



3705 Progress Blvd, Suite 2
Peru, IL 61354
815-780-8486

SOIL BORING LOG

Solutions You Can Build On

Date 7/25/17

ROUTE I-57/74 DESCRIPTION Ramp D, west abut. MSE wall LOGGED BY TLM

SECTION (10-34-1) HBK LOCATION , SEC. , TWP. , RNG. ,

Latitude 40.148176, Longitude -88.286972

COUNTY Champaign DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. 010-1004
Station 414+78.50

BORING NO. DW 2
Station 405+30.00
Offset 33.0 ft Lt.
Ground Surface Elev. 773.41 ft

D E P T H
B L O W S
U C S
M O I S T

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft
Groundwater Elev.:
First Encounter _____ ft
Upon Completion _____ ft
After _____ Hrs. _____ ft

D E P T H
B L O W S
U C S
M O I S T

Very Stiff Brown Clay to Silty Clay, dry					+/- 6" Layers of Wet, Gray, Medium Dense Sand and Gravel and Gray Silty Clay Loam Till, moist				
		3					5		
		5	3.7	19			7	2.9	12
		3	S				6	B	
	770.16					750.41			
Shelby Tube collected from 3 ft to 5 ft.		3			Very Stiff Gray Silty Clay Loam Till		4		
		2	0.8	17			6	2.1	12
		3	B				9	B	
	-5								
Medium Stiff Silty Clay, trace sand, moist		4							
		5	1.0	12					
	765.91	6	B						
Very Stiff Olive Brown to Gray Silty Clay Loam Till		3					3		
		4	2.7	13			5	1.2	13
		6	B				7	B	
	-10								
	762.91								
Very Stiff Gray Silty Clay Loam Till		3							
		7	2.9	11					
		9	B						
		3					4		
		6	2.3	11			5	1.2	13
		9	B				7	B	
	-15					738.41	-35		
	762.91								
Shelby Tube collected from 35 ft. to 37 ft.		6							ST
		6	2.7	12					
		8	B						
	755.41				End of Boring				
Medium Dense, Gray, Medium to Coarse Sand, wet		3							
		4	-	15					
	753.41	7					-40		

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

BBS, form 137 (Rev. 8-99)



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Date 7/25/17

ROUTE I-57/74 DESCRIPTION Ramp D, west abut. MSE wall LOGGED BY TLM

SECTION (10-34-1) HBK LOCATION , SEC. , TWP. , RNG. ,

Latitude 40.14777, Longitude -88.28666

COUNTY Champaign DRILLING METHOD Hollow Stem Auger HAMMER TYPE Automatic

STRUCT. NO. 010-1004
Station 414+78.50

BORING NO. DW 7
Station 406+88.6
Offset 25.9 ft Rt.
Ground Surface Elev. 771.88 ft

D E P T H
B L O W S
U C S
M O I S T

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft
Groundwater Elev.:
First Encounter 751.9 ft
Upon Completion 751.9 ft
After _____ Hrs. _____ ft

D E P T H
B L O W S
U C S
M O I S T

Stiff Brown Silty Clay, organic, dry					Very Stiff to Stiff Gray Silty Clay Loam Till, 1/2" sand seams at approximately 8" spacing				
		4					6		
		5	1.0	18			9	3.2	12
		6	P				12	B	
	768.63								
Very Stiff Born Silty Clay, organic, dry		4					6		
		5	2.5	20			9	2.5	11
		6	P				8	B	
	767.13								
Very Stiff Brown Silty Clay, little recovery (<3")		2					5		
		1	2.5	20			6	1.7	13
		2	P				8	B	
	763.88								
Stiff Brown Silty Clay Till		2					4		
		4	1.9	13			5	1.5	13
		7	B				8	B	
	-10								
	760.38								
Very Stiff Olive Brown to Brown Silty Clay Till		8	2.5	13					
		8	B						
		4					3		
		7	2.5	14			7	2.7	11
		9	P				9	B	
	-15					736.88	-35		
	755.38				End of Boring				
Hard Gray Silty Clay Loam Till, with thin (<2mm) thick sand seams		7							
		10	4.5	11					
		14	P						
		4							
		7	4.5	9					
	751.88	11	P				-40		

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

BBS, form 137 (Rev. 8-99)

FILE NAME = p:\v\cm\engr-p\w\benfley.com\cm\proj\docs\Documents\Projects\DOT115086-01\Draw\Structures\CADD_Sheets\RAMP_Draw\IPD-70899-095-Boring-Log-13.dgn



USER NAME = Denise Herrera	DESIGNED - DH	REVISED -
CHECKED - JTH	REVISIONS -	
PLOT SCALE = N/A	DRAWN - DH	REVISIONS -
PLOT DATE = 4/29/2021 (4:02:11 PM)	CHECKED - JTH	REVISIONS -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOG - 13
STRUCTURE NO. 010-1004

SHEET NO. 93 OF 94 SHEETS

F.A.I. RTE. 74 & 57	SECTION (10-34-1) HBK	COUNTY CHAMPAIGN	TOTAL SHEETS 1187	SHEET NO. 901
CONTRACT NO. 70B99			ILLINOIS FED. AID PROJECT	

Benchmark: Chiseled "□" on top of S.W. corner of S.W. Parapet Wall of I-74 W.B. Bridge over I-57, Sta. 1059+99.73, 12.54' Left, Elev. 787.79

Existing Structure: None / No Salvage

INDEX OF SHEETS

1. General Plan and Elevation
2. General Data
- 3 - 5. Top of Slab Elevations
- 6 - 7. Top of Approach Slab Elevations
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10. End Diaphragm Details
- 11 - 13. Bridge Approach Slab Details
- 14 - 16. Concrete Girder Details
17. North Abutment Details
18. South Abutment Details
19. Wingwall Extension Details
20. Metal Shell Pile Details
21. Concrete Parapet Slipforming Option
- 22 - 25. Boring Logs

DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Specifications, 9th Edition

LOADING HL-93

Allow 25 psf for future wearing surface

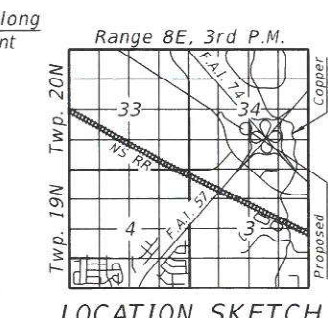
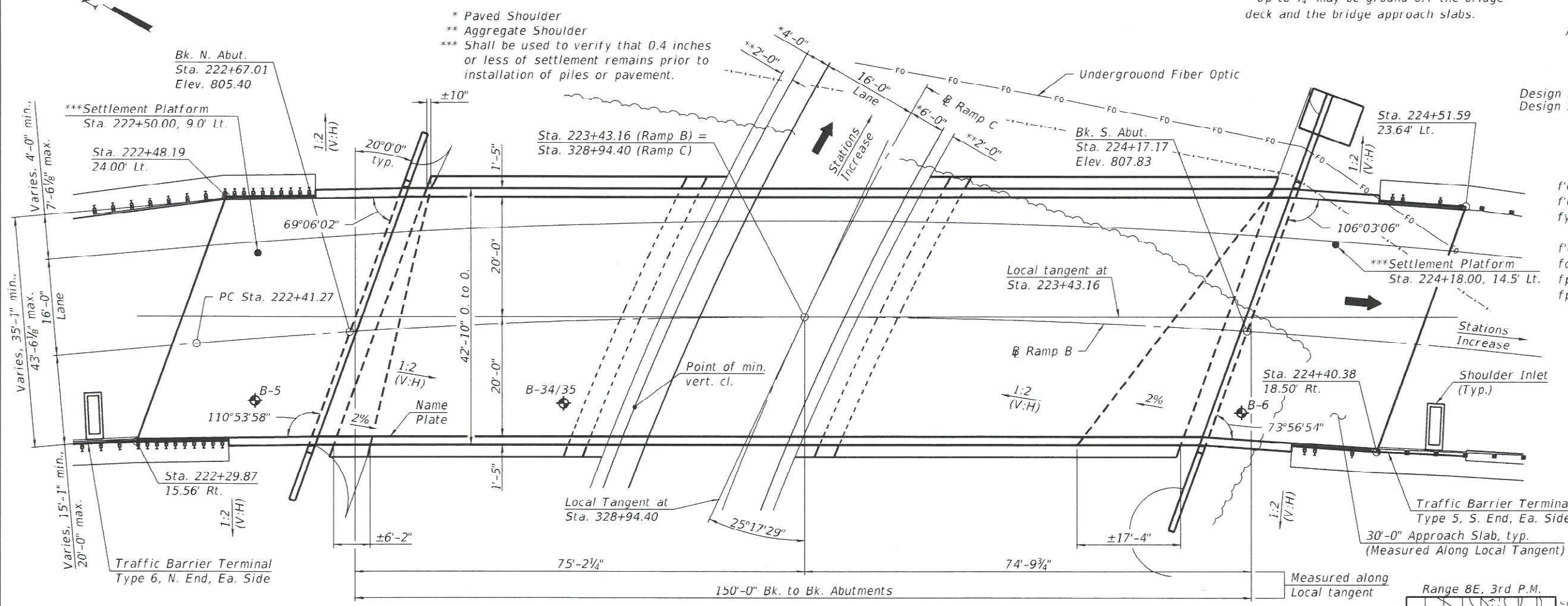
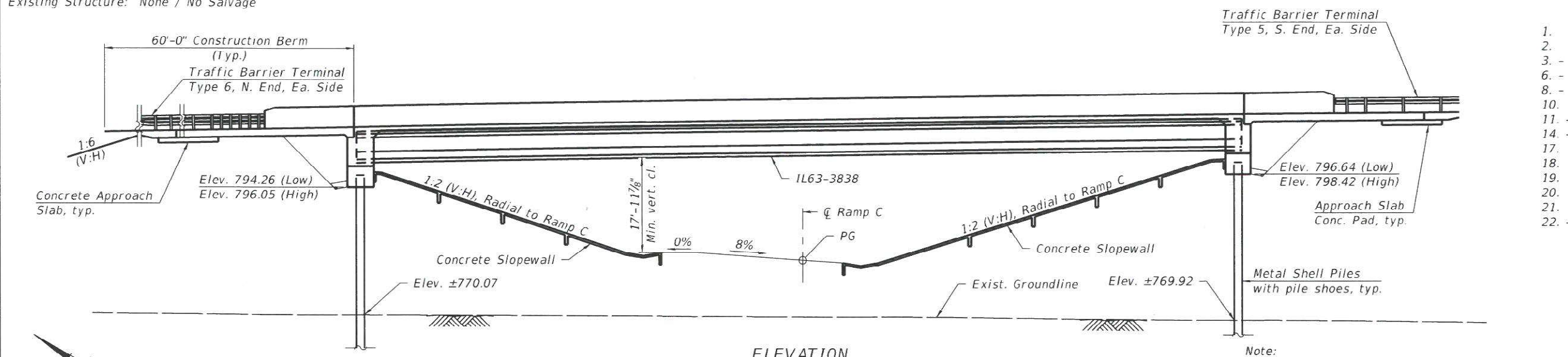
SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
 Design Spectral Acceleration at 1.0 sec (SD1) = 0.135g
 Design Spectral Acceleration at 0.2 sec (SDS) = 0.233g
 Soil Site Class = D

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi (Cast-in-Place)
 f'c = 4,000 psi (Superstructure Concrete)
 fy = 60,000 psi (Reinforcement)
PRECAST PRESTRESSED UNITS
 f'c = 8,500 psi
 fci = 6,500 psi
 fpu = 270,000 psi (0.6" Φ low lax strands)
 fpb = 202,300 psi (0.6" Φ low lax strands)



GENERAL PLAN & ELEVATION
RAMP B OVER RAMP C
F.A.I. RTE. 57/74
SECTION (10-34-1)HBK
CHAMPAIGN COUNTY
STATION 223+43.16
STRUCTURE NO. 010-1005

APPROVED
 For Structural Adequacy Only
 Eric Lagemann
 Engineer of Bridges & Structures



Eric Lagemann 5/4/21
 License Expires 11/30/2022 Date

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DESIGNED - T.S. Friederich	REVISIONS
CHECKED - E.M. Lagemann	REVISIONS
DRAWN - T.S. Friederich	REVISIONS
CHECKED - E.M. Lagemann	REVISIONS

FUHRMANN ENGINEERING
 WWW.FUHRMANN-ENG.COM

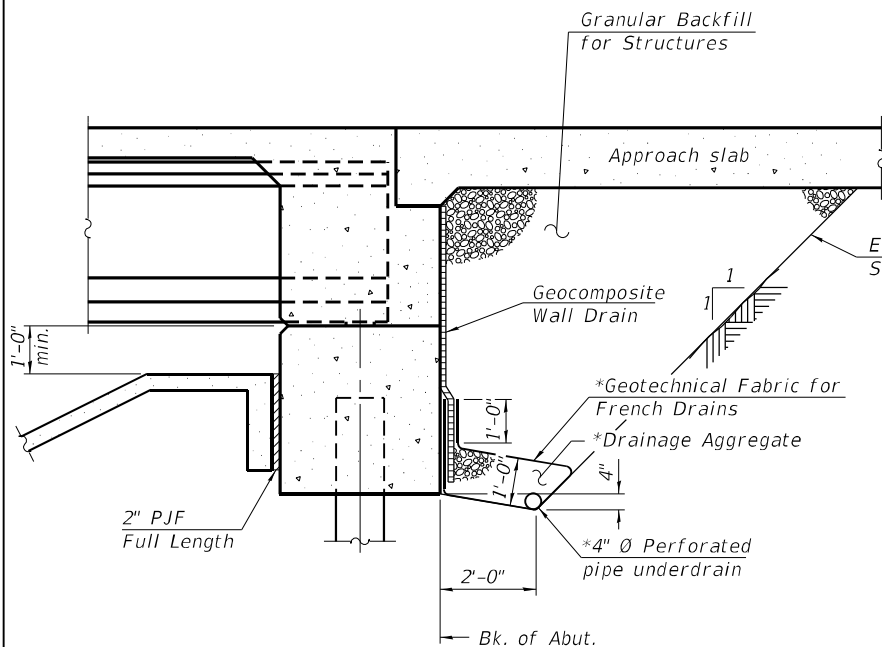
F.A.I. RTE. 74 & 57	SECTION (10-34-1) HBK	COUNTY CHAMPAIGN	TOTAL SHEETS 1187	SHEET NO. 903
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				

GENERAL NOTES

Reinforcement bars designated (E) shall be epoxy coated.
The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.

STATION 223+43.16
BUILT 202 BY
STATE OF ILLINOIS
F.A.I. 57/74 SEC. (10-34-1) HBK
LOADING HL-93
STRUCTURE NO. 010-1005

NAME PLATE
See Std. 515001

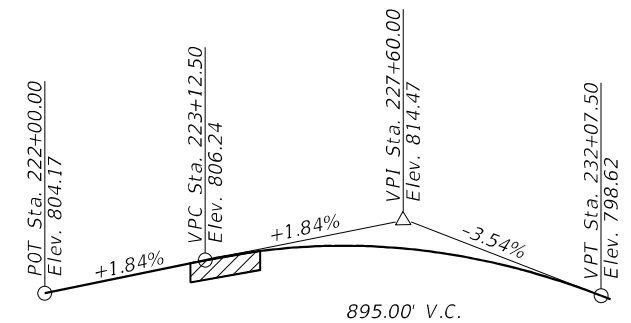


SECTION THRU INTEGRAL ABUTMENT
(Horiz. dim. @ Rt. L's)

*Included in the cost of Pipe Underdrains for Structures.
(See Special Provisions)

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).

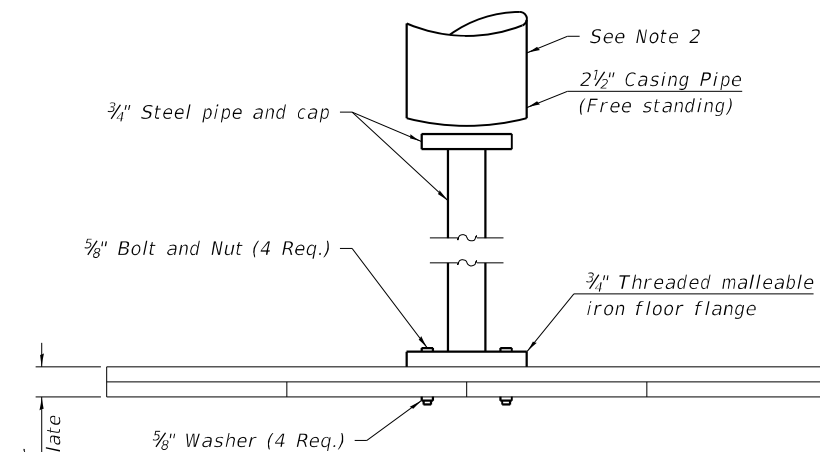


PROFILE GRADE RAMP B
(Along B Roadway)

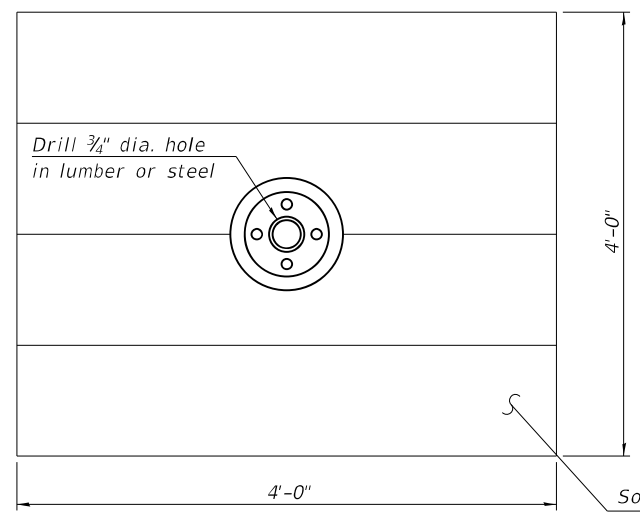
(The profile grade shows the final elevations after grinding)

PROPOSED RAMP B CURVE DATA

P.I. Sta. = 230+56.25 L = 1,420.88'
Δ = 70°-10'-53" (Rt.) E = 257.67'
D = 4°-56'-21" S.E. = 7.8%
R = 1,160.00' P.C. Sta. = 222+41.27
T = 814.98' P.T. Sta. = 236+62.15'



SETTLEMENT PLATFORM - ELEVATION

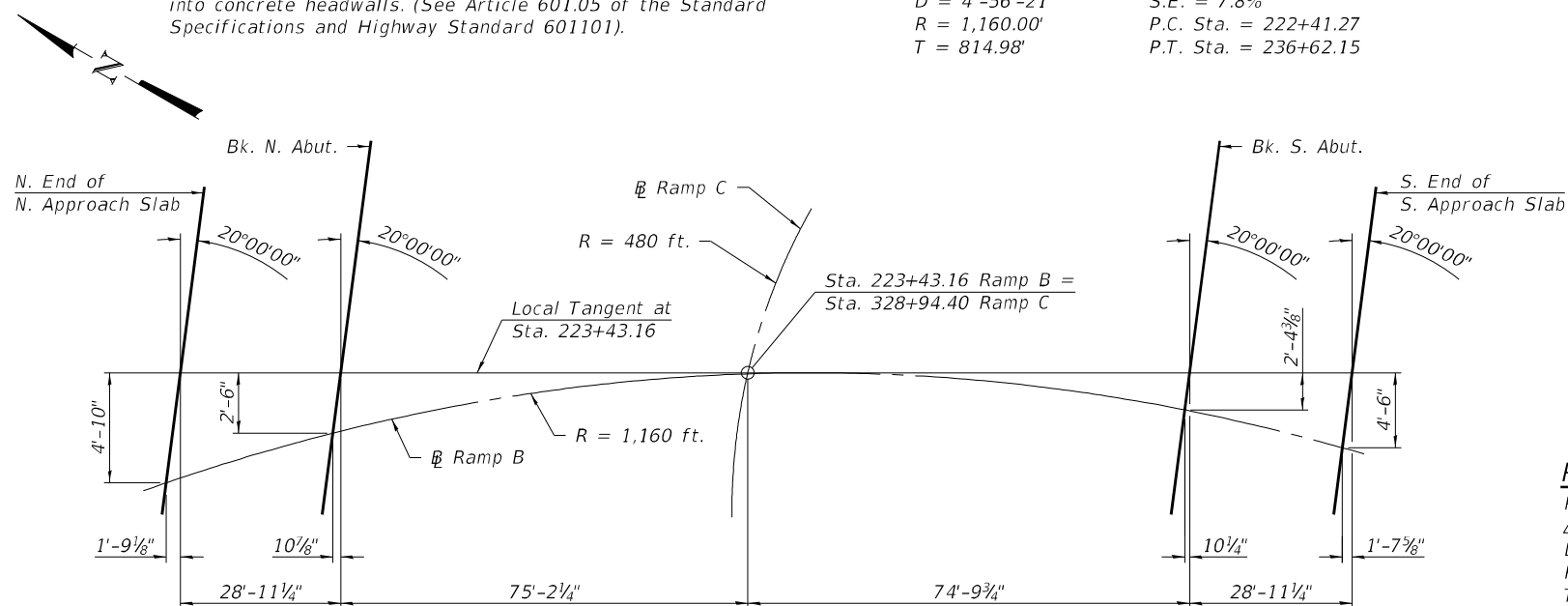


SETTLEMENT PLATFORM - PLAN

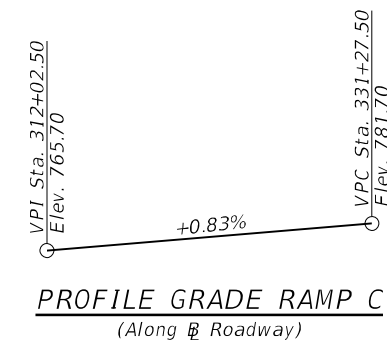
TOTAL BILL OF MATERIAL				
ITEM	UNIT	SUPER	SUB	TOTAL
Structure Excavation	Cu. Yd.		404	404
Concrete Structures	Cu. Yd.		96.6	96.6
Concrete Superstructure	Cu. Yd.	302.9		302.9
Protective Coat	Sq. Yd.	1,091		1,091
Concrete Superstructure (Approach Slab)	Cu. Yd.	116.8		116.8
Furnishing and Erecting Precast Prestressed Concrete Beam, IL63	Foot	883		883
Reinforcement Bars, Epoxy Coated	Pound	102,200	22,680	124,880
Slope Wall 4 Inch	Sq. Yd.			616
Driving Piles	Foot		1,351	1,351
Test Pile Metal Shells	Each		2	2
Pile Shoes	Each		16	16
Name Plates	Each			1
Granular Backfill for Structures	Cu. Yd.		317	317
Geocomposite Wall Drain	Sq. Yd.		133	133
Furnishing Metal Shell Piles 16" X 0.312"	Foot		1,351	1,351
Bridge Deck Grooving (Longitudinal)	Sq. Yd.		370	370
Diamond Grinding (Bridge Section)	Sq. Yd.		832	832
Pipe Underdrains for Structures 4"	Foot		162	162
Settlement Platforms	Each			2

Notes:

- Settlement platform shall be in accordance with the applicable portions of Article 204.06 of the Standard Specifications.
- Do not install casing pipe until after one section of 3/4" steel pipe has been covered with earth. The casing pipe should not rest on platform.



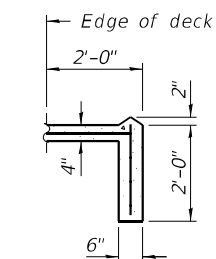
OFFSET SKETCH



PROFILE GRADE RAMP C
(Along B Roadway)

PROPOSED RAMP C CURVE DATA

P.I. Sta. = 330+93.16 L = 1,041.65'
Δ = 124°-20'-18" (Rt.) E = 548.14'
D = 11°-56'-12" S.E. = 8.0%
R = 480.00' P.C.C. Sta. = 321+83.95
T = 909.21' P.C.C. Sta. = 332+25.60

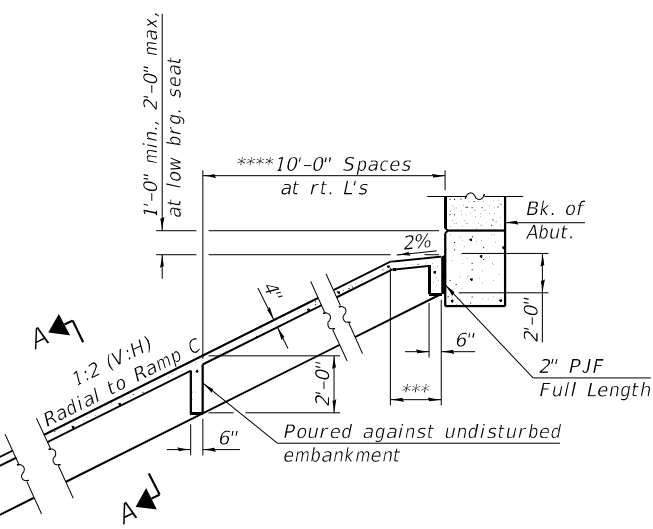


SECTION A-A

** 1:6 (V:H)

3'-0" 3'-0"

2'-0" 6"



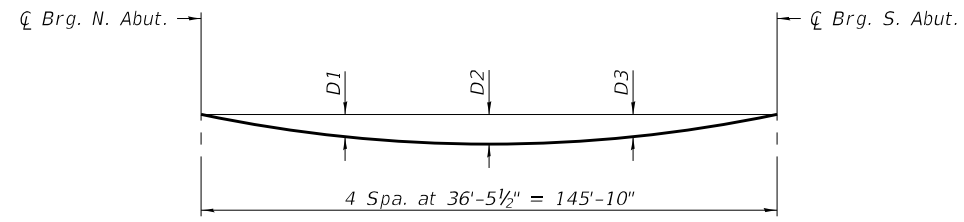
*** Varies from ±10" to ±6'-2" N. Abut. along slope wall
Varies from ±0'-0" to ±17'-4" S. Abut. along slope wall
**** Toewalls are to be spaced at 10'-0". See ELEVATION on sheet 1 of 25 for number of Toewalls.

Note:

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.

SECTION THRU CONCRETE SLOPEWALL

MODEL: Default
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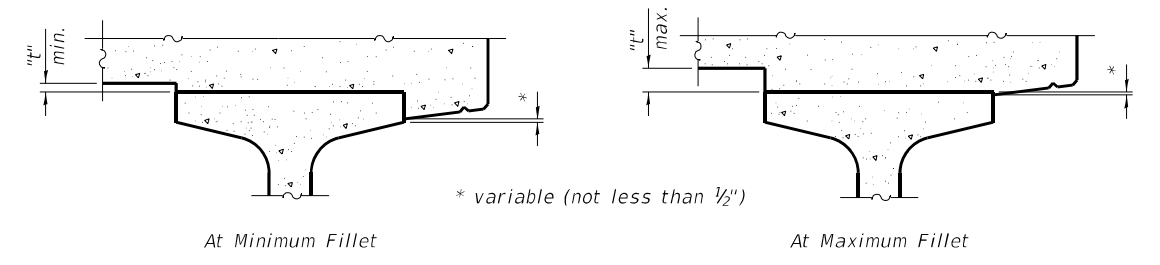


DEAD LOAD DEFLECTION DIAGRAM
(Includes weight of concrete only, excluding beams.)

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 4 and 5 of 25.

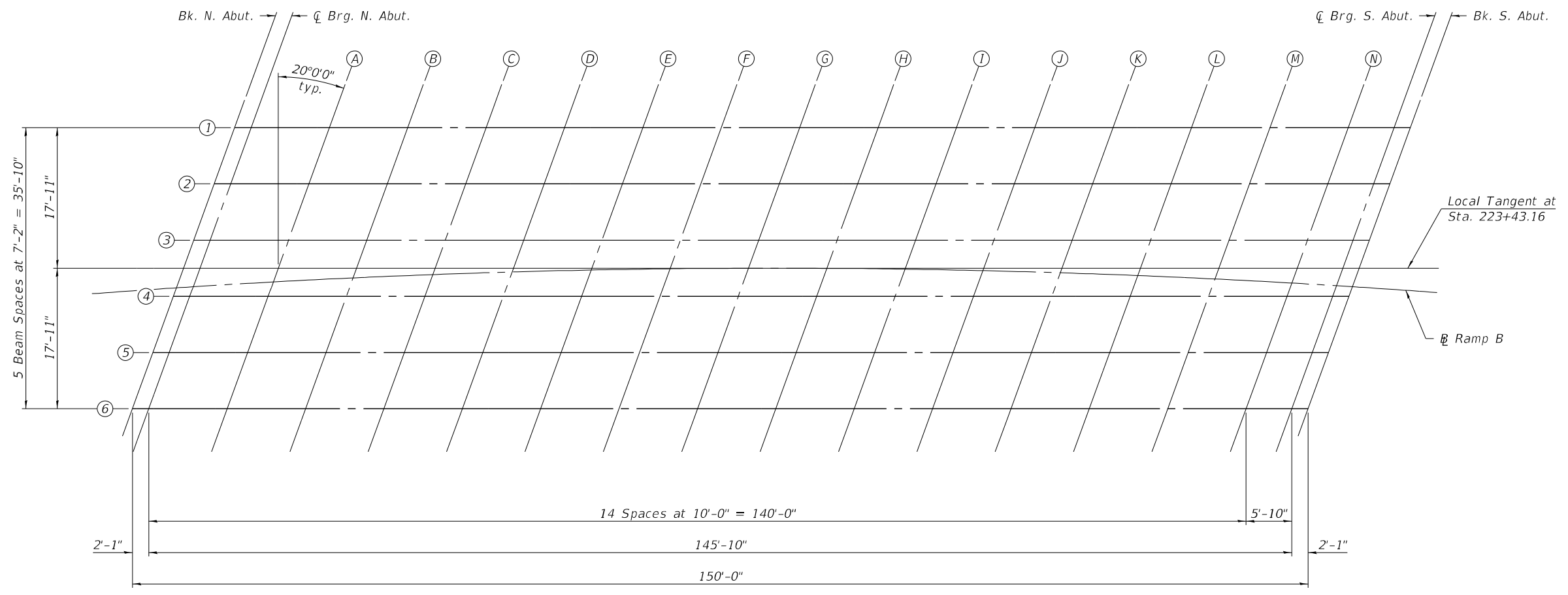
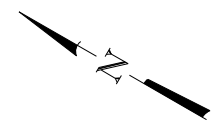
TABLE OF DEFLECTIONS

Beam	D1	D2	D3
1	2 7/8"	3 3/8"	2 3/8"
2	2 3/8"	3 1/4"	2 3/8"
3	2 3/8"	3 1/4"	2 3/8"
4	2 3/8"	3 1/4"	2 3/8"
5	2 3/8"	3 1/4"	2 3/8"
6	2 1/2"	3 1/2"	2 1/2"



To determine "t": After all beams have 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 Deflections and Grinding" shown on sheets 4 and 5 of 25, minus 8 1/4" slab thickness, equals the fillet heights "t" above top flange of beams.
The slab is to be ground after curing to achieve smoothness, but the slab is not to be ground to elevations below the "Theoretical Grade Elevations" shown on sheets 4 and 5 of 25. For grinding the deck, see Special Provisions.

FILLET HEIGHTS



PLAN

MODEL: Default
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BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. N. Abut.	222+75.62	-19.92	807.11	807.13
CL Brg. N. Abut.	222+77.67	-19.80	807.14	807.16
A	222+87.49	-19.27	807.28	807.37
B	222+97.32	-18.84	807.43	807.58
C	223+07.15	-18.48	807.58	807.78
D	223+16.99	-18.22	807.74	807.99
E	223+26.84	-18.03	807.90	808.19
F	223+36.68	-17.94	808.06	808.38
G	223+46.53	-17.92	808.23	808.55
H	223+56.38	-17.99	808.39	808.71
I	223+66.22	-18.15	808.55	808.86
J	223+76.07	-18.39	808.72	808.99
K	223+85.90	-18.72	808.88	809.12
L	223+95.73	-19.13	809.05	809.23
M	224+05.56	-19.62	809.22	809.34
N	224+15.37	-20.20	809.39	809.45
CL Brg. S. Abut.	224+21.09	-20.58	809.48	809.51
Bk. S. Abut.	224+23.14	-20.72	809.52	809.54

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. N. Abut.	222+72.63	-12.92	806.51	806.53
CL Brg. N. Abut.	222+74.69	-12.79	806.54	806.56
A	222+84.57	-12.25	806.68	806.76
B	222+94.46	-11.78	806.82	806.96
C	223+04.35	-11.41	806.98	807.16
D	223+14.25	-11.11	807.13	807.36
E	223+24.15	-10.91	807.30	807.56
F	223+34.06	-10.79	807.46	807.74
G	223+43.97	-10.75	807.62	807.92
H	223+53.88	-10.80	807.79	808.08
I	223+63.78	-10.93	807.95	808.23
J	223+73.68	-11.16	808.12	808.37
K	223+83.58	-11.46	808.29	808.50
L	223+93.48	-11.85	808.45	808.62
M	224+03.36	-12.33	808.62	808.73
N	224+13.24	-12.89	808.79	808.85
CL Brg. S. Abut.	224+18.99	-13.26	808.89	808.91
Bk. S. Abut.	224+21.05	-13.39	808.92	808.94

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. N. Abut.	222+69.61	-5.93	805.91	805.93
CL Brg. N. Abut.	222+71.68	-5.80	805.94	805.96
A	222+81.61	-5.22	806.08	806.16
B	222+91.56	-4.74	806.22	806.36
C	223+01.51	-4.33	806.37	806.56
D	223+11.47	-4.02	806.53	806.76
E	223+21.44	-3.79	806.69	806.96
F	223+31.40	-3.64	806.86	807.14
G	223+41.37	-3.58	807.02	807.31
H	223+51.34	-3.61	807.19	807.48
I	223+61.31	-3.73	807.35	807.63
J	223+71.27	-3.93	807.52	807.77
K	223+81.24	-4.21	807.69	807.90
L	223+91.19	-4.58	807.86	808.02
M	224+01.14	-5.04	808.02	808.14
N	224+11.08	-5.58	808.19	808.25
CL Brg. S. Abut.	224+16.87	-5.94	808.29	808.31
Bk. S. Abut.	224+18.94	-6.07	808.33	808.35

PROFILE GRADE & RAMP B

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. N. Abut.	222+67.01	0.00	805.40	805.42
CL Brg. N. Abut.	222+69.15	0.00	805.44	805.46
A	222+79.39	0.00	805.63	805.71
B	222+89.59	0.00	805.81	805.95
C	222+99.76	0.00	806.00	806.19
D	223+09.88	0.00	806.19	806.42
E	223+19.98	0.00	806.37	806.63
F	223+30.03	0.00	806.55	806.83
G	223+40.06	0.00	806.72	807.01
H	223+50.05	0.00	806.88	807.18
I	223+60.02	0.00	807.04	807.32
J	223+69.95	0.00	807.19	807.44
K	223+79.86	0.00	807.34	807.55
L	223+89.73	0.00	807.48	807.64
M	223+99.59	0.00	807.61	807.72
N	224+09.41	0.00	807.74	807.79
CL Brg. S. Abut.	224+15.13	0.00	807.81	807.83
Bk. S. Abut.	224+17.17	0.00	807.83	807.85

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. N. Abut.	222+66.55	1.06	805.31	805.33
CL Brg. N. Abut.	222+68.63	1.19	805.34	805.36
A	222+78.63	1.79	805.47	805.55
B	222+88.63	2.30	805.62	805.75
C	222+98.64	2.73	805.77	805.95
D	223+08.66	3.07	805.93	806.16
E	223+18.69	3.33	806.09	806.35
F	223+28.71	3.49	806.25	806.54
G	223+38.74	3.57	806.42	806.71
H	223+48.78	3.57	806.59	806.88
I	223+58.81	3.48	806.75	807.03
J	223+68.83	3.30	806.92	807.17
K	223+78.86	3.04	807.09	807.30
L	223+88.88	2.68	807.26	807.42
M	223+98.89	2.25	807.43	807.54
N	224+08.89	1.72	807.60	807.65
CL Brg. S. Abut.	224+14.72	1.38	807.70	807.72
Bk. S. Abut.	224+16.80	1.25	807.73	807.75

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. N. Abut.	222+63.45	8.03	804.71	804.73
CL Brg. N. Abut.	222+65.55	8.17	804.73	804.76
A	222+75.60	8.80	804.87	804.95
B	222+85.66	9.34	805.01	805.15
C	222+95.74	9.79	805.16	805.35
D	223+05.82	10.15	805.32	805.55
E	223+15.90	10.43	805.48	805.75
F	223+25.99	10.62	805.65	805.93
G	223+36.08	10.73	805.82	806.11
H	223+46.18	10.75	805.98	806.27
I	223+56.27	10.68	806.15	806.43
J	223+66.36	10.52	806.32	806.57
K	223+76.45	10.28	806.49	806.70
L	223+86.53	9.95	806.66	806.82
M	223+96.61	9.53	806.83	806.94
N	224+06.68	9.03	807.00	807.05
CL Brg. S. Abut.	224+12.54	8.69	807.10	807.12
Bk. S. Abut.	224+14.64	8.57	807.13	807.15

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BEAM 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. N. Abut.	222+60.32	15.00	804.11	804.13
CL Brg. N. Abut.	222+62.42	15.14	804.13	804.15
A	222+72.54	15.80	804.27	804.35
B	222+82.66	16.36	804.41	804.56
C	222+92.79	16.84	804.56	804.76
D	223+02.94	17.23	804.72	804.96
E	223+13.08	17.53	804.88	805.16
F	223+23.24	17.75	805.05	805.35
G	223+33.39	17.88	805.21	805.53
H	223+43.55	17.92	805.38	805.69
I	223+53.70	17.87	805.55	805.84
J	223+63.86	17.73	805.72	805.99
K	223+74.01	17.51	805.89	806.12
L	223+84.16	17.20	806.06	806.24
M	223+94.30	16.81	806.23	806.35
N	224+04.43	16.32	806.40	806.46
CL Brg. S. Abut.	224+10.34	16.00	806.50	806.52
Bk. S. Abut.	224+12.45	15.88	806.54	806.56

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	CHECKED - E.M. Lagemann	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATIONS
 STRUCTURE NO. 010-1005**

SHEET 5 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74 & 57	(10-34-1) HBK	CHAMPAIGN	1187	907
			CONTRACT NO. 70B99	
		ILLINOIS FED. AID PROJECT		

EAST EDGE OF SHOULDER / CURB LINE

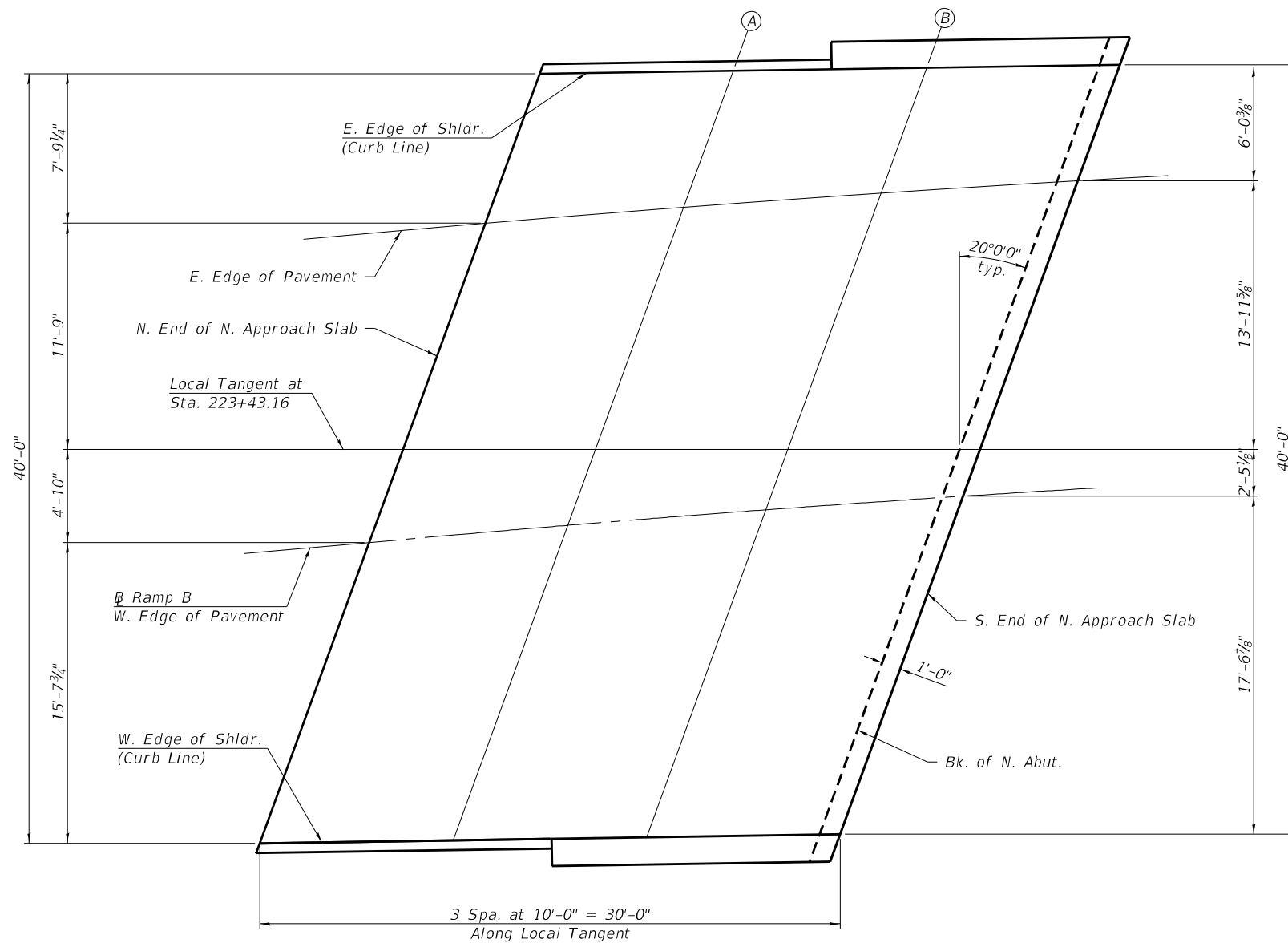
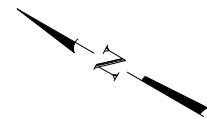
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
N. End of N. Appr. Pav't	222+47.97	-23.51	806.88	806.90
A	222+57.81	-22.88	807.01	807.04
B	222+67.66	-22.35	807.15	807.17
S. End of N. Appr. Pav't	222+78.11	-23.29	807.42	807.44

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
N. End of N. Appr. Pav't	222+44.56	-16.00	806.23	806.25
A	222+54.76	-16.00	806.42	806.44
B	222+64.91	-16.00	806.61	806.63
S. End of N. Appr. Pav't	222+75.03	-16.00	806.79	806.82

WEST EDGE OF PAVEMENT, PROFILE GRADE, & RAMP B

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
N. End of N. Appr. Pav't	222+37.14	0.00	804.85	804.87
A	222+47.50	0.00	805.04	805.06
B	222+57.82	0.00	805.23	805.25
S. End of N. Appr. Pav't	222+68.11	0.00	805.42	805.44



PLAN

WEST EDGE OF SHOULDER / CURB LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
N. End of N. Appr. Pav't	222+30.09	15.08	803.59	803.61
A	222+40.13	15.80	803.68	803.70
B	222+50.29	16.49	803.80	803.83
S. End of N. Appr. Pav't	222+60.48	17.10	803.95	803.97

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	CHECKED - E.M. Lagemann	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**TOP OF NORTH APPROACH SLAB ELEVATIONS
 STRUCTURE NO. 010-1005**

F.A.I. RTE. 74 & 57	SECTION (10-34-1) HBK	COUNTY CHAMPAIGN	TOTAL SHEETS 1187	SHEET NO. 908
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				

EAST EDGE OF SHOULDER / CURB LINE

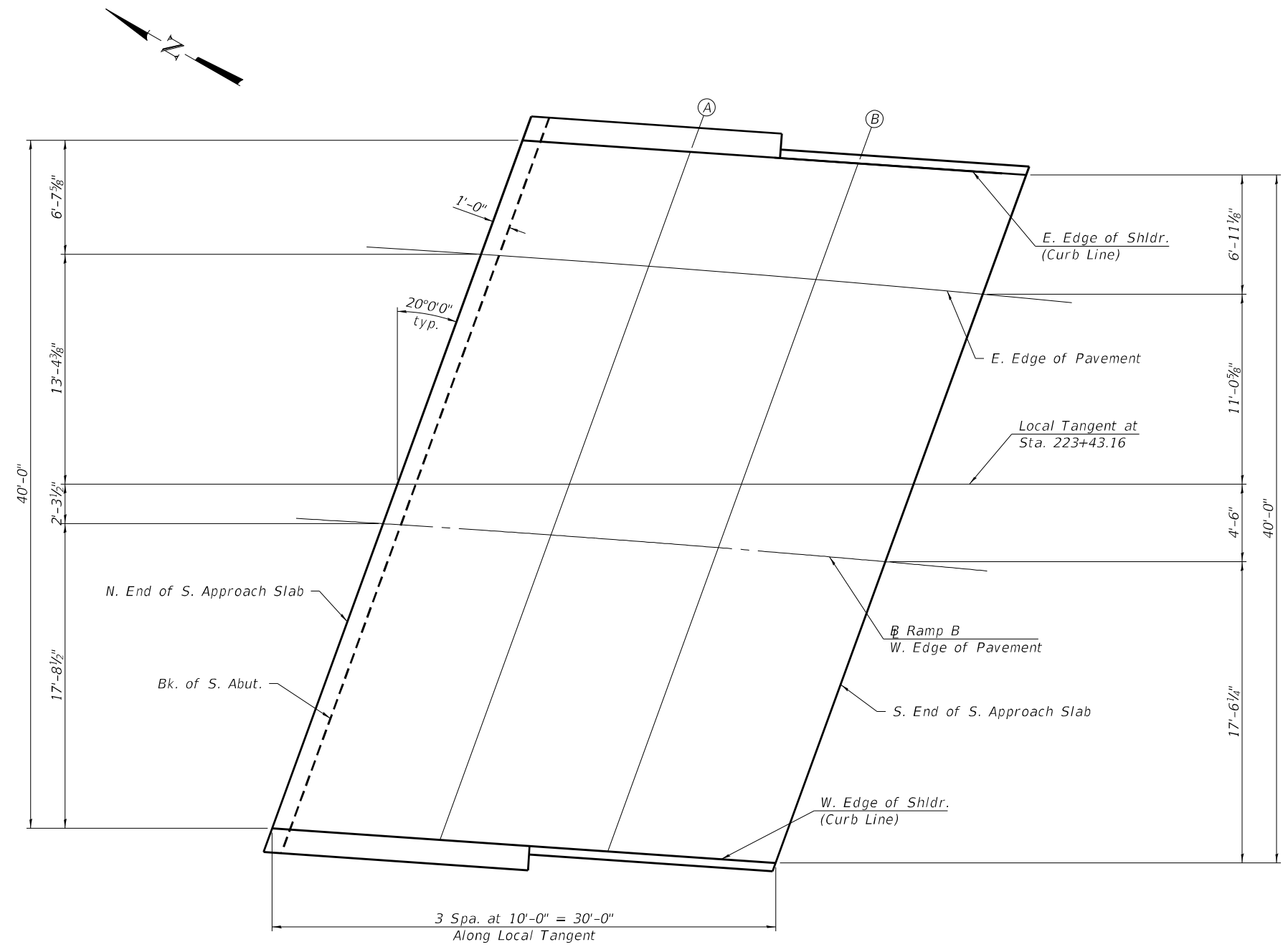
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
N. End of S. Appr. Pav't	224+22.70	-22.78	809.68	809.70
A	224+32.28	-22.82	809.79	809.81
B	224+41.87	-22.93	809.90	809.92
S. End of S. Appr. Pav't	224+51.46	-23.13	810.02	810.04

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
N. End of S. Appr. Pav't	224+20.77	-16.00	809.12	809.14
A	224+30.41	-16.00	809.24	809.26
B	224+40.02	-16.00	809.34	809.36
S. End of S. Appr. Pav't	224+49.62	-16.00	809.44	809.46

WEST EDGE OF PAVEMENT, PROFILE GRADE, & RAMP B

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
N. End of S. Appr. Pav't	224+16.13	0.00	807.82	807.84
A	224+25.91	0.00	807.94	807.96
B	224+35.67	0.00	808.05	808.07
S. End of S. Appr. Pav't	224+45.41	0.00	808.15	808.17



PLAN

WEST EDGE OF SHOULDER / CURB LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
N. End of S. Appr. Pav't	224+10.72	18.06	806.34	806.37
A	224+20.66	18.13	806.46	806.48
B	224+30.59	18.10	806.58	806.60
S. End of S. Appr. Pav't	224+40.52	18.00	806.70	806.72

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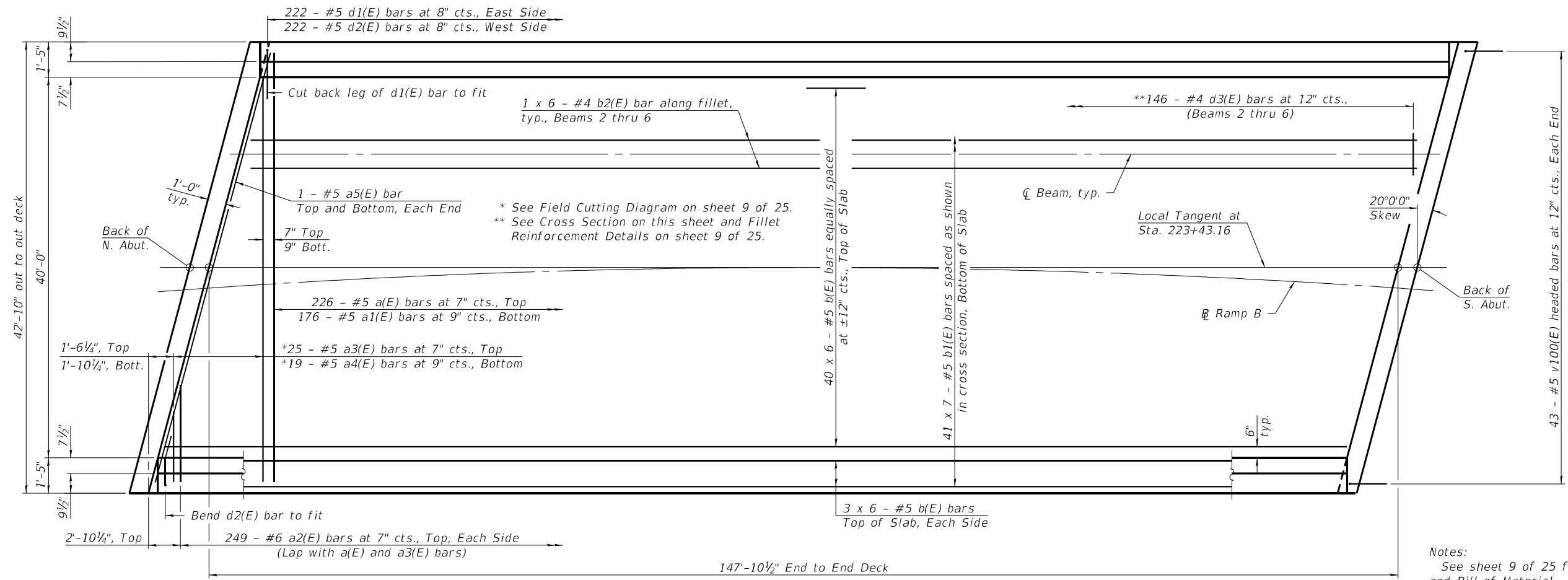
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**STATE OF ILLINOIS
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**TOP OF SOUTH APPROACH SLAB ELEVATIONS
 STRUCTURE NO. 010-1005**

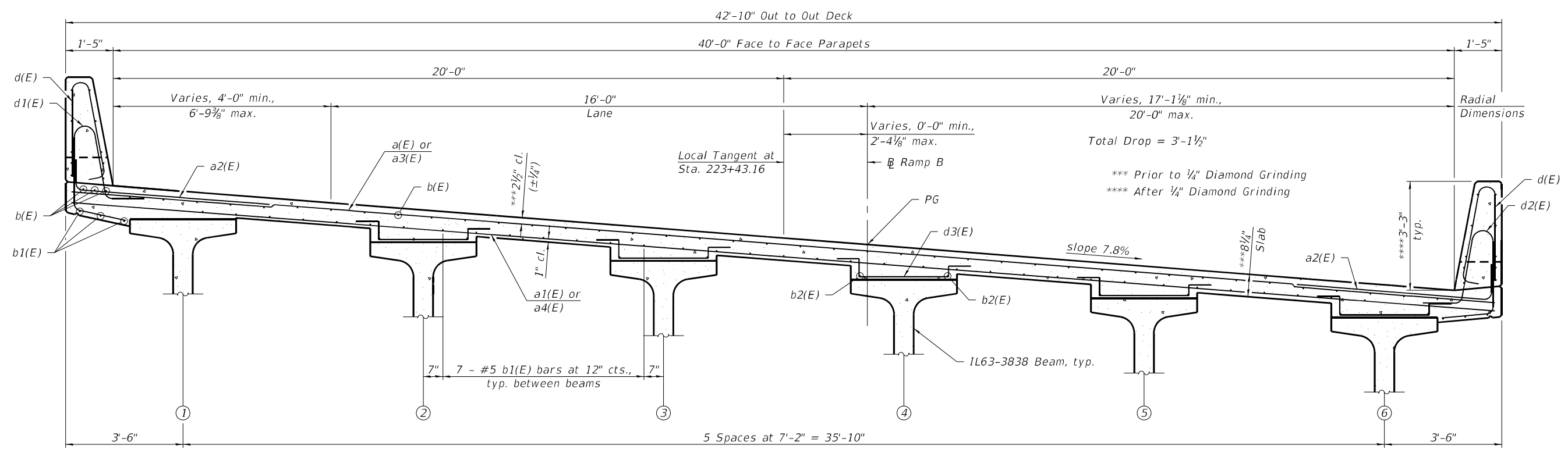
F.A.I. RTE. 74 & 57	SECTION (10-34-1) HBK	COUNTY CHAMPAIGN	TOTAL SHEETS 1187	SHEET NO. 909
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				



PLAN

MINIMUM BAR LAP
 #4 bar = 2'-5"
 #5 bar = 3'-6"

Notes:
 See sheet 9 of 25 for superstructure details and Bill of Material.
 Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.



CROSS SECTION
 (Looking Upstation)

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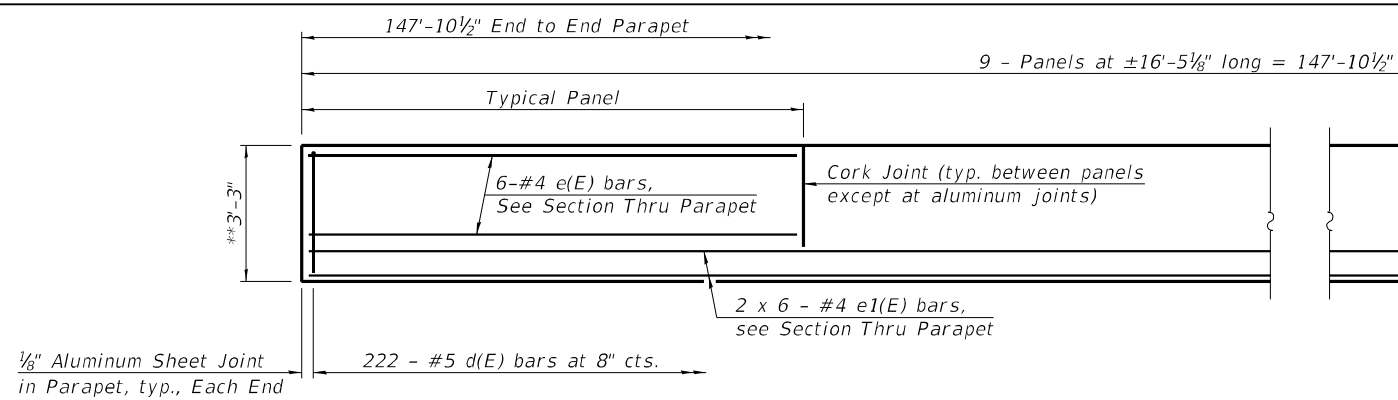
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DEPARTMENT OF TRANSPORTATION

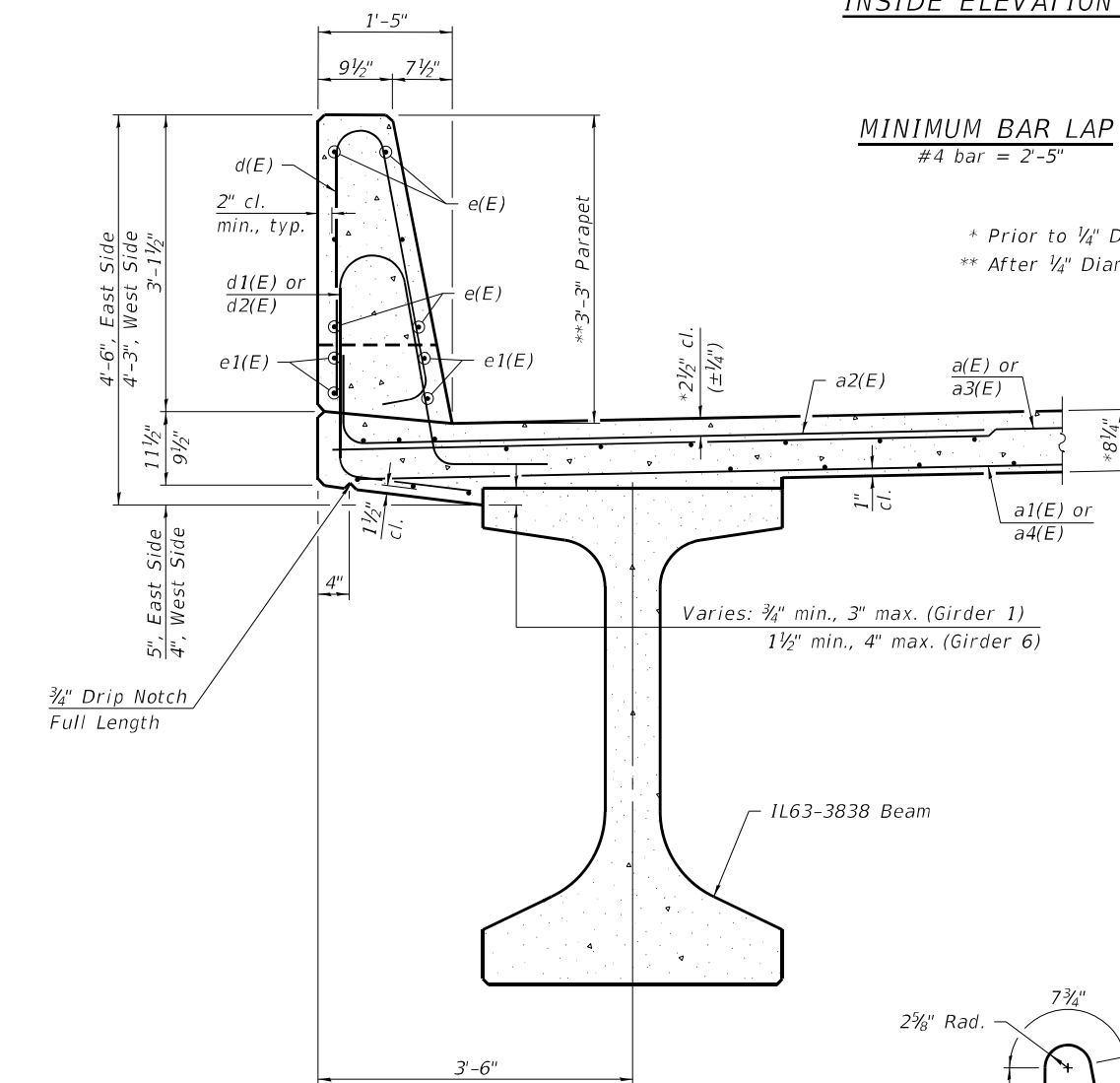
SUPERSTRUCTURE PLAN AND CROSS-SECTION
STRUCTURE NO. 010-1005

SHEET 8 OF 25 SHEETS

F.A.I. RTE. 74 & 57	SECTION (10-34-1) HBK	COUNTY CHAMPAIGN	TOTAL SHEETS 1187	SHEET NO. 910
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				



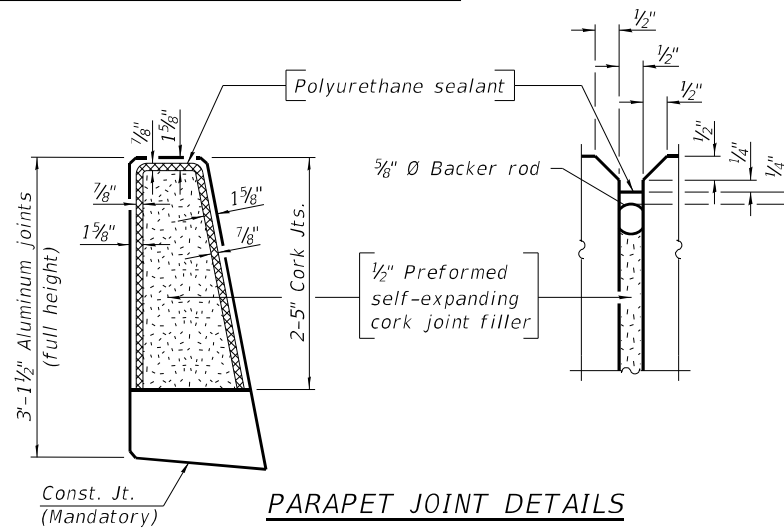
INSIDE ELEVATION OF PARAPET



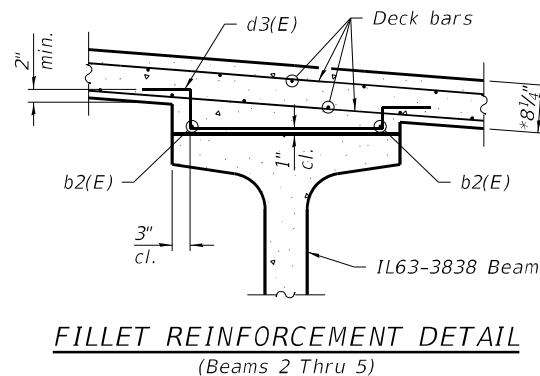
SECTION THRU PARAPET

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

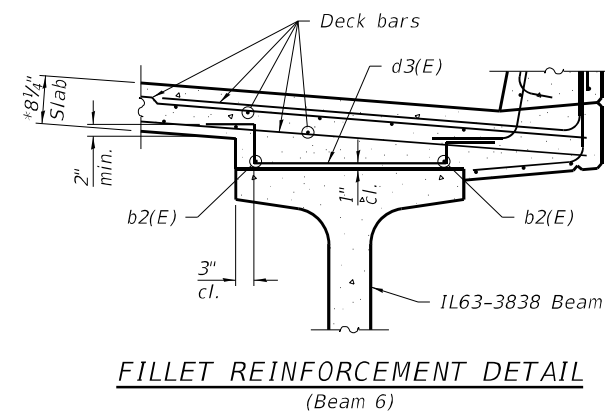
* Prior to 1/4" Diamond Gridding
** After 1/4" Diamond Gridding



PARAPET JOINT DETAILS



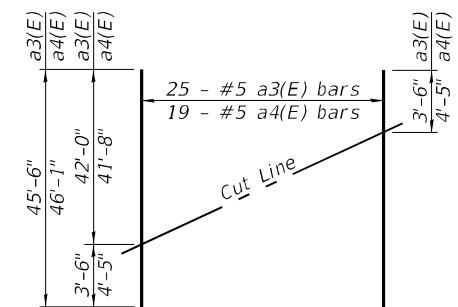
FILLET REINFORCEMENT DETAIL
(Beams 2 Thru 5)



FILLET REINFORCEMENT DETAIL
(Beam 6)

Notes:

The 1/8" Aluminum sheet shall be ASTM B 209 alloy 3003-H14 and coated to minimize reaction with wet concrete. Cost included with Concrete Superstructure.
The polyurethane sealant shall be according to Article 1050.04 of the Std. Spec. and the color shall be gray.
Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.



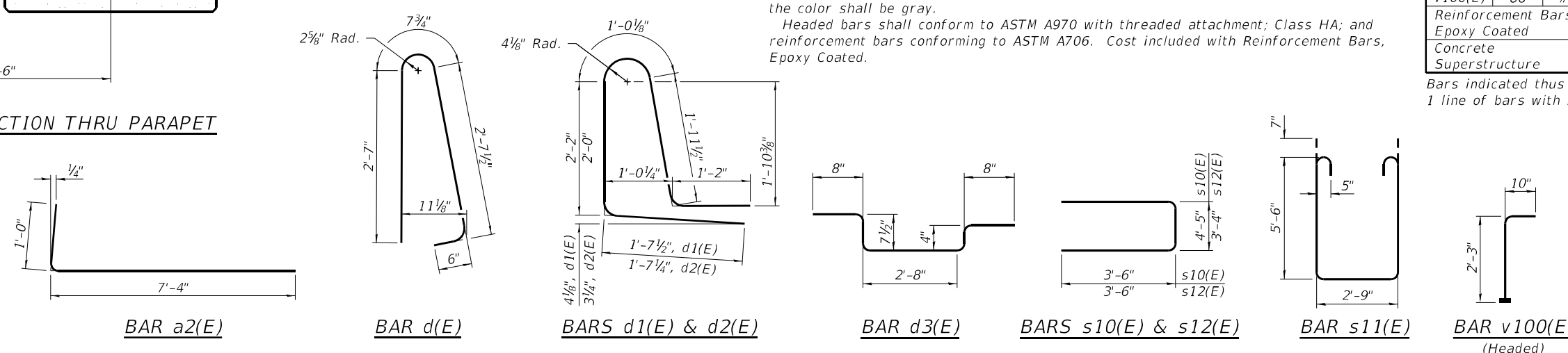
FIELD CUTTING DIAGRAM

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

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	226	#5	42'-7"	—
a1(E)	176	#5	42'-6"	—
a2(E)	498	#6	8'-4"	—
a3(E)	25	#5	45'-6"	—
a4(E)	19	#5	46'-1"	—
a5(E)	4	#5	45'-4"	—
b(E)	276	#5	27'-6"	—
b1(E)	287	#5	24'-1"	—
b2(E)	60	#4	26'-6"	—
d(E)	444	#5	6'-5"	—
d1(E)	222	#5	7'-11"	—
d2(E)	222	#5	7'-9"	—
d3(E)	730	#4	5'-0"	—
e(E)	108	#4	16'-2"	—
e1(E)	48	#4	26'-7"	—
m10(E)	14	#6	45'-3"	—
m11(E)	50	#6	6'-3"	—
m12(E)	20	#6	2'-11"	—
m13(E)	10	#6	4'-0"	—
m14(E)	4	#6	1'-7"	—
m15(E)	36	#5	4'-0"	—
s10(E)	58	#5	11'-5"	—
s11(E)	58	#5	14'-11"	—
s12(E)	48	#5	10'-4"	—
v100(E)	86	#5	3'-1"	—
Reinforcement Bars, Epoxy Coated		Pound	57,720	
Concrete Superstructure		Cu. Yd.	295.2	

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



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SUPERSTRUCTURE DETAILS
STRUCTURE NO. 010-1005

SHEET 9 OF 25 SHEETS

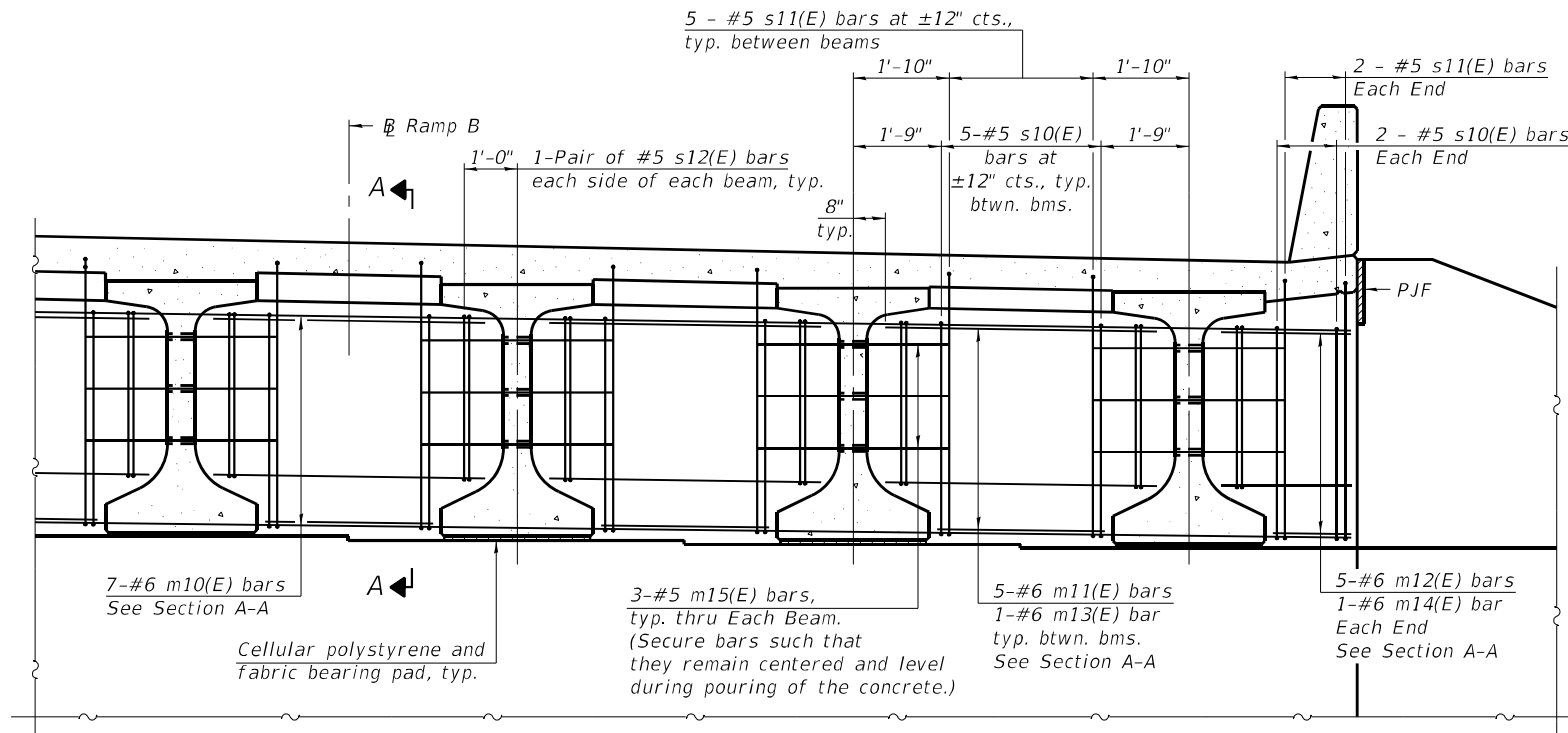
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74 & 57	(10-34-1) HBK	CHAMPAIGN	1187	911
CONTRACT NO. 70B99				

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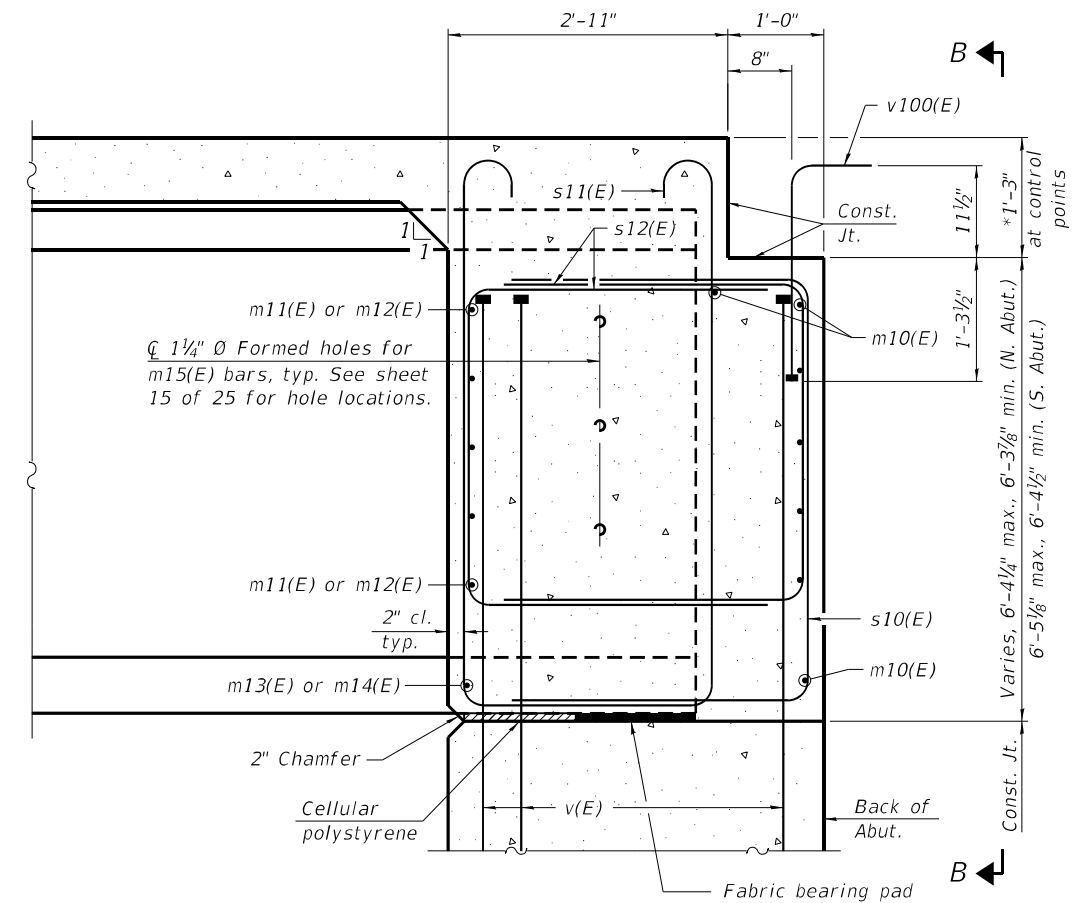
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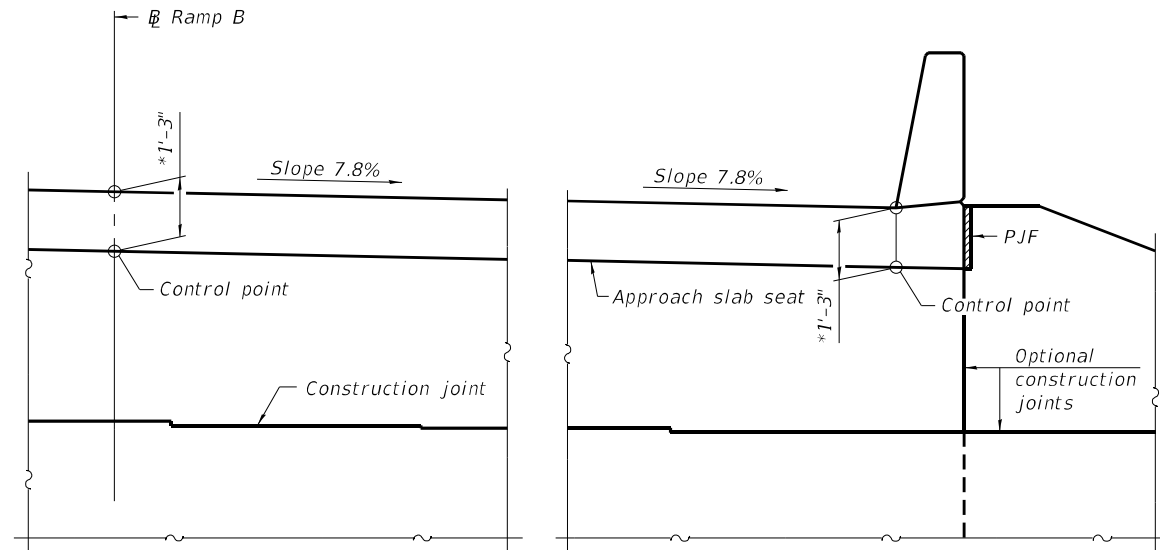
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DIAPHRAGM AT ABUTMENT



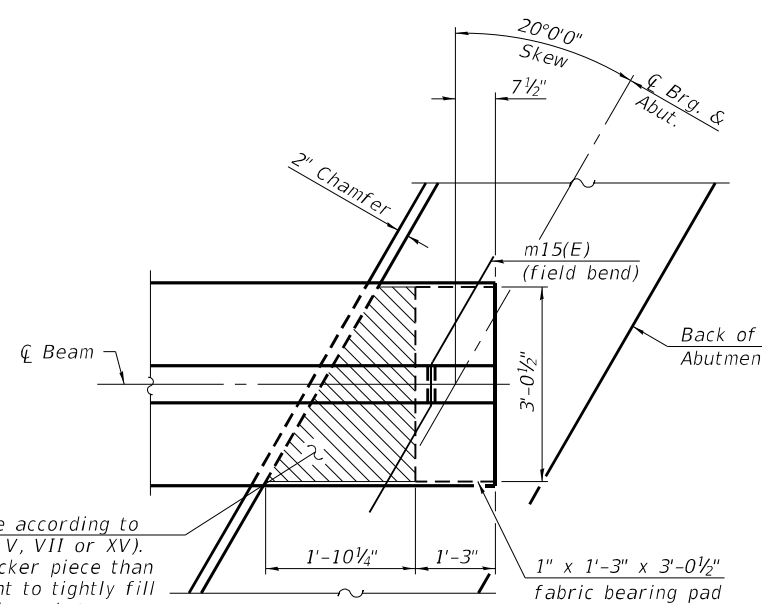
SECTION A-A
(at Rt. L's)



VIEW B-B

* After 1/4" Diamond Grinding

Cellular polystyrene according to ASTM C 578 (Types V, VII or XV). Provide slightly thicker piece than measured gap height to tightly fill the hatched area shown between abutment cap and bottom of beam.



PLAN AT ABUTMENT
(Showing bottom flange of beam)

Notes:
See sheets 8 and 9 of 25 for superstructure details and Bill of Material.
See sheets 11 and 12 of 25 for P.J.F. details.
The s10(E), s11(E) and s12(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.
Cost of cellular polystyrene is included with Concrete Superstructure.

