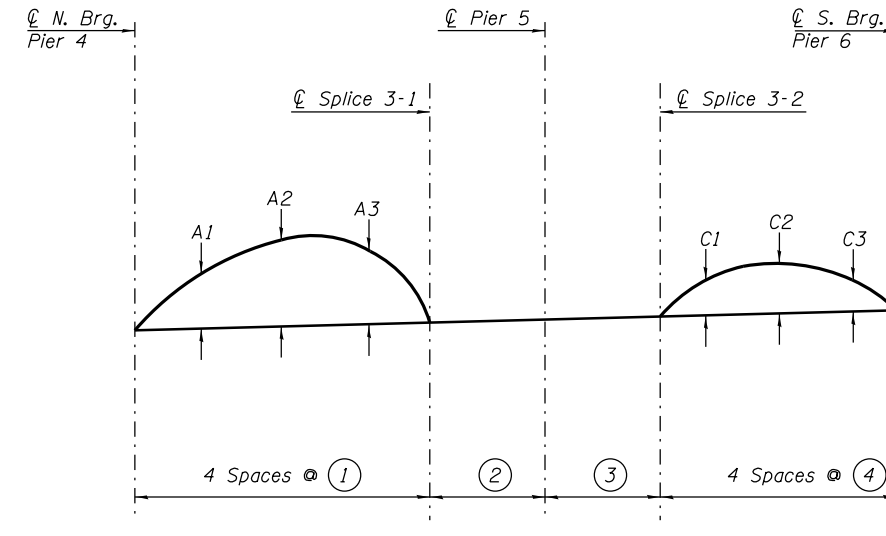


**CAMBER DIAGRAM - UNIT III
(GRIDERS 2 - 6)**



**CAMBER DIAGRAM - UNIT III
(GRIDER 1)**

TOP OF WEB ELEVATIONS* - UNIT III					
Girder	☉ N. Brg. Pier 4	☉ Splice 3-1	☉ Pier 5	☉ Splice 3-2	☉ S. Brg. Pier 6
1	624.12	628.05	628.98	630.23	632.08
2	624.54	627.82	628.56	629.80	631.64
3	624.40	627.36	628.12	629.36	631.19
4	624.25	626.89	627.68	628.93	630.75
5	624.10	626.43	627.24	628.50	630.31
6	623.95	625.97	626.80	628.06	629.87

*For fabrication use only.

CAMBER ORDINATES - UNIT III													
Girder	A1	A2	A3	B1	B2	B3	C1	C2	C3	①	②	③	④
1	4"	6 3/4"	6 1/4"	-	-	-	1 3/4"	1 1/2"	1"	30.479	42.550	57.080	19.473
2	3 1/2"	6 1/4"	5 3/4"	0 1/2"	1 1/4"	0 3/4"	1 3/4"	1 1/2"	1"	30.087	20.965	28.124	19.184
3	3 1/4"	5 1/4"	4 1/2"	0 1/2"	1 1/4"	0 3/4"	1 3/4"	1 1/2"	1"	29.696	20.655	27.708	18.895
4	3 1/4"	4 1/2"	3 1/2"	0 1/2"	1"	0 1/2"	1 3/4"	1 1/2"	1"	29.304	20.345	27.292	18.605
5	3 1/4"	3 1/2"	2 1/4"	0 1/4"	0 3/4"	0 1/2"	1 3/4"	1 1/2"	1"	28.912	20.035	26.876	18.316
6	3 1/4"	2 3/4"	1 1/4"	0 1/4"	0 3/4"	0 1/4"	1 3/4"	1 1/2"	1"	28.521	19.725	26.460	18.027

NOTES:

1. See Sheet S-83 for girder framing plan.
2. See Sheet S-84 for girder elevations.
3. See Sheet S-86 for girder moment & reaction tables.
4. See Sheet S-99 for girder splice details.
5. See Sheet S-100 thru S-102 for girder cross frame details and erection notes.

0161705-60W28-5085-GirderCamber.dgn



USER NAME = floresg	DESIGNED - VP	REVISED
	CHECKED - DD	REVISED
PLOT SCALE = N.T.S.	DRAWN - MRK	REVISED
PLOT DATE = 5/7/2014	CHECKED - ATB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GIRDER CAMBER AND TOP OF WEB ELEVATIONS - UNIT III
STRUCTURE NO. 016-1705

SHEET NO. S-85 OF S-165 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	401
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

EXTERIOR GIRDER 1 MOMENT TABLE - UNIT III				
		0.4 Sp. 5	Pier 5	0.6 Sp. 6
I_s	(in ⁴)	79,647	142,313	73,864
$I_c(n)$	(in ⁴)	174,333	-	157,679
$I_c(3n)$	(in ⁴)	125,810	-	115,379
$I_c(cr)$	(in ⁴)	-	153,731	-
S_s	(in ³)	2,587	3,846	2,250
$S_c(n)$	(in ³)	3,317	-	2,902
$S_c(3n)$	(in ³)	3,038	-	2,653
$S_c(cr)$	(in ³)	-	3,945	-
S_{xc}	(in ³)	121	192	81
DC1	(k/')	1.10	1.26	1.08
M _{DC1}	(k)	2,509	4,686	734
DC2	(k/')	0.29	0.29	0.29
M _{DC2}	(k)	533	888	214
DW	(k/')	0.28	0.28	0.28
M _{DW}	(k)	862	1,178	265
$M_{\perp} + IM$	(k)	3,620	3,591	2,934
f_i (Strength I)	(ksi)	4.80	6.56	5.99
$M_u + 1/3 f_i S_{xc}$	(k)	11,624	15,439	6,879
$\phi_r M_n$	(k)	-	-	-
f_s DC1	(ksi)	11.64	14.62	3.91
f_s DC2	(ksi)	2.11	2.70	0.97
f_s DW	(ksi)	3.41	3.58	1.20
f_s ($\perp + IM$)	(ksi)	13.09	10.92	12.13
f_i (Service II)	(ksi)	3.69	5.09	4.50
$f_s + 1/2$ (Service II)	(ksi)	36.02	37.65	24.10
0.95R _n F _{yr}	(ksi)	47.50	47.50	47.50
$f_s + 1/3$ (Total)(Strength I)	(ksi)	46.81	48.33	31.13
$\phi_r F_n$	(ksi)	50.00	50.00	50.00
V _r	(k)	76.70	81.70	79.80

INTERIOR GIRDER 2 MOMENT TABLE - UNIT III				
		0.4 Sp. 5	Pier 5	0.6 Sp. 6
I_s	(in ⁴)	79,647	142,313	73,864
$I_c(n)$	(in ⁴)	180,279	-	162,774
$I_c(3n)$	(in ⁴)	130,167	-	119,232
$I_c(cr)$	(in ⁴)	-	155,098	-
S_s	(in ³)	2,587	3,846	2,250
$S_c(n)$	(in ³)	3,344	-	2,926
$S_c(3n)$	(in ³)	3,069	-	2,680
$S_c(cr)$	(in ³)	-	3,956	-
S_{xc}	(in ³)	121	192	81
DC1	(k/')	1.19	1.35	1.17
M _{DC1}	(k)	2,433	4,867	757
DC2	(k/')	0.29	0.29	0.29
M _{DC2}	(k)	401	736	130
DW	(k/')	0.41	0.41	0.41
M _{DW}	(k)	829	1,329	306
$M_{\perp} + IM$	(k)	2,779	2,990	2,229
f_i (Strength I)	(ksi)	4.00	6.12	4.75
$M_u + 1/3 f_i S_{xc}$	(k)	9,811	14,621	5,597
$\phi_r M_n$	(k)	-	-	-
f_s DC1	(ksi)	11.29	15.18	4.04
f_s DC2	(ksi)	1.57	2.23	0.58
f_s DW	(ksi)	3.24	4.03	1.37
f_s ($\perp + IM$)	(ksi)	9.97	9.07	9.14
f_i (Service II)	(ksi)	3.09	4.77	3.58
$f_s + 1/2$ (Service II)	(ksi)	30.60	35.62	19.66
0.95R _n F _{yr}	(ksi)	47.50	47.50	47.50
$f_s + 1/3$ (Total)(Strength I)	(ksi)	39.72	45.73	25.41
$\phi_r F_n$	(ksi)	50.00	50.00	50.00
V _r	(k)	53.30	59.30	56.90

EXTERIOR GIRDER 1 REACTION TABLE - UNIT III				
		Pier 4-N	Pier 5	Pier 6-S
R _{DC1}	(k)	84.4	198.9	47.2
R _{DC2}	(k)	18.4	43.2	12.1
R _{DW}	(k)	25.9	52.7	14.2
R _{\perp + IM}	(k)	116.9	171.4	105.7
R _{Total}	(k)	245.6	466.2	179.2

INTERIOR GIRDER 2 REACTION TABLE - UNIT III				
		Pier 4-N	Pier 5	Pier 6-S
R _{DC1}	(k)	79.3	281.7	49.8
R _{DC2}	(k)	13.5	48.7	8.4
R _{DW}	(k)	26.2	82.9	16.5
R _{\perp + IM}	(k)	103.3	210.2	96.9
R _{Total}	(k)	222.3	623.5	171.7

INTERIOR GIRDER 5 MOMENT TABLE - UNIT III				
		0.4 Sp. 5	Pier 5	0.6 Sp. 6
I_s	(in ⁴)	63,237	131,942	63,237
$I_c(n)$	(in ⁴)	133,768	-	133,768
$I_c(3n)$	(in ⁴)	100,208	-	100,208
$I_c(cr)$	(in ⁴)	-	144,686	-
S_s	(in ³)	1,757	3,566	1,757
$S_c(n)$	(in ³)	2,308	-	2,308
$S_c(3n)$	(in ³)	2,108	-	2,108
$S_c(cr)$	(in ³)	-	3,679	-
S_{xc}	(in ³)	54	162	54
DC1	(k/')	1.14	1.32	1.14
M _{DC1}	(k)	1,400	3,907	658
DC2	(k/')	0.29	0.29	0.29
M _{DC2}	(k)	266	496	149
DW	(k/')	0.41	0.41	0.41
M _{DW}	(k)	493	1,043	276
$M_{\perp} + IM$	(k)	1,923	2,358	1,678
f_i (Strength I)	(ksi)	5.51	5.49	5.45
$M_u + 1/3 f_i S_{xc}$	(k)	6,286	11,491	4,457
$\phi_r M_n$	(k)	-	-	-
f_s DC1	(ksi)	9.56	13.15	4.50
f_s DC2	(ksi)	1.51	1.62	0.85
f_s DW	(ksi)	2.81	3.40	1.57
f_s ($\perp + IM$)	(ksi)	10.00	7.69	8.72
f_i (Service II)	(ksi)	4.24	4.28	4.13
$f_s + 1/2$ (Service II)	(ksi)	29.00	30.31	20.32
0.95R _n F _{yr}	(ksi)	47.50	47.50	47.50
$f_s + 1/3$ (Total)(Strength I)	(ksi)	37.39	38.85	26.12
$\phi_r F_n$	(ksi)	50.00	50.00	50.00
V _r	(k)	58.00	63.60	60.10

EXTERIOR GIRDER 6 MOMENT TABLE - UNIT III				
		0.4 Sp. 5	Pier 5	0.6 Sp. 6
I_s	(in ⁴)	63,237	131,942	63,237
$I_c(n)$	(in ⁴)	129,931	-	129,931
$I_c(3n)$	(in ⁴)	97,151	-	97,151
$I_c(cr)$	(in ⁴)	-	143,327	-
S_s	(in ³)	1,757	3,566	1,757
$S_c(n)$	(in ³)	2,289	-	2,289
$S_c(3n)$	(in ³)	2,086	-	2,086
$S_c(cr)$	(in ³)	-	3,667	-
S_{xc}	(in ³)	54	162	54
DC1	(k/')	1.05	1.23	1.05
M _{DC1}	(k)	1,191	3,821	726
DC2	(k/')	0.29	0.29	0.29
M _{DC2}	(k)	289	639	201
DW	(k/')	0.28	0.28	0.28
M _{DW}	(k)	408	917	226
$M_{\perp} + IM$	(k)	2,102	2,817	1,733
f_i (Strength I)	(ksi)	5.38	5.73	5.74
$M_u + 1/3 f_i S_{xc}$	(k)	6,237	12,190	4,634
$\phi_r M_n$	(k)	-	-	-
f_s DC1	(ksi)	8.14	12.86	4.96
f_s DC2	(ksi)	1.66	2.09	1.16
f_s DW	(ksi)	2.35	3.00	1.30
f_s ($\perp + IM$)	(ksi)	11.02	9.22	9.09
f_i (Service II)	(ksi)	4.12	4.45	4.35
$f_s + 1/2$ (Service II)	(ksi)	28.53	32.16	21.40
0.95R _n F _{yr}	(ksi)	47.50	47.50	47.50
$f_s + 1/3$ (Total)(Strength I)	(ksi)	36.85	41.23	27.41
$\phi_r F_n$	(ksi)	50.00	50.00	50.00
V _r	(k)	56.60	67.20	58.00

INTERIOR GIRDER 5 REACTION TABLE - UNIT III				
		Pier 4-N	Pier 5	Pier 6-S
R _{DC1}	(k)	56.7	215.3	42.3
R _{DC2}	(k)	10.6	31.6	8.5
R _{DW}	(k)	18.8	63.0	15.1
R _{\perp + IM}	(k)	97.6	172.3	94.1
R _{Total}	(k)	183.7	482.2	160.0

EXTERIOR GIRDER 6 REACTION TABLE - UNIT III				
		Pier 4-N	Pier 5	Pier 6-S
R _{DC1}	(k)	48.8	258.3	41.6
R _{DC2}	(k)	11.7	49.9	10.3
R _{DW}	(k)	14.5	64.5	11.4
R _{\perp + IM}	(k)	80.2	192.1	75.3
R _{Total}	(k)	155.2	564.8	138.6

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) due to non-composite dead loads (in⁴ and in³).

$I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections due to short term composite live loads (in⁴ and in³).

$I_c(3n), S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections due to long-term composite (superimposed) dead loads (in⁴ and in³).

$I_c(cr), S_c(cr)$: Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing f_s (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads (in⁴ and in³).

S_{xc} : Section modulus about the major axis of section to the controlling flange, tension or compression, taken as yield moment with respect to the controlling flange over the yield strength of the controlling flange (in³).

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

M_{DC1}: Un-factored moment due to non-composite dead load (kip-ft.).

DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).

M_{DC2}: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).

DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).

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

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

M_u (Strength I): Factored design moment (kip-ft.).

$1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{\perp} + IM$

f_i : Factored calculated normal stress at edge of flange for controlling flange plate due to lateral bending, Strength I or Service II as applicable (ksi).

$\phi_r M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (kip-ft.).

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

M_{DC1} / S_s

f_s DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).

$M_{DC2} / S_c(3n)$ or $M_{DC2} / S_c(cr)$ as applicable.

f_s DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).

$M_{DW} / S_c(3n)$ or $M_{DW} / S_c(cr)$ as applicable.

f_s ($\perp + IM$): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live plus impact loads as calculated below (ksi).

$M_{\perp} + IM / S_c(n)$ or $M_{\perp} + IM / S_c(cr)$ as applicable.

$f_s + 1/2$ (Service II): Sum of stresses as computed below (ksi).

$f_s DC1 + f_s DC2 + f_s DW + 1.3 f_s (\perp + IM) + 1/2$

0.95R_nF_{yr}: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).

$f_s + 1/3$ (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).

$1.25 (f_s DC1 + f_s DC2) + 1.5 f_s DW + 1.75 f_s (\perp + IM) + 1/3$

$\phi_r F_n$: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).

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

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

0161705-60W2B-5086-SuperStruct.dgn



USER NAME = floresg
 PLOT SCALE = N.T.S.
 PLOT DATE = 5/7/2014

DESIGNED - DD
 CHECKED - ATB
 DRAWN - MRK
 CHECKED - DD

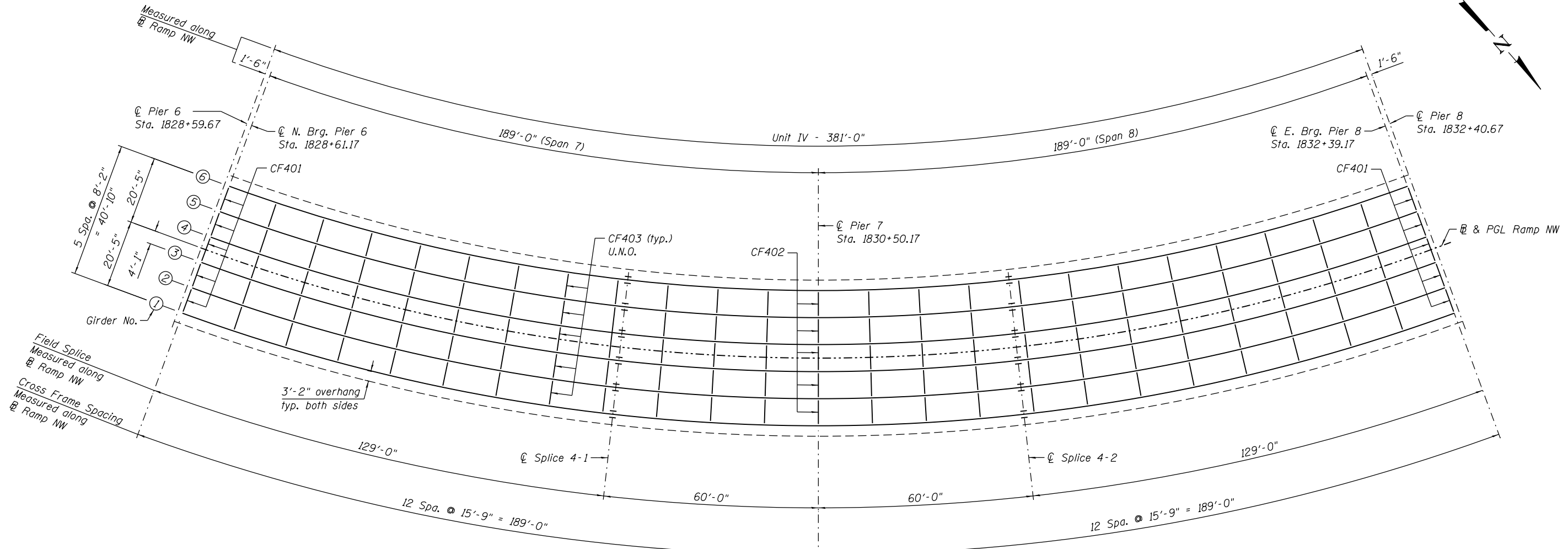
REVISED
 REVISED
 REVISED
 REVISED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

GIRDER MOMENT AND REACTION TABLES - UNIT III
 STRUCTURE NO. 016-1705

SHEET NO. S-86 OF S-165 SHEETS

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	402
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				

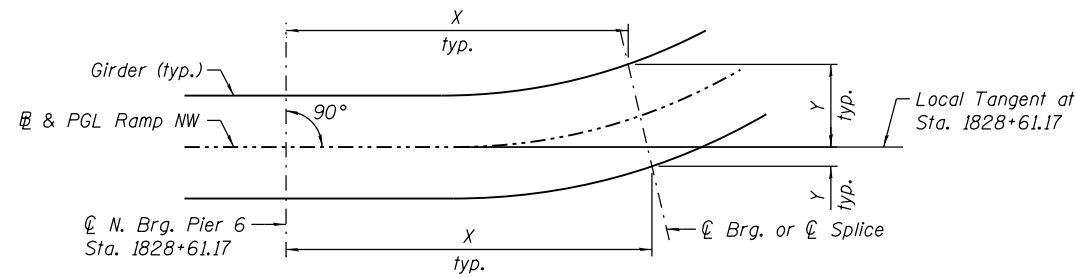


GIRDER FRAMING PLAN - UNIT IV

GIRDER COORDINATES - UNIT IV

(All Dimensions in Feet)

Girder	☐ N. Brg. Pier 6		☐ Splice 4-1		☐ Pier 7		☐ Splice 4-2		☐ E. Brg. Pier 8	
	X	Y	X	Y	X	Y	X	Y	X	Y
1	-0.057	-20.417	132.608	-4.502	192.166	13.560	249.354	38.114	361.074	111.406
2	-0.034	-12.250	130.675	3.433	189.365	21.231	245.720	45.428	355.795	117.638
3	-0.011	-4.083	128.743	11.368	186.565	28.903	242.086	52.741	350.517	123.869
4	0.011	4.083	126.810	19.303	183.765	36.575	238.453	60.055	345.238	130.101
5	0.034	12.250	124.878	27.237	180.964	44.246	234.819	67.369	339.960	136.333
6	0.057	20.417	122.945	35.172	178.164	51.918	231.185	74.683	334.681	142.564



CURVED GIRDER LAYOUT
(X Measured along Local Tangent)

NOTES:

1. See Sheet S-88 for girder elevation.
2. See Sheet S-89 for camber & top of web elevations.
3. See Sheet S-90 for moment tables & reaction tables.
4. See Sheet S-99 for girder bolted field splice details.
5. See Sheets S-100 thru S-102 for girder cross frame details.
6. Girder spacings and cross frame orientations are radial to the ☐ Ramp NW, except at ☐ N. Brg. Pier 6 & ☐ E. Brg. Pier 8 supports where ☐ Brg. and cross frame orientations are parallel to the respective centerline of supports.

0161705-60W28-5087-FramePlan.dgn



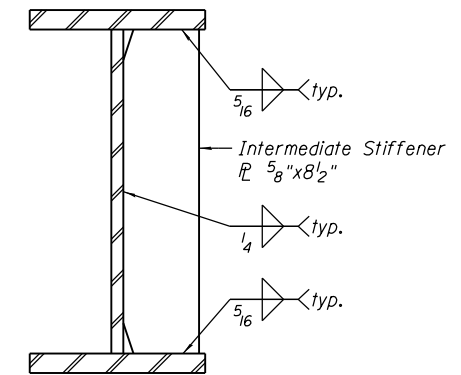
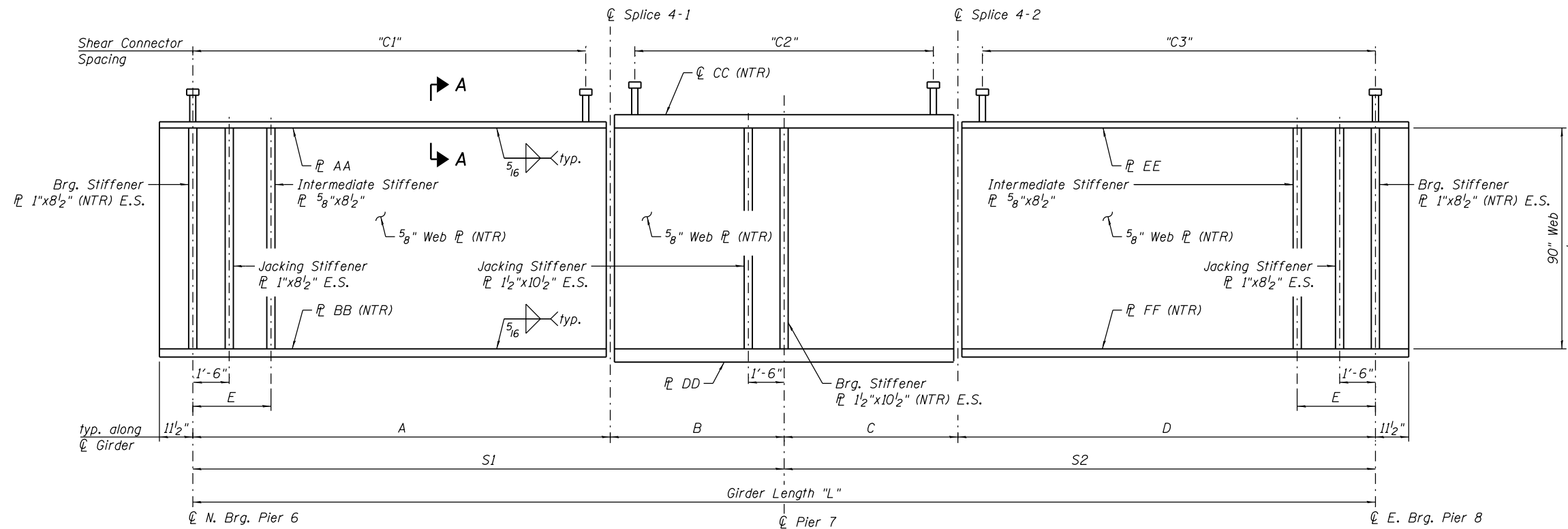
USER NAME = floresg	DESIGNED - DD	REVISED
	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - MRK	REVISED
PLOT DATE = 5/7/2014	CHECKED - DD	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GIRDER FRAMING PLAN - UNIT IV
STRUCTURE NO. 016-1705**

SHEET NO. S-87 OF S-165 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	403
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				



INTERMEDIATE STIFFENER DETAIL

GIRDER ELEVATION - UNIT IV

(Connection and Splice R's not shown for clarity)

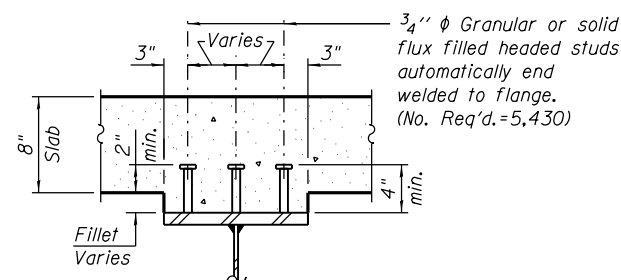
Girder	AA	BB	CC	DD	EE	FF
1, 2, 3	1 1/2"x20"	1 1/2"x20"	2 1/2"x26"	2 1/2"x28"	1 1/2"x20"	1 1/2"x20"
4, 5, 6	1"x18"	1"x20"	2"x22"	2"x24"	1"x18"	1"x20"

GIRDER DIMENSIONS - UNIT IV

(All Dimensions in Feet)

Girder	Radius	L*	S1	S2	A	B	C	D	E	C1	C2	C3
1	560.417	392.406	196.203	196.202	133.935	62.269	62.268	133.934	8'-2"	134 Spa at 12"	107 Spa at 14"	134 Spa at 12"
2	552.250	386.643	193.321	193.322	131.960	61.361	61.362	131.960	8'-0"	99 Spa at 16"	93 Spa at 16"	99 Spa at 16"
3	544.083	380.881	190.440	190.440	129.987	60.453	60.453	129.987	7'-11"	98 Spa at 16"	91 Spa at 16"	98 Spa at 16"
4	535.917	375.119	187.560	187.559	128.013	59.547	59.546	128.013	7'-9"	97 Spa at 16"	90 Spa at 16"	97 Spa at 16"
5	527.750	369.357	184.678	184.679	126.040	58.639	58.639	126.040	7'-8"	101 Spa at 15"	88 Spa at 16"	101 Spa at 15"
6	519.583	363.594	181.797	181.797	124.065	57.732	57.731	124.065	7'-7"	94 Spa at 16"	77 Spa at 18"	94 Spa at 16"

* Girder Length "L" excludes girder ends beyond first & last bearings.



SECTION A-A

NOTES:

1. See Sheet S-87 for girder framing plan.
2. See Sheet S-89 for camber & top of web elevations.
3. See Sheet S-90 for moment tables & reaction tables.
4. See Sheet S-99 for girder bolted field splice details.
5. See Sheets S-100 thru S-102 for girder cross frame details.
6. All structural steel shall be AASHTO M270 Grade 50.
7. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

0161705-60W28-5088-GirderElev.dgn



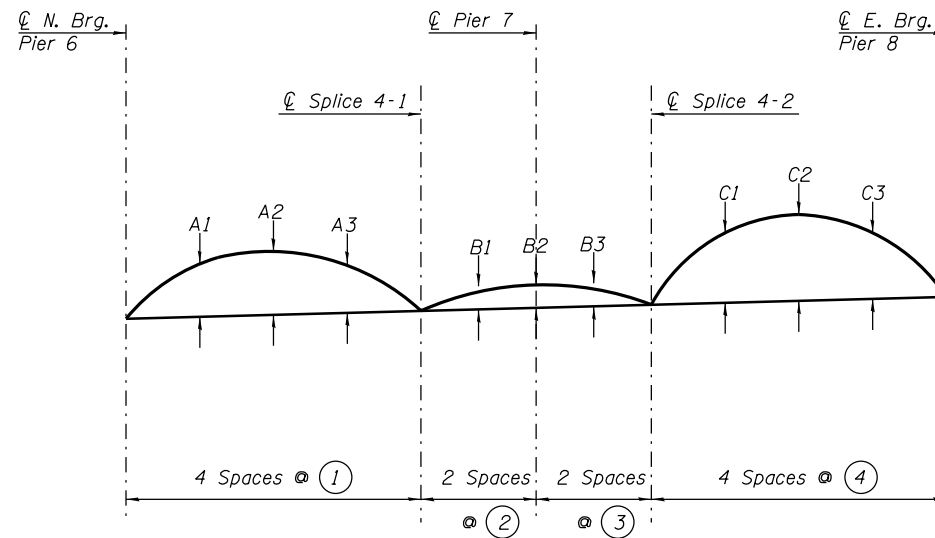
USER NAME = floresg	DESIGNED - DD	REVISED
	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - MRK	REVISED
PLOT DATE = 5/7/2014	CHECKED - DD	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GIRDER ELEVATIONS - UNIT IV
STRUCTURE NO. 016-1705**

SHEET NO. S-88 OF S-165 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	404
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				



CAMBER DIAGRAM - UNIT IV

TOP OF WEB ELEVATIONS* - UNIT IV					
Girder	☉ N. Brg. Pier 6	☉ Splice 4-1	☉ Pier 7	☉ Splice 4-2	☉ E. Brg. Pier 8
1	632.10	635.14	636.09	636.68	635.29
2	631.66	634.69	635.65	636.23	634.85
3	631.22	634.24	635.21	635.78	634.41
4	630.82	633.85	634.81	635.40	634.01
5	630.38	633.41	634.37	634.95	633.57
6	629.94	632.96	633.93	634.50	633.13

*For fabrication use only.

CAMBER ORDINATES - UNIT IV													
Girder	A1	A2	A3	B1	B2	B3	C1	C2	C3	①	②	③	④
1	3 1/4"	4 3/4"	4"	2"	2 1/4"	2"	7 1/2"	9 1/2"	6 3/4"	33.484	31.134	31.134	33.483
2	3"	4 1/2"	4"	2"	2 1/4"	2"	7 1/4"	9 1/4"	6 1/2"	32.990	30.681	30.681	32.990
3	3"	4 1/4"	3 3/4"	2 1/4"	2 1/4"	2 1/4"	7 1/4"	9"	6 1/4"	32.497	30.227	30.227	32.497
4	2 3/4"	4"	3 1/2"	2"	2 1/4"	2"	7"	8 3/4"	6 1/4"	32.003	29.773	29.773	32.003
5	2 3/4"	4"	3 1/2"	2"	2 1/4"	2"	7"	8 1/2"	6"	31.510	29.319	29.319	31.510
6	2 1/2"	3 3/4"	3 1/4"	2"	2 1/4"	2"	6 3/4"	8 1/2"	6"	31.016	28.866	28.866	31.016

NOTES:

1. See Sheet S-87 for girder framing plan.
2. See Sheet S-88 for girder elevations.
3. See Sheet S-90 for girder moment & reaction tables.
4. See Sheet S-99 for girder splice details.
5. See Sheet S-100 thru S-102 for girder cross frame details and erection notes.

0161705-60W28-5089-GirderCamber.dgn



USER NAME = floresg	DESIGNED - VP	REVISED
	CHECKED - DD	REVISED
PLOT SCALE = N.T.S.	DRAWN - MRK	REVISED
PLOT DATE = 5/7/2014	CHECKED - ATB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GIRDER CAMBER AND TOP OF WEB ELEVATIONS - UNIT IV
STRUCTURE NO. 016-1705

SHEET NO. S-89 OF S-165 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	405
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

EXTERIOR GIRDER 1 MOMENT TABLE - UNIT IV				
		0.4 Sp. 7	Pier 7	0.6 Sp. 8
I_s	(in ⁴)	163,564	326,533	163,564
$I_c(n)$	(in ⁴)	290,152	-	290,152
$I_c(3n)$	(in ⁴)	222,405	-	222,405
$I_c(cr)$	(in ⁴)	-	345,546	-
S_s	(in ³)	3,518	7,054	3,518
$S_c(n)$	(in ³)	4,268	-	4,268
$S_c(3n)$	(in ³)	3,937	-	3,937
$S_c(cr)$	(in ³)	-	7,175	-
S_{xc}	(in ³)	100	327	100
DC1	(k/')	1.18	1.44	1.18
M _{DC1}	(k)	3,240	8,575	3,132
DC2	(k/')	0.30	0.30	0.30
M _{DC2}	(k)	621	1,484	618
DW	(k/')	0.28	0.28	0.28
M _{DW}	(k)	1,043	2,100	1,038
$M_{\xi} + IM$	(k)	4,994	5,376	4,985
f_i (Strength I)	(ksi)	8.17	4.68	8.08
$M_u + 1/3 f_i S_{xc}$	(k)	15,403	25,642	15,238
$\phi_r M_n$	(k)	-	-	-
f_s DC1	(ksi)	11.05	14.59	10.68
f_s DC2	(ksi)	1.89	2.48	1.88
f_s DW	(ksi)	3.18	3.51	3.16
$f_s (\xi + IM)$	(ksi)	14.04	8.99	14.02
f_i (Service II)	(ksi)	6.25	3.65	6.17
$f_s + 1/2$ (Service II)	(ksi)	37.50	34.09	37.04
0.95R _n F _{yr}	(ksi)	47.50	45.73	47.50
$f_s + 1/3$ (Total)(Strength I)	(ksi)	48.25	43.90	47.68
$\phi_r F_n$	(ksi)	50.00	49.80	50.00
V _r	(k)	80.10	88.30	80.00

INTERIOR GIRDER 2 MOMENT TABLE - UNIT IV				
		0.4 Sp. 7	Pier 7	0.6 Sp. 8
I_s	(in ⁴)	163,564	326,533	163,564
$I_c(n)$	(in ⁴)	298,905	-	298,905
$I_c(3n)$	(in ⁴)	228,231	-	228,231
$I_c(cr)$	(in ⁴)	-	347,855	-
S_s	(in ³)	3,518	7,054	3,518
$S_c(n)$	(in ³)	4,303	-	4,303
$S_c(3n)$	(in ³)	3,970	-	3,970
$S_c(cr)$	(in ³)	-	7,189	-
S_{xc}	(in ³)	100	327	100
DC1	(k/')	1.27	1.53	1.27
M _{DC1}	(k)	3,073	9,595	3,211
DC2	(k/')	0.30	0.30	0.30
M _{DC2}	(k)	504	1,406	507
DW	(k/')	0.41	0.41	0.41
M _{DW}	(k)	995	2,448	1,000
$M_{\xi} + IM$	(k)	3,809	4,760	3,817
f_i (Strength I)	(ksi)	6.69	4.73	6.77
$M_u + 1/3 f_i S_{xc}$	(k)	12,853	26,269	13,053
$\phi_r M_n$	(k)	-	-	-
f_s DC1	(ksi)	10.48	16.32	10.95
f_s DC2	(ksi)	1.52	2.35	1.53
f_s DW	(ksi)	3.01	4.09	3.02
$f_s (\xi + IM)$	(ksi)	10.62	7.95	10.64
f_i (Service II)	(ksi)	5.13	3.70	5.20
$f_s + 1/2$ (Service II)	(ksi)	31.39	34.93	31.95
0.95R _n F _{yr}	(ksi)	47.50	45.66	47.50
$f_s + 1/3$ (Total)(Strength I)	(ksi)	40.34	44.95	41.03
$\phi_r F_n$	(ksi)	50.00	49.70	50.00
V _r	(k)	57.90	62.70	57.90

EXTERIOR GIRDER 1 REACTION TABLE - UNIT IV				
		Pier 6-N	Pier 7	Pier 8-E
R _{DC1}	(k)	101.0	233.4	99.8
R _{DC2}	(k)	20.6	46.1	20.5
R _{DW}	(k)	29.5	56.2	29.5
R ξ + IM	(k)	130.0	174.4	130.0
R _{Total}	(k)	281.1	510.1	279.8

INTERIOR GIRDER 2 REACTION TABLE - UNIT IV				
		Pier 6-N	Pier 7	Pier 8-E
R _{DC1}	(k)	96.4	443.1	94.4
R _{DC2}	(k)	15.9	70.7	15.8
R _{DW}	(k)	29.4	117.2	29.3
R ξ + IM	(k)	109.3	249.6	109.3
R _{Total}	(k)	250.9	880.6	248.8

INTERIOR GIRDER 5 MOMENT TABLE - UNIT IV				
		0.4 Sp. 7	Pier 7	0.6 Sp. 8
I_s	(in ⁴)	116,554	232,443	116,554
$I_c(n)$	(in ⁴)	241,213	-	241,213
$I_c(3n)$	(in ⁴)	179,241	-	179,241
$I_c(cr)$	(in ⁴)	-	253,156	-
S_s	(in ³)	2,588	5,080	2,588
$S_c(n)$	(in ³)	3,403	-	3,403
$S_c(3n)$	(in ³)	3,088	-	3,088
$S_c(cr)$	(in ³)	-	5,230	-
S_{xc}	(in ³)	67	192	67
DC1	(k/')	1.19	1.38	1.19
M _{DC1}	(k)	1,664	6,403	1,632
DC2	(k/')	0.30	0.30	0.30
M _{DC2}	(k)	344	825	343
DW	(k/')	0.41	0.41	0.41
M _{DW}	(k)	607	1,628	606
$M_{\xi} + IM$	(k)	2,371	3,019	2,370
f_i (Strength I)	(ksi)	5.85	5.03	5.84
$M_u + 1/3 f_i S_{xc}$	(k)	7,700	17,082	7,656
$\phi_r M_n$	(k)	-	-	-
f_s DC1	(ksi)	7.72	15.13	7.57
f_s DC2	(ksi)	1.34	1.89	1.33
f_s DW	(ksi)	2.36	3.74	2.36
$f_s (\xi + IM)$	(ksi)	8.36	6.93	8.36
f_i (Service II)	(ksi)	4.49	3.93	4.48
$f_s + 1/2$ (Service II)	(ksi)	24.52	31.73	24.36
0.95R _n F _{yr}	(ksi)	47.50	36.80	47.50
$f_s + 1/3$ (Total)(Strength I)	(ksi)	31.43	40.68	31.23
$\phi_r F_n$	(ksi)	50.00	49.60	50.00
V _r	(k)	60.00	63.70	60.00

EXTERIOR GIRDER 6 MOMENT TABLE - UNIT IV				
		0.4 Sp. 7	Pier 7	0.6 Sp. 8
I_s	(in ⁴)	116,554	232,443	116,554
$I_c(n)$	(in ⁴)	233,872	-	233,872
$I_c(3n)$	(in ⁴)	173,842	-	173,842
$I_c(cr)$	(in ⁴)	-	250,935	-
S_s	(in ³)	2,588	5,080	2,588
$S_c(n)$	(in ³)	3,372	-	3,372
$S_c(3n)$	(in ³)	3,054	-	3,054
$S_c(cr)$	(in ³)	-	5,214	-
S_{xc}	(in ³)	67	192	67
DC1	(k/')	1.10	1.29	1.10
M _{DC1}	(k)	1,626	6,583	1,603
DC2	(k/')	0.30	0.30	0.30
M _{DC2}	(k)	344	946	344
DW	(k/')	0.28	0.28	0.28
M _{DW}	(k)	503	1,470	502
$M_{\xi} + IM$	(k)	2,601	3,873	2,601
f_i (Strength I)	(ksi)	6.06	5.42	6.02
$M_u + 1/3 f_i S_{xc}$	(k)	7,904	18,741	7,873
$\phi_r M_n$	(k)	-	-	-
f_s DC1	(ksi)	7.54	15.55	7.43
f_s DC2	(ksi)	1.35	2.18	1.35
f_s DW	(ksi)	1.98	3.38	1.97
$f_s (\xi + IM)$	(ksi)	9.26	8.91	9.26
f_i (Service II)	(ksi)	4.63	4.22	4.60
$f_s + 1/2$ (Service II)	(ksi)	25.22	34.81	25.09
0.95R _n F _{yr}	(ksi)	47.50	45.37	47.50
$f_s + 1/3$ (Total)(Strength I)	(ksi)	32.30	44.64	32.15
$\phi_r F_n$	(ksi)	50.00	49.60	50.00
V _r	(k)	56.00	64.50	56.00

INTERIOR GIRDER 5 REACTION TABLE - UNIT IV				
		Pier 6-N	Pier 7	Pier 8-E
R _{DC1}	(k)	62.2	280.3	61.7
R _{DC2}	(k)	12.0	41.1	12.0
R _{DW}	(k)	20.6	77.4	20.6
R ξ + IM	(k)	100.7	186.4	100.7
R _{Total}	(k)	195.5	585.2	195.1

EXTERIOR GIRDER 6 REACTION TABLE - UNIT IV				
		Pier 6-N	Pier 7	Pier 8-E
R _{DC1}	(k)	58.4	374.7	57.0
R _{DC2}	(k)	12.6	63.9	12.6
R _{DW}	(k)	15.8	88.6	15.7
R ξ + IM	(k)	82.2	226.8	82.2
R _{Total}	(k)	168.9	754.0	167.5

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) due to non-composite dead loads (in⁴ and in³).

$I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections due to short term composite live loads (in⁴ and in³).

$I_c(3n), S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections due to long-term composite (superimposed) dead loads (in⁴ and in³).

$I_c(cr), S_c(cr)$: Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing f_s (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads (in⁴ and in³).

S_{xc} : Section modulus about the major axis of section to the controlling flange, tension or compression, taken as yield moment with respect to the controlling flange over the yield strength of the controlling flange (in³).

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

M_{DC1}: Un-factored moment due to non-composite dead load (kip-ft.).

DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).

M_{DC2}: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).

DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).

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

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

M_u (Strength I): Factored design moment (kip-ft.).

$1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{\xi} + IM$

f_i : Factored calculated normal stress at edge of flange for controlling flange plate due to lateral bending, Strength I or Service II as applicable (ksi).

$\phi_r M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (kip-ft.).

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

M_{DC1} / S_s

f_s DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).

$M_{DC2} / S_c(3n)$ or $M_{DC2} / S_c(cr)$ as applicable.

f_s DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).

$M_{DW} / S_c(3n)$ or $M_{DW} / S_c(cr)$ as applicable.

$f_s (\xi + IM)$: Un-factored stress at edge of flange for controlling steel flange due to vertical composite live plus impact loads as calculated below (ksi).

