



GSI Job No. 10195

SOIL BORING LOG

Page 1 of 2

Date 2/29/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY JZ
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. Station	BORING NO. Station	Offset	Ground Surface Elev.	D (ft)	B (/6")	U (tsf)	M (%)	Soil Description				D (ft)	B (/6")	U (tsf)	M (%)
								Surface Water Elev.	Stream Bed Elev.	Groundwater Elev.:	First Encounter				
016-D011	SB-25	20.30ft Left	686.50					ASPHALT							
								CLAY LOAM-brown, gray & black-stiff to very stiff (Fill)							
								SILTY LOAM-gray-loose							
								SILTY CLAY LOAM-gray-loose							
								SILTY LOAM-gray-medium dense							
								CLAY-gray-stiff							
								ORGANIC SILTY CLAY-dark gray-soft							
								CLAYEY SAND & GRAVEL-gray-medium dense							
								SILTY LOAM-gray-medium dense							

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 T208)
 BBS, from 137 (Rev. 8-99)



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								Surface Water Elev.	Stream Bed Elev.	Groundwater Elev.:	First Encounter				
016-D011	SB-25	20.30ft Left	686.50					SILTY LOAM-gray-medium dense (continued)							
								SAND-gray-medium dense							
								SILTY SAND & GRAVEL-gray-medium dense							
								CLAY-gray-very stiff							
								SAND-gray-very dense							
								SILTY CLAY LOAM-gray-very stiff							

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 T208)
 BBS, from 137 (Rev. 8-99)

\\NASCH1\Chicago2\5106-566-Struct\dgn\Lead Bridges\Lead Bridge 2 - 016-D011-016D011-60L72-076-SB.dgn



GSI Job No. 10195

SOIL BORING LOG

Page 1 of 2

Date 2/29/12

ROUTE IL Route 7/J. S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY JZ
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. Station	BORING NO. Station	Offset	Ground Surface Elev.	DEPTHS				Surface Water Elev.	Stream Bed Elev.	Groundwater Elev.:	DEPTHS			
				(ft)	(/6")	(tsf)	(%)				(ft)	(/6")	(tsf)	(%)
016-D011	SB-26	18.00ft Left	687.00					n/a	n/a	681.0				
				4							6			
				5	3.5	19					10			8
				5	P						12			
				3							7			
				2	2.0	23					3			17
				2	P						3			
				-5							-25			
			681.00											
				2							4			
				3		19					4			20
				3							4			
			679.00											
				1							3			
				2		22					3			18
				-10							4			
				3							-30			
				1										
				2		26								
				2										
			674.00											
				2							10			
				3	2.5	25					13			7
				3	P						15			
				-15							-35			
			671.50											
				4										
				5		13								
				5										
				6							9			
				6							11			17
				7		11					13			
				-20							-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, from 137 (Rev. 8-99)



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Page 2 of 2

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 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. Station	BORING NO. Station	Offset	Ground Surface Elev.	DEPTHS				Surface Water Elev.	Stream Bed Elev.	Groundwater Elev.:	DEPTHS			
				(ft)	(/6")	(tsf)	(%)				(ft)	(/6")	(tsf)	(%)
016-D011	SB-26	18.00ft Left	687.00					n/a	n/a	681.0				
				5										
				8	2.7	20								31
				10	B									33
				-45							-65			41
			645.00											
				5										
				8	2.7	20								31
				10	B									33
				-45							-65			41
			640.00											
				7										
				10	4.1	18								25
				13	B									32
				-50							-70			34
			635.00											
				7										
				10	4.1	18								25
				13	B									32
				-50							-70			34
			630.00											
				10										
				21		24								7
				24										8
				-65							-75			9
			612.00											
				25										
				31		11								
				42										
				-80							-80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
 BBS, from 137 (Rev. 8-99)

Z:\PROJECTS\2010\10195\H.W.LOCHNER\11.7.WILL COOK RD. TO US 46 (PFB, 1ST, 5)10195 BORING LOGS\0195_LOG.GPJ 01/17/12

LOCHNER
 H.W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED -	REVISED
FILE NAME = 016D011-60L72-077-SB.dgn	CHECKED -	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

SOIL BORINGS 19
 STRUCTURE NO. 016-D011

SHEET NO. 77 OF 77 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	502
CONTRACT NO. 60L72				

ILLINOIS FED. AID PROJECT

Bench Mark: BM #49 Set at a notch cut on south end of east 16' headwall to private entrance. Elev. 687.61. 37' north of \odot US 6 and \pm 1000' east of 104th Street;
 BM #50 Set at a notch cut in center of west 16' headwall to private entrance. Elev. 686.54. 52' north of \odot US 6 and \pm 2400' east of 104th Street.

Existing Structure: S.N. D016-D012. Built in 1937 as S.B.I. Route 53, Section 537-R at Station 398+92.60. Structure consists of 20-spans - four 5-span continuous reinforced concrete slab units supported on timber piles. Each unit has a width of 20'-0" and a length of 115'-0". The overall length of the structure is 460'-0". Structure to be removed and replaced using stage construction.

No Salvage

STATION 399+15.00
 BUILT 2015 BY
 STATE OF ILLINOIS
 F.A.P. RTE 351-SEC. 2010-081-R
 LOADING HL-93
 STRUCTURE NO. 016-D012

NAME PLATE
 See Std. 515001

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
 Design Spectral Acceleration at 1.0 sec. (S_{a1}) = 0.130g
 Design Spectral Acceleration at 0.2 sec. (S_{a5}) = 0.238g
 Soil Site Class = E

LOADING HL-93

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

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications, 6th Edition, with 2013 Interims.

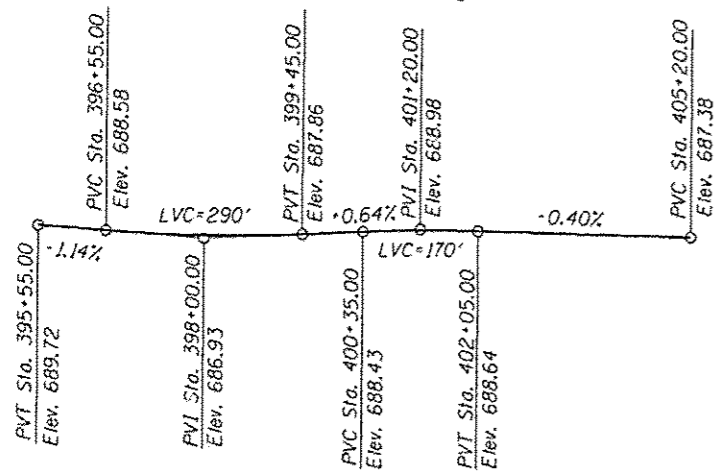
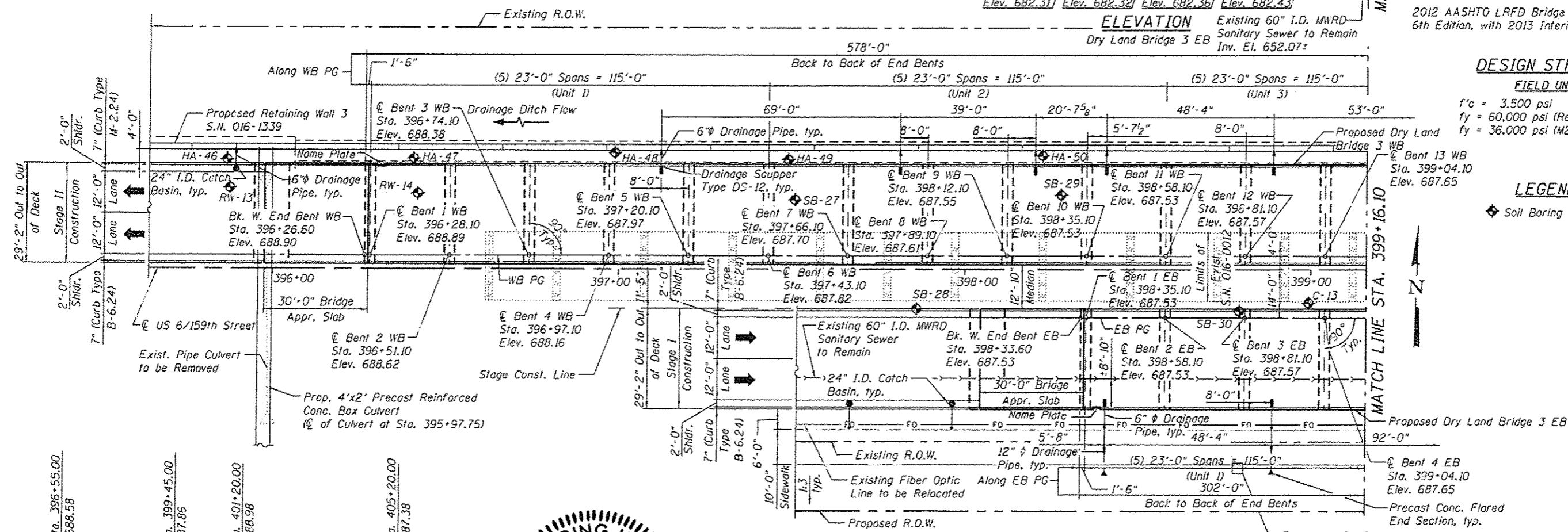
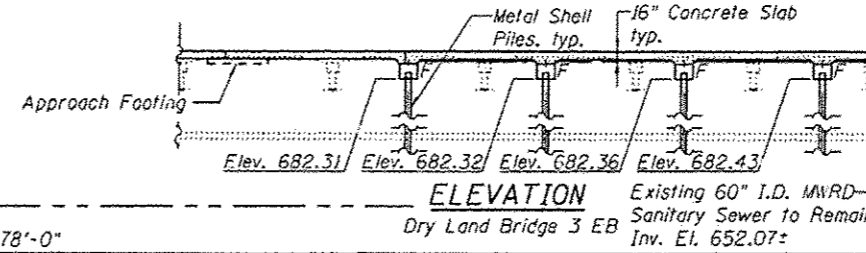
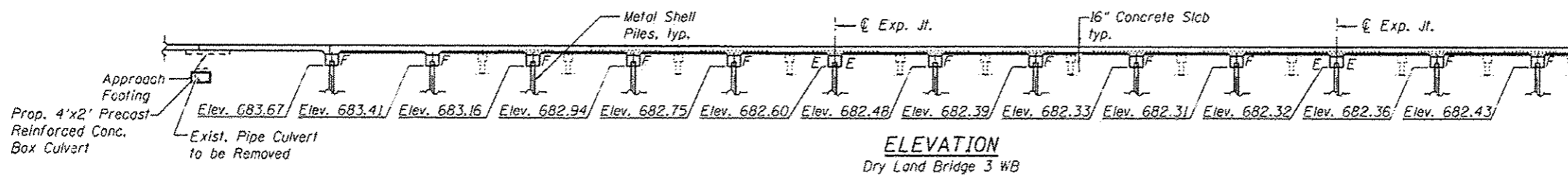
DESIGN STRESSES

FIELD UNITS

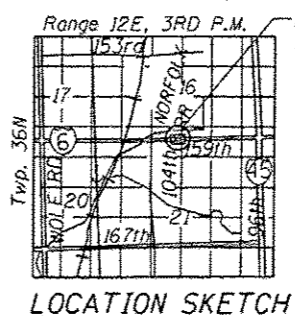
f'_c = 3,500 psi
 f_y = 60,000 psi (Reinforcement)
 f_y = 36,000 psi (M270 Grade 36)

LEGEND

Soil Boring Location



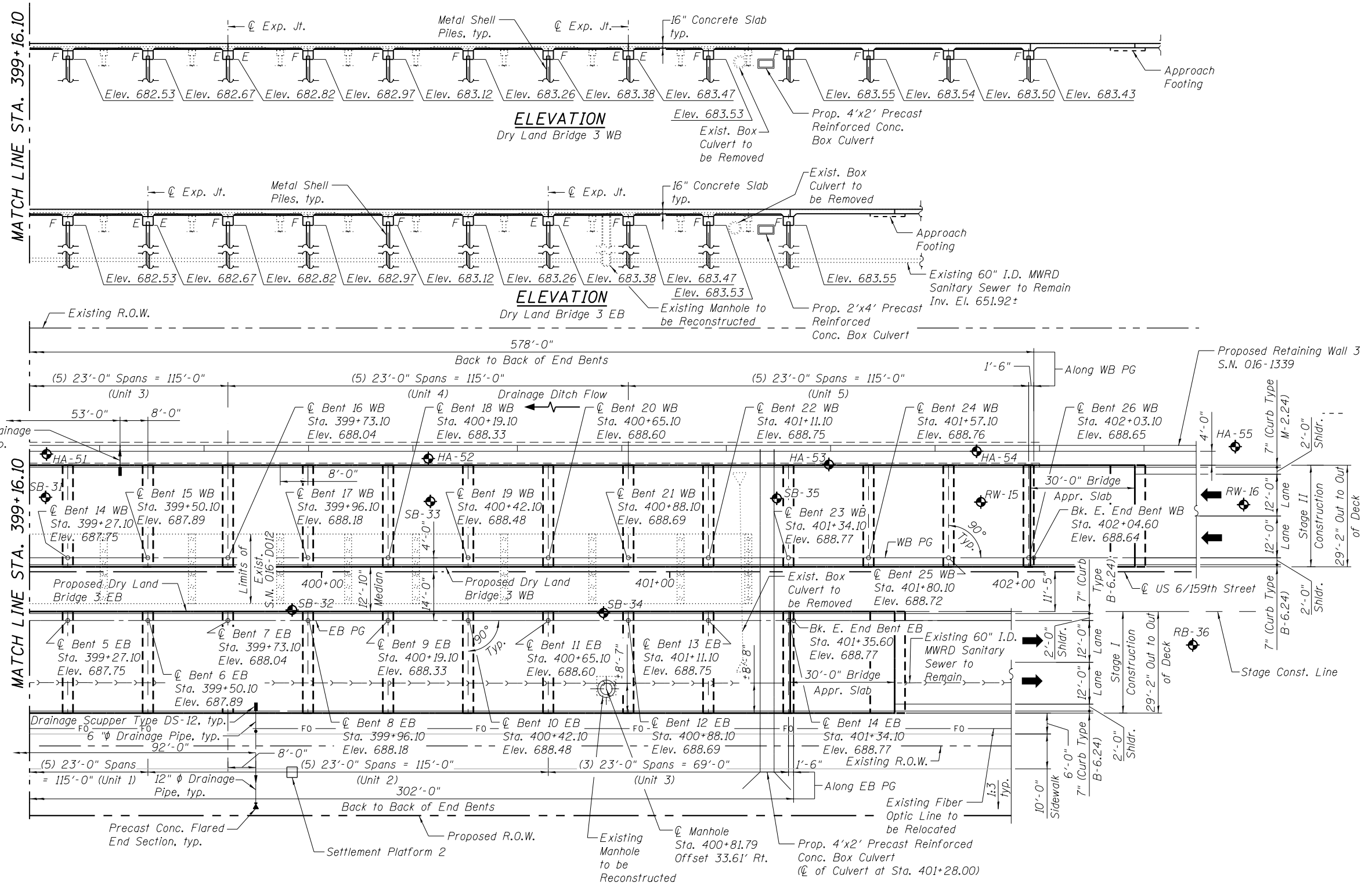
APPROVED
 For Structural Adequacy Only
 Engineer of Bridges & Structures



GENERAL PLAN & ELEVATION I
DRY LAND BRIDGE 3
US ROUTE 6 / 159TH STREET
 F.A.P. RTE 351 - SEC. 2010-081-R
 COOK COUNTY
 STATION 399+15.00
 STRUCTURE NO. 016-D012

LOCHNER H.W. LOCHNER, INC. 226 WEST WASHINGTON STREET 12 TH FLOOR CHICAGO, ILLINOIS 60606	USER NAME :	DESIGNED - LJB	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SHEET NO. 1 OF 43 SHEETS	F.A.P. RTE. 351 SECTION 2010-081-R COUNTY COOK TOTAL SHEETS 1045 SHEET NO. 503 CONTRACT NO. 60L72
	FILE NAME :	CHECKED - RH	REVISED			
	PLOT SCALE :	DRAWN - LJB	REVISED			
	PLOT DATE :	CHECKED - RH	REVISED			

ILLINOIS FED. AID PROJECT



PLAN

SETTLEMENT PLATFORM SCHEDULE

Settlement Platform I.D.	Station	Offset
Settlement Platform 1	398+80.00	58.00' Rt.
Settlement Platform 2	399+92.00	58.00' Rt.

The identified settlement platforms are paid for as SETTLEMENT PLATFORMS.

LEGEND

◆ Soil Boring Location

GENERAL PLAN & ELEVATION 2
DRY LAND BRIDGE 3
US ROUTE 6 / 159TH STREET
F.A.P. RTE 351 - SEC. 2010-081-R
COOK COUNTY
STATION 399+15.00
STRUCTURE NO. 016-D012

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LOCHNER
 H.W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

USER NAME =
 FILE NAME = 016D012-60L72-002-GP.dgn
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 2 OF 43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	504
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

GENERAL NOTES

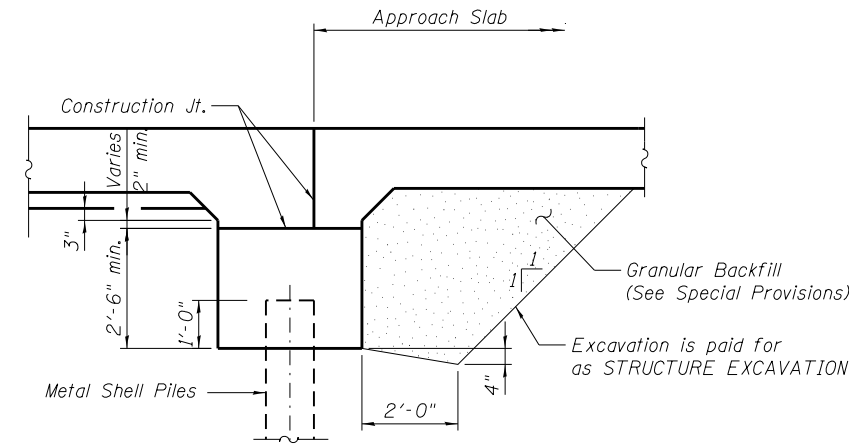
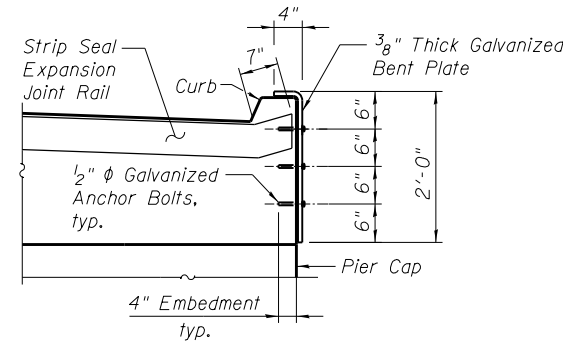
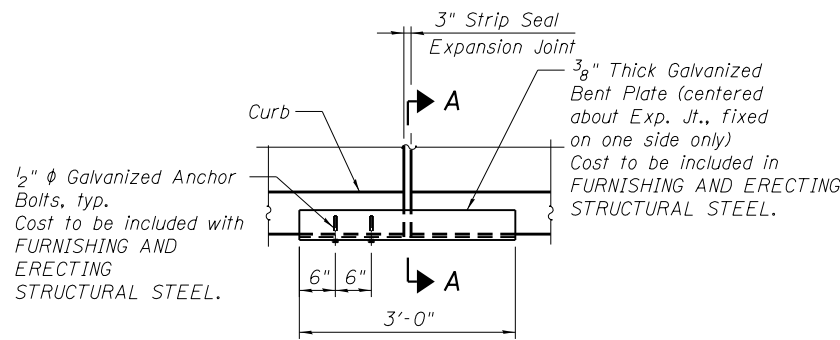
1. Calculated weight of Structural Steel M270 Grade 36 = 1,290 lb.
2. All structural steel shall be AASHTO M 270 Grade 36.
3. Reinforcement bars designated (E) shall be epoxy coated.
4. Protective coat shall be applied to surfaces of bridge deck, approach slabs and curbs.
5. Concrete Sealer shall be applied to the designated areas of the Expansion Bent Caps. See Sheet 23 for locations.
6. Refer to Roadway Plans for type and quantity of fill material required within the limits of Dry Land Bridge.
7. Piles shall be driven through 18" diameter precored holes extending to the estimated elevation shown on sheet 24 according to Article 512.09(c) of the Standard Specifications. Cost included in driving piles. However, the contractor may cease the precore of piles at the elevation peat is encountered. Loose sand shall be backfilled in the precore holes without compacting.
8. The deck of the existing land bridge shall be removed. The existing bent caps and/or timber piles shall be removed to 2' below bottom of the proposed land bridge slab, abandoned in place and buried under the proposed land bridges.
9. The Contractor shall verify locations of all underground utilities before driving piling. Any disturbance or damage to existing structures, utilities or other property, caused by the Contractor's operation, shall be repaired by the Contractor in a manner satisfactory to the Engineer at no additional cost to the Department.
10. Excavation for placement of slab shall be paid for as Earth Excavation. See Roadway Plans.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Granular Backfill for Structures	Cu. Yd.		58	58
Removal of Existing Structures No. 3	Each	1		1
Structure Excavation	Cu. Yd.		1,132	1,132
Concrete Structures	Cu. Yd.		360.4	360.4
Concrete Superstructure	Cu. Yd.	1,737.8		1,737.8
Bridge Deck Grooving	Sq. Yd.	2,879		2,879
Protective Coat	Sq. Yd.	3,338		3,338
Reinforcement Bars, Epoxy Coated	Pound	315,790	41,190	356,980
Furnishing Metal Shell Piles 14"x0.25"	Foot		10,913	10,913
Driving Piles	Foot		10,913	10,913
Test Pile Metal Shells	Each		11	11
Name Plates	Each	2		2
Preformed Joint Strip Seal	Foot	176		176
Concrete Sealer	Sq. Ft.		1,494	1,494
Drainage Scuppers, DS-12	Each	9		9
Drainage System No. 3	Each	1		1
Furnishing and Erecting Structural Steel	Pound	1,290		1,290
Settlement Platforms	Each		2	2

INDEX OF SHEETS

SHEET NO.	TITLE
1	General Plan & Elevation 1
2	General Plan & Elevation 2
3	General Notes and Bill of Material
4	Construction Staging
5	Temporary Concrete Barrier
6	Top of Slab Elevation Plan WB
7	Top of Slab Elevations 1 WB
8	Top of Slab Elevations 2 WB
9	Top of Slab Elevation Plan EB
10	Top of Slab Elevations EB
11	Top of Approach Slab Elevations 1
12	Top of Approach Slab Elevations 2
13	Deck Plan & Cross Section 1
14	Superstructure Details 1
15	Deck Plan & Cross Section 2
16	Superstructure Details 2
17	Deck Plan & Cross Section 3
18	Superstructure Details 3
19	Approach Slab Details 1
20	Approach Slab Details 2
21	Preformed Joint Strip Seal
22	Drainage Scupper, DS-12
23	Typical Bent Details 1
24	Typical Bent Details 2
25	Typical Bent Details 3
26	Typical Bent Details 4
27	Metal Shell Piles
28	Soil Borings 1
29	Soil Borings 2
30	Soil Borings 3
31	Soil Borings 4
32	Soil Borings 5
33	Soil Borings 6
34	Soil Borings 7
35	Soil Borings 8
36	Soil Borings 9
37	Soil Borings 10
38	Soil Borings 11
39	Soil Borings 12
40	Soil Borings 13
41	Soil Borings 14
42	Soil Borings 15
43	Soil Borings 16

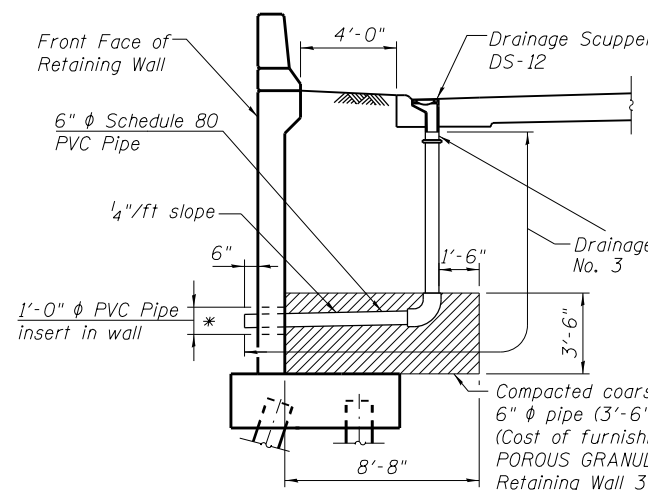


END PLAN OF EXPANSION JOINT DETAILS

Typical at each end of Expansion Joints

SECTION A-A

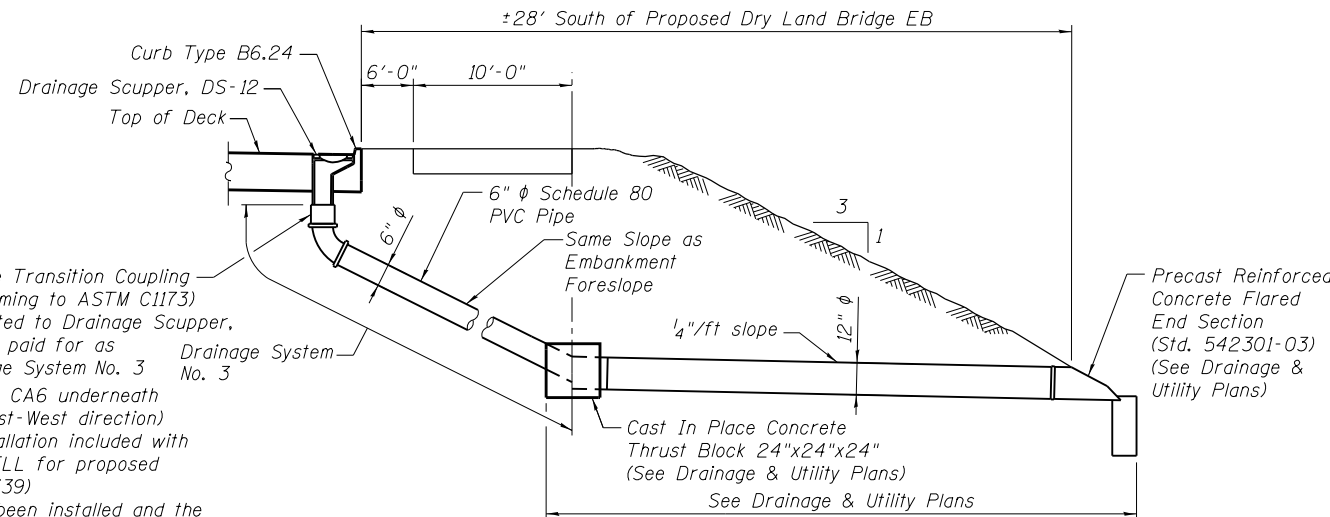
SECTION THRU END PILE BENT CAP



*After the DS-12 drainage scupper has been installed and the adjacent Dry Land Bridge constructed, concrete shall be placed between the 1'-0" ϕ PVC pipe insert and the 6" ϕ drain pipe.

SCUPPER AND DRAINAGE SYSTEM DETAILS

(Looking East)



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H.W. LOCHNER, INC.
225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

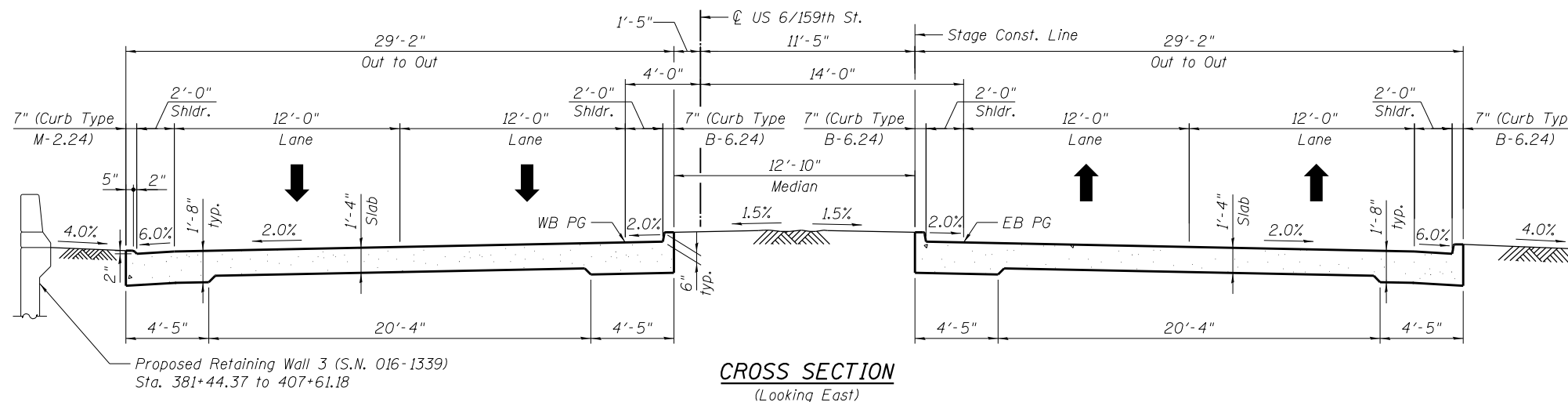
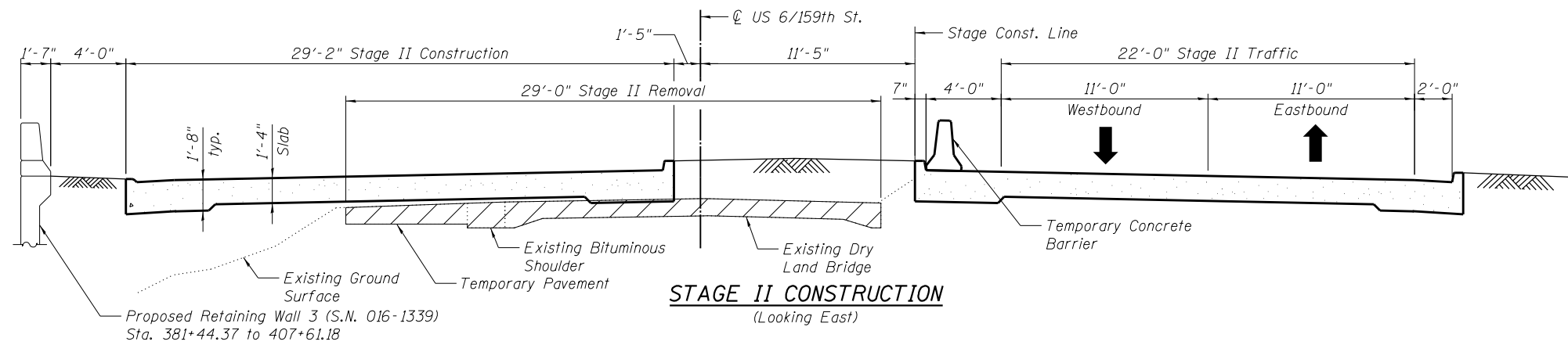
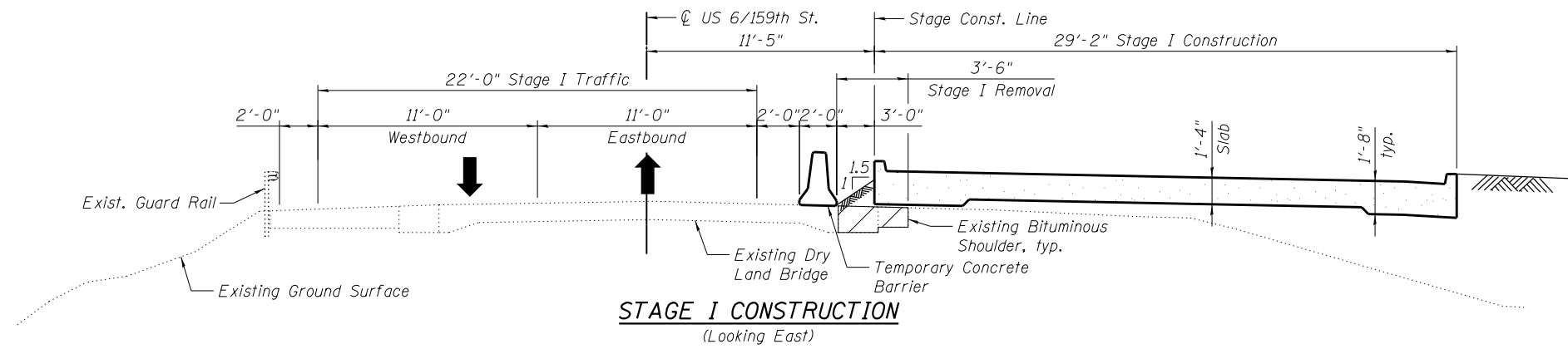
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PLOT DATE =	CHECKED - RH	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GENERAL NOTES AND BILL OF MATERIAL
STRUCTURE NO. 016-D012**

SHEET NO. 3 OF 43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	505
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



LEGEND

Existing Structure Removal

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LOCHNER
H.W. LOCHNER, INC.
225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

USER NAME =
FILE NAME = 0160012-60L72-004-MD.dgn
PLOT SCALE =
PLOT DATE =

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CHECKED - RH

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

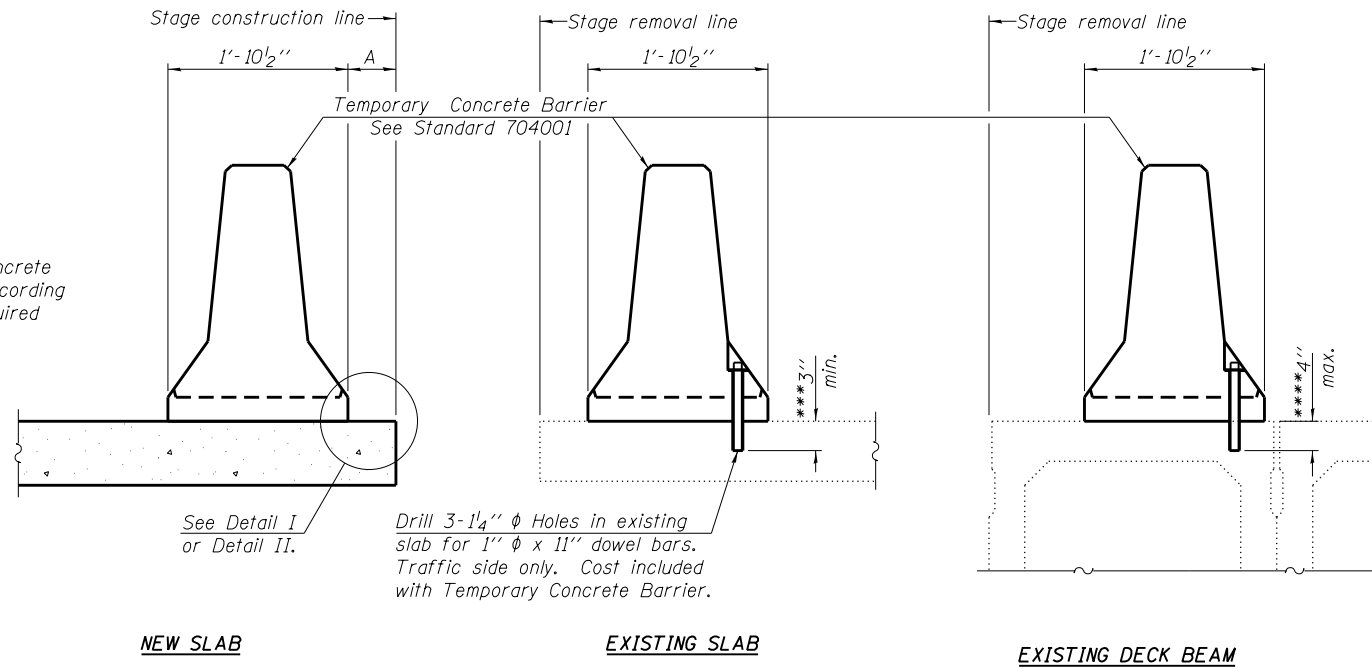
CONSTRUCTION STAGING
STRUCTURE NO. 016-D012

SHEET NO. 4 OF 43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	506
CONTRACT NO. 60L72				

ILLINOIS FED. AID PROJECT

When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".



SECTIONS THRU SLAB OR DECK BEAM

NOTES

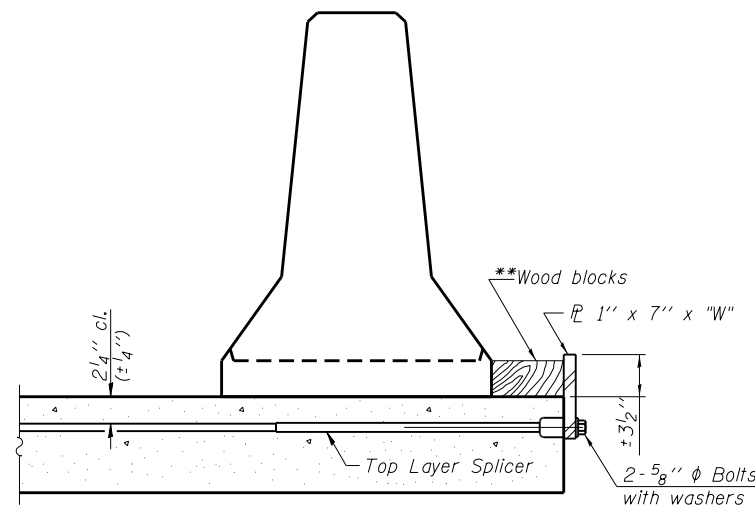
Detail I - With Bar Splicer or Couplers:
Connect one (1) 1" x 7" x "W" steel PL to the top layer of couplers with 2-5/8" φ bolts screwed to coupler at approximate C of each barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 1" x 7" x "W" steel PL to the concrete slab or concrete wearing surface with 2-5/8" φ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate C of each barrier panel.

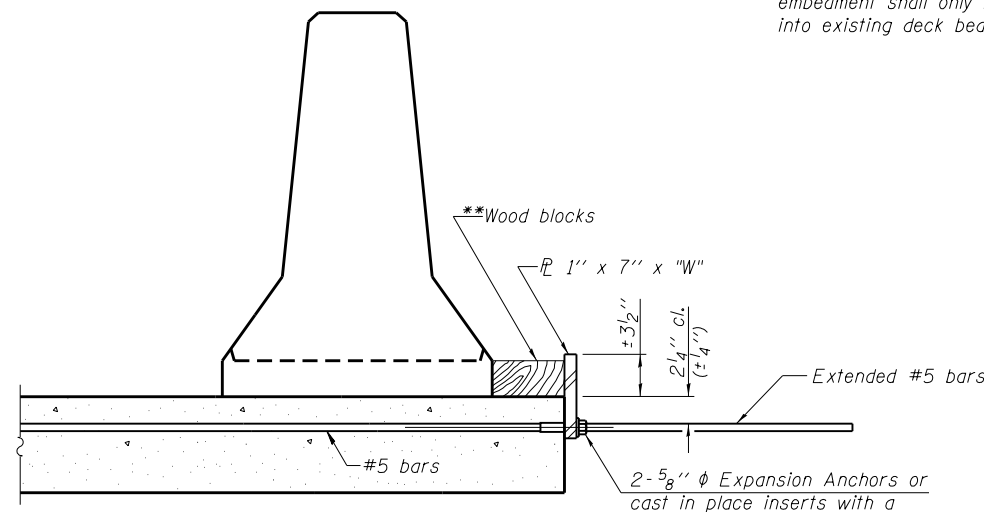
Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x "W" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

*** Dimension shown is minimum required embedment into concrete. If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.

**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



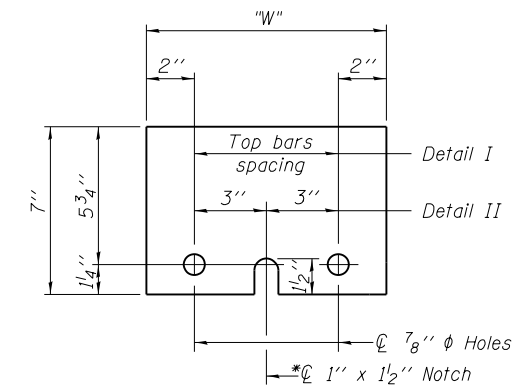
DETAIL I



DETAIL II

** Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.

"W" = Top bars spacing + 4"



STEEL RETAINER PLATE 1" x 7" x "W"

* Required only with Detail II

R-27

7-1-10

LOCHNER
H. W. LOCHNER, INC.
225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED - LJB	REVISED
FILE NAME = 016D012-60L72-005-TC.dgn	CHECKED - RH	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

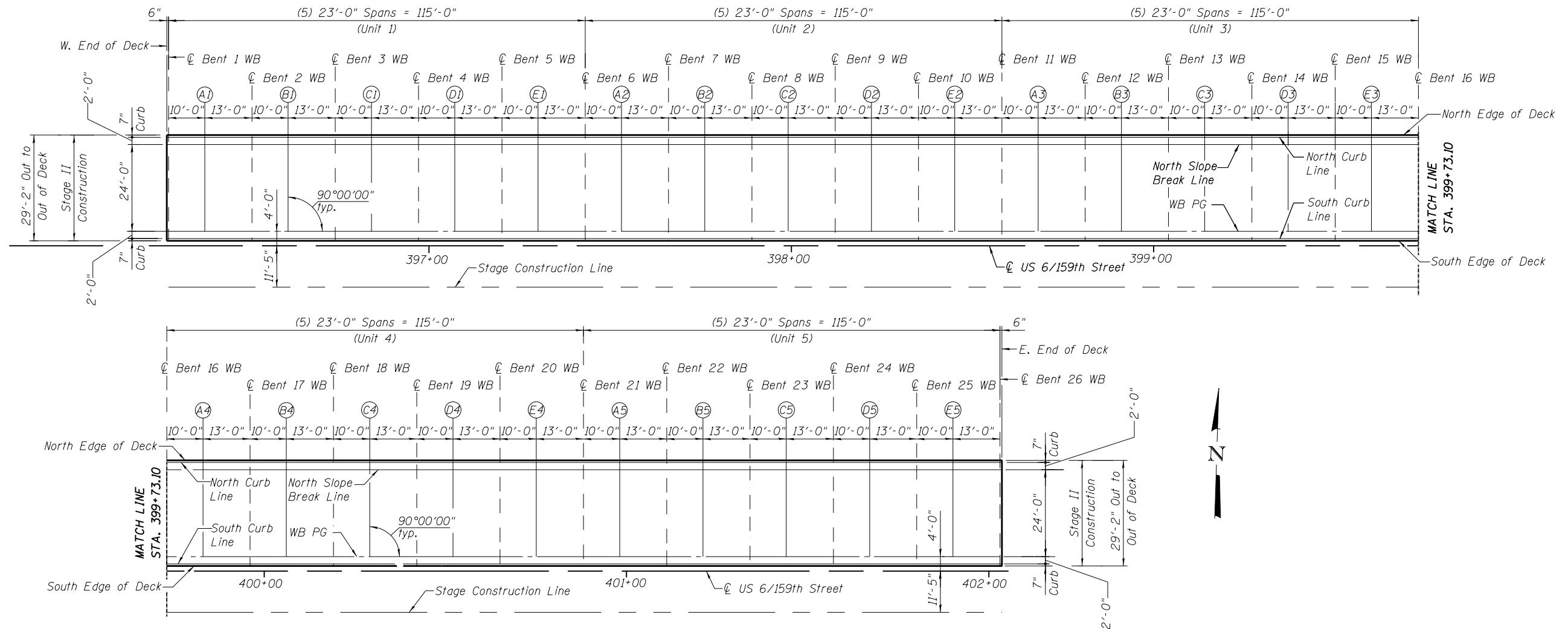
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TEMPORARY CONCRETE BARRIER
STRUCTURE NO. 016-D012**

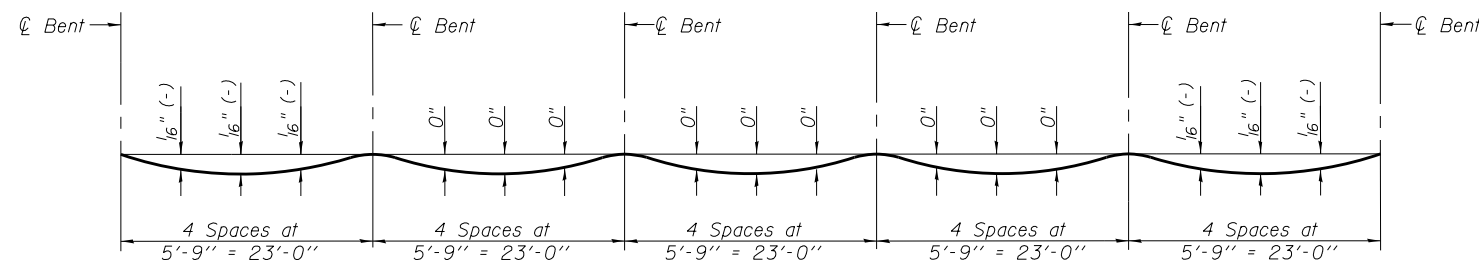
SHEET NO. 5 OF 43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	507
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

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PLAN DECK UNITS - DRY LAND BRIDGE 3 WESTBOUND



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete).
(For 5-Span units - WB Unit 1 thru Unit 5).

Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on Sheet 7 and 8 of 43.

T:\51006-056\Struct\Bridges\Land Bridge 3 - 016-0012\0160012-60L72-006-EL.dgn

LOCHNER
H.W. LOCHNER, INC.
225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED - RH	REVISED
FILE NAME = 0160012-60L72-006-EL.dgn	CHECKED - LJB	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATION PLAN WB
STRUCTURE NO. 016-D012

SHEET NO. 6 OF 43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	508
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

NORTH EDGE OF DECK

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
W. End of Deck	396+27.60	-30.58	688.46	688.46
☉ WB Bent 1	396+28.10	-30.58	688.45	688.45
A1	396+38.10	-30.58	688.34	688.34
☉ WB Bent 2	396+51.10	-30.58	688.19	688.19
B1	396+61.10	-30.58	688.08	688.08
☉ WB Bent 3	396+74.10	-30.58	687.94	687.94
C1	396+84.10	-30.58	687.84	687.84
☉ WB Bent 4	396+97.10	-30.58	687.72	687.72
D1	397+07.10	-30.58	687.64	687.64
☉ WB Bent 5	397+20.10	-30.58	687.54	687.54
E1	397+30.10	-30.58	687.47	687.47
☉ WB Bent 6	397+43.10	-30.58	687.38	687.38
A2	397+53.10	-30.58	687.33	687.33
☉ WB Bent 7	397+66.10	-30.58	687.26	687.26
B2	397+76.10	-30.58	687.22	687.22
☉ WB Bent 8	397+89.10	-30.58	687.17	687.17
C2	397+99.10	-30.58	687.14	687.14
☉ WB Bent 9	398+12.10	-30.58	687.12	687.12
D2	398+22.10	-30.58	687.10	687.10
☉ WB Bent 10	398+35.10	-30.58	687.09	687.09
E2	398+45.10	-30.58	687.09	687.09
☉ WB Bent 11	398+58.10	-30.58	687.10	687.10
A3	398+68.10	-30.58	687.11	687.11
☉ WB Bent 12	398+81.10	-30.58	687.14	687.14
B3	398+91.10	-30.58	687.17	687.17
☉ WB Bent 13	399+04.10	-30.58	687.21	687.21
C3	399+14.10	-30.58	687.26	687.26
☉ WB Bent 14	399+27.10	-30.58	687.32	687.32
D3	399+37.10	-30.58	687.38	687.38
☉ WB Bent 15	399+50.10	-30.58	687.46	687.46
E3	399+60.10	-30.58	687.52	687.52
☉ WB Bent 16	399+73.10	-30.58	687.60	687.60
A4	399+83.10	-30.58	687.67	687.67
☉ WB Bent 17	399+96.10	-30.58	687.75	687.75
B4	400+06.10	-30.58	687.81	687.81
☉ WB Bent 18	400+19.10	-30.58	687.90	687.90
C4	400+29.10	-30.58	687.96	687.96
☉ WB Bent 19	400+42.10	-30.58	688.05	688.05
D4	400+52.10	-30.58	688.10	688.10
☉ WB Bent 20	400+65.10	-30.58	688.17	688.17
E4	400+75.10	-30.58	688.21	688.21
☉ WB Bent 21	400+88.10	-30.58	688.26	688.26
A5	400+98.10	-30.58	688.28	688.28
☉ WB Bent 22	401+11.10	-30.58	688.31	688.31
B5	401+21.10	-30.58	688.33	688.33
☉ WB Bent 23	401+34.10	-30.58	688.34	688.34
C5	401+44.10	-30.58	688.34	688.34
☉ WB Bent 24	401+57.10	-30.58	688.33	688.33
D5	401+67.10	-30.58	688.31	688.31
☉ WB Bent 25	401+80.10	-30.58	688.29	688.29
E5	401+90.10	-30.58	688.26	688.26
☉ WB Bent 26	402+03.10	-30.58	688.21	688.21
E. End of Deck	402+03.60	-30.58	688.21	688.21

NORTH CURB LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
W. End of Deck	396+27.60	-30.00	688.29	688.29
☉ WB Bent 1	396+28.10	-30.00	688.29	688.29
A1	396+38.10	-30.00	688.17	688.17
☉ WB Bent 2	396+51.10	-30.00	688.02	688.02
B1	396+61.10	-30.00	687.91	687.91
☉ WB Bent 3	396+74.10	-30.00	687.78	687.78
C1	396+84.10	-30.00	687.68	687.68
☉ WB Bent 4	396+97.10	-30.00	687.56	687.56
D1	397+07.10	-30.00	687.47	687.47
☉ WB Bent 5	397+20.10	-30.00	687.37	687.37
E1	397+30.10	-30.00	687.30	687.30
☉ WB Bent 6	397+43.10	-30.00	687.22	687.22
A2	397+53.10	-30.00	687.16	687.16
☉ WB Bent 7	397+66.10	-30.00	687.10	687.10
B2	397+76.10	-30.00	687.05	687.05
☉ WB Bent 8	397+89.10	-30.00	687.01	687.01
C2	397+99.10	-30.00	686.98	686.98
☉ WB Bent 9	398+12.10	-30.00	686.95	686.95
D2	398+22.10	-30.00	686.93	686.93
☉ WB Bent 10	398+35.10	-30.00	686.93	686.93
E2	398+45.10	-30.00	686.92	686.92
☉ WB Bent 11	398+58.10	-30.00	686.93	686.93
A3	398+68.10	-30.00	686.95	686.95
☉ WB Bent 12	398+81.10	-30.00	686.97	686.97
B3	398+91.10	-30.00	687.00	687.00
☉ WB Bent 13	399+04.10	-30.00	687.05	687.05
C3	399+14.10	-30.00	687.09	687.09
☉ WB Bent 14	399+27.10	-30.00	687.15	687.15
D3	399+37.10	-30.00	687.21	687.21
☉ WB Bent 15	399+50.10	-30.00	687.29	687.29
E3	399+60.10	-30.00	687.35	687.35
☉ WB Bent 16	399+73.10	-30.00	687.44	687.44
A4	399+83.10	-30.00	687.50	687.50
☉ WB Bent 17	399+96.10	-30.00	687.58	687.58
B4	400+06.10	-30.00	687.65	687.65
☉ WB Bent 18	400+19.10	-30.00	687.73	687.73
C4	400+29.10	-30.00	687.80	687.80
☉ WB Bent 19	400+42.10	-30.00	687.88	687.88
D4	400+52.10	-30.00	687.94	687.94
☉ WB Bent 20	400+65.10	-30.00	688.00	688.00
E4	400+75.10	-30.00	688.04	688.04
☉ WB Bent 21	400+88.10	-30.00	688.09	688.09
A5	400+98.10	-30.00	688.12	688.12
☉ WB Bent 22	401+11.10	-30.00	688.15	688.15
B5	401+21.10	-30.00	688.16	688.16
☉ WB Bent 23	401+34.10	-30.00	688.17	688.17
C5	401+44.10	-30.00	688.17	688.17
☉ WB Bent 24	401+57.10	-30.00	688.16	688.16
D5	401+67.10	-30.00	688.15	688.15
☉ WB Bent 25	401+80.10	-30.00	688.12	688.12
E5	401+90.10	-30.00	688.09	688.09
☉ WB Bent 26	402+03.10	-30.00	688.05	688.05
E. End of Deck	402+03.60	-30.00	688.05	688.05

NORTH SLOPE BREAK LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
W. End of Deck	396+27.60	-28.00	688.41	688.41
☉ WB Bent 1	396+28.10	-28.00	688.41	688.41
A1	396+38.10	-28.00	688.29	688.29
☉ WB Bent 2	396+51.10	-28.00	688.14	688.14
B1	396+61.10	-28.00	688.03	688.03
☉ WB Bent 3	396+74.10	-28.00	687.90	687.90
C1	396+84.10	-28.00	687.80	687.80
☉ WB Bent 4	396+97.10	-28.00	687.68	687.68
D1	397+07.10	-28.00	687.59	687.59
☉ WB Bent 5	397+20.10	-28.00	687.49	687.49
E1	397+30.10	-28.00	687.42	687.42
☉ WB Bent 6	397+43.10	-28.00	687.34	687.34
A2	397+53.10	-28.00	687.28	687.28
☉ WB Bent 7	397+66.10	-28.00	687.22	687.22
B2	397+76.10	-28.00	687.17	687.17
☉ WB Bent 8	397+89.10	-28.00	687.13	687.13
C2	397+99.10	-28.00	687.10	687.10
☉ WB Bent 9	398+12.10	-28.00	687.07	687.07
D2	398+22.10	-28.00	687.05	687.05
☉ WB Bent 10	398+35.10	-28.00	687.05	687.05
E2	398+45.10	-28.00	687.04	687.04
☉ WB Bent 11	398+58.10	-28.00	687.05	687.05
A3	398+68.10	-28.00	687.07	687.07
☉ WB Bent 12	398+81.10	-28.00	687.09	687.09
B3	398+91.10	-28.00	687.12	687.12
☉ WB Bent 13	399+04.10	-28.00	687.17	687.17
C3	399+14.10	-28.00	687.21	687.21
☉ WB Bent 14	399+27.10	-28.00	687.27	687.27
D3	399+37.10	-28.00	687.33	687.33
☉ WB Bent 15	399+50.10	-28.00	687.41	687.41
E3	399+60.10	-28.00	687.47	687.47
☉ WB Bent 16	399+73.10	-28.00	687.56	687.56
A4	399+83.10	-28.00	687.62	687.62
☉ WB Bent 17	399+96.10	-28.00	687.70	687.70
B4	400+06.10	-28.00	687.77	687.77
☉ WB Bent 18	400+19.10	-28.00	687.85	687.85
C4	400+29.10	-28.00	687.92	687.92
☉ WB Bent 19	400+42.10	-28.00	688.00	688.00
D4	400+52.10	-28.00	688.06	688.06
☉ WB Bent 20	400+65.10	-28.00	688.12	688.12
E4	400+75.10	-28.00	688.16	688.16
☉ WB Bent 21	400+88.10	-28.00	688.21	688.21
A5	400+98.10	-28.00	688.24	688.24
☉ WB Bent 22	401+11.10	-28.00	688.27	688.27
B5	401+21.10	-28.00	688.28	688.28
☉ WB Bent 23	401+34.10	-28.00	688.29	688.29
C5	401+44.10	-28.00	688.29	688.29
☉ WB Bent 24	401+57.10	-28.00	688.28	688.28
D5	401+67.10	-28.00	688.27	688.27
☉ WB Bent 25	401+80.10	-28.00	688.24	688.24
E5	401+90.10	-28.00	688.21	688.21
☉ WB Bent 26	402+03.10	-28.00	688.17	688.17
E. End of Deck	402+03.60	-28.00	688.17	688.17

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LOCHNER
 H.W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED - RH	REVISED
FILE NAME = 016D012-60L72-007-EL.dgn	CHECKED - LJB	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE	CHECKED - RH	REVISED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS 1 WB
 STRUCTURE NO. 016-D012

SHEET NO. 7 OF 43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	509
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

WB PG

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
W. End of Deck	396+27.60	-4.00	688.89	688.89
WB Bent 1	396+28.10	-4.00	688.89	688.89
A1	396+38.10	-4.00	688.77	688.77
WB Bent 2	396+51.10	-4.00	688.62	688.62
B1	396+61.10	-4.00	688.51	688.51
WB Bent 3	396+74.10	-4.00	688.38	688.38
C1	396+84.10	-4.00	688.28	688.28
WB Bent 4	396+97.10	-4.00	688.16	688.16
D1	397+07.10	-4.00	688.07	688.07
WB Bent 5	397+20.10	-4.00	687.97	687.97
E1	397+30.10	-4.00	687.90	687.90
WB Bent 6	397+43.10	-4.00	687.82	687.82
A2	397+53.10	-4.00	687.76	687.76
WB Bent 7	397+66.10	-4.00	687.70	687.70
B2	397+76.10	-4.00	687.65	687.65
WB Bent 8	397+89.10	-4.00	687.61	687.61
C2	397+99.10	-4.00	687.58	687.58
WB Bent 9	398+12.10	-4.00	687.55	687.55
D2	398+22.10	-4.00	687.53	687.53
WB Bent 10	398+35.10	-4.00	687.53	687.53
E2	398+45.10	-4.00	687.52	687.52
WB Bent 11	398+58.10	-4.00	687.53	687.53
A3	398+68.10	-4.00	687.55	687.55
WB Bent 12	398+81.10	-4.00	687.57	687.57
B3	398+91.10	-4.00	687.60	687.60
WB Bent 13	399+04.10	-4.00	687.65	687.65
C3	399+14.10	-4.00	687.69	687.69
WB Bent 14	399+27.10	-4.00	687.75	687.75
D3	399+37.10	-4.00	687.81	687.81
WB Bent 15	399+50.10	-4.00	687.89	687.89
E3	399+60.10	-4.00	687.95	687.95
WB Bent 16	399+73.10	-4.00	688.04	688.04
A4	399+83.10	-4.00	688.10	688.10
WB Bent 17	399+96.10	-4.00	688.18	688.18
B4	400+06.10	-4.00	688.25	688.25
WB Bent 18	400+19.10	-4.00	688.33	688.33
C4	400+29.10	-4.00	688.40	688.40
WB Bent 19	400+42.10	-4.00	688.48	688.48
D4	400+52.10	-4.00	688.54	688.54
WB Bent 20	400+65.10	-4.00	688.60	688.60
E4	400+75.10	-4.00	688.64	688.64
WB Bent 21	400+88.10	-4.00	688.69	688.69
A5	400+98.10	-4.00	688.72	688.72
WB Bent 22	401+11.10	-4.00	688.75	688.75
B5	401+21.10	-4.00	688.76	688.76
WB Bent 23	401+34.10	-4.00	688.77	688.77
C5	401+44.10	-4.00	688.77	688.77
WB Bent 24	401+57.10	-4.00	688.76	688.76
D5	401+67.10	-4.00	688.75	688.75
WB Bent 25	401+80.10	-4.00	688.72	688.72
E5	401+90.10	-4.00	688.69	688.69
WB Bent 26	402+03.10	-4.00	688.65	688.65
E. End of Deck	402+03.60	-4.00	688.65	688.65

SOUTH CURB LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
W. End of Deck	396+27.60	-2.00	688.93	688.93
WB Bent 1	396+28.10	-2.00	688.93	688.93
A1	396+38.10	-2.00	688.81	688.81
WB Bent 2	396+51.10	-2.00	688.66	688.66
B1	396+61.10	-2.00	688.55	688.55
WB Bent 3	396+74.10	-2.00	688.42	688.42
C1	396+84.10	-2.00	688.32	688.32
WB Bent 4	396+97.10	-2.00	688.20	688.20
D1	397+07.10	-2.00	688.11	688.11
WB Bent 5	397+20.10	-2.00	688.01	688.01
E1	397+30.10	-2.00	687.94	687.94
WB Bent 6	397+43.10	-2.00	687.86	687.86
A2	397+53.10	-2.00	687.80	687.80
WB Bent 7	397+66.10	-2.00	687.74	687.74
B2	397+76.10	-2.00	687.69	687.69
WB Bent 8	397+89.10	-2.00	687.65	687.65
C2	397+99.10	-2.00	687.62	687.62
WB Bent 9	398+12.10	-2.00	687.59	687.59
D2	398+22.10	-2.00	687.57	687.57
WB Bent 10	398+35.10	-2.00	687.57	687.57
E2	398+45.10	-2.00	687.56	687.56
WB Bent 11	398+58.10	-2.00	687.57	687.57
A3	398+68.10	-2.00	687.59	687.59
WB Bent 12	398+81.10	-2.00	687.61	687.61
B3	398+91.10	-2.00	687.64	687.64
WB Bent 13	399+04.10	-2.00	687.69	687.69
C3	399+14.10	-2.00	687.73	687.73
WB Bent 14	399+27.10	-2.00	687.79	687.79
D3	399+37.10	-2.00	687.85	687.85
WB Bent 15	399+50.10	-2.00	687.93	687.93
E3	399+60.10	-2.00	687.99	687.99
WB Bent 16	399+73.10	-2.00	688.08	688.08
A4	399+83.10	-2.00	688.14	688.14
WB Bent 17	399+96.10	-2.00	688.22	688.22
B4	400+06.10	-2.00	688.29	688.29
WB Bent 18	400+19.10	-2.00	688.37	688.37
C4	400+29.10	-2.00	688.44	688.44
WB Bent 19	400+42.10	-2.00	688.52	688.52
D4	400+52.10	-2.00	688.58	688.58
WB Bent 20	400+65.10	-2.00	688.64	688.64
E4	400+75.10	-2.00	688.68	688.68
WB Bent 21	400+88.10	-2.00	688.73	688.73
A5	400+98.10	-2.00	688.76	688.76
WB Bent 22	401+11.10	-2.00	688.79	688.79
B5	401+21.10	-2.00	688.80	688.80
WB Bent 23	401+34.10	-2.00	688.81	688.81
C5	401+44.10	-2.00	688.81	688.81
WB Bent 24	401+57.10	-2.00	688.80	688.80
D5	401+67.10	-2.00	688.79	688.79
WB Bent 25	401+80.10	-2.00	688.76	688.76
E5	401+90.10	-2.00	688.73	688.73
WB Bent 26	402+03.10	-2.00	688.69	688.69
E. End of Deck	402+03.60	-2.00	688.69	688.69

SOUTH EDGE OF DECK

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
W. End of Deck	396+27.60	-1.42	689.43	689.43
WB Bent 1	396+28.10	-1.42	689.43	689.43
A1	396+38.10	-1.42	689.31	689.31
WB Bent 2	396+51.10	-1.42	689.16	689.16
B1	396+61.10	-1.42	689.05	689.05
WB Bent 3	396+74.10	-1.42	688.92	688.92
C1	396+84.10	-1.42	688.82	688.82
WB Bent 4	396+97.10	-1.42	688.70	688.70
D1	397+07.10	-1.42	688.61	688.61
WB Bent 5	397+20.10	-1.42	688.51	688.51
E1	397+30.10	-1.42	688.44	688.44
WB Bent 6	397+43.10	-1.42	688.36	688.36
A2	397+53.10	-1.42	688.30	688.30
WB Bent 7	397+66.10	-1.42	688.24	688.24
B2	397+76.10	-1.42	688.19	688.19
WB Bent 8	397+89.10	-1.42	688.15	688.15
C2	397+99.10	-1.42	688.12	688.12
WB Bent 9	398+12.10	-1.42	688.09	688.09
D2	398+22.10	-1.42	688.07	688.07
WB Bent 10	398+35.10	-1.42	688.07	688.07
E2	398+45.10	-1.42	688.06	688.06
WB Bent 11	398+58.10	-1.42	688.07	688.07
A3	398+68.10	-1.42	688.09	688.09
WB Bent 12	398+81.10	-1.42	688.11	688.11
B3	398+91.10	-1.42	688.14	688.14
WB Bent 13	399+04.10	-1.42	688.19	688.19
C3	399+14.10	-1.42	688.23	688.23
WB Bent 14	399+27.10	-1.42	688.29	688.29
D3	399+37.10	-1.42	688.35	688.35
WB Bent 15	399+50.10	-1.42	688.43	688.43
E3	399+60.10	-1.42	688.49	688.49
WB Bent 16	399+73.10	-1.42	688.58	688.58
A4	399+83.10	-1.42	688.64	688.64
WB Bent 17	399+96.10	-1.42	688.72	688.72
B4	400+06.10	-1.42	688.79	688.79
WB Bent 18	400+19.10	-1.42	688.87	688.87
C4	400+29.10	-1.42	688.94	688.94
WB Bent 19	400+42.10	-1.42	689.02	689.02
D4	400+52.10	-1.42	689.08	689.08
WB Bent 20	400+65.10	-1.42	689.14	689.14
E4	400+75.10	-1.42	689.18	689.18
WB Bent 21	400+88.10	-1.42	689.23	689.23
A5	400+98.10	-1.42	689.26	689.26
WB Bent 22	401+11.10	-1.42	689.29	689.29
B5	401+21.10	-1.42	689.30	689.30
WB Bent 23	401+34.10	-1.42	689.31	689.31
C5	401+44.10	-1.42	689.31	689.31
WB Bent 24	401+57.10	-1.42	689.30	689.30
D5	401+67.10	-1.42	689.29	689.29
WB Bent 25	401+80.10	-1.42	689.26	689.26
E5	401+90.10	-1.42	689.23	689.23
WB Bent 26	402+03.10	-1.42	689.19	689.19
E. End of Deck	402+03.60	-1.42	689.19	689.19

T:\151006-USA\Struct\Land Bridges\Land Bridges\WB PG\WB PG.dgn

LOCHNER
H.W. LOCHNER, INC.
225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

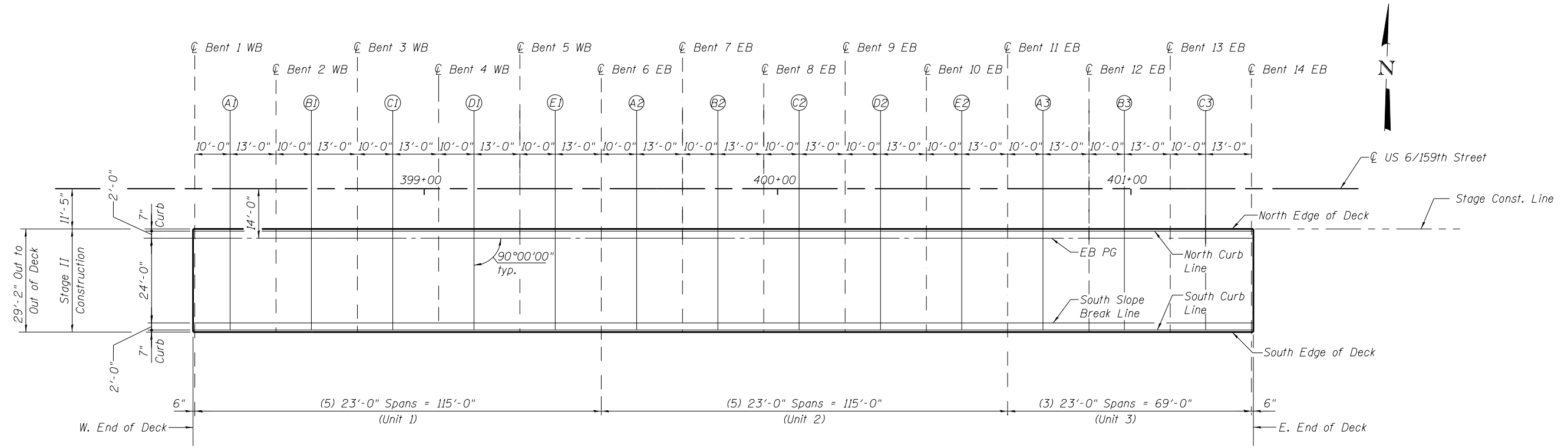
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FILE NAME = 016D012-60L72-008-EL.dgn	CHECKED - LJB	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE	CHECKED - RH	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

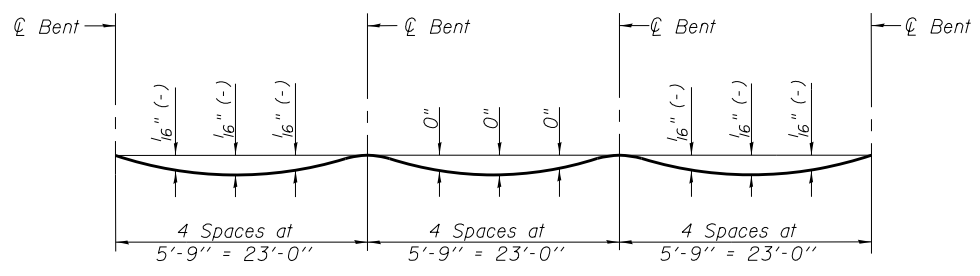
**TOP OF SLAB ELEVATIONS 2 WB
STRUCTURE NO. 016-D012**

SHEET NO. 8 OF 43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	510
CONTRACT NO. 60L72			ILLINOIS FED. AID PROJECT	

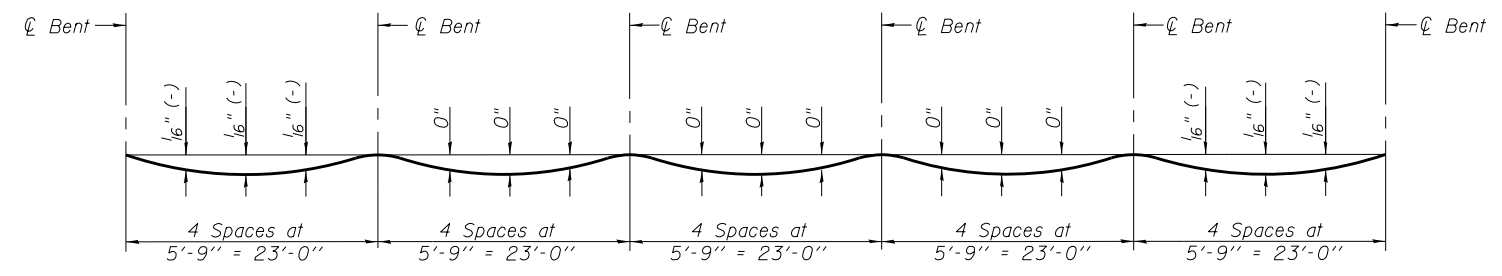


PLAN DECK UNITS - DRY LAND BRIDGE 3 EASTBOUND



DEAD LOAD DEFLECTION DIAGRAM
 (Includes weight of concrete).
 (For 3-Span units - EB Unit 3).

Note:
 The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on Sheet 10 of 43.



DEAD LOAD DEFLECTION DIAGRAM
 (Includes weight of concrete).
 (For 5-Span units - EB Unit 1 & Unit 2).

Note:
 The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on Sheet 10 of 43.