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6-15-2019

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	CHECKED - E.M. Lagemann	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DIAPHRAGM DETAILS
STRUCTURE NO. 010-1005

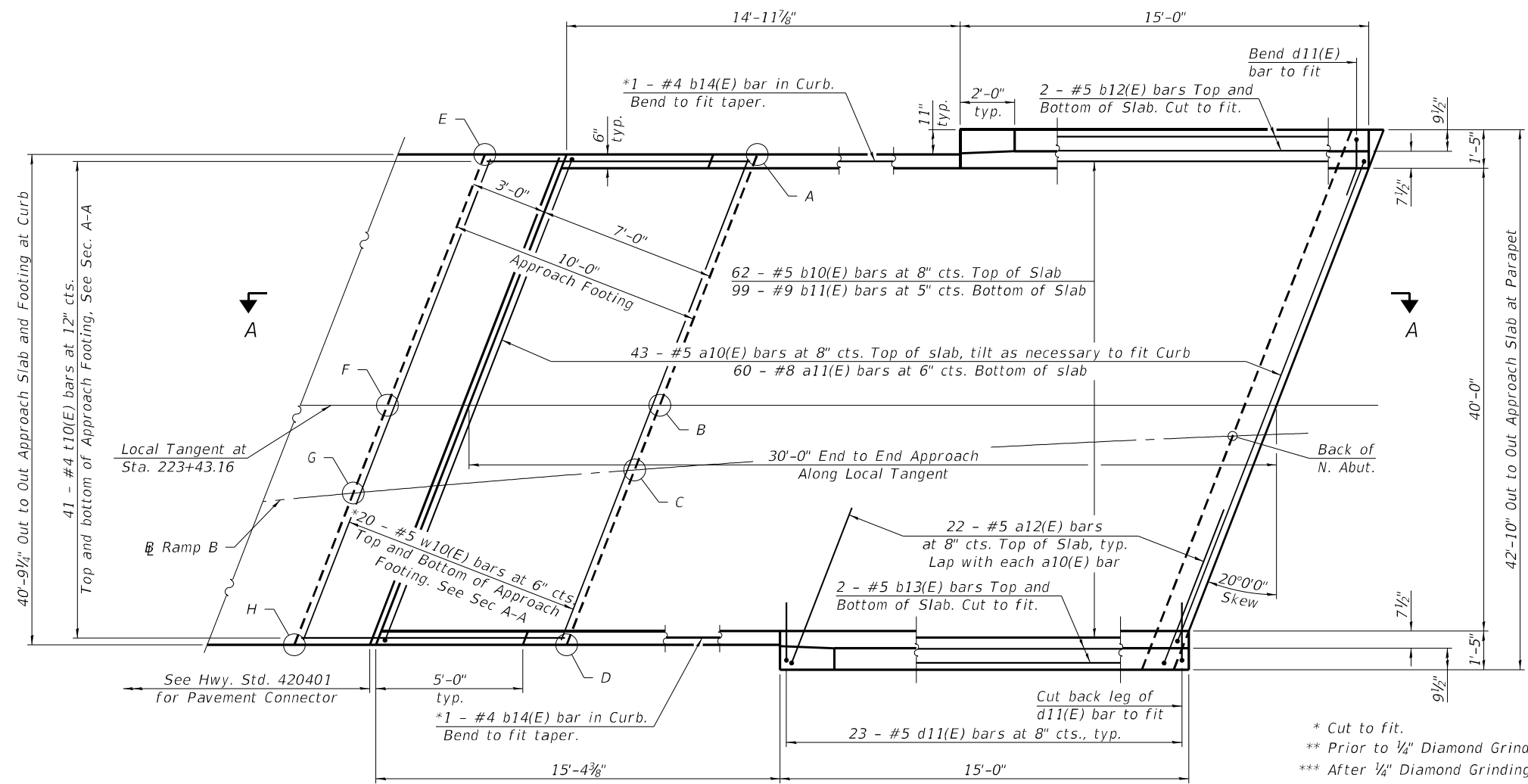
SHEET 10 OF 25 SHEETS

F.A.I. RTE. 74 & 57	SECTION (10-34-1) HBK	COUNTY CHAMPAIGN	TOTAL SHEETS 1187	SHEET NO. 912
CONTRACT NO. 70B99				

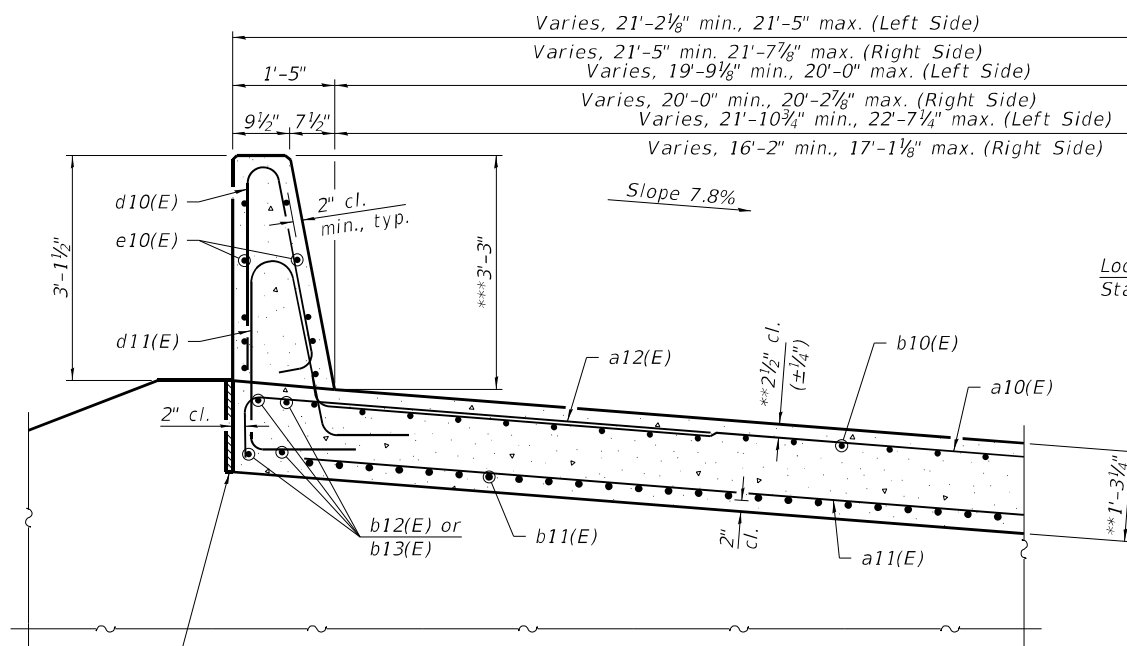
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TOP AND BOTTOM ELEVATIONS
FOR NORTH APPROACH FOOTING

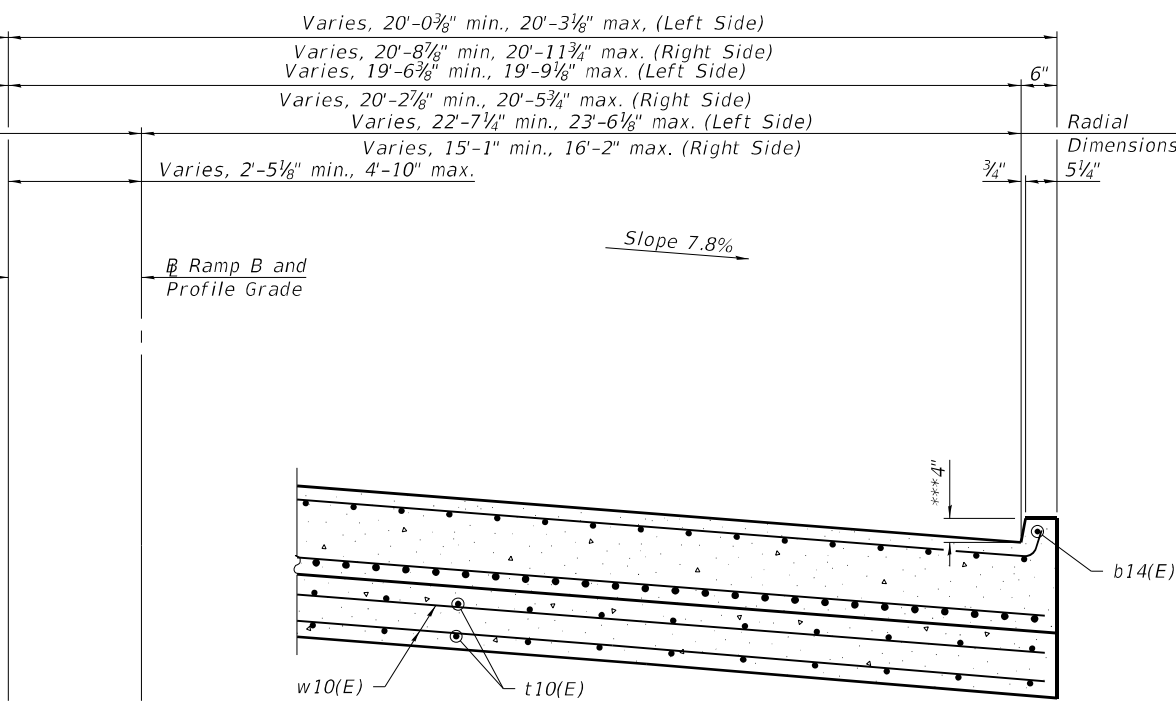
Point	Station	Offset	Top	Bottom
A	222+55.52	23.52' Lt.	805.77	804.94
B	222+46.71	4.02' Lt.	804.09	803.26
C	222+44.86	0.00' Lt.	803.74	802.91
D	222+37.34	16.10' Rt.	802.37	801.53
E	222+44.88	23.84' Lt.	805.60	804.77
F	222+36.13	4.94' Lt.	803.96	803.13
G	222+33.82	0.00' Lt.	803.54	802.71
H	222+26.66	15.33' Rt.	802.28	801.44



PLAN



NEAR ABUTMENT



CROSS SECTION
(Looking Upstation)

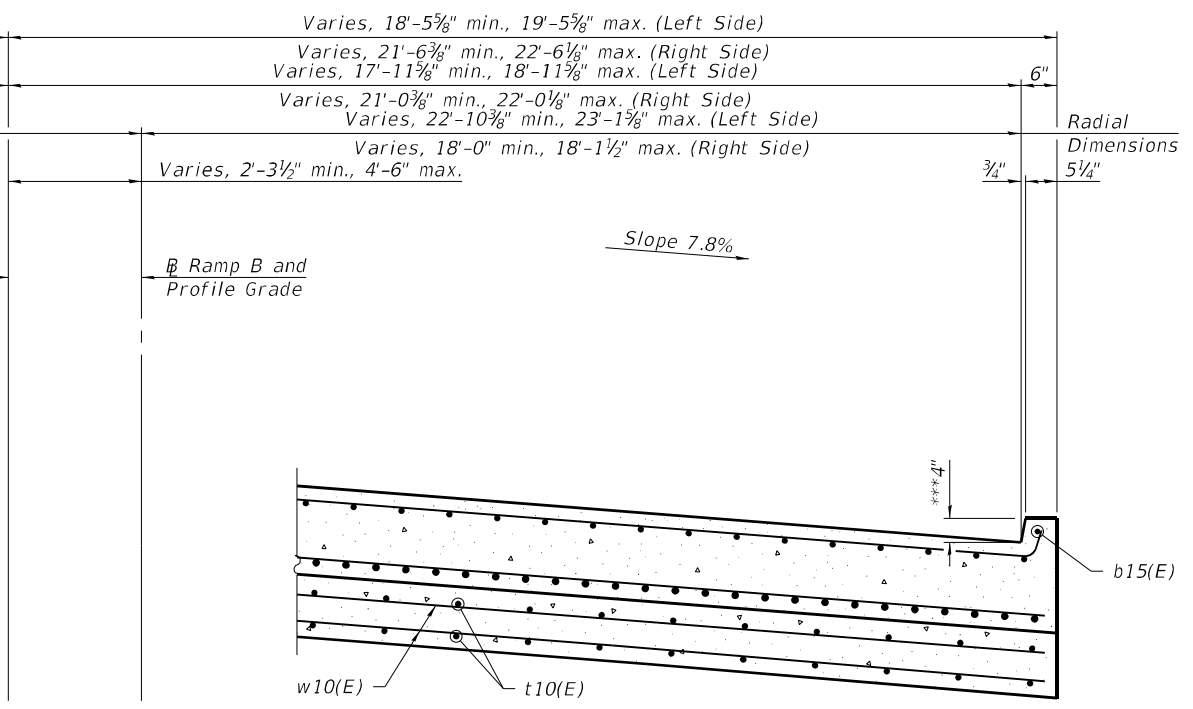
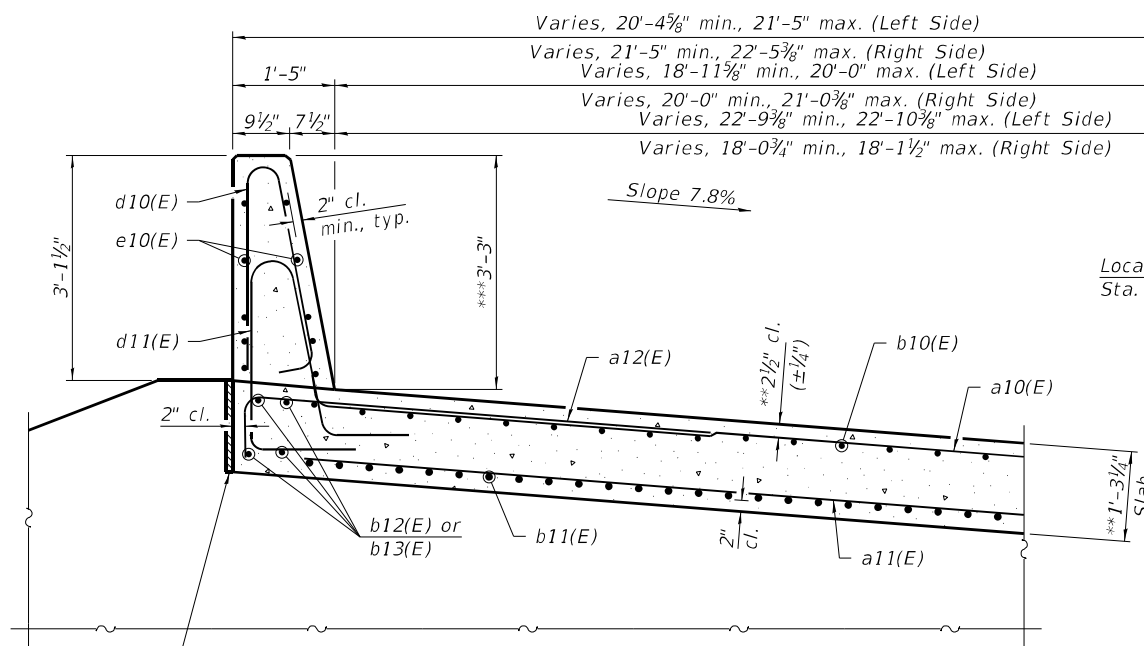
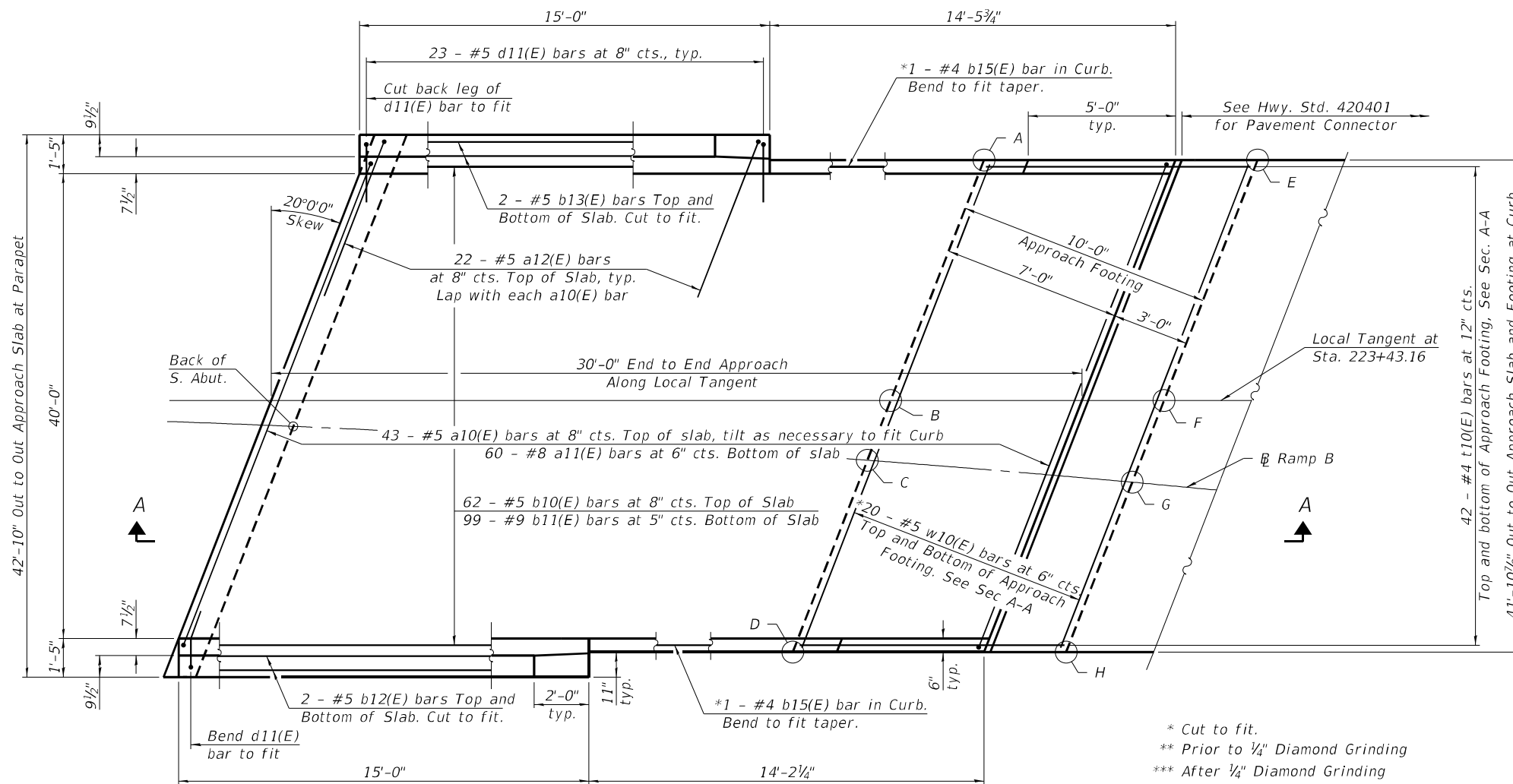
AT APPROACH FOOTING

Notes:
For Section A-A, see sheet 13 of 25.
Cost of 2" PJF is included with Concrete Superstructure.

MODEL: Default
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TOP AND BOTTOM ELEVATIONS
FOR SOUTH APPROACH FOOTING

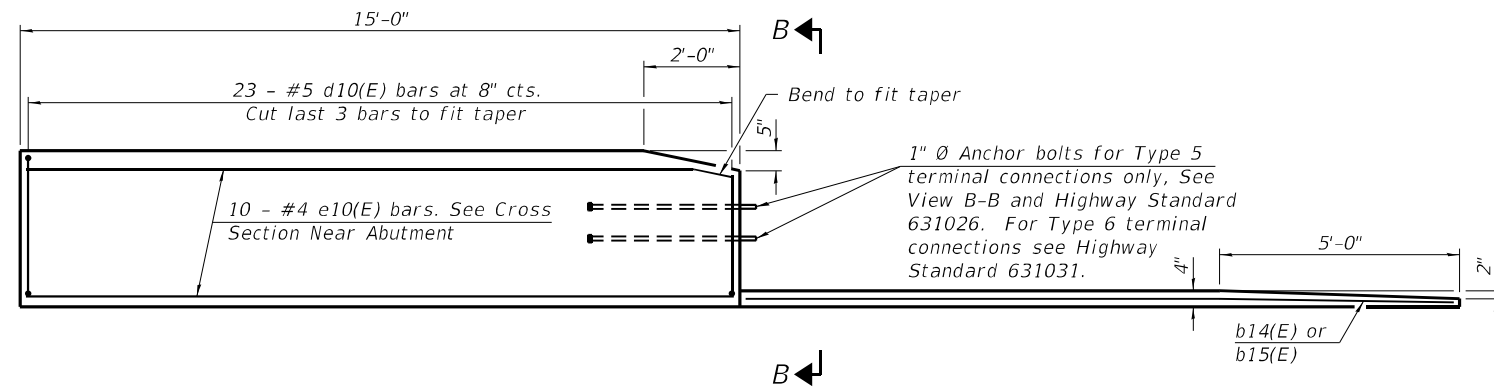
Point	Station	Offset	Top	Bottom
A	224+44.45	23.48' Lt.	808.72	807.89
B	224+39.24	3.99' Lt.	807.15	806.31
C	224+38.16	0.00' Lt.	806.82	805.99
D	224+32.98	18.59' Rt.	805.32	804.48
E	224+54.51	23.17' Lt.	808.80	807.97
F	224+49.81	4.92' Lt.	807.33	806.50
G	224+48.51	0.00' Lt.	806.93	806.10
H	224+43.56	18.45' Rt.	805.44	804.61



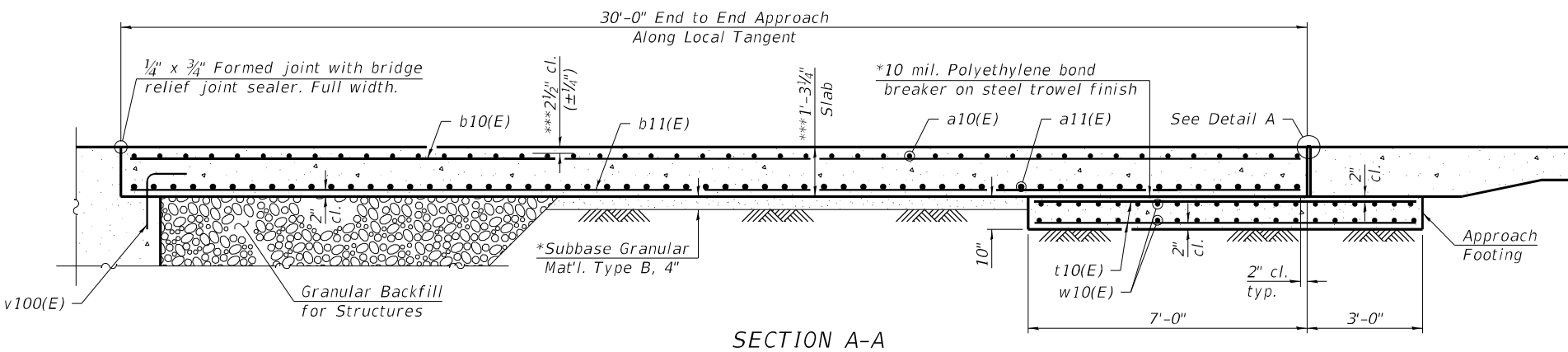
2" PJF (per Article 1051.09 of the Standard Specifications) bonded to wingwall with suitable adhesive as recommended by supplier.

Notes:
For Section A-A, see sheet 13 of 25.
Cost of 2" PJF is included with Concrete Superstructure.

MODEL: Default
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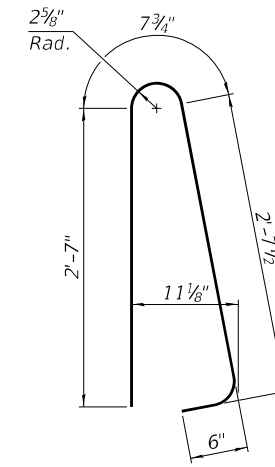
INSIDE ELEVATION OF PARAPET AND CURB



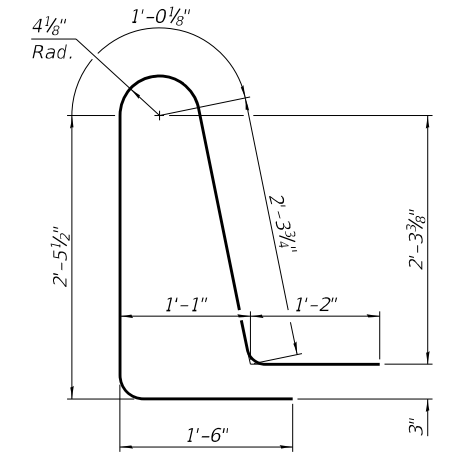
SECTION A-A

Notes:

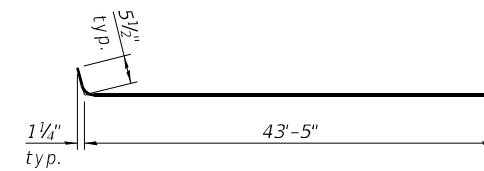
The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach slab.
 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 25.



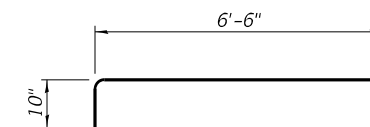
BAR d10(E)



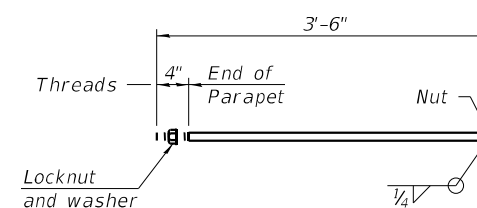
BAR d11(E)



BAR a10(E)



BAR a12(E)

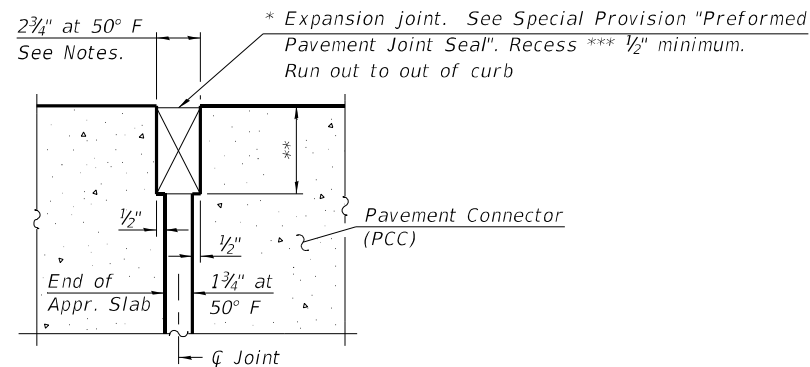


*1" Ø ANCHOR BOLT

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

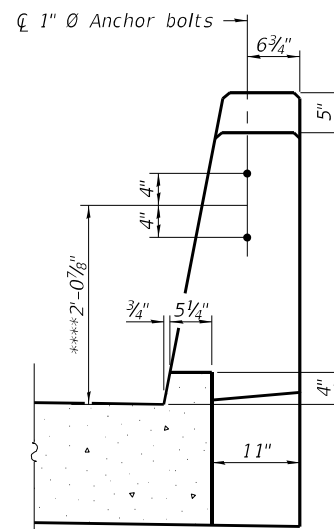
TWO APPROACHES
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a10(E)	86	#5	44'-4"	┌───┐
a11(E)	120	#8	43'-5"	┌───┐
a12(E)	88	#5	7'-4"	┌───┐
b10(E)	124	#5	29'-8"	┌───┐
b11(E)	198	#9	29'-8"	┌───┐
b12(E)	8	#5	15'-7"	┌───┐
b13(E)	8	#5	13'-8"	┌───┐
b14(E)	2	#4	15'-1"	┌───┐
b15(E)	2	#4	14'-3"	┌───┐
d10(E)	92	#5	6'-5"	┌───┐
d11(E)	92	#5	8'-6"	┌───┐
e10(E)	40	#4	14'-8"	┌───┐
t10(E)	164	#4	10'-4"	┌───┐
w10(E)	80	#5	43'-5"	┌───┐
Concrete Superstructure			Cu. Yd.	7.7
Concrete Superstructure (Approach Slab)			Cu. Yd.	116.8
Concrete Structures			Cu. Yd.	26.9
Reinforcement Bars, Epoxy Coated			Pound	49,230



DETAIL A
(at Rt. L's)

*** Prior to 1/4" Diamond Grinding
 **** After 1/4" Diamond Grinding



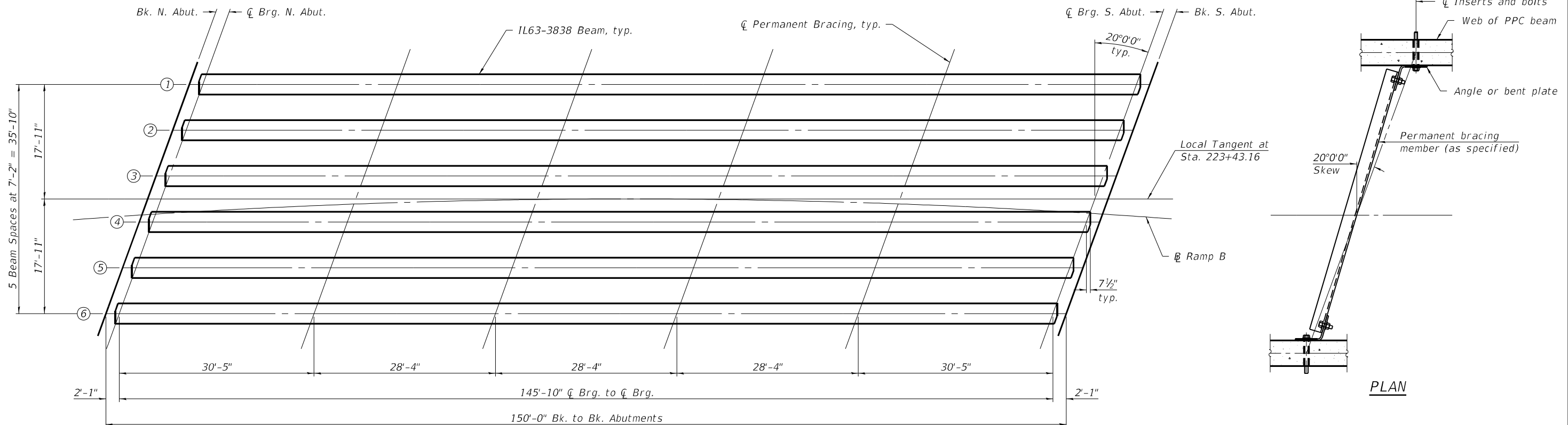
VIEW B-B

* Cost included with Concrete Superstructure (Approach Slab).

** Per manufacturer recommendations

Note:
 For location of Section A-A, see sheets 11 and 12 of 25.

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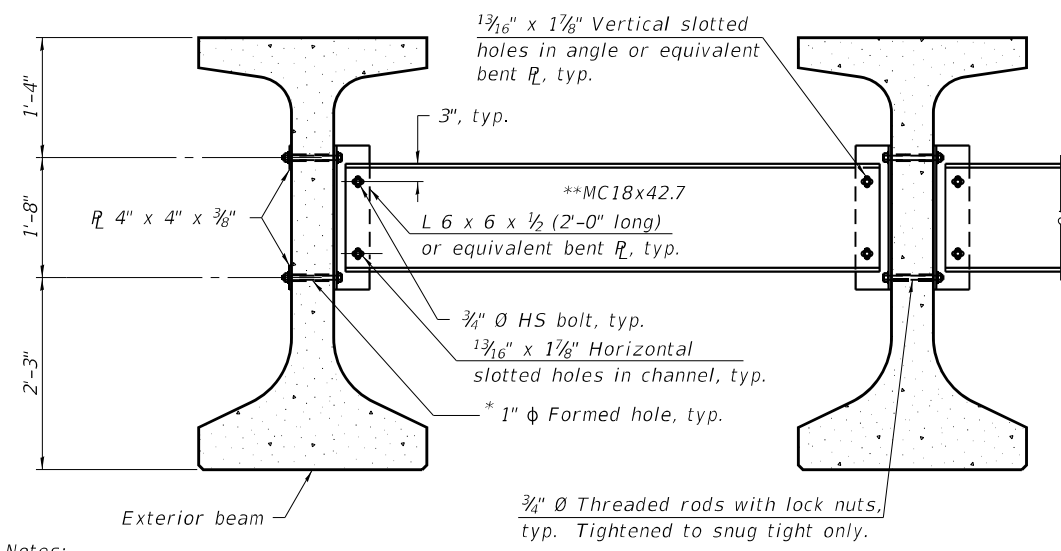


FRAMING PLAN

BEAM MOMENT TABLE		
	0.5 Sp. 1	
	INTERIOR	EXTERIOR
I	(in ⁴) 527,741	527,741
I'	(in ⁴) 1,011,093	1,007,258
Sb	(in ³) 18,687.7	18,687.7
Sb'	(in ³) 24,833.24	24,799.19
St	(in ³) 15,182.4	15,182.4
St'	(in ³) 45,371.61	45,000.13
DC1	(k/ft) 1.91	2.01
MDC1	(k) 5,070.90	5,351.20
DC2	(k/ft) 0.175	0.175
MDC2	(k) 465.21	465.21
DW	(k/ft) 0.333	0.333
MDW	(k) 886.20	886.20
LLDF		0.595
M _L + IM	(k) 2,868.90	2,892.10

BEAM REACTION TABLE		
	Abutments	
	INTERIOR	EXTERIOR
LLDF	0.765	0.623
OCF	1.051	1.051
RDC1	(k) 139.0	146.7
RDC2	(k) 12.8	12.8
RDW	(k) 24.3	24.3
R _L	(k) 91.7	74.7
R _{IM}	(k) 17.9	14.6
RTotal	(k) 285.7	273.1

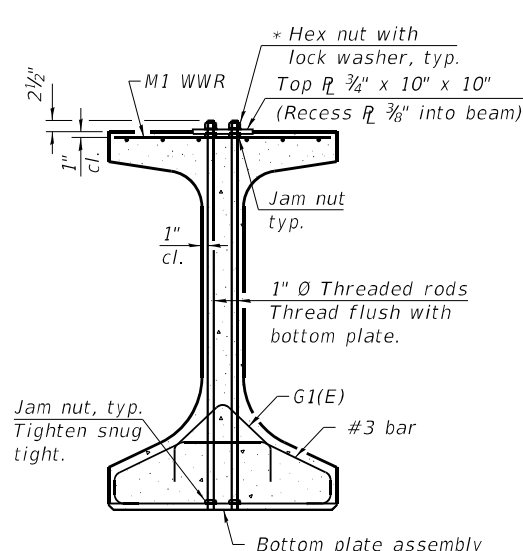
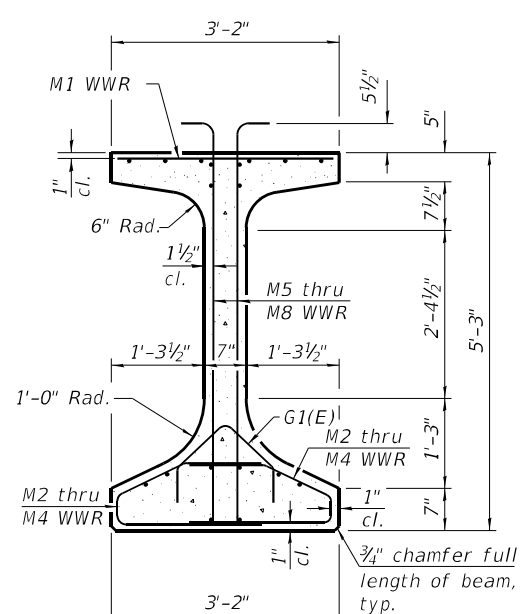
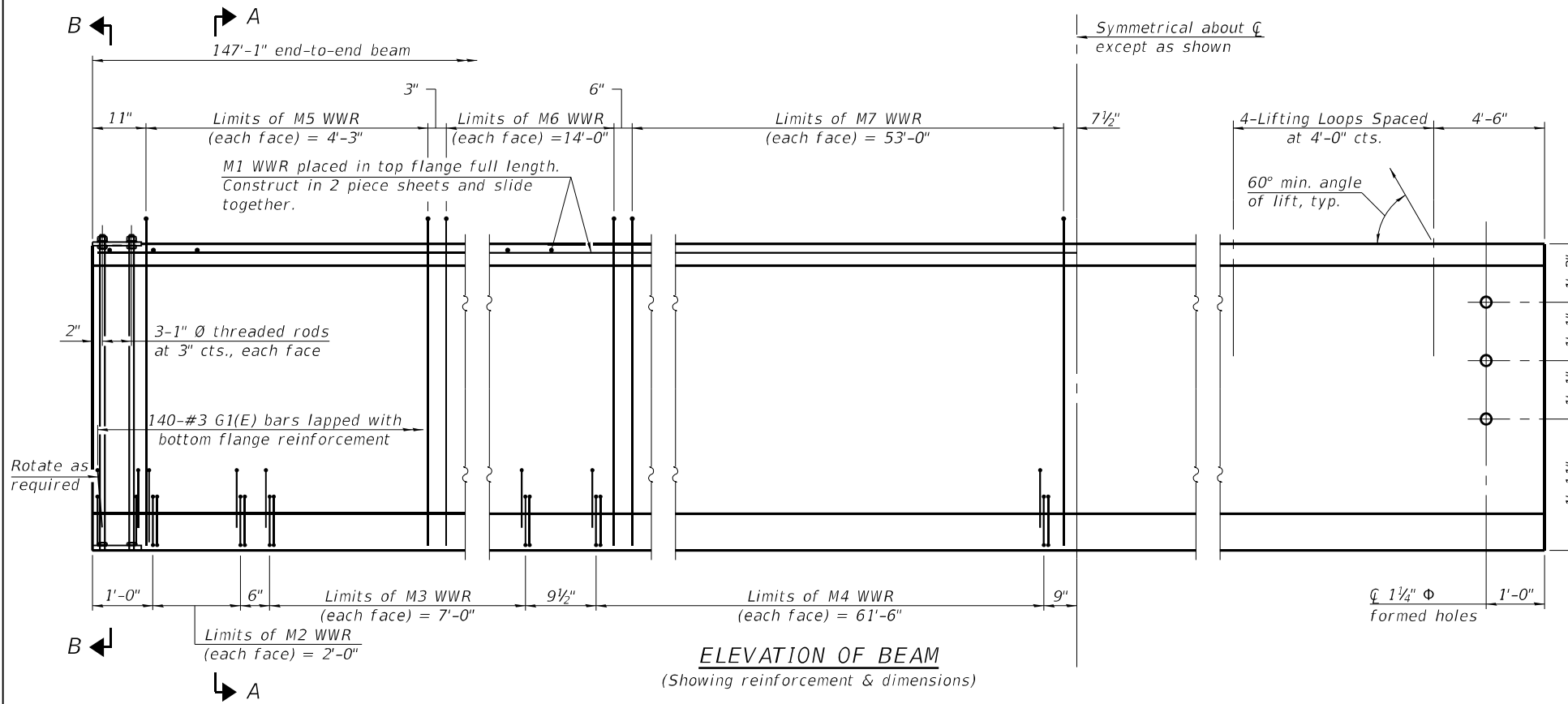
I: Non-composite moment of inertia of beam section (in.⁴).
 I': Composite moment of inertia of beam section (in.⁴).
 Sb: Non-composite section modulus for the bottom fiber of the prestressed beam (in.³).
 Sb': Composite section modulus for the bottom fiber of the prestressed beam (in.³).
 St: Non-composite section modulus for the top fiber of the prestressed beam (in.³).
 St': Composite section modulus for the top fiber of the prestressed beam (in.³).
 DC1: Un-factored non-composite dead load (kips/ft.).
 MDC1: Un-factored moment due to non-composite dead load (kip-ft.).
 DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).
 MDC2: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).
 DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).
 MDW: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).
 M_L + IM: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
 OCF: Obtuse Corner Factor
 LLDF: Live Load Distribution Factor



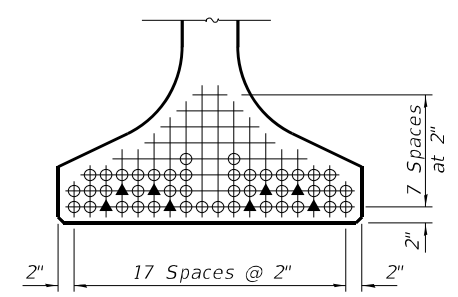
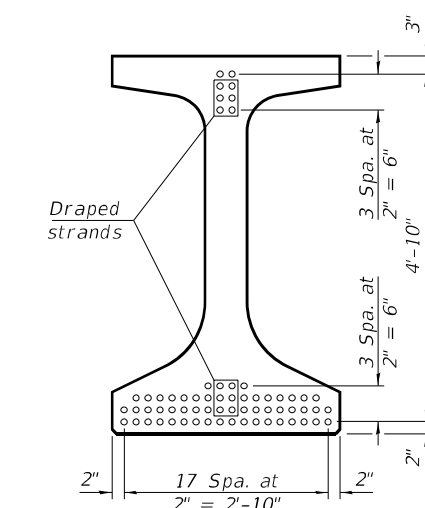
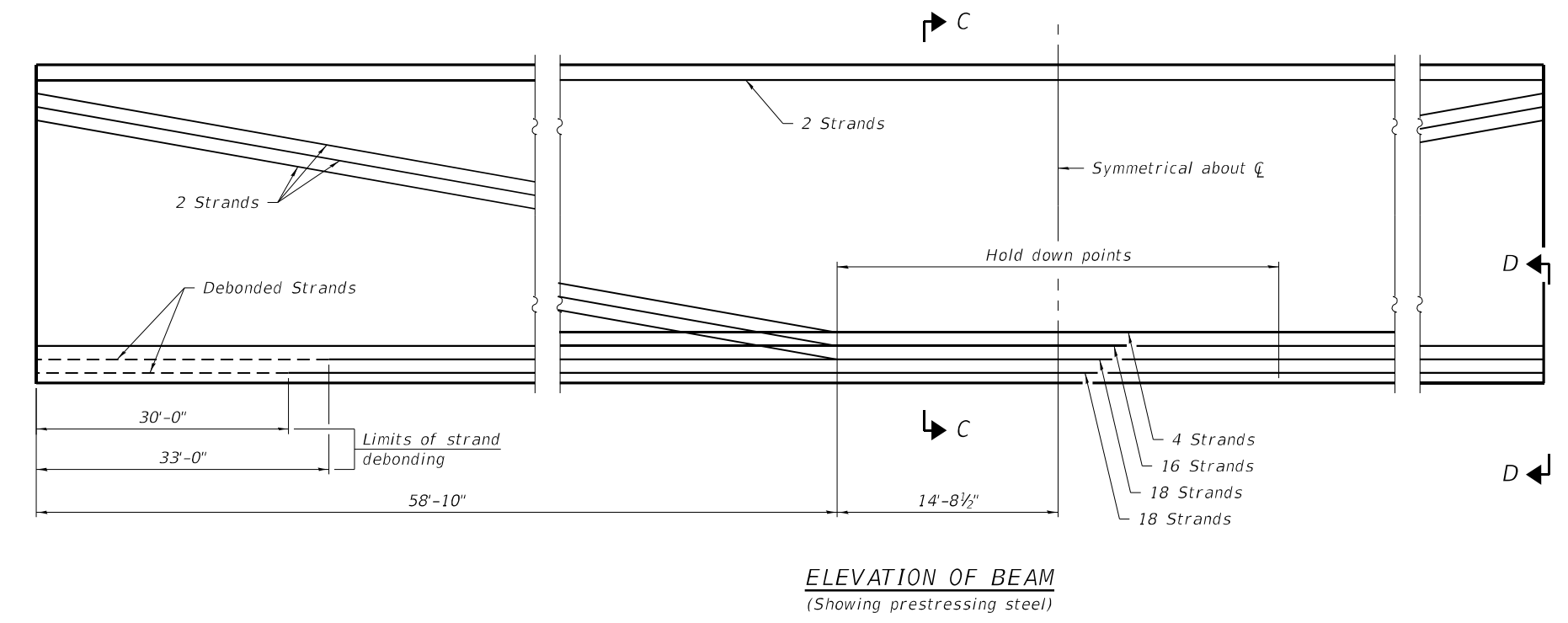
Notes:
 All material for bracing shall be hot dip galvanized according to AASHTO M111 unless otherwise noted. Two hardened washers are required for each set of oversized holes.
 All holes shall be 15/16" Ø unless otherwise noted. 5/16" x 3" x 3" plate washers are required over all slotted holes.
 All bolts, threaded rods, and hardware shall be galvanized according to AASHTO M232.
 Threaded rods shall be ASTM F 1554 Grade 55. Bracing shall be installed as beams are erected and tightened as soon as possible during erection.
 Permanent bracing shall not be paid for separately, but shall be included in the cost of Furnishing and Erecting Precast Prestressed Concrete Beams.

PERMANENT BRACING DETAILS FOR IL63 BEAMS

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SECTION B-B
* Only tighten sufficiently to compress lock washers



VIEW D-D
○ Fully bonded strand
▲ Partially debonded strand

Note:
See sheet 16 of 25 for additional details and Bill of Material.

MODEL: Default
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IL63-3838

2-25-2019

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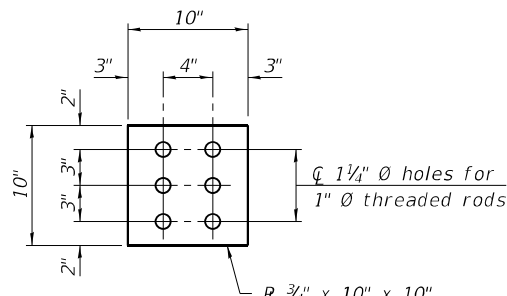
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PLOT SCALE =	CHECKED - E.M. Lagemann	REVISED -
PLOT DATE =	DRAWN - T.S. Friederich	REVISED -
	CHECKED - E.M. Lagemann	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

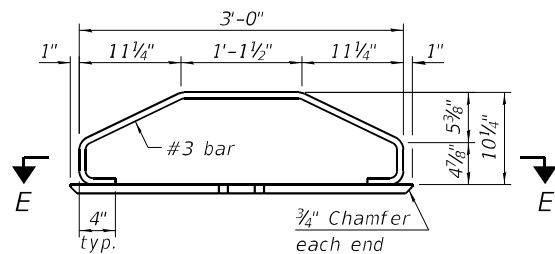
IL63 BEAM
STRUCTURE NO. 010-1005

SHEET 15 OF 25 SHEETS

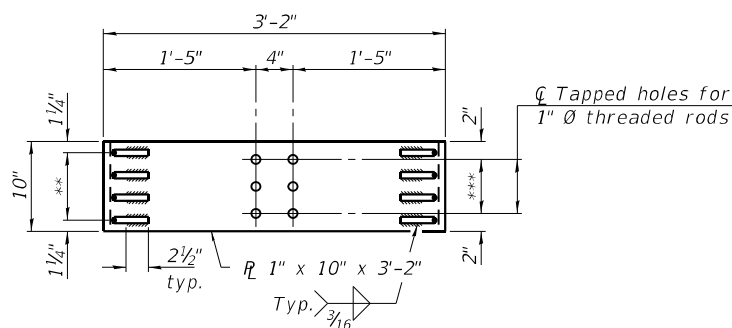
F.A.I. RTE. 74 & 57	SECTION (10-34-1) HBK	COUNTY CHAMPAIGN	TOTAL SHEETS 1187	SHEET NO. 917
				CONTRACT NO. 70B99
ILLINOIS FED. AID PROJECT				



PLAN - TOP PLATE



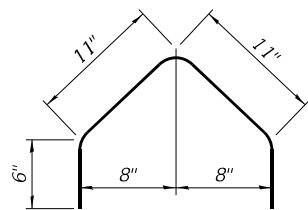
ELEVATION - BOTTOM PLATE ASSEMBLY



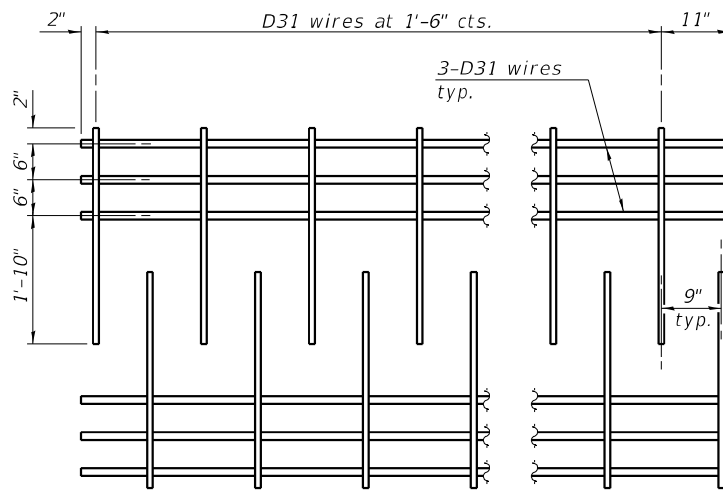
SECTION E-E

** 3 Spaces at 2 1/2" = 7 1/2"

*** 2 Spaces at 3" = 6"

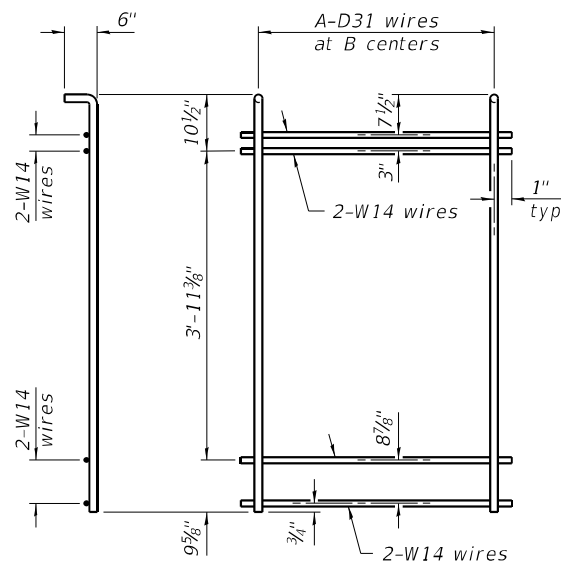


BAR G1(E)



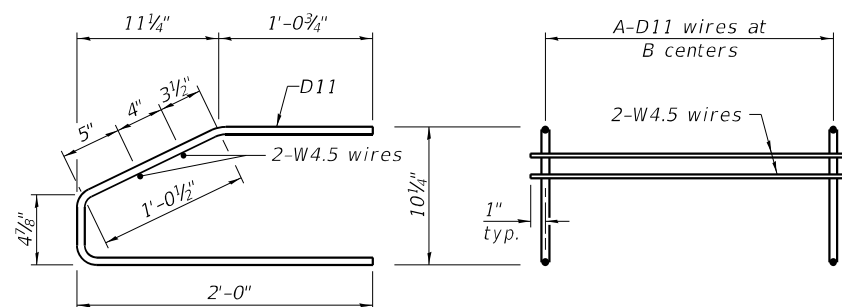
M1 WWR DETAIL

When multiple sheets of M1 WWR are required along the beam length, #5(E) bars (5'-0" long) shall be used to splice the longitudinal D31 wires together (Min. Lap 2'-2").



M5 THRU M8 WWR DETAIL

(See Table of Dimensions)



M2 THRU M4 WWR DETAIL

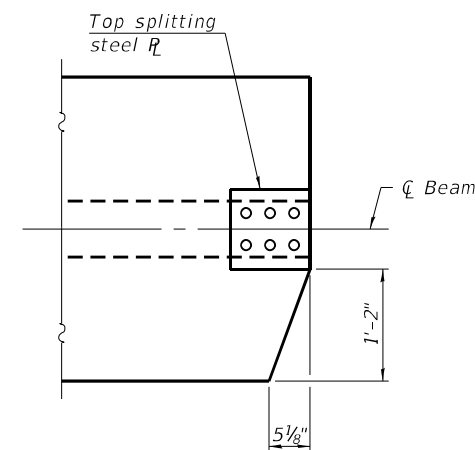
(See Table of Dimensions)

TABLE OF DIMENSIONS

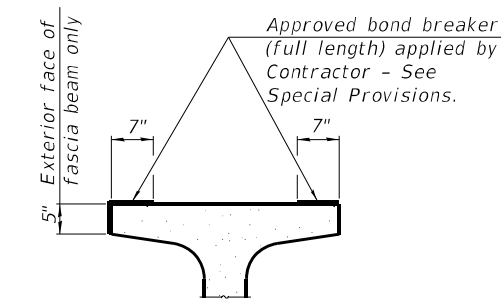
(WWR tables are based on Grade 60.)

SPAN 1

WWR	A	B
M2	9	3"
M3	15	6"
M4	42	1'-6"
M5	18	3"
M6	29	6"
M7	54	1'-0"
M8	-	2'-0"

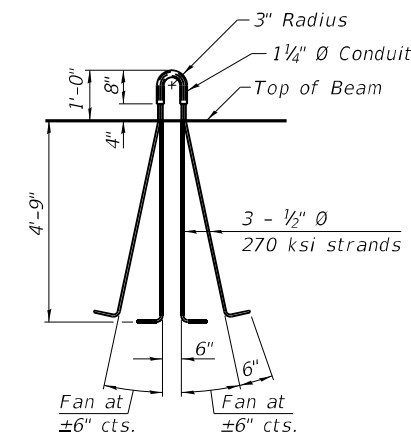


TOP FLANGE CLIP DETAIL



SECTION THRU TOP FLANGE

(Showing limits of bond breaker)



LIFTING LOOP DETAIL

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Precast Prestressed Concrete Beams, IL63	Ft.	883

NOTES

Inserts for 3/4" Ø threaded dowel rods, when specified, are to be two strut, ferrule type for interior beams and single ferrule, flared loop type for exterior beams.

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter for beam strands shall be 0.6" and the nominal cross-sectional area shall be 0.217 sq. in. The nominal diameter for lifting loops shall be 1/2" and the nominal cross sectional area shall be 0.153 sq. in.

The beams shall have a final concrete compressive strength, f'c, of 8500 psi and a release concrete compressive strength, f'ci, of 6500 psi.

A minimum 2 1/2" Ø lifting pin shall be used to engage the lifting loops during handling.

The top and bottom plates shall be AASHTO M270 Grade 50.

The top plates and bottom plate assemblies shall be galvanized according to AASHTO M111.

The threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

Threaded rods shall be ASTM F 1554 Grade 55.

Welded Wire Reinforcement (WWR) shall conform to ASTM A884 with a Class A, Type 1 epoxy coating or ASTM A1060, Table 3 galvanized coating.

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IL63-3838D

2-25-2019

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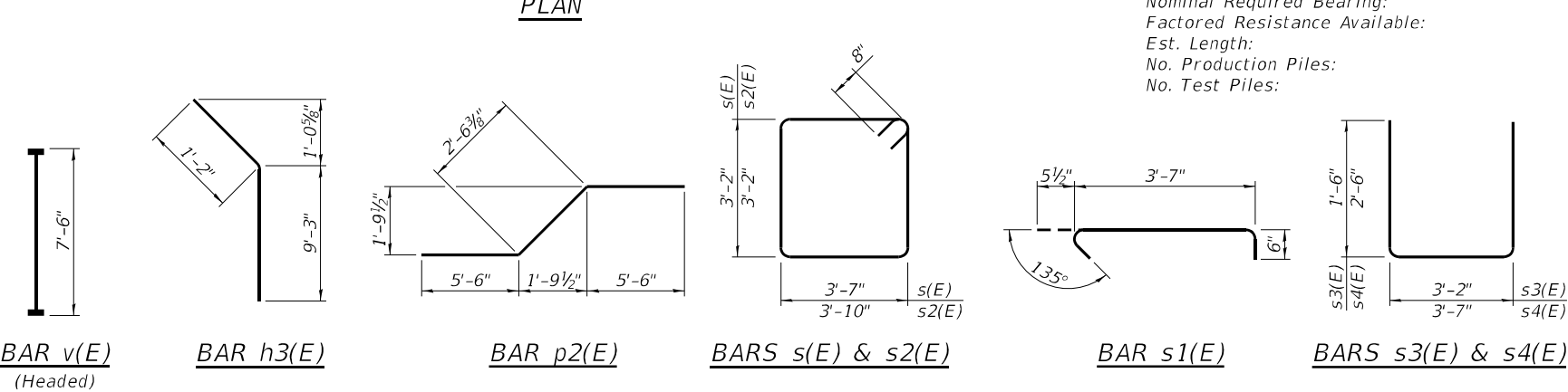
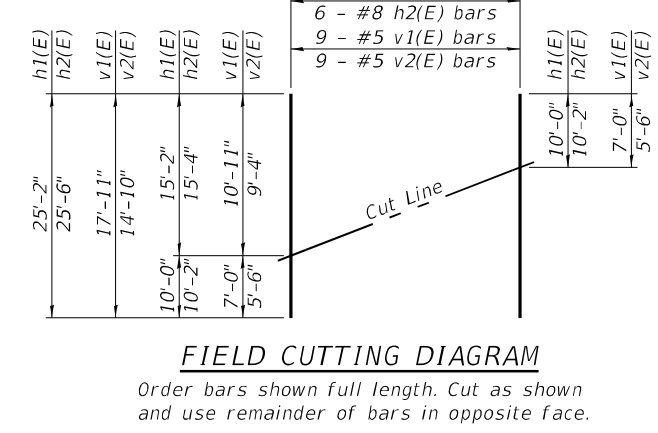
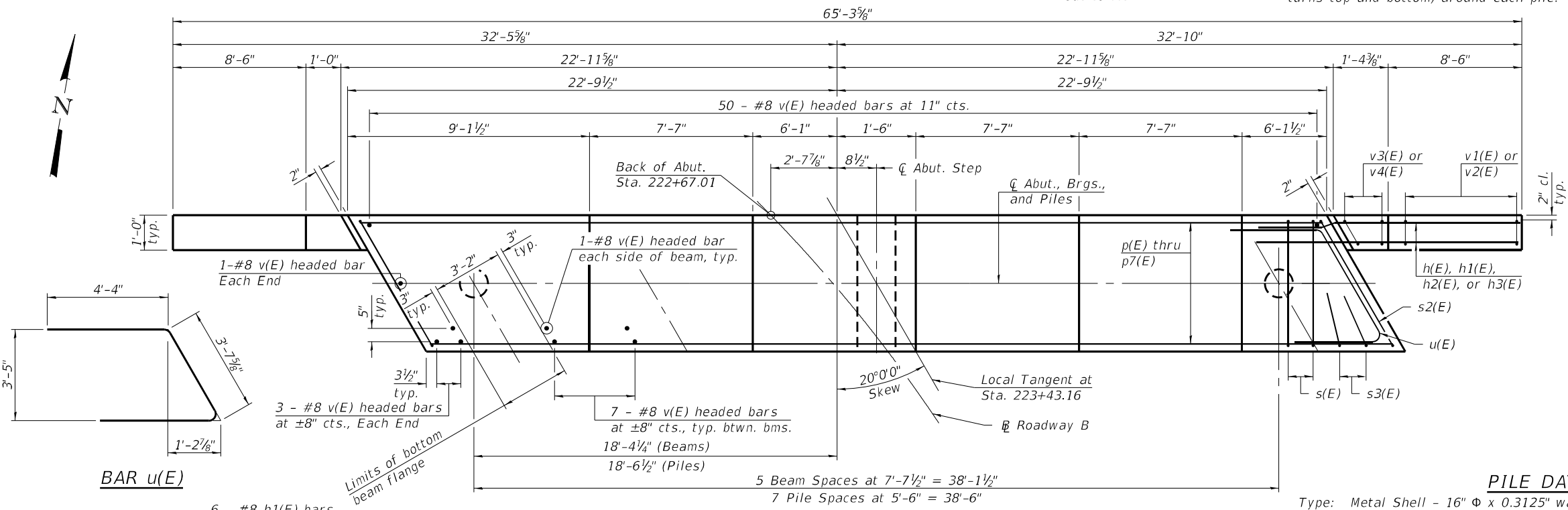
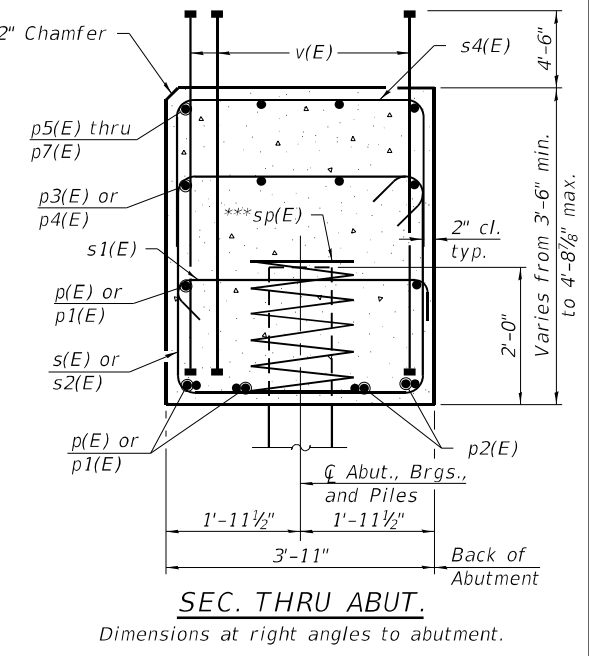
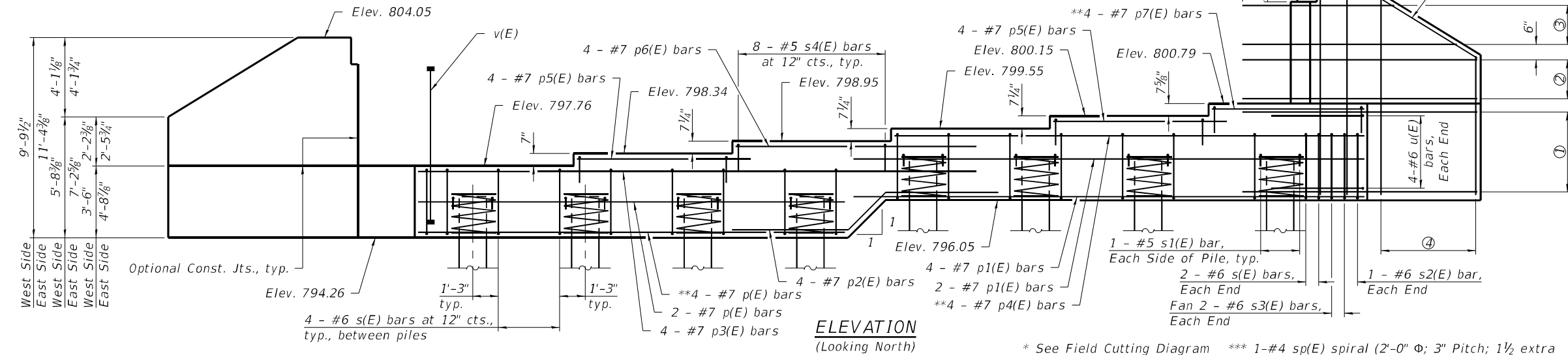
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

IL63 BEAM DETAILS
 STRUCTURE NO. 010-1005

SHEET 16 OF 25 SHEETS

F.A.I. RTE. 74 & 57	SECTION (10-34-1) HBK	COUNTY CHAMPAIGN	TOTAL SHEETS 1187	SHEET NO. 918
ILLINOIS FED. AID PROJECT			CONTRACT NO. 70B99	

- ① 9-#8 h(E) bars at 6" cts., Each Face (East Wing)
7-#8 h(E) bars at 6" cts., Each Face (West Wing)
- ② 5-#8 h(E) bars at 6" cts., Each Face (East Wing)
4-#8 h(E) bars at 6" cts., Each Face (West Wing)
- ③ *6-#8 h1(E) bars at 6" cts., Each Face (East Wing)
*6-#8 h2(E) bars at 6" cts., Each Face (West Wing)
- ④ *9-#5 v1(E) bars at 12" cts., Each Face (East Wing)
*9-#5 v2(E) bars at 12" cts., Each Face (West Wing)
- ⑤ 2-#5 v3(E) bars at 8" cts., Each Face (East Wing)
2-#5 v4(E) bars at 8" cts., Each Face (West Wing)
- ⑥ 1-#5 h3(E) bar, Each Face (Each Wing, Cut to fit)



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	50	#8	15'-10"	—
h1(E)	6	#8	25'-2"	—
h2(E)	6	#8	25'-6"	—
h3(E)	4	#5	10'-5"	—
p(E)	6	#7	22'-3"	—
p1(E)	6	#7	23'-2"	—
p2(E)	4	#7	13'-7"	—
p3(E)	4	#7	27'-4"	—
p4(E)	4	#7	22'-4"	—
p5(E)	8	#7	8'-0"	—
p6(E)	4	#7	13'-1"	—
p7(E)	4	#7	7'-1"	—
s(E)	32	#6	14'-10"	□
s1(E)	16	#5	4'-7"	□
s2(E)	2	#6	15'-4"	□
s3(E)	4	#6	6'-2"	□
s4(E)	32	#5	8'-7"	□
sp(E)	8	#4	2'-0"	⊘
u(E)	8	#6	12'-4"	⊏
v(E)	105	#8	7'-6"	—
v1(E)	9	#5	17'-11"	—
v2(E)	9	#5	14'-10"	—
v3(E)	4	#5	11'-1"	—
v4(E)	4	#5	9'-6"	—
Structure Excavation			Cu. Yd.	195
Concrete Structures			Cu. Yd.	32.4
Reinforcement Bars, Epoxy Coated			Pound	8,510
Furnishing Metal Shell Piles 16" X 0.312"			Foot	707
Driving Piles			Foot	707
Test Pile, Metal Shells			Each	1
Pile Shoes			Each	8

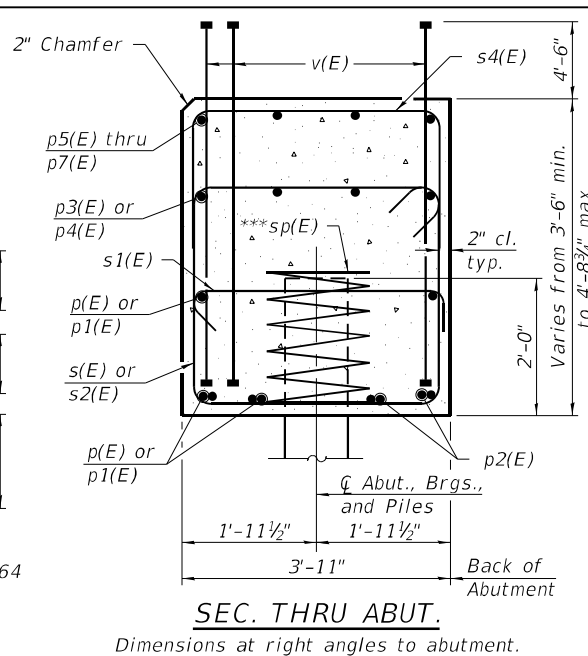
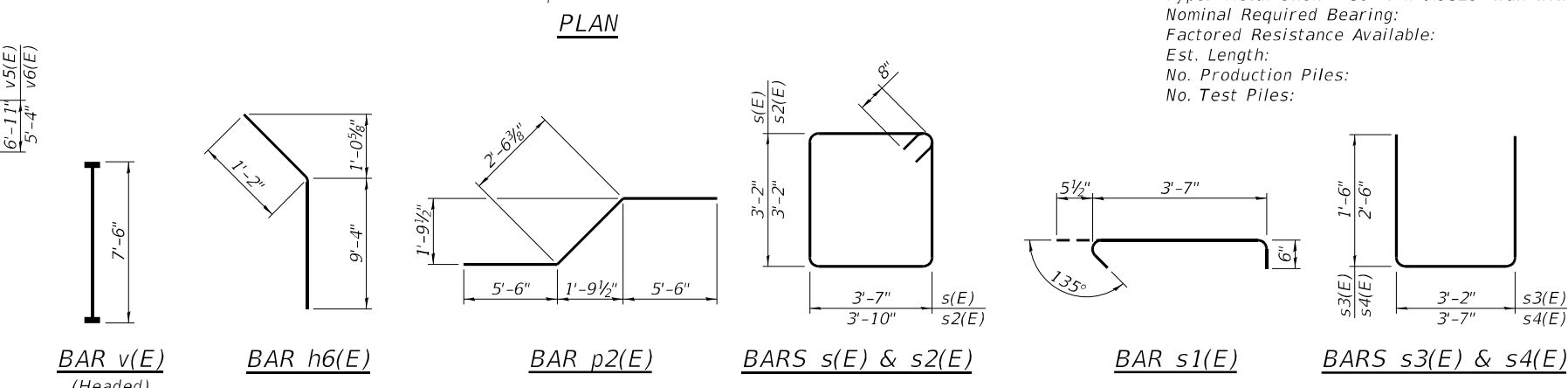
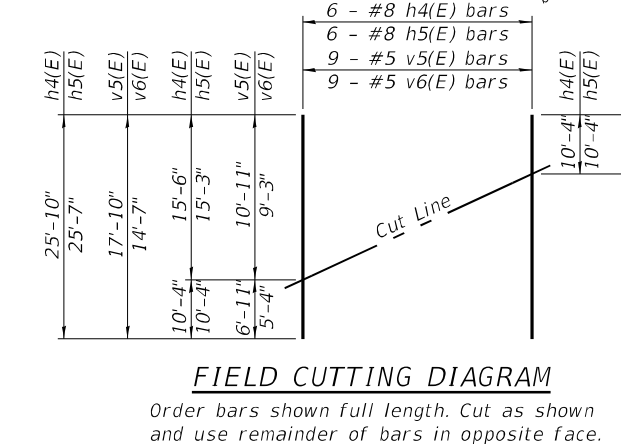
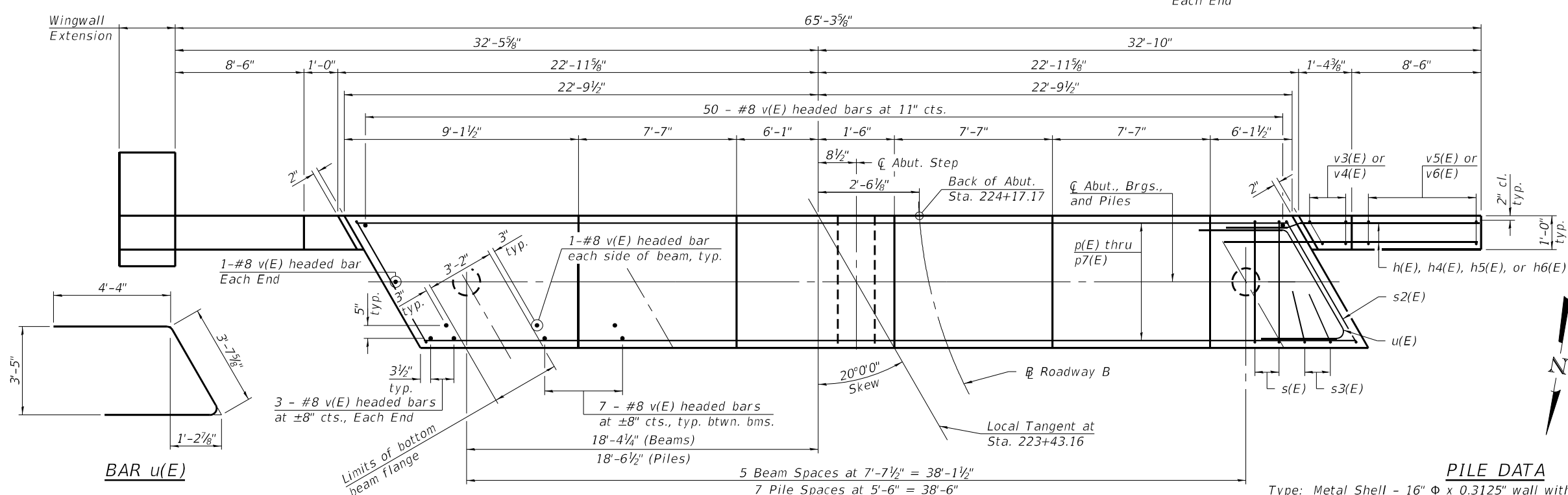
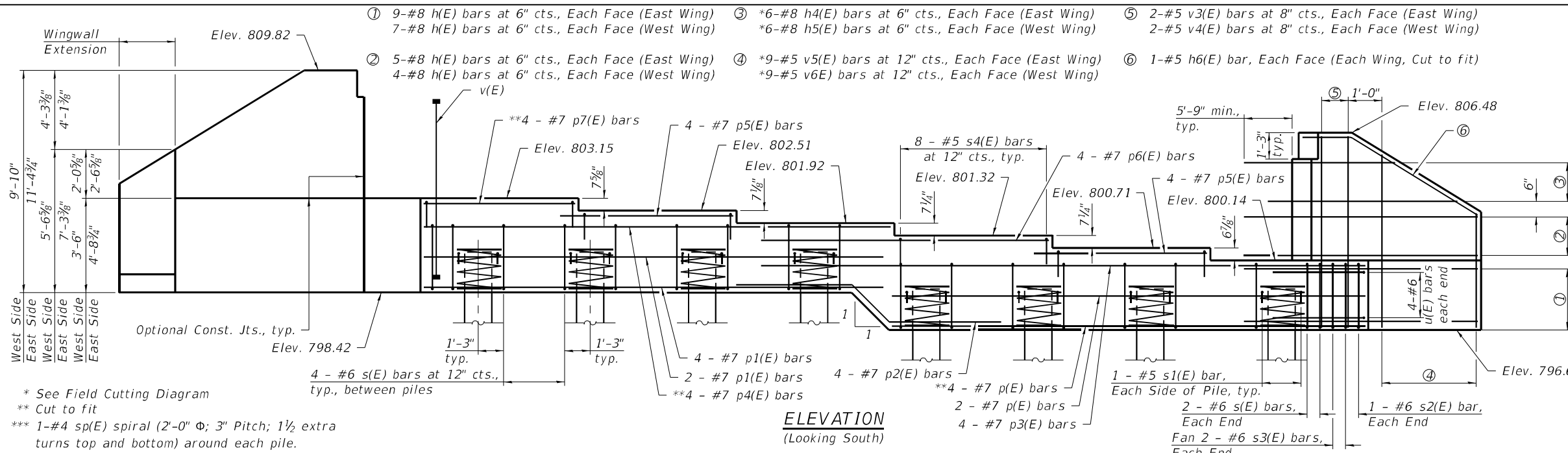
PILE DATA

Type: Metal Shell - 16" Φ x 0.3125" wall with pile shoes
 Nominal Required Bearing: 586 kips
 Factored Resistance Available: 322 kips
 Est. Length: 101 feet
 No. Production Piles: 7
 No. Test Piles: 1

**** Length is height of spiral.

Notes:
 Pour steps monolithically with cap.
 Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.
 For details of piles see sheet 20 of 25.

MODEL: Default
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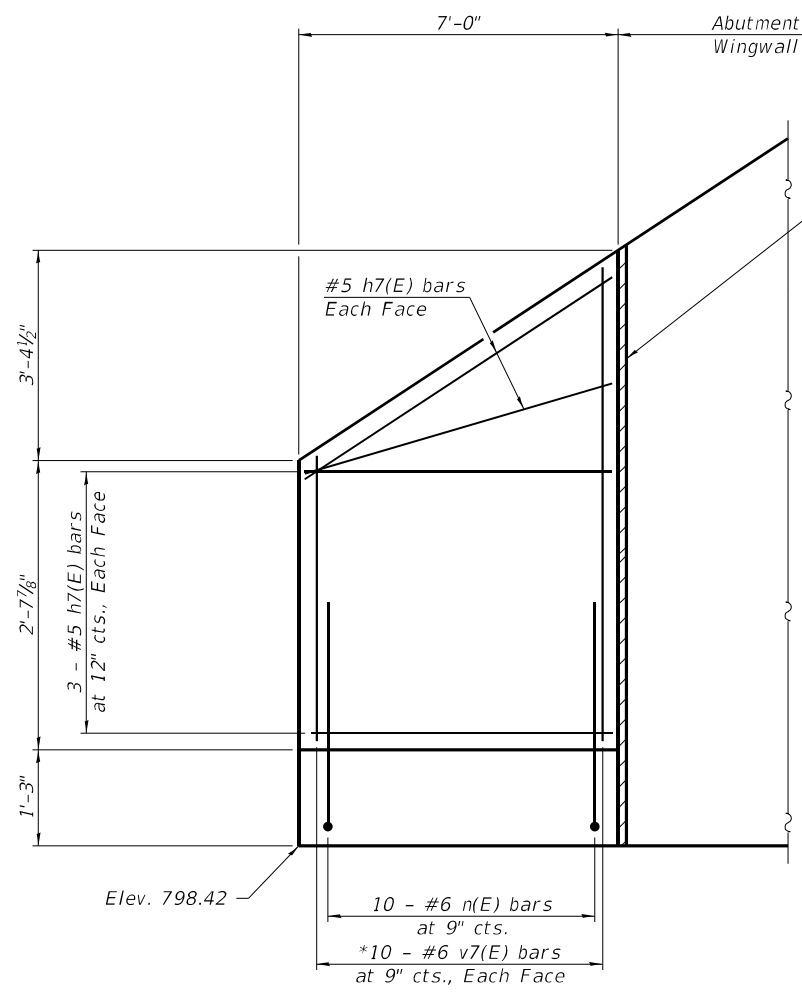
SEC. THRU ABUT.
Dimensions at right angles to abutment.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	50	#8	15'-10"	
h4(E)	6	#8	25'-10"	
h5(E)	6	#8	25'-7"	
h6(E)	4	#5	10'-6"	
p(E)	6	#7	22'-3"	
p1(E)	6	#7	23'-2"	
p2(E)	4	#7	13'-7"	
p3(E)	4	#7	27'-4"	
p4(E)	4	#7	22'-4"	
p5(E)	8	#7	8'-0"	
p6(E)	4	#7	13'-1"	
p7(E)	4	#7	7'-1"	
s(E)	32	#6	14'-10"	
s1(E)	16	#5	4'-7"	
s2(E)	2	#6	15'-4"	
s3(E)	4	#6	6'-2"	
s4(E)	32	#5	8'-7"	
sp(E)	8	#4	2'-0"	***
u(E)	8	#6	12'-4"	
v(E)	105	#8	7'-6"	
v3(E)	4	#5	11'-1"	
v4(E)	4	#5	9'-6"	
v5(E)	9	#5	17'-10"	
v6(E)	9	#5	14'-7"	
Structure Excavation			Cu. Yd.	186
Concrete Structures			Cu. Yd.	33.0
Reinforcement Bars, Epoxy Coated			Pound	8,520
Furnishing Metal Shell Piles 16" X 0.312"			Foot	644
Driving Piles			Foot	644
Test Pile, Metal Shells			Each	1
Pile Shoes			Each	8

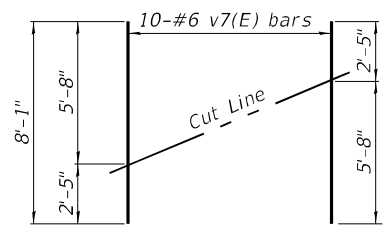
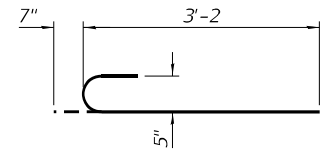
Notes:
 Pour steps monolithically with cap.
 Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.
 For details for the Wingwall Extension, see sheet 19 of 25.
 For details of piles see sheet 20 of 25.

MODEL: Default
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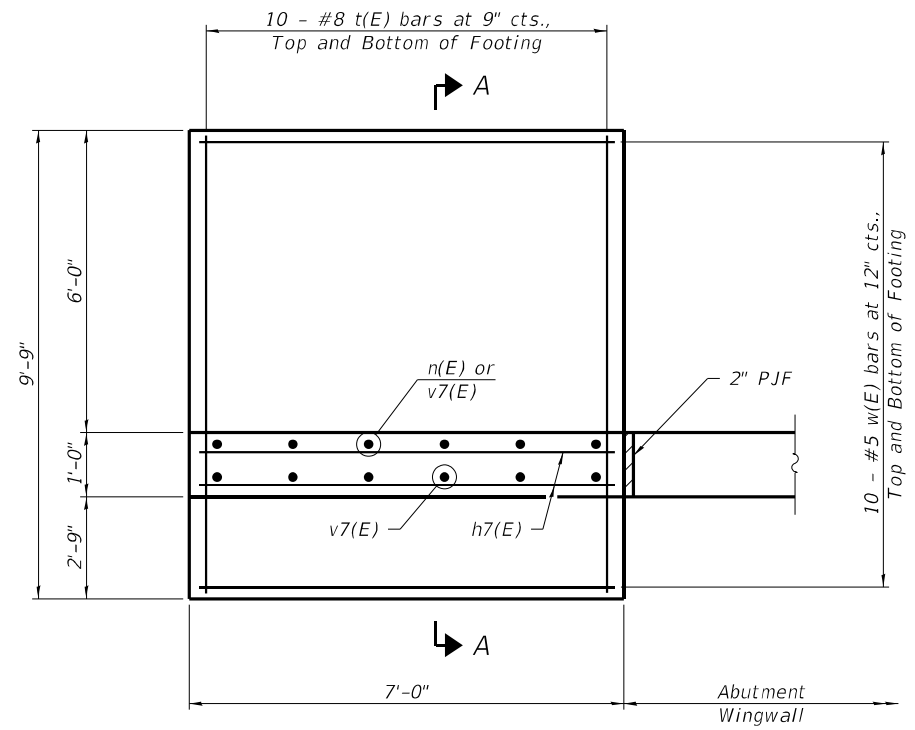


PART ELEVATION

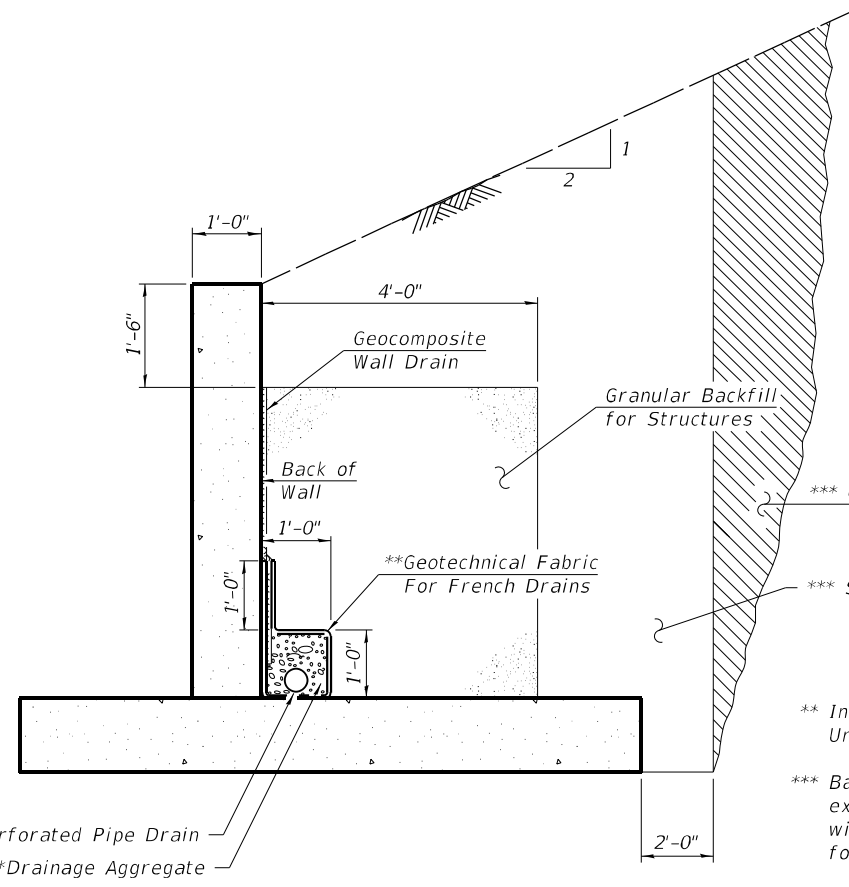
* Order bars shown full length. Cut as shown and use remainder of bars in opposite face.



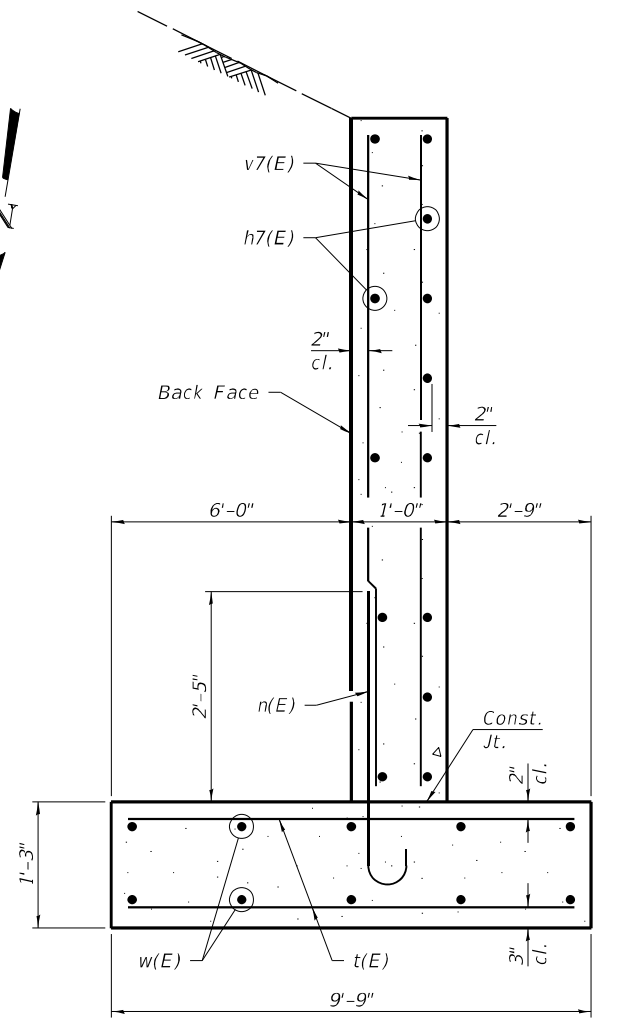
Order bars shown full length. Cut as shown and use remainder of bars in opposite face.