$M_{\xi} + IM / S_c(n)$ or $M_{\xi} + IM / S_c(cr)$ as applicable.

$f_s + 1/2$ (Service II): Sum of stresses as computed below (ksi).

$f_s DC1 + f_s DC2 + f_s DW + 1.3 f_s (\xi + IM) + 1/2 0.95R_n F_{yr}$: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).

$f_s + 1/3$ (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).

$1.25 (f_s DC1 + f_s DC2) + 1.5 f_s DW + 1.75 f_s (\xi + IM) + 1/3 \phi_r F_n$: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).

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

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

0161705-60W2B-5090-SuperStr.uct.dgn



USER NAME = floresg
 PLOT SCALE = N.T.S.
 PLOT DATE = 5/7/2014

DESIGNED - DD
 CHECKED - ATB
 DRAWN - MRK
 CHECKED - DD

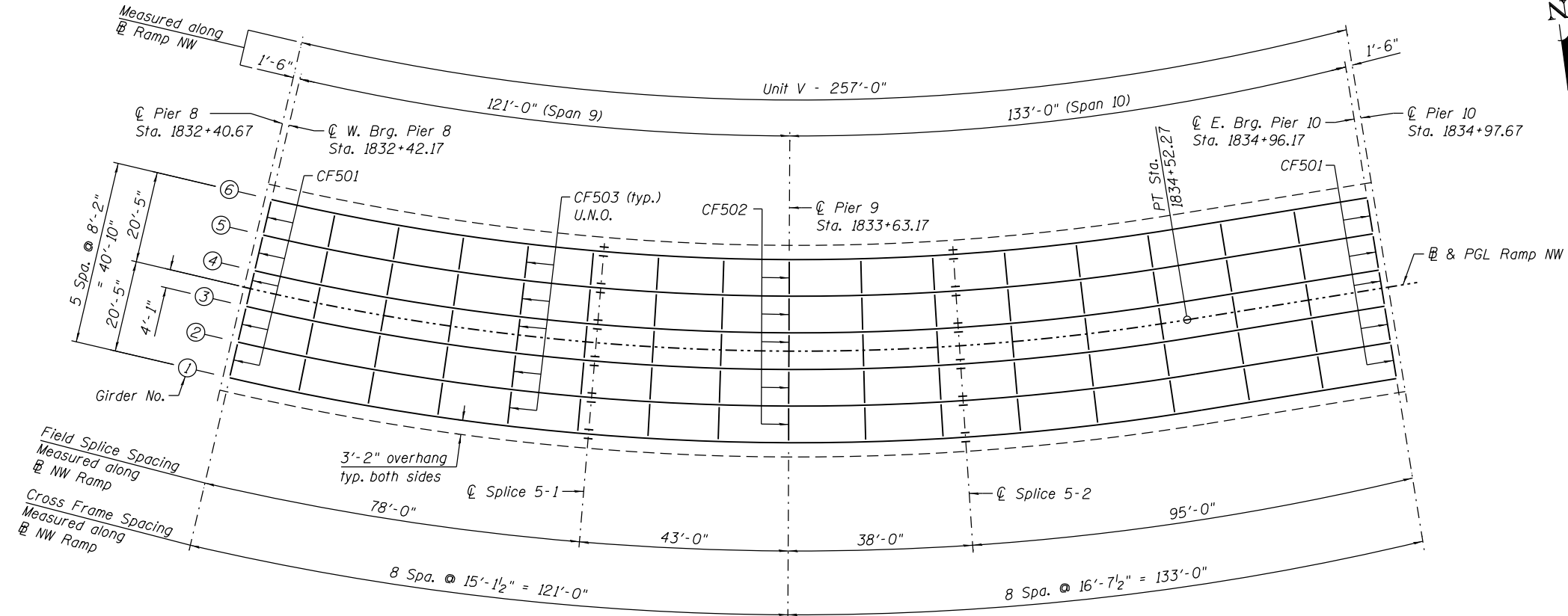
REVISED
 REVISED
 REVISED
 REVISED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

GIRDER MOMENT AND REACTION TABLES - UNIT IV
 STRUCTURE NO. 016-1705

SHEET NO. S-90 OF S-165 SHEETS

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	406
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				

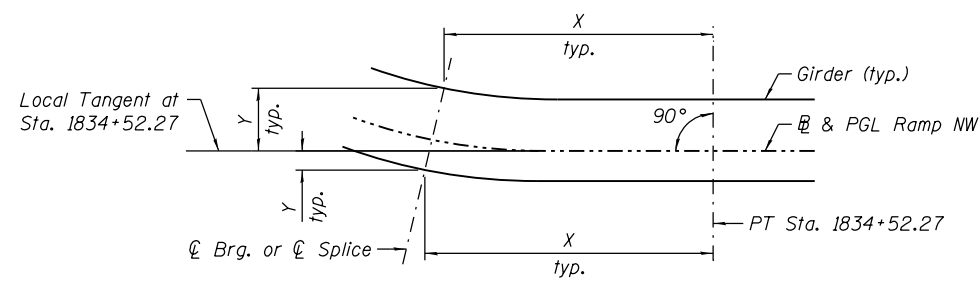


GIRDER FRAMING PLAN - UNIT V

GIRDER COORDINATES - UNIT V

(All Dimensions in Feet)

Girder	☉ W. Brg. Pier 8		☉ Splice 5-1		☉ Pier 9		☉ Splice 5-2	
	X	Y	X	Y	X	Y	X	Y
1	-212.636	21.490	-135.731	-3.731	-92.050	-12.805	-52.953	-17.909
2	-209.518	29.038	-133.753	4.192	-90.708	-4.750	-52.181	-9.779
3	-206.399	36.585	-131.775	12.116	-89.367	3.306	-51.410	-1.649
4	-203.280	44.133	-129.797	20.039	-88.026	11.362	-50.638	6.481
5	-200.161	51.681	-127.819	27.963	-86.684	19.418	-49.866	14.611
6	-197.042	59.228	-125.842	35.886	-85.343	27.473	-49.095	22.741



CURVED GIRDER LAYOUT

(X Measured along Local Tangent)

NOTES:

1. See Sheet S-92 for girder elevation.
2. See Sheet S-93 for camber & top of web elevations.
3. See Sheet S-94 for moment tables & reaction tables.
4. See Sheet S-99 for girder bolted field splice details.
5. See Sheets S-100 thru S-102 for girder cross frame details.
6. Girder spacings and cross frame orientations are radial to the Ramp NW, except at ☉ W. Brg. Pier 8 & ☉ E. Brg. Pier 10 supports where ☉ Brg. and cross frame orientations are parallel to the respective centerline of supports.

0161705-60W28-5091-FramePlan.dgn



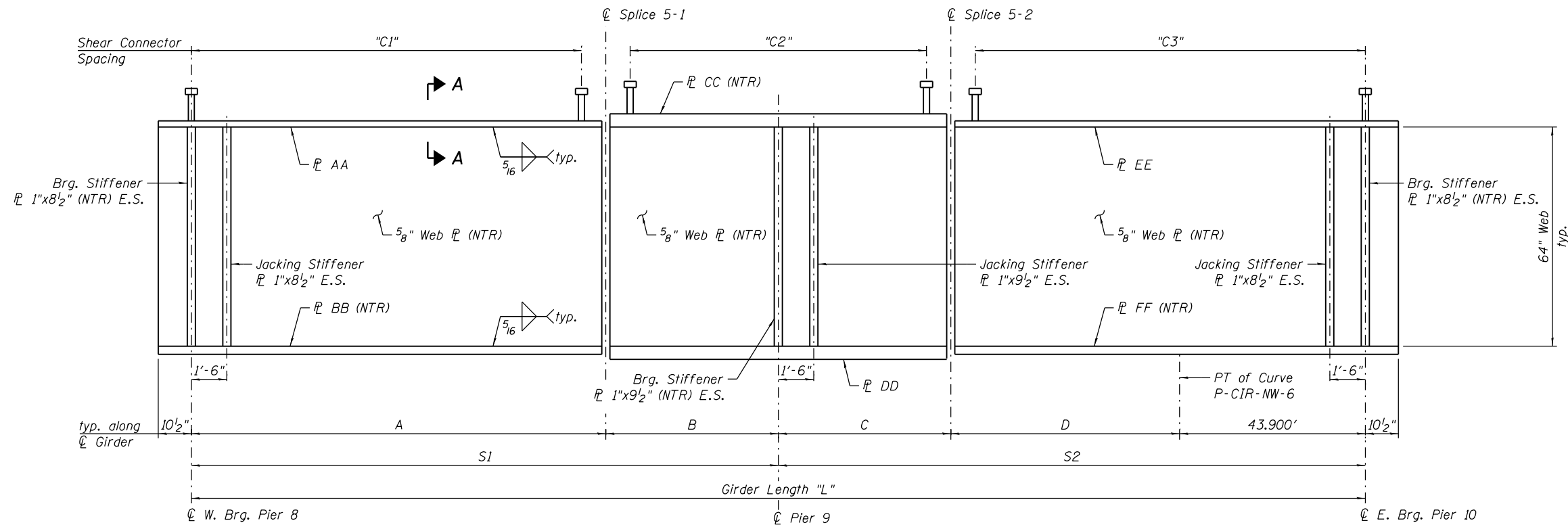
USER NAME = floresg	DESIGNED - DD	REVISED
	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - MRK	REVISED
PLOT DATE = 5/7/2014	CHECKED - DD	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GIRDER FRAMING PLAN - UNIT V
STRUCTURE NO. 016-1705

SHEET NO. S-91 OF S-165 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	407
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	



GIRDER ELEVATION - UNIT V

(Connection and Splice ℓ 's not shown for clarity)

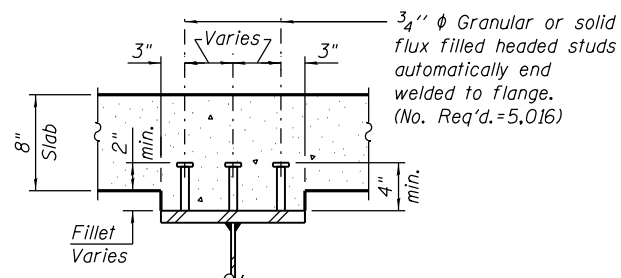
Girder	AA	BB	CC	DD	EE	FF
1, 2, 3	1"x18"	1 1/2"x18"	2"x22"	2"x22"	1"x18"	1"x22"
4, 5, 6	1"x18"	1"x18"	2"x20"	2"x20"	1"x18"	1"x18"

GIRDER DIMENSIONS - UNIT V

(All Dimensions in Feet)

Girder	Radius	L*	S1	S2	A	B	C	D	C1	C2	C3
1	560.417	262.000	125.631	136.369	81.006	44.625	39.437	53.032	122 Spa at 8"	85 Spa at 12"	117 Spa at 10"
2	552.250	258.801	123.780	135.021	79.804	43.976	38.862	52.259	80 Spa at 12"	63 Spa at 16"	116 Spa at 10"
3	544.083	255.600	121.926	133.674	78.602	43.325	38.287	51.487	79 Spa at 12"	62 Spa at 16"	115 Spa at 10"
4	535.917	252.400	120.073	132.327	77.399	42.674	37.713	50.714	104 Spa at 9"	65 Spa at 15"	114 Spa at 10"
5	527.750	249.200	118.221	130.979	76.197	42.024	37.138	49.940	92 Spa at 10"	80 Spa at 12"	113 Spa at 10"
6	519.583	246.000	116.368	129.631	74.994	41.375	36.563	49.168	75 Spa at 12"	78 Spa at 12"	94 Spa at 12"

* Girder Length "L" excludes girder ends beyond first & last bearings.



SECTION A-A

NOTES:

1. See Sheet S-91 for girder framing plan.
2. See Sheet S-93 for camber & top of web elevations.
3. See Sheet S-94 for moment tables & reaction tables.
4. See Sheet S-99 for girder bolted field splice details.
5. See Sheets S-100 thru S-102 for girder cross frame details.
6. All structural steel shall be AASHTO M270 Grade 50.
7. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

0161705-60W28-5092-GirderElev.dgn



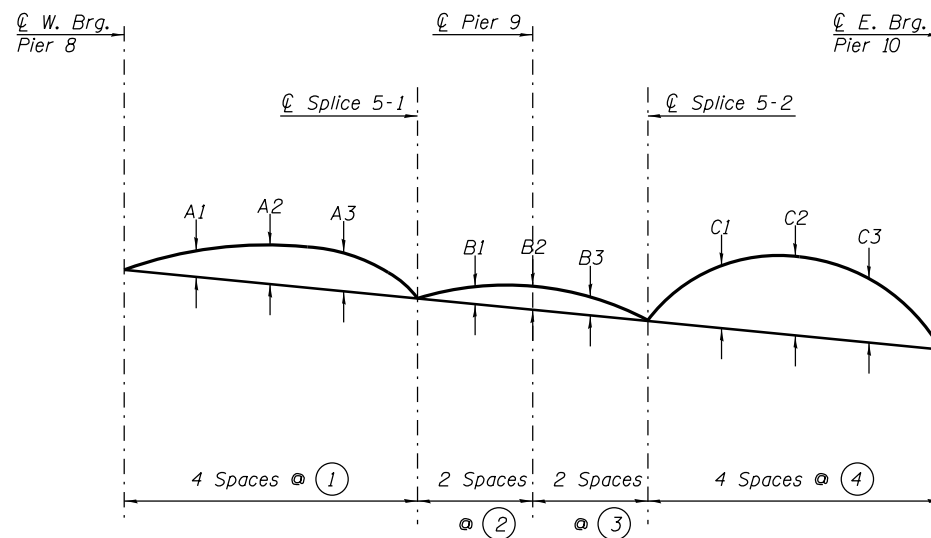
USER NAME = floresg	DESIGNED - DD	REVISED
	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - MRK	REVISED
PLOT DATE = 5/7/2014	CHECKED - DD	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GIRDER ELEVATIONS - UNIT V
STRUCTURE NO. 016-1705**

SHEET NO. S-92 OF S-165 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	408
CONTRACT NO. 60W28				
ILLINOIS FED. AID PROJECT				



CAMBER DIAGRAM - UNIT V

TOP OF WEB ELEV * (in feet) - UNIT V					
Girder	℄ W. Brg. Pier 8	℄ Splice 5-1	℄ Pier 9	℄ Splice 5-2	℄ E. Brg. Pier 10
1	635.27	632.83	631.09	629.34	622.71
2	634.83	632.39	630.65	628.88	622.61
3	634.39	631.95	630.21	628.43	622.50
4	633.94	631.53	629.76	627.99	622.39
5	633.50	631.09	629.32	627.53	622.28
6	633.06	630.65	628.88	627.08	622.17

*For fabrication use only.

CAMBER ORDINATES - UNIT V													
Girder	A1	A2	A3	B1	B2	B3	C1	C2	C3	①	②	③	④
1	2 1/2"	3 1/2"	3 1/4"	1 1/4"	1 1/4"	1 1/4"	7 1/4"	8"	5 1/4"	20.251	22.313	19.718	24.233
2	2 1/4"	3 1/2"	3 1/4"	1 1/2"	1 1/2"	1 1/4"	6 1/4"	7"	4 3/4"	19.951	21.988	19.431	24.040
3	2 1/4"	3 1/2"	3 1/4"	1 1/2"	1 1/2"	1 1/2"	5 1/4"	6"	4 1/4"	19.650	21.663	19.144	23.847
4	2 1/4"	3 1/4"	3"	1 1/4"	1 1/4"	1 1/4"	4 1/4"	5"	3 1/2"	19.350	21.337	18.856	23.654
5	2 1/4"	3 1/4"	3"	1 1/4"	1 1/2"	1 1/4"	3 1/4"	4 1/4"	3"	19.049	21.012	18.569	23.460
6	2 1/4"	3 1/4"	3"	1 1/2"	1 1/2"	1 1/4"	2 1/2"	3 1/2"	2 1/2"	18.748	20.687	18.282	23.267

NOTES:

1. See Sheet S-91 for girder framing plan.
2. See Sheet S-92 for girder elevations.
3. See Sheet S-94 for girder moment & reaction tables.
4. See Sheet S-99 for girder splice details.
5. See Sheet S-100 thru S-102 for girder cross frame details and erection notes.

0161705-60W28-5093-GirderCamber.dgn



USER NAME = floresg	DESIGNED - VP	REVISED
	CHECKED - DD	REVISED
PLOT SCALE = N.T.S.	DRAWN - MRK	REVISED
PLOT DATE = 5/7/2014	CHECKED - ATB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GIRDER CAMBER AND TOP OF WEB ELEVATIONS - UNIT V
STRUCTURE NO. 016-1705

SHEET NO. S-93 OF S-165 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	409
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

EXTERIOR GIRDER 1 MOMENT TABLE - UNIT V			
	0.4 Sp. 9	Pier 9	0.6 Sp. 10
I_s	(in ⁴)	60,578	55,695
$I_c(n)$	(in ⁴)	136,556	122,915
$I_c(3n)$	(in ⁴)	98,611	89,851
$I_c(cr)$	(in ⁴)	-	120,077
S_s	(in ³)	2,021	1,775
$S_c(n)$	(in ³)	2,671	2,356
$S_c(3n)$	(in ³)	2,430	2,141
$S_c(cr)$	(in ³)	-	3,330
S_{xc}	(in ³)	81	81
DC1	(k/')	1.07	1.05
MDC1	(k)	919	1,452
DC2	(k/')	0.29	0.29
MDC2	(k)	238	345
DW	(k/')	0.28	0.28
MDW	(k)	311	516
$M\ddot{\epsilon} \cdot IM$	(k)	2,554	2,683
f_i (Strength I)	(ksi)	5.53	3.80
$M_u + \frac{1}{3} f_i S_{xc}$	(k)	6,532	7,818
$\phi_r M_n$	(k)	-	-
f_s DC1	(ksi)	5.46	9.82
f_s DC2	(ksi)	1.18	1.93
f_s DW	(ksi)	1.54	2.89
$f_s (\ddot{\epsilon} + IM)$	(ksi)	11.47	13.67
f_i (Service II)	(ksi)	4.19	2.91
$f_s + \frac{1}{2} f_i$ (Service II)	(ksi)	25.18	33.86
$0.95R_n F_{yr}$	(ksi)	47.50	47.50
$f_s + \frac{1}{3} f_i$ (Total)(Strength I)	(ksi)	32.52	44.21
$\phi_r F_n$	(ksi)	50.00	50.00
Vr	(k)	78.90	71.30

INTERIOR GIRDER 2 MOMENT TABLE - UNIT V			
	0.4 Sp. 9	Pier 9	0.6 Sp. 10
I_s	(in ⁴)	60,578	55,695
$I_c(n)$	(in ⁴)	141,074	126,787
$I_c(3n)$	(in ⁴)	102,099	92,932
$I_c(cr)$	(in ⁴)	-	121,335
S_s	(in ³)	2,021	1,775
$S_c(n)$	(in ³)	2,694	2,376
$S_c(3n)$	(in ³)	2,457	2,165
$S_c(cr)$	(in ³)	-	3,342
S_{xc}	(in ³)	81	81
DC1	(k/')	1.16	1.14
MDC1	(k)	911	1,426
DC2	(k/')	0.29	0.29
MDC2	(k)	150	243
DW	(k/')	0.41	0.41
MDW	(k)	333	508
$M\ddot{\epsilon} \cdot IM$	(k)	1,946	2,066
f_i (Strength I)	(ksi)	4.45	6.81
$M_u + \frac{1}{3} f_i S_{xc}$	(k)	5,351	6,648
$\phi_r M_n$	(k)	-	-
f_s DC1	(ksi)	5.41	9.64
f_s DC2	(ksi)	0.73	1.35
f_s DW	(ksi)	1.63	2.82
$f_s (\ddot{\epsilon} + IM)$	(ksi)	8.67	10.43
f_i (Service II)	(ksi)	3.38	5.22
$f_s + \frac{1}{2} f_i$ (Service II)	(ksi)	20.73	29.98
$0.95R_n F_{yr}$	(ksi)	47.50	47.50
$f_s + \frac{1}{3} f_i$ (Total)(Strength I)	(ksi)	26.77	38.49
$\phi_r F_n$	(ksi)	50.00	50.00
Vr	(k)	55.10	52.20

EXTERIOR GIRDER 1 REACTION TABLE - UNIT V			
	Pier 8-W	Pier 9	Pier 10-E
RDC1	(k)	50.5	62.7
RDC2	(k)	12.5	14.8
R _{DW}	(k)	14.9	19.4
$R\ddot{\epsilon} \cdot IM$	(k)	101.9	103.2
R _{Total}	(k)	179.8	200.0

INTERIOR GIRDER 2 REACTION TABLE - UNIT V			
	Pier 8-W	Pier 9	Pier 10-E
RDC1	(k)	48.9	57.9
RDC2	(k)	8.4	10.6
R _{DW}	(k)	16.3	20.4
$R\ddot{\epsilon} \cdot IM$	(k)	93.0	94.9
R _{Total}	(k)	166.7	183.7

INTERIOR GIRDER 5 MOMENT TABLE - UNIT V			
	0.4 Sp. 9	Pier 9	0.6 Sp. 10
I_s	(in ⁴)	51,681	51,681
$I_c(n)$	(in ⁴)	115,351	115,351
$I_c(3n)$	(in ⁴)	85,467	85,467
$I_c(cr)$	(in ⁴)	-	112,575
S_s	(in ³)	1,566	1,566
$S_c(n)$	(in ³)	2,113	2,113
$S_c(3n)$	(in ³)	1,921	1,921
$S_c(cr)$	(in ³)	-	3,088
S_{xc}	(in ³)	54	54
DC1	(k/')	1.13	1.13
MDC1	(k)	686	1,052
DC2	(k/')	0.29	0.29
MDC2	(k)	142	195
DW	(k/')	0.41	0.41
MDW	(k)	269	372
$M\ddot{\epsilon} \cdot IM$	(k)	1,493	1,629
f_i (Strength I)	(ksi)	4.92	3.50
$M_u + \frac{1}{3} f_i S_{xc}$	(k)	4,140	5,031
$\phi_r M_n$	(k)	-	-
f_s DC1	(ksi)	5.26	8.06
f_s DC2	(ksi)	0.89	1.22
f_s DW	(ksi)	1.68	2.32
$f_s (\ddot{\epsilon} + IM)$	(ksi)	8.48	9.25
f_i (Service II)	(ksi)	3.74	2.69
$f_s + \frac{1}{2} f_i$ (Service II)	(ksi)	20.72	24.97
$0.95R_n F_{yr}$	(ksi)	47.50	47.50
$f_s + \frac{1}{3} f_i$ (Total)(Strength I)	(ksi)	26.68	32.44
$\phi_r F_n$	(ksi)	50.00	50.00
Vr	(k)	58.20	58.30

EXTERIOR GIRDER 6 MOMENT TABLE - UNIT V			
	0.4 Sp. 9	Pier 9	0.6 Sp. 10
I_s	(in ⁴)	51,681	51,681
$I_c(n)$	(in ⁴)	111,971	111,971
$I_c(3n)$	(in ⁴)	82,710	82,710
$I_c(cr)$	(in ⁴)	-	111,326
S_s	(in ³)	1,566	1,566
$S_c(n)$	(in ³)	2,095	2,095
$S_c(3n)$	(in ³)	1,899	1,899
$S_c(cr)$	(in ³)	-	3,076
S_{xc}	(in ³)	54	54
DC1	(k/')	1.04	1.04
MDC1	(k)	720	863
DC2	(k/')	0.29	0.29
MDC2	(k)	192	227
DW	(k/')	0.28	0.28
MDW	(k)	223	291
$M\ddot{\epsilon} \cdot IM$	(k)	1,588	1,722
f_i (Strength I)	(ksi)	5.18	3.28
$M_u + \frac{1}{3} f_i S_{xc}$	(k)	4,347	4,872
$\phi_r M_n$	(k)	-	-
f_s DC1	(ksi)	5.52	6.61
f_s DC2	(ksi)	1.21	1.43
f_s DW	(ksi)	1.41	1.84
$f_s (\ddot{\epsilon} + IM)$	(ksi)	9.10	9.86
f_i (Service II)	(ksi)	3.94	2.51
$f_s + \frac{1}{2} f_i$ (Service II)	(ksi)	21.93	23.96
$0.95R_n F_{yr}$	(ksi)	47.50	47.50
$f_s + \frac{1}{3} f_i$ (Total)(Strength I)	(ksi)	28.17	31.17
$\phi_r F_n$	(ksi)	50.00	50.00
Vr	(k)	54.90	54.60

INTERIOR GIRDER 5 REACTION TABLE - UNIT V			
	Pier 8-W	Pier 9	Pier 10-E
RDC1	(k)	40.8	48.9
RDC2	(k)	8.1	9.5
R _{DW}	(k)	14.3	17.1
$R\ddot{\epsilon} \cdot IM$	(k)	90.6	94.2
R _{Total}	(k)	153.8	169.7

EXTERIOR GIRDER 6 REACTION TABLE - UNIT V			
	Pier 8-W	Pier 9	Pier 10-E
RDC1	(k)	40.5	42.9
RDC2	(k)	10.2	10.6
R _{DW}	(k)	11.3	12.3
$R\ddot{\epsilon} \cdot IM$	(k)	74.9	75.0
R _{Total}	(k)	136.9	140.8

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) due to non-composite dead loads (in⁴ and in³).

$I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections due to short term composite live loads (in⁴ and in³).

$I_c(3n), S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections due to long-term composite (superimposed) dead loads (in⁴ and in³).

$I_c(cr), S_c(cr)$: Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing f_s (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads (in⁴ and in³).

S_{xc} : Section modulus about the major axis of section to the controlling flange, tension or compression, taken as yield moment with respect to the controlling flange over the yield strength of the controlling flange (in³).

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

MDC1: Un-factored moment due to non-composite dead load (kip-ft.).

DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).

MDC2: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).

DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).

MDW: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).

$M\ddot{\epsilon} \cdot IM$: Un-factored live load moment plus dynamic load allowance (impact)(kip-ft.).

M_u (Strength I): Factored design moment (kip-ft.).

$1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M\ddot{\epsilon} \cdot IM$

f_i : Factored calculated normal stress at edge of flange for controlling flange plate due to lateral bending, Strength I or Service II as applicable (ksi).

$\phi_r M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (kip-ft.).

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

M_{DC1} / S_s

f_s DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).

$M_{DC2} / S_c(3n)$ or $M_{DC2} / S_c(cr)$ as applicable.

f_s DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).

$M_{DW} / S_c(3n)$ or $M_{DW} / S_c(cr)$ as applicable.

$f_s (\ddot{\epsilon} + IM)$: Un-factored stress at edge of flange for controlling steel flange due to vertical composite live plus impact loads as calculated below (ksi).

$M\ddot{\epsilon} \cdot IM / S_c(n)$ or $M\ddot{\epsilon} \cdot IM / S_c(cr)$ as applicable.

$f_s + \frac{1}{2} f_i$ (Service II): Sum of stresses as computed below (ksi).

$f_s DC1 + f_s DC2 + f_s DW + 1.3 f_s (\ddot{\epsilon} + IM) + \frac{1}{2} 0.95R_n F_{yr}$: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).

$f_s + \frac{1}{3} f_i$ (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).

$1.25 (f_s DC1 + f_s DC2) + 1.5 f_s DW + 1.75 f_s (\ddot{\epsilon} + IM) + \frac{1}{3} 0.95R_n F_{yr}$

$\phi_r F_n$: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).

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

Note:
 $M\ddot{\epsilon}$ and $R\ddot{\epsilon}$ include the effects of centrifugal force and superelevation.

0161705-60W2B-5094-SuperStruct.dgn



USER NAME = floresg
 PLOT SCALE = N.T.S.
 PLOT DATE = 5/7/2014

DESIGNED - DD
 CHECKED - ATB
 DRAWN - MRK
 CHECKED - DD

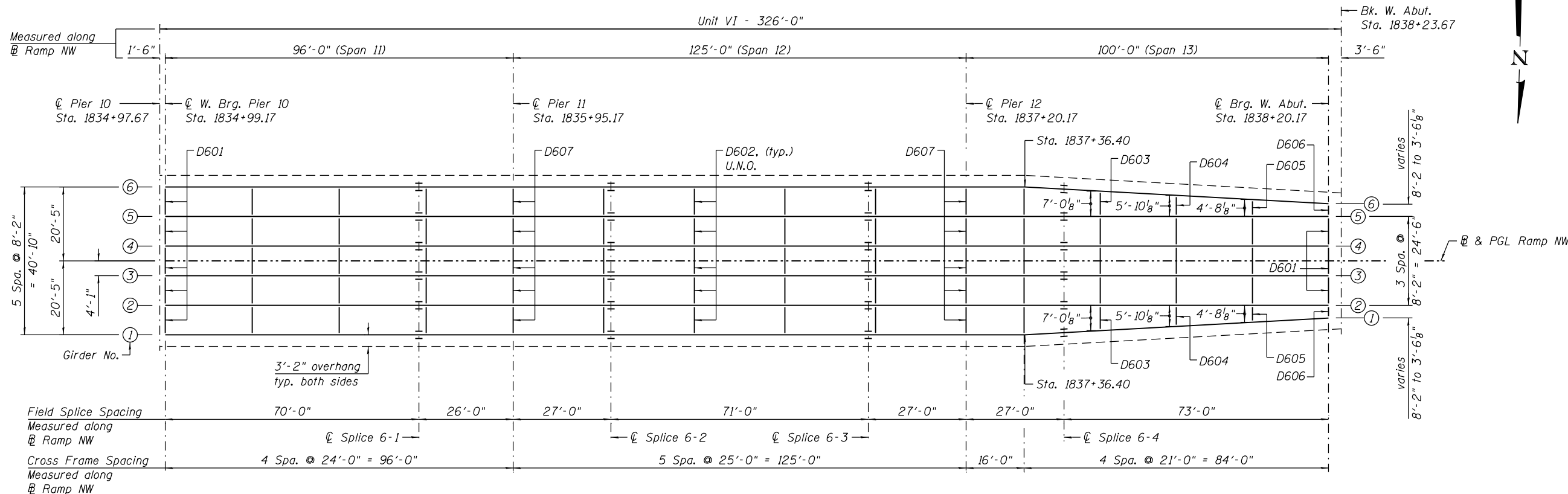
REVISED
 REVISED
 REVISED
 REVISED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

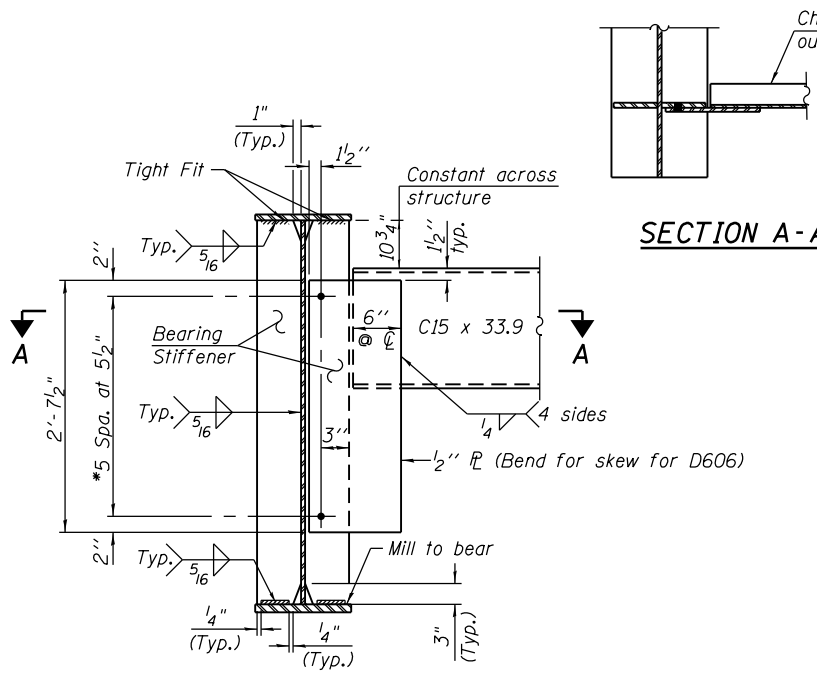
GIRDER MOMENT AND REACTION TABLES - UNIT V
 STRUCTURE NO. 016-1705

SHEET NO. S-94 OF S-165 SHEETS

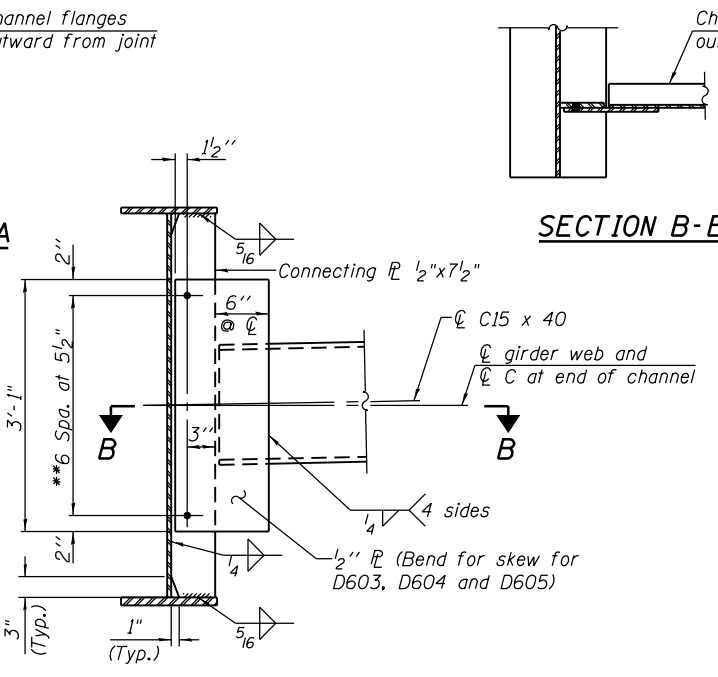
F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	410
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				



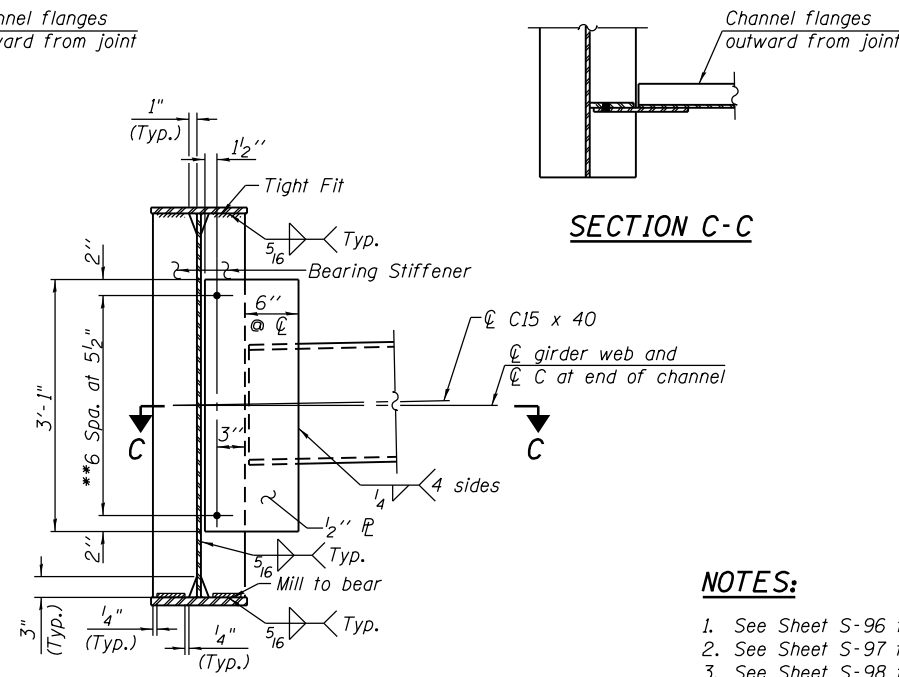
GIRDER FRAMING PLAN - UNIT VI



END DIAPHRAGM
 D601 (8 Required)
 D606 (2 Required)
 *3/4" HS Bolts, 15/16" holes



INTERIOR DIAPHRAGM
 D602 (49 Required)
 D603 (2 Required)
 D604 (2 Required)
 D605 (2 Required)
 **3/4" HS bolts, 15/16" holes



INTERIOR DIAPHRAGM - D607
 (10 Required)
 **3/4" HS bolts, 15/16" holes

- NOTES:**
1. See Sheet S-96 for girder elevation.
 2. See Sheet S-97 for camber & top of web elevations.
 3. See Sheet S-98 for moment tables & reaction tables.
 4. See Sheet S-99 for girder bolted field splice details.
 5. Two hardened washers required for each set of oversized holes.
 6. Jacking stiffeners shall use the same size clips & fillet welds as the bearing stiffeners.

0161705-60W28-5095-FramePlan.dgn



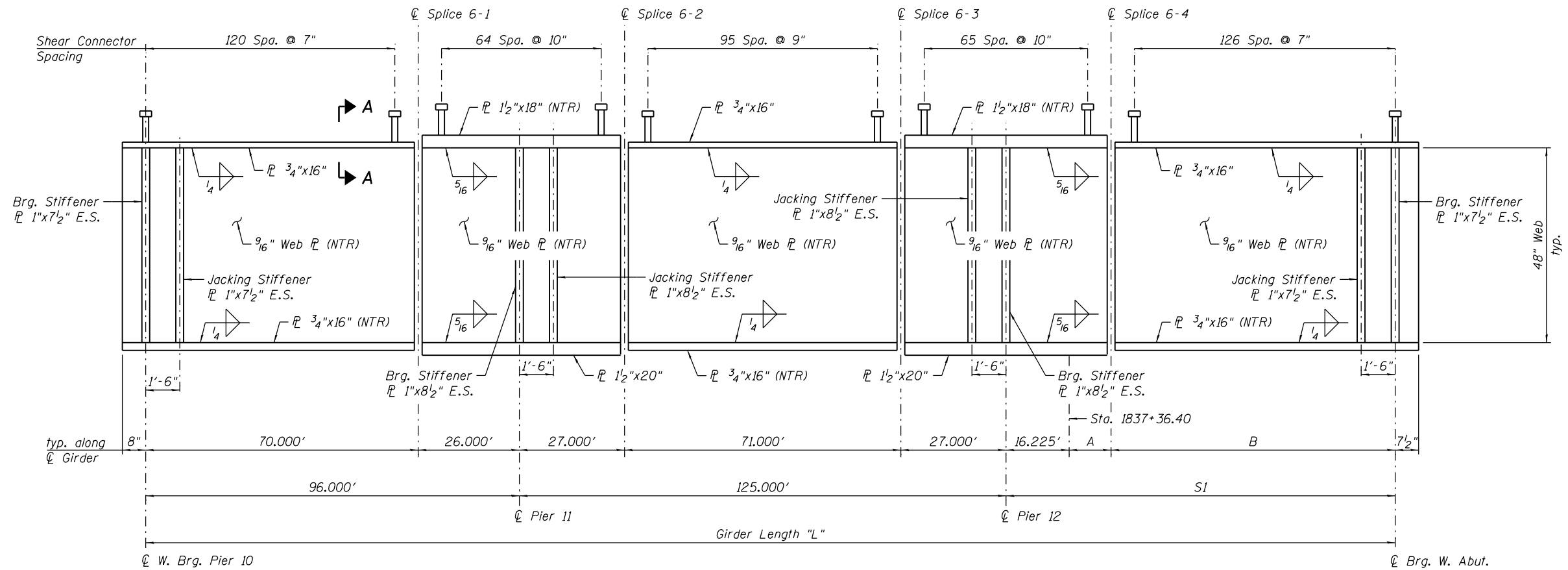
USER NAME = floresg	DESIGNED - DD	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 5/7/2014	DRAWN - MRK	REVISED
	CHECKED - DD	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GIRDER FRAMING PLAN - UNIT VI
STRUCTURE NO. 016-1705

SHEET NO. S-95 OF S-165 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 411
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

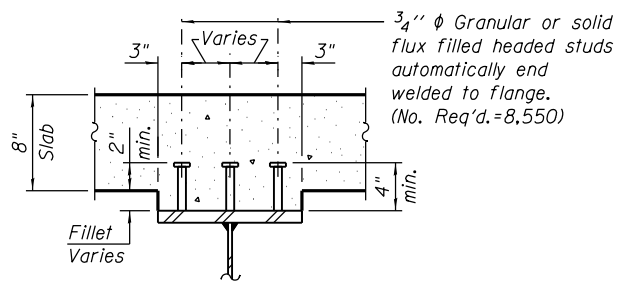


GIRDER ELEVATION - UNIT VI
(Connection and Splice R's not shown for clarity)

GIRDER DIMENSIONS - UNIT VI
(All Dimensions in Feet)

Girder	L*	S1	A	B
1	321.130	100.130	10.792	73.113
2	321.000	100.000	10.775	73.000
3	321.000	100.000	10.775	73.000
4	321.000	100.000	10.775	73.000
5	321.000	100.000	10.775	73.000
6	321.130	100.130	10.792	73.113

* Girder Length "L" excludes girder ends beyond first & last bearings.