T:\51006-USA\Struct\Bridges\Land Bridges\016-0012-60L72-009-EL.dgn

LOCHNER H.W. LOCHNER, INC. 225 WEST WASHINGTON STREET 12 TH FLOOR CHICAGO, ILLINOIS 60606	USER NAME =	DESIGNED - RH	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TOP OF SLAB ELEVATION PLAN EB STRUCTURE NO. 016-D012 SHEET NO. 9 OF 43 SHEETS	F.A.P. RTE. =	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	FILE NAME = 016D012-60L72-009-EL.dgn	CHECKED - LJB	REVISED			351	2010-081-R	COOK	1045	511
PLOT SCALE =	DRAWN - EF	REVISED		CONTRACT NO. 60L72 ILLINOIS FED. AID PROJECT						
PLOT DATE =	CHECKED - RH	REVISED								

NORTH EDGE OF DECK

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
W. End of Deck	398+34.60	11.42	688.07	688.07
⊘ EB Bent 1	398+35.10	11.42	688.07	688.07
A1	398+45.10	11.42	688.06	688.06
⊘ EB Bent 2	398+58.10	11.42	688.07	688.07
B1	398+68.10	11.42	688.09	688.09
⊘ EB Bent 3	398+81.10	11.42	688.11	688.11
C1	398+91.10	11.42	688.14	688.14
⊘ EB Bent 4	399+04.10	11.42	688.19	688.19
D1	399+14.10	11.42	688.23	688.23
⊘ EB Bent 5	399+27.10	11.42	688.29	688.29
E1	399+37.10	11.42	688.35	688.35
⊘ EB Bent 6	399+50.10	11.42	688.43	688.43
A2	399+60.10	11.42	688.49	688.49
⊘ EB Bent 7	399+73.10	11.42	688.58	688.58
B2	399+83.10	11.42	688.64	688.64
⊘ EB Bent 8	399+96.10	11.42	688.72	688.72
C2	400+06.10	11.42	688.79	688.79
⊘ EB Bent 9	400+19.10	11.42	688.87	688.87
D2	400+29.10	11.42	688.94	688.94
⊘ EB Bent 10	400+42.10	11.42	689.02	689.02
E2	400+52.10	11.42	689.08	689.08
⊘ EB Bent 11	400+65.10	11.42	689.14	689.14
A3	400+75.10	11.42	689.18	689.18
⊘ EB Bent 12	400+88.10	11.42	689.23	689.23
B3	400+98.10	11.42	689.26	689.26
⊘ EB Bent 13	401+11.10	11.42	689.29	689.29
C3	401+21.10	11.42	689.30	689.30
⊘ EB Bent 14	401+34.10	11.42	689.31	689.31
E. End of Deck	401+34.60	11.42	689.31	689.31

NORTH CURB LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
W. End of Deck	398+34.60	12.00	687.57	687.57
⊘ EB Bent 1	398+35.10	12.00	687.57	687.57
A1	398+45.10	12.00	687.56	687.56
⊘ EB Bent 2	398+58.10	12.00	687.57	687.57
B1	398+68.10	12.00	687.59	687.59
⊘ EB Bent 3	398+81.10	12.00	687.61	687.61
C1	398+91.10	12.00	687.64	687.64
⊘ EB Bent 4	399+04.10	12.00	687.69	687.69
D1	399+14.10	12.00	687.73	687.73
⊘ EB Bent 5	399+27.10	12.00	687.79	687.79
E1	399+37.10	12.00	687.85	687.85
⊘ EB Bent 6	399+50.10	12.00	687.93	687.93
A2	399+60.10	12.00	687.99	687.99
⊘ EB Bent 7	399+73.10	12.00	688.08	688.08
B2	399+83.10	12.00	688.14	688.14
⊘ EB Bent 8	399+96.10	12.00	688.22	688.22
C2	400+06.10	12.00	688.29	688.29
⊘ EB Bent 9	400+19.10	12.00	688.37	688.37
D2	400+29.10	12.00	688.44	688.44
⊘ EB Bent 10	400+42.10	12.00	688.52	688.52
E2	400+52.10	12.00	688.58	688.58
⊘ EB Bent 11	400+65.10	12.00	688.64	688.64
A3	400+75.10	12.00	688.68	688.68
⊘ EB Bent 12	400+88.10	12.00	688.73	688.73
B3	400+98.10	12.00	688.76	688.76
⊘ EB Bent 13	401+11.10	12.00	688.79	688.79
C3	401+21.10	12.00	688.80	688.80
⊘ EB Bent 14	401+34.10	12.00	688.81	688.81
E. End of Deck	401+34.60	12.00	688.81	688.81

EB PG

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
W. End of Deck	398+34.60	14.00	687.53	687.53
⊘ EB Bent 1	398+35.10	14.00	687.53	687.53
A1	398+45.10	14.00	687.52	687.52
⊘ EB Bent 2	398+58.10	14.00	687.53	687.53
B1	398+68.10	14.00	687.55	687.55
⊘ EB Bent 3	398+81.10	14.00	687.57	687.57
C1	398+91.10	14.00	687.60	687.60
⊘ EB Bent 4	399+04.10	14.00	687.65	687.65
D1	399+14.10	14.00	687.69	687.69
⊘ EB Bent 5	399+27.10	14.00	687.75	687.75
E1	399+37.10	14.00	687.81	687.81
⊘ EB Bent 6	399+50.10	14.00	687.89	687.89
A2	399+60.10	14.00	687.95	687.95
⊘ EB Bent 7	399+73.10	14.00	688.04	688.04
B2	399+83.10	14.00	688.10	688.10
⊘ EB Bent 8	399+96.10	14.00	688.18	688.18
C2	400+06.10	14.00	688.25	688.25
⊘ EB Bent 9	400+19.10	14.00	688.33	688.33
D2	400+29.10	14.00	688.40	688.40
⊘ EB Bent 10	400+42.10	14.00	688.48	688.48
E2	400+52.10	14.00	688.54	688.54
⊘ EB Bent 11	400+65.10	14.00	688.60	688.60
A3	400+75.10	14.00	688.64	688.64
⊘ EB Bent 12	400+88.10	14.00	688.69	688.69
B3	400+98.10	14.00	688.72	688.72
⊘ EB Bent 13	401+11.10	14.00	688.75	688.75
C3	401+21.10	14.00	688.76	688.76
⊘ EB Bent 14	401+34.10	14.00	688.77	688.77
E. End of Deck	401+34.60	14.00	688.77	688.77

SOUTH SLOPE BREAK LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
W. End of Deck	398+34.60	38.00	687.05	687.05
⊘ EB Bent 1	398+35.10	38.00	687.05	687.05
A1	398+45.10	38.00	687.04	687.04
⊘ EB Bent 2	398+58.10	38.00	687.05	687.05
B1	398+68.10	38.00	687.07	687.07
⊘ EB Bent 3	398+81.10	38.00	687.09	687.09
C1	398+91.10	38.00	687.12	687.12
⊘ EB Bent 4	399+04.10	38.00	687.17	687.17
D1	399+14.10	38.00	687.21	687.21
⊘ EB Bent 5	399+27.10	38.00	687.27	687.27
E1	399+37.10	38.00	687.33	687.33
⊘ EB Bent 6	399+50.10	38.00	687.41	687.41
A2	399+60.10	38.00	687.47	687.47
⊘ EB Bent 7	399+73.10	38.00	687.56	687.56
B2	399+83.10	38.00	687.62	687.62
⊘ EB Bent 8	399+96.10	38.00	687.70	687.70
C2	400+06.10	38.00	687.77	687.77
⊘ EB Bent 9	400+19.10	38.00	687.85	687.85
D2	400+29.10	38.00	687.92	687.92
⊘ EB Bent 10	400+42.10	38.00	688.00	688.00
E2	400+52.10	38.00	688.06	688.06
⊘ EB Bent 11	400+65.10	38.00	688.12	688.12
A3	400+75.10	38.00	688.16	688.16
⊘ EB Bent 12	400+88.10	38.00	688.21	688.21
B3	400+98.10	38.00	688.24	688.24
⊘ EB Bent 13	401+11.10	38.00	688.27	688.27
C3	401+21.10	38.00	688.28	688.28
⊘ EB Bent 14	401+34.10	38.00	688.29	688.29
E. End of Deck	401+34.60	38.00	688.29	688.29

SOUTH CURB LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
W. End of Deck	398+34.60	40.00	686.93	686.93
⊘ EB Bent 1	398+35.10	40.00	686.93	686.93
A1	398+45.10	40.00	686.92	686.92
⊘ EB Bent 2	398+58.10	40.00	686.93	686.93
B1	398+68.10	40.00	686.95	686.95
⊘ EB Bent 3	398+81.10	40.00	686.97	686.97
C1	398+91.10	40.00	687.00	687.00
⊘ EB Bent 4	399+04.10	40.00	687.05	687.05
D1	399+14.10	40.00	687.09	687.09
⊘ EB Bent 5	399+27.10	40.00	687.15	687.15
E1	399+37.10	40.00	687.21	687.21
⊘ EB Bent 6	399+50.10	40.00	687.29	687.29
A2	399+60.10	40.00	687.35	687.35
⊘ EB Bent 7	399+73.10	40.00	687.44	687.44
B2	399+83.10	40.00	687.50	687.50
⊘ EB Bent 8	399+96.10	40.00	687.58	687.58
C2	400+06.10	40.00	687.65	687.65
⊘ EB Bent 9	400+19.10	40.00	687.73	687.73
D2	400+29.10	40.00	687.80	687.80
⊘ EB Bent 10	400+42.10	40.00	687.88	687.88
E2	400+52.10	40.00	687.94	687.94
⊘ EB Bent 11	400+65.10	40.00	688.00	688.00
A3	400+75.10	40.00	688.04	688.04
⊘ EB Bent 12	400+88.10	40.00	688.09	688.09
B3	400+98.10	40.00	688.12	688.12
⊘ EB Bent 13	401+11.10	40.00	688.15	688.15
C3	401+21.10	40.00	688.16	688.16
⊘ EB Bent 14	401+34.10	40.00	688.17	688.17
E. End of Deck	401+34.60	40.00	688.17	688.17

SOUTH EDGE OF DECK

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
W. End of Deck	398+34.60	40.58	687.43	687.43
⊘ EB Bent 1	398+35.10	40.58	687.43	687.43
A1	398+45.10	40.58	687.42	687.42
⊘ EB Bent 2	398+58.10	40.58	687.43	687.43
B1	398+68.10	40.58	687.45	687.45
⊘ EB Bent 3	398+81.10	40.58	687.47	687.47
C1	398+91.10	40.58	687.50	687.50
⊘ EB Bent 4	399+04.10	40.58	687.55	687.55
D1	399+14.10	40.58	687.59	687.59
⊘ EB Bent 5	399+27.10	40.58	687.65	687.65
E1	399+37.10	40.58	687.71	687.71
⊘ EB Bent 6	399+50.10	40.58	687.79	687.79
A2	399+60.10	40.58	687.85	687.85
⊘ EB Bent 7	399+73.10	40.58	687.94	687.94
B2	399+83.10	40.58	688.00	688.00
⊘ EB Bent 8	399+96.10	40.58	688.08	688.08
C2	400+06.10	40.58	688.15	688.15
⊘ EB Bent 9	400+19.10	40.58	688.23	688.23
D2	400+29.10	40.58	688.30	688.30
⊘ EB Bent 10	400+42.10	40.58	688.38	688.38
E2	400+52.10	40.58	688.44	688.44
⊘ EB Bent 11	400+65.10	40.58	688.50	688.50
A3	400+75.10	40.58	688.54	688.54
⊘ EB Bent 12	400+88.10	40.58	688.59	688.59
B3	400+98.10	40.58	688.62	688.62
⊘ EB Bent 13	401+11.10	40.58	688.65	688.65
C3	401+21.10	40.58	688.66	688.66
⊘ EB Bent 14	401+34.10	40.58	688.67	688.67
E. End of Deck	401+34.60	40.58	688.67	688.67

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LOCHNER
H.W. LOCHNER, INC.
225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED - RH	REVISED
FILE NAME = 016D012-60L72-010-EL.dgn	CHECKED - LJB	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE	CHECKED - RH	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS EB
STRUCTURE NO. 016-D012

SHEET NO. 10 OF 43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	512
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

NORTH EDGE OF SLAB

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	395+97.60	-30.58	688.80
A	396+07.60	-30.58	688.69
B	396+17.60	-30.58	688.57
E. End of W. Appr. Slab	396+27.60	-30.58	688.46
W. End of E. Appr. Slab	402+03.60	-30.58	688.21
C	402+13.60	-30.58	688.17
D	402+23.60	-30.58	688.13
E. End of E. Appr. Slab	402+33.60	-30.58	688.09

NORTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	395+97.60	-30.00	688.63
A	396+07.60	-30.00	688.52
B	396+17.60	-30.00	688.41
E. End of W. Appr. Slab	396+27.60	-30.00	688.29
W. End of E. Appr. Slab	402+03.60	-30.00	688.05
C	402+13.60	-30.00	688.01
D	402+23.60	-30.00	687.97
E. End of E. Appr. Slab	402+33.60	-30.00	687.93

NORTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	395+97.60	-28.00	688.75
A	396+07.60	-28.00	688.64
B	396+17.60	-28.00	688.53
E. End of W. Appr. Slab	396+27.60	-28.00	688.41
W. End of E. Appr. Slab	402+03.60	-28.00	688.17
C	402+13.60	-28.00	688.13
D	402+23.60	-28.00	688.09
E. End of E. Appr. Slab	402+33.60	-28.00	688.05

WB PG & SOUTH EDGE OF PAVEMENT

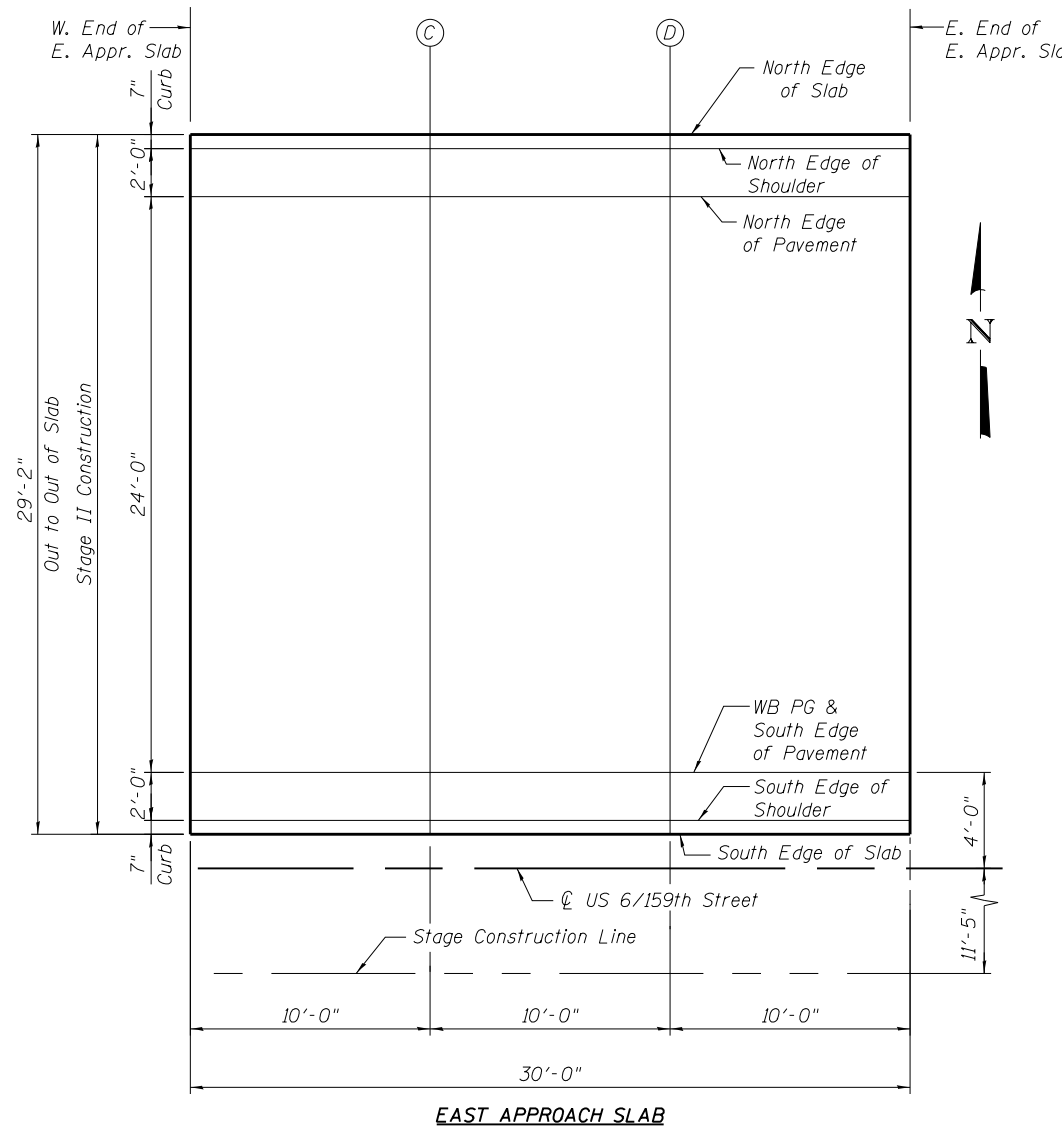
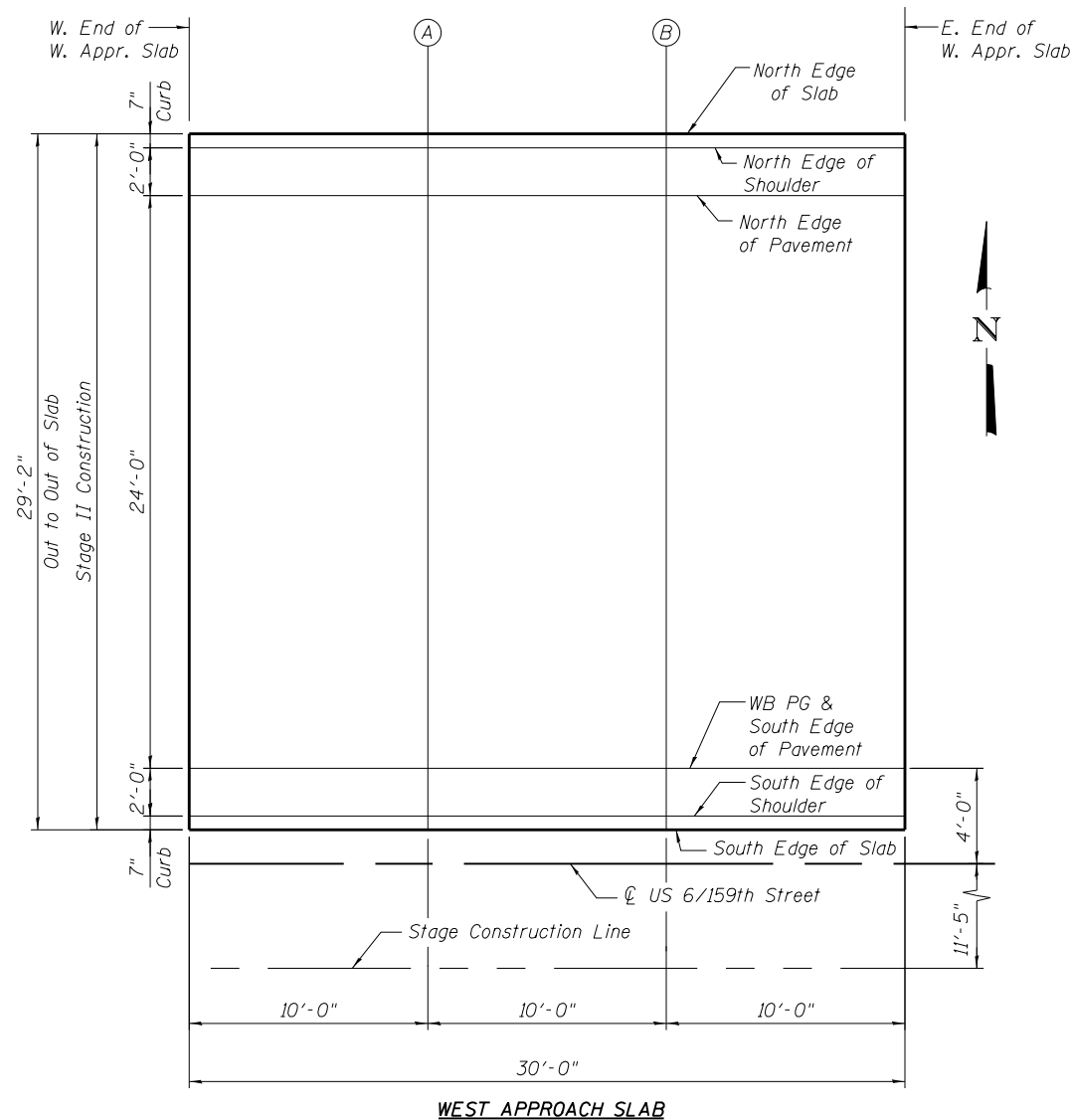
Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	395+97.60	-4.00	689.23
A	396+07.60	-4.00	689.12
B	396+17.60	-4.00	689.01
E. End of W. Appr. Slab	396+27.60	-4.00	688.89
W. End of E. Appr. Slab	402+03.60	-4.00	688.65
C	402+13.60	-4.00	688.61
D	402+23.60	-4.00	688.57
E. End of E. Appr. Slab	402+33.60	-4.00	688.53

SOUTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	395+97.60	-2.00	689.27
A	396+07.60	-2.00	689.16
B	396+17.60	-2.00	689.05
E. End of W. Appr. Slab	396+27.60	-2.00	688.93
W. End of E. Appr. Slab	402+03.60	-2.00	688.69
C	402+13.60	-2.00	688.65
D	402+23.60	-2.00	688.61
E. End of E. Appr. Slab	402+33.60	-2.00	688.57

SOUTH EDGE OF SLAB

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	395+97.60	-1.42	689.77
A	396+07.60	-1.42	689.66
B	396+17.60	-1.42	689.55
E. End of W. Appr. Slab	396+27.60	-1.42	689.43
W. End of E. Appr. Slab	402+03.60	-1.42	689.19
C	402+13.60	-1.42	689.15
D	402+23.60	-1.42	689.11
E. End of E. Appr. Slab	402+33.60	-1.42	689.07



PLAN - DRY LAND BRIDGE 3 WESTBOUND APPROACH SLAB

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LOCHNER
H.W. LOCHNER, INC.
225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED - RH	REVISED
FILE NAME = 016D012-60L72-011-SE.dgn	CHECKED - LJB	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TOP OF APPROACH SLAB ELEVATIONS 1
STRUCTURE NO. 016-D012**

SHEET NO. 11 OF 43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	513
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

NORTH EDGE OF SLAB

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	398+04.60	11.42	688.10
A	398+14.60	11.42	688.09
B	398+24.60	11.42	688.07
E. End of W. Appr. Slab	398+34.60	11.42	688.07
W. End of E. Appr. Slab	401+34.60	11.42	689.31
C	401+44.60	11.42	689.31
D	401+54.60	11.42	689.30
E. End of E. Appr. Slab	401+64.60	11.42	689.29

NORTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	398+04.60	12.00	687.60
A	398+14.60	12.00	687.59
B	398+24.60	12.00	687.57
E. End of W. Appr. Slab	398+34.60	12.00	687.57
W. End of E. Appr. Slab	401+34.60	12.00	688.81
C	401+44.60	12.00	688.81
D	401+54.60	12.00	688.80
E. End of E. Appr. Slab	401+64.60	12.00	688.79

EB PG & NORTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	398+04.60	14.00	687.56
A	398+14.60	14.00	687.55
B	398+24.60	14.00	687.53
E. End of W. Appr. Slab	398+34.60	14.00	687.53
W. End of E. Appr. Slab	401+34.60	14.00	688.77
C	401+44.60	14.00	688.77
D	401+54.60	14.00	688.76
E. End of E. Appr. Slab	401+64.60	14.00	688.75

SOUTH EDGE OF PAVEMENT

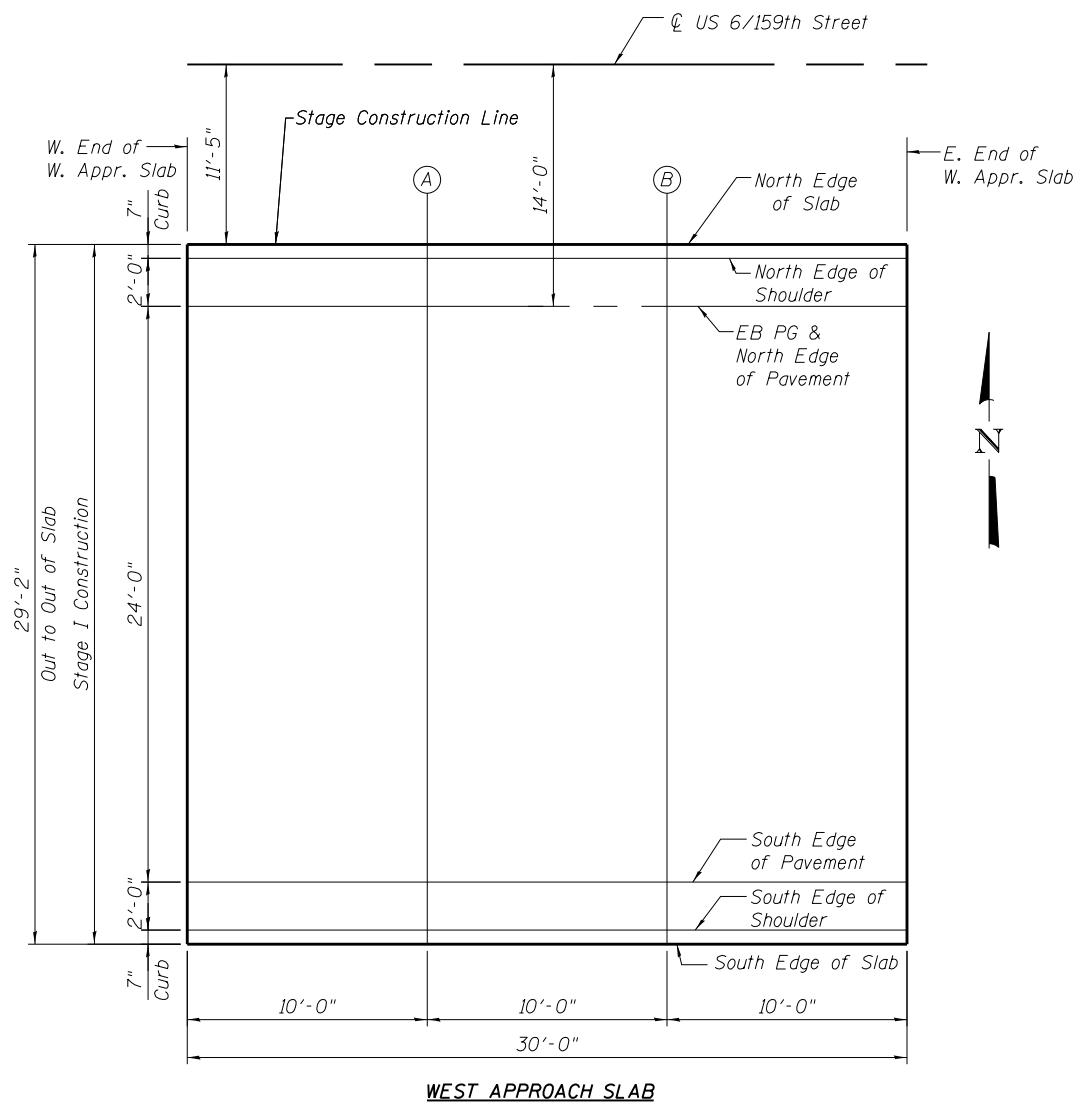
Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	398+04.60	38.00	687.08
A	398+14.60	38.00	687.07
B	398+24.60	38.00	687.05
E. End of W. Appr. Slab	398+34.60	38.00	687.05
W. End of E. Appr. Slab	401+34.60	38.00	688.29
C	401+44.60	38.00	688.29
D	401+54.60	38.00	688.28
E. End of E. Appr. Slab	401+64.60	38.00	688.27

SOUTH EDGE OF SHOULDER

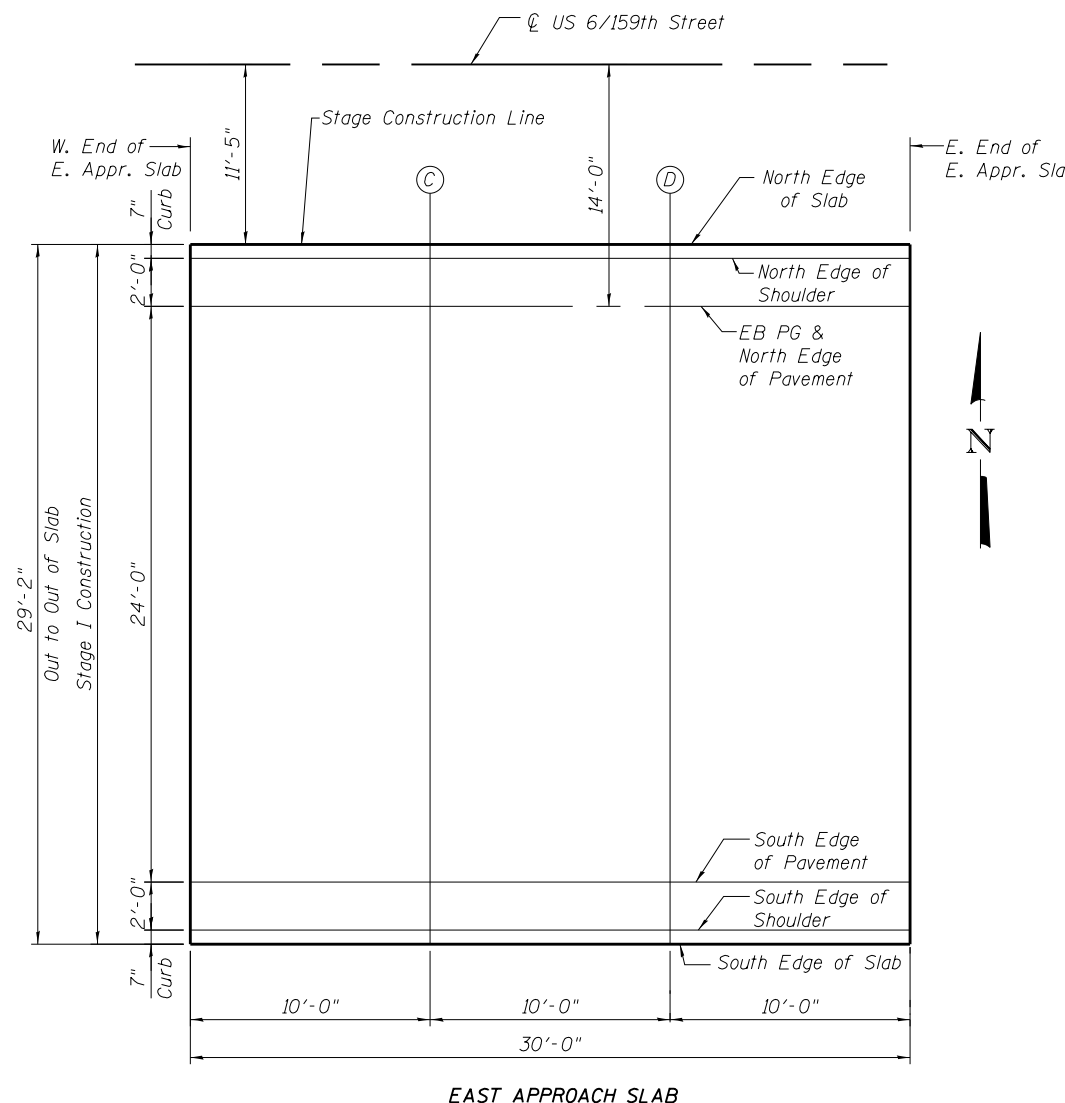
Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	398+04.60	40.00	686.96
A	398+14.60	40.00	686.95
B	398+24.60	40.00	686.93
E. End of W. Appr. Slab	398+34.60	40.00	686.93
W. End of E. Appr. Slab	401+34.60	40.00	688.17
C	401+44.60	40.00	688.17
D	401+54.60	40.00	688.16
E. End of E. Appr. Slab	401+64.60	40.00	688.15

SOUTH EDGE OF SLAB

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	398+04.60	40.58	687.46
A	398+14.60	40.58	687.45
B	398+24.60	40.58	687.43
E. End of W. Appr. Slab	398+34.60	40.58	687.43
W. End of E. Appr. Slab	401+34.60	40.58	688.67
C	401+44.60	40.58	688.67
D	401+54.60	40.58	688.66
E. End of E. Appr. Slab	401+64.60	40.58	688.65



WEST APPROACH SLAB



EAST APPROACH SLAB

PLAN - DRY LAND BRIDGE 3 EASTBOUND APPROACH SLAB

T:\51006-USA\Struct\Land Bridges\Land Bridges\016-D012-60L72-012-SE.dgn

LOCHNER
H.W. LOCHNER, INC.
225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

USER NAME =
FILE NAME = 016D012-60L72-012-SE.dgn
PLOT SCALE =
PLOT DATE =

DESIGNED - RH
CHECKED - LJB
DRAWN - EF
CHECKED - RH

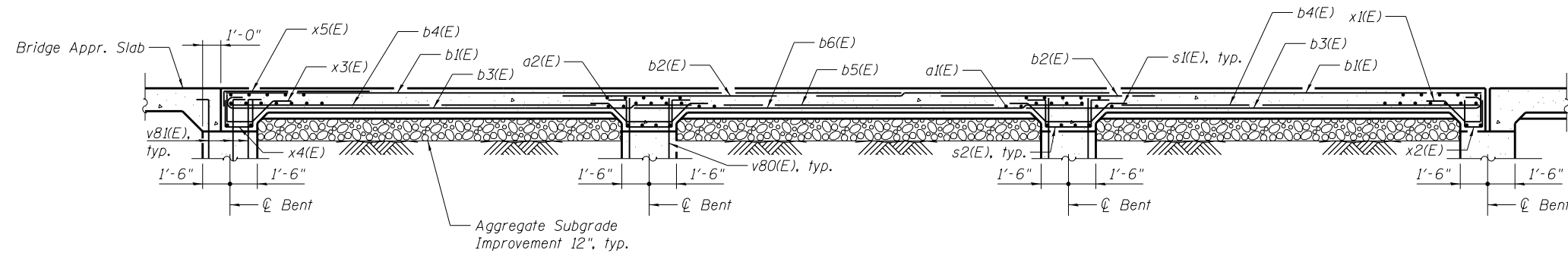
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REVISED
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REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

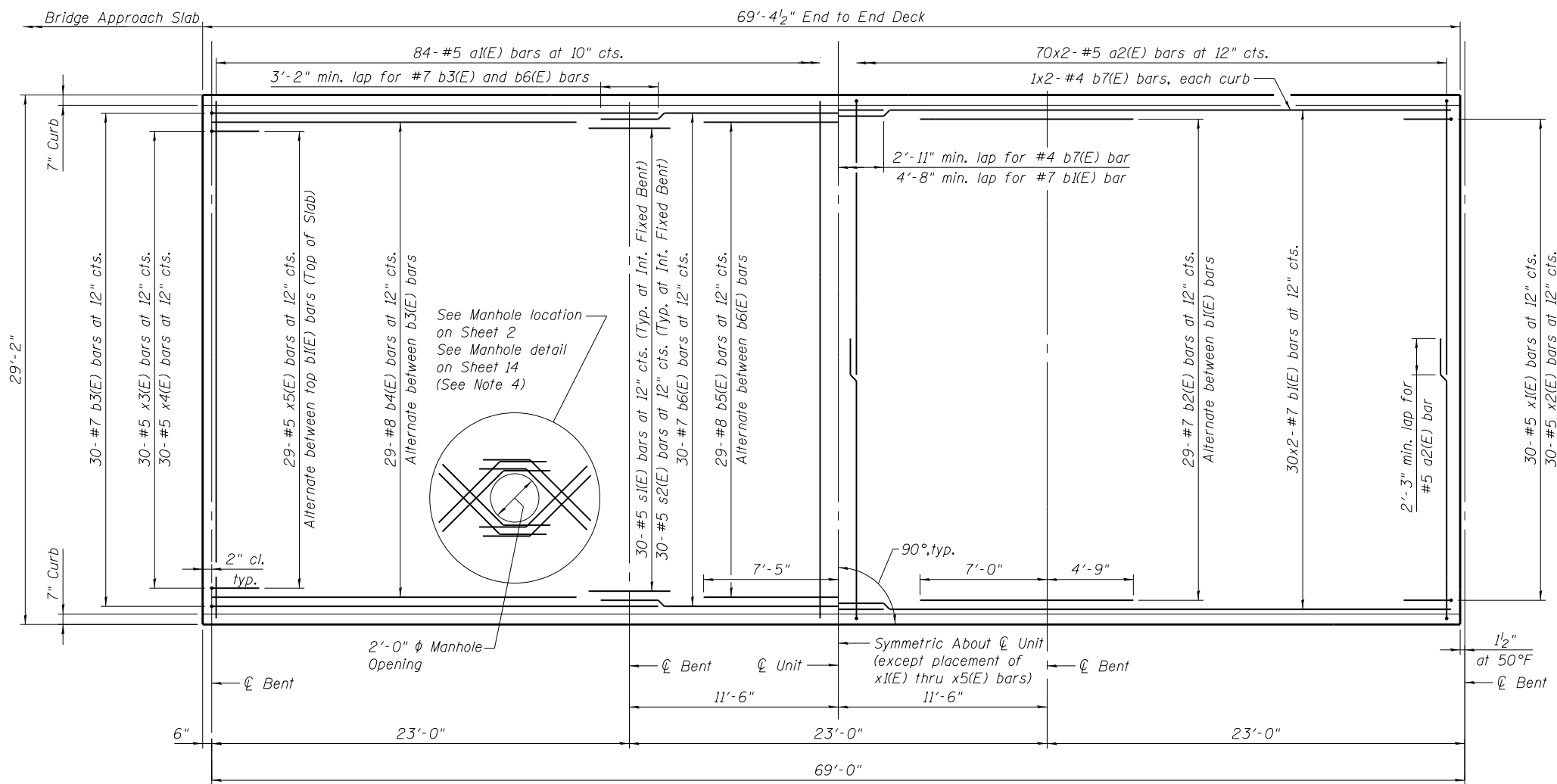
**TOP OF APPROACH SLAB ELEVATIONS 2
STRUCTURE NO. 016-D012**

SHEET NO. 12 OF 43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	514
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



END UNIT ELEVATION



3 SPAN END UNIT PLAN
(EB Unit 3)

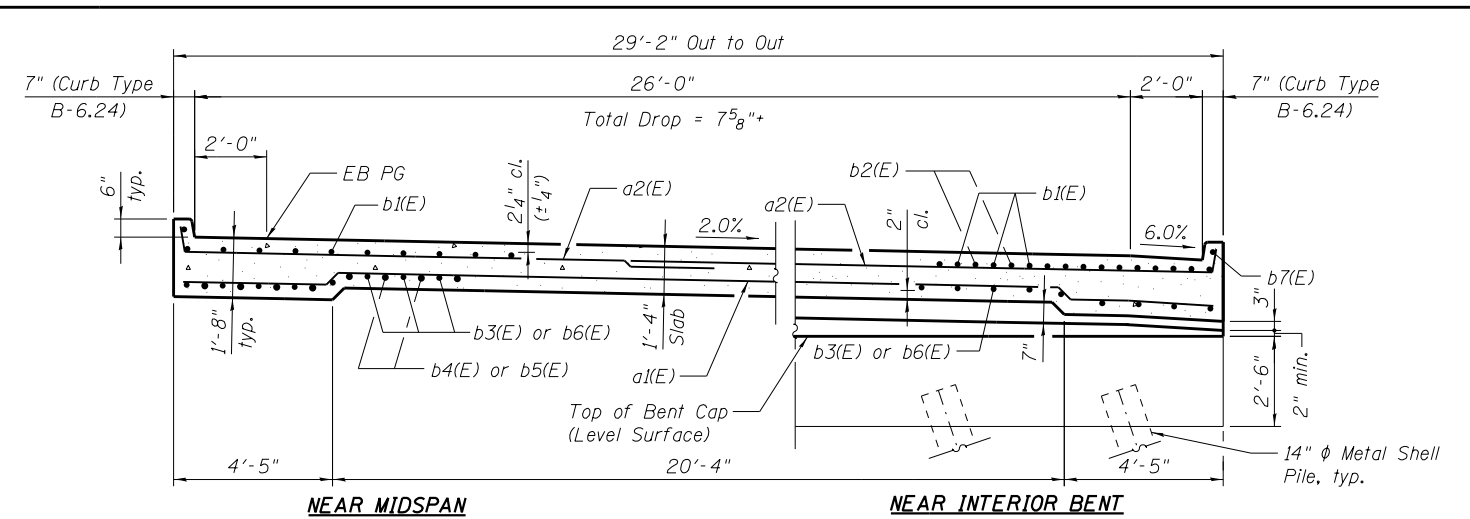
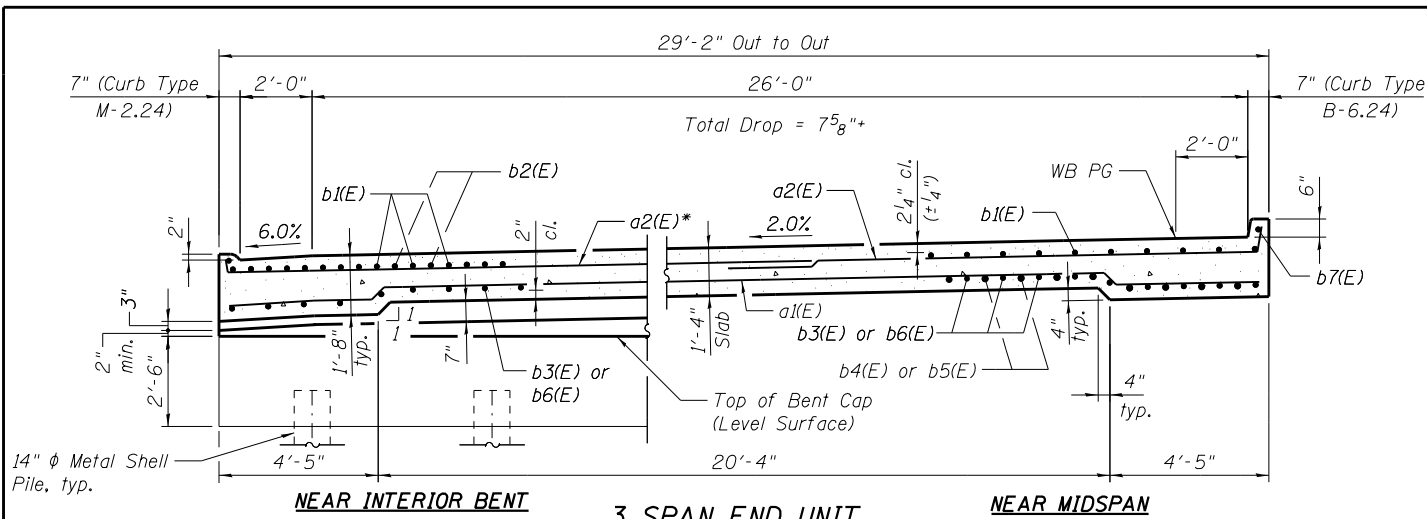
MINIMUM BAR LAP
(Deck)
 #4 bar (Top) = 2'-11"
 #5 bar (Top) = 2'-3"
 #7 bar (Top) = 4'-8"
 #7 bar = 3'-2"

NOTES

1. See Sheet 14 of 43 for superstructure details and Bill of Material.
2. Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
3. For Span arrangements, work this sheet with Sheets 1 and 2.
4. 1 manhole is placed in EB unit 3. Cut a1(E), a2(E), b1(E), b2(E), b5(E) and b6(E) bars to clear 2'-0" ϕ manhole opening.

T:\51006-056\Struct\Land Bridges\Land Bridges\016-D012-60L72-013-DP.dgn

LOCHNER H.W. LOCHNER, INC. 225 WEST WASHINGTON STREET 12 TH FLOOR CHICAGO, ILLINOIS 60606	USER NAME =	DESIGNED - LJB	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DECK PLAN & CROSS SECTION 1 STRUCTURE NO. 016-D012	F.A.P. RTE. =	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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	PLOT SCALE =	DRAWN - EF	REVISED			CONTRACT NO. 60L72				
	PLOT DATE =	CHECKED - RH	REVISED			ILLINOIS FED. AID PROJECT				



**3 SPAN END UNIT
WB BRIDGE CROSS SECTION**
(Looking East)

**3 SPAN END UNIT
EB BRIDGE CROSS SECTION**
(Looking East)

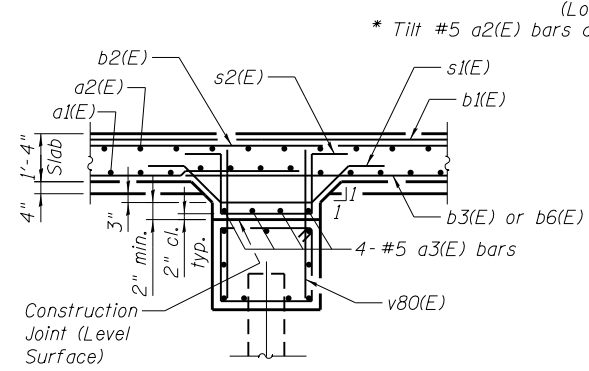
**BILL OF MATERIAL
FOR 3 SPAN END UNITS**

Bar	No.	Size	Length	Shape
a1(E)	84	#5	29'-2"	
a2(E)	140	#5	16'-1"	
a3(E)	12	#5	28'-10"	
b1(E)	60	#7	36'-11"	
b2(E)	58	#7	11'-9"	
b3(E)	60	#7	25'-9"	
b4(E)	58	#8	20'-1"	
b5(E)	29	#8	14'-10"	
b6(E)	30	#7	26'-2"	
b7(E)	4	#4	36'-1"	
s1(E)	60	#5	7'-0"	
s2(E)	60	#5	8'-2"	
x1(E)	30	#5	4'-11"	
x2(E)	30	#5	4'-6"	
x3(E)	30	#5	5'-7"	
x4(E)	30	#5	5'-2"	
x5(E)	29	#5	8'-10"	
Reinforcement Bars, Epoxy Coated			Pound	22,160
Concrete Superstructure			Cu. Yd.	120.9
Protective Coat			Sq. Yd.	233
Bridge Deck Grooving			Sq. Yd.	201

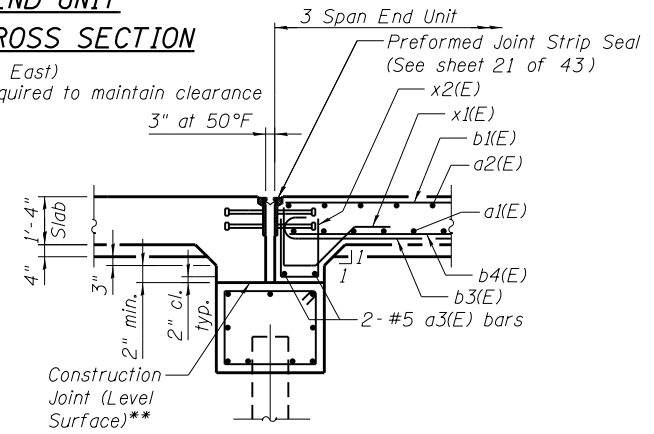
The above quantities include 1 unit: EB Unit 3.

**MANHOLE REINFORCEMENT
BILL OF MATERIAL
FOR ONE MANHOLE**
(1 Required)

Bar	No.	Size	Length	Shape
a65(E)	16	#6	7'-4"	
Reinforcement Bars, Epoxy Coated			Pound	180

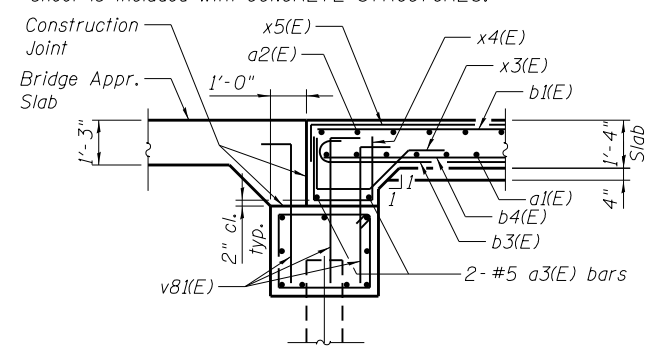


**FIXED PILE BENT
CAP SECTION**

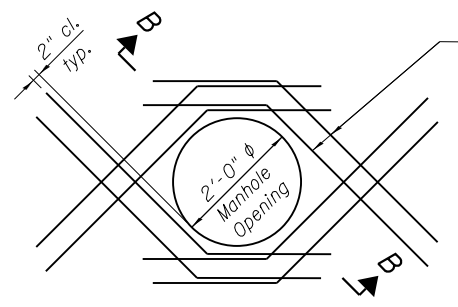


EXPANSION PILE BENT

** Top concrete surface of the expansion pier caps shall be finished to a very smooth finish. 1/8" neoprene sheet shall be placed on the entire top surface of the expansion pier caps prior to pouring the superstructure slab. Cost of furnishing and installing 1/8" neoprene sheet is included with CONCRETE STRUCTURES.



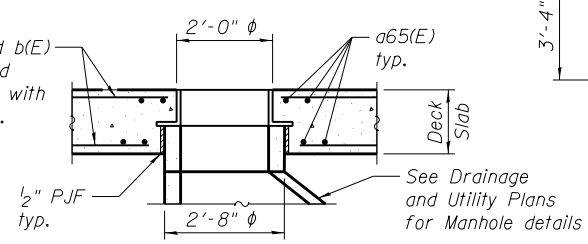
**END PILE BENT
CAP SECTION**



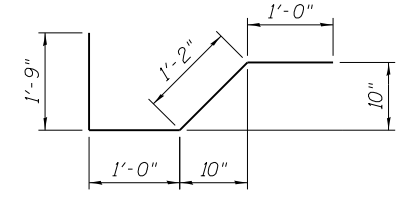
MANHOLE REINFORCEMENT

2-#6 a65(E) bars at 6" cts. tied to bottom of top reinforcement mat and top of bottom reinforcement mat typ.

Cut a(E) and b(E) bars to avoid interference with manhole, typ.

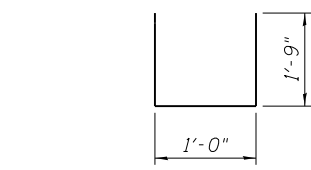


SECTION B-B

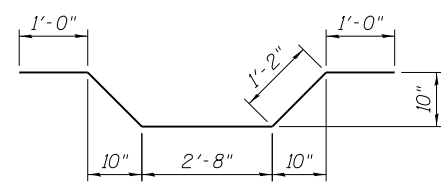


BAR x1(E)

BAR b3(E)

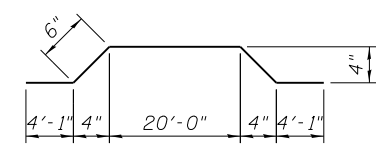


BAR x2(E)

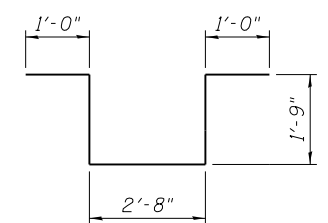


BAR s1(E)

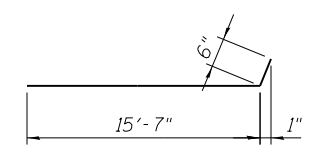
BAR s2(E)



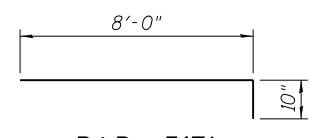
BAR a1(E)



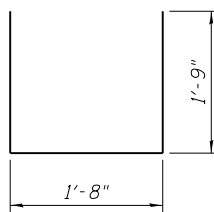
BAR x5(E)



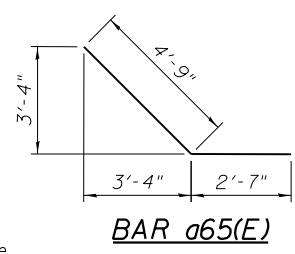
BAR a2(E)



BAR x3(E)

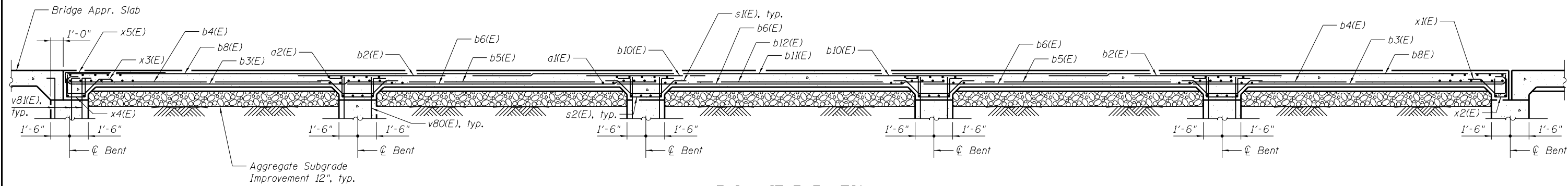


BAR x4(E)

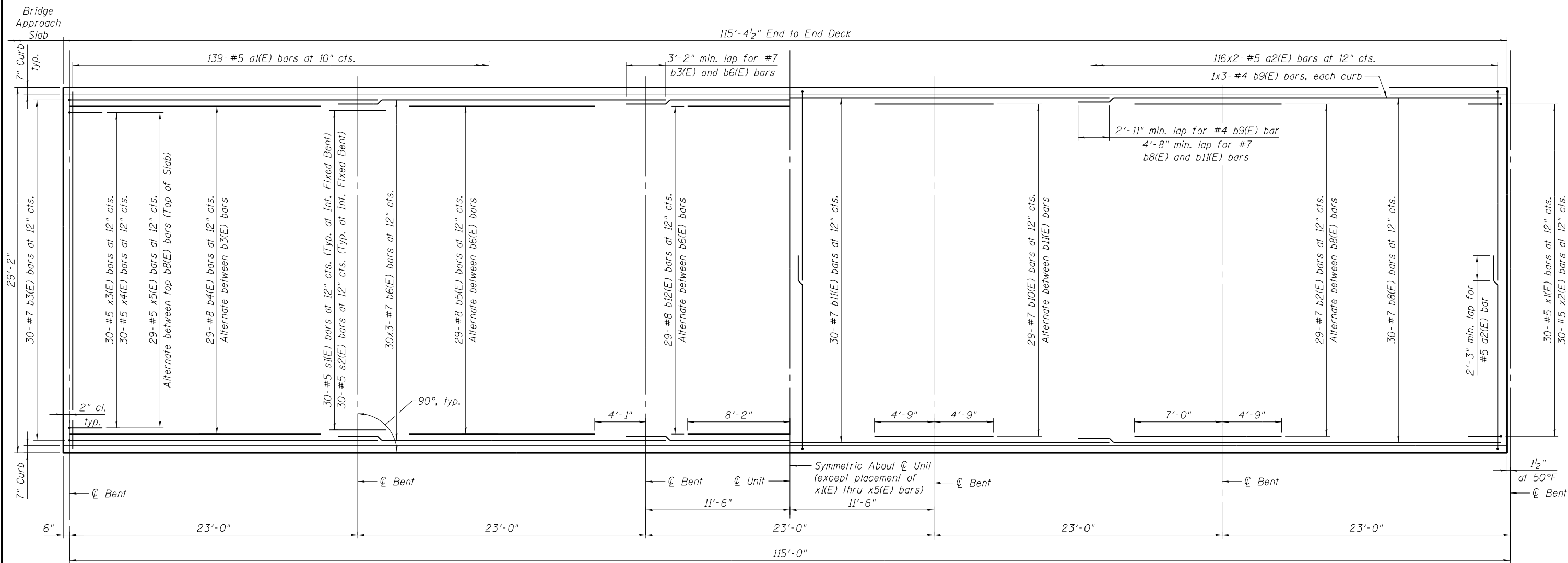


BAR a65(E)

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END UNIT ELEVATION



BOTTOM

TOP

5 SPAN END UNIT PLAN

(WB Units 1 & 5, EB Unit 1)

MINIMUM BAR LAP

- (Deck)
- #4 bar (Top) = 2'-11"
- #5 bar (Top) = 2'-3"
- #7 bar (Top) = 4'-8"
- #7 bar = 3'-2"

NOTES

1. See Sheet 16 of 43 for superstructure details and Bill of Material.
2. Bars indicated thus 20 x 3- #5 etc. indicates 20 lines of bars with 3 lengths per line.
3. For Span arrangements, work this sheet with Sheets 1 and 2.
4. 1 scupper is placed in WB Unit 1. 2 scuppers are placed in EB Unit 1. Scuppers not shown in plan view. For location details, see Sheets 1 and 2. For typical scupper reinforcement details, see Sheet 16.

T:\51006-USA\Struct\Land Bridges\Land Bridge 3 - 016-D012-60L72-015-DP.dgn

LOCHNER
H.W. LOCHNER, INC.
225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

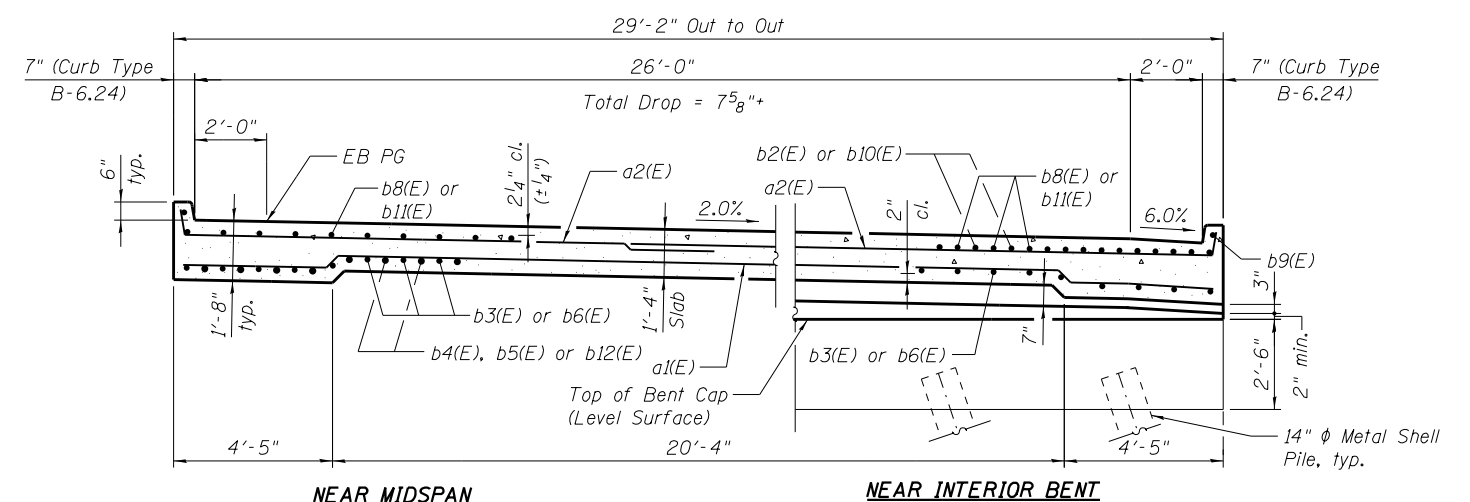
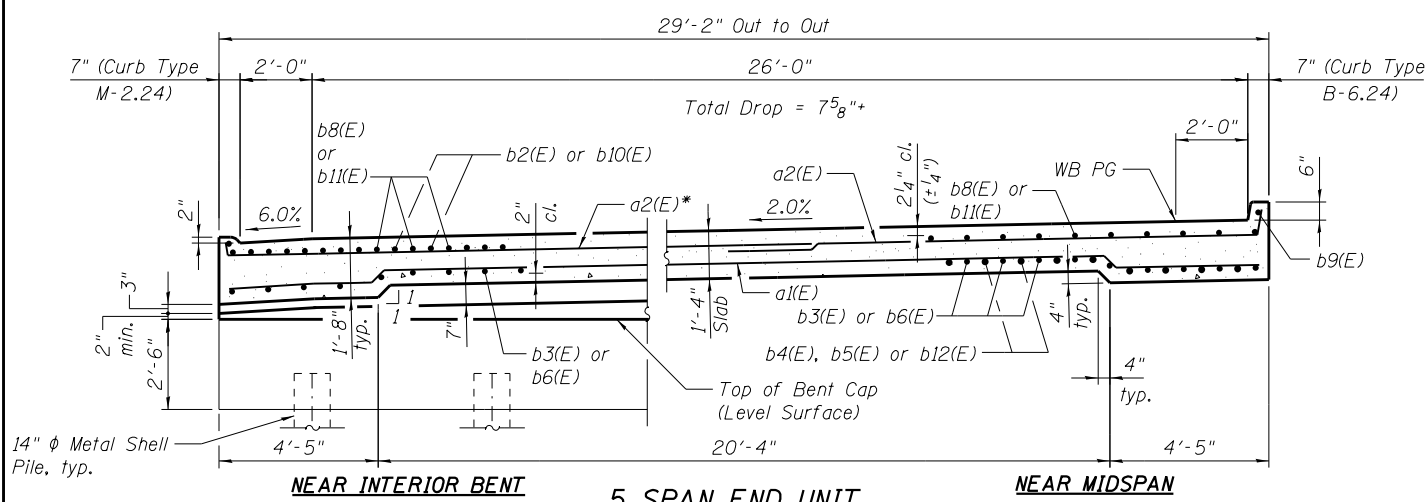
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PLOT DATE =	CHECKED - RH	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK PLAN & CROSS SECTION 2
STRUCTURE NO. 016-D012

SHEET NO. 15 OF 43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	517
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



WB BRIDGE CROSS SECTION
(Looking East)
5 SPAN END UNIT

EB BRIDGE CROSS SECTION
(Looking East)
5 SPAN END UNIT

BILL OF MATERIAL FOR 5 SPAN END UNITS

Bar	No.	Size	Length	Shape
a1(E)	417	#5	29'-2"	
a2(E)	696	#5	16'-1"	
a3(E)	60	#5	28'-10"	
b2(E)	174	#7	11'-9"	
b3(E)	180	#7	25'-9"	
b4(E)	174	#8	20'-1"	
b5(E)	174	#8	14'-10"	
b6(E)	270	#7	26'-2"	
b8(E)	180	#7	37'-2"	
b9(E)	18	#4	40'-4"	
b10(E)	174	#7	9'-6"	
b11(E)	90	#7	50'-8"	
b12(E)	87	#8	16'-4"	
s1(E)	360	#5	7'-0"	
s2(E)	360	#5	8'-2"	
x1(E)	90	#5	4'-11"	
x2(E)	90	#5	4'-6"	
x3(E)	90	#5	5'-7"	
x4(E)	90	#5	5'-2"	
x5(E)	87	#5	8'-10"	
Reinforcement Bars, Epoxy Coated			Pound	109,530
Concrete Superstructure			Cu. Yd.	614.1
Protective Coat			Sq. Yd.	1161
Bridge Deck Grooving			Sq. Yd.	1002

The above quantities include all 3 units:
WB Units 1 & 5 and EB Unit 1.

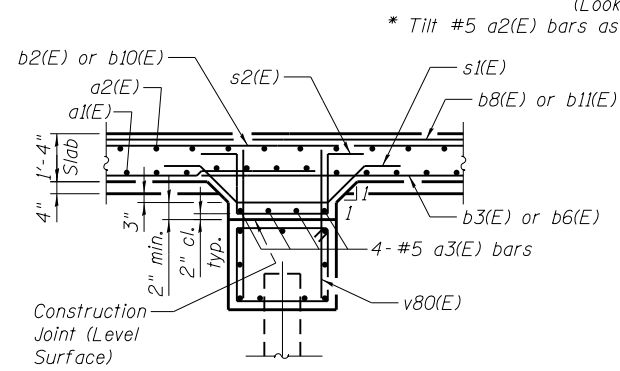
SCUPPER REINFORCEMENT BILL OF MATERIAL FOR SCUPPERS

Bar	No.	Size	Length	Shape
a4(E)	24	#6	2'-0"	
Reinforcement Bars, Epoxy Coated			Pound	90

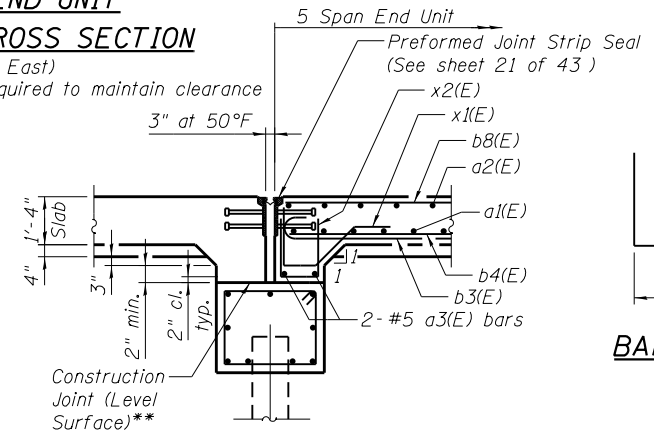
The above quantities include reinforcement for 3 scuppers.

NOTES

- Cut b8(E) and/or b11(E) bars to clear drainage scuppers.
- Space b3(E) thru b6(E) and b12(E) bars to avoid interference with drainage scuppers.

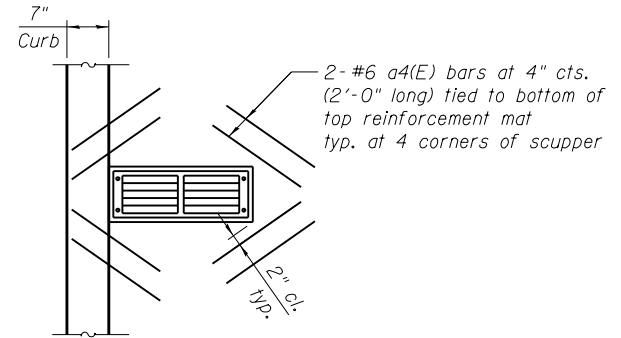


FIXED PILE BENT CAP SECTION

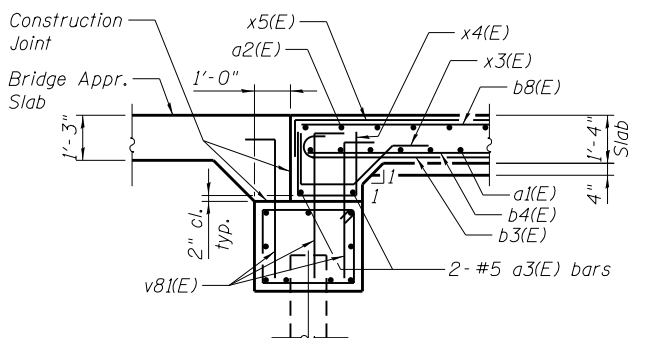


EXPANSION PILE BENT CAP SECTION

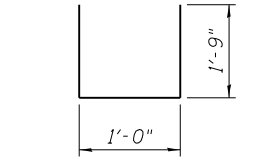
** Top concrete surface of the expansion pier caps shall be finished to a very smooth finish. 1/8" neoprene sheet shall be placed on the entire top surface of the expansion pier caps prior to pouring the superstructure slab. Cost of furnishing and installing 1/8" neoprene sheet is included with CONCRETE STRUCTURES.



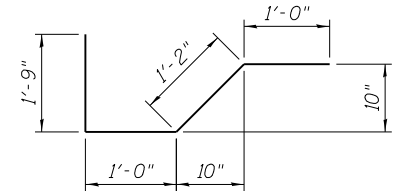
SCUPPER REINFORCEMENT



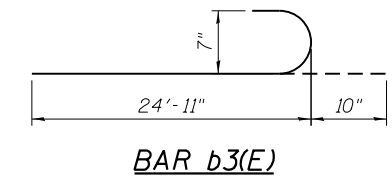
END PILE BENT CAP SECTION



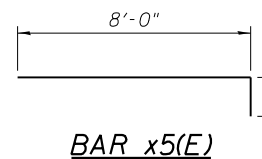
BAR x2(E)



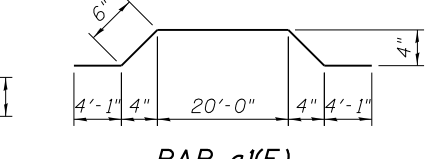
BAR x1(E)



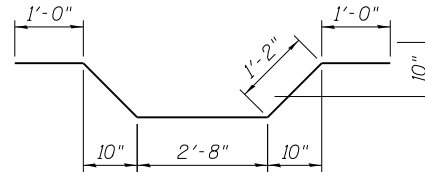
BAR b3(E)



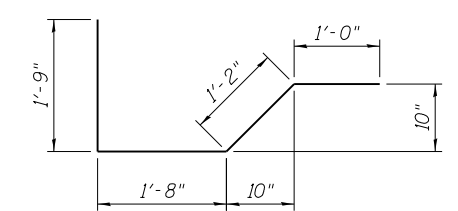
BAR x5(E)



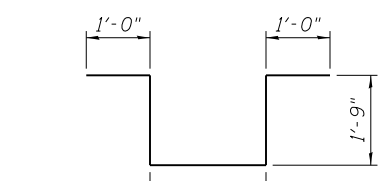
BAR a1(E)



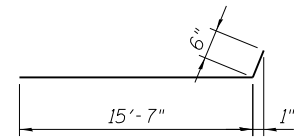
BAR s1(E)



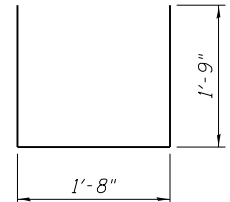
BAR x3(E)



BAR s2(E)



BAR a2(E)



BAR x4(E)

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LOCHNER
H. W. LOCHNER, INC.
225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

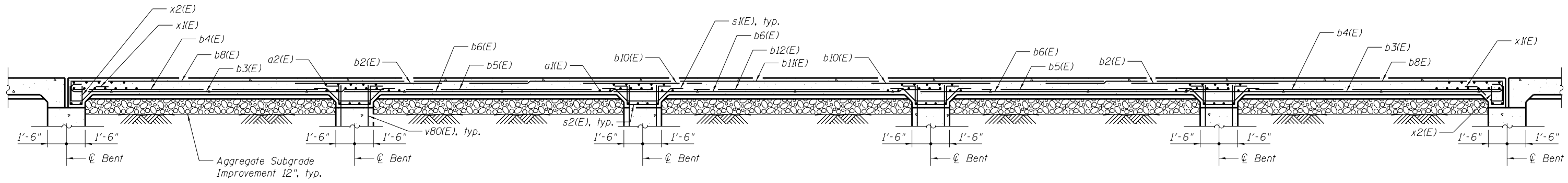
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STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

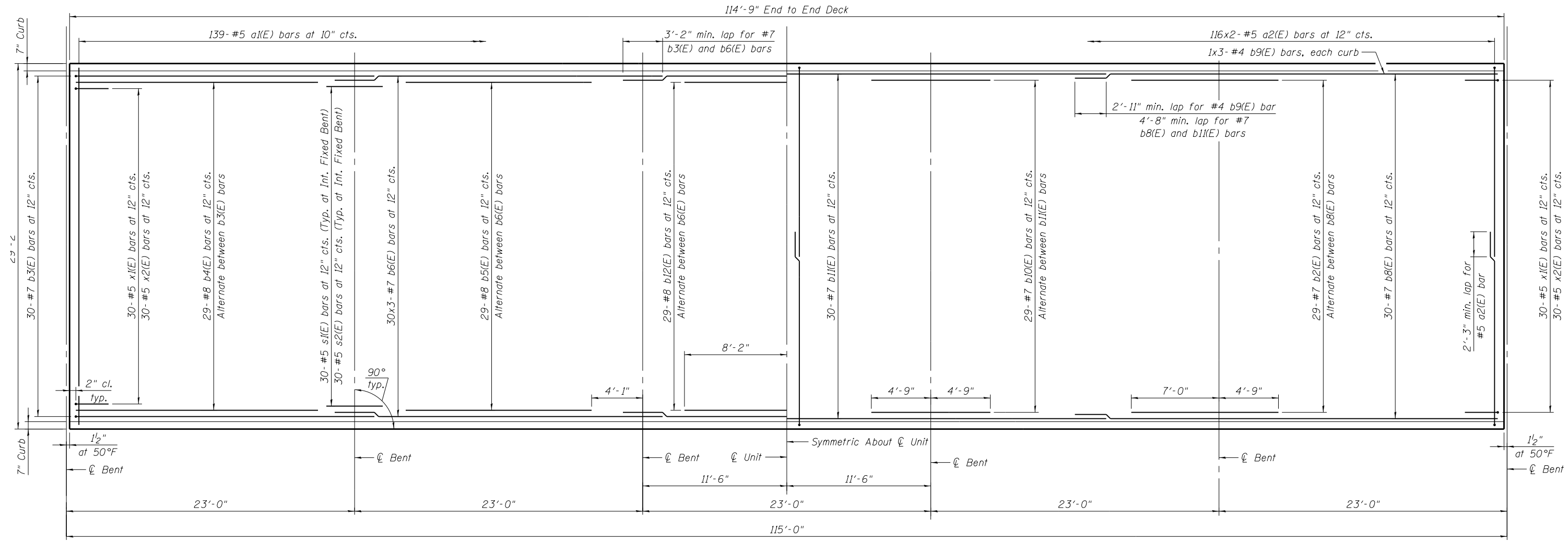
**SUPERSTRUCTURE DETAILS 2
STRUCTURE NO. 016-D012**

SHEET NO. 16 OF 43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	518
				CONTRACT NO. 60L72
ILLINOIS FED. AID PROJECT				



INTERIOR UNIT ELEVATION



BOTTOM

TOP

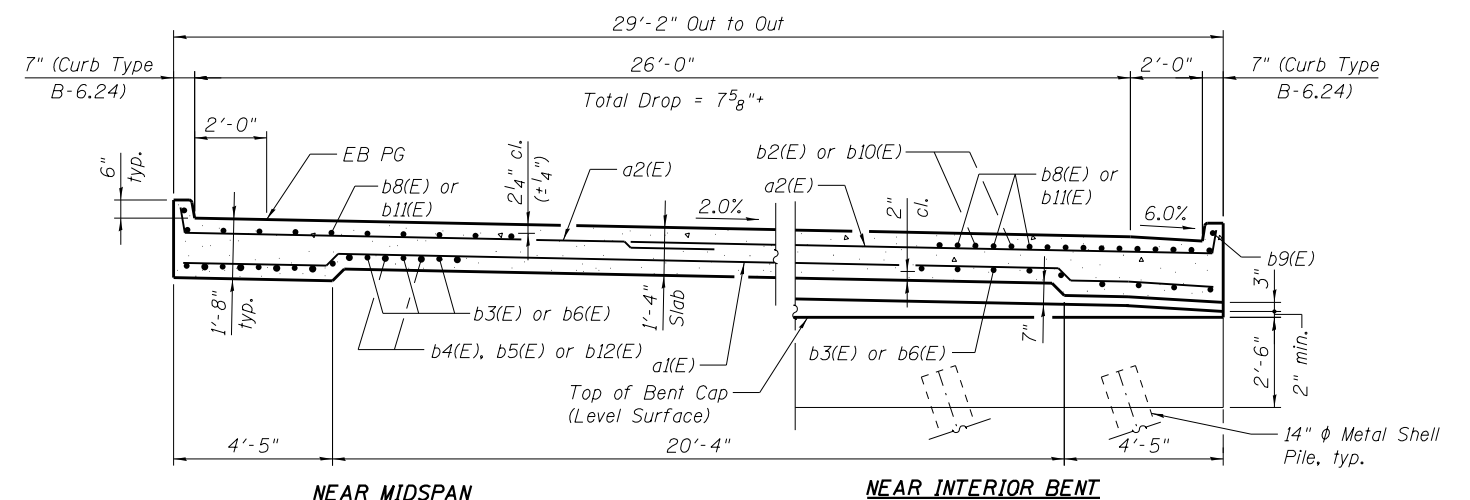
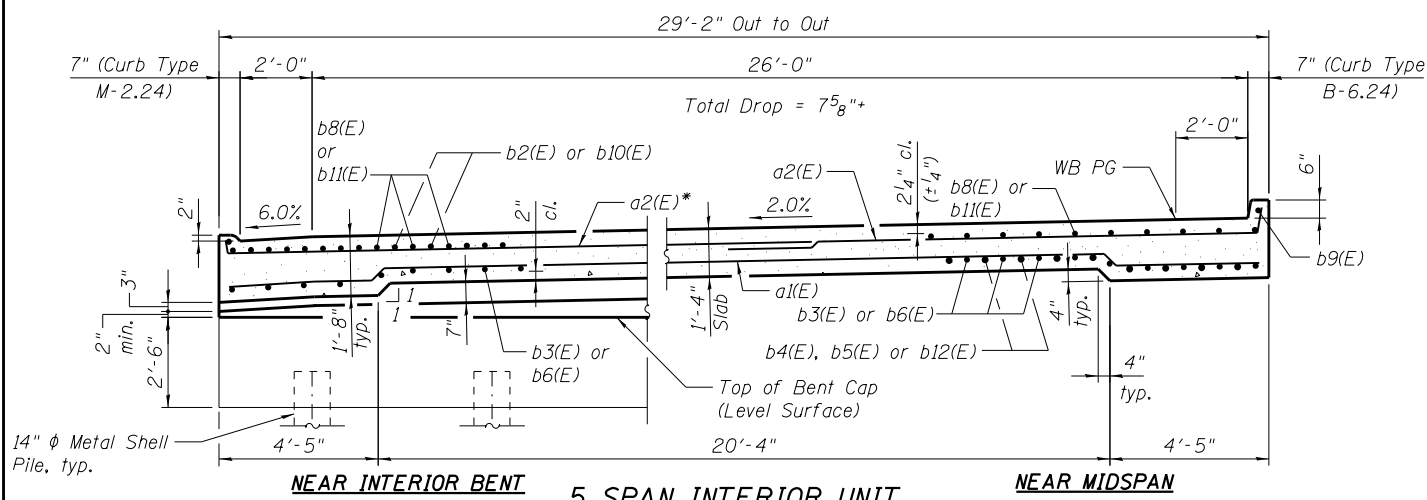
5 SPAN INTERIOR UNIT PLAN
(WB Units 2 thru 4, EB Unit 2)

MINIMUM BAR LAP
(Deck)
 #4 bar (Top) = 2'-11"
 #5 bar (Top) = 2'-3"
 #7 bar (Top) = 4'-8"
 #7 bar = 3'-2"

- NOTES**
- See Sheet 18 of 43 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.
 - For Span arrangements, work this sheet with Sheets 1 and 2.
 - 1 scupper is placed in EB Unit 2.
2 scuppers are placed in WB Unit 3.
3 scuppers are placed in WB Unit 2.
Scuppers not shown in plan view. For location details, see Sheets 1 and 2. For typical scupper reinforcement details, see Sheet 18.