PART PLAN



SECTION THRU WINGWALL EXTENSION
 (Horiz. dim. @ Rt. L's)

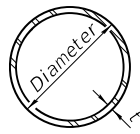


SECTION A-A

(Max. Applied Service Bearing Pressure = 2 ksf)

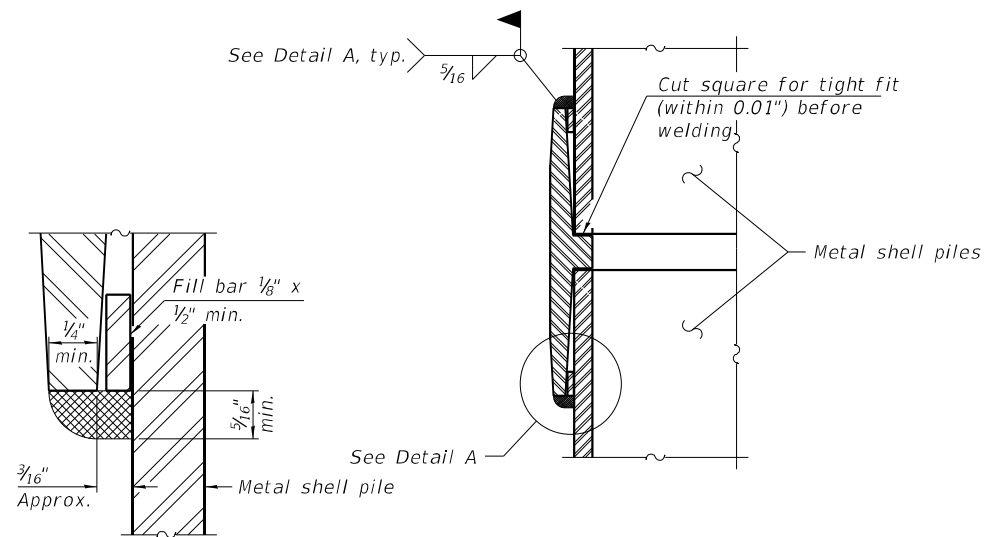
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h7(E)	10	#5	6'-9"	—
n(E)	10	#6	3'-9"	┌
t(E)	20	#8	9'-6"	—
v7(E)	10	#6	8'-1"	—
w(E)	20	#5	6'-9"	—
Structure Excavation			Cu. Yd.	23
Concrete Structures			Cu. Yd.	4.3
Reinforcement Bars, Epoxy Coated			Pound	900

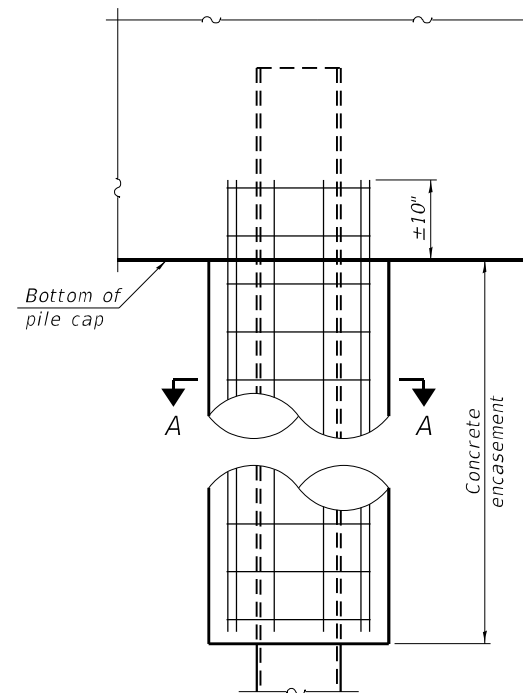


METAL SHELL PILE TABLE

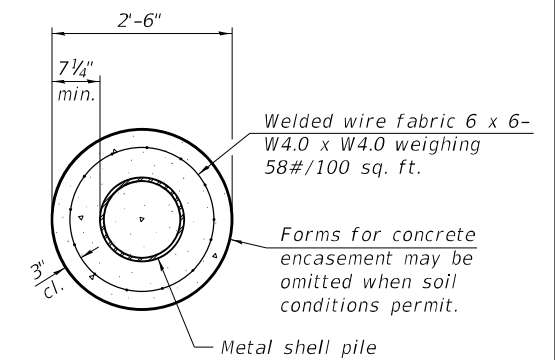
Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd. ³ /ft.)
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361
PP16	0.312"	52.32	0.0478
PP16	0.375"	62.64	0.0470



DETAIL A

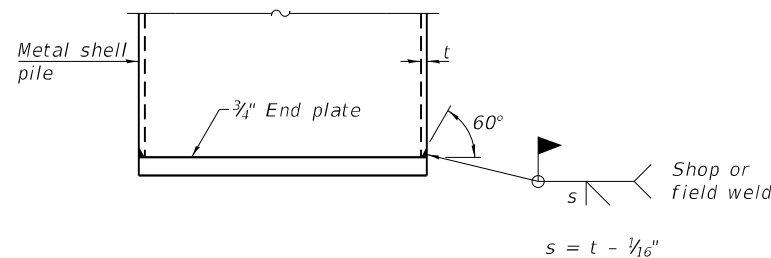


ELEVATION



SECTION A-A

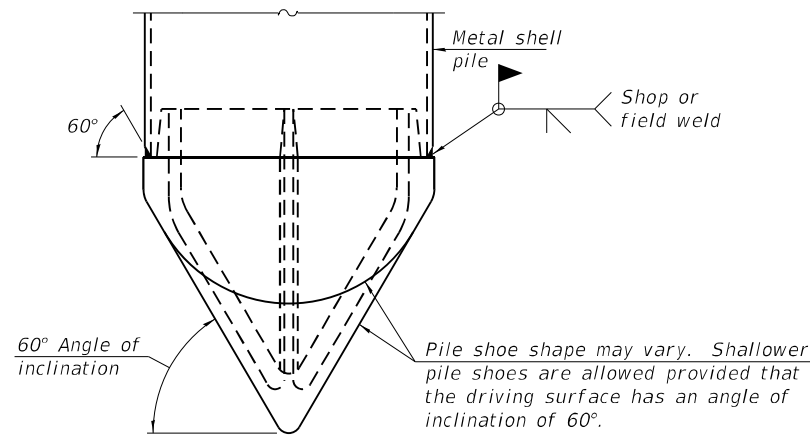
INDIVIDUAL PILE CONCRETE ENCASUREMENT
(When specified)



END PLATE ATTACHMENT

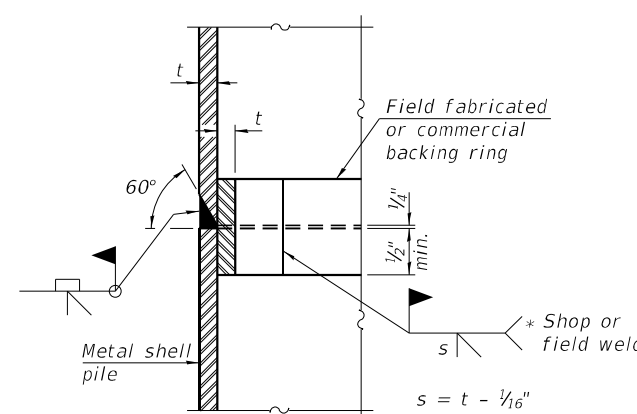
WELDED COMMERCIAL SPLICE

Notes:
The 1/8" x 1/2" min. fill bar may be constructed of 2 bars with a 1/8" max. gap between them.
Pile segments shall be driven to solid contact with splicer before welding.



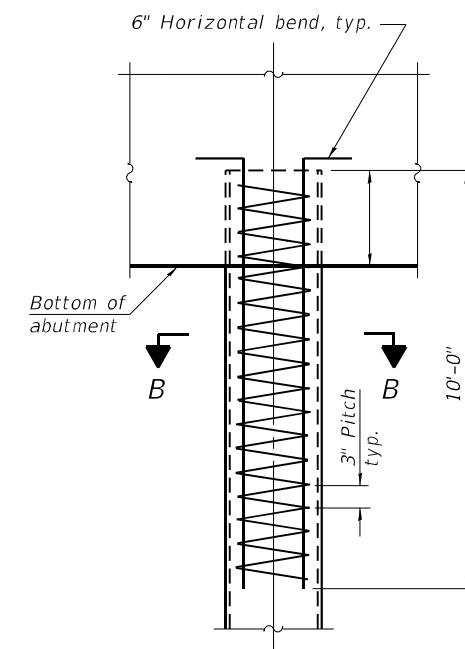
PILE SHOE ATTACHMENT

(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).

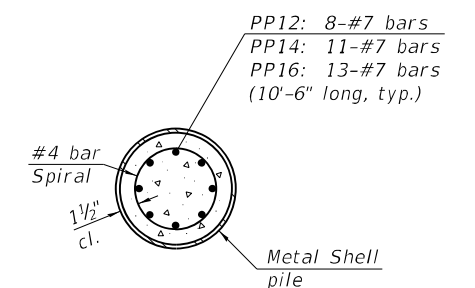


COMPLETE PENETRATION WELD SPLICE

* 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.

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F-MS 1-1-2020



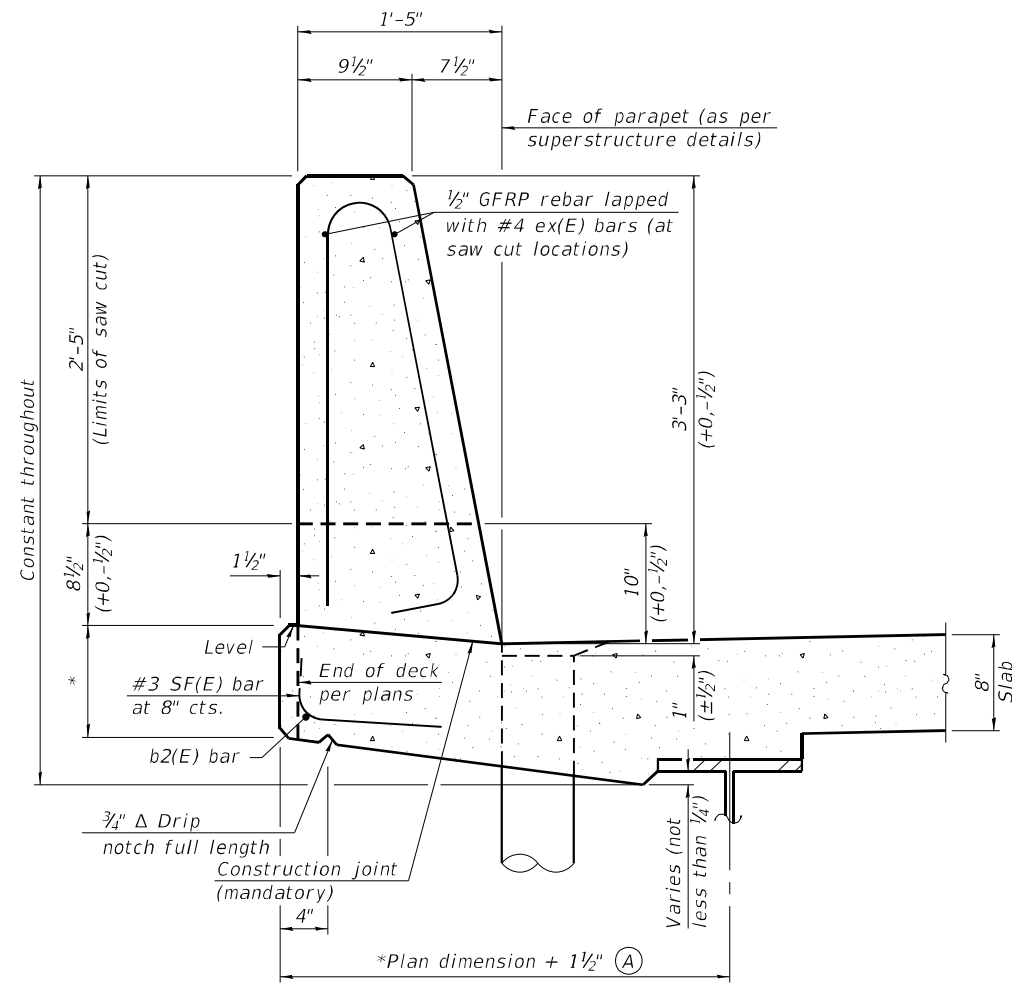
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PLOT SCALE =	CHECKED - E.M. Lagemann	REVISED -
PLOT DATE =	DRAWN - T.S. Friederich	REVISED -
	CHECKED - E.M. Lagemann	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**METAL SHELL PILE DETAILS
STRUCTURE NO. 010-1005**

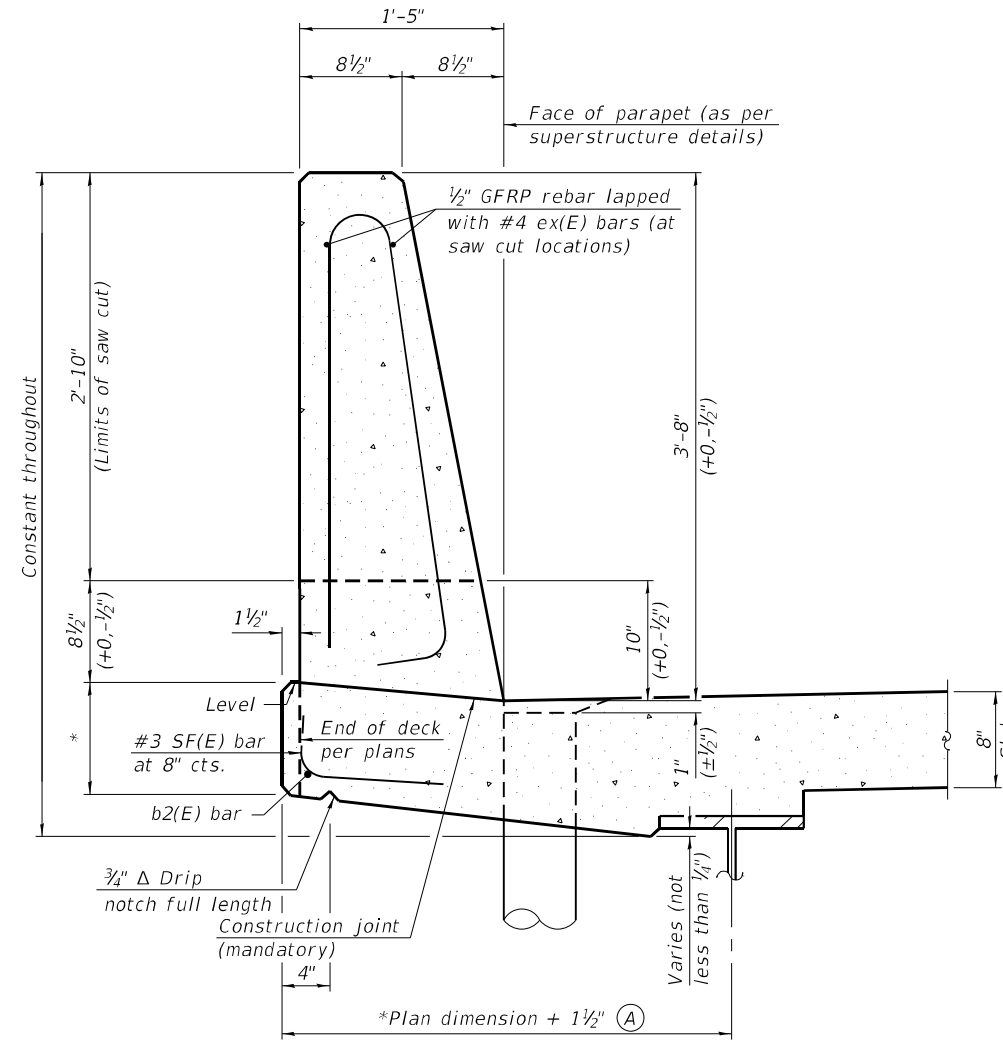
SHEET 20 OF 25 SHEETS

F.A.I. RTE. 74 & 57	SECTION (10-34-1) HBK	COUNTY CHAMPAIGN	TOTAL SHEETS 1187	SHEET NO. 922
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				



**39" CONSTANT-SLOPE
PARAPET SECTION**

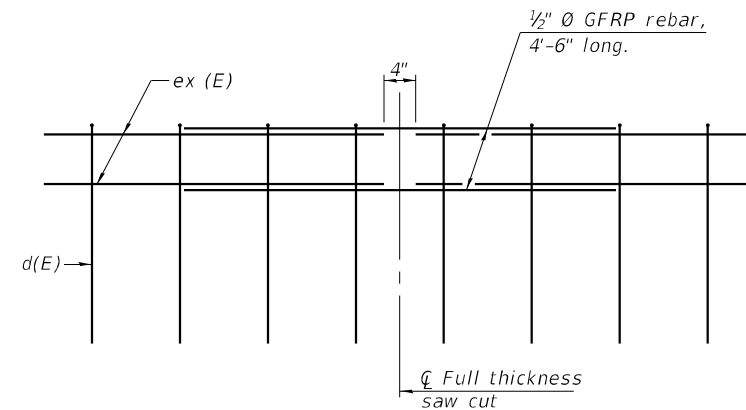
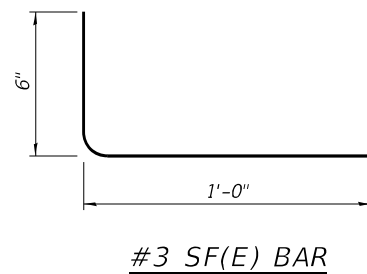
(Showing dimensions, d(E), and 1/2" Ø GFRP rebar)



**44" CONSTANT-SLOPE
PARAPET SECTION**

(Showing dimensions, d(E), and 1/2" Ø GFRP rebar)

*See Superstructure Details.



GFRP REBAR STIFFENING DETAIL

(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 = 0.00348 cu. yds./ft. for 39" and 44" parapets.
Place full depth aluminum sheets as shown on superstructure details.
Replace all cork joint filler locations with a full thickness saw cut.
Steel superstructure shown. Other superstructure types similar.

MODEL: Default
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SFP 39-44

1-1-2020



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PLOT SCALE =	CHECKED - E.M. Lagemann	REVISED -
PLOT DATE =	DRAWN - T.S. Friederich	REVISED -
	CHECKED - E.M. Lagemann	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**CONCRETE PARAPET SLIPFORMING OPTION
STRUCTURE NO. 010-1005**

SHEET 21 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74 & 57	(10-34-1) HBK	CHAMPAIGN	1187	923
CONTRACT NO. 70B99				

ILLINOIS FED. AID PROJECT

SOIL BORING LOG

Date 1/15/15

ROUTE I-57/74 DESCRIPTION North Abut Ramp B over Ramp C LOGGED BY TLM
 SECTION (10-34-1)HBK LOCATION SEC. 34, TWP. 20N, RNG. 8E, 3rd PM,
 COUNTY Champaign DRILLING METHOD HSA HAMMER TYPE Auto

STRUCT. NO.	STATION	DEPTH	BL	UCS	M	Surface Water Elev.	Stream Bed Elev.	DEPTH	BL	UCS	M
010-1005	223+43.16	(ft)	(/6")	(tsf)	(%)	n/a	ft	(ft)	(/6")	(tsf)	(%)
BORING NO. B-5	Station 222+52.50					Groundwater Elev.:					
Offset 8.8 ft LT						First Encounter 728.4 ft					
Ground Surface Elev. 770.88 ft						Upon Completion washed ft					
						After Hrs. ft					
TOPSOIL: Silty Clay, dark brown to black	769.38	2				SILTY CLAY TILL: Gray, stiff (continued)					
SILTY CLAY: Brown, stiff	767.88	2	1.5	29			748.88				
		3	P			SILTY CLAY LOAM: Gray, stiff					
CLAYEY SAND: Brown, loose, fine	765.38	1						2			
		1		21				7	1.2	13	
		-5						7	B		
SILTY CLAY: Brown, soft with rounded gravel pieces	762.88	1	0.5	17							
		3	B								
SILTY SAND: Gray, loose, fine to medium	760.38	3		15				2			
		3						3	1.7	12	
		-10						5	B		
SILTY CLAY LOAM TILL: Gray, stiff with limestone pieces	755.38	5	1.8	12							
		13	B								
		15				SILTY CLAY: Gray, stiff, trace gravel, rounded gravel pieces up to 3/8"					
		3						3			
		4	1.4	12				6	1.4	12	
		-15	B					8	B		
SILTY CLAY TILL: Gray, stiff	731.88	2									
		4	1.5	13				4	0.7	17	
		6	B					6	B		
1" Sand seam at 19.5 ft.	730.88	-20				SILT: Gray, loose					
		7	B			1" Sand seam at 39.5 ft.					
		7						4	0.7	17	
		-20						6	B		

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


Date 1/15/15

ROUTE I-57/74 DESCRIPTION North Abut Ramp B over Ramp C LOGGED BY TLM
 SECTION (10-34-1)HBK LOCATION SEC. 34, TWP. 20N, RNG. 8E, 3rd PM,
 COUNTY Champaign DRILLING METHOD HSA HAMMER TYPE Auto

STRUCT. NO.	STATION	DEPTH	BL	UCS	M	Surface Water Elev.	Stream Bed Elev.	DEPTH	BL	UCS	M
010-1005	223+43.16	(ft)	(/6")	(tsf)	(%)	n/a	ft	(ft)	(/6")	(tsf)	(%)
BORING NO. B-5	Station 222+52.50					Groundwater Elev.:					
Offset 8.8 ft LT						First Encounter 728.4 ft					
Ground Surface Elev. 770.88 ft						Upon Completion washed ft					
						After Hrs. ft					
SAND: Gray, medium dense, fine to medium (clean)	723.88					SILTY CLAY LOAM TILL: Gray, very stiff (continued)					
		4									
		4		17							
		-45									
GRAVELLY SAND: Gray, medium dense, coarse to fine	718.88					SILTY CLAY LOAM TILL: Gray, stiff					
		4									
		6		14							
		-50									
SILTY CLAY LOAM TILL: Gray, very hard	713.88										
		4									
		7	6.3	12							
		-55	B								
SILTY CLAY LOAM TILL: Gray, very stiff	690.88										
		6									
		7	3.4	13							
		-60	B								

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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	PLOT SCALE =	CHECKED - E.M. Lagemann	REVISED -
	PLOT DATE =	DRAWN - T.S. Friederich	REVISED -
		CHECKED - E.M. Lagemann	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**BORING LOGS
STRUCTURE NO. 010-1005**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74 & 57	(10-34-1) HBK	CHAMPAIGN	1187	924
CONTRACT NO. 70B99				

SOIL BORING LOG

Date 1/15/15

ROUTE I-57/74 DESCRIPTION Pier Ramp B over Ramp C LOGGED BY TLM
 SECTION (10-34-1)HBK LOCATION SEC. 34, TWP. 20N, RNG. 8E, 3rd PM.
 COUNTY Champaign DRILLING METHOD HSA HAMMER TYPE Auto

STRUCT. NO.	Station	DEPTH	BLOW	UCS	MOIST	Surface Water Elev.	Stream Bed Elev.	DEPTH	BLOW	UCS	MOIST
010-1005	223+43.16	H	S	Qu	T	n/a		H	S	Qu	T
BORING NO.	Station	Offset	Ground Surface Elev.	(ft)	(/6")	(tsf)	(%)	(ft)	(/6")	(tsf)	(%)
B-34/35	223+02.36	10.4 ft RT	770.68								
TOPSOIL: Silty Clay, dark brown to black						SILTY CLAY LOAM TILL: Gray, stiff (continued)					
			767.68	4							
SILTY CLAY: Brown, soft											
			765.18	1	0.3	22		2	3	0.7	14
SILTY CLAY: Brown, stiff											
			760.18	2	1.7	14		5	5	B	
SILTY CLAY LOAM TILL: Gray, stiff											
			738.68	2				2	4	1.6	12
SILTY CLAY LOAM TILL: Gray, very stiff											
			733.68	3				3	6	2.1	11
SILTY CLAY LOAM TILL: Gray, stiff											
			730.68	2				2	5	2.0	11
2" Sand seam at 39 ft.											

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

Date 1/15/15

ROUTE I-57/74 DESCRIPTION Pier Ramp B over Ramp C LOGGED BY TLM
 SECTION (10-34-1)HBK LOCATION SEC. 34, TWP. 20N, RNG. 8E, 3rd PM.
 COUNTY Champaign DRILLING METHOD HSA HAMMER TYPE Auto

STRUCT. NO.	Station	DEPTH	BLOW	UCS	MOIST	Surface Water Elev.	Stream Bed Elev.	DEPTH	BLOW	UCS	MOIST
010-1005	223+43.16	H	S	Qu	T	n/a		H	S	Qu	T
BORING NO.	Station	Offset	Ground Surface Elev.	(ft)	(/6")	(tsf)	(%)	(ft)	(/6")	(tsf)	(%)
B-34/35	223+02.36	10.4 ft RT	770.68								
SAND: Gray, coarse						SILTY CLAY LOAM: Gray, very stiff					
			723.68	5				8	11	3.1	12
SILTY CLAY LOAM TILL: Gray, hard, angular aggregate pieces up to 1/2"											
			718.68	10				6	9	2.3	13
2" Sand seam at 49.5 ft.											
			716.68	12	4.5	13		11	10	B	
SILTY CLAY LOAM TILL: Brown, hard											
			695.68	13	4.1	13		7	7	2.5	13
SILTY CLAY LOAM TILL: Gray, stiff											
			713.68	10				5	10	B	
SILTY CLAY LOAM: Gray, stiff						End of Boring					
			710.68	7	1.6	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)

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	PLOT DATE =	DRAWN - T.S. Friederich	REVISED -
		CHECKED - E.M. Lagemann	REVISED -

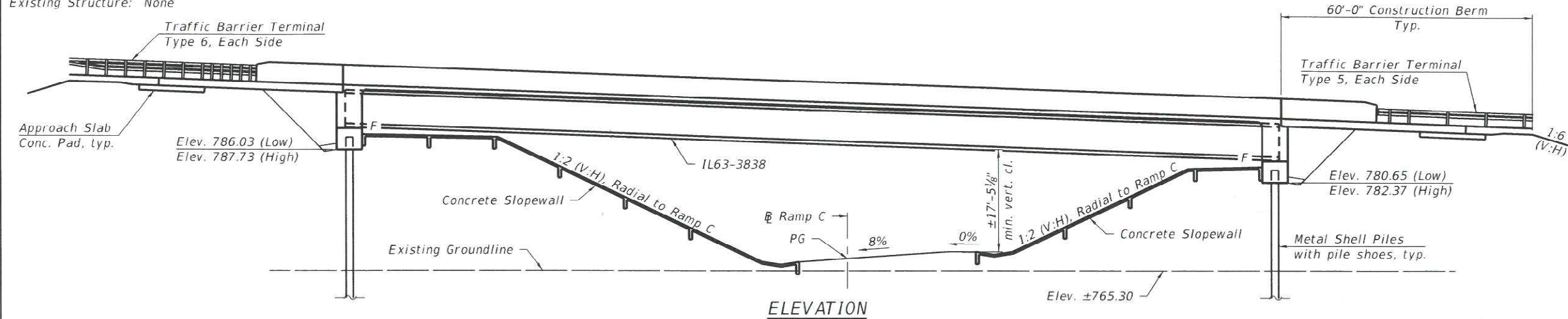
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS
 STRUCTURE NO. 010-1005
 SHEET 25 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74 & 57	(10-34-1) HBK	CHAMPAIGN	1187	927
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				

Benchmark: Chiseled "□" on top of S.W. corner of S.W. Parapet Wall of I-74 W.B. Bridge over I-57,
Sta. 1059+99.73, 12'-6" Left, Elev. 787.789

Existing Structure: None



ELEVATION

INDEX OF SHEETS

1. General Plan and Elevation
2. General Data
3. - 5. Top of Slab Elevations
6. - 7. Top of Approach Slab Elevations
8. - 9. Superstructure Details
10. End Diaphragm Details
11. - 13. Bridge Approach Slab Details
14. - 16. Concrete Girder Details
17. North Abutment Details
18. South Abutment Details
19. Wingwall Extension Details
20. Metal Shell Pile Details
21. Concrete Parapet Slipforming Option
22. - 24. Boring Logs

DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

LOADING HL-93

Allow 25 psf for future wearing surface

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec (SD1) = 0.135g
Design Spectral Acceleration at 0.2 sec (SD2) = 0.233g
Soil Site Class = D

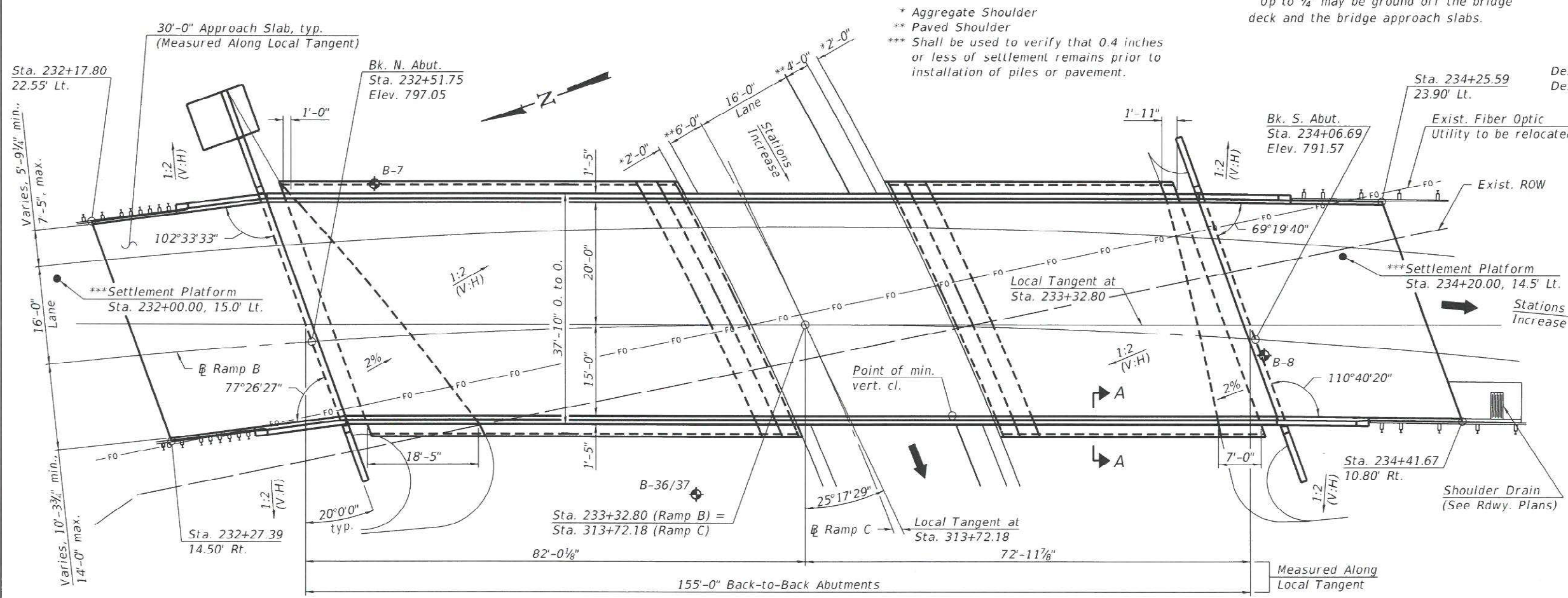
DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi (Cast-in-Place)
f'c = 4,000 psi (Superstructure Concrete)
fy = 60,000 psi (Reinforcement)

PRECAST PRESTRESSED UNITS

f'c = 8,500 psi
f'ci = 6,500 psi
fpu = 270,000 psi (0.6" Φ low lax strands)
fprt = 202,300 psi (0.6" Φ low lax strands)



PLAN

◆ Boring Location

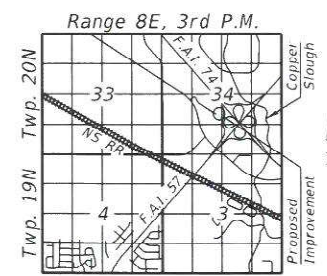
Note:
Up to 1/4" may be ground off the bridge deck and the bridge approach slabs.

* Aggregate Shoulder
** Paved Shoulder
*** Shall be used to verify that 0.4 inches or less of settlement remains prior to installation of piles or pavement.



APPROVED
For Structural Adequacy Only
Eric M. Lagemann
Engineer of Bridges & Structures

Eric Lagemann 5/4/21
License Expires 11/30/2022 Date



LOCATION SKETCH

GENERAL PLAN & ELEVATION

RAMP B OVER RAMP C
F.A.I. RTE. 57/74
SECTION (10-34-1)HBK
CHAMPAIGN COUNTY
STATION 233+32.80
STRUCTURE NO. 010-1006

MODEL: Default
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5/4/2021 9:59:32 AM

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USER NAME =	DESIGNED - T.S. Friederich	REVISED -
PLOT SCALE =	CHECKED - E.M. Lagemann	REVISED -
PLOT DATE =	DRAWN - T.S. Friederich	REVISED -
	CHECKED - E.M. Lagemann	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

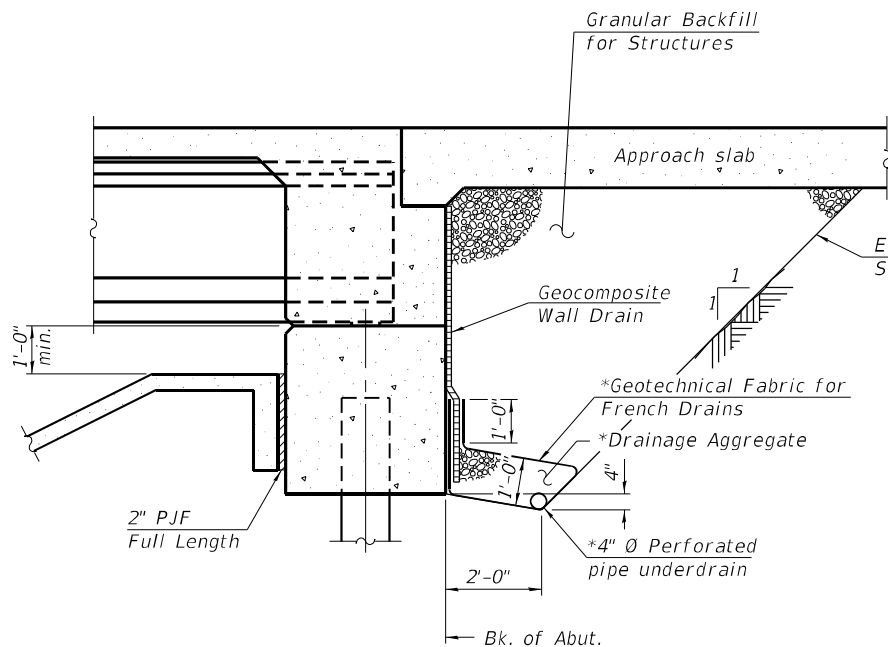
F.A.I. RTE. 74 & 57	SECTION (10-34-1) HBK	COUNTY CHAMPAIGN	TOTAL SHEETS 1187	SHEET NO. 928
ILLINOIS FED. AID PROJECT CONTRACT NO. 70B99				

GENERAL NOTES

Reinforcement bars designated (E) shall be epoxy coated.
The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.

STATION 233+32.80
BUILT 202_ BY
STATE OF ILLINOIS
F.A.I. 57/74 SEC. (10-34-1) HBK
LOADING HL-93
STRUCTURE NO. 010-1006

NAME PLATE
See Std. 515001

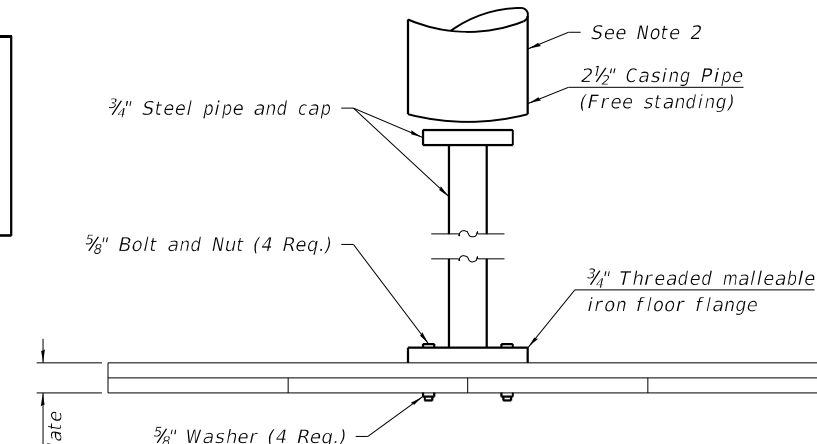


SECTION THRU INTEGRAL ABUTMENT
(Horiz. dim. @ Rt. L's)

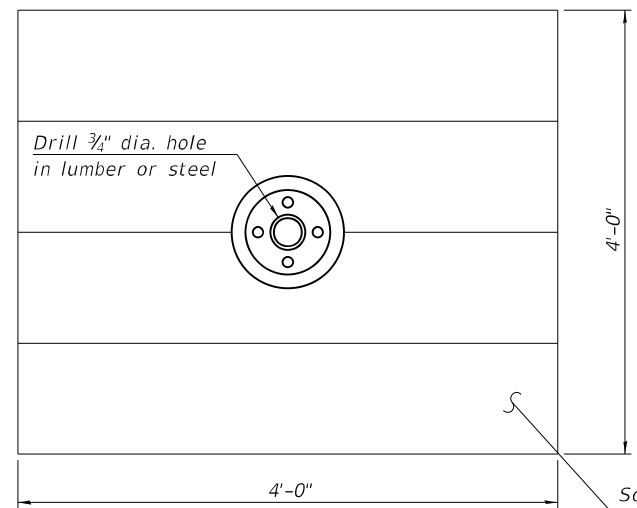
*Included in the cost of Pipe Underdrains for Structures.
(See Special Provisions)

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).



SETTLEMENT PLATFORM - ELEVATION



SETTLEMENT PLATFORM - PLAN

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Structure Excavation	Cu. Yd.		374	374
Concrete Structures	Cu. Yd.		87.2	87.2
Concrete Superstructure	Cu. Yd.	287.6		287.6
Protective Coat	Sq. Yd.	999		999
Concrete Superstructure (Approach Slab)	Cu. Yd.	102.8		102.8
Furnishing and Erecting Precast Prestressed Concrete Beam, IL63	Foot	913		913
Reinforcement Bars, Epoxy Coated	Pound	93,180	21,240	114,420
Slope Wall 4 Inch	Sq. Yd.		574	574
Driving Piles	Foot		1,162	1,162
Test Pile Metal Shells	Each		2	2
Pile Shoes	Each		16	16
Name Plates	Each		1	1
Granular Backfill for Structures	Cu. Yd.	295		295
Geocomposite Wall Drain	Sq. Yd.	124		124
Furnishing Metal Shell Piles 16" X 0.312"	Foot		1,162	1,162
Bridge Deck Grooving (Longitudinal)	Sq. Yd.	378		378
Diamond Grinding (Bridge Section)	Sq. Yd.	733		733
Pipe Underdrains for Structures 4"	Foot		152	152
Settlement Platforms	Each		2	2

Notes:

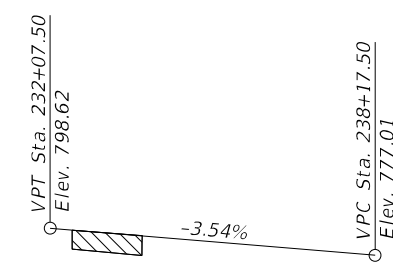
- Settlement platform shall be in accordance with the applicable portions of Article 204.06 of the Standard Specifications.
- Do not install casing pipe until after one section of 3/4" steel pipe has been covered with earth. The casing pipe should not rest on platform.



PROFILE GRADE RAMP C
(Along E Roadway)

PROPOSED RAMP C CURVE DATA

P.I. Sta. = 330+93.16 L = 1,041.65'
 $\Delta = 124^{\circ}20'18"$ (Rt.) E = 548.14'
D = 11°56'12" S.E. = 8.0%
R = 480.00' P.C.C. Sta. = 321+83.95
T = 909.21' P.C.C. Sta. = 332+25.60

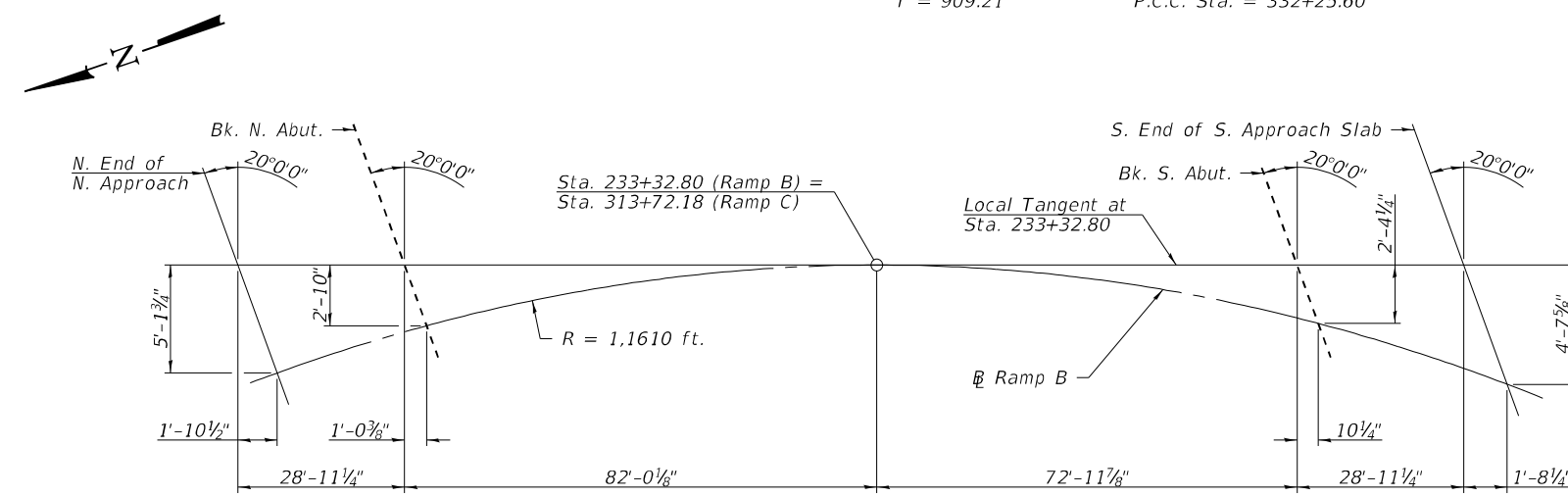


PROFILE GRADE RAMP B
(Along E Roadway)

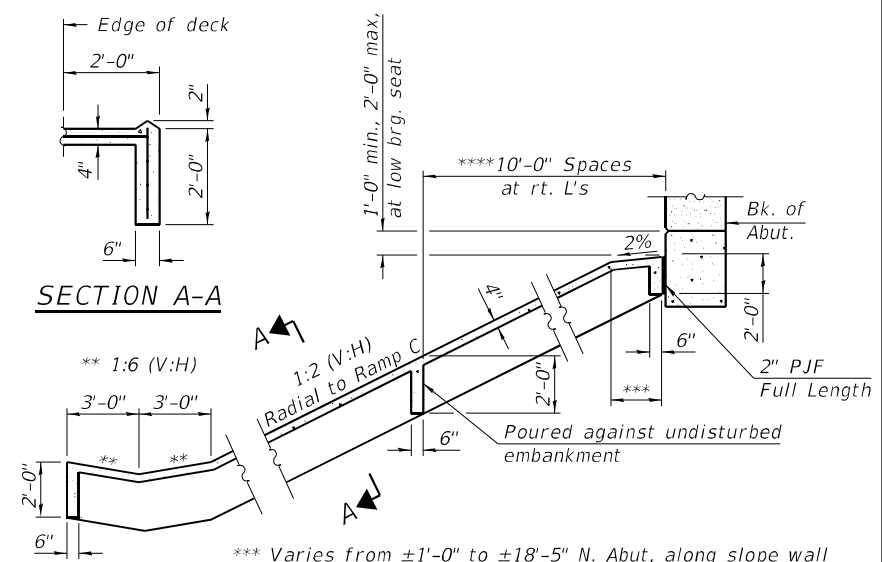
(The profile grade shows the final elevations after grinding)

PROPOSED RAMP B CURVE DATA

P.I. Sta. = 230+56.25 L = 1,420.88'
 $\Delta = 70^{\circ}10'53"$ (Rt.) E = 257.67'
D = 4°56'21" S.E. = 7.8%
R = 1,160.00' P.C. Sta. = 222+41.27
T = 814.98' P.T. Sta. = 236+62.15



OFFSET SKETCH



SECTION A-A

** 1:6 (V:H)

*** Varies from ±1'-0" to ±18'-5" N. Abut. along slope wall
 Varies from ±1'-0" to ±7'-0" S. Abut. along slope wall
 **** Toewalls are to be spaced at 10'-0". See ELEVATION on sheet 1 of 24 for number of Toewalls.

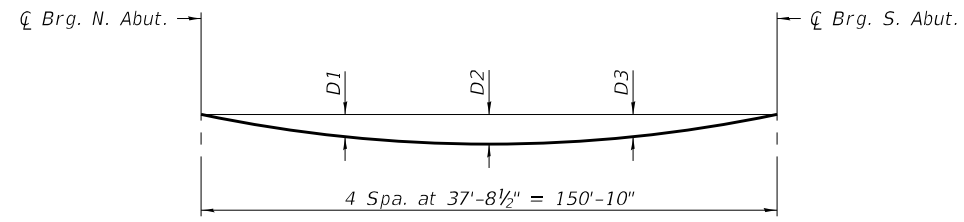
Note:

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.

SECTION THRU CONCRETE SLOPEWALL

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	PLOT SCALE =	DRAWN - T.S. Friederich	REVISED -			ILLINOIS	FED. AID PROJECT			
	PLOT DATE =	CHECKED - E.M. Lagemann	REVISED -	SHEET 2 OF 24 SHEETS		CONTRACT NO. 70B99				



DEAD LOAD DEFLECTION DIAGRAM

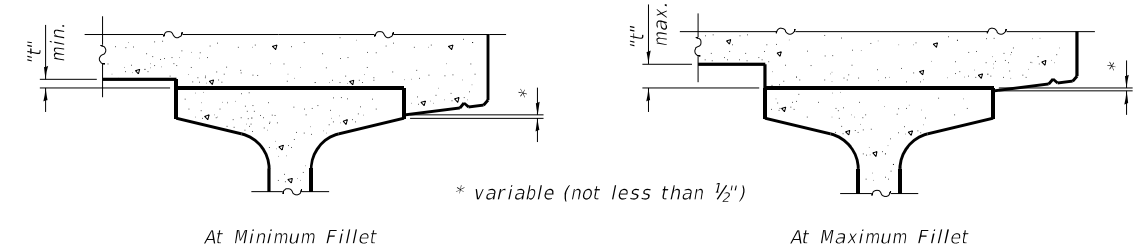
(Includes weight of concrete only, excluding beams.)

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 4 and 5 of 24.

TABLE OF DEFLECTIONS

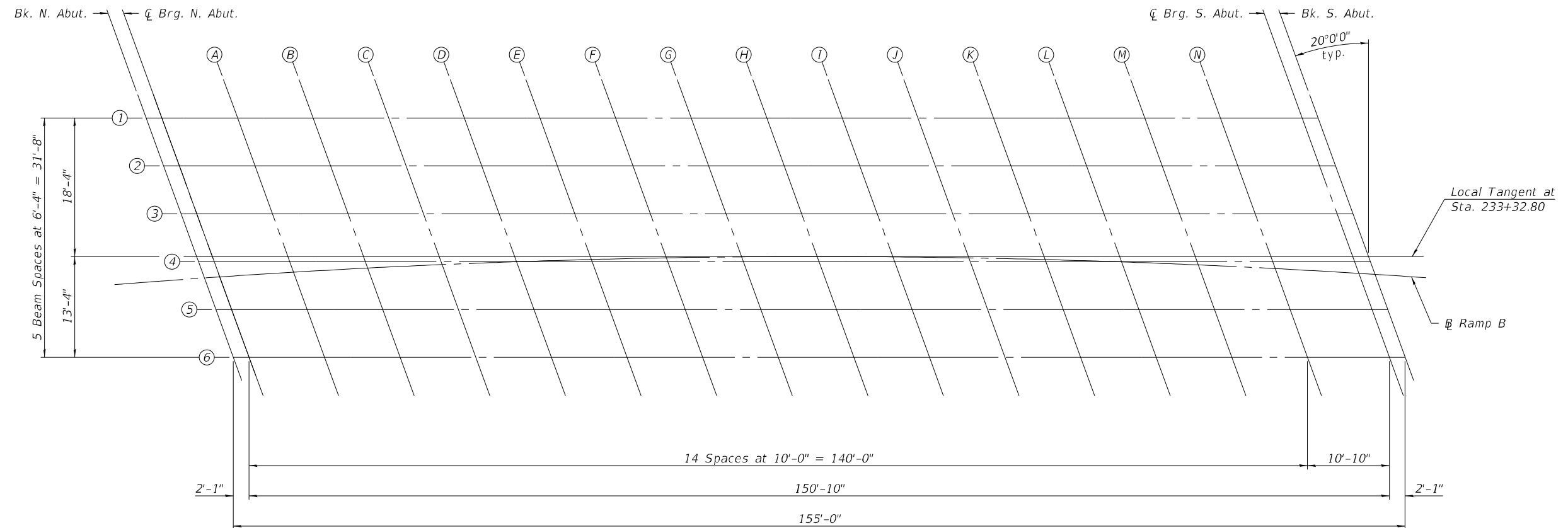
Beam	D1	D2	D3
1	2 3/4"	3 7/8"	2 3/4"
2	2 1/2"	3 1/2"	2 1/2"
3	2 1/2"	3 1/2"	2 1/2"
4	2 1/2"	3 1/2"	2 1/2"
5	2 1/2"	3 1/2"	2 1/2"
6	2 5/8"	3 3/8"	2 5/8"



To determine "t": After all beams have 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 Deflections and Grinding" shown on sheets 4 and 5 of 24, minus 8 1/4" slab thickness, equals the fillet heights "t" above top flange of beams.

The slab is to be ground after curing to achieve smoothness, but the slab is not to be ground to elevations below the "Theoretical Grade Elevations" shown on sheets 4 and 5 of 24. For grinding the deck, see Special Provisions.

FILLET HEIGHTS



PLAN

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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATIONS
STRUCTURE NO. 010-1006**

SHEET 3 OF 24 SHEETS

F.A.I. RTE. 74 & 57	SECTION (10-34-1) HBK	COUNTY CHAMPAIGN	TOTAL SHEETS 1187	SHEET NO. 930
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. N. Abut.	232+45.66	-21.67	798.96	798.98
CL Brg. N. Abut.	232+47.70	-21.51	798.87	798.90
A	232+57.50	-20.82	798.47	798.56
B	232+67.31	-20.21	798.08	798.23
C	232+77.12	-19.69	797.69	797.90
D	232+86.95	-19.25	797.31	797.57
E	232+96.78	-18.90	796.93	797.24
F	233+06.62	-18.63	796.56	796.89
G	233+16.46	-18.45	796.20	796.55
H	233+26.30	-18.35	795.85	796.19
I	233+36.15	-18.34	795.50	795.83
J	233+45.99	-18.41	795.15	795.46
K	233+55.83	-18.57	794.82	795.08
L	233+65.67	-18.81	794.49	794.71
M	233+75.51	-19.13	794.16	794.32
N	233+85.33	-19.54	793.85	793.94
CL Brg. S. Abut.	233+95.97	-20.08	793.51	793.54
Bk. S. Abut.	233+98.02	-20.20	793.45	793.47

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. N. Abut.	232+47.46	-15.18	798.39	798.41
CL Brg. N. Abut.	232+49.51	-15.03	798.30	798.33
A	232+59.36	-14.35	797.90	797.99
B	232+69.23	-13.76	797.51	797.65
C	232+79.10	-13.26	797.12	797.31
D	232+88.98	-12.84	796.74	796.97
E	232+98.87	-12.50	796.36	796.63
F	233+08.76	-12.25	795.99	796.29
G	233+18.65	-12.09	795.63	795.94
H	233+28.55	-12.01	795.27	795.58
I	233+38.45	-12.01	794.92	795.22
J	233+48.34	-12.11	794.58	794.85
K	233+58.24	-12.28	794.24	794.48
L	233+68.13	-12.54	793.91	794.11
M	233+78.01	-12.89	793.59	793.73
N	233+87.89	-13.32	793.27	793.36
CL Brg. S. Abut.	233+98.58	-13.89	792.94	792.96
Bk. S. Abut.	234+00.64	-14.01	792.88	792.90

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. N. Abut.	232+49.28	-8.69	797.82	797.84
CL Brg. N. Abut.	232+51.34	-8.55	797.73	797.76
A	232+61.25	-7.89	797.33	797.41
B	232+71.17	-7.31	796.94	797.08
C	232+81.10	-6.83	796.55	796.74
D	232+91.03	-6.42	796.16	796.40
E	233+00.97	-6.11	795.79	796.06
F	233+10.92	-5.87	795.42	795.71
G	233+20.87	-5.73	795.05	795.36
H	233+30.82	-5.67	794.70	795.01
I	233+40.77	-5.69	794.35	794.64
J	233+50.72	-5.81	794.00	794.28
K	233+60.67	-6.00	793.67	793.91
L	233+70.61	-6.29	793.34	793.53
M	233+80.55	-6.65	793.01	793.16
N	233+90.48	-7.11	792.70	792.78
CL Brg. S. Abut.	234+01.23	-7.70	792.36	792.38
Bk. S. Abut.	234+03.29	-7.82	792.30	792.32

PROFILE GRADE & β RAMP B

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. N. Abut.	232+51.75	0.00	797.05	797.07
CL Brg. N. Abut.	232+53.79	0.00	796.98	797.00
A	232+63.58	0.00	796.63	796.72
B	232+73.40	0.00	796.29	796.43
C	232+83.24	0.00	795.94	796.13
D	232+93.11	0.00	795.59	795.83
E	233+03.01	0.00	795.24	795.51
F	233+12.93	0.00	794.89	795.18
G	233+22.89	0.00	794.54	794.84
H	233+32.87	0.00	794.18	794.49
I	233+42.89	0.00	793.83	794.12
J	233+52.94	0.00	793.47	793.75
K	233+63.02	0.00	793.11	793.35
L	233+73.14	0.00	792.76	792.95
M	233+83.29	0.00	792.40	792.54
N	233+93.48	0.00	792.04	792.12
CL Brg. S. Abut.	234+04.56	0.00	791.64	791.66
Bk. S. Abut.	234+06.69	0.00	791.57	791.59

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. N. Abut.	232+51.12	-2.21	797.25	797.27
CL Brg. N. Abut.	232+53.19	-2.07	797.16	797.18
A	232+63.16	-1.43	796.76	796.84
B	232+73.13	-0.87	796.36	796.50
C	232+83.12	-0.40	795.97	796.17
D	232+93.11	-0.01	795.59	795.83
E	233+03.10	0.29	795.21	795.49
F	233+13.11	0.50	794.84	795.14
G	233+23.11	0.63	794.48	794.79
H	233+33.12	0.67	794.12	794.43
I	233+43.12	0.62	793.77	794.07
J	233+53.12	0.49	793.43	793.70
K	233+63.13	0.27	793.09	793.33
L	233+73.12	-0.03	792.76	792.96
M	233+83.11	-0.42	792.44	792.58
N	233+93.10	-0.90	792.12	792.21
CL Brg. S. Abut.	234+03.90	-1.51	791.79	791.81
Bk. S. Abut.	234+05.98	-1.64	791.72	791.74

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. N. Abut.	232+52.98	4.27	796.68	796.70
CL Brg. N. Abut.	232+55.07	4.41	796.59	796.61
A	232+65.09	5.03	796.19	796.27
B	232+75.12	5.57	795.79	795.93
C	232+85.16	6.03	795.40	795.59
D	232+95.21	6.39	795.02	795.25
E	233+05.26	6.67	794.64	794.91
F	233+15.32	6.87	794.27	794.56
G	233+25.38	6.98	793.90	794.21
H	233+35.44	7.00	793.55	793.85
I	233+45.50	6.93	793.19	793.49
J	233+55.55	6.78	792.85	793.12
K	233+65.61	6.54	792.51	792.75
L	233+75.66	6.21	792.18	792.38
M	233+85.70	5.80	791.86	792.00
N	233+95.74	5.30	791.54	791.63
CL Brg. S. Abut.	234+06.60	4.66	791.21	791.23
Bk. S. Abut.	234+08.69	4.53	791.14	791.17

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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATIONS
STRUCTURE NO. 010-1006**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74 & 57	(10-34-1) HBK	CHAMPAIGN	1187	931
CONTRACT NO. 70B99				
ILLINOIS		FED. AID PROJECT		

BEAM 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. N. Abut.	232+54.86	10.74	796.11	796.13
CL Brg. N. Abut.	232+56.96	10.88	796.02	796.04
A	232+67.04	11.49	795.62	795.70
B	232+77.13	12.01	795.22	795.37
C	232+87.22	12.45	794.83	795.03
D	232+97.33	12.80	794.44	794.69
E	233+07.44	13.06	794.06	794.35
F	233+17.55	13.23	793.69	794.00
G	233+27.67	13.32	793.33	793.65
H	233+37.78	13.32	792.97	793.30
I	233+47.90	13.24	792.62	792.93
J	233+58.01	13.06	792.27	792.56
K	233+68.12	12.80	791.94	792.19
L	233+78.22	12.45	791.60	791.81
M	233+88.32	12.02	791.28	791.43
N	233+98.41	11.50	790.97	791.06
CL Brg. S. Abut.	234+09.33	10.83	790.63	790.65
Bk. S. Abut.	234+11.43	10.69	790.57	790.59

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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATIONS
 STRUCTURE NO. 010-1006**

SHEET 5 OF 24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74 & 57	(10-34-1) HBK	CHAMPAIGN	1187	932
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				

EAST EDGE OF SHOULDER / CURB LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
N. End of N. Appr. Pav't	232+17.93	-22.05	799.97	799.99
A	232+27.37	-22.39	799.66	799.68
B	232+36.80	-22.80	799.36	799.38
S. End of N. Appr. Pav't	232+46.23	-23.29	799.07	799.09

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
N. End of N. Appr. Pav't	232+19.45	-16.00	799.44	799.47
A	232+29.03	-16.00	799.11	799.13
B	232+38.63	-16.00	798.77	798.79
S. End of N. Appr. Pav't	232+48.26	-16.00	798.43	798.45

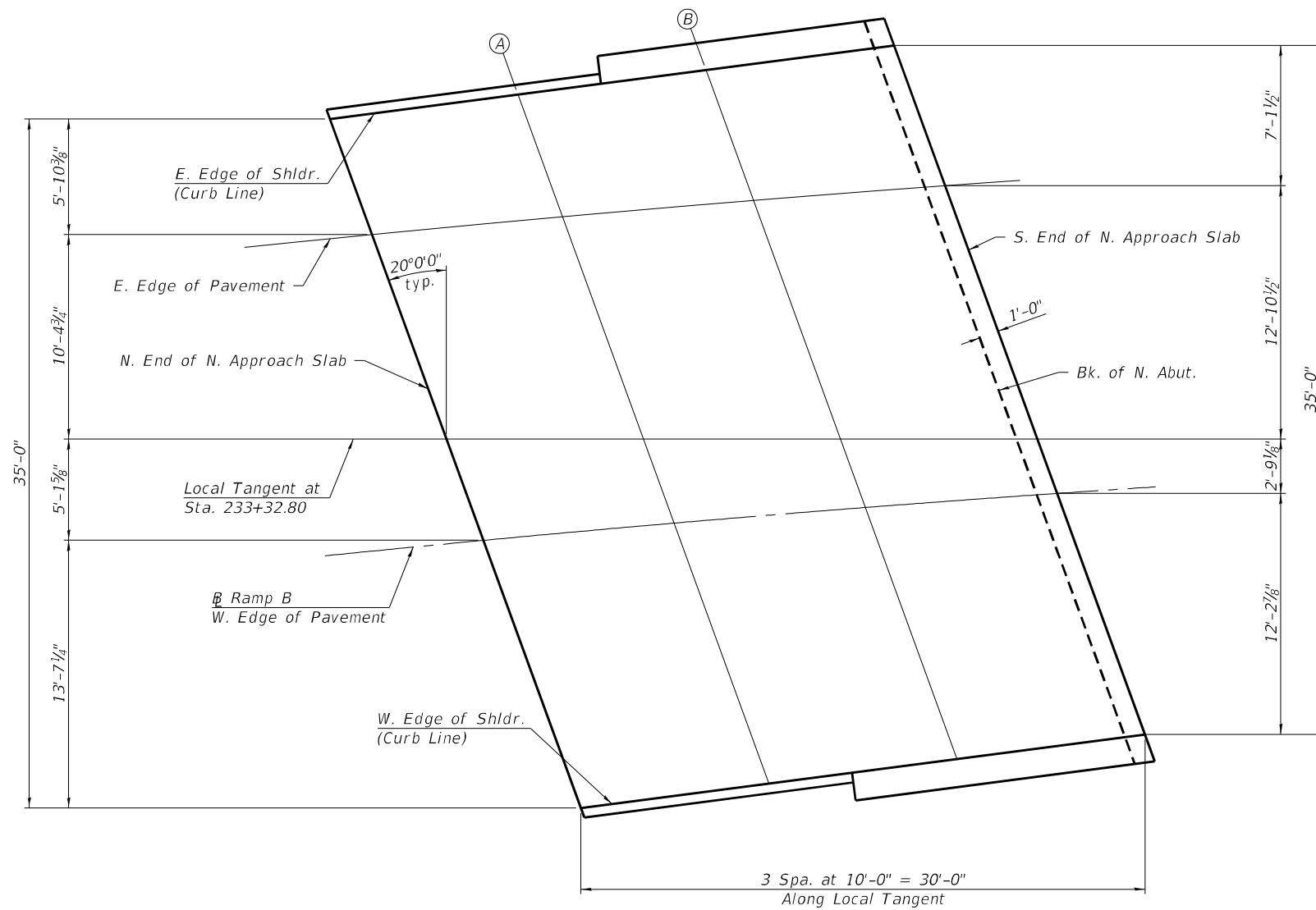
WEST EDGE OF PAVEMENT, PROFILE GRADE, & RAMP B

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
N. End of N. Appr. Pav't	232+23.56	0.00	798.05	798.07
A	232+33.28	0.00	797.71	797.73
B	232+43.03	0.00	797.36	797.38
S. End of N. Appr. Pav't	232+52.79	0.00	797.02	797.04



WEST EDGE OF SHOULDER / CURB LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
N. End of N. Appr. Pav't	232+27.26	14.00	796.83	796.85
A	232+36.99	13.59	796.52	796.54
B	232+46.72	13.09	796.21	796.23
S. End of N. Appr. Pav't	232+56.43	12.51	795.91	795.93



PLAN

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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**TOP OF NORTH APPROACH SLAB ELEVATIONS
 STRUCTURE NO. 010-1006**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74 & 57	(10-34-1) HBK	CHAMPAIGN	1187	933
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				

EAST EDGE OF SHOULDER / CURB LINE

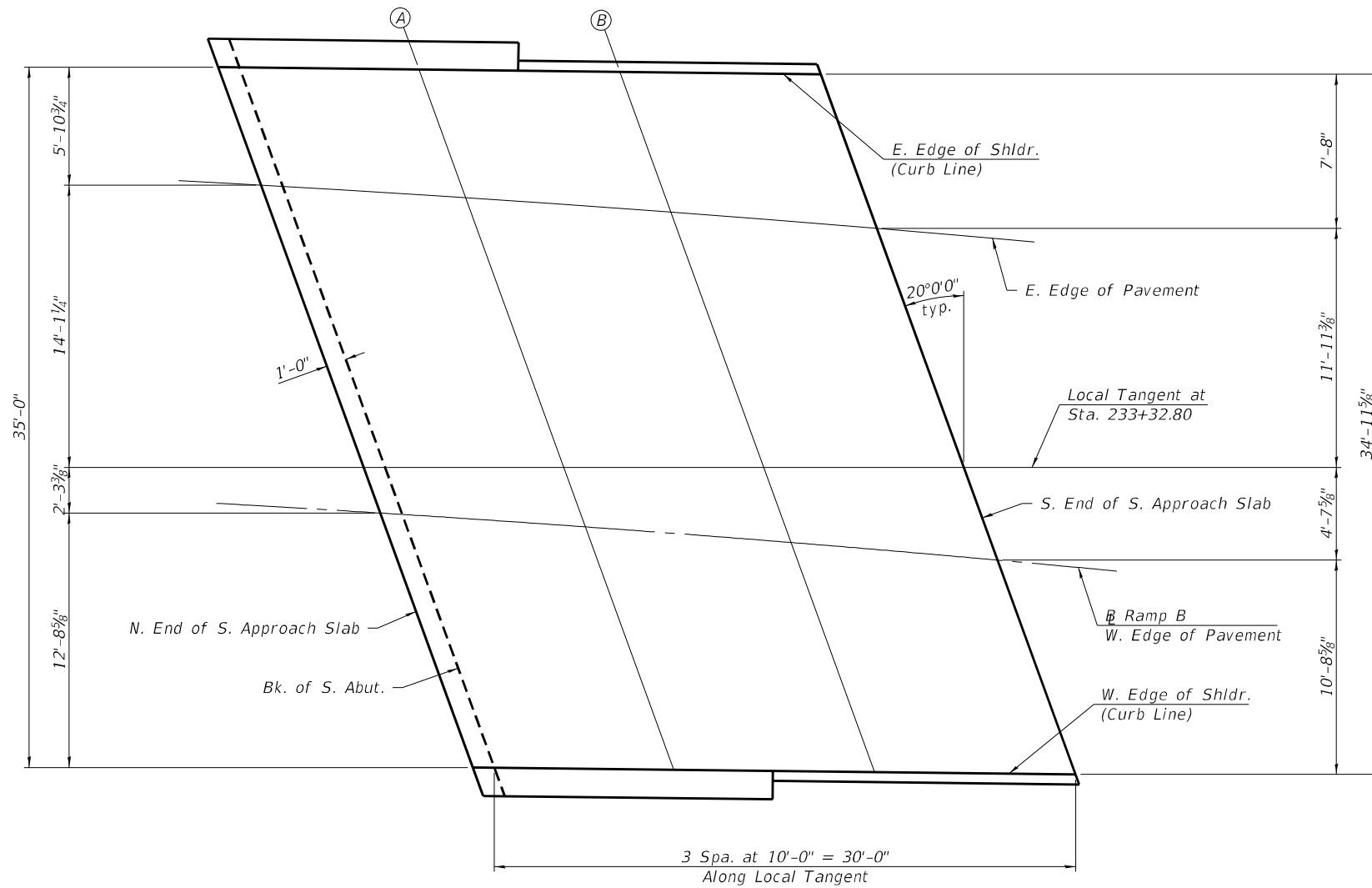
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
N. End of S. Appr. Pav't	233+96.29	-21.77	793.64	793.66
A	234+06.14	-22.23	793.32	793.34
B	234+15.98	-22.78	793.02	793.04
S. End of S. Appr. Pav't	234+25.81	-23.41	792.72	792.74

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
N. End of S. Appr. Pav't	233+98.72	-16.00	793.10	793.12
A	234+08.83	-16.00	792.74	792.76
B	234+18.97	-16.00	792.38	792.40
S. End of S. Appr. Pav't	234+29.16	-16.00	792.02	792.04

WEST EDGE OF PAVEMENT, PROFILE GRADE, & RAMP B

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
N. End of S. Appr. Pav't	234+05.60	0.00	791.61	791.63
A	234+15.88	0.00	791.24	791.26
B	234+26.19	0.00	790.88	790.90
S. End of S. Appr. Pav't	234+36.55	0.00	790.51	790.53



PLAN

WEST EDGE OF SHOULDER / CURB LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
N. End of S. Appr. Pav't	234+11.08	12.39	790.45	790.47
A	234+21.21	11.78	790.14	790.16
B	234+31.33	11.09	789.83	789.85
S. End of S. Appr. Pav't	234+41.44	10.32	789.53	789.55

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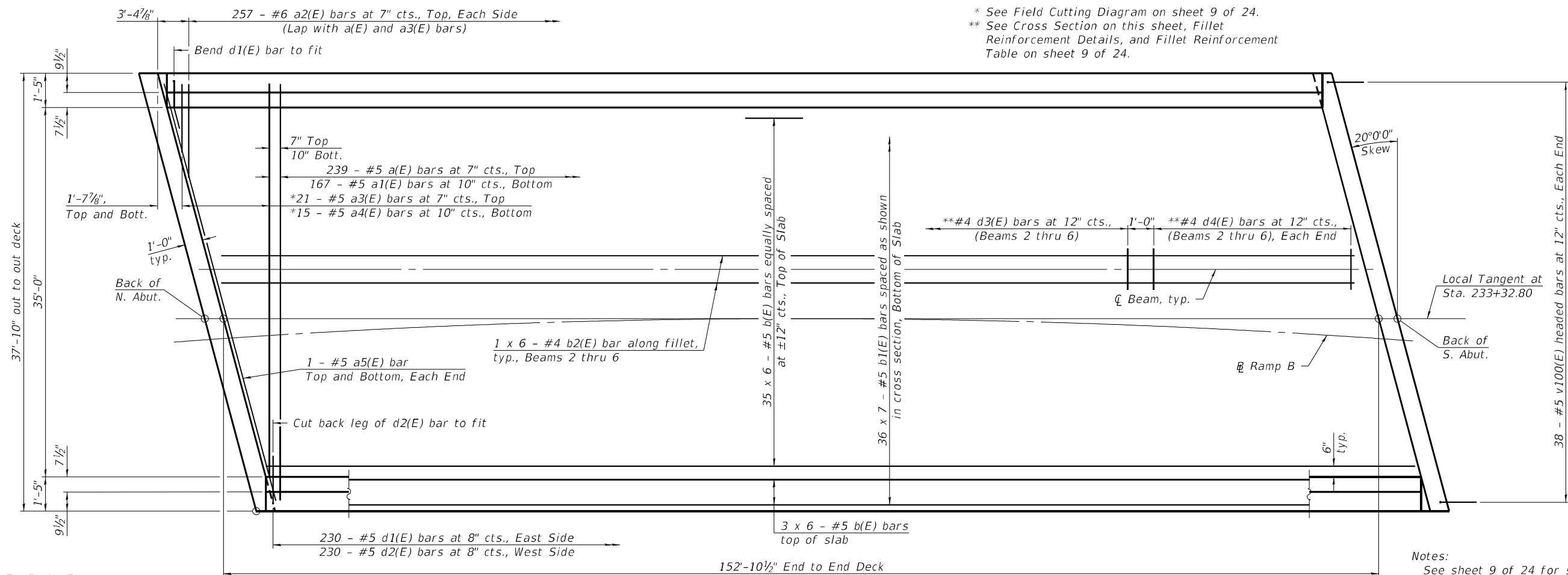
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	CHECKED - E.M. Lagemann	REVISED -

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 DEPARTMENT OF TRANSPORTATION**

**TOP OF SOUTH APPROACH SLAB ELEVATIONS
 STRUCTURE NO. 010-1006**

F.A.I. RTE. 74 & 57	SECTION (10-34-1) HBK	COUNTY CHAMPAIGN	TOTAL SHEETS 1187	SHEET NO. 934
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				

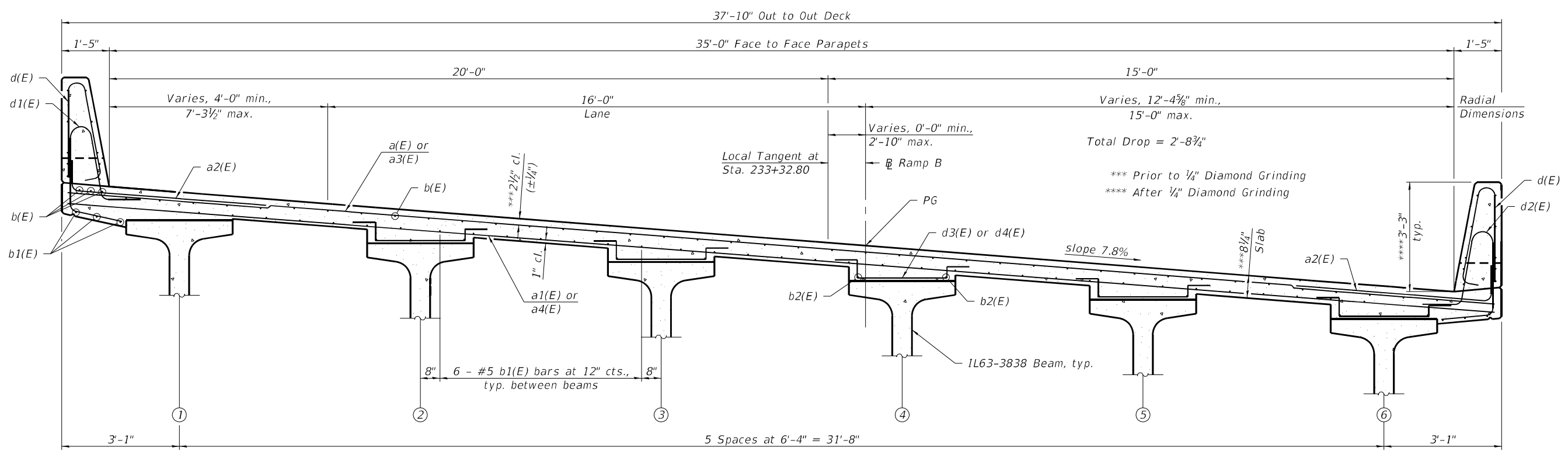


* See Field Cutting Diagram on sheet 9 of 24.
 ** See Cross Section on this sheet, Fillet Reinforcement Details, and Fillet Reinforcement Table on sheet 9 of 24.

MINIMUM BAR LAP
 #4 bar = 2'-5"
 #5 bar = 3'-6"

PLAN

Notes:
 See sheet 9 of 24 for superstructure details and Bill of Material.
 Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.



CROSS SECTION
 (Looking Upstation)

MODEL: Default
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	CHECKED - E.M. Lagemann	REVISED -

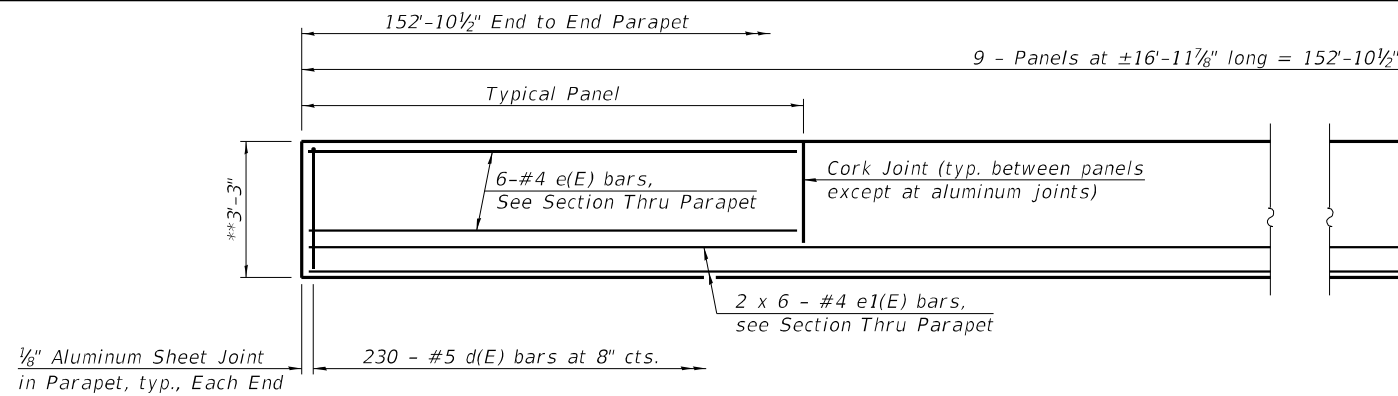
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE PLAN AND CROSS-SECTION
STRUCTURE NO. 010-1006

SHEET 8 OF 24 SHEETS

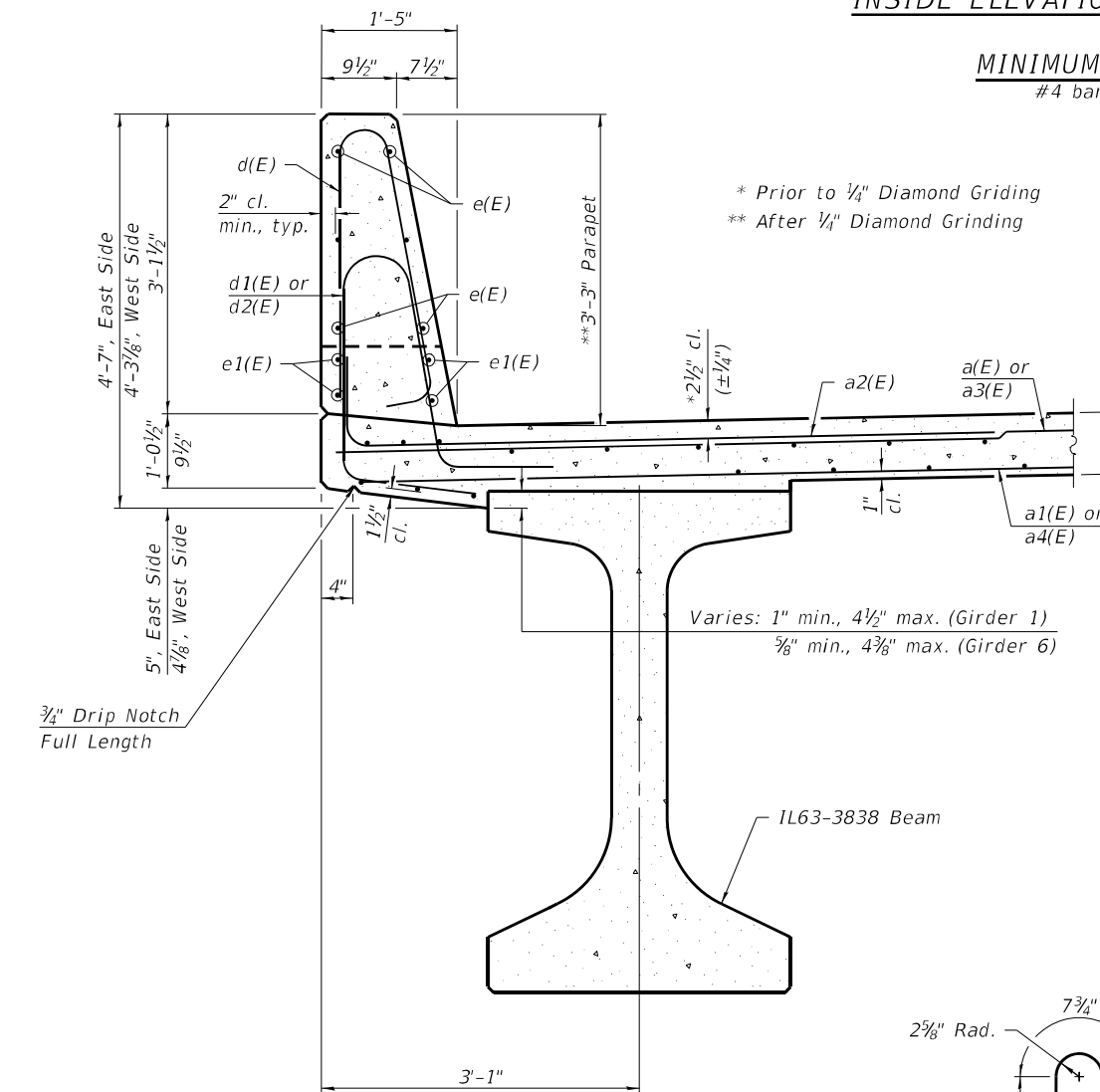
F.A.I. RTE. 74 & 57	SECTION (10-34-1) HBK	COUNTY CHAMPAIGN	TOTAL SHEETS 1187	SHEET NO. 935
CONTRACT NO. 70B99				

ILLINOIS FED. AID PROJECT



INSIDE ELEVATION OF PARAPET

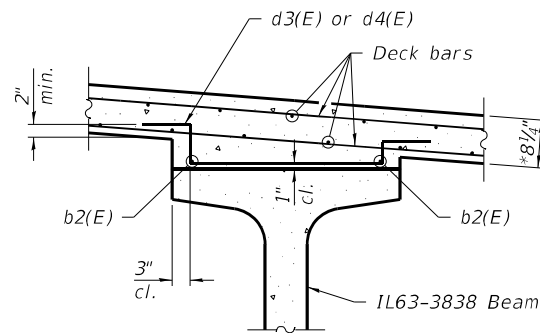
MINIMUM BAR LAP
#4 bar = 2'-5"



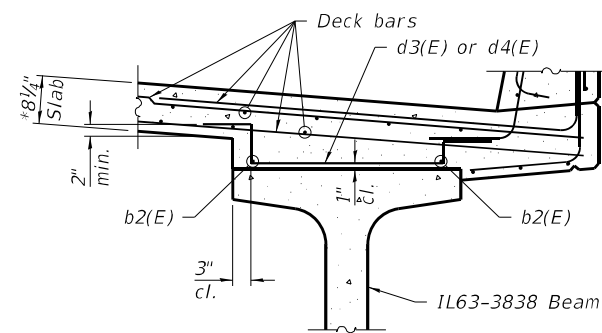
SECTION THRU PARAPET

FILLET REINFORCEMENT TABLE

Beam	d4(E)		d3(E)
	North	South	
2	23	22	107
3	24	22	106
4	24	22	106
5	24	22	106
6	22	21	109



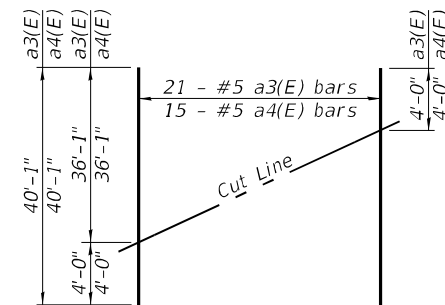
FILLET REINFORCEMENT DETAIL
(Beams 2 Thru 5)



FILLET REINFORCEMENT DETAIL
(Beam 6)

Notes:

The 1/8" Aluminum sheet shall be ASTM B 209 alloy 3003-H14 and coated to minimize reaction with wet concrete. Cost included with Concrete Superstructure.
The polyurethane sealant shall be according to Article 1050.04 of the Std. Spec. and the color shall be gray.
Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.



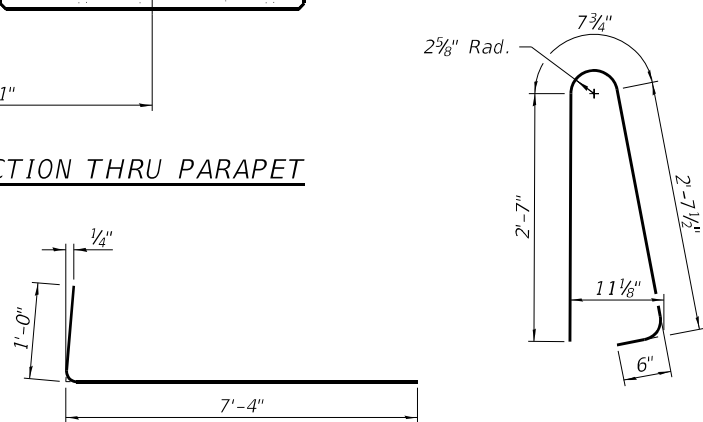
FIELD CUTTING DIAGRAM

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

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	239	#5	37'-7"	—
a1(E)	167	#5	37'-6"	—
a2(E)	514	#6	8'-4"	┌
a3(E)	21	#5	40'-1"	—
a4(E)	15	#5	40'-1"	—
a5(E)	4	#5	39'-11"	—
b(E)	246	#5	28'-4"	—
b1(E)	252	#5	24'-10"	—
b2(E)	60	#4	27'-6"	—
d(E)	460	#5	6'-5"	┌
d1(E)	230	#5	7'-7"	┌
d2(E)	230	#5	7'-4"	┌
d3(E)	534	#4	4'-9"	┌
d4(E)	226	#4	5'-1"	┌
e(E)	108	#4	16'-8"	—
e1(E)	48	#4	27'-6"	—
m10(E)	14	#6	39'-11"	—
m11(E)	50	#6	5'-4"	—
m12(E)	20	#6	2'-5"	—
m13(E)	10	#6	3'-0"	—
m14(E)	4	#6	1'-3"	—
m15(E)	36	#5	4'-0"	—
s10(E)	48	#5	11'-5"	┌
s11(E)	48	#5	14'-11"	┌
s12(E)	48	#5	10'-4"	┌
v100(E)	76	#5	3'-1"	┌
Reinforcement Bars, Epoxy Coated		Pound	53,700	
Concrete Superstructure		Cu. Yd.	279.9	

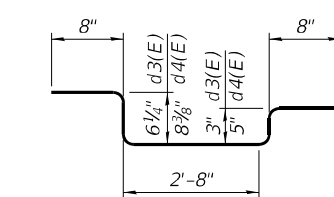
Bars indicated thus 1 x 2-#4 etc. indicates 1 line of bars with 2 lengths per line.