SECTION A-A

NOTES:

1. See Sheet S-95 for girder framing plan.
2. See Sheet S-97 for camber & top of web elevations.
3. See Sheet S-98 for moment tables & reaction tables.
4. See Sheet S-99 for girder bolted field splice details.
5. All structural steel shall be AASHTO M270 Grade 50.
6. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

0161705-60W28-5096-GirderElev.dgn



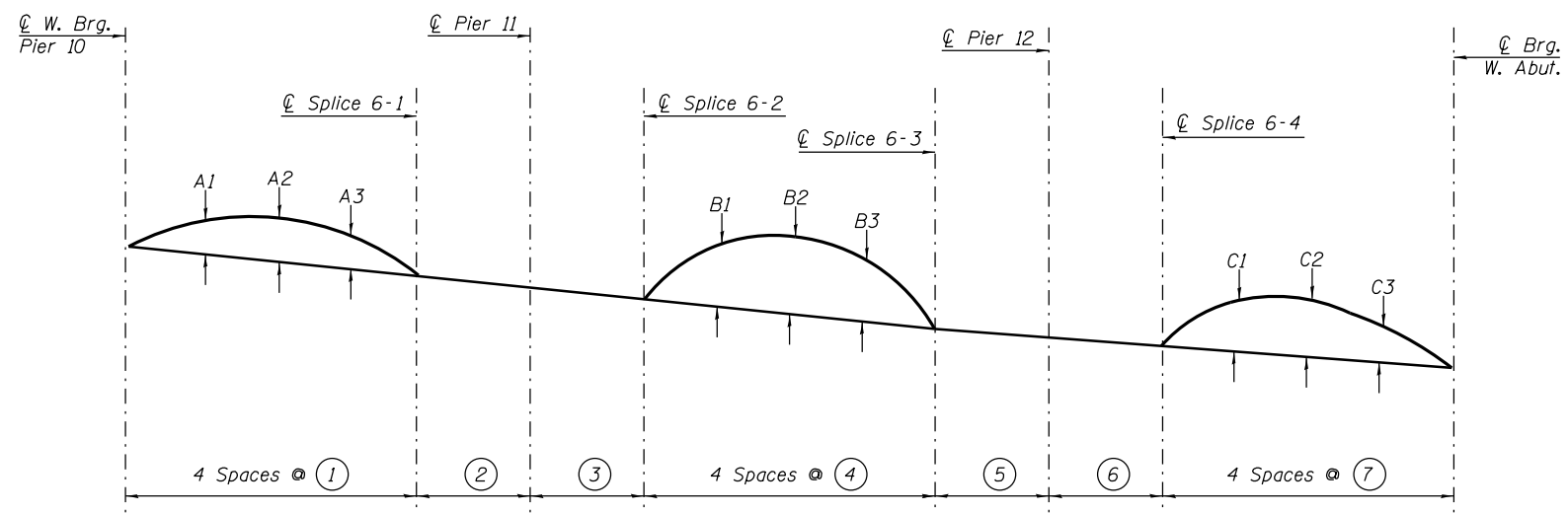
USER NAME = floresg	DESIGNED - DD	REVISED
	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - MRK	REVISED
PLOT DATE = 5/7/2014	CHECKED - DD	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GIRDER ELEVATIONS - UNIT VI
STRUCTURE NO. 016-1705**

SHEET NO. S-96 OF S-165 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	412
CONTRACT NO. 60W28				
ILLINOIS FED. AID PROJECT				



CAMBER DIAGRAM - STR. NO. 016-1705 - UNIT VI

TOP OF WEB ELEV * (in feet) - UNIT VI								
Girder	℄ W. Brg. Pier 10	℄ Splice 6-1	℄ Pier 11	℄ Splice 6-2	℄ Splice 6-3	℄ Pier 12	℄ Splice 6-4	℄ Brg. W. Abut.
1	622.50	616.93	615.13	613.26	608.33	606.47	604.60	599.66
2	622.40	617.09	615.29	613.43	608.49	606.62	604.75	599.73
3	622.30	617.26	615.46	613.59	608.66	606.79	604.92	599.90
4	622.21	617.42	615.62	613.75	608.82	606.95	605.08	600.06
5	622.11	617.58	615.78	613.92	608.98	607.11	605.24	600.22
6	622.02	617.75	615.95	614.08	609.15	607.27	605.39	600.29

*For fabrication use only.

Girder	①	②	③	④	⑤	⑥	⑦
1	17.500	26.000	27.000	17.750	27.000	27.017	18.278
2	17.500	26.000	27.000	17.750	27.000	27.000	18.250
3	17.500	26.000	27.000	17.750	27.000	27.000	18.250
4	17.500	26.000	27.000	17.750	27.000	27.000	18.250
5	17.500	26.000	27.000	17.750	27.000	27.000	18.250
6	17.500	26.000	27.000	17.750	27.000	27.017	18.278

CAMBER ORDINATES - UNIT VI									
Girder	A1	A2	A3	B1	B2	B3	C1	C2	C3
1	0 3/4"	1"	0 3/4"	1 3/4"	2 1/4"	1 3/4"	1 3/4"	1 3/4"	1 1/4"
2	0 3/4"	1 1/4"	1"	1 3/4"	2 1/4"	1 3/4"	1 3/4"	1 3/4"	1 1/4"
3	1"	1 1/2"	1 1/2"	1 3/4"	2 1/4"	1 3/4"	1 3/4"	1 3/4"	1 1/4"
4	1"	1 3/4"	1 3/4"	1 3/4"	2 1/4"	1 3/4"	1 3/4"	1 3/4"	1 1/4"
5	1 1/4"	2"	2"	1 3/4"	2 1/4"	1 3/4"	1 3/4"	1 3/4"	1 1/4"
6	1 1/4"	2 1/4"	2 1/2"	1 3/4"	2 1/4"	1 3/4"	1 3/4"	1 3/4"	1 1/4"

NOTES:

1. See Sheet S-95 for girder framing plan.
2. See Sheet S-96 for girder elevations.
3. See Sheet S-98 for girder moment & reaction tables.
4. See Sheet S-99 for girder splice details.
5. See Sheet S-100 thru S-102 for girder cross frame details and erection notes.

0161705-60W28-5097-GirderCamber.dgn



USER NAME = floresg	DESIGNED - VP	REVISED
	CHECKED - DD	REVISED
PLOT SCALE = N.T.S.	DRAWN - MRK	REVISED
PLOT DATE = 5/7/2014	CHECKED - ATB	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GIRDER CAMBER AND TOP OF WEB ELEVATIONS - UNIT VI
STRUCTURE NO. 016-1705**

SHEET NO. S-97 OF S-165 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	413
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

INTERIOR GIRDER MOMENT TABLE - UNIT VI						
		0.4 Sp. 11	Pier 11	0.5 Sp. 12	Pier 12	0.6 Sp. 13
I_s	(in ⁴)	19,444	40,045	19,444	40,045	19,444
$I_c(n)$	(in ⁴)	47,586	-	47,586	-	47,586
$I_c(3n)$	(in ⁴)	35,969	-	35,969	-	35,969
$I_c(cr)$	(in ⁴)	-	46,885	-	46,885	-
S_s	(in ³)	786	1,627	786	1,627	786
$S_c(n)$	(in ³)	1,092	-	1,092	-	1,092
$S_c(3n)$	(in ³)	1,002	-	1,002	-	1,002
$S_c(cr)$	(in ³)	-	1,720	-	1,720	-
DC1	(k/')	1.06	1.17	1.06	1.17	1.06
M_{DC1}	(k)	567	1,539	540	1,622	634
DC2	(k/')	0.20	0.20	0.20	0.20	0.20
M_{DC2}	(k)	110	277	107	291	123
DW	(k/')	0.41	0.41	0.41	0.41	0.41
M_{DW}	(k)	226	567	218	597	253
$M_{\xi + IM}$	(k)	1,321	1,820	1,274	1,846	1,369
M_u (Strength I)	(k)	3,497	6,306	3,365	6,517	3,722
$\phi_r M_n$	(k)	5,499	7,934	5,517	7,931	5,450
f_s DC1	(ksi)	8.66	11.35	8.25	11.96	9.68
f_s DC2	(ksi)	1.32	1.93	1.28	2.03	1.47
f_s DW	(ksi)	2.71	3.95	2.61	4.16	3.03
f_s ($\xi + IM$)	(ksi)	14.52	12.69	14.00	12.88	15.05
f_s (Service II)	(ksi)	31.56	33.74	30.35	34.90	33.75
$0.95R_n F_{yr}$	(ksi)	47.50	47.50	47.50	47.50	47.50
f_s (Total)(Strength I)	(ksi)	-	-	-	-	-
$\phi_r F_n$	(ksi)	-	-	-	-	-
V_r	(k)	59.30	62.00	46.00	68.20	62.50

INTERIOR GIRDER REACTION TABLE - UNIT VI					
	Pier 10-W	Pier 11	Pier 12	W. Abut.	
R_{DC1}	(k)	36.0	138.1	141.9	38.0
R_{DC2}	(k)	6.7	24.9	25.5	7.1
R_{DW}	(k)	13.8	51.0	52.3	14.5
$R_{\xi + IM}$	(k)	92.3	181.0	182.4	93.3
R_{Total}	(k)	148.9	395.0	402.1	152.9

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) due to non-composite dead loads (in⁴ and in³).

$I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections due to short-term composite live loads (in⁴ and in³).

$I(3n), S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections, due to long-term composite (superimposed) dead loads (in⁴ and in³).

$I(cr), S_c(cr)$: Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing f_s (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads (in⁴ and in³).

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

M_{DC1} : Un-factored moment due to non-composite dead load (kip-ft.).

DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).

M_{DC2} : Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).

DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).

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

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

M_u (Strength I): Factored design moment (kip-ft.).

$1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{\xi + IM}$

$\phi_r M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (kip-ft.).

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

M_{DC1} / S_s

f_s DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).

$M_{DC2} / S_c(3n)$ or $M_{DC2} / S_c(cr)$ as applicable.

f_s DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).

$M_{DW} / S_c(3n)$ or $M_{DW} / S_c(cr)$ as applicable.

f_s ($\xi + IM$): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live load plus impact loads as calculated below (ksi).

$M_{\xi + IM} / S_c(n)$ or $M_{\xi + IM} / S_c(cr)$ as applicable.

f_s (Service II): Sum of stresses as computed below (ksi).

$f_{sDC1} + f_{sDC2} + f_{sDW} + 1.3 f_s(\xi + IM)$

$0.95R_n F_{yr}$: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).

f_s (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).

$1.25 (f_{sDC1} + f_{sDC2}) + 1.5 f_{sDW} + 1.75 f_s(\xi + IM)$

$\phi_r F_n$: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).

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

0161705-60W28-5098-SuperStruct.dgn



USER NAME = floresg
 PLOT SCALE = N.T.S.
 PLOT DATE = 5/7/2014

DESIGNED - DD
 CHECKED - ATB
 DRAWN - MRK
 CHECKED - DD

REVISED
 REVISED
 REVISED
 REVISED

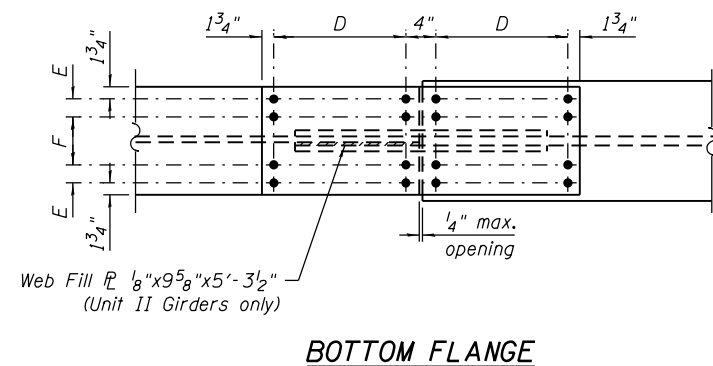
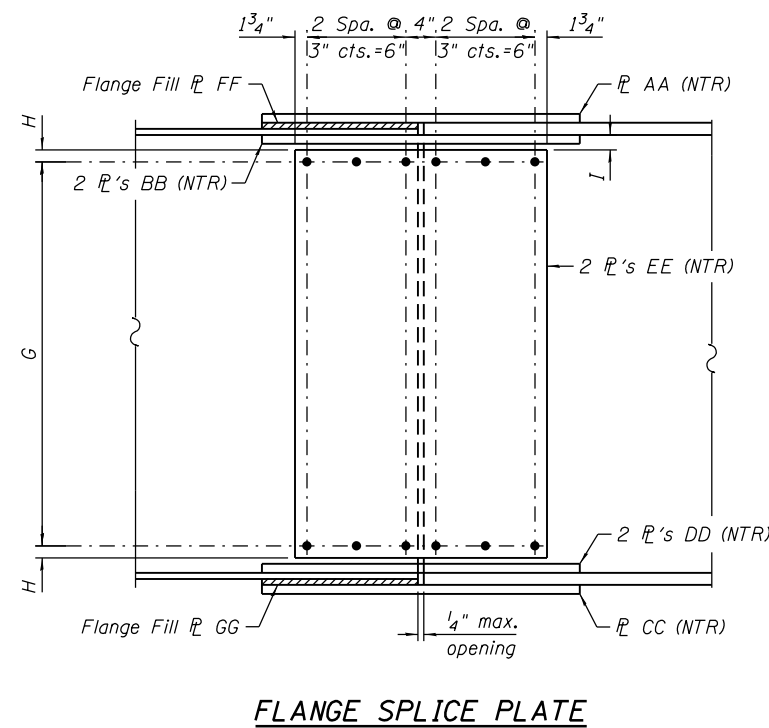
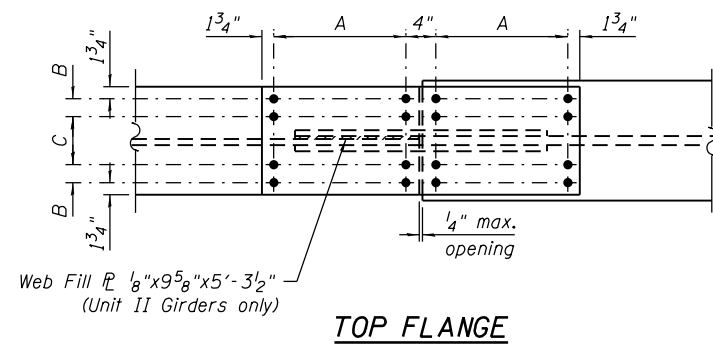
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

GIRDER MOMENT AND REACTION TABLES - UNIT VI
 STRUCTURE NO. 016-1705

SHEET NO. S-98 OF S-165 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-01OR	COOK	747	414
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				

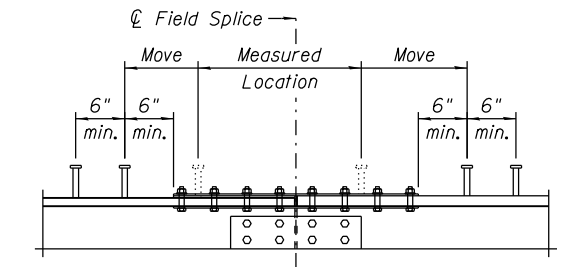
SPLICE BOLT SPACING



UNIT	GIRDER	SPLICE TYPE	A	B	C	D	E	F	G	H	I	
I	1, 2, 3, 4, 5, 6	1-1	8 Spa. @ 3"=2'-0"	4 1/2"	5 1/2"	8 Spa. @ 3"=2'-0"	4 1/2"	5 1/2"	21 Spa. @ 3"=5'-3"	1 3/4"	1 3/4"	
		1-2	8 Spa. @ 3"=2'-0"	4 1/2"	5 1/2"	8 Spa. @ 3"=2'-0"	4 1/2"	5 1/2"	21 Spa. @ 3"=5'-3"	1 3/4"	1 3/4"	
II	1B	2-1	9 Spa. @ 3"=2'-3"	4 1/2"	5 1/2"	10 Spa. @ 3"=2'-6"	4 1/2"	5 1/2"	20 Spa. @ 3"=5'-0"	1 3/4"	3 1/4"	
		2-2	8 Spa. @ 3"=2'-0"	4 1/2"	5 1/2"	11 Spa. @ 3"=2'-9"	4 1/2"	5 1/2"	20 Spa. @ 3"=5'-0"	1 3/4"	3 1/4"	
	3B, 8B	2-2	8 Spa. @ 3"=2'-0"	4 1/2"	5 1/2"	9 Spa. @ 3"=2'-3"	4 1/2"	5 1/2"	20 Spa. @ 3"=5'-0"	1 3/4"	3 1/4"	
		2-1	8 Spa. @ 3"=2'-0"	4 1/2"	5 1/2"	9 Spa. @ 3"=2'-3"	4 1/2"	5 1/2"	20 Spa. @ 3"=5'-0"	1 3/4"	3 1/4"	
	4B, 5B, 6B, 7B	2-2	8 Spa. @ 3"=2'-0"	4 1/2"	5 1/2"	9 Spa. @ 3"=2'-3"	4 1/2"	5 1/2"	20 Spa. @ 3"=5'-0"	1 3/4"	3 1/4"	
		2-1	8 Spa. @ 3"=2'-0"	4 1/2"	5 1/2"	9 Spa. @ 3"=2'-3"	4 1/2"	5 1/2"	20 Spa. @ 3"=5'-0"	1 3/4"	3 1/4"	
9B	2-1	9 Spa. @ 3"=2'-3"	4 1/2"	5 1/2"	10 Spa. @ 3"=2'-6"	4 1/2"	5 1/2"	20 Spa. @ 3"=5'-0"	1 3/4"	3 1/4"		
	2-2	8 Spa. @ 3"=2'-0"	4 1/2"	5 1/2"	9 Spa. @ 3"=2'-3"	4 1/2"	5 1/2"	20 Spa. @ 3"=5'-0"	1 3/4"	3 1/4"		
III	1, 2, 3	3-1	6 Spa. @ 3"=1'-6"	4 1/2"	5 1/2"	10 Spa. @ 3"=2'-6"	6 1/2"	5 1/2"	21 Spa. @ 3"=5'-3"	1 3/4"	1 3/4"	
		3-2	6 Spa. @ 3"=1'-6"	4 1/2"	5 1/2"	8 Spa. @ 3"=2'-0"	4 1/2"	5 1/2"	21 Spa. @ 3"=5'-3"	1 3/4"	1 3/4"	
	4, 5, 6	3-1	6 Spa. @ 3"=1'-6"	4 1/2"	5 1/2"	6 Spa. @ 3"=1'-6"	4 1/2"	5 1/2"	21 Spa. @ 3"=5'-3"	1 3/4"	1 3/4"	
		3-2	6 Spa. @ 3"=1'-6"	4 1/2"	5 1/2"	6 Spa. @ 3"=1'-6"	4 1/2"	5 1/2"	21 Spa. @ 3"=5'-3"	1 3/4"	1 3/4"	
	IV	1, 2, 3	4-1	10 Spa. @ 3"=2'-6"	5 1/2"	5 1/2"	10 Spa. @ 3"=2'-6"	5 1/2"	5 1/2"	27 Spa. @ 3"=6'-9"	1 3/4"	2 3/4"
			4-2	10 Spa. @ 3"=2'-6"	5 1/2"	5 1/2"	10 Spa. @ 3"=2'-6"	5 1/2"	5 1/2"	27 Spa. @ 3"=6'-9"	1 3/4"	2 3/4"
4, 5, 6	4-1	7 Spa. @ 3"=1'-9"	4 1/2"	5 1/2"	7 Spa. @ 3"=1'-9"	4 1/2"	5 1/2"	27 Spa. @ 3"=6'-9"	1 3/4"	2 3/4"		
	4-2	7 Spa. @ 3"=1'-9"	4 1/2"	5 1/2"	7 Spa. @ 3"=1'-9"	4 1/2"	5 1/2"	27 Spa. @ 3"=6'-9"	1 3/4"	2 3/4"		
V	1, 2, 3	5-1	6 Spa. @ 3"=1'-6"	4 1/2"	5 1/2"	8 Spa. @ 3"=2'-0"	4 1/2"	5 1/2"	18 Spa. @ 3"=4'-6"	1 3/4"	3 1/4"	
		5-2	6 Spa. @ 3"=1'-6"	4 1/2"	5 1/2"	8 Spa. @ 3"=2'-0"	6 1/2"	5 1/2"	18 Spa. @ 3"=4'-6"	1 3/4"	3 1/4"	
	4, 5, 6	5-1	6 Spa. @ 3"=1'-6"	4 1/2"	5 1/2"	6 Spa. @ 3"=1'-6"	4 1/2"	5 1/2"	18 Spa. @ 3"=4'-6"	1 3/4"	3 1/4"	
		5-2	6 Spa. @ 3"=1'-6"	4 1/2"	5 1/2"	6 Spa. @ 3"=1'-6"	4 1/2"	5 1/2"	18 Spa. @ 3"=4'-6"	1 3/4"	3 1/4"	
	VI	1, 2, 3, 4, 5, 6	6-1	4 Spa. @ 3"=1'-0"	3 1/2"	5 1/2"	4 Spa. @ 3"=1'-0"	3 1/2"	5 1/2"	14 Spa. @ 3"=3'-6"	1 1/2"	1 1/2"
			6-2	4 Spa. @ 3"=1'-0"	3 1/2"	5 1/2"	4 Spa. @ 3"=1'-0"	3 1/2"	5 1/2"	14 Spa. @ 3"=3'-6"	1 1/2"	1 1/2"
6-3			4 Spa. @ 3"=1'-0"	3 1/2"	5 1/2"	4 Spa. @ 3"=1'-0"	3 1/2"	5 1/2"	14 Spa. @ 3"=3'-6"	1 1/2"	1 1/2"	
6-4			4 Spa. @ 3"=1'-0"	3 1/2"	5 1/2"	4 Spa. @ 3"=1'-0"	3 1/2"	5 1/2"	14 Spa. @ 3"=3'-6"	1 1/2"	1 1/2"	

NOTES:

- See Sheets S-73 thru S-98 for girder framing plan.
- All structural steel shall be AASHTO M270 Grade 50.
- Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.



SHEAR CONNECTOR DETAIL AT SPLICE AND FLANGE TRANSITIONS

DO NOT place shear connectors on splice plates.

Move row of studs to 6" beyond nearest edge of splice plate from measured location.

SPLICE PLATE SIZES

UNIT	GIRDER	SPLICE TYPE	AA	BB	CC	DD	EE	FF	GG	
I	1, 2, 3, 4, 5, 6	1-1	3/4"x1'-6"x4'-7 1/2"	3/4"x8"x4'-7 1/2"	3/4"x1'-6"x4'-7 1/2"	3/4"x8"x4'-7 1/2"	3/8"x1'-7 1/2"x5'-6 1/2"	1 1/4"x1'-6"x2'-3 5/8"	1 1/4"x1'-6"x2'-3 5/8"	
		1-2	3/4"x1'-6"x4'-7 1/2"	3/4"x8"x4'-7 1/2"	3/4"x1'-6"x4'-7 1/2"	3/4"x8"x4'-7 1/2"	3/8"x1'-7 1/2"x5'-6 1/2"	1 1/4"x1'-6"x2'-3 5/8"	1 1/4"x1'-6"x2'-3 5/8"	
II	1B	2-1	1"x1'-6"x5'-1 1/2"	1"x8"x5'-1 1/2"	1"x1'-6"x5'-7 1/2"	1"x8"x5'-7 1/2"	1/2"x1'-7 1/2"x5'-3 1/2"	1 1/4"x1'-6"x2'-6 5/8"	3/4"x1'-6"x2'-9 5/8"	
		2-2	1"x1'-6"x4'-7 1/2"	1"x8"x4'-7 1/2"	1"x1'-6"x6'-1 1/2"	1"x8"x6'-1 1/2"	1/2"x1'-7 1/2"x5'-3 1/2"	1 1/4"x1'-6"x2'-3 5/8"	3/4"x1'-6"x3'-0 5/8"	
	3B, 8B	2-2	7/8"x1'-6"x4'-7 1/2"	7/8"x8"x4'-7 1/2"	7/8"x1'-6"x5'-1 1/2"	7/8"x8"x5'-1 1/2"	3/8"x1'-7 1/2"x5'-3 1/2"	1 1/4"x1'-6"x2'-3 5/8"	1"x1'-6"x2'-6 5/8"	
		2-1	7/8"x1'-6"x4'-7 1/2"	7/8"x8"x4'-7 1/2"	7/8"x1'-6"x5'-1 1/2"	7/8"x8"x5'-1 1/2"	3/8"x1'-7 1/2"x5'-3 1/2"	1 1/4"x1'-6"x2'-3 5/8"	1"x1'-6"x2'-6 5/8"	
	4B, 5B, 6B, 7B	2-2	7/8"x1'-6"x4'-7 1/2"	7/8"x8"x4'-7 1/2"	7/8"x1'-6"x5'-1 1/2"	7/8"x8"x5'-1 1/2"	3/8"x1'-7 1/2"x5'-3 1/2"	1 1/4"x1'-6"x2'-3 5/8"	1"x1'-6"x2'-6 5/8"	
		2-1	7/8"x1'-6"x5'-1 1/2"	7/8"x8"x5'-1 1/2"	7/8"x1'-6"x5'-7 1/2"	7/8"x8"x5'-7 1/2"	1/2"x1'-7 1/2"x5'-3 1/2"	1 1/4"x1'-6"x2'-6 5/8"	1"x1'-6"x2'-9 5/8"	
9B	2-2	7/8"x1'-6"x4'-7 1/2"	7/8"x8"x4'-7 1/2"	7/8"x1'-6"x5'-1 1/2"	7/8"x8"x5'-1 1/2"	1/2"x1'-7 1/2"x5'-3 1/2"	1 1/4"x1'-6"x2'-3 5/8"	1"x1'-6"x2'-6 5/8"		
	2-1	7/8"x1'-6"x5'-1 1/2"	7/8"x8"x5'-1 1/2"	7/8"x1'-6"x5'-7 1/2"	7/8"x8"x5'-7 1/2"	1/2"x1'-7 1/2"x5'-3 1/2"	1 1/4"x1'-6"x2'-6 5/8"	1"x1'-6"x2'-9 5/8"		
III	1, 2, 3	3-1	5/8"x1'-6"x3'-7 1/2"	5/8"x8"x3'-7 1/2"	7/8"x1'-10"x5'-7 1/2"	7/8"x10"x5'-7 1/2"	3/8"x1'-7 1/2"x5'-6 1/2"	1"x1'-6"x1'-9 5/8"	1/2"x1'-10"x2'-9 5/8"	
		3-2	5/8"x1'-6"x3'-7 1/2"	5/8"x8"x3'-7 1/2"	7/8"x1'-6"x4'-7 1/2"	7/8"x8"x4'-7 1/2"	3/8"x1'-7 1/2"x5'-6 1/2"	1"x1'-6"x1'-9 5/8"	1/2"x1'-6"x2'-3 5/8"	
	4, 5, 6	3-1	5/8"x1'-6"x3'-7 1/2"	5/8"x8"x3'-7 1/2"	5/8"x1'-6"x3'-7 1/2"	5/8"x8"x3'-7 1/2"	3/8"x1'-7 1/2"x5'-6 1/2"	1"x1'-6"x1'-9 5/8"	1"x1'-6"x1'-9 5/8"	
		3-2	5/8"x1'-6"x3'-7 1/2"	5/8"x8"x3'-7 1/2"	5/8"x1'-6"x3'-7 1/2"	5/8"x8"x3'-7 1/2"	3/8"x1'-7 1/2"x5'-6 1/2"	1"x1'-6"x1'-9 5/8"	1"x1'-6"x1'-9 5/8"	
	IV	1, 2, 3	4-1	7/8"x1'-8"x5'-7 1/2"	7/8"x9"x5'-7 1/2"	7/8"x1'-8"x5'-7 1/2"	7/8"x9"x5'-7 1/2"	3/8"x1'-7 1/2"x7'-0 1/2"	1"x1'-8"x2'-9 5/8"	1"x1'-8"x2'-9 5/8"
			4-2	7/8"x1'-8"x5'-7 1/2"	7/8"x9"x5'-7 1/2"	7/8"x1'-8"x5'-7 1/2"	7/8"x9"x5'-7 1/2"	3/8"x1'-7 1/2"x7'-0 1/2"	1"x1'-8"x2'-9 5/8"	1"x1'-8"x2'-9 5/8"
4, 5, 6	4-1	5/8"x1'-6"x4'-1 1/2"	5/8"x8"x4'-1 1/2"	5/8"x1'-6"x4'-1 1/2"	5/8"x8"x4'-1 1/2"	3/8"x1'-7 1/2"x7'-0 1/2"	1"x1'-6"x2'-0 5/8"	1"x1'-6"x2'-0 5/8"		
	4-2	5/8"x1'-6"x4'-1 1/2"	5/8"x8"x4'-1 1/2"	5/8"x1'-6"x4'-1 1/2"	5/8"x8"x4'-1 1/2"	3/8"x1'-7 1/2"x7'-0 1/2"	1"x1'-6"x2'-0 5/8"	1"x1'-6"x2'-0 5/8"		
V	1, 2, 3	5-1	7/8"x1'-6"x3'-7 1/2"	7/8"x8"x3'-7 1/2"	7/8"x1'-6"x4'-7 1/2"	7/8"x8"x4'-7 1/2"	1/2"x1'-7 1/2"x4'-9 1/2"	1"x1'-6"x1'-9 5/8"	1/2"x1'-6"x2'-3 5/8"	
		5-2	7/8"x1'-6"x3'-7 1/2"	7/8"x8"x3'-7 1/2"	7/8"x1'-10"x4'-7 1/2"	7/8"x10"x4'-7 1/2"	1/2"x1'-7 1/2"x4'-9 1/2"	1"x1'-6"x1'-9 5/8"	1"x1'-10"x2'-3 5/8"	
	4, 5, 6	5-1	5/8"x1'-6"x3'-7 1/2"	5/8"x8"x3'-7 1/2"	5/8"x1'-6"x3'-7 1/2"	5/8"x8"x3'-7 1/2"	1/2"x1'-7 1/2"x4'-9 1/2"	1"x1'-6"x1'-9 5/8"	1"x1'-6"x1'-9 5/8"	
		5-2	5/8"x1'-6"x3'-7 1/2"	5/8"x8"x3'-7 1/2"	5/8"x1'-6"x3'-7 1/2"	5/8"x8"x3'-7 1/2"	1/2"x1'-7 1/2"x4'-9 1/2"	1"x1'-6"x1'-9 5/8"	1"x1'-6"x1'-9 5/8"	
	VI	1, 2, 3, 4, 5, 6	6-1	1/2"x1'-4"x2'-7 1/2"	1/2"x7"x2'-7 1/2"	1/2"x1'-4"x2'-7 1/2"	1/2"x7"x2'-7 1/2"	3/8"x1'-7 1/2"x3'-9"	3/4"x1'-4"x1'-3 5/8"	3/4"x1'-4"x1'-3 5/8"
			6-2	1/2"x1'-4"x2'-7 1/2"	1/2"x7"x2'-7 1/2"	1/2"x1'-4"x2'-7 1/2"	1/2"x7"x2'-7 1/2"	3/8"x1'-7 1/2"x3'-9"	3/4"x1'-4"x1'-3 5/8"	3/4"x1'-4"x1'-3 5/8"
6-3			1/2"x1'-4"x2'-7 1/2"	1/2"x7"x2'-7 1/2"	1/2"x1'-4"x2'-7 1/2"	1/2"x7"x2'-7 1/2"	3/8"x1'-7 1/2"x3'-9"	3/4"x1'-4"x1'-3 5/8"	3/4"x1'-4"x1'-3 5/8"	
6-4			1/2"x1'-4"x2'-7 1/2"	1/2"x7"x2'-7 1/2"	1/2"x1'-4"x2'-7 1/2"	1/2"x7"x2'-7 1/2"	3/8"x1'-7 1/2"x3'-9"	3/4"x1'-4"x1'-3 5/8"	3/4"x1'-4"x1'-3 5/8"	

0161705-60W2B-5099-FrameDetail.dgn



USER NAME = floresg
 DESIGNED - DD
 CHECKED - ATB
 PLOT SCALE = N.T.S.
 DRAWN - MRK
 PLOT DATE = 5/7/2014
 CHECKED - DD

DESIGNED - DD
 CHECKED - ATB
 DRAWN - MRK
 CHECKED - DD

REVISED
 REVISED
 REVISED
 REVISED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

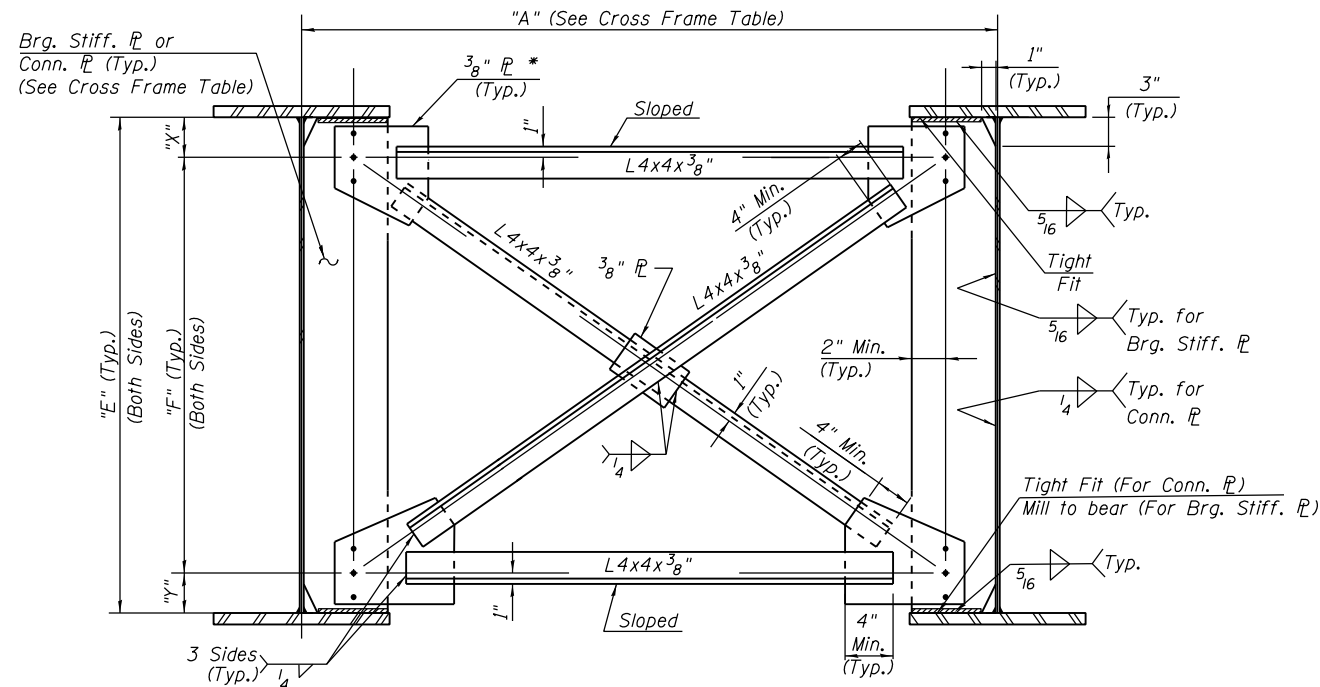
GIRDER SPLICE DETAILS
 STRUCTURE NO. 016-1705

SHEET NO. S-99 OF S-165 SHEETS

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	415
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				

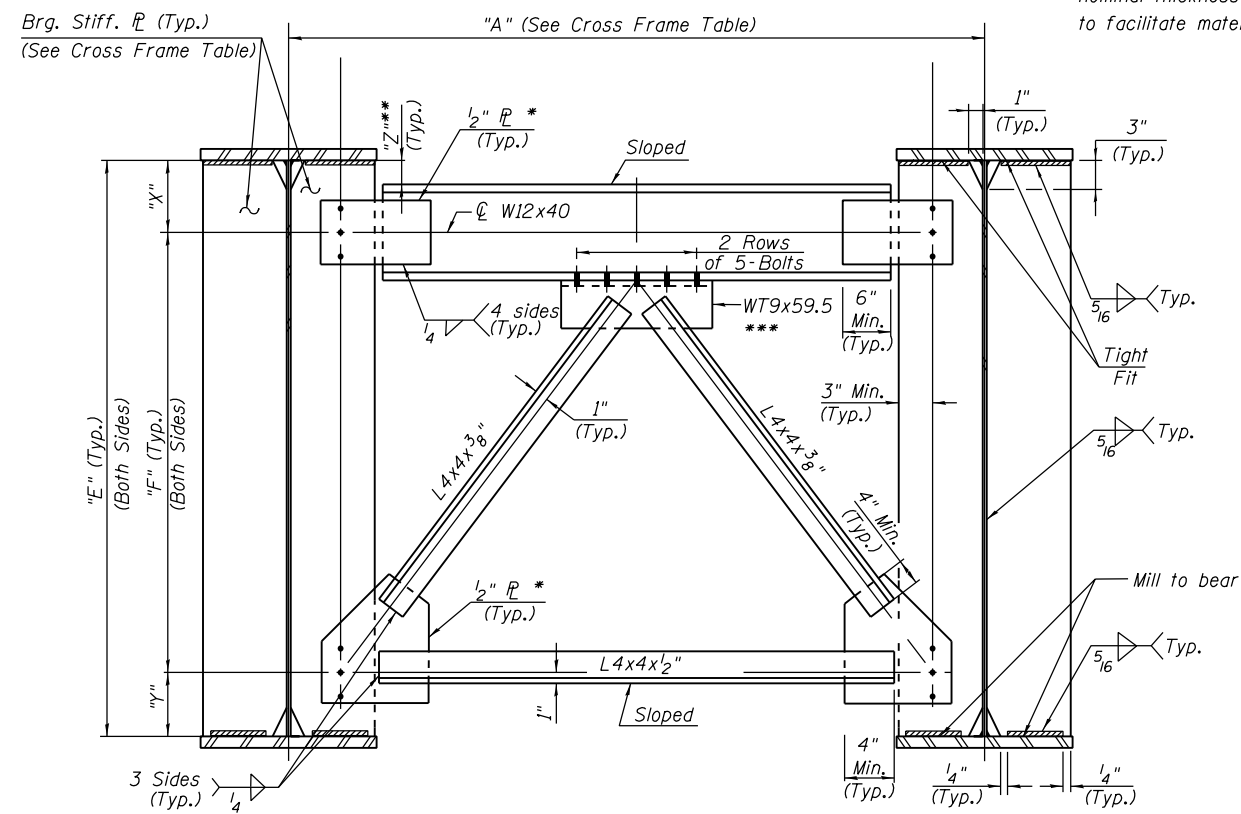
CROSS FRAME TABLE

Name	Type	Quantity	"A"	"E"	"F"	"X"	"Y"	"Z"	Connection \bar{R} or Brg. \bar{R}
CF101	2	10	7'- 0"	5'- 10"	3'- 11 3/4"	1'- 4 1/4"	6"	10 1/4"	1" x 8 1/2"
CF102	1	5	7'- 0"	5'- 10"	4'- 10"	6"	6"	---	1" x 10 1/2"
CF103	1	80	7'- 0"	5'- 10"	4'- 10"	6"	6"	---	0 5/8" x 8 1/2"
CF201	2	3	9'- 0"	5'- 10"	3'- 11 3/4"	1'- 4 1/4"	6"	10 1/4"	1" x 8 1/2"
CF202	2	1	6'- 0"	5'- 10"	3'- 11 3/4"	1'- 4 1/4"	6"	10 1/4"	1" x 8 1/2"
CF204	2	1	7'- 11 1/8"	5'- 10"	3'- 11 3/4"	1'- 4 1/4"	6"	10 1/4"	1" x 8 1/2"
CF205	2	1	7'- 0 3/16"	5'- 10"	3'- 11 3/4"	1'- 4 1/4"	6"	10 1/4"	1" x 8 1/2"
CF206	2	5	9'- 0 3/16"	5'- 10"	3'- 11 3/4"	1'- 4 1/4"	6"	10 1/4"	1" x 8 1/2"
CF207	2	1	9'- 10 9/16"	5'- 10"	3'- 11 3/4"	1'- 4 1/4"	6"	10 1/4"	1" x 8 1/2"
CF208	1	55	9'- 0"	5'- 10"	4'- 10"	6"	6"	---	0 5/8" x 8 1/2"
CF209	1	1	6'- 7 1/2"	5'- 10"	4'- 10"	6"	6"	---	0 5/8" x 8 1/2"
CF210	1	1	7'- 2 5/8"	5'- 10"	4'- 10"	6"	6"	---	0 5/8" x 8 1/2"
CF211	1	1	7'- 9 3/4"	5'- 10"	4'- 10"	6"	6"	---	0 5/8" x 8 1/2"
CF212	1	1	8'- 4 7/8"	5'- 10"	4'- 10"	6"	6"	---	0 5/8" x 8 1/2"
CF213	1	9	7'- 0"	5'- 10"	4'- 10"	6"	6"	---	0 5/8" x 8 1/2"
CF215	1	1	3'- 5 1/4"	5'- 10"	4'- 10"	6"	6"	---	1" x 11 1/2"
CF216	1	1	3'- 11 15/16"	5'- 10"	4'- 10"	6"	6"	---	0 5/8" x 8 1/2"
CF217	1	1	4'- 6 9/16"	5'- 10"	4'- 10"	6"	6"	---	0 5/8" x 8 1/2"
CF218	1	1	5'- 1 1/4"	5'- 10"	4'- 10"	6"	6"	---	0 5/8" x 8 1/2"
CF219	1	1	5'- 7 7/8"	5'- 10"	4'- 10"	6"	6"	---	0 5/8" x 8 1/2"
CF220	1	1	6'- 2 9/16"	5'- 10"	4'- 10"	6"	6"	---	0 5/8" x 8 1/2"
CF221	1	1	6'- 9 3/16"	5'- 10"	4'- 10"	6"	6"	---	0 5/8" x 8 1/2"
CF222	1	1	7'- 3 7/8"	5'- 10"	4'- 10"	6"	6"	---	0 5/8" x 8 1/2"
CF223	1	1	4'- 4 3/16"	5'- 10"	4'- 10"	6"	6"	---	0 5/8" x 8 1/2"
CF224	1	1	6'- 0 1/16"	5'- 10"	4'- 10"	6"	6"	---	0 5/8" x 8 1/2"
CF225	1	1	7'- 9 3/16"	5'- 10"	4'- 10"	6"	6"	---	0 5/8" x 8 1/2"
CF226	1	1	9'- 5 1/16"	5'- 10"	4'- 10"	6"	6"	---	0 5/8" x 8 1/2"
CF227	1	1	3'- 6 3/4"	5'- 10"	4'- 10"	6"	6"	---	0 5/8" x 8 1/2"
CF228	1	1	4'- 11 5/16"	5'- 10"	4'- 10"	6"	6"	---	0 5/8" x 8 1/2"
CF229	1	1	6'- 3 7/8"	5'- 10"	4'- 10"	6"	6"	---	1" x 11 1/2"
CF230	1	1	7'- 11"	5'- 10"	4'- 10"	6"	6"	---	0 5/8" x 8 1/2"
CF231	1	1	9'- 6 3/16"	5'- 10"	4'- 10"	6"	6"	---	0 5/8" x 8 1/2"
CF232	1	1	3'- 8 1/2"	5'- 10"	4'- 10"	6"	6"	---	0 5/8" x 8 1/2"
CF233	1	1	5'- 3 1/16"	5'- 10"	4'- 10"	6"	6"	---	0 5/8" x 8 1/2"
CF234	1	1	6'- 10 13/16"	5'- 10"	4'- 10"	6"	6"	---	0 5/8" x 8 1/2"
CF235	1	1	8'- 6"	5'- 10"	4'- 10"	6"	6"	---	0 5/8" x 8 1/2"
CF236	1	4	9'- 0"	5'- 10"	4'- 10"	6"	6"	---	1" x 11 1/2"
CF237	1	1	7'- 0"	5'- 10"	4'- 10"	6"	6"	---	1" x 11 1/2"



INTERIOR CROSS FRAME - Type 1
(179 Required)

- * Bend \bar{R} if required.
- ** Contractor to coordinate with Modular Joint Manufacturer.
- *** Alternate WT shapes utilizing 5/8" nominal thickness are permitted to facilitate material acquisition.