T:\51006-USA\Struct\Bridges\Land Bridges\3 - 016-D012\016D012-60L72-017-DP.dgn

LOCHNER H.W. LOCHNER, INC. 225 WEST WASHINGTON STREET 12 TH FLOOR CHICAGO, ILLINOIS 60606	USER NAME =	DESIGNED - LJB	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DECK PLAN & CROSS SECTION 3 STRUCTURE NO. 016-D012 SHEET NO. 17 OF 43 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	FILE NAME = 016D012-60L72-017-DP.dgn	CHECKED - RH	REVISED			351	2010-081-R	COOK	1045	519
	PLOT SCALE =	DRAWN - EF	REVISED			CONTRACT NO. 60L72				
PLOT DATE =	CHECKED - RH	REVISED	ILLINOIS FED. AID PROJECT							



**5 SPAN INTERIOR UNIT
WB BRIDGE CROSS SECTION**
(Looking East)

**5 SPAN INTERIOR UNIT
EB BRIDGE CROSS SECTION**
(Looking East)

**BILL OF MATERIAL
FOR 5 SPAN INTERIOR UNITS**

Bar	No.	Size	Length	Shape
a1(E)	556	#5	29'-2"	
a2(E)	928	#5	16'-1"	
a3(E)	80	#5	28'-10"	
b2(E)	232	#7	11'-9"	
b3(E)	240	#7	25'-9"	
b4(E)	232	#8	20'-1"	
b5(E)	232	#8	14'-10"	
b6(E)	360	#7	26'-2"	
b8(E)	240	#7	37'-2"	
b9(E)	24	#4	40'-4"	
b10(E)	232	#7	9'-6"	
b11(E)	120	#7	50'-8"	
b12(E)	116	#8	16'-4"	
s1(E)	480	#5	7'-0"	
s2(E)	480	#5	8'-2"	
x1(E)	240	#5	4'-11"	
x2(E)	240	#5	4'-6"	
Reinforcement Bars, Epoxy Coated			Pound	144,800
Concrete Superstructure			Cu. Yd.	815.2
Protective Coat			Sq. Yd.	1540
Bridge Deck Grooving			Sq. Yd.	1328

The above quantities include all 4 units: WB Units 2 thru 4 and EB Unit 2.

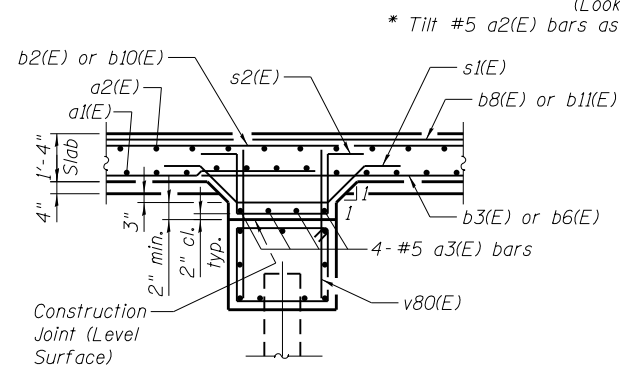
**SCUPPER REINFORCEMENT
BILL OF MATERIAL
FOR SCUPPERS**

Bar	No.	Size	Length	Shape
a4(E)	48	#6	2'-0"	
Reinforcement Bars, Epoxy Coated			Pound	180

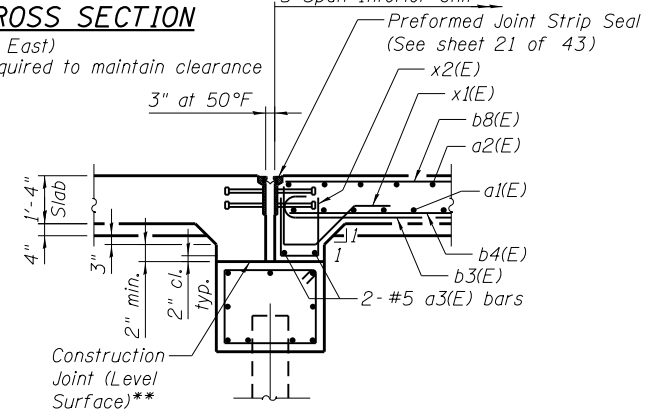
The above quantities include reinforcement for 6 scuppers.

NOTES

1. Cut b8(E) and/or b11(E) bars to clear drainage scuppers.
2. Space b3(E) thru b6(E) and b12(E) bars to avoid interference with drainage scuppers.

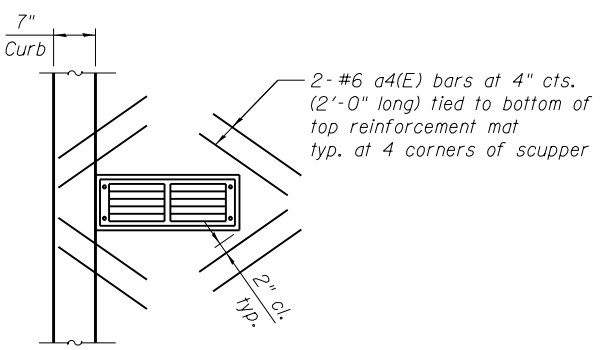


**FIXED PILE BENT
CAP SECTION**

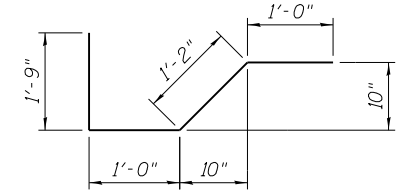


EXPANSION PILE BENT

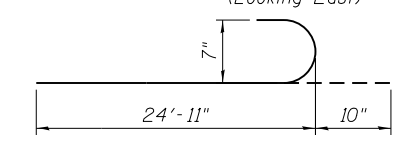
** Top concrete surface of the expansion pier caps shall be finished to a very smooth finish. 1/8" neoprene sheet shall be placed on the entire top surface of the expansion pier caps prior to pouring the superstructure slab. Cost of furnishing and installing 1/8" neoprene sheet is included with CONCRETE STRUCTURES.



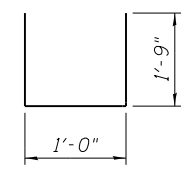
SCUPPER REINFORCEMENT



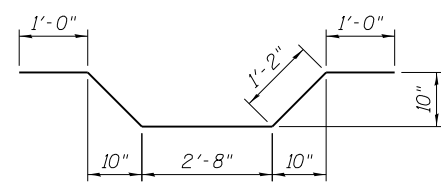
BAR x1(E)



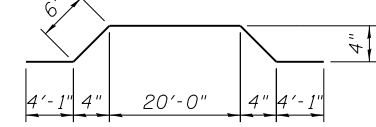
BAR b3(E)



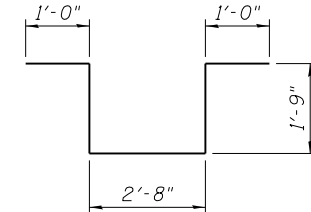
BAR x2(E)



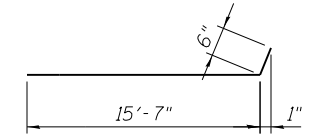
BAR s1(E)



BAR a1(E)



BAR s2(E)



BAR a2(E)

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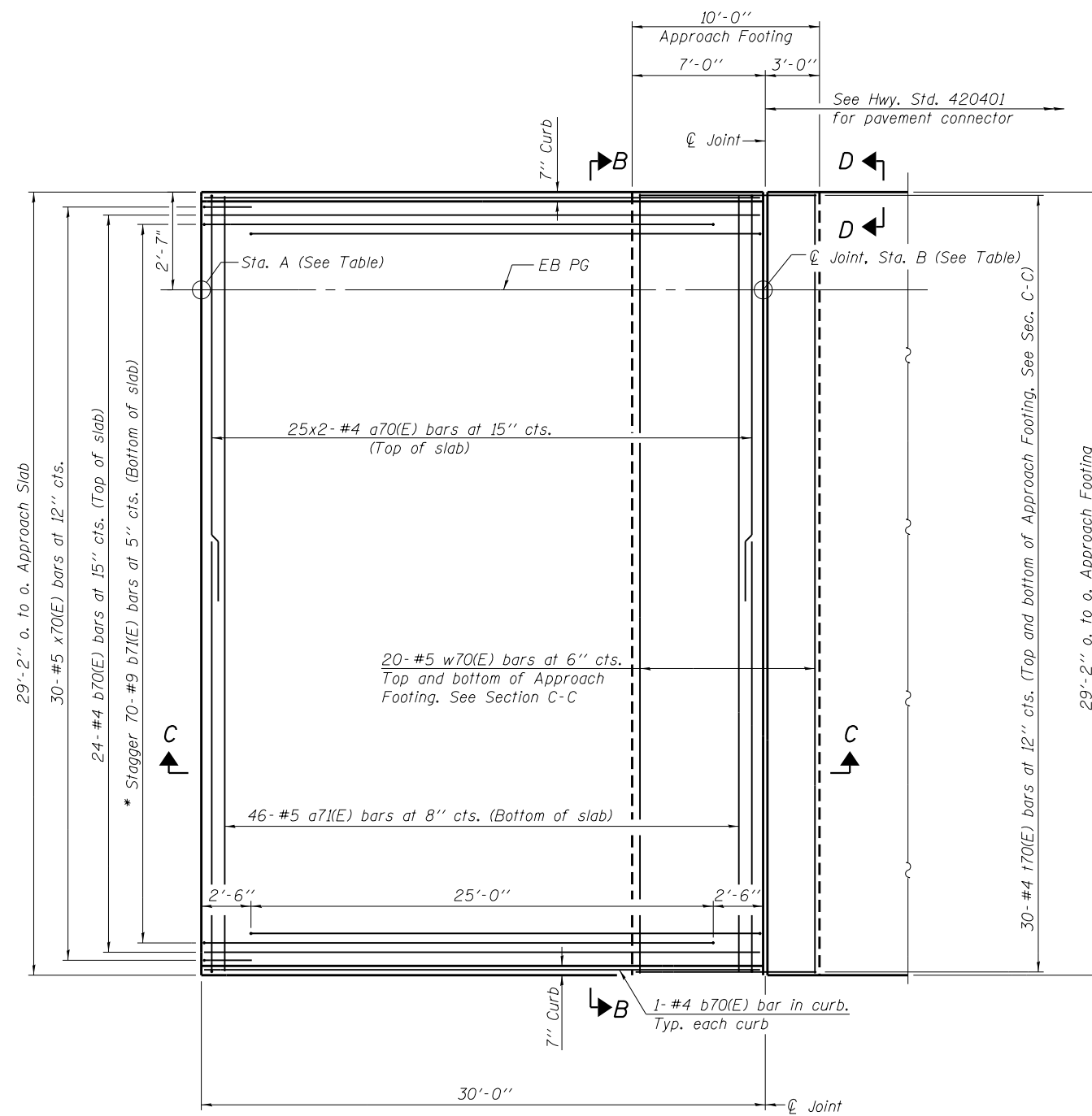
LOCHNER H. W. LOCHNER, INC. 225 WEST WASHINGTON STREET 12 TH FLOOR CHICAGO, ILLINOIS 60606	USER NAME =	DESIGNED - LJB	REVISED
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	PLOT SCALE =	DRAWN - EF	REVISED
	PLOT DATE =	CHECKED - RH	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE DETAILS 3
STRUCTURE NO. 016-0012**
SHEET NO. 18 OF 43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	520
				CONTRACT NO. 60L72
ILLINOIS FED. AID PROJECT				

Notes:
 The joint opening shall be determined per Article 520.04 except that on jointless structures, the distance described as the bridge length between the nearest fixed bearings each way from the joint shall be taken as half the bridge length plus the approach slab length. The minimum dimension shall be 1/2" for installation purposes.



PLAN

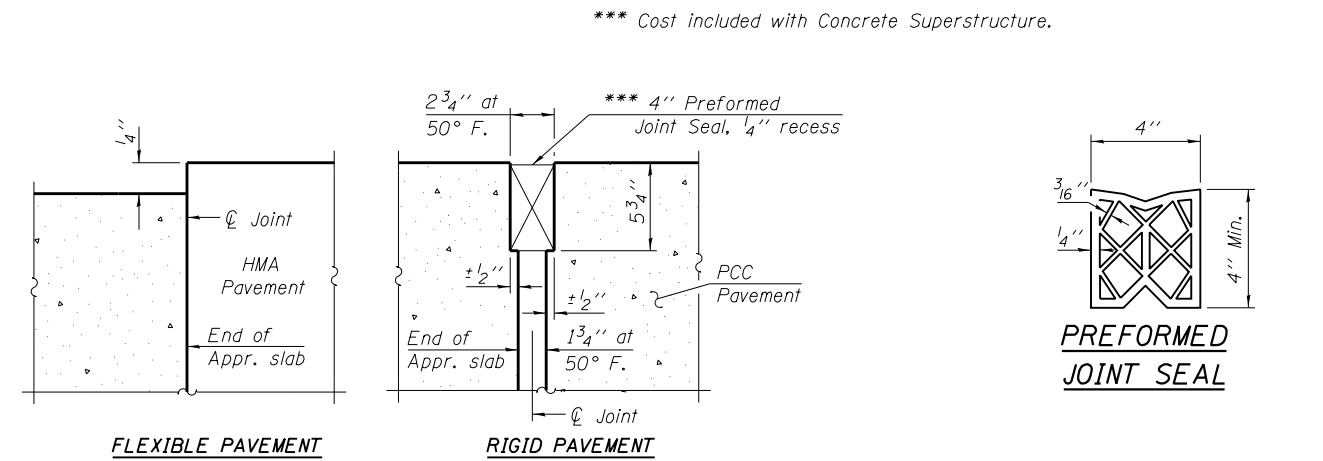
EB Bridge, E. Appr. Details as Shown
 Details of Other Approach Slabs Similar
 * Tilt #4 a70(E) and #9 b71(E) bars as required to maintain clearance.

APPROACH STATIONS

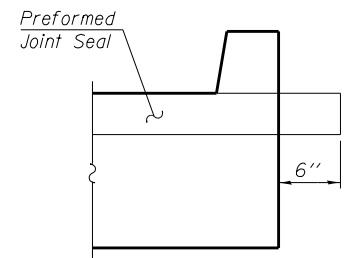
	Sta. A	Sta. B
EB Bridge, W. Appr. Sta.	398+34.60	398+04.60
EB Bridge, E. Appr. Sta.	401+34.60	401+64.60
WB Bridge, W. Appr. Sta.	396+27.60	395+97.60
WB Bridge, E. Appr. Sta.	402+03.60	402+33.60

MINIMUM BAR LAP

(Approach)
 #4 bar (Top) = 1'-10"



DETAIL A



VIEW D-D

NOTES

- See sheet 20 of 43 for Sections B-B and C-C.
- a71(E) and a70(E) bar spacings measured along ϕ Rdwy.

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 H. W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

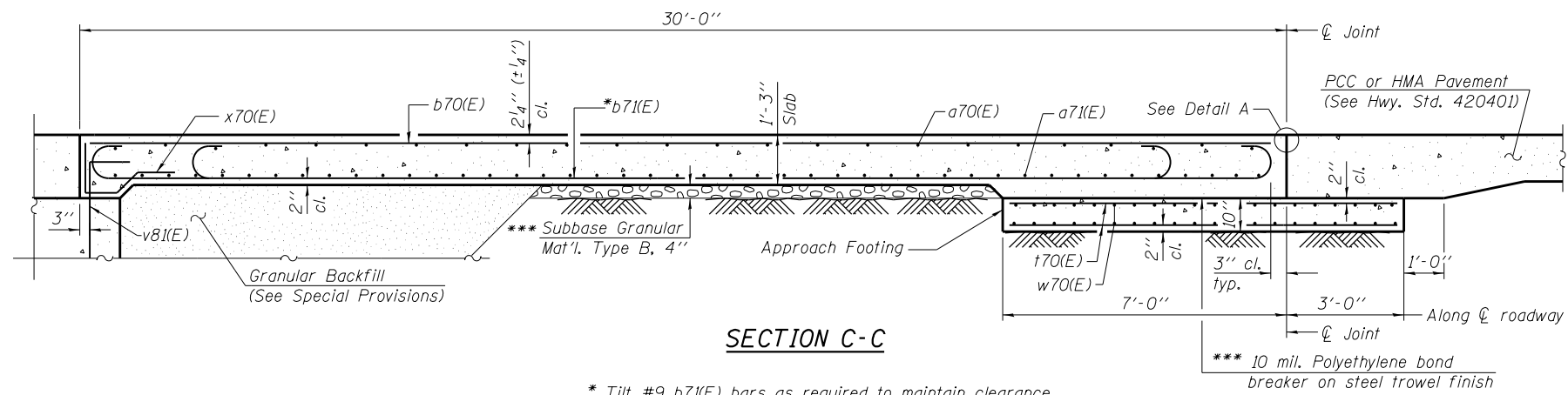
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**STATE OF ILLINOIS
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**APPROACH SLAB DETAILS 1
 STRUCTURE NO. 016-D012**

SHEET NO. 19 OF 43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	521
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



SECTION C-C

* Tilt #9 b71(E) bars as required to maintain clearance.

*** Cost included with Concrete Superstructure.

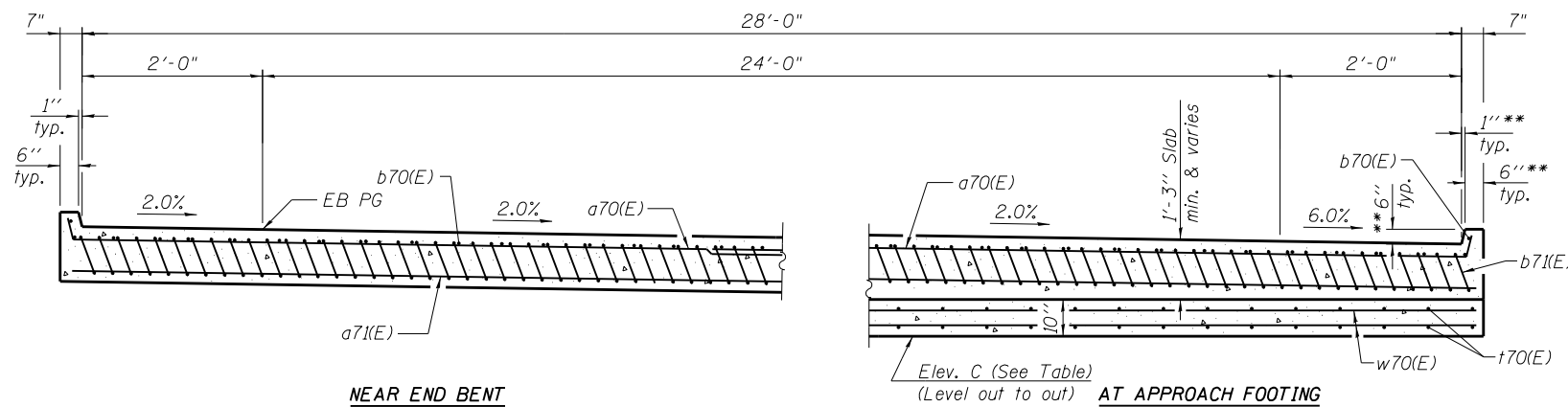
NOTES

1. See Sheet 19 of 43 for Detail A.
2. Approach slab and concrete curb shall be paid for as CONCRETE SUPERSTRUCTURE.
3. Approach footing concrete shall be paid for as CONCRETE STRUCTURES.
4. Reinforcement shall be paid for as REINFORCEMENT BARS, EPOXY COATED.
5. For v81(E) bar details, see Sheet 23 of 43.
6. The approach footing maximum applied service bearing pressure (Q_{max}) = 2.0 ksf.
7. Cost of excavation for approach footing included with STRUCTURE EXCAVATION.
8. For Granular Backfill and drainage treatment details, see Sheet 3 of 43.

BILL OF MATERIAL FOR APPROACH SLABS

Bar	No.	Size	Length	Shape
a70(E)	200	#4	15'-10"	—
a71(E)	184	#5	28'-10"	—
b70(E)	104	#4	29'-8"	—
b71(E)	280	#9	29'-9"	—
t70(E)	240	#4	9'-8"	—
w70(E)	160	#5	29'-8"	—
x70(E)	120	#5	6'-6"	—
Reinforcement Bars, Epoxy Coated			Pound	45,360
Concrete Superstructure			Cu. Yd.	187.6
Concrete Structures			Cu. Yd.	36.4
Structure Excavation			Cu. Yd.	40
Bridge Deck Grooving			Sq. Yd.	348
Protective Coat			Sq. Yd.	404

The above quantities include all 4 approach slabs.



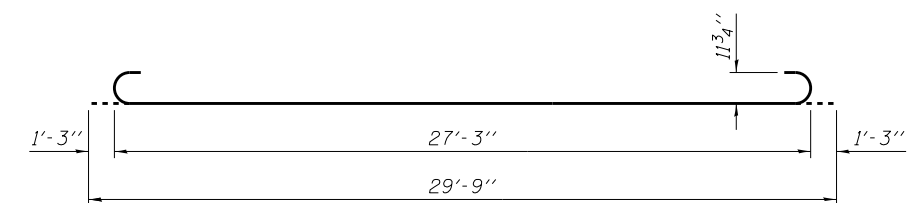
SECTION B-B

Looking East
Eastbound Approach Slab Details as shown
Westbound Approach Slab Details similar
(See Plan for dimensions not shown)

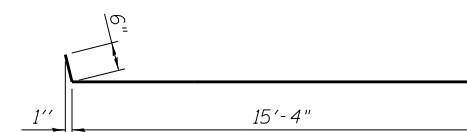
** M-2.24 Curb Section required at North Edge of the Westbound structure
For M-2.24 curb geometry, see Sheet 14.

APPROACH FOOTING ELEVATIONS

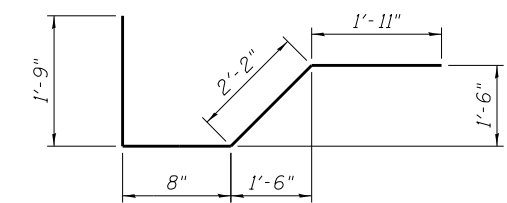
	Elev. C
EB Bridge, W. Appr. Ftg.	684.53
EB Bridge, E. Appr. Ftg.	685.73
WB Bridge, W. Appr. Ftg.	686.13
WB Bridge, E. Appr. Ftg.	685.51



BAR b71(E)



BAR a70(E)



BAR x70(E)

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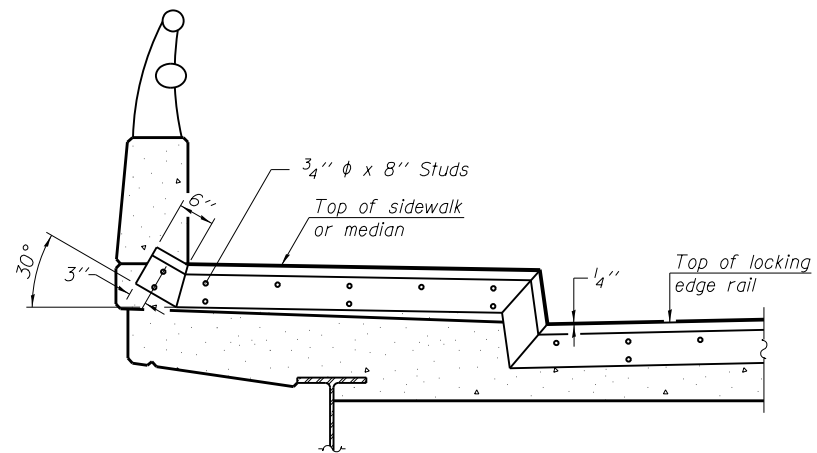
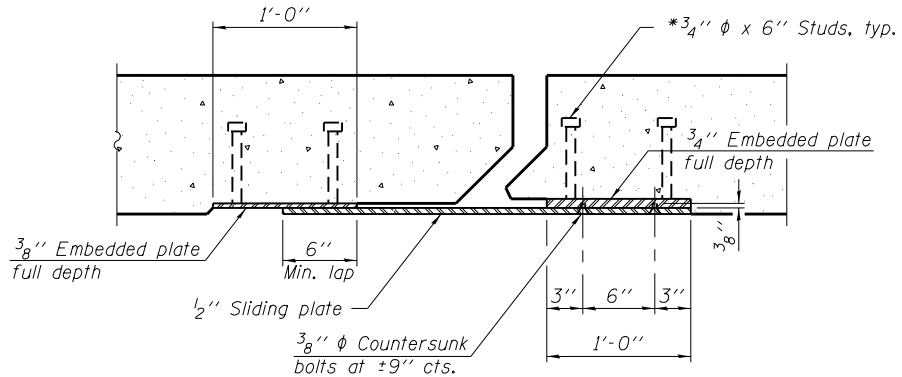
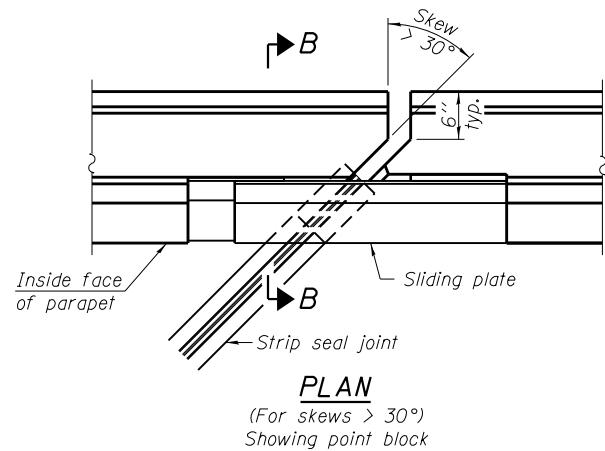
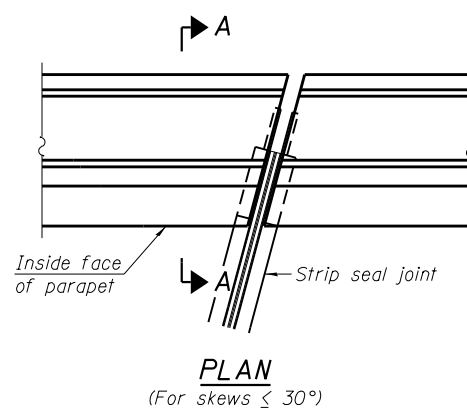
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**APPROACH SLAB DETAILS 2
STRUCTURE NO. 016-D012**

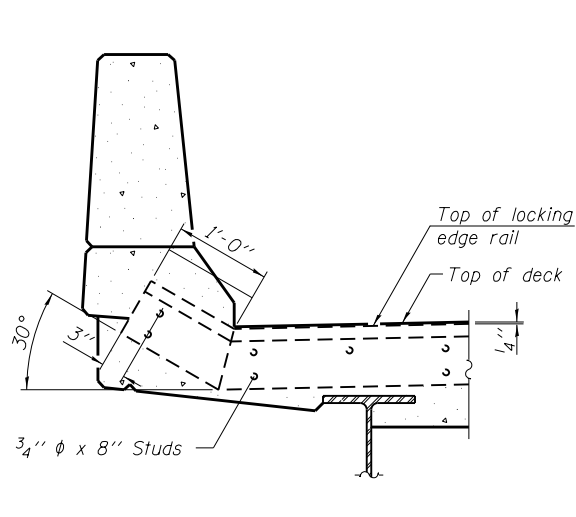
SHEET NO. 20 OF 43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

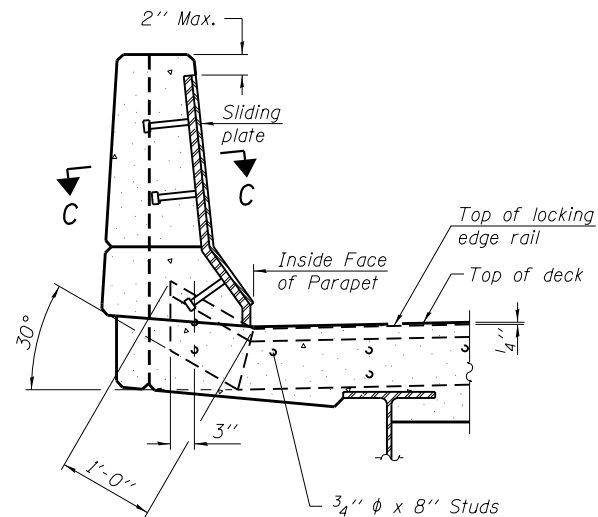


TYPICAL END TREATMENT AT SIDEWALK OR MEDIAN

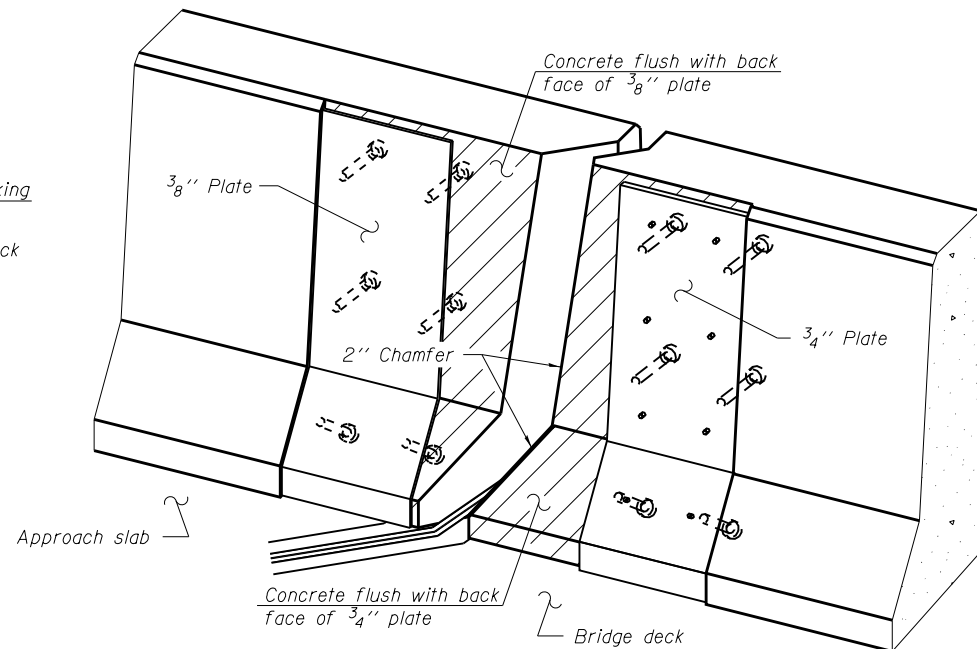
Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.



SECTION A-A



SECTION B-B



TRIMETRIC VIEW (Showing back plates only)

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

The Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities.

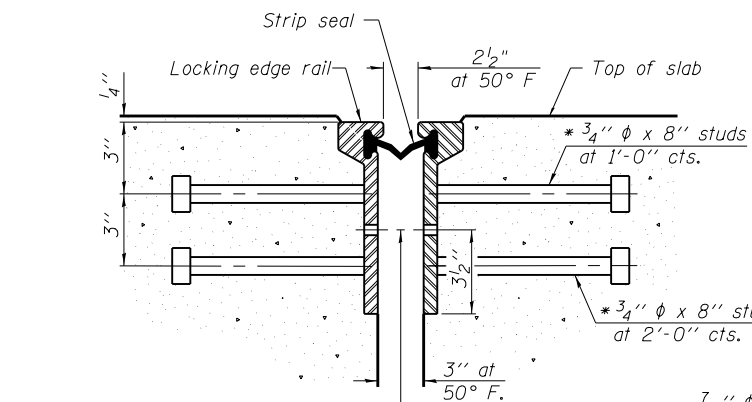
The manufacturer's recommended installation methods shall be followed.

The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.

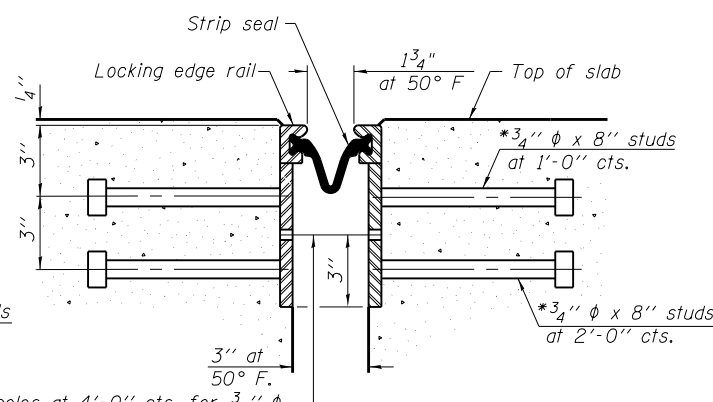
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

Maximum space between rail segments shall be 3/16", sealed with a suitable sealant. Joints in rails within 10 ft. of curbs shall be welded.

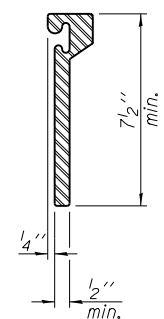
Parapet plates and anchorage studs for skews > 30° included in the cost of Preformed Joint Strip Seal.



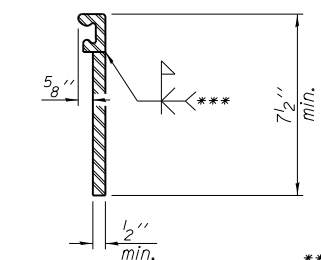
SECTION THRU ROLLED RAIL JOINT



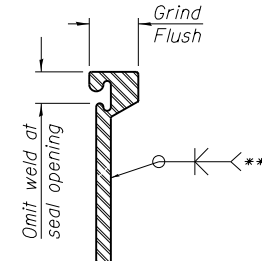
SECTION THRU WELDED RAIL JOINT



ROLLED EXTRUDED RAIL



WELDED RAIL



LOCKING EDGE RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.

Rolled rail shown, welded rail similar.

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

LOCKING EDGE RAILS

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	176

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

EJ-SSJ

1-27-12

LOCHNER
H.W. LOCHNER, INC.
225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

USER NAME =
FILE NAME = 016D012-60L72-021-EJ.dgn
PLOT SCALE =
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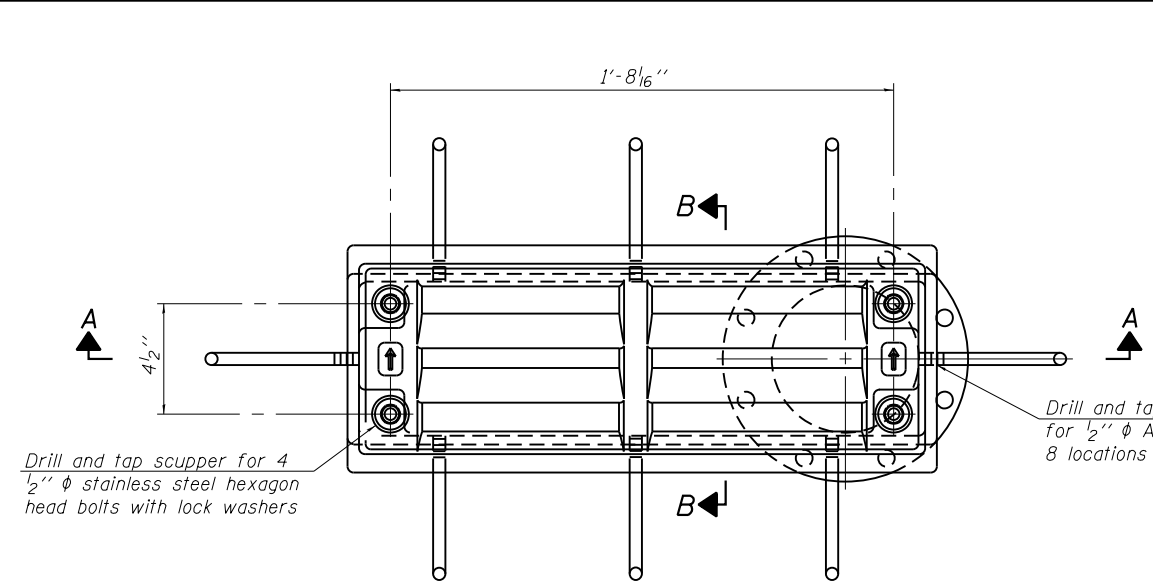
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

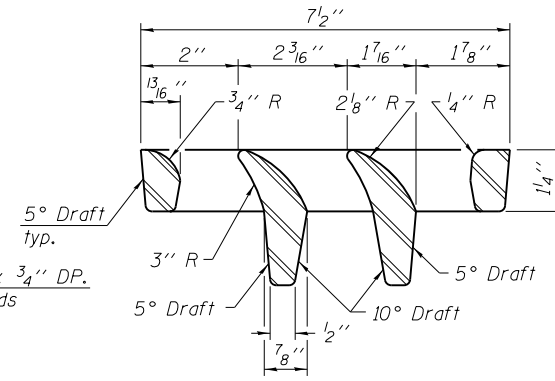
**PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 016-D012**

SHEET NO. 21 OF 43 SHEETS

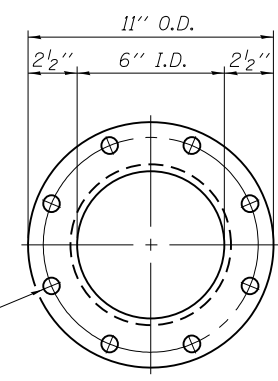
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	523
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



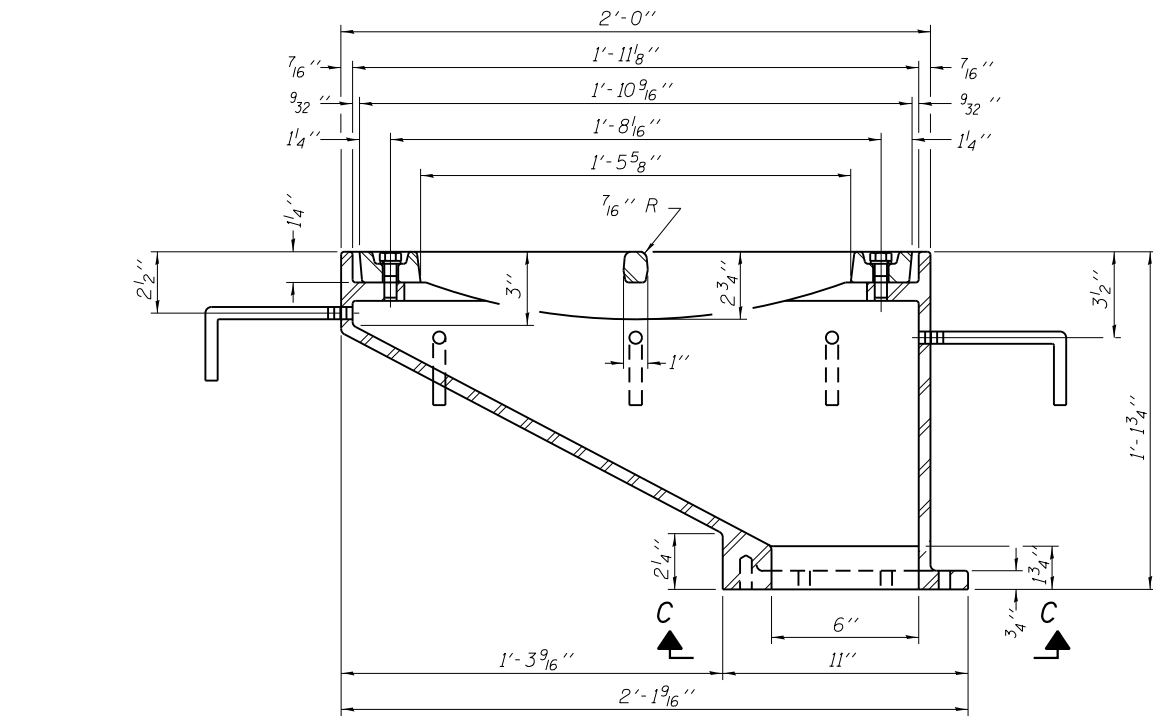
PLAN



VANE GRATE DETAIL

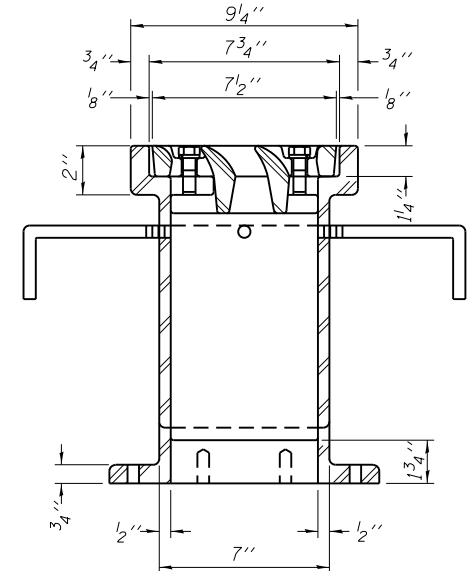


VIEW C-C

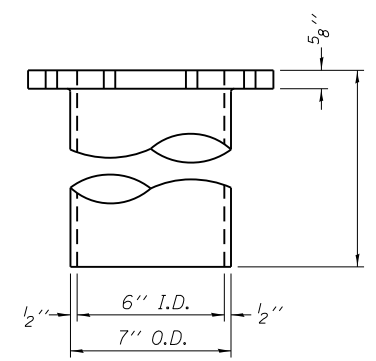


SECTION A-A

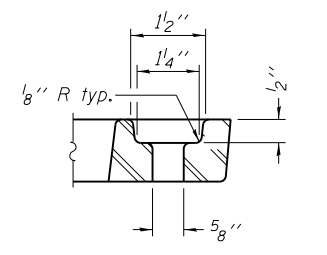
See sheets 16 and 18 of 43 for scupper location relative to curb.



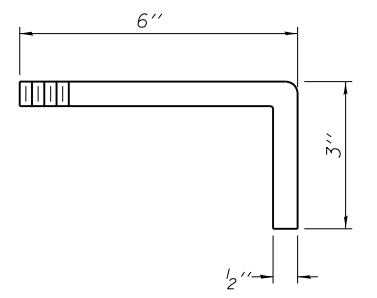
SECTION B-B



DOWNSPOUT



BOLT HOLE DETAIL



ANCHOR STUD DETAIL

Drill and tap 8 holes for 1/2"-13 bolts on a 9 1/2" φ bolt circle. (2 blind holes are 1/4" deep, 6 thru holes)

Notes:

All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 105, Class 35B.

Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.

Downspouts located on the exterior side of a painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.

As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.

Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frame. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval. Structural steel weldments shall not be substituted for the cast iron scupper grate. Structural steel frames and downspouts shall be galvanized according to AASHTO M111.

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

Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-12.

Alternate fiberglass downspout conforming to ASTM D 2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. may be used in lieu of the cast iron or steel equivalent.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scuppers, DS-12	Each	9

T:\151006-USA\Struct\Land Bridges\Land Bridge 3 - 016-0012\0160012-60L72-022-SP.dgn

DS-12

7-1-10

LOCHNER
H.W. LOCHNER, INC.
225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

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FILE NAME = 0160012-60L72-022-SP.dgn
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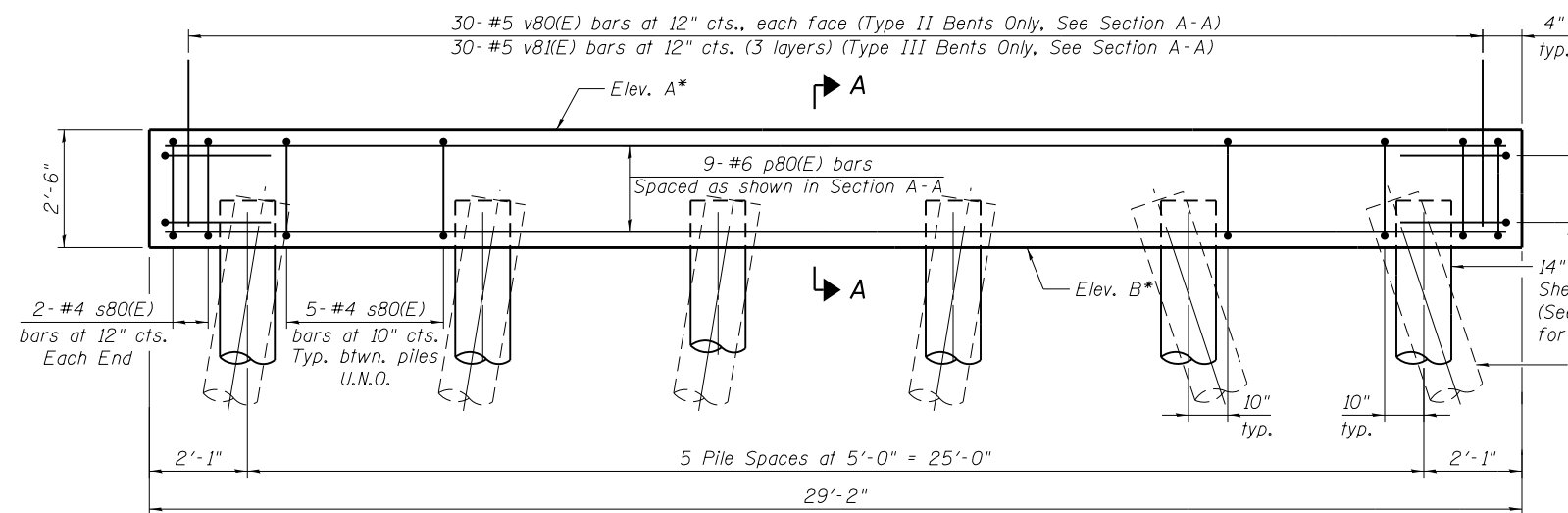
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CHECKED -
DRAWN - EF
CHECKED - RH

REVISED
REVISED
REVISED
REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRAINAGE SCUPPER DS-12
STRUCTURE NO. 016-0012
SHEET NO. 22 OF 43 SHEETS

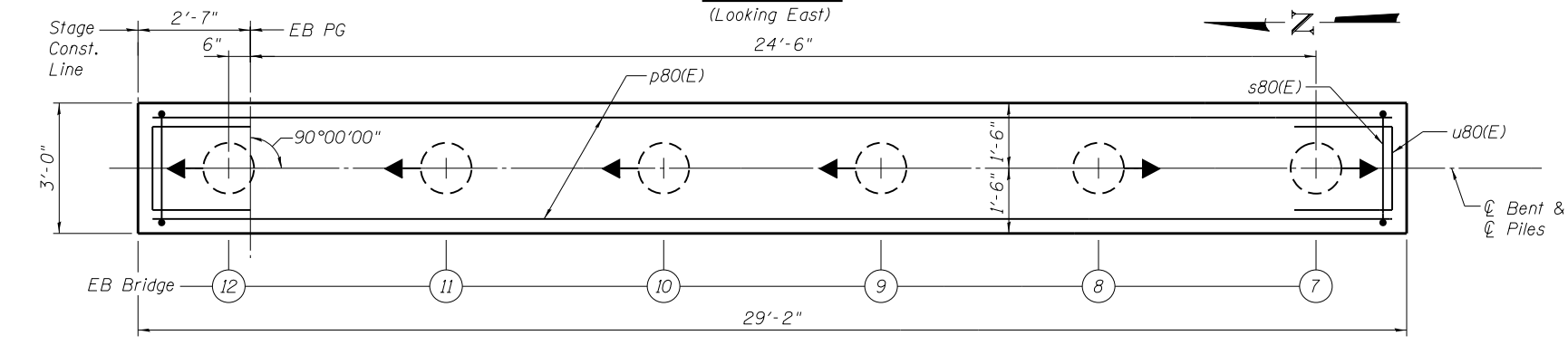
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	524
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



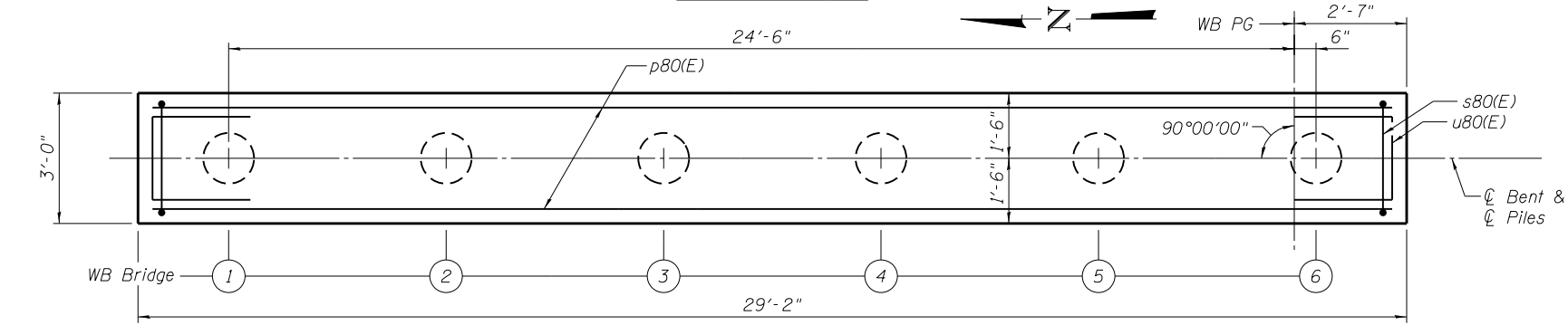
ELEVATION

(Looking East)

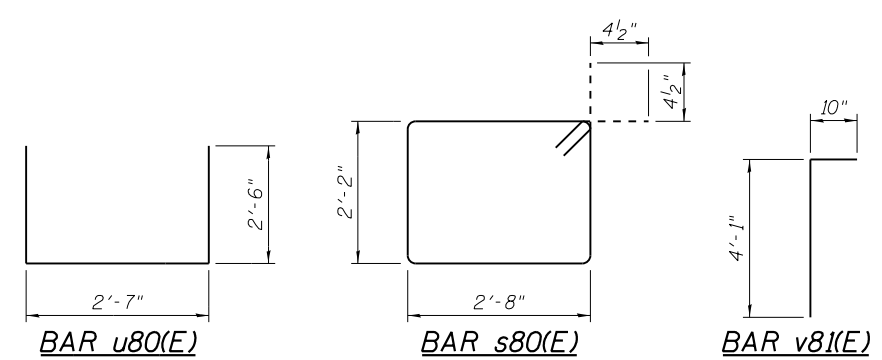
*For Elev. A & B, see Sheet 24



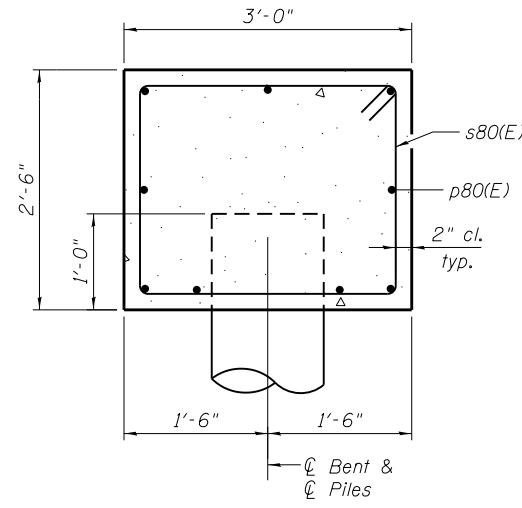
EB BENT PLAN



WB BENT PLAN



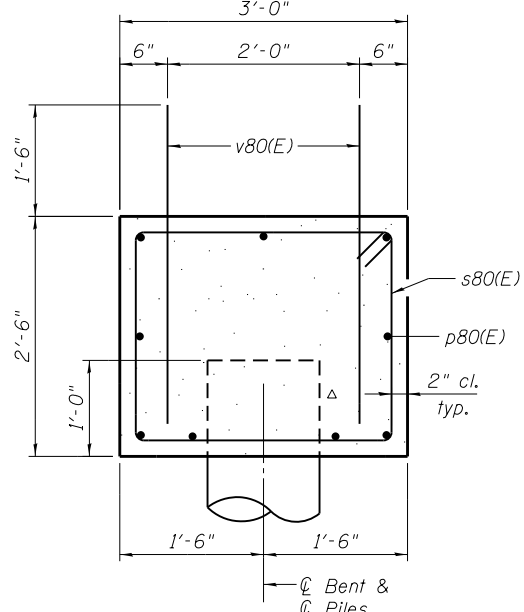
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225 WEST WASHINGTON STREET	PLOT SCALE =	DRAWN - RH	REVISED
12 TH FLOOR	PLOT DATE =	CHECKED - LJB	REVISED
CHICAGO, ILLINOIS 60606			



TYPE I BENT

SECTION A-A THRU EXPANSION BENT

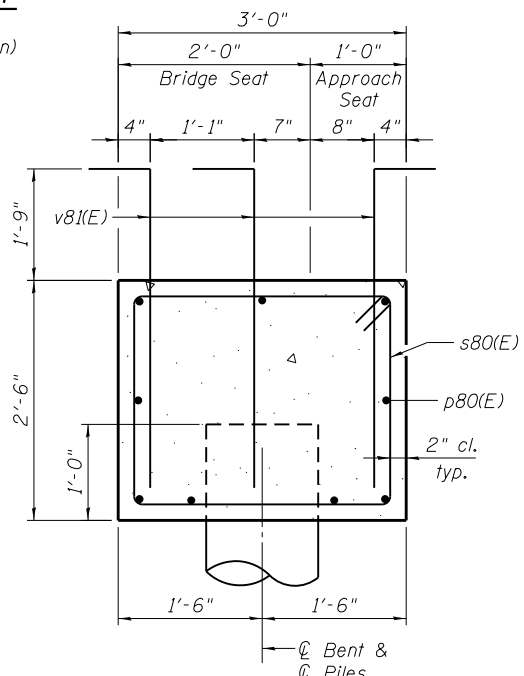
(See "WESTBOUND BENT TABLE" and "EASTBOUND BENT TABLE" on Sheet 24 for detail bent information)



TYPE II BENT

SECTION A-A THRU FIXED BENT

(See "WESTBOUND BENT TABLE" and "EASTBOUND BENT TABLE" on Sheet 24 for detail bent information)



TYPE III BENT

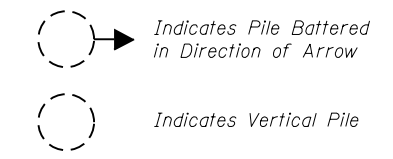
SECTION A-A THRU END BENT

(See "WESTBOUND BENT TABLE" and "EASTBOUND BENT TABLE" on Sheet 24 for detail bent information)

PILE DATA

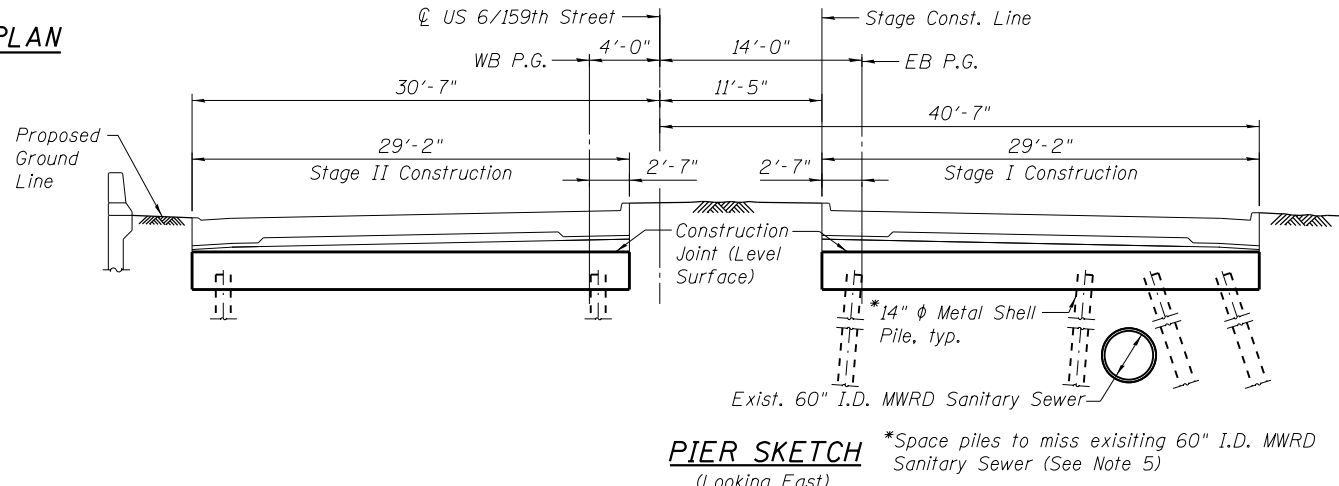
Type: Metal Shell - 14 in. dia. x 0.25 in. wall
 Nominal Required Bearing: See Table
 Factored Resistance Available: See Table
 Est. Length: See Table
 No. Production Piles: See Table
 No. Test Piles: See Table

LEGEND



NOTES

- For Metal Shell Pile Details, see Sheet 27.
- For Pile Data Table, see Sheet 24.
- Apply Concrete Sealer to top and sides of Bent Cap of WB Bents 6, 11, 16 and 21 and EB Bents 6 and 11.
- For pile bent layout, see Sheets 1 and 2.
- The Contractor shall coordinate with MWRD to verify the location of the existing 60" I.D. MWRD sanitary sewer pipe in the field and advise the Engineer of discrepancies prior to the pile installation. The Contractor must take special precautions to avoid damage to the existing MWRD facilities when driving the 14" φ metal shell piles. The Contractor may propose other means of pile installation provided they are done so at no extra cost to the Department. If the Contractor elects to vary from the design requirements shown on the plans, revised design calculations and details shall be submitted to the Engineer for approval. The calculations shall be prepared and sealed by an Illinois Licensed Structural Engineer.



PIER SKETCH

(Looking East)

*Space piles to miss existing 60" I.D. MWRD Sanitary Sewer (See Note 5)

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**TYPICAL BENT DETAILS 1
 STRUCTURE NO. 016-D012**

SHEET NO. 23 OF 43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	525
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

WESTBOUND BENT TABLE

BENT CAP TABLE				PILE DATA TABLE					
Bent	Type of Pile Bent	Elev. A	Elev. B	Nominal Required Bearing (kips)	Factored Resistance Available (kips)	Est. Pile Length (ft.)	Precore to Est. Elev.	No. Prod. Piles	No. Test Piles
1	III	686.17	683.67	290	160	51	676	5	1
2	II	685.91	683.41	290	160	51	676	6	0
3	II	685.66	683.16	290	160	51	676	6	0
4	II	685.44	682.94	290	160	51	676	6	0
5	II	685.25	682.75	303	152	46	676	5	1
6	I	685.10	682.60	303	152	46	676	6	0
7	II	684.98	682.48	303	152	46	676	6	0
8	II	684.89	682.39	273	150	50	676	6	0
9	II	684.83	682.33	330	138	50	676	5	1
10	II	684.81	682.31	330	138	50	676	6	0
11	I	684.82	682.32	353	176	55	666	6	0
12	II	684.86	682.36	353	176	55	666	6	0
13	II	684.93	682.43	353	176	55	666	5	1
14	II	685.03	682.53	381	184	45	676	6	0
15	II	685.17	682.67	381	184	45	676	6	0
16	I	685.32	682.82	285	140	43	676	6	0
17	II	685.47	682.97	285	140	43	676	5	1
18	II	685.61	683.11	349	184	41	676	6	0
19	II	685.76	683.26	349	184	41	676	6	0
20	II	685.88	683.38	349	184	41	676	6	0
21	I	685.97	683.47	353	158	51	676	5	1
22	II	686.03	683.53	353	158	51	676	6	0
23	II	686.05	683.55	258	142	41	676	6	0
24	II	686.04	683.54	258	142	41	676	6	0
25	II	686.00	683.50	264	142	34	676	5	1
26	III	685.93	683.43	264	142	34	676	6	0

EASTBOUND BENT TABLE

BENT CAP TABLE				PILE DATA TABLE						PILE BATTER INFORMATION					
Bent	Type of Pile Bent	Elev. A	Elev. B	Nominal Required Bearing (kips)	Factored Resistance Available (kips)	Est. Pile Length (ft.)	Precore to Est. Elev.	No. Prod. Piles	No. Test Piles	Pile No. 7	Pile No. 8	Pile No. 9	Pile No. 10	Pile No. 11	Pile No. 12
1	III	684.81	682.31	330	138	53	676	5	1	-4:12	-4:12	2:12	2:12	2:12	2:12
2	II	684.82	682.32	353	176	58	666	6	0	-4:12	-4:12	2:12	2:12	2:12	2:12
3	II	684.86	682.36	353	176	58	666	6	0	-4:12	-4:12	2:12	2:12	2:12	2:12
4	II	684.93	682.43	353	176	58	666	6	0	-4:12	-4:12	2:12	2:12	2:12	2:12
5	II	685.03	682.53	381	184	48	676	5	1	-4:12	-4:12	2:12	2:12	2:12	2:12
6	I	685.17	682.67	381	184	48	676	6	0	-4:12	-4:12	2:12	2:12	2:12	2:12
7	II	685.32	682.82	285	140	46	676	6	0	-4:12	-4:12	2:12	2:12	2:12	2:12
8	II	685.47	682.97	285	140	46	676	6	0	-4:12	-4:12	2:12	2:12	2:12	2:12
9	II	685.61	683.11	349	184	44	676	5	1	-4:12	-4:12	2:12	2:12	2:12	2:12
10	II	685.76	683.26	349	184	44	676	6	0	-4:12	-4:12	2:12	2:12	2:12	2:12
11	I	685.88	683.38	349	184	44	676	6	0	-4:12	-4:12	2:12	2:12	2:12	2:12
12	II	685.97	683.47	353	158	54	676	6	0	-4:12	-4:12	2:12	2:12	2:12	2:12
13	II	686.03	683.53	353	158	54	676	5	1	-4:12	-4:12	2:12	2:12	2:12	2:12
14	III	686.05	683.55	258	142	44	676	6	0	-4:12	-4:12	2:12	2:12	2:12	2:12

Note: A positive batter indicates piles to be battered toward the \odot US 6/159th Street.
A negative batter indicates piles to be battered away from the \odot US 6/159th Street.

NOTES

- For pile bent layout, see Sheets 1 and 2.
- If peat soils are present above the estimated elevation of precore, the contractor shall cease the precore at the elevation peat is encountered in the field during construction.
- Cost of precoring for pile installation is included with DRIVING PILES.

BILL OF MATERIAL BENT 1 WB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌┐
v80(E)	90	#5	4'-11"	└─┘
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	1110	
Structure Excavation		Cu. Yd.	26	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	255	
Driving Piles		Foot	255	
Test Pile Metal Shells		Each	1	

BILL OF MATERIAL BENT 2 WB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌┐
v80(E)	60	#5	3'-10"	—
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	880	
Structure Excavation		Cu. Yd.	27	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	306	
Driving Piles		Foot	306	

BILL OF MATERIAL BENT 3 WB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌┐
v80(E)	60	#5	3'-10"	—
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	880	
Structure Excavation		Cu. Yd.	29	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	306	
Driving Piles		Foot	306	

BILL OF MATERIAL BENT 4 WB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌┐
v80(E)	60	#5	3'-10"	—
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	880	
Structure Excavation		Cu. Yd.	29	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	306	
Driving Piles		Foot	306	

BILL OF MATERIAL BENT 5 WB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌┐
v80(E)	60	#5	3'-10"	—
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	880	
Structure Excavation		Cu. Yd.	30	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	230	
Driving Piles		Foot	230	
Test Pile Metal Shells		Each	1	

BILL OF MATERIAL BENT 6 WB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌┐
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	640	
Structure Excavation		Cu. Yd.	32	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	276	
Driving Piles		Foot	276	
Concrete Sealer		Sq. Ft.	249	

BILL OF MATERIAL BENT 7 WB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌┐
v80(E)	60	#5	3'-10"	—
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	880	
Structure Excavation		Cu. Yd.	32	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	276	
Driving Piles		Foot	276	

BILL OF MATERIAL BENT 8 WB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌┐
v80(E)	60	#5	3'-10"	—
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	880	
Structure Excavation		Cu. Yd.	33	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	300	
Driving Piles		Foot	300	

BILL OF MATERIAL BENT 9 WB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌┐
v80(E)	60	#5	3'-10"	—
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	880	
Structure Excavation		Cu. Yd.	34	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	250	
Driving Piles		Foot	250	
Test Pile Metal Shells		Each	1	

BILL OF MATERIAL BENT 10 WB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌┐
v80(E)	60	#5	3'-10"	—
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	880	
Structure Excavation		Cu. Yd.	34	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	300	
Driving Piles		Foot	300	

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LOCHNER
H.W. LOCHNER, INC.
225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

USER NAME =
FILE NAME = 0160012-60L72-024-BD.dgn
PLOT SCALE =
PLOT DATE

DESIGNED - LJB
CHECKED - RH
DRAWN - EF
CHECKED - RH

REVISED
REVISED
REVISED
REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL BENT DETAILS 2
STRUCTURE NO. 016-D012

SHEET NO. 24 OF 43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	526
CONTRACT NO. 60L72				

ILLINOIS FED. AID PROJECT

BILL OF MATERIAL BENT 11 WB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┘
Concrete Structures				
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	640	
Structure Excavation		Cu. Yd.	34	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	330	
Driving Piles		Foot	330	
Concrete Sealer		Sq. Ft.	249	

BILL OF MATERIAL BENT 12 WB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┘
v80(E)	60	#5	3'-10"	—
Concrete Structures				
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	880	
Structure Excavation		Cu. Yd.	34	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	330	
Driving Piles		Foot	330	

BILL OF MATERIAL BENT 13 WB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┘
v80(E)	60	#5	3'-10"	—
Concrete Structures				
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	880	
Structure Excavation		Cu. Yd.	33	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	275	
Driving Piles		Foot	275	
Test Pile Metal Shells		Each	1	

BILL OF MATERIAL BENT 14 WB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┘
v80(E)	60	#5	3'-10"	—
Concrete Structures				
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	880	
Structure Excavation		Cu. Yd.	32	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	270	
Driving Piles		Foot	270	

BILL OF MATERIAL BENT 15 WB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┘
v80(E)	60	#5	3'-10"	—
Concrete Structures				
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	880	
Structure Excavation		Cu. Yd.	31	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	270	
Driving Piles		Foot	270	

BILL OF MATERIAL BENT 16 WB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┘
Concrete Structures				
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	640	
Structure Excavation		Cu. Yd.	30	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	258	
Driving Piles		Foot	258	
Concrete Sealer		Sq. Ft.	249	

BILL OF MATERIAL BENT 17 WB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┘
v80(E)	60	#5	3'-10"	—
Concrete Structures				
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	880	
Structure Excavation		Cu. Yd.	29	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	215	
Driving Piles		Foot	215	
Test Pile Metal Shells		Each	1	

BILL OF MATERIAL BENT 18 WB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┘
v80(E)	60	#5	3'-10"	—
Concrete Structures				
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	880	
Structure Excavation		Cu. Yd.	28	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	246	
Driving Piles		Foot	246	

BILL OF MATERIAL BENT 19 WB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┘
v80(E)	60	#5	3'-10"	—
Concrete Structures				
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	880	
Structure Excavation		Cu. Yd.	27	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	246	
Driving Piles		Foot	246	

BILL OF MATERIAL BENT 20 WB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┘
v80(E)	60	#5	3'-10"	—
Concrete Structures				
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	880	
Structure Excavation		Cu. Yd.	26	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	246	
Driving Piles		Foot	246	

BILL OF MATERIAL BENT 21 WB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┘
Concrete Structures				
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	640	
Structure Excavation		Cu. Yd.	26	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	255	
Driving Piles		Foot	255	
Test Pile Metal Shells		Each	1	
Concrete Sealer		Sq. Ft.	249	

BILL OF MATERIAL BENT 22 WB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┘
v80(E)	60	#5	3'-10"	—
Concrete Structures				
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	880	
Structure Excavation		Cu. Yd.	26	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	306	
Driving Piles		Foot	306	

BILL OF MATERIAL BENT 23 WB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┘
v80(E)	60	#5	3'-10"	—
Concrete Structures				
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	880	
Structure Excavation		Cu. Yd.	26	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	246	
Driving Piles		Foot	246	

BILL OF MATERIAL BENT 24 WB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┘
v80(E)	60	#5	3'-10"	—
Concrete Structures				
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	880	
Structure Excavation		Cu. Yd.	26	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	246	
Driving Piles		Foot	246	

BILL OF MATERIAL BENT 25 WB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┘
v80(E)	60	#5	3'-10"	—
Concrete Structures				
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	880	
Structure Excavation		Cu. Yd.	26	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	170	
Driving Piles		Foot	170	
Test Pile Metal Shells		Each	1	

BILL OF MATERIAL BENT 26 WB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┘
v80(E)	90	#5	4'-11"	┘
Concrete Structures				
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	1110	
Structure Excavation		Cu. Yd.	27	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	204	
Driving Piles		Foot	204	

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BILL OF MATERIAL BENT 1 EB

Table with columns: Bar, No., Size, Length, Shape. Includes rows for reinforcement bars (p80, s80, u80, v80) and material quantities for concrete, reinforcement, excavation, and piles.

BILL OF MATERIAL BENT 2 EB

Table with columns: Bar, No., Size, Length, Shape. Includes rows for reinforcement bars and material quantities for bent 2.

BILL OF MATERIAL BENT 3 EB

Table with columns: Bar, No., Size, Length, Shape. Includes rows for reinforcement bars and material quantities for bent 3.

BILL OF MATERIAL BENT 4 EB

Table with columns: Bar, No., Size, Length, Shape. Includes rows for reinforcement bars and material quantities for bent 4.

BILL OF MATERIAL BENT 5 EB

Table with columns: Bar, No., Size, Length, Shape. Includes rows for reinforcement bars and material quantities for bent 5.

BILL OF MATERIAL BENT 6 EB

Table with columns: Bar, No., Size, Length, Shape. Includes rows for reinforcement bars and material quantities for bent 6.

BILL OF MATERIAL BENT 7 EB

Table with columns: Bar, No., Size, Length, Shape. Includes rows for reinforcement bars and material quantities for bent 7.

BILL OF MATERIAL BENT 8 EB

Table with columns: Bar, No., Size, Length, Shape. Includes rows for reinforcement bars and material quantities for bent 8.

BILL OF MATERIAL BENT 9 EB

Table with columns: Bar, No., Size, Length, Shape. Includes rows for reinforcement bars and material quantities for bent 9.

BILL OF MATERIAL BENT 10 EB

Table with columns: Bar, No., Size, Length, Shape. Includes rows for reinforcement bars and material quantities for bent 10.

BILL OF MATERIAL BENT 11 EB

Table with columns: Bar, No., Size, Length, Shape. Includes rows for reinforcement bars and material quantities for bent 11.

BILL OF MATERIAL BENT 12 EB

Table with columns: Bar, No., Size, Length, Shape. Includes rows for reinforcement bars and material quantities for bent 12.

BILL OF MATERIAL BENT 13 EB

Table with columns: Bar, No., Size, Length, Shape. Includes rows for reinforcement bars and material quantities for bent 13.

BILL OF MATERIAL BENT 14 EB

Table with columns: Bar, No., Size, Length, Shape. Includes rows for reinforcement bars and material quantities for bent 14.

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

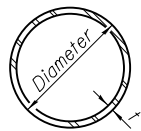
TYPICAL BENT DETAILS 4 STRUCTURE NO. 016-D012

SHEET NO. 26 OF 43 SHEETS

Table with columns: F.A.P. RTE., SECTION, COUNTY, COOK, TOTAL SHEETS, SHEET NO. Includes project details like 351, 2010-081-R, COOK, 1045, 528.

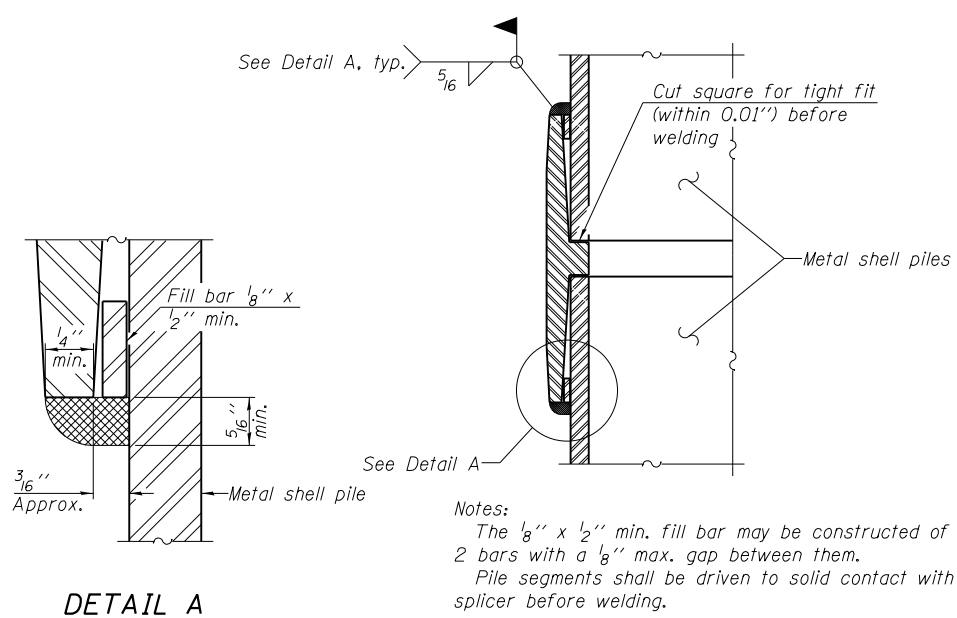
ILLINOIS FED. AID PROJECT

Table with columns: USER NAME, FILE NAME, PLOT SCALE, PLOT DATE, DESIGNED, CHECKED, DRAWN, CHECKED, REVISED, REVISED, REVISED, REVISED.