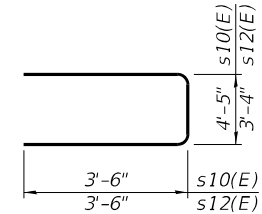
BAR a2(E)

BAR d(E)

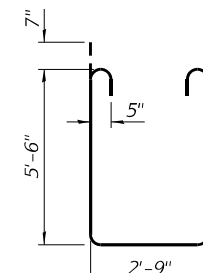
BARS d1(E) & d2(E)



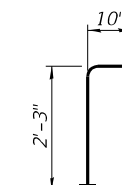
BARS d3(E) & d4(E)



BARS s10(E) & s12(E)



BAR s11(E)

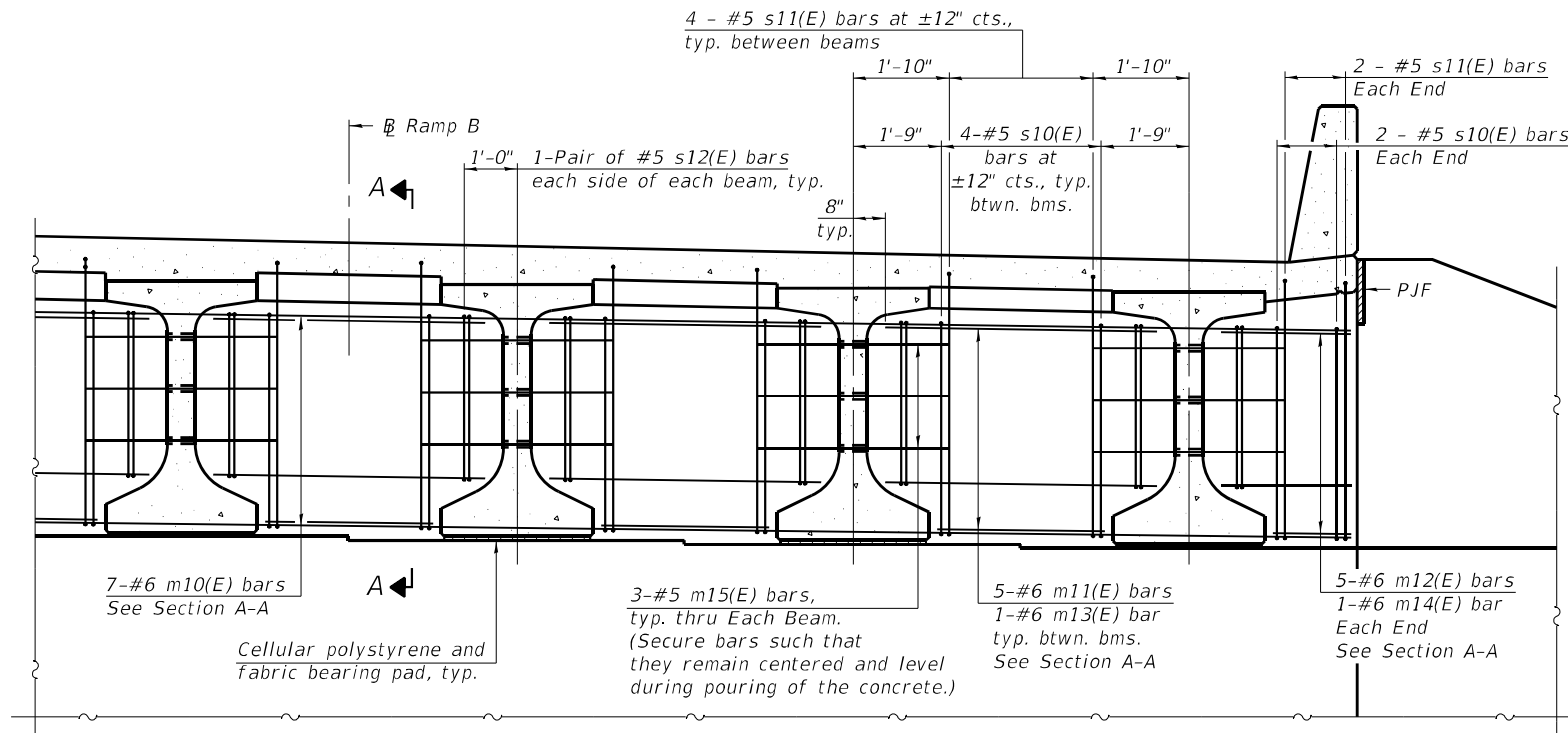


BAR v100(E)
(Headed)

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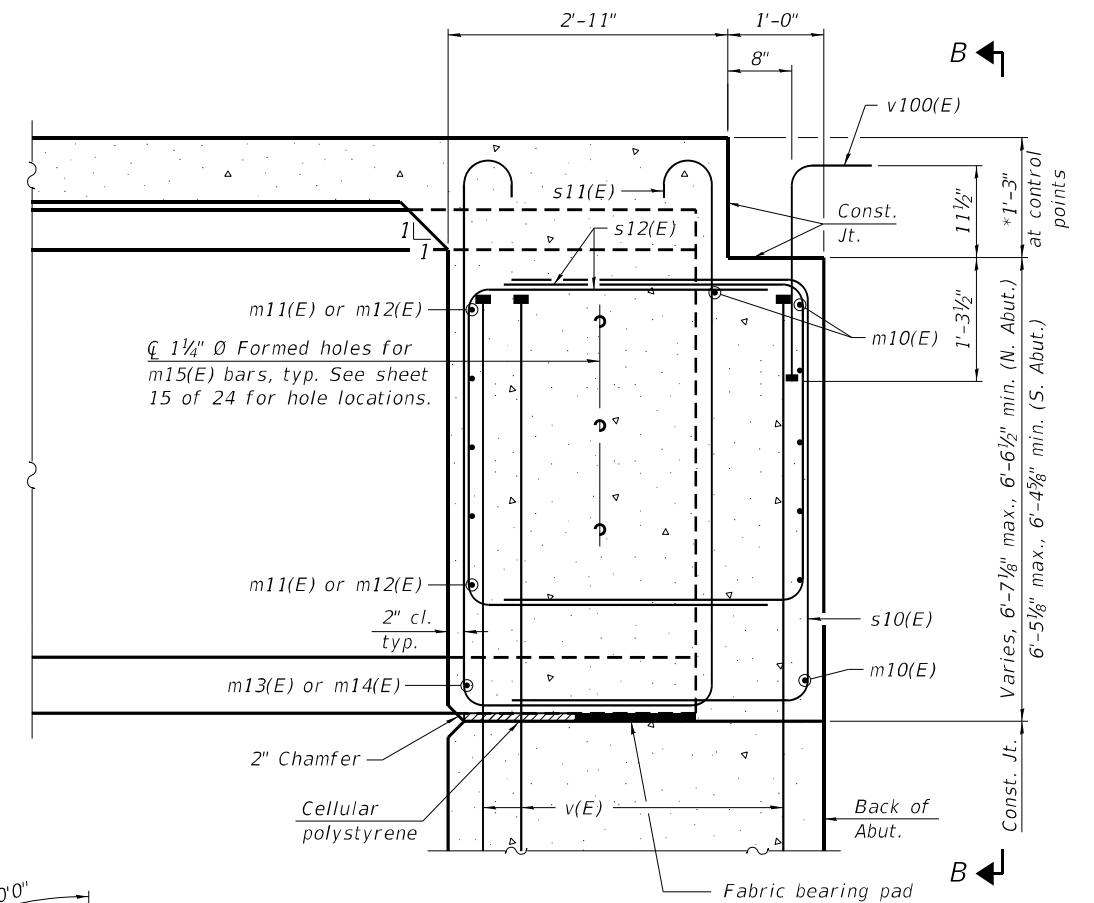
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F.A.I. RTE. 74 & 57	SECTION (10-34-1) HBK	COUNTY CHAMPAIGN	TOTAL SHEETS 1187	SHEET NO. 936
CONTRACT NO. 70B99				ILLINOIS FED. AID PROJECT

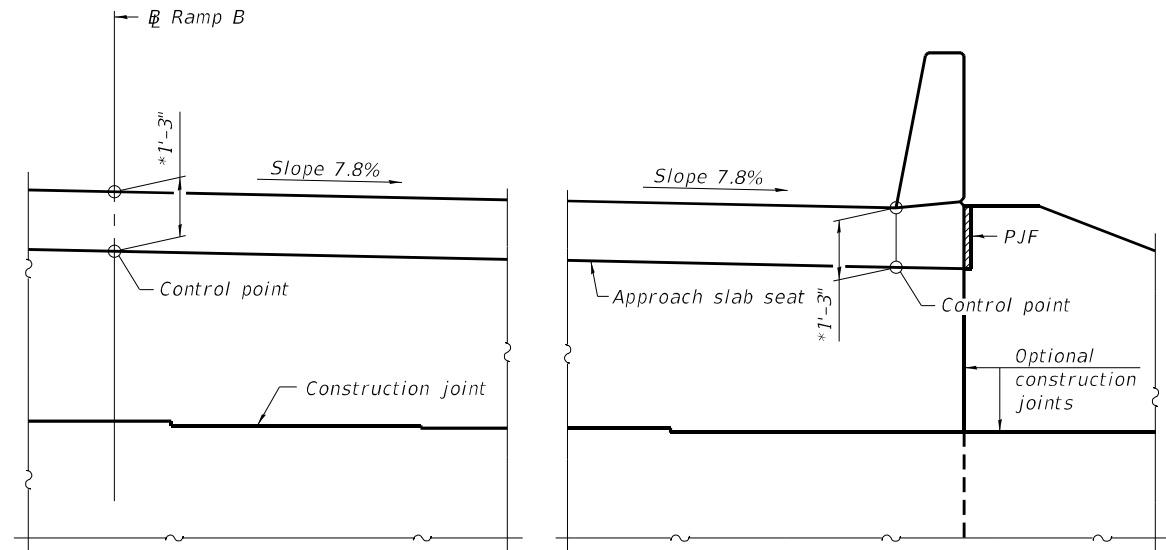


DIAPHRAGM AT ABUTMENT

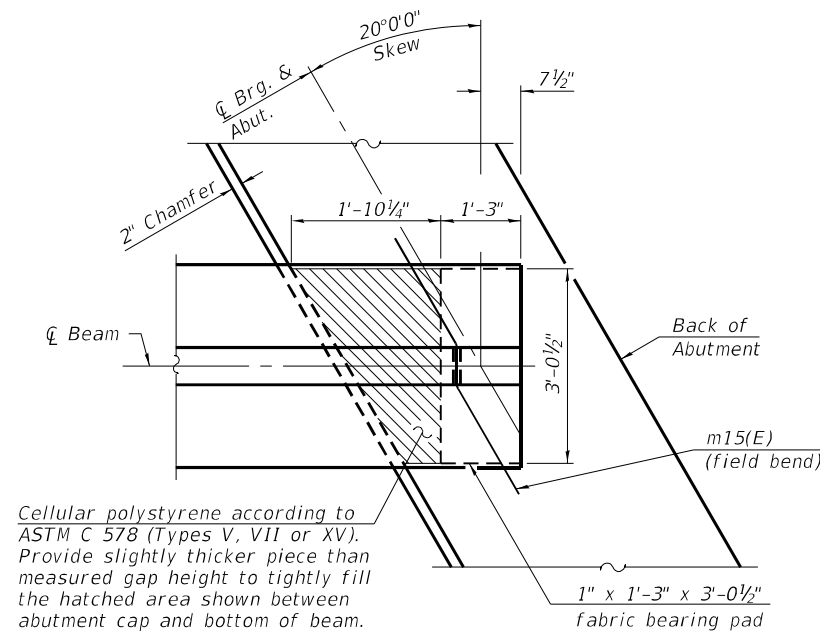
* After 1/4" Diamond Grinding



SECTION A-A
(at Rt. L's)



VIEW B-B



PLAN AT ABUTMENT
(Showing bottom flange of beam)

Notes:
 See sheets 8 and 9 of 24 for superstructure details and Bill of Material.
 See sheets 11 and 12 of 24 for P.J.F. details.
 The s10(E), s11(E) and s12(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.
 Cost of cellular polystyrene is included with Concrete Superstructure.

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STATE OF ILLINOIS
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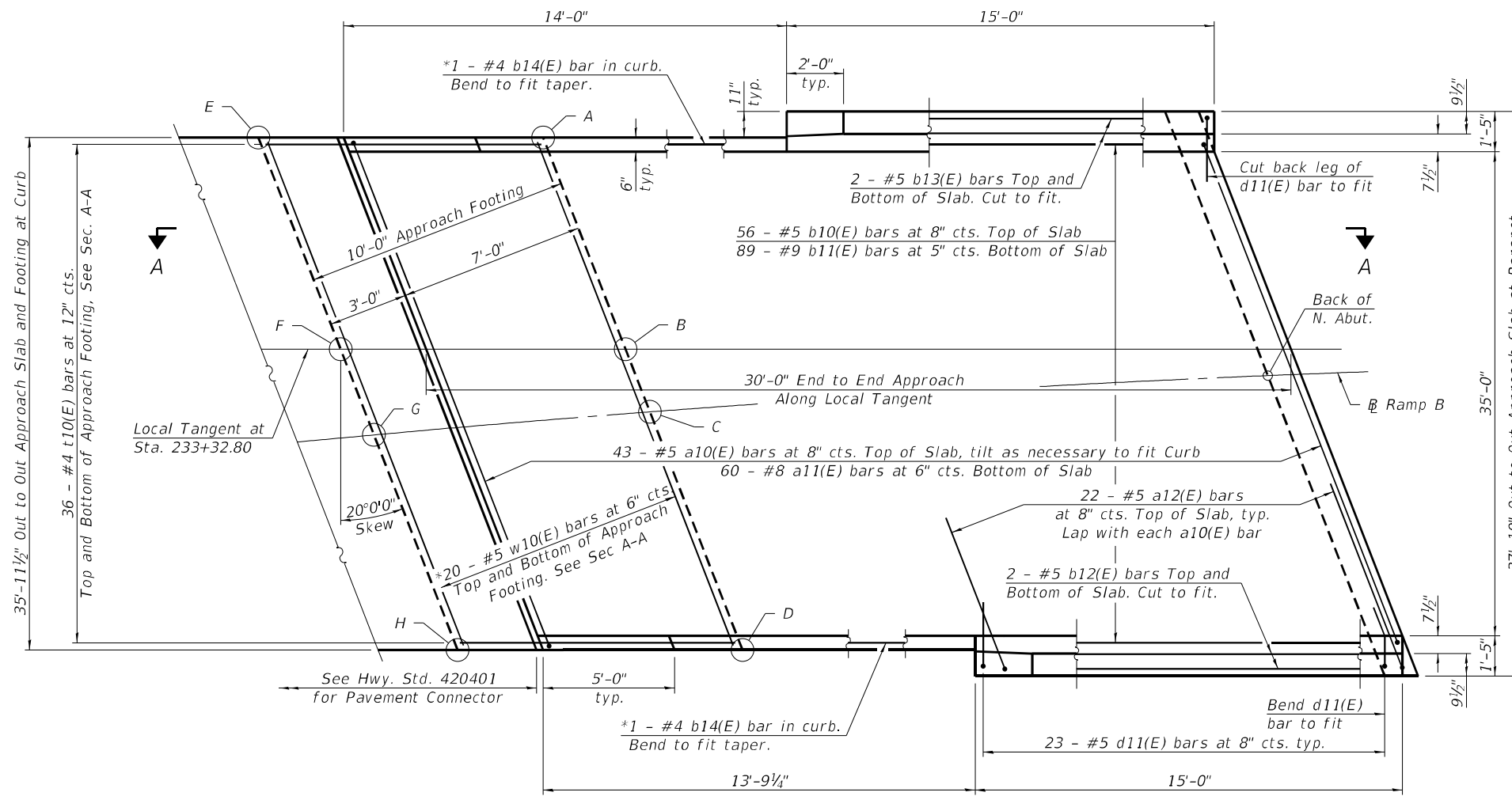
DIAPHRAGM DETAILS
STRUCTURE NO. 010-1006

SHEET 10 OF 24 SHEETS

F.A.I. RTE. 74 & 57	SECTION (10-34-1) HBK	COUNTY CHAMPAIGN	TOTAL SHEETS 1187	SHEET NO. 937
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				

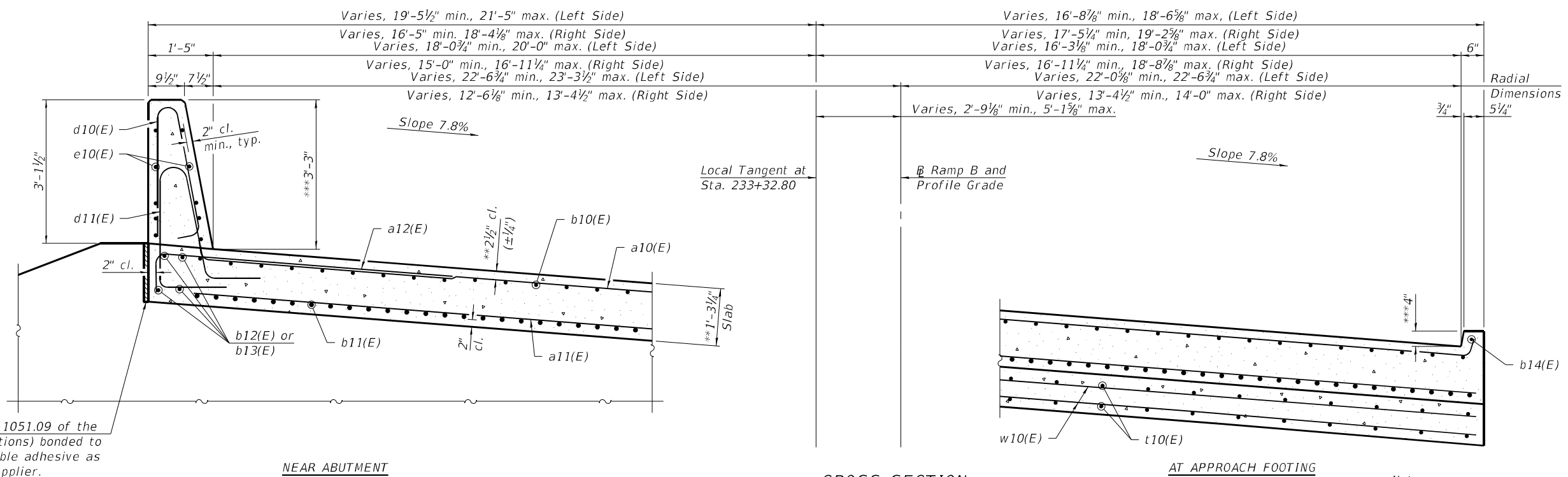
TOP AND BOTTOM ELEVATIONS
FOR NORTH APPROACH FOOTING

Point	Station	Offset	Top	Bottom
A	232+24.83	22.79' Lt.	798.53	797.70
B	232+29.58	4.61' Lt.	796.95	796.11
C	232+30.80	0.00' Lt.	796.55	795.71
D	232+34.64	14.19' Rt.	795.30	794.47
E	232+14.91	21.97' Lt.	798.82	797.99
F	232+19.03	5.60' Lt.	797.40	796.57
G	232+20.46	0.00' Lt.	796.91	796.08
H	232+24.28	14.61' Rt.	795.64	794.80



PLAN

* Cut to fit.
** Prior to 1/4" Diamond Grinding
*** After 1/4" Diamond Grinding



NEAR ABUTMENT

CROSS SECTION
(Looking Upstation)

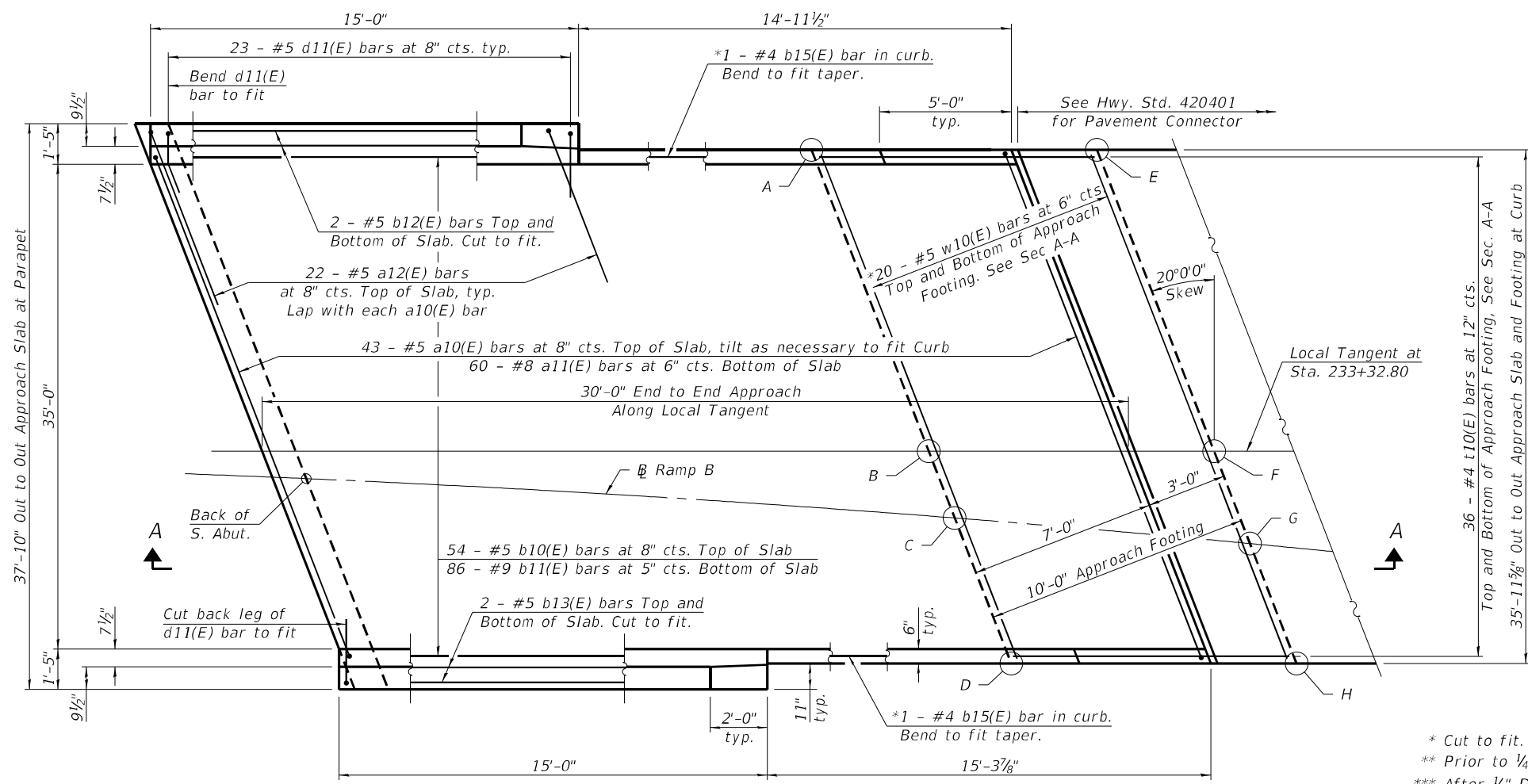
AT APPROACH FOOTING

Note:
For Section A-A, see sheet 13 of 24.
Cost of 2" PJF is included with Concrete Superstructure.

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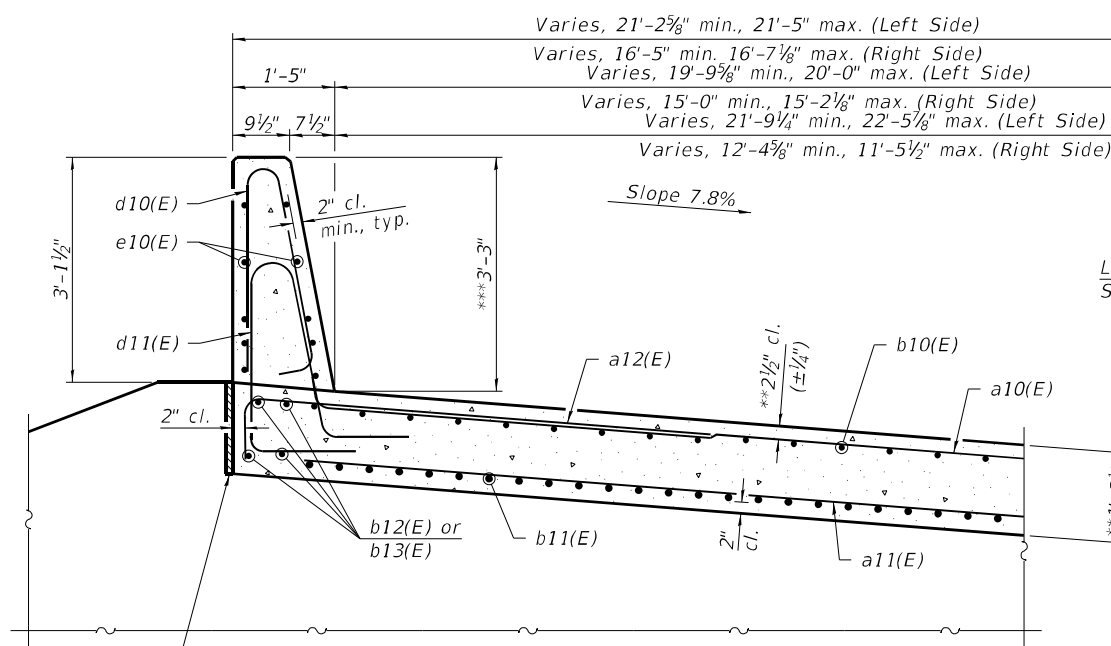
**TOP AND BOTTOM ELEVATIONS
FOR SOUTH APPROACH FOOTING**

Point	Station	Offset	Top	Bottom
A	234+18.27	23.42' Lt.	791.74	790.90
B	234+27.07	3.84' Lt.	789.90	789.06
C	234+28.83	0.00' Lt.	789.53	788.70
D	234+34.14	11.39' Rt.	788.46	787.63
E	234+28.89	23.76' Lt.	791.39	790.55
F	234+37.63	4.75' Lt.	789.59	788.76
G	234+39.87	0.00' Lt.	789.14	788.31
H	234+44.89	10.53' Rt.	788.14	787.31

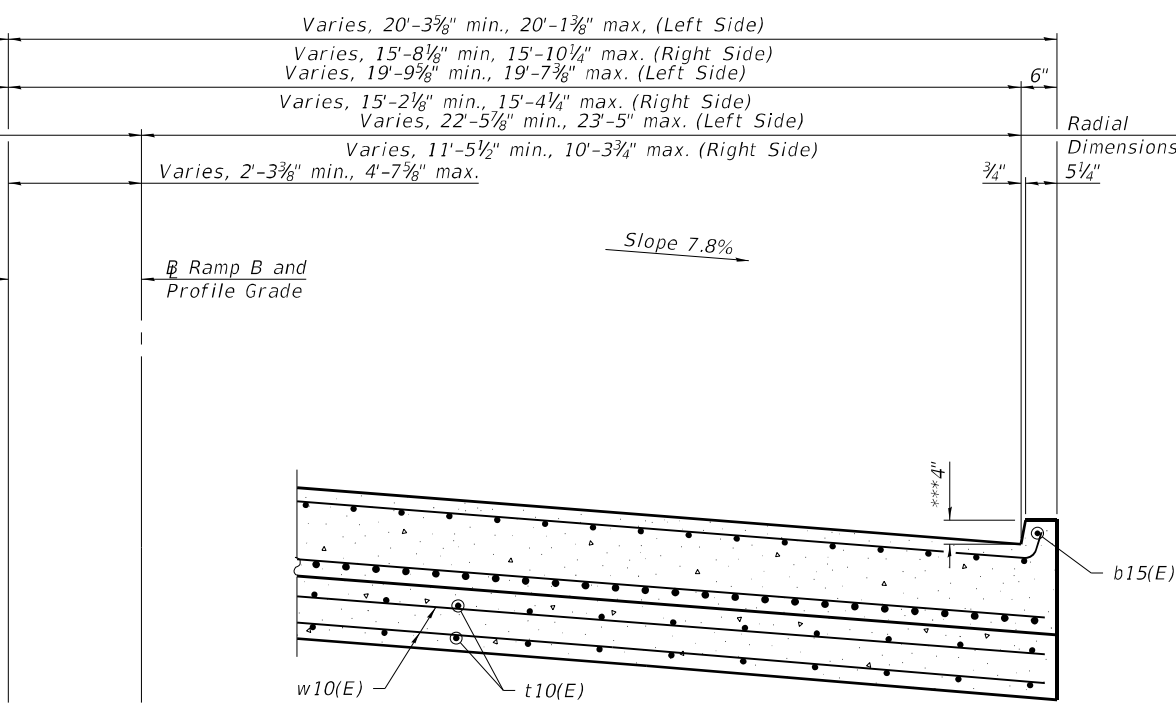


PLAN

* Cut to fit.
** Prior to 1/4" Diamond Grinding
*** After 1/4" Diamond Grinding



NEAR ABUTMENT



**CROSS SECTION
(Looking Upstation)**

AT APPROACH FOOTING

Note:
For Section A-A, see sheet 13 of 24.
Cost of 2" P.J.F. is included with Concrete Superstructure.

MODEL: Default
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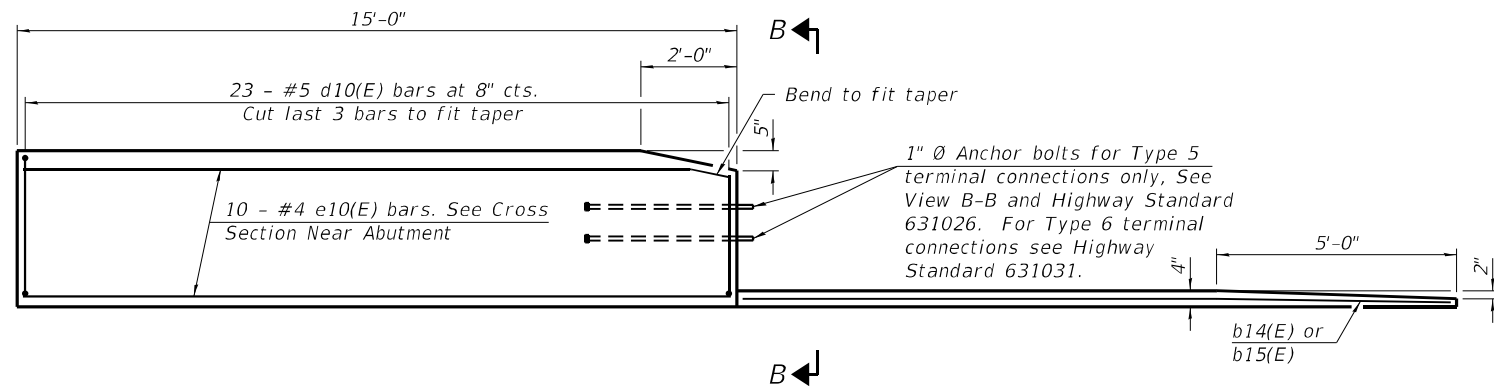
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**SOUTH BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 010-1006**

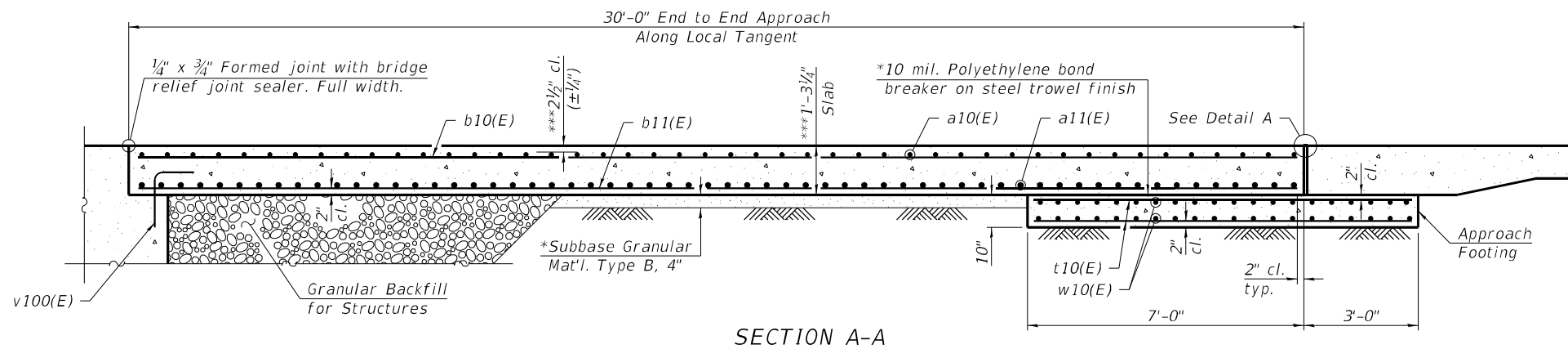
SHEET 12 OF 24 SHEETS

F.A.I. RTE. 74 & 57	SECTION (10-34-1) HBK	COUNTY CHAMPAIGN	TOTAL SHEETS 1187	SHEET NO. 939
CONTRACT NO. 70B99			ILLINOIS FED. AID PROJECT	

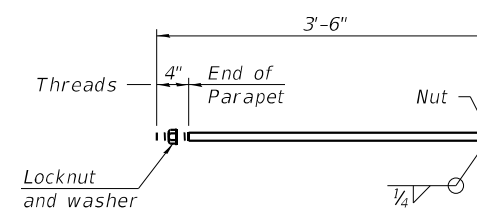
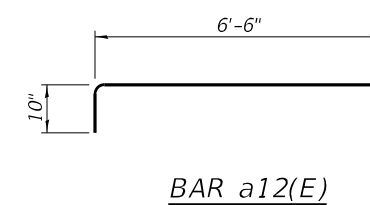
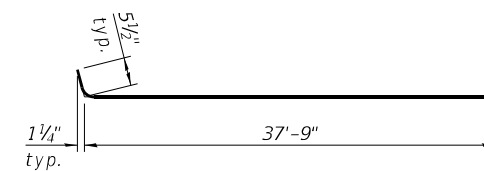
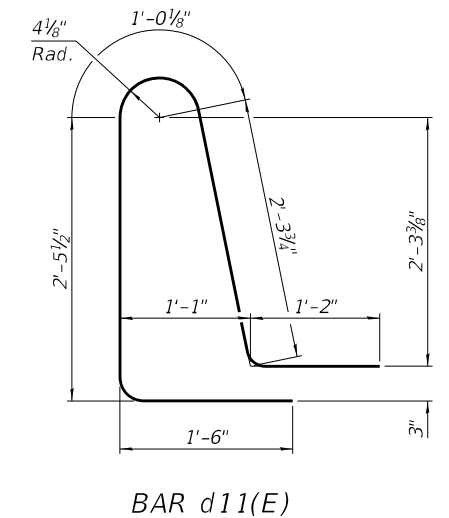
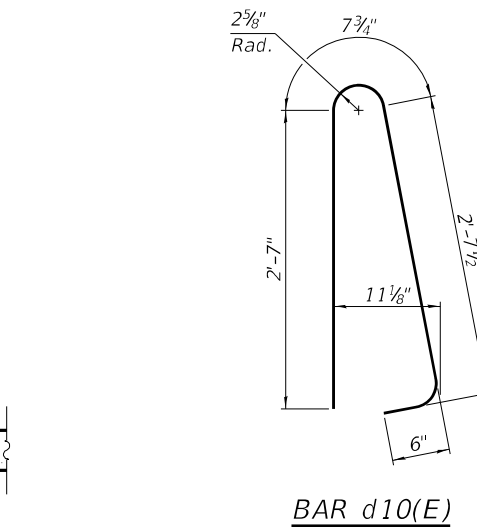


INSIDE ELEVATION OF PARAPET AND CURB

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 (Q_{max}) = 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 24.



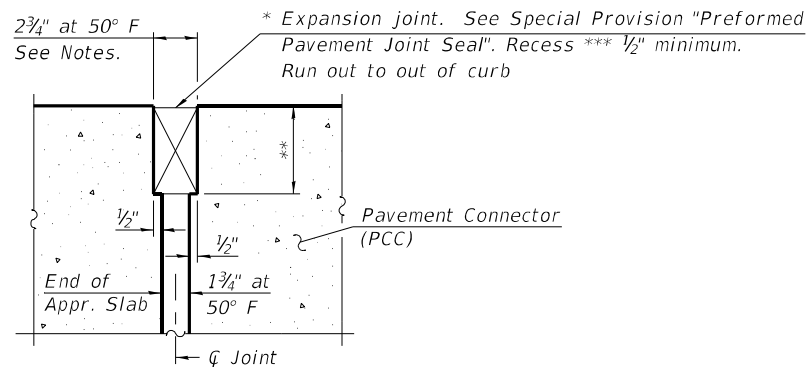
SECTION A-A



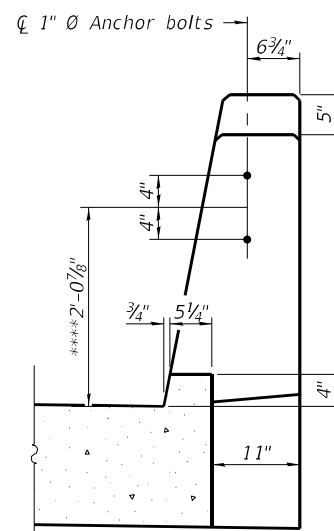
1" Ø ANCHOR BOLT
 (Anchor bolt assemblies shall be galvanized according to Article 1006.09 of the Standard Specifications)

**TWO APPROACHES
 BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a10(E)	86	#5	38'-8"	┌───┐
a11(E)	120	#8	38'-0"	┌───┐
a12(E)	88	#5	7'-4"	┌───┐
b10(E)	110	#5	29'-8"	┌───┐
b11(E)	175	#9	29'-8"	┌───┐
b12(E)	8	#5	15'-4"	┌───┐
b13(E)	8	#5	14'-9"	┌───┐
b14(E)	2	#4	13'-8"	┌───┐
b15(E)	2	#4	15'-0"	┌───┐
d10(E)	92	#5	6'-5"	┌───┐
d11(E)	92	#5	8'-6"	┌───┐
e10(E)	40	#4	14'-8"	┌───┐
t10(E)	144	#4	10'-4"	┌───┐
w10(E)	80	#5	37'-11"	┌───┐
Concrete Superstructure			Cu. Yd.	7.7
Concrete Superstructure (Approach Slab)			Cu. Yd.	102.8
Concrete Structures			Cu. Yd.	23.6
Reinforcement Bars, Epoxy Coated			Pound	43,640



*** Prior to 1/4" Diamond Grinding
 **** After 1/4" Diamond Grinding



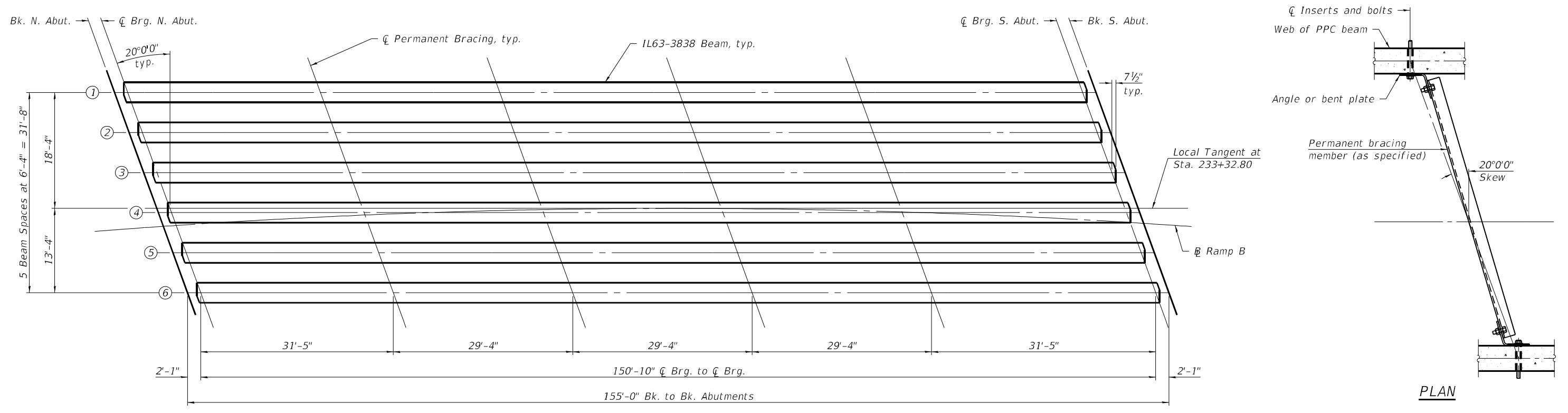
* Cost included with Concrete Superstructure (Approach Slab).
 ** Per manufacturer recommendations

Note:
 For location of Section A-A, see sheets 11 and 12 of 24.

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F.A.I. RTE. 74 & 57	SECTION (10-34-1) HBK	COUNTY CHAMPAIGN	TOTAL SHEETS 1187	SHEET NO. 940
				CONTRACT NO. 70B99
ILLINOIS FED. AID PROJECT				

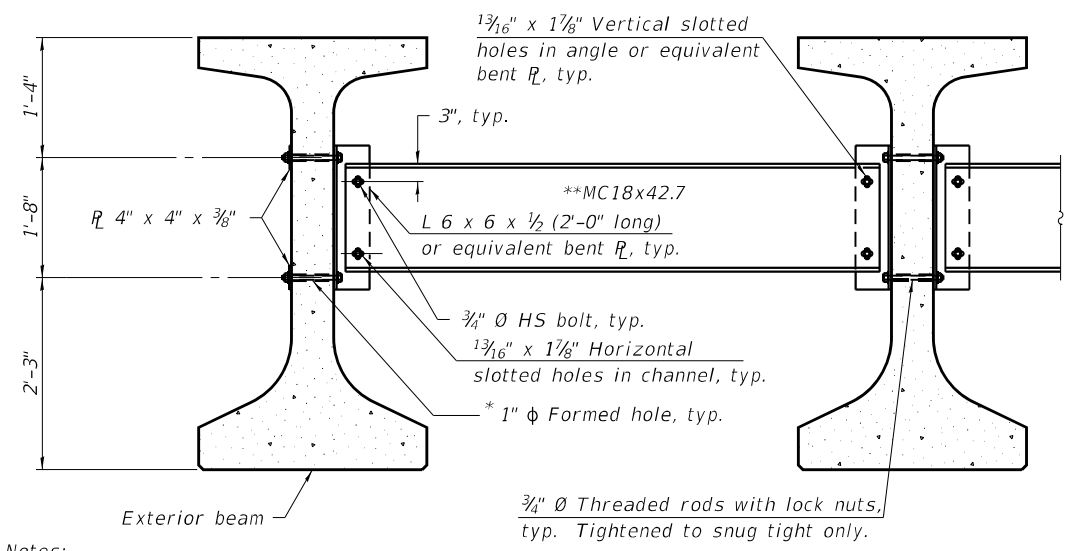


FRAMING PLAN

BEAM MOMENT TABLE		
	0.5 Sp. 1	
	INTERIOR	EXTERIOR
I	(in ⁴) 527,741	527,741
I'	(in ⁴) 971,410	967,273
Sb	(in ³) 18,687.7	18,687.7
Sb'	(in ³) 24,472.89	24,434.27
St	(in ³) 15,182.4	15,182.4
St'	(in ³) 41,679.5	41,313.1
DC1	(k/ft.) 1.82	1.93
MDC1	(k) 5,180.3	5,482.9
DC2	(k/ft.) 0.175	0.175
MDC2	(k) 498.20	498.20
DW	(k/ft.) 0.292	0.292
MDW	(k) 830.4	830.4
LLDF		0.541
M _L + IM	(k) 2,740.80	2,632.60

BEAM REACTION TABLE		
	Abutments	
	INTERIOR	EXTERIOR
LLDF	0.704	0.542
OCF	1.051	1.051
RDC1	(k) 137.3	145.3
RDC2	(k) 13.2	13.2
RDW	(k) 22.0	22.0
R _L	(k) 85.7	66.0
R _{IM}	(k) 16.5	12.7
RTotal	(k) 274.7	259.2

- I: Non-composite moment of inertia of beam section (in.⁴).
- I': Composite moment of inertia of beam section (in.⁴).
- Sb: Non-composite section modulus for the bottom fiber of the prestressed beam (in.³).
- Sb': Composite section modulus for the bottom fiber of the prestressed beam (in.³).
- St: Non-composite section modulus for the top fiber of the prestressed beam (in.³).
- St': Composite section modulus for the top fiber of the prestressed beam (in.³).
- DC1: Un-factored non-composite dead load (kips/ft.).
- MDC1: Un-factored moment due to non-composite dead load (kip-ft.).
- DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).
- MDC2: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).
- DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).
- MDW: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).
- M_L + IM: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
- OCF: Obtuse Corner Factor
- LLDF: Live Load Distribution Factor



Notes:
 All material for bracing shall be hot dip galvanized according to AASHTO M111 unless otherwise noted. Two hardened washers are required for each set of oversized holes.
 All holes shall be 15/16" Ø unless otherwise noted. 5/16" x 3" x 3" plate washers are required over all slotted holes.
 All bolts, threaded rods, and hardware shall be galvanized according to AASHTO M232.
 Threaded rods shall be ASTM F 1554 Grade 55.
 Bracing shall be installed as beams are erected and tightened as soon as possible during erection.
 Permanent bracing shall not be paid for separately, but shall be included in the cost of Furnishing and Erecting Precast Prestressed Concrete Beams.

* Fabricator shall locate to miss strands within permissible tolerances.
 ** Alternate MC18x45.8 channels are permitted to facilitate material acquisition.

PERMANENT BRACING DETAILS FOR IL63 BEAMS

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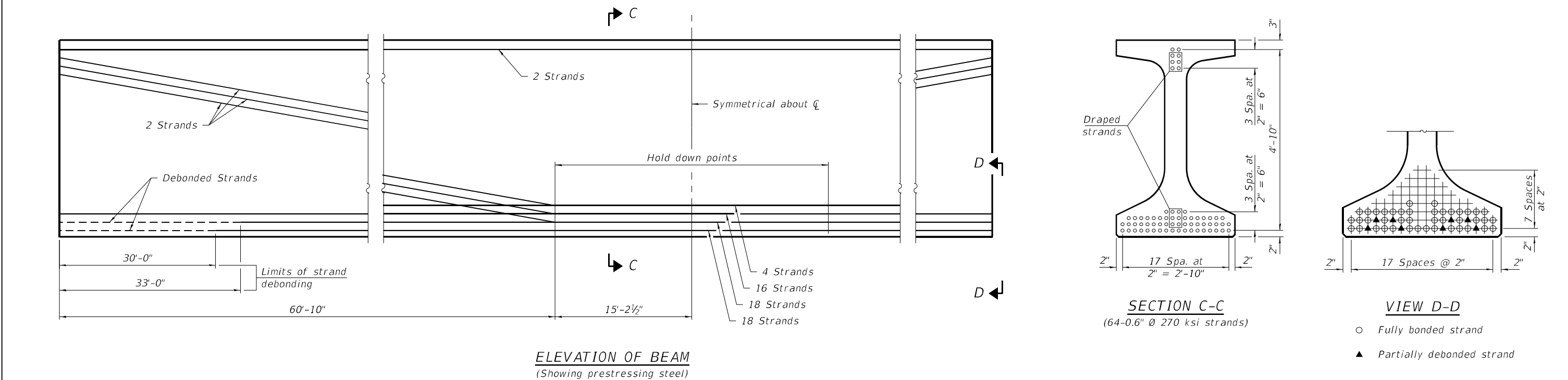
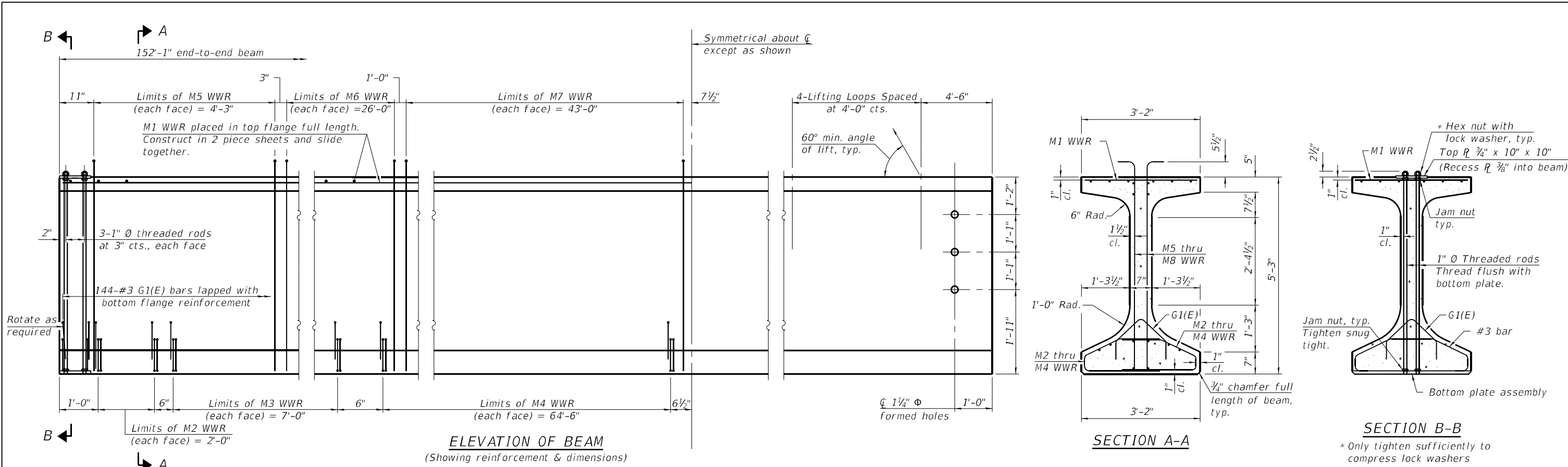
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	CHECKED - E.M. Lagemann	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**FRAMING PLAN
 STRUCTURE NO. 010-1006**

SHEET 14 OF 24 SHEETS

F.A.I. RTE. 74 & 57	SECTION (10-34-1) HBK	COUNTY CHAMPAIGN	TOTAL SHEETS 1187	SHEET NO. 941
ILLINOIS FED. AID PROJECT			CONTRACT NO. 70B99	



Note:
See sheet 16 of 24 for additional details and Bill of Material.

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IL63-3838

2-25-2019

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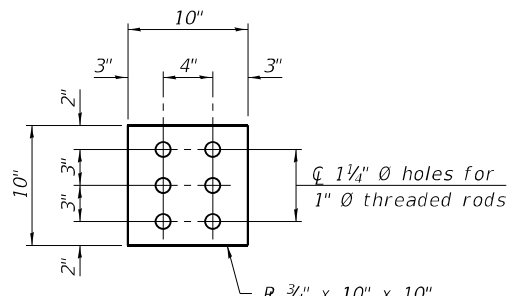
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PLOT SCALE =	CHECKED - E.M. Lagemann	REVISED -
PLOT DATE =	DRAWN - T.S. Friederich	REVISED -
	CHECKED - E.M. Lagemann	REVISED -

STATE OF ILLINOIS
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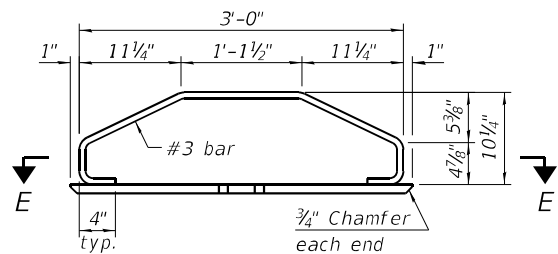
IL63 BEAM
STRUCTURE NO. 010-1006

SHEET 15 OF 24 SHEETS

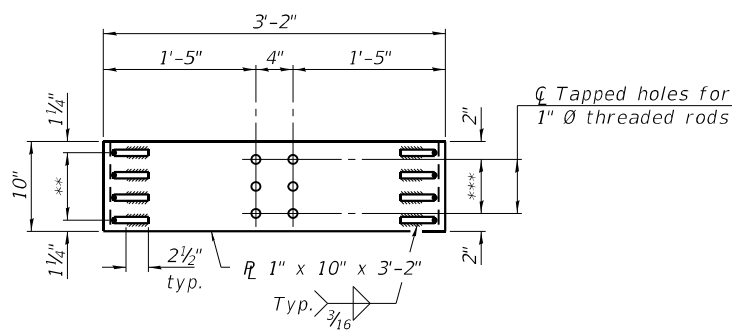
F.A.I. RTE. 74 & 57	SECTION (10-34-1) HBK	COUNTY CHAMPAIGN	TOTAL SHEETS 1187	SHEET NO. 942
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				



PLAN - TOP PLATE



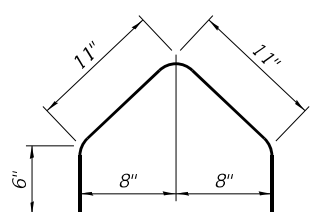
ELEVATION - BOTTOM PLATE ASSEMBLY



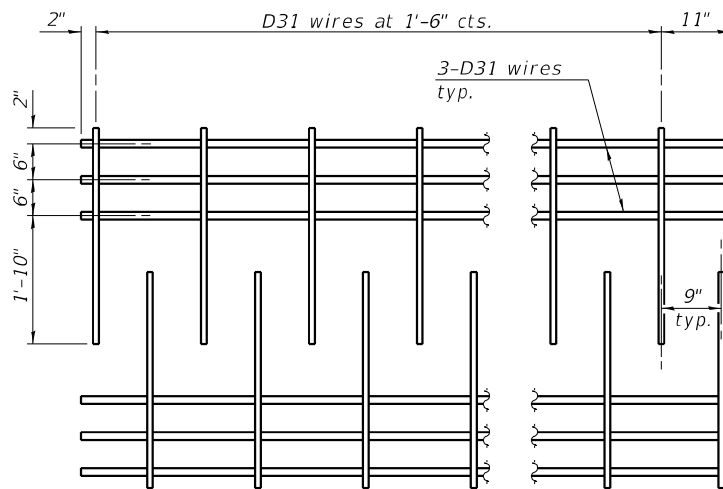
SECTION E-E

** 3 Spaces at 2 1/2" = 7 1/2"

*** 2 Spaces at 3" = 6"

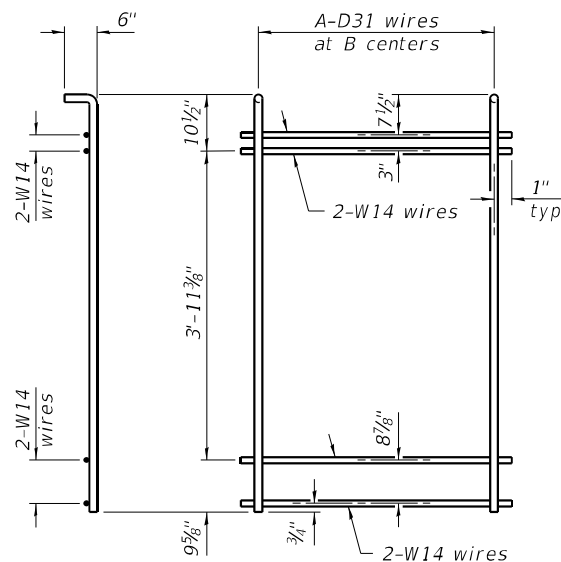


BAR G1(E)



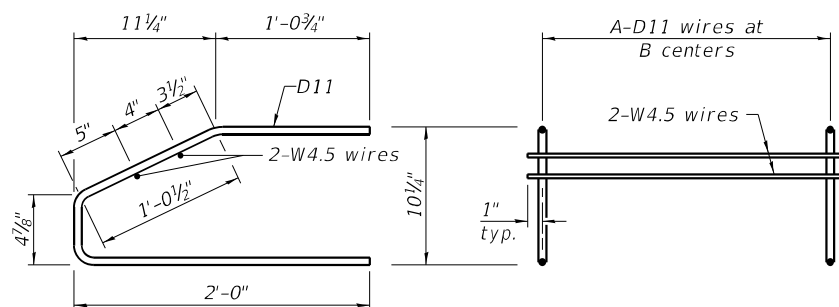
M1 WWR DETAIL

When multiple sheets of M1 WWR are required along the beam length, #5(E) bars (5'-0" long) shall be used to splice the longitudinal D31 wires together (Min. Lap 2'-2").



M5 THRU M8 WWR DETAIL

(See Table of Dimensions)



M2 THRU M4 WWR DETAIL

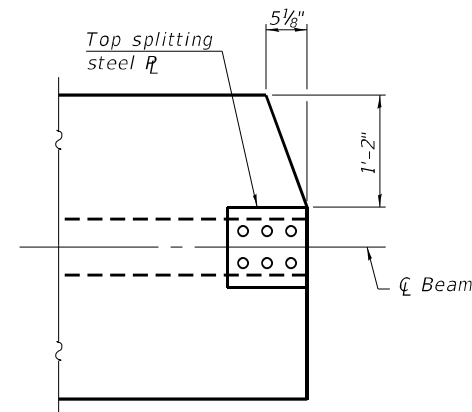
(See Table of Dimensions)

TABLE OF DIMENSIONS

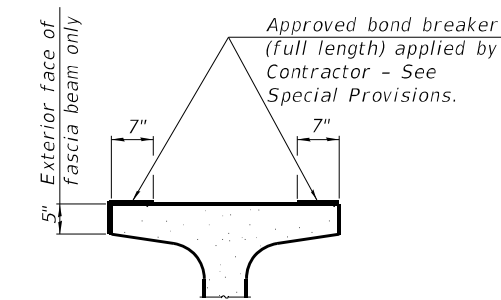
(WWR tables are based on Grade 60.)

SPAN 1

WWR	A	B
M2	9	3"
M3	15	6"
M4	44	1'-6"
M5	18	3"
M6	53	6"
M7	44	1'-0"
M8	-	2'-0"

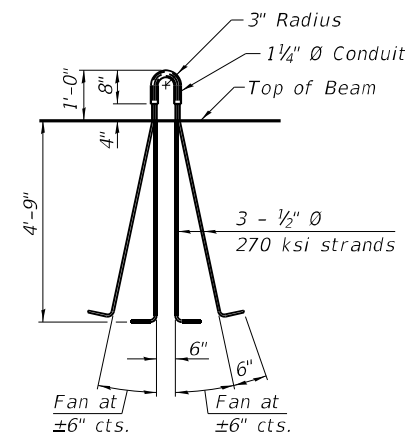


TOP FLANGE CLIP DETAIL



SECTION THRU TOP FLANGE

(Showing limits of bond breaker)



LIFTING LOOP DETAIL

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Precast Prestressed Concrete Beams, IL63	Ft.	913

NOTES

Inserts for 3/4" Ø threaded dowel rods, when specified, are to be two strut, ferrule type for interior beams and single ferrule, flared loop type for exterior beams. Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter for beam strands shall be 0.6" and the nominal cross-sectional area shall be 0.217 sq. in. The nominal diameter for lifting loops shall be 1/2" and the nominal cross sectional area shall be 0.153 sq. in.

The beams shall have a final concrete compressive strength, f'c, of 8500 psi and a release concrete compressive strength, f'ci, of 6500 psi.

A minimum 2 1/2" Ø lifting pin shall be used to engage the lifting loops during handling. The top and bottom plates shall be AASHTO M270 Grade 50.

The top plates and bottom plate assemblies shall be galvanized according to AASHTO M111. The threaded rods, nuts and washers shall be galvanized according to AASHTO M232. Threaded rods shall be ASTM F 1554 Grade 55.

Welded Wire Reinforcement (WWR) shall conform to ASTM A884 with a Class A, Type 1 epoxy coating or ASTM A1060, Table 3 galvanized coating.

MODEL: Default
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USER NAME =	DESIGNED - T.S. Friederich	REVISED -
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PLOT DATE =	DRAWN - T.S. Friederich	REVISED -
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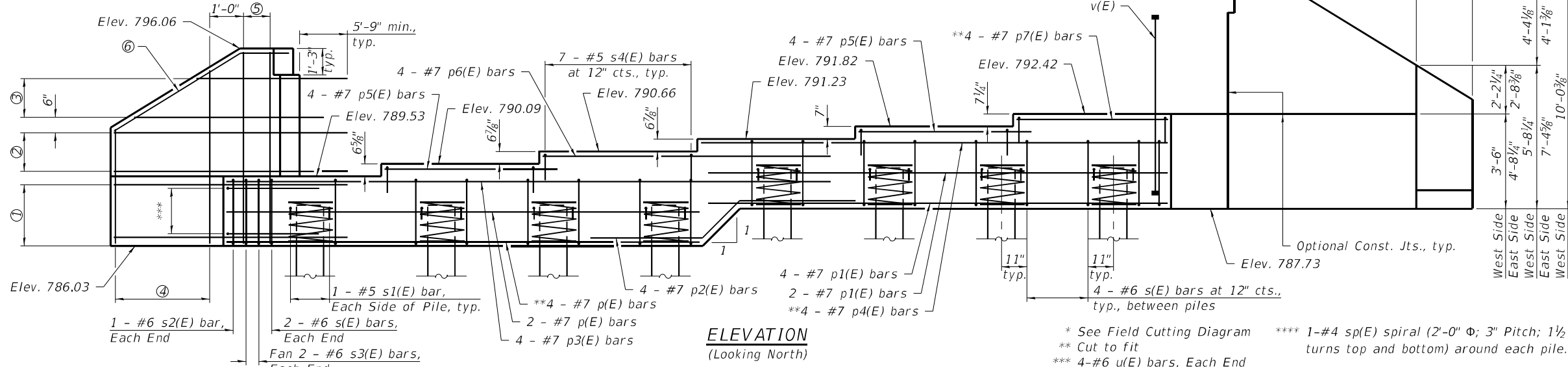
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

IL63 BEAM DETAILS
 STRUCTURE NO. 010-1006

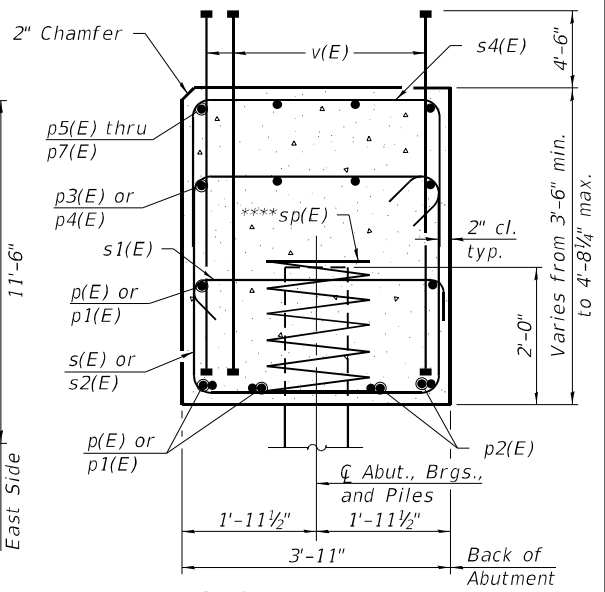
SHEET 16 OF 24 SHEETS

F.A.I. RTE. 74 & 57	SECTION (10-34-1) HBK	COUNTY CHAMPAIGN	TOTAL SHEETS 1187	SHEET NO. 943
ILLINOIS FED. AID PROJECT			CONTRACT NO. 70B99	

- ① 9-#8 h(E) bars at 6" cts., Each Face (East Wing)
7-#8 h(E) bars at 6" cts., Each Face (West Wing)
- ② 5-#8 h(E) bars at 6" cts., Each Face (East Wing)
4-#8 h(E) bars at 6" cts., Each Face (West Wing)
- ③ *6-#8 h1(E) bars at 6" cts., Each Face (East Wing)
*7-#8 h2(E) bars at 6" cts., Each Face (West Wing)
- ④ *9-#5 v1(E) bars at 12" cts., Each Face (East Wing)
*9-#5 v2(E) bars at 12" cts., Each Face (West Wing)
- ⑤ 2-#5 v3(E) bars at 8" cts., Each Face (East Wing)
2-#5 v4(E) bars at 8" cts., Each Face (West Wing)
- ⑥ 1-#5 h3(E) bar, Each Face (Each Wing, Cut to fit)

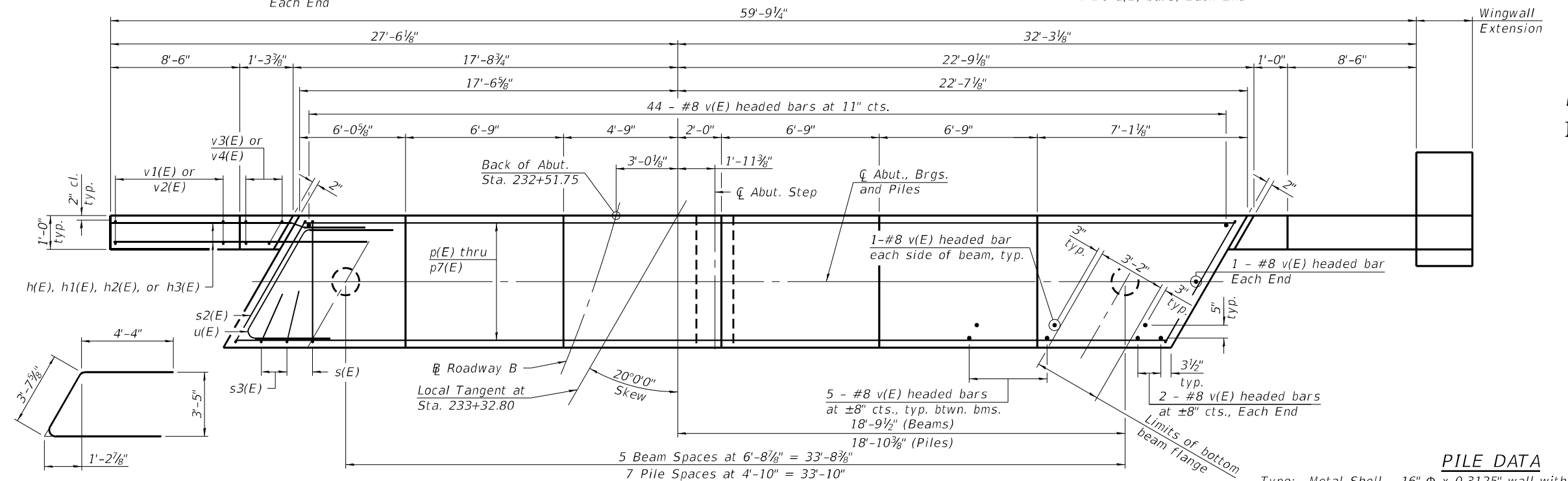


ELEVATION
(Looking North)

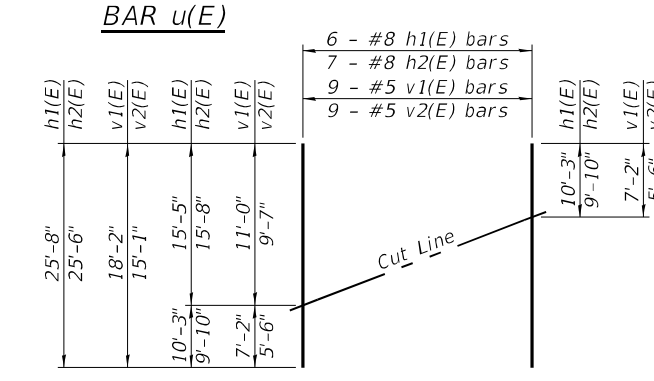


SEC. THRU ABUT.

Dimensions at right angles to abutment.

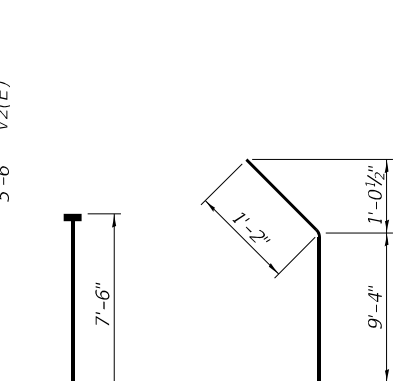


PLAN



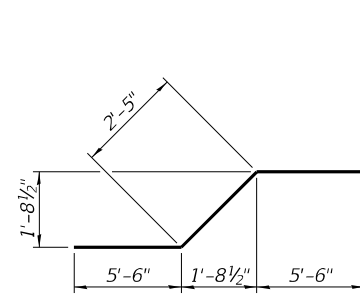
FIELD CUTTING DIAGRAM

Order bars shown full length. Cut as shown and use remainder of bars in opposite face.

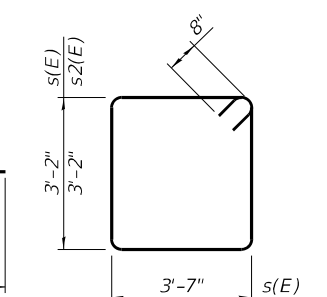


BAR v(E)
(Headed)

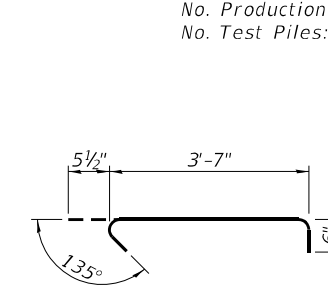
BAR h3(E)



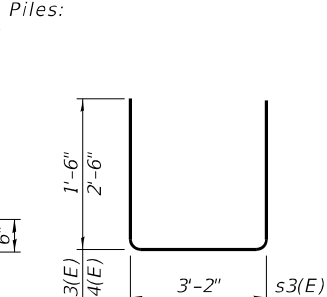
BAR p2(E)



BARS s(E) & s2(E)



BAR s1(E)



BARS s3(E) & s4(E)

PILE DATA

Type: Metal Shell - 16" Φ x 0.3125" wall with pile shoes
 Nominal Required Bearing: 588 kips
 Factored Resistance Available: 323 kips
 Est. Length: 78 feet
 No. Production Piles: 7
 No. Test Piles: 1

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	50	#8	15'-10"	—
h1(E)	6	#8	25'-8"	—
h2(E)	7	#8	25'-6"	—
h3(E)	4	#5	10'-6"	—
p(E)	6	#7	19'-8"	—
p1(E)	6	#7	21'-1"	—
p2(E)	4	#7	13'-5"	—
p3(E)	4	#7	25'-9"	—
p4(E)	4	#7	20'-5"	—
p5(E)	8	#7	7'-2"	—
p6(E)	4	#7	11'-8"	—
p7(E)	4	#7	6'-11"	—
s(E)	32	#6	14'-10"	—
s1(E)	16	#5	4'-7"	—
s2(E)	2	#6	15'-4"	—
s3(E)	4	#6	6'-2"	—
s4(E)	28	#5	8'-7"	—
sp(E)	8	#4	2'-0"	***
u(E)	8	#6	12'-4"	—
v(E)	87	#8	7'-6"	—
v1(E)	9	#5	18'-2"	—
v2(E)	9	#5	15'-1"	—
v3(E)	4	#5	11'-2"	—
v4(E)	4	#5	9'-9"	—
Structure Excavation			Cu. Yd.	173
Concrete Structures			Cu. Yd.	29.4
Reinforcement Bars, Epoxy Coated			Pound	8,080
Furnishing Metal Shell Piles 16" X 0.312"			Foot	546
Driving Piles			Foot	546
Test Pile, Metal Shells			Each	1
Pile Shoes			Each	8

Notes:
 **** Length is height of spiral.
 Pour steps monolithically with cap.
 Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.
 For details for the Wingwall Extension, see sheet 19 of 24.
 For details of piles see sheet 20 of 24.

MODEL: Default
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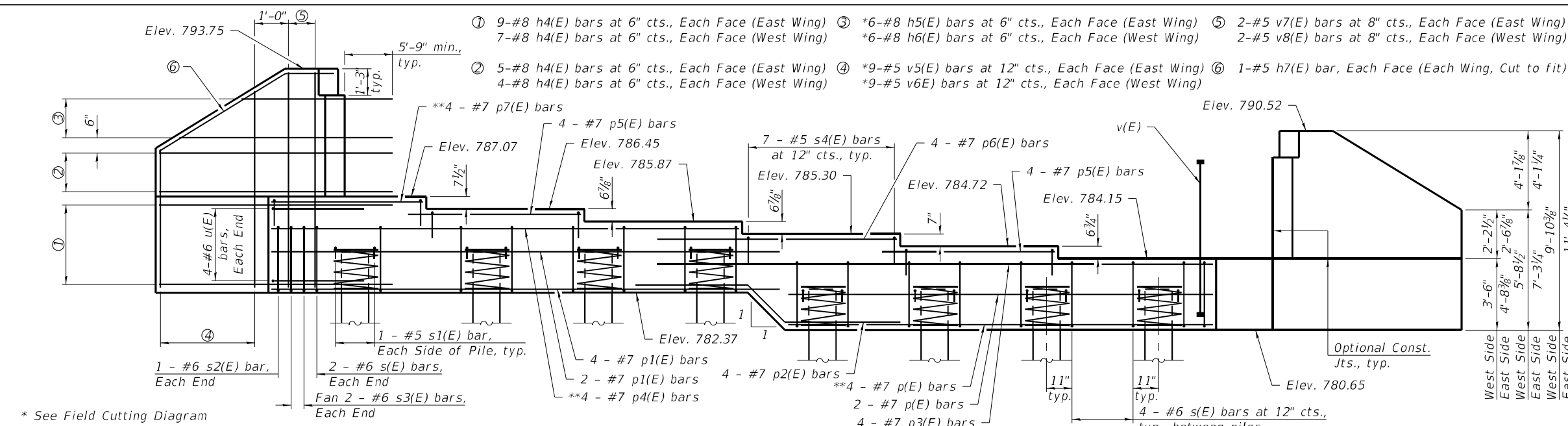
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PLOT SCALE =	CHECKED - E.M. Lagemann	REVISED -
PLOT DATE =	DRAWN - T.S. Friederich	REVISED -
	CHECKED - E.M. Lagemann	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT DETAILS
STRUCTURE NO. 010-1006

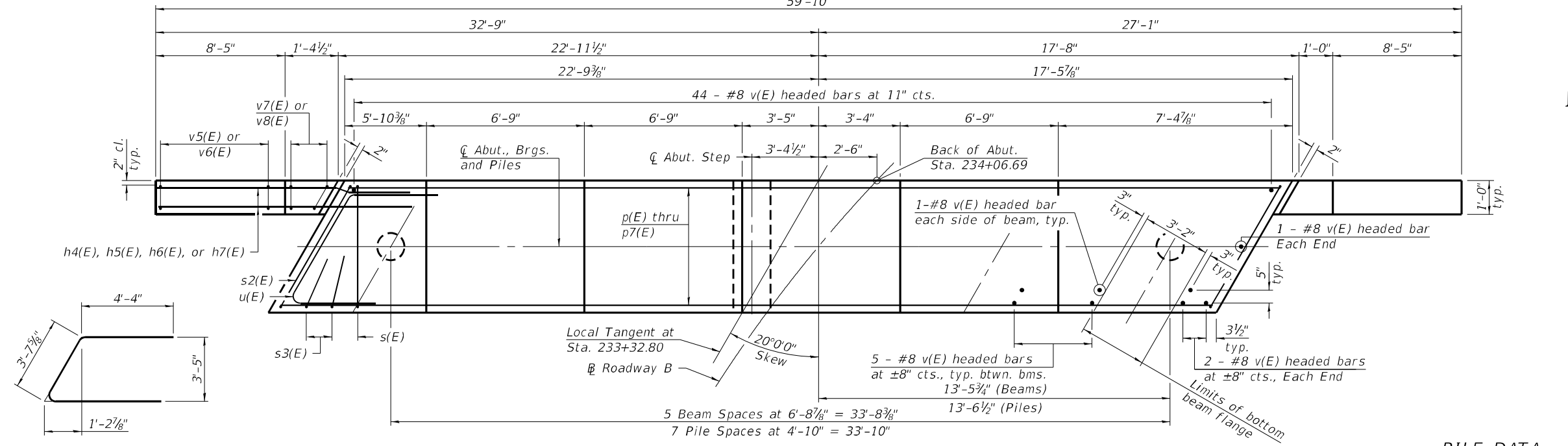
F.A.I. RTE. 74 & 57	SECTION (10-34-1) HBK	COUNTY CHAMPAIGN	TOTAL SHEETS 1187	SHEET NO. 944
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				

MODEL: Default
 FILE NAME: G:\FE\Jobs\2015\15-9.13.PTB 175-24.CMT 1-74 1-57 PHASE II\CADD\CADD Sheets\0101006-70897-018 - South Abutment Details.dgn
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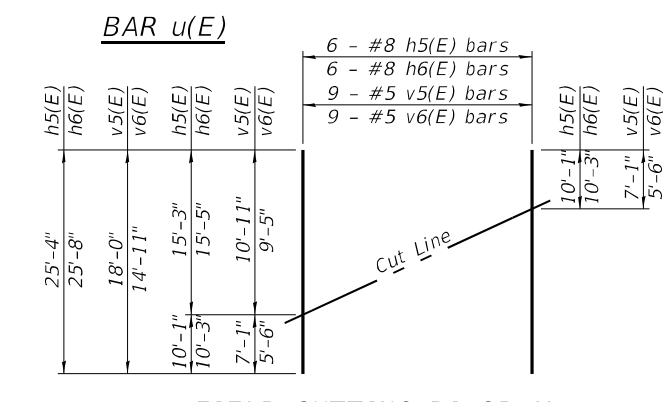


* See Field Cutting Diagram
 ** Cut to fit
 *** 1-#4 sp(E) spiral (2'-0" Φ ; 3" Pitch; 1/2 extra turns top and bottom) around each pile.

ELEVATION
 (Looking South)
 59'-10"

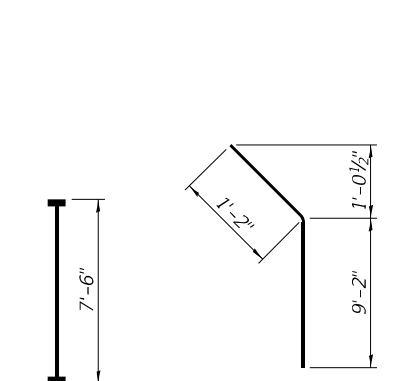


PLAN



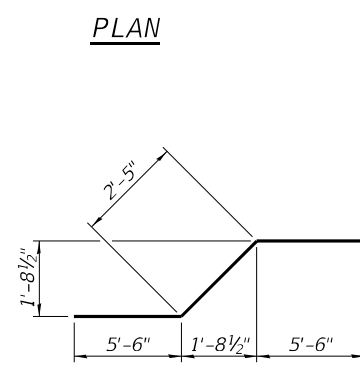
FIELD CUTTING DIAGRAM

Order bars shown full length. Cut as shown and use remainder of bars in opposite face.