END CROSS FRAME - Type 2
(22 Required)

Notes:

1. See Sheets S-73 & S-77 for location of girder cross frames.
2. AASHTO M270 Grade 50 steel shall be used for all cross frames, connection plates, and bearing stiffeners, unless otherwise noted.
3. Intermediate transverse stiffeners shall use the same size clips & fillet welds as connection plates. Likewise, jacking stiffeners shall use the same size clips & fillet welds as the bearing stiffeners.
4. Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts. Bolts 3/4 in. ϕ , holes 15/16 in. ϕ , unless otherwise noted.
5. Two hardened washers required for each set of oversized holes.
6. Bolt spacing shall be 3" min. & edge distances shall be 2" min.
7. All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
8. For Cross Frames CF203 & CF214, see sheet S-77 for details.

0161705-60W28-S100-XFrame.dgn



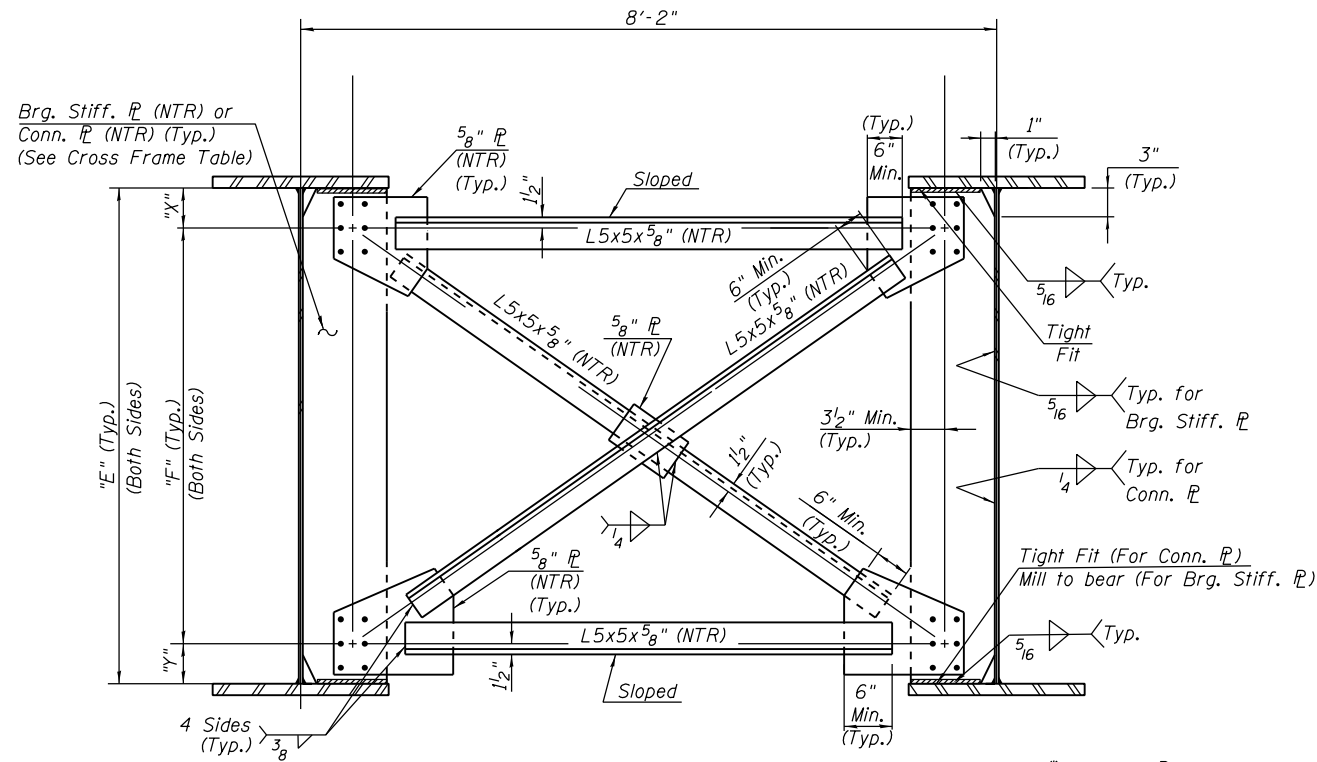
USER NAME = floresg	DESIGNED - DD	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 5/7/2014	DRAWN - DD	REVISED
	CHECKED - ATB	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**CROSS FRAME DETAILS I
STRUCTURE NO. 016-1705**

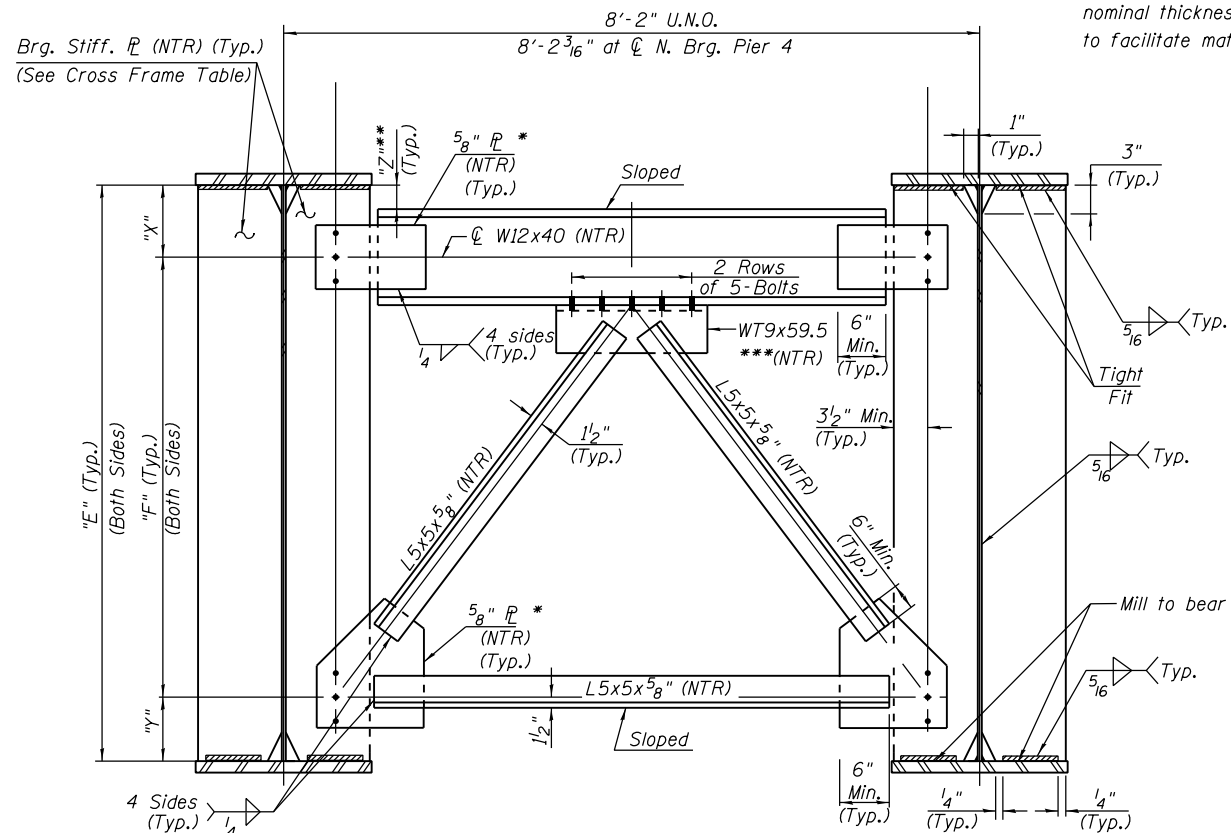
SHEET NO. S-100 OF S-165 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-01OR	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 416
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	



INTERIOR CROSS FRAME - Type 3
(270 Required)

- * Bend P if required.
- ** Contractor to coordinate with Modular Joint Manufacturer.
- *** Alternate WT shapes utilizing 5/8" nominal thickness are permitted to facilitate material acquisition.



END CROSS FRAME - Type 4
(30 Required)

CROSS FRAME TABLE

Name	Type	Quantity	"E"	"F"	"X"	"Y"	"Z"	Connection P or Brg. P
CF301	4	10	5'- 10"	3'- 11 1/2"	1'- 4 1/2"	6"	10 1/2"	1" x 8 1/2"
CF302	3	5	5'- 10"	4'- 10"	6"	6"	---	1" x 10 1/2"
CF303	3	75	5'- 10"	4'- 10"	6"	6"	---	0 5/8" x 8 1/2"
CF401	4	10	7'- 6"	5'- 8"	1'- 4"	6"	10"	1" x 8 1/2"
CF402	3	5	7'- 6"	6'- 6"	6"	6"	---	1 1/2" x 10 1/2"
CF403	3	110	7'- 6"	6'- 6"	6"	6"	---	0 5/8" x 8 1/2"
CF501	4	10	5'- 4"	3'- 5 1/2"	1'- 4 1/2"	6"	10 1/2"	1" x 8 1/2"
CF502	3	5	5'- 4"	4'- 4"	6"	6"	---	1" x 9 1/2"
CF503	3	70	5'- 4"	4'- 4"	6"	6"	---	0 5/8" x 8 1/2"

Notes:

1. See Sheets S-83, S-87 & S-91 for location of girder cross frames.
2. AASHTO M270 Grade 50 steel shall be used for all cross frames, connection plates, and bearing stiffeners, unless otherwise noted.
3. Intermediate transverse stiffeners shall use the same size clips & fillet welds as connection plates. Likewise, jacking stiffeners shall use the same size clips & fillet welds as the bearing stiffeners.
4. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
5. Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts. Bolts 7/8 in. ϕ , holes 15/16 in. ϕ , unless otherwise noted.
6. Bolt spacing shall be 3" min. & edge distances shall be 2" min.
7. Field reaming shall not exceed that permitted in Article 505.08(l) of the Standard Specifications. If any field reaming is required, two hardened washers are required for each oversized bolt hole.
8. Erection shall be accomplished by a steel erection contractor or sub-contractor certified as an Advanced Certified Steel Erector (ACSE) by the American Institute of Steel Construction (AISC). See special provision for "Erection of Complex Steel Structures".
9. All cross frames between girders shall be installed with erection pins and bolts in accordance with erection plan submitted to and approved by the Engineer. Individual cross frames at supports may be temporarily disconnected to install bearing anchor rods.
10. The Contractor shall either:
 - a. Ream cross frame connection holes during shop assembly, or
 - b. Provide detailing and fabrication controls acceptable to the Engineer which ensures accuracy such that field reaming will not exceed the amount permitted in Article 505.08(l) of the Standard Specifications.

0161705-60W28-5101-xFrame1.dgn



USER NAME = floresg
 PLOT SCALE = N.T.S.
 PLOT DATE = 5/7/2014

DESIGNED - DD
 CHECKED - ATB
 DRAWN - DD
 CHECKED - ATB

REVISED
 REVISED
 REVISED
 REVISED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

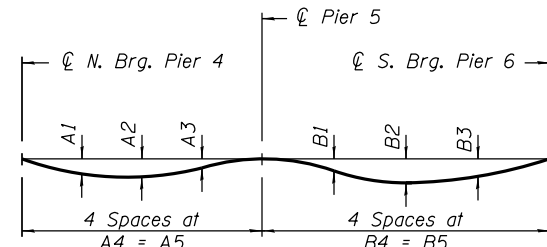
CROSS FRAME DETAILS II
 STRUCTURE NO. 016-1705

SHEET NO. S-101 OF S-165 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-01OR	COOK	747	417
CONTRACT NO. 60W28				
ILLINOIS FED. AID PROJECT				

Notes:

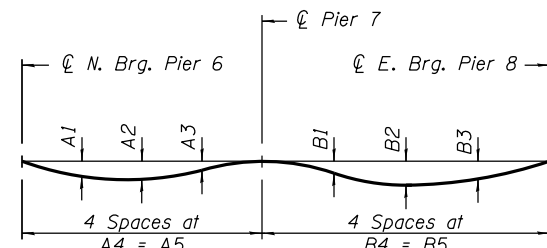
The calculated deflections of the primary girders under steel self-weight shall be used to detail the cross frame connections, and to erect the structural steel such that girders will be plumb within a tolerance of $\pm \frac{1}{8}$ in. per vertical foot throughout the length of their girder system when supporting their own weight.



DEAD LOAD DEFLECTION DIAGRAM - UNIT III

(Includes weight of structural steel only.)

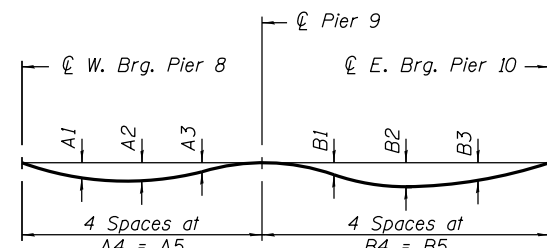
Girder No.	DEAD LOAD DEFLECTIONS - STEEL SELF WEIGHT ONLY - UNIT III									
	Span 5					Span 6				
	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5
1	1 5/8"	2"	1"	41'-1 3/8"	164'-5 5/8"	-0 1/8"	0 1/8"	0 1/4"	33'-8 7/8"	134'-11 5/8"
2	1 1/2"	1 3/4"	0 7/8"	40'-6 7/8"	162'-3 3/8"	0"	0 1/4"	0 1/4"	33'-3"	132'-11 3/4"
3	1 3/8"	1 1/2"	0 3/4"	40'-0 1/4"	160'-1 1/8"	0"	0 1/4"	0 1/4"	32'-9"	130'-11 7/8"
4	1 1/8"	1 3/8"	0 5/8"	39'-5 3/4"	157'-10 7/8"	0"	0 1/4"	0 1/4"	32'-3"	129'-0 1/8"
5	1"	1 1/4"	0 1/2"	38'-11 1/8"	155'-8 5/8"	0"	0 1/4"	0 1/4"	31'-9"	127'-0 1/4"
6	0 7/8"	1"	0 1/2"	38'-4 5/8"	153'-6 3/8"	0 1/8"	0 1/4"	0 1/4"	31'-3 1/8"	125'-0 3/8"



DEAD LOAD DEFLECTION DIAGRAM - UNIT IV

(Includes weight of structural steel only.)

Girder No.	DEAD LOAD DEFLECTIONS - STEEL SELF WEIGHT ONLY - UNIT IV									
	Span 7					Span 8				
	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5
1	1 5/8"	1 5/8"	0 5/8"	49'-0 5/8"	196'-2 3/8"	0 5/8"	1 5/8"	1 5/8"	49'-0 5/8"	196'-2 3/8"
2	1 1/2"	1 1/2"	0 5/8"	48'-4"	193'-3 7/8"	0 5/8"	1 1/2"	1 1/2"	48'-4"	193'-3 7/8"
3	1 3/8"	1 1/2"	0 5/8"	47'-7 3/8"	190'-5 1/4"	0 5/8"	1 1/2"	1 3/8"	47'-7 3/8"	190'-5 1/4"
4	1 1/4"	1 3/8"	0 1/2"	46'-10 5/8"	187'-6 3/4"	0 1/2"	1 3/8"	1 1/4"	46'-10 5/8"	187'-6 3/4"
5	1 1/8"	1 1/4"	0 1/2"	46'-2"	184'-8 1/8"	0 1/2"	1 1/4"	1 1/8"	46'-2"	184'-8 1/8"
6	1 1/8"	1 1/8"	0 1/2"	45'-5 3/8"	181'-9 5/8"	0 1/2"	1 1/4"	1 1/8"	45'-5 3/8"	181'-9 5/8"



DEAD LOAD DEFLECTION DIAGRAM - UNIT V

(Includes weight of structural steel only.)

Girder No.	DEAD LOAD DEFLECTIONS - STEEL SELF WEIGHT ONLY - UNIT V									
	Span 9					Span 10				
	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5
1	0 3/8"	0 3/8"	0 1/8"	31'-4 7/8"	125'-7 5/8"	0 3/8"	1"	0 7/8"	34'-1 1/8"	136'-4 3/8"
2	0 3/8"	0 3/8"	0 1/8"	30'-11 3/8"	123'-9 3/8"	0 3/8"	0 7/8"	0 3/4"	33'-9"	135'-0 1/4"
3	0 3/8"	0 3/8"	0 1/8"	30'-5 3/4"	121'-11 1/8"	0 3/8"	0 3/4"	0 5/8"	33'-5"	133'-8 1/8"
4	0 1/4"	0 3/8"	0 1/8"	30'-0 1/4"	120'-0 1/8"	0 1/4"	0 3/4"	0 5/8"	33'-1"	132'-3 7/8"
5	0 1/4"	0 3/8"	0 1/8"	29'-6 5/8"	118'-2 5/8"	0 1/4"	0 5/8"	0 1/2"	32'-8 7/8"	130'-11 3/4"
6	0 1/4"	0 1/4"	0 1/8"	29'-1 1/8"	116'-4 3/8"	0 1/4"	0 1/2"	0 1/2"	32'-4 7/8"	129'-7 5/8"

0161705-60W28-5102-xFrameIII.dgn



USER NAME = floresg
 PLOT SCALE = N.T.S.
 PLOT DATE = 5/7/2014

DESIGNED - VP
 CHECKED - ATB
 DRAWN - VP
 CHECKED - ATB

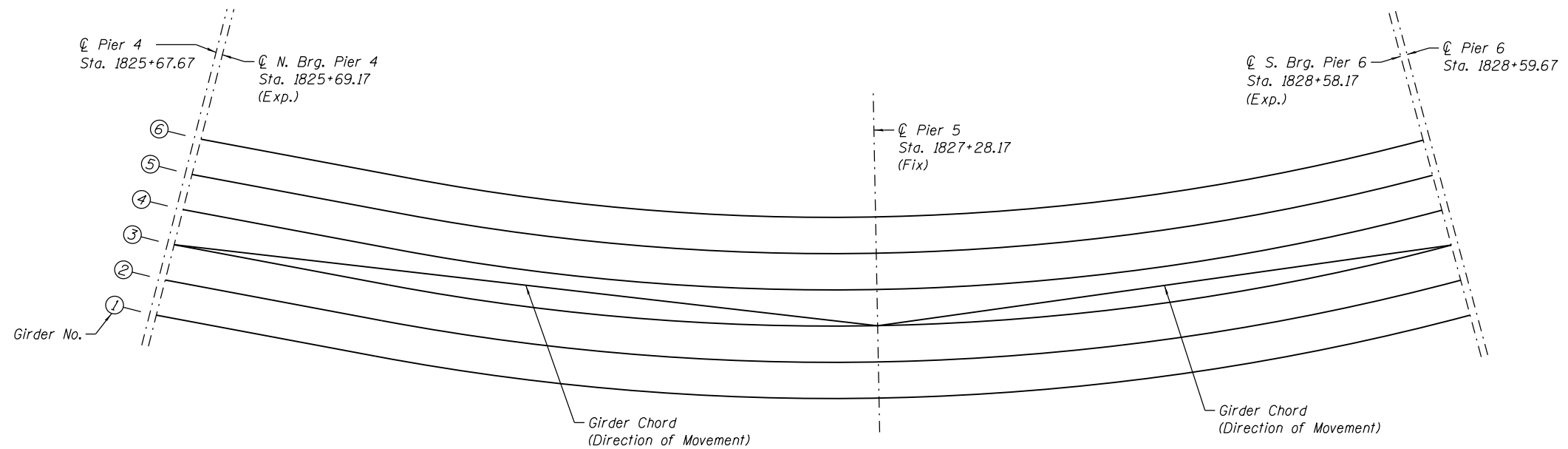
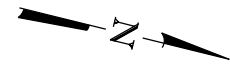
REVISED
 REVISED
 REVISED
 REVISED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

CROSS FRAME DETAILS III
 STRUCTURE NO. 016-1705

SHEET NO. S-102 OF S-165 SHEETS

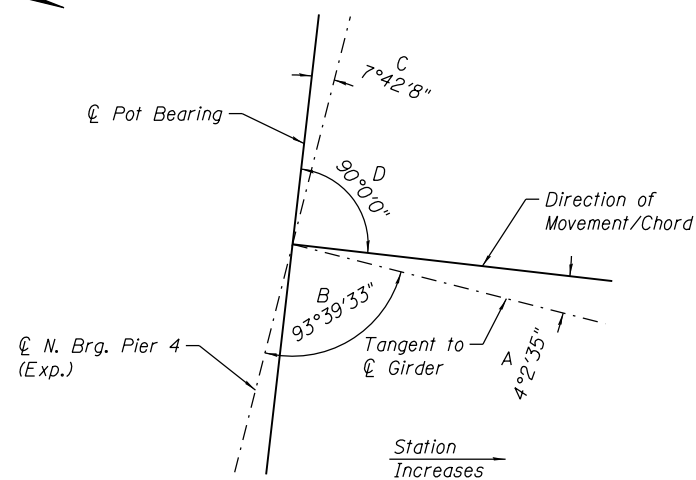
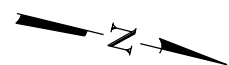
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	418
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				



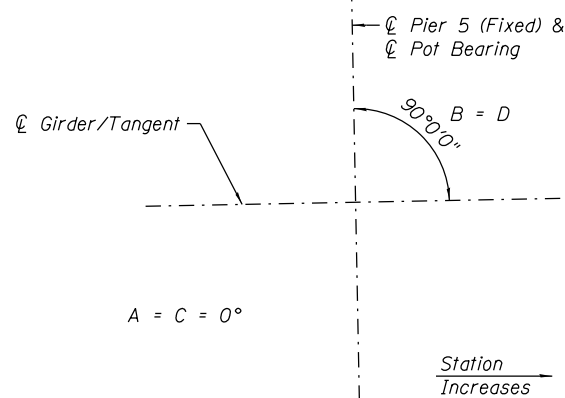
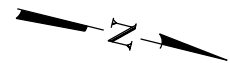
BEARING LAYOUT - UNIT 3

NOTES:

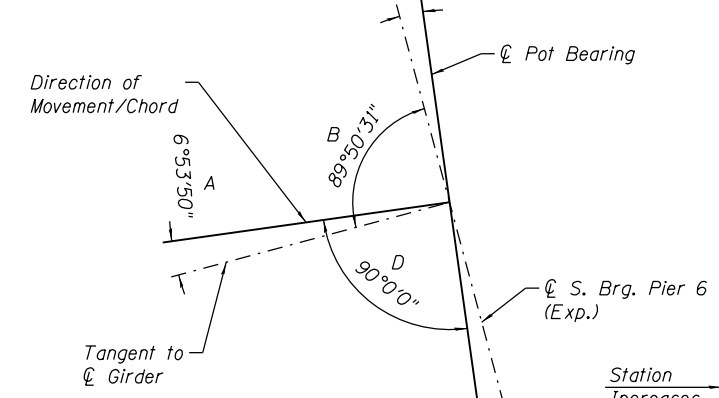
- A = Angle between Tangent to Girder and Direction of Movement.
- B = Angle between Tangent to Girder and \varnothing of Pier or Abutment.
- C = Setting angle between \varnothing of Bearing Base Plate and \varnothing Pier or Abutment.
- D = Set Bearing Base Plates at right angles to the Direction of Movement/Chord.



PIER 4



PIER 5



PIER 6

BEARING ORIENTATION - UNIT 3

0161705-60W28-5103-Bearing.dgn



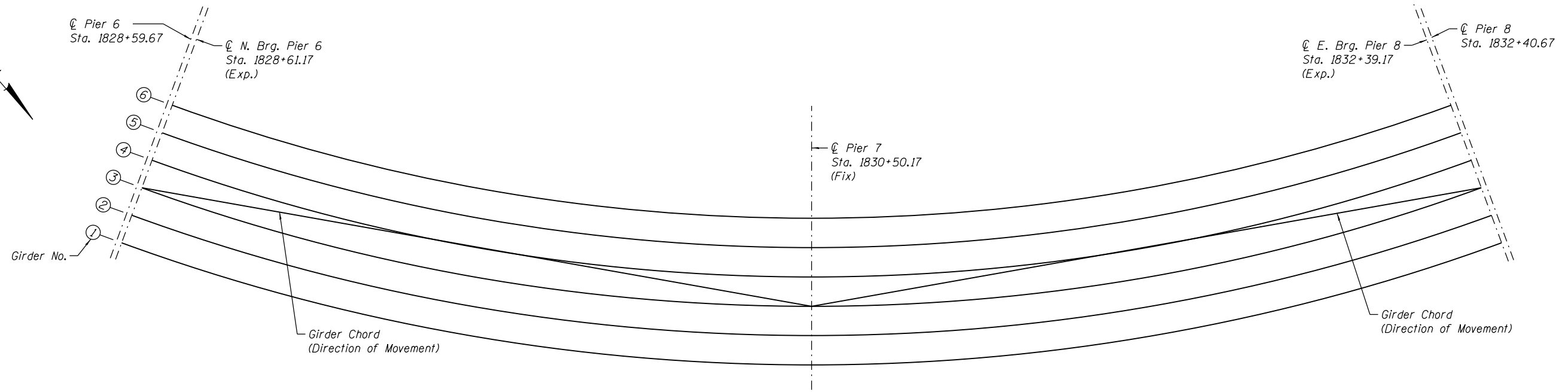
USER NAME = floresg	DESIGNED - ATB	REVISED
PLOT SCALE = N.T.S.	CHECKED - EJO	REVISED
PLOT DATE = 5/7/2014	DRAWN - MK	REVISED
	CHECKED - ATB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING LAYOUT AND ORIENTATION - UNIT III
STRUCTURE NO. 016-1705

SHEET NO. S-103 OF S-165 SHEETS

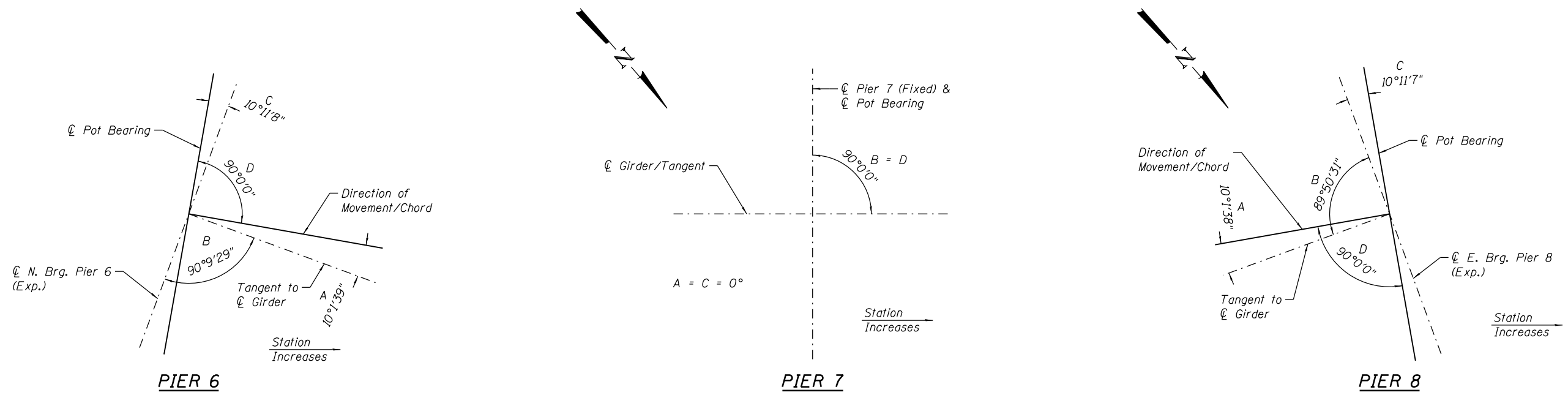
F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 419
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	



BEARING LAYOUT - UNIT 4

NOTES:

- A = Angle between Tangent to Girder and Direction of Movement.
- B = Angle between Tangent to Girder and \varnothing of Pier or Abutment.
- C = Setting angle between \varnothing of Bearing Base Plate and \varnothing Pier or Abutment.
- D = Set Bearing Base Plates at right angles to the Direction of Movement/Chord.



BEARING ORIENTATION - UNIT 4

0161705-60W28-5104-Bearing.dgn

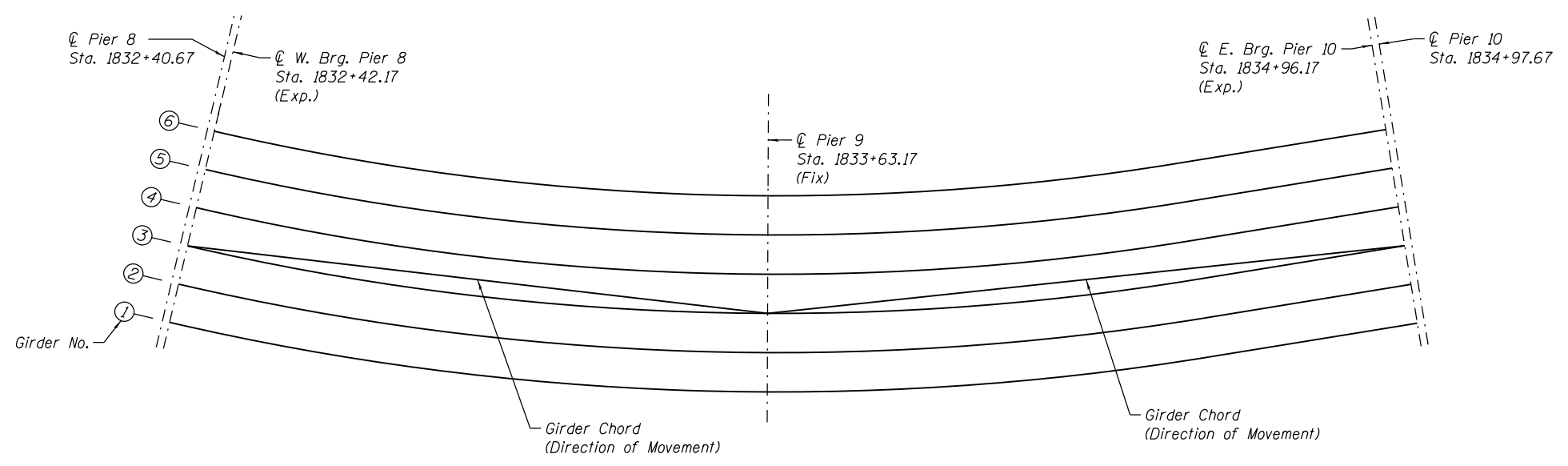


USER NAME = floresg	DESIGNED - ATB	REVISED
	CHECKED - EJO	REVISED
PLOT SCALE = N.T.S.	DRAWN - MK	REVISED
PLOT DATE = 5/7/2014	CHECKED - ATB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING LAYOUT AND ORIENTATION - UNIT IV
STRUCTURE NO. 016-1705
SHEET NO. S-104 OF S-165 SHEETS

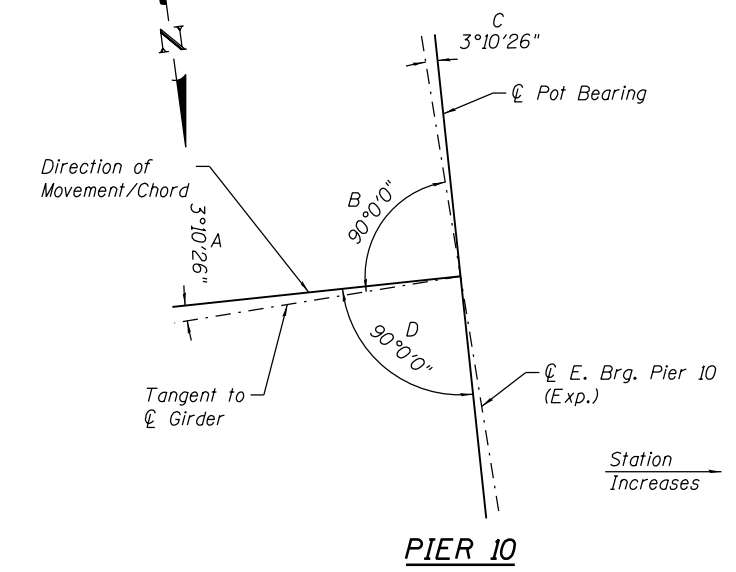
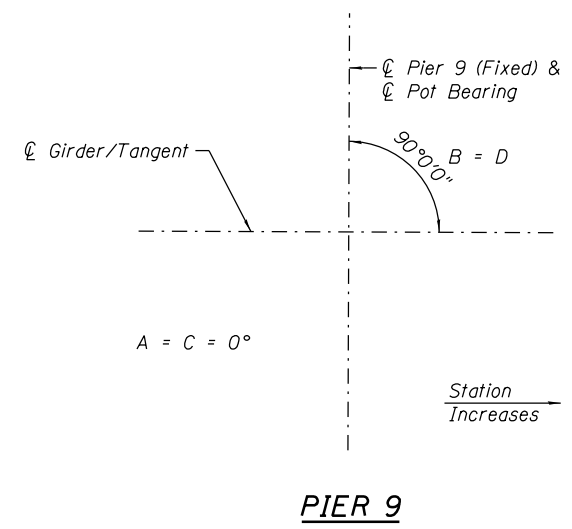
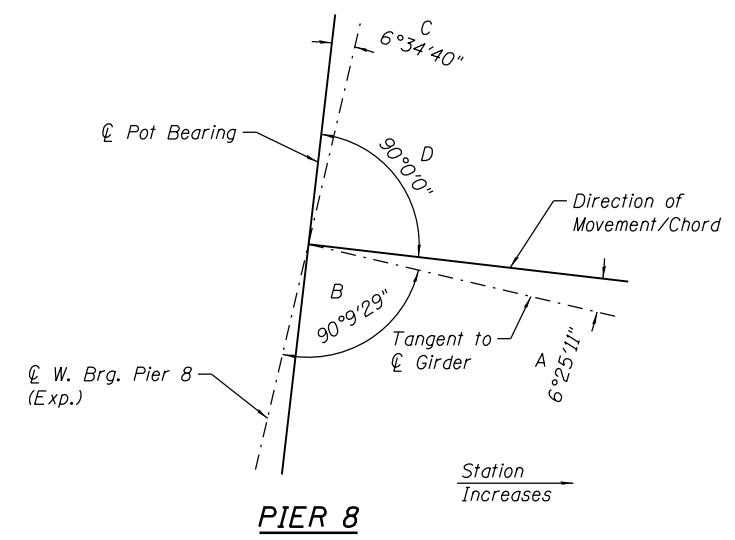
F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 420
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	



BEARING LAYOUT - UNIT 5

NOTES:

- A = Angle between Tangent to Girder and Direction of Movement.
- B = Angle between Tangent to Girder and \varnothing of Pier or Abutment.
- C = Setting angle between \varnothing of Bearing Base Plate and \varnothing Pier or Abutment.
- D = Set Bearing Base Plates at right angles to the Direction of Movement/Chord.



BEARING ORIENTATION - UNIT 5

0161705-60W28-5105-Bearing.dgn



USER NAME = floresg	DESIGNED - ATB	REVISED
PLOT SCALE = N.T.S.	CHECKED - EJO	REVISED
PLOT DATE = 5/7/2014	DRAWN - MK	REVISED
	CHECKED - ATB	REVISED

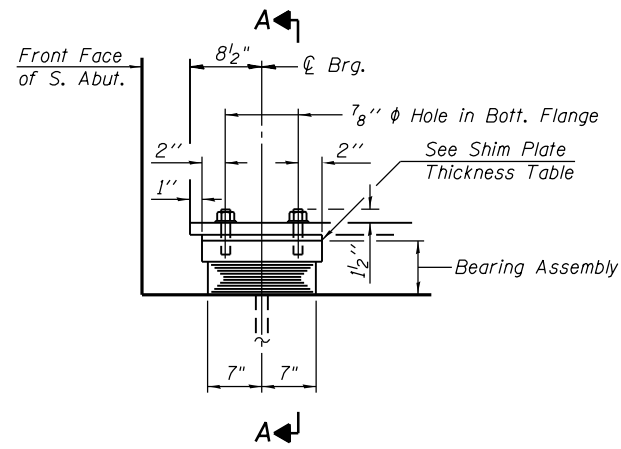
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING LAYOUT AND ORIENTATION - UNIT V
STRUCTURE NO. 016-1705

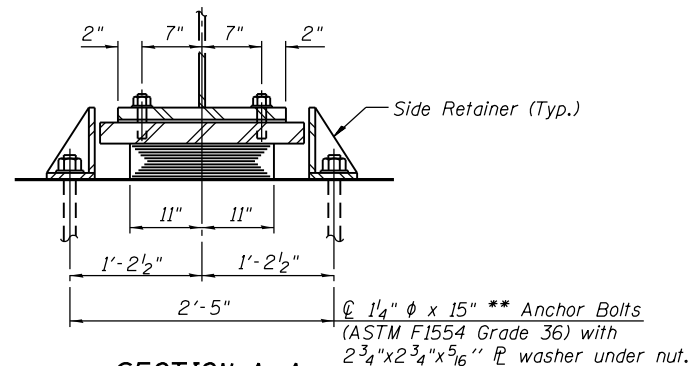
SHEET NO. S-105 OF S-165 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	421
CONTRACT NO. 60W28				

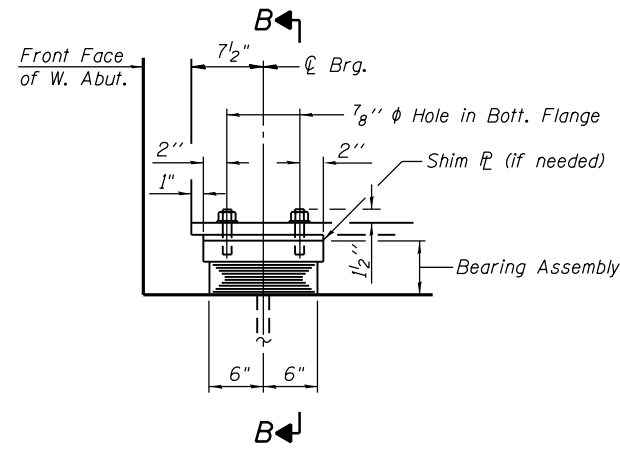
ILLINOIS FED. AID PROJECT



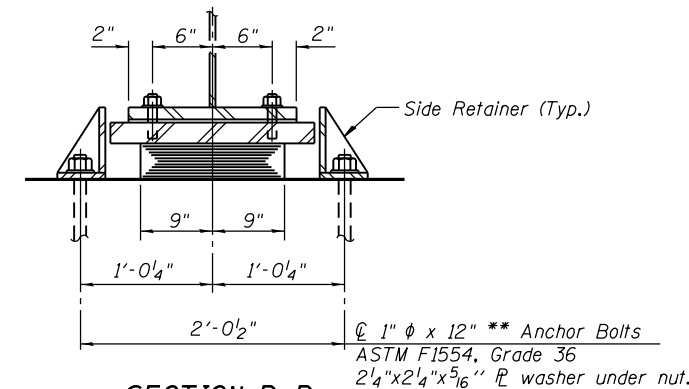
ELEVATION AT S. ABUT.
(Pier 2-S similar)



SECTION A-A



ELEVATION AT W. ABUT.

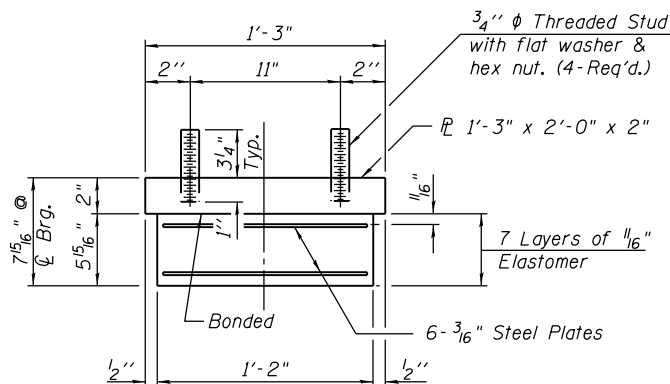


SECTION B-B

TYPE I ELASTOMERIC EXP. BRG.
(S. Abut. and Pier 2-S)

**Length shown is minimum required embedment length.

TYPE I ELASTOMERIC EXP. BRG.
(W. Abut.)

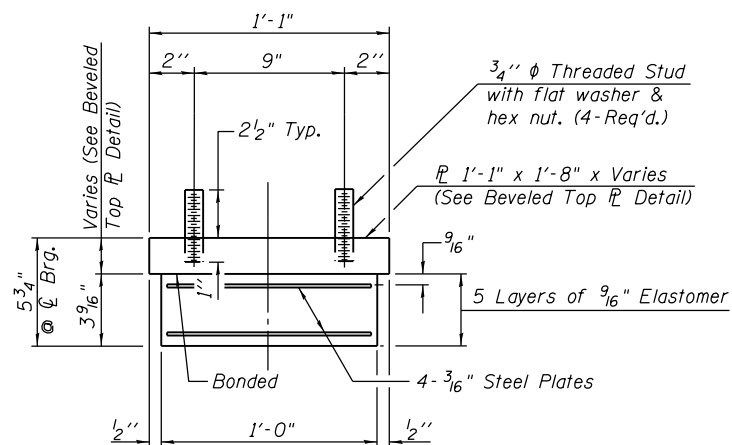


BEARING ASSEMBLY

Note:
Shim PL's shall not be placed under Bearing Assembly.

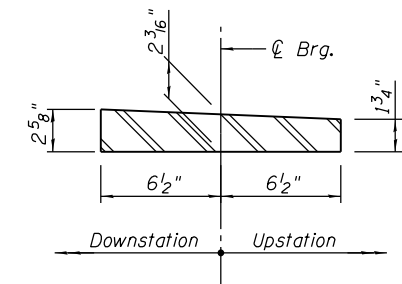
SHIM PLATE THICKNESS

Bearing Line 2-S, Girder 1	1/2"
Bearing Line 2-S, Girder 5	1/4"

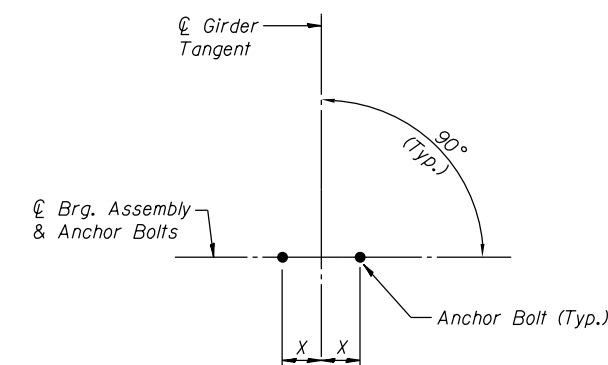


BEARING ASSEMBLY
(W. Abut.)

Note:
Shim PL's shall not be placed under Bearing Assembly.