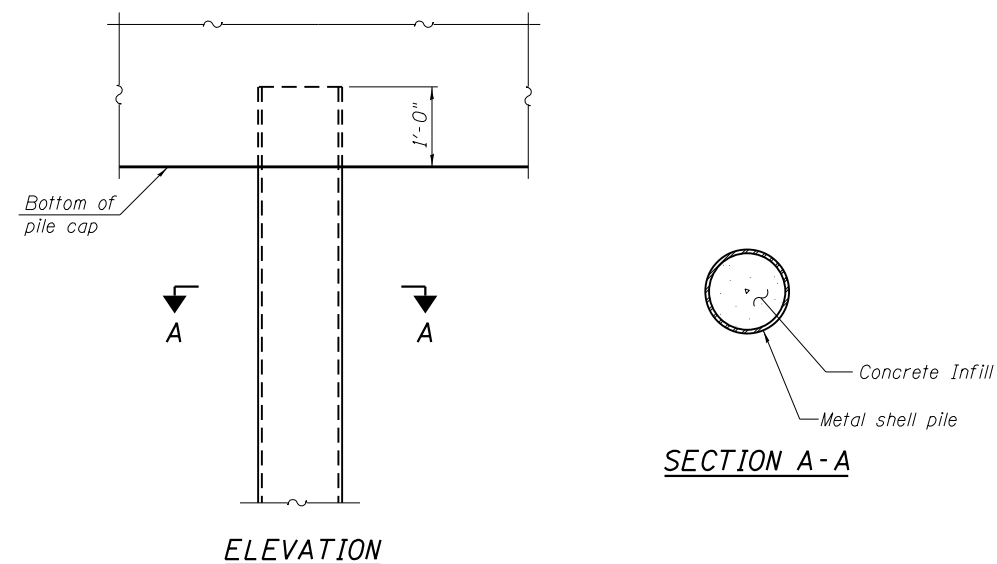
METAL SHELL PILE TABLE

Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd. ³ /ft.)
PP12	0.179"	22.60	0.0274
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361



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.

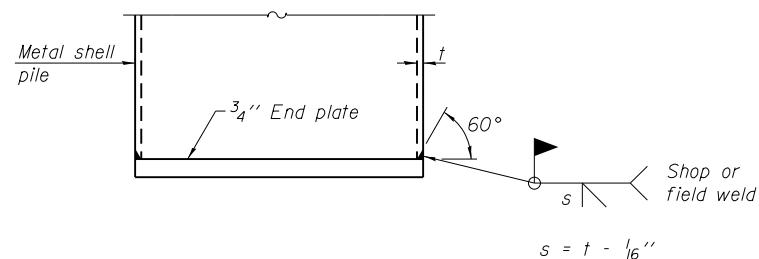
WELDED COMMERCIAL SPLICE



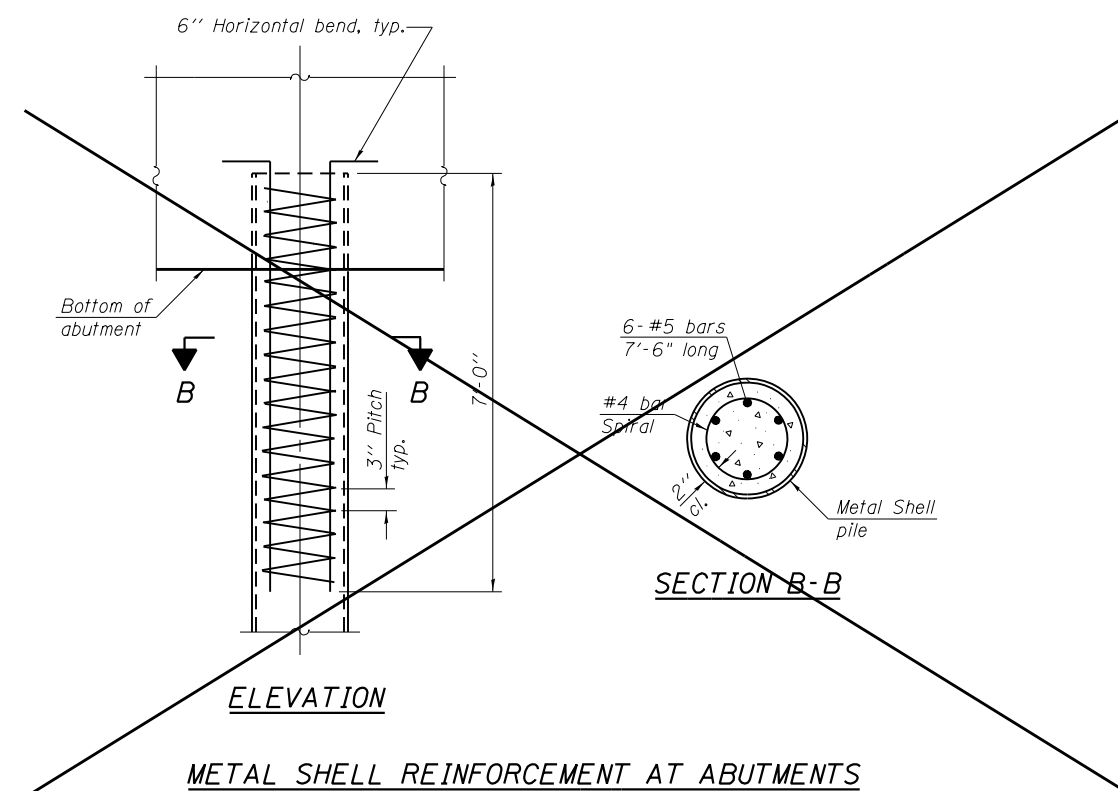
ELEVATION

SECTION A-A

METAL SHELL PILE DETAILS AT PIERS



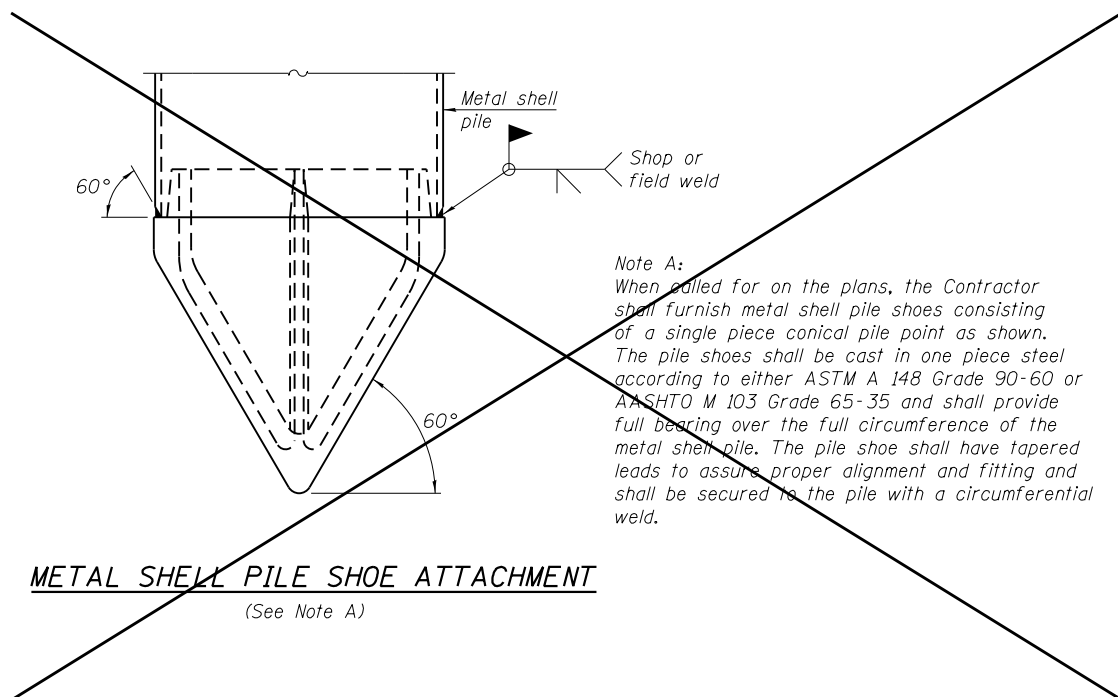
END PLATE ATTACHMENT



ELEVATION

SECTION B-B

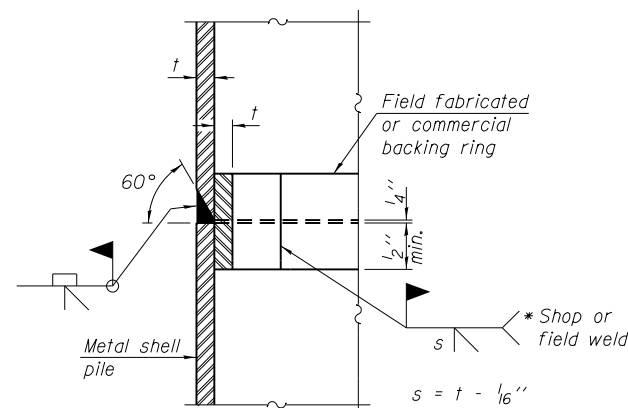
METAL SHELL REINFORCEMENT AT ABUTMENTS



METAL SHELL PILE SHOE ATTACHMENT

(See Note A)

Note A:
 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 90-60 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.

Note:
 The metal shell piles shall be according to ASTM A 252 Grade 3.

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LOCHNER
 H.W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

USER NAME =
 FILE NAME = 0160012-60L72-027-PD.dgn
 PLOT SCALE =
 PLOT DATE =

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 CHECKED -
 DRAWN -
 CHECKED -

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 REVISED
 REVISED

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**METAL SHELL PILES
 STRUCTURE NO. 016-0012**

SHEET NO. 27 OF 43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	529
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



SOIL BORING LOG

GSJ Job No. 10195

Page 1 of 1

Date 4/23/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR

SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM

COUNTY Cook DRILLING METHOD HAND AUGER HAMMER TYPE

STRUCT. NO.	D	B	U	M	Surface Water Elev.
Station	E	L	C	O	Stream Bed Elev.
BORING NO.	P	O	S	I	Groundwater Elev.:
Station	T	W	Qu	S	First Encounter
Offset	H	S		T	Upon Completion
Ground Surface Elev.			(tsf)	(%)	After Hrs.
016-D012					n/a ft
HA-46					n/a ft
395+87					678.3 ft ▼
31.60ft Left					n/a ft
684.30 ft					n/a ft
SAND, GRAVEL & ASPHALT-black				5	
681.80				13	
SANDY LOAM with GRAVEL-brown				14	
678.30				14	
CLAY LOAM-gray-very stiff			3.8 P	14	
675.80			3.8 P	20	
CLAY-gray-very stiff					
674.30					
End Of Boring @ -10.0'. Boring backfilled with cuttings.					

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)



SOIL BORING LOG

GSJ Job No. 10195

Page 1 of 1

Date 4/27/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR

SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM

COUNTY Cook DRILLING METHOD HAND AUGER HAMMER TYPE

STRUCT. NO.	D	B	U	M	Surface Water Elev.
Station	E	L	C	O	Stream Bed Elev.
BORING NO.	P	O	S	I	Groundwater Elev.:
Station	T	W	Qu	S	First Encounter
Offset	H	S		T	Upon Completion
Ground Surface Elev.			(tsf)	(%)	After Hrs.
016-D012					n/a ft
HA-47					n/a ft
396+41					675.9 ft ▼
32.00ft Left					n/a ft
682.40 ft					n/a ft
SAND, GRAVEL & ASPHALT-black				14	
680.40				16	
SILTY CLAY LOAM-brown & gray				25	
676.90				25	
CLAY-gray-very stiff			2.5 P	25	
673.90			2.0 P	14	
CLAY LOAM-gray-very stiff					
672.40					
End Of Boring @ -10.0'. Boring backfilled with cuttings.					

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)



SOIL BORING LOG

GSJ Job No. 10195

Page 1 of 1

Date 4/18/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR

SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM

COUNTY Cook DRILLING METHOD HAND AUGER HAMMER TYPE

STRUCT. NO.	D	B	U	M	Surface Water Elev.
Station	E	L	C	O	Stream Bed Elev.
BORING NO.	P	O	S	I	Groundwater Elev.:
Station	T	W	Qu	S	First Encounter
Offset	H	S		T	Upon Completion
Ground Surface Elev.			(tsf)	(%)	After Hrs.
016-D012					n/a ft
HA-48					n/a ft
396+99					Dry ft
33.70ft Left					n/a ft
681.80 ft					n/a ft
TOPSOIL-black (Fill)				22	
681.30				32	
SILTY CLAY-dark brown-stiff (Fill)				366	
676.80				340	
PEAT-dark brown & black				41	
673.80					
ORGANIC SANDY LOAM-dark gray					
671.80					
End Of Boring @ -10.0'. Boring backfilled with cuttings.					

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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LOCHNER
 H. W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

USER NAME =
 FILE NAME = 016D012-60L72-028-SB.dgn
 PLOT SCALE =
 PLOT DATE =

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 DRAWN - EF
 CHECKED - RH

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 REVISED
 REVISED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

SOIL BORINGS 1
 STRUCTURE NO. 016-D012

SHEET NO. 28 OF 43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	530
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



GSI Job No. 10195

SOIL BORING LOG

Page 1 of 1

Date 4/18/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR
SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HAND AUGER HAMMER TYPE

STRUCT. NO.	BORING NO.	Station	Offset	Ground Surface Elev.	D E P T H (ft)	B L O W S (/6")	U C S Qu (tsf)	M O I S T (%)	Surface Water Elev.		Groundwater Elev.:			
									n/a	ft	n/a	ft	First Encounter	Upon Completion
016-D012	HA-49	397+49	31.80ft Left	684.60						n/a	ft	Dry	n/a	ft
CRUSHED ASPHALT & STONE														
				682.60				5						
SILTY CLAY-brown & gray-stiff (Apparently Fill)														
							1.5	26						
				679.60			1.0	26						
SILTY CLAY-dark brown & gray-medium stiff to stiff														
								29						
							0.8	32						
				674.60										
End Of Boring @ -10.0'. Boring backfilled with cuttings.														

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)



GSI Job No. 10195

SOIL BORING LOG

Page 1 of 1

Date 4/18/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR
SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HAND AUGER HAMMER TYPE

STRUCT. NO.	BORING NO.	Station	Offset	Ground Surface Elev.	D E P T H (ft)	B L O W S (/6")	U C S Qu (tsf)	M O I S T (%)	Surface Water Elev.		Groundwater Elev.:			
									n/a	ft	n/a	ft	First Encounter	Upon Completion
016-D012	HA-50	398+23	32.90ft Left	682.50						n/a	ft	Dry	n/a	ft
CRUSHED ASPHALT & STONE														
				680.00			1.0	29						
SILTY CLAY-brown & gray-stiff (Fill)														
				678.00			.5	162						
PEAT-black														
								400						
								508						
				672.50										
End Of Boring @ -10.0'. Boring backfilled with cuttings.														

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)



GSI Job No. 10195

SOIL BORING LOG

Page 1 of 1

Date 4/18/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR
SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HAND AUGER HAMMER TYPE

STRUCT. NO.	BORING NO.	Station	Offset	Ground Surface Elev.	D E P T H (ft)	B L O W S (/6")	U C S Qu (tsf)	M O I S T (%)	Surface Water Elev.		Groundwater Elev.:			
									n/a	ft	n/a	ft	First Encounter	Upon Completion
016-D012	HA-51	399+22	33.60ft Left	682.60						n/a	ft	Dry	n/a	ft
SILTY SAND & GRAVEL-dark brown & gray														
								12						
				679.10			1.0	27						
CLAY LOAM-brown-stiff (Fill)														
				678.10			0.8	21						
SILTY CLAY-dark brown & gray-medium stiff														
							0.5	29						
								26						
				672.60										
End Of Boring @ -10.0'. Boring backfilled with cuttings.														

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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GSI Job No. 10195

SOIL BORING LOG

Page 1 of 2

Date 2/27/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.	BORING NO.	Station	Offset	Ground Surface Elev.	DEPTH (ft)	SOIL TYPE	UCS (tsf)	Failure Mode	SPT (blows)	DEPTH (ft)	SOIL TYPE	UCS (tsf)	Failure Mode	SPT (blows)
016-D012	SB-29	398+28	21.50ft Left	688.30		ASPHALT								
				685.60		CLAY to CLAY LOAM-brown, gray & black-medium stiff to stiff (Fill)					CLAY-gray-soft to stiff			
					4					4		0.4	B	25
					4		1.4	B	21					
					4									
					2					3				
					2		1.0	B	28	5		1.1	B	23
					3					-25				
					2					4		1.5	B	22
					2		1.3	P	32	4				
					4					5				
					1					3				
					1		0.9	B	25	4		1.2	B	22
					2					-30				
					2		0.5	P	28					
					2									
					1					3				
					2		0.5	P	30	9		1.1	B	25
					2					-35	13		B	
					15									
					1		0.8	B	21					
					1									
					2									
					2		0.8	P	24	5				
					2					4				15
					5					-40	5			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T205)
 BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

SOIL BORING LOG

Page 2 of 2

Date 2/27/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.	BORING NO.	Station	Offset	Ground Surface Elev.	DEPTH (ft)	SOIL TYPE	UCS (tsf)	Failure Mode	SPT (blows)	DEPTH (ft)	SOIL TYPE	UCS (tsf)	Failure Mode	SPT (blows)
016-D012	SB-29	398+28	21.50ft Left	688.30		SILTY LOAM to LOAM-gray-loose (continued)								
				644.30		CLAY-gray-stiff								
					8					9				
					12		1.1	B	21	9				14
					7					-65				
					639.30		CLAY LOAM-gray-hard							
					8					9				
					6		4.5	P	11	10				19
					11					-70				
					634.30		SAND & GRAVEL-gray-medium dense							
					7					8				
					13					7				20
					7					-75				
					611.30		SAND & GRAVEL-gray-medium dense			9				
					7									
					8					20				
					9					-80				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T205)
 BBS, from 137 (Rev. 8-99)

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LOCHNER
 H.W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED -	REVISED
FILE NAME = 016D012-60L72-037-SB.dgn	CHECKED -	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**SOIL BORINGS 10
 STRUCTURE NO. 016-D012**

SHEET NO. 37 OF 43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	539
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



GSI Job No. 10195

SOIL BORING LOG

Page 1 of 2

Date 2/27/12

ROUTE IL Route 7/J.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.	Station	DEPTH	B	L	UCS	M	Surface Water Elev.	Stream Bed Elev.	DEPTH	B	UCS	M
016-D012		(ft)	(in)	(in)	(tsf)	(%)	n/a	n/a	(ft)	(in)	(tsf)	(%)
BORING NO. SB-31												
Station 399+21												
Offset 21.20ft Left												
Ground Surface Elev. 686.50 ft												
ASPHALT												
CLAY to CLAY LOAM-dark brown & gray-medium stiff to stiff (Fill)												
CLAY-brown & gray-medium stiff to very stiff												
becoming gray @ -15.5'												

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
 BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

SOIL BORING LOG

Page 2 of 2

Date 2/27/12

ROUTE IL Route 7/J.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.	Station	DEPTH	B	L	UCS	M	Surface Water Elev.	Stream Bed Elev.	DEPTH	B	UCS	M
016-D012		(ft)	(in)	(in)	(tsf)	(%)	n/a	n/a	(ft)	(in)	(tsf)	(%)
BORING NO. SB-31												
Station 399+21												
Offset 21.20ft Left												
Ground Surface Elev. 686.50 ft												
CLAY-brown & gray-medium stiff to very stiff (continued)												
CLAY LOAM-gray-hard												
SAND-gray-medium dense												
SAND with GRAVEL-gray-medium dense												
SAND-gray-medium dense												
End Of Boring @ -75.0'. Boring backfilled with cuttings.												

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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LOCHNER
 H.W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED -	REVISED
FILE NAME = 016D012-60L72-039-SB.dgn	CHECKED -	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

SOIL BORINGS 12
 STRUCTURE NO. 016-D012

SHEET NO. 39 OF 43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	541
CONTRACT NO. 60L72				

ILLINOIS FED. AID PROJECT



GSI Job No. 10195

SOIL BORING LOG

Page 1 of 2

Date 3/14/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY KD
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.	DEPT	BLOW	UCS	MOIST	Surface Water Elev.	DEPT	BLOW	UCS	MOIST	
Station	H	S	Qu	T	n/a ft	H	S	Qu	T	
016-D012					n/a ft					
SB-32					n/a ft					
399+92					n/a ft					
11.20ft Right					n/a ft					
687.20		(ft)	(/6")	(tsf)	(%)		(ft)	(/6")	(tsf)	(%)
SAND, GRAVEL & STONE-black		686.20								
CLAY LOAM-dark brown & black-very loose to loose (Fill)			3					3		
			4	2.0	23			4	1.5	20
			4	P				6	B	
			1					3		
			1					4	1.2	19
			1					5	B	
			5					-25		
SAND, GRAVEL & STONE-very loose (Fill)		681.70								
			2					3		
			2					4	1.1	14
			2					6	B	
			1					6		
			2	1.5	21			8	3.8	16
			2	B				11	B	
								-30		
			1							
			1	1.0	30					
			2	P						
PEAT-dark brown to black-very loose		674.20						4		
			1					4	1.2	17
			1					4	B	
			1					6	B	
			15					-35		
			1							
			1	0.5	22					
			4	B						
			3					5		
			3	1.2	22			7	2.2	13
			5	B				12	B	
								-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, from 137 (Rev. 8-99)



GSI Job No. 10195

SOIL BORING LOG

Page 2 of 2

Date 3/14/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY KD
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.	DEPT	BLOW	UCS	MOIST	Surface Water Elev.	DEPT	BLOW	UCS	MOIST	
Station	H	S	Qu	T	n/a ft	H	S	Qu	T	
016-D012					n/a ft					
SB-32					n/a ft					
399+92					n/a ft					
11.20ft Right					n/a ft					
687.20		(ft)	(/6")	(tsf)	(%)		(ft)	(/6")	(tsf)	(%)
CLAY LOAM-gray-stiff to very stiff (continued)		645.20								
			7					8		
			7					8		
			7					11		23
			45					-65		
			8					8		
			6					9		19
			7					9		
			50					-70		
			7					10		
			7					10		20
			6					10		
			65					-78		
			6							
			7					15		
			6					6		
			60					-80		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
 BBS, from 137 (Rev. 8-99)

T:\51006-USA\Struct\Bridges\Land Bridge 3 - 016-D012-60L72-040-SB.dgn

LOCHNER
 H.W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED -	REVISED
FILE NAME = 016D012-60L72-040-SB.dgn	CHECKED -	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORINGS 13
STRUCTURE NO. 016-D012
 SHEET NO. 40 OF 43 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	542
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



Geo Services, Inc.
 Geotechnical, Environmental & Civil Engineering
 805 Amherst Court, Suite 204
 Naperville, Illinois 60563
 (630) 565-2966

GSI Job No. 10195

SOIL BORING LOG

Page 1 of 2

Date 2/27/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY JZ
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.	BORING NO.	Station	Offset	Ground Surface Elev.	DEPTH (ft)	BULGE (in)	UCS (tsf)	MOISTURE (%)	DESCRIPTION	DEPTH (ft)	BULGE (in)	UCS (tsf)	MOISTURE (%)
016-D012	SB-33	400+32	20.00ft Left	686.60					8" ASPHALT, 4.0" SILTY SAND-black				
				685.60	3				CLAY to CLAY LOAM-dark brown, gray & black-soft to very stiff (Fill)	664.60	5	1.5	16
					4	3.2	20				7	7	
					7	B			SANDY CLAY LOAM-gray-medium dense		8		
					8						9		17
					9	1.5	24				8		
					10	P					11	1.9	18
					11						13	B	
					12						5		
					13	0.7	29				7	4.0	14
					14	B					9	B	
					15						10		
					16	0.3	35				8		
					17	P					8	2.3	16
					18						8	P	
					19						8		
					20						8		
					21	1.8	21				10		
					22	P					11	2.4	14
					23						12	B	
					24						10		
					25						8		
					26						8		
					27						11		
					28						11		
					29						10		
					30						8		
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					143						8		
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GSI Job No. 10195

SOIL BORING LOG

Page 1 of 2

Date 3/14/12

ROUTE IL Route 7/J.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY TZ
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.	DEPTH	BULGE	UCS	MOISTURE	Surface Water Elev.	DEPTH	BULGE	UCS	MOISTURE
Station	(ft)	(%)	(tsf)	(%)	n/a ft	(ft)	(%)	(tsf)	(%)
016-D012					n/a ft				
SB-34					n/a ft				
400+82					681.0 ft				
12.00ft Right					Upon Completion				
687.00 ft					After				
CRUSHED STONE	686.00			4	666.50				
CLAY LOAM-dark brown & black-very stiff (Fill)	3								
	4	3.5		20					
	6	P							
684.00									
PEAT-black-loose	1								
	2			201					
	4								
681.00									
CLAY-brown & gray-stiff to very stiff	2								
	4	1.1		22					
becoming gray @ -8.0'	2								
	4	2.0		21					
	6	B							
	10								
	3								
	5	3.0		22					
	7	P			655.00				
	3								
	4	1.4		23					
	5	B							
	15								
	3								
	5	1.8		16					
	7	B							
669.00									
SANDY LOAM-gray-medium dense	4								
	5			15					
	5								
	6								
	8								

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
 BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

SOIL BORING LOG

Page 2 of 2

Date 3/14/12

ROUTE IL Route 7/J.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY TZ
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.	DEPTH	BULGE	UCS	MOISTURE	Surface Water Elev.	DEPTH	BULGE	UCS	MOISTURE
Station	(ft)	(%)	(tsf)	(%)	n/a ft	(ft)	(%)	(tsf)	(%)
016-D012					n/a ft				
SB-34					n/a ft				
400+82					681.0 ft				
12.00ft Right					Upon Completion				
687.00 ft					After				
SAND-gray-medium dense (continued)									
	5								
	6			20					
	7								
	7								
	6								
	6			20					
	7								
	7								
	9			20					
	9								
	11								
	8								
	8			22					
	8								
	11								
	8								
	8			23					
	10								
	11								
	7								
	9			22					
	9								
	12								

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)

T:\51006-USA\Struct\Bridges\Land Bridges\3 - 016-0012\016D012-60L72-042-SB.dgn

LOCHNER
 H.W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED -	REVISED
FILE NAME = 016D012-60L72-042-SB.dgn	CHECKED -	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**SOIL BORINGS 15
 STRUCTURE NO. 016-D012**

SHEET NO. 42 OF 43 SHEETS

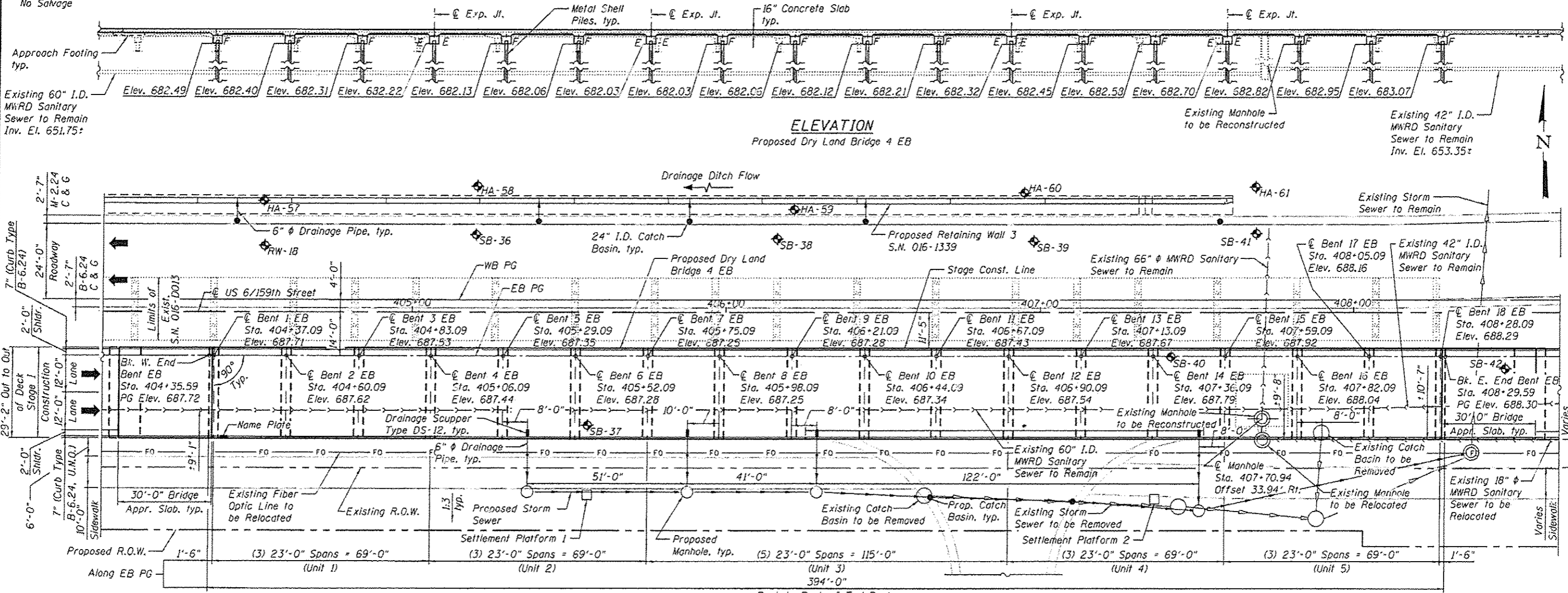
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	544
CONTRACT NO. 60L72				

ILLINOIS FED. AID PROJECT

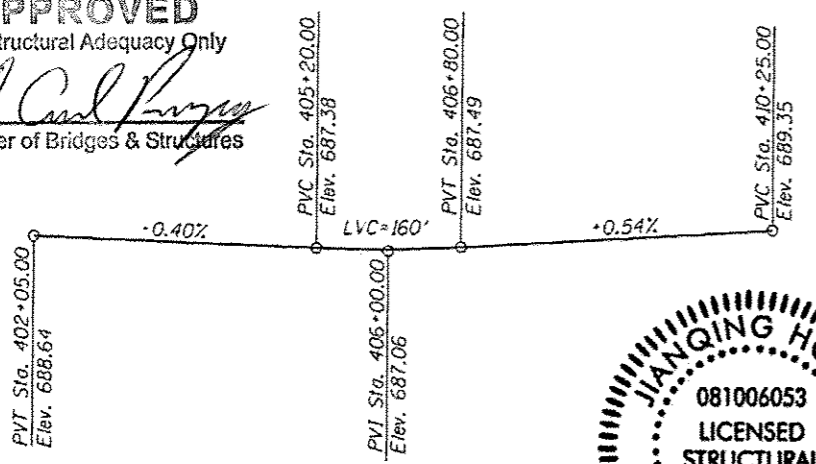
Bench Mark: BM #50 Set at a notch cut in center of west 16' headwall to private entrance, Elev. 686.54, 52' north of C US 6 and ±2400' east of 104th Street.

Existing Structure: S.N. 016-D013. Built in 1937 as S.B.I. Route 53, Section 537-R at Station 405+96. Structure consists of 20-spans - four 5-span continuous reinforced concrete slab units supported on timber piles. Each unit has a width of 20'-0" and a length of 115'-0". The overall length of the structure is 460'-0". Structure to be removed and replaced using stage construction.

No Salvage



APPROVED
For Structural Adequacy Only
[Signature]
Engineer of Bridges & Structures

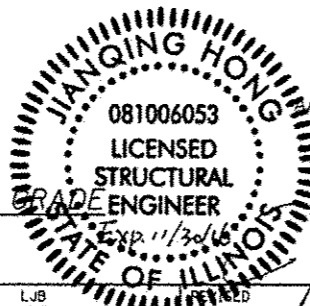


STATION 406+32.59
BUILT 2015 BY
STATE OF ILLINOIS
F.A.P. RTE 351-SEC. 2010-081-R
LOADING HL-93
STRUCTURE NO. 016-D013

NAME PLATE
See Std. 515001

LOADING HL-93
Allow 50#/sq. ft. for future wearing surface.

LEGEND
Soil Boring Location
U.N.D. Unless Noted Otherwise



PLAN

DESIGN SPECIFICATIONS
2012 AASHTO LRFD Bridge Design Specifications,
6th Edition, with 2013 Interims.

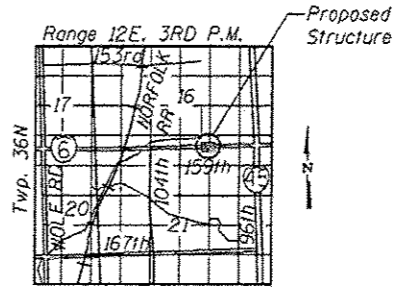
DESIGN STRESSES

FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 36,000 psi (M270 Grade 36)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.130g
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.238g
Soil Site Class = E

Use Depressed Curb at driveway entrance from Sta. 406+25.50 to Sta. 407+52.50



SETTLEMENT PLATFORM SCHEDULE

Settlement Platform I.D.	Station	Offset
Settlement Platform 1	405+56.00	59.00' Rt.
Settlement Platform 2	407+37.00	60.00' Rt.

The identified settlement platforms are paid for as SETTLEMENT PLATFORMS.

GENERAL PLAN & ELEVATION
DRY LAND BRIDGE 4
US ROUTE 6 / 159TH STREET
F.A.P. RTE 351 - SEC. 2010-081-R
COOK COUNTY
STATION 406+32.59
STRUCTURE NO. 016-D013

LOCHNER H. W. LOCHNER, INC. 325 WEST WASHINGTON STREET 12 TH FLOOR CHICAGO, ILLINOIS 60608	USER NAME :	DESIGNED :	LJB	REVISION
	FILE NAME :	CHECKED :	RH	REVISION
	PLOT SCALE :	DRAWN :	LJB	REVISION
	PLOT DATE :	CHECKED :	RH	REVISION

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	546
CONTRACT NO. 60L72			ILLINOIS FED. AID PROJECT	

GENERAL NOTES

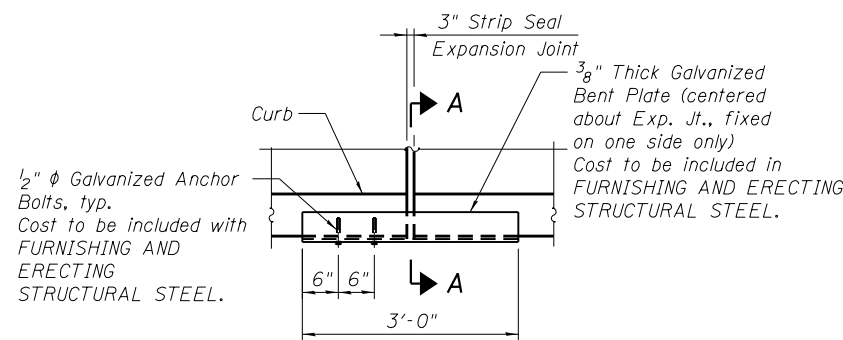
1. Calculated weight of Structural Steel M270 Grade 36 = 860 lb.
2. All structural steel shall be AASHTO M 270 Grade 36.
3. Reinforcement bars designated (E) shall be epoxy coated.
4. Protective coat shall be applied to surfaces of bridge deck, approach slabs and curbs.
5. Concrete Sealer shall be applied to the designated areas of the Expansion Bent Caps. See Sheet 19 for locations.
6. Refer to Roadway Plans for type and quantity of fill material required within the limits of Dry Land Bridge.
7. Piles shall be driven through 18" diameter precored holes extending to the estimated elevation shown on sheet 20 according to Article 512.09(c) of the Standard Specifications. Cost included in driving piles. However, the contractor may cease the precore of piles at the elevation peat is encountered. Loose sand shall be backfilled in the precore holes without compacting.
8. The deck of the existing land bridge shall be removed. The existing bent caps and/or timber piles shall be removed to 2' below bottom of the proposed land bridge slab, abandoned in place and buried under the proposed land bridges.
9. The Contractor shall verify locations of all underground utilities before driving piling. Any disturbance or damage to existing structures, utilities or other property, caused by the Contractor's operation, shall be repaired by the Contractor in a manner satisfactory to the Engineer at no additional cost to the Department.
10. Excavation for placement of slab shall be paid for as Earth Excavation. See Roadway Plans.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Granular Backfill for Structures	Cu. Yd.		29	29
Removal of Existing Structures No. 4	Each	1		1
Structure Excavation	Cu. Yd.		696	696
Concrete Structures	Cu. Yd.		164.0	164.0
Concrete Superstructure	Cu. Yd.	779.2		779.2
Bridge Deck Grooving	Sq. Yd.	1,306		1,306
Protective Coat	Sq. Yd.	1,515		1,515
Reinforcement Bars, Epoxy Coated	Pound	143,930	18,600	162,530
Furnishing Metal Shell Piles 14"x0.25"	Foot		5,814	5,814
Driving Piles	Foot		5,814	5,814
Test Pile Metal Shells	Each		5	5
Name Plates	Each	1		1
Preformed Joint Strip Seal	Foot	117		117
Concrete Sealer	Sq. Ft.		996	996
Drainage Scuppers, DS-12	Each	4		4
Drainage System No. 4	Each	1		1
Furnishing and Erecting Structural Steel	Pound		860	860
Settlement Platforms	Each		2	2

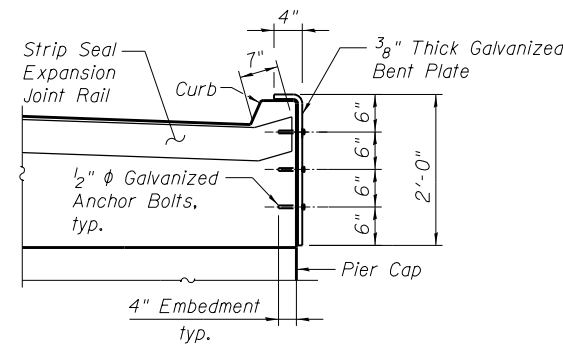
INDEX OF SHEETS

SHEET NO.	TITLE
1	General Plan & Elevation
2	General Notes and Bill of Material
3	Construction Staging
4	Temporary Concrete Barrier
5	Top of Slab Elevation Plan
6	Top of Slab Elevations 1
7	Top of Slab Elevations 2
8	Top of Approach Slab Elevations
9	Deck Plan & Cross Section 1
10	Superstructure Details 1
11	Deck Plan & Cross Section 2
12	Superstructure Details 2
13	Deck Plan & Cross Section 3
14	Superstructure Details 3
15	Approach Slab Details 1
16	Approach Slab Details 2
17	Preformed Joint Strip Seal
18	Drainage Scupper, DS-12
19	Typical Bent Details 1
20	Typical Bent Details 2
21	Typical Bent Details 3
22	Metal Shell Piles
23	Soil Borings 1
24	Soil Borings 2
25	Soil Borings 3
26	Soil Borings 4
27	Soil Borings 5
28	Soil Borings 6
29	Soil Borings 7
30	Soil Borings 8
31	Soil Borings 9
32	Soil Borings 10

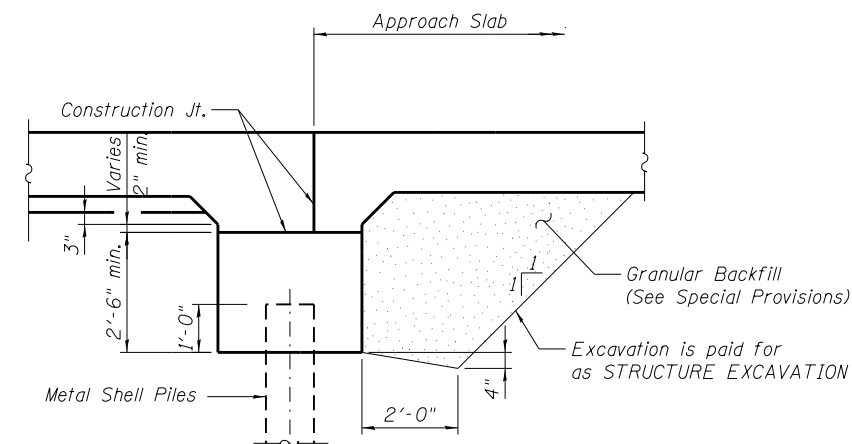


END PLAN OF EXPANSION JOINT DETAILS

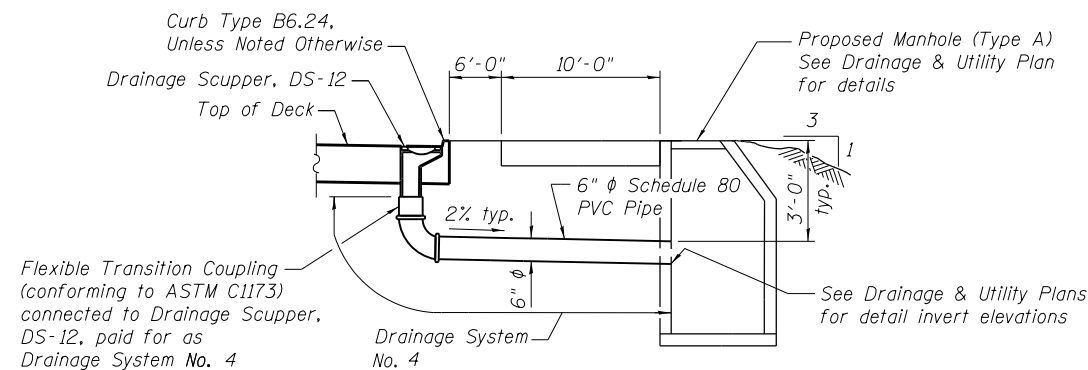
Typical at each end of Expansion Joints



SECTION A-A



SECTION THRU END PILE BENT CAP



SCUPPER AND DRAINAGE SYSTEM DETAILS

(Looking East)

T:\0106-056\Struct\Bridges\Land Bridge 4 - 016-0013\0160013-60L72-002-GN.dgn

LOCHNER
H.W. LOCHNER, INC.
225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

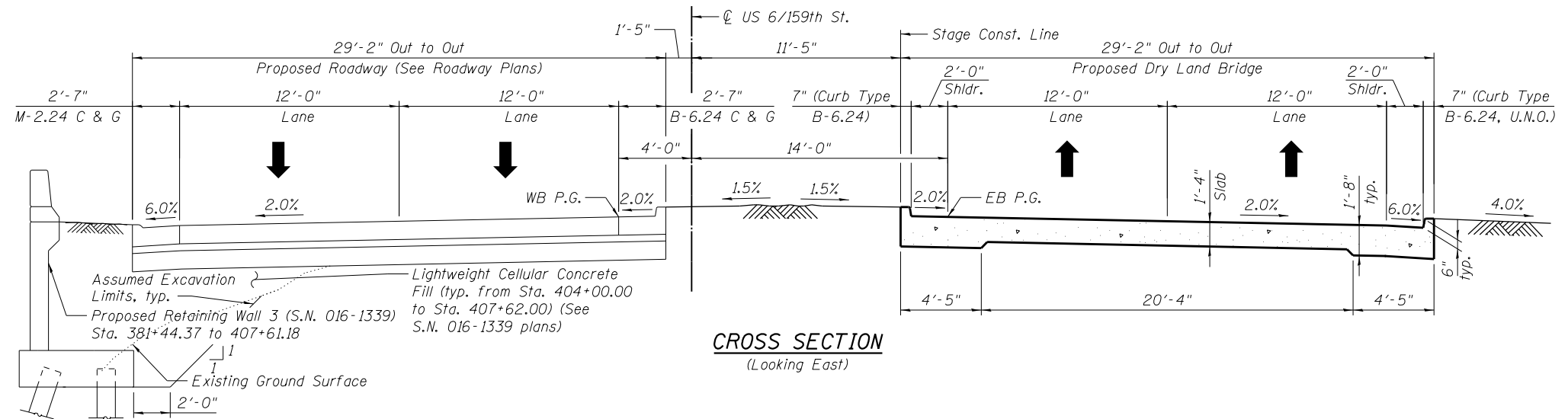
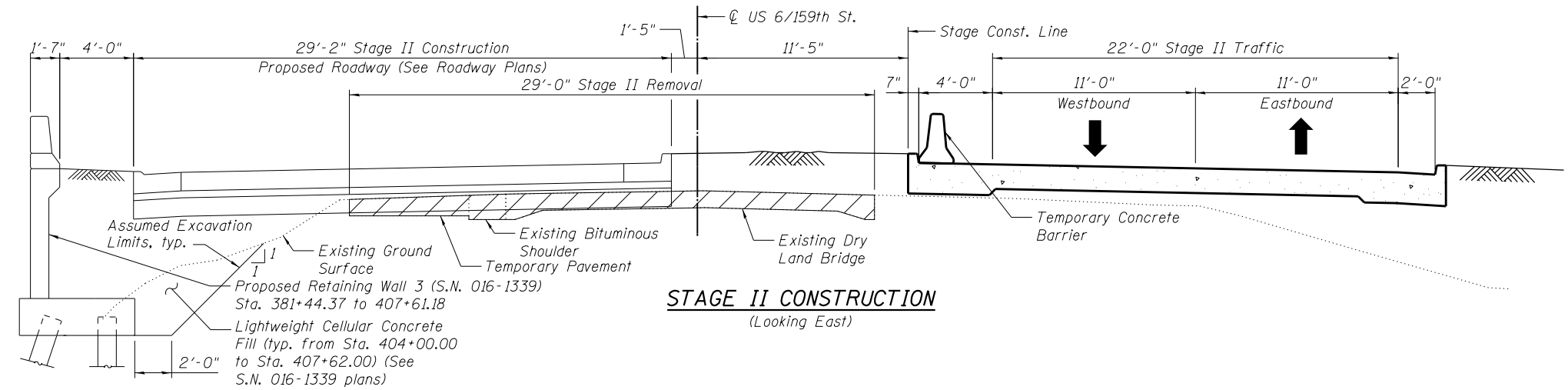
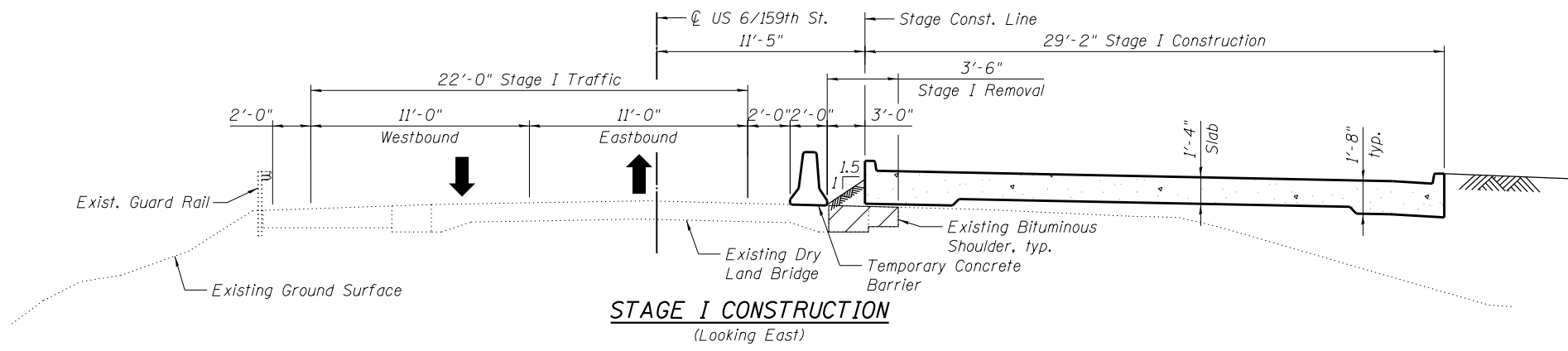
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FILE NAME = 0160013-60L72-002-GN.dgn	CHECKED - RH	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GENERAL NOTES AND BILL OF MATERIAL
STRUCTURE NO. 016-D013**

SHEET NO. 2 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	547
				CONTRACT NO. 60L72
ILLINOIS FED. AID PROJECT				



LEGEND

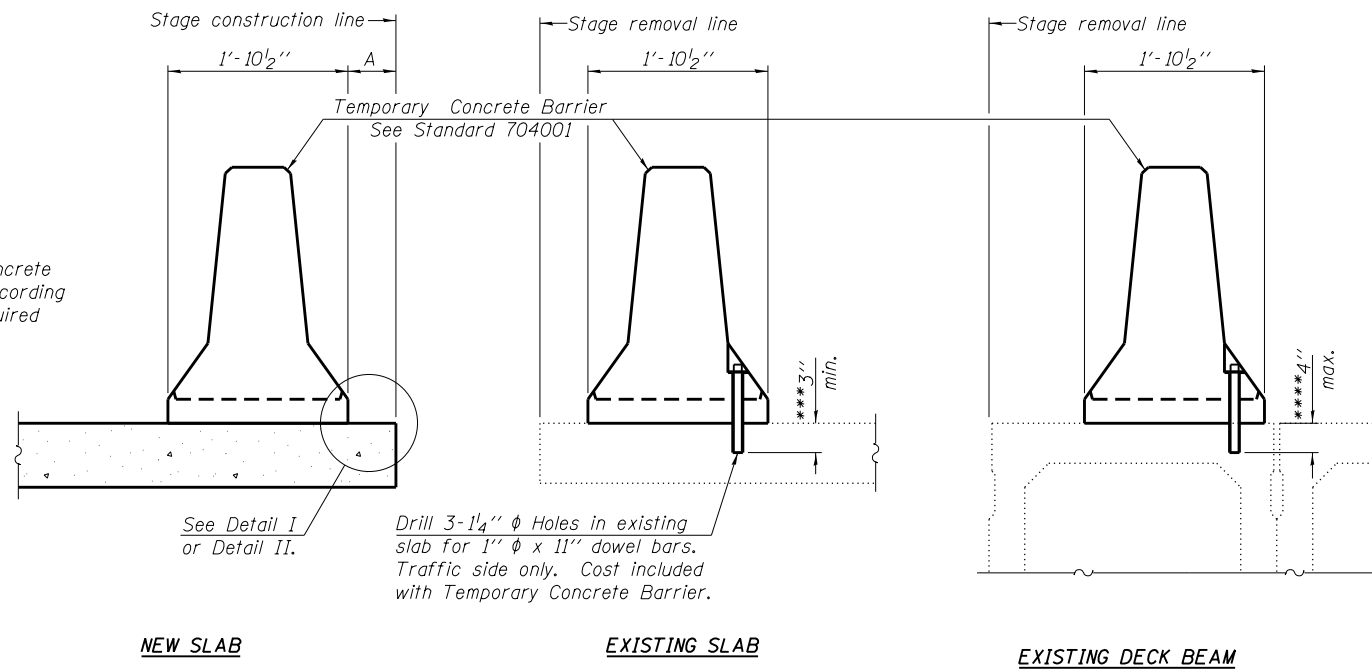
Existing Structure Removal

U.N.O. Unless Noted Otherwise

T:\51006-056\Struct\Bridges\Land Bridge 4 - 016-0013\016D013-60L72-003-MD.dgn

LOCHNER H.W. LOCHNER, INC. 225 WEST WASHINGTON STREET 12 TH FLOOR CHICAGO, ILLINOIS 60606	USER NAME =	DESIGNED - LJB	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CONSTRUCTION STAGING STRUCTURE NO. 016-D013	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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	PLOT SCALE =	DRAWN - LJB	REVISED	SHEET NO. 3 OF 32 SHEETS		CONTRACT NO. 60L72			ILLINOIS FED. AID PROJECT		
	PLOT DATE =	CHECKED - RH	REVISED								

When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".



SECTIONS THRU SLAB OR DECK BEAM

NOTES

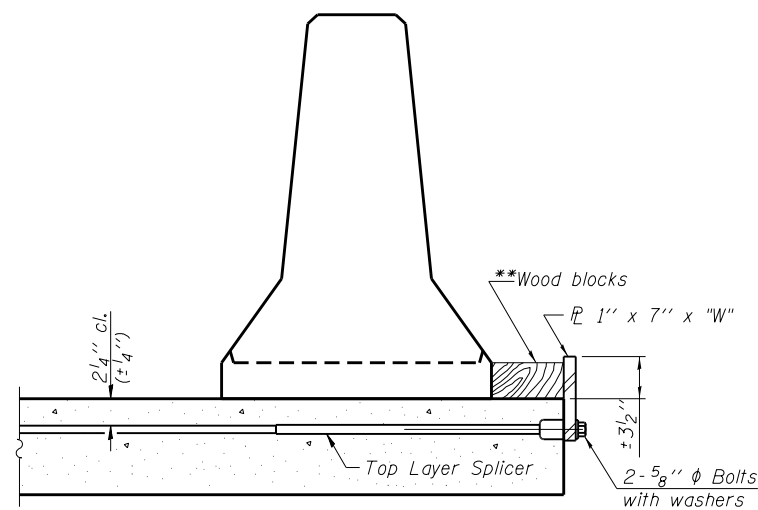
Detail I - With Bar Splicer or Couplers:
Connect one (1) 1" x 7" x "W" steel PL to the top layer of couplers with 2-5/8" φ bolts screwed to coupler at approximate C of each barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 1" x 7" x "W" steel PL to the concrete slab or concrete wearing surface with 2-5/8" φ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate C of each barrier panel.

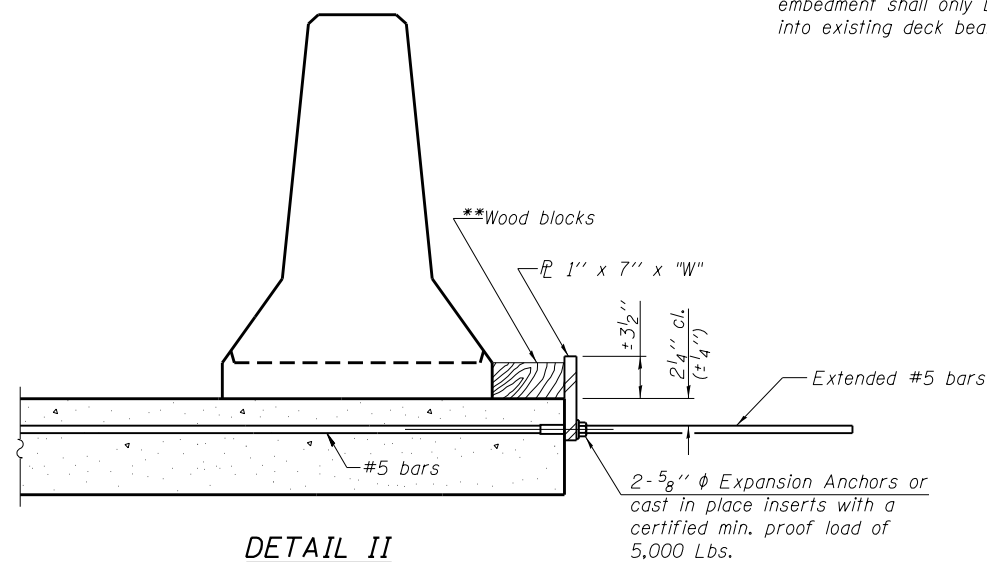
Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x "W" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

*** Dimension shown is minimum required embedment into concrete. If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.

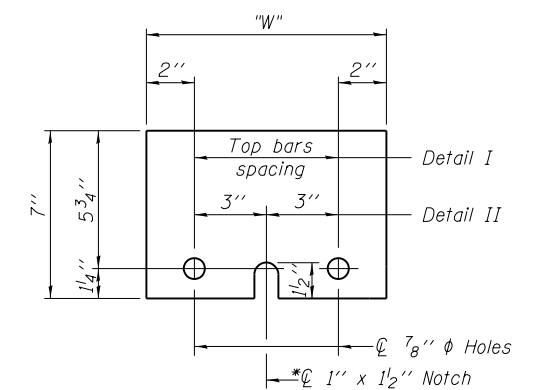
**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



DETAIL I



DETAIL II



STEEL RETAINER PL 1" x 7" x "W"

* Required only with Detail II

** Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.

"W" = Top bars spacing + 4"

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R-27 7-1-10

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225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

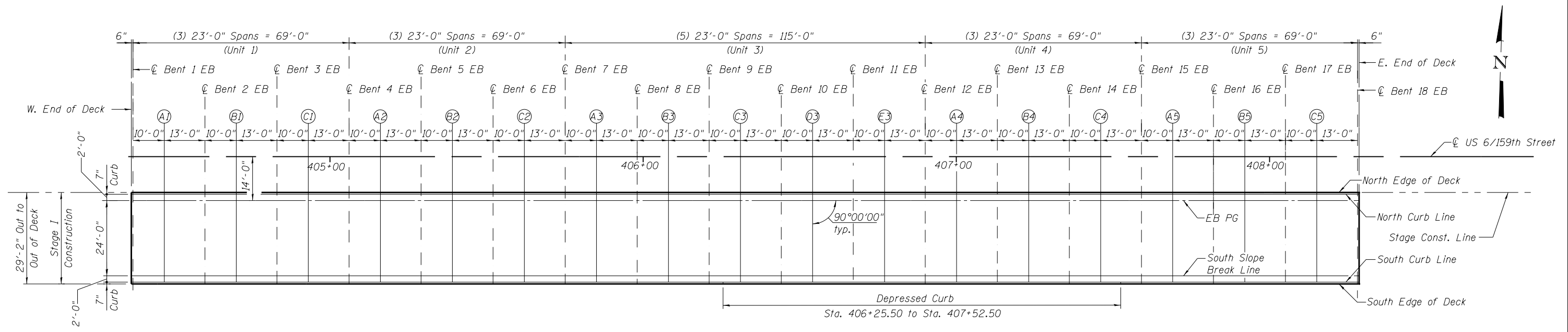
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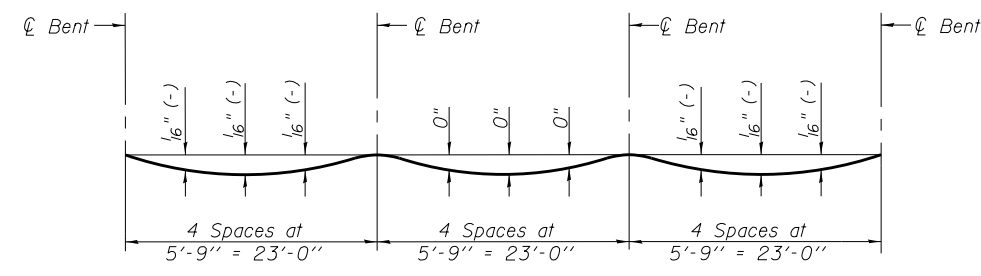
**TEMPORARY CONCRETE BARRIER
STRUCTURE NO. 016-D013**

SHEET NO. 4 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	549
CONTRACT NO. 60L72			ILLINOIS FED. AID PROJECT	

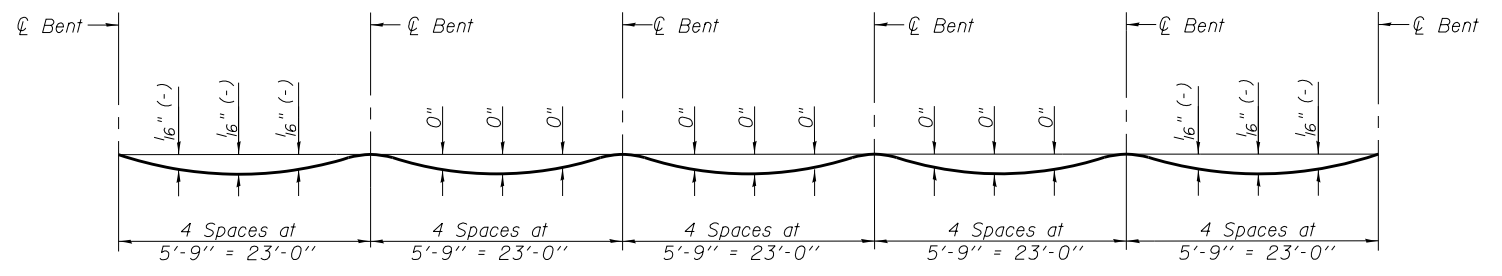


PLAN DECK UNITS - DRY LAND BRIDGE 4 EASTBOUND



DEAD LOAD DEFLECTION DIAGRAM
 (Includes weight of concrete).
 (For 3-Span units - EB Unit 1, Unit 2, Unit 4 & Unit 5).

Note:
 The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on Sheet 6 and 7 of 32.



DEAD LOAD DEFLECTION DIAGRAM
 (Includes weight of concrete).
 (For 5-Span unit - EB Unit 3).

Note:
 The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on Sheet 6 and 7 of 32.

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 225 WEST WASHINGTON STREET
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 CHICAGO, ILLINOIS 60606

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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATION PLAN
 STRUCTURE NO. 016-0013**

SHEET NO. 5 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	550
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

NORTH EDGE OF DECK

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
W. End of Deck	404+36.59	11.42	688.25	688.25
☉ EB Bent 1	404+37.09	11.42	688.25	688.25
A1	404+47.09	11.42	688.21	688.21
☉ EB Bent 2	404+60.09	11.42	688.16	688.16
B1	404+70.09	11.42	688.12	688.12
☉ EB Bent 3	404+83.09	11.42	688.07	688.07
C1	404+93.09	11.42	688.03	688.03
☉ EB Bent 4	405+06.09	11.42	687.98	687.98
A2	405+16.09	11.42	687.94	687.94
☉ EB Bent 5	405+29.09	11.42	687.89	687.89
B2	405+39.09	11.42	687.85	687.85
☉ EB Bent 6	405+52.09	11.42	687.82	687.82
C2	405+62.09	11.42	687.80	687.80
☉ EB Bent 7	405+75.09	11.42	687.79	687.79
A3	405+85.09	11.42	687.78	687.78
☉ EB Bent 8	405+98.09	11.42	687.79	687.79
B3	406+08.09	11.42	687.80	687.80
☉ EB Bent 9	406+21.09	11.42	687.82	687.82
C3	406+31.09	11.42	687.84	687.84
☉ EB Bent 10	406+44.09	11.42	687.88	687.88
D3	406+54.09	11.42	687.91	687.91
☉ EB Bent 11	406+67.09	11.42	687.97	687.97
E3	406+77.09	11.42	688.02	688.02
☉ EB Bent 12	406+90.09	11.42	688.08	688.08
A4	407+00.09	11.42	688.14	688.14
☉ EB Bent 13	407+13.09	11.42	688.21	688.21
B4	407+23.09	11.42	688.26	688.26
☉ EB Bent 14	407+36.09	11.42	688.33	688.33
C4	407+46.09	11.42	688.39	688.39
☉ EB Bent 15	407+59.09	11.42	688.46	688.46
A5	407+69.09	11.42	688.51	688.51
☉ EB Bent 16	407+82.09	11.42	688.58	688.58
B5	407+92.09	11.42	688.63	688.63
☉ EB Bent 17	408+05.09	11.42	688.70	688.70
C5	408+15.09	11.42	688.76	688.76
☉ EB Bent 18	408+28.09	11.42	688.83	688.83
E. End of Deck	408+28.59	11.42	688.83	688.83

NOth CURB LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
W. End of Deck	404+36.59	12.00	687.75	687.75
☉ EB Bent 1	404+37.09	12.00	687.75	687.75
A1	404+47.09	12.00	687.71	687.71
☉ EB Bent 2	404+60.09	12.00	687.66	687.66
B1	404+70.09	12.00	687.62	687.62
☉ EB Bent 3	404+83.09	12.00	687.57	687.57
C1	404+93.09	12.00	687.53	687.53
☉ EB Bent 4	405+06.09	12.00	687.48	687.48
A2	405+16.09	12.00	687.44	687.44
☉ EB Bent 5	405+29.09	12.00	687.39	687.39
B2	405+39.09	12.00	687.35	687.35
☉ EB Bent 6	405+52.09	12.00	687.32	687.32
C2	405+62.09	12.00	687.30	687.30
☉ EB Bent 7	405+75.09	12.00	687.29	687.29
A3	405+85.09	12.00	687.28	687.28
☉ EB Bent 8	405+98.09	12.00	687.29	687.29
B3	406+08.09	12.00	687.30	687.30
☉ EB Bent 9	406+21.09	12.00	687.32	687.32
C3	406+31.09	12.00	687.34	687.34
☉ EB Bent 10	406+44.09	12.00	687.38	687.38
D3	406+54.09	12.00	687.41	687.41
☉ EB Bent 11	406+67.09	12.00	687.47	687.47
E3	406+77.09	12.00	687.52	687.52
☉ EB Bent 12	406+90.09	12.00	687.58	687.58
A4	407+00.09	12.00	687.64	687.64
☉ EB Bent 13	407+13.09	12.00	687.71	687.71
B4	407+23.09	12.00	687.76	687.76
☉ EB Bent 14	407+36.09	12.00	687.83	687.83
C4	407+46.09	12.00	687.89	687.89
☉ EB Bent 15	407+59.09	12.00	687.96	687.96
A5	407+69.09	12.00	688.01	688.01
☉ EB Bent 16	407+82.09	12.00	688.08	688.08
B5	407+92.09	12.00	688.13	688.13
☉ EB Bent 17	408+05.09	12.00	688.20	688.20
C5	408+15.09	12.00	688.26	688.26
☉ EB Bent 18	408+28.09	12.00	688.33	688.33
E. End of Deck	408+28.59	12.00	688.33	688.33

EB PG

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
W. End of Deck	404+36.59	14.00	687.71	687.71
☉ EB Bent 1	404+37.09	14.00	687.71	687.71
A1	404+47.09	14.00	687.67	687.67
☉ EB Bent 2	404+60.09	14.00	687.62	687.62
B1	404+70.09	14.00	687.58	687.58
☉ EB Bent 3	404+83.09	14.00	687.53	687.53
C1	404+93.09	14.00	687.49	687.49
☉ EB Bent 4	405+06.09	14.00	687.44	687.44
A2	405+16.09	14.00	687.40	687.40
☉ EB Bent 5	405+29.09	14.00	687.35	687.35
B2	405+39.09	14.00	687.31	687.31
☉ EB Bent 6	405+52.09	14.00	687.28	687.28
C2	405+62.09	14.00	687.26	687.26
☉ EB Bent 7	405+75.09	14.00	687.25	687.25
A3	405+85.09	14.00	687.24	687.24
☉ EB Bent 8	405+98.09	14.00	687.25	687.25
B3	406+08.09	14.00	687.26	687.26
☉ EB Bent 9	406+21.09	14.00	687.28	687.28
C3	406+31.09	14.00	687.30	687.30
☉ EB Bent 10	406+44.09	14.00	687.34	687.34
D3	406+54.09	14.00	687.37	687.37
☉ EB Bent 11	406+67.09	14.00	687.43	687.43
E3	406+77.09	14.00	687.48	687.48
☉ EB Bent 12	406+90.09	14.00	687.54	687.54
A4	407+00.09	14.00	687.60	687.60
☉ EB Bent 13	407+13.09	14.00	687.67	687.67
B4	407+23.09	14.00	687.72	687.72
☉ EB Bent 14	407+36.09	14.00	687.79	687.79
C4	407+46.09	14.00	687.85	687.85
☉ EB Bent 15	407+59.09	14.00	687.92	687.92
A5	407+69.09	14.00	687.97	687.97
☉ EB Bent 16	407+82.09	14.00	688.04	688.04
B5	407+92.09	14.00	688.09	688.09
☉ EB Bent 17	408+05.09	14.00	688.16	688.16
C5	408+15.09	14.00	688.22	688.22
☉ EB Bent 18	408+28.09	14.00	688.29	688.29
E. End of Deck	408+28.59	14.00	688.29	688.29

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225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATIONS 1
STRUCTURE NO. 016-D013**

SHEET NO. 6 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	551
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

SOUTH SLOPE BREAK LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
W. End of Deck	404+36.59	38.00	687.23	687.23
⊕ EB Bent 1	404+37.09	38.00	687.23	687.23
A1	404+47.09	38.00	687.19	687.19
⊕ EB Bent 2	404+60.09	38.00	687.14	687.14
B1	404+70.09	38.00	687.10	687.10
⊕ EB Bent 3	404+83.09	38.00	687.05	687.05
C1	404+93.09	38.00	687.01	687.01
⊕ EB Bent 4	405+06.09	38.00	686.96	686.96
A2	405+16.09	38.00	686.92	686.92
⊕ EB Bent 5	405+29.09	38.00	686.87	686.87
B2	405+39.09	38.00	686.83	686.83
⊕ EB Bent 6	405+52.09	38.00	686.80	686.80
C2	405+62.09	38.00	686.78	686.78
⊕ EB Bent 7	405+75.09	38.00	686.77	686.77
A3	405+85.09	38.00	686.76	686.76
⊕ EB Bent 8	405+98.09	38.00	686.77	686.77
B3	406+08.09	38.00	686.78	686.78
⊕ EB Bent 9	406+21.09	38.00	686.80	686.80
C3	406+31.09	38.00	686.82	686.82
⊕ EB Bent 10	406+44.09	38.00	686.86	686.86
D3	406+54.09	38.00	686.89	686.89
⊕ EB Bent 11	406+67.09	38.00	686.95	686.95
E3	406+77.09	38.00	687.00	687.00
⊕ EB Bent 12	406+90.09	38.00	687.06	687.06
A4	407+00.09	38.00	687.12	687.12
⊕ EB Bent 13	407+13.09	38.00	687.19	687.19
B4	407+23.09	38.00	687.24	687.24
⊕ EB Bent 14	407+36.09	38.00	687.31	687.31
C4	407+46.09	38.00	687.37	687.37
⊕ EB Bent 15	407+59.09	38.00	687.44	687.44
A5	407+69.09	38.00	687.49	687.49
⊕ EB Bent 16	407+82.09	38.00	687.56	687.56
B5	407+92.09	38.00	687.61	687.61
⊕ EB Bent 17	408+05.09	38.00	687.68	687.68
C5	408+15.09	38.00	687.74	687.74
⊕ EB Bent 18	408+28.09	38.00	687.81	687.81
E. End of Deck	408+28.59	38.00	687.81	687.81

SOUTH CURB LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
W. End of Deck	404+36.59	40.00	687.11	687.11
⊕ EB Bent 1	404+37.09	40.00	687.11	687.11
A1	404+47.09	40.00	687.07	687.07
⊕ EB Bent 2	404+60.09	40.00	687.02	687.02
B1	404+70.09	40.00	686.98	686.98
⊕ EB Bent 3	404+83.09	40.00	686.93	686.93
C1	404+93.09	40.00	686.89	686.89
⊕ EB Bent 4	405+06.09	40.00	686.84	686.84
A2	405+16.09	40.00	686.80	686.80
⊕ EB Bent 5	405+29.09	40.00	686.75	686.75
B2	405+39.09	40.00	686.71	686.71
⊕ EB Bent 6	405+52.09	40.00	686.68	686.68
C2	405+62.09	40.00	686.66	686.66
⊕ EB Bent 7	405+75.09	40.00	686.65	686.65
A3	405+85.09	40.00	686.64	686.64
⊕ EB Bent 8	405+98.09	40.00	686.65	686.65
B3	406+08.09	40.00	686.66	686.66
⊕ EB Bent 9	406+21.09	40.00	686.68	686.68
C3	406+31.09	40.00	686.70	686.70
⊕ EB Bent 10	406+44.09	40.00	686.74	686.74
D3	406+54.09	40.00	686.77	686.77
⊕ EB Bent 11	406+67.09	40.00	686.83	686.83
E3	406+77.09	40.00	686.88	686.88
⊕ EB Bent 12	406+90.09	40.00	686.94	686.94
A4	407+00.09	40.00	687.00	687.00
⊕ EB Bent 13	407+13.09	40.00	687.07	687.07
B4	407+23.09	40.00	687.12	687.12
⊕ EB Bent 14	407+36.09	40.00	687.19	687.19
C4	407+46.09	40.00	687.25	687.25
⊕ EB Bent 15	407+59.09	40.00	687.32	687.32
A5	407+69.09	40.00	687.37	687.37
⊕ EB Bent 16	407+82.09	40.00	687.44	687.44
B5	407+92.09	40.00	687.49	687.49
⊕ EB Bent 17	408+05.09	40.00	687.56	687.56
C5	408+15.09	40.00	687.62	687.62
⊕ EB Bent 18	408+28.09	40.00	687.69	687.69
E. End of Deck	408+28.59	40.00	687.69	687.69

SOUTH EDGE OF DECK

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
W. End of Deck	404+36.59	40.58	687.61	687.61
⊕ EB Bent 1	404+37.09	40.58	687.61	687.61
A1	404+47.09	40.58	687.57	687.57
⊕ EB Bent 2	404+60.09	40.58	687.52	687.52
B1	404+70.09	40.58	687.48	687.48
⊕ EB Bent 3	404+83.09	40.58	687.43	687.43
C1	404+93.09	40.58	687.39	687.39
⊕ EB Bent 4	405+06.09	40.58	687.34	687.34
A2	405+16.09	40.58	687.30	687.30
⊕ EB Bent 5	405+29.09	40.58	687.25	687.25
B2	405+39.09	40.58	687.21	687.21
⊕ EB Bent 6	405+52.09	40.58	687.18	687.18
C2	405+62.09	40.58	687.16	687.16
⊕ EB Bent 7	405+75.09	40.58	687.15	687.15
A3	405+85.09	40.58	687.14	687.14
⊕ EB Bent 8	405+98.09	40.58	687.15	687.15
B3	406+08.09	40.58	687.16	687.16
⊕ EB Bent 9	406+21.09	40.58	687.18	687.18
C3	406+31.09	40.58	686.82	686.82
⊕ EB Bent 10	406+44.09	40.58	686.86	686.86
D3	406+54.09	40.58	686.90	686.90
⊕ EB Bent 11	406+67.09	40.58	686.95	686.95
E3	406+77.09	40.58	687.00	687.00
⊕ EB Bent 12	406+90.09	40.58	687.07	687.07
A4	407+00.09	40.58	687.12	687.12
⊕ EB Bent 13	407+13.09	40.58	687.19	687.19
B4	407+23.09	40.58	687.25	687.25
⊕ EB Bent 14	407+36.09	40.58	687.32	687.32
C4	407+46.09	40.58	687.37	687.37
⊕ EB Bent 15	407+59.09	40.58	687.82	687.82
A5	407+69.09	40.58	687.87	687.87
⊕ EB Bent 16	407+82.09	40.58	687.94	687.94
B5	407+92.09	40.58	687.99	687.99
⊕ EB Bent 17	408+05.09	40.58	688.06	688.06
C5	408+15.09	40.58	688.12	688.12
⊕ EB Bent 18	408+28.09	40.58	688.19	688.19
E. End of Deck	408+28.59	40.58	688.19	688.19

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225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATIONS 2
STRUCTURE NO. 016-0013**