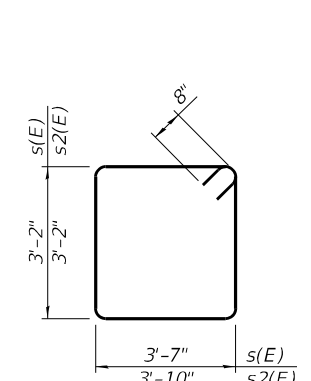


BAR v(E)
 (Headed)

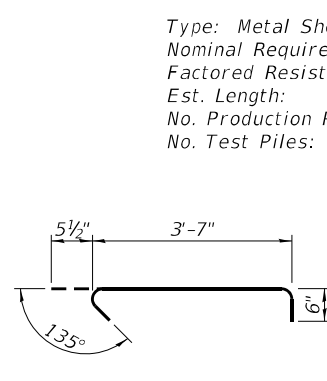
BAR h7(E)



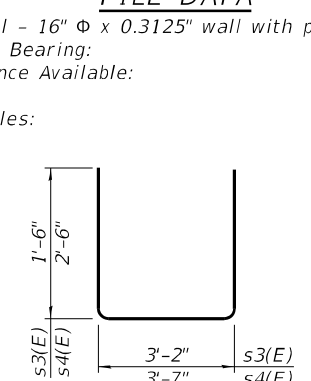
BAR p2(E)



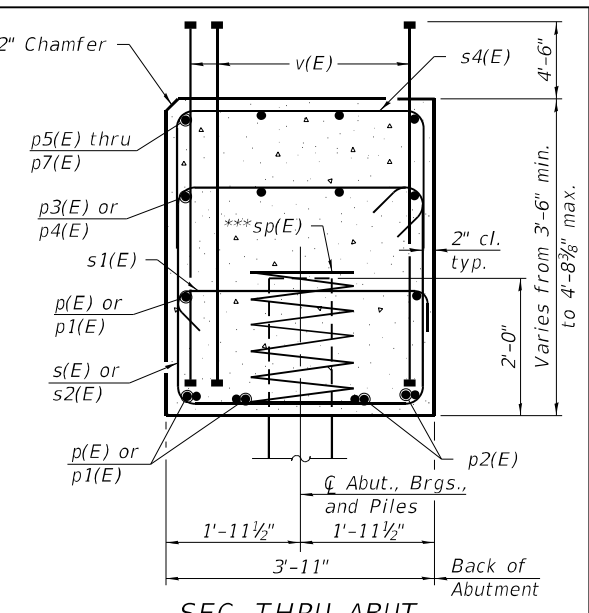
BARS s(E) & s2(E)



BAR s1(E)



BARS s3(E) & s4(E)



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

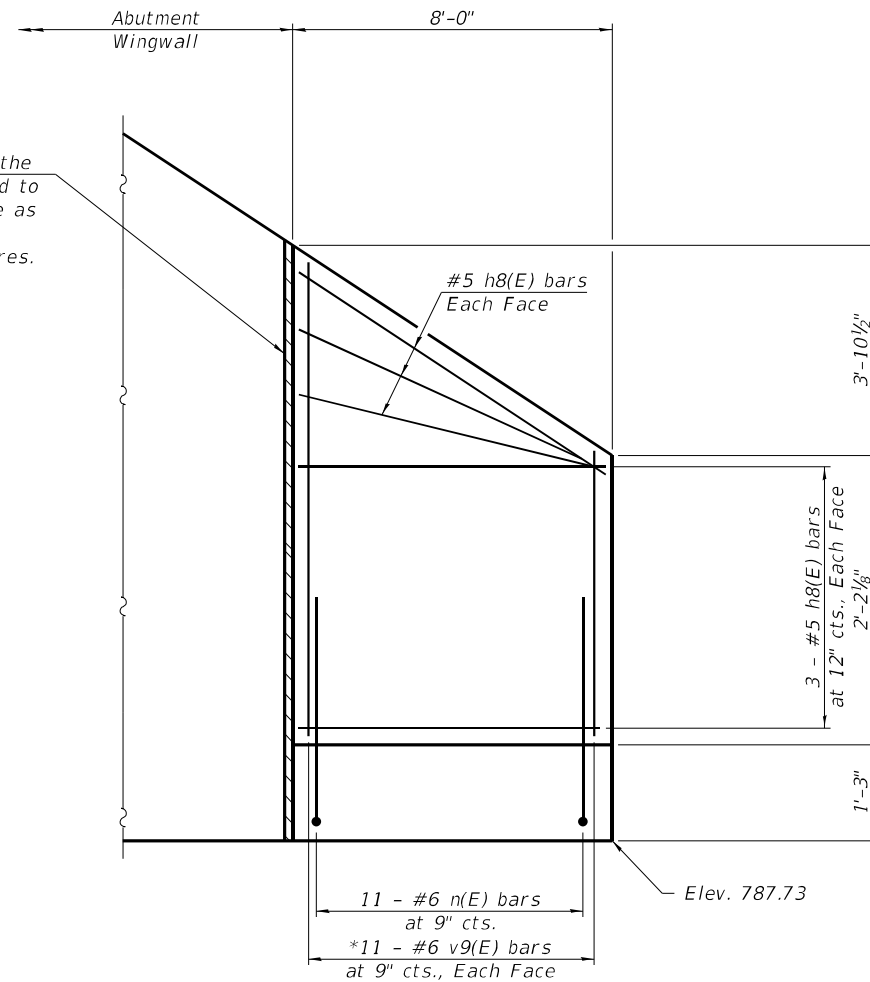
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h4(E)	50	#8	15'-9"	—
h5(E)	6	#8	25'-4"	—
h6(E)	6	#8	25'-8"	—
h7(E)	4	#5	10'-4"	—
p(E)	6	#7	19'-8"	—
p1(E)	6	#7	21'-1"	—
p2(E)	4	#7	13'-5"	—
p3(E)	4	#7	25'-9"	—
p4(E)	4	#7	20'-5"	—
p5(E)	8	#7	7'-2"	—
p6(E)	4	#7	11'-8"	—
p7(E)	4	#7	6'-11"	—
s(E)	32	#6	14'-10"	—
s1(E)	16	#5	4'-7"	—
s2(E)	2	#6	15'-4"	—
s3(E)	4	#6	6'-2"	—
s4(E)	28	#5	8'-7"	—
sp(E)	8	#4	2'-0"	***
u(E)	8	#6	12'-4"	—
v(E)	87	#8	7'-6"	—
v5(E)	9	#5	18'-0"	—
v6(E)	9	#5	14'-11"	—
v7(E)	4	#5	11'-1"	—
v8(E)	4	#5	9'-7"	—
Structure Excavation			Cu. Yd.	179
Concrete Structures			Cu. Yd.	29.4
Reinforcement Bars, Epoxy Coated			Pound	8,000
Furnishing Metal Shell Piles 16" X 0.312"			Foot	616
Driving Piles			Foot	616
Test Pile, Metal Shells			Each	1
Pile Shoes			Each	8

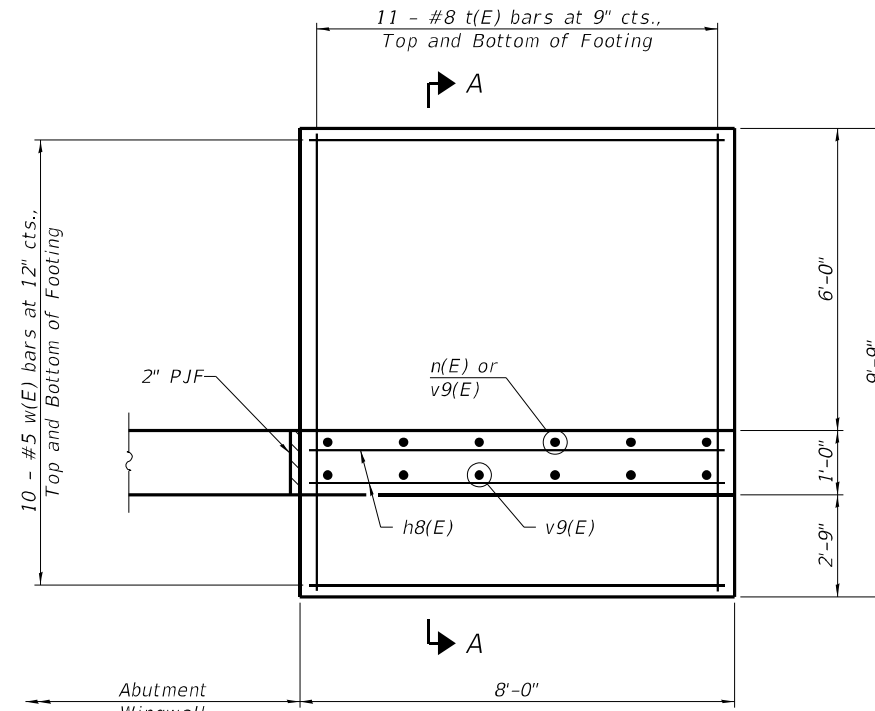
**** Length is height of spiral.

Notes:
 Pour steps monolithically with cap.
 Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.
 For details for the Wingwall Extension, see sheet 19 of 24.
 For details of piles see sheet 20 of 24.

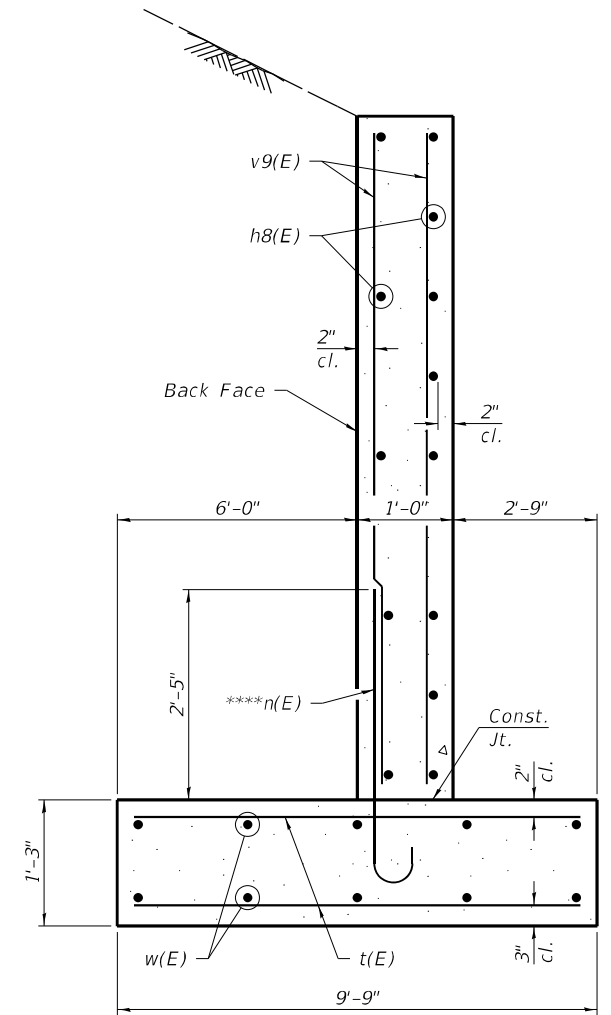
2" P.J.F. (per Article 1051.09 of the Standard Specifications) bonded to wingwall with suitable adhesive as recommended by supplier. Cost included with Concrete Structures.



PART ELEVATION



PART PLAN

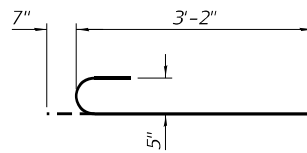


SECTION A-A

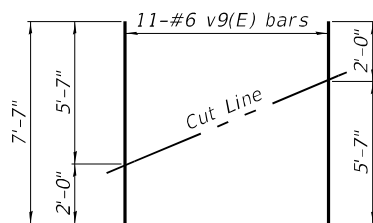
(Max. Applied Service Bearing Pressure = 2 ksf)

**** Cut the last bar as necessary to maintain 2" clearance.

* Order bars shown full length. Cut as shown and use remainder of bars in opposite face.

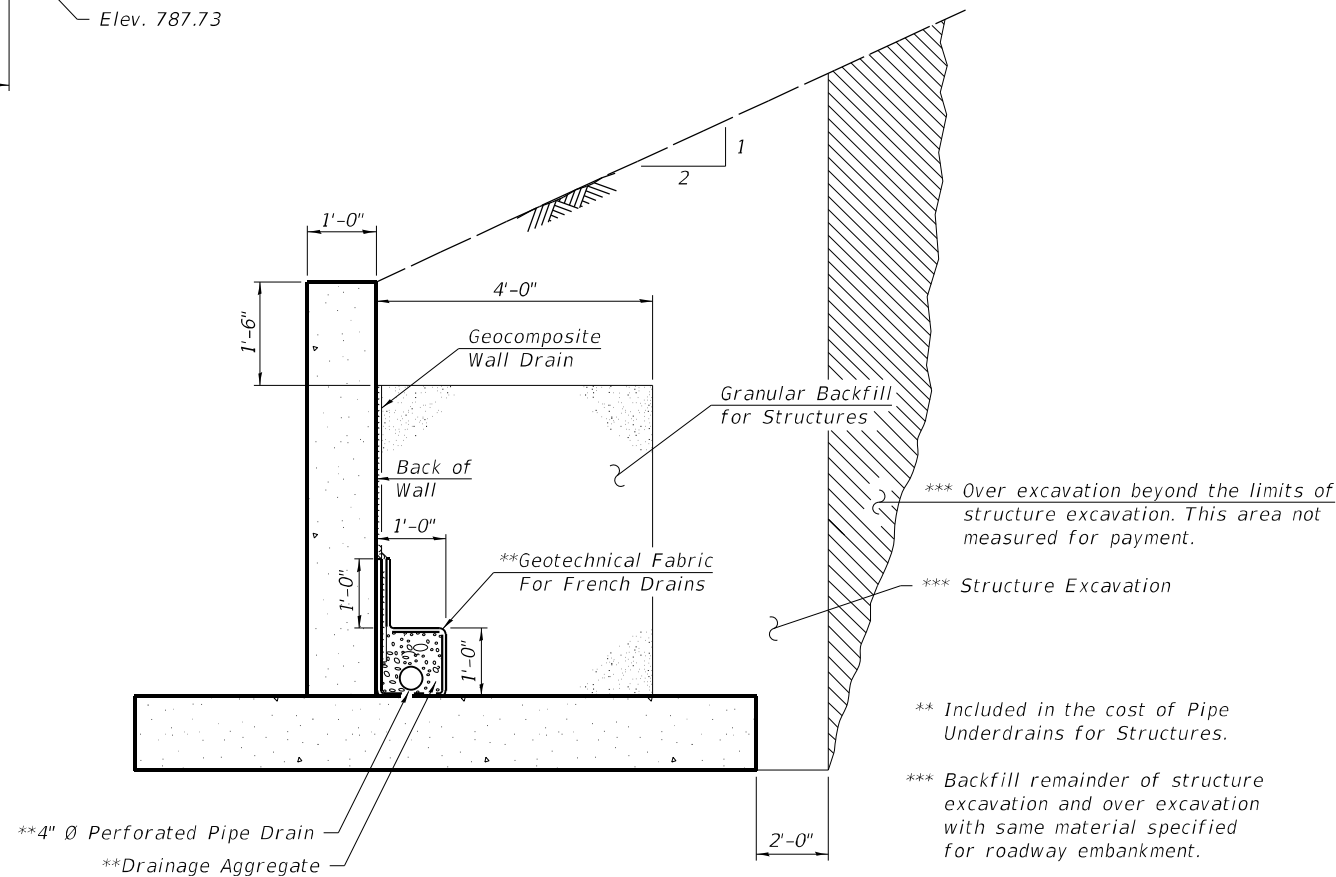


BAR n(E)



FIELD CUTTING DIAGRAM

Order bars shown full length. Cut as shown and use remainder of bars in opposite face.



SECTION THRU WINGWALL EXTENSION

(Horiz. dim. @ Rt. L's)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h8(E)	12	#5	7'-9"	—
n(E)	11	#6	3'-9"	—
t(E)	22	#8	9'-6"	—
v9(E)	11	#6	7'-7"	—
w(E)	20	#5	7'-9"	—
Structure Excavation			Cu. Yd.	22
Concrete Structures			Cu. Yd.	4.8
Reinforcement Bars, Epoxy Coated			Pound	1,000

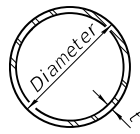
*** Over excavation beyond the limits of structure excavation. This area not measured for payment.

*** Structure Excavation

** Included in the cost of Pipe Underdrains for Structures.

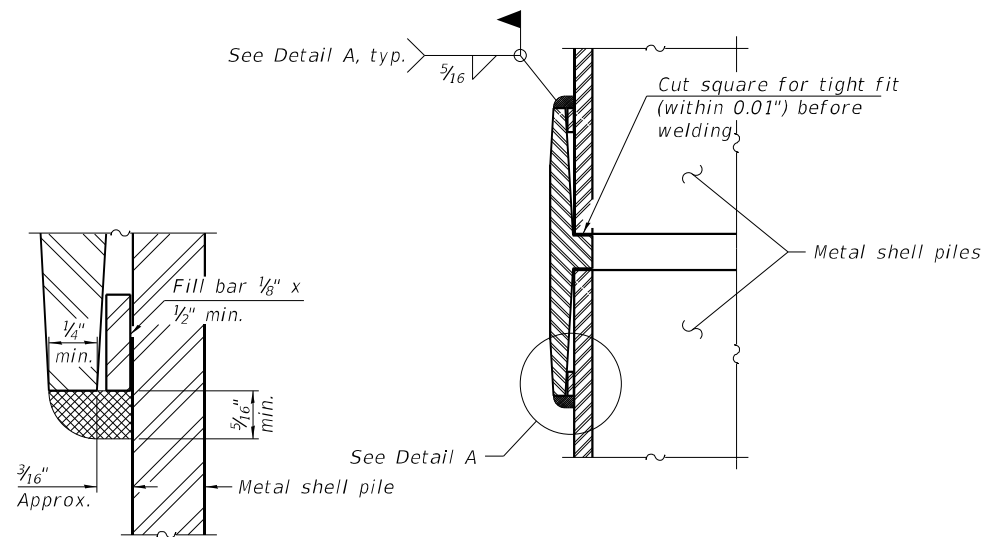
*** Backfill remainder of structure excavation and over excavation with same material specified for roadway embankment.

MODEL: Default
 FILE NAME: G:\FE\Jobs\2015\15-913 PTB 175-24 CMT 1-74 1-57 PHASE II\CADD\CADD Sheets\0101006-70897-019 - Wingwall Extension Details.dgn
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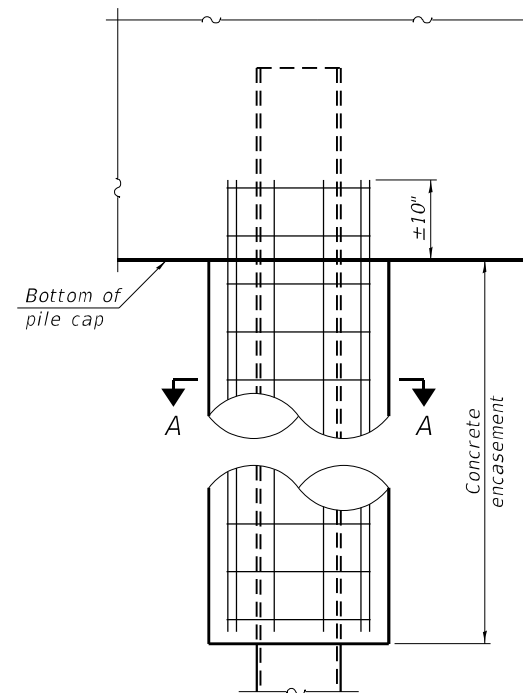


METAL SHELL PILE TABLE

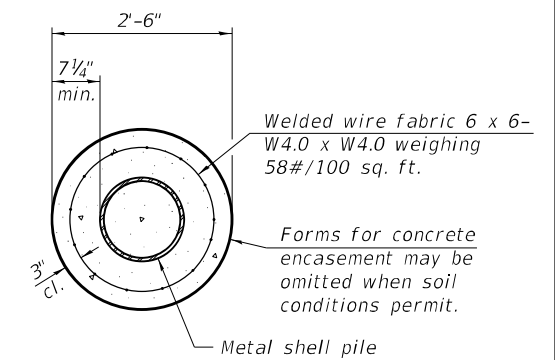
Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd. ³ /ft.)
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361
PP16	0.312"	52.32	0.0478
PP16	0.375"	62.64	0.0470



DETAIL A

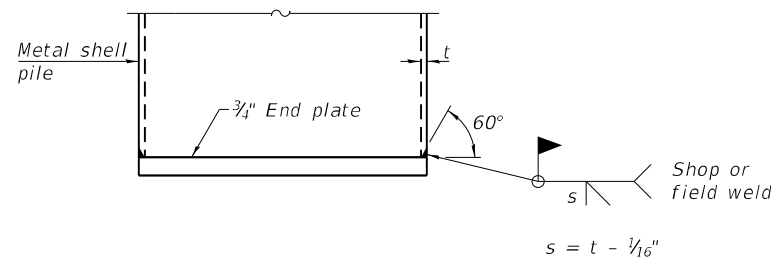


ELEVATION



SECTION A-A

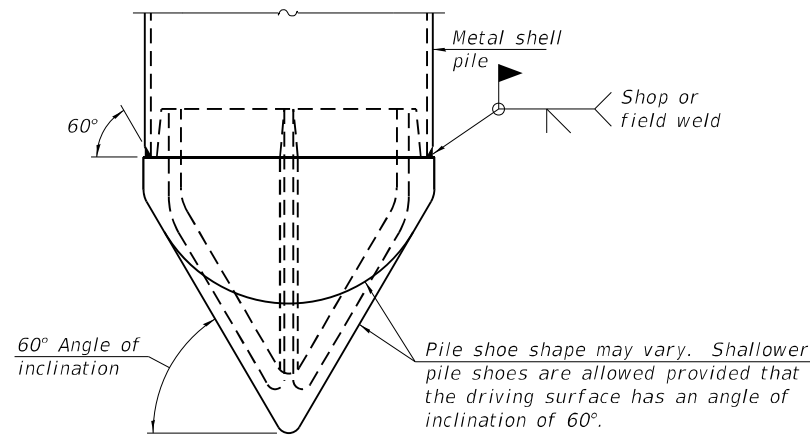
INDIVIDUAL PILE CONCRETE ENCASUREMENT
(When specified)



END PLATE ATTACHMENT

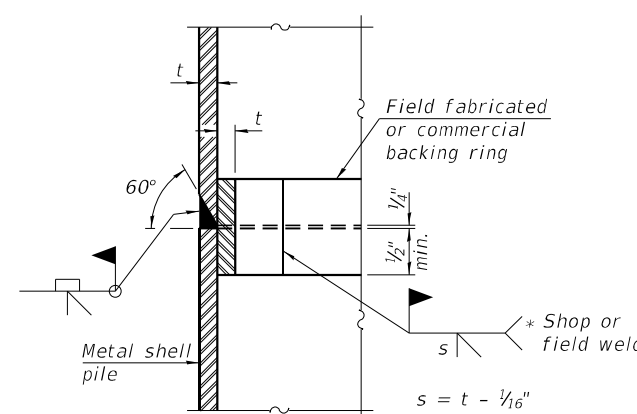
WELDED COMMERCIAL SPLICE

Notes:
The 1/8" x 1/2" min. fill bar may be constructed of 2 bars with a 1/8" max. gap between them.
Pile segments shall be driven to solid contact with splicer before welding.



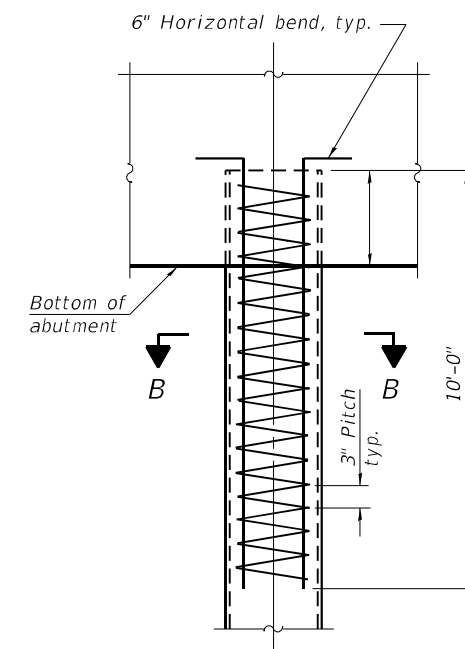
PILE SHOE ATTACHMENT

(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).

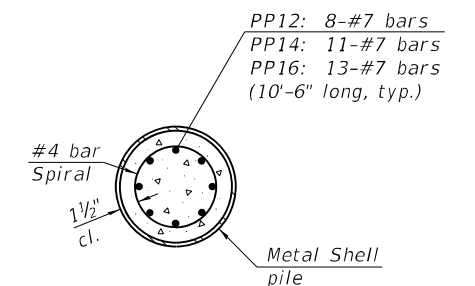


COMPLETE PENETRATION WELD SPLICE

* 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.

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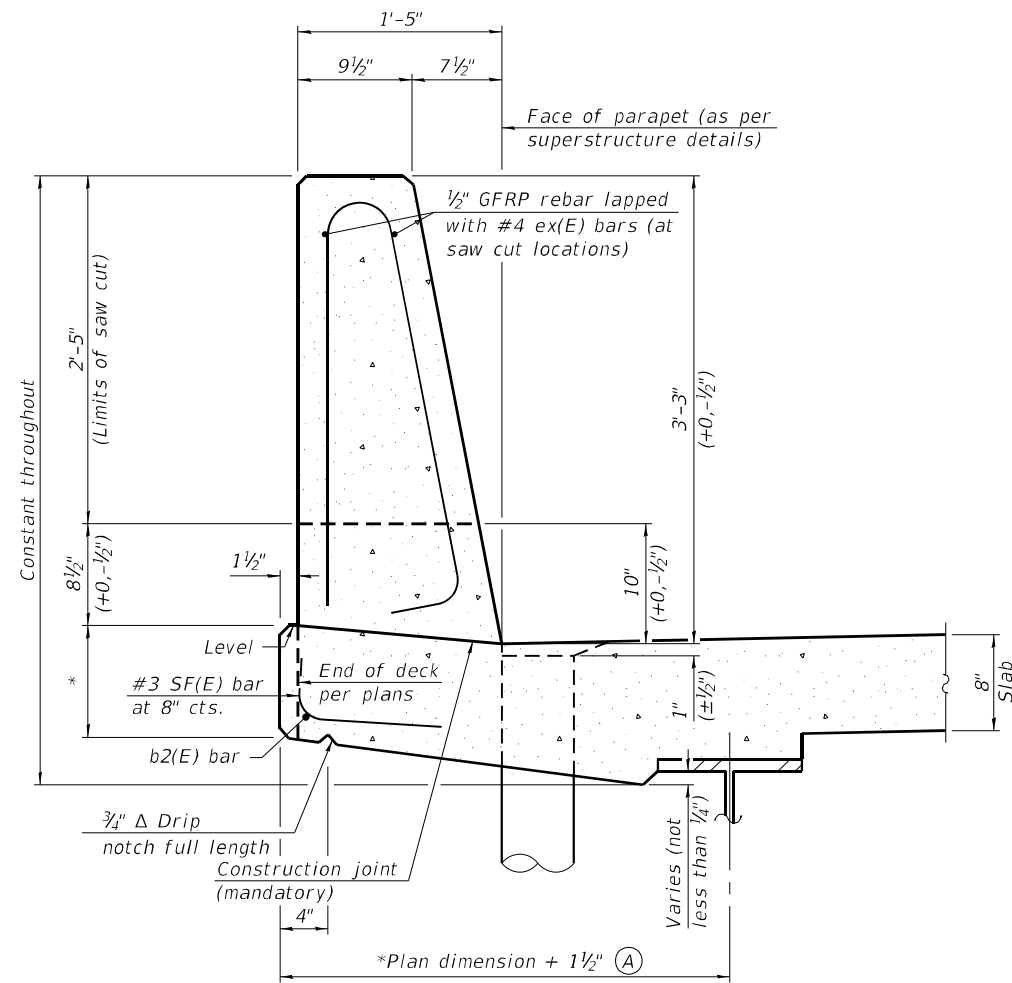
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PLOT SCALE =	CHECKED - E.M. Lagemann	REVISED -
PLOT DATE =	DRAWN - T.S. Friederich	REVISED -
	CHECKED - E.M. Lagemann	REVISED -

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DEPARTMENT OF TRANSPORTATION**

**METAL SHELL PILE DETAILS
STRUCTURE NO. 010-1006**

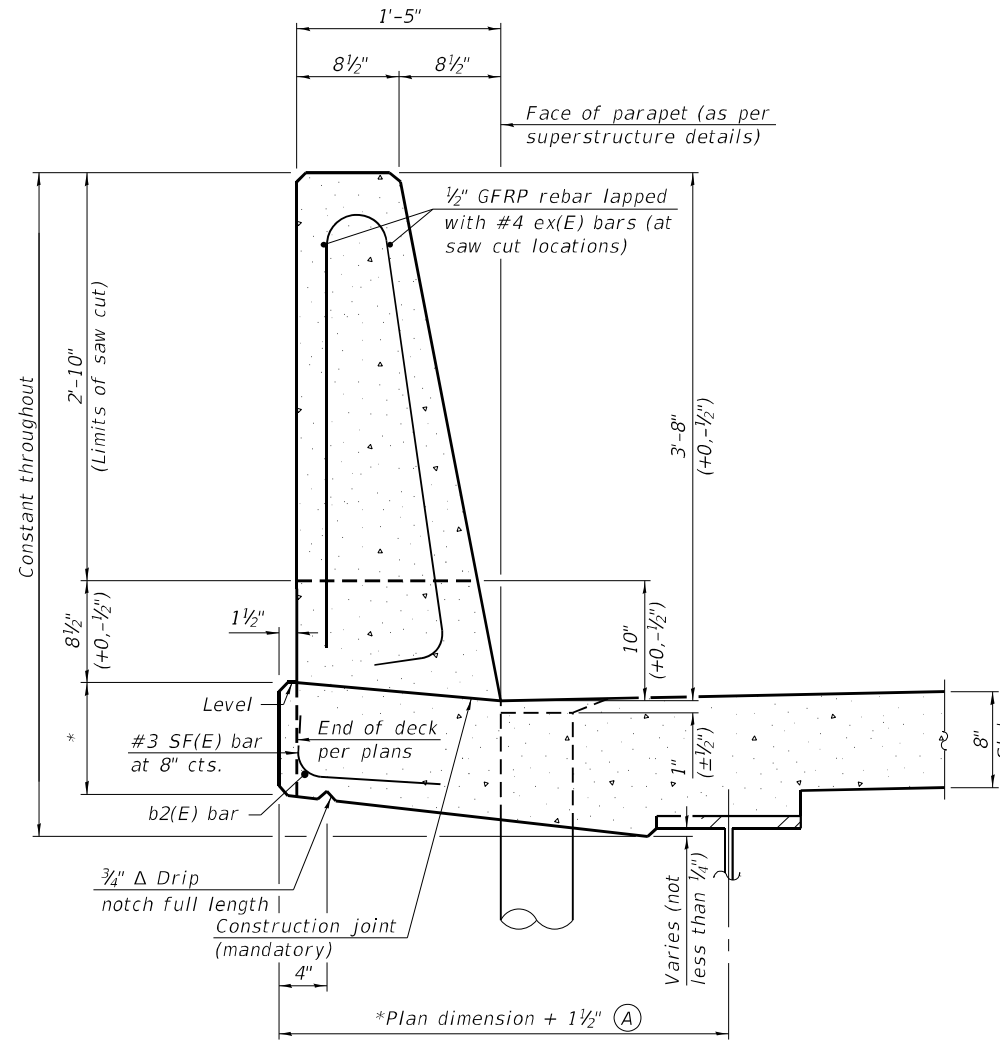
SHEET 20 OF 24 SHEETS

F.A.I. RTE. 74 & 57	SECTION (10-34-1) HBK	COUNTY CHAMPAIGN	TOTAL SHEETS 1187	SHEET NO. 947
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				



**39" CONSTANT-SLOPE
PARAPET SECTION**

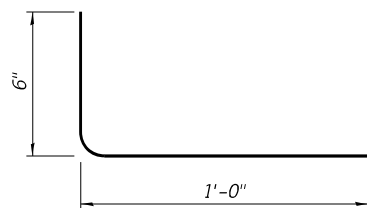
(Showing dimensions, d(E), and 1/2" Ø GFRP rebar)



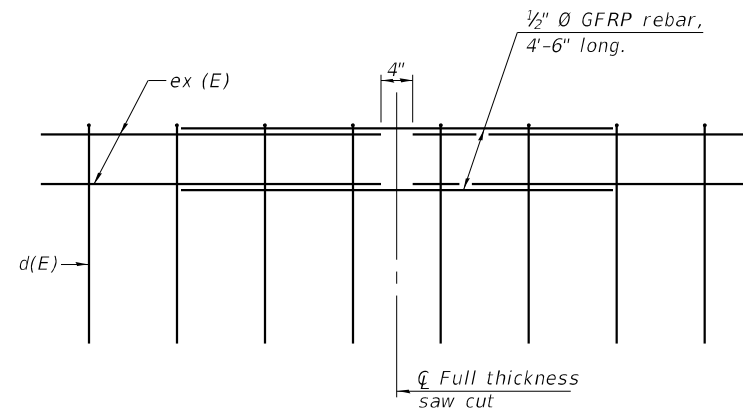
**44" CONSTANT-SLOPE
PARAPET SECTION**

(Showing dimensions, d(E), and 1/2" Ø GFRP rebar)

*See Superstructure Details.



#3 SF(E) BAR



GFRP REBAR STIFFENING DETAIL

(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 = 0.00348 cu. yds./ft. for 39" and 44" parapets.
Place full depth aluminum sheets as shown on superstructure details.
Replace all cork joint filler locations with a full thickness saw cut.
Steel superstructure shown. Other superstructure types similar.

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1-1-2020



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	CHECKED - E.M. Lagemann	REVISED -

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**CONCRETE PARAPET SLIPFORMING OPTION
STRUCTURE NO. 010-1006**

SHEET 21 OF 24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74 & 57	(10-34-1) HBK	CHAMPAIGN	1187	948
			CONTRACT NO. 70B99	
		ILLINOIS FED. AID PROJECT		



SOIL BORING LOG

Date 1/19/15

ROUTE I-57/74 DESCRIPTION South Abut Structure Carrying Ramp B over Ramp C (South Bridge) LOGGED BY TLM
SECTION (10-34-1)HBK LOCATION SEC. 34, TWP. 20N, RNG. 8E, 3rd PM, Latitude 40.144699, Longitude -88.286570
COUNTY Champaign DRILLING METHOD HSA HAMMER TYPE Auto

STRUCT. NO.	Station	D	B	U	M	Surface Water Elev.	ft	D	B	U	M	
010-1006	233+32.80	EP	LO	CS	OIS	n/a		EP	LO	CS	OIS	
BORING NO.	Station	T	W	Qu	T	Groundwater Elev.:	ft	H	S	Qu	T	
B-8	234+08.30	H	S	Qu	T	723.8		H	S	Qu	T	
	Offset 2.5 ft RT					Upon Completion	ft					
	Ground Surface Elev. 765.34	ft	(ft)	(/6")	(tsf)	(%)		ft	(ft)	(/6")	(tsf)	(%)
TOPSOIL: Silty Clay, black/dark brown						SILTY CLAY LOAM TILL: Gray, stiff (continued)						
764.34												
SILTY CLAY: Brown, soft												
1												
2 0.3 22												
1 B												
762.34												
SILTY CLAY: Brown, stiff												
1												
3 1.2 17												
-5 3 B												
4												
5 1.8 17												
9 B												
2												
5 1.6 15												
-10 8 B						many rounded aggregate pieces up to 5/8"						
754.84												
SILTY CLAY LOAM TILL: Gray, stiff												
4												
6 1.3 13												
6 B												
5												
7 18												
-15 8												
2												
5 1.0 12												
6 B												
3												
3 1.2 13												
-20 5 B												

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

Date 1/19/15

ROUTE I-57/74 DESCRIPTION South Abut Structure Carrying Ramp B over Ramp C (South Bridge) LOGGED BY TLM
SECTION (10-34-1)HBK LOCATION SEC. 34, TWP. 20N, RNG. 8E, 3rd PM, Latitude 40.144699, Longitude -88.286570
COUNTY Champaign DRILLING METHOD HSA HAMMER TYPE Auto

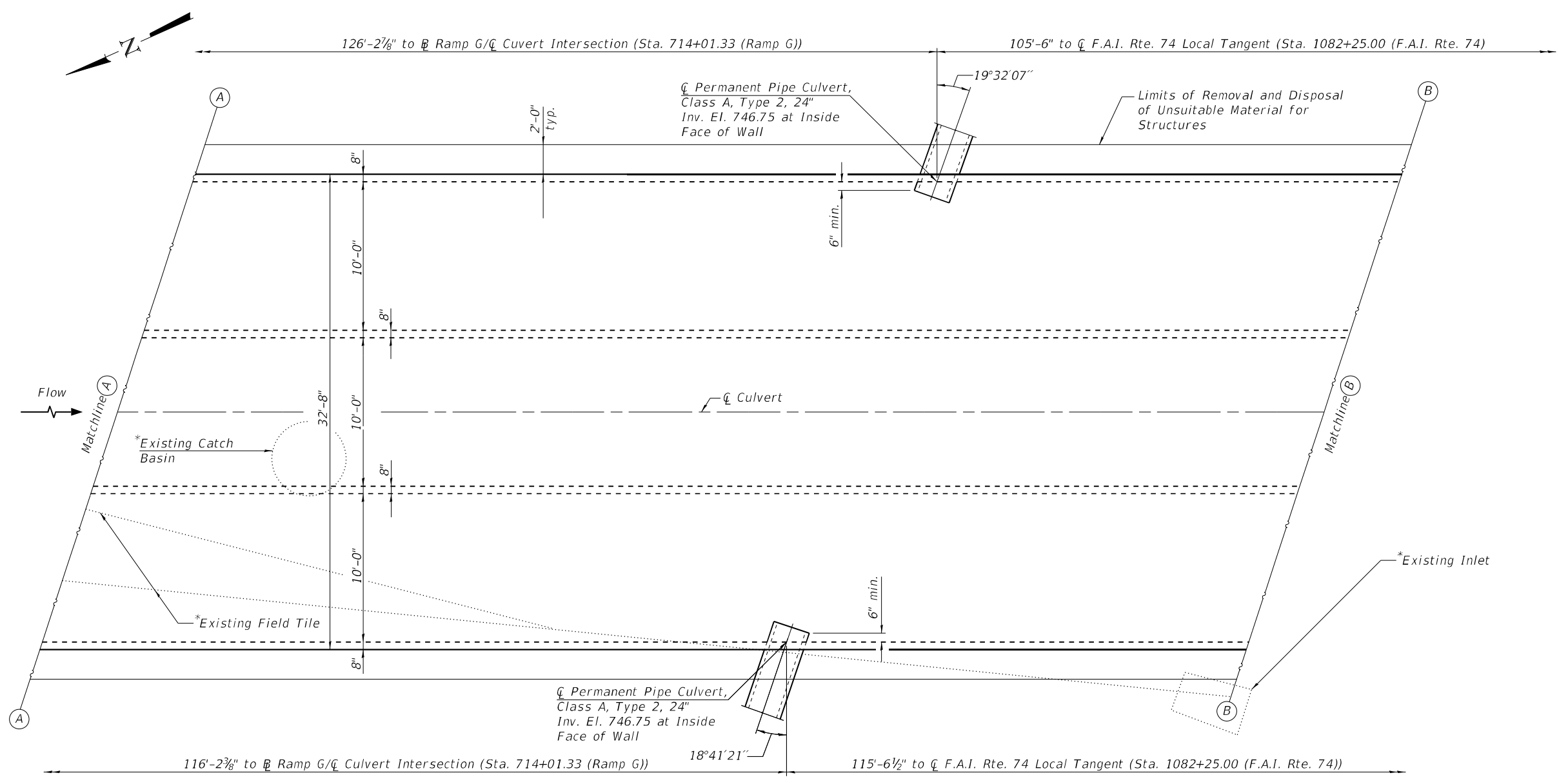
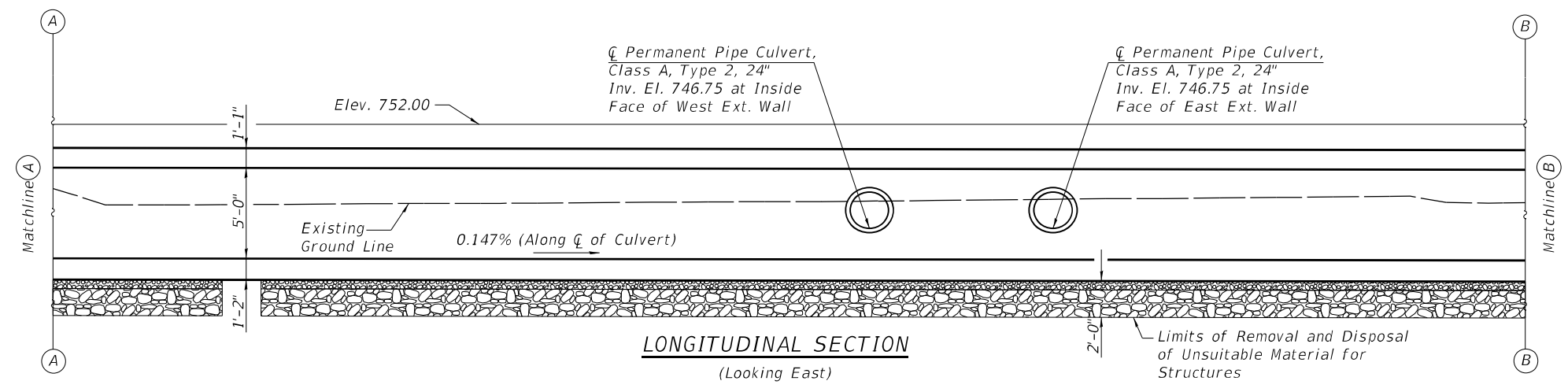
STRUCT. NO.	Station	D	B	U	M	Surface Water Elev.	ft	D	B	U	M	
010-1006	233+32.80	EP	LO	CS	OIS	n/a		EP	LO	CS	OIS	
BORING NO.	Station	T	W	Qu	T	Groundwater Elev.:	ft	H	S	Qu	T	
B-8	234+08.30	H	S	Qu	T	723.8		H	S	Qu	T	
	Offset 2.5 ft RT					Upon Completion	ft					
	Ground Surface Elev. 765.34	ft	(ft)	(/6")	(tsf)	(%)		ft	(ft)	(/6")	(tsf)	(%)
SILTY CLAY LOAM TILL: Gray, stiff (continued)						SILTY CLAY LOAM TILL: Gray, stiff (continued)						
723.84												
SAND and GRAVEL: Gray, medium dense												
11												
14												
-45 12												
12												
698.84												
SILTY CLAY LOAM TILL: Gray, stiff						SILTY CLAY LOAM TILL: Stiff to very stiff						
5												
11 1.5 17												
-50 4 B												
12												
10 4.5 17												
-55 12 E												
7												
9 4.5 12												
-80 14 B												
No Recovery (Qu estimated by comparing N-values with the next sample below)						Sample Disturbed						
690.34												
End of Boring												

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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*See Roadway Plans for Removal Details and Quantities

(Sheet 2 of 4)

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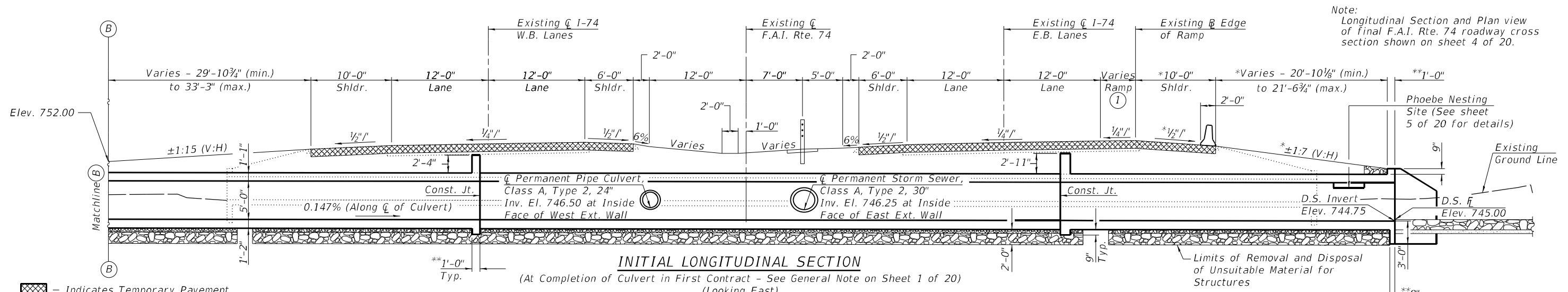
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
STRUCTURE NO. 010-2043

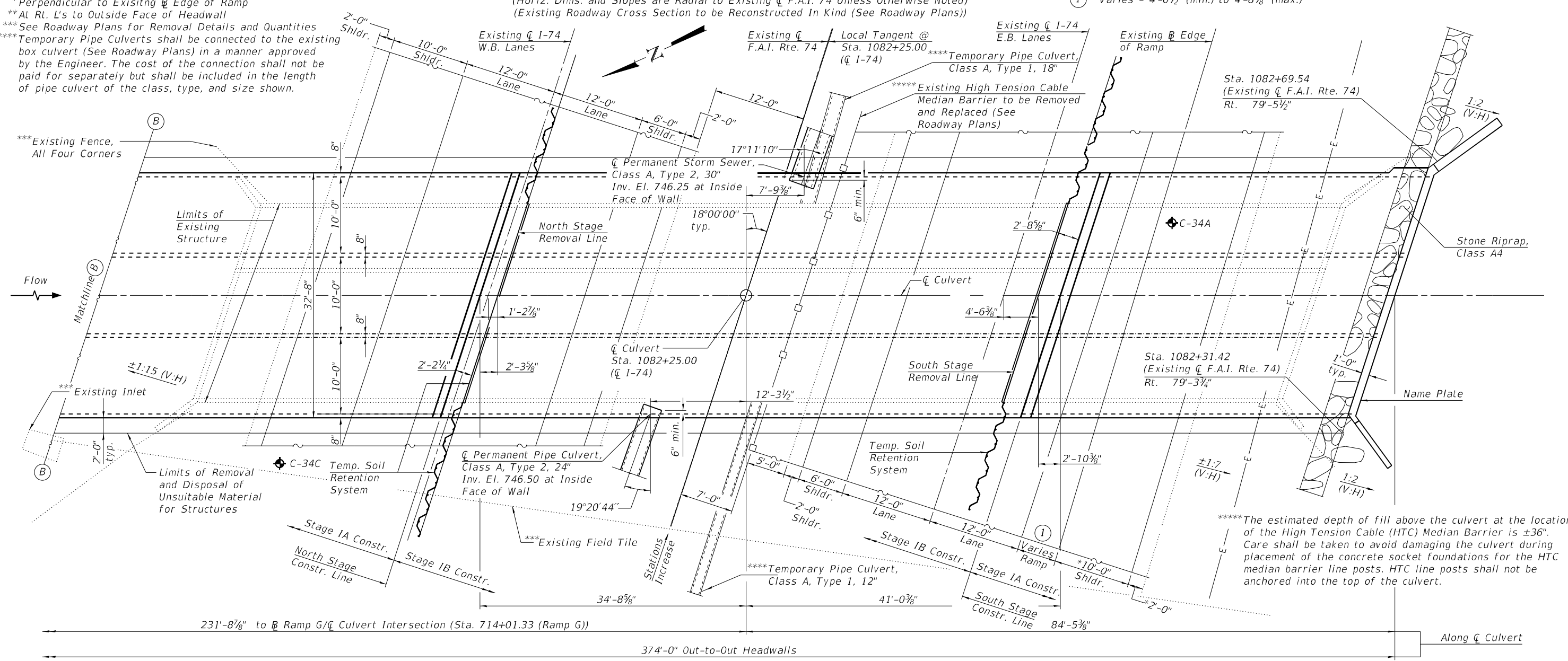
SHEET 2 OF 20 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(10-34-1) HBK	CHAMPAIGN	1187	953
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				

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⊠ - Indicates Temporary Pavement
 * Perpendicular to Existing B Edge of Ramp
 ** At Rt. L's to Outside Face of Headwall
 *** See Roadway Plans for Removal Details and Quantities
 **** Temporary Pipe Culverts shall be connected to the existing box culvert (See Roadway Plans) in a manner approved by the Engineer. The cost of the connection shall not be paid for separately but shall be included in the length of pipe culvert of the class, type, and size shown.



*****The estimated depth of fill above the culvert at the location of the High Tension Cable (HTC) Median Barrier is ±36". Care shall be taken to avoid damaging the culvert during placement of the concrete socket foundations for the HTC median barrier line posts. HTC line posts shall not be anchored into the top of the culvert.

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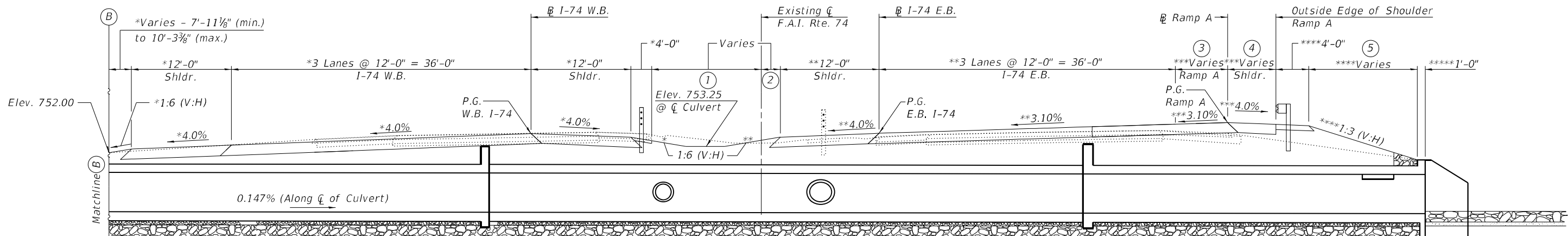
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STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
 STRUCTURE NO. 010-2043

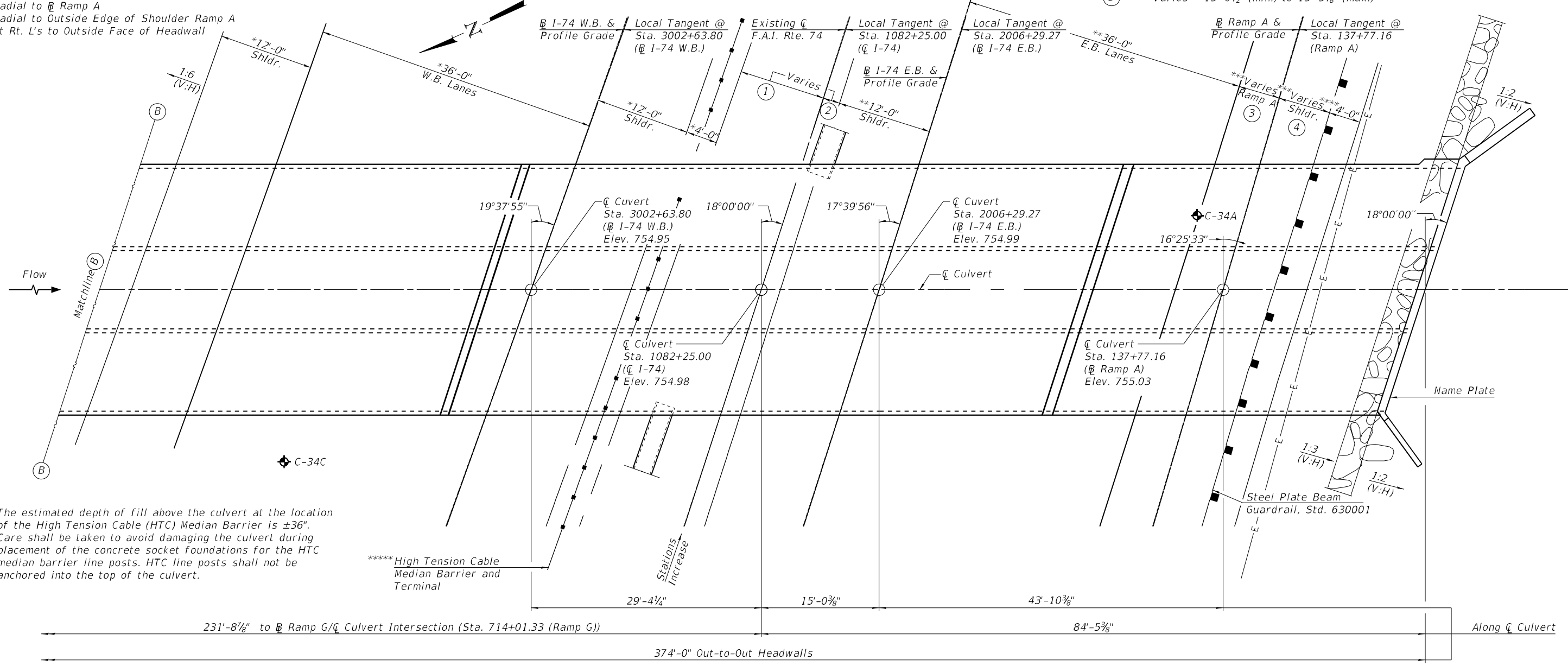
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(10-34-1)HBK	CHAMPAIGN	1187	954
CONTRACT NO. 70B99				
ILLINOIS		FED. AID PROJECT		

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- FINAL LONGITUDINAL SECTION**
 (At Completion of Second Contract - See General Note on Sheet 1 of 20)
 (Looking East)
 (Horiz. Dims. and Slopes are Radial to Existing C F.A.I. 74 unless otherwise noted)
- ① Varies - 11'-3 3/8" (min.) to 12'-3 3/8" (max.)
 - ② Varies - 2'-2 3/4" (min.) to 2'-5 1/8" (max.)
 - ③ ***Varies - 5'-5 5/8" (min.) to 6'-1 3/4" (max.)
 - ④ ***Varies - 6'-0" (min.) to 6'-7 3/8" (max.)
 - ⑤ ****Varies - 13'-0 1/2" (min.) to 13'-3 3/8" (max.)

*Radial to B W.B. I-74
 **Radial to B E.B. I-74
 ***Radial to B Ramp A
 ****Radial to Outside Edge of Shoulder Ramp A
 ***** At Rt. L's to Outside Face of Headwall



*****The estimated depth of fill above the culvert at the location of the High Tension Cable (HTC) Median Barrier is ±36". Care shall be taken to avoid damaging the culvert during placement of the concrete socket foundations for the HTC median barrier line posts. HTC line posts shall not be anchored into the top of the culvert.

*****High Tension Cable Median Barrier and Terminal

FINAL PLAN

(At Completion of Second Contract - See General Note on Sheet 1 of 20)

(Sheet 4 of 4)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
STRUCTURE NO. 010-2043

SHEET 4 OF 20 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(10-34-1) HBK	CHAMPAIGN	1187	955
CONTRACT NO. 70B99				

ILLINOIS FED. AID PROJECT

***WATERWAY INFORMATION**

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Existing Overtop. Elev. = 755.04 @ Sta. 1081+59.00									
Drainage Area = 1.1 sq. mi. Proposed Overtop. Elev. = 754.55 @ Sta. 709+58.00 (Ramp G)									
Ten-Year	10	358	72	150	750.93	0.53	0.00	751.46	750.71
Design	50	602	72	150	751.83	1.81	0.00	753.64	751.08
Base	100	714	72	150	752.23	2.55	0.00	754.78	751.32
Overtopping Exist.		743	72		752.33	2.77		755.10	
Overtopping Proposed									
Max. Calc.	500	993	72	150	752.93	2.82	0.00	755.75	752.08

Existing 10 Year Outlet Velocity = 5.0 ft/s Proposed 10 Year Outlet Velocity = 2.4 ft/s

*The waterway information provided considers the full culvert area available (after the future lowering of the Copper Slough channel).

****WATERWAY INFORMATION**

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Existing Overtop. Elev. = 755.04 @ Sta. 1081+59.00									
Drainage Area = 1.1 sq. mi. Proposed Overtop. Elev. = 754.55 @ Sta. 709+58.00 (Ramp G)									
Ten-Year	10	358	72	90	750.93	0.53	0.29	751.46	751.22
Design	50	602	72	90	751.83	1.81	0.69	753.64	752.52
Base	100	714	72	90	752.23	2.55	1.12	754.78	753.35
Overtopping Exist.		743	72		752.33	2.77		755.10	
Overtopping Proposed		888		90	752.63		2.27		754.90
Max. Calc.	500	993	72	90	752.93	2.82	2.32	755.75	755.25

Existing 10 Year Outlet Velocity = 5.0 ft/s Proposed 10 Year Outlet Velocity = 4.0 ft/s

**The waterway information provided considers the box culvert to be partially silted in due to the lowering of the proposed invert elevations (assumed 2 ft. silted in).

PROP. CURVE 74 EB-1

PI STA. = 2004+69.75
 $\Delta = 6^\circ 43' 16''$ (LT)
 $D = 0^\circ 42' 58''$
 $R = 8,000.00'$
 $T = 469.75'$
 $L = 938.43'$
 $E = 13.78'$
 $e = 3.1\%$
 $T.R. = 120'$
 $S.E. RUN = 245'$
 $P.C. STA. = 2000+00.00$
 $P.C.C. STA. = 2009+38.43$

ATTAIN S.E.:

SEE EXIST. CURVE 74-1

PROP. CURVE 74 WB-1

PI STA. = 3006+64.01
 $\Delta = 12^\circ 44' 08''$ (LT)
 $D = 0^\circ 57' 47''$
 $R = 5,950.00'$
 $T = 664.01'$
 $L = 1,322.55'$
 $E = 36.94'$
 $e = 4.0\%$
 $T.R. = 125'$
 $S.E. RUN = 250'$
 $P.C. STA. = 3000+00.00$
 $P.C.C. STA. = 3013+22.25$

ATTAIN S.E.:

SEE EXIST. CURVE 74-1

PROP. CURVE RAMPA-2

PI STA. = 135+74.90
 $\Delta = 6^\circ 18' 53''$ (LT)
 $D = 0^\circ 42' 43''$
 $R = 8,047.66'$
 $T = 443.94'$
 $L = 886.97'$
 $E = 12.23'$
 $e = MATCH I-74$
 $T.R. = N/A$
 $S.E. RUN = N/A$
 $P.C. STA. = 131+30.96$
 $P.T. STA. = 140+17.93$

EXIST. CURVE 74-1

PI STA. = 1088+67.30
 $\Delta = 18^\circ 37' 57''$ (LT)
 $D = 0^\circ 48' 50''$
 $R = 7,040.65'$
 $T = 1,155.00'$
 $L = 2,289.60'$
 $E = 94.11'$
 $e = 3.4\%$
 $T.R. = N/A$
 $S.E. RUN = 215'$
 $P.C. STA. = 1077+12.30$
 $P.C.C. STA. = 1100+01.90$

MEDIAN TRANS. (E.B. LANES)

STA. 1073+18.27 (-1.5% N.C.)
 STA. 1074+38.27 (0% T.R.)
 STA. 1076+83.27 (+3.1% S.E.)
 (SEE PROP. CURVE 74 EB-1)

MEDIAN TRANS. (W.B. LANES)

STA. 1076+59.35 (+2.0% N.C.)
 STA. 1077+84.35 (0% T.R.)
 STA. 1080+34.35 (-4.0% S.E.)
 (SEE PROP. CURVE 74 WB-1)

ATTAIN S.E. (E.B. LANES):

STA. 1085+38.19 (+3.1% S.E.)
 STA. 1085+57.16 (+3.4% S.E.)

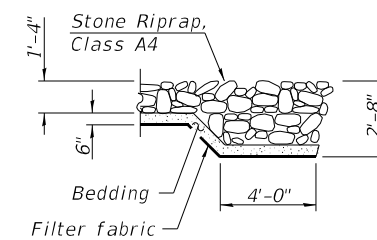
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STA. 1092+39.33 (-4.0% S.E.)
 STA. 1092+77.27 (-3.4% S.E.)

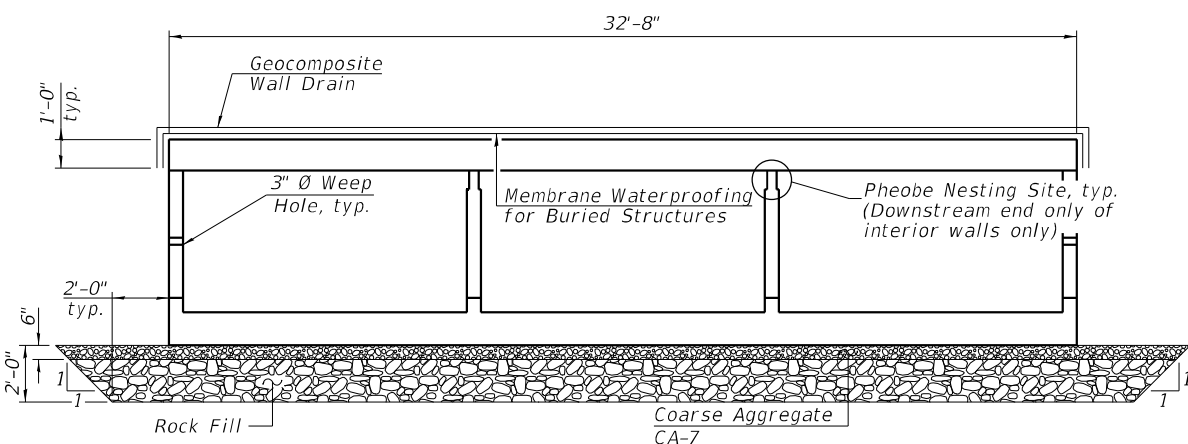
STATION 1082+25.00
 BUILT 20__ BY
 STATE OF ILLINOIS
 F.A.I. RTE. 74 - SEC. (10-34-1) HBK
 LOADING HL-93
 STRUCTURE NO. 010-2043

NAME PLATE

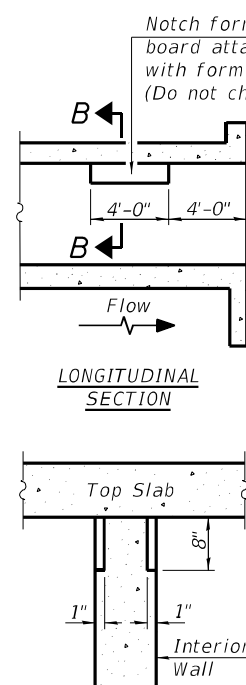
See Std. 515001



SECTION A-A

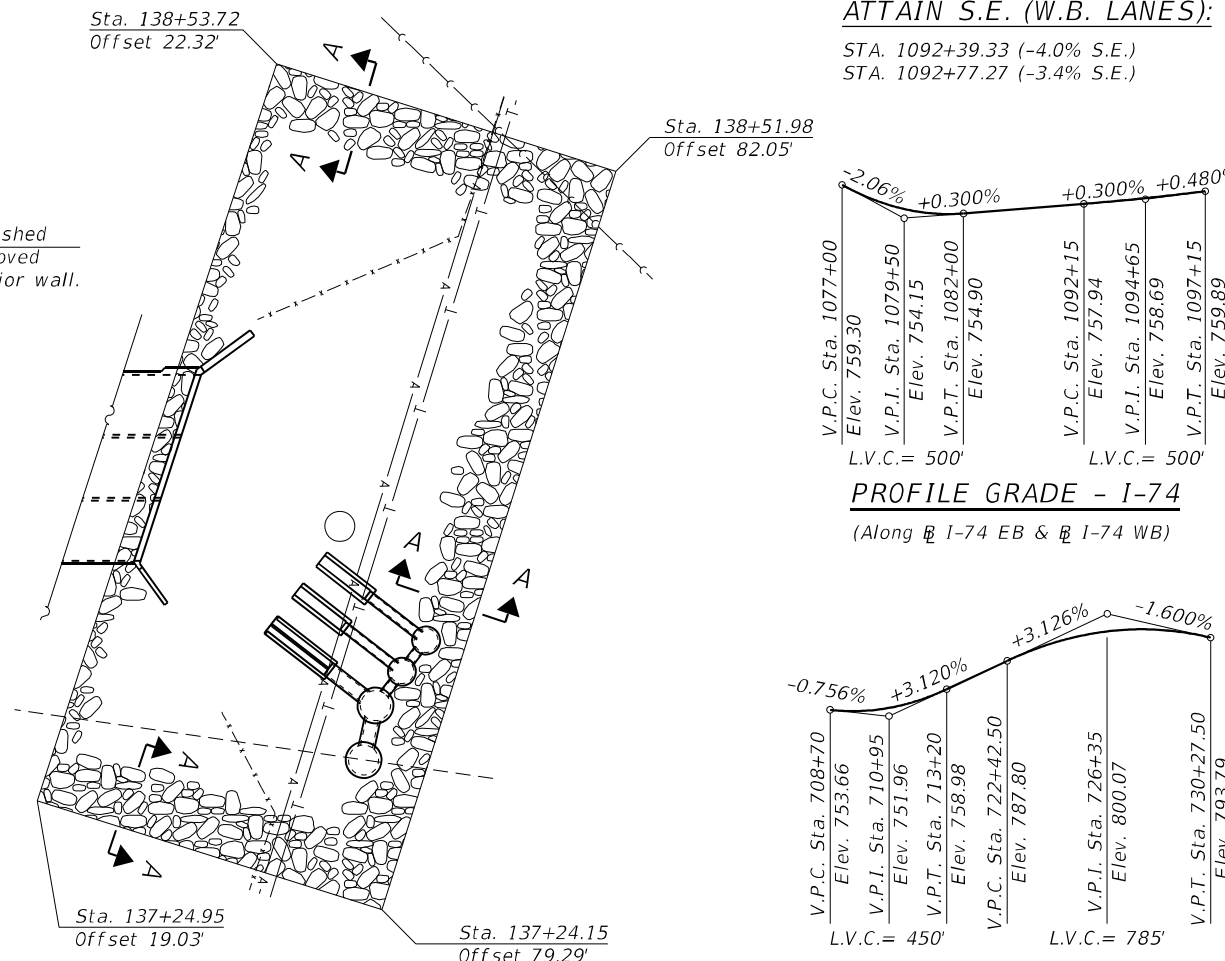


SECTION THRU BARREL



SECTION B-B

PHOEBE NESTING SITE DETAILS
 (Downstream End Only)



RIPRAP LAYOUT - DOWNSTREAM CULVERT OUTLET

Stations and Offsets are taken from \square Ramp A

Note:
 Geocomposite Wall Drain shall be according to Section 591 of the Standard Specifications, except that concrete nails shall not be used in areas where it overlaps Membrane Waterproofing System for Buried Structures.

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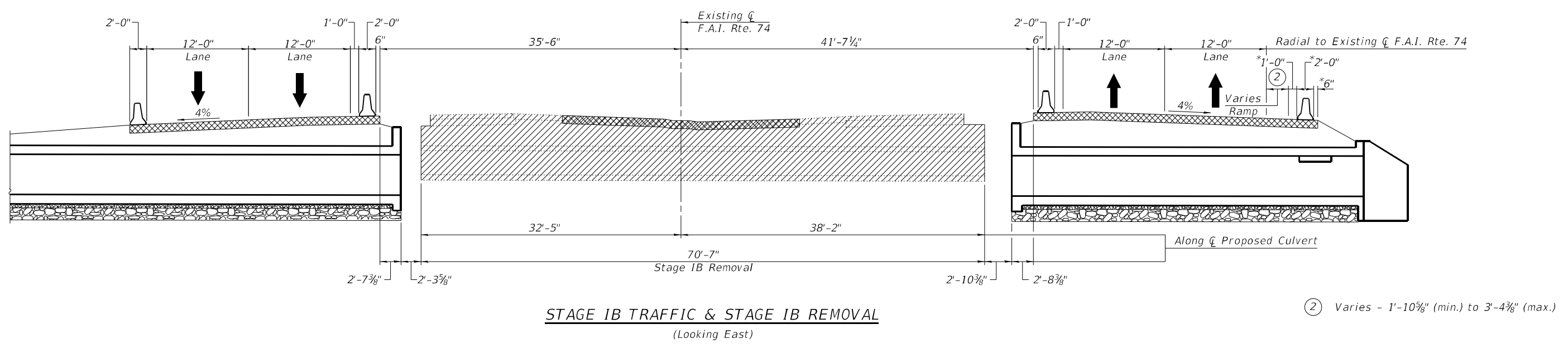
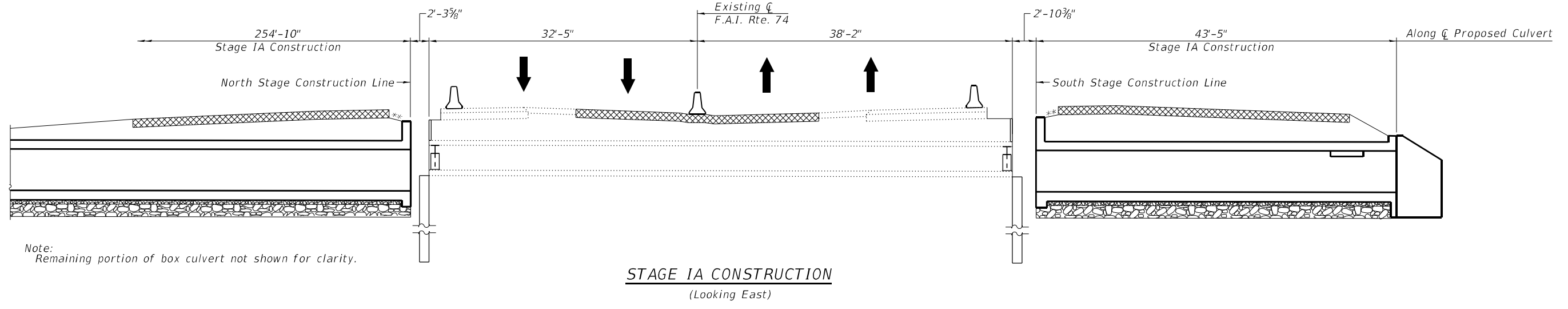
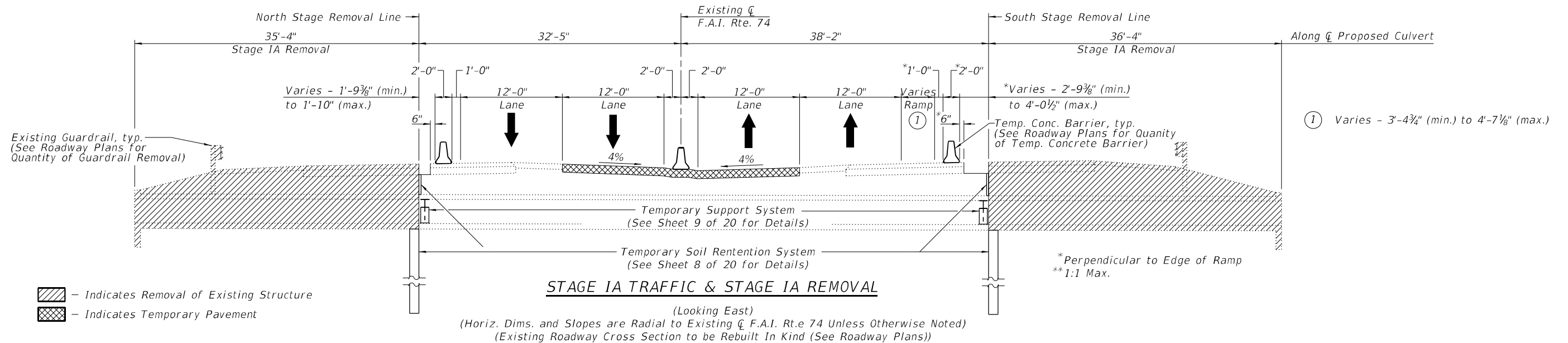
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL DATA
STRUCTURE NO. 010-2043

SHEET 5 OF 20 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(10-34-1) HBK	CHAMPAIGN	1187	956
CONTRACT NO. 70B99				
		ILLINOIS	FED. AID PROJECT	

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(Sheet 1 of 2)

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PLOT DATE =	DRAWN - JGY	REVISED -
	CHECKED - GBR	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 010-2043

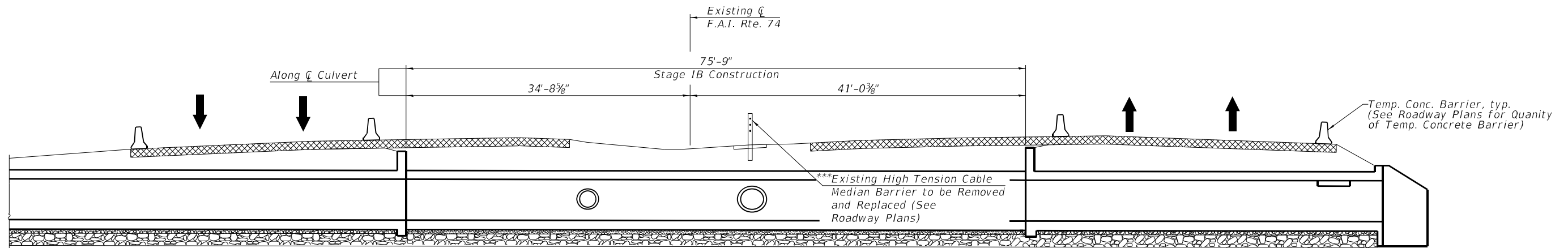
SHEET 6 OF 20 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(10-34-1) HBK	CHAMPAIGN	1187	957
CONTRACT NO. 70B99				

ILLINOIS FED. AID PROJECT

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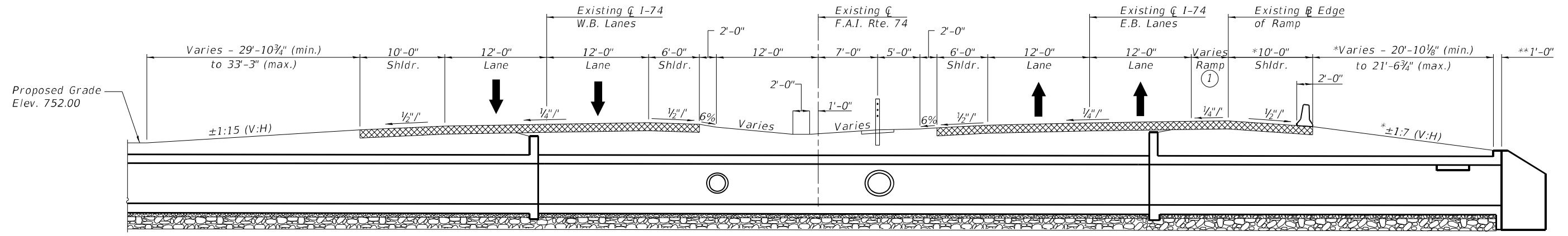


STAGE IB CONSTRUCTION
 (Looking East)

▨ - Indicates Temporary Pavement

Note: Remaining portion of box culvert not shown for clarity.

***The estimated depth of fill above the culvert at the location of the High Tension Cable (HTC) Median Barrier is ±36". Care shall be taken to avoid damaging the culvert during placement of the concrete socket foundations for the HTC median barrier line posts. HTC line posts shall not be anchored into the top of the culvert.



COMPLETED INITIAL ROADWAY CROSS SECTION

(At Completion of Culvert in First Contract - See General Note on Sheet 1 of 2)
 (Looking East)
 (Horiz. Dims. and Slopes are Radial to Existing C F.A.I. 74 Unless Otherwise Noted)
 (Existing Roadway Cross Section to be Rebuilt In Kind (See Roadway Plans))

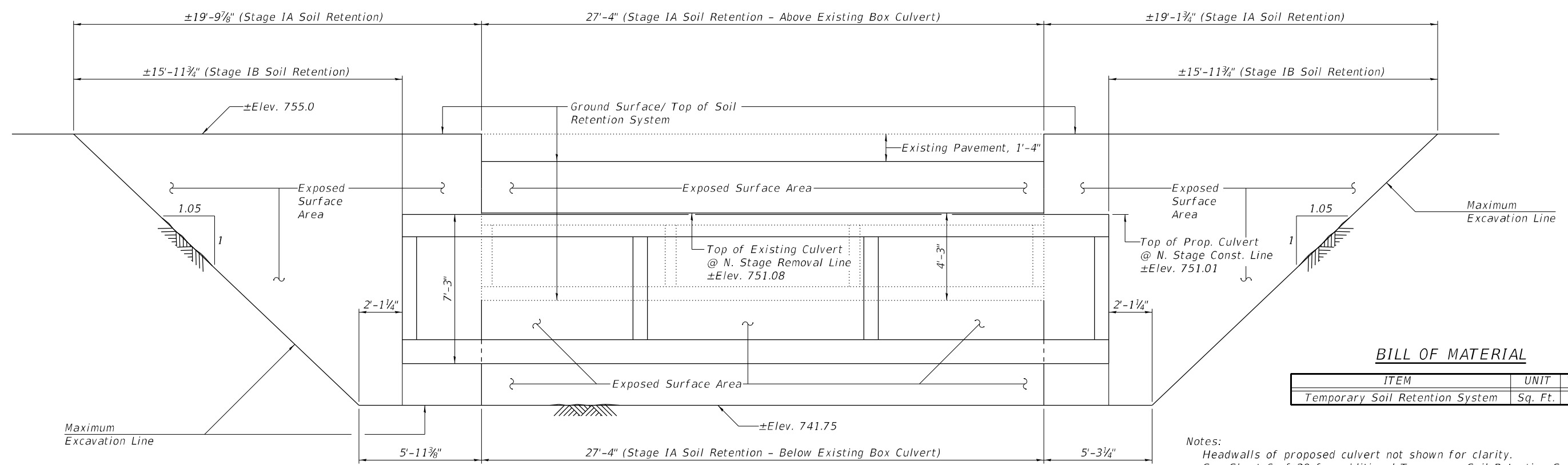
*Perpendicular to Existing B Edge of Ramp
 **At Rt. L's to Outside Face of Headwall

① Varies - 4'-0 1/2" (min.) to 4'-8 3/8" (max.)

(Sheet 2 of 2)

BACON FARMER WORKMAN ENGINEERING & TESTING, INC. <small>403 NORTH COURT STREET MARIETTA, IL 61758-5050 PHONE - 815.267.9190</small>	USER NAME =	DESIGNED - JGY	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STAGE CONSTRUCTION DETAILS STRUCTURE NO. 010-2043	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE =	CHECKED - GBR	REVISED -			74	(10-34-1) HBK	CHAMPAIGN	1187	958
PLOT DATE =	DRAWN - JGY	REVISED -	CONTRACT NO. 70B99							
	CHECKED - GBR	REVISED -	ILLINOIS FED. AID PROJECT							

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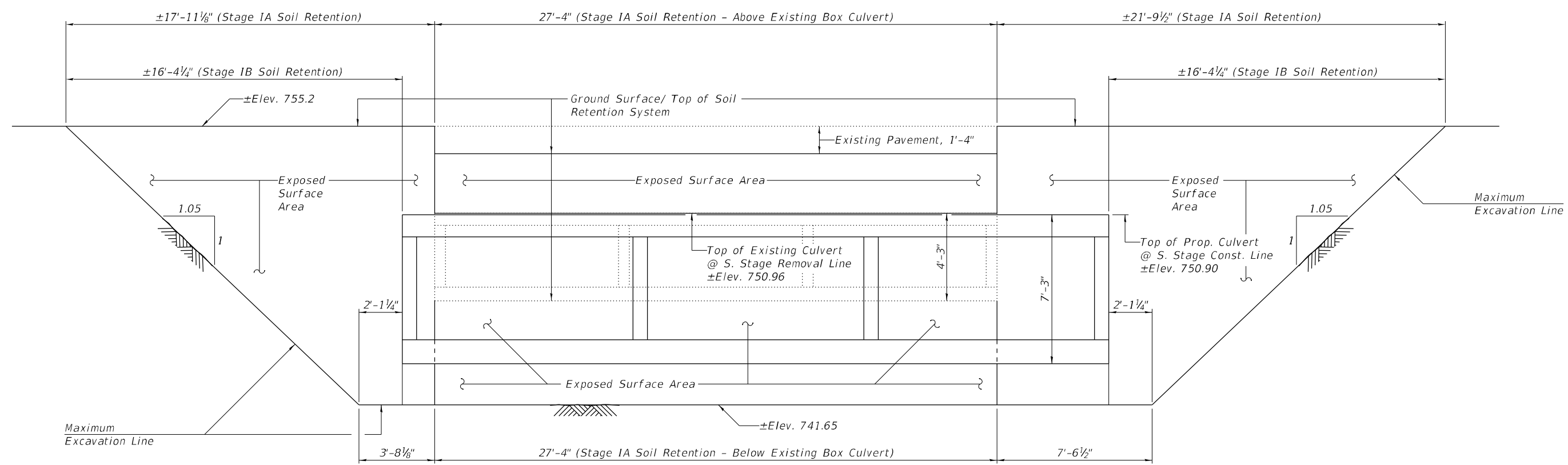
*1:1 Max. Slope (Perpendicular to Pavement)

TEMPORARY SOIL RETENTION SYSTEM - NORTH STAGE REMOVAL LINE
 (Looking South)
 (Dimensions Shown Along Skew)

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Temporary Soil Retention System	Sq. Ft.	1103

Notes:
 Headwalls of proposed culvert not shown for clarity.
 See Sheet 6 of 20 for additional Temporary Soil Retention System Details.
 A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.



*1:1 Max. Slope (Perpendicular to Pavement)

TEMPORARY SOIL RETENTION SYSTEM - SOUTH STAGE REMOVAL LINE
 (Looking North)
 (Dimensions Shown Along Skew)

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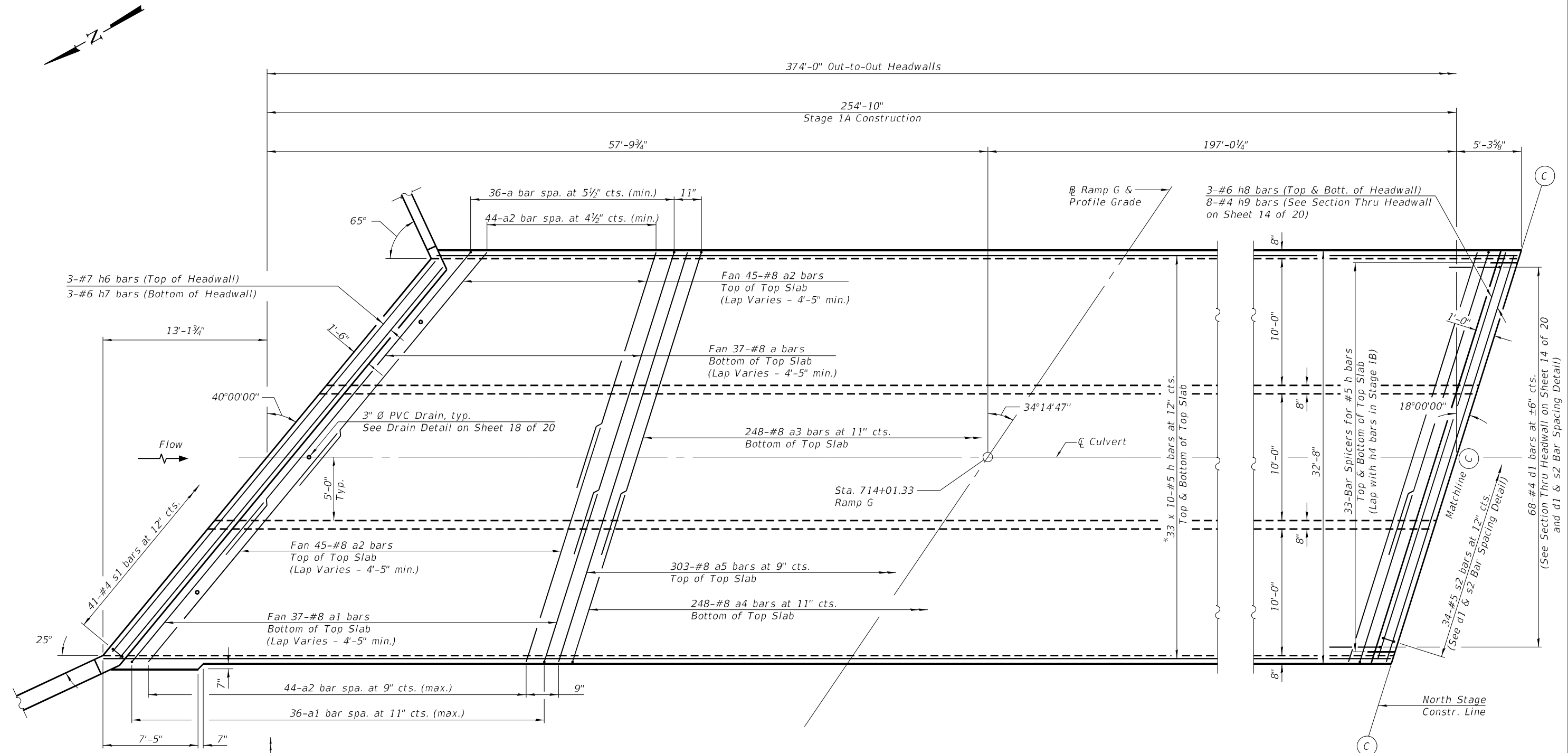
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY SOIL RETENTION DETAILS
STRUCTURE NO. 010-2043

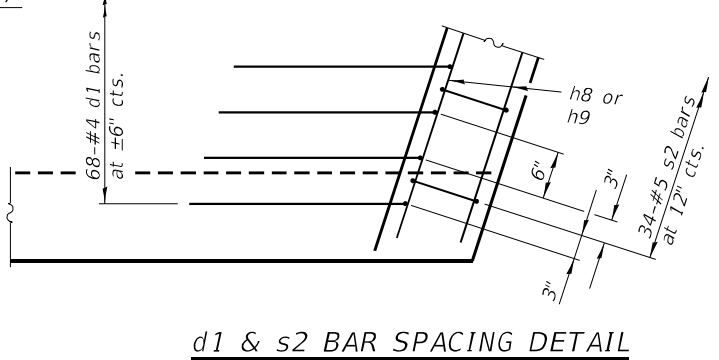
SHEET 8 OF 20 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(10-34-1) HBK	CHAMPAIGN	1187	959
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				

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PLAN - TOP SLAB



d1 & s2 BAR SPACING DETAIL

*Vary the bar lap length (2'-9" min.) of the last bar in each line of bars or cut last bar to fit skew.