BEVELED TOP PL DETAIL
(W. Abut.)



ANCHOR BOLT LAYOUT

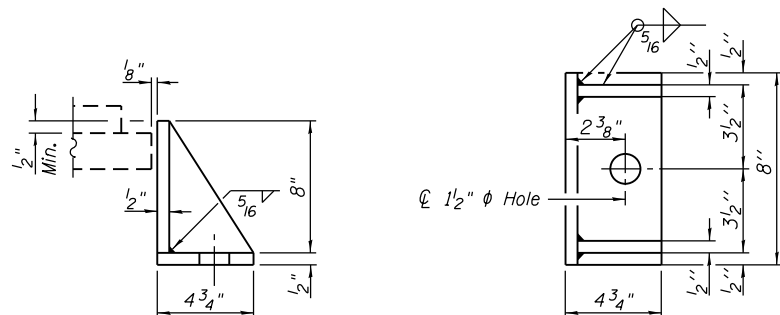
Location	X
S. Abut. & Pier 2-S	1'-2 1/4"
W. Abut. & Pier 10-W	11 7/8"
Pier 1	1'-4 3/8"
Pier 12	1'-1 3/4"

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	18
Anchor Bolts, 1"	Each	12
Anchor Bolts, 1 1/4"	Each	24

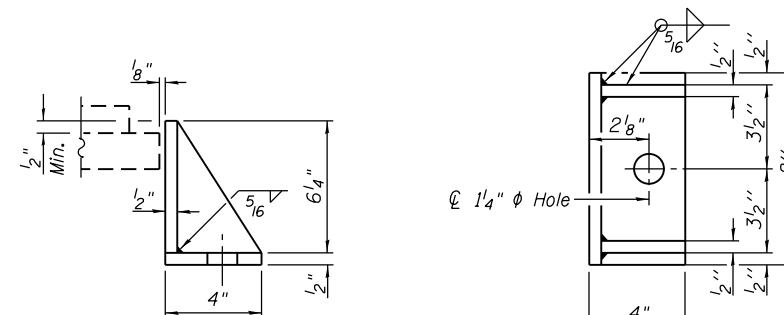
NOTES:

- Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
- Anchor bolts for side retainers may be cast in place or installed in holes drilled before or after members are in place.
- Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
- Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.
- The structural steel plates of the Bearing Assembly shall conform to the requirements of AASHTO M 270 Grade 50.
- Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
- All (embedded and separate) bearing plates, side retainers, anchor bolts, nuts, washers and pintles shall be galvanized according to AASHTO M111 or M232 as applicable.



SIDE RETAINER

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



SIDE RETAINER
(W. Abut.)

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



USER NAME = floresg	DESIGNED - ABT	REVISED
PLOT SCALE = N.T.S.	CHECKED - EJO	REVISED
PLOT DATE = 5/7/2014	DRAWN - MRK	REVISED
	CHECKED - ABT	REVISED

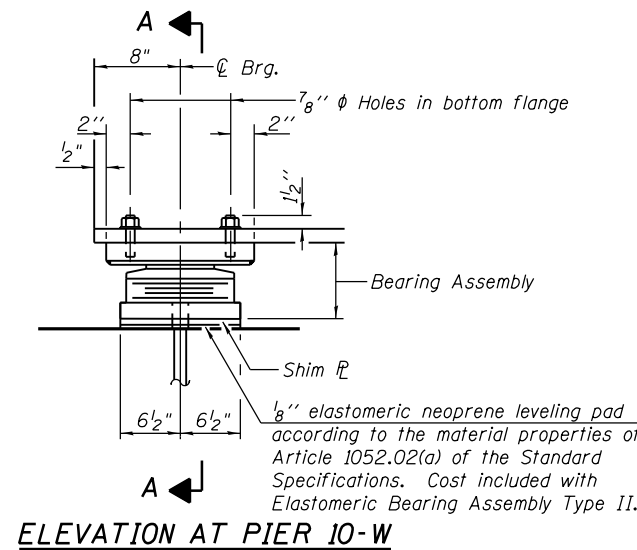
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ELASTOMERIC BEARING DETAILS I
STRUCTURE NO. 016-1705

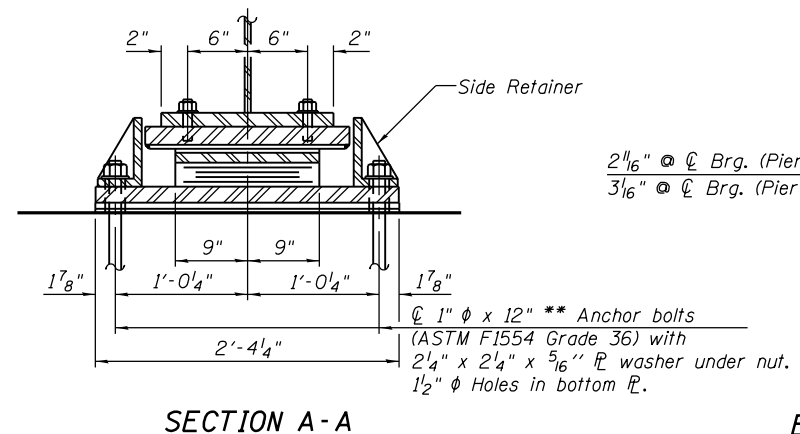
SHEET NO. S-106 OF S-165 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	422
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				

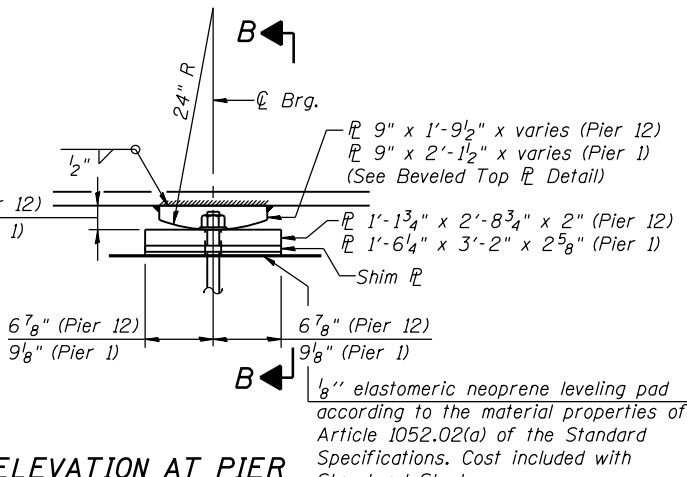
0161705-60W28-S106-Bearing.dgn



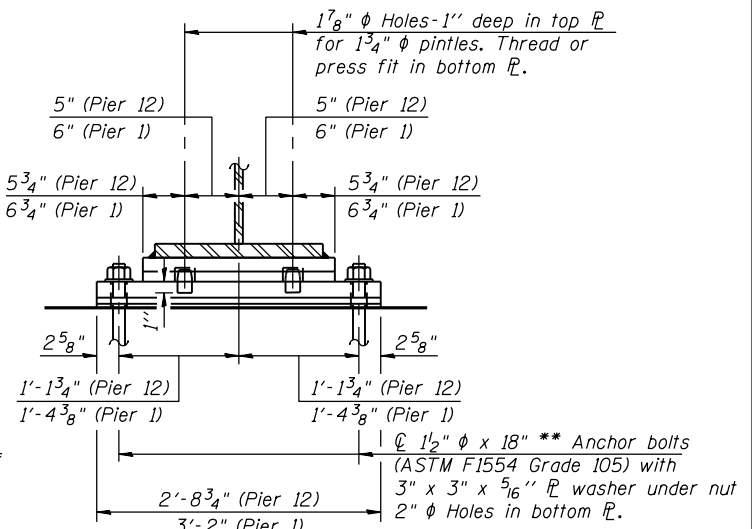
ELEVATION AT PIER 10-W



SECTION A-A



ELEVATION AT PIER



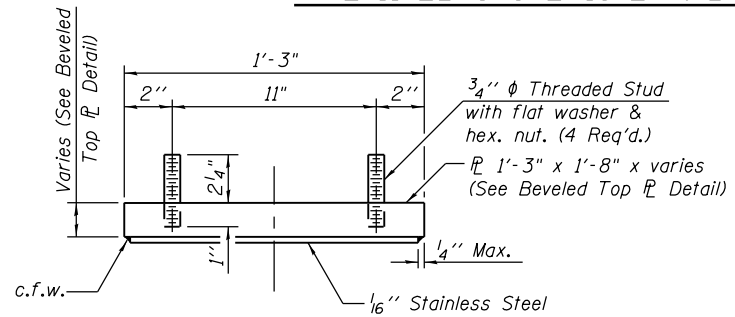
SECTION B-B

TYPE II ELASTOMERIC EXP. BRG. AT PIER 10-W

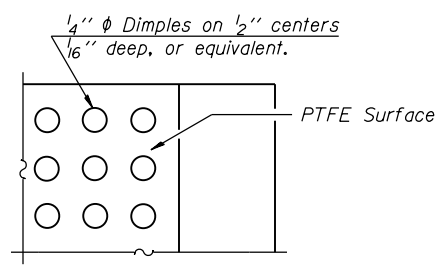
FIXED BEARING (Pier 1 and Pier 12)

NOTES:

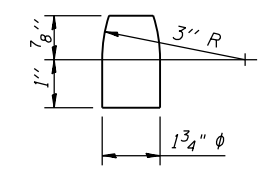
- Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
- Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.
- Anchor bolts for Type II bearings shall be placed in holes drilled in the concrete through holes in the bottom bearing plate after members are in place. Side retainers shall be placed after bolts are installed.
- Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
- Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type II.
- The 1/8" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.
- Bonding of 1/8" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.
- Fixed Bearing included in "Furnishing and Erecting Structural Steel."
- The structural steel for fixed bearing and elastomeric bearing assembly shall conform to the requirements of AASHTO M270 Grade 50.
- Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on earing details.
- All (embedded and separate) bearing plates, side retainers, anchor bolts, nuts, washers and pintles shall be galvanized according to AASHTO M111 or M232 as applicable.



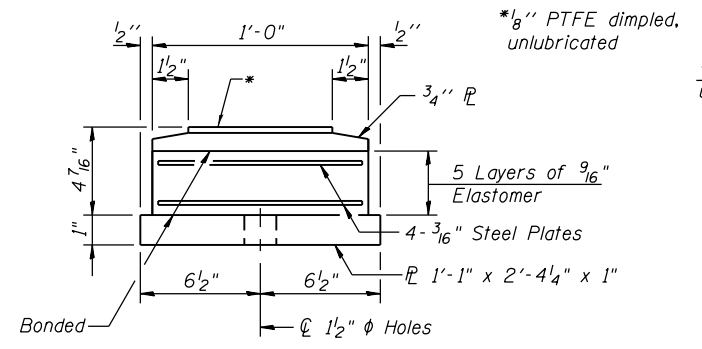
TOP BEARING ASSEMBLY



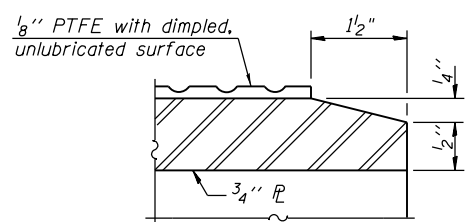
PLAN-PTFE SURFACE



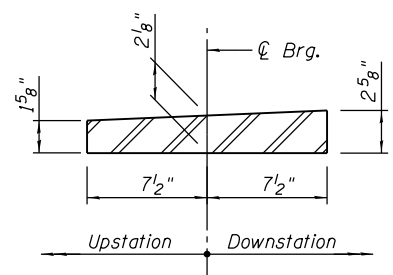
PINTLE



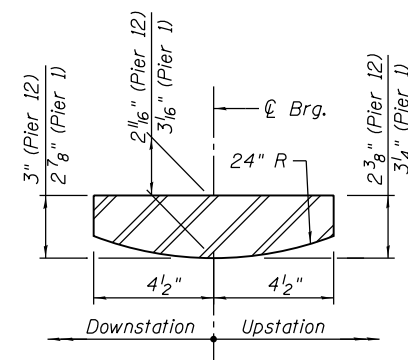
BOTTOM BEARING ASSEMBLY



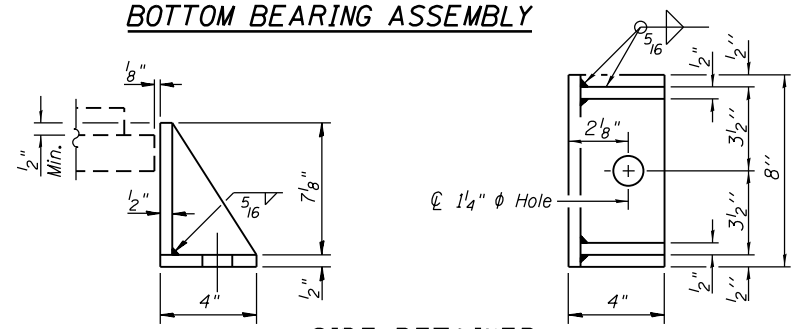
SECTION THRU PTFE



BEVELED TOP FLANGE DETAIL (Pier 10-W)

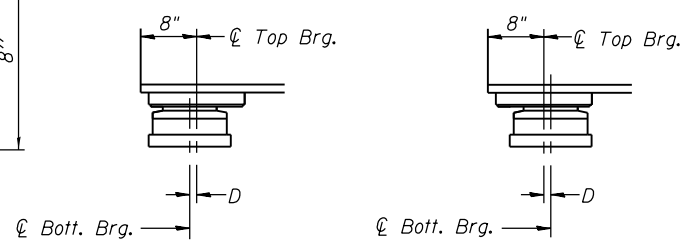


BEVELED TOP FLANGE DETAIL (Pier 1 and Pier 12)



SIDE RETAINER

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



SETTING ANCHOR BOLTS AT EXP. BRG.

BELOW 50°F. ABOVE 50°F. (Move bott. brg. away from fixed brg.) (Move bott. brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.

D=1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type II	Each	6
Anchor Bolts, 1" phi	Each	12
Anchor Bolts, 1 1/2" phi	Each	24

0161705-60W28-5107-Bearing.dgn



USER NAME = floresg
DESIGNED - ABT
CHECKED - EJO
PLOT SCALE = N.T.S.
DRAWN - MRK
PLOT DATE = 5/7/2014
CHECKED - ABT
REVISED

DESIGNED - ABT
CHECKED - EJO
DRAWN - MRK
CHECKED - ABT
REVISED

REVISED
REVISED
REVISED
REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

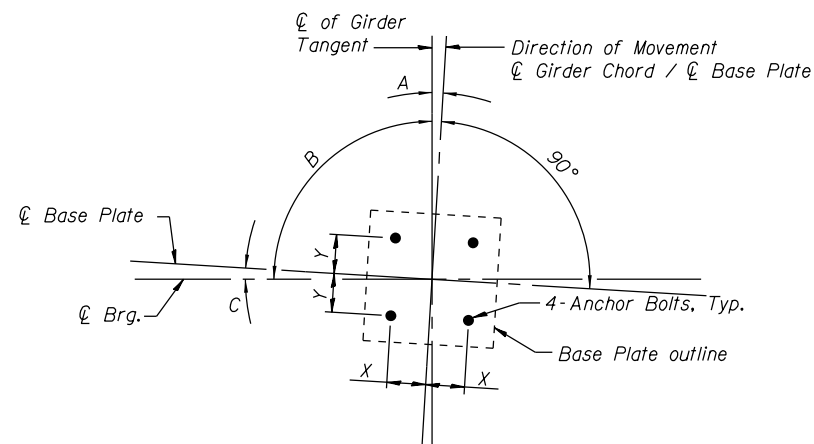
ELASTOMERIC BEARING DETAILS II
STRUCTURE NO. 016-1705

SHEET NO. S-107 OF S-165 SHEETS

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	423
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				

GUIDED EXPANSION BEARING DIMENSIONS TABLE

Brg. Location	Vertical Design Load (kips)	Lateral Design Load (kips)	Total Required Movement (inches)	Bottom Bearing Plate			Top Bearing Plate						Th1	Th2	L	D	Anchor Bolt Dia.	Anchor Bolt Specification Grade
				Tb	Lb	Wb	Tt1	Tt2	Lt	Wt	N	S						
Unit II, Pier 2-N	250	43	2 1/4"	1 1/2"	2'- 2"	2'- 2"	1 1/2"	2 3/8"	1'- 8"	1'- 8"	7"	5"	8 1/2"	9 3/8"	12"	1'- 1"	1"	F1554, Grade 36
Unit II, Pier 4-S	250	48	2 1/4"	1 1/2"	2'- 8"	2'- 2"	1 5/8"	2 5/8"	1'- 10"	1'- 8"	7"	5"	8 5/8"	9 5/8"	12"	1'- 1"	1"	F1554, Grade 36
Unit III, Pier 4-N	250	44	2"	1 1/2"	2'- 8"	2'- 2"	1 1/2"	2 1/8"	1'- 10"	1'- 8"	7"	5"	8 1/2"	9 1/8"	12"	1'- 1"	1"	F1554, Grade 36
Unit III, Pier 6-S	200	31	1 5/8"	1 1/2"	2'- 8"	2'- 1"	1 1/2"	2"	1'- 10"	1'- 7"	7"	5"	8"	8 1/2"	11"	12"	0 3/4"	F1554, Grade 36
Unit IV, Pier 6-N	300	50	2 3/8"	1 1/2"	2'- 10"	2'- 3"	1 5/8"	2 1/4"	2'- 0"	1'- 9"	8"	5"	9 1/8"	9 3/4"	1'- 1"	1'- 2 1/4"	1"	F1554, Grade 36
Unit IV, Pier 8-E	300	50	2 3/8"	1 1/2"	2'- 10"	2'- 3"	2 1/4"	1 5/8"	2'- 0"	1'- 9"	8"	5"	9 3/4"	9 1/8"	1'- 1"	1'- 2 1/4"	1"	F1554, Grade 36
Unit V, Pier 8-W	200	31	1 5/8"	1 1/2"	2'- 8"	2'- 1"	2"	1 1/2"	1'- 10"	1'- 7"	7"	5"	8 1/2"	8"	11"	12"	0 3/4"	F1554, Grade 36
Unit V, Pier 10-E	200	35	1 3/4"	1 1/2"	3'- 0"	2'- 1"	3"	1 1/2"	2'- 2"	1'- 7"	9"	5"	9 1/2"	8"	11"	12"	0 3/4"	F1554, Grade 36
Unit VI, Pier 11	400	71	1 5/8"	1 1/2"	2'- 10"	2'- 4"	3 1/2"	2"	2'- 0"	1'- 10"	8"	6"	11"	9 1/2"	1'- 2"	1'- 5 1/2"	1 1/4"	F1554, Grade 55



ANCHOR BOLT LOCATION DETAIL

Location	X	Y	A	B	C
Unit II, Pier 2-N	11"	11"	0°00'00"	90°00'00"	0°00'00"
Unit II, Pier 4-S	14"	11"	0°00'00"	86°20'27"	3°39'33"
Unit III, Pier 4-N	14"	11"	4°2'35"	93°39'33"	7°42'8"
Unit III, Pier 6-S	14"	10 1/2"	6°53'50"	89°50'31"	7°3'19"
Unit IV, Pier 6-N	15"	11 1/2"	10°1'39"	90°9'29"	10°11'8"
Unit IV, Pier 8-E	15"	11 1/2"	10°1'38"	89°50'31"	10°11'7"
Unit V, Pier 8-W	14"	10 1/2"	6°25'11"	90°9'29"	6°34'40"
Unit V, Pier 10-E	16"	10 1/2"	3°10'26"	90°00'00"	3°10'26"
Unit VI, Pier 11	15"	12"	0°00'00"	90°00'00"	0°00'00"

BILL OF MATERIAL

Item	Unit	Total
High Load Multi-Rotation Bearings, Guided Expansion 200K.	Each	18
High Load Multi-Rotation Bearings, Guided Expansion 250K.	Each	21
High Load Multi-Rotation Bearings, Guided Expansion 300K.	Each	12
High Load Multi-Rotation Bearings, Guided Expansion 400K.	Each	6
Anchor Bolts, 3/4"	Each	72
Anchor Bolts, 1"	Each	132
Anchor Bolts, 1/4"	Each	24

Notes:

- All HLMR bearings shall be designed to carry minimum Factored Ultimate (Strength) Design Rotation of 0.02 radians. See Special Provision.
- Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
- Work this sheet with sheet S-108.
- See Sheets S-103 thru S-105 for bearing layout & orientation.

0161705-60W28-5109-Bearing.dgn



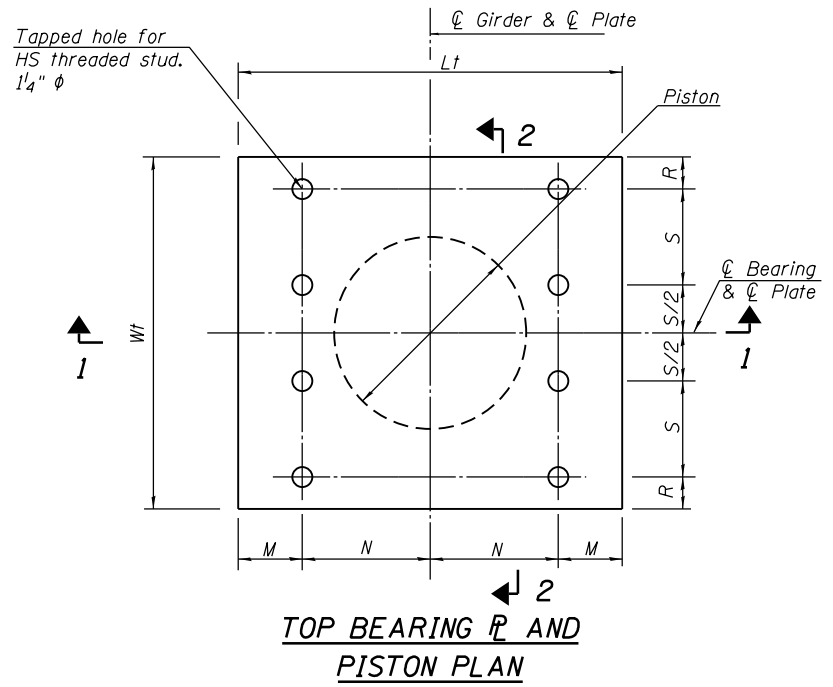
USER NAME = floresg	DESIGNED - ATB	REVISED
	CHECKED - EJO	REVISED
PLOT SCALE = N.T.S.	DRAWN - MRK	REVISED
PLOT DATE = 5/7/2014	CHECKED - ATB	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

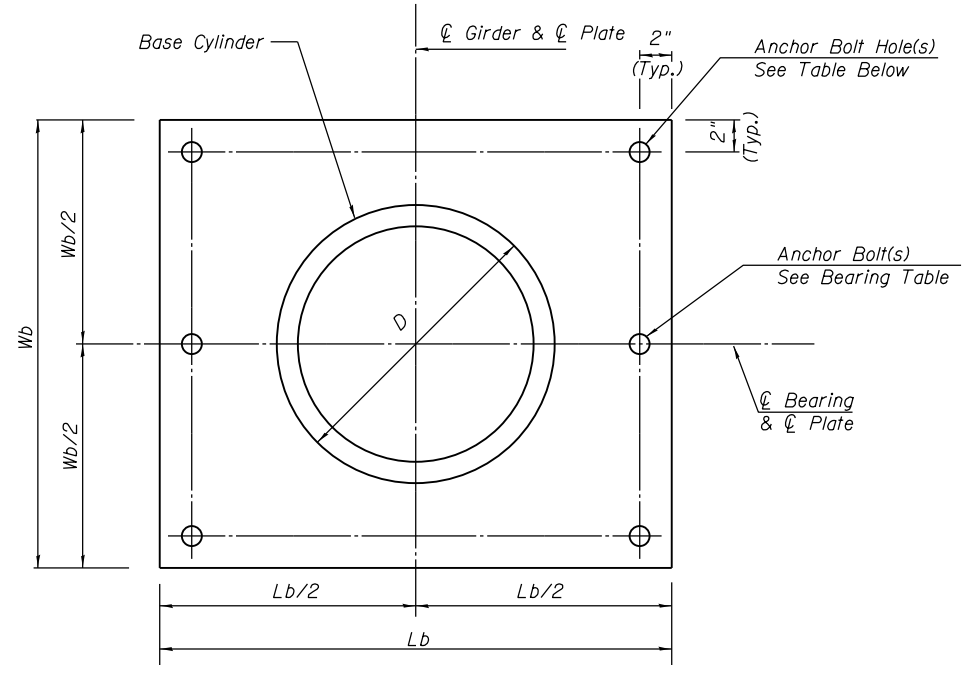
**EXPANSION POT BEARING DETAILS II
STRUCTURE NO. 016-1705**

SHEET NO. S-109 OF S-165 SHEETS

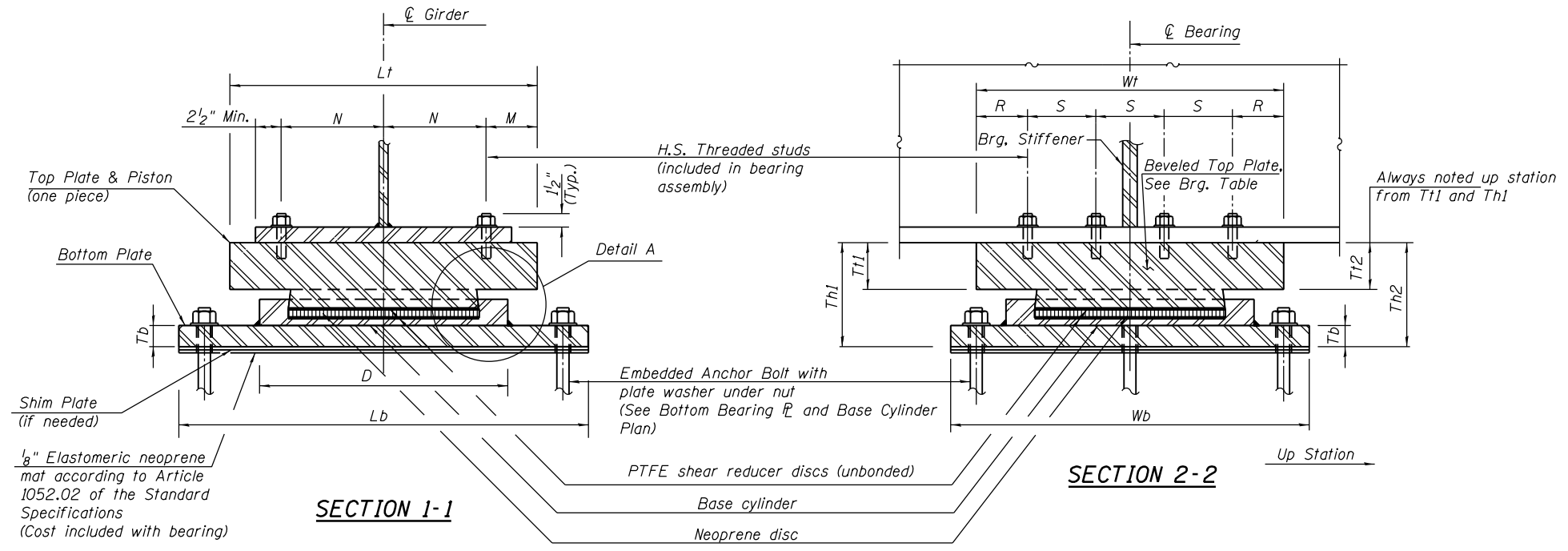
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	425
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				



TOP BEARING PLATE AND PISTON PLAN



BOTTOM BEARING PLATE AND BASE CYLINDER PLAN



SECTION 1-1

SECTION 2-2

1/8" Elastomeric neoprene mat according to Article 1052.02 of the Standard Specifications (Cost included with bearing)

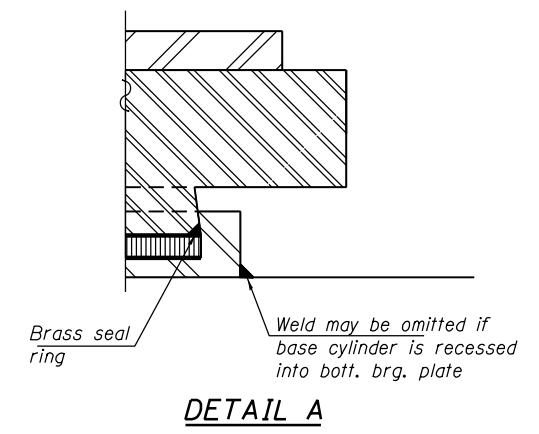
ANCHOR BOLT DETAILS

Bolt Dia. x Length**	Plate Washer
1" x 12"	2 1/4" x 2 1/4" x 5/16"
1 1/4" x 15"	2 3/4" x 2 3/4" x 5/16"

**Length shown is minimum required embedment length.

BASE PLATE HOLE TABLE

Anchor Bolt ϕ	Max. Hole ϕ
1 1/4"	1 3/4"
1"	1 1/2"



DETAIL A

NOTES:

- The Structural Steel for the top & bottom bearing plates shall be AASHTO M270 Grade 50.
- For anchor bolt type and details see Bearing Dimensions Table.
- Top & bottom plates, threaded studs, washers & shim plates are included in the cost of the Bearings.
- Anchor bolts for bearings shall be placed in holes drilled in the concrete through holes in the bottom bearing plate after members are in place.
- Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
- Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
- Work this sheet with sheet S-111.
- All (embedded and separate) bearing plates, anchor bolts, nuts, washers and pintles shall be galvanized according to AASHTO M111 or M232 as applicable.
- If base cylinder is recessed into the bottom bearing plate, the thickness of the bottom plate shall be Tb plus the depth of the recess.

0161705-60W28-5110-Bear-Ing.dgn



USER NAME = floresg	DESIGNED - ATB	REVISED
PLOT SCALE = N.T.S.	CHECKED - EJO	REVISED
PLOT DATE = 5/7/2014	DRAWN - MRK	REVISED
	CHECKED - ATB	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

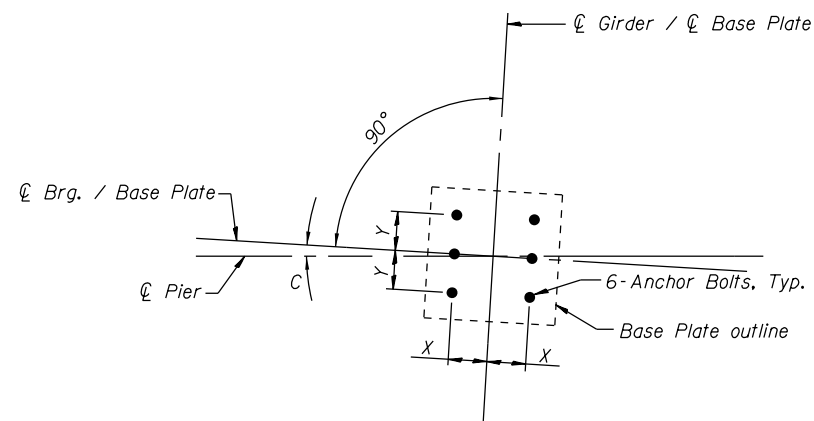
**FIXED POT BEARING DETAILS I
STRUCTURE NO. 016-1705**

SHEET NO. S-110 OF S-165 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	426
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				

FIXED BEARING DIMENSIONS TABLE

Brg. Location	Vertical Design Load (kips)	Lateral Design Load (kips)	Bottom Bearing Plate			Top Bearing Plate								Th1	Th2	D	Anchor Bolt Dia.	Anchor Bolt Specification Grade
			Tb	Lb	Wb	Tt1	Tt2	Lt	Wt	M	N	R	S					
Unit II, Pier 3	650	125	2"	3'- 2"	3'- 2"	2 1/2"	3 1/4"	2'- 4"	2'- 4"	4 1/2"	9 1/2"	3 1/2"	7"	12"	1'- 0 3/4"	1'- 8"	1 1/4"	F1554, Grade 55
Unit III, Pier 5	600	115	1 3/4"	3'- 2"	3'- 2"	2 3/8"	3"	2'- 4"	2'- 4"	4 1/2"	9 1/2"	3 1/2"	7"	11 5/8"	1'- 0 1/4"	1'- 8"	1 1/4"	F1554, Grade 55
Unit IV, Pier 7	850	164	1 3/4"	3'- 4"	3'- 4"	3"	3 1/2"	2'- 6"	2'- 6"	3 1/2"	11 1/2"	4 1/2"	7"	1'- 1 1/4"	1'- 1 3/4"	2'- 0"	1 1/4"	F1554, Grade 55
Unit V, Pier 9	500	99	1 3/4"	3'- 0"	3'- 0"	3 1/2"	2 1/4"	2'- 2"	2'- 2"	4 1/2"	8 1/2"	4"	6"	1'- 0 1/4"	11"	1'- 6"	1"	F1554, Grade 36



ANCHOR BOLT LOCATION DETAIL.

Location	X	Y	C
Unit II, Pier 3	17"	17"	0°00'00"
Unit III, Pier 5	17"	17"	0°00'00"
Unit IV, Pier 7	18"	18"	0°00'00"
Unit V, Pier 9	16"	16"	0°00'00"

BILL OF MATERIAL

Item	Unit	Total
High Load Multi-Rotation Bearings, Fixed 500K	Each	6
High Load Multi-Rotation Bearings, Fixed 600K	Each	6
High Load Multi-Rotation Bearings, Fixed 650K	Each	8
High Load Multi-Rotation Bearings, Fixed 850K	Each	6
Anchor Bolts, 1"	Each	36
Anchor Bolts, 1 1/4"	Each	120

Notes:

- All HLMR bearings shall be designed to carry minimum Factored Ultimate (Strength) Design Rotation of 0.02 radians. See Special Provision.
- Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
- Work this sheet with sheet S-110.
- See Sheets S-103 thru S-105 for bearing layout & orientation.

0161705-60W28-5111-Bear.ng.dgn



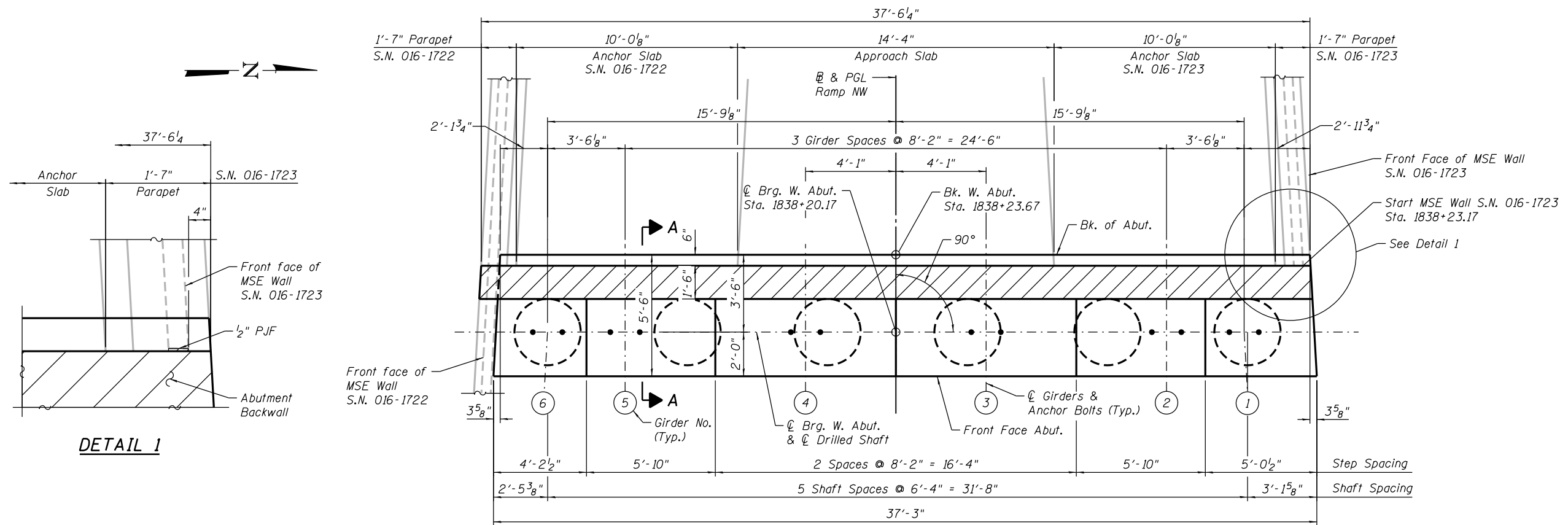
USER NAME = floresg	DESIGNED - ATB	REVISED
	CHECKED - EJO	REVISED
PLOT SCALE = N.T.S.	DRAWN - MRK	REVISED
PLOT DATE = 5/7/2014	CHECKED - ATB	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**FIXED POT BEARING DETAILS II
STRUCTURE NO. 016-1705**

SHEET NO. S-111 OF S-165 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	427
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				

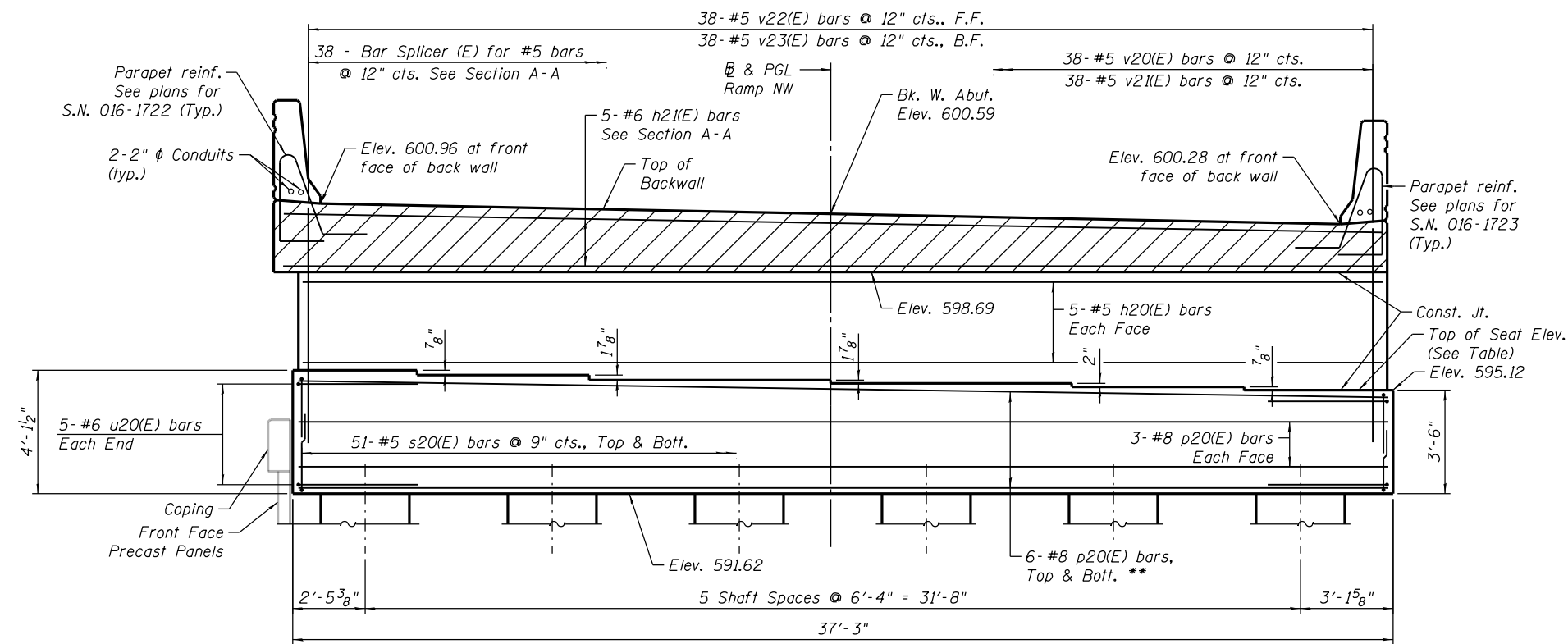


DETAIL 1

PLAN

TOP OF SEAT ELEVATION

Girder No.	Seat Elevation
1	595.12
2	595.19
3	595.36
4	595.52
5	595.68
6	595.75



ELEVATION
(Looking West)

TYP. MIN. BAR LAP
(Unless Noted Otherwise)
#5 bar = 3'-3"

NOTES:

1. Pour steps monolithically with cap.
2. For Anchor Bolt Details see Sheets S-106.
3. Hatched area to be poured after superstructure false work has been removed. Quantity of concrete included with Concrete Superstructure.
4. Concrete Sealer shall be applied to abutment backwall, bearing seats and exposed faces of abutment cap.
5. Space bars in cap to miss anchor bolts.
6. For Section A-A, see Sheet S-115.
7. A Drilled Shaft shall be tested in accordance with Special Provision for Crosshole Sonic Logging.