SHEET NO. 7 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	552
CONTRACT NO. 60L72			ILLINOIS FED. AID PROJECT	

NORTH EDGE OF SLAB

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	404+06.59	11.42	688.37
A	404+16.59	11.42	688.33
B	404+26.59	11.42	688.29
E. End of W. Appr. Slab	404+36.59	11.42	688.25
W. End of E. Appr. Slab	408+28.59	11.42	688.83
C	408+38.59	11.42	688.88
D	408+48.59	11.42	688.94
E. End of E. Appr. Slab	408+58.59	11.42	688.99

NORTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	404+06.59	12.00	687.87
A	404+16.59	12.00	687.83
B	404+26.59	12.00	687.79
E. End of W. Appr. Slab	404+36.59	12.00	687.75
W. End of E. Appr. Slab	408+28.59	12.00	688.33
C	408+38.59	12.00	688.38
D	408+48.59	12.00	688.44
E. End of E. Appr. Slab	408+58.59	12.00	688.49

EB PG & NORTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	404+06.59	14.00	687.83
A	404+16.59	14.00	687.79
B	404+26.59	14.00	687.75
E. End of W. Appr. Slab	404+36.59	14.00	687.71
W. End of E. Appr. Slab	408+28.59	14.00	688.29
C	408+38.59	14.00	688.34
D	408+48.59	14.00	688.40
E. End of E. Appr. Slab	408+58.59	14.00	688.45

SOUTH EDGE OF PAVEMENT

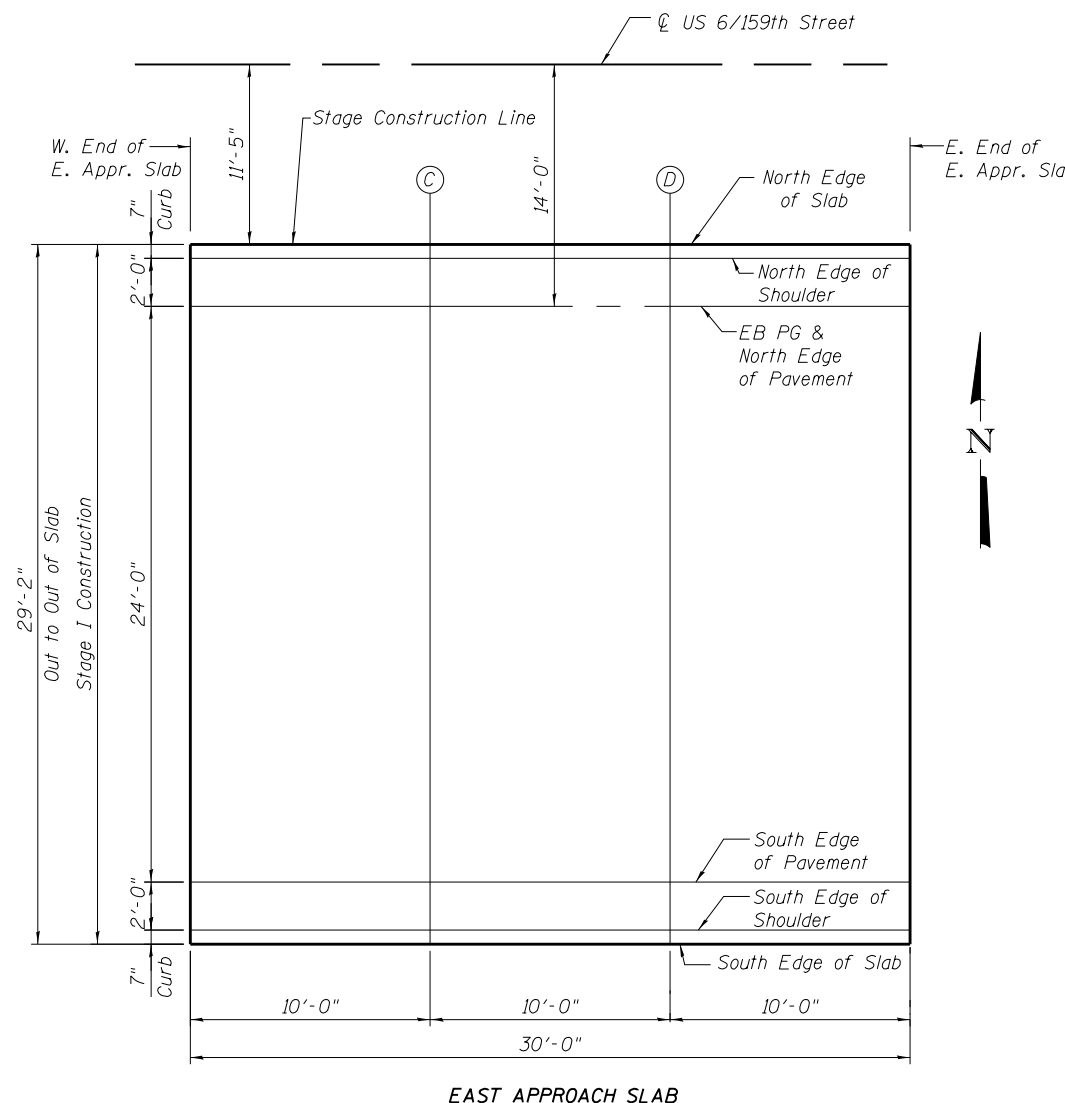
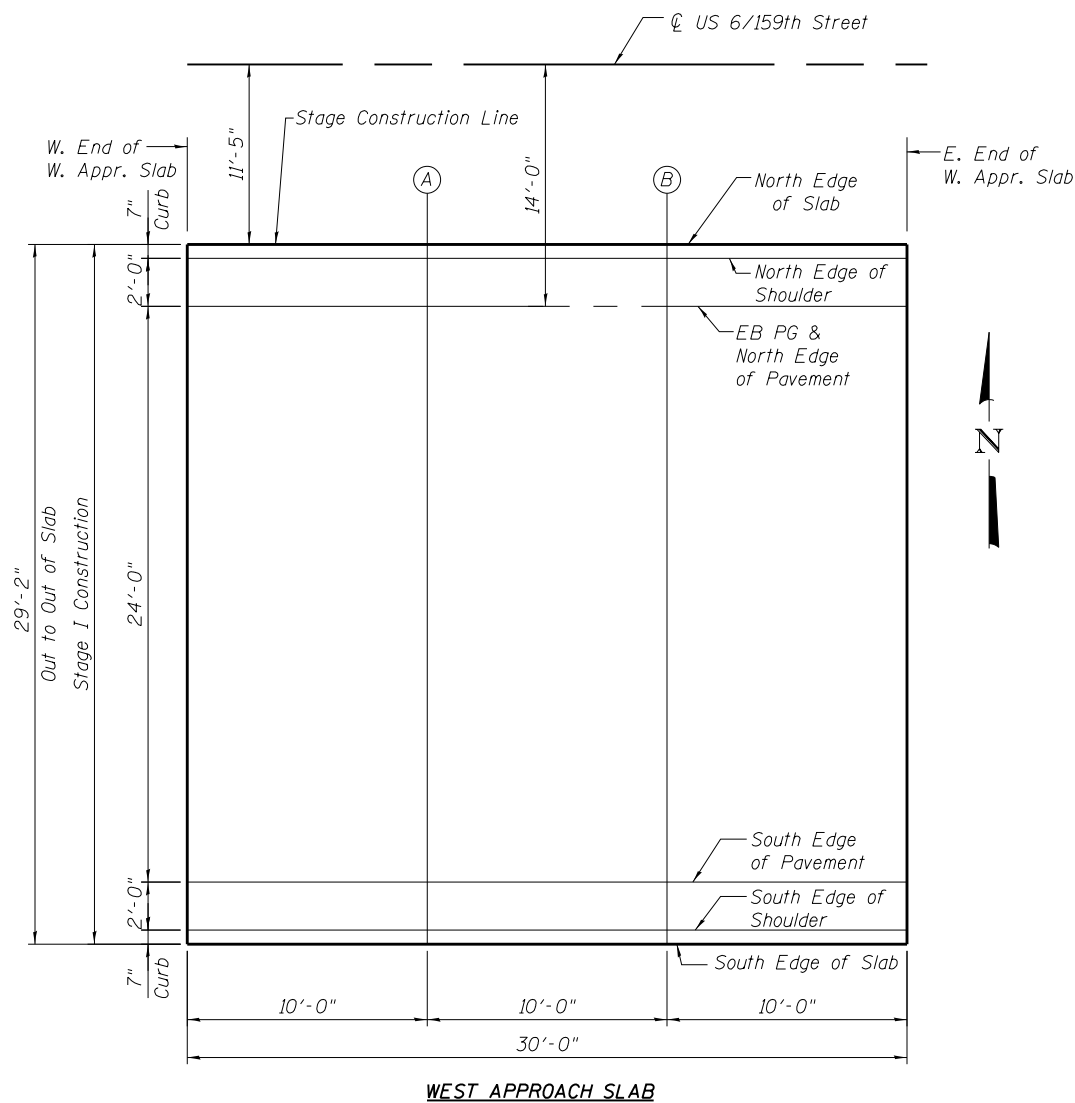
Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	404+06.59	38.00	687.35
A	404+16.59	38.00	687.31
B	404+26.59	38.00	687.27
E. End of W. Appr. Slab	404+36.59	38.00	687.23
W. End of E. Appr. Slab	408+28.59	38.00	687.81
C	408+38.59	38.00	687.86
D	408+48.59	38.00	687.92
E. End of E. Appr. Slab	408+58.59	38.00	687.97

SOUTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	404+06.59	40.00	687.23
A	404+16.59	40.00	687.19
B	404+26.59	40.00	687.15
E. End of W. Appr. Slab	404+36.59	40.00	687.11
W. End of E. Appr. Slab	408+28.59	40.00	687.69
C	408+38.59	40.00	687.74
D	408+48.59	40.00	687.80
E. End of E. Appr. Slab	408+58.59	40.00	687.85

SOUTH EDGE OF SLAB

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	404+06.59	40.58	687.73
A	404+16.59	40.58	687.69
B	404+26.59	40.58	687.65
E. End of W. Appr. Slab	404+36.59	40.58	687.61
W. End of E. Appr. Slab	408+28.59	40.58	688.19
C	408+38.59	40.58	688.24
D	408+48.59	40.58	688.30
E. End of E. Appr. Slab	408+58.59	40.58	688.35



PLAN - DRY LAND BRIDGE 4 EASTBOUND APPROACH SLAB

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LOCHNER
H. W. LOCHNER, INC.
225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

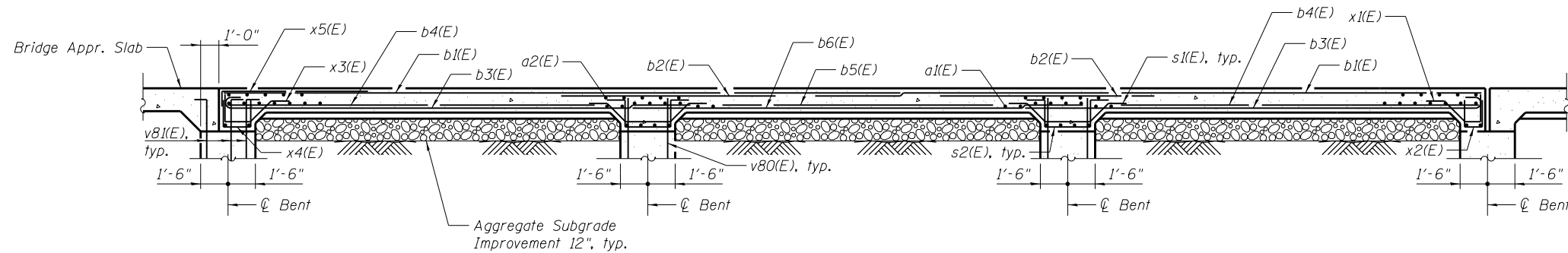
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PLOT DATE =	CHECKED - RH	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

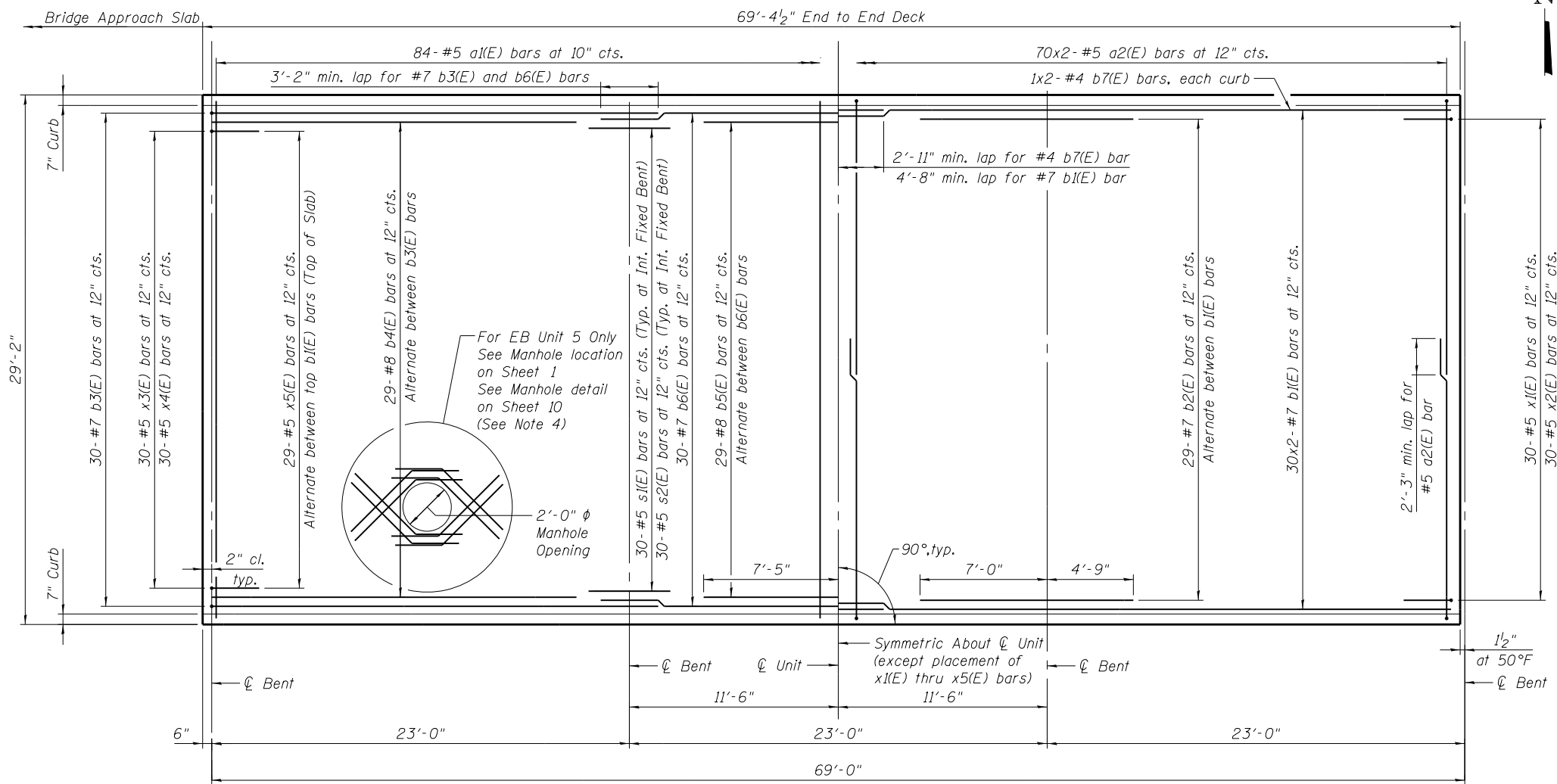
**TOP OF APPROACH SLAB ELEVATIONS
STRUCTURE NO. 016-D012**

SHEET NO. 8 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	553
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



END UNIT ELEVATION



BOTTOM

TOP

3 SPAN END UNIT PLAN

(Units 1 & 5)

MINIMUM BAR LAP

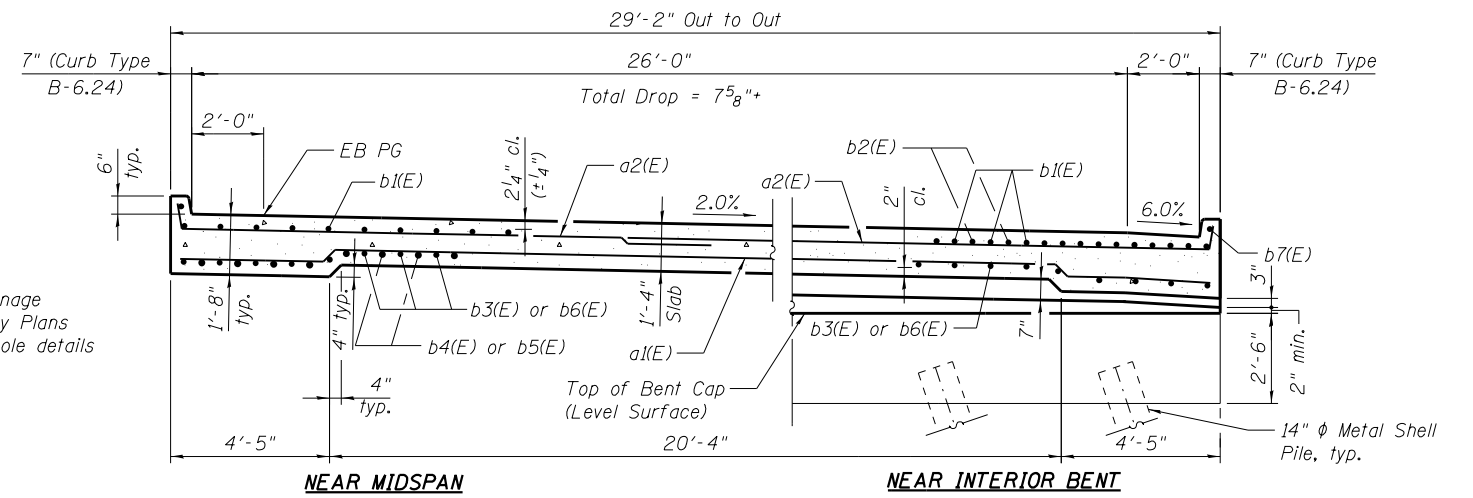
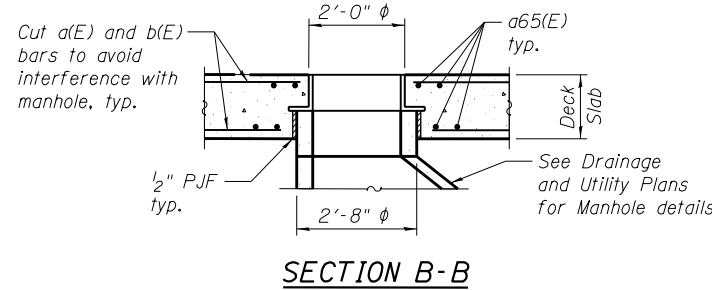
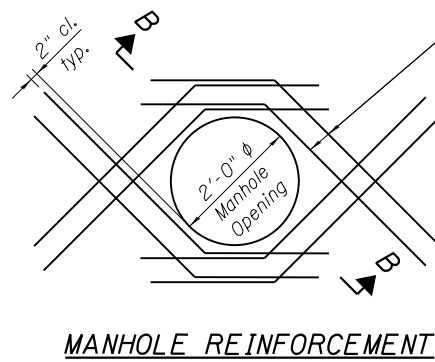
- (Deck)
- #4 bar (Top) = 2'-11"
- #5 bar (Top) = 2'-3"
- #7 bar (Top) = 4'-8"
- #7 bar = 3'-2"

NOTES

1. See Sheet 10 of 32 for superstructure details and Bill of Material.
2. Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
3. For Span arrangements, work this sheet with Sheet 1.
4. 1 manhole is placed in EB unit 5. Cut a1(E), a2(E), b1(E), b3(E) and b4(E) bars to clear 2'-0" ϕ manhole opening.

T:\51006-056\Struct\Bridges\Land Bridges\4 - 016-0013\0160013-60L72-009-DP.dgn

LOCHNER H. W. LOCHNER, INC. 225 WEST WASHINGTON STREET 12 TH FLOOR CHICAGO, ILLINOIS 60606	USER NAME =	DESIGNED - LJB	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DECK PLAN & CROSS SECTION 1 STRUCTURE NO. 016-D013	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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	PLOT SCALE =	DRAWN - EF	REVISED			CONTRACT NO. 60L72		ILLINOIS FED. AID PROJECT		
	PLOT DATE =	CHECKED - RH	REVISED			SHEET NO. 9 OF 32 SHEETS				



**3 SPAN END UNIT
EB BRIDGE CROSS SECTION**
(Looking East)

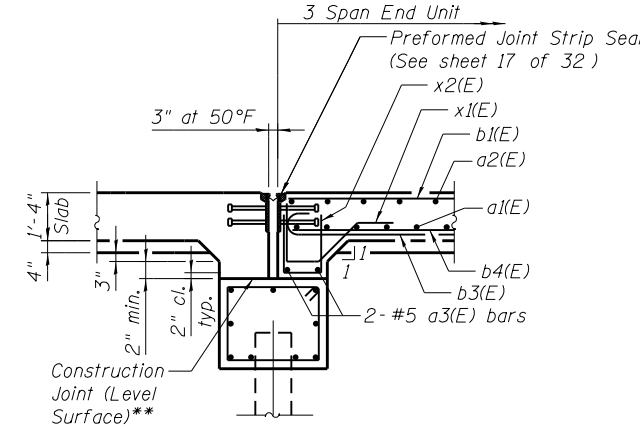
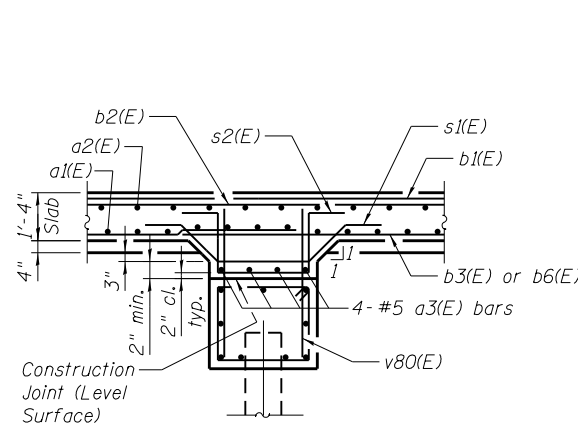
**BILL OF MATERIAL
FOR 3 SPAN END UNITS**

Bar	No.	Size	Length	Shape
a1(E)	168	#5	29'-2"	
a2(E)	280	#5	16'-1"	
a3(E)	24	#5	28'-10"	
b1(E)	120	#7	36'-11"	
b2(E)	116	#7	11'-9"	
b3(E)	120	#7	25'-9"	
b4(E)	116	#8	20'-1"	
b5(E)	58	#8	14'-10"	
b6(E)	60	#7	26'-2"	
b7(E)	8	#4	36'-1"	
s1(E)	120	#5	7'-0"	
s2(E)	120	#5	8'-2"	
x1(E)	60	#5	4'-11"	
x2(E)	60	#5	4'-6"	
x3(E)	60	#5	5'-7"	
x4(E)	60	#5	5'-2"	
x5(E)	58	#5	8'-10"	
Reinforcement Bars, Epoxy Coated			Pound	44,310
Concrete Superstructure			Cu. Yd.	241.8
Protective Coat			Sq. Yd.	466
Bridge Deck Grooving			Sq. Yd.	402

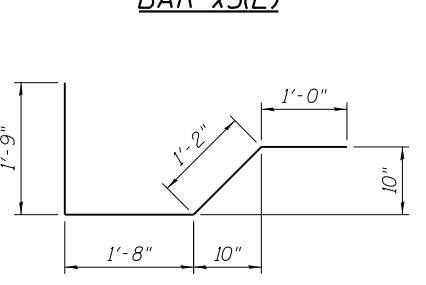
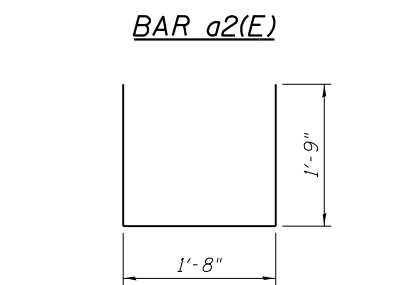
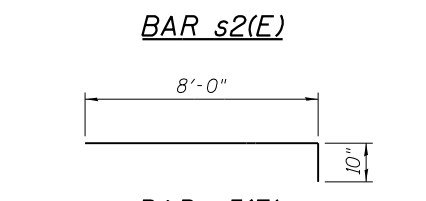
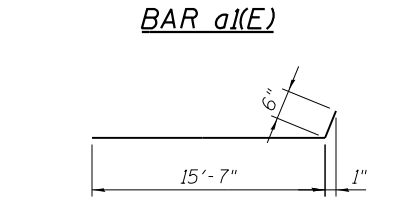
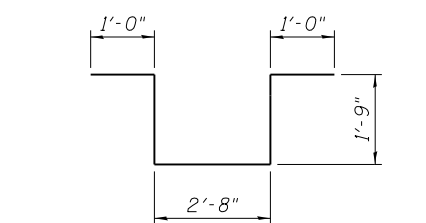
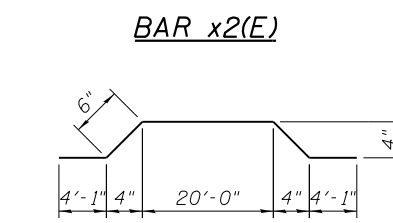
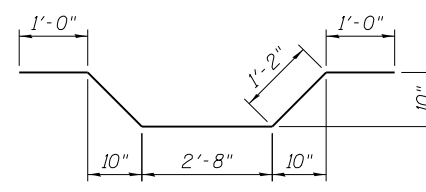
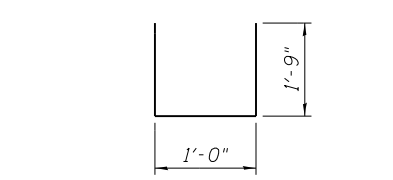
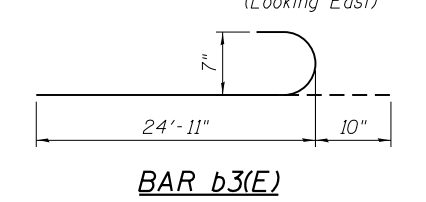
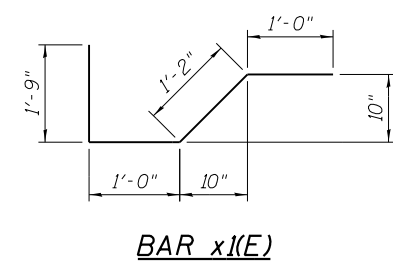
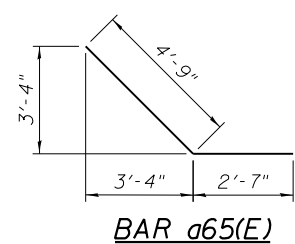
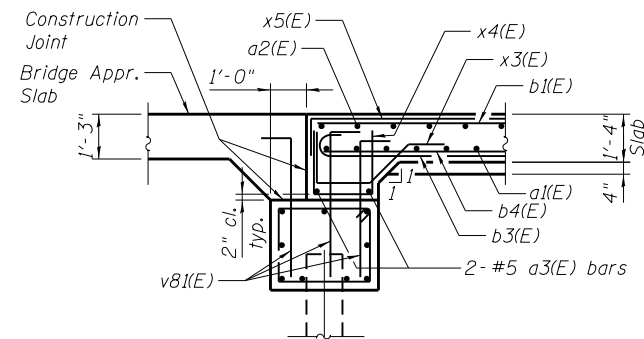
The above quantities include all 2 units: EB Units 1 & 5.

**MANHOLE REINFORCEMENT
BILL OF MATERIAL
FOR ONE MANHOLE**
(1 Required)

Bar	No.	Size	Length	Shape
a65(E)	16	#6	7'-4"	
Reinforcement Bars, Epoxy Coated			Pound	180



** Top concrete surface of the expansion pier caps shall be finished to a very smooth finish. 1/8" neoprene sheet shall be placed on the entire top surface of the expansion pier caps prior to pouring the superstructure slab. Cost of furnishing and installing 1/8" neoprene sheet is included with CONCRETE STRUCTURES.



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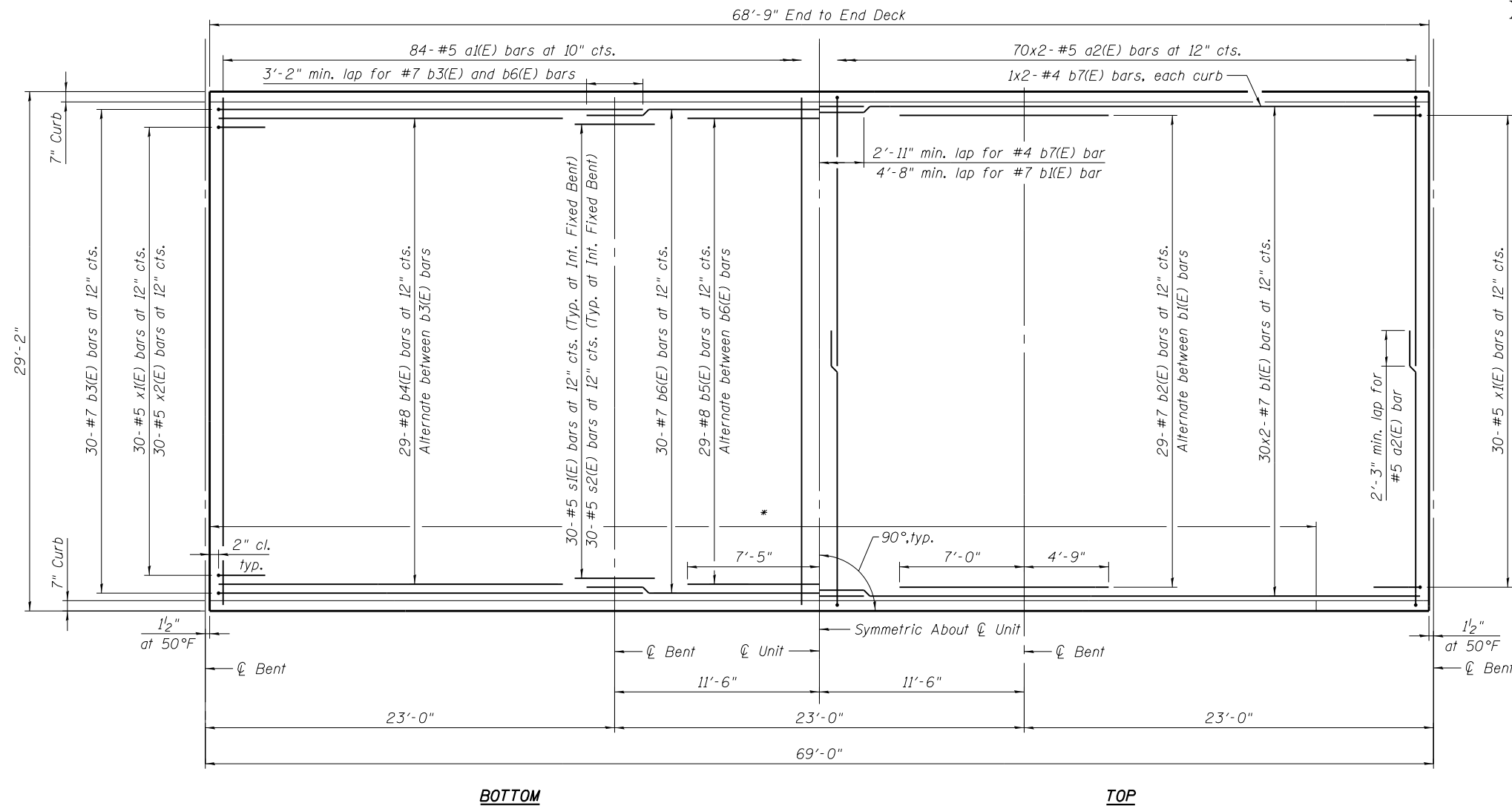
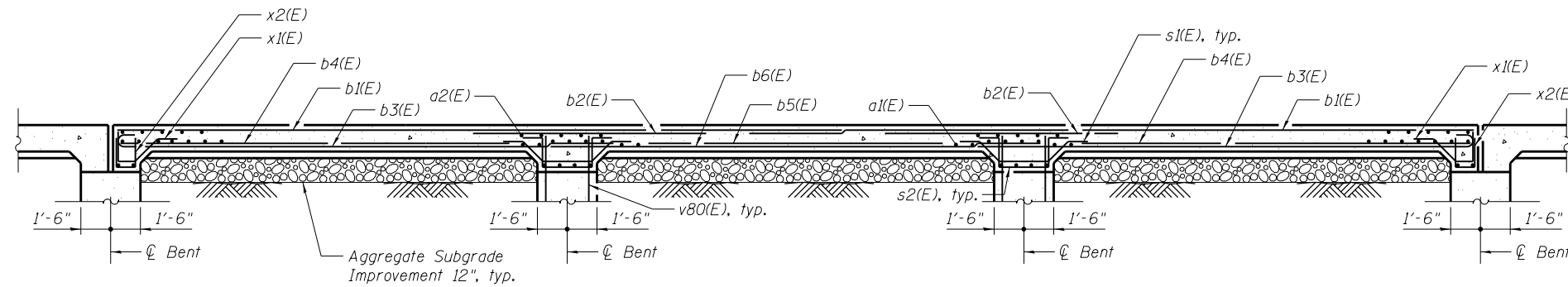
LOCHNER
H. W. LOCHNER, INC.
225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

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PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE DETAILS 1
STRUCTURE NO. 016-D013**
SHEET NO. 10 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	555
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



MINIMUM BAR LAP

- (Deck)
- #4 bar (Top) = 2'-11"
 - #5 bar (Top) = 2'-3"
 - #7 bar (Top) = 4'-8"
 - #7 bar = 3'-2"

NOTES

1. See Sheet 12 of 32 for superstructure details and Bill of Material.
2. Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
3. For Span arrangements, work this sheet with Sheet 1.
4. 1 scupper is placed in EB Unit 2 and 4. Scuppers not shown in plan view. For location details, see Sheet 1. For typical scupper reinforcement details, see Sheet 12.

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LOCHNER
H.W. LOCHNER, INC.
225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

USER NAME =
FILE NAME = 016013-60L72-011-DP.dgn
PLOT SCALE =
PLOT DATE =

DESIGNED - LJB
CHECKED - RH
DRAWN - EF
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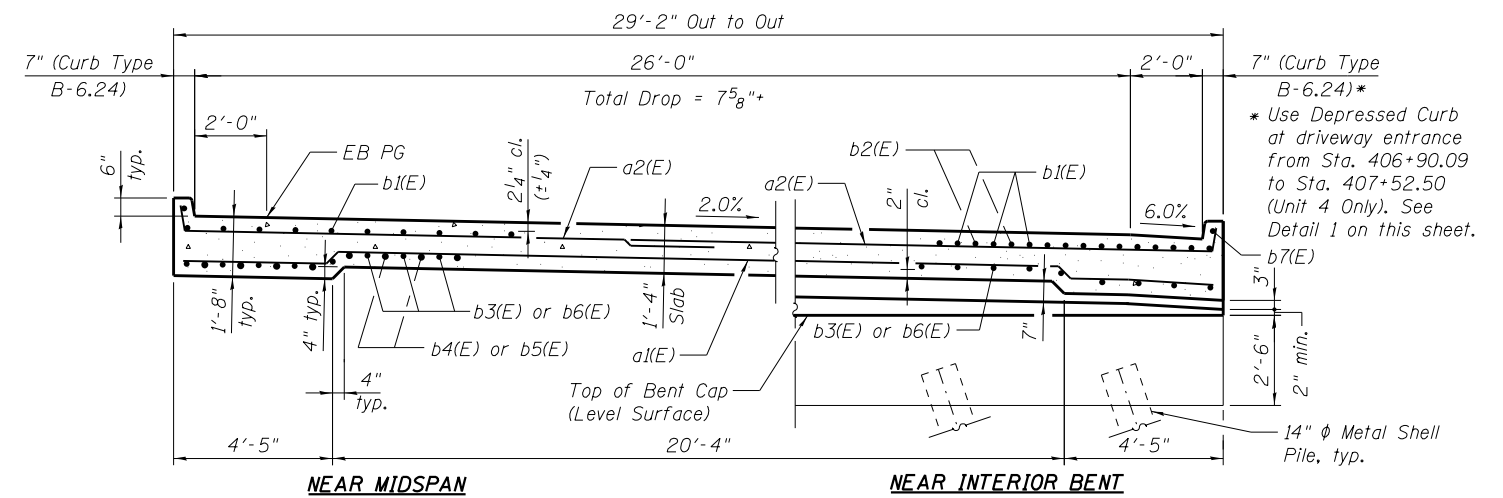
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

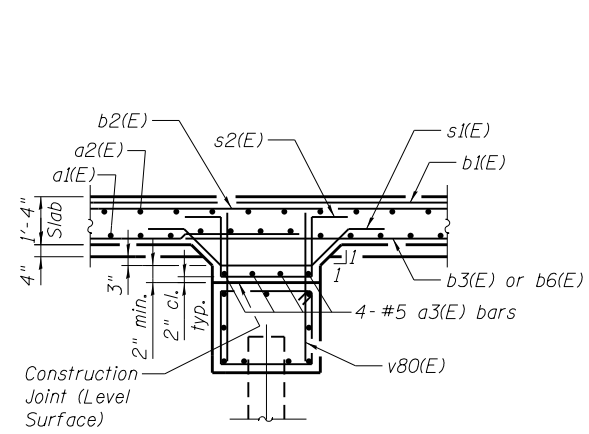
**DECK PLAN & CROSS SECTION 2
STRUCTURE NO. 016-D013**

SHEET NO. 11 OF 32 SHEETS

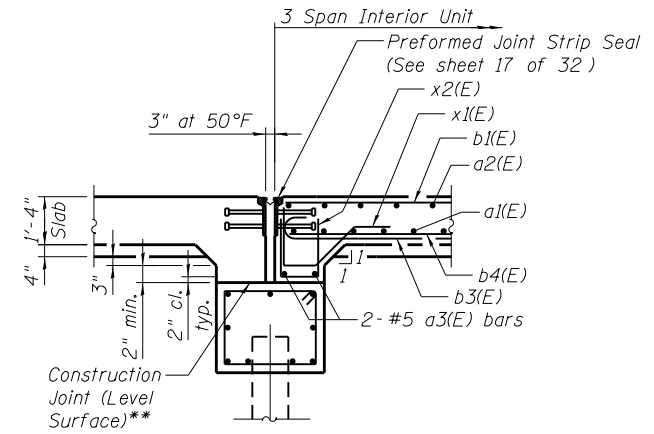
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351	2010-081-R	COOK	1045	556
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



* Use Depressed Curb at driveway entrance from Sta. 406+90.09 to Sta. 407+52.50 (Unit 4 Only). See Detail 1 on this sheet.

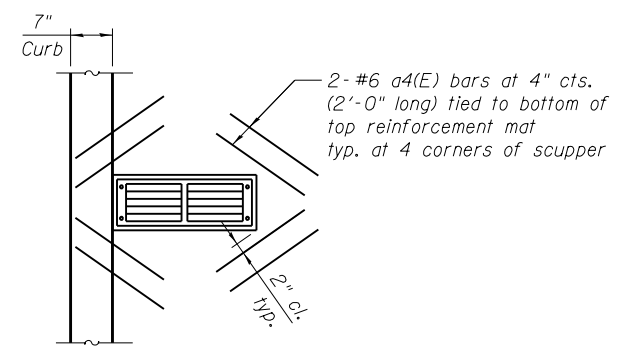


**FIXED PILE BENT
CAP SECTION**

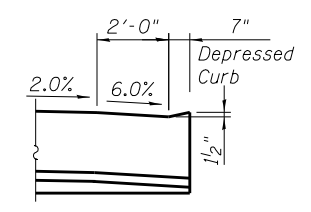


EXPANSION PILE BENT

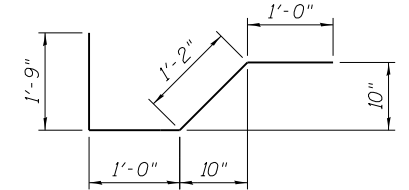
** Top concrete surface of the expansion pier caps shall be finished to a very smooth finish. 1/8" neoprene sheet shall be placed on the entire top surface of the expansion pier caps prior to pouring the superstructure slab. Cost of furnishing and installing 1/8" neoprene sheet is included with CONCRETE STRUCTURES.



SCUPPER REINFORCEMENT

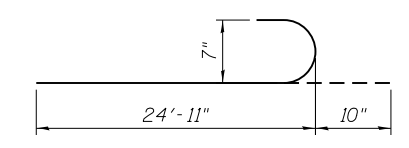


DETAIL 1

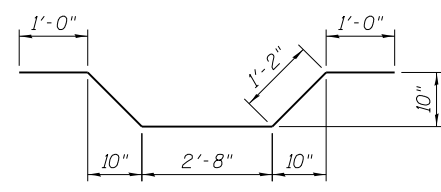


BAR x1(E)

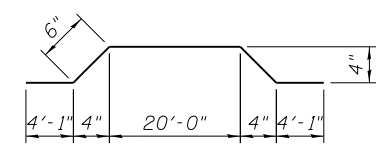
BAR x2(E)



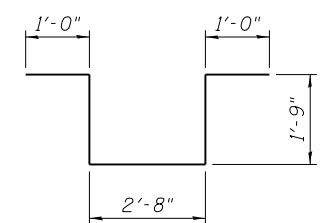
BAR b3(E)



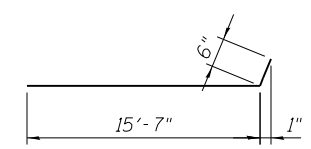
BAR s1(E)



BAR a1(E)



BAR s2(E)



BAR a2(E)

**3 SPAN INTERIOR UNIT
EB BRIDGE CROSS SECTION
(Looking East)**

**BILL OF MATERIAL
FOR 3 SPAN INTERIOR UNITS**

Bar	No.	Size	Length	Shape
a1(E)	168	#5	29'-2"	
a2(E)	280	#5	16'-1"	
a3(E)	24	#5	28'-10"	
b1(E)	120	#7	36'-11"	
b2(E)	116	#7	11'-9"	
b3(E)	120	#7	25'-9"	
b4(E)	116	#8	20'-1"	
b5(E)	58	#8	14'-10"	
b6(E)	60	#7	26'-2"	
b7(E)	8	#4	36'-1"	
s1(E)	120	#5	7'-0"	
s2(E)	120	#5	8'-2"	
x1(E)	120	#5	4'-11"	
x2(E)	120	#5	4'-6"	
Reinforcement Bars, Epoxy Coated			Pound	43,690
Concrete Superstructure			Cu. Yd.	239.8
Protective Coat			Sq. Yd.	462
Bridge Deck Grooving			Sq. Yd.	398

The above quantities include all 2 units: EB Units 2 & 4.

**SCUPPER REINFORCEMENT
BILL OF MATERIAL
FOR SCUPPERS**

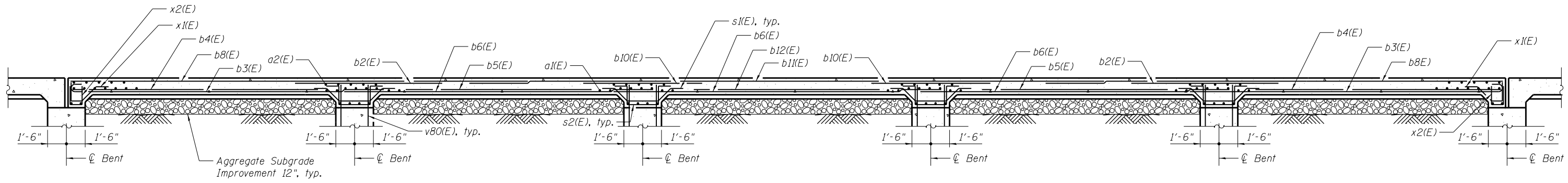
Bar	No.	Size	Length	Shape
a4(E)	16	#6	2'-0"	
Reinforcement Bars, Epoxy Coated			Pound	60

The above quantities include reinforcement for 2 scuppers.

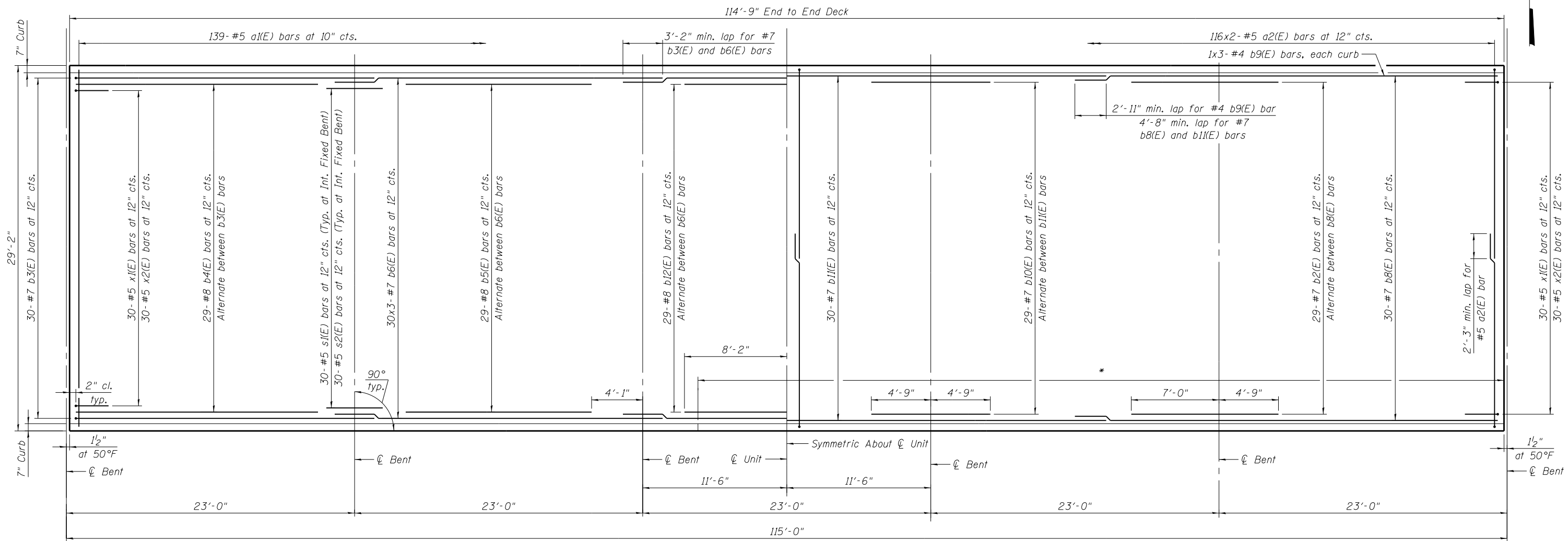
NOTES

1. Cut b1(E) bars to clear drainage scuppers.
2. Space b3(E) thru b6(E) bars to avoid interference with drainage scuppers.

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INTERIOR UNIT ELEVATION



BOTTOM

TOP

* Depressed Curb from Sta. 406+25.50 to Sta. 406+90.09 (Unit 3 Only)

5 SPAN INTERIOR UNIT PLAN
(Unit 3)

MINIMUM BAR LAP

- (Deck)
- #4 bar (Top) = 2'-11"
- #5 bar (Top) = 2'-3"
- #7 bar (Top) = 4'-8"
- #7 bar = 3'-2"

NOTES

1. See Sheet 14 of 32 for superstructure details and Bill of Material.
2. Bars indicated thus 20 x 3- #5 etc. indicates 20 lines of bars with 3 lengths per line.
3. For Span arrangements, work this sheet with Sheet 1.
4. 2 scuppers are placed in EB Unit 3. Scuppers not shown in plan view. For location details, see Sheet 1. For typical scupper reinforcement details, see Sheet 14.

T:\51006-056\Struct\Land Bridges\Land Bridges\4 - 016-0013\016013-60L72-013-DP.dgn

LOCHNER
H.W. LOCHNER, INC.
225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

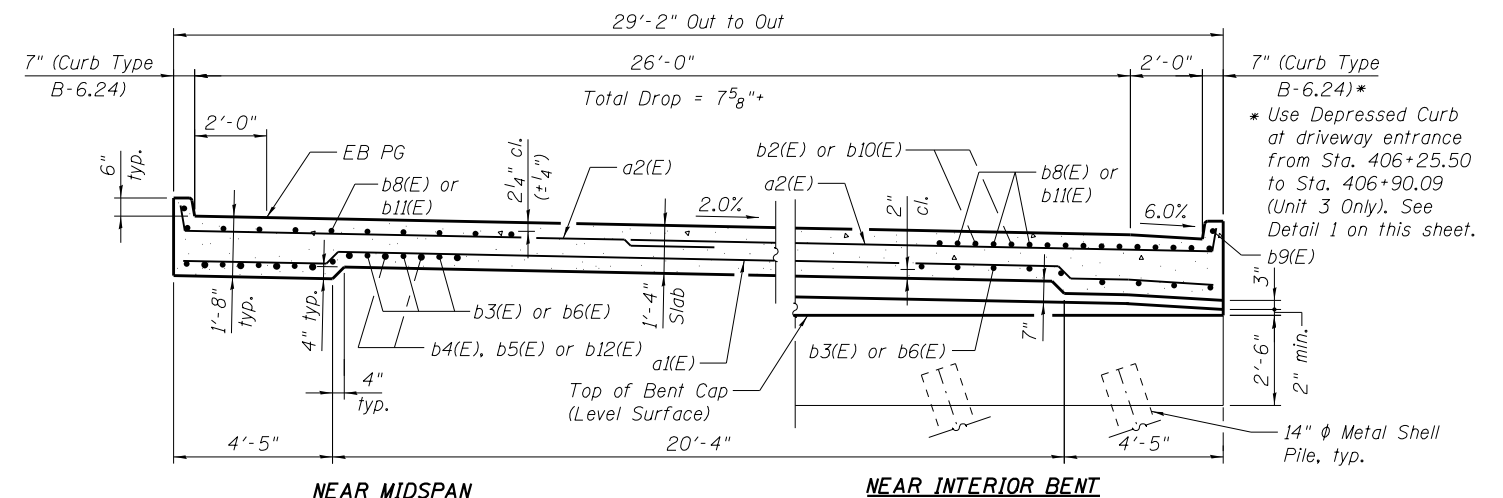
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PLOT DATE =	CHECKED - RH	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK PLAN & CROSS SECTION 3
STRUCTURE NO. 016-D013

SHEET NO. 13 OF 32 SHEETS

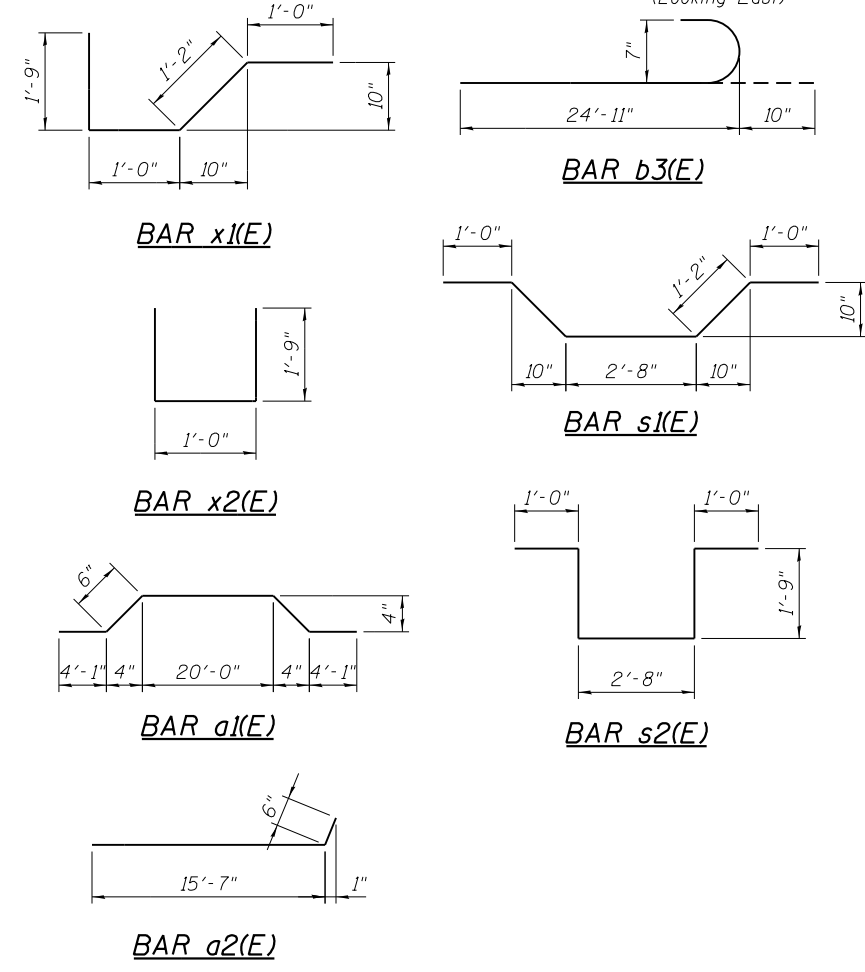
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	558
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



7" (Curb Type B-6.24)*
 * Use Depressed Curb at driveway entrance from Sta. 406+25.50 to Sta. 406+90.09 (Unit 3 Only). See Detail 1 on this sheet.

NEAR MIDSPAN NEAR INTERIOR BENT

5 SPAN INTERIOR UNIT EB BRIDGE CROSS SECTION (Looking East)



BILL OF MATERIAL FOR 5 SPAN INTERIOR UNITS

Bar	No.	Size	Length	Shape
a1(E)	139	#5	29'-2"	
a2(E)	232	#5	16'-1"	
a3(E)	20	#5	28'-10"	
b2(E)	58	#7	11'-9"	
b3(E)	60	#7	25'-9"	
b4(E)	58	#8	20'-1"	
b5(E)	58	#8	14'-10"	
b6(E)	90	#7	26'-2"	
b8(E)	60	#7	37'-2"	
b9(E)	6	#4	40'-4"	
b10(E)	58	#7	9'-6"	
b11(E)	30	#7	50'-8"	
b12(E)	29	#8	16'-4"	
s1(E)	120	#5	7'-0"	
s2(E)	120	#5	8'-2"	
x1(E)	60	#5	4'-11"	
x2(E)	60	#5	4'-6"	
Reinforcement Bars, Epoxy Coated			Pound	36,200
Concrete Superstructure			Cu. Yd.	203.8
Protective Coat			Sq. Yd.	385
Bridge Deck Grooving			Sq. Yd.	332

The above quantities include 1 unit: EB Unit 3.

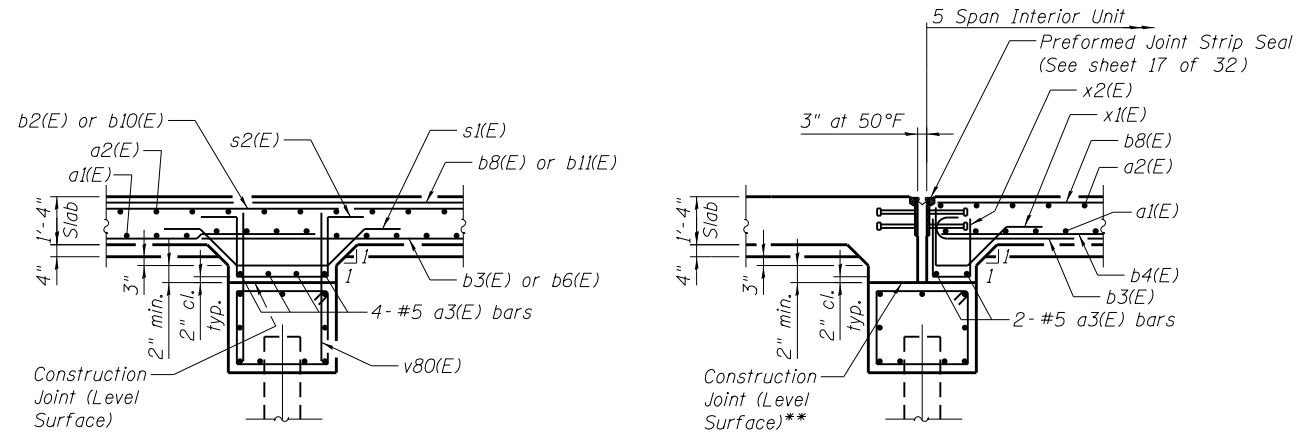
SCUPPER REINFORCEMENT BILL OF MATERIAL FOR SCUPPERS

Bar	No.	Size	Length	Shape
a4(E)	16	#6	2'-0"	
Reinforcement Bars, Epoxy Coated			Pound	60

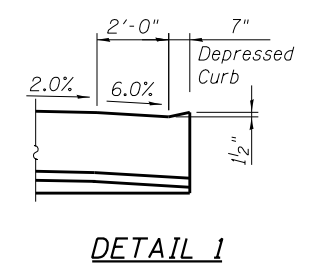
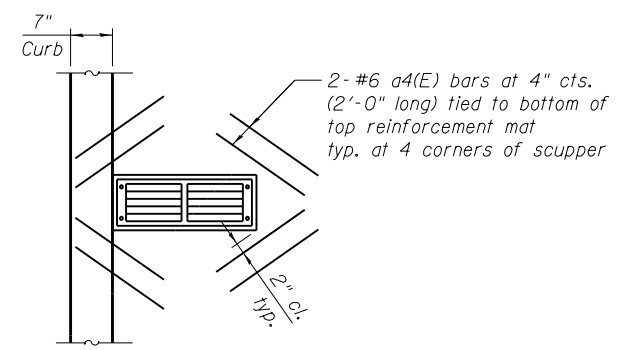
The above quantities include reinforcement for 2 scuppers.

NOTES

1. Cut b8(E) and/or b11(E) bars to clear drainage scuppers.
2. Space b3(E) thru b6(E) and b12(E) bars to avoid interference with drainage scuppers.

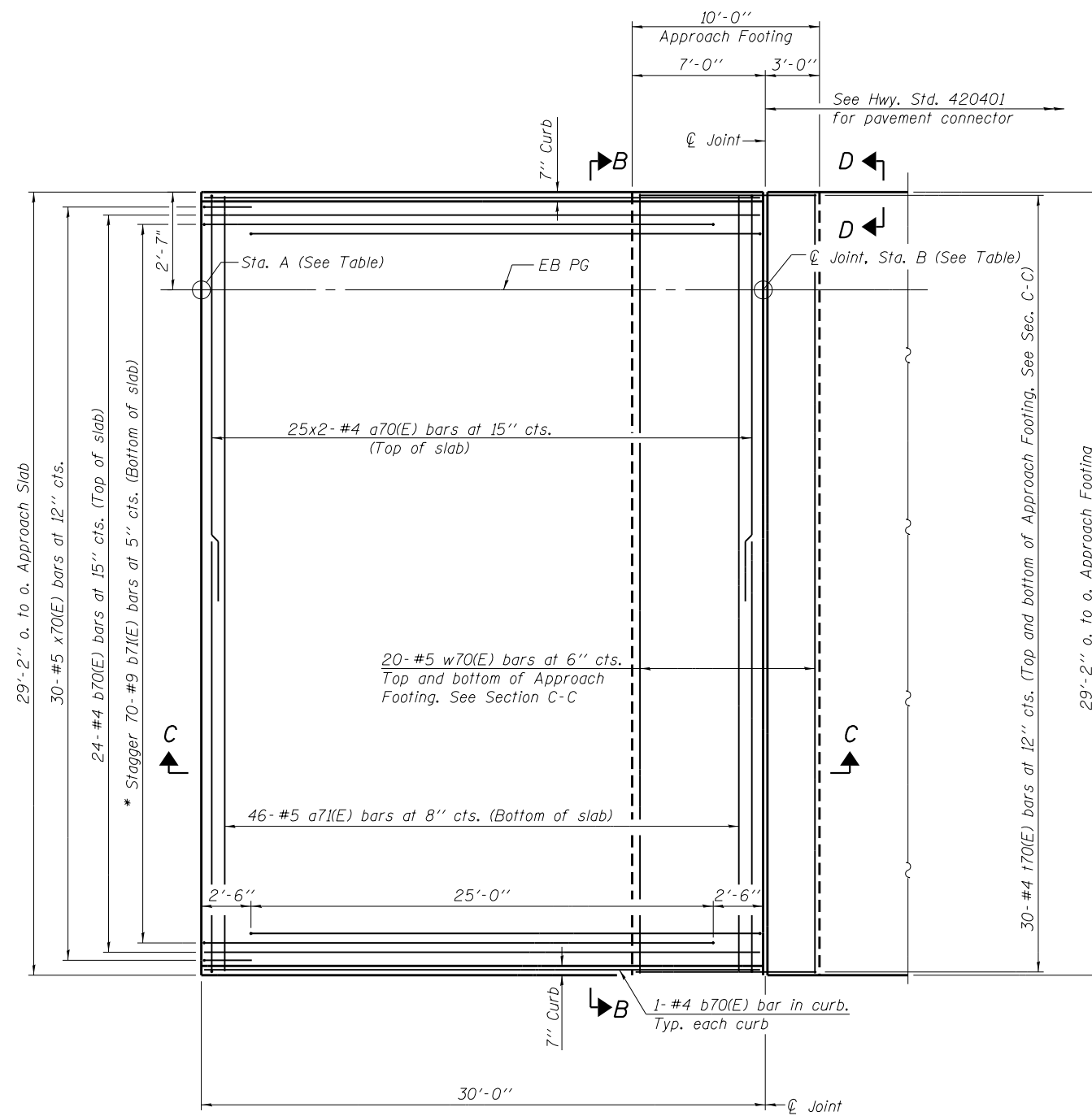


** Top concrete surface of the expansion pier caps shall be finished to a very smooth finish. 1/8" neoprene sheet shall be placed on the entire top surface of the expansion pier caps prior to pouring the superstructure slab. Cost of furnishing and installing 1/8" neoprene sheet is included with CONCRETE STRUCTURES.



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Notes:
 The joint opening shall be determined per Article 520.04 except that on jointless structures, the distance described as the bridge length between the nearest fixed bearings each way from the joint shall be taken as half the bridge length plus the approach slab length. The minimum dimension shall be 1/2" for installation purposes.



PLAN

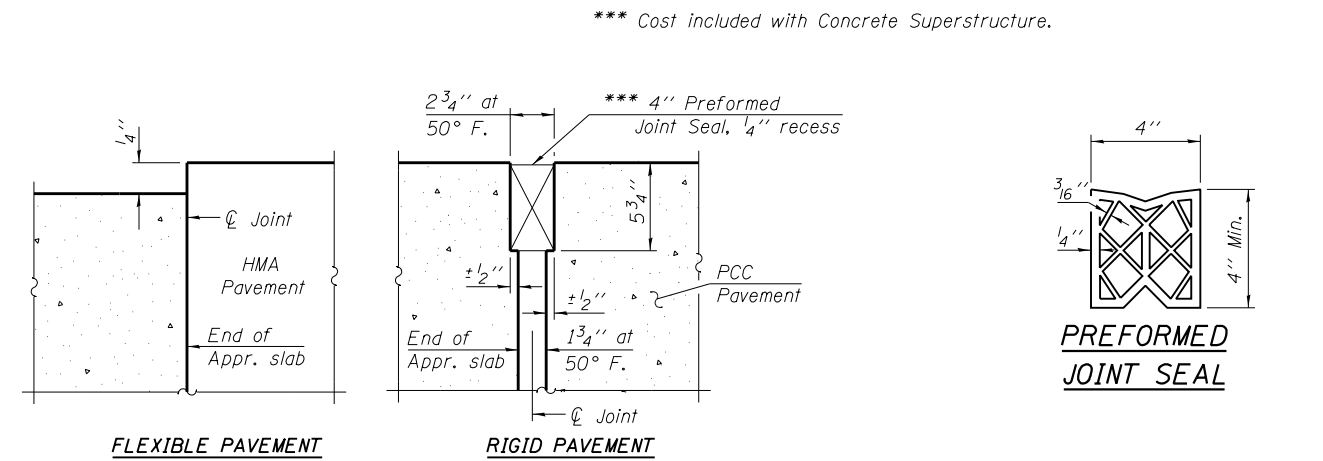
E. Appr. Details as Shown
 Details of W. Approach Slab Similar
 * Tilt #9 b71(E) bars as required to maintain clearance.

APPROACH STATIONS

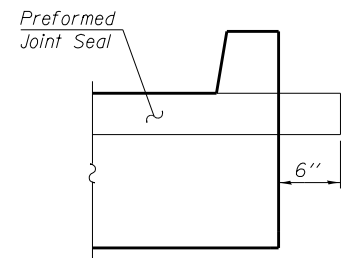
	Sta. A	Sta. B
W. Appr. Sta.	404+36.59	404+06.59
E. Appr. Sta.	408+28.59	408+58.59

MINIMUM BAR LAP

(Approach)
 #4 bar (Top) = 1'-10"



DETAIL A



VIEW D-D

NOTES

- See sheet 16 of 32 for Sections B-B and C-C.
- a71(E) and a70(E) bar spacings measured along C Rdwy.

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 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

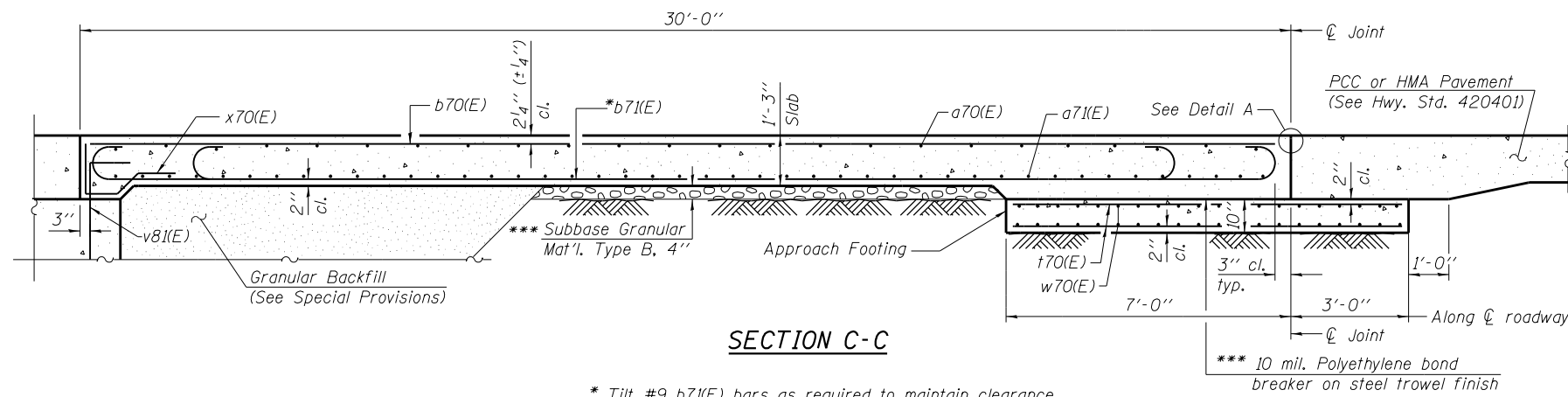
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PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**APPROACH SLAB DETAILS 1
 STRUCTURE NO. 016-D013**

SHEET NO. 15 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	560
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



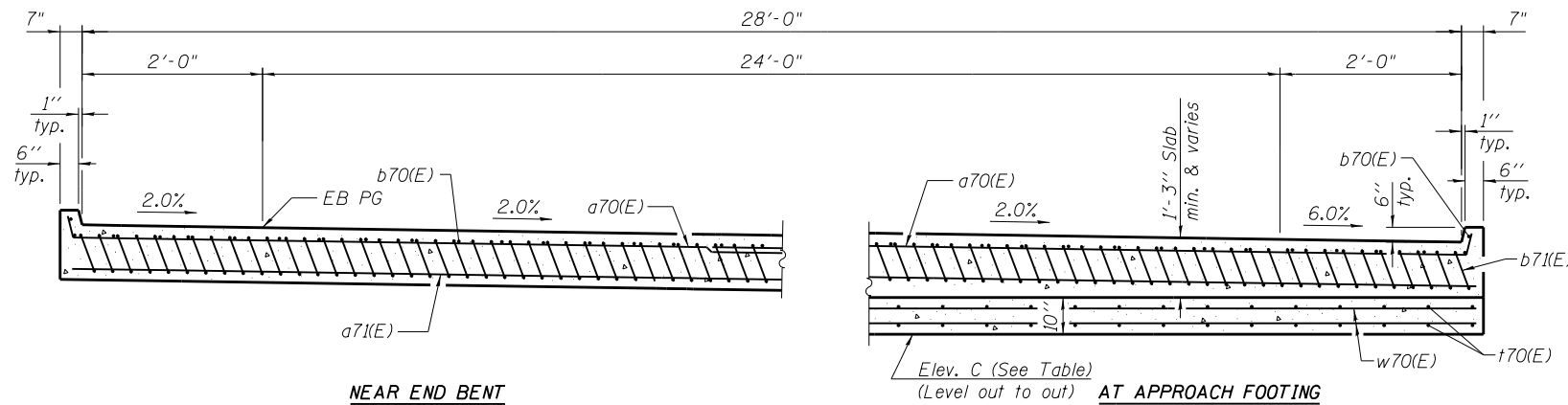
SECTION C-C

* Tilt #9 b71(E) bars as required to maintain clearance.

*** Cost included with Concrete Superstructure.

NOTES

1. See Sheet 15 of 32 for Detail A.
2. Approach slab and concrete curb shall be paid for as CONCRETE SUPERSTRUCTURE.
3. Approach footing concrete shall be paid for as CONCRETE STRUCTURES.
4. Reinforcement shall be paid for as REINFORCEMENT BARS, EPOXY COATED.
5. For v81(E) bar details, see Sheet 19 of 32.
6. The approach footing maximum applied service bearing pressure (Q_{max}) = 2.0 ksf.
7. Cost of excavation for approach footing included with STRUCTURE EXCAVATION.
8. For Granular Backfill and drainage treatment details, see Sheet 2 of 32.



NEAR END BENT

SECTION B-B

Looking East
(See Plan for dimensions not shown)

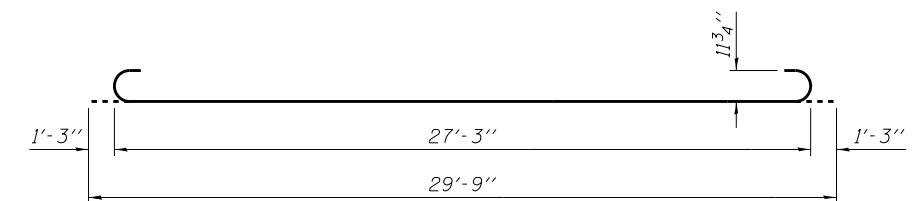
**BILL OF MATERIAL
FOR APPROACH SLABS**

Bar	No.	Size	Length	Shape
a70(E)	100	#4	15'-10"	—
a71(E)	92	#5	28'-10"	—
b70(E)	52	#4	29'-8"	—
b71(E)	140	#9	29'-9"	—
t70(E)	120	#4	9'-8"	—
w70(E)	80	#5	29'-8"	—
x70(E)	60	#5	6'-6"	—
Reinforcement Bars, Epoxy Coated			Pound	22,690
Concrete Superstructure			Cu. Yd.	93.8
Concrete Structures			Cu. Yd.	18.2
Structure Excavation			Cu. Yd.	57
Bridge Deck Grooving			Sq. Yd.	174
Protective Coat			Sq. Yd.	202

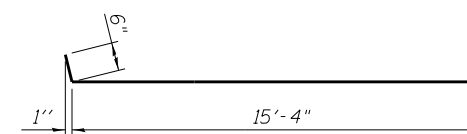
The above quantities include all 2 approach slabs.