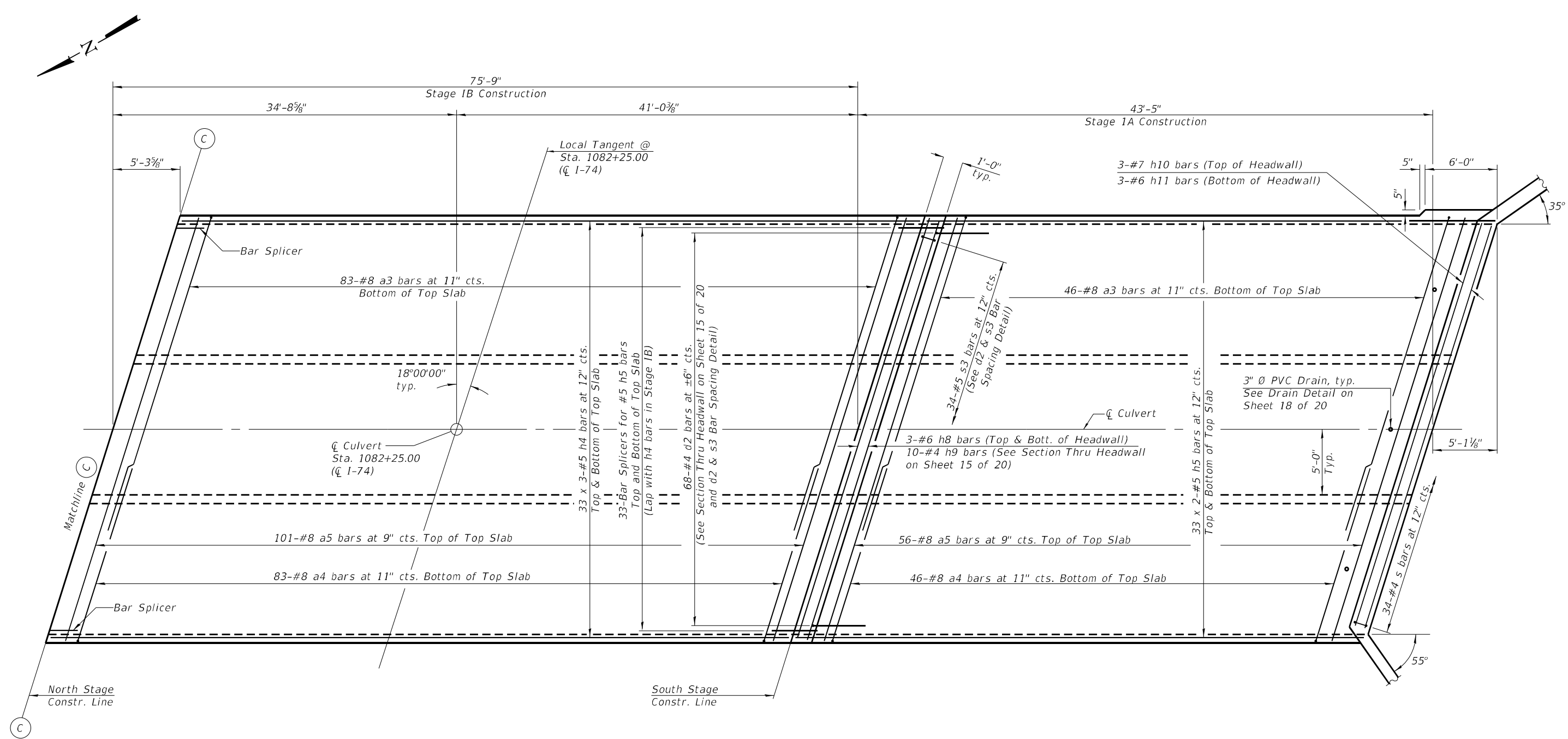
MINIMUM BAR LAP
 #5 Bar = 2'-9"
 #8 Bar = 4'-5"

Notes:
 See Sheets 16 & 17 of 20 for Horizontal Cantilever Wingwall Details.
 See Sheet 14 of 20 for Sections Thru Headwalls.
 See Sheet 19 of 20 for Bar Splicer Details and Quantity.
 A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.
 Bars indicated thus 33 x 10 indicates 33 lines of bars with 10 lengths per line.

(Sheet 1 of 2)

BACON FARMER WORKMAN ENGINEERING & TESTING, INC. 403 NORTH COURT STREET MARIETTA, IL 62450 PHONE - 618.267.9190	USER NAME =	DESIGNED - JGY	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CULVERT DETAILS - TOP SLAB STRUCTURE NO. 010-2043	F.A. RTE. =	SECTION =	COUNTY =	TOTAL SHEETS =	SHEET NO. =
	PLOT SCALE =	DRAWN - JGY	REVISED -			74	(10-34-1) HBK	CHAMPAIGN	1187	961
PLOT DATE =	CHECKED - GBR	REVISED -		SHEET 10 OF 20 SHEETS		CONTRACT NO. 70B99		ILLINOIS FED. AID PROJECT		

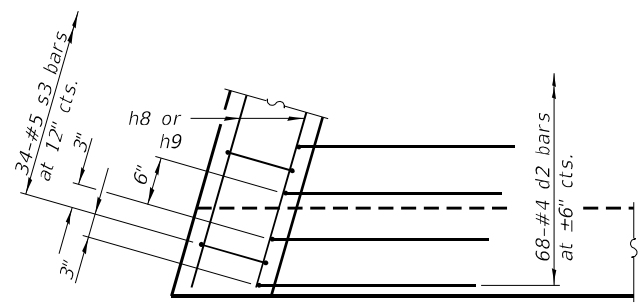
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PLAN - TOP SLAB

MINIMUM BAR LAP

#5 Bar = 2'-9"
 #8 Bar = 4'-5"



d2 & s3 BAR SPACING DETAIL

Notes:
 See Sheets 16 & 17 of 20 for Horizontal Cantilever Wingwall Details.
 See Sheet 15 of 20 for Sections Thru Headwalls.
 See Sheet 19 of 20 for Bar Splicer Details and Quantity.
 A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.
 Bars indicated thus 33 x 10 indicates 33 lines of bars with 10 lengths per line.

(Sheet 2 of 2)

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PLOT DATE =	DRAWN - JGY	REVISD -
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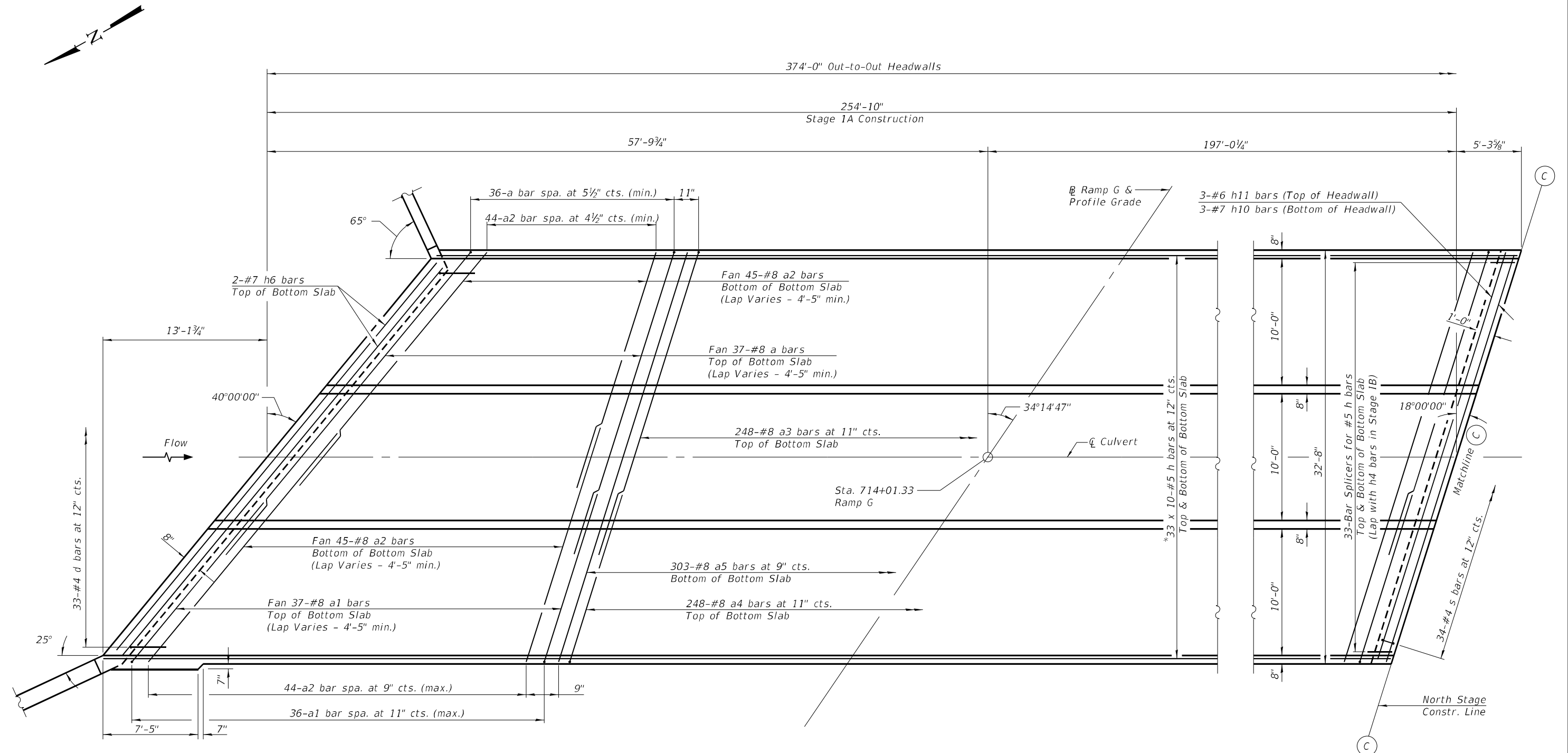
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS - TOP SLAB
 STRUCTURE NO. 010-2043

SHEET 11 OF 20 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(10-34-1) HBK	CHAMPAIGN	1187	962
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				

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MINIMUM BAR LAP
 #5 Bar = 2'-9"
 #8 Bar = 4'-5"

PLAN - BOTTOM SLAB

*Vary the bar lap length (2'-9" min.) of the last bar in each line of bars or cut last bar to fit skew.

Notes:
 See Sheets 16 & 17 of 20 for Horizontal Cantilever Wingwall Details.
 See Sheet 14 of 20 for Section Thru Headwall and Elevation View of Cutoff wall.
 See Sheet 19 of 20 for Bar Splicer Details and Quantity.
 A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.
 Bars indicated thus 33 x 10 indicates 33 lines of bars with 10 lengths per line.

(Sheet 1 of 2)

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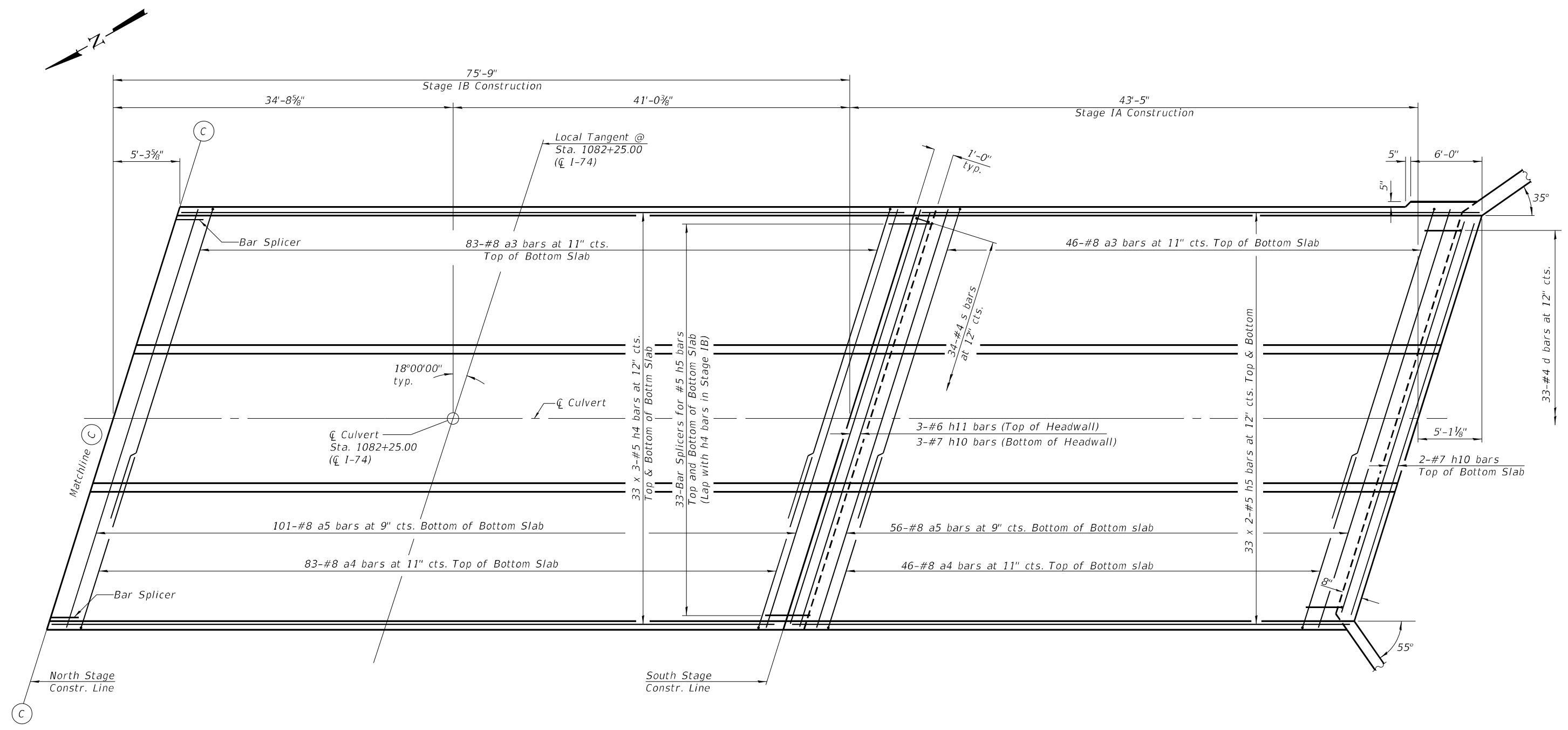
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PLOT DATE =	CHECKED - GBR	REVISED -

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DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS - BOTTOM SLAB
STRUCTURE NO. 010-2043

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(10-34-1) HBK	CHAMPAIGN	1187	963
CONTRACT NO. 70B99				
ILLINOIS		FED. AID PROJECT		

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MINIMUM BAR LAP
 #5 Bar = 2'-9"
 #8 Bar = 4'-5"

PLAN - BOTTOM SLAB

Notes:
 See Sheets 16 & 17 of 20 for Horizontal Cantilever Wingwall Details.
 See Sheet 14 of 20 for Section Thru Headwall and Elevation View of Cutoff wall.
 See Sheet 19 of 20 for Bar Splicer Details and Quantity.
 A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.
 Bars indicated thus 33 x 10 indicates 33 lines of bars with 10 lengths per line.

(Sheet 2 of 2)

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CULVERT DETAILS - BOTTOM SLAB
STRUCTURE NO. 010-2043

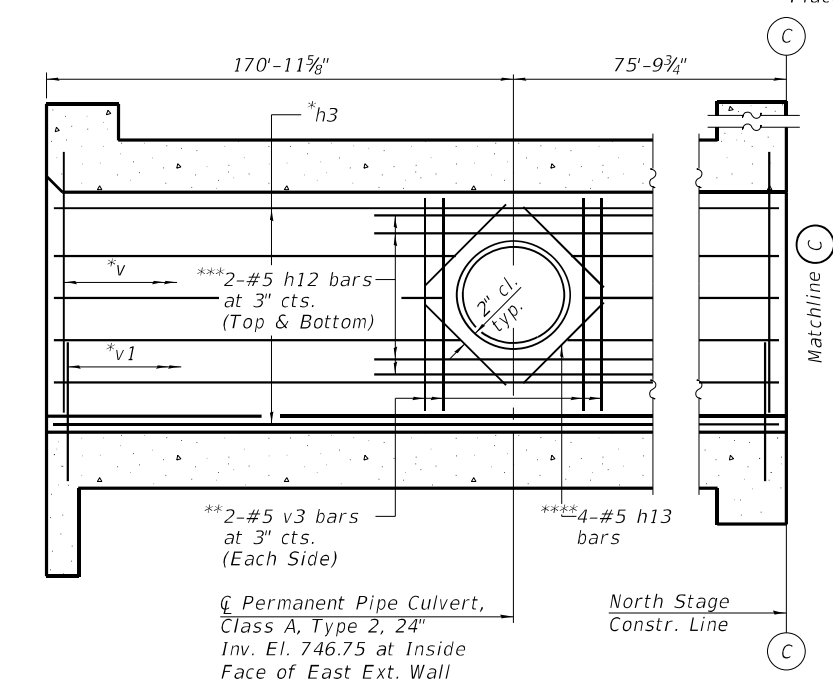
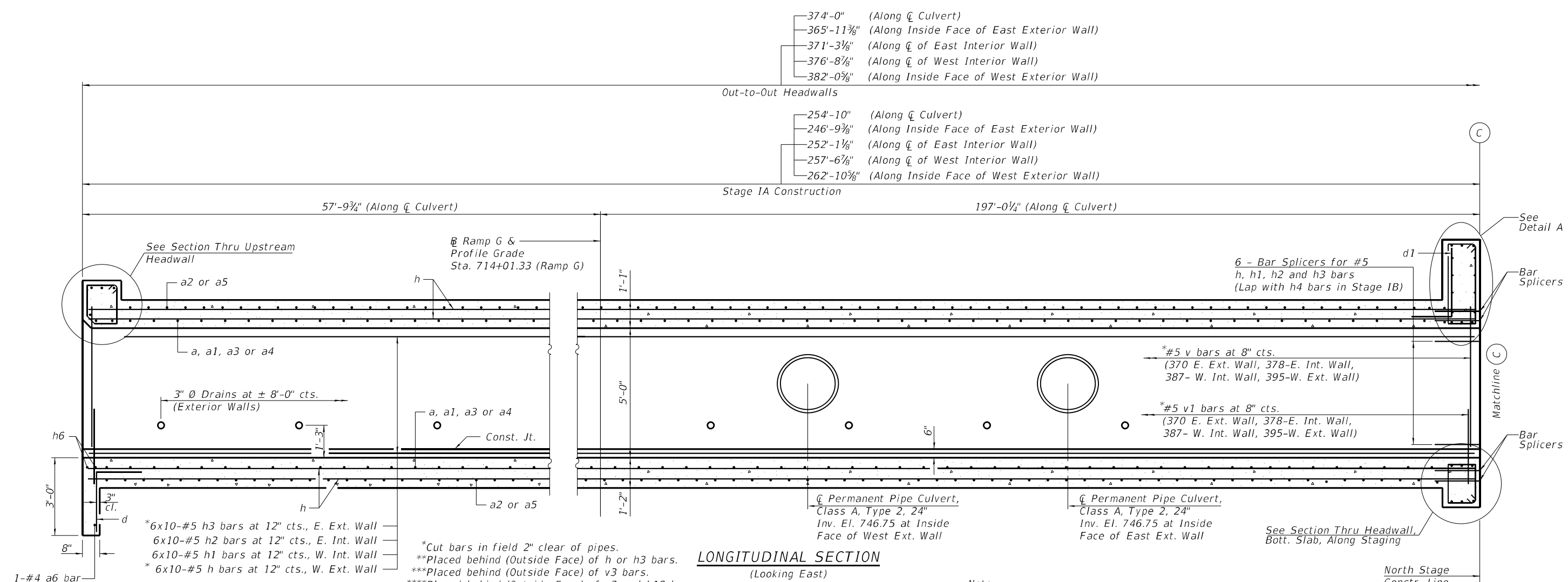
SHEET 13 OF 20 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(10-34-1) HBK	CHAMPAIGN	1187	964
CONTRACT NO. 70B99				

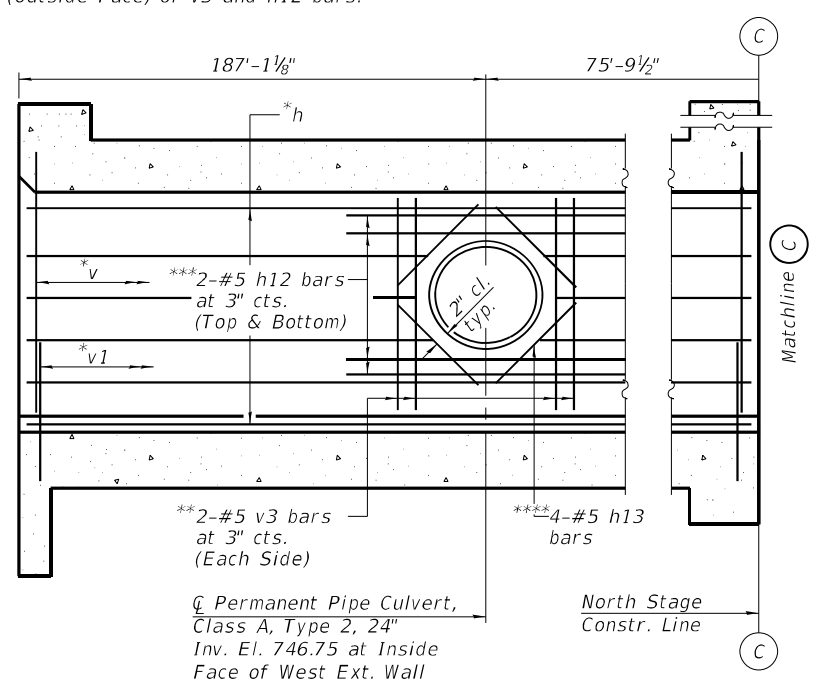
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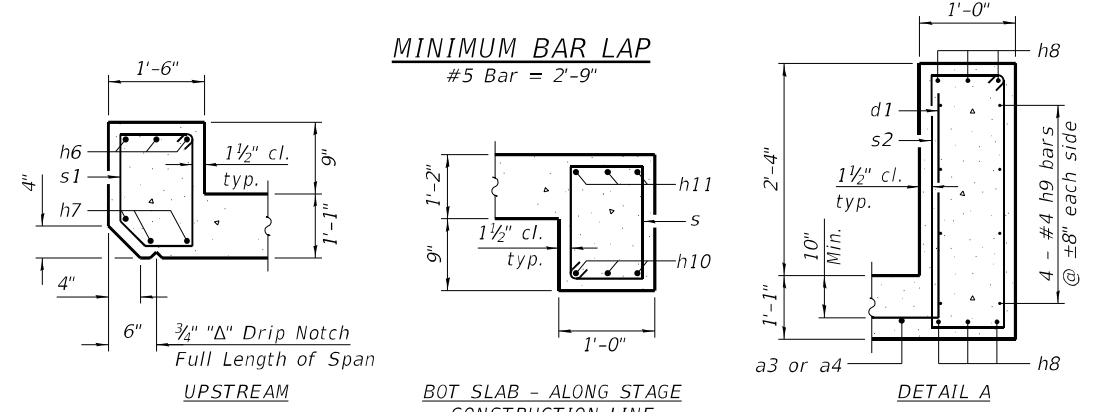


ELEVATION - EAST EXT. WALL
 (Looking East - Dimensions Along Inside Face of East Ext. Wall)
 (Reinforcement In Slabs Not Shown for Clarity)



ELEVATION - WEST EXT. WALL
 (Looking East - Dimensions Along Inside Face of West Ext. Wall)
 (Reinforcement In Slabs Not Shown for Clarity)

Note:
 Pipe sections shall be cast in the exterior culvert walls at the locations shown. The ends shall extend a minimum of 6 inches past the inside face of walls. The pipes shall extend through and beyond the outside face a sufficient distance to allow connections. The maximum length of section cast into the walls should be 4 feet.
 The Contractor shall carefully construct the walls around the pipes to prevent leakage along the surfaces. The Contractor shall seal any voids between the culvert walls and sections with non-shrink grout per Article 1024.02 of the Standard Specifications.
 The cost of the connection shall not be paid for separately but shall be included in the length of pipe culvert or storm sewer of the class, type, and size shown.



SECTION THRU HEADWALL
 Sections at right angle to headwalls

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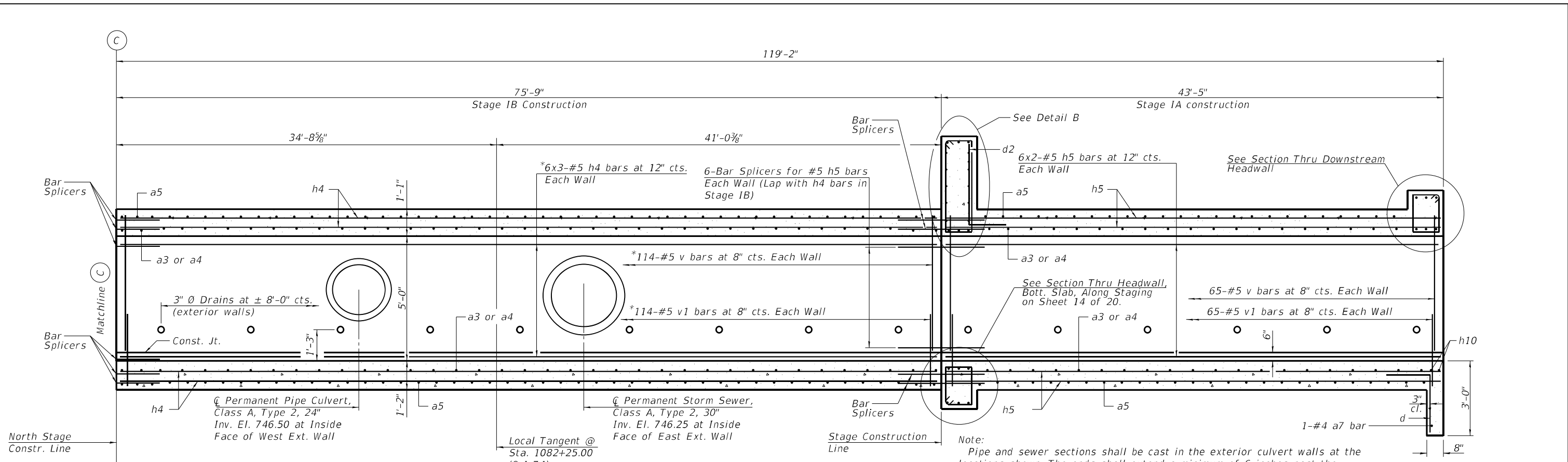
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS - LONGITUDINAL SECTION
STRUCTURE NO. 010-2043

F.A. RTE. = 74	SECTION = (10-34-1) HBK	COUNTY = CHAMPAIGN	TOTAL SHEETS = 1187	SHEET NO. = 965
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				

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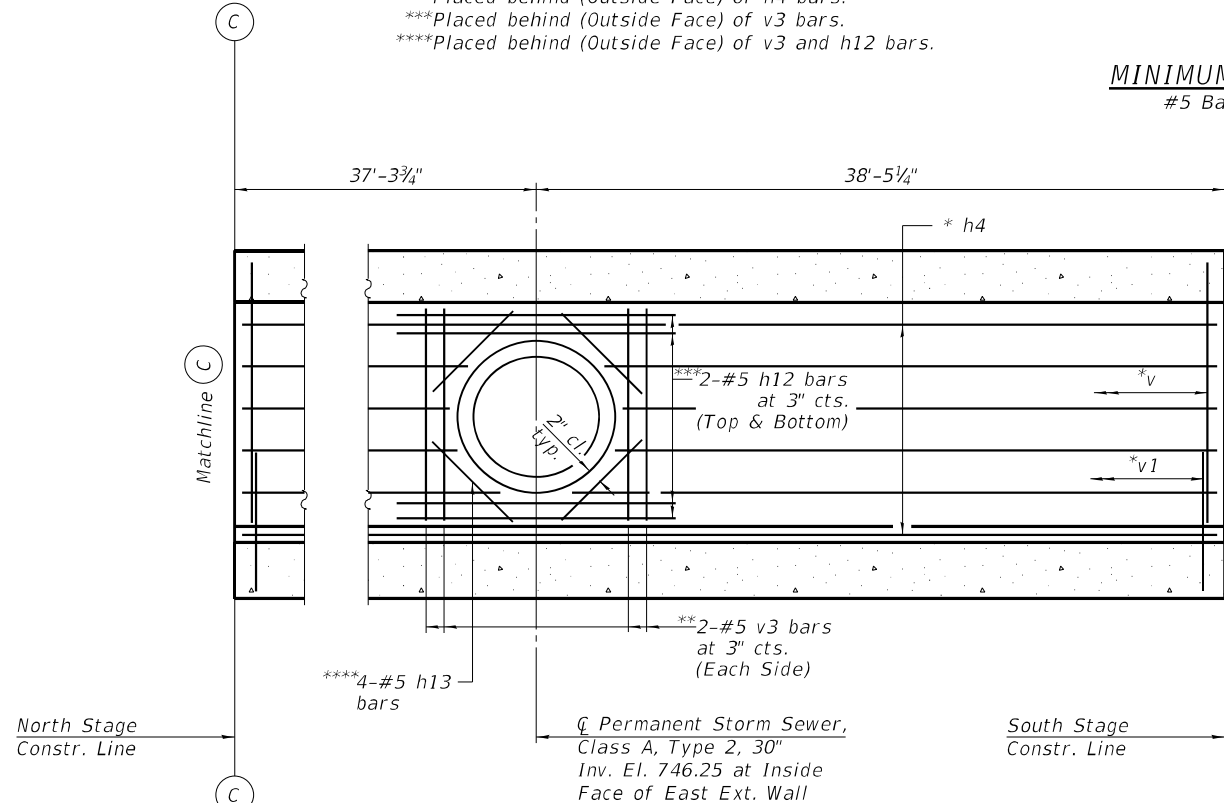


LONGITUDINAL SECTION
(Looking East)

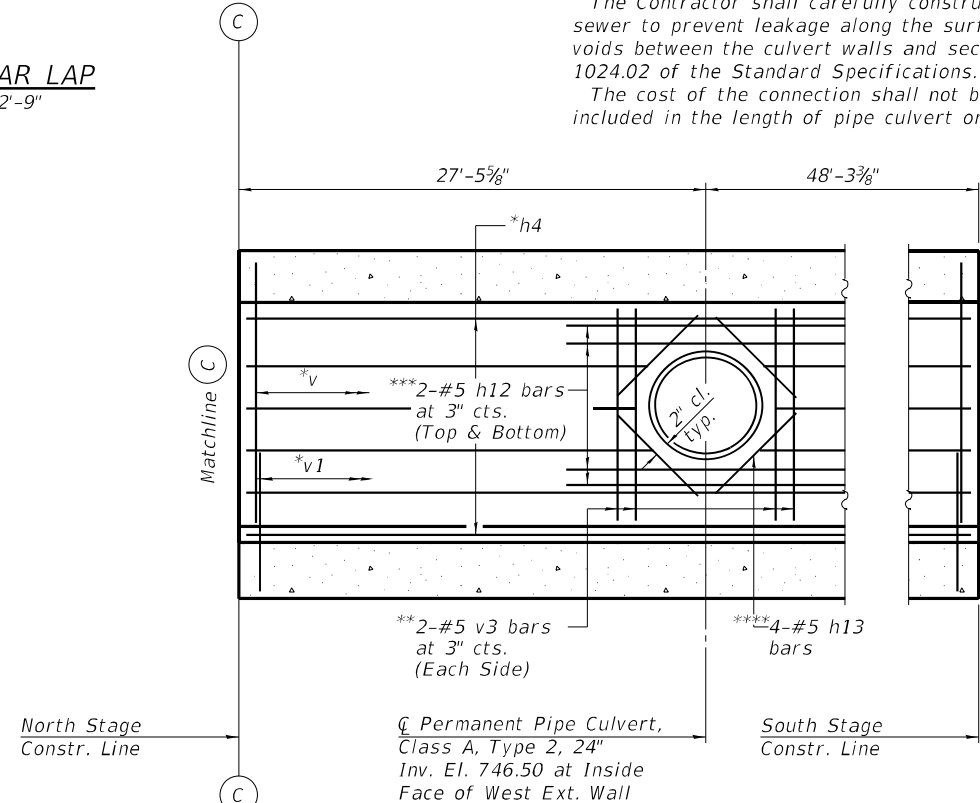
Note:
 Pipe and sewer sections shall be cast in the exterior culvert walls at the locations shown. The ends shall extend a minimum of 6 inches past the inside face of walls. The pipes and sewer shall extend through and beyond the outside face a sufficient distance to allow connections. The maximum length of section cast into the walls should be 4 feet.
 The Contractor shall carefully construct the walls around the pipes and sewer to prevent leakage along the surfaces. The Contractor shall seal any voids between the culvert walls and sections with non-shrink grout per Article 1024.02 of the Standard Specifications.
 The cost of the connection shall not be paid for separately but shall be included in the length of pipe culvert or storm sewer of the class, type, and size shown.

*Cut bars in field 2" clear of pipes in exterior walls.
 **Placed behind (Outside Face) of h4 bars.
 ***Placed behind (Outside Face) of v3 bars.
 ****Placed behind (Outside Face) of v3 and h12 bars.

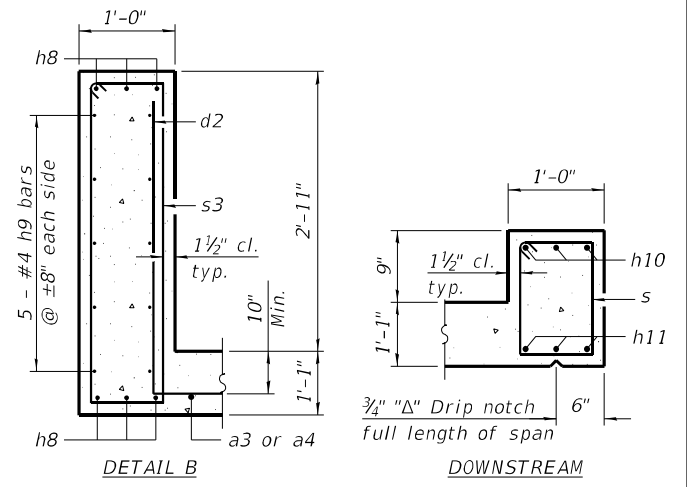
MINIMUM BAR LAP
#5 Bar = 2'-9"



ELEVATION - EAST EXT. WALL
(Looking East - Dimensions Along Inside Face of East Ext. Wall)
(Reinforcement In Slabs Not Shown for Clarity)



ELEVATION - WEST EXT. WALL
(Looking East - Dimensions Along Inside Face of West Ext. Wall)
(Reinforcement In Slabs Not Shown for Clarity)



SECTION THRU HEADWALL
Sections at right angle to headwalls

(Sheet 2 of 2)

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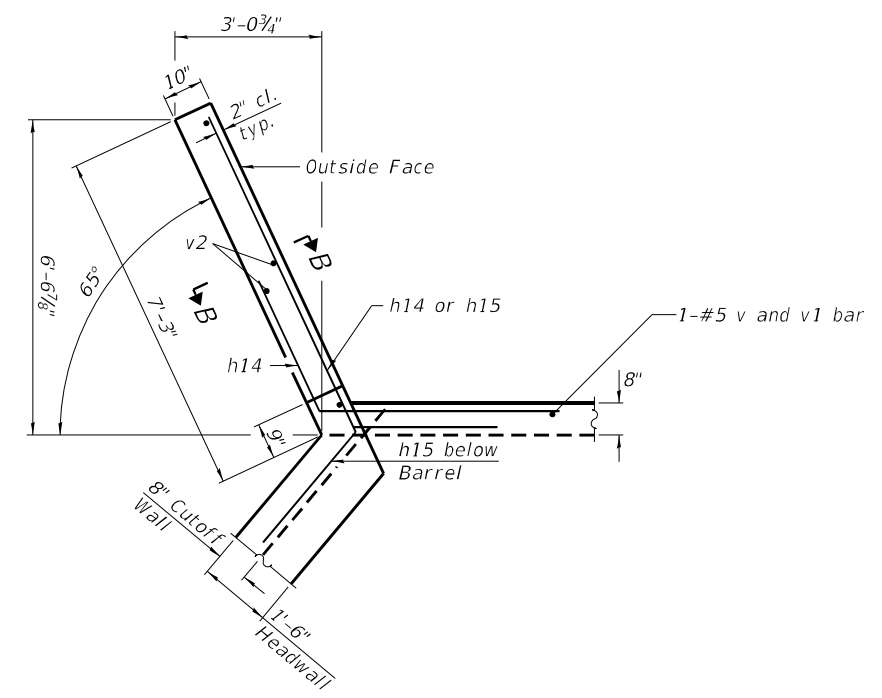
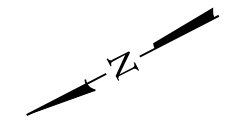
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS - LONGITUDINAL SECTION
STRUCTURE NO. 010-2043

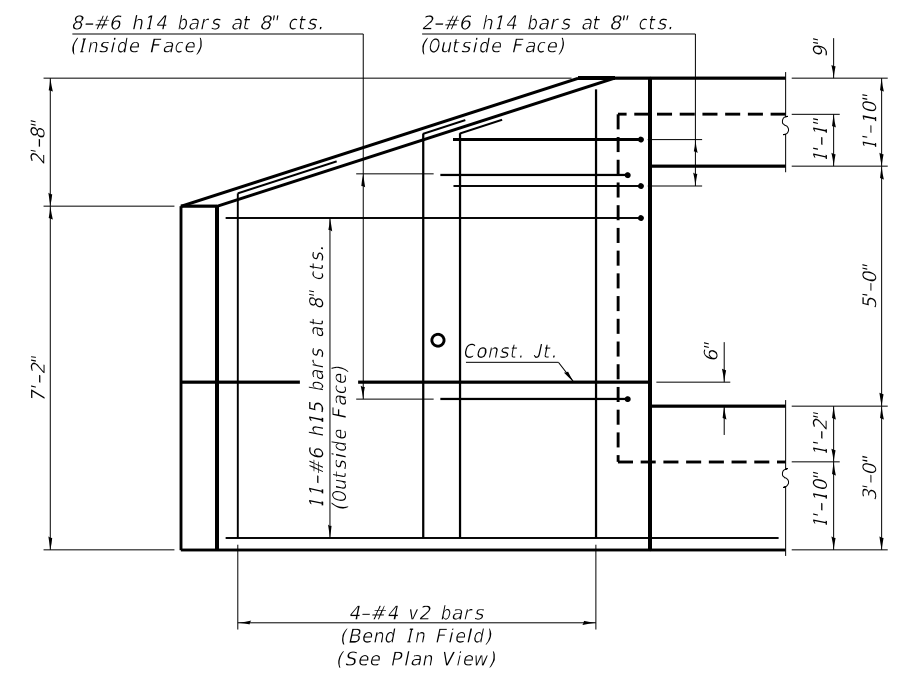
SHEET 15 OF 20 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(10-34-1) HBK	CHAMPAIGN	1187	966
CONTRACT NO. 70B99				
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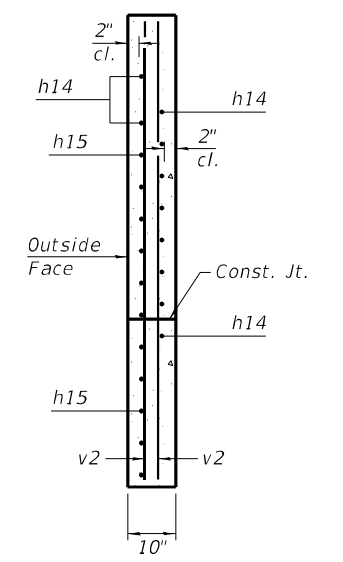
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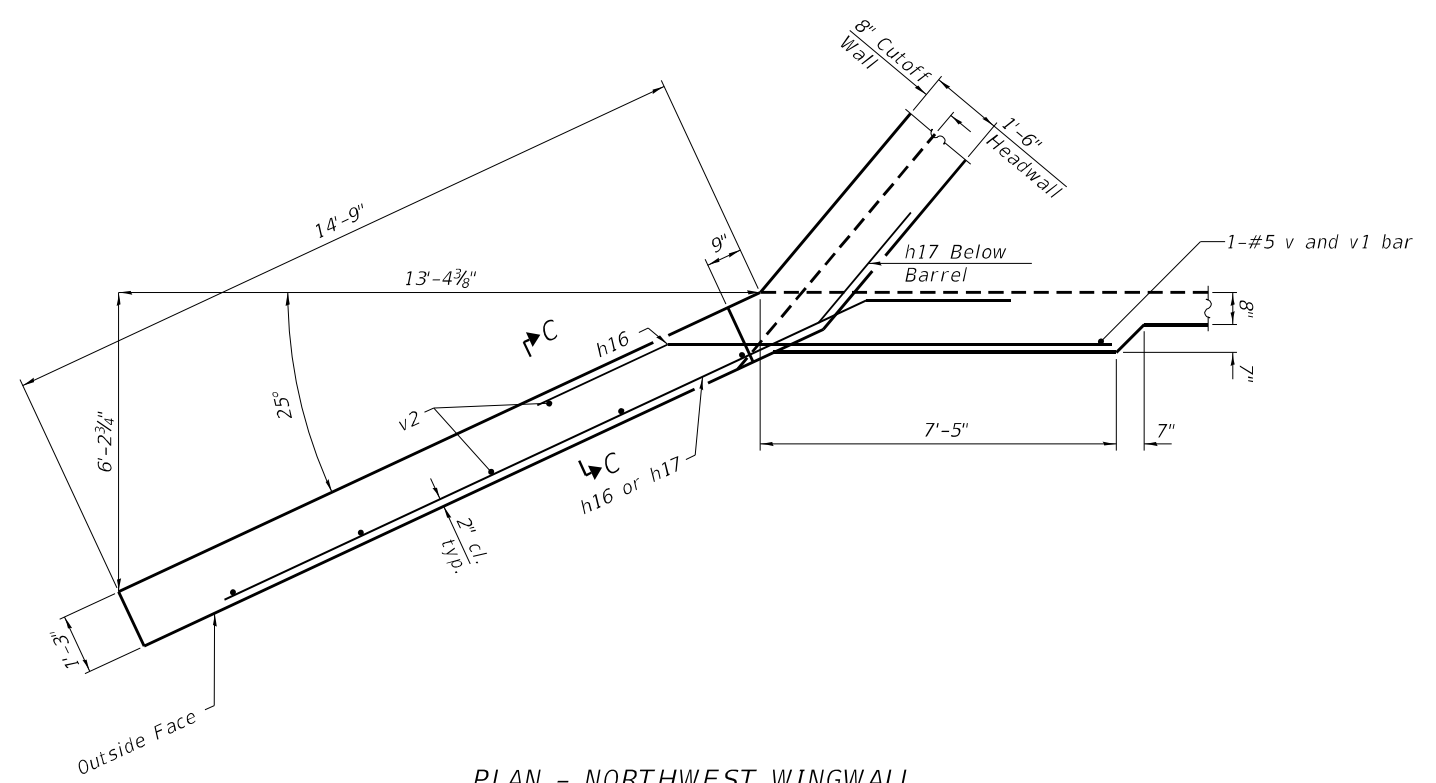
PLAN - NORTHEAST WINGWALL



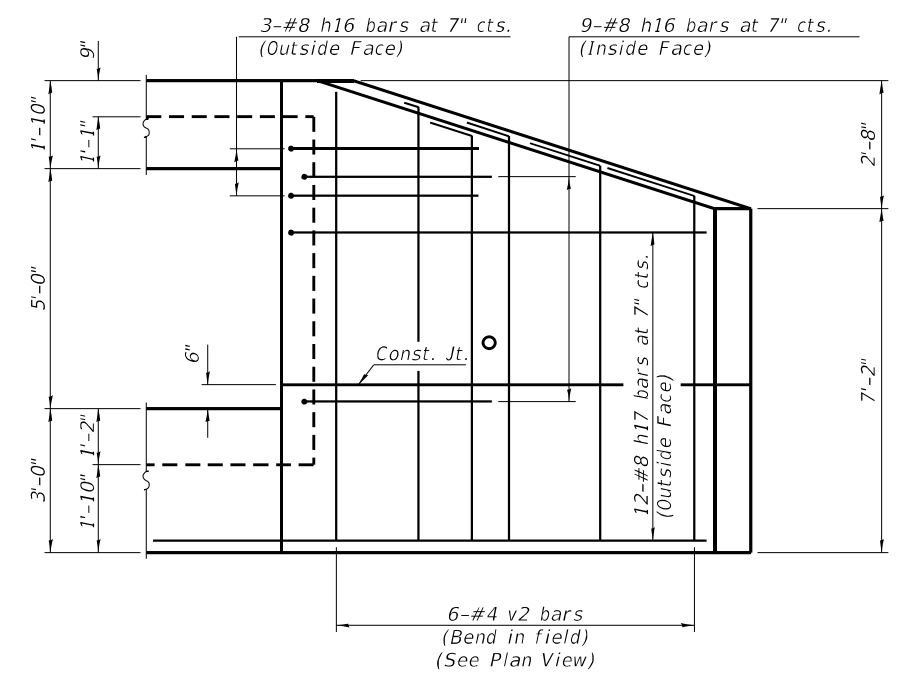
ELEVATION - NORTHEAST WINGWALL



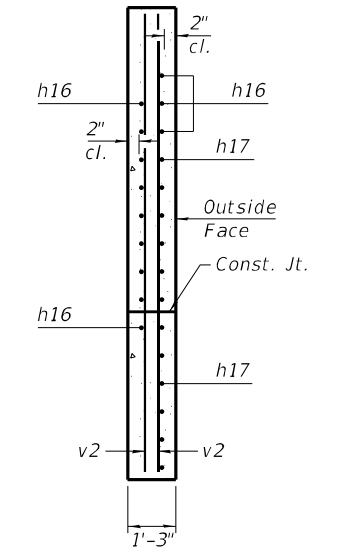
SECTION B-B



PLAN - NORTHWEST WINGWALL



ELEVATION - NORTHWEST WINGWALL



SECTION C-C

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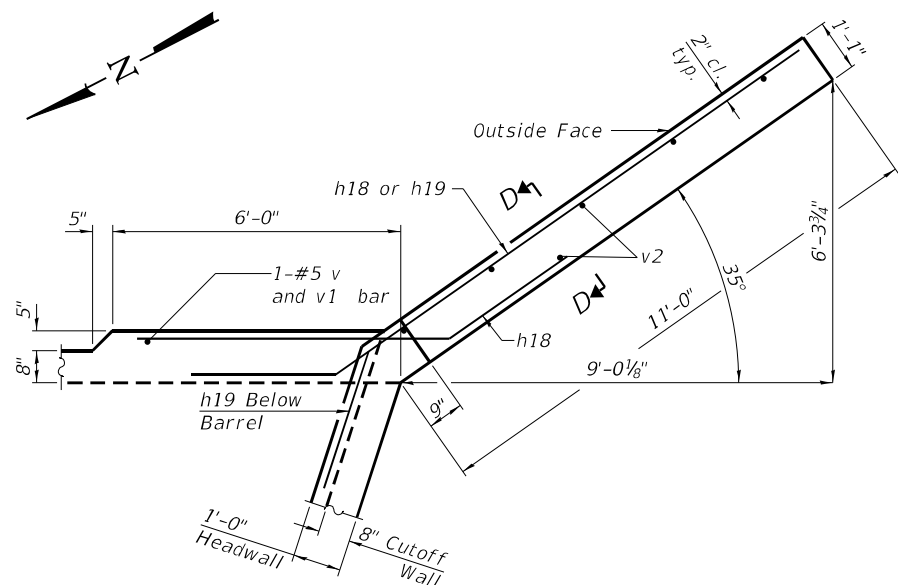
STATE OF ILLINOIS
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HORIZONTAL CANTILEVER WINGWALLS
STRUCTURE NO. 010-2043

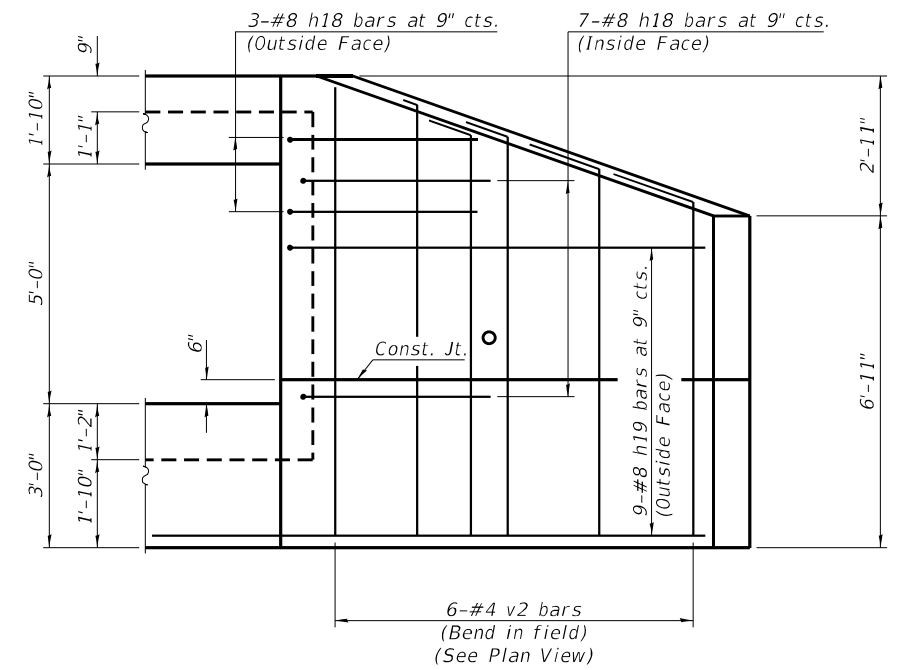
SHEET 16 OF 20 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(10-34-1) HBK	CHAMPAIGN	1187	967
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				

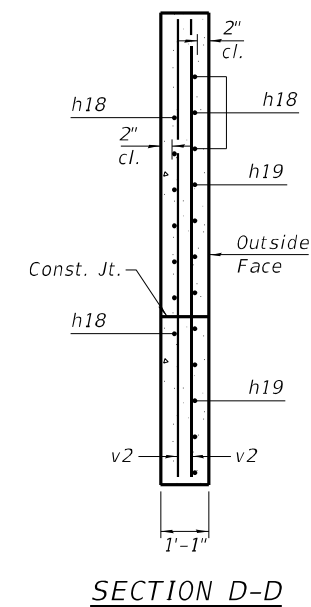
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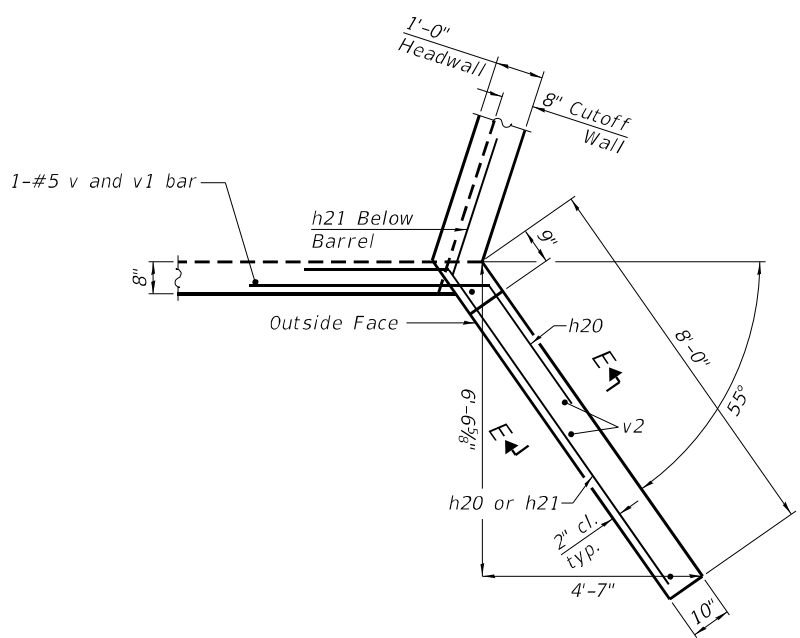
PLAN - SOUTHEAST WINGWALL



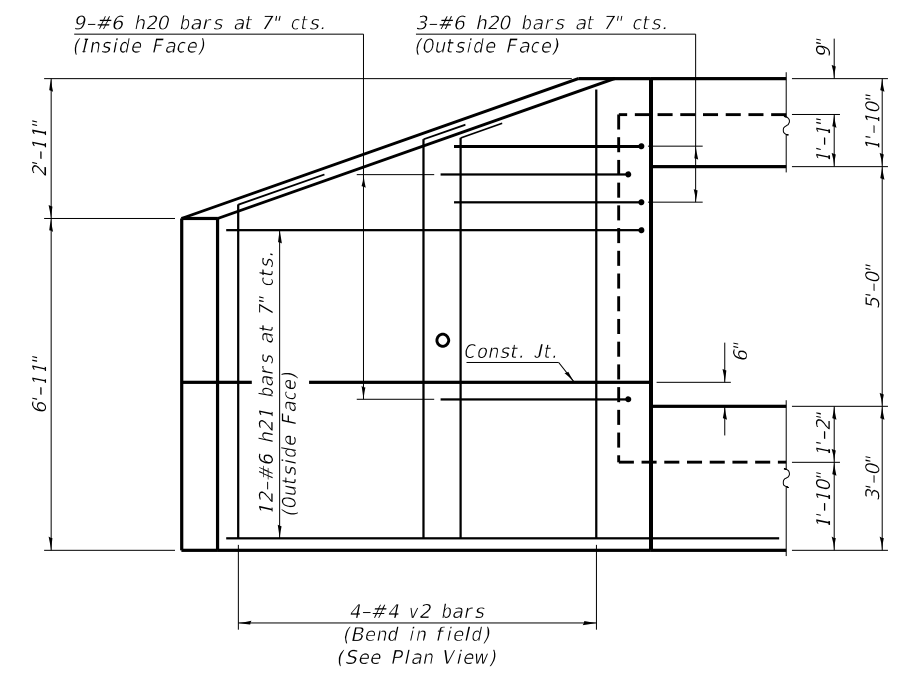
ELEVATION - SOUTHEAST WINGWALL



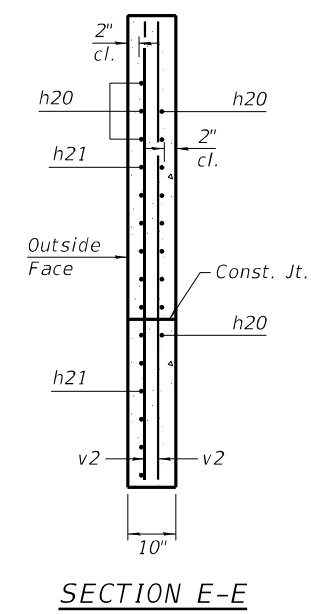
SECTION D-D



PLAN - SOUTHWEST WINGWALL



ELEVATION - SOUTHWEST WINGWALL



SECTION E-E

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 ENGINEERING & TESTING, INC.
 403 NORTH COURT STREET
 MARIETTA, IL 61756-5050
 PHONE - 815.267.9190

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DEPARTMENT OF TRANSPORTATION

HORIZONTAL CANTILEVER WINGWALLS
STRUCTURE NO. 010-2043

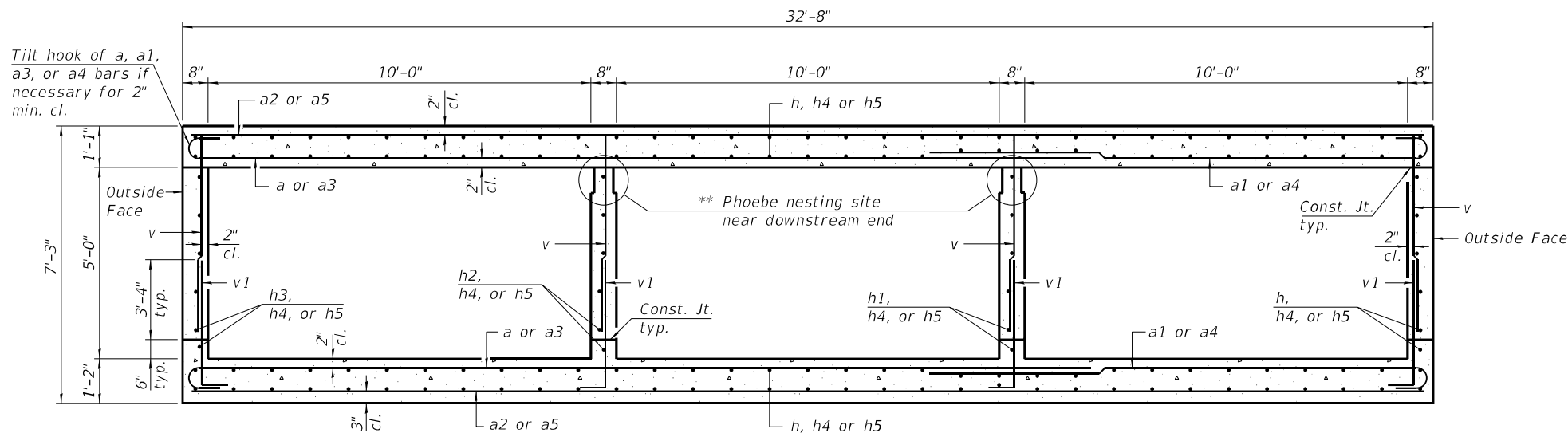
SHEET 17 OF 20 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(10-34-1) HBK	CHAMPAIGN	1187	968
CONTRACT NO. 70B99				

ILLINOIS FED. AID PROJECT

BILL OF MATERIAL

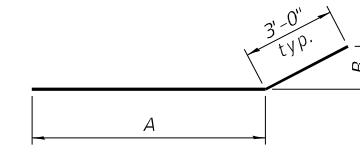
Bar	No.	Size	Length	Shape
a	74	#8	31'-1"	┌───┐
a1	74	#8	17'-5"	┌───┐
a2	180	#8	23'-4"	┌───┐
a3	754	#8	25'-8"	┌───┐
a4	754	#8	14'-8"	┌───┐
a5	920	#8	34'-0"	┌───┐
a6	1	#4	40'-4"	┌───┐
a7	1	#4	34'-0"	┌───┐
d	66	#4	4'-5"	┌───┐
d1	68	#4	5'-3"	┌───┐
d2	68	#4	5'-10"	┌───┐
h	1380	#5	28'-10"	┌───┐
h1	60	#5	28'-3"	┌───┐
h2	60	#5	27'-9"	┌───┐
h3	60	#5	27'-2"	┌───┐
h4	468	#5	27'-0"	┌───┐
h5	312	#5	23'-0"	┌───┐
h6	5	#7	40'-4"	┌───┐
h7	3	#6	40'-4"	┌───┐
h8	12	#6	34'-0"	┌───┐
h9	18	#4	34'-0"	┌───┐
h10	11	#7	32'-8"	┌───┐
h11	9	#6	32'-8"	┌───┐
h12	16	#5	4'-4"	┌───┐
h13	16	#5	2'-6"	┌───┐
h14	10	#6	8'-0"	┌───┐
h15	11	#6	10'-3"	┌───┐
h16	12	#8	12'-3"	┌───┐
h17	12	#8	17'-9"	┌───┐
h18	10	#8	10'-0"	┌───┐
h19	9	#8	14'-0"	┌───┐
h20	12	#6	8'-0"	┌───┐
h21	12	#6	11'-0"	┌───┐
s	102	#4	5'-5"	┌───┐
s1	41	#4	6'-4"	┌───┐
s2	34	#5	8'-7"	┌───┐
s3	34	#5	9'-9"	┌───┐
v	2250	#5	5'-3"	┌───┐
v1	2250	#5	6'-2"	┌───┐
v2	20	#4	9'-5"	┌───┐
v3	16	#5	4'-4"	┌───┐
Concrete Box Culverts	Cu. Yd.	1233.2		
Reinforcement Bars	Pound	286,920		



SECTION THRU BARREL

(Looking South)

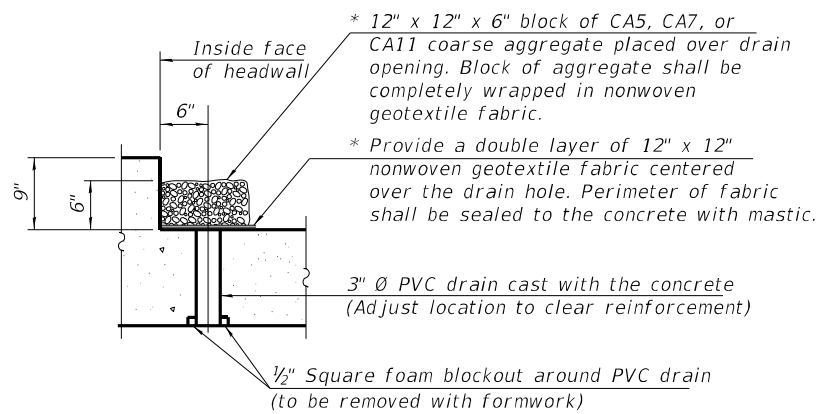
** See Phoebe Nesting Site Details on Sheet 5 of 20.



BARS h14, h15, h16, h17, h18, h19, h20 & h21

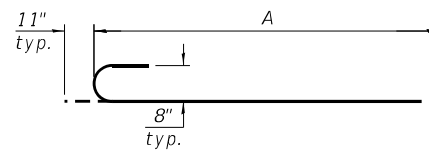
Bar	A	B
h14	5'-0"	2'-8 ⁵ / ₈ "
h15	7'-3"	2'-8 ⁵ / ₈ "
h16	9'-3"	1'-3 ¹ / ₄ "
h17	14'-9"	1'-3 ¹ / ₄ "
h18	7'-0"	1'-8 ⁵ / ₈ "
h19	11'-0"	1'-8 ⁵ / ₈ "
h20	5'-0"	2'-5 ¹ / ₂ "
h21	8'-0"	2'-5 ¹ / ₂ "

* Nonwoven geotextile fabric shall conform to the requirements of Article 1080.01 of the Standard Specifications. The minimum weight of the fabric shall be 6 ounces per square yard.



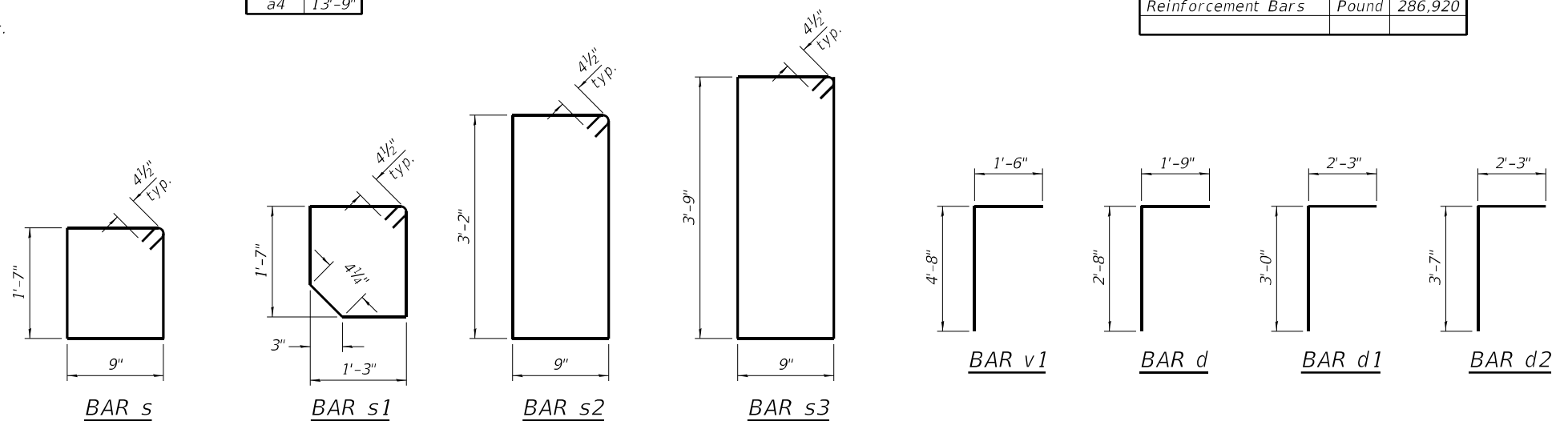
DRAIN DETAIL

(All costs associated with furnishing and constructing the above drain detail will not be measured for payment but shall be included in the contract unit price for the associated work.)



BARS a, a1, a3 & a4

Bar	A
a	30'-2"
a1	16'-6"
a3	24'-9"
a4	13'-9"



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 ENGINEERING & TESTING, INC.
 403 NORTH COURT STREET
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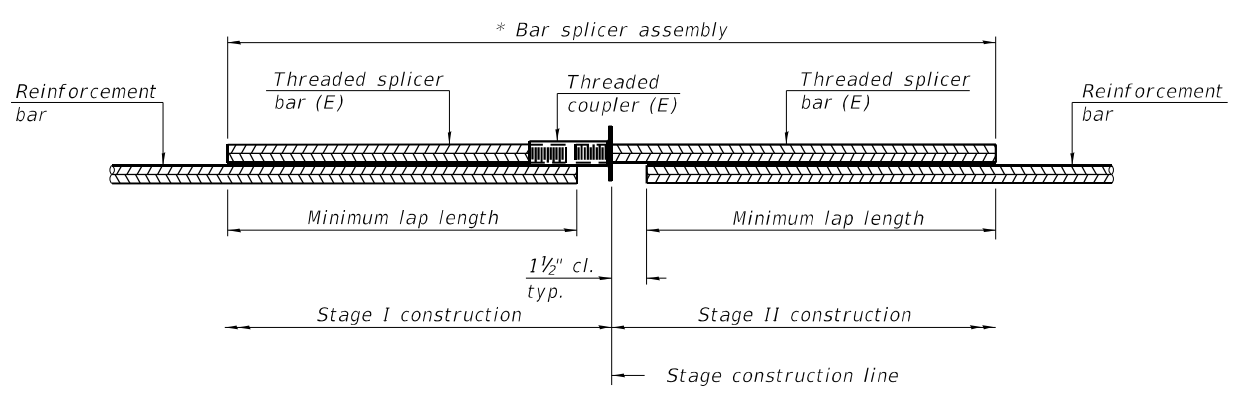
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CULVERT SECTION AND DETAILS
STRUCTURE NO. 010-2043

SHEET 18 OF 20 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(10-34-1) HBK	CHAMPAIGN	1187	969
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				

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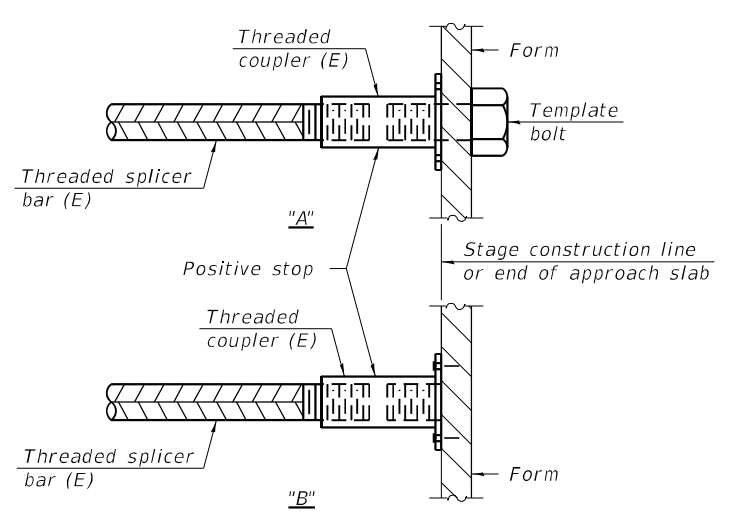


STANDARD BAR SPLICER ASSEMBLY PLAN
 (All components shall be provided from one supplier)

Threaded splicer bar length = min. lap length + 1 1/2" + thread length

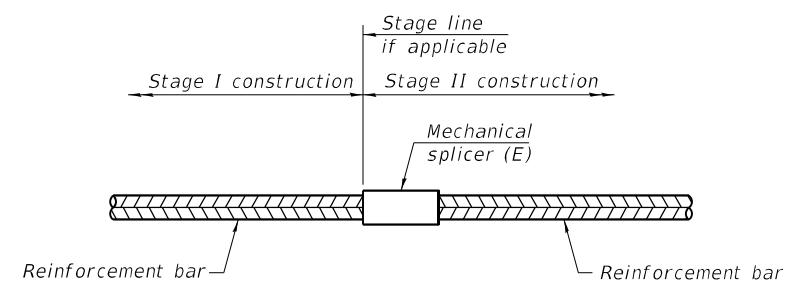
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length
Top slab	#5	132	2'-9"
Walls	#5	48	2'-9"
Bottom slab	#5	132	2'-9"



INSTALLATION AND SETTING METHODS

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



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required

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

BSD-1 1-1-2020

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 010-2043

SHEET 19 OF 20 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(10-34-1) HBK	CHAMPAIGN	1187	970
CONTRACT NO. 70B99				

ILLINOIS FED. AID PROJECT

Bench Mark: B.M. #4802-1 Chiseled "□" in center of overhead sign foundation in the median of I-57. Sta 612+70.80, 1.46' Lt. (I-57). Elev. 764.855.

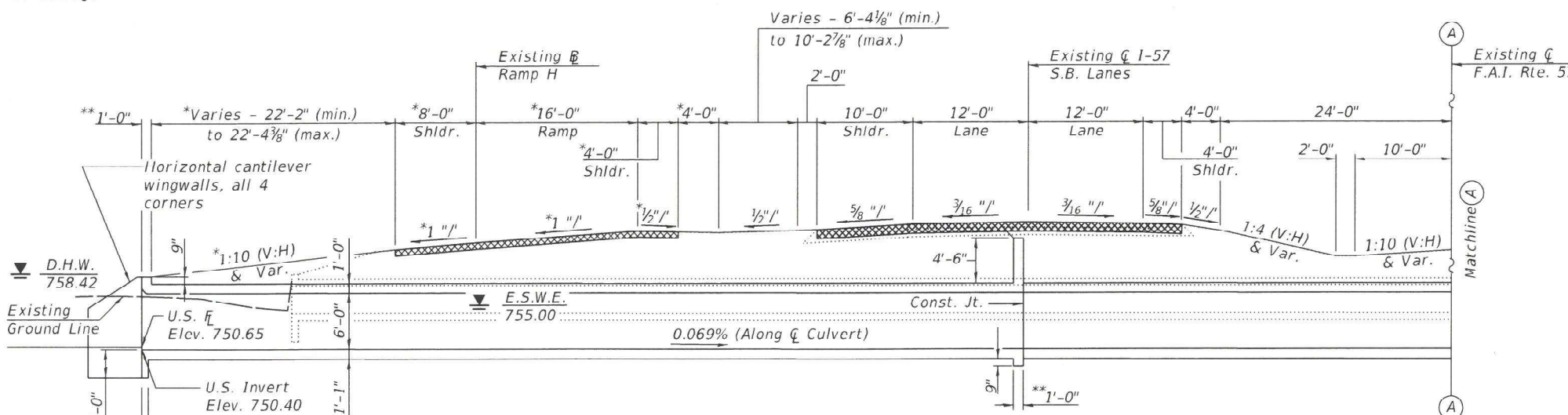
Existing Structure: S.N. 010-8306 was built in 1965 under F.A.I. Rte. 57, Section 10-34-1. The existing structure is a double 9'x3' R.C. box culvert. The culvert is 232'-5" in length. Existing structure is to be removed and replaced with traffic to be maintained utilizing stage construction.

No Salvage

*Radial to Existing @ Ramp H
 **At Rt. L's to Outside Face of Headwall
 ***See Roadway Plans for Removal Details and Quantities
 [Hatched Box] - Indicates Temporary Pavement

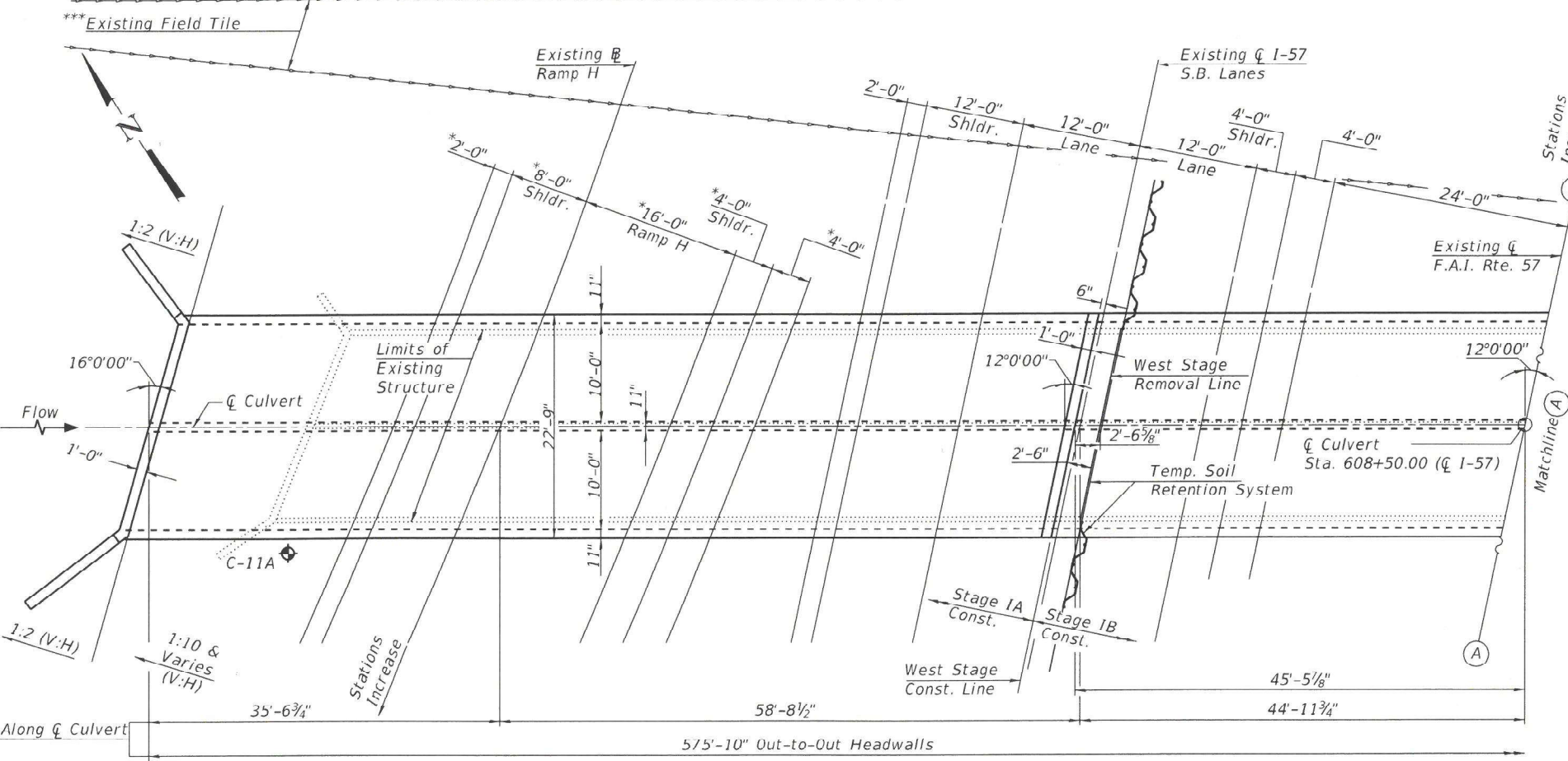
GENERAL NOTES

Precast Alternate is not allowed.
 The limits and quantities of removal and replacement shown are based on the boring data and may be modified by the District Geotechnical and Field Engineers for variable subsurface conditions encountered in the field.
 The Rock Fill shall be capped with 6 in. of CA7 and satisfy the Standard Specifications unless otherwise indicated in the Special Provisions. The cost of the capping material shall be included in the pay item for "Rock Fill".
 Construction to occur over two separate contracts. The initial contract will include construction of the culvert, ramps, drainage items (pipe culverts, storm sewer), and reconstruction of the portion of the existing F.A.I. Rte. 57 removed to construct the proposed culvert. The second contract will include construction of the final F.A.I. Rte. 57 roadway cross section.
 Per Section 540 of the Standard Specifications, the Contractor shall be responsible for diverting the water flow from the construction area using a method meeting the approval of the Engineer. Also, see Special Provisions concerning dewatering requirements for embankment and structure construction.
 See Sheet 3 of 28 for Profile Grades and Curve Data.
 See Sheet 6 of 28 for Total Bill of Material, Waterway Information, Name Plate, and Phoebe Nesting Site Details.
 See Sheet 25 of 28 for a Section Thru Barrel showing the limits of removal and replacement of material under the culvert.
 Minimum and Maximum dimensions are taken from within or to the limits of the proposed culvert.



INITIAL LONGITUDINAL SECTION

(At Completion of Culvert in First Contract - See General Note)
 (Looking North)
 (Horiz. Dims. and Slopes are at Rt. L's to Existing C F.A.I. Rte. 57 unless otherwise noted)
 (Existing Roadway Cross Section to be Reconstructed In Kind (See Roadway Plans))



INITIAL PLAN

(At Completion of Culvert in First Contract - See General Note)

APPROVED
 For Structural Adequacy Only
Carl Pappas
 Engineer of Bridges & Structures

LICENSED STRUCTURAL ENGINEER
 GERALD B. ROTHERHAM
 081-005673
 STATE OF ILLINOIS
Gerald B. Rotherham
 03/09/2021
 Exp: 11/30/2022

DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

LOADING HL-93

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

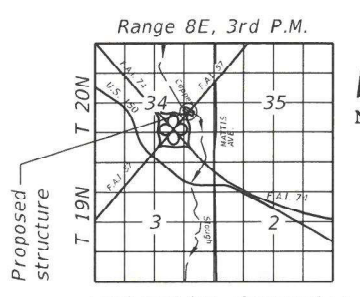
DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
 fy = 60,000 psi (Reinforcement)

INDEX OF SHEETS

- 1-6 General Plan & Elevation
- 7-8 Stage Construction Details
- 9 Temporary Soil Retention Details
- 10 Temporary Slab Support Details
- 11-14 Culvert Details - Top Slab
- 15-18 Culvert Details - Bottom Slab
- 19-22 Culvert Details - Longitudinal Section
- 23-24 Horizontal Cantilever Wingwalls
- 25 Culvert Section and Details
- 26 Bar Splicer Assembly and Mechanical Splicer Details
- 27-28 Soil Boring Logs



LOCATION SKETCH

GENERAL PLAN & ELEVATION
I-57 OVER COPPER SLOUGH
F.A.I. RTE. 57 - SEC. (10-34-1) HBK
CHAMPAIGN COUNTY
STATION 608+50.00
S.N. 010-2044

(Sheet 1 of 6)

GENERAL PLAN & ELEVATION
STRUCTURE NO. 010-2044

SHEET 1 OF 28 SHEETS

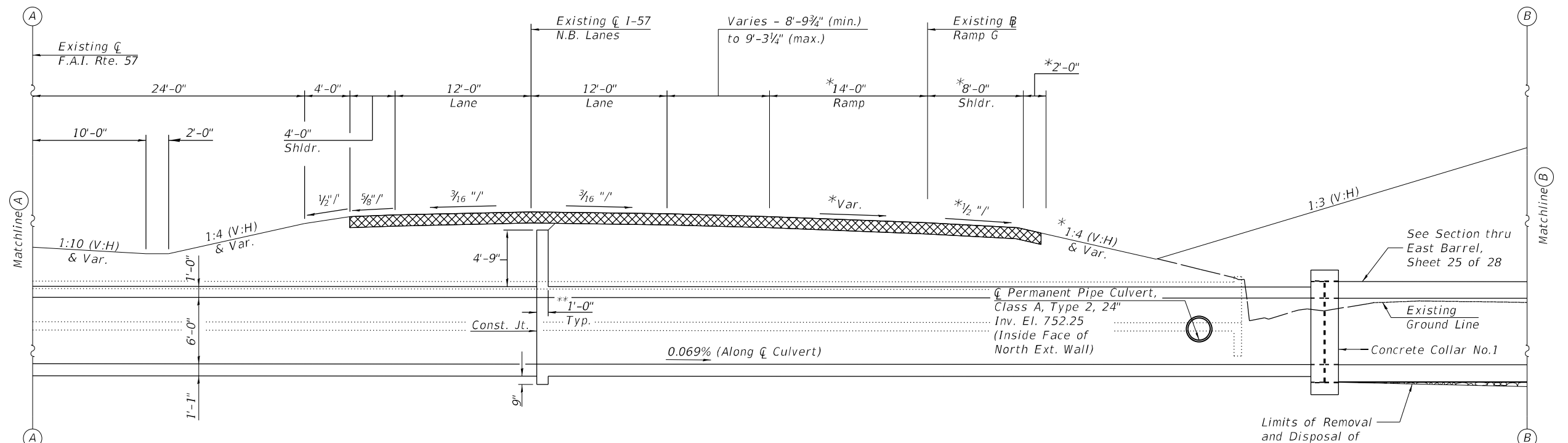
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DEPARTMENT OF TRANSPORTATION

F.A.I. RTE. 57	SECTION (10-34-1) HBK	COUNTY CHAMPAIGN	TOTAL SHEETS 1187	SHEET NO. 972
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				

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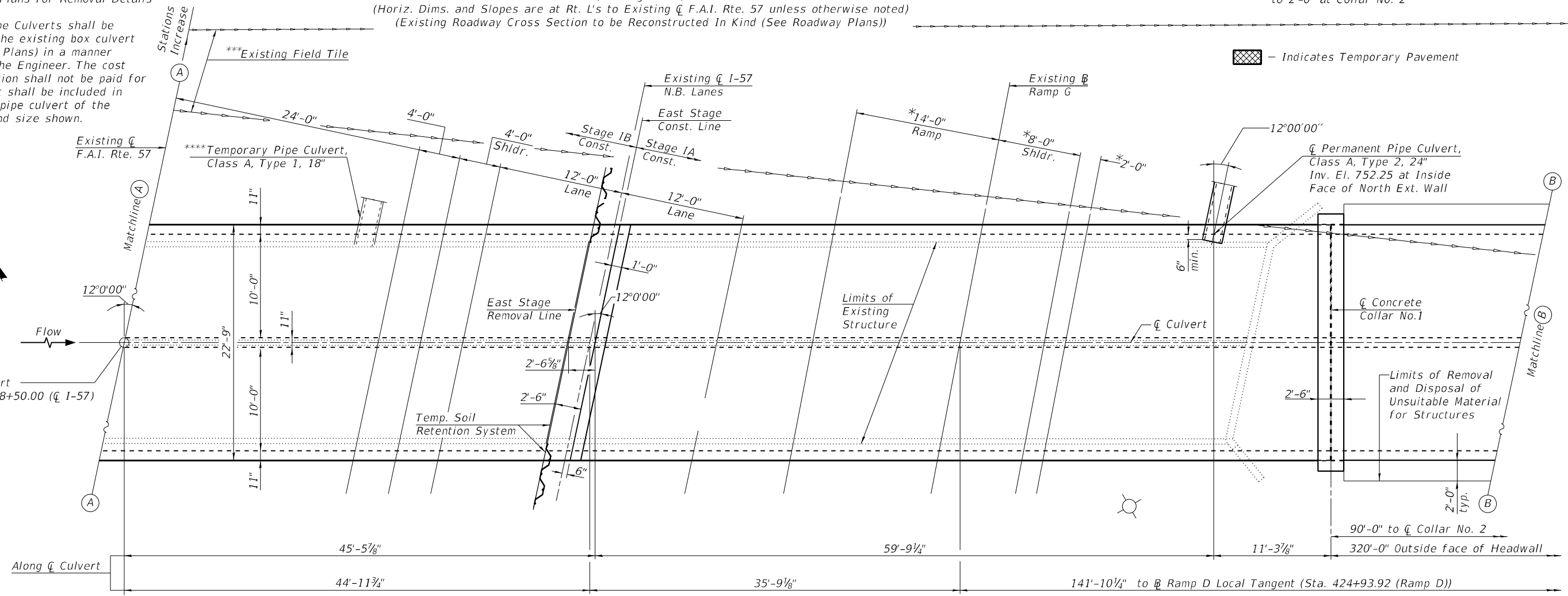
INITIAL LONGITUDINAL SECTION

(At Completion of Culvert in First Contract - See General Note on Sheet 1 of 28)
 (Looking North)
 (Horiz. Dims. and Slopes are at Rt. L's to Existing \bar{C} F.A.I. Rte. 57 unless otherwise noted)
 (Existing Roadway Cross Section to be Reconstructed In Kind (See Roadway Plans))

- * At Rt. L's to Existing \bar{B} Ramp G
- ** At Rt. L's to Outside Face of Headwall
- *** See Roadway Plans for Removal Details and Quantities
- **** Temporary Pipe Culverts shall be connected to the existing box culvert (See Roadway Plans) in a manner approved by the Engineer. The cost of the connection shall not be paid for separately but shall be included in the length of pipe culvert of the class, type, and size shown.