** Slope top bars with bearing steps.

0161705-G0W2B-5114-WestAbutPlan.dgn



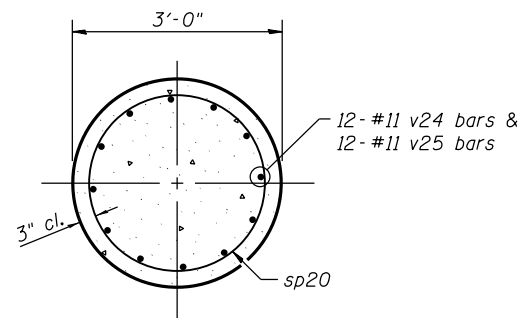
USER NAME = floresg	DESIGNED - RD	REVISED
	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - GF	REVISED
PLOT DATE = 5/7/2014	CHECKED - ATB	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

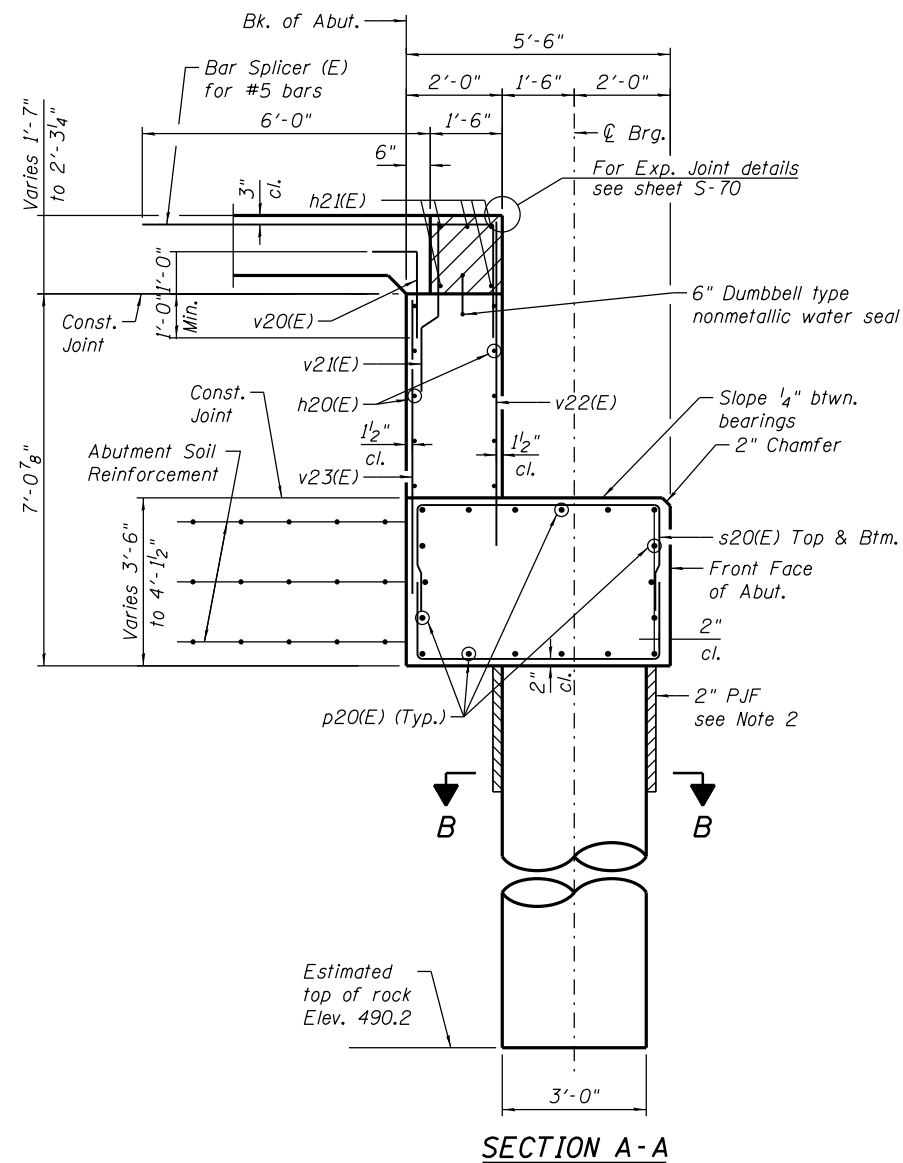
**WEST ABUTMENT PLAN AND ELEVATION
STRUCTURE NO. 016-1705**

SHEET NO. S-114 OF S-165 SHEETS

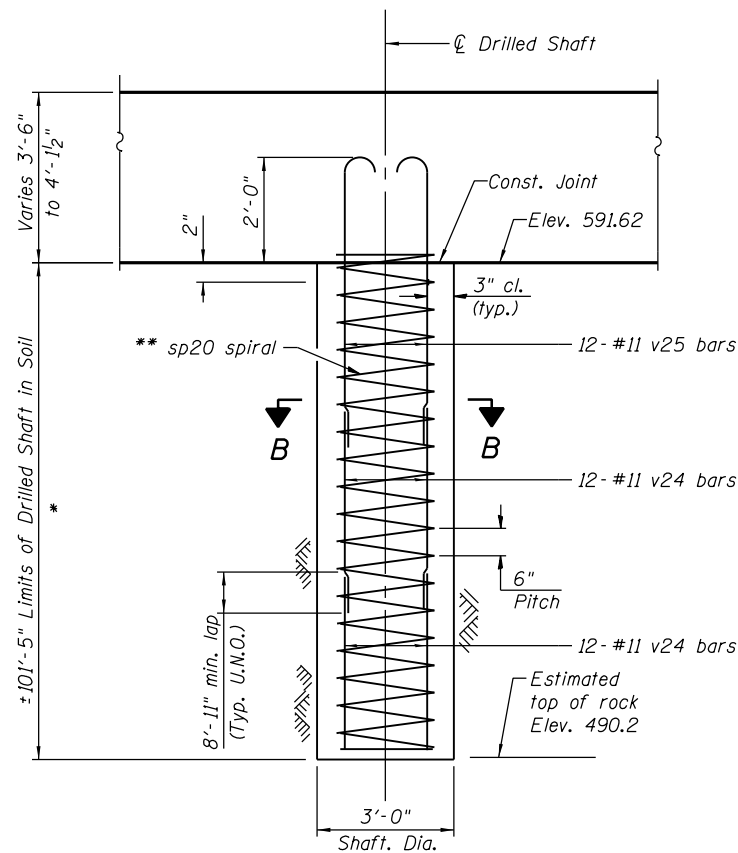
F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 430
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	



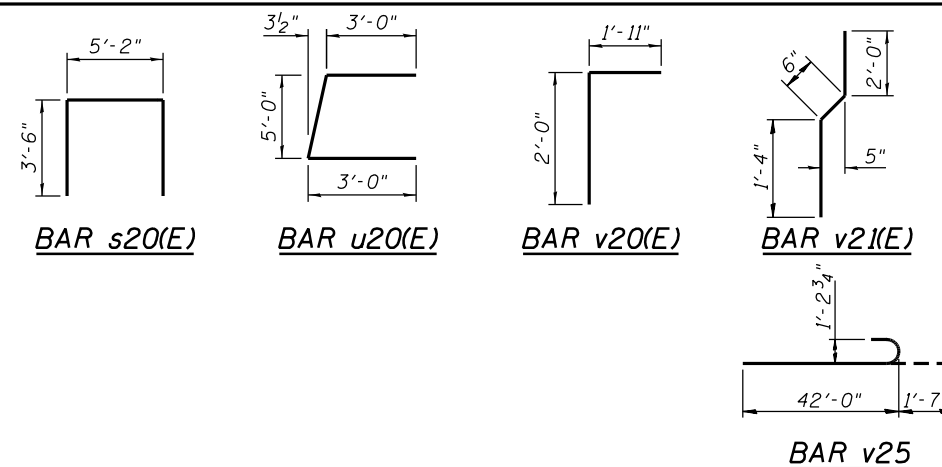
SECTION B-B



SECTION A-A



ABUTMENT SHAFT ELEVATION



* The quantities and detailing are based on the estimated elevations shown on the plans. The actual elevations may differ at each shaft and corresponding adjustments shall be made to the drilled shaft and reinforcement quantities and payment limits.

** Provide 1/2 extra turns top and bottom of each drilled shaft. Extend spiral 2" into the abutment cap. Provide 4- #4 spacers or equivalent.

WEST ABUTMENT
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h20(E)	10	#5	36'-4"	—
h21(E)	5	#6	37'-2"	—
p20(E)	18	#8	36'-11"	—
s20(E)	102	#5	12'-2"	□
sp20	6	#6	101'-7"	⋈
u20(E)	10	#6	11'-0"	⊏
v20(E)	38	#5	3'-11"	⌒
v21(E)	38	#5	3'-10"	⌒
v22(E)	38	#5	5'-8"	—
v23(E)	38	#5	4'-6"	—
v24	144	#11	40'-0"	—
v25	72	#11	43'-7"	—
Concrete Structures			Cu. Yd.	38.9
Reinforcement Bars			Pound	61,870
Reinforcement Bars, Epoxy Coated			Pound	4,610
Drilled Shaft In Soil			Cu. Yd.	159.2
Concrete Sealer			Sq. Ft.	449
Crosshole Sonic Logging			Each	1

*** Length is height of spiral

NOTES:

- When splicing spiral reinforcement is necessary, the spiral shall be provided with 1/2 extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4 or shall both terminate with a 135° standard hook.
- Install 2" P.J.F. from bottom of abutment to Elev. 571.78. Cost is included in Drilled Shaft In Soil.
- For details and quantity of Bar Splicers see sheet S-146.
- Drilled Shaft quantity from top of existing ground elev. to bottom of abutment cap elev. shall be included with Drilled Shaft In Soil.
- Cut s20(E) bars in the field to fit. Min. bar lap at field cut location shall not be less than 2'-11".

0161705-60W28-5115-WestAbutDetail.dgn



USER NAME = floresg	DESIGNED - RD	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 5/7/2014	DRAWN - GF	REVISED
	CHECKED - ATB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

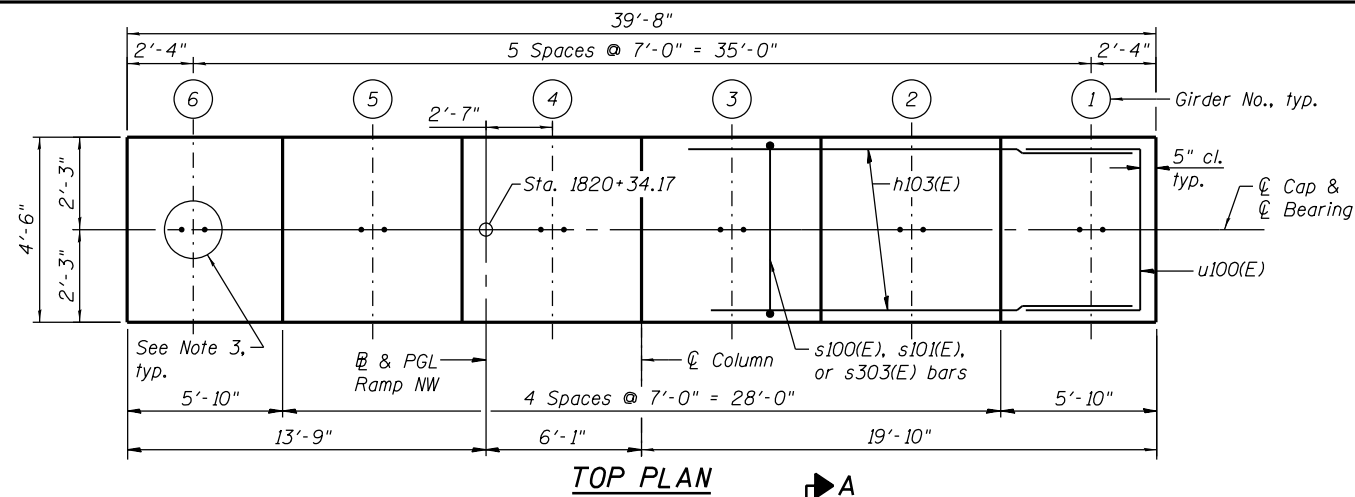
WEST ABUTMENT DETAILS
STRUCTURE NO. 016-1705

SHEET NO. S-115 OF S-165 SHEETS

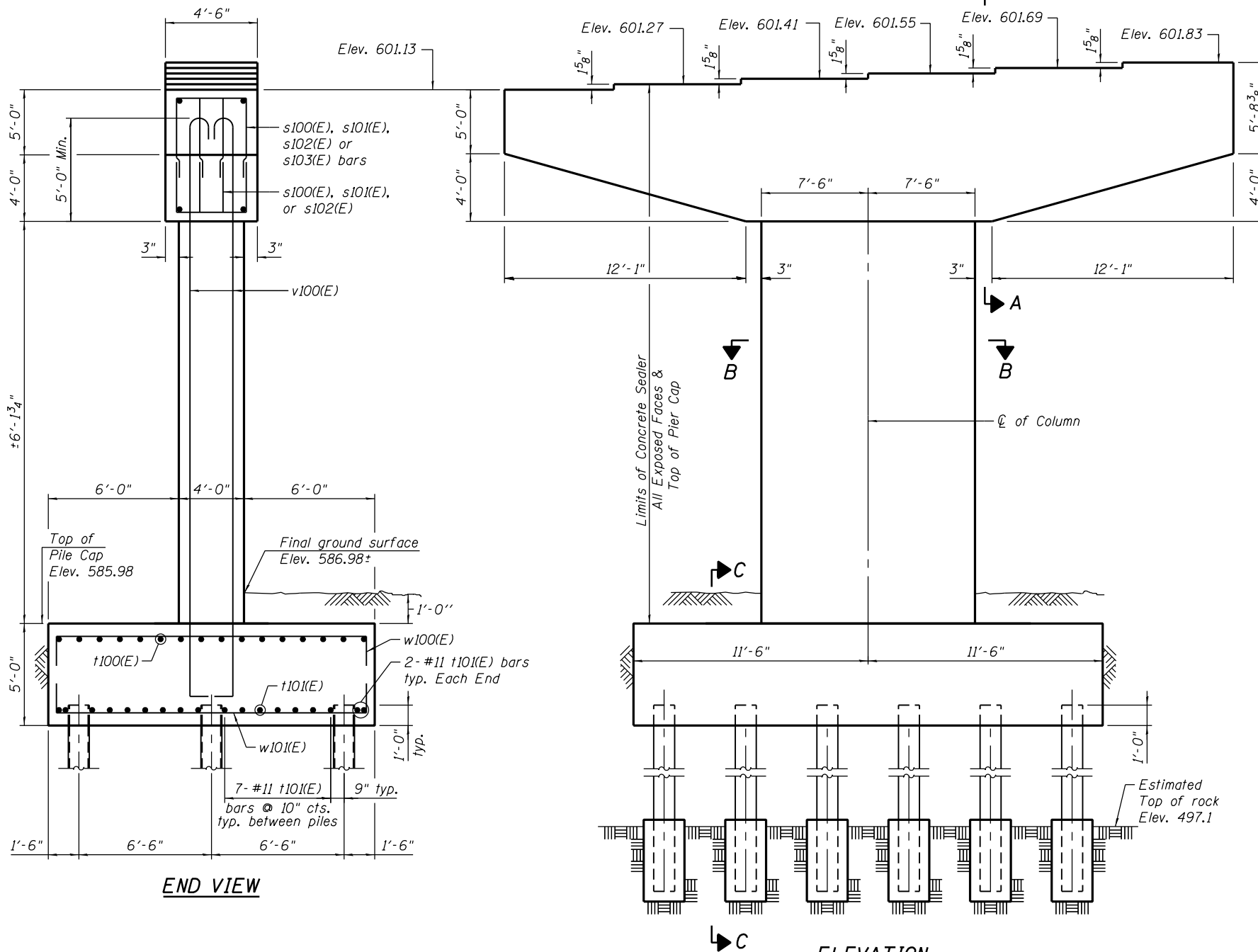
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	431
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				

NOTES:

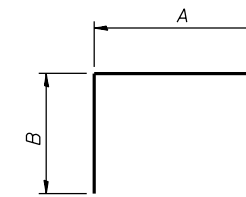
1. Pour steps monolithically with cap.
2. ϕ of Pier is radial to ϕ Ramp NW at Sta. 1820+34.17.
3. For Anchor Bolts Details see sheet S-106.
4. For Architectural Details see sheets S-143 thru S-145.
5. See sheet S-117 for Sections and Details.



TOP PLAN



ELEVATION
(Looking North)



BARS

A & B DIMENSIONS

Bar	A	B
s100(E)	2'-4"	4'-6"
s101(E)	2'-4"	5'-4"
s102(E)	2'-4"	6'-4"
s103(E)	3'-8"	6'-4"
t100(E)	22'-8"	1'-4"
t101(E)	22'-8"	2'-0"
u100(E)	3'-6"	4'-0"
u101(E)	3'-6"	1'-0"
w100(E)	15'-8"	1'-4"
w101(E)	15'-8"	2'-0"

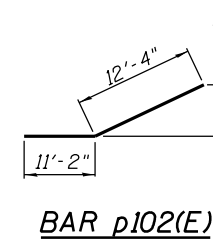
PILE DATA:

Type: Steel HP12x84
Nominal Req'd Bearing: Set in Rock
Factored Resistance Available: 460 kips
Est. Length: 89'-0"
No. Production Piles: 18
No. Test Piles: 0
Estimated Top of Rock Elev.: 497.1
Rock Socket Depth: 4'-0"
Rock Socket Dia.: 2'-0"

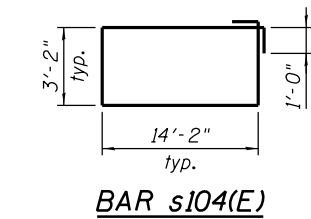
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h100(E)	6	#7	55'-4"	—
h101(E)	16	#7	38'-10"	—
h102(E)	24	#6	6'-0"	—
h103(E)	12	#6	4'-10"	—
p100(E)	9	#11	42'-10"	—
p101(E)	9	#11	38'-6"	—
p102(E)	12	#8	28'-6"	—
s100(E)	20	#6	11'-4"	□
s101(E)	72	#6	13'-0"	□
s102(E)	100	#6	15'-0"	□
s103(E)	30	#6	16'-4"	□
s104(E)	6	#6	36'-8"	□
s105(E)	36	#6	4'-10"	—
t100(E)	16	#8	25'-4"	—
t101(E)	18	#11	26'-8"	—
u100(E)	16	#6	11'-6"	—
u101(E)	41	#6	5'-6"	—
v100(E)	56	#11	18'-5"	—
w100(E)	24	#8	18'-4"	—
w101(E)	34	#11	19'-8"	—
Concrete Structures		Cu. Yd.	135.5	
Reinforcement Bars, Epoxy Coated		Pound	26,840	
Concrete Sealer		Sq. Ft.	1,228	
Braced Excavation		Cu. Yd.	44.4	
Furnishing Steel		Foot	1,602	
Piles HP 12x84		Each	18	
Setting Pile in Rock				

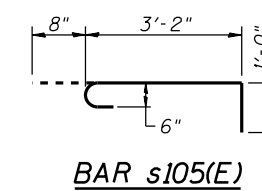
BAR p100(E)



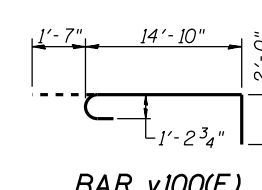
BAR p102(E)



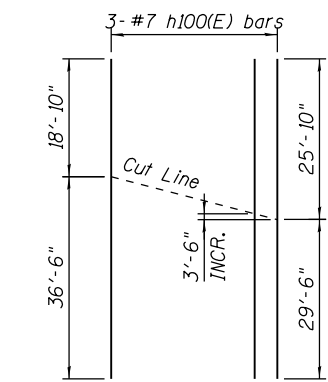
BAR s104(E)



BAR s105(E)



BAR v100(E)



FIELD CUTTING DIAGRAM

Order h100(E) bars Full Length. Cut as shown & use remainder of bars.

MIN. LAP LENGTH

- #6 bars: 3'-10"
- #8 bars: 6'-9"
- #11 bars: 13'-4"



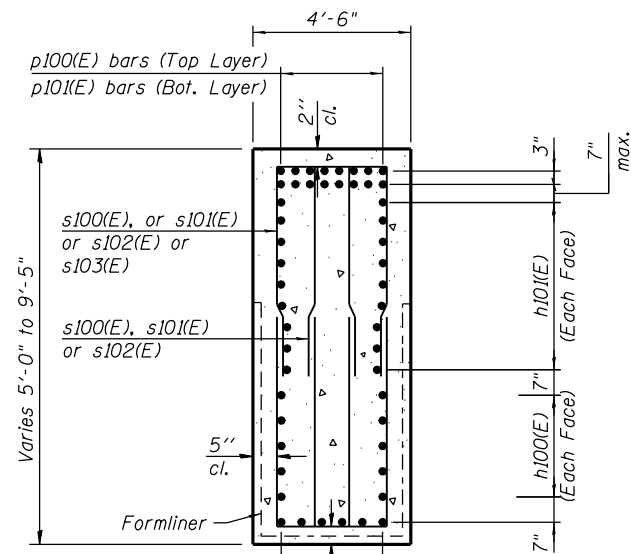
USER NAME = floresg	DESIGNED - RD	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 5/7/2014	DRAWN - BM	REVISED
	CHECKED - RD	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

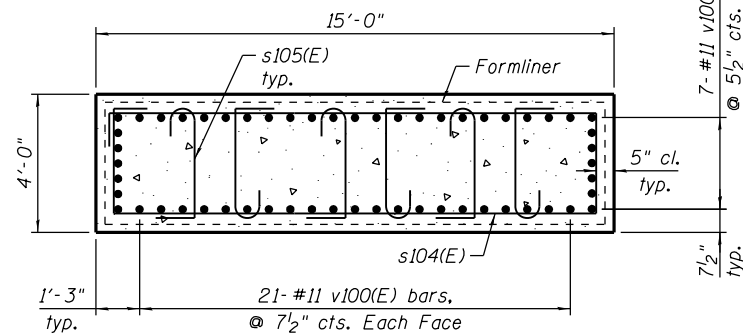
PIER 1 - PLAN AND ELEVATION
STRUCTURE NO. 016-1705
SHEET NO. S-116 OF S-165 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 432
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

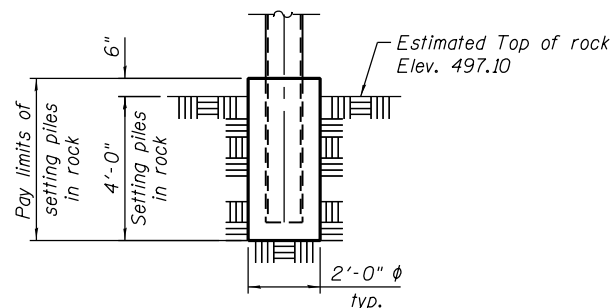
0161705-60W28-S116-Pier.dgn



SECTION A-A



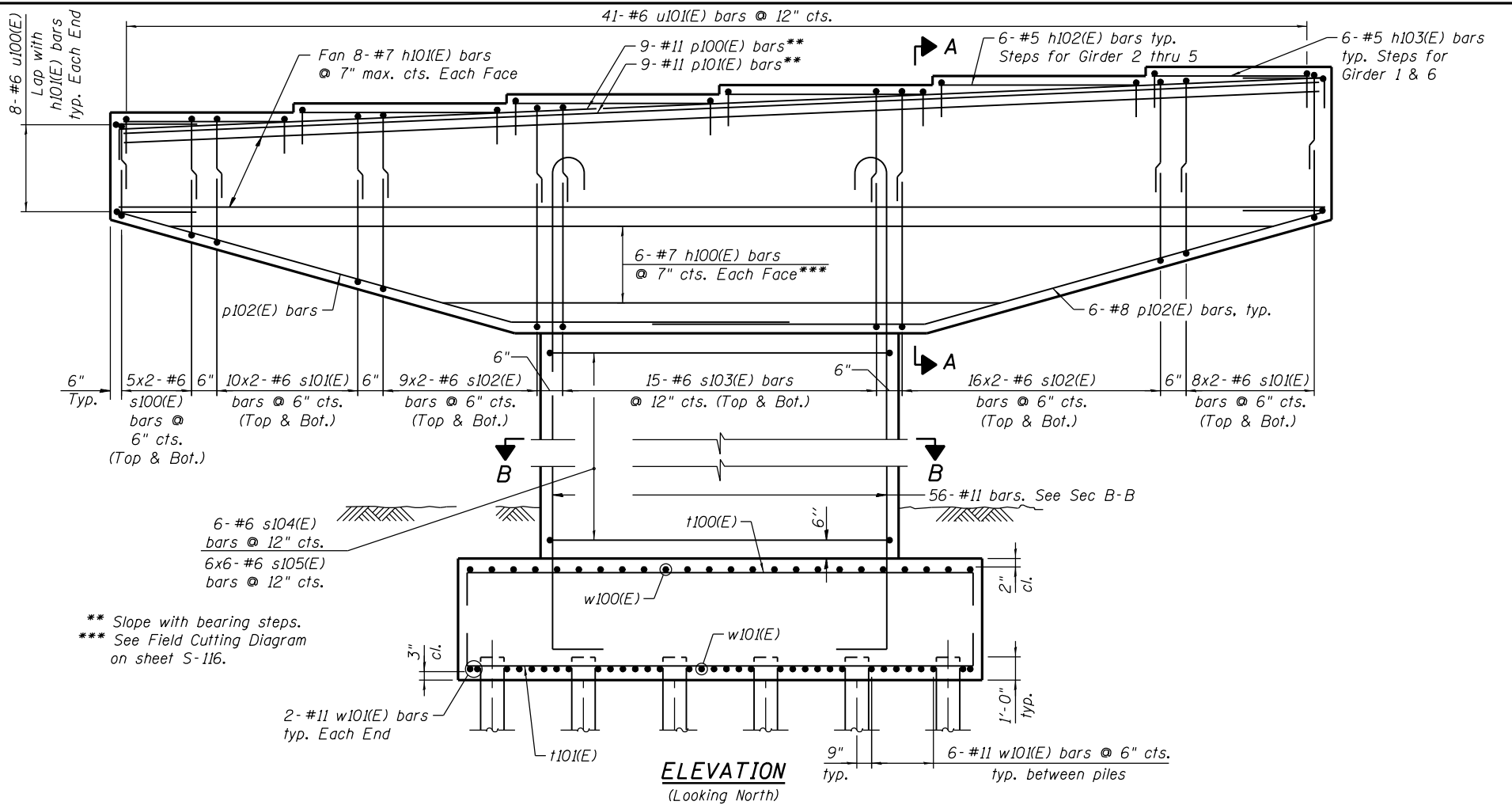
SECTION B-B



SETTING PILES IN ROCK DETAIL

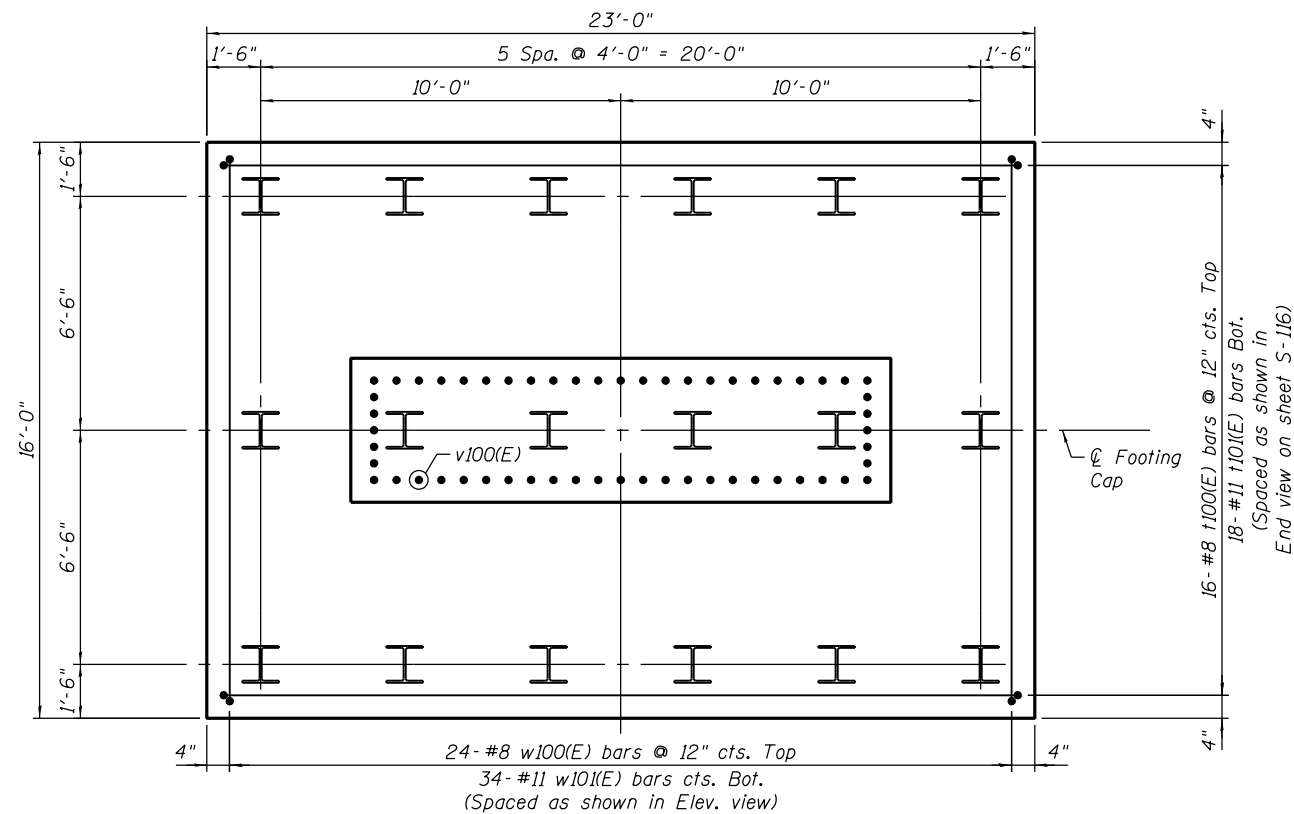
NOTES:

1. Space reinforcement in cap to miss anchor bolts.
2. The Contractor shall field locate existing retaining wall (S.N. 016-Z024) piles prior to drilling and installing the proposed steel H-piles. The contractor may need to field adjust the proposed pile locations to avoid conflict with existing retaining wall piles. The spacing between two adjacent piles, in any direction within the pile group, shall not be greater than 8'-0" and shall not be less than 3'-0". If field adjustment is required, the Contractor shall submit a revised foundation layout plan depicting the location of all piles to the Engineer for approval prior to constructing the proposed foundations.



ELEVATION
(Looking North)

** Slope with bearing steps.
*** See Field Cutting Diagram on sheet S-116.



FOOTING PLAN

0161705-60W28-5117-Pier.dgn



USER NAME = floresg	DESIGNED - RD	REVISED
	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - BM	REVISED
PLOT DATE = 5/7/2014	CHECKED - RD	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 1 DETAILS
STRUCTURE NO. 016-1705

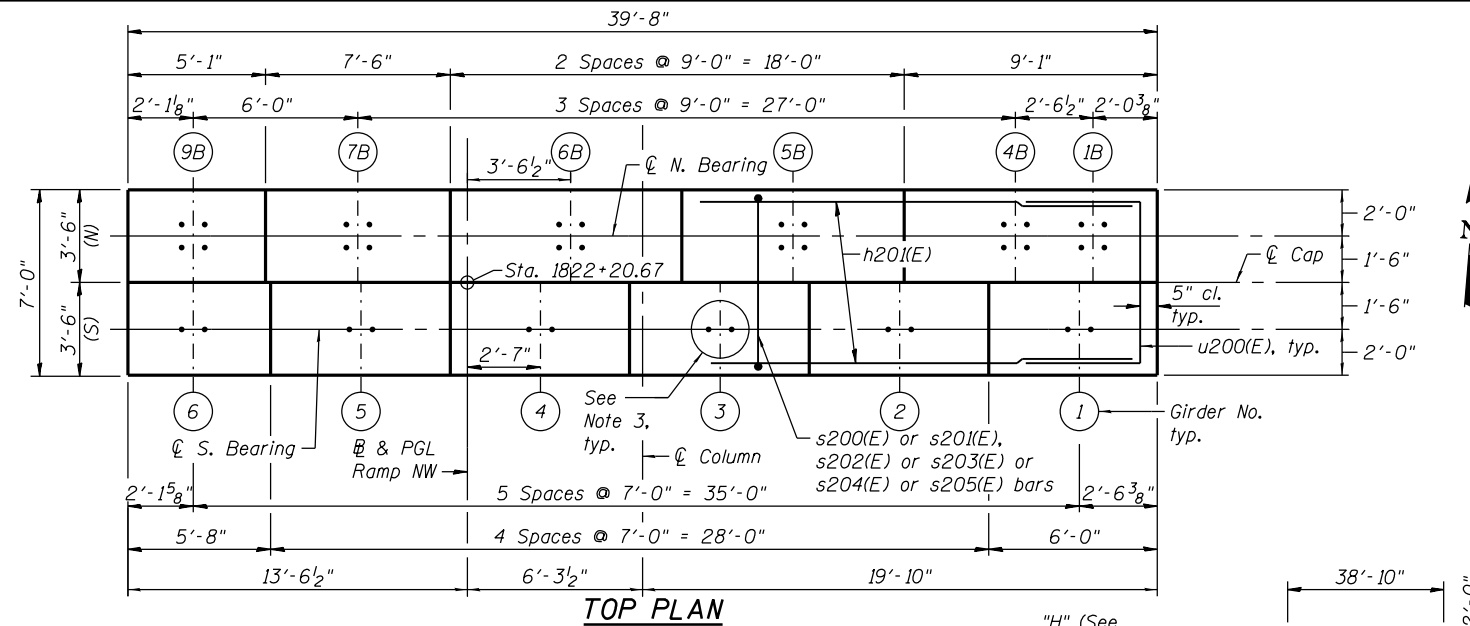
SHEET NO. S-117 OF S-165 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 433
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

NOTES:

1. Pour steps monolithically with cap.
2. ϕ of Pier is radial to ϕ Ramp NW at Sta. 1822+20.67.
3. For Anchor Bolts Details see sheets S-106, S-108, and S-109.
4. For Architectural Details see sheets S-143 thru S-145.
5. See sheet S-119 for Sections and Details.
6. (N)-North Girder, (S)-South Girder.

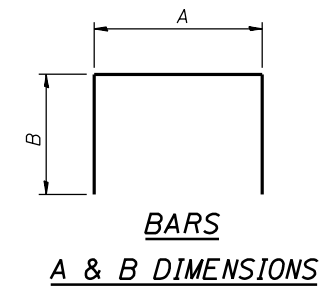
* The quantities and detailing are based on the estimated elevations shown on the plans. The actual elevations may differ at each shaft and corresponding adjustments shall be made to the drilled shaft and reinforcement quantities and payment limits.



TOP PLAN

TOP OF SEAT ELEVATION

South Bearing Seat			North Bearing Seat		
Girder No.	Seat Elev.	Step "H"	Girder No.	Seat Elev.	Step "H"
1	609.21	1 1/4"	1B	609.21	-
2	609.11	1 5/8"	4B	609.21	2 1/8"
3	608.97	1 5/8"	5B	609.03	2 3/8"
4	608.83	1 7/8"	6B	608.83	1 7/8"
5	608.67	1 1/2"	7B	608.67	1 3/8"
6	608.55	-	9B	608.55	-



BARS A & B DIMENSIONS

Bar	A	B
h200(E)	4'-0"	3'-10"
h201(E)	4'-0"	4'-2"
h202(E)	4'-0"	4'-10"
h203(E)	4'-0"	5'-0"
h204(E)	6'-2"	6'-5"
s200(E)	4'-0"	6'-3"
s201(E)	22'-1"	3'-6"
s202(E)	22'-1"	2'-0"
s203(E)	6'-2"	4'-0"
s204(E)	6'-2"	1'-0"
s205(E)	7'-4"	4'-0"

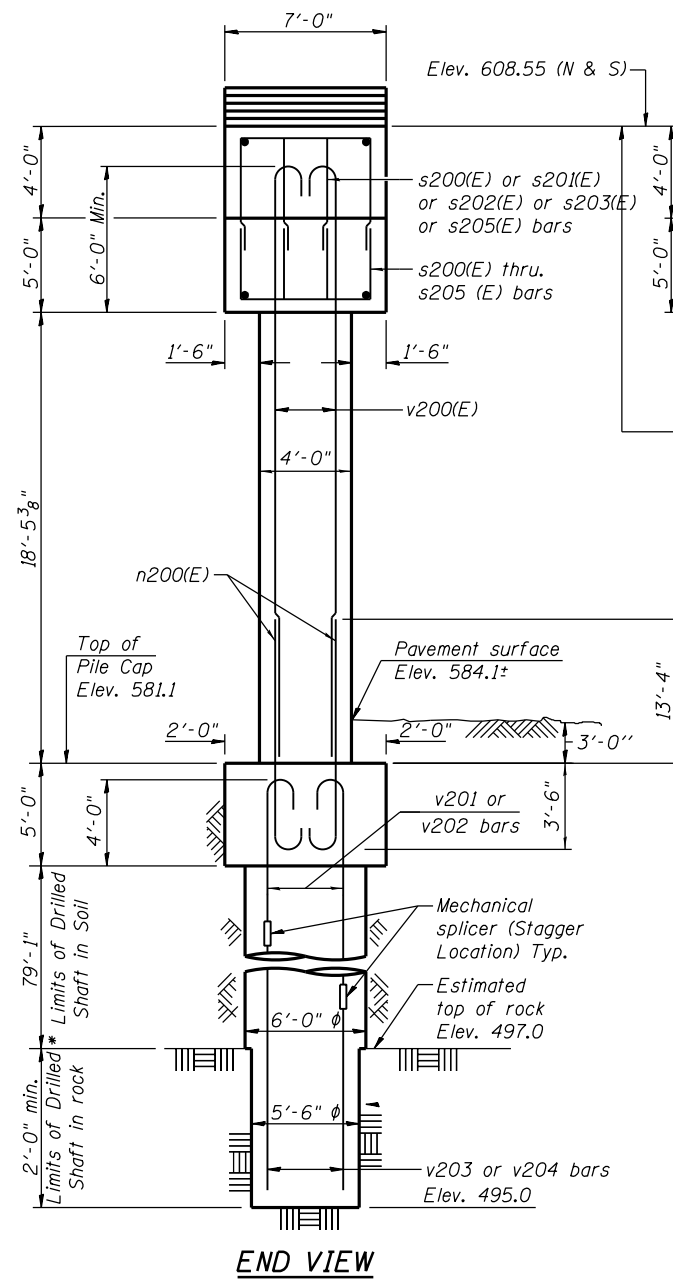
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h200(E)	8	#7	55'-11"	—
h201(E)	12	#7	38'-10"	—
h202(E)	16	#5	8'-0"	—
h203(E)	8	#7	5'-0"	—
h204(E)	16	#7	22'-3"	—
n200(E)	56	#11	18'-5"	U
p200(E)	20	#11	42'-10"	U
p201(E)	20	#8	23'-11"	U
s200(E)	8	#6	11'-8"	U
s201(E)	16	#6	12'-4"	U
s202(E)	36	#6	13'-8"	U
s203(E)	32	#6	14'-0"	U
s204(E)	32	#6	19'-0"	U
s205(E)	36	#6	16'-6"	U
s206(E)	18	#6	36'-8"	U
s207(E)	108	#6	4'-10"	U
sp200	2	#6	81'-4"	W
t200(E)	30	#7	18'-4"	U
t201(E)	21	#11	29'-1"	U
t202(E)	17	#11	26'-1"	U
t203(E)	30	#7	9'-6"	U
u200(E)	12	#6	14'-2"	U
u202(E)	22	#6	8'-2"	U
u203(E)	16	#7	15'-4"	U
v200(E)	56	#11	26'-1"	U
v201	20	#14	27'-4"	U
v202	20	#14	33'-4"	U
v203	20	#14	60'-0"	U
v204	20	#14	54'-0"	U
Concrete Structures		Cu. Yd.	155.1	
Reinforcement Bars, Epoxy Coated		Pound	34,910	
Reinforcement Bars		Pound	34,800	
Drilled Shaft in Soil		Cu. Yd.	165.6	
Drilled Shaft in Rock		Cu. Yd.	3.5	
Concrete Sealer		Sq. Ft.	1,891	
Braced Excavation		Cu. Yd.	69.4	
Crosshole Sonic Logging		Each	1	

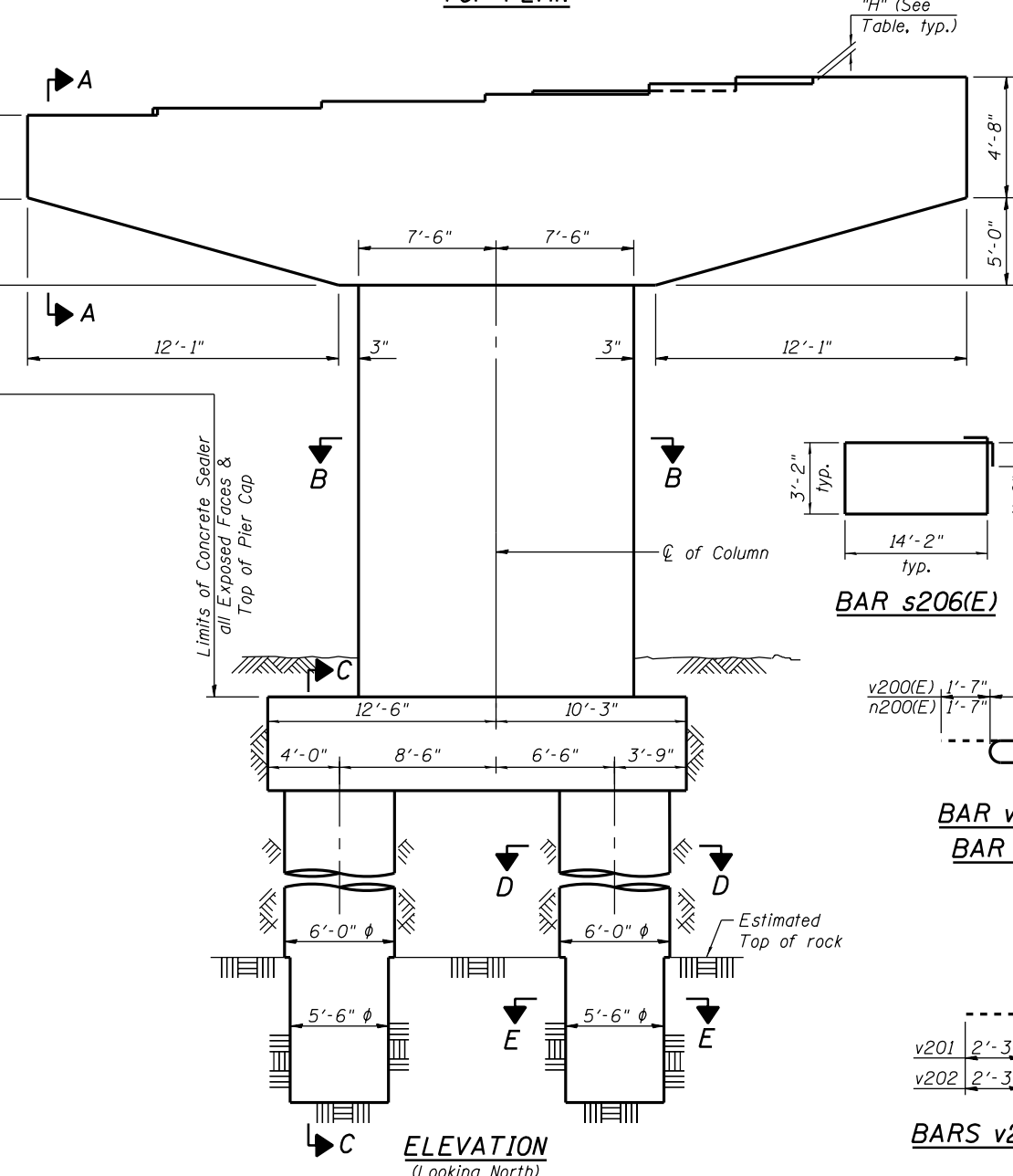
** Length is height of spiral.