APPROACH FOOTING ELEVATIONS

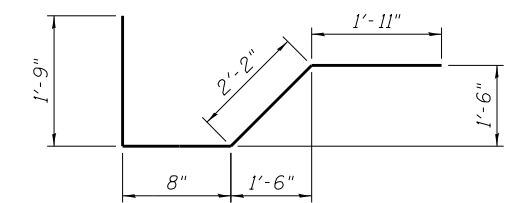
	Elev. C
W. Appr. Ftg.	684.79
E. Appr. Ftg.	685.40



BAR b71(E)



BAR a70(E)



BAR x70(E)

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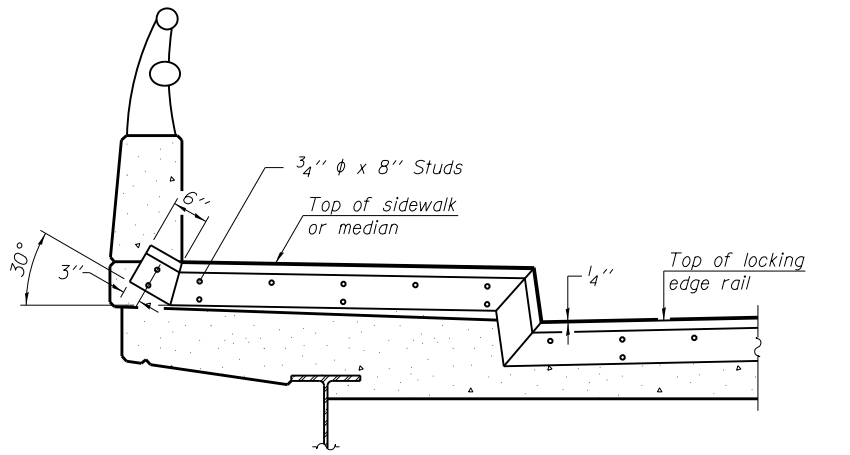
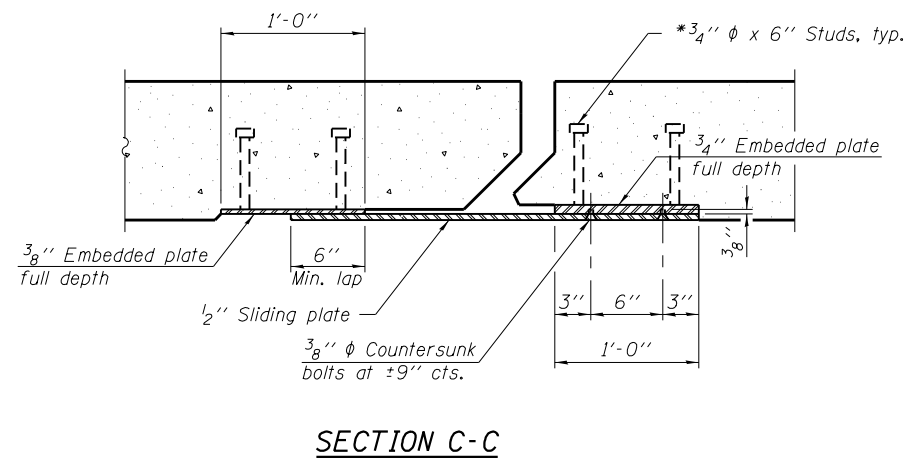
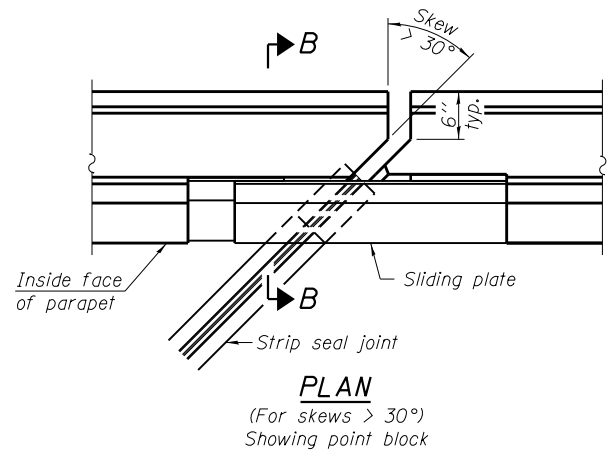
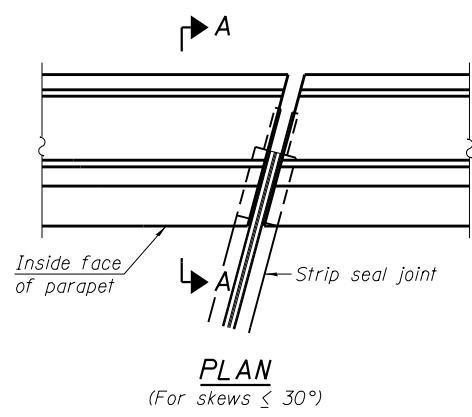
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**APPROACH SLAB DETAILS 2
STRUCTURE NO. 016-D013**

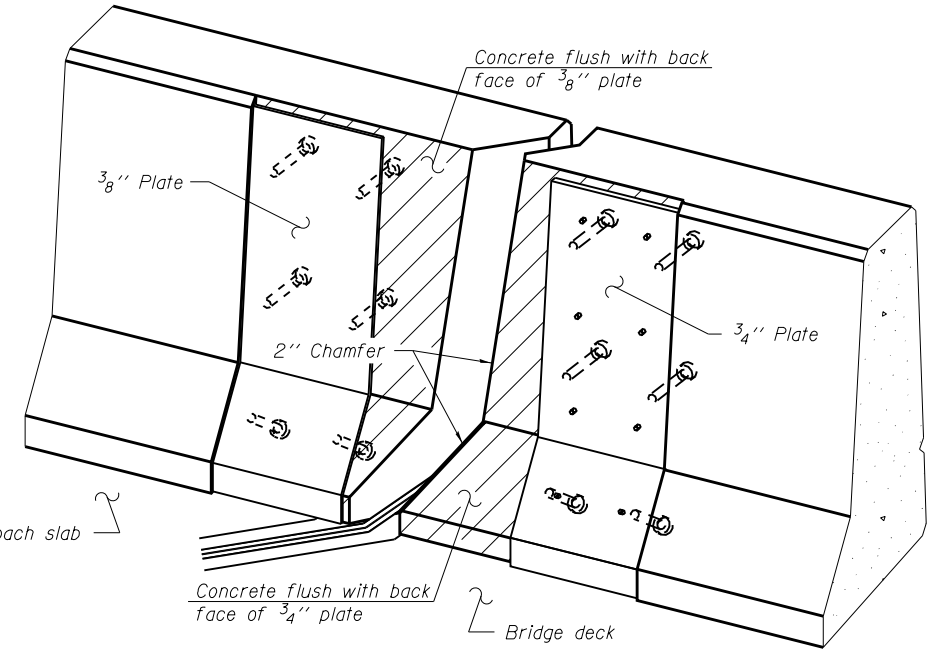
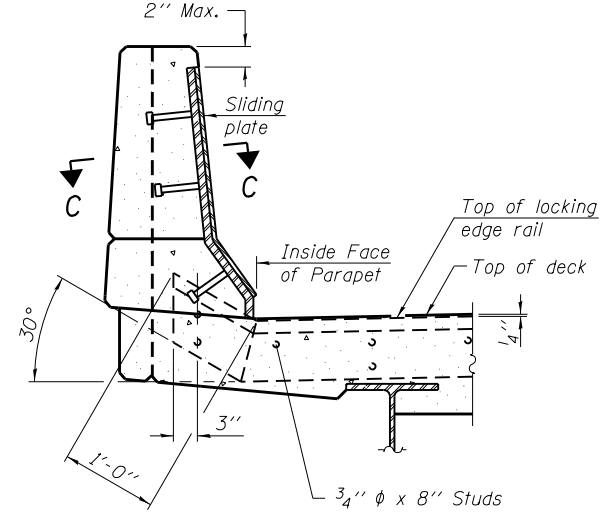
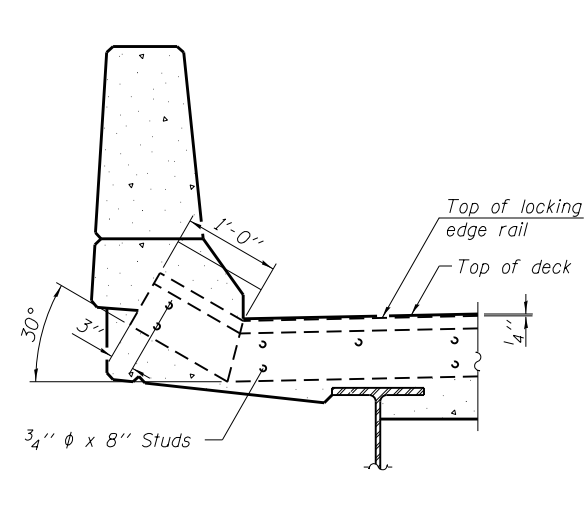
SHEET NO. 16 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	561
				CONTRACT NO. 60L72

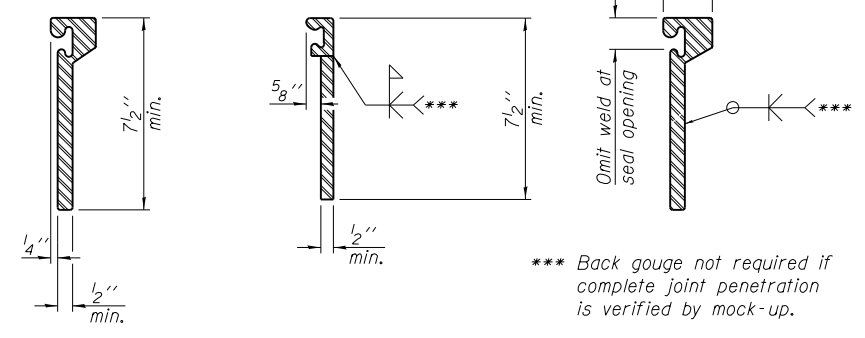
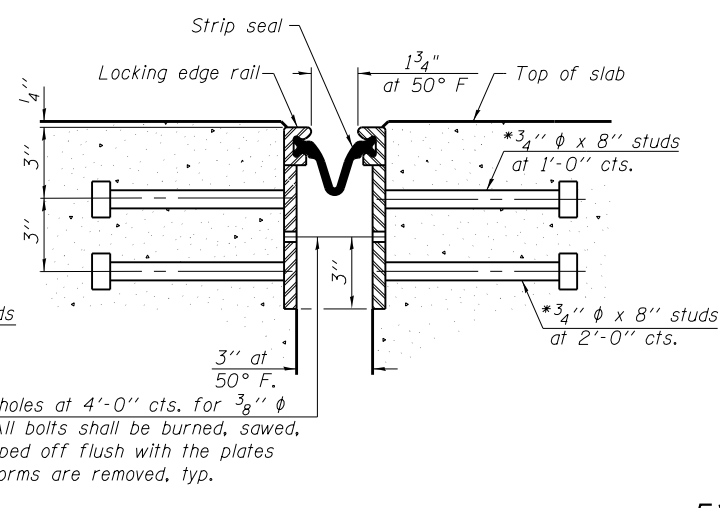
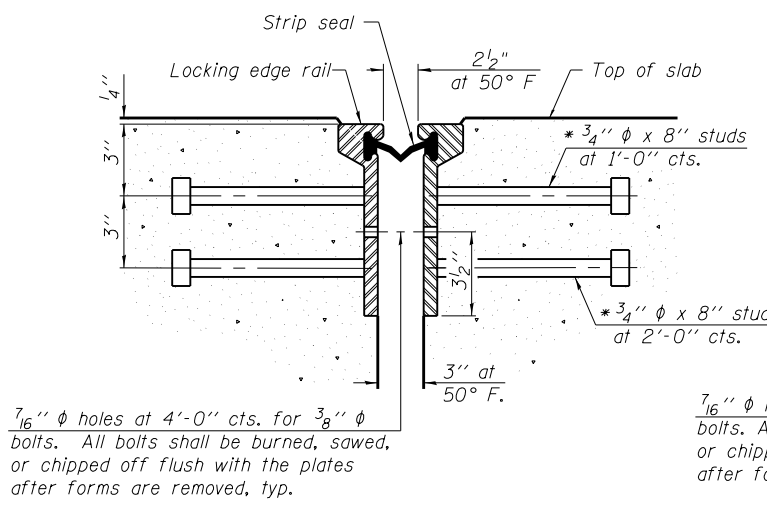
ILLINOIS FED. AID PROJECT



Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.



Notes:
The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.
The Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities.
The manufacturer's recommended installation methods shall be followed.
The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.
Maximum space between rail segments shall be 3/16", sealed with a suitable sealant. Joints in rails within 10 ft. of curbs shall be welded.
Parapet plates and anchorage studs for skews > 30° included in the cost of Preformed Joint Strip Seal.



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

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	117

EJ-SSJ 1-27-12

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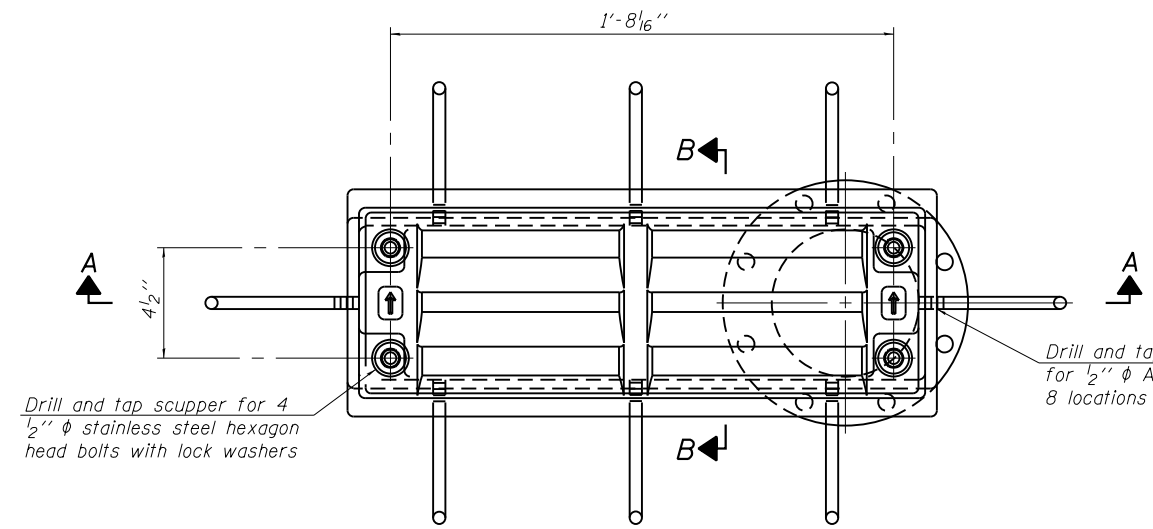
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 016-D013

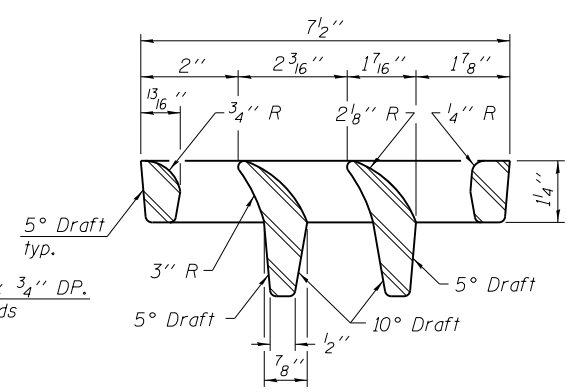
SHEET NO. 17 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

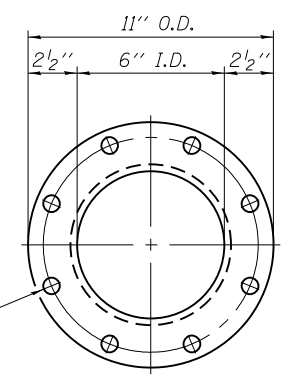
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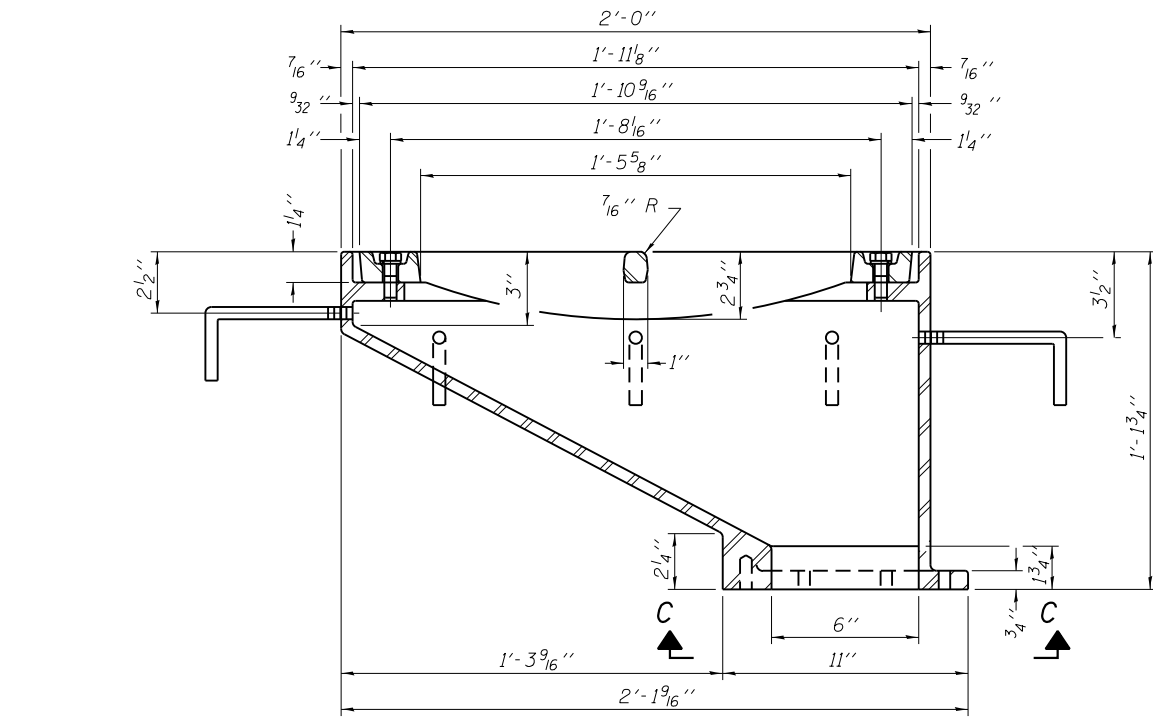
PLAN



VANE GRATE DETAIL

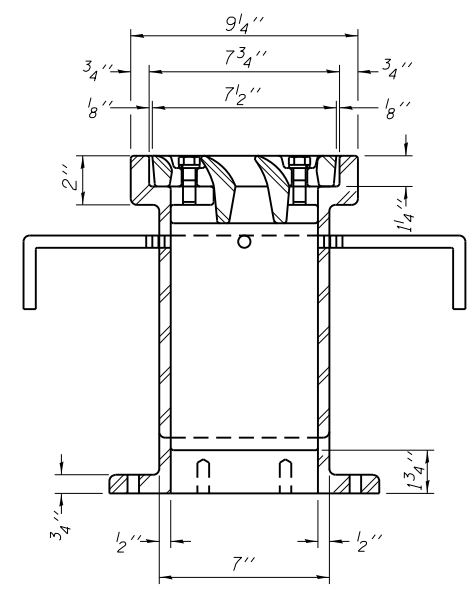


VIEW C-C

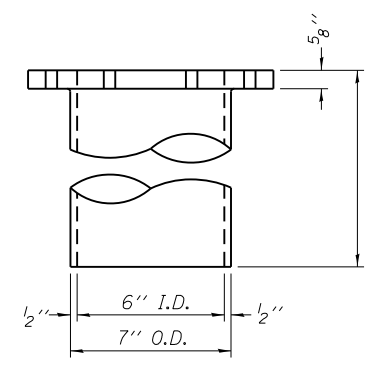


SECTION A-A

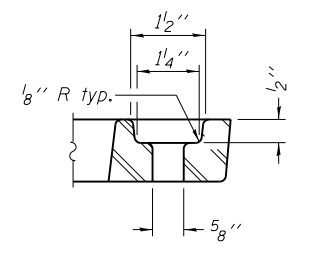
See sheets 12 and 14 of 32 for scupper location relative to curb.



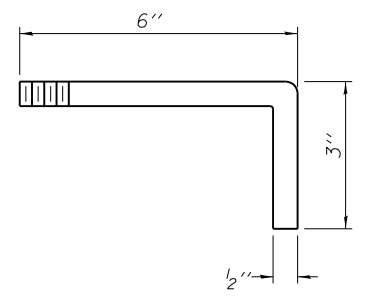
SECTION B-B



DOWNSPOUT



BOLT HOLE DETAIL



ANCHOR STUD DETAIL

Drill and tap 8 holes for 1/2"-13 bolts on a 9 1/2" φ bolt circle. (2 blind holes are 1/4" deep, 6 thru holes)

Notes:

All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 105, Class 35B.

Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.

Downspouts located on the exterior side of a painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.

As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.

Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frame. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval. Structural steel weldments shall not be substituted for the cast iron scupper grate. Structural steel frames and downspouts shall be galvanized according to AASHTO M111.

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

Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-12.

Alternate fiberglass downspout conforming to ASTM D 2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. may be used in lieu of the cast iron or steel equivalent.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scuppers, DS-12	Each	4

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DS-12

7-1-10

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225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

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CHECKED - RH

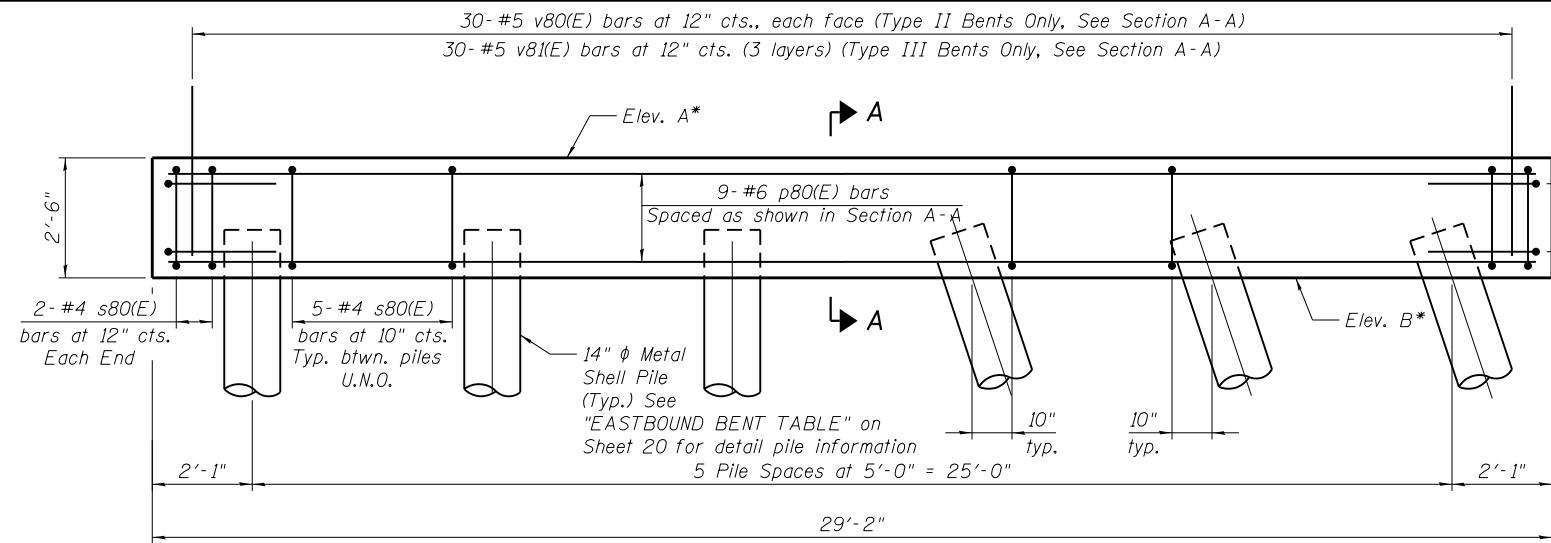
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRAINAGE SCUPPER DS-12
STRUCTURE NO. 016-0013

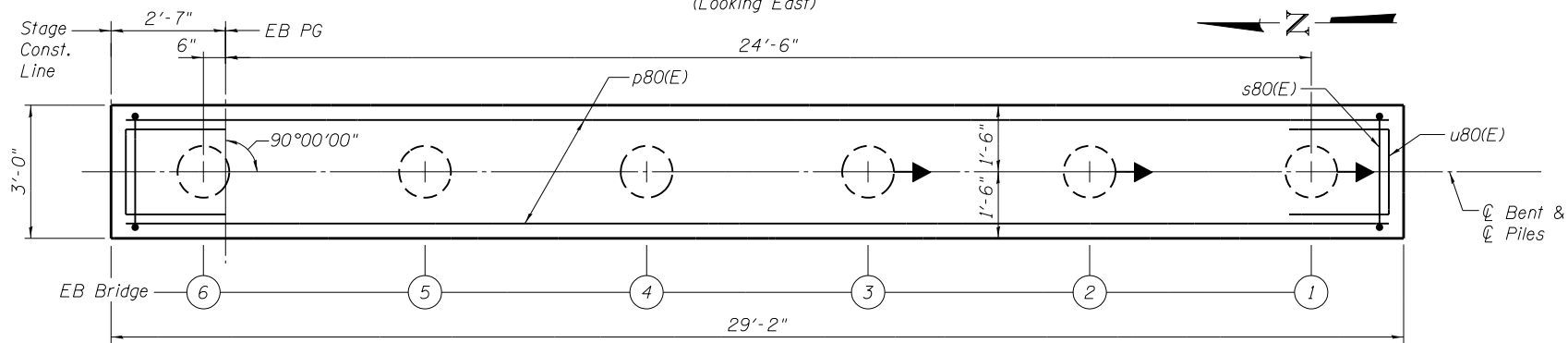
SHEET NO. 18 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

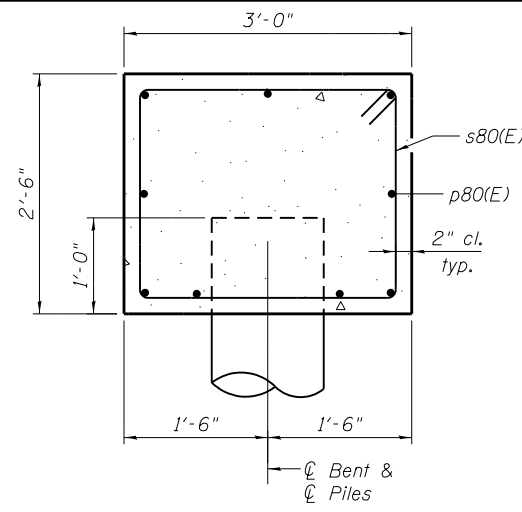


ELEVATION
(Looking East)

*For Elev. A & B, see Sheet 20

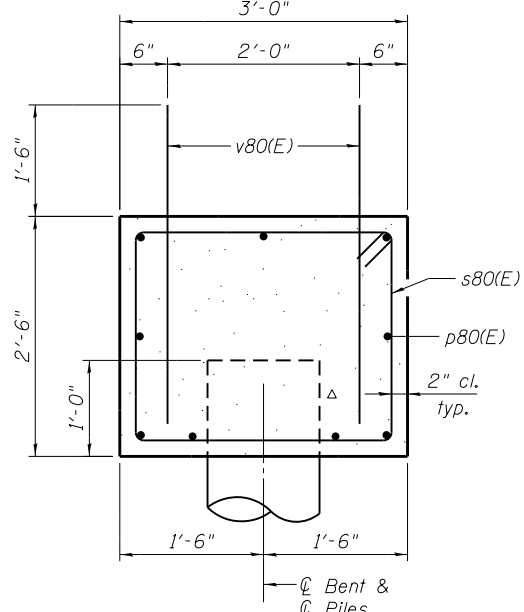


EB BENT PLAN



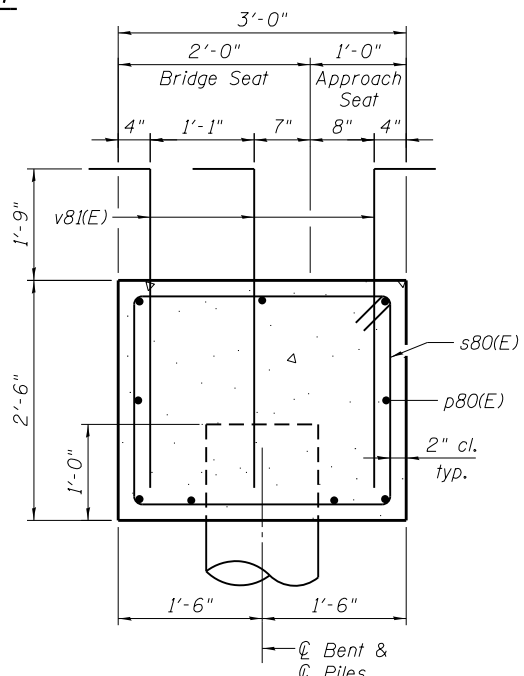
TYPE I BENT
SECTION A-A THRU EXPANSION BENT

(See "EASTBOUND BENT TABLE" on Sheet 20 for detail bent information)



TYPE II BENT
SECTION A-A THRU FIXED BENT

(See "EASTBOUND BENT TABLE" on Sheet 20 for detail bent information)



TYPE III BENT
SECTION A-A THRU END BENT

(See "EASTBOUND BENT TABLE" on Sheet 20 for detail bent information)

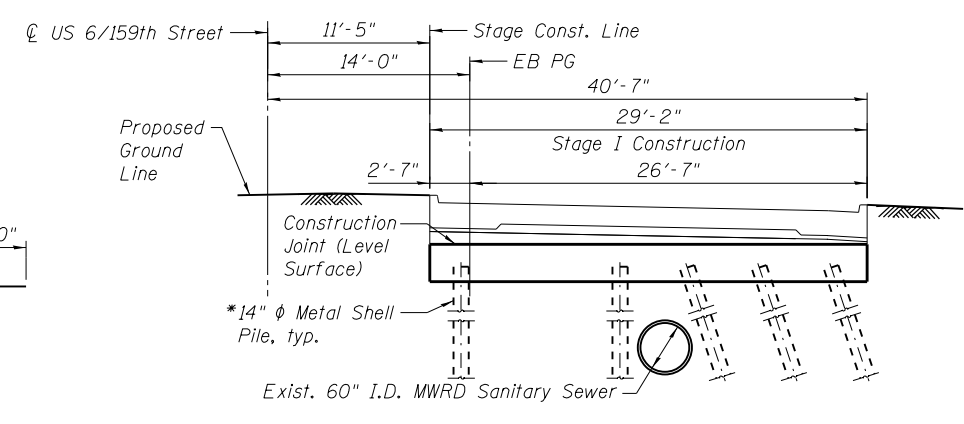
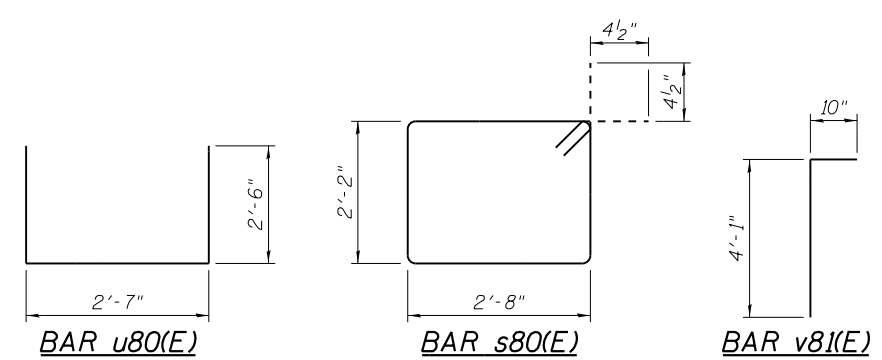
PILE DATA

Type: Metal Shell - 14 in. dia. x 0.25 in. wall
Nominal Required Bearing: See Table
Factored Resistance Available: See Table
Est. Length: See Table
No. Production Piles: See Table
No. Test Piles: See Table

LEGEND

- Indicates Pile Battered in Direction of Arrow
- Indicates Vertical Pile

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PIER SKETCH
(Looking East)

*Space piles to miss existing 60" I.D. MWRD sanitary sewer (See Note 5)

NOTES

1. For Metal Shell Pile Details, see Sheet 22.
2. For Pile Data Table, see Sheet 20.
3. Apply Concrete Sealer to top and sides of Bent Cap of EB Bents 4, 7, 12 and 15.
4. For pile bent layout, see Sheet 1.
5. The Contractor shall coordinate with MWRD, verify the location of the existing 60" I.D. MWRD sanitary sewer pipe in the field and advise the Engineer of discrepancies prior to the pile installation. The Contractor must take special precautions to avoid the damage to the existing MWRD facilities when driving 14" φ metal shell piles. The Contractor may propose other means of pile installation provided they are done so at no extra cost to the Department. If the Contractor elects to vary from the design requirements shown on the plans, the revised design calculations and details shall be submitted to the Engineer for approval. The calculations shall be prepared and sealed by an Illinois Licensed Structural Engineer.

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225 WEST WASHINGTON STREET
12 TH FLOOR
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL BENT DETAILS 1
STRUCTURE NO. 016-0013

SHEET NO. 19 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	564
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

EASTBOUND BENT TABLE

BENT CAP TABLE				PILE DATA TABLE							PILE BATTER INFORMATION					
Bent	Type of Pile Bent	Elev. A	Elev. B	Nominal Required Bearing (kips)	Factored Resistance Available (kips)	Est. Pile Length (ft.) ¹	Est. Pile Length (ft.) ²	Precore to Est. Elev.	No. Prod. Piles	No. Test Piles	Pile No. 1	Pile No. 2	Pile No. 3	Pile No. 4	Pile No. 5	Pile No. 6
1	III	684.99	682.49	264	145	52	55	676	5	1	-4:12	-4:12	-4:12	-	-	-
2	II	684.90	682.40	264	145	52	55	676	6	0	-4:12	-4:12	-4:12	-	-	-
3	II	684.81	682.31	264	145	52	55	676	6	0	-4:12	-4:12	-4:12	-	-	-
4	I	684.72	682.22	373	195	60	64	670	6	0	-4:12	-4:12	-4:12	-	-	-
5	II	684.63	682.13	373	195	60	64	670	5	1	-4:12	-4:12	-4:12	-	-	-
6	II	684.56	682.06	373	195	60	64	670	6	0	-4:12	-4:12	-4:12	-	-	-
7	I	684.53	682.03	373	195	60	64	670	6	0	-4:12	-4:12	-4:12	-	-	-
8	II	684.53	682.03	373	195	60	64	670	6	0	-4:12	-4:12	-4:12	-	-	-
9	II	684.56	682.06	373	195	60	64	670	5	1	-4:12	-4:12	-4:12	-	-	-
10	II	684.62	682.12	373	195	60	64	670	6	0	-4:12	-4:12	-4:12	-	-	-
11	II	684.71	682.21	273	139	48	51	676	6	0	-4:12	-4:12	-4:12	-	-	-
12	I	684.82	682.32	273	139	48	51	676	6	0	-4:12	-4:12	-4:12	-	-	-
13	II	684.95	682.45	273	139	48	51	676	5	1	-4:12	-4:12	-4:12	-	-	-
14	II	685.07	682.57	273	139	48	51	676	6	0	-4:12	-4:12	-4:12	-	-	-
15	I	685.20	682.70	273	139	48	51	676	6	0	-4:12	-4:12	-4:12	-	-	-
16	II	685.32	682.82	273	139	48	51	676	6	0	-4:12	-4:12	-4:12	-	-	-
17	II	685.45	682.95	277	152	61	65	676	5	1	-4:12	-4:12	-4:12	-	-	-
18	III	685.57	683.07	277	152	61	65	676	6	0	-4:12	-4:12	-4:12	-	-	-

NOTES

- For pile bent layout, see Sheet 1.
- If peat soils are present above the estimated elevation of precore, the contractor shall cease the precore at the elevation peat is encountered in the field during construction.
- Cost of precoring for pile installation is included with DRIVING PILES.

Note: A positive batter indicates piles to be battered toward the \odot US 6/159th Street.
A negative batter indicates piles to be battered away from the \odot US 6/159th Street.

¹Vertical pile length.

²Battered pile length.

BILL OF MATERIAL BENT 1 EB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	90	#5	4'-11"	└
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	1110		
Structure Excavation	Cu. Yd.	34		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	266		
Driving Piles	Foot	266		
Test Pile Metal Shells	Each	1		

BILL OF MATERIAL BENT 2 EB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	35		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	321		
Driving Piles	Foot	321		

BILL OF MATERIAL BENT 3 EB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	36		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	321		
Driving Piles	Foot	321		

BILL OF MATERIAL BENT 4 EB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	640		
Structure Excavation	Cu. Yd.	36		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	372		
Driving Piles	Foot	372		
Concrete Sealer	Sq. Ft.	249		

BILL OF MATERIAL BENT 5 EB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	37		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	312		
Driving Piles	Foot	312		
Test Pile Metal Shells	Each	1		

BILL OF MATERIAL BENT 6 EB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	38		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	372		
Driving Piles	Foot	372		

BILL OF MATERIAL BENT 7 EB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	640		
Structure Excavation	Cu. Yd.	38		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	372		
Driving Piles	Foot	372		
Concrete Sealer	Sq. Ft.	249		

BILL OF MATERIAL BENT 8 EB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	38		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	372		
Driving Piles	Foot	372		

BILL OF MATERIAL BENT 9 EB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	38		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	312		
Driving Piles	Foot	312		
Test Pile Metal Shells	Each	1		

BILL OF MATERIAL BENT 10 EB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	┌
v80(E)	60	#5	3'-10"	—
Concrete Structures	Cu. Yd.	8.1		
Reinforcement Bars, Epoxy Coated	Pound	880		
Structure Excavation	Cu. Yd.	37		
Furnishing Metal Shell Piles - 14" X 0.25"	Foot	372		
Driving Piles	Foot	372		

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LOCHNER H. W. LOCHNER, INC. 225 WEST WASHINGTON STREET 12 TH FLOOR CHICAGO, ILLINOIS 60606	USER NAME =	DESIGNED - LJB	REVISED
	FILE NAME = 016D013-60L72-020-BD.dgn	CHECKED - RH	REVISED
	PLOT SCALE =	DRAWN - EF	REVISED
	PLOT DATE	CHECKED - RH	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TYPICAL BENT DETAILS 2
STRUCTURE NO. 016-D013**

SHEET NO. 20 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	565
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

BILL OF MATERIAL BENT 11 EB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	└
v80(E)	60	#5	3'-10"	—
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	880	
Structure Excavation		Cu. Yd.	37	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	297	
Driving Piles		Foot	297	

BILL OF MATERIAL BENT 12 EB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	└
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	640	
Structure Excavation		Cu. Yd.	39	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	297	
Driving Piles		Foot	297	
Concrete Sealer		Sq. Ft.	249	

BILL OF MATERIAL BENT 13 EB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	└
v80(E)	60	#5	3'-10"	—
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	880	
Structure Excavation		Cu. Yd.	38	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	246	
Driving Piles		Foot	246	
Test Pile Metal Shells		Each	1	

BILL OF MATERIAL BENT 14 EB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	└
v80(E)	60	#5	3'-10"	—
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	880	
Structure Excavation		Cu. Yd.	34	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	297	
Driving Piles		Foot	297	

BILL OF MATERIAL BENT 15 EB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	└
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	640	
Structure Excavation		Cu. Yd.	31	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	297	
Driving Piles		Foot	297	
Concrete Sealer		Sq. Ft.	249	

BILL OF MATERIAL BENT 16 EB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	└
v80(E)	60	#5	3'-10"	—
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	880	
Structure Excavation		Cu. Yd.	31	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	297	
Driving Piles		Foot	297	

BILL OF MATERIAL BENT 17 EB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	└
v80(E)	60	#5	3'-10"	—
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	880	
Structure Excavation		Cu. Yd.	30	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	313	
Driving Piles		Foot	313	
Test Pile Metal Shells		Each	1	

BILL OF MATERIAL BENT 18 EB

Bar	No.	Size	Length	Shape
p80(E)	9	#6	28'-10"	—
s80(E)	29	#4	10'-5"	□
u80(E)	6	#5	7'-7"	└
v81(E)	90	#5	4'-11"	└
Concrete Structures		Cu. Yd.	8.1	
Reinforcement Bars, Epoxy Coated		Pound	1110	
Structure Excavation		Cu. Yd.	32	
Furnishing Metal Shell Piles - 14" X 0.25"		Foot	378	
Driving Piles		Foot	378	

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LOCHNER
H. W. LOCHNER, INC.
225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

USER NAME =
FILE NAME = 016013-60L72-021-80.dgn
PLOT SCALE =
PLOT DATE =

DESIGNED - LJB
CHECKED - RH
DRAWN - EF
CHECKED - RH

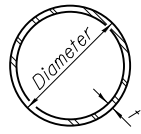
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REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TYPICAL BENT DETAILS 3
STRUCTURE NO. 016-D013**

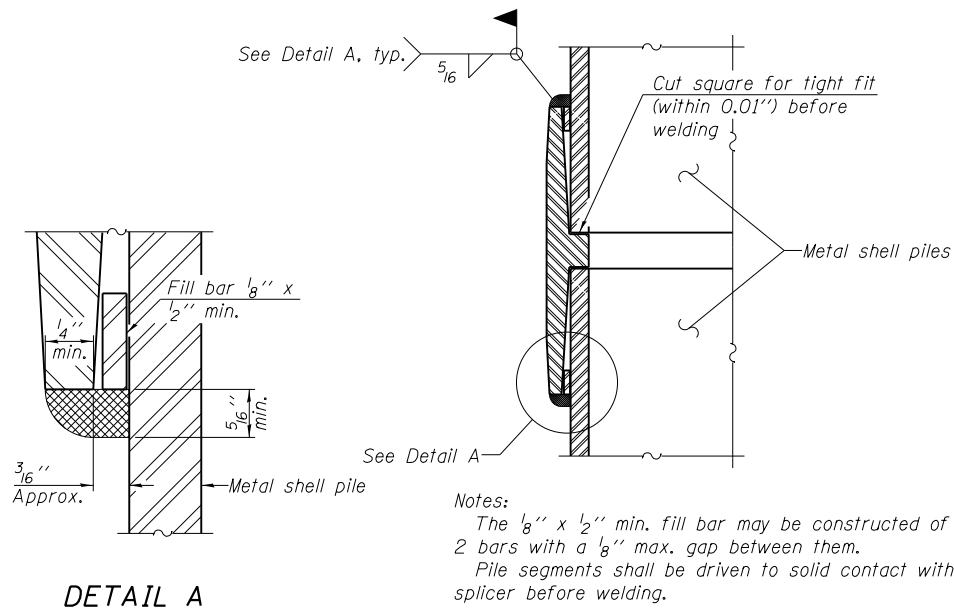
SHEET NO. 21 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	566
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



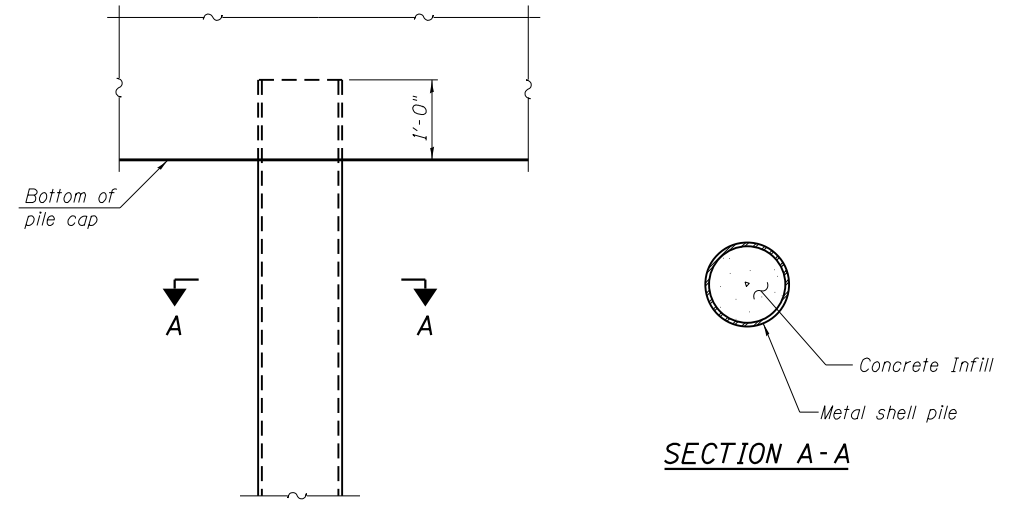
METAL SHELL PILE TABLE

Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd. ³ /ft.)
PP12	0.179"	22.60	0.0274
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361



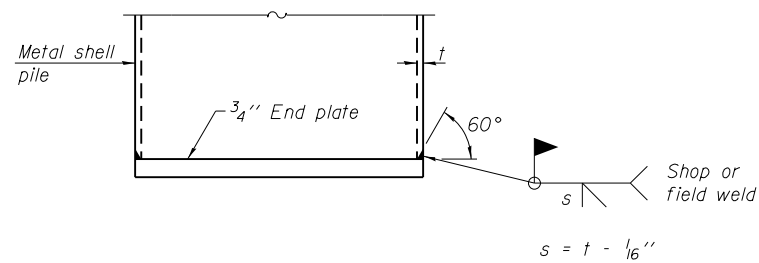
DETAIL A

WELDED COMMERCIAL SPLICE

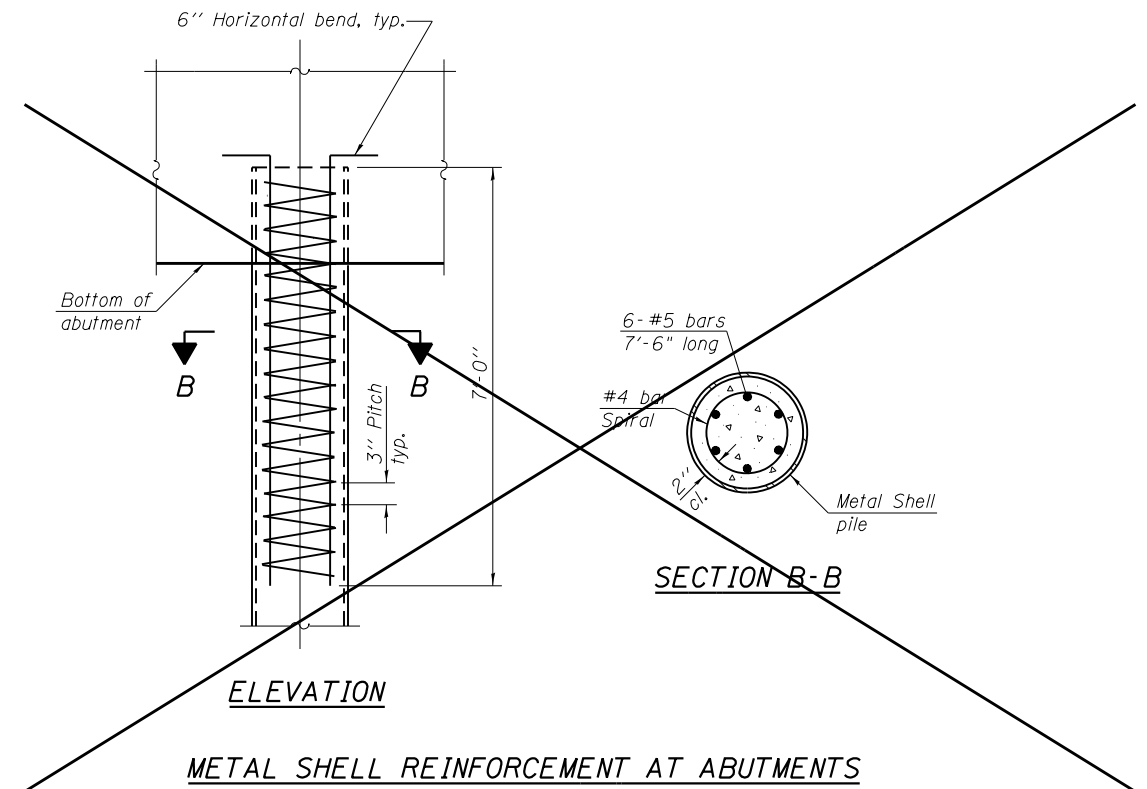


ELEVATION

METAL SHELL PILE DETAILS AT PIERS

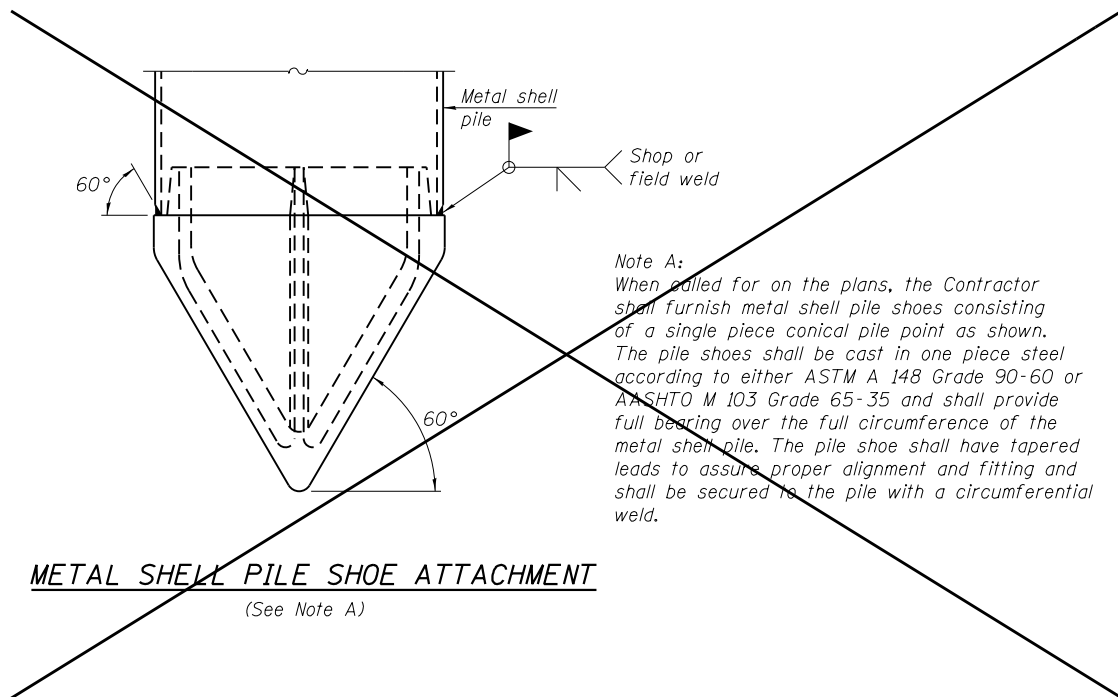


END PLATE ATTACHMENT



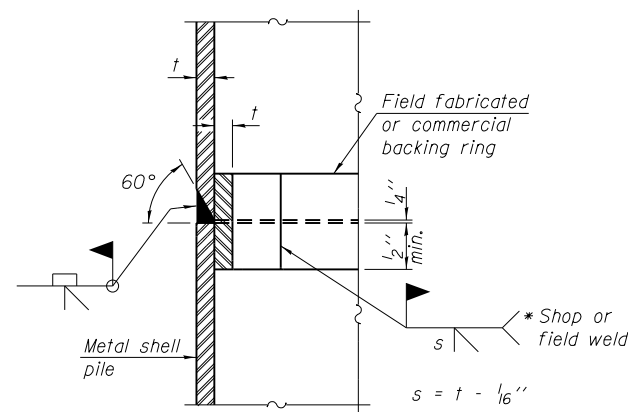
ELEVATION

METAL SHELL REINFORCEMENT AT ABUTMENTS



METAL SHELL PILE SHOE ATTACHMENT

(See Note A)



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.

Note:
 The metal shell piles shall be according to ASTM A 252 Grade 3.

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LOCHNER
 H.W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED -	REVISED
FILE NAME = 0160013-60L72-022-PD.dgn	CHECKED -	REVISED
PLOT SCALE =	DRAWN -	REVISED
PLOT DATE =	CHECKED -	REVISED

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**METAL SHELL PILES
 STRUCTURE NO. 016-0013**

SHEET NO. 22 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	567
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



SOIL BORING LOG

GSJ Job No. 10195 Page 1 of 1 Date 4/18/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM COUNTY Cook DRILLING METHOD HAND AUGER HAMMER TYPE

Table with columns for Depth (ft), Borehole Diameter (in), Unit Weight (pcf), Moisture Content (%), and Soil Description. Includes groundwater elevation data and soil layers like TOPSOIL-black, CLAY LOAM-brown & gray-medium stiff to very stiff (Fill), and PEAT-black.

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)



SOIL BORING LOG

GSJ Job No. 10195 Page 1 of 1 Date 4/17/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM COUNTY Cook DRILLING METHOD HAND AUGER HAMMER TYPE

Table with columns for Depth (ft), Borehole Diameter (in), Unit Weight (pcf), Moisture Content (%), and Soil Description. Includes groundwater elevation data and soil layers like TOPSOIL-black, CLAY LOAM-dark brown & gray-medium stiff to very stiff (Fill), and ORGANIC SILTY CLAY-black.

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)



SOIL BORING LOG

GSJ Job No. 10195 Page 1 of 1 Date 4/17/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM COUNTY Cook DRILLING METHOD HAND AUGER HAMMER TYPE

Table with columns for Depth (ft), Borehole Diameter (in), Unit Weight (pcf), Moisture Content (%), and Soil Description. Includes groundwater elevation data and soil layers like TOPSOIL-black, SILTY CLAY-brown & gray-medium stiff to very stiff, and ORGANIC SILTY CLAY-black (Fill).

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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LOCHNER H. W. LOCHNER, INC. 225 WEST WASHINGTON STREET 12 TH FLOOR CHICAGO, ILLINOIS 60606

Table with columns for USER NAME, FILE NAME, PLOT SCALE, PLOT DATE, DESIGNED, CHECKED, DRAWN, CHECKED, REVISED, REVISED, REVISED, REVISED.

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

SOIL BORINGS 1 STRUCTURE NO. 016-D013 SHEET NO. 23 OF 32 SHEETS

Table with columns for F.A.P. RTE., SECTION, COUNTY, TOTAL SHEETS, SHEET NO., CONTRACT NO.

ILLINOIS FED. AID PROJECT



GSI Job No. 10195

SOIL BORING LOG

Page 1 of 1

Date 4/17/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av LOGGED BY RR
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD HAND AUGER HAMMER TYPE

STRUCT. NO.	DEPT	BULGE	UCS	MOIST	Surface Water Elev.
016-D013					n/a ft
Station					n/a ft
BORING NO. HA-60					Groundwater Elev.:
Station 406+95					First Encounter Dry ft
Offset 37.90ft Left					Upon Completion n/a ft
Ground Surface Elev. 680.70 ft	(ft)	(/6")	(tsf)	(%)	After Hrs. ft
TOPSOIL-black	679.70		1.3	26	
CLAY LOAM-brown & gray-stiff (Fill)			1.3	25	
			1.0	28	
			1.3	23	
ORGANIC SILTY CLAY-black	671.70			26	
End Of Boring @ -10.0'. Boring backfilled with cuttings.	670.70 -10				

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)



GSI Job No. 10195

SOIL BORING LOG

Page 1 of 1

Date 4/17/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av LOGGED BY RR
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD HAND AUGER HAMMER TYPE

STRUCT. NO.	DEPT	BULGE	UCS	MOIST	Surface Water Elev.
016-D013					n/a ft
Station					n/a ft
BORING NO. HA-61					Groundwater Elev.:
Station 407+69					First Encounter 677.7 ft
Offset 39.70ft Left					Upon Completion n/a ft
Ground Surface Elev. 685.70 ft	(ft)	(/6")	(tsf)	(%)	After Hrs. ft
TOPSOIL-black	685.30			9	
CRUSHED STONE & GRAVEL				6	
ORGANIC SILTY LOAM-dark brown & black	681.70		1.0	67	
			0.5	88	
			0.3	72	
End Of Boring @ -10.0'. Boring backfilled with cuttings.	675.70 -10				

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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LOCHNER
 H.W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED - LJB	REVISED
FILE NAME = 016D013-60L72-024-SB.dgn	CHECKED - RH	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORINGS 2
STRUCTURE NO. 016-D013
 SHEET NO. 24 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	569
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



GSI Job No. 10195

SOIL BORING LOG

Page 1 of 2

Date 2/22/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. Station	BORING NO. Station	Offset	Ground Surface Elev.	D (ft)	B (/6")	U (tsf)	M (%)	SOIL						
								DEP	LO	CS	Q			
016-D013	RW-18	21.00ft Left	686.90					CLAY-brown & gray-stiff to very stiff (continued)						
			685.90					ASPHALT						
				5	2.2	23		CLAY LOAM-brown & gray-stiff to very stiff						
				7	B									
				3	1.0	23								
				2	P									
			681.40					SILTY CLAY-black-very loose						
				2	1.0	33								
				2	P									
			678.90					CLAY-brown & gray-stiff to very stiff						
				1	1.5	24								
				1	P									
								becoming gray @ -10.5'						
				1	1.0	22								
				1	P									
				ST	1.5	23								
					P									
				3	1.5	22								
				6	B									
				3										
				5	2.3	21								
				8	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 T208)
 BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

SOIL BORING LOG

Page 2 of 2

Date 2/22/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. Station	BORING NO. Station	Offset	Ground Surface Elev.	D (ft)	B (/6")	U (tsf)	M (%)	SOIL					
								DEP	LO	CS	Q		
016-D013	RW-18	21.00ft Left	686.90					CLAY-brown & gray-stiff to very stiff (continued)					
			644.90					SILTY CLAY LOAM-gray-medium stiff to stiff (Wet)					
				3	0.6	31							
				4	B								
				5	P								
			636.90					End Of Boring @ -50.0'. Boring backfilled with cuttings.					
				4	1.5	30							
				5	P								
				9									
				3	1.1	20							
				4	B								
				6									
				2									
				5	1.0	31							
				3	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 T208)
 BBS, from 137 (Rev. 8-99)

T:\51006-USA\Struct\Bridges\Land Bridges\Land Bridges\Land Bridge 4 - 016-D013-60L72-025-SB.dgn

LOCHNER
 H.W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED - LJB	REVISED
FILE NAME = 016D013-60L72-025-SB.dgn	CHECKED - RH	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

SOIL BORINGS 3
 STRUCTURE NO. 016-D013

SHEET NO. 25 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	570
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



GSI Job No. 10195

SOIL BORING LOG

Page 1 of 2

Date 2/20/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.	BORING NO.	Station	Offset	Ground Surface Elev.	DEPTH (ft)	SOIL TYPE (B/S/Qu)	UCS (tsf)	Failure Mode	MOISTURE (%)	Surface Water Elev.	Stream Bed Elev.	Groundwater Elev.	First Encounter	Upon Completion	After Hrs.	DEPTH (ft)	SOIL TYPE (B/S/Qu)	UCS (tsf)	Failure Mode	MOISTURE (%)
016-D013	SB-36	405+21	24.50ft Left	686.80						n/a	n/a		Dry to 10'	n/a						
					0	8.0" ASPHALT, 4.0" GRAVEL						666.30								
					4	CLAY-dark brown & gray-medium stiff to very stiff (Fill)														
					5		3.0	22												
					4		B													
					4															
					4		2.4	23												
					6		B													
					4															
					4		3.0	22												
					4		P													
					3															
					2		0.9	23												
					3		B													
					2															
					2		1.0	25												
					2		B													
					1															
					1		0.5	26												
					1		B													
					1															
					1		0.5	25												
					1															
					1		1.5	28												
					2		P													

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)



GSI Job No. 10195

SOIL BORING LOG

Page 2 of 2

Date 2/20/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.	BORING NO.	Station	Offset	Ground Surface Elev.	DEPTH (ft)	SOIL TYPE (B/S/Qu)	UCS (tsf)	Failure Mode	MOISTURE (%)	Surface Water Elev.	Stream Bed Elev.	Groundwater Elev.	First Encounter	Upon Completion	After Hrs.	DEPTH (ft)	SOIL TYPE (B/S/Qu)	UCS (tsf)	Failure Mode	MOISTURE (%)
016-D013	SB-36	405+21	24.50ft Left	686.80						n/a	n/a		Dry to 10'	n/a						
					4	CLAY-gray-medium stiff to very stiff (continued)														
					5		1.1	23												
					8		B													
					4															
					5		0.5	33												
					9		P													
					4															
					5		0.5	21												
					5		B													
					4															
					5		2.8	20												
					9		B													
					4															
					1		0.5	25												
					1		B													
					1															
					1		1.5	28												
					2		P													

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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LOCHNER
 H.W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED -	REVISED
FILE NAME = 016D013-60L72-026-SB.dgn	CHECKED -	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

SOIL BORINGS 4
 STRUCTURE NO. 016-D013

SHEET NO. 26 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	571
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



GSI Job No. 10195

SOIL BORING LOG

Page 1 of 2

Date 3/9/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR

SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM

COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.	BORING NO.	Station	Offset	Ground Surface Elev.	DEPTH	BL	UCS	M	SOIL	Surface Water Elev.	Stream Bed Elev.	Groundwater Elev.	First Encounter	Upon Completion	After	HRS.	DEPTH	BL	UCS	M	SOIL
016-D013	SB-37	405+57	36.40ft Right	686.10	(ft)	(/6")	(tsf)	(%)		n/a	n/a	n/a	682.6	n/a			(ft)	(/6")	(tsf)	(%)	
CONCRETE																					
CRUSHED STONE-medium dense																					
PEAT-dark brown & black-loose																					
ORGANIC SILTY CLAY-dark gray-very loose																					
SILTY CLAY-gray-soft																					
CLAY-gray-medium stiff to very stiff																					
CLAY-gray-medium stiff to very stiff (continued)																					
LOAM-gray-medium dense																					

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 T208)
 BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

SOIL BORING LOG

Page 2 of 2

Date 3/9/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR

SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM

COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.	BORING NO.	Station	Offset	Ground Surface Elev.	DEPTH	BL	UCS	M	SOIL	Surface Water Elev.	Stream Bed Elev.	Groundwater Elev.	First Encounter	Upon Completion	After	HRS.	DEPTH	BL	UCS	M	SOIL
016-D013	SB-37	405+57	36.40ft Right	686.10	(ft)	(/6")	(tsf)	(%)		n/a	n/a	n/a	682.6	n/a			(ft)	(/6")	(tsf)	(%)	
LOAM-gray-medium dense (continued)																					
CLAY LOAM-gray-medium stiff to very stiff																					
SILTY LOAM-gray-medium dense to dense																					
SAND & GRAVEL-gray-medium dense																					
End Of Boring @ -75.0'. Boring backfilled with cuttings.																					

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 T208)
 BBS, from 137 (Rev. 8-99)

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LOCHNER
 H.W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORINGS 5
STRUCTURE NO. 016-D013
 SHEET NO. 27 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	572
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



GSI Job No. 10195

SOIL BORING LOG

Page 1 of 2

Date 2/20/12

ROUTE IL Route 7/J.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR

SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM

COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. Station	BORING NO. Station	Offset	Ground Surface Elev.	SOIL				Surface Water Elev.	Stream Bed Elev.	SOIL			
				D E P T H	B L O W S	U C S	M O I S T			D E P T H	B L O W S	U C S	M O I S T
			ft	(ft)	(/6")	(tsf)	(%)	ft	ft	(ft)	(/6")	(tsf)	(%)
016-D013	SB-38	23.20ft Left	686.80										
8" ASPHALT, 3" GRAVEL				685.90									
CLAY-dark brown & gray-medium stiff to very stiff (Fill)													
				5		3.0	21			2			
				5	3	P				4	0.9		20
				6						7	B		
				5						4			
				3		1.5	25			5		2.5	24
				4		B				8	B		
				3						4			
				3		1.8	21			5		1.3	29
				4		B				5	B		
				4						4			
				3		1.2	24			6		1.9	24
				3		B				7	B		
				3						5			
				4		0.9	27			5			
				5		B				6	B		
				2						5			
				2		0.7	29			5	0.5		16
				2		B				6	B		
				15						35			
SILTY SAND & GRAVEL-gray				671.30									
				ST			14			649.80			
CLAY-gray-medium stiff to very stiff				668.80									
				3						4			
				3		1.9	22			5			15
				7		B				6			

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 T208)
BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

SOIL BORING LOG

Page 2 of 2

Date 2/20/12

ROUTE IL Route 7/J.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY RR

SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM

COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. Station	BORING NO. Station	Offset	Ground Surface Elev.	SOIL				Surface Water Elev.	Stream Bed Elev.	SOIL			
				D E P T H	B L O W S	U C S	M O I S T			D E P T H	B L O W S	U C S	M O I S T
			ft	(ft)	(/6")	(tsf)	(%)	ft	ft	(ft)	(/6")	(tsf)	(%)
016-D013	SB-38	23.20ft Left	686.80										
SILTY LOAM to LOAM-gray-medium dense (continued)													
				644.80						624.80			
CLAY LOAM-gray-very stiff													
				4						7			
				6		3.5	16			6			13
				7		P				6			
				45						65			
				3						4			
				3		1.8	21			5		1.3	29
				4		B				5	B		
				4						4			
				3		1.2	24			6		1.9	24
				3		B				7	B		
				10						30			
				3						5			
				4		0.9	27			5			
				5		B				6	B		
				2						5			
				2		0.7	29			5	0.5		16
				2		B				6	B		
				15						35			
SILTY SAND & GRAVEL-gray				671.30									
				ST			14			649.80			
CLAY-gray-medium stiff to very stiff				668.80									
				3						4			
				3		1.9	22			5			15
				7		B				6			

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 T208)
BBS, from 137 (Rev. 8-99)

T:\10195\US6\Struct.dgn\Land Bridges\Land Bridges\4 - 016-D013-60L72-028-SB.dgn

LOCHNER
H.W. LOCHNER, INC.
225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED -	REVISED
FILE NAME = 016D013-60L72-028-SB.dgn	CHECKED -	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORINGS 6
STRUCTURE NO. 016-D013

SHEET NO. 28 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	573
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



GSI Job No. 10195

SOIL BORING LOG

Page 1 of 2

Date 2/20/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av LOGGED BY NW
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.	BORING NO.	Station	Offset	Ground Surface Elev.	D	B	U	M	Surface Water Elev.	Stream Bed Elev.	Groundwater Elev.:	First Encounter	Upon Completion	After	D	B	U	M	
016-D013	SB-39	406+98	22.50ft Left	686.10	(ft)	(/ft)	(tsf)	(%)	n/a	n/a	Dry to 10'	n/a	n/a	n/a	(ft)	(/ft)	(tsf)	(%)	
ASPHALT					685.50				CLAY-gray-medium stiff to very stiff (continued)										
SILTY CLAY-dark brown & gray-soft to very stiff (Fill)						3										3			
						4	3.0	21								5	2.1	22	
						5	B									7	B		
						3										2			
						4	1.7	23								5	1.9	21	
						4	B									8	B		
						2										2			
						3	0.9	24								4	0.9	29	
						3	B									7	B		
						1										3			
						1	0.4	29								5	1.0	29	
						2	B									7	B		
						ST	0.5	31											
							P												
ORGANIC SILTY CLAY-dark gray to black-very loose					673.10														
						1										2			
						1	0.5	32								4	1.2	16	
						1	P									7	B		
						1													
						1	0.3	53											
						1	B												
CLAY-gray-medium stiff to very stiff					668.10														
						2										4			
						3	1.3	22								8	2.0	19	
						4	B									12	P		

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 T208)
 BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

SOIL BORING LOG

Page 2 of 2

Date 2/20/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av LOGGED BY NW
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.	BORING NO.	Station	Offset	Ground Surface Elev.	D	B	U	M	Surface Water Elev.	Stream Bed Elev.	Groundwater Elev.:	First Encounter	Upon Completion	After	D	B	U	M	
016-D013	SB-39	406+98	22.50ft Left	686.10	(ft)	(/ft)	(tsf)	(%)	n/a	n/a	Dry to 10'	n/a	n/a	n/a	(ft)	(/ft)	(tsf)	(%)	
CLAY-gray-medium stiff to very stiff (continued)					644.10				CLAY-gray-stiff to very stiff (continued)										
CLAY LOAM-gray-stiff																			
						5										6			
						7	1.5	17								9	1.3	26	
						7	B									12	B		
						5													
						6	1.1	12								10			
						15	B									10			16
						5													
SAND with GRAVEL-gray-medium dense					634.10				SANDY LOAM-gray-dense										
						8										10			
						13		11								13			16
						10										10			
						5													
CLAY-gray-stiff to very stiff					629.10				End Of Boring @ -75.0' Boring backfilled with cuttings.										
						5													
						8	2.5	14											
						10	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 T208)
 BBS, from 137 (Rev. 8-99)

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LOCHNER
 H.W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**SOIL BORINGS 7
 STRUCTURE NO. 016-D013**

SHEET NO. 29 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	574
CONTRACT NO. 60L72			ILLINOIS FED. AID PROJECT	



GSI Job No. 10195

SOIL BORING LOG

Page 1 of 2

Date 3/9/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY NW
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.	DEPT	BL	UCS	MOIST	Surface Water Elev.	DEPT	BL	UCS	MOIST
Station	H	(ft)	(tsf)	(%)	n/a ft	H	(ft)	(tsf)	(%)
016-D013					n/a ft				
SB-40					680.6 ft				
407+43					n/a ft				
14.40ft Right									
686.60 ft									
CONCRETE 685.85					CLAY-gray-stiff to very stiff (continued)				
CLAY-brown & black-medium stiff to very stiff (Fill)									
	4					2			
	6	2.9	21			3	1.1	29	
	8	B				5	B		
	3					3			
	3	0.6	23			5	1.8	20	
	3	B				5	P		
ORGANIC CLAY-dark brown-very loose 681.10					CLAY LOAM-gray-stiff to very stiff 661.10				
	1					3			
	1	0.6	59			5	1.3	15	
	1	B				7	B		
PEAT-dark brown-very loose 678.60									
	0					4			
	1		108			6	2.1	16	
	1					9	B		
CLAY-gray-stiff to very stiff 676.10									
	2								
	2	2.0	20						
	3	P							
	2					4			
	3	1.5	21			6	2.8	15	
	5	B				7	B		
	6								
	6	1.4	19						
	6	B							
	3					4			
	4	1.5	23			5	1.9	13	
	4	B				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 T208)
 BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

SOIL BORING LOG

Page 2 of 2

Date 3/9/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY NW
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.	DEPT	BL	UCS	MOIST	Surface Water Elev.	DEPT	BL	UCS	MOIST
Station	H	(ft)	(tsf)	(%)	n/a ft	H	(ft)	(tsf)	(%)
016-D013					n/a ft				
SE-40					680.6 ft				
407+43					n/a ft				
14.40ft Right									
686.60 ft									
CLAY LOAM-gray-stiff to very stiff (continued)					CLAY LOAM-gray-stiff (continued)				
CLAY LOAM-gray-stiff to very stiff (continued)									
	4					6			
	6	1.8	11			4	1.8	14	
	7	B				6	P		
	4								
	6	1.4	16						
	10	B							
	10								
	6								
	6	1.4	16						
	10	B							
	13								
	7								
CLAYEY SAND & GRAVEL-gray-medium dense 634.60					CLAYEY SAND & GRAVEL-gray-dense to very dense 619.60				
	10								
	13								
	7								
	10								
	13								
	7								
CLAY LOAM-gray-stiff 629.60					End Of Boring @ -75.0'. Boring backfilled with cuttings. 611.60				
	4								
	6	1.5	14						
	9	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 T208)
 BBS, from 137 (Rev. 8-99)

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LOCHNER
 H.W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED -	REVISED
FILE NAME = 016D013-60L72-030-SB.dgn	CHECKED -	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**SOIL BORINGS 8
 STRUCTURE NO. 016-D013**

SHEET NO. 30 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	575
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



GSI Job No. 10195

SOIL BORING LOG

Page 1 of 2

Date 2/20/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av LOGGED BY NW
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. 016-D013 Station	DEPTHS (ft)	BULGE (in)	UCS (tsf)	MOISTURE (%)	Description	DEPTHS (ft)	BULGE (in)	UCS (tsf)	MOISTURE (%)
ASPHALT	686.30				CLAY-gray-stiff to very stiff (continued)				
CLAY-dark brown & gray-stiff to hard (Fill)	4					3			
	5	4.0	24			5	2.2	29	
	7	P				7	B		
	3					3			
	4	1.9	23			4	1.5	29	
	4	B				6	B		
SILTY CLAY-black-stiff (Fill)	681.40								
	1					2			
	2	1.0	26			3	1.2	29	
	2	P				3	B		
	1					3			
	3	1.5	32			5	1.8	15	
	3	P				6	B		
ORGANIC SILTY LOAM-dark gray-very loose	676.40								
	1								
	1		58						
	1								
SILTY CLAY LOAM-brown & gray-very loose	673.90								
	1					10			
	1	1.1	20			9	2.4	16	
	3	B				8	B		
CLAY-gray-stiff to very stiff	671.40								
	3								
	3	1.9	20						
	3	B							
	3					4			
	5	2.1	21			5		15	
	7	B				7			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
 BBS, from 137 (Rev. 8-99)



GSI Job No. 10195

SOIL BORING LOG

Page 2 of 2

Date 2/20/12

ROUTE IL Route 7/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av LOGGED BY NW
 SECTION 2010-081-R LOCATION SW1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. 016-D013 Station	DEPTHS (ft)	BULGE (in)	UCS (tsf)	MOISTURE (%)	Description	DEPTHS (ft)	BULGE (in)	UCS (tsf)	MOISTURE (%)
SANDY CLAY LOAM-gray-medium dense (continued)	644.90				SANDY LOAM-gray-dense (continued)				
CLAY LOAM-gray-very stiff	644.90				CLAY LOAM-gray-stiff				
	6					4			
	8	3.9	14			6	1.2	16	
	10	B				9	B		
	-45					-65			
SILTY LOAM to LOAM-gray-medium dense	639.90				SILTY LOAM-gray-dense				
	8					17			
	5		14			19		16	
	6					16			
	-50					-70			
CLAY LOAM-gray-stiff	634.90				SAND & GRAVEL-gray-dense				
	5					15			
	8	1.5	16			17		7	
	12	B				18			
	-85					-75			
					End Of Boring @ -75.0'. Boring backfilled with cuttings.				
SANDY LOAM-gray-dense	629.90								
	13								
	13		18						
	17					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)

T:\51006-USA\Struct\Drawn\Land Bridges\Land Bridges 4 - 016-D013-60L72-031-SB.dgn

LOCHNER
 H.W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED -	REVISED
FILE NAME = 016D013-60L72-031-SB.dgn	CHECKED -	REVISED
PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - RH	REVISED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

SOIL BORINGS 9
 STRUCTURE NO. 016-D013

SHEET NO. 31 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	576
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



GSI Job No. 10195

SOIL BORING LOG

Page 1 of 2

Date 3/13/12

ROUTE IL Route 7/J.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av LOGGED BY RR
 SECTION 2010-081-R LOCATION SE1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.	BORING NO.	Station	Offset	Ground Surface Elev.	D E P T H	B L O W S	U C S Qu	M O I S T	Surface Water Elev.	Stream Bed Elev.	Groundwater Elev.	First Encounter	Upon Completion	After	Hrs.	D E P T H	B L O W S	U C S Qu	M O I S T
016-D013	SB-42	408+49	18.20ft Right	687.00	(ft)	(/6")	(tsf)	(%)	n/a	n/a	n/a	Dry to 10'	n/a	n/a		(ft)	(/6")	(tsf)	(%)
				12" ASPHALT, 3" SAND & GRAVEL															
				CLAY-dark brown & black-stiff (Fill)	685.75	12										4			
				SILTY CLAY LOAM and TOPSOIL-black	684.00	8	1.8	26								5	1.0	15	
				ORGANIC SILTY CLAY-dark brown-very loose	681.50	4										7			
				CLAY-brown & gray-stiff	679.00	3										6			
				SILTY CLAY-dark gray to black-medium stiff	676.50	3	1.5	43								12	1.0	15	
				CLAY to CLAY LOAM - gray-medium stiff to very stiff	674.00	1	1.1	44								7	2.0	18	
				CLAY-gray-medium stiff		1										12	B		
				CLAY-gray-medium stiff		3										6			
				CLAY-gray-medium stiff		4	1.0	20								5	1.2	16	
				CLAY-gray-medium stiff		3										7	B		
				CLAY-gray-medium stiff		5	0.8	29								4			
				CLAY-gray-medium stiff		6	P									5	1.7	14	
				CLAY-gray-medium stiff		4										6	B		
				CLAY-gray-medium stiff		5	1.8	28								5			
				CLAY-gray-medium stiff		6	B									6	B		
				CLAY-gray-medium stiff		3										4			
				CLAY-gray-medium stiff		4	1.6	27								6	1.5	14	
				CLAY-gray-medium stiff		5	0.8	21								4			
				CLAY-gray-medium stiff		4	B									10	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, from 137 (Rev. 8-99)



GSI Job No. 10195

SOIL BORING LOG

Page 2 of 2

Date 3/13/12

ROUTE IL Route 7/J.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av LOGGED BY RR
 SECTION 2010-081-R LOCATION SE1/4, SEC. 16, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD HSA/ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.	BORING NO.	Station	Offset	Ground Surface Elev.	D E P T H	B L O W S	U C S Qu	M O I S T	Surface Water Elev.	Stream Bed Elev.	Groundwater Elev.	First Encounter	Upon Completion	After	Hrs.	D E P T H	B L O W S	U C S Qu	M O I S T
016-D013	SB-42	408+49	18.20ft Right	687.00	(ft)	(/6")	(tsf)	(%)	n/a	n/a	n/a	Dry to 10'	n/a	n/a		(ft)	(/6")	(tsf)	(%)
				CLAY to CLAY LOAM - gray-medium stiff to very stiff															
				SAND & GRAVEL-gray-medium dense	625.00														
				SILTY LOAM-gray-loose															
				CLAY-gray-medium stiff		7										3			
				CLAY-gray-medium stiff		8	1.8	16								4			
				CLAY-gray-medium stiff		10	B									4			
				SAND & GRAVEL-gray-medium dense	620.00														
				CLAY-gray-medium stiff		4										11			
				CLAY-gray-medium stiff		5	0.5	15								5			
				CLAY-gray-medium stiff		5	B									10			
				SILTY LOAM-gray-medium dense	635.00														
				CLAY-gray-medium stiff		4										9			
				CLAY-gray-medium stiff		5										11			
				CLAY-gray-medium stiff		6										11			
				CLAY-gray-medium stiff		6										13			
				CLAY-gray-medium stiff		2										2			
				CLAY-gray-medium stiff		2	0.6	16								3	B		
				CLAY-gray-medium stiff		3	B									3			

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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USER NAME =	DESIGNED -	REVISED
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PLOT DATE =	CHECKED - RH	REVISED

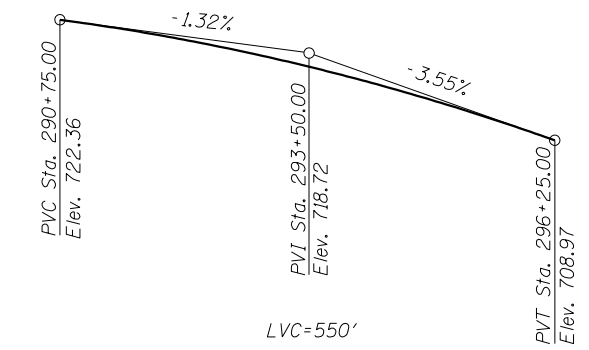
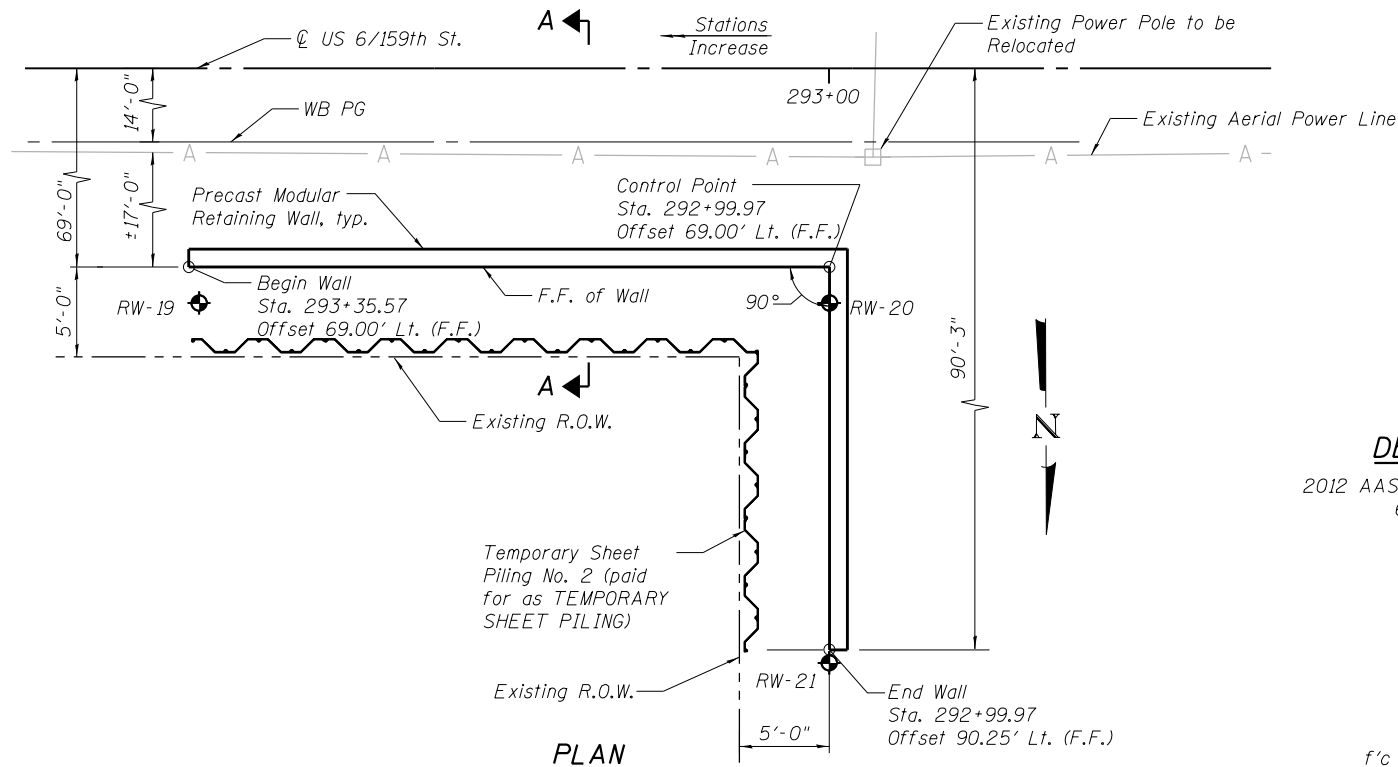
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

SOIL BORINGS 10
 STRUCTURE NO. 016-D013
 SHEET NO. 32 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	577
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

Bench Mark: BM #42 Set at Sta. 303+78, 23' Lt., Elev. 694.85 square cut west end of north headwall, ±185' west of 115th ct. and 1.6 miles east of Bell rd.