Limits of Removal and Disposal of Unsuitable Material for Structures (Varies from 0'-0" at Collar No.1 to 2'-0" at Collar No. 2)

▨ - Indicates Temporary Pavement



INITIAL PLAN

(At Completion of Culvert in First Contract - See General Note on Sheet 1 of 28)

(Sheet 2 of 6)

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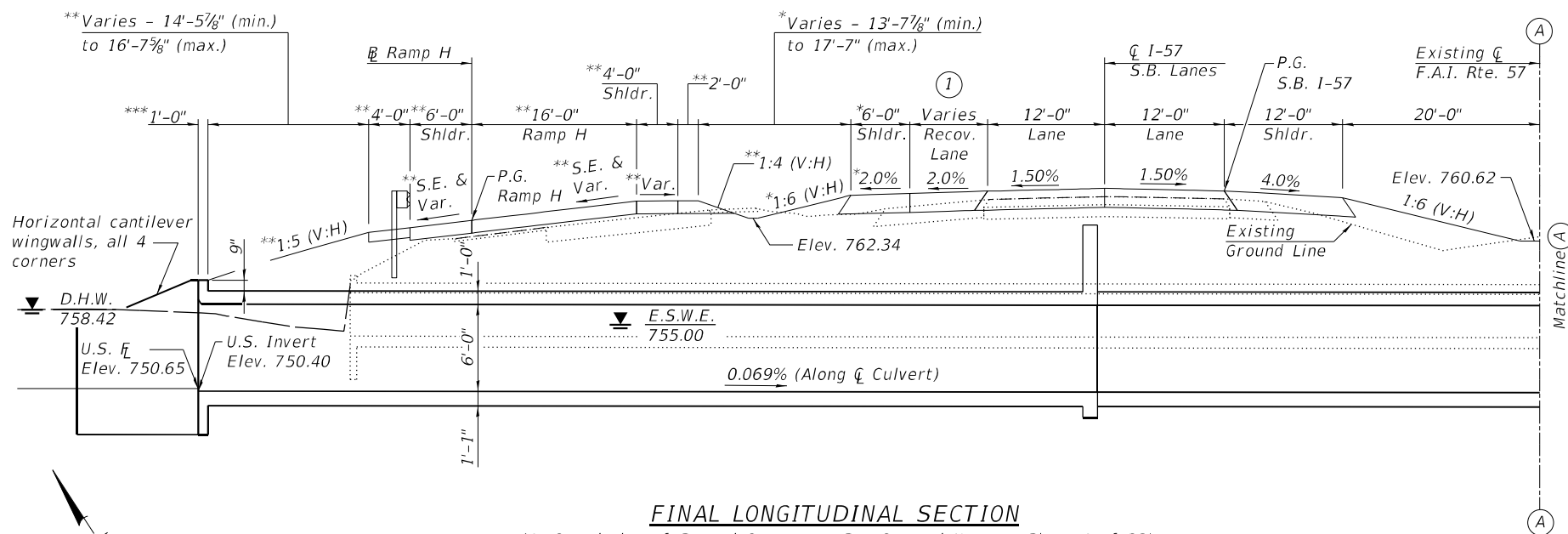
GENERAL PLAN & ELEVATION
 STRUCTURE NO. 010-2044

SHEET 2 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(10-34-1) HBK	CHAMPAIGN	1187	973
CONTRACT NO. 70B99				
ILLINOIS		FED. AID PROJECT		

*At Rt. L's to Outside Edge of Recovery Lane
 **Radial to Ramp H
 ***At Rt. L's to Outside Face of Headwall
 ****See Roadway Plans for Removal Details and Quantities

① Varies - 7'-7 $\frac{5}{8}$ " (min.) to 8'-1 $\frac{1}{4}$ " (max.)

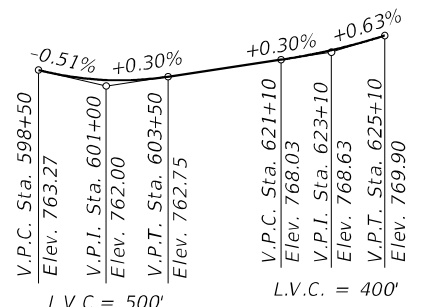


FINAL LONGITUDINAL SECTION

(At Completion of Second Contract - See General Note on Sheet 1 of 28)
 (Looking North)
 (Horiz. Dims. and Slopes are at Rt. L's to Existing \bar{C} F.A.I. Rte. 57 unless otherwise noted)

PROP. CURVE RAMPD-1

PI STA. = 421+90.36
 $\Delta = 109^\circ 32' 31"$ (LT)
 $D = 4^\circ 14' 39"$
 $R = 1,350.00'$
 $T = 1,911.69'$
 $L = 2,581.02'$
 $E = 990.32'$
 $e = 7.4\%$
 $T.R. = N/A$
 $S.E. RUN = 250'$
 $P.C. STA = 402+78.67$
 $P.T. STA = 428+59.69$
ATTAIN S.E.:
 STA. 401+62.68 (-1.5% N.C.)
 STA. 403+62.00 (-7.4% S.E.)
REMOVE S.E.:
 STA. 427+76.36 (-7.4% S.E.)
 STA. 429+75.68 (-1.5% N.C.)

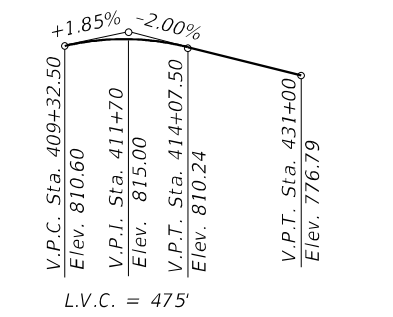


PROFILE GRADE - I-57

(Along Inside E.O.P. F.A.I. Rte 57)

PROP. CURVE RAMPG-4

PI STA. = 730+86.74
 $\Delta = 60^\circ 51' 35"$ (RT)
 $D = 3^\circ 30' 16"$
 $R = 1,635.00'$
 $T = 960.40'$
 $L = 1,736.70'$
 $E = 261.20'$
 $e = 6.7\%$
 $T.R. = N/A$
 $S.E. RUN = 230'$
 $P.C. STA = 721+26.34$
 $P.T. STA = 738+63.05$
ATTAIN S.E.:
 STA. 720+24.50 (+1.5% N.C.)
 STA. 722+03.01 (+6.7% S.E.)
REMOVE S.E.:
 STA. 737+86.38 (+6.7% S.E.)
 STA. 739+64.89 (+1.5% N.C.)

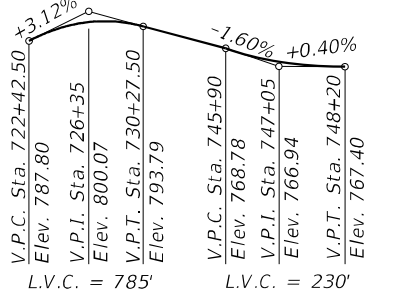


PROFILE GRADE - RAMP D

(Along Ramp D)

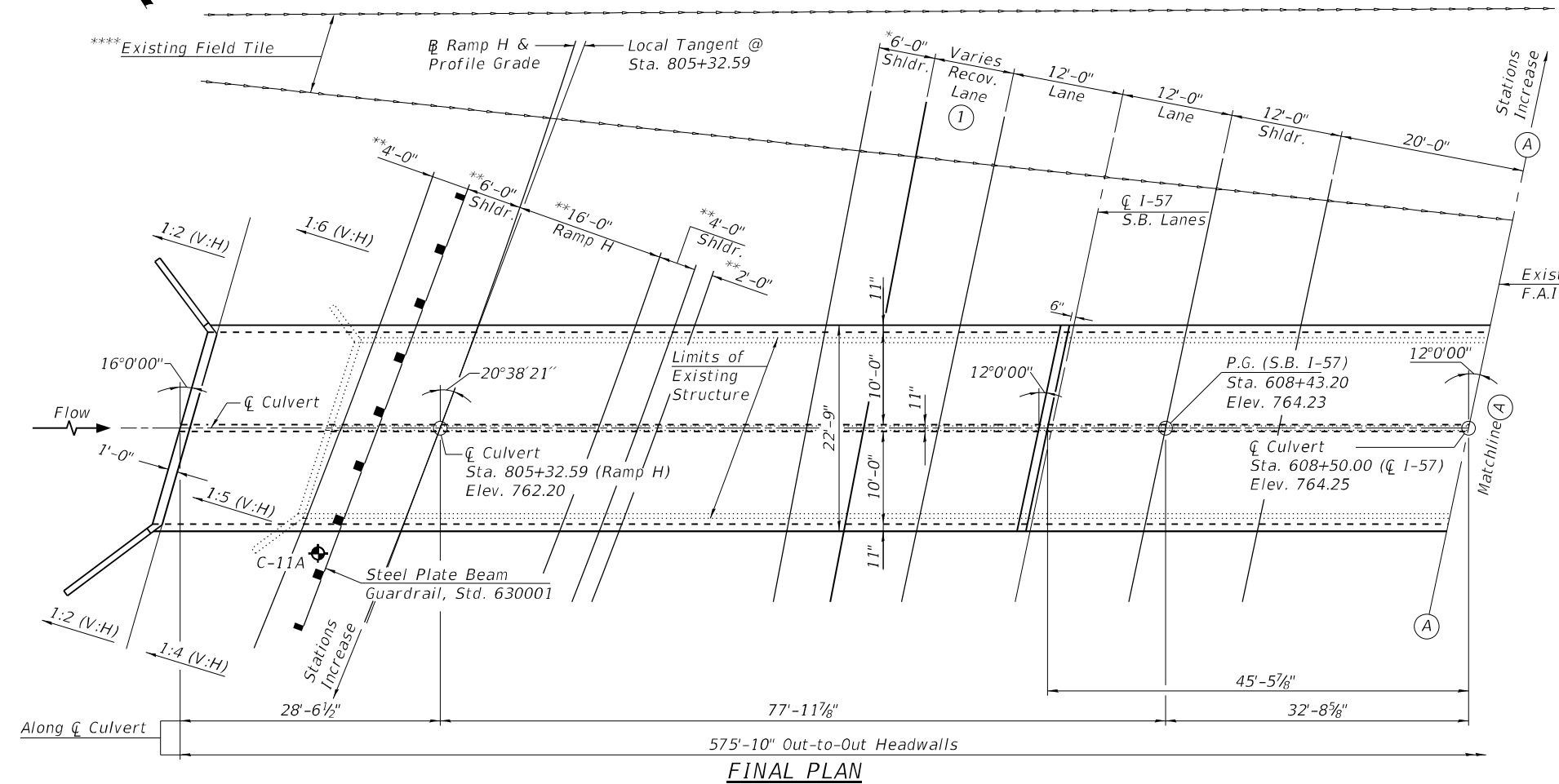
PROP. CURVE RAMPH-1

PI STA. = 814+42.14
 $\Delta = 91^\circ 36' 27"$ (RT)
 $D = 5^\circ 58' 06"$
 $R = 960.00'$
 $T = 987.32'$
 $L = 1,534.90'$
 $E = 417.10'$
 $e = 8.0\%$
 $T.R. = N/A$
 $S.E. RUN = 275'$
 $P.C. STA = 804+54.82$
 $P.T. STA = 819+89.72$
ATTAIN S.E. (EXIT TERMINAL):
 STA. 803+14.82 (+2.0% N.C. @ C-C)
 STA. 805+24.82 (+8.0% S.E. @ D-D)
REMOVE S.E. (ENTR. TERMINAL):
 STA. 818+59.72 (+8.0% S.E. @ A-A)
 STA. 819+89.72 (+5.81% @ B-B)
 STA. 821+89.76 (+3.26% @ C-C)
 STA. 822+89.78 (+2.24% @ D-D)
 STA. 823+13.31 (+2.0% N.C.)



PROFILE GRADE - RAMP G

(Along Ramp G)



FINAL PLAN

(At Completion of Second Contract - See General Note on Sheet 1 of 28)

(Sheet 3 of 6)

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**GENERAL PLAN & ELEVATION
 STRUCTURE NO. 010-2044**

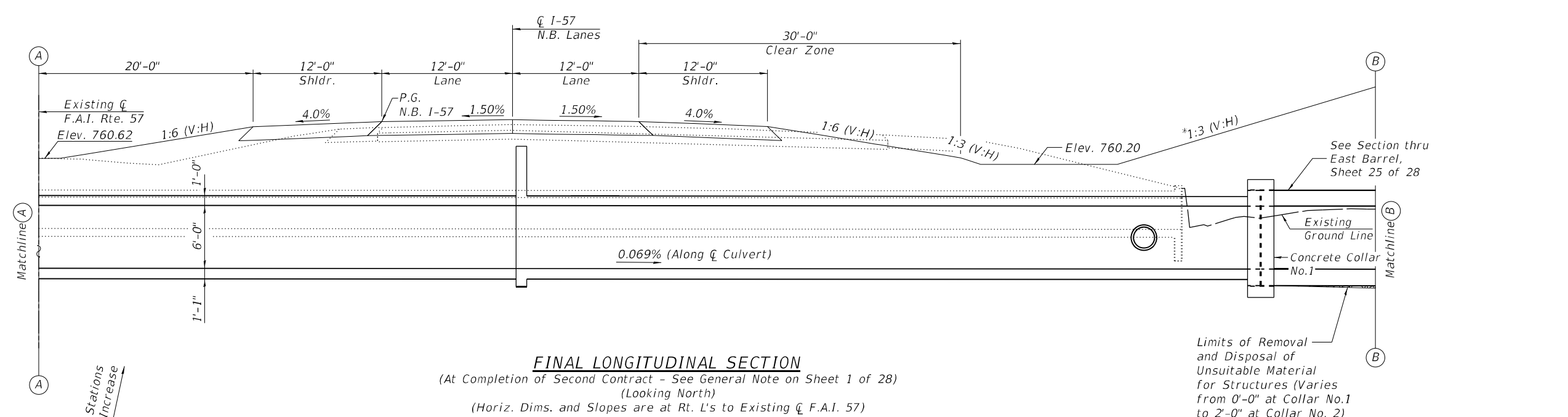
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 ENGINEERING & TESTING, INC.
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SHEET 3 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(10-34-1) HBK	CHAMPAIGN	1187	974
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				

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See Section thru East Barrel, Sheet 25 of 28

Existing Ground Line

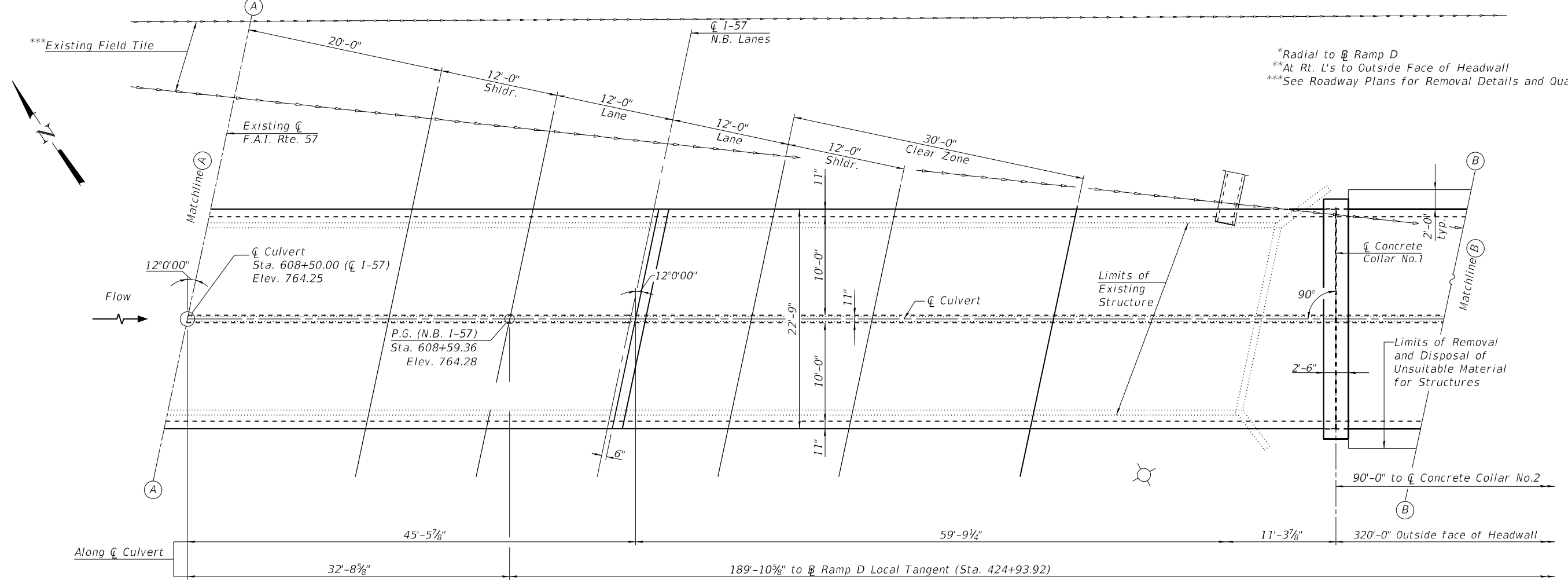
Concrete Collar No.1

Limits of Removal and Disposal of Unsuitable Material for Structures (Varies from 0'-0" at Collar No.1 to 2'-0" at Collar No. 2)

*Radial to B Ramp D

**At Rt. L's to Outside Face of Headwall

***See Roadway Plans for Removal Details and Quantities



FINAL PLAN
 (At Completion of Second Contract - See General Note on Sheet 1 of 28)

(Sheet 4 of 6)

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 ENGINEERING & TESTING, INC.
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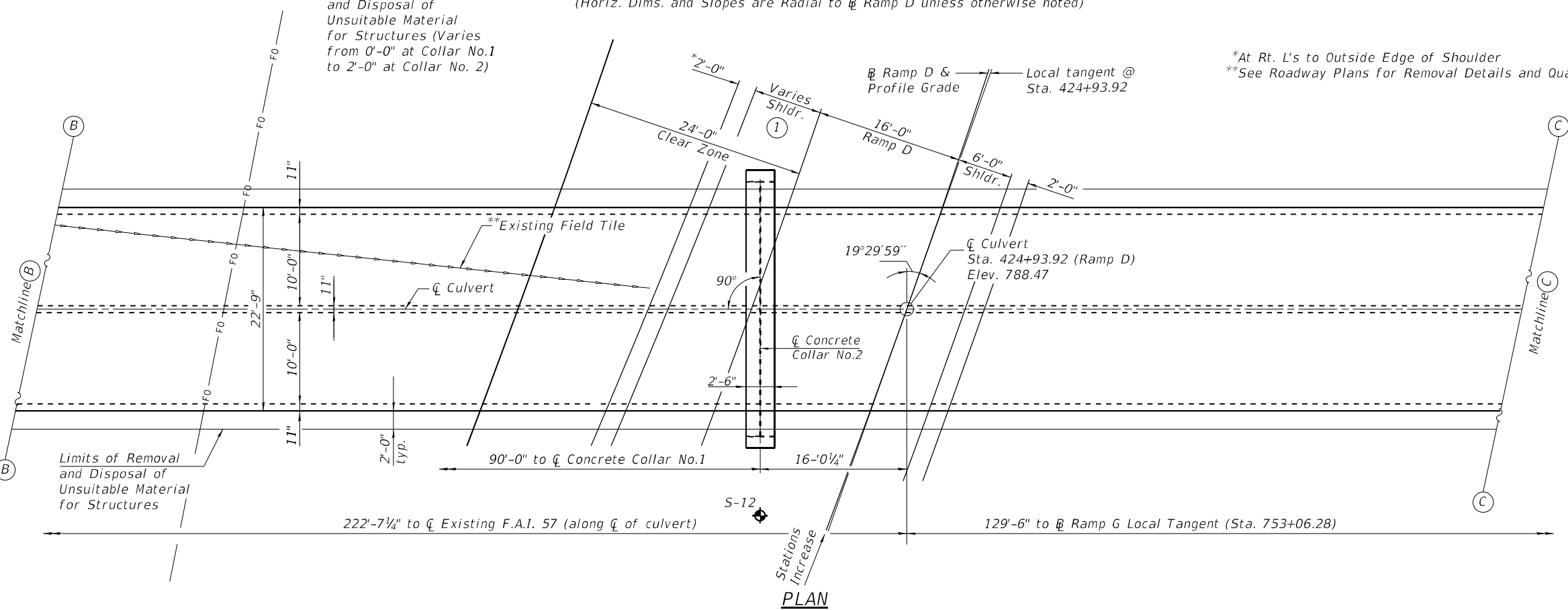
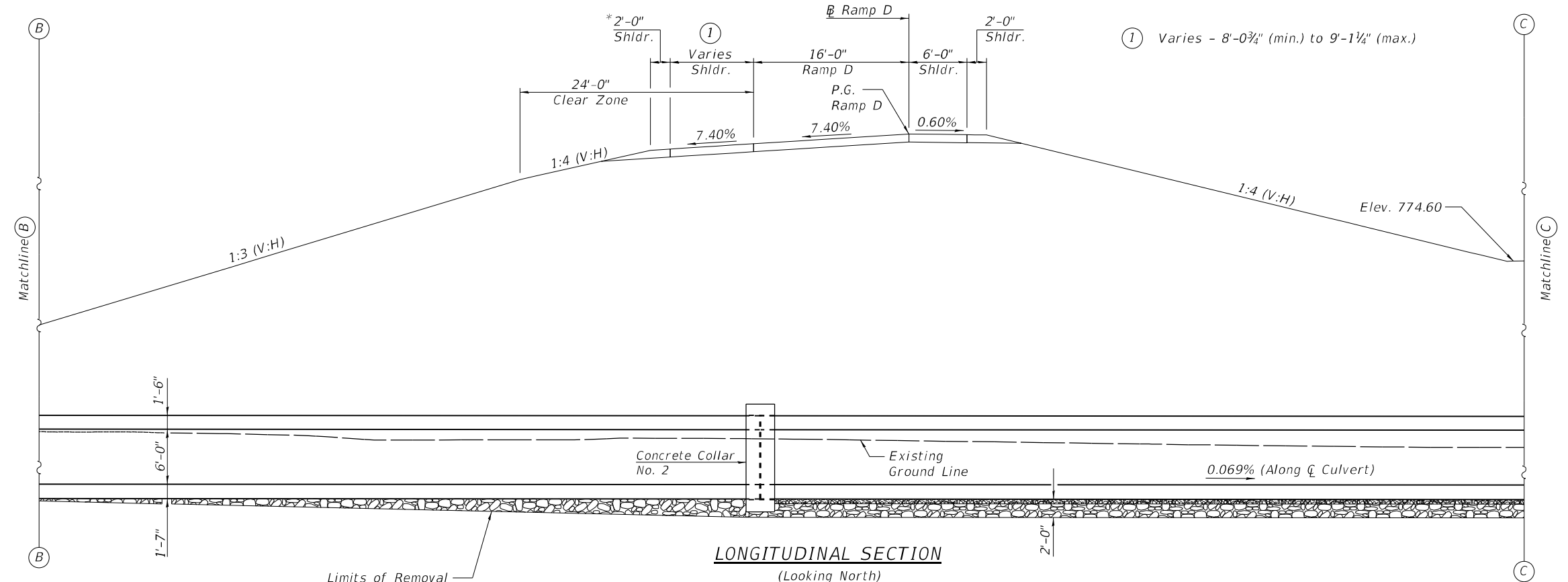
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
STRUCTURE NO. 010-2044

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(10-34-1) HBK	CHAMPAIGN	1187	975
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				

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*At Rt. L's to Outside Edge of Shoulder
 **See Roadway Plans for Removal Details and Quantities

(Sheet 5 of 6)

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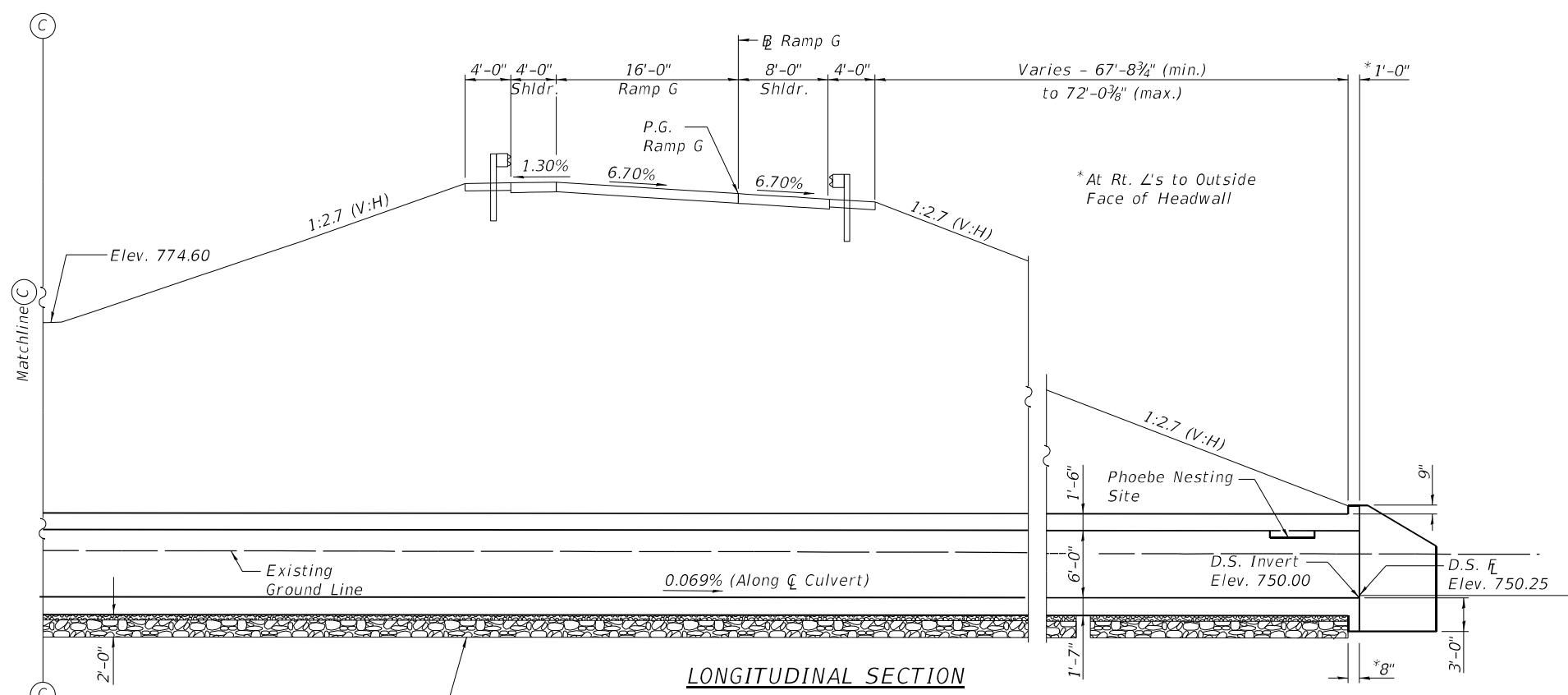
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STATE OF ILLINOIS
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GENERAL PLAN & ELEVATION
STRUCTURE NO. 010-2044

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(10-34-1) HBK	CHAMPAIGN	1187	976
CONTRACT NO. 70B99				
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LONGITUDINAL SECTION
 (Looking North)

(Horiz. Dims. and Slopes are Radial to Ramp G unless otherwise noted)

Limits of Removal and Disposal of Unsuitable Material for Structures

WATERWAY INFORMATION

Existing Overtop. Elev. = 762.29 @ Sta. 806+89.00 (Ramp H)
 Drainage Area = 0.8 sq. mi. Proposed Overtop. Elev. = 762.04 @ Sta. 806+95.00 (Ramp H)

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Head - Ft.		Headwater El.		
			Exist.	Prop.	H.W.E. Exist.	Prop.	Exist.	Prop.	
Ten-Year	10	311	54	99	757.52	0.99	0.00	758.51	755.35
Design	50	526	54	111	758.42	3.04	0.00	761.46	755.97
Base	100	626	54	119	758.72	4.40	0.00	763.12	756.33
Overtopping Exist.		649	54		758.82	4.71		763.53	
Overtopping Proposed									
Max. Calc.	500	873	54	120	759.42	4.77	0.00	764.19	757.36

Existing 10 Year Outlet Velocity = 5.8 ft/s Proposed 10 Year Outlet Velocity = 3.1 ft/s

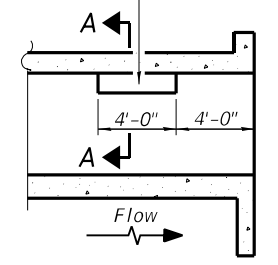
TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Removal Of Existing Structures No. 2	Each	1
Removal And Disposal Of Unsuitable Material For Structures	Cu. Yd.	584
Reinforcement Bars	Pound	361,990
Bar Splicers	Each	262
Name Plates	Each	1
Temporary Soil Retention System	Sq. Ft.	1250
Concrete Box Culverts	Cu. Yd.	1659.7
Concrete Collar	Cu. Yd.	13.0
Rock Fill	Cu. Yd.	584
Temporary Support System, Location 2	Each	4

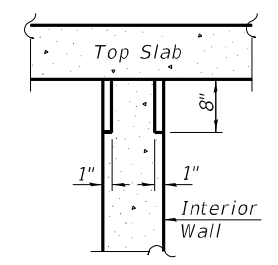
STATION 608+50.00
 BUILT 20__ BY
 STATE OF ILLINOIS
 F.A.I. RTE. 57 - SEC. (10-34-1) HBK
 LOADING HL-93
 STRUCTURE NO. 010-2044

NAME PLATE
 See Std. 515001

Notch formed by rough finished board attached to and removed with form work, each interior wall. (Do not chamfer).

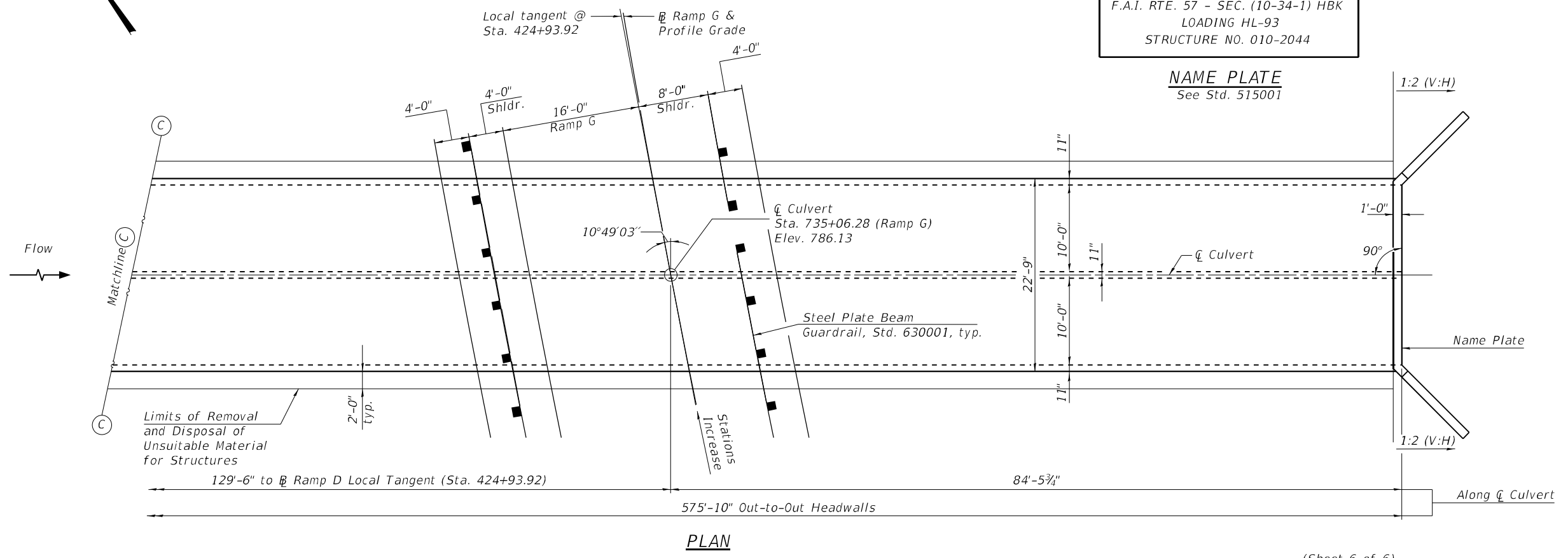
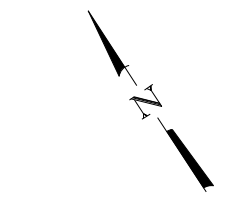


LONGITUDINAL SECTION



SECTION A-A

PHOEBE NESTING SITE DETAILS
 (Downstream End Only)



PLAN

(Sheet 6 of 6)

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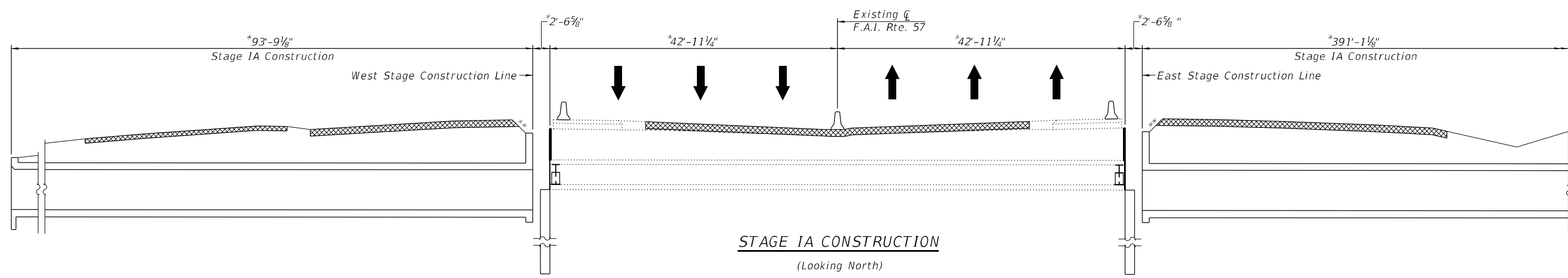
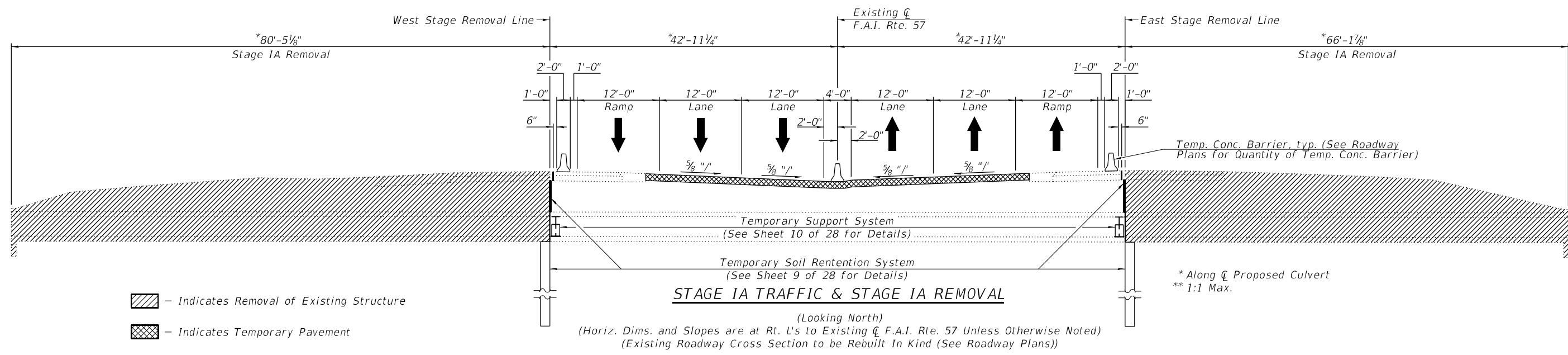
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
STRUCTURE NO. 010-2044

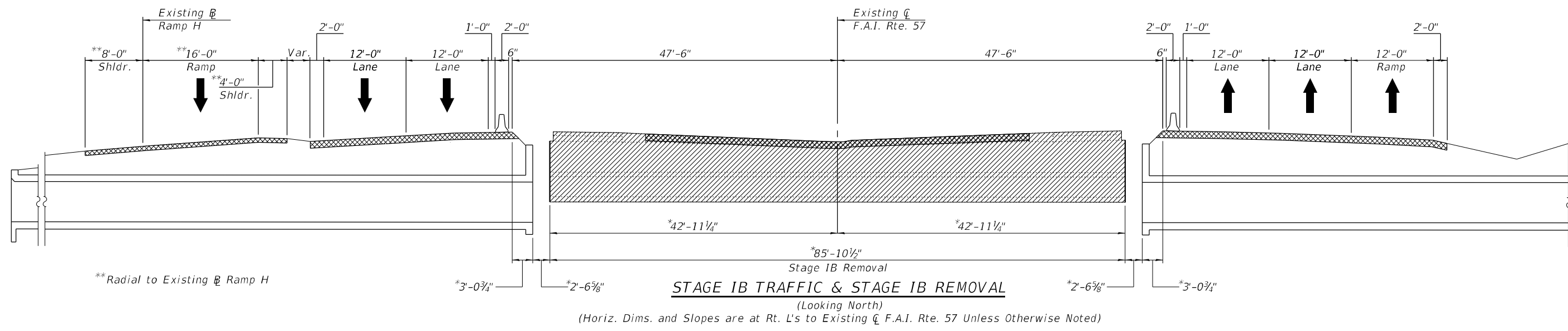
SHEET 6 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(10-34-1) HBK	CHAMPAIGN	1187	977
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				

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Note:
Remaining portion of box culvert not shown for clarity.



(Sheet 1 of 2)

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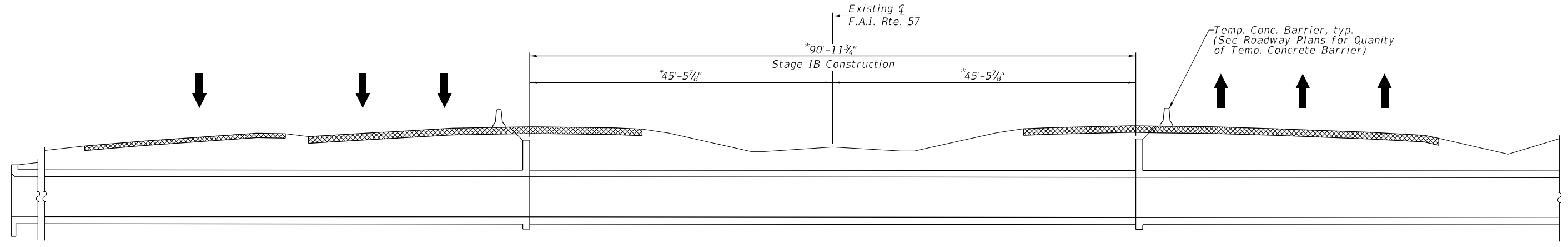
STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 010-2044

SHEET 7 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(10-34-1) HBK	CHAMPAIGN	1187	978
CONTRACT NO. 70B99				

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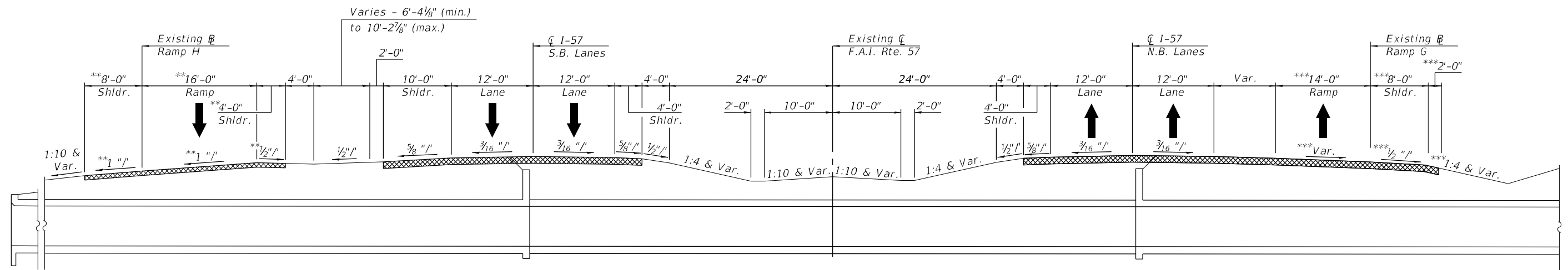


STAGE 1B CONSTRUCTION
 (Looking North)

- Indicates Temporary Pavement

*Along \bar{C} Proposed Culvert
 **Radial to Existing \bar{B} Ramp H
 ***Rt. L's to Existing \bar{B} Ramp G

Note:
 Remaining portion of box culvert not shown for clarity.



COMPLETED INITIAL ROADWAY CROSS SECTION

(At Completion of Culvert in First Contract - See General Note on Sheet 1 of 28)
 (Looking North)
 (Horiz. Dims. and Slopes are at Rt. L's to Existing \bar{C} F.A.I. Rte. 57 Unless Otherwise Noted)
 (Existing Roadway Cross Section to be Rebuilt In Kind (See Roadway Plans))

(Sheet 2 of 2)

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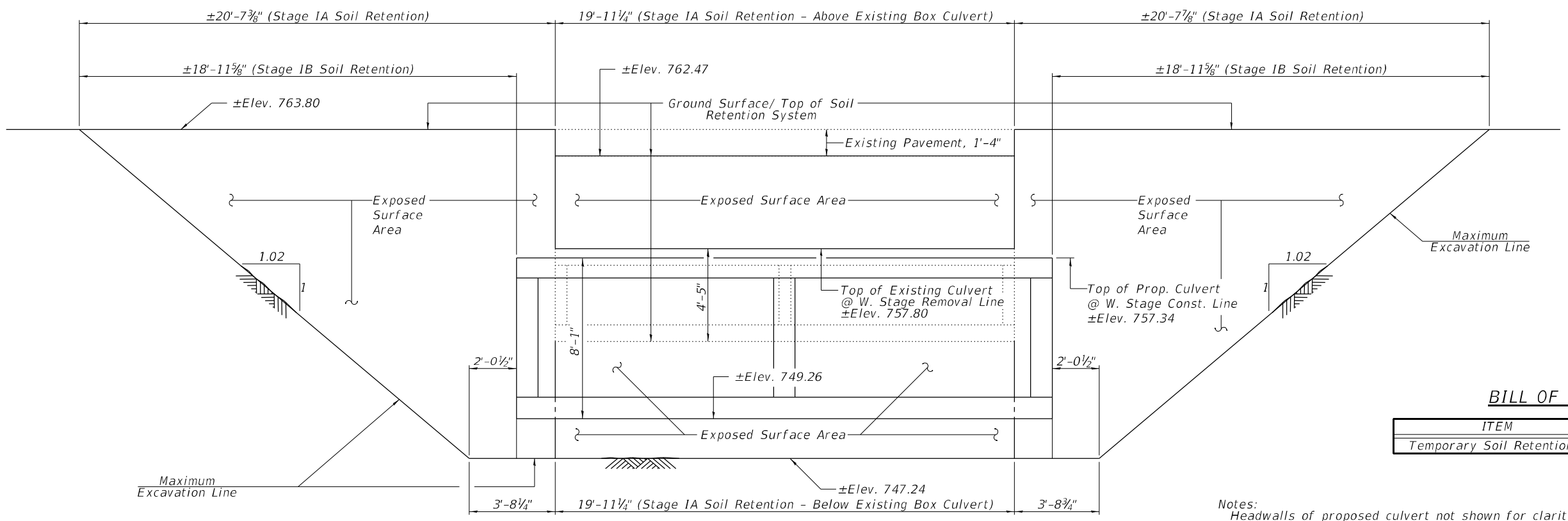
STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 010-2044

SHEET 8 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(10-34-1) HBK	CHAMPAIGN	1187	979
CONTRACT NO. 70B99				

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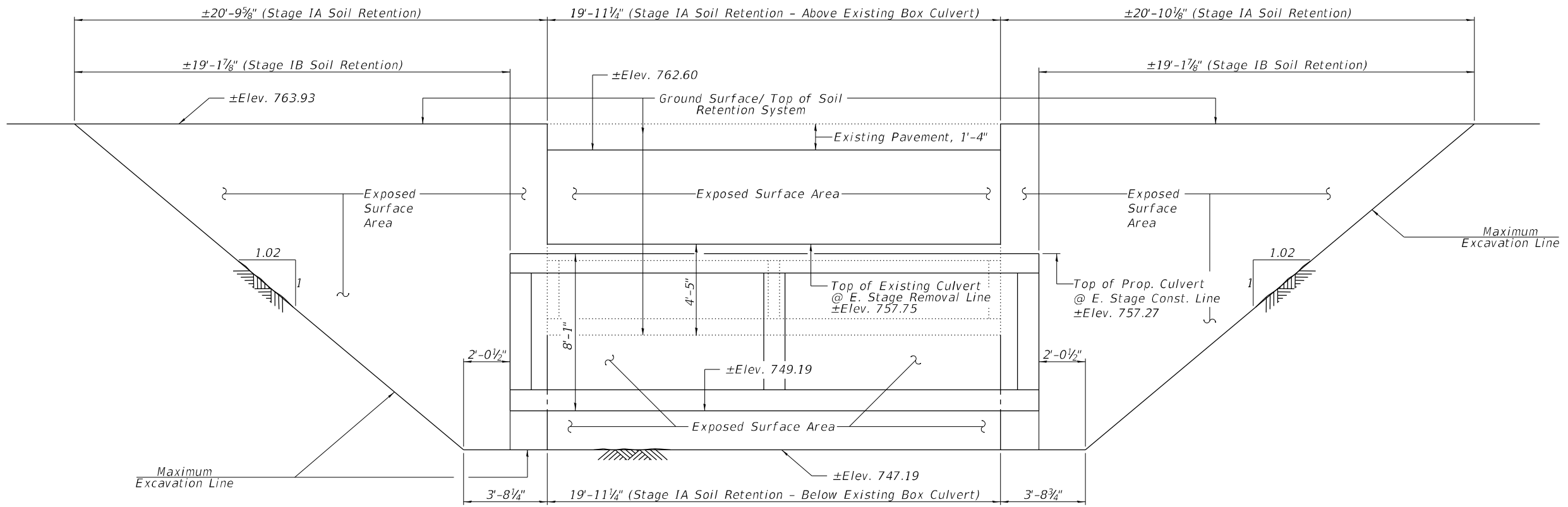


TEMPORARY SOIL RETENTION SYSTEM - WEST STAGE REMOVAL LINE
 (Looking East)
 (Dimensions Shown Along Skew)

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Temporary Soil Retention System	Sq. Ft.	1250

Notes:
 Headwalls of proposed culvert not shown for clarity.
 See Sheet 7 of 28 for additional Temporary Soil Retention System Details.
 A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.



TEMPORARY SOIL RETENTION SYSTEM - EAST INTERIOR HEADWALL
 (Looking West)
 (Dimensions Shown Along Skew)

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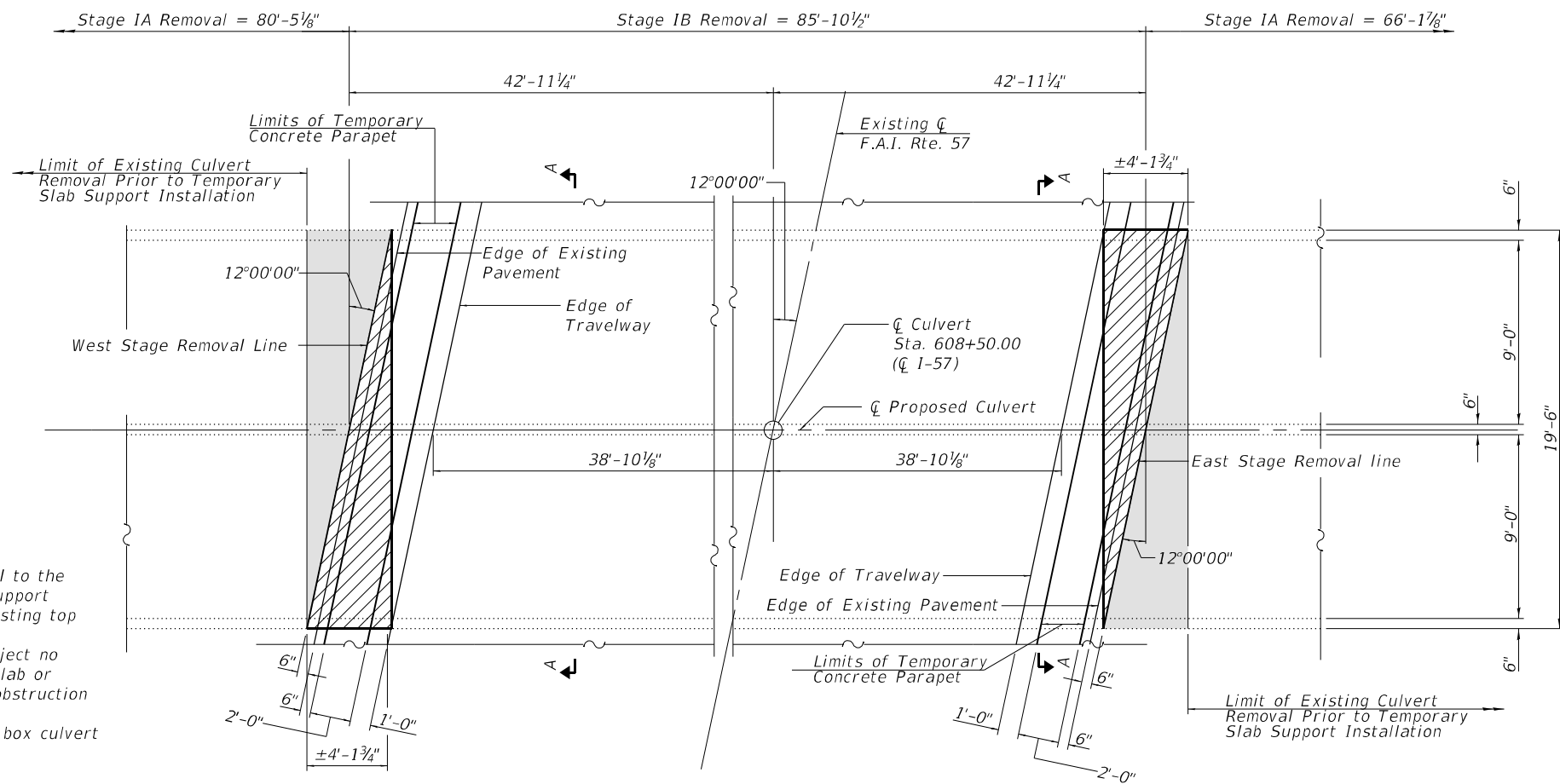
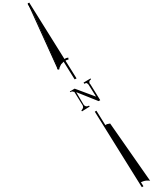
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TEMPORARY SOIL RETENTION DETAILS
STRUCTURE NO. 010-2044

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(10-34-1) HBK	CHAMPAIGN	1187	980
CONTRACT NO. 70B99				

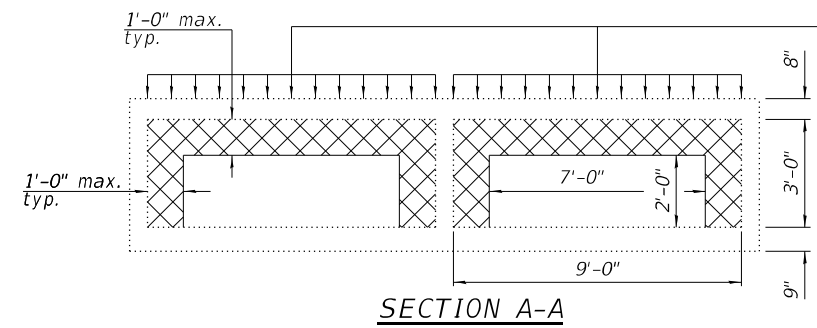
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Note:
 Existing reinforcement does not run parallel to the Stage Removal Line therefore a Temporary Support System is required for the portion of the existing top slab supporting Stage IA Traffic and with cut reinforcement. The support system shall project no more than 1'-0" below the bottom of the top slab or from the culvert walls' face to minimize the obstruction to the culvert's hydraulic opening.
 Each Temporary Support System is for one box culvert cell at a stage line (4 Total).

PLAN VIEW - EXISTING CULVERT

- Indicates Area of Existing Top Slab Requiring Support
- Indicates the box culvert cell requires a Temporary Support System and the Max. Permissible Obstructed Area
- Portion of existing culvert to be removed after Temporary Slab Support System is installed.



The Temporary Support System shall be capable of supporting the following design service vertical loads:

Exist. Top Slab, Temp. Conc. Barrier, & Exist. Pavement (DC):	0.59 kips/ft.
Existing Fill (EV):	0.61 kips/ft.
Vehicle Live Load plus Impact (LL + IM):	0.35 kips/ft.

In addition, the Temporary Support System shall support any additional load due to the soil retention system installed on top of the culvert.
 Loads provided are in 1' strips perpendicular to the existing culvert walls.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Temporary Support System, Location 2	Each	4

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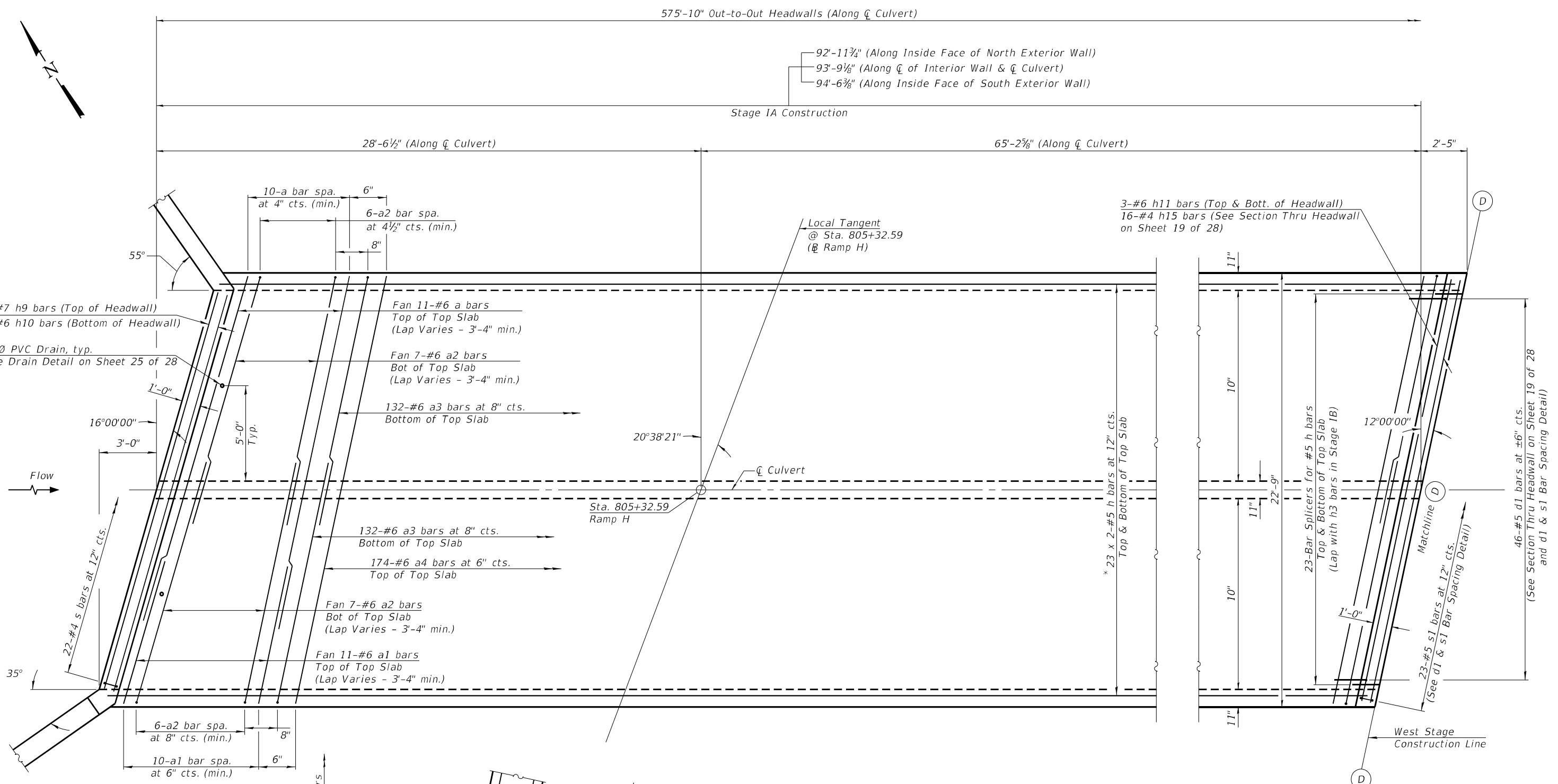
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TEMPORARY SLAB SUPPORT DETAILS
STRUCTURE NO. 010-2044

SHEET 10 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(10-34-1) HBK	CHAMPAIGN	1187	981
CONTRACT NO. 70B99				
ILLINOIS		FED. AID PROJECT		

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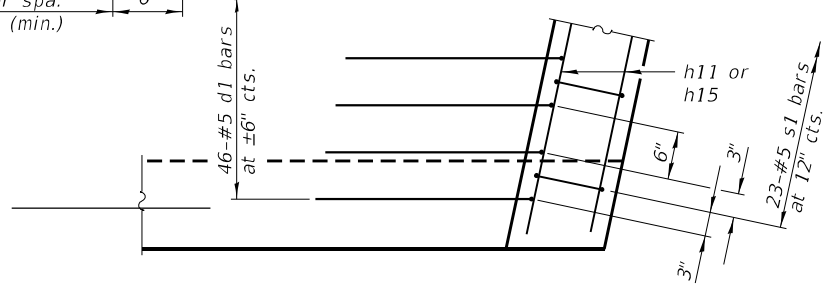
PLAN - TOP SLAB

*Vary the bar lap length (2'-9" min.) of the last bar in each line of bars or cut last bar to fit skew.

MINIMUM BAR LAP

- #5 Bar = 2'-9"
- #6 Bar = 3'-4"

d1 & s1 BAR SPACING DETAIL

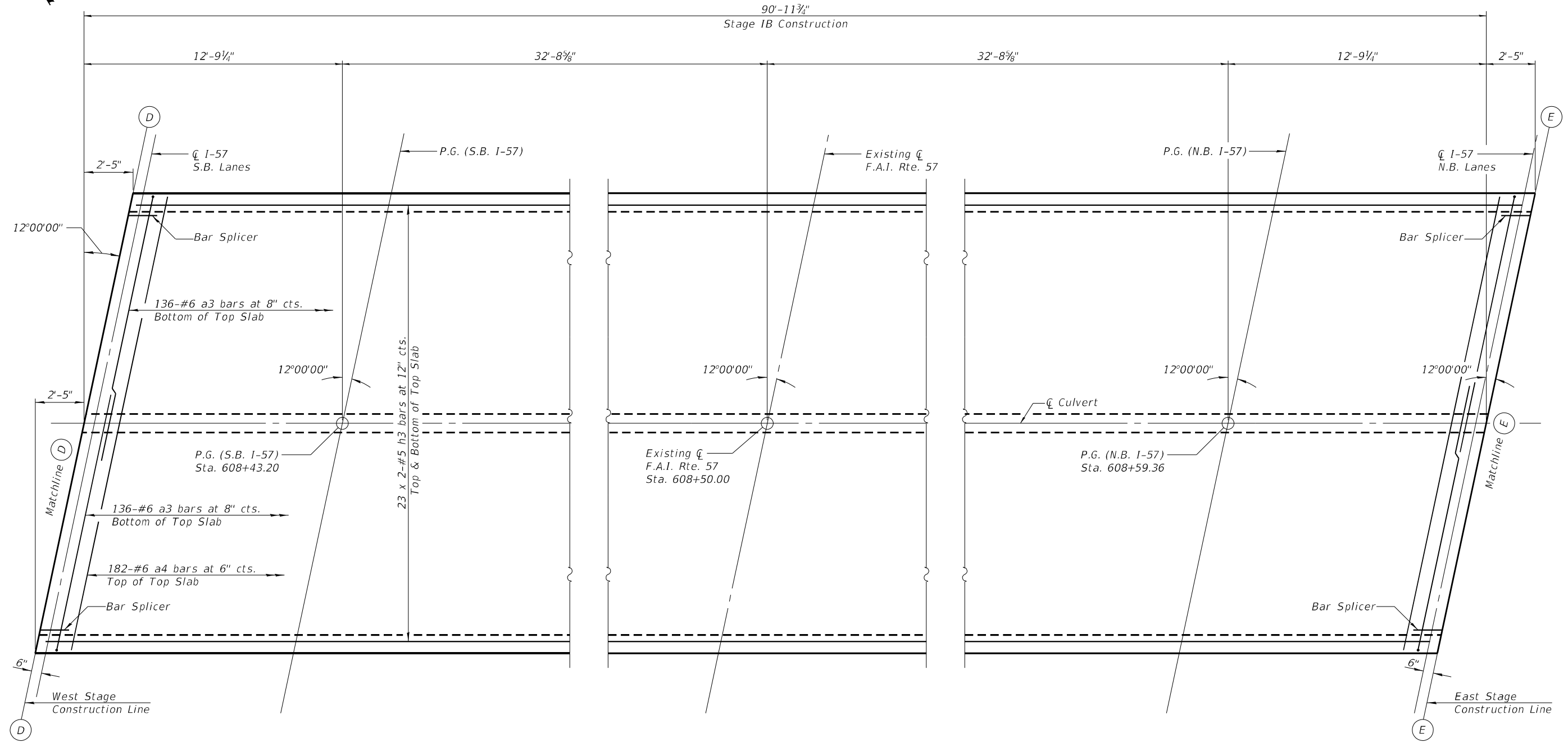
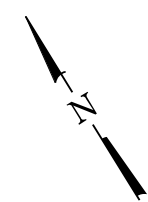


Notes:
 See Sheets 23 of 28 for Horizontal Cantilever Wingwall Details.
 See Sheet 19 of 28 for Sections Thru Headwalls.
 See Sheet 26 of 28 for Bar Splicer Details and Quantity.
 A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.
 Bars indicated thus 23 x 2 indicates 23 lines of bars with 2 lengths per line.

(Sheet 1 of 4)

BACON FARMER WORKMAN ENGINEERING & TESTING, INC. <small>403 NORTH COURT STREET MARIETTA, IL 61756-5050 PHONE - 815.267.9190</small>	USER NAME =	DESIGNED - JGY	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CULVERT DETAILS - TOP SLAB STRUCTURE NO. 010-2044	F.A.I. RTE. =	SECTION =	COUNTY =	TOTAL SHEETS =	SHEET NO. =
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MINIMUM BAR LAP
 #5 Bar = 2'-9"
 #6 Bar = 3'-4"

Notes:
 See Sheet 26 of 28 for Bar Splicer Details and Quantity.
 Bars indicated thus 23 x 2 indicates 23 lines of bars with 2 lengths per line.

(Sheet 2 of 4)

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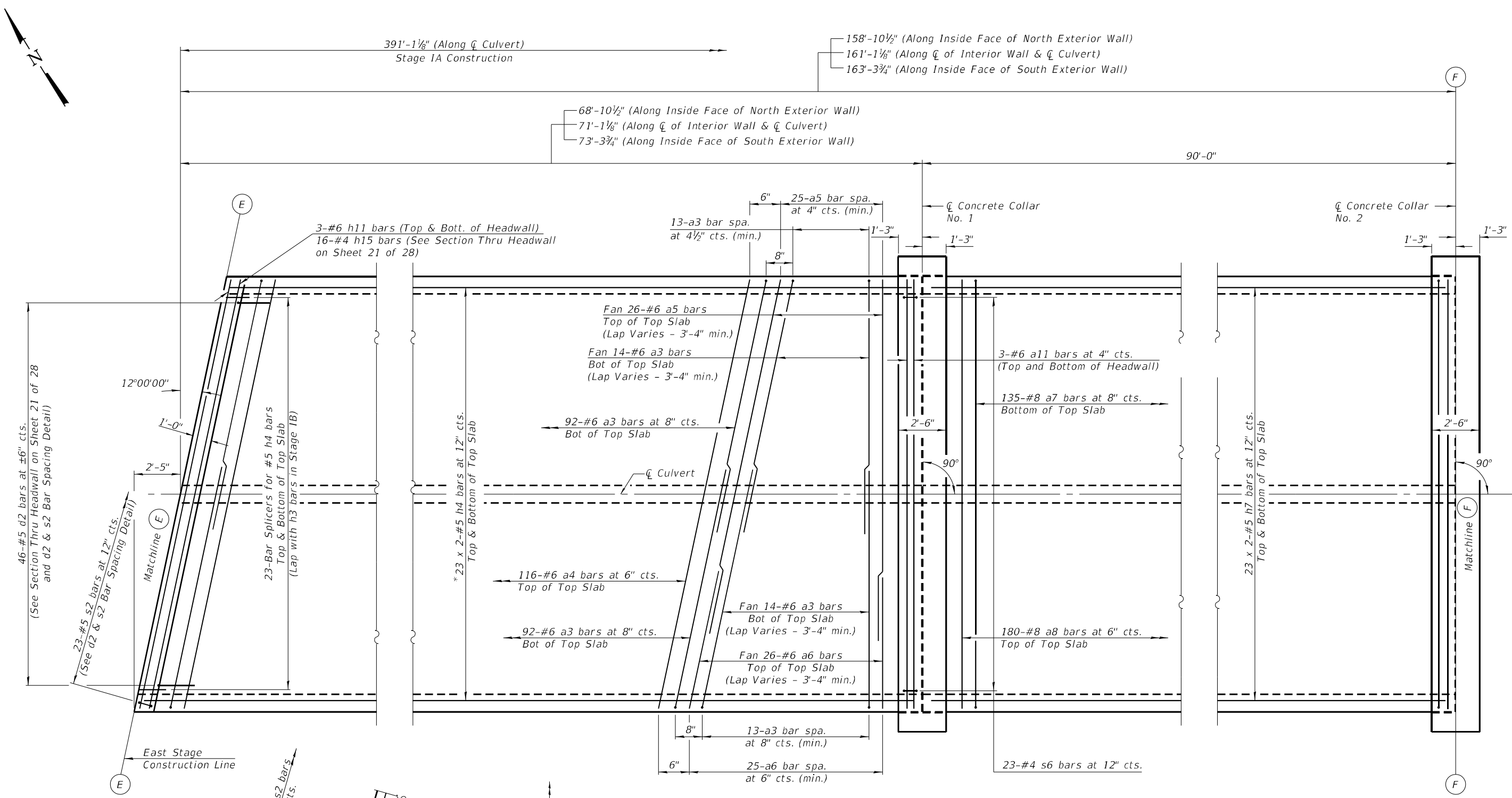
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CULVERT DETAILS - TOP SLAB
STRUCTURE NO. 010-2044

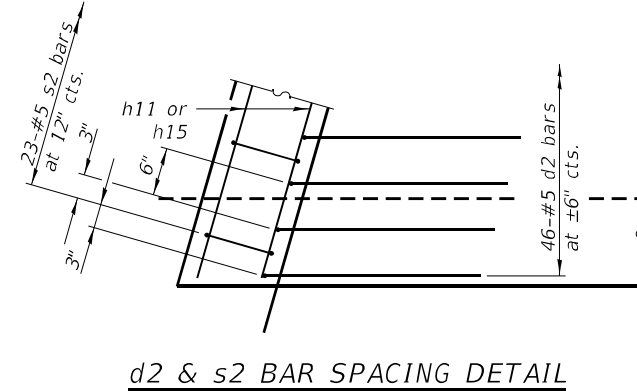
SHEET 12 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				

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PLAN - TOP SLAB



d2 & s2 BAR SPACING DETAIL

*Vary the bar lap length (2'-9" min.) of the last bar in each line of bars or cut last bar to fit skew.

MINIMUM BAR LAP

- #5 Bar = 2'-9"
- #6 Bar = 3'-4"

Notes:
 See Sheet 21 of 28 for Sections Thru Headwalls.
 See Sheet 22 of 28 for Settlement Collar Details.
 See Sheet 26 of 28 for Bar Splicer Details and Quantity.
 Bars indicated thus 23 x 2 indicates 23 lines of bars with 2 lengths per line.

(Sheet 3 of 4)

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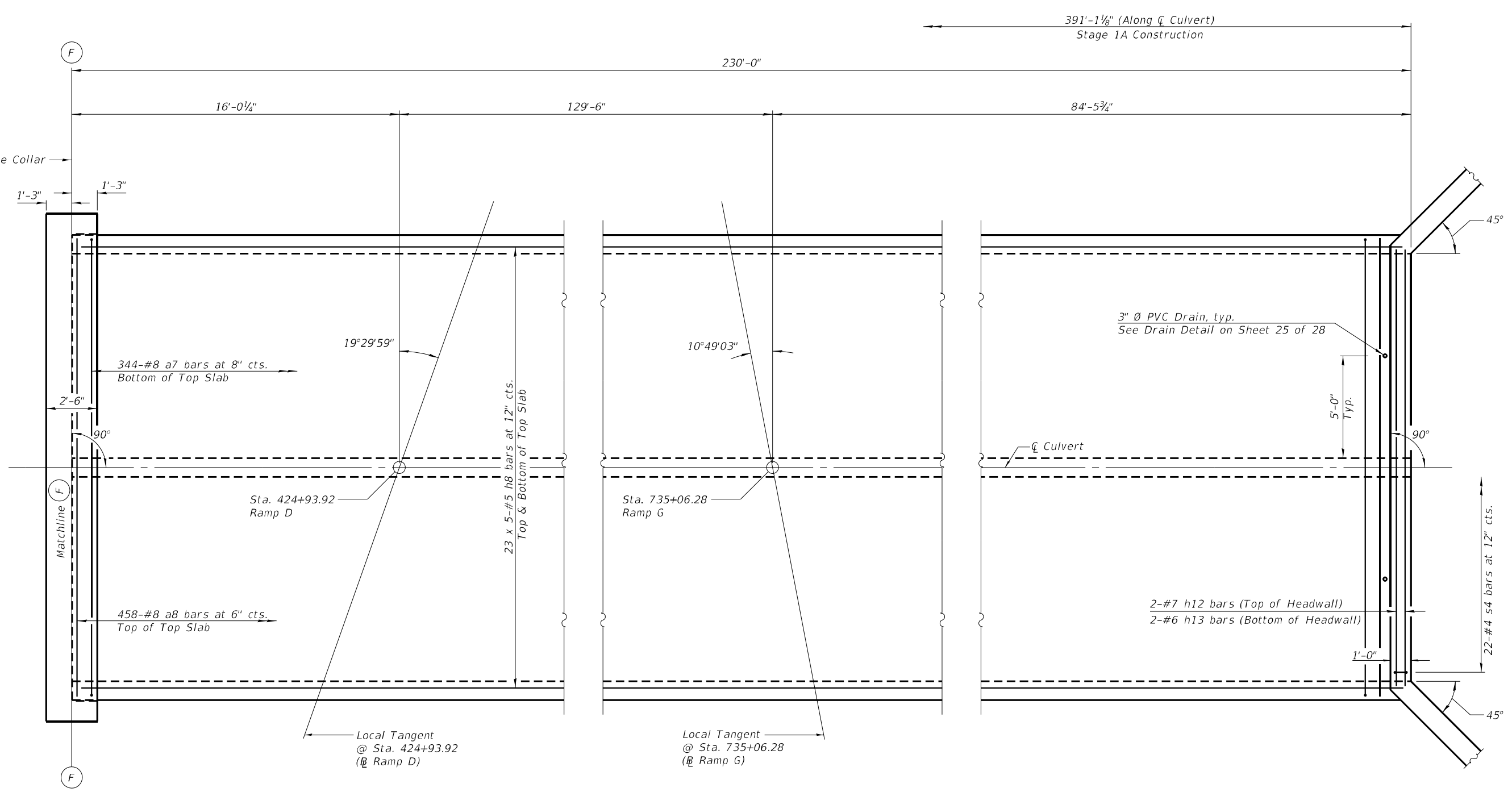
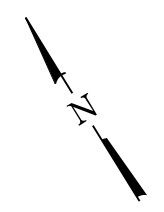
CULVERT DETAILS - TOP SLAB
STRUCTURE NO. 010-2044

SHEET 13 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 70B99				

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PLAN - TOP SLAB

MINIMUM BAR LAP
 #5 Bar = 2'-9"

Notes:
 See Sheets 24 of 28 for Horizontal Cantilever Wingwall Details.
 See Sheet 22 of 28 for Sections Thru Headwalls.
 See Sheet 22 of 28 for Settlement Collar Details.
 A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.
 Bars indicated thus 23 x 5 indicates 23 lines of bars with 5 lengths per line.

(Sheet 4 of 4)

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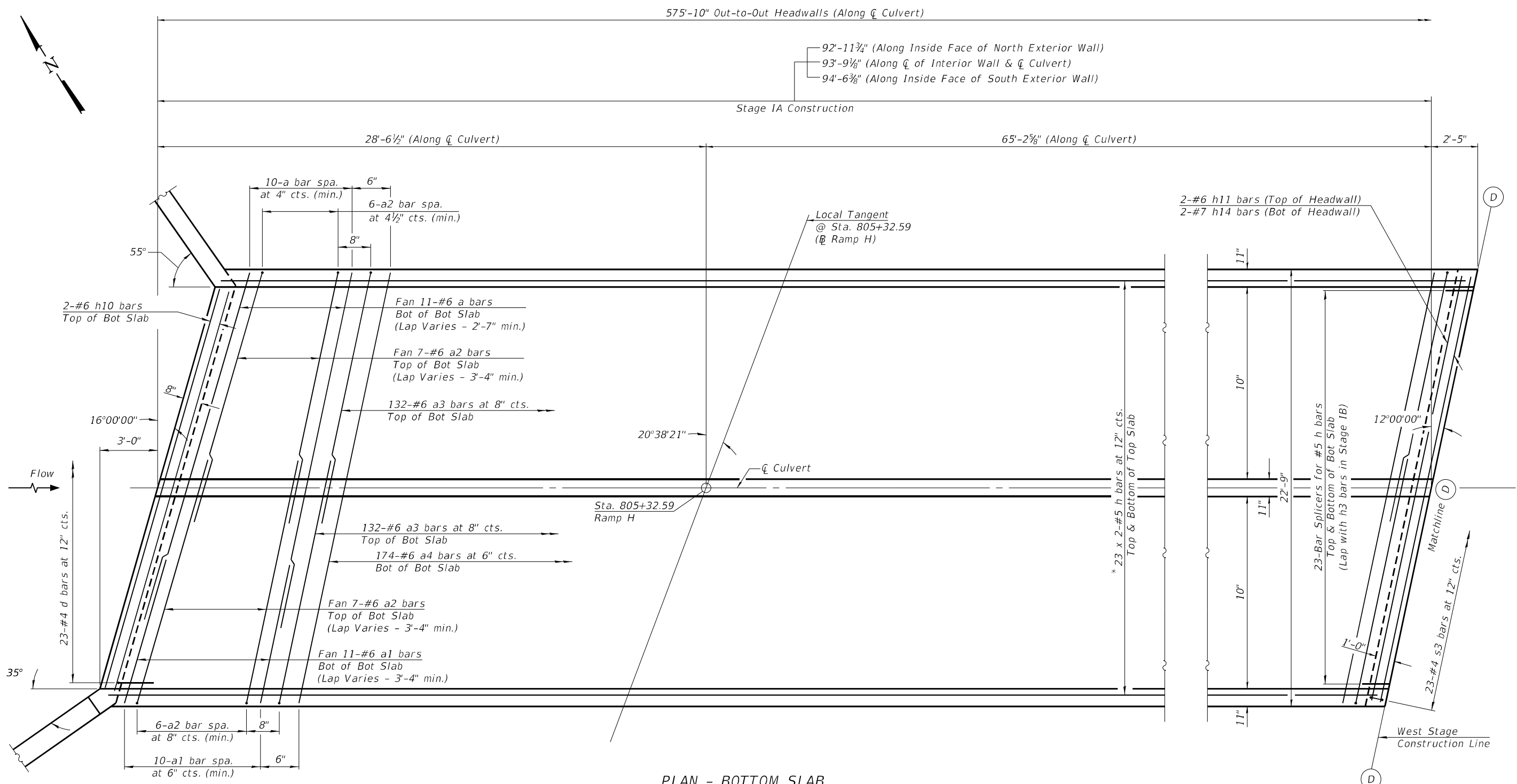
CULVERT DETAILS - TOP SLAB
 STRUCTURE NO. 010-2044

SHEET 14 OF 28 SHEETS

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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(10-34-1) HBK	CHAMPAIGN	1187	985
CONTRACT NO. 70B99				
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PLAN - BOTTOM SLAB

MINIMUM BAR LAP
 #5 Bar = 2'-9"
 #6 Bar = 3'-4"

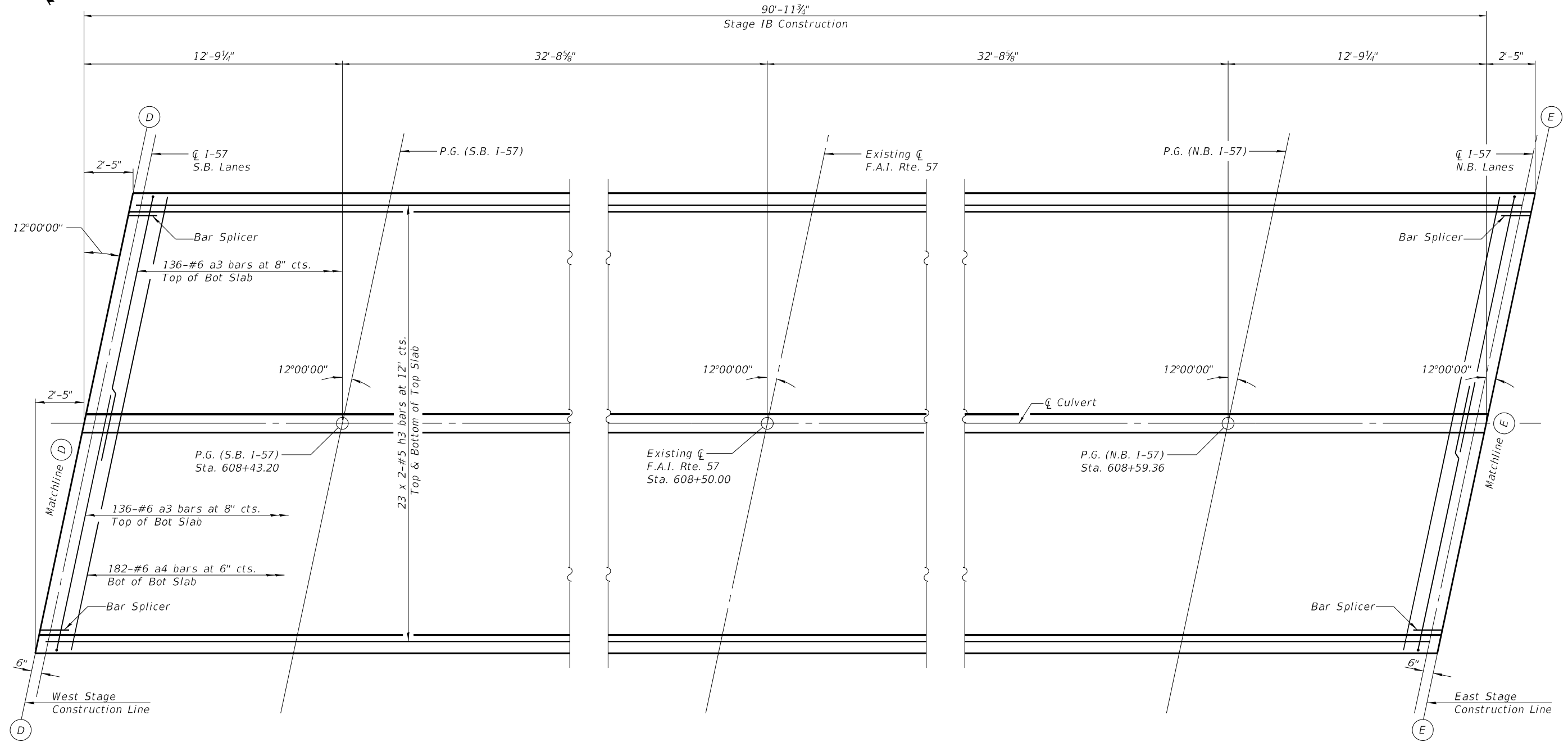
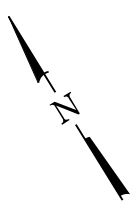
*Vary the bar lap length (2'-9" min.) of the last bar in each line of bars or cut last bar to fit skew.