MIN. LAP LENGTH

- #6 bars: 3'-10"
- #8 bars: 6'-9"
- #11 bars: 13'-4"



END VIEW



ELEVATION (Looking North)

BAR p200(E)

BAR p201(E)

BAR s206(E)

BAR t200(E)

BAR t203(E)

BAR v200(E) & BAR n200(E)

BAR s207(E)

BARS v201 & v202

FIELD CUTTING DIAGRAM

Order h200(E) bars Full Length. Cut as shown and use remainder of bars.



USER NAME = floresg	DESIGNED - RD	REVISED
	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - BM	REVISED
PLOT DATE = 5/7/2014	CHECKED - RD	REVISED

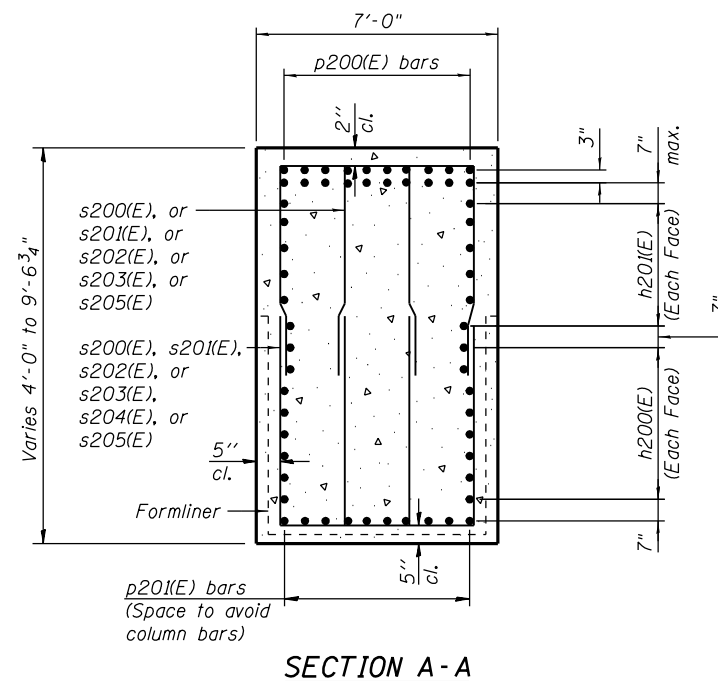
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2 - PLAN AND ELEVATION
STRUCTURE NO. 016-1705

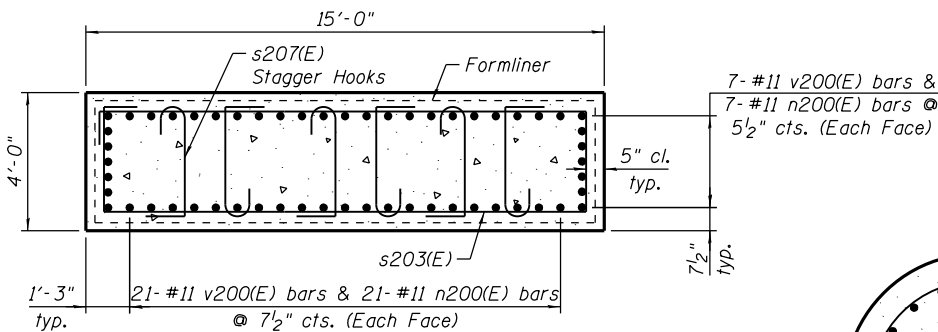
SHEET NO. S-118 OF S-165 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 434
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

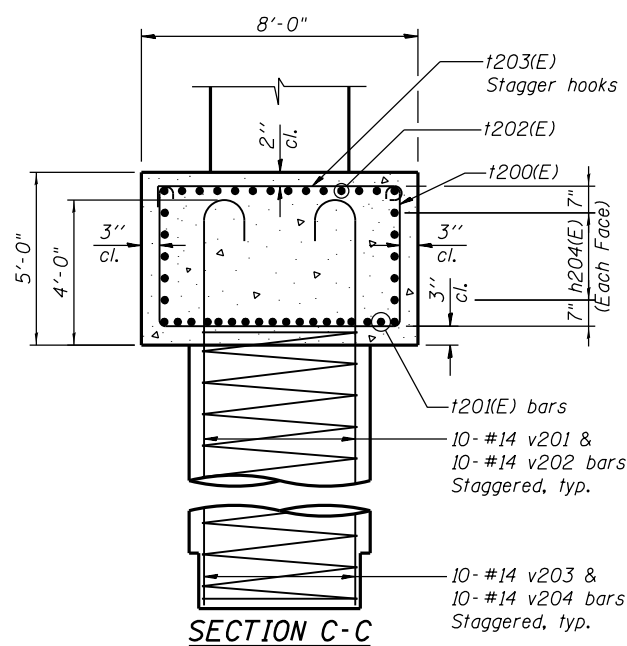
0161705-60W28-S118-Pier.dgn



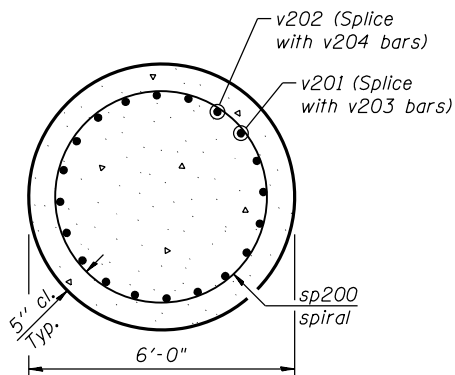
SECTION A-A



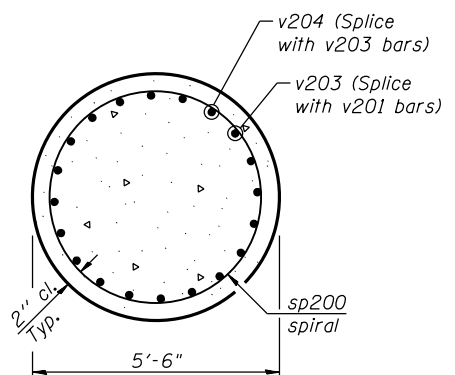
SECTION B-B



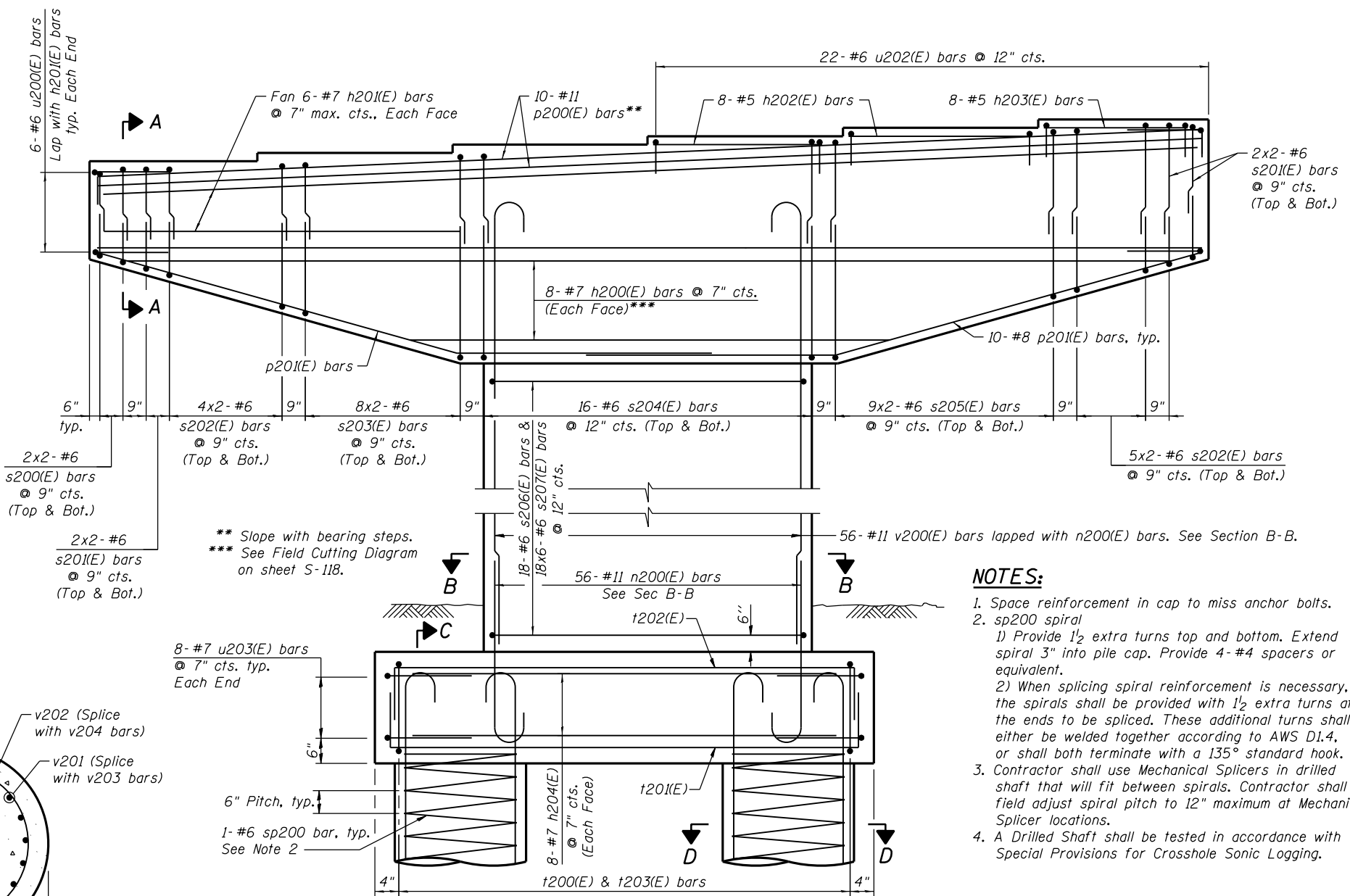
SECTION C-C



SECTION D-D

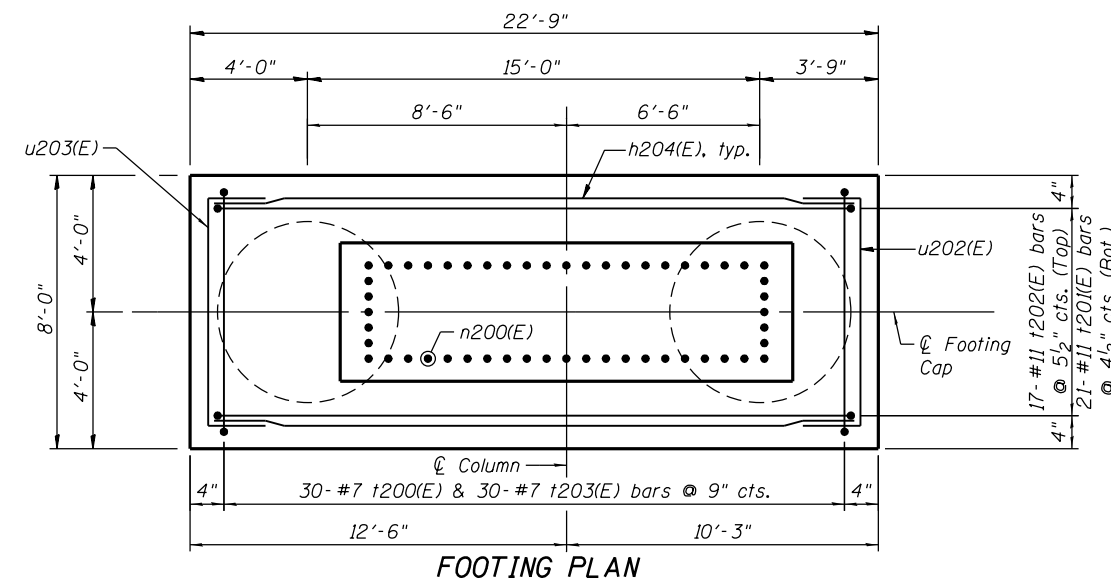


SECTION E-E



ELEVATION

(Looking North)



FOOTING PLAN

NOTES:

1. Space reinforcement in cap to miss anchor bolts.
2. sp200 spiral
 - 1) Provide 1 1/2 extra turns top and bottom. Extend spiral 3" into pile cap. Provide 4-#4 spacers or equivalent.
 - 2) When splicing spiral reinforcement is necessary, the spirals shall be provided with 1 1/2 extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook.
3. Contractor shall use Mechanical Splicers in drilled shaft that will fit between spirals. Contractor shall field adjust spiral pitch to 12" maximum at Mechanical Splicer locations.
4. A Drilled Shaft shall be tested in accordance with Special Provisions for Crosshole Sonic Logging.

0161705-60W28-5119-Pier.dgn



USER NAME = floresg	DESIGNED - RD	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 5/7/2014	DRAWN - BM	REVISED
	CHECKED - RD	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2 DETAILS
STRUCTURE NO. 016-1705

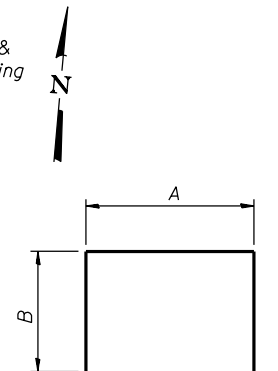
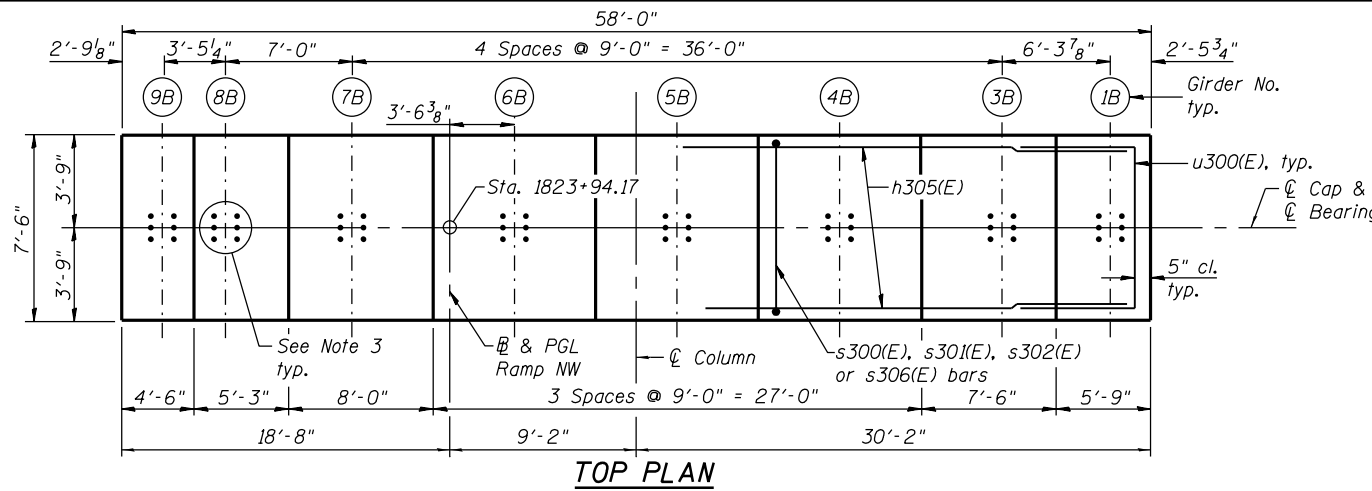
SHEET NO. S-119 OF S-165 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 435
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

NOTES:

1. Pour steps monolithically with cap.
2. ϕ of Pier is radial to ϕ Ramp NW at Sta. 1823+94.17.
3. For Anchor Bolts Details see sheets S-110 & S-111.
4. For Architectural Details see sheets S-143 thru S-145.
5. See sheet S-121 & S-122 for Sections and Details.
6. Concrete for Pier 3 shall be in accordance with Section 503 of Standard Specifications except that the max. design of concrete shall attain a compressive strength of 5,000 psi at 14 days.

* The quantities and detailing are based on the estimated elevations shown on the plans. The actual elevations may differ at each shaft and corresponding adjustments shall be made to the drilled shaft and reinforcement quantities and payment limits.

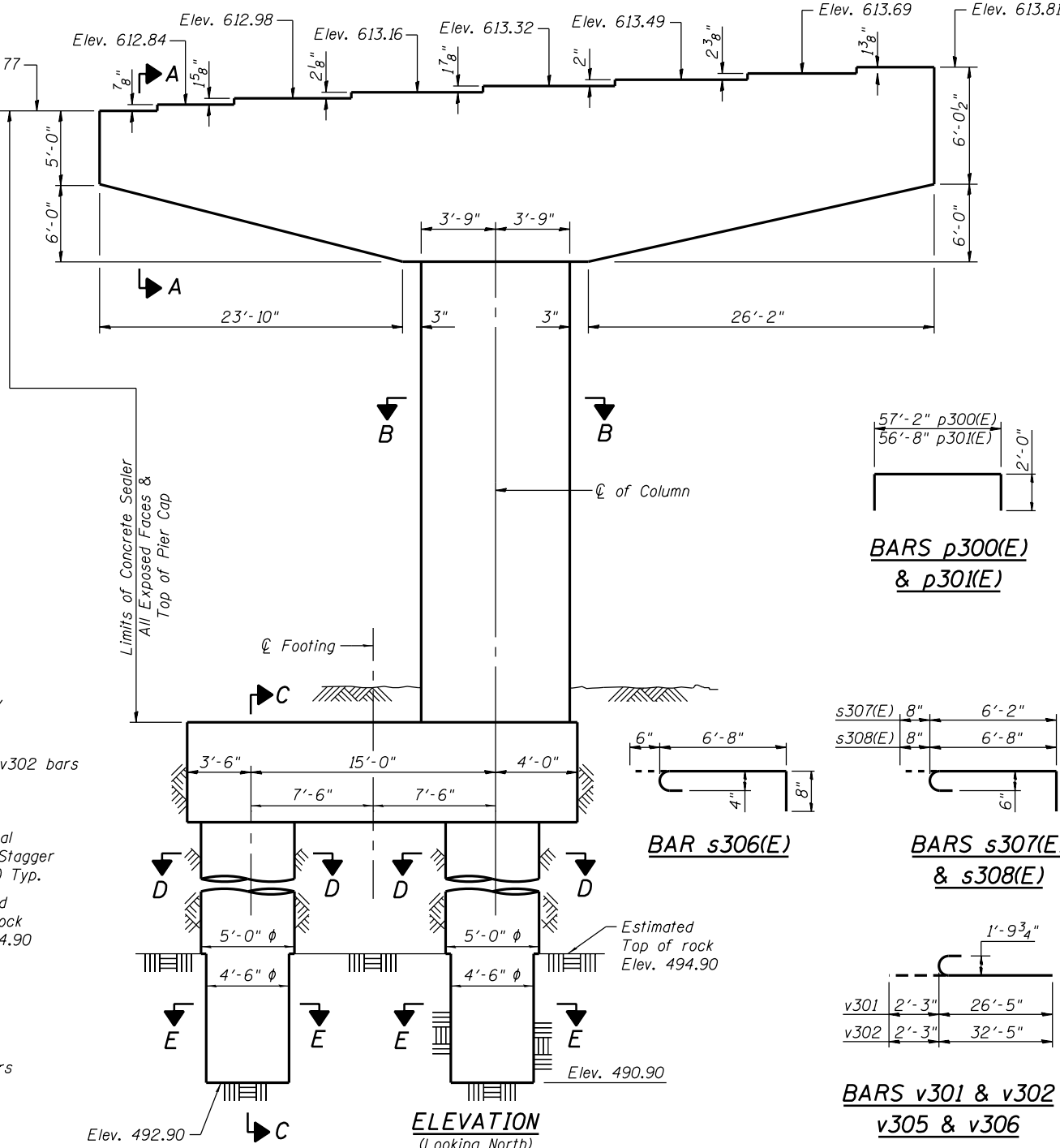
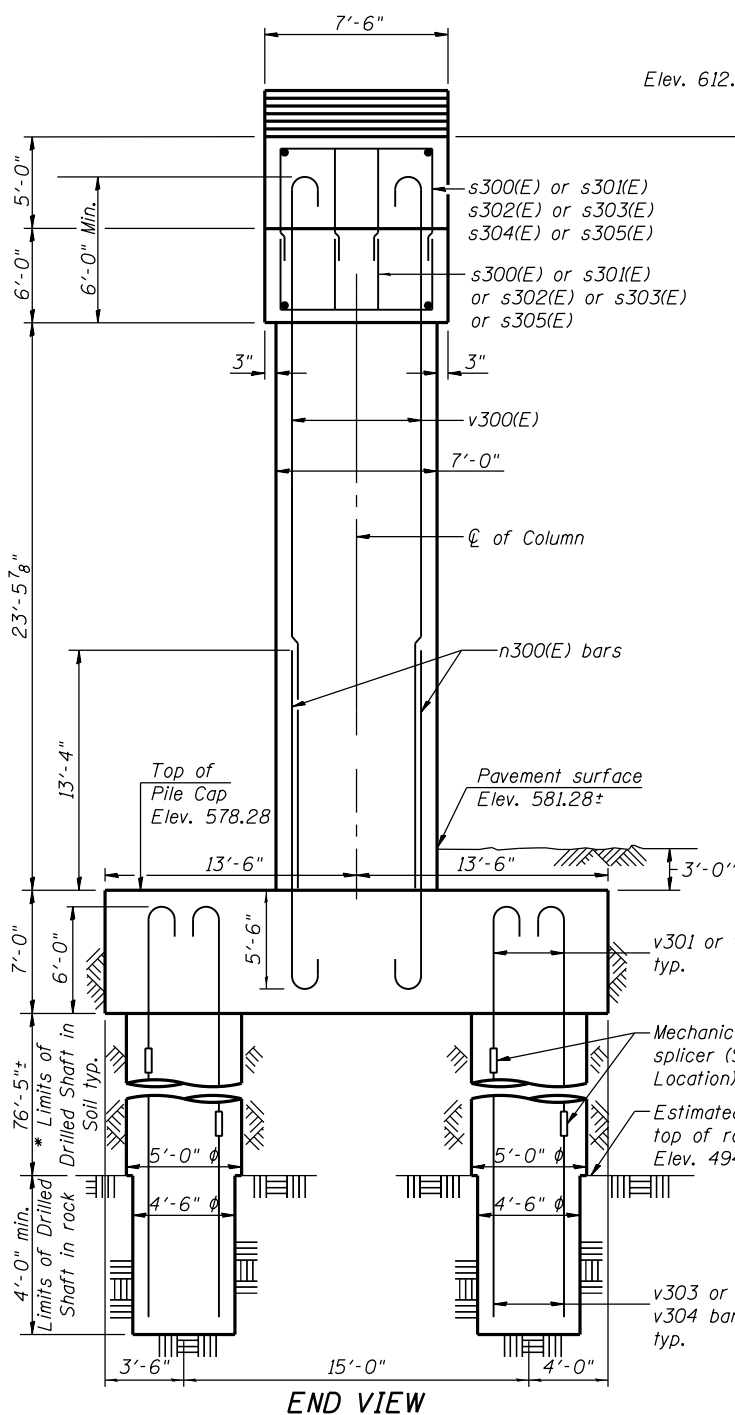


BARS A & B DIMENSIONS

Bar	A	B
s300(E)	5'-0"	4'-6"
s301(E)	5'-0"	5'-2"
s302(E)	5'-0"	6'-7"
s303(E)	5'-0"	7'-4"
s304(E)	6'-8"	7'-4"
s305(E)	5'-0"	5'-7"
t300(E)	21'-10"	3'-3"
u300(E)	6'-8"	4'-0"
u301(E)	6'-8"	1'-0"
u303(E)	22'-6"	4'-0"
w300(E)	26'-4"	3'-3"

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h300(E)	12	#7	67'-0"	—
h301(E)	22	#7	57'-2"	—
h302(E)	24	#5	8'-0"	—
h303(E)	8	#5	7'-0"	—
h304(E)	8	#5	4'-6"	—
h305(E)	8	#5	6'-6"	—
h306(E)	8	#5	5'-0"	—
h307(E)	22	#7	26'-6"	—
n300(E)	68	#11	20'-5"	U
p300(E)	20	#11	61'-2"	U
p301(E)	20	#11	60'-8"	U
p302(E)	20	#11	56'-2"	U
p303(E)	10	#8	33'-8"	U
p304(E)	10	#8	31'-4"	U
s300(E)	28	#6	14'-0"	U
s301(E)	60	#6	15'-4"	U
s302(E)	112	#6	18'-2"	U
s303(E)	228	#6	19'-8"	U
s304(E)	16	#6	21'-4"	U
s305(E)	100	#6	16'-2"	U
s306(E)	14	#4	7'-10"	U
s307(E)	94	#6	7'-10"	U
s308(E)	94	#6	8'-4"	U
s309(E)	47	#6	27'-8"	U
sp300	5	#6	80'-8"	W
t300(E)	116	#11	28'-10"	U
u300(E)	22	#7	14'-8"	U
u301(E)	60	#6	8'-8"	U
u303(E)	22	#7	30'-6"	U
v300(E)	68	#11	31'-1"	U
v301	80	#14	28'-8"	U
v302	80	#14	34'-8"	U
v303	80	#14	60'-0"	U
v304	80	#14	54'-0"	U
w300(E)	118	#11	32'-10"	U
Concrete Structures		Cu. Yd.	347.0	
Reinforcement Bars, Epoxy Coated		Pound	105,240	
Reinforcement Bars		Pound	124,680	
Drilled Shaft in Soil		Cu. Yd.	277.9	
Drilled Shaft in Rock		Cu. Yd.	11.8	
Concrete Sealer		Sq. Ft.	2,628	
Braced Excavation		Cu. Yd.	271.4	
Crosshole Sonic Logging		Each	1	



BARS p300(E) & p301(E)

BARS p303(E) & p304(E)

BARS s307(E) & s308(E)

BARS v300(E) & n300(E)

BARS v301 & v302 v305 & v306

BAR s307(E)

** Length is height of spiral.

MIN. LAP LENGTH

- #6 bars: 3'-10"
- #8 bars: 6'-9"
- #11 bars: 13'-4"

0161705-60W28-S120-Pier.dgn



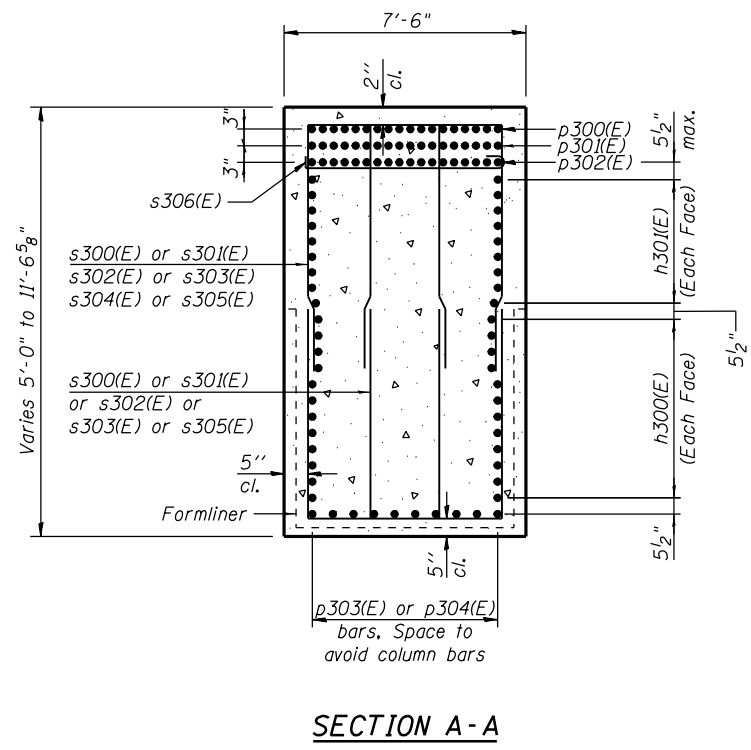
USER NAME = floresg	DESIGNED - RD	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 5/7/2014	DRAWN - BM	REVISED
	CHECKED - RD	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

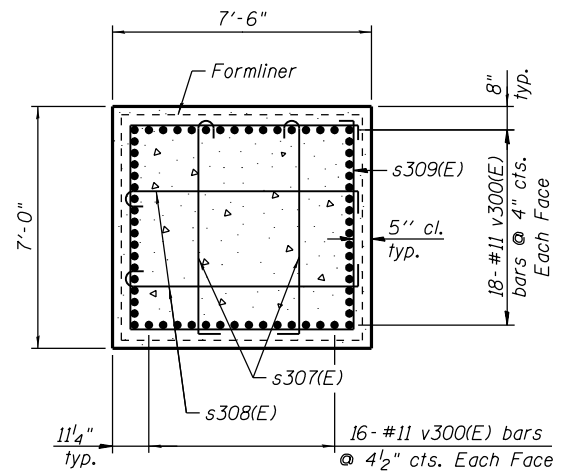
PIER 3 - PLAN AND ELEVATION
STRUCTURE NO. 016-1705

SHEET NO. S-120 OF S-165 SHEETS

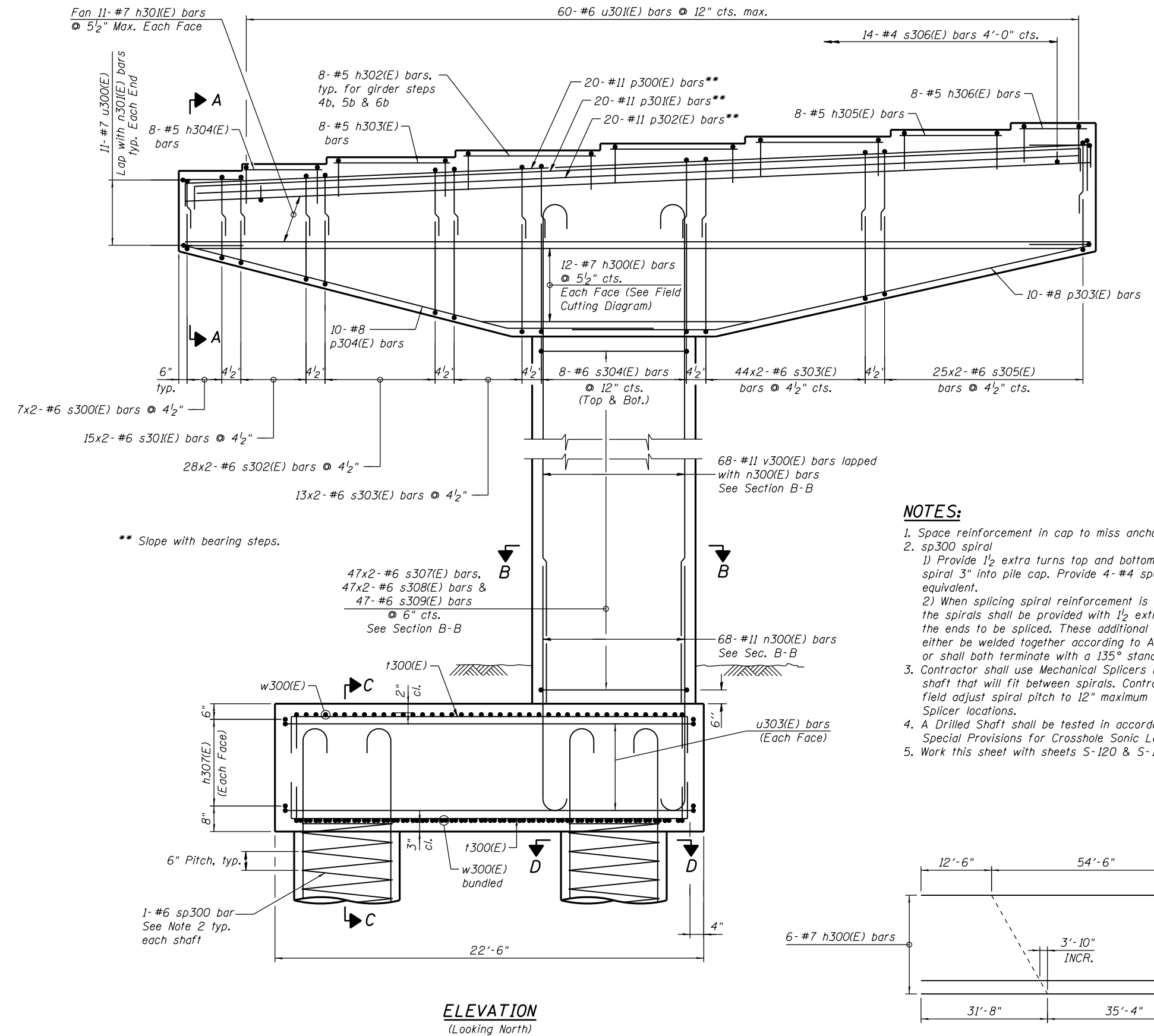
F.A.I. R.T.E. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 436
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	



SECTION A-A



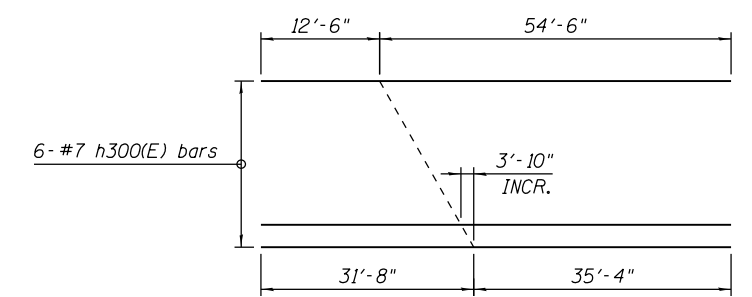
SECTION B-B



ELEVATION
(Looking North)

NOTES:

1. Space reinforcement in cap to miss anchor bolts.
2. sp300 spiral
1) Provide 1/2 extra turns top and bottom. Extend spiral 3" into pile cap. Provide 4- #4 spacers or equivalent.
2) When splicing spiral reinforcement is necessary, the spirals shall be provided with 1/2 extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook.
3. Contractor shall use Mechanical Splicers in drilled shaft that will fit between spirals. Contractor shall field adjust spiral pitch to 12" maximum at Mechanical Splicer locations.
4. A Drilled Shaft shall be tested in accordance with Special Provisions for Crosshole Sonic Logging.
5. Work this sheet with sheets S-120 & S-122.



BAR CUTTING DIAGRAM

Order h300(E) bars Full Length. Cut as shown & use remainder of bars.

0161705-60W28-S121-Pier.dgn



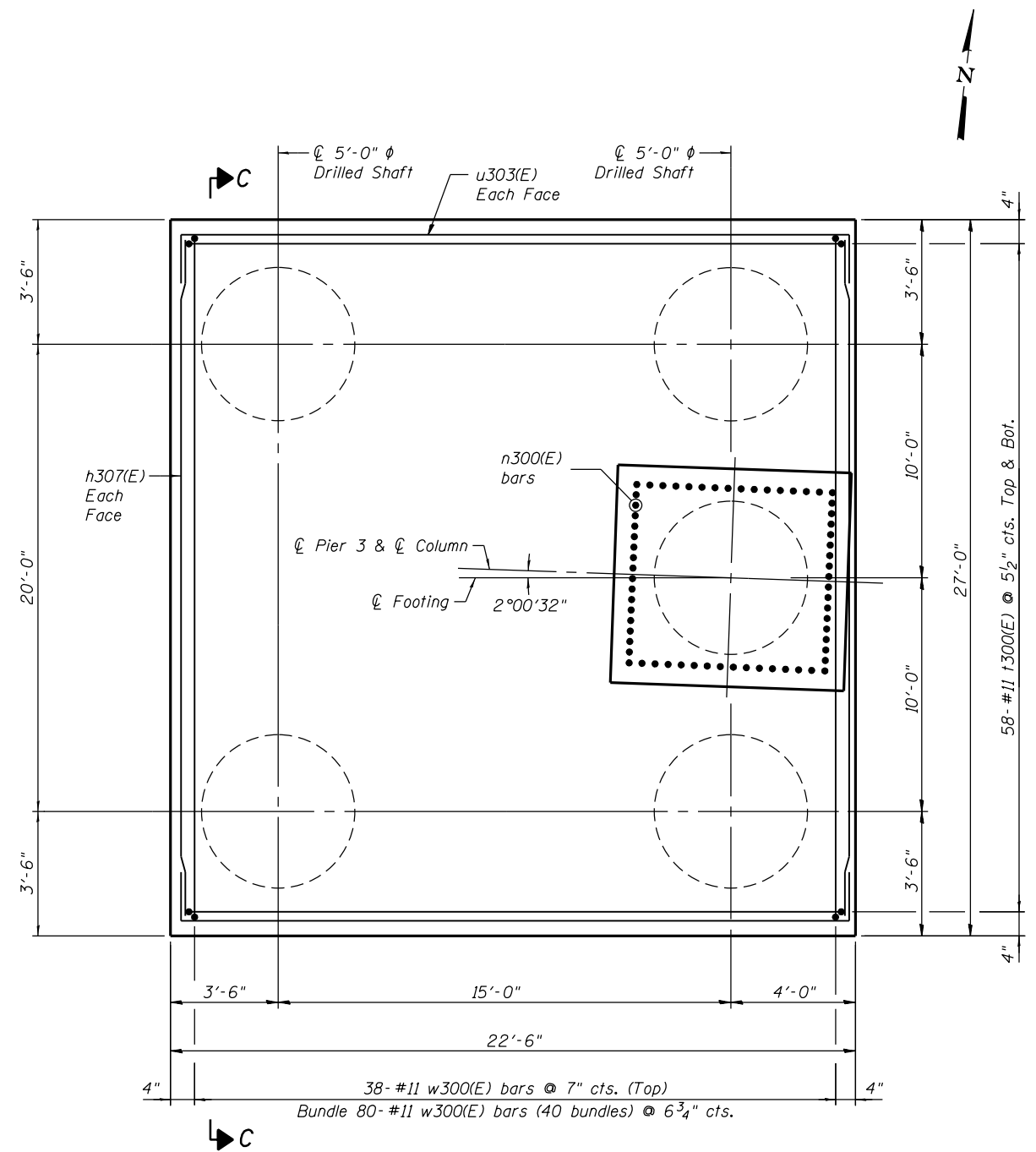
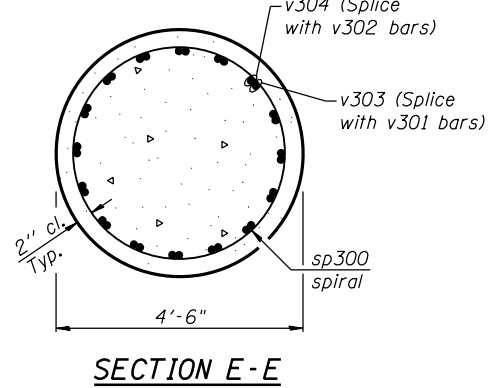
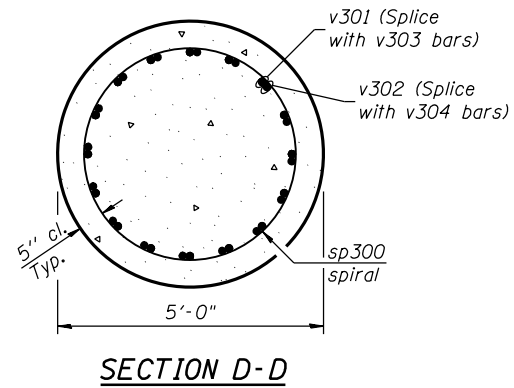
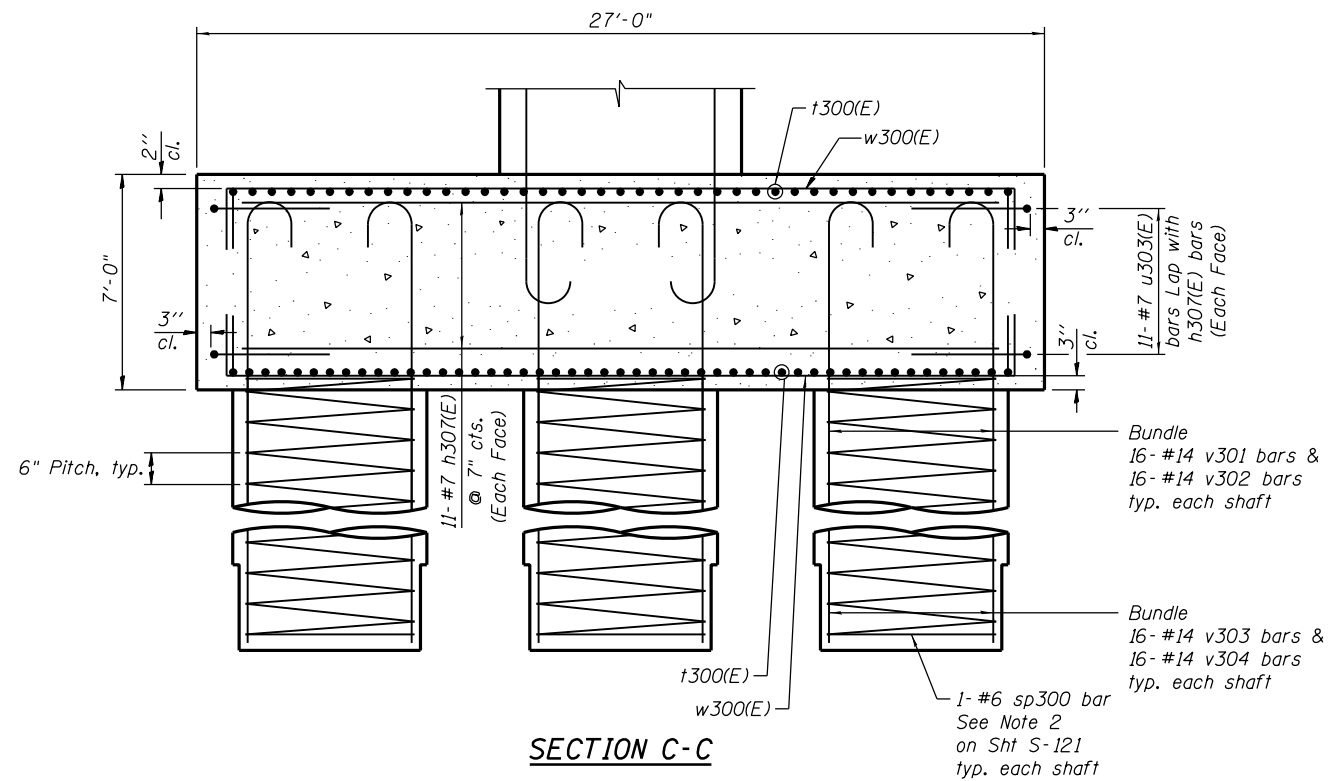
USER NAME = floresg	DESIGNED - RD	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 5/7/2014	DRAWN - BM	REVISED
	CHECKED - RD	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PIER 3 DETAILS I
STRUCTURE NO. 016-1705**

SHEET NO. S-121 OF S-165 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 437
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	



NOTES:
Work this sheet with sheets S-120 & S-121.