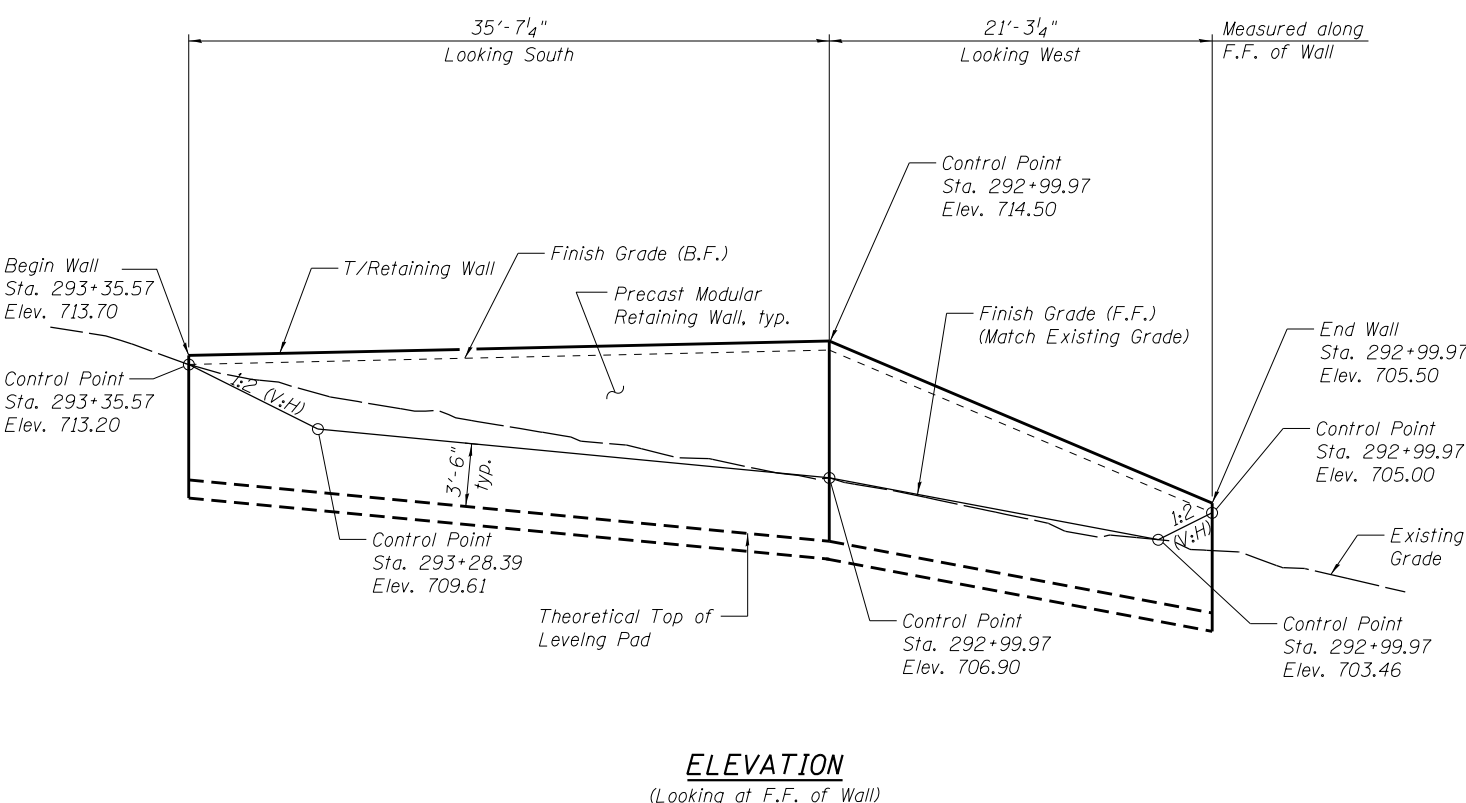
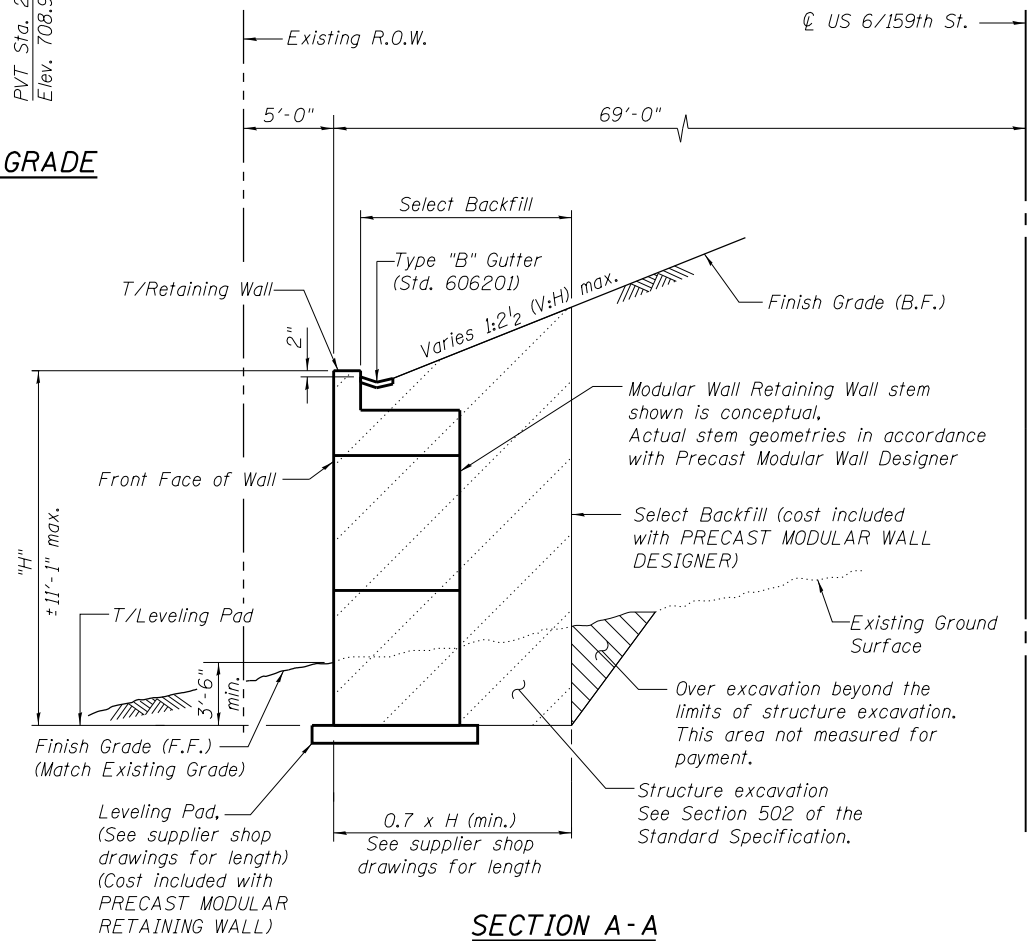
Existing Structure: None



DESIGN SPECIFICATIONS
2012 AASHTO LRFD Bridge Design Specifications, 6th Edition with 2013 Interims.

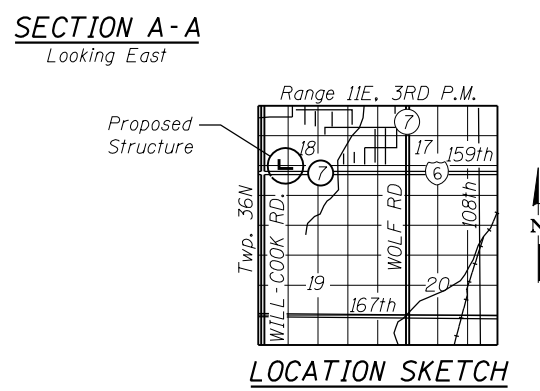
DESIGN STRESSES
FIELD UNITS
 $f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)
PRECAST UNITS
 $f'_c = 4,500$ psi (Precast Modular Unit)

LEGEND
F.F. = Front Face
B.F. = Back Face
⊙ = Soil Boring Location



TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structure Excavation	Cu. Yd.	181
Precast Modular Retaining Wall	Sq. Ft.	655
Temporary Sheet Piling	Sq. Ft.	397



- NOTES**
- Design criteria and construction requirements of Precast Modular Retaining Wall shall conform to requirements of the latest IDOT Guide Bridge Special Provisions (GBSP) No. 65 "PRECAST MODULAR RETAINING WALL"
 - The wall system shown in section is conceptual and details will vary based on the actual wall supplied. The wall system supplier shall submit complete design calculations and shop drawings of the precast modular retaining wall signed and sealed by an Illinois Licensed Structural Engineer to Illinois Department of Transportation for approval prior to commencement of construction.
 - Soil bearing resistance must be verified in the field by the Engineer during the foundation excavation to ensure that the precast modular retaining wall is founded on suitable soil with a minimum factored bearing resistance of 4,000 psf. The maximum applied equivalent uniform bearing pressure under each module width shall not exceed the factored bearing resistance of 4,000 psf for foundation on the natural, clay loam soils.

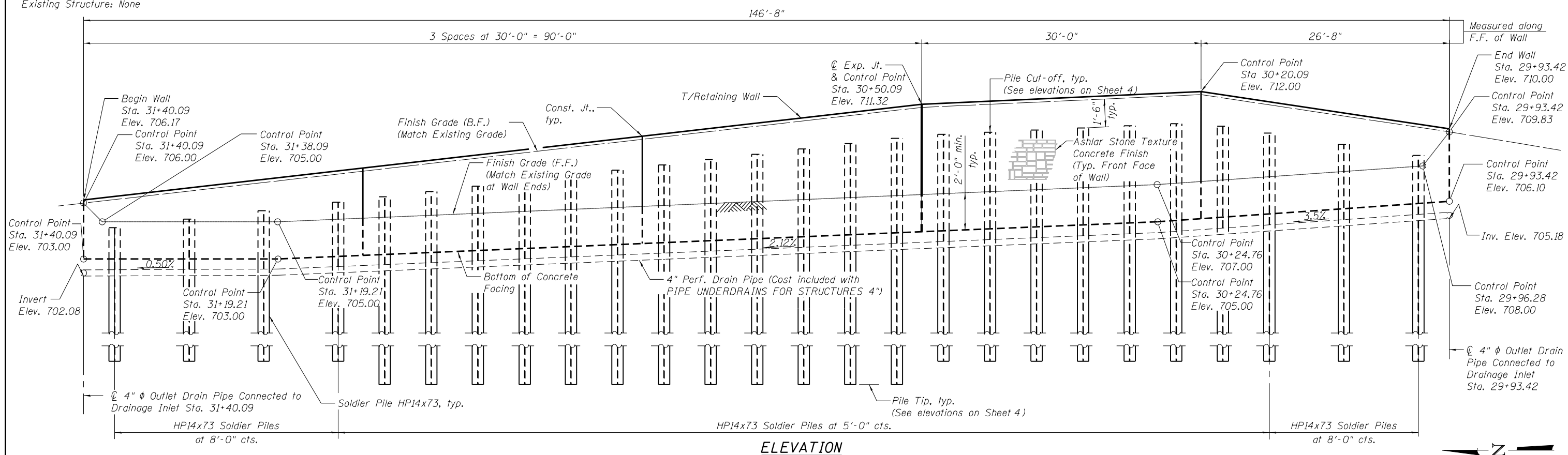
**GENERAL PLAN & ELEVATION
RETAINING WALL 1
US ROUTE 6 / 159TH STREET
F.A.P. RTE 351 - SEC. 2010-081-R
COOK COUNTY
STATION 292+99.97 TO 293+35.57**

T:\151006-US65-Struct.dgn\Retaining Wall 1\0160001-60L72-001-GP.dgn

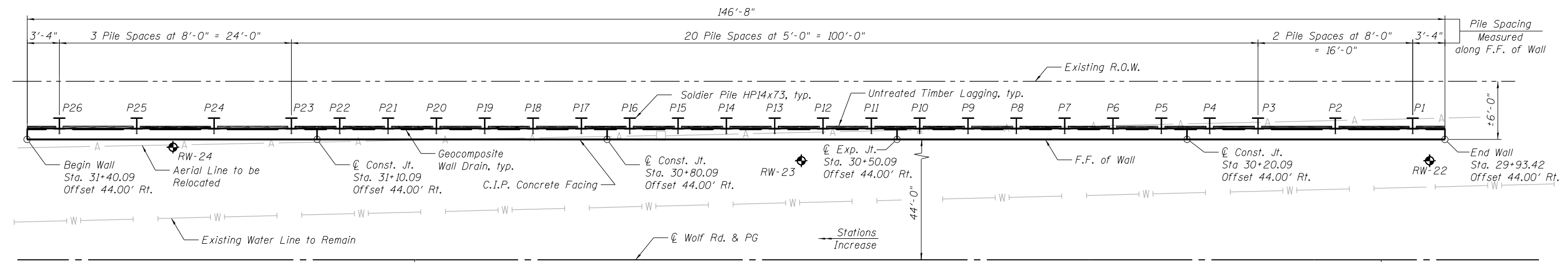
LOCHNER H.W. LOCHNER, INC. 225 WEST WASHINGTON STREET 12 TH FLOOR CHICAGO, ILLINOIS 60606	USER NAME =	DESIGNED - JSD	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SHEET NO. 1 OF 2 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	FILE NAME = 0160001-60L72-001-GP.dgn	CHECKED - RH	REVISED			351	2010-081-R	COOK	1045	578
	PLOT SCALE =	DRAWN - EF	REVISED			CONTRACT NO. 60L72				
	PLOT DATE =	CHECKED - RH	REVISED			ILLINOIS FED. AID PROJECT				

Benchmark: South bolt on fire hydrant, on south side of 159th St., approximately 350 ft west of centerline of Wolf Rd.

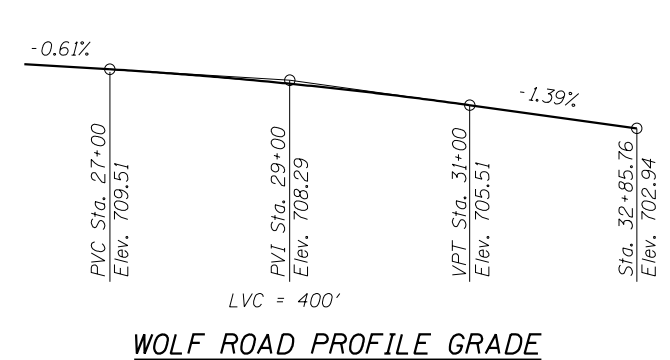
Existing Structure: None



ELEVATION



PLAN



WOLF ROAD PROFILE GRADE

LEGEND

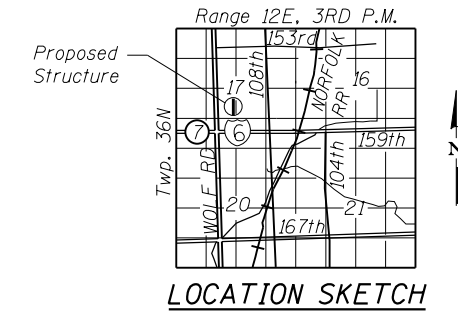
- F.F. - Front Face
- B.F. - Back Face
- E.F. - Each Face
- U.N.O. - Unless Noted Otherwise
- ⊕ - Soil Boring Location

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications, 6th Edition with 2013 Interims

DESIGN STRESSES

FIELD UNITS
 f'c = 3,500 psi
 fy = 60,000 psi (Reinforcement)
 fy = 36,000 psi (M270 Grade 36)



LOCATION SKETCH

**GENERAL PLAN & ELEVATION
 RETAINING WALL 2
 US ROUTE 6 / 159TH STREET
 F.A.P. RTE 351 - SEC. 2010-081-R
 COOK COUNTY
 STATION 29+93.42 TO 31+40.09**

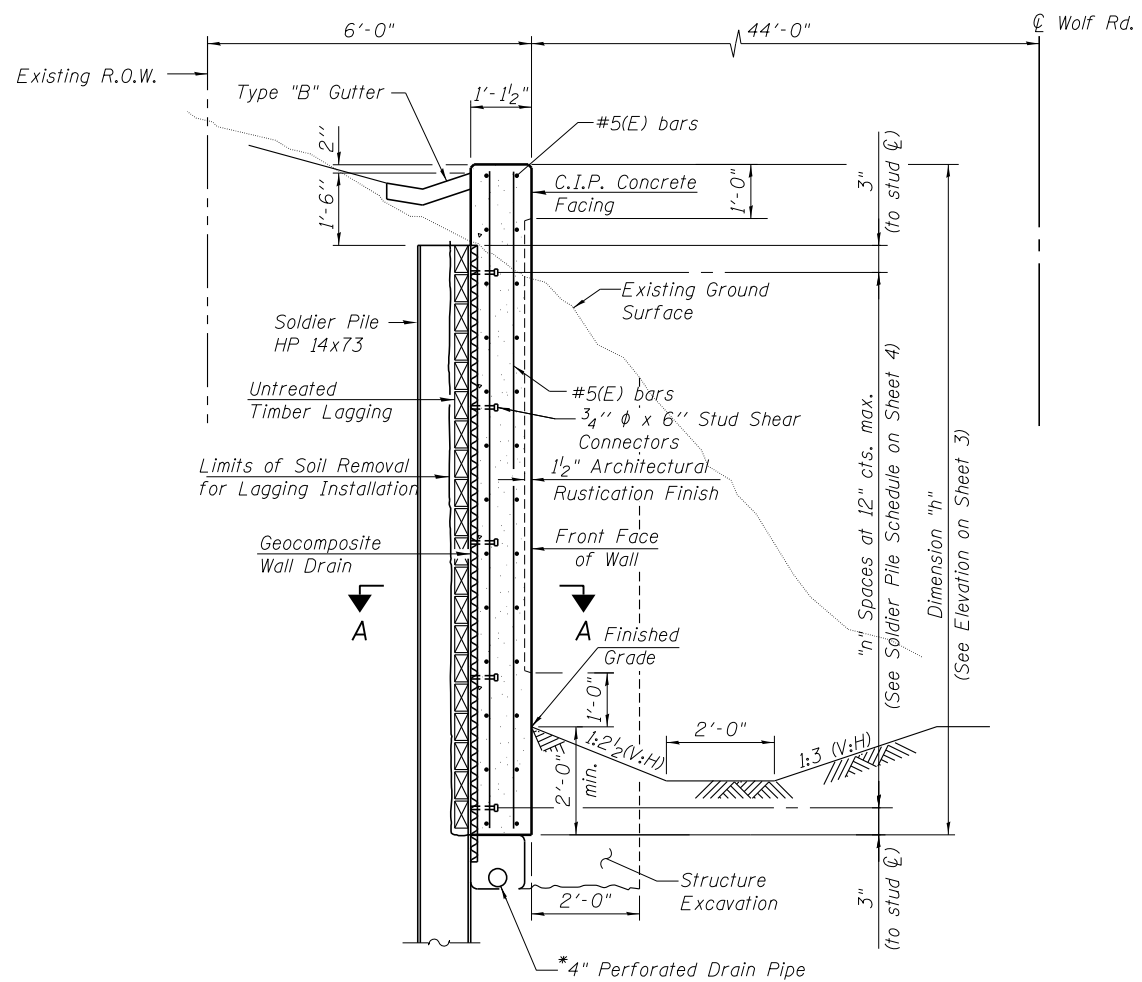
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LOCHNER H.W. LOCHNER, INC. 225 WEST WASHINGTON STREET 12 TH FLOOR CHICAGO, ILLINOIS 60606	USER NAME =	DESIGNED -	JSD	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	FILE NAME = 0160002-60L72-001-GP.dgn	CHECKED -	LJB	REVISED		351	2010-081-R	COOK	1045	580
PLOT SCALE =	DRAWN -	JSD	REVISED	SHEET NO. 1 OF 7 SHEETS						
PLOT DATE =	CHECKED -	LJB	REVISED	CONTRACT NO. 60L72						

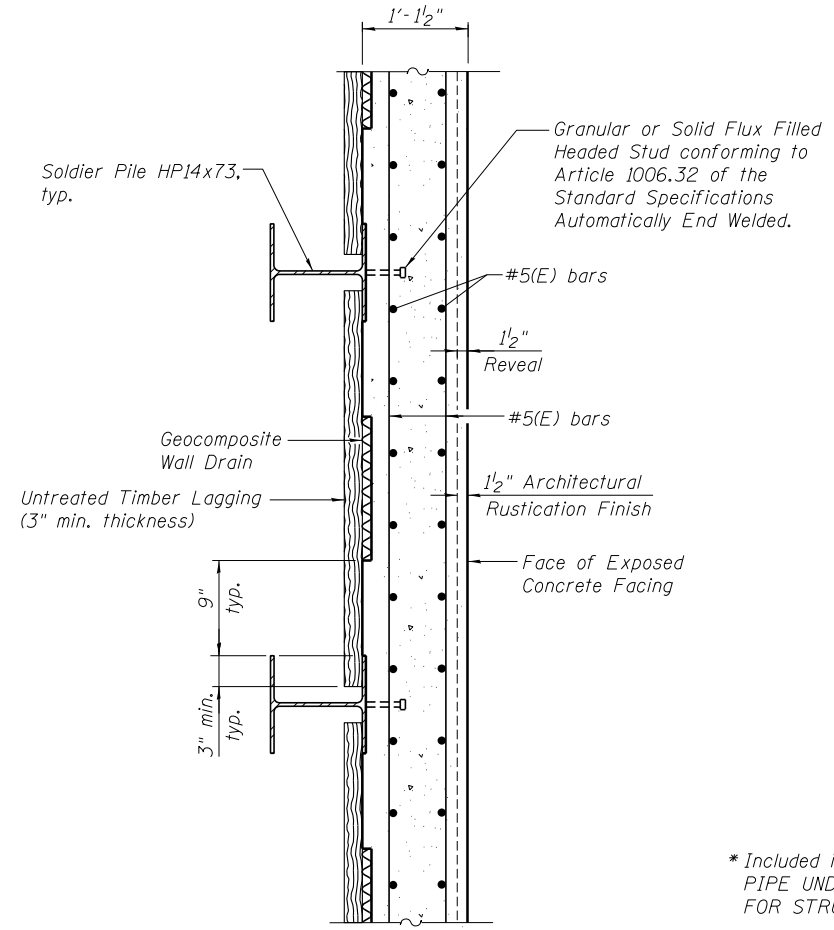
ILLINOIS FED. AID PROJECT

TOTAL BILL OF MATERIAL

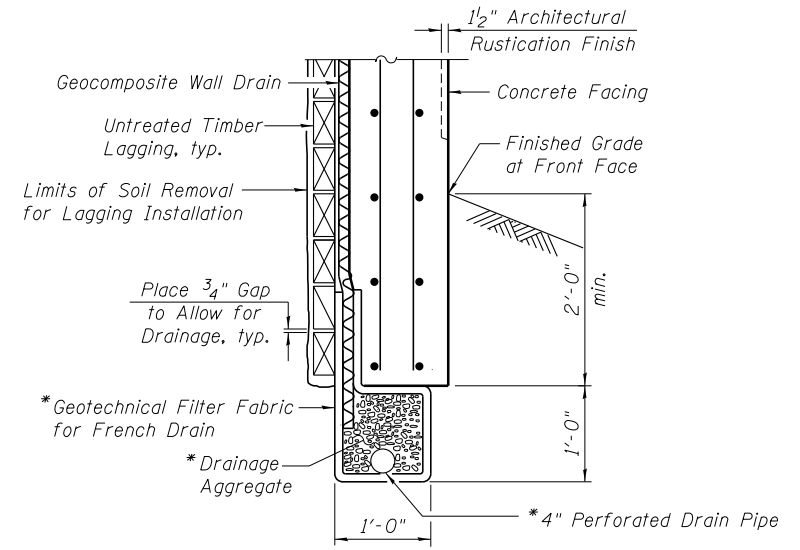
ITEM	UNIT	TOTAL
Structure Excavation	Cu. Yd.	122
Concrete Structures	Cu. Yd.	34.0
Reinforcement Bars, Epoxy Coated	Pound	4110
Furnishing Steel Piles HP14X73	Foot	683
Driving Soldier Piles	Foot	683
Geocomposite Wall Drain	Sq. Yd.	72
Untreated Timber Lagging	Sq. Ft.	572
Stud Shear Connectors	Each	130
Pipe Underdrains for Structures 4"	Foot	147
Form Liner Textured Surface	Sq. Ft.	234



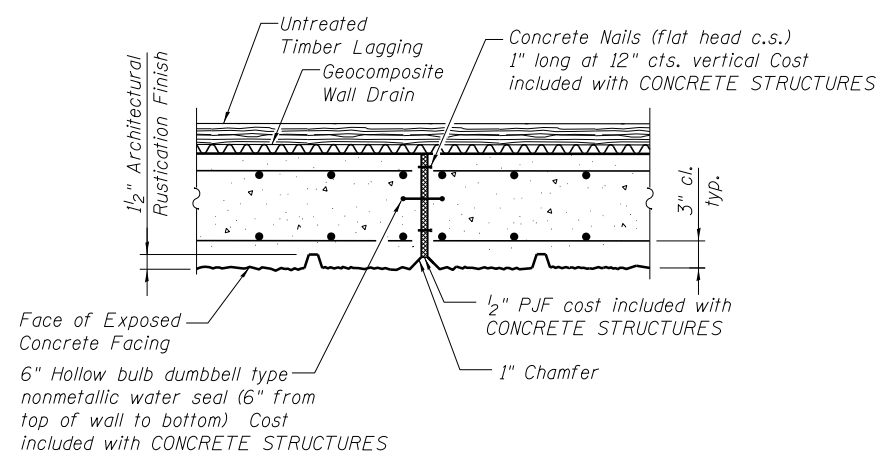
SECTION THRU SOLDIER PILE WALL



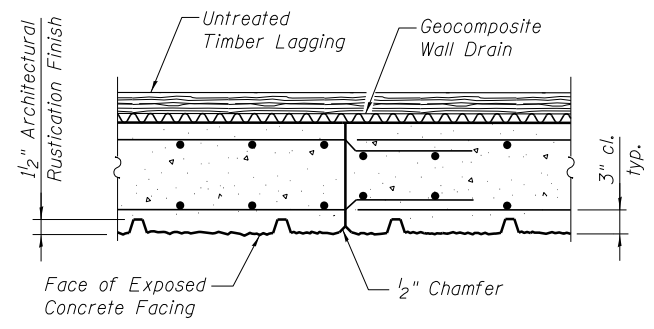
SECTION A-A



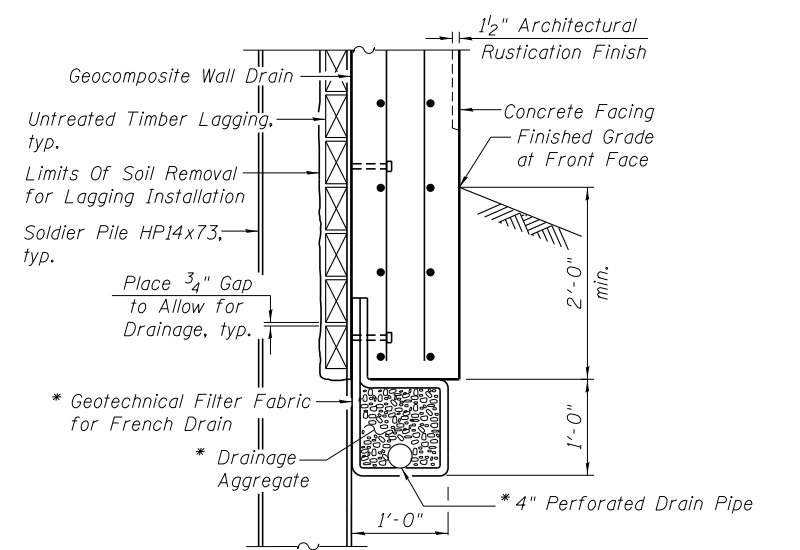
SECTION THRU WALL BETWEEN SOLDIER PILE



EXPANSION JOINT



CONSTRUCTION JOINT



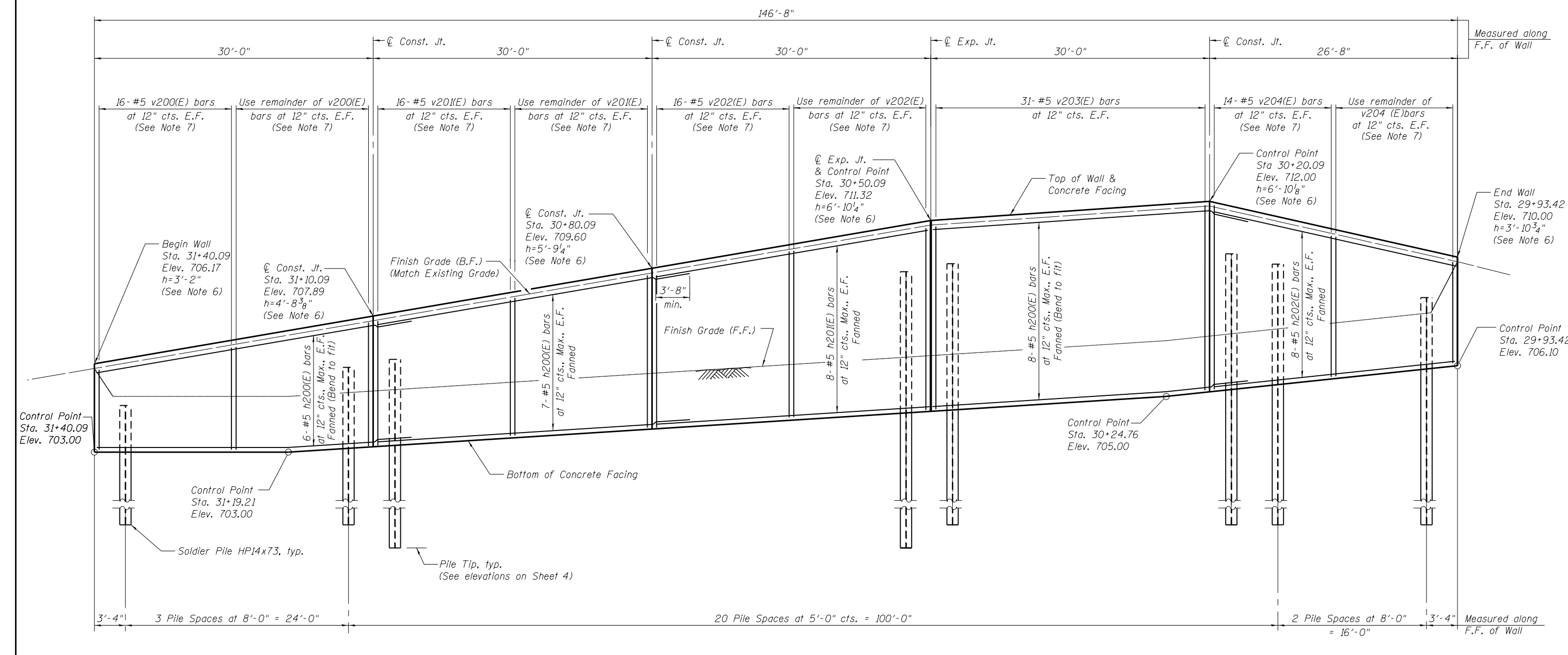
SECTION THRU WALL AT SOLDIER PILE

* Included in the Cost of PIPE UNDERDRAINS FOR STRUCTURES 4".

NOTES

- Design and construction of soldier pile wall shall conform to the requirements of the latest IDOT Guide Bridge Special Provisions (GBSP) No. 43 "DRIVEN SOLDIER PILE RETAINING WALL".
- All pipe underdrains shall be placed at a depth of 30" below the top of proposed pavement or as deep as possible and in accordance with check sheet #19 of the supplemental specifications and recurring special provisions. The cost of making pipe underdrain connections to drainage structures shall be included in the cost of pipe underdrains item.

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ELEVATION

MINIMUM BAR LAP
#5 Bar = 3'-8"

NOTES

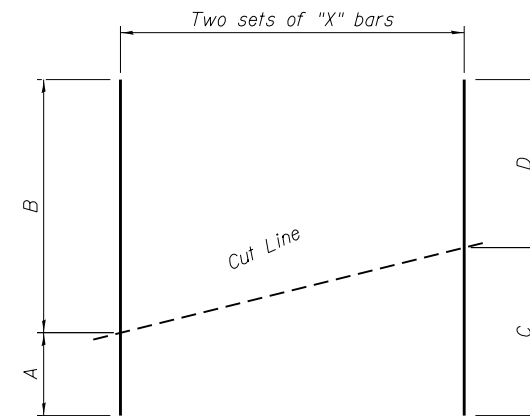
- E.F. denotes Each Face
F.F. denotes Front Face
B.F. denotes Back Face
- Reinforcement bars designated (E) shall be epoxy coated.
- For reinforcement bar list, Bill of Material and Soldier Pile Schedule see Sheet 4.
- For construction and expansion joint details see Sheet 2.
- For Pile Splice details see Sheet 3.
- See dimension "h" in Section Thru Soldier Pile Wall on Sheet 3.
- Order v200(E), v201(E), v202(E) and v204(E) bars full length. Cut to fit in shorter half of wall and use remainder of bars in higher half.

T:\51006-USE5\Struct\Design\Retaining Wall 2\0160002-60L72-003-DE.dgn

LOCHNER H.W. LOCHNER, INC. 225 WEST WASHINGTON STREET 12 TH FLOOR CHICAGO, ILLINOIS 60606	USER NAME =	DESIGNED - JSD	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DETAIL ELEVATION RETAINING WALL 2	F.A.P. RTE. =	SECTION =	COUNTY =	TOTAL SHEETS =	SHEET NO. =
	FILE NAME = 0160002-60L72-003-DE.dgn	CHECKED - LJB	REVISED			351	2010-081-R	COOK	1045	582
	PLOT SCALE =	DRAWN - JSD	REVISED	SHEET NO. 3 OF 7 SHEETS		CONTRACT NO. 60L72				
	PLOT DATE =	CHECKED - LJB	REVISED			ILLINOIS FED. AID PROJECT				

SOLDIER PILE SCHEDULE

PILE NO.	MEMBER SIZE	WOLF ROAD STA.	F.F. PILE OFFSET (ft)	PILE LENGTH (ft)	TIP ELEV.	CUT-OFF ELEV.	NO. OF STUD SPACINGS n
P1	HP14x73	29+96.75	45.08	26.1	682.50	708.58	3
P2	HP14x73	30+04.75	45.08	26.7	682.50	709.18	3
P3	HP14x73	30+12.75	45.08	27.3	682.50	709.78	4
P4	HP14x73	30+17.75	45.08	27.7	682.50	710.16	5
P5	HP14x73	30+22.75	45.08	27.8	682.50	710.27	5
P6	HP14x73	30+27.75	45.08	27.7	682.50	710.16	5
P7	HP14x73	30+32.75	45.08	27.5	682.50	710.05	5
P8	HP14x73	30+37.75	45.08	27.4	682.50	709.93	5
P9	HP14x73	30+42.75	45.08	27.3	682.50	709.82	5
P10	HP14x73	30+47.75	45.08	27.2	682.50	709.71	5
P11	HP14x73	30+52.75	45.08	28.3	681.24	709.50	5
P12	HP14x73	30+57.75	45.08	28.0	681.24	709.21	5
P13	HP14x73	30+62.75	45.08	27.7	681.24	708.93	5
P14	HP14x73	30+67.75	45.08	27.4	681.24	708.64	5
P15	HP14x73	30+72.75	45.08	27.1	681.24	708.36	4
P16	HP14x73	30+77.75	45.08	26.8	681.24	708.07	4
P17	HP14x73	30+82.75	45.08	26.5	681.24	707.78	4
P18	HP14x73	30+87.75	45.08	26.3	681.24	707.50	4
P19	HP14x73	30+92.75	45.08	26.0	681.24	707.21	4
P20	HP14x73	30+97.75	45.08	25.7	681.24	706.93	3
P21	HP14x73	31+02.75	45.08	25.4	681.24	706.64	3
P22	HP14x73	31+07.75	45.08	25.1	681.24	706.35	3
P23	HP14x73	31+12.75	45.08	23.1	683.00	706.07	3
P24	HP14x73	31+20.75	45.08	22.6	683.00	705.61	3
P25	HP14x73	31+28.75	45.08	22.2	683.00	705.15	2
P26	HP14x73	31+36.75	45.08	21.7	683.00	704.69	2



TYPICAL BAR CUTTING DIAGRAM

Bar	A	B	C	D	X
v200(E)	2'-11"	4'-5"	3'-8"	3'-8"	16
v201(E)	4'-5"	5'-5"	4'-11"	4'-11"	16
v202(E)	5'-6"	6'-6"	6'-0"	6'-0"	16
v204(E)	3'-7"	6'-7"	5'-1"	5'-1"	14

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h200(E)	42	#5	33'-8"	=====
h201(E)	16	#5	29'-9"	=====
h202(E)	16	#5	26'-5"	=====
v200(E)	32	#5	7'-4"	=====
v201(E)	32	#5	9'-10"	=====
v202(E)	32	#5	12'-0"	=====
v203(E)	62	#5	6'-7"	=====
v204(E)	28	#5	10'-2"	=====
Structure Excavation			Cu. Yd.	122
Concrete Structures			Cu. Yd.	34.0
Reinforcement Bars, Epoxy Coated			Pound	4,110
Furnishing Steel Piles HP14x73			Foot	683
Driving Soldier Piles			Foot	683

T:\5106-US6\Struct\Draw\Retaining Wall 2\0160002-60L72-004-DE.dgn

LOCHNER
H. W. LOCHNER, INC.
225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

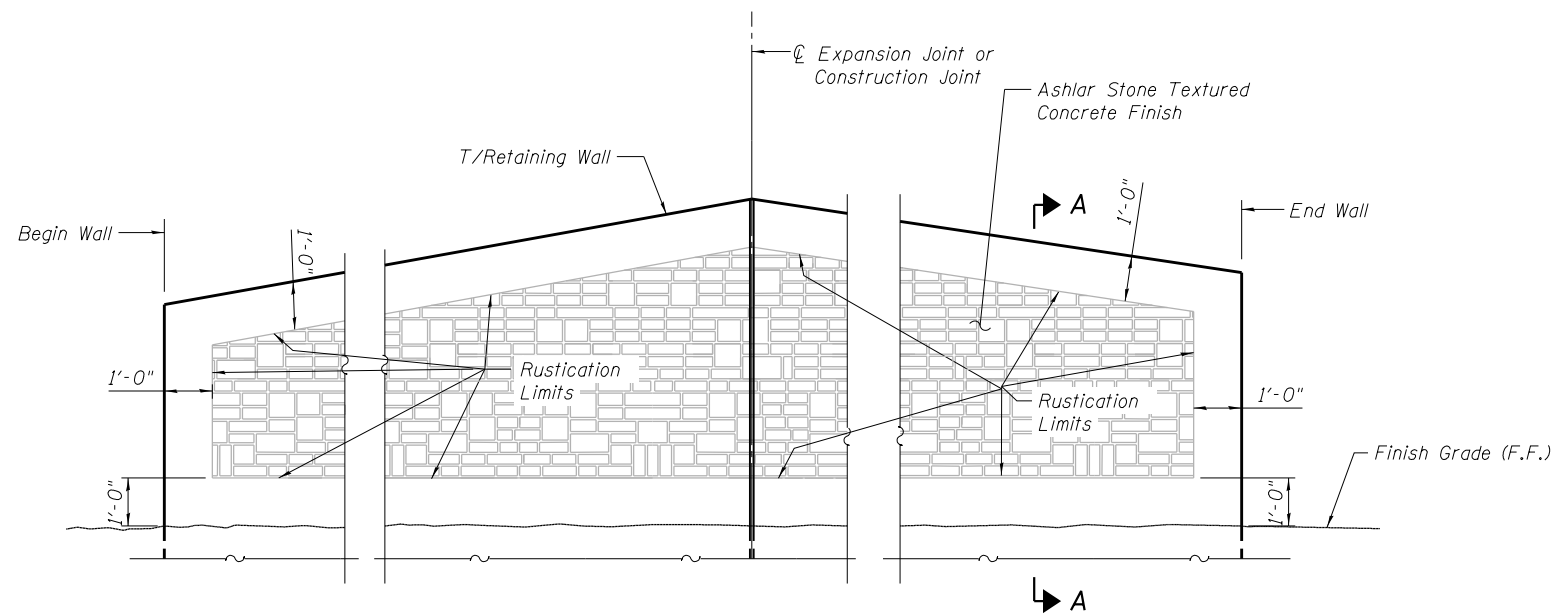
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PLOT DATE =	CHECKED - LJB	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

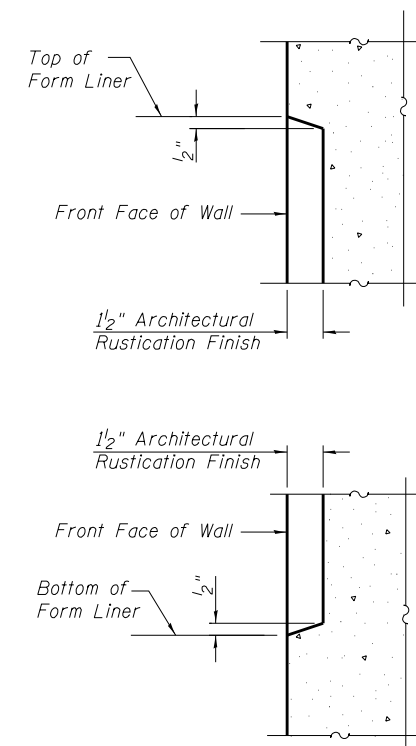
**REINFORCING AND SOLDIER PILE SCHEDULE
RETAINING WALL 2**

SHEET NO. 4 OF 7 SHEETS

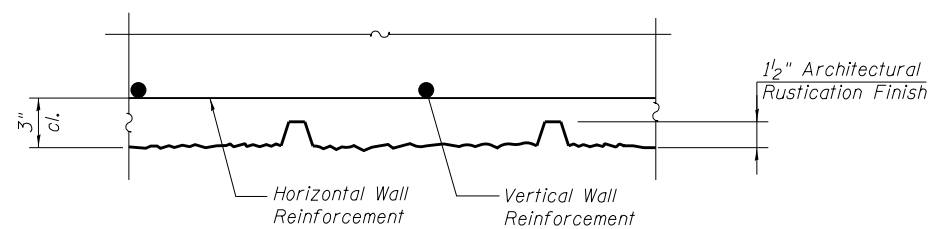
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	583
				CONTRACT NO. 60L72
ILLINOIS FED. AID PROJECT				



**ARCHITECTURAL RUSTICATION
FINISH LIMITS**



SECTION A-A



PLAN - FORM LINER

T:\51006-USA\Struct\Drawings\Retaining Wall 2\0160002-60L72-005-AF.dgn

LOCHNER
H.W. LOCHNER, INC.
225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED -	REVISED
FILE NAME = 0160002-60L72-005-AF.dgn	CHECKED -	REVISED
PLOT SCALE =	DRAWN -	REVISED
PLOT DATE =	CHECKED -	REVISED

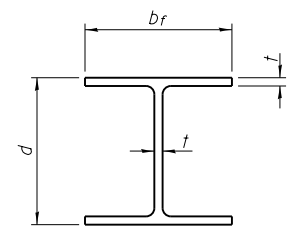
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**ARCHITECTURAL FINISH DETAILS
RETAINING WALL 2**

SHEET NO. 5 OF 7 SHEETS

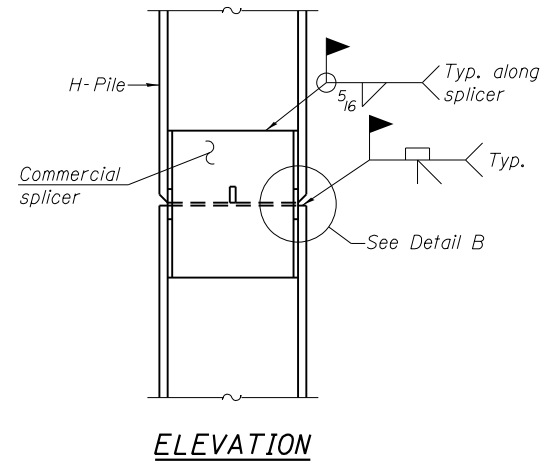
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	584
CONTRACT NO. 60L72				

ILLINOIS FED. AID PROJECT

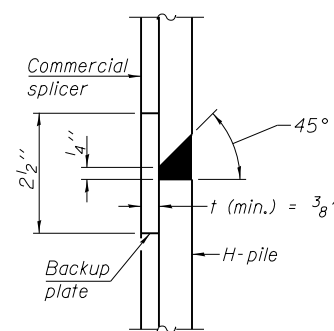


STEEL PILE TABLE

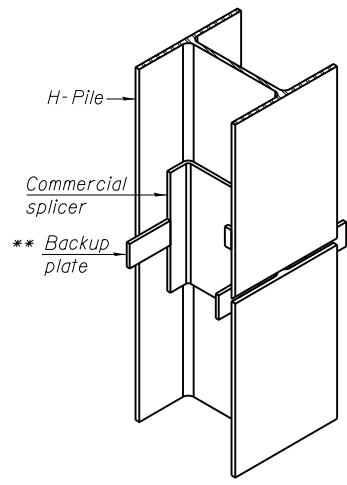
Designation	Depth d	Flange width b _f	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"



ELEVATION

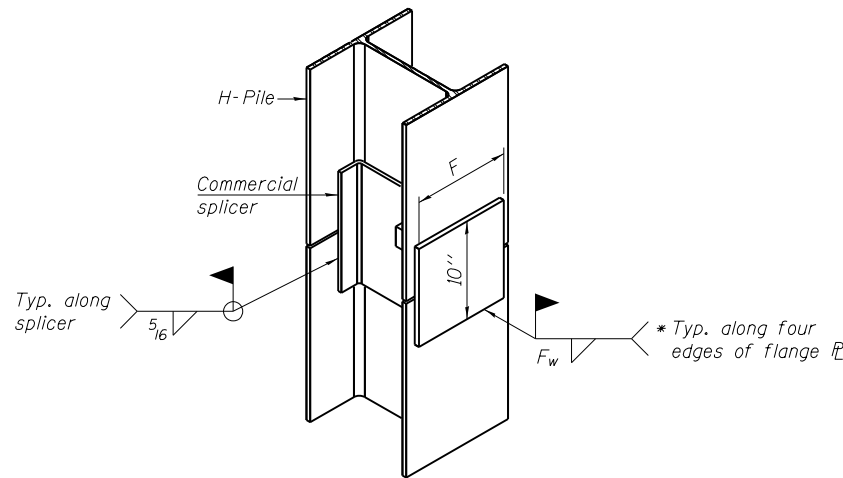


DETAIL "B"



ISOMETRIC VIEW

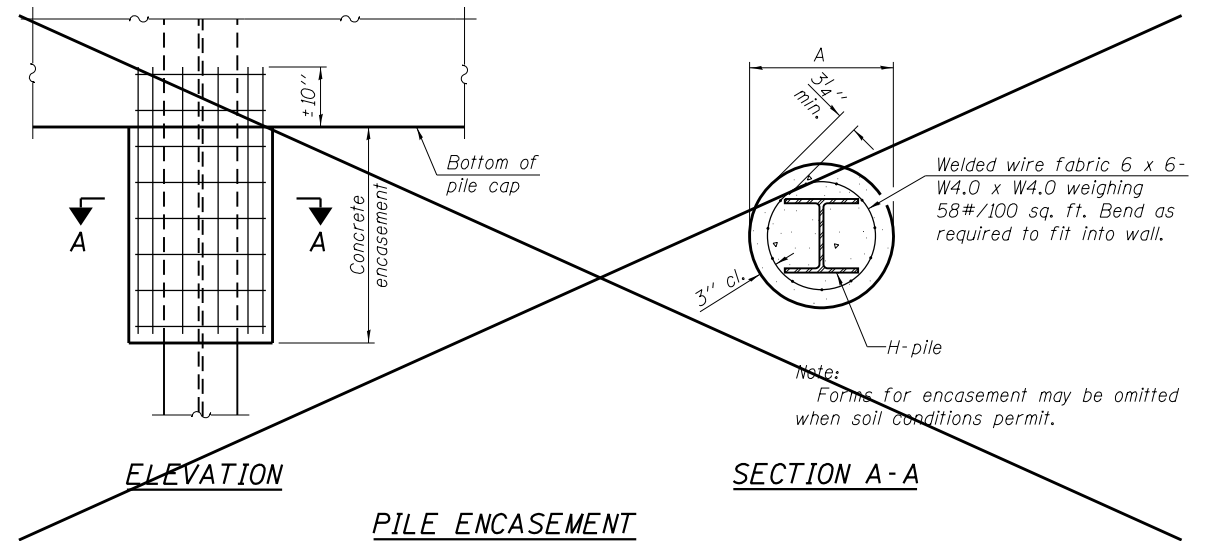
WELDED COMMERCIAL SPLICE



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

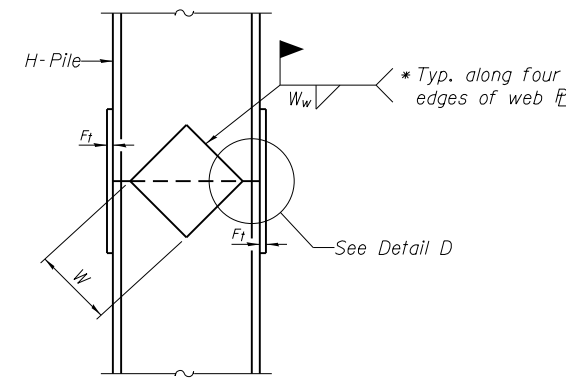
- * Interrupt welds 1/4" from end of web and/or each flange.
- ** Remove portions of backup plates that extend outside the flanges.
- *** Weld size per pile shoe manufacturer (5/16" min.).



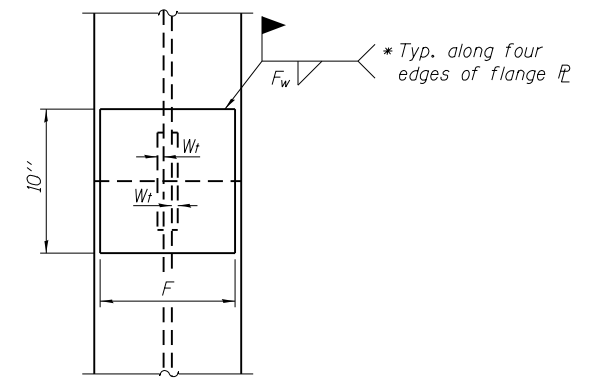
ELEVATION

SECTION A-A

PILE ENCASEMENT



ELEVATION



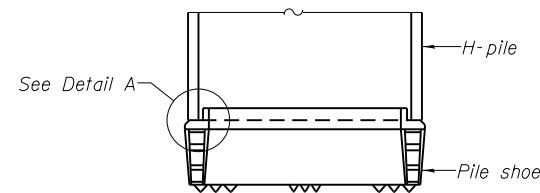
END VIEW

DETAIL D

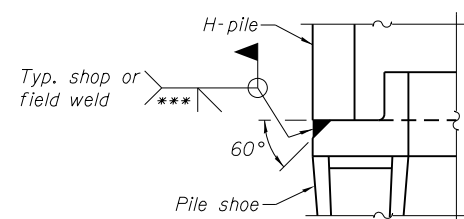
WELDED PLATE FIELD SPLICE

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

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



ELEVATION



DETAIL A

H-PILE SHOE ATTACHMENT

T:\51006-USA\Struct\Drawings\Retaining Wall\2\0160002-60L72-006-HP.dgn

F-HP 1-27-12
LOCHNER
 H. W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED -	REVISED
FILE NAME = 0160002-60L72-006-HP.dgn	CHECKED -	REVISED
PLOT SCALE =	DRAWN -	REVISED
PLOT DATE =	CHECKED -	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**STEEL H PILES
RETAINING WALL 2**

SHEET NO. 6 OF 7 SHEETS

F.A.P. RTE. =	SECTION =	COUNTY =	TOTAL SHEETS =	SHEET NO. =
351	2010-081-R	COOK	1045	585
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



SOIL BORING LOG

GSI Job No. 10195
 Page 1 of 1
 Date 1/31/14

ROUTE IL Route 77/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY KD
 SECTION 2010-081-R LOCATION SW1/4, SEC. 17, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. Station	D E P T H	B L O W S	U C S Qu	M O I S T	Surface Water Elev.	D E P T H	B L O W S	U C S Qu	M O I S T								
					n/a ft					(ft)	(/6")	(tsf)	(%)				
BORING NO. RW-22 Station 29+95 Offset 41.80ft Right Ground Surface Elev. 712.40 ft					n/a ft												
					711.48					32					4	3.1	19
										50/5	11				6	B	
															7		
										7					3		
										10	6.4	17			4	2.4	20
										12	B				7	B	
															-25		
										6					4		
										10	4.4	19			6	2.4	14
										12	B				8	B	
															3		
										5	1.3	19			7	3.8	16
										8	B				9	B	
						-30											
CLAY LOAM-gray-stiff to very stiff 701.90					688.90												
										4					4		
										7		13			6	2.2	15
										15					7	B	
															3		
										4	3.1	13			4	1.9	15
										7	B				6	B	
															-35		
										3					5		
										5	3.3	16			5	1.3	15
										6	B				5	B	
															3		
										6	2.8	19			6		
										7	B				7		
						-20											
CLAY-gray very stiff 694.40					672.40												
										3					3		
										6	2.8	19			6		
										7	B				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, from 137 (Rev. 8-99)



SOIL BORING LOG

GSI Job No. 10195
 Page 1 of 1
 Date 1/31/14

ROUTE IL Route 77/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY KD
 SECTION 2010-081-R LOCATION SW1/4, SEC. 17, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. Station	D E P T H	B L O W S	U C S Qu	M O I S T	Surface Water Elev.	D E P T H	B L O W S	U C S Qu	M O I S T								
					n/a ft					(ft)	(/6")	(tsf)	(%)				
BORING NO. RW-23 Station 30+60 Offset 41.80ft Right Ground Surface Elev. 710.50 ft					n/a ft												
					709.58					8					3		
										17	1.3	15			6	1.3	17
										18	P				7	B	
															5		
										7	5.3	15			7	5.3	15
										8	B				8	B	
															-5		
										7					6		
										9	8.8	15			4	1.9	15
										10	B				5	B	
															3		
										6					6	2.7	15
										7	B				8	B	
						-30											
CLAY to CLAY LOAM-gray-stiff to very stiff 700.00 becoming gray @ -8.0'					697.50												
										4					6		
										3	0.5	17			7	2.7	20
										3	P				10	B	
															3		
										4	1.8	14			7	2.4	15
										6	P				15	B	
															-35		
										4					4		
										7	2.7	13			7	2.5	14
										8	B				8	B	
															6		
										6	2.8	16			8	2.0	14
										8	B				9	B	
						-20											
CLAY to CLAY LOAM-gray-stiff to very stiff 695.00 becoming gray @ -8.0'					692.20												
										3					4		
										4	2.2	13			5	2.0	24
										5	B				7	B	
															4		
										4	1.1	16			4	2.2	15
										5	B				7	B	
															-35		
										3					4		
										4					7	4.6	14
										6					10	B	
															5		
										4	2.2	15			4	2.2	15
										5	B				7	B	
						-35											
CLAY to CLAY LOAM-gray-very stiff to hard 689.70					687.70												
										3					4		
										4					7	4.6	14
										6					10	B	
															5		
										4	2.2	15			4	2.2	15
										5	B				7	B	
															-35		
										5					5		
										8	4.0	13			8	3.2	14
										11	P				8	B	
															-20		

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)



SOIL BORING LOG

GSI Job No. 10195
 Page 1 of 1
 Date 2/3/14

ROUTE IL Route 77/U.S. Route 6 (159th St.) DESCRIPTION IL Rte. 7 from Will Cook Rd. to Ravinia Av. LOGGED BY TZ
 SECTION 2010-081-R LOCATION SW1/4, SEC. 17, TWP. T36N, RNG. R12E, 3rd PM
 COUNTY Cook DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. Station	D E P T H	B L O W S	U C S Qu	M O I S T	Surface Water Elev.	D E P T H	B L O W S	U C S Qu	M O I S T								
					n/a ft					(ft)	(/6")	(tsf)	(%)				
BORING NO. RW-24 Station 31+25 Offset 43.20ft Right Ground Surface Elev. 707.70 ft					n/a ft												
					707.03					14					7		
										11		21			8	3.5	13
										10					9	P	
															5		
										8	4.5	15			6	2.9	15
										9	B				8	B	
															-25		
										4					4		
										5	4.2	14			5	2.4	17
										10	B				6	B	
															4		
										5	2.5	13			4		
										6	B				5	3.0	16
						-30											
CLAY to CLAY LOAM-gray-very stiff to hard 704.70 becoming gray @ -8.0'					692.20												
										3					3		
										4	2.2	13			5	2.0	24
										5	B				7	B	
															4		
										4	1.1	16			4	2.2	15
										5	B				7	B	
															-35		
										3					4		
										4					7	4.6	14
										6					10	B	
															5		
										4	2.2	15			4	2.2	15
										5	B				7	B	
						-35											
CLAY to CLAY LOAM-gray-very stiff to hard 689.70					687.70												
										3					4		
										4					7	4.6	14
										6					10	B	
															5		
										4	2.2	15			4	2.2	15
										5	B				7	B	
															-35		
										5					5		
										8	4.0	13			8	3.2	14
										11	P				8	B	
															-20		

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)

T:\151006-056\Struct\Retaining Wall\2010-081-R\SOIL BORING LOG\GPI_227114.dgn



USER NAME =	DESIGNED -	REVISED
FILE NAME = 0160002-60L72-007-SB.dgn	CHECKED -	REVISED
PLOT SCALE =	DRAWN -	REVISED
PLOT DATE =	CHECKED -	REVISED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS
 RETAINING WALL 2

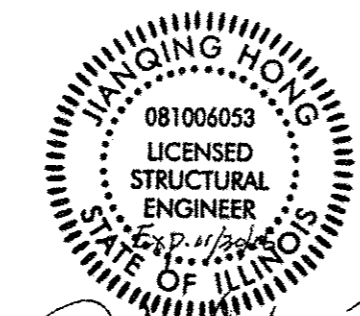
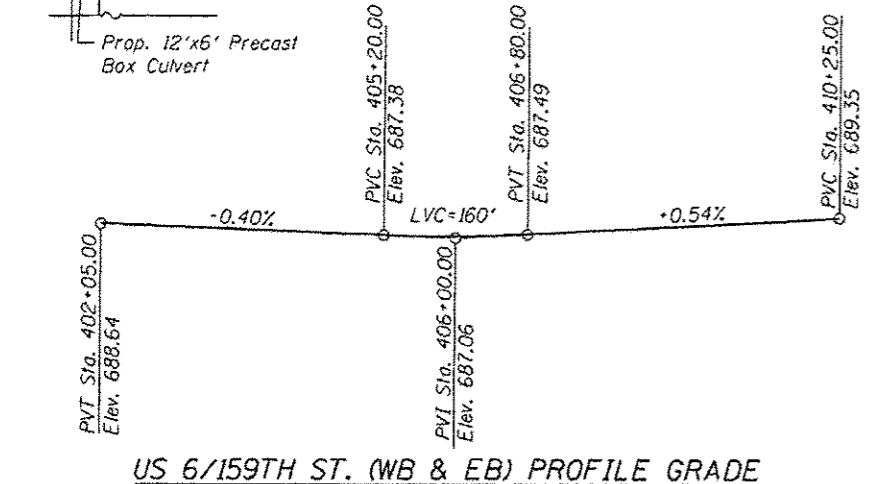
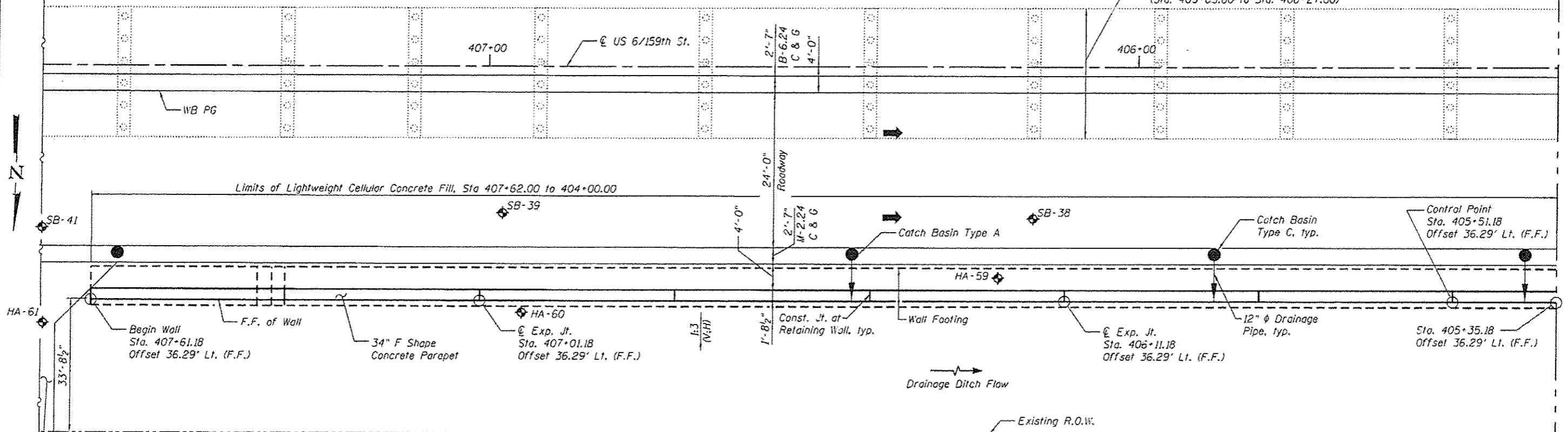
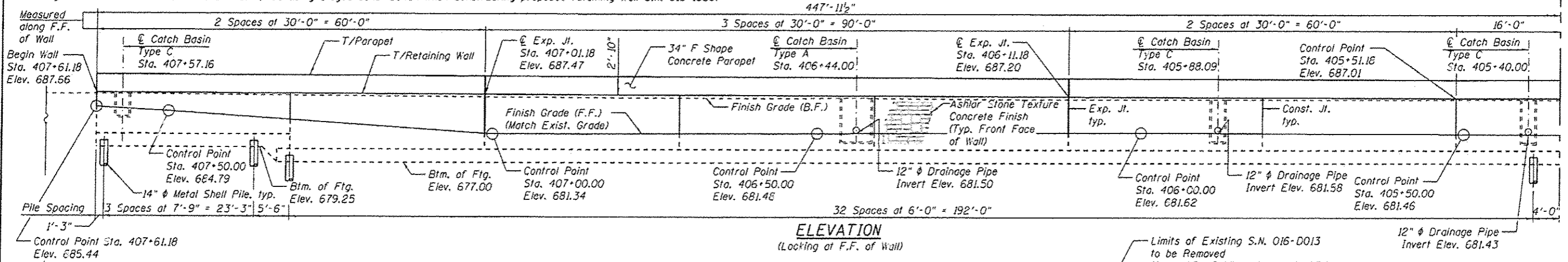
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	586
CONTRACT NO. 60L72				

SHEET NO. 7 OF 7 SHEETS

ILLINOIS FED. AID PROJECT

Bench Mark: BM #48 Set at a notch cut on top of northwest wingwall of bridge US 6 over Marley Creek, Elev. 686.47; BM #49 Set at a notch cut on south end of east 16' headwall to private entrance, Elev. 687.61, 37' north of \odot US 6 and \pm 1000' east of 104th Street; BM #50 Set at a notch cut in center of west 16' headwall to private entrance, Elev. 686.54, 52' north of \odot US 6 and \pm 2400' east of 104th Street.

Existing Structure: None. Traffic to be maintained using staged construction when constructing proposed retaining wall S.N. 016-1339.



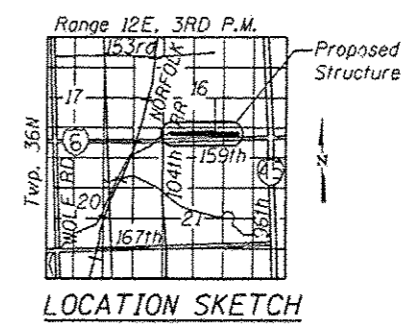
APPROVED
For Structural Adequacy Only

[Signature]
Engineer of Bridges & Structures

DESIGN SPECIFICATIONS
2012 AASHTO LRFD Bridge Design Specifications, 6th Edition with 2013 Interims.