Notes:
 See Sheets 23 of 28 for Horizontal Cantilever Wingwall Details.
 See Sheet 19 of 28 for Sections Thru Headwalls and Elevation View at cutoff wall.
 See Sheet 26 of 28 for Bar Splicer Details and Quantity.
 A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.
 Bars indicated thus 23 x 2 indicates 23 lines of bars with 2 lengths per line.

(Sheet 1 of 4)

BACON FARMER WORKMAN ENGINEERING & TESTING, INC. <small>403 NORTH COURT STREET MARIETTA, IL 62450 PHONE - 618.267.9190</small>	USER NAME =	DESIGNED - JGY	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CULVERT DETAILS - BOTTOM SLAB STRUCTURE NO. 010-2044	F.A.I. RTE. =	SECTION =	COUNTY =	TOTAL SHEETS =	SHEET NO. =
	PLOT SCALE =	CHECKED - GBR	REVISED -			57	(10-34-1) HBK	CHAMPAIGN	1187	986
	PLOT DATE =	DRAWN - JGY	REVISED -			CONTRACT NO. 70B99				
		CHECKED - GBR	REVISED -			ILLINOIS FED. AID PROJECT				

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PLAN - BOTTOM SLAB

MINIMUM BAR LAP
 #5 Bar = 2'-9"
 #6 Bar = 3'-4"

Notes:
 See Sheet 26 of 28 for Bar Splicer Details and Quantity.
 Bars indicated thus 23 x 2 indicates 23 lines of bars with 2 lengths per line.

(Sheet 2 of 4)

BACON | FARMER | WORKMAN
 ENGINEERING & TESTING, INC.
 403 NORTH COURT STREET
 MARIETTA, IL 61756-5050
 PHONE - 815.267.9190

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PLOT SCALE =	DRAWN - JGY	REVISED -
CHECKED - GBR	REVISED -	

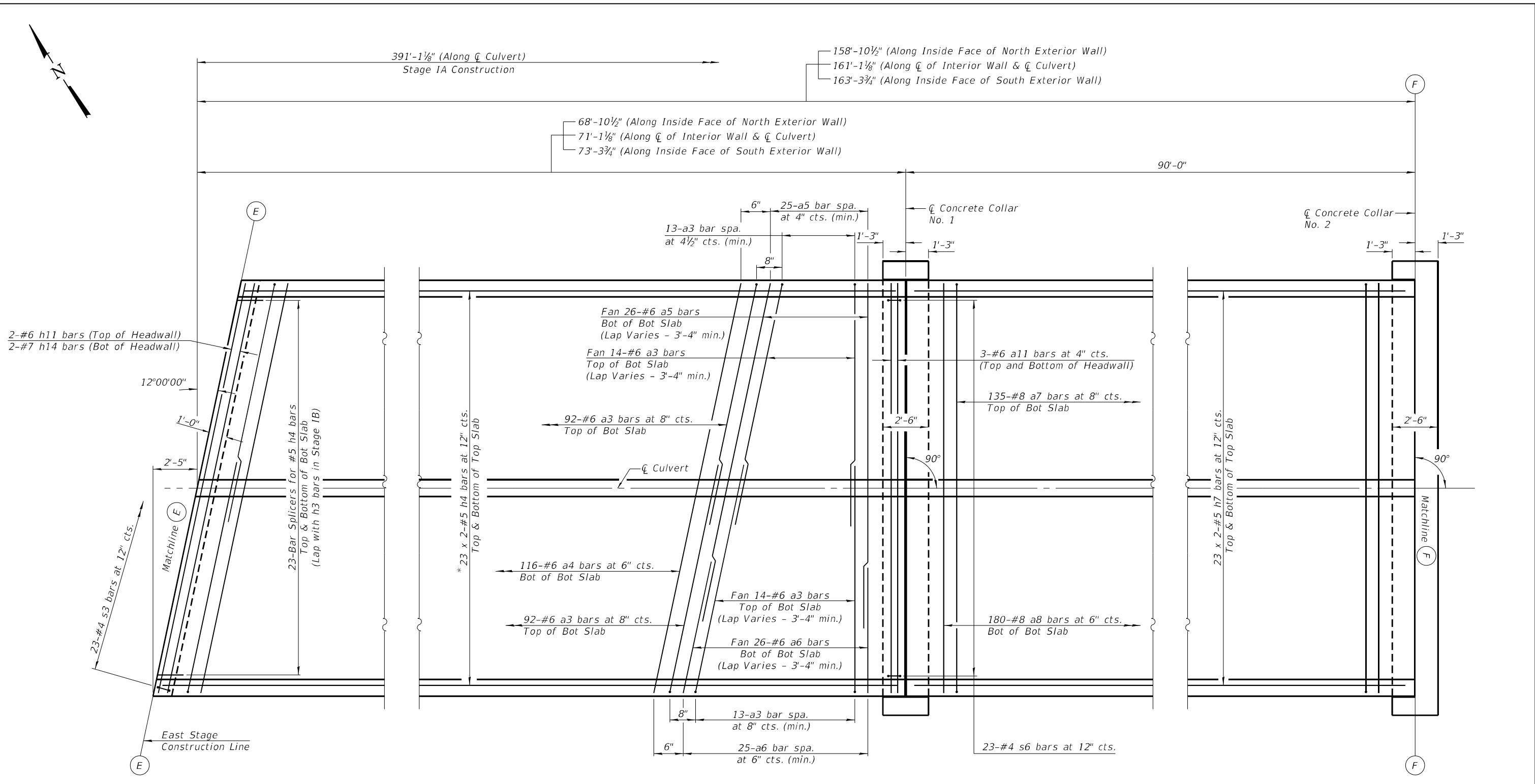
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS - BOTTOM SLAB
STRUCTURE NO. 010-2044

SHEET 16 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(10-34-1) HBK	CHAMPAIGN	1187	987
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				

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PLAN - BOTTOM SLAB

MINIMUM BAR LAP
 #5 Bar = 2'-9"
 #6 Bar = 3'-4"

*Vary the bar lap length (2'-9" min.) of the last bar in each line of bars or cut last bar to fit skew.

Note:
 Bars indicated thus 23 x 2 indicates 23 lines of bars with 2 lengths per line.

(Sheet 3 of 4)

BACON | FARMER | WORKMAN
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PLOT DATE =	DRAWN - JGY	REVISED -
	CHECKED - GBR	REVISED -

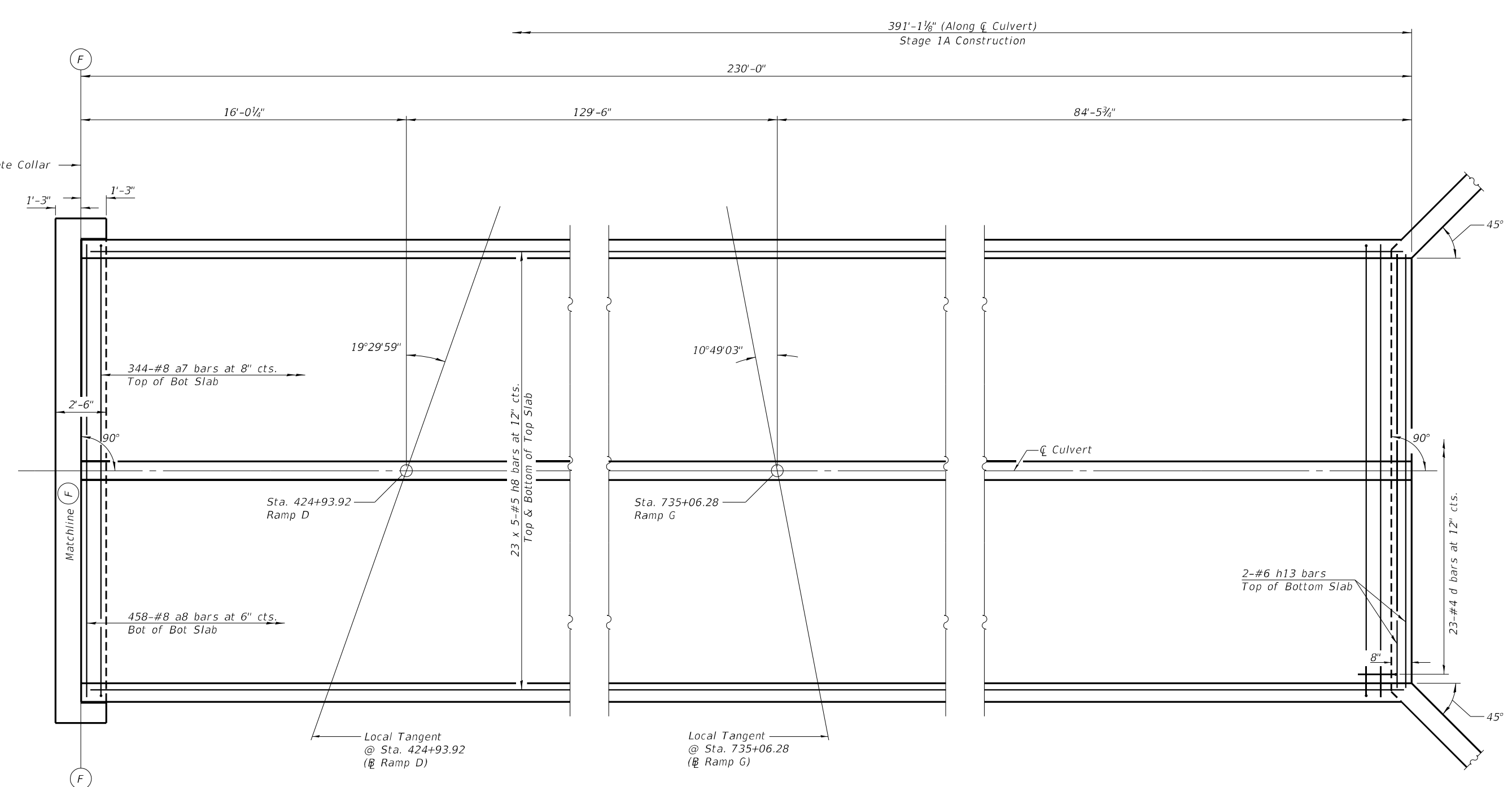
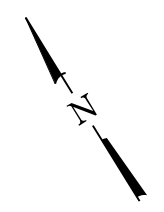
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS - BOTTOM SLAB
STRUCTURE NO. 010-2044

SHEET 17 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(10-34-1) HBK	CHAMPAIGN	1187	988
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				

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PLAN - BOTTOM SLAB

MINIMUM BAR LAP
 #5 Bar = 2'-9"

Notes:
 See Sheets 24 of 28 for Horizontal Cantilever Wingwall Details.
 See Sheet 22 of 28 for Settlement Collar Details and elevation views of cutoff wall.
 A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.
 Bars indicated thus 23 x 5 indicates 23 lines of bars with 5 lengths per line.

(Sheet 4 of 4)

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 ENGINEERING & TESTING, INC.
 403 NORTH COURT STREET
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PLOT DATE =	DRAWN - JGY	REVISED -
	CHECKED - GBR	REVISED -

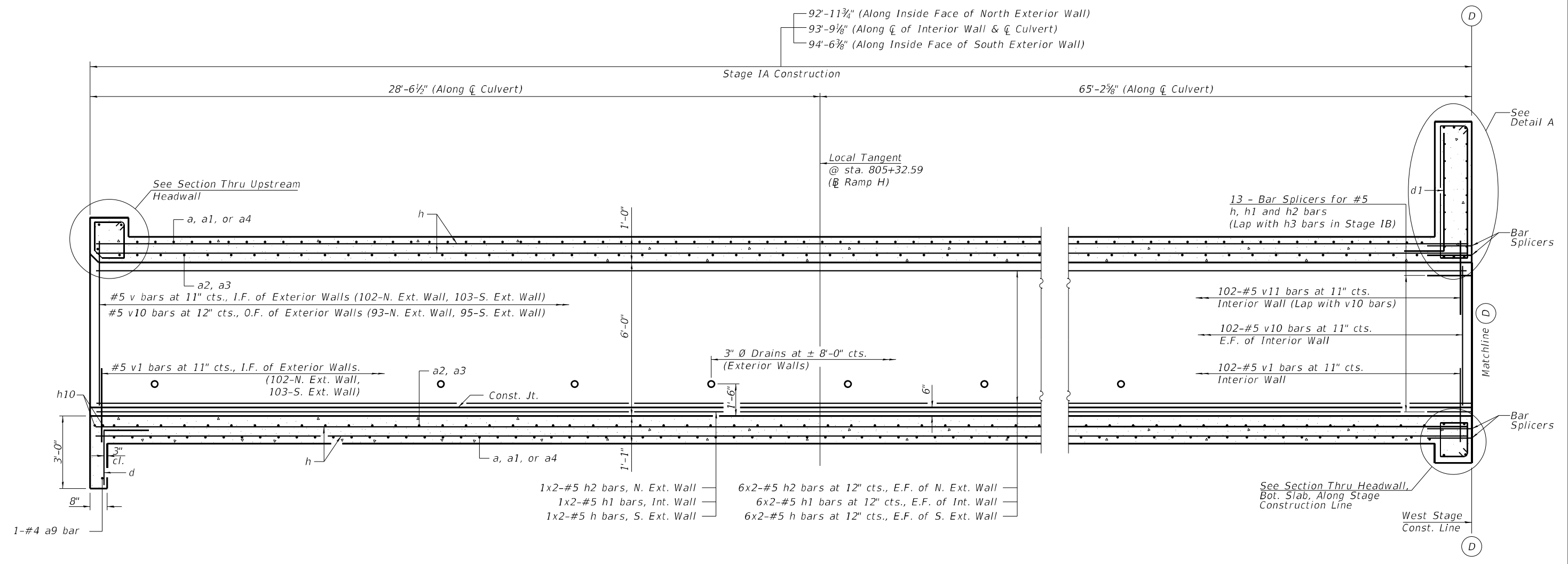
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS - BOTTOM SLAB
STRUCTURE NO. 010-2044

SHEET 18 OF 28 SHEETS

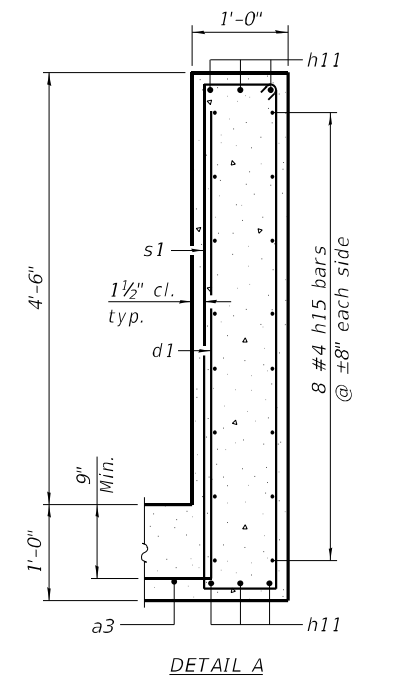
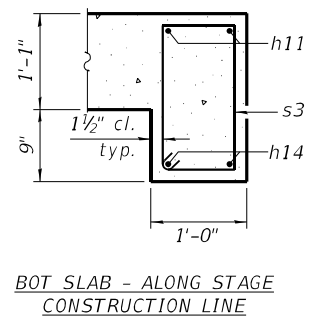
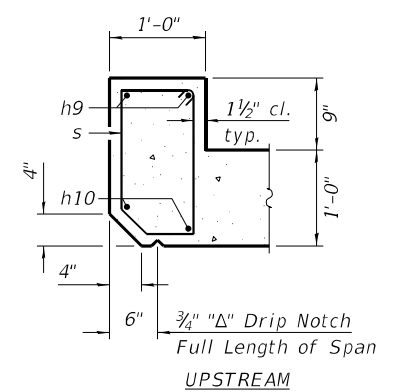
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(10-34-1) HBK	CHAMPAIGN	1187	989
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				

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 3/9/2021 8:24:56 AM



MINIMUM BAR LAP
 #5 Bar = 2'-9"

LONGITUDINAL SECTION
 (Looking North)



SECTION THRU HEADWALL
 Sections at right angle to headwalls

(Sheet 1 of 4)

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 ENGINEERING & TESTING, INC.
 403 NORTH COURT STREET
 MARIETTA, IL 62426
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PLOT DATE =	DRAWN - JGY	REVISED -
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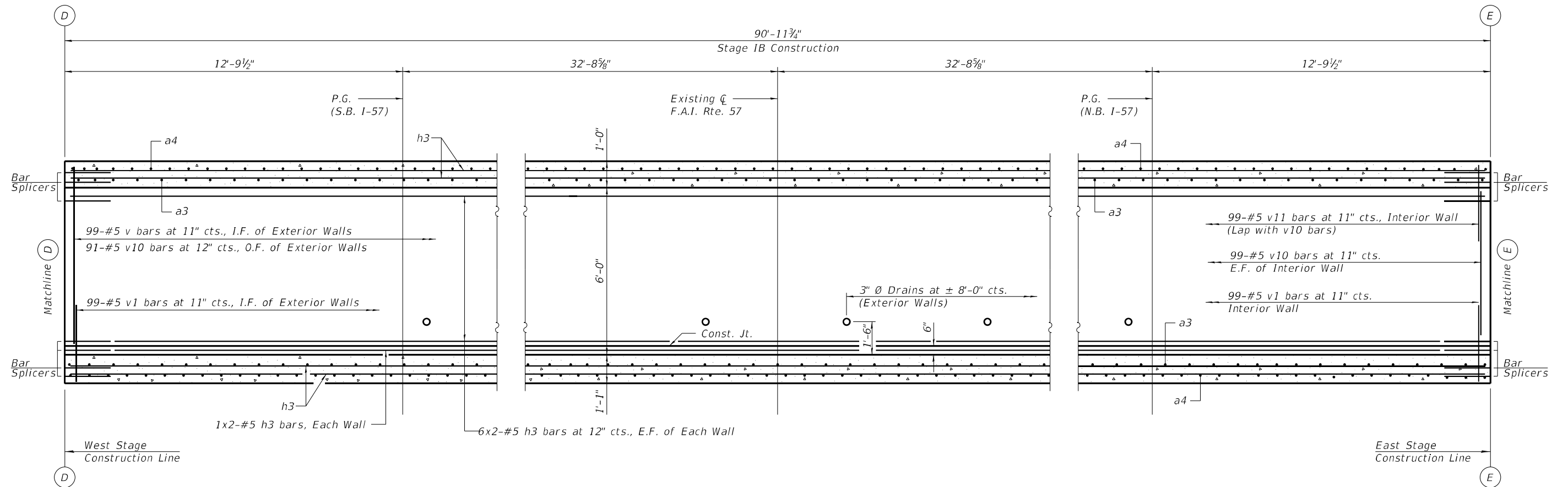
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS - LONGITUDINAL SECTION
STRUCTURE NO. 010-2044

SHEET 19 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(10-34-1) HBK	CHAMPAIGN	1187	990
CONTRACT NO. 70B99				
ILLINOIS		FED. AID PROJECT		

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LONGITUDINAL SECTION
 (Looking North)

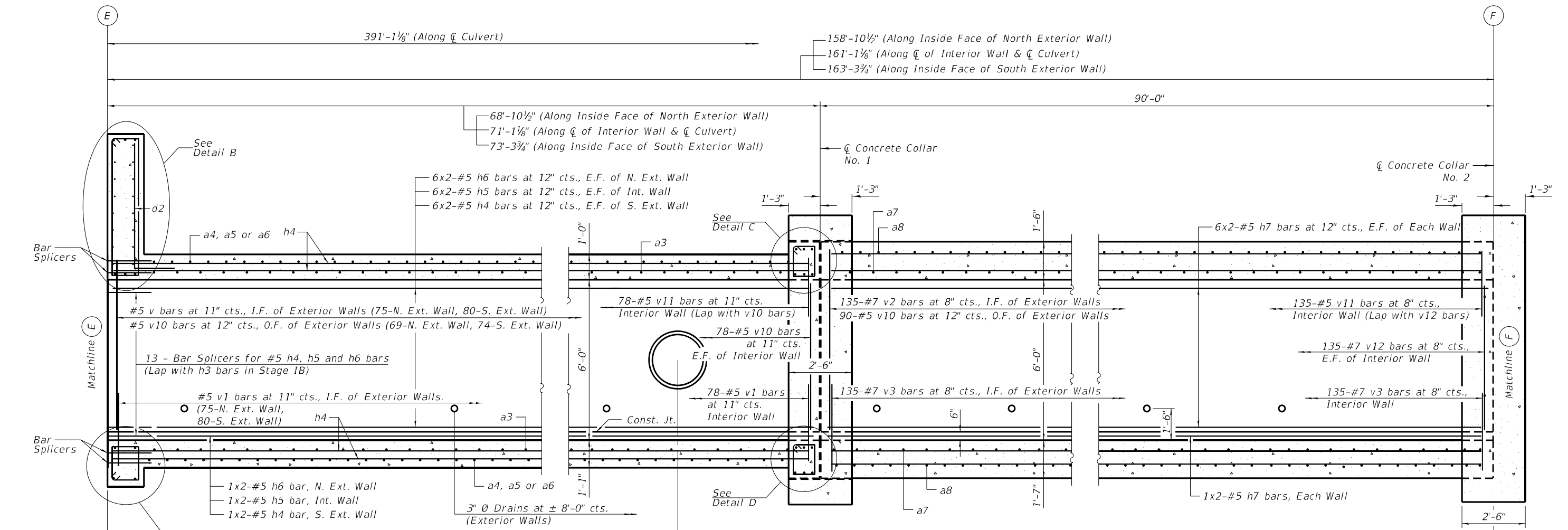
MINIMUM BAR LAP

#5 Bar = 2'-9"

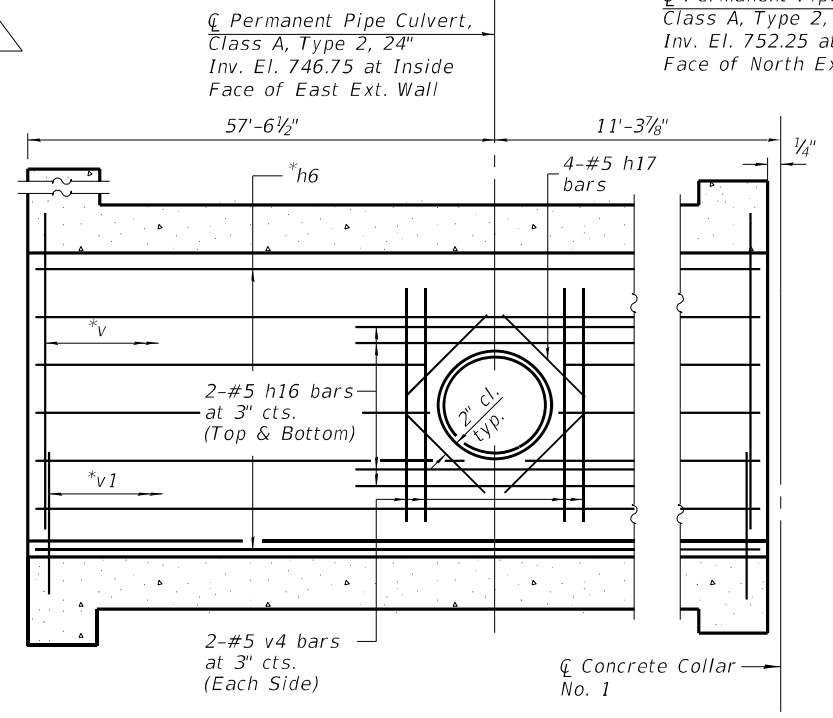
(Sheet 2 of 4)

BACON FARMER WORKMAN ENGINEERING & TESTING, INC. <small>403 NORTH COURT STREET MARIETTA, IL 61758-5050 PHONE - 815.267.9190</small>	USER NAME =	DESIGNED - JGY	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CULVERT DETAILS - LONGITUDINAL SECTION STRUCTURE NO. 010-2044	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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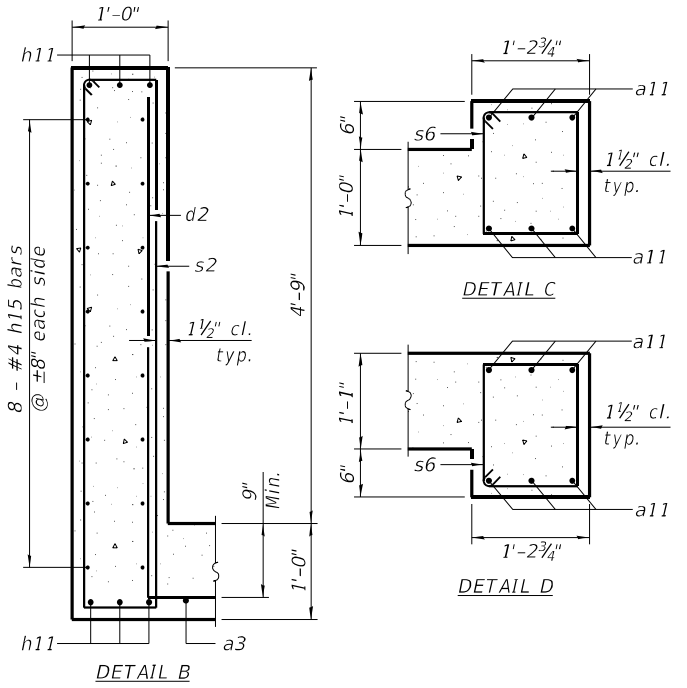
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LONGITUDINAL SECTION
(Looking North)



ELEVATION - NORTH EXT. WALL
(Looking North - Dimensions Along Inside Face of North Ext. Wall)
(Reinforcement In Slabs Not Shown for Clarity)



SECTION THRU HEADWALL
Sections at right angle to headwalls

*Cut bars in field 2" clear of pipes in exterior walls.

Notes:
 Pipe section shall be cast in the north exterior culvert wall at the location shown. The end shall extend a minimum of 6 inches past the inside face of wall. The pipe shall extend through and beyond the outside face a sufficient distance to allow connections. The maximum length of section cast into the walls should be 4 feet.
 The Contractor shall carefully construct the wall around the pipe to prevent leakage along the surfaces. The Contractor shall seal any voids between the culvert wall and section with non-shrink grout per Article 1024.02 of the Standard Specifications.
 The cost of the connection shall not be paid for separately but shall be included in the length of pipe culvert of the class, type, and size shown.

(Sheet 3 of 4)

BACON | FARMER | WORKMAN
ENGINEERING & TESTING, INC.
403 NORTH COURSE STREET
MARIETTA, IL 61758-5050
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PLOT DATE =	CHECKED - GBR	REVISED -

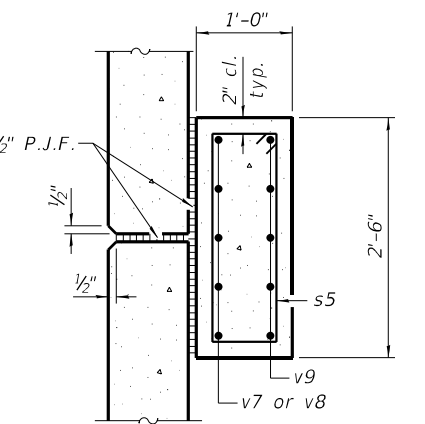
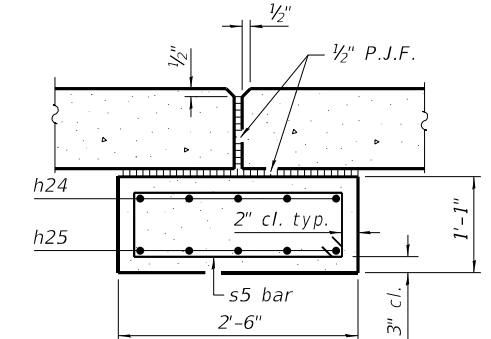
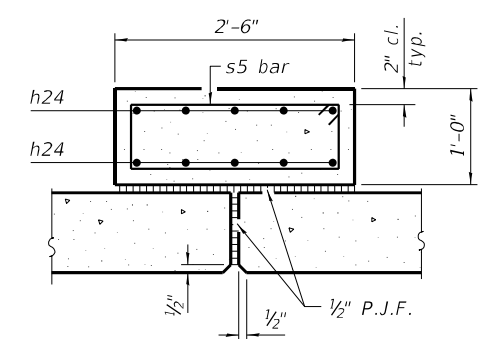
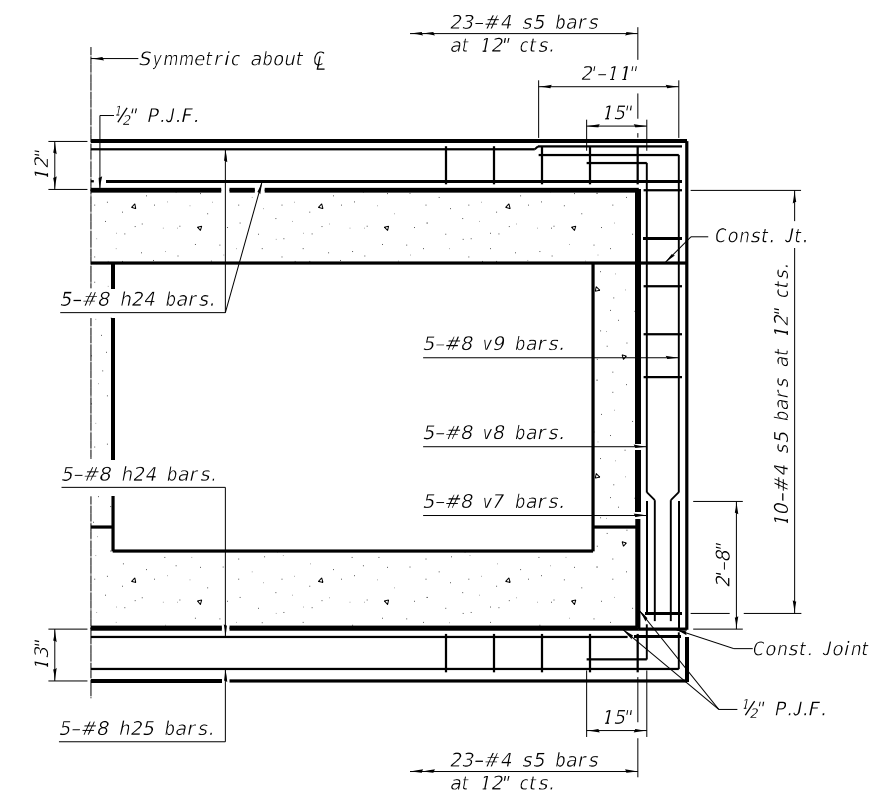
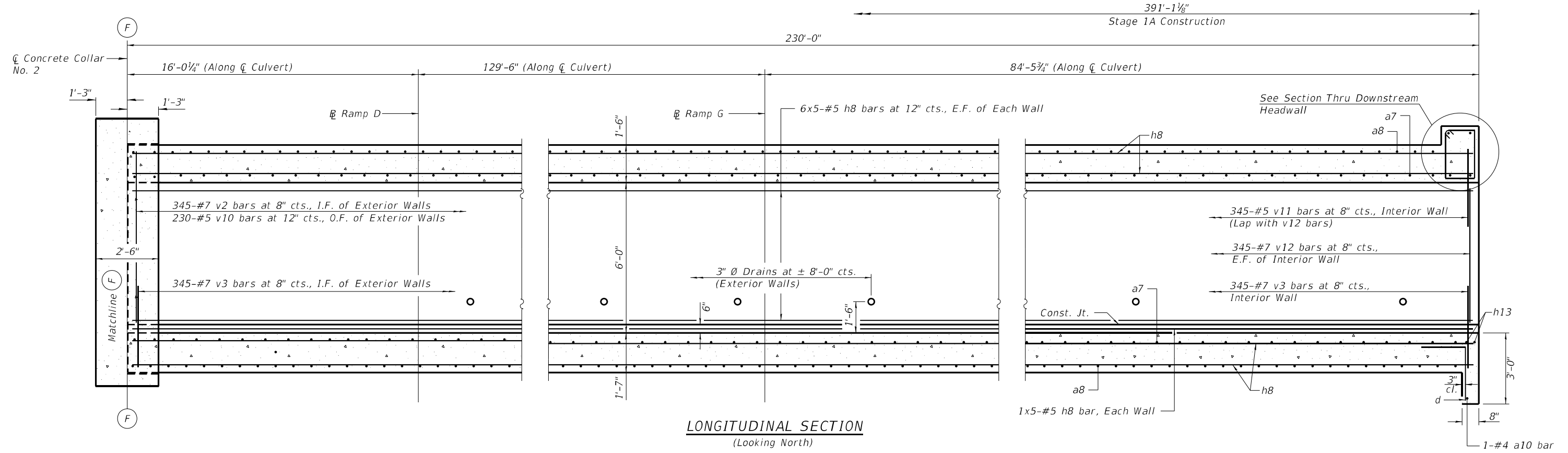
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS - LONGITUDINAL SECTION
STRUCTURE NO. 010-2044

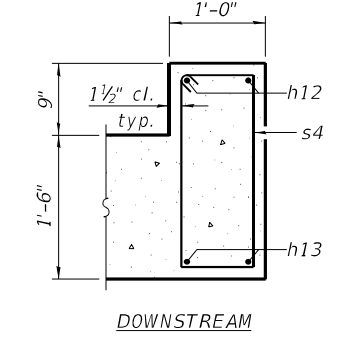
SHEET 21 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(10-34-1) HBK	CHAMPAIGN	1187	992
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				

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MINIMUM BAR LAP
#5 Bar = 2'-9"



(Sheet 4 of 4)

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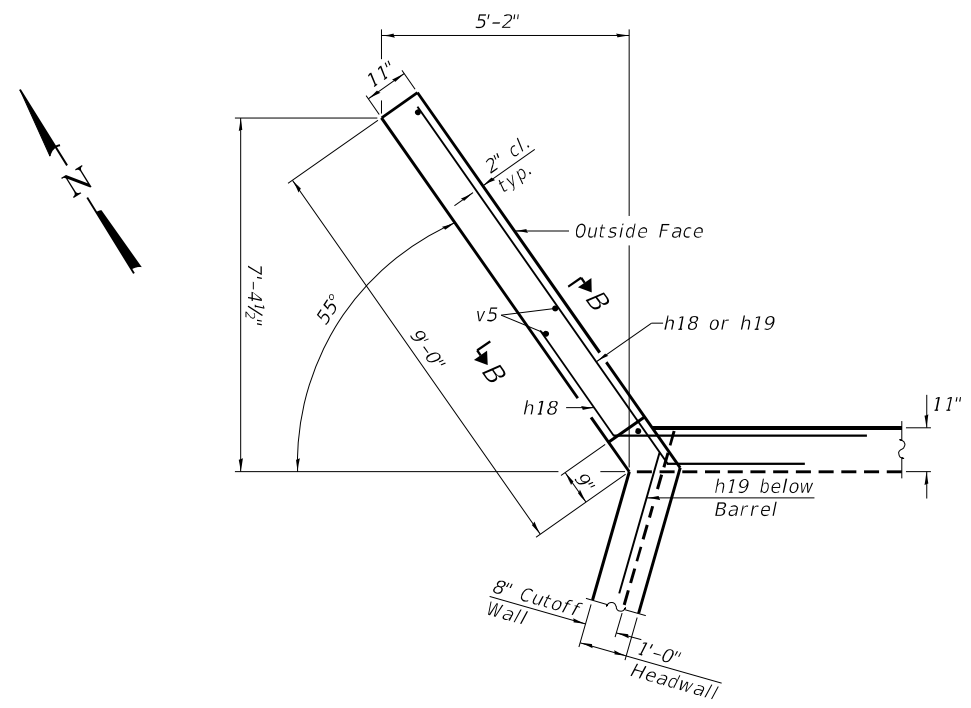
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS - LONGITUDINAL SECTION
STRUCTURE NO. 010-2044

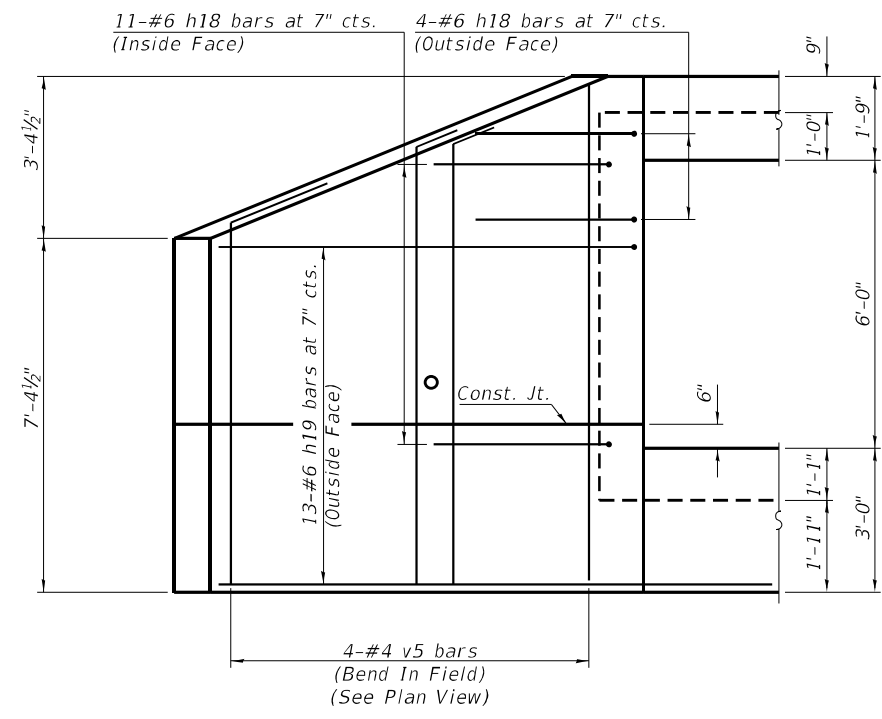
SHEET 22 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(10-34-1) HBK	CHAMPAIGN	1187	993
CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				

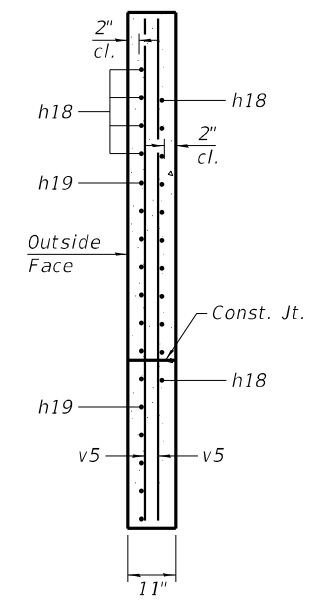
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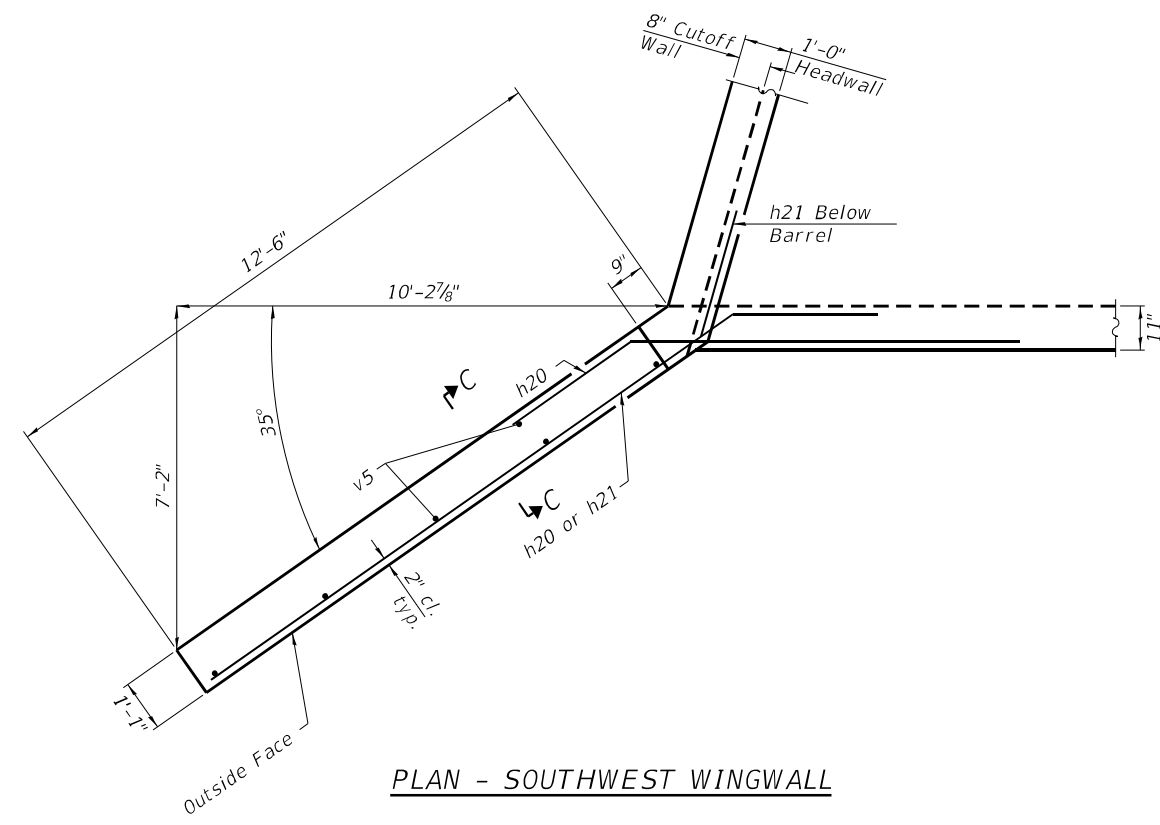
PLAN - NORTHWEST WINGWALL



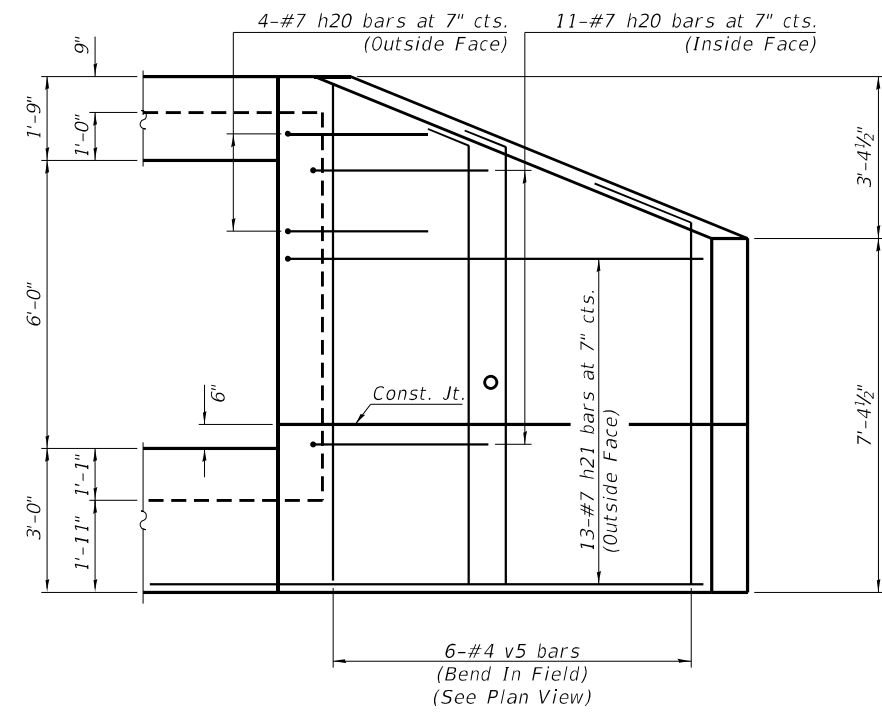
ELEVATION - NORTHWEST WINGWALL



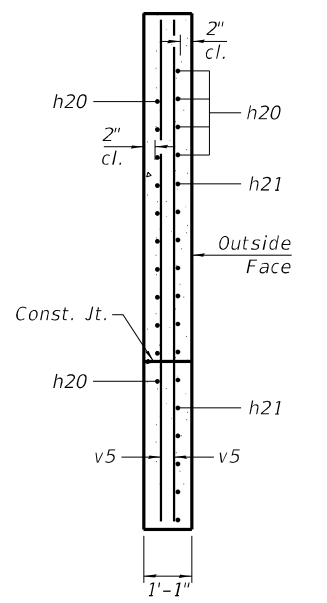
SECTION B-B



PLAN - SOUTHWEST WINGWALL



ELEVATION - SOUTHWEST WINGWALL



SECTION C-C

(Sheet 1 of 2)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

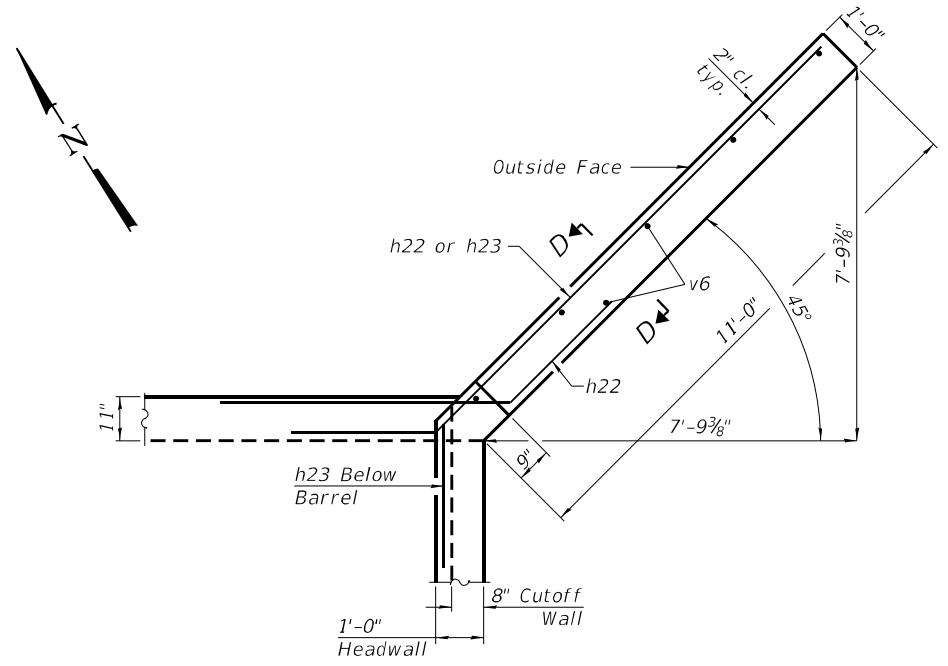
HORIZONTAL CANTILEVER WINGWALLS
STRUCTURE NO. 010-2044

SHEET 23 OF 28 SHEETS

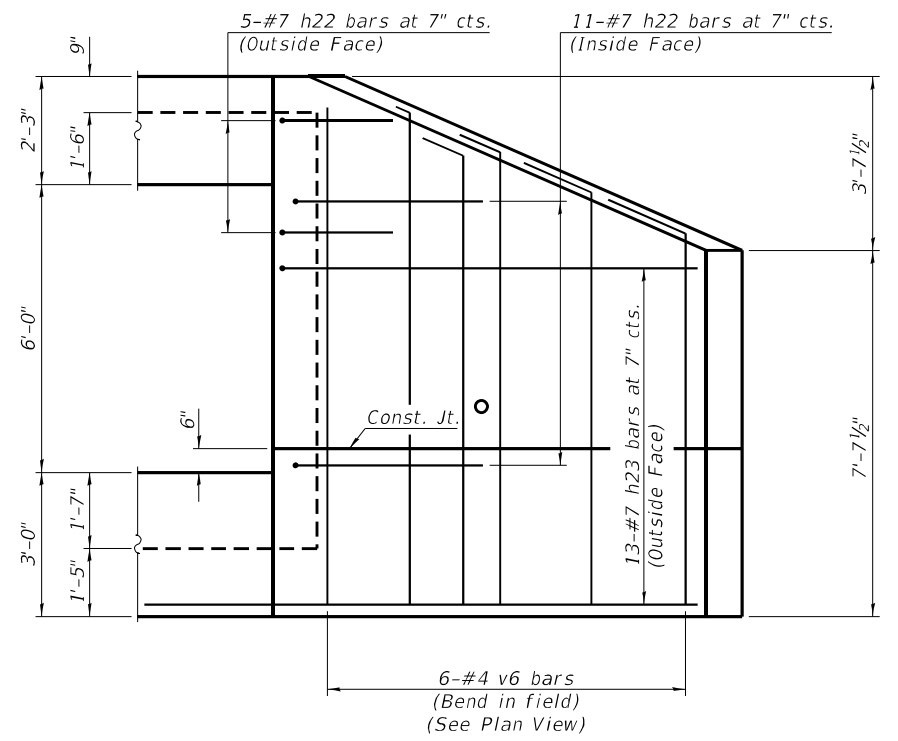
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 70B99				

ILLINOIS FED. AID PROJECT

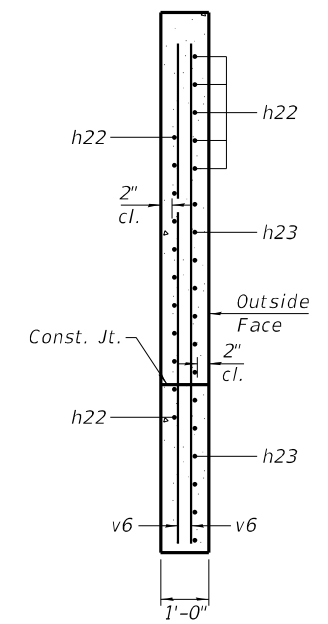
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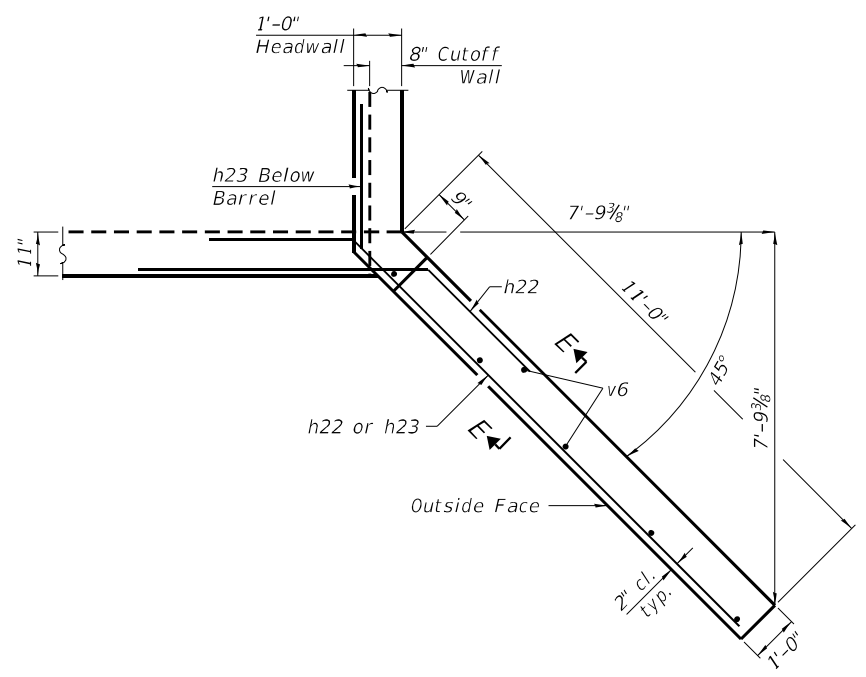
PLAN - NORTHEAST WINGWALL



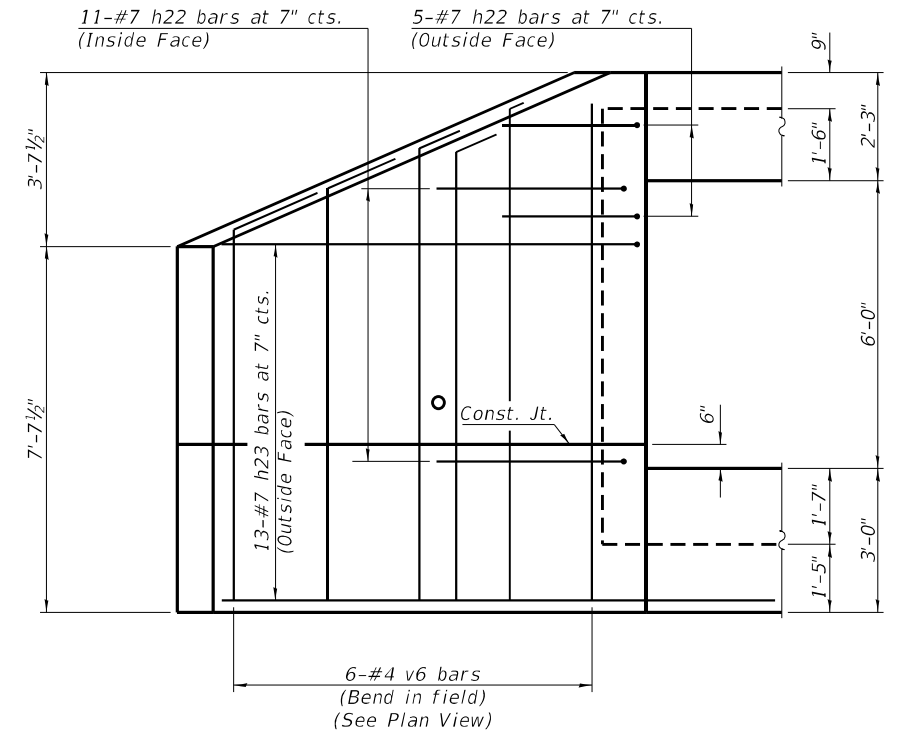
ELEVATION - NORTHEAST WINGWALL



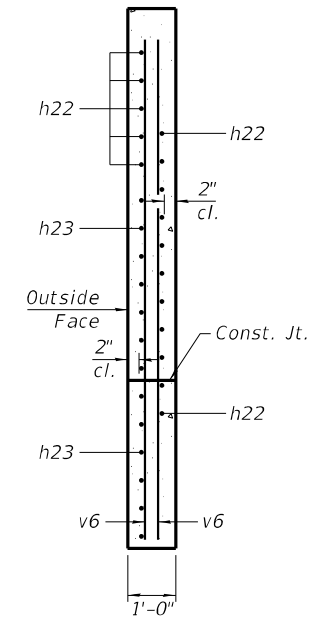
SECTION D-D



PLAN - SOUTHEAST WINGWALL



ELEVATION - SOUTHEAST WINGWALL



SECTION E-E

(Sheet 2 of 2)

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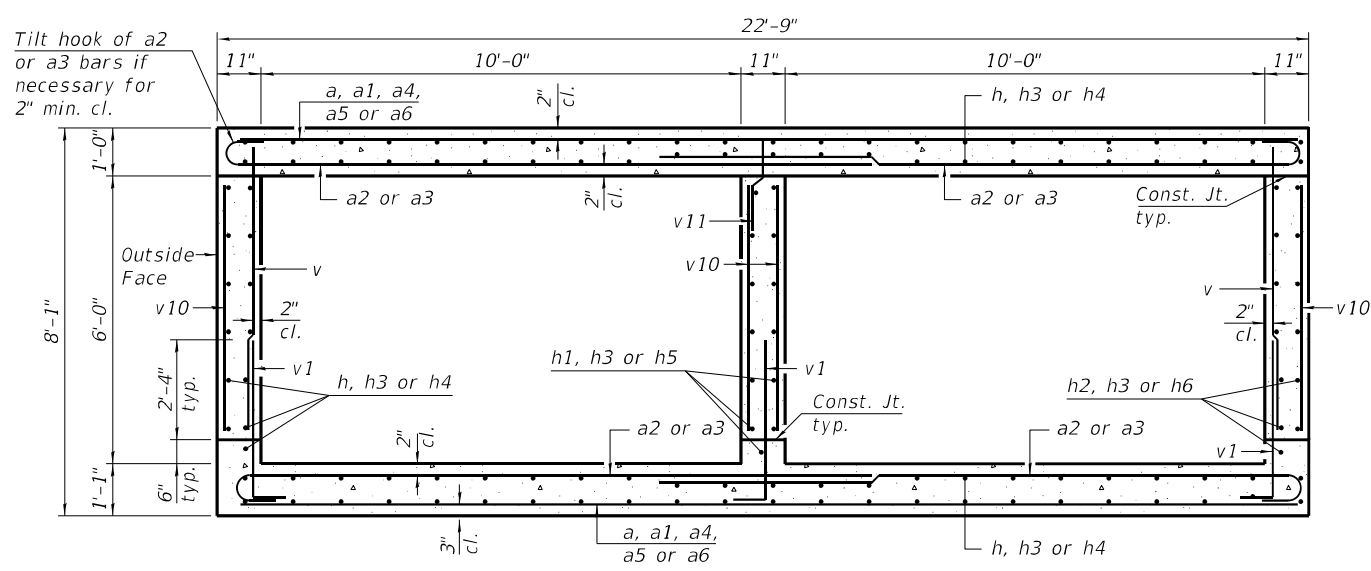
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HORIZONTAL CANTILEVER WINGWALLS
STRUCTURE NO. 010-2044

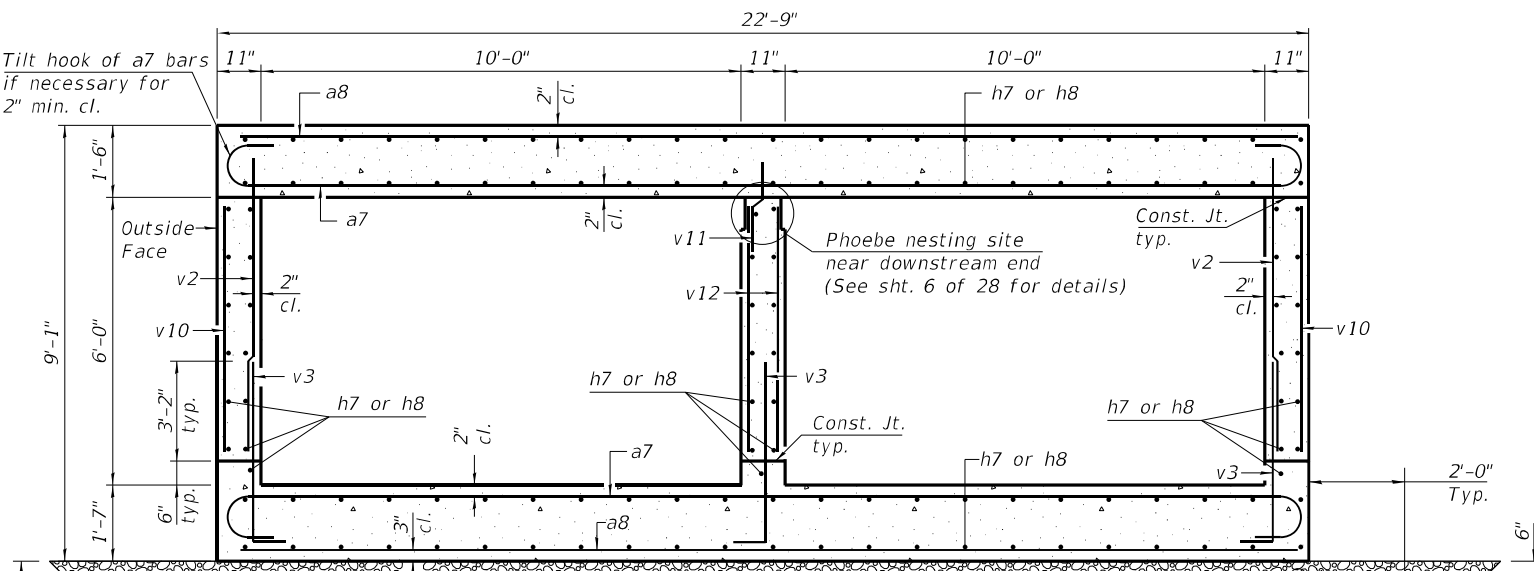
SHEET 24 OF 28 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 70B99				
ILLINOIS FED. AID PROJECT				

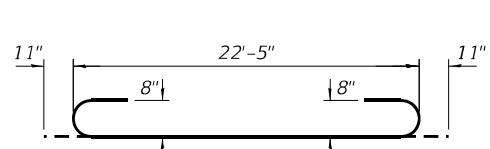
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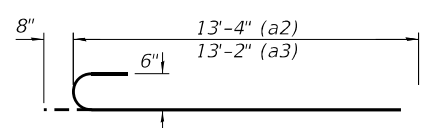
SECTION THRU WEST BARREL
(Looking West)



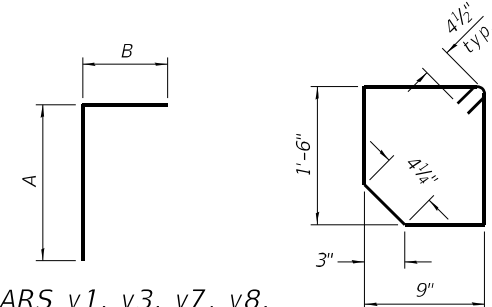
SECTION THRU EAST BARREL
(Looking East)



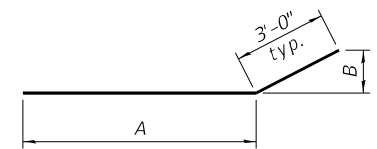
BAR a7



BARS a2 & a3

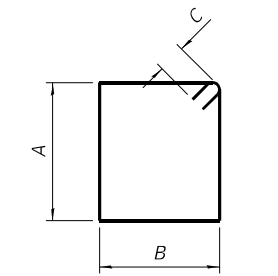


BARS v1, v3, v7, v8, v9, d, d1 & d2



BARS h18, h19, h20, h21, h22 & h23

Bar	A	B
h18	5'-0"	2'-5 1/2"
h19	9'-0"	2'-5 1/2"
h20	5'-0"	1'-8 3/8"
h21	13'-4"	1'-8 3/8"
h22	5'-0"	2'-1 1/2"
h23	11'-5"	2'-1 1/2"



BARS s1, s2, s3, s4 & s5

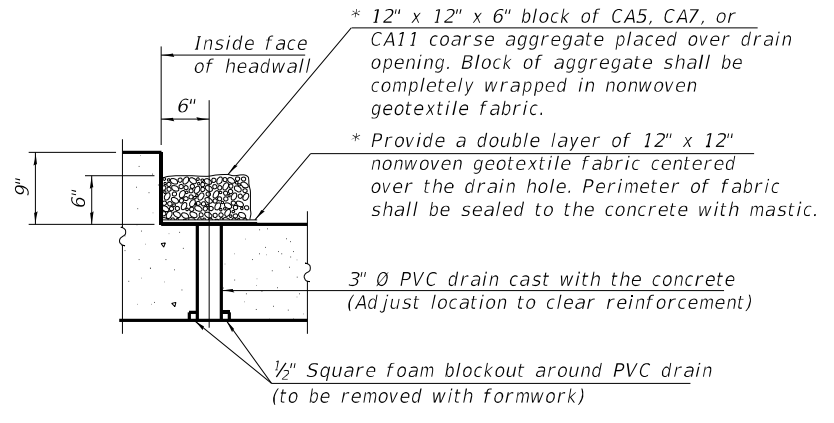
Bar	A	B
v1	3'-8"	1'-6"
v3	5'-0"	1'-6"
v7	3'-4"	1'-3"
v8	9'-8"	1'-3"
v9	9'-8"	2'-11"
d	2'-8"	1'-9"
d1	5'-1"	2'-3"
d2	5'-4"	2'-3"

Bar	A	B	C
s1	5'-3"	9"	5 1/2"
s2	5'-6"	9"	5 1/2"
s3	1'-6"	9"	4 1/2"
s4	2'-0"	9"	4 1/2"
s5	2'-2"	8"	4 1/2"
s6	1'-3"	11 3/4"	4 1/2"

BILL OF MATERIAL

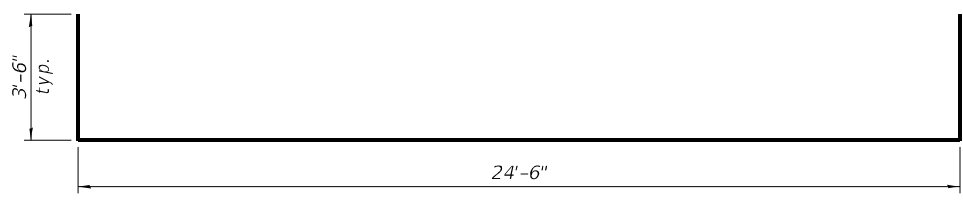
Bar	No.	Size	Length	Shape
a	22	#6	19'-1"	—
a1	22	#6	7'-8"	—
a2	28	#6	14'-0"	—
a3	1496	#6	13'-10"	—
a4	944	#6	22'-11"	—
a5	52	#6	18'-9"	—
a6	52	#6	7'-7"	—
a7	958	#8	24'-3"	—
a8	1276	#8	22'-6"	—
a9	1	#4	23'-3"	—
a10	1	#4	22'-6"	—
a11	12	#6	22'-5"	—
d	46	#4	4'-5"	—
d1	46	#5	7'-4"	—
d2	46	#5	7'-7"	—
h	210	#5	48'-6"	—
h1	26	#5	48'-2"	—
h2	26	#5	47'-9"	—
h3	262	#5	46'-9"	—
h4	210	#5	38'-0"	—
h5	26	#5	36'-10"	—
h6	26	#5	35'-8"	—
h7	262	#5	46'-3"	—
h8	655	#5	48'-2"	—
h9	2	#7	21'-9"	—
h10	4	#6	21'-9"	—
h11	16	#6	22'-11"	—
h12	2	#7	20'-11"	—
h13	4	#6	20'-11"	—
h14	4	#7	22'-11"	—
h15	32	#4	22'-11"	—
h16	4	#5	4'-10"	—
h17	4	#5	2'-5"	—
h18	15	#6	8'-0"	—
h19	13	#6	12'-0"	—
h20	15	#7	8'-0"	—
h21	13	#7	16'-4"	—
h22	32	#7	8'-0"	—
h23	26	#7	14'-5"	—
h24	30	#8	24'-6"	—
h25	10	#8	31'-6"	—
s	22	#4	5'-2"	—
s1	23	#5	12'-11"	—
s2	23	#5	13'-5"	—
s3	46	#4	5'-3"	—
s4	22	#4	6'-3"	—
s5	132	#4	6'-5"	—
s6	46	#4	5'-3"	—
v	558	#5	6'-2"	—
v1	837	#5	5'-2"	—
v2	960	#7	6'-8"	—
v3	1440	#7	6'-6"	—
v4	4	#5	4'-10"	—
v5	10	#4	10'-4"	—
v6	12	#4	10'-10"	—
v7	20	#8	4'-7"	—
v8	20	#8	10'-11"	—
v9	20	#8	12'-7"	—
v10	1771	#5	5'-2"	—
v11	759	#5	4'-0"	—
v12	960	#7	5'-2"	—
Concrete Box Culverts	Cu. Yd.		1659.7	
Reinforcement Bars	Pound		361,990	

* Nonwoven geotextile fabric shall conform to the requirements of Article 1080.01 of the Standard Specifications. The minimum weight of the fabric shall be 6 ounces per square yard.

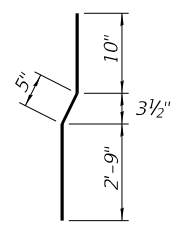


DRAIN DETAIL

(All costs associated with furnishing and constructing the above drain detail will not be measured for payment but shall be included in the contract unit price for the associated work.)



BAR h25



BAR v11

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 MARIETTA, IL 62426
 PHONE - 618.267.9190

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DEPARTMENT OF TRANSPORTATION

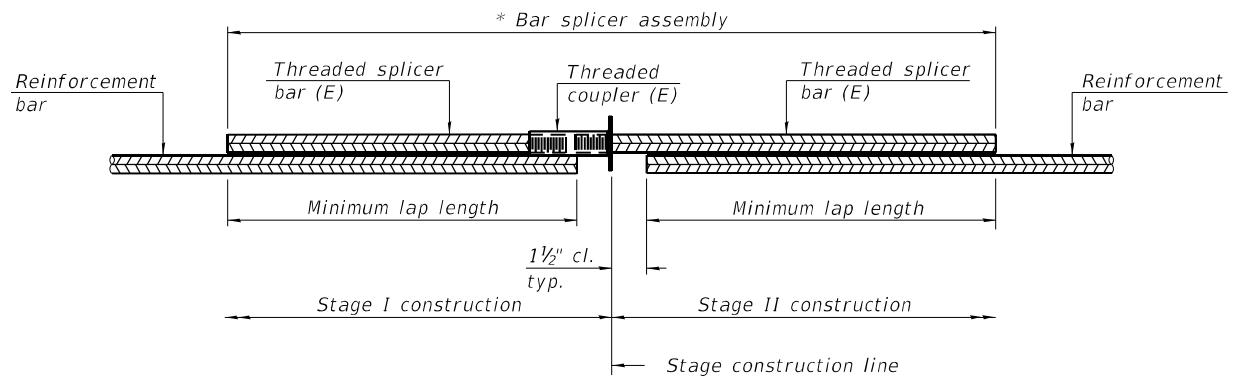
CULVERT SECTION AND DETAILS
STRUCTURE NO. 010-2044

SHEET 25 OF 28 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(10-34-1) HBK	CHAMPAIGN	1187	996
CONTRACT NO. 70B99				

ILLINOIS FED. AID PROJECT

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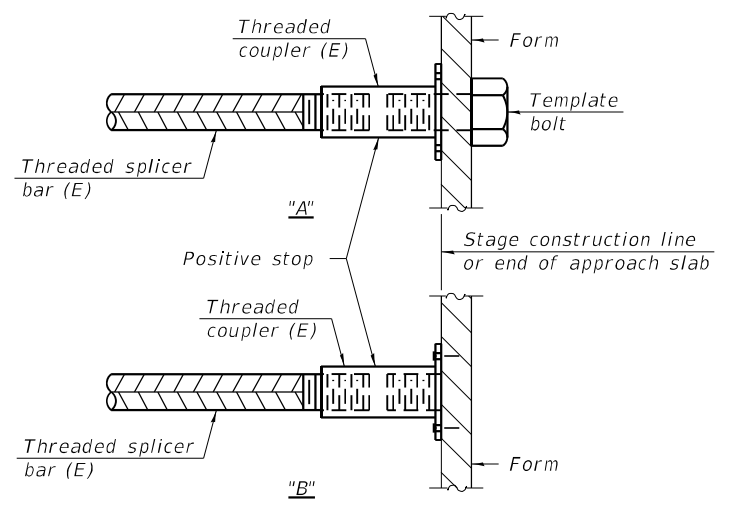


STANDARD BAR SPLICER ASSEMBLY PLAN
 (All components shall be provided from one supplier)

Threaded splicer bar length = min. lap length + 1 1/2" + thread length

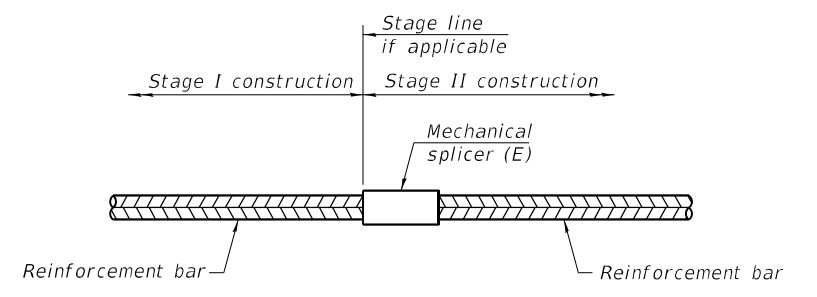
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length
Top slab	#5	92	2'-9"
Walls	#5	78	2'-9"
Bottom slab	#5	92	2'-9"



INSTALLATION AND SETTING METHODS

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



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required

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

BSD-1 1-1-2020

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BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 010-2044

SHEET 26 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(10-34-1) HBK	CHAMPAIGN	1187	997
ILLINOIS FED. AID PROJECT			CONTRACT NO. 70B99	

MODEL: Default
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Illinois Department of Transportation
 Division of Highways
 Illinois Department of Transportation

SOIL BORING LOG

Page 1 of 1

Date 11/6/17

ROUTE FAI Rt. 57/74 Interchange DESCRIPTION North Culvert to Copper Slough under I-57 LOGGED BY CNA

SECTION (10-34-1) HBK LOCATION SE, SEC. 34, TWP. 20N, RNG. 8E, 3rd PM, GPS: 40.1484977N, -88.2817309W

COUNTY Champaign DRILLING METHOD Hollow Stem HAMMER TYPE Automatic

STRUCT. NO. 010-8306E/2044P
 Station 608+50
 BORING NO. C-11A Culvert
 Station 608+11
 Offset 119.00ft Lt.
 Ground Surface Elev. 759.7 ft

D	S	U	M	Surface Water Elev.	ft
E	P	C	O	Stream Bed Elev.	ft
P	T	S	I	Groundwater Elev.:	
T	H	N	Q	First Encounter	ft
		Qu	T	Upon Completion	ft
				After Hrs.	ft
(ft)	(/6")	(tsf)	(%)		

Bituminous PAVEMENT - Shoulder					
	757.70				
Brown/Black SILTY CLAY LOAM to CLAY LOAM (Embankment)		2			
	755.20	5	1.8	21	
Black SILTY CLAY (Top Soil - Organic)		5	B		
	754.20				
Brown CLAY LOAM TILL		2			
	752.70	2			
Gray CLAY LOAM TILL		2			
		1			
		3	1.8	13	
		5	B		
		7			
		10	6.4	10	
		11	B		
		10			
		12	4.5+	10	
		13	E		
End of Boring	744.70	-15			

SOIL BORING 70897_CULVERTS.GPJ IL DOT.GDT 11/8/17

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, from 137 (Rev. 8-99)

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 MARIETTA, IL 61756-5050
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DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS
STRUCTURE NO. 010-2044

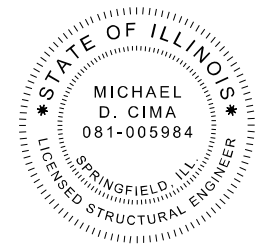
SHEET 28 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(10-34-1) HBK	CHAMPAIGN	1187	999
			CONTRACT NO. 70B99	
		ILLINOIS FED. AID PROJECT		

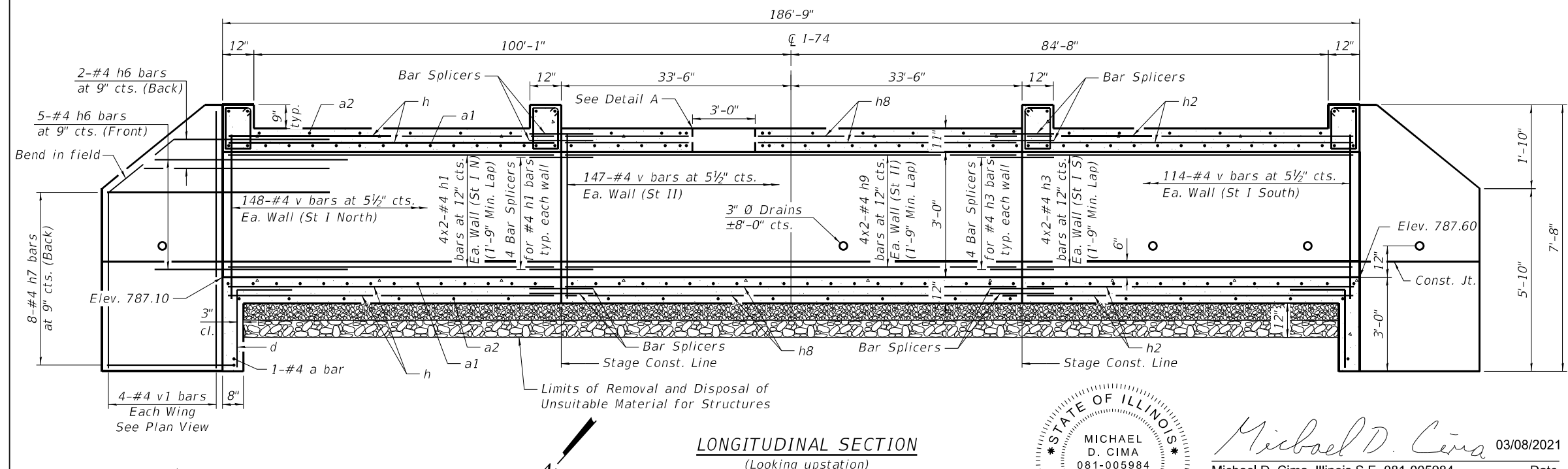
STATION 1857+00.00
 BUILT 20__ BY
 STATE OF ILLINOIS
 F.A.I. RTE. 74 - SEC. (10-34-1) HBK
 LOADING HL-93
 STRUCTURE NO. 010-8172

NAME PLATE
 See Std. 515001

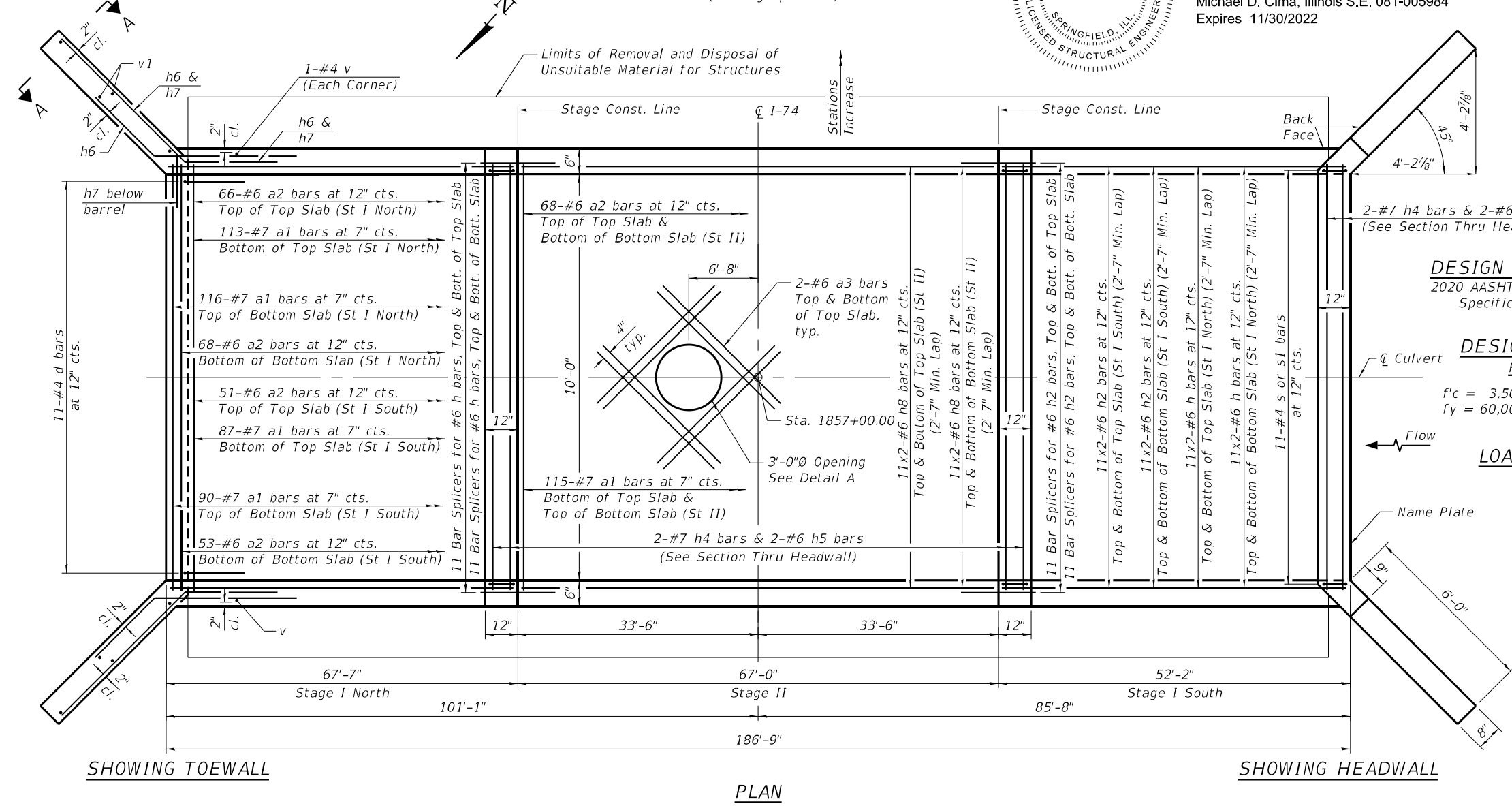
Notes:
 A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.
 Bars indicated thus 12 x 4-#5 etc. indicates 12 lines of bars with 4 lengths per line.
 For Detail A and Section A-A see Sheet 2 of 2.
 Cut a1, a2 and h8 bars to fit around 3'-0" Ø opening in top slab.
 Precast Alternate is not allowed.



Michael D. Cima 03/08/2021
 Michael D. Cima, Illinois S.E. 081-005984 Date
 Expires 11/30/2022



LONGITUDINAL SECTION
 (Looking upstation)



SHOWING TOEWALL

PLAN

SHOWING HEADWALL

DESIGN SPECIFICATIONS
 2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

DESIGN STRESSES
 FIELD UNITS

$f'c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)

LOADING HL-93

TOTAL BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	2	#4	10'-8"	—
a1	636	#7	12'-4"	U
a2	374	#6	10'-8"	—
a3	16	#6	7'-0"	—
d	22	#4	4'-5"	L
h	88	#6	34'-11"	—
h1	16	#4	34'-6"	—
h2	88	#6	27'-3"	—
h3	16	#4	26'-10"	—
h4	8	#7	10'-0"	—
h5	8	#6	10'-0"	—
h6	28	#4	8'-0"	—
h7	32	#4	9'-3"	—
h8	88	#6	34'-8"	—
h9	16	#4	34'-3"	—
s	33	#4	5'-1"	□
s1	11	#4	5'-0"	□
v	822	#4	4'-6"	—
v1	16	#4	7'-4"	—

Item	Unit	Quantity
Removal and Disposal of Unsuitable Material for Structures	Cu. Yd.	103.1
Reinforcement Bars	Pound	39,430
Bar Splicers	Each	104
Name Plates	Each	1
Temporary Soil Retention System	Sq. Ft.	583
Concrete Box Culverts	Cu. Yd.	172.8
Rock Fill	Cu. Yd.	103.1
Removal of Existing Structures, No. 4	Each	1