0161705-60W28-S122-Pier.dgn



USER NAME = floresg	DESIGNED - RD	REVISED
	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - BM	REVISED
PLOT DATE = 5/7/2014	CHECKED - RD	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 3 DETAILS II
STRUCTURE NO. 016-1705

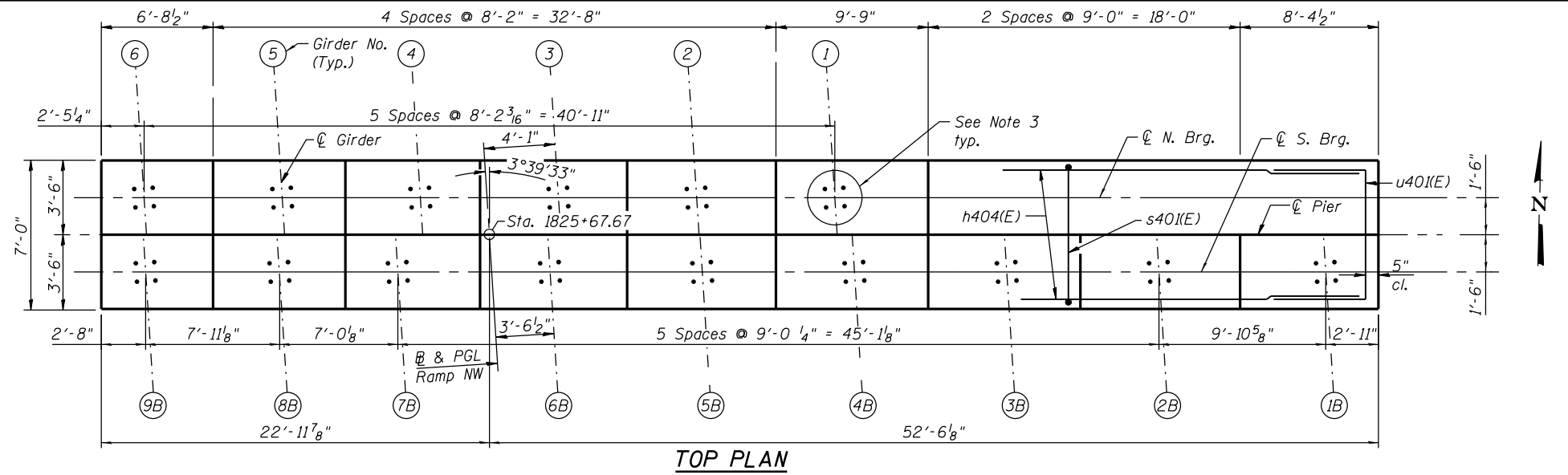
SHEET NO. S-122 OF S-165 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 438
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

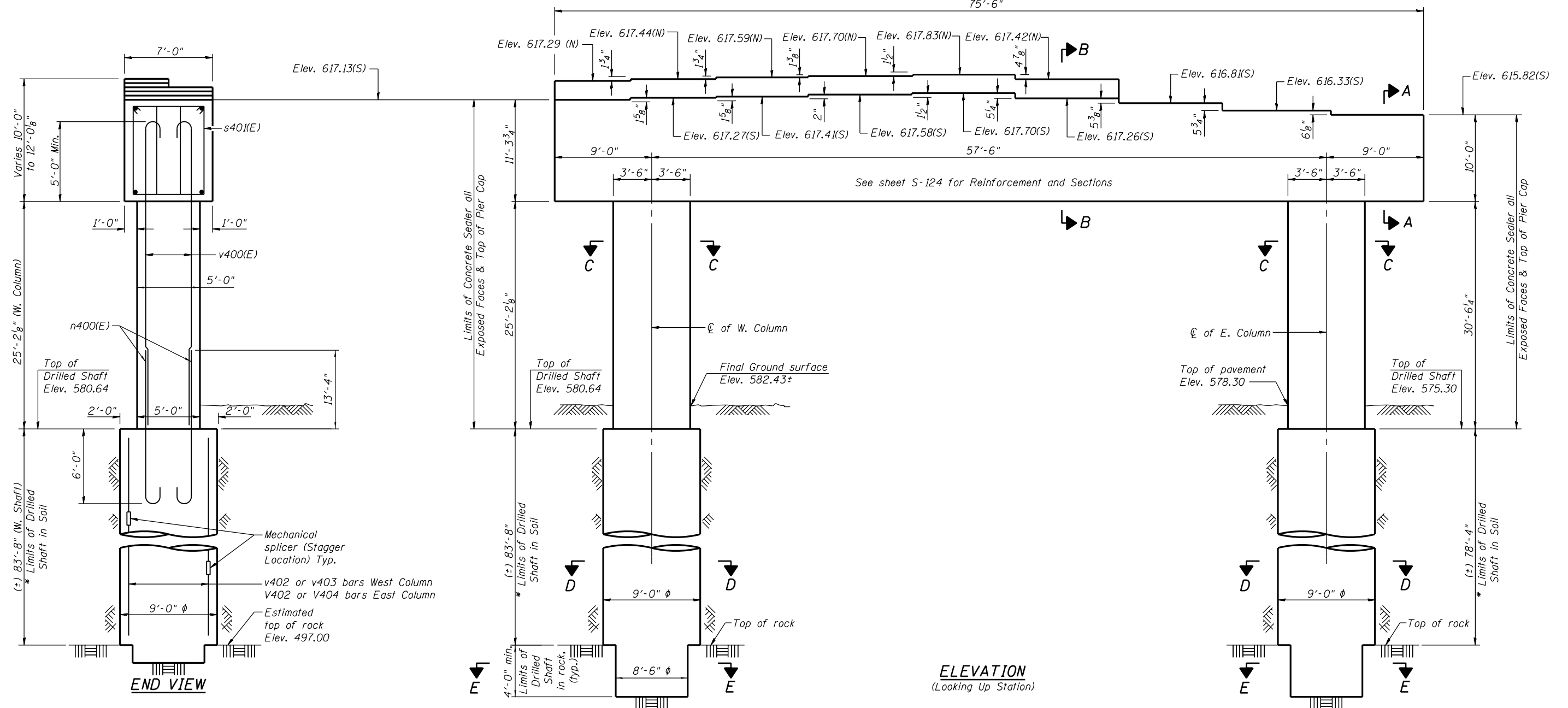
NOTES:

1. Pour steps monolithically with cap.
2. ϕ of Pier is skewed $3^{\circ}39'33''$ to ϕ Ramp NW at Sta. 1825+67.67.
3. For Anchor Bolt Details see Sheets S-108 & S-109.
4. For Architectural Details see Sheets S-143 thru S-145.

* The quantities and detailing are based on the estimated elevations shown on the plans. The actual elevations may differ at each shaft and corresponding adjustments shall be made to the drilled shaft and reinforcement quantities and payment limits.



TOP PLAN



ELEVATION
(Looking Up Station)

0161705-60W28-S123-Pier.dgn



USER NAME = floresg	DESIGNED - RD	REVISED
	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - BM	REVISED
PLOT DATE = 5/7/2014	CHECKED - RD	REVISED

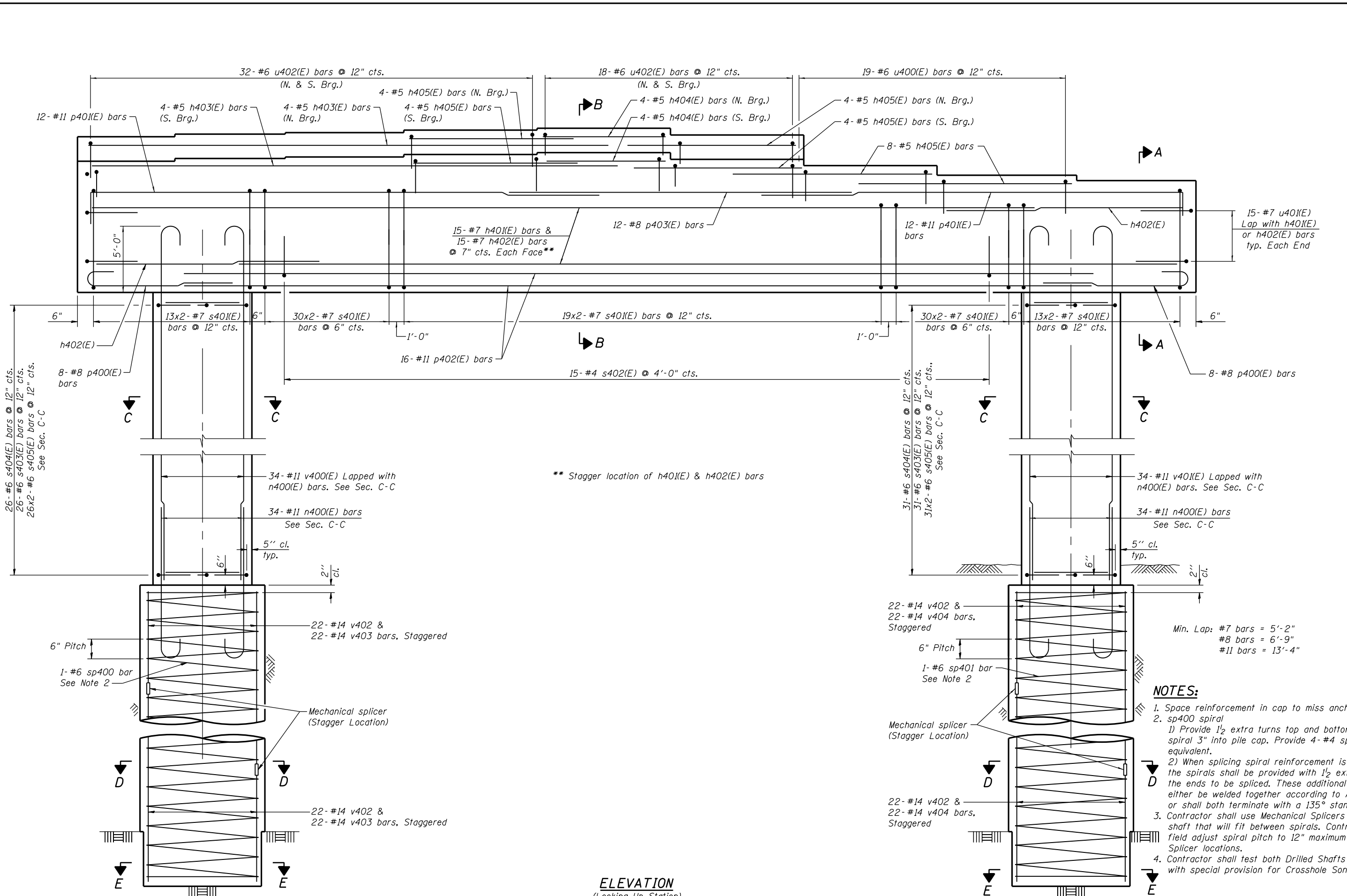
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 4 - PLAN AND ELEVATION
STRUCTURE NO. 016-1705

SHEET NO. S-123 OF S-165 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 439
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

0161705-60W28-5124-Pier.dgn



** Stagger location of h401(E) & h402(E) bars

- NOTES:**
1. Space reinforcement in cap to miss anchor bolts.
 2. sp400 spiral
 - 1) Provide 1/2 extra turns top and bottom. Extend spiral 3" into pile cap. Provide 4- #4 spacers or equivalent.
 - 2) When splicing spiral reinforcement is necessary, the spirals shall be provided with 1/2 extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook.
 3. Contractor shall use Mechanical Splicers in drilled shaft that will fit between spirals. Contractor shall field adjust spiral pitch to 12" maximum at Mechanical Splicer locations.
 4. Contractor shall test both Drilled Shafts in accordance with special provision for Crosshole Sonic Logging.

ELEVATION
(Looking Up Station)

PIER 4 DETAILS I
STRUCTURE NO. 016-1705

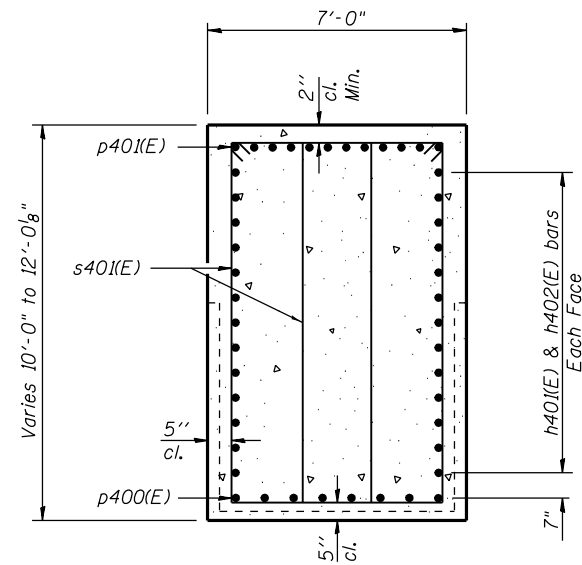
SHEET NO. S-124 OF S-165 SHEETS



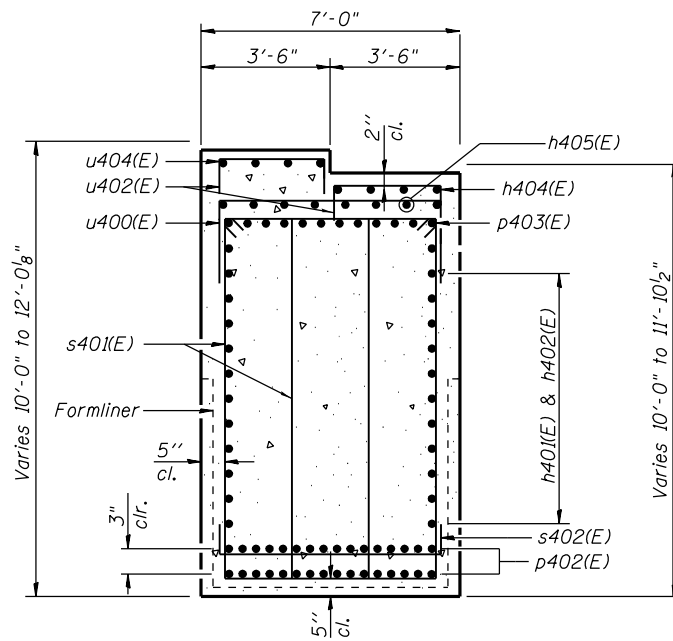
USER NAME = floresg	DESIGNED - RD	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 5/7/2014	DRAWN - BM	REVISED
	CHECKED - RD	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

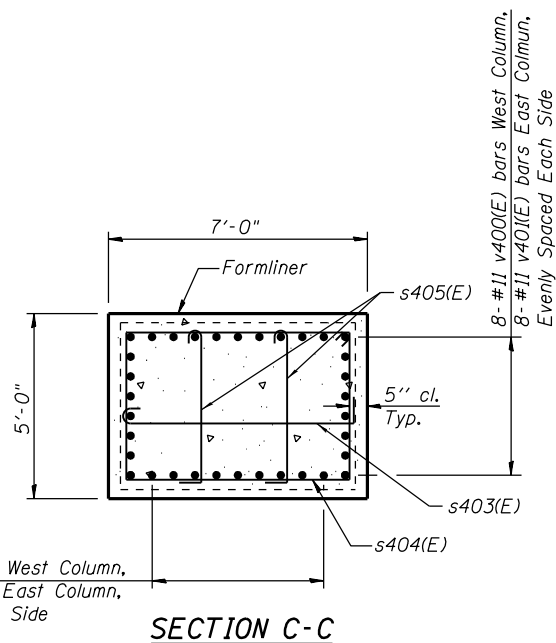
F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 440
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	



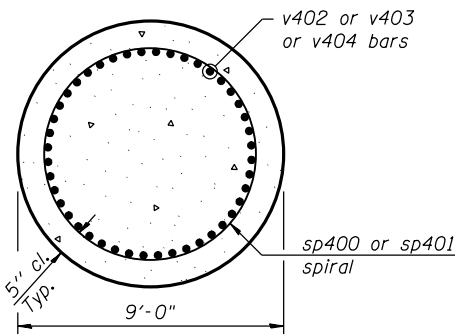
SECTION A-A



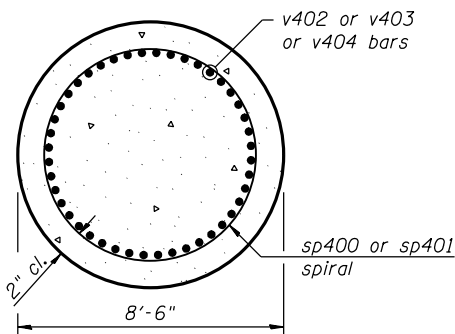
SECTION B-B



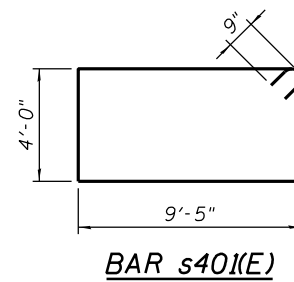
SECTION C-C



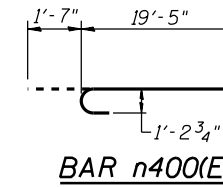
SECTION D-D



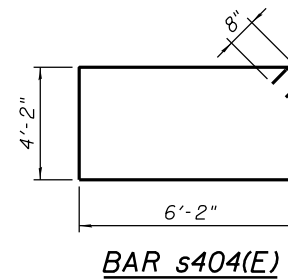
SECTION E-E



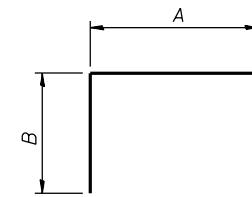
BAR s40(E)



BAR n400(E)

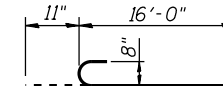


BAR s404(E)

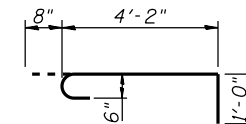


BARS A & B DIMENSIONS

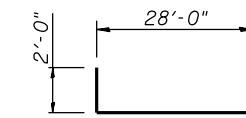
Bar	A	B
s402(E)	6'-2"	1'-2"
u400(E)	6'-2"	2'-0"
u40(E)	6'-0"	4'-0"
u402(E)	2'-11"	2'-0"



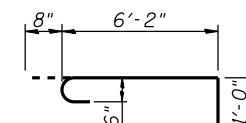
BAR p400(E)



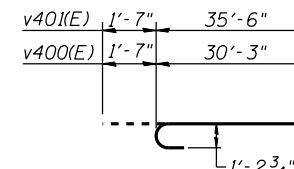
BAR s405(E)



BAR p40(E)



BAR s403(E)



BARS v400(E) & v40(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h40(E)	30	#7	60'-0"	—
h402(E)	30	#7	21'-0"	—
h403(E)	8	#5	38'-6"	—
h404(E)	8	#5	7'-10"	—
h405(E)	24	#5	12'-0"	—
n400(E)	68	#11	21'-0"	—
p400(E)	16	#8	16'-11"	—
p40(E)	24	#11	30'-0"	—
p402(E)	32	#11	60'-0"	—
p403(E)	12	#8	33'-0"	—
s40(E)	210	#7	28'-4"	—
s402(E)	15	#4	8'-6"	—
s403(E)	57	#6	7'-10"	—
s404(E)	57	#6	22'-0"	—
s405(E)	114	#6	5'-10"	—
sp400	1	#6	87'-6"	—
sp401	1	#6	82'-2"	—
u400(E)	19	#6	10'-2"	—
u40(E)	30	#7	14'-0"	—
u402(E)	100	#6	6'-11"	—
v400(E)	34	#11	31'-10"	—
v40(E)	34	#11	37'-1"	—
v402	88	#14	60'-0"	—
v403	44	#14	27'-6"	—
v404	44	#14	22'-2"	—
Concrete Structures		Cu. Yd.	290.7	
Reinforcement Bars, Epoxy Coated		Pound	57,300	
Reinforcement Bars		Pound	70,420	
Drilled Shaft in Soil		Cu. Yd.	381.7	
Drilled Shaft in Rock		Cu. Yd.	16.8	
Concrete Sealer		Sq. Ft.	4,163	
Crosshole Sonic Logging		Each	2	

** Length is height of spiral.

0161705-60W28-5125-Pier.dgn



USER NAME = floresg	DESIGNED - RD	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 5/7/2014	DRAWN - BM	REVISED
	CHECKED - RD	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

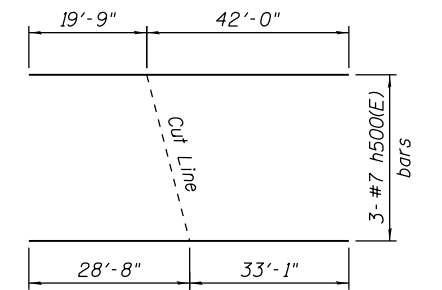
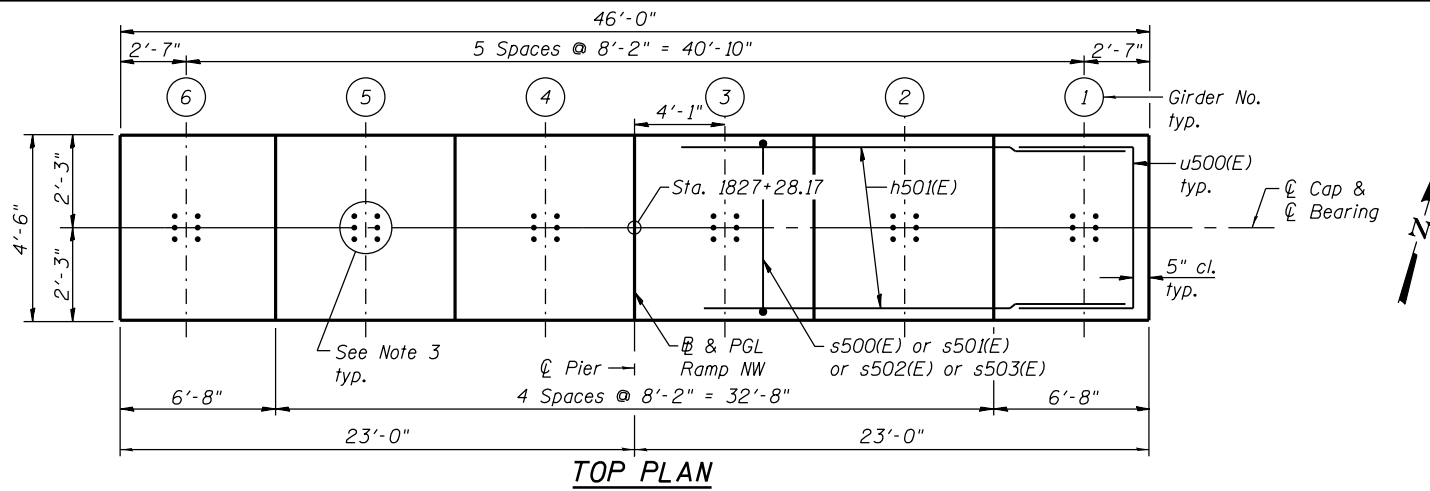
PIER 4 DETAILS II
STRUCTURE NO. 016-1705

SHEET NO. S-125 OF S-165 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	441
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				

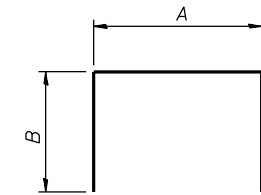
NOTES:

1. Pour steps monolithically with cap.
2. ϕ of Pier is radial to ϕ Ramp NW at Sta. 1827+28.17.
3. For Anchor Bolts Details see sheets S-110 & S-111.
4. For Architectural Details see sheets S-143 thru S-145.
5. See sheet S-127 for Sections and Details.
6. It is anticipated that existing Ramp NE approach wall foundation conflicts with installation of drilled shafts. The Contractor shall provide necessary equipment, labor and materials as required to construct proposed the proposed drilled shafts. This work shall be completed in accordance with the Special Provision Foundation Construction at Existing Obstructions.



FIELD CUTTING DIAGRAM

Order h500(E) bars Full Length. Cut as shown and use remainder of bars.

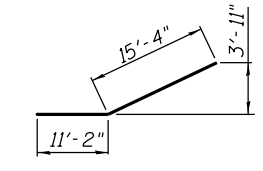


BARS

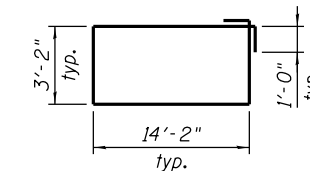
A & B DIMENSIONS

Bar	A	B
s500(E)	2'-6"	4'-2"
s501(E)	2'-6"	6'-6"
s502(E)	3'-8"	6'-6"
s503(E)	2'-6"	4'-9"
t501(E)	26'-4"	4'-6"
t502(E)	26'-4"	2'-0"
u500(E)	3'-6"	4'-0"
u501(E)	7'-6"	4'-0"
u502(E)	3'-8"	1'-0"

BARS p500(E) & p501(E)



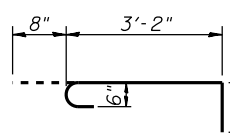
BAR p503(E)



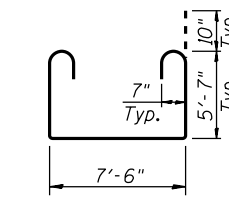
BAR s504(E)

MIN. LAP LENGTH

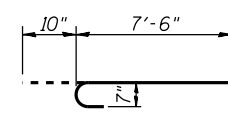
- #6 bars: 3'-10"
- #8 bars: 6'-9"
- #11 bars: 13'-4"



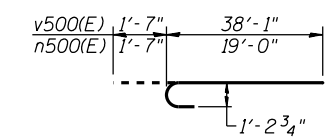
BAR s505(E)



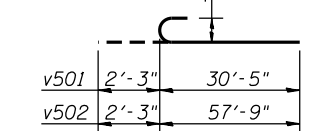
BAR t500(E)



BAR t503(E)



BAR v500(E) & BAR n500(E)

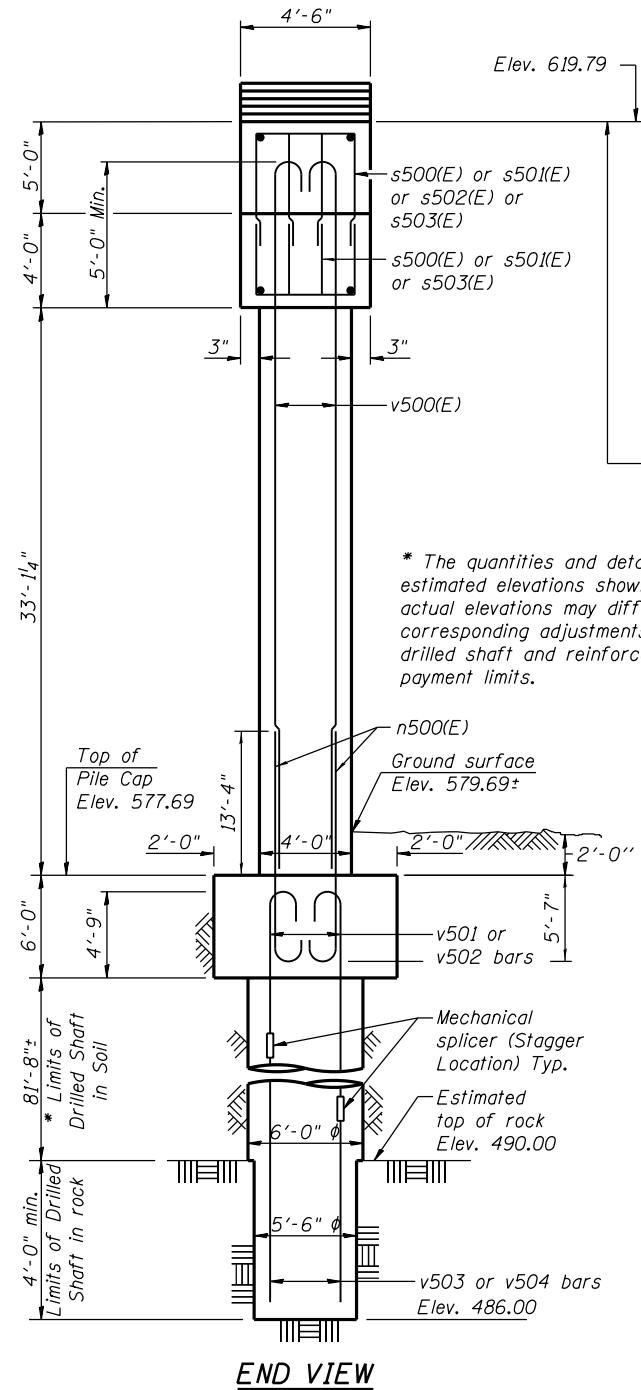


BARS v501 & v502

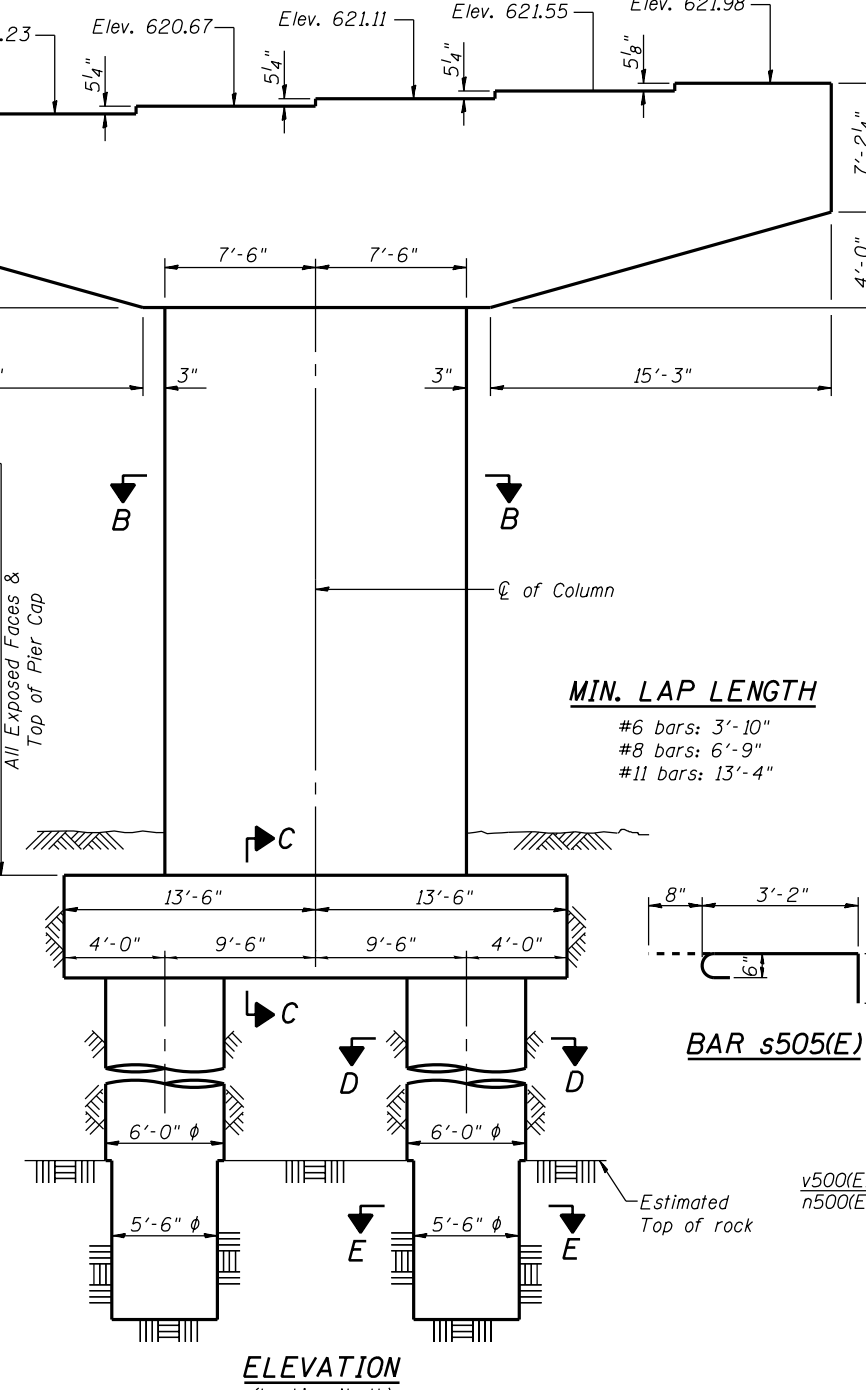
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h500(E)	6	#7	61'-9"	—
h501(E)	18	#7	45'-2"	—
h502(E)	14	#7	26'-6"	—
h503(E)	24	#5	7'-10"	—
h504(E)	12	#5	6'-1"	—
n500(E)	56	#11	20'-7"	U
p500(E)	9	#11	49'-1"	□
p501(E)	9	#11	48'-6"	□
p502(E)	9	#11	43'-8"	—
p503(E)	12	#8	26'-6"	—
s500(E)	20	#6	10'-10"	□
s501(E)	192	#6	15'-6"	□
s502(E)	28	#6	16'-8"	□
s503(E)	36	#6	12'-0"	□
s504(E)	33	#6	36'-8"	□
s505(E)	198	#6	4'-10"	U
sp500	2	#6	85'-11"	W
t500(E)	37	#7	20'-4"	U
t501(E)	20	#11	35'-4"	□
t502(E)	13	#11	30'-4"	□
t503(E)	37	#7	9'-6"	U
u500(E)	18	#6	11'-6"	□
u501(E)	14	#7	15'-6"	□
u502(E)	47	#6	5'-8"	□
v500(E)	56	#11	39'-8"	U
v501	20	#14	32'-8"	U
v502	20	#14	60'-0"	U
v503	20	#14	32'-8"	—
v504	20	#14	60'-0"	—
Concrete Structures		Cu. Yd.	188.8	
Reinforcement Bars, Epoxy Coated		Pound	47,640	
Reinforcement Bars		Pound	36,880	
Drilled Shaft in Soil		Cu. Yd.	171.0	
Drilled Shaft in Rock		Cu. Yd.	7.0	
Concrete Sealer		Sq. Ft.	2,478	
Braced Excavation		Cu. Yd.	102.1	
Crosshole Sonic Logging		Each	1	
Foundation Construction at Existing Obstructions		Each	2	

** Length is height of spiral.



* The quantities and detailing are based on the estimated elevations shown on the plans. The actual elevations may differ at each shaft and corresponding adjustments shall be made to the drilled shaft and reinforcement quantities and payment limits.



ELEVATION
(Looking North)



USER NAME = floresg	DESIGNED - RD	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 5/7/2014	DRAWN - BM	REVISED
	CHECKED - RD	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 5 - PLAN AND ELEVATION
STRUCTURE NO. 016-1705

SHEET NO. S-126 OF S-165 SHEETS

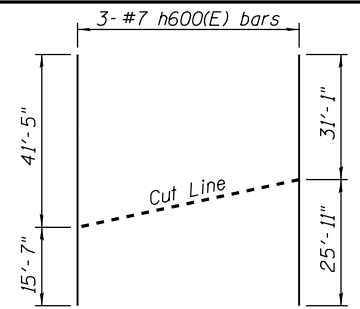
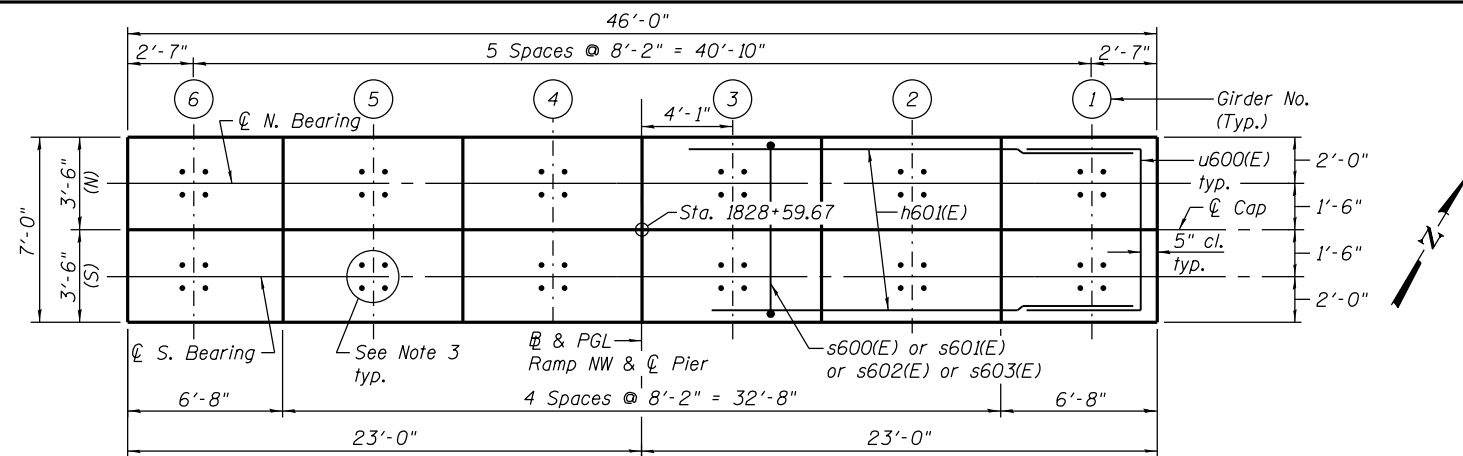
F.A.I. RTE. 90/94/290	SECTION 2013-01OR	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 442
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

0161705-60W28-S126-Pier.dgn

NOTES:

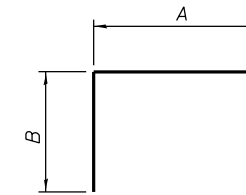
1. Four steps monolithically with cap.
2. ϕ of Pier is radial to ϕ Ramp NW at Sta. 1828+59.67.
3. For Anchor Bolts Details see sheets S-108 & S-109.
4. For Architectural Details see sheets S-143 thru S-145.
5. See sheet S-129 for Sections and Details.
6. (N)-North Girder, (S)-South Girder.

* The quantities and detailing are based on the estimated elevations shown on the plans. The actual elevations may differ at each shaft and corresponding adjustments shall be made to the drilled shaft and reinforcement quantities and payment limits.



FIELD CUTTING DIAGRAM

Order h600(E) bars full length. Cut as shown and use remainder of bars.



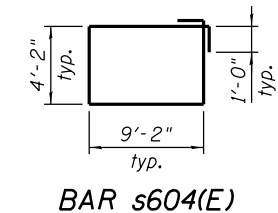
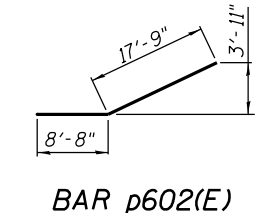
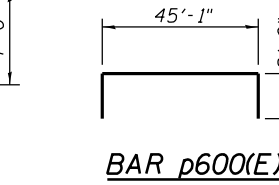
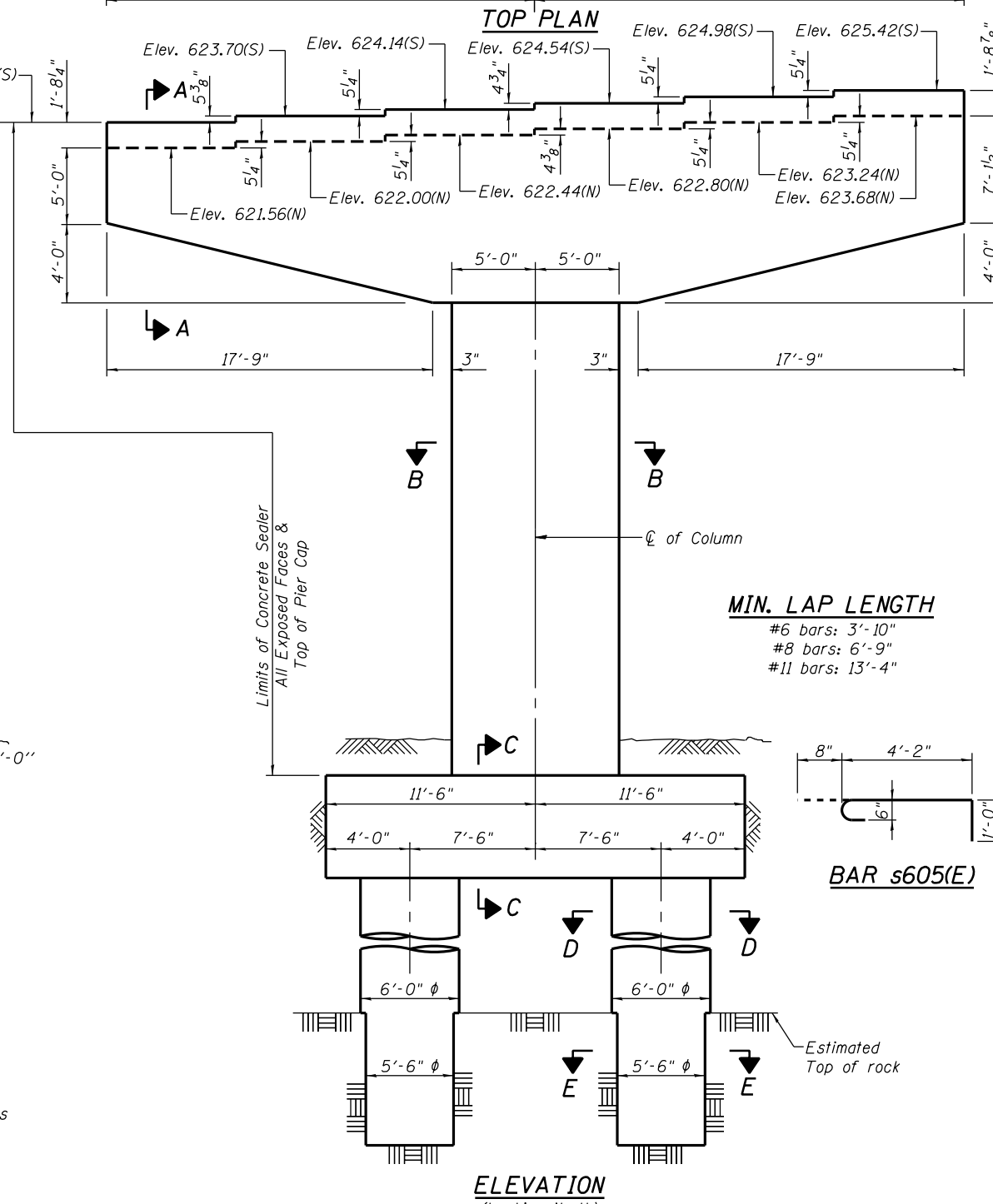