DESIGN STRESSES
FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)

LEGEND
F.F. = Front Face
B.F. = Back Face
 \diamond Soil Boring Location



GENERAL PLAN & ELEVATION 1
RETAINING WALL 3
US ROUTE 6 / 159TH STREET
F.A.P. RTE 351 - SEC. 2010-081-R
COOK COUNTY
STATION 381+44.37 TO 407+61.18
STRUCTURE NO. 016-1339

LOCHNER
H. W. LOCHNER, INC.
225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

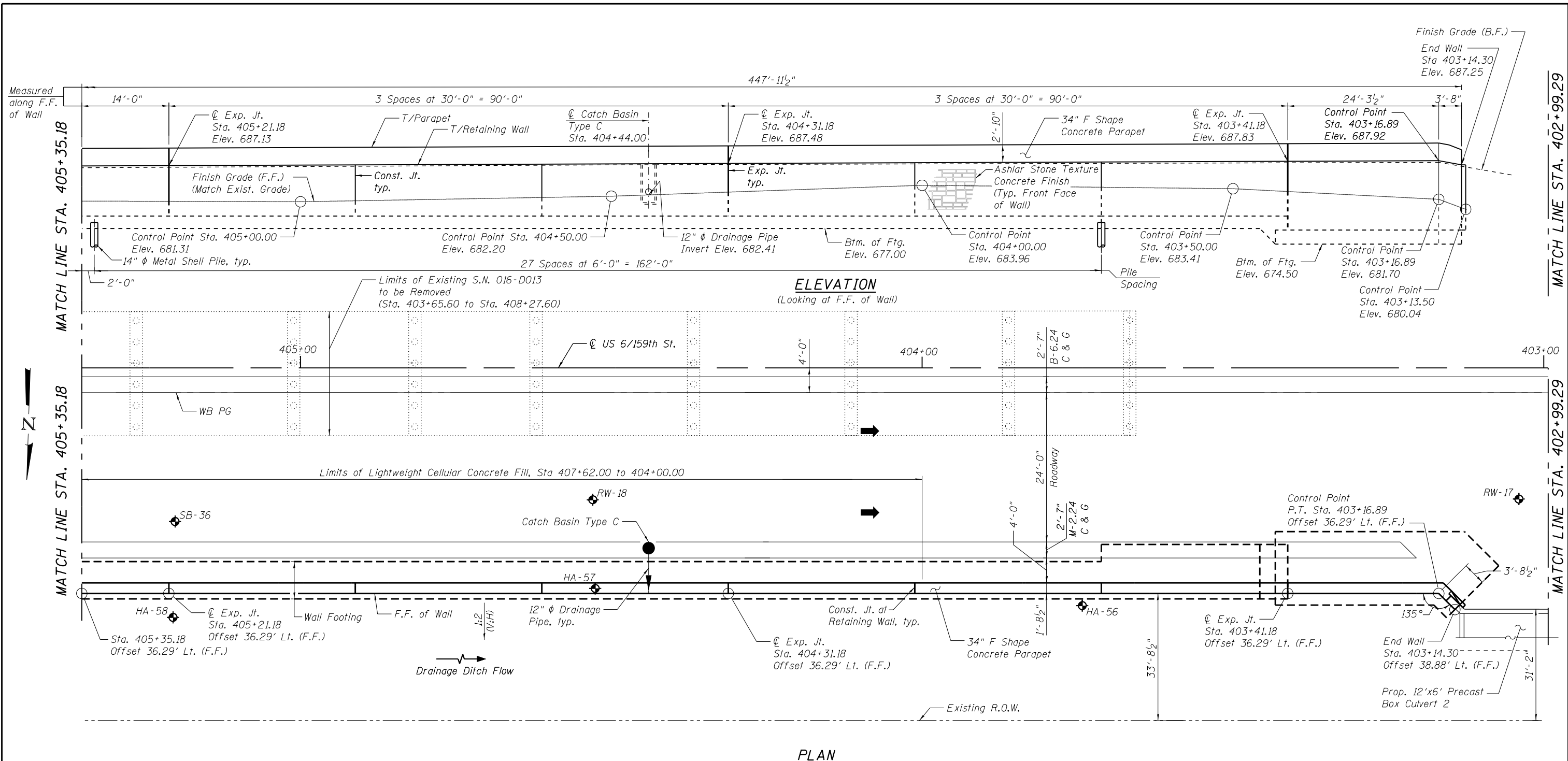
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PLOT SCALE *	DRAWN - EF	REVISED
PLOT DATE *	CHECKED - CMM	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 84 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	587
			CONTRACT NO. 60L72	

ILLINOISIFIED, A10 PROJECT



PLAN

LEGEND

- F.F. = Front Face
- B.F. = Back Face
- ◆ Soil Boring Location

GENERAL PLAN & ELEVATION 2
RETAINING WALL 3
US 6 / 159TH STREET
F.A.P. RTE 351 - SEC. 2010-081-R
COOK COUNTY
STATION 381+44.37 TO 407+61.18
STRUCTURE NO. 016-1339

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LOCHNER
 H.W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

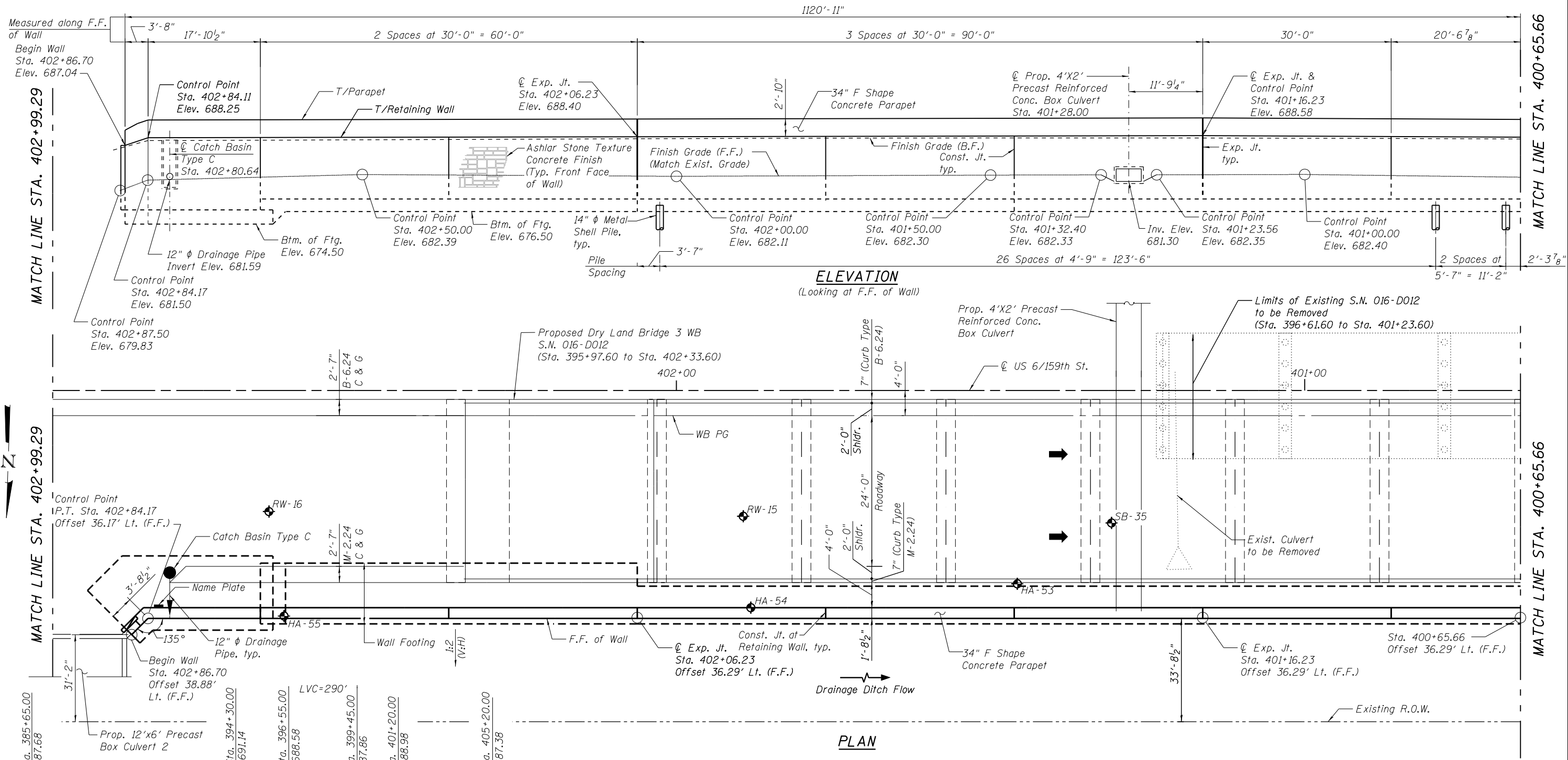
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PLOT SCALE =	DRAWN - EF	REVISED
PLOT DATE =	CHECKED - CMM	REVISED

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

SHEET NO. 2 OF 84 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	588
CONTRACT NO. 60L72				

ILLINOIS FED. AID PROJECT



ELEVATION
(Looking at F.F. of Wall)

PLAN

US 6/159TH ST. (WB & EB) PROFILE GRADE

GENERAL PLAN & ELEVATION 3
RETAINING WALL 3
US ROUTE 6 / 159TH STREET
F.A.P. RTE 351 - SEC. 2010-081-R
COOK COUNTY
STATION 381+44.37 TO 407+61.18
STRUCTURE NO. 016-1339

LEGEND
 F.F. = Front Face
 B.F. = Back Face
 ⬢ Soil Boring Location

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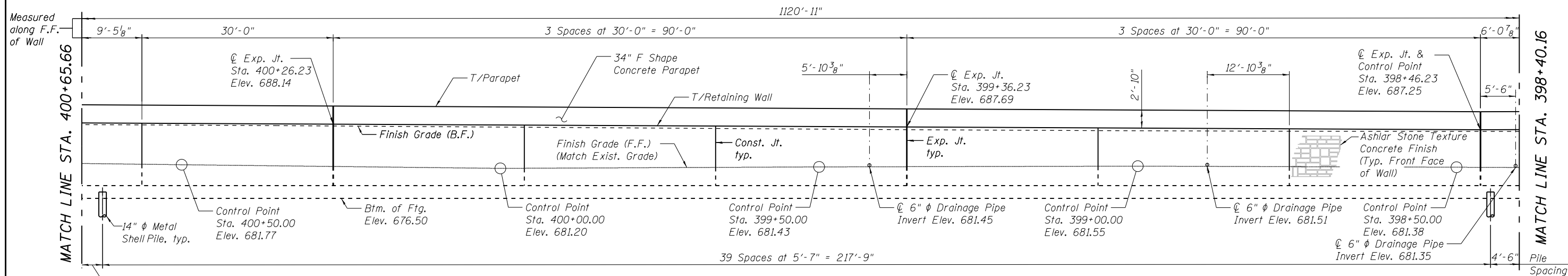
LOCHNER
 H.W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

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PLOT DATE	CHECKED - CMM	REVISED

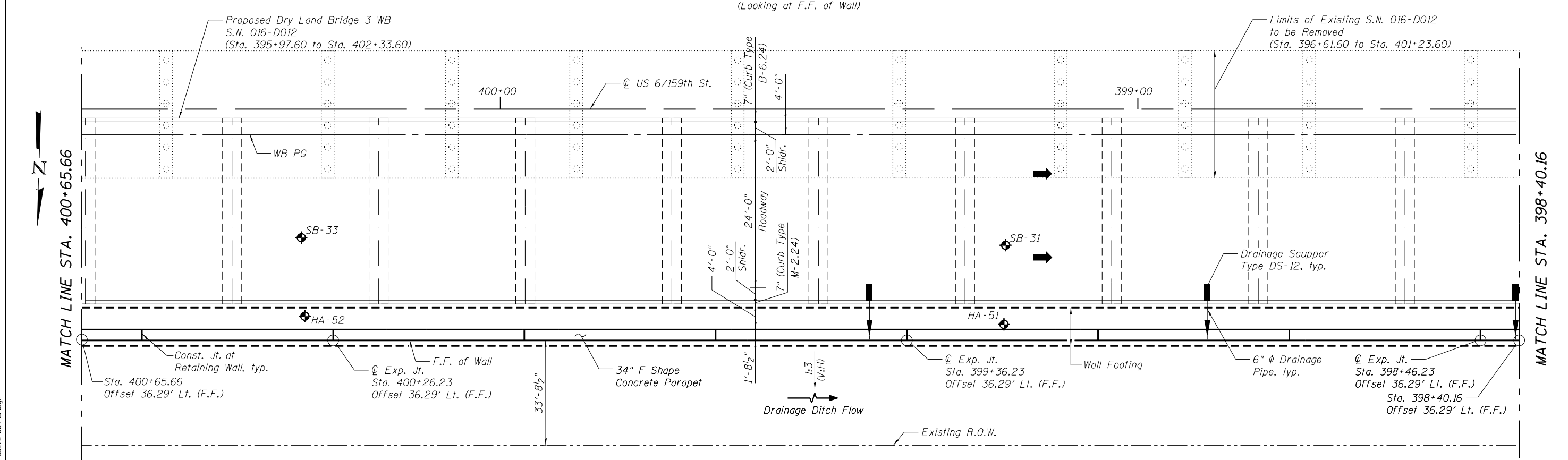
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 3 OF 84 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	589
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



ELEVATION
(Looking at F.F. of Wall)



PLAN

LEGEND

- F.F. = Front Face
- B.F. = Back Face
- ◆ Soil Boring Location

GENERAL PLAN & ELEVATION 4
RETAINING WALL 3
US ROUTE 6 / 159TH STREET
F.A.P. RTE 351 - SEC. 2010-081-R
COOK COUNTY
STATION 381+44.37 TO 407+61.18
STRUCTURE NO. 016-1339

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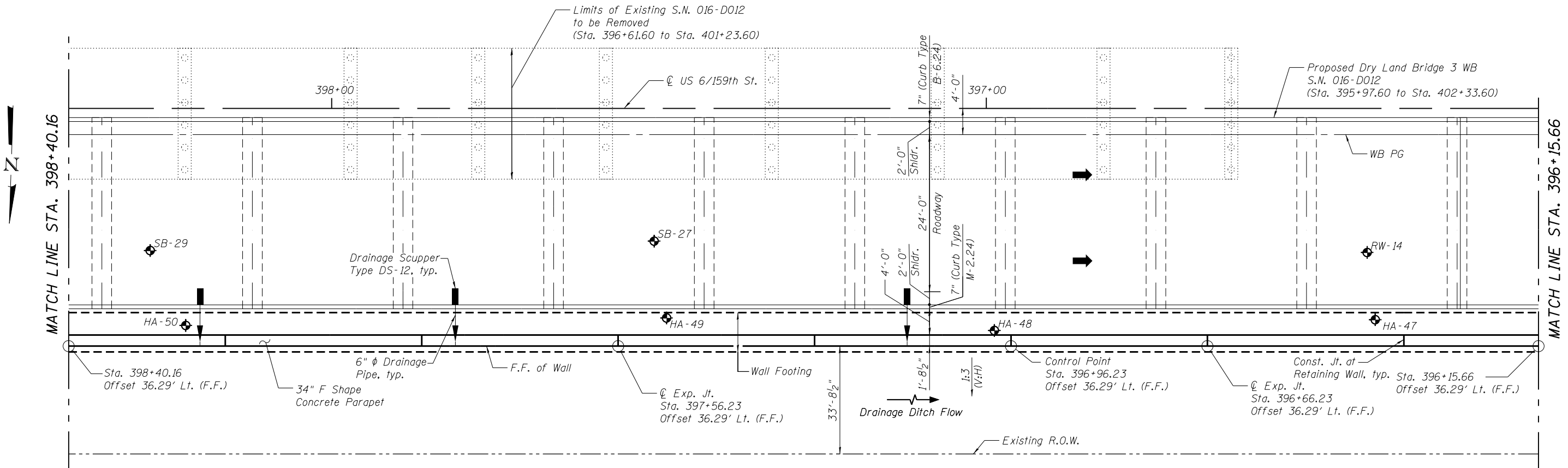
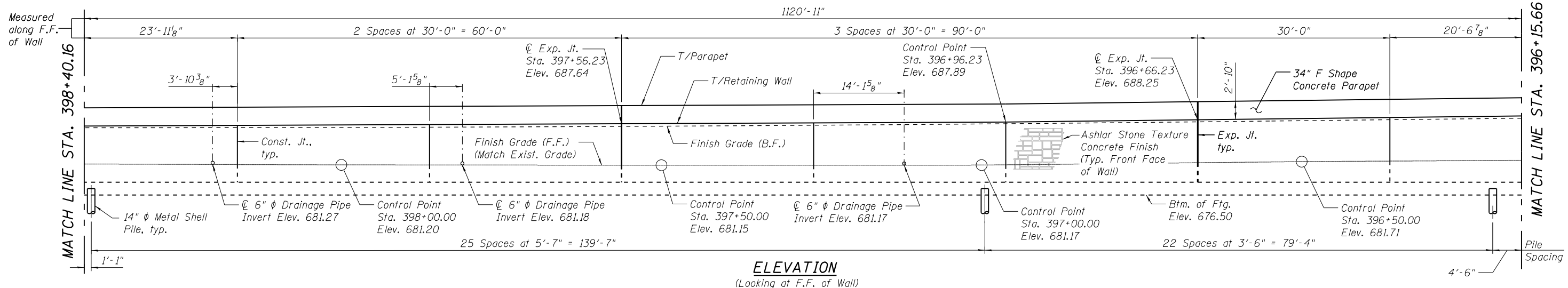
LOCHNER
 H.W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 4 OF 84 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	590
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



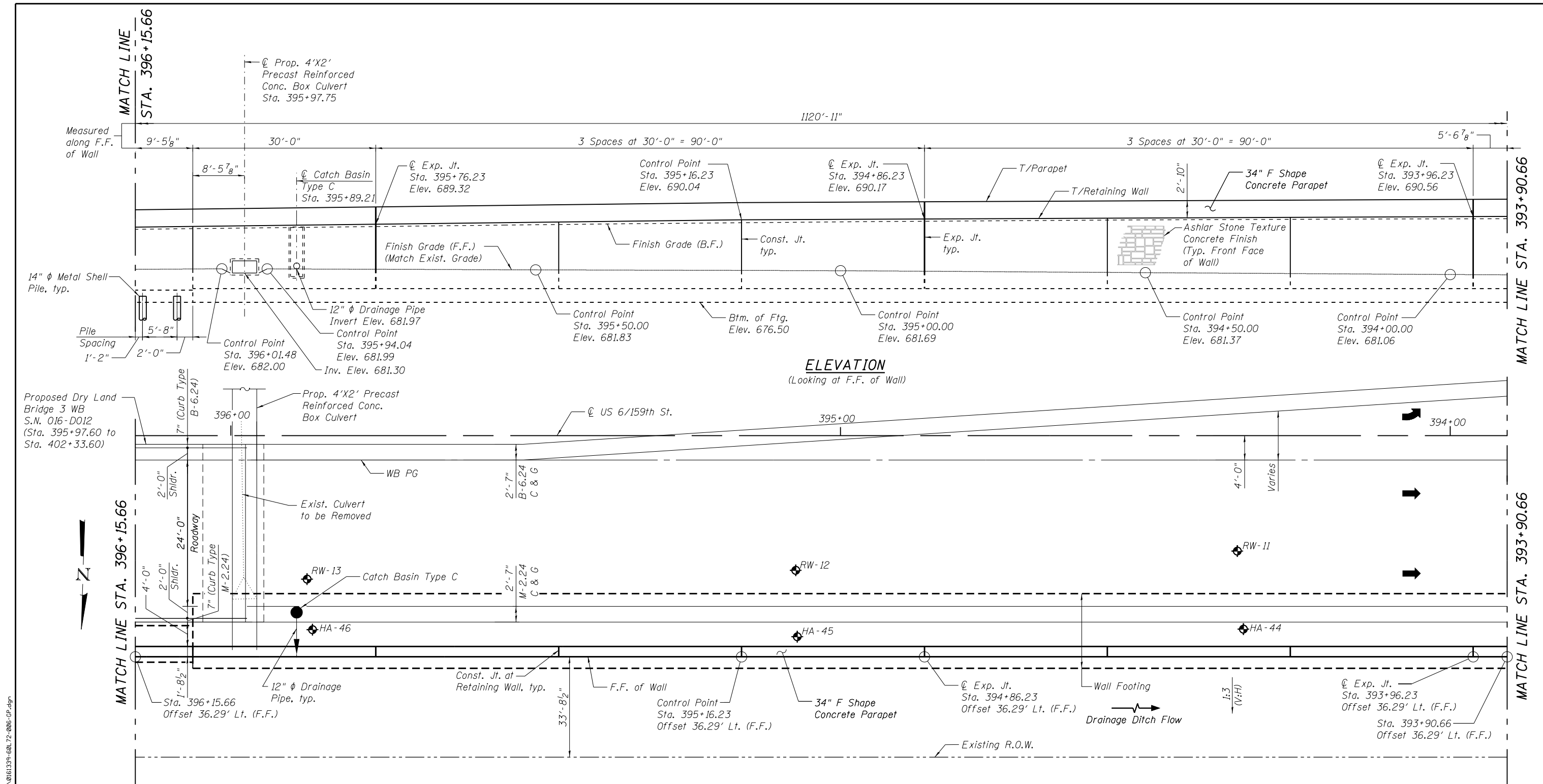
LEGEND
 F.F. = Front Face
 B.F. = Back Face
 ⬢ = Soil Boring Location

GENERAL PLAN & ELEVATION 5
RETAINING WALL 3
US ROUTE 6 / 159TH STREET
F.A.P. RTE 351 - SEC. 2010-081-R
COOK COUNTY
STATION 381+44.37 TO 407+61.18
STRUCTURE NO. 016-1339

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LOCHNER H.W. LOCHNER, INC. 225 WEST WASHINGTON STREET 12 TH FLOOR CHICAGO, ILLINOIS 60606	USER NAME =	DESIGNED - RAB	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SHEET NO. 5 OF 84 SHEETS ILLINOIS FED. AID PROJECT
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	PLOT DATE =	CHECKED - CMM	REVISED		
F.A.P. RTE. 351 SECTION 2010-081-R COUNTY COOK TOTAL SHEETS 1045 SHEET NO. 591 CONTRACT NO. 60L72					

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ELEVATION
(Looking at F.F. of Wall)

LEGEND

- F.F. = Front Face
- B.F. = Back Face
- ◆ Soil Boring Location

GENERAL PLAN & ELEVATION 6
RETAINING WALL 3
US ROUTE 6 / 159TH STREET
F.A.P. RTE 351 - SEC. 2010-081-R
COOK COUNTY
STATION 381+44.37 TO 407+61.18
STRUCTURE NO. 016-1339

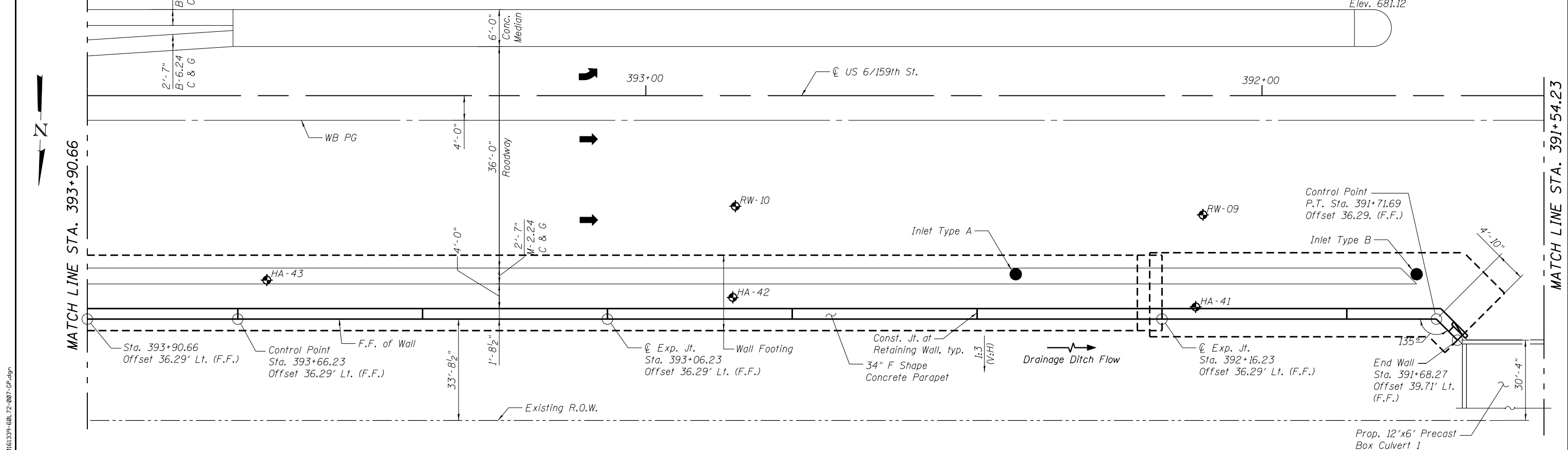
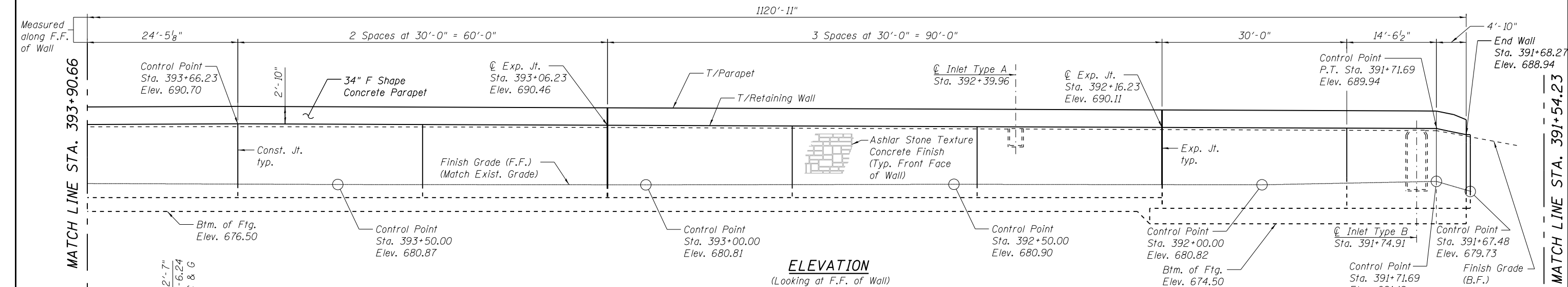
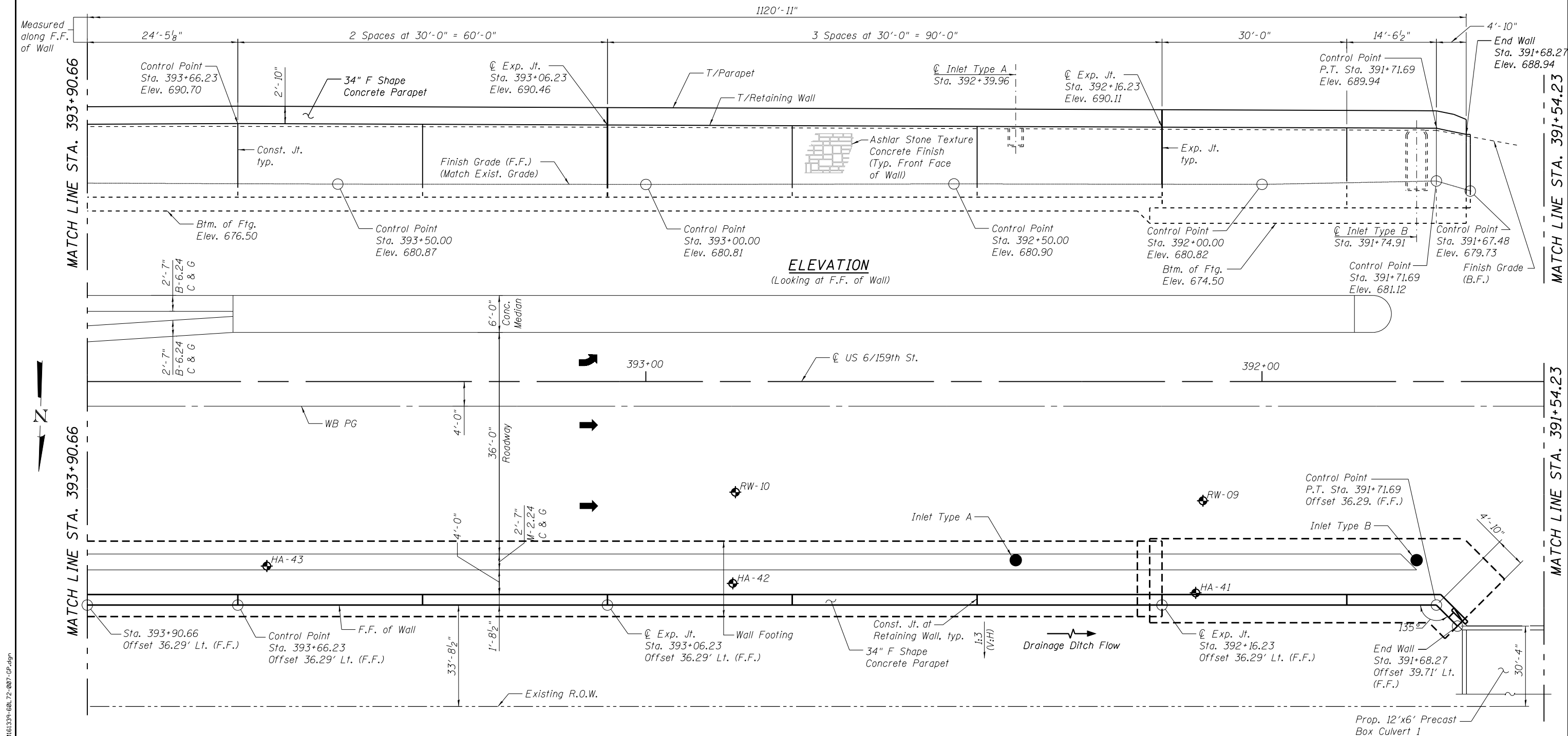
LOCHNER
H.W. LOCHNER, INC.
225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 6 OF 84 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	592
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



PLAN

LEGEND

- F.F. = Front Face
- B.F. = Back Face
- ◆ Soil Boring Location

GENERAL PLAN & ELEVATION 7
RETAINING WALL 3
US ROUTE 6 / 159TH STREET
F.A.P. RTE 351 - SEC. 2010-081-R
COOK COUNTY
STATION 381+44.37 TO 407+61.18
STRUCTURE NO. 016-1339

LOCHNER
 H.W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

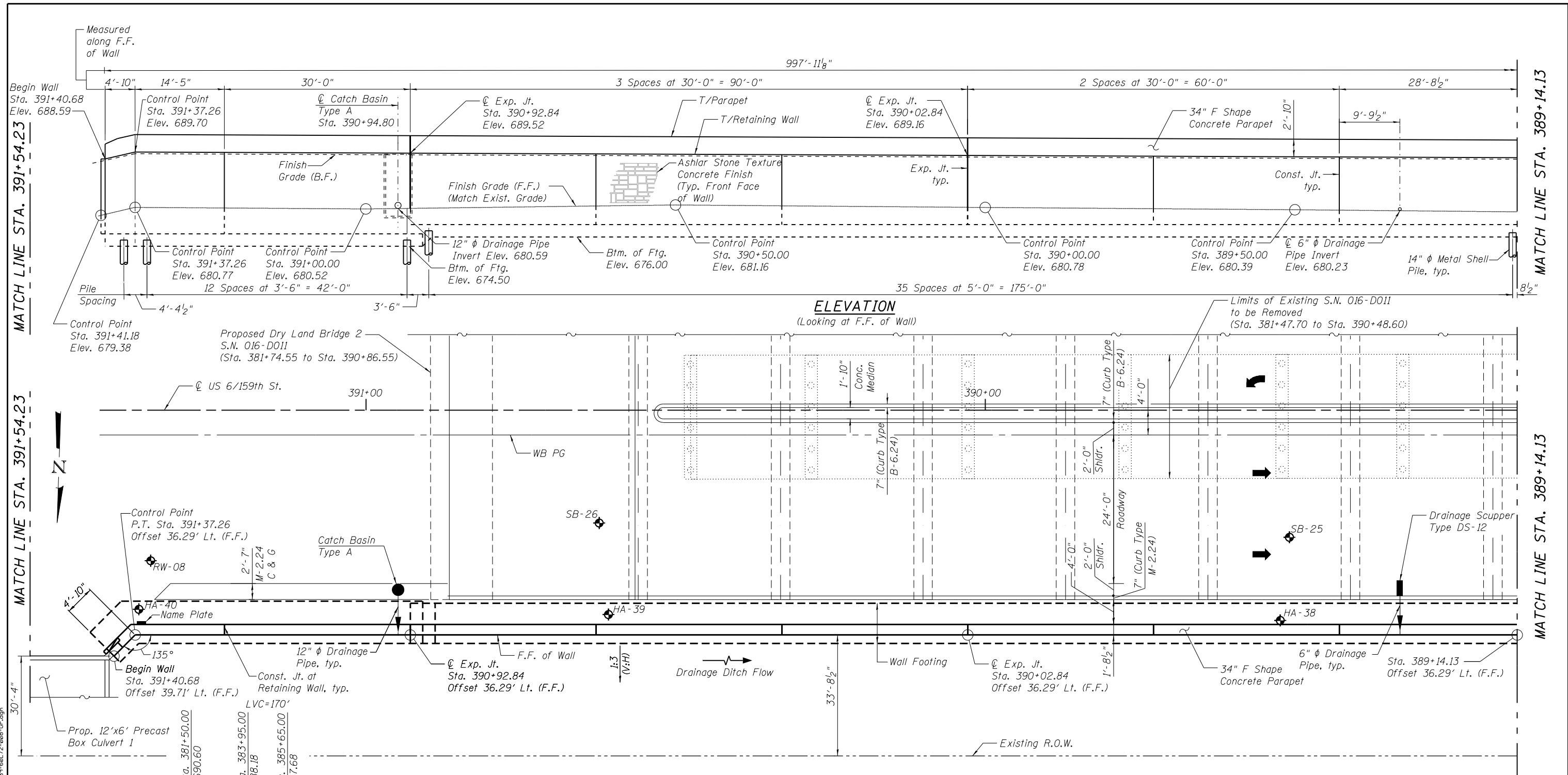
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STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

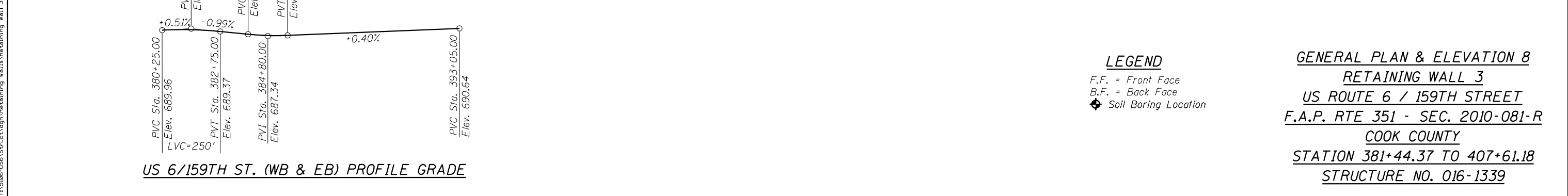
SHEET NO. 7 OF 84 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	593
CONTRACT NO. 60L72				

ILLINOIS FED. AID PROJECT



ELEVATION
(Looking at F.F. of Wall)



US 6/159TH ST. (WB & EB) PROFILE GRADE

PVC Sta. 380+25.00 Elev. 689.96	PVI Sta. 381+50.00 Elev. 690.60	PVT Sta. 382+75.00 Elev. 689.37	PVI Sta. 383+95.00 Elev. 688.18	PVT Sta. 385+65.00 Elev. 687.68	PVC Sta. 393+05.00 Elev. 690.64
LVC=250'		LVC=170'			
+0.51%		-0.99%		+0.40%	

LOCHNER
H.W. LOCHNER, INC.
225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

USER NAME =	DESIGNED - RAB	REVISED
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PLOT DATE	CHECKED - CMM	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

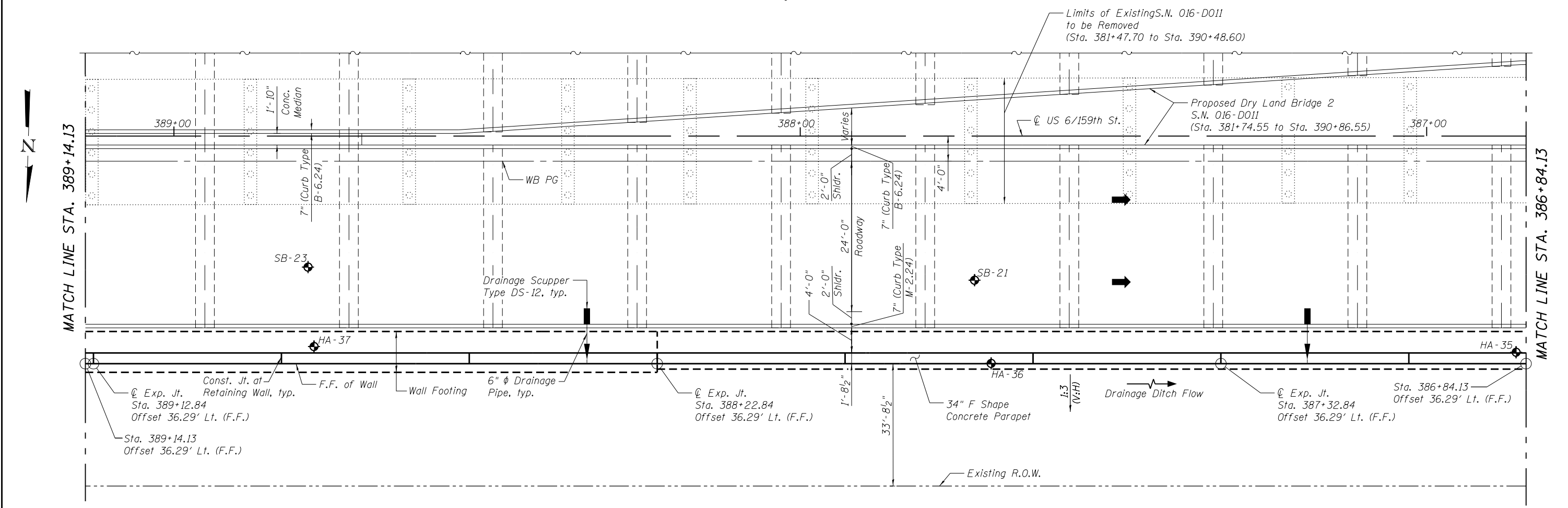
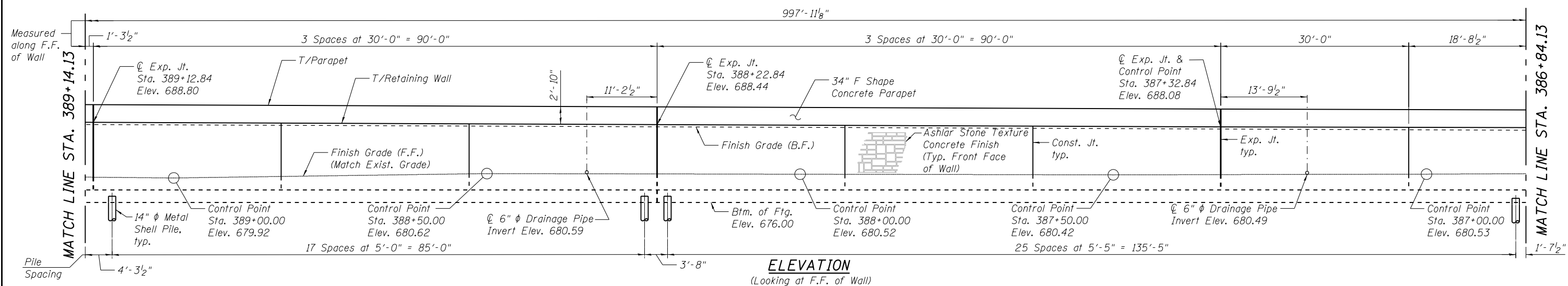
SHEET NO. 8 OF 84 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	594
CONTRACT NO. 60L72				

LEGEND
F.F. = Front Face
B.F. = Back Face
◆ Soil Boring Location

**GENERAL PLAN & ELEVATION 8
RETAINING WALL 3
US ROUTE 6 / 159TH STREET
F.A.P. RTE 351 - SEC. 2010-081-R
COOK COUNTY
STATION 381+44.37 TO 407+61.18
STRUCTURE NO. 016-1339**

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LOCHNER
 H. W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

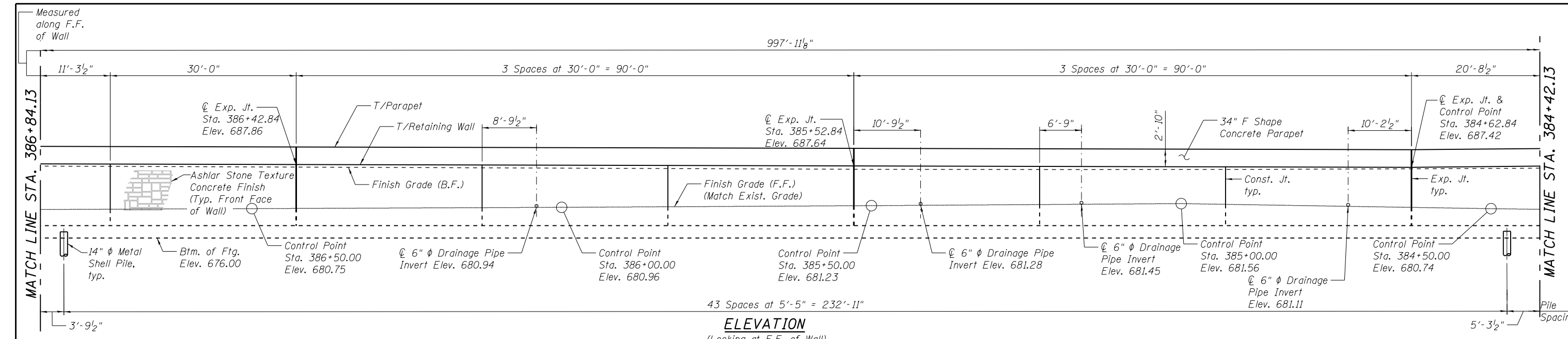
SHEET NO. 9 OF 84 SHEETS

LEGEND
 F.F. = Front Face
 B.F. = Back Face
 ⬤ = Soil Boring Location

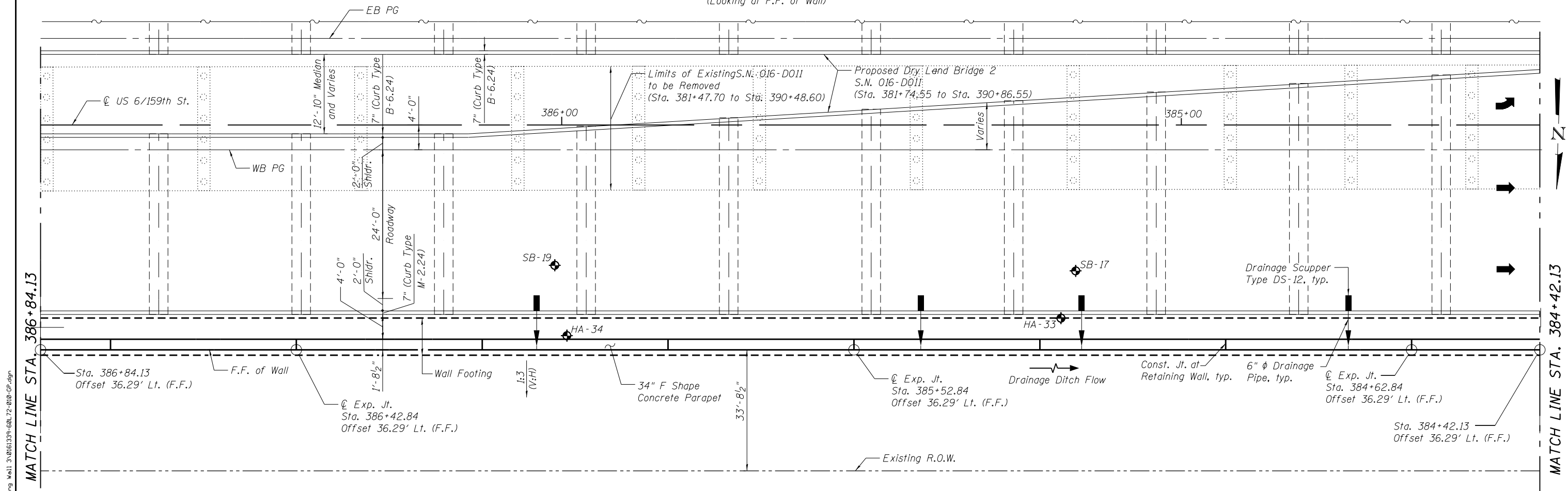
**GENERAL PLAN & ELEVATION 9
 RETAINING WALL 3
 US ROUTE 6 / 159TH STREET
 F.A.P. RTE 351 - SEC. 2010-081-R
 COOK COUNTY
 STATION 381+44.37 TO 407+61.18
 STRUCTURE NO. 016-1339**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	595
CONTRACT NO. 60L72				

ILLINOIS FED. AID PROJECT



ELEVATION
(Looking at F.F. of Wall)



PLAN

- LEGEND**
- F.F. = Front Face
 - B.F. = Back Face
 - ◆ Soil Boring Location

GENERAL PLAN & ELEVATION 10
RETAINING WALL 3
US ROUTE 6 / 159TH STREET
F.A.P. RTE 351 - SEC. 2010-081-R
COOK COUNTY
STATION 381+44.37 TO 407+61.18
STRUCTURE NO. 016-1339

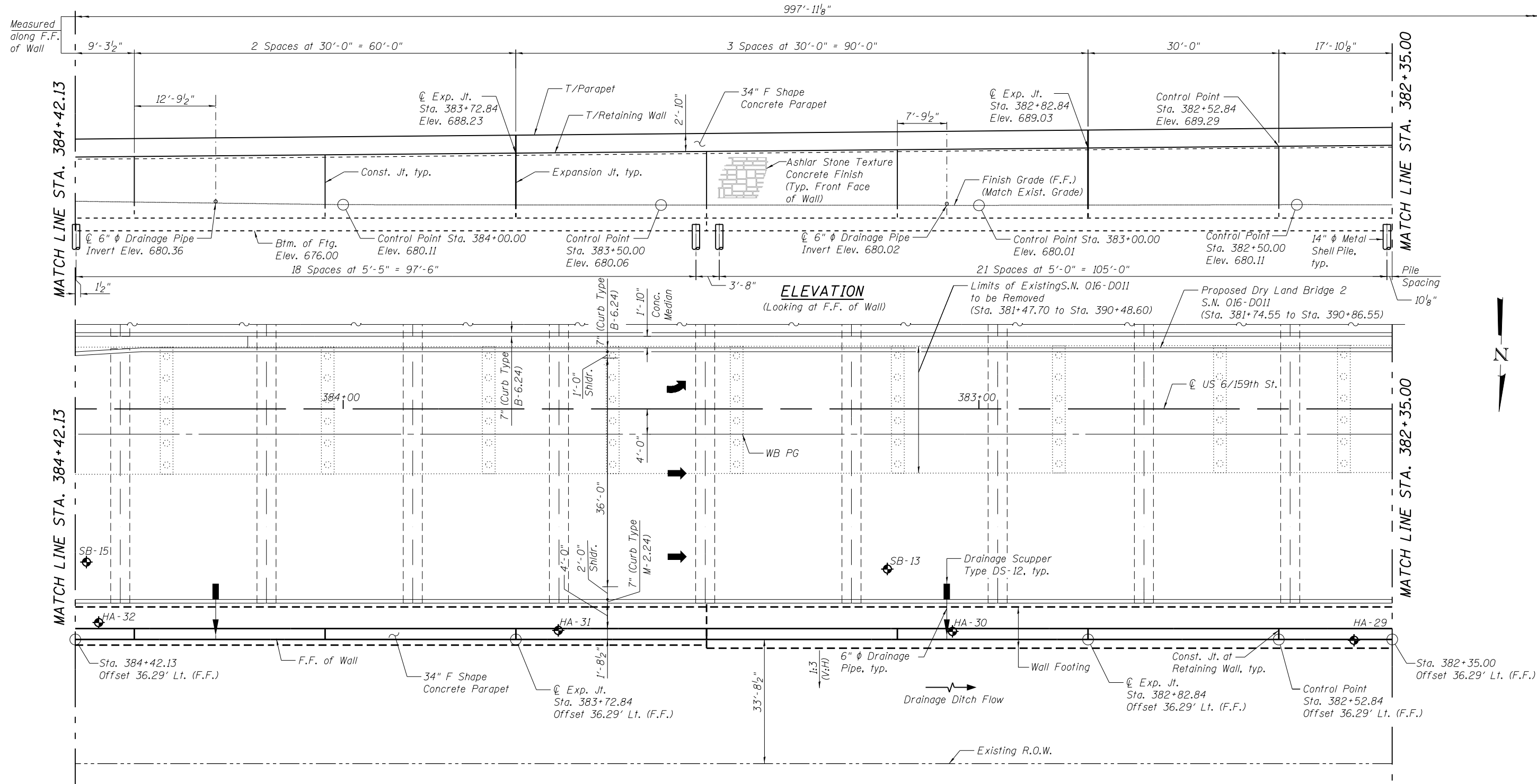
LOCHNER
 H.W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 10 OF 84 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	596
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



PLAN

LEGEND

- F.F. = Front Face
- B.F. = Back Face
- ⊕ Soil Boring Location

GENERAL PLAN & ELEVATION 11
RETAINING WALL 3
US ROUTE 6 / 159TH STREET
F.A.P. RTE 351 - SEC. 2010-081-R
COOK COUNTY
STATION 381+44.37 TO 407+61.18
STRUCTURE NO. 016-1339

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LOCHNER
 H.W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

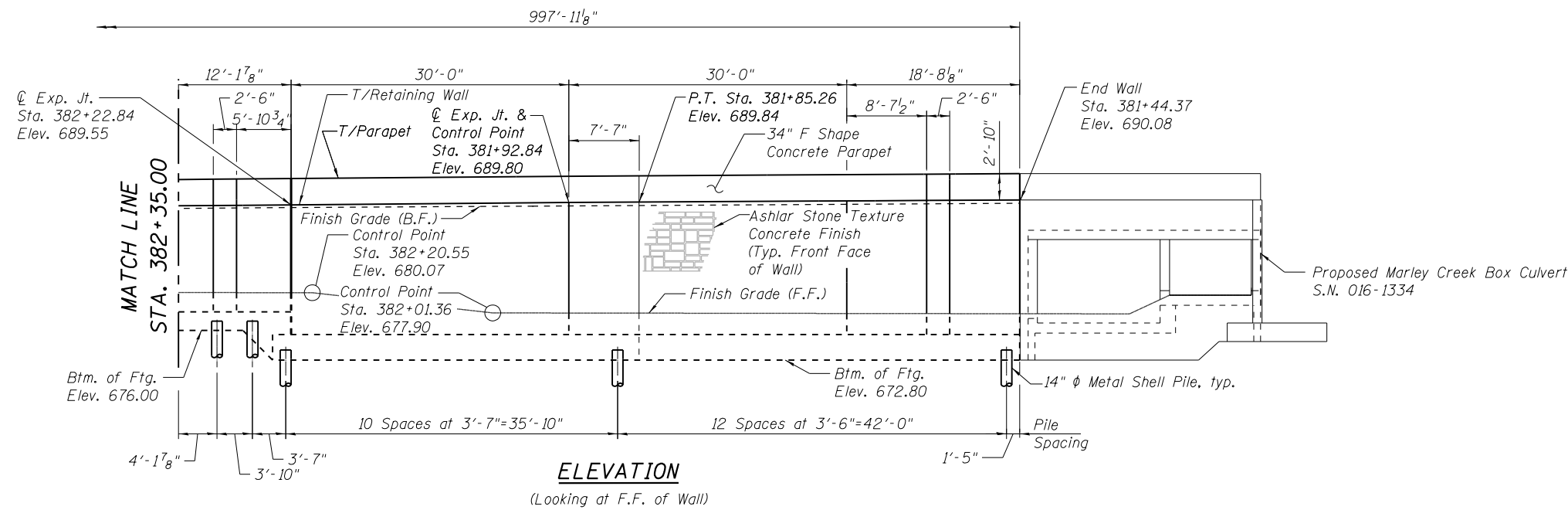
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

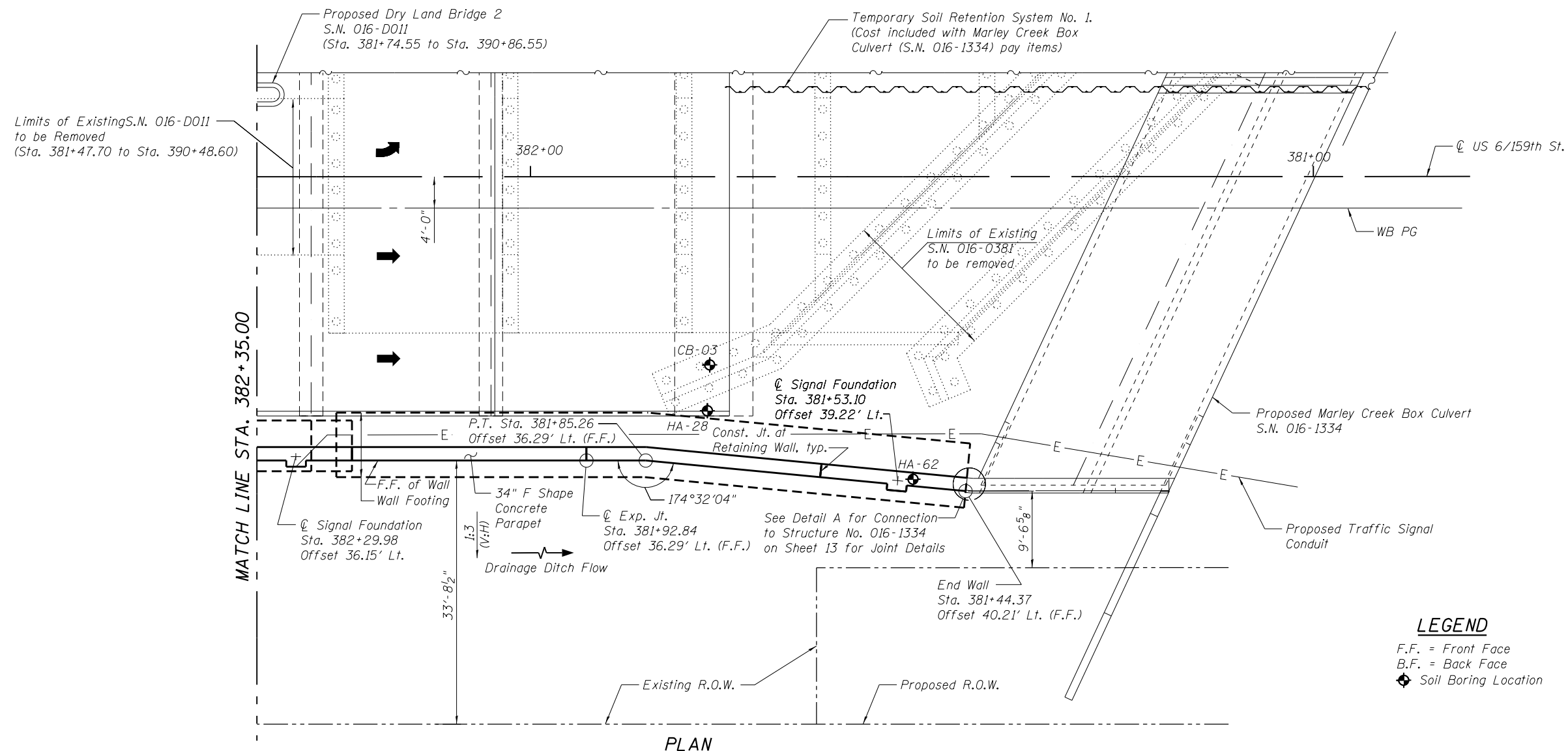
SHEET NO. 11 OF 84 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	597
CONTRACT NO. 60L72				

ILLINOIS FED. AID PROJECT



ELEVATION
(Looking at F.F. of Wall)



PLAN

LEGEND

- F.F. = Front Face
- B.F. = Back Face
- ◆ Soil Boring Location

GENERAL PLAN & ELEVATION 12
RETAINING WALL 3
US ROUTE 6 / 159TH STREET
F.A.P. RTE 351 - SEC. 2010-081-R
COOK COUNTY
STATION 381+44.37 TO 407+61.18
STRUCTURE NO. 016-1339

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LOCHNER
 H.W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

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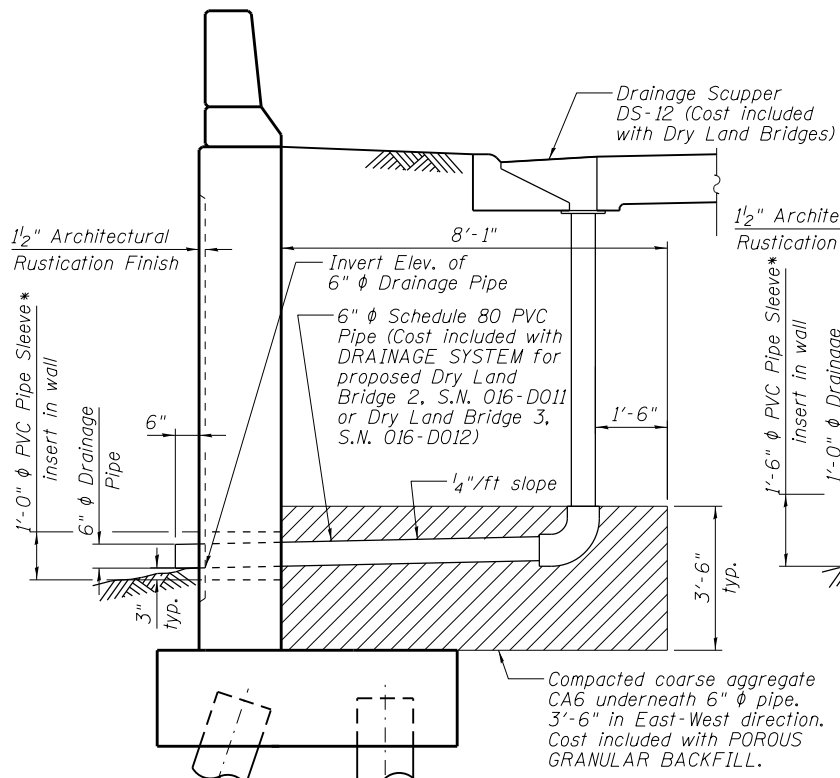
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 12 OF 84 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	598
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				

GENERAL NOTES

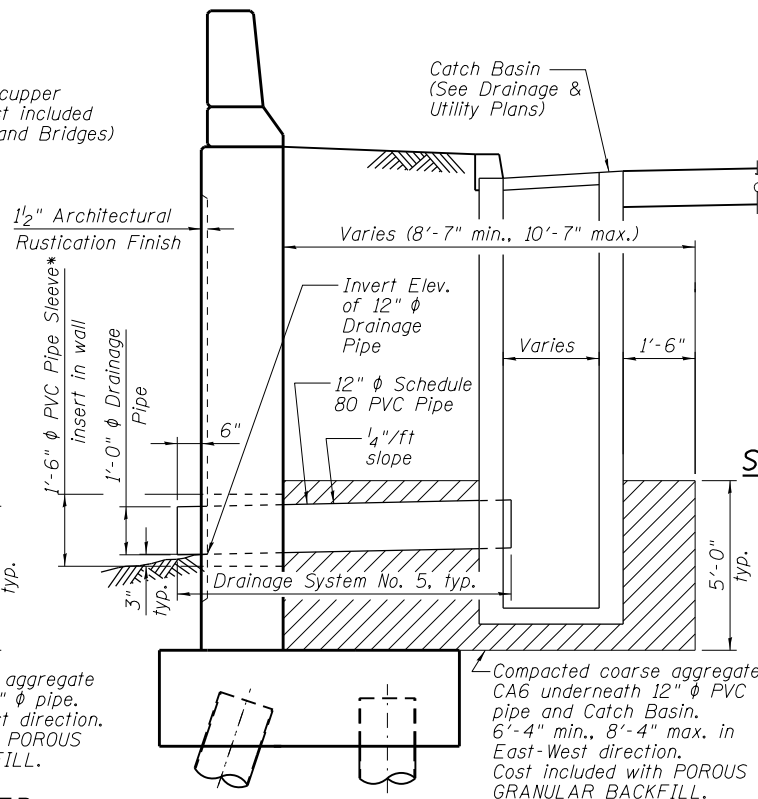
1. Reinforcement bars designated (E) shall be epoxy coated.
2. Protective coat shall be applied to the top and inside faces of parapets.
3. All exposed concrete corners shall be chamfered 3/4", unless otherwise noted.
4. Bars indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
5. For the construction of retaining walls supported by concrete spread footings, soil bearing resistance must be verified in the field by the Engineer during the foundation excavation to ensure the footings are founded on suitable soil with an adequate bearing resistance. Actual extents of any soil remedial treatments, if any, will be determined at this time. If soils with less than adequate bearing strength are noted at the foundation level during footing construction this should be reported to the Engineer. Cost of soil remedial treatments, if any, shall be paid for in accordance with Standard Specifications, Section 104.03.
6. The Contractor shall verify locations of all underground utilities before driving piling. Any disturbance or damage to existing structures, utilities or other property, caused by the Contractor's operation, shall be repaired by the Contractor in a manner satisfactory to the Engineer at no additional cost to the Department.



TYPICAL WALL SECTION AT DRAINAGE SCUPPER

(Looking East)

*After the DS-12 drainage scupper has been installed and the adjacent Dry Land Bridge constructed, concrete shall be placed between the 1'-0" ϕ PVC pipe sleeve and the 6" ϕ drain pipe. Cost included with CONCRETE STRUCTURES.



TYPICAL WALL SECTION AT CATCH BASIN

(Looking East)

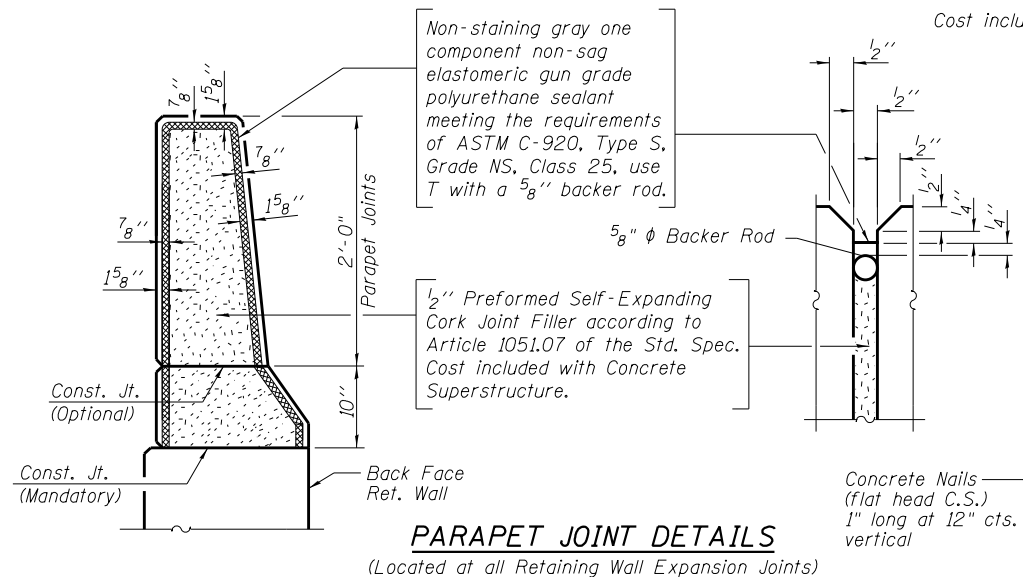
* After the Catch Basin Type C has been installed and the roadway pavement poured, concrete shall be placed between the 1'-6" ϕ PVC pipe insert and the 12" ϕ PVC pipe. Cost included with CONCRETE STRUCTURES.

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Porous Granular Backfill	Cu. Yd.	2,290
Structure Excavation	Cu. Yd.	5,606
Concrete Structures	Cu. Yd.	3,193.0
Protective Coat	Sq. Yd.	1,130
Reinforcement Bars, Epoxy Coated	Pound	402,580
Furnishing Metal Shell Piles 14" X 0.25"	Foot	24,026
Driving Piles	Foot	24,026
Test Pile Metal Shells	Each	10
Geocomposite Wall Drain	Sq. Yd.	1,658
Lightweight Cellular Concrete Fill	Cu. Yd.	943
Drainage System No. 5	Each	1
Form Liner Textured Surface	Sq. Ft.	20,960
Concrete Superstructure	Cu. Yd.	308.5

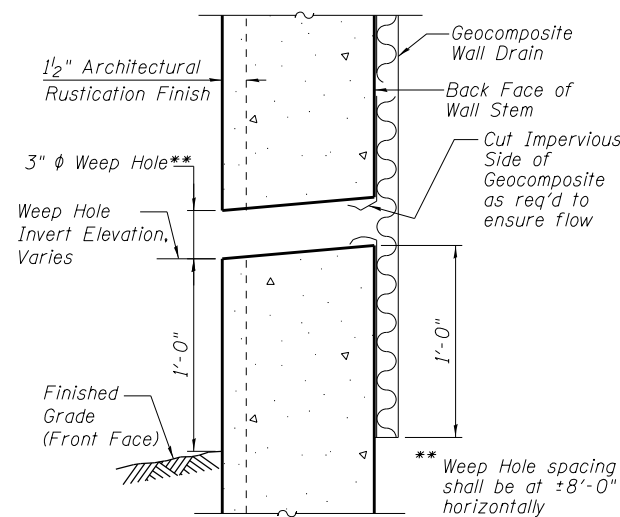
INDEX OF SHEET

SHEET NO.	TITLE	SHEET NO.	TITLE
1	General Plan & Elevation 1	43	Concrete Parapet Slipforming Option
2	General Plan & Elevation 2		
3	General Plan & Elevation 3	44	Soil Borings 1
4	General Plan & Elevation 4	45	Soil Borings 2
5	General Plan & Elevation 5	46	Soil Borings 3
6	General Plan & Elevation 6	47	Soil Borings 4
7	General Plan & Elevation 7	48	Soil Borings 5
8	General Plan & Elevation 8	49	Soil Borings 6
9	General Plan & Elevation 9	50	Soil Borings 7
10	General Plan & Elevation 10	51	Soil Borings 8
11	General Plan & Elevation 11	52	Soil Borings 9
12	General Plan & Elevation 12	53	Soil Borings 10
13	General Notes and Bill of Material	54	Soil Borings 11
14	Typical Sections 1	55	Soil Borings 12
15	Typical Sections 2	56	Soil Borings 13
16	Detail Plan & Elevation 1	57	Soil Borings 14
17	Detail Plan & Elevation 2	58	Soil Borings 15
18	Detail Plan & Elevation 3	59	Soil Borings 16
19	Detail Plan & Elevation 4	60	Soil Borings 17
20	Detail Plan & Elevation 5	61	Soil Borings 18
21	Detail Plan & Elevation 6	62	Soil Borings 19
22	Detail Plan & Elevation 7	63	Soil Borings 20
23	Detail Plan & Elevation 8	64	Soil Borings 21
24	Detail Plan & Elevation 9	65	Soil Borings 22
25	Detail Plan & Elevation 10	66	Soil Borings 23
26	Detail Plan & Elevation 11	67	Soil Borings 24
27	Detail Plan & Elevation 12	68	Soil Borings 25
28	Detail Plan & Elevation 13	69	Soil Borings 26
29	Detail Plan & Elevation 14	70	Soil Borings 27
30	Detail Plan & Elevation 15	71	Soil Borings 28
31	Detail Plan & Elevation 16	72	Soil Borings 29
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33	Sections & Details 1	74	Soil Borings 31
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41	Metal Shell Piles	82	Soil Borings 39
42	Architectural Finish Details	83	Soil Borings 40
		84	Soil Borings 41

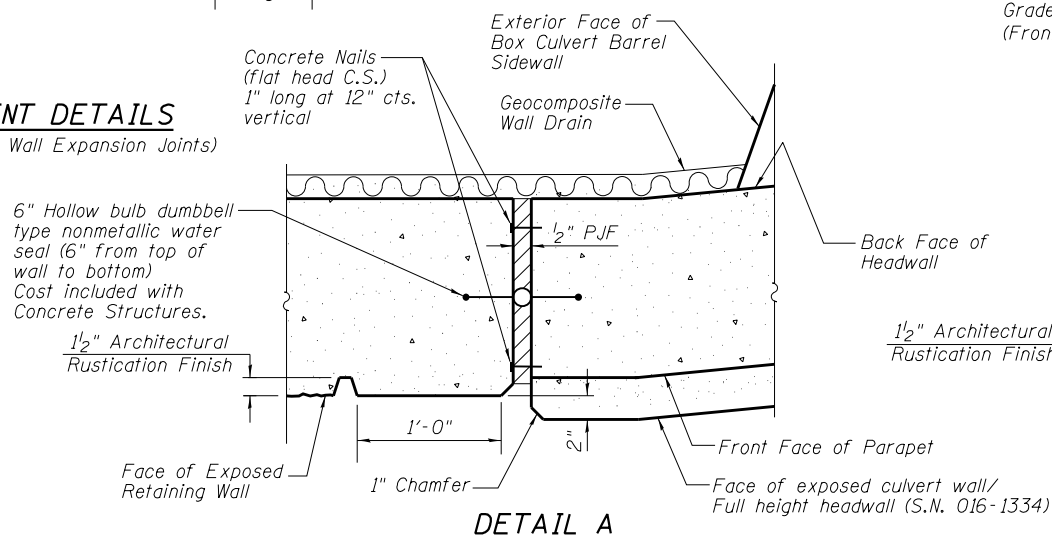


PARAPET JOINT DETAILS

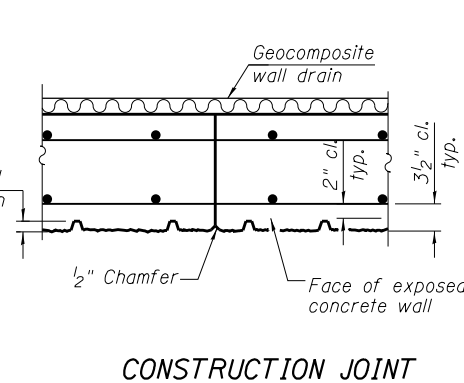
(Located at all Retaining Wall Expansion Joints)



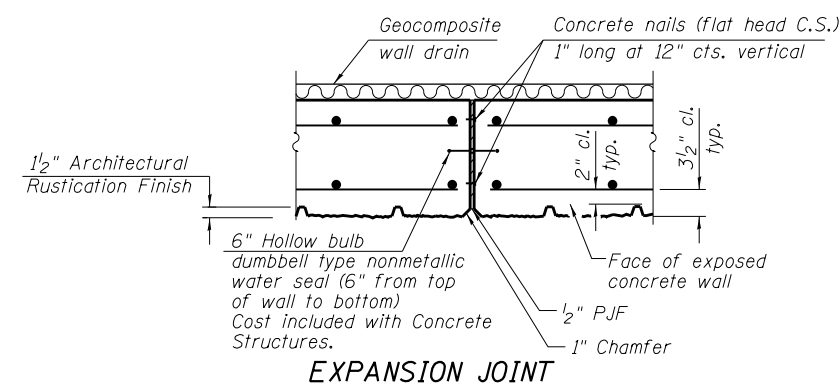
WEEP HOLE DRAIN DETAIL



DETAIL A



CONSTRUCTION JOINT



EXPANSION JOINT

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LOCHNER
H.W. LOCHNER, INC.
225 WEST WASHINGTON STREET
12 TH FLOOR
CHICAGO, ILLINOIS 60606

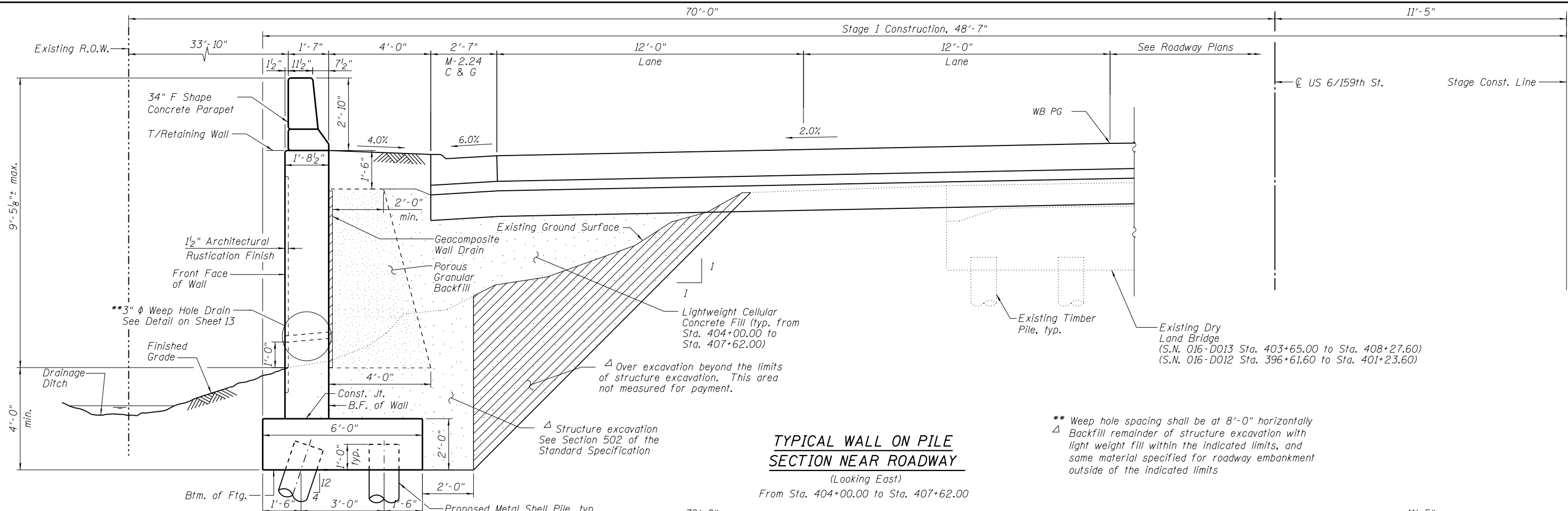
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PLOT DATE	CHECKED - CMM	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GENERAL NOTES AND BILL OF MATERIAL
STRUCTURE NO. 016-1339**

SHEET NO. 13 OF 84 SHEETS

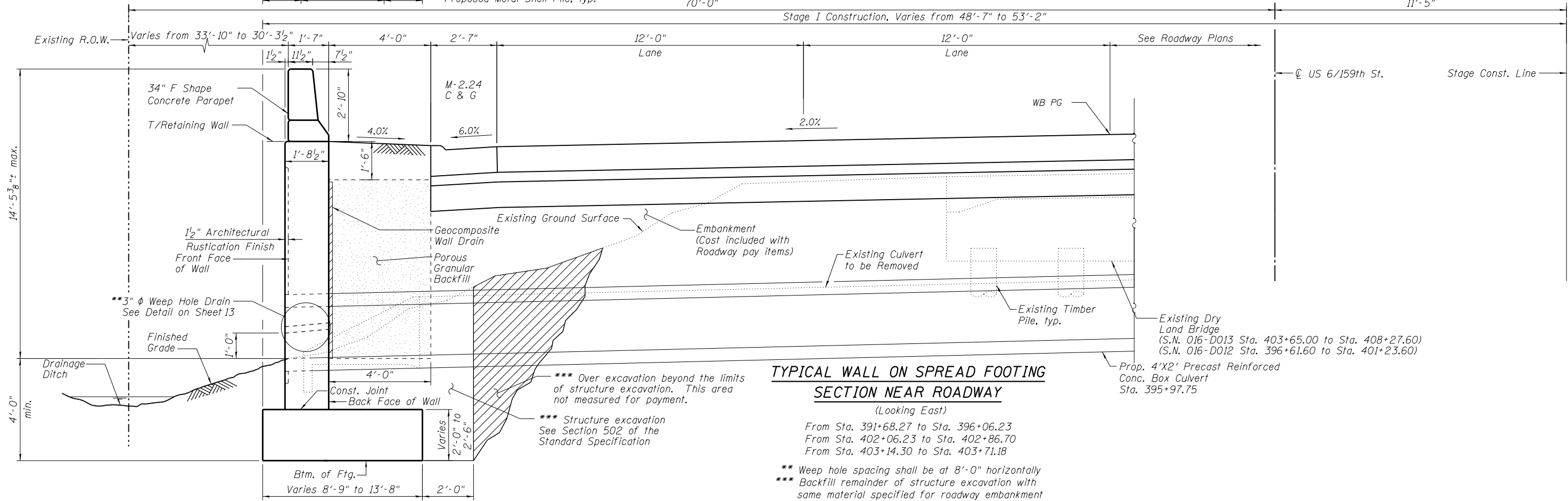
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	599
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				



**TYPICAL WALL ON PILE
SECTION NEAR ROADWAY**

(Looking East)
From Sta. 404+00.00 to Sta. 407+62.00

** Weep hole spacing shall be at 8'-0" horizontally
 Δ Backfill remainder of structure excavation with light weight fill within the indicated limits, and same material specified for roadway embankment outside of the indicated limits



**TYPICAL WALL ON SPREAD FOOTING
SECTION NEAR ROADWAY**

(Looking East)
 From Sta. 391+68.27 to Sta. 396+06.23
 From Sta. 402+06.23 to Sta. 402+86.70
 From Sta. 403+14.30 to Sta. 403+71.18

** Weep hole spacing shall be at 8'-0" horizontally
 *** Backfill remainder of structure excavation with same material specified for roadway embankment

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LOCHNER
 H.W. LOCHNER, INC.
 225 WEST WASHINGTON STREET
 12 TH FLOOR
 CHICAGO, ILLINOIS 60606

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PLOT DATE =	CHECKED - CMM	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TYPICAL SECTIONS 1
STRUCTURE NO. 016-1339**

SHEET NO. 14 OF 84 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
351	2010-081-R	COOK	1045	600
CONTRACT NO. 60L72				
ILLINOIS FED. AID PROJECT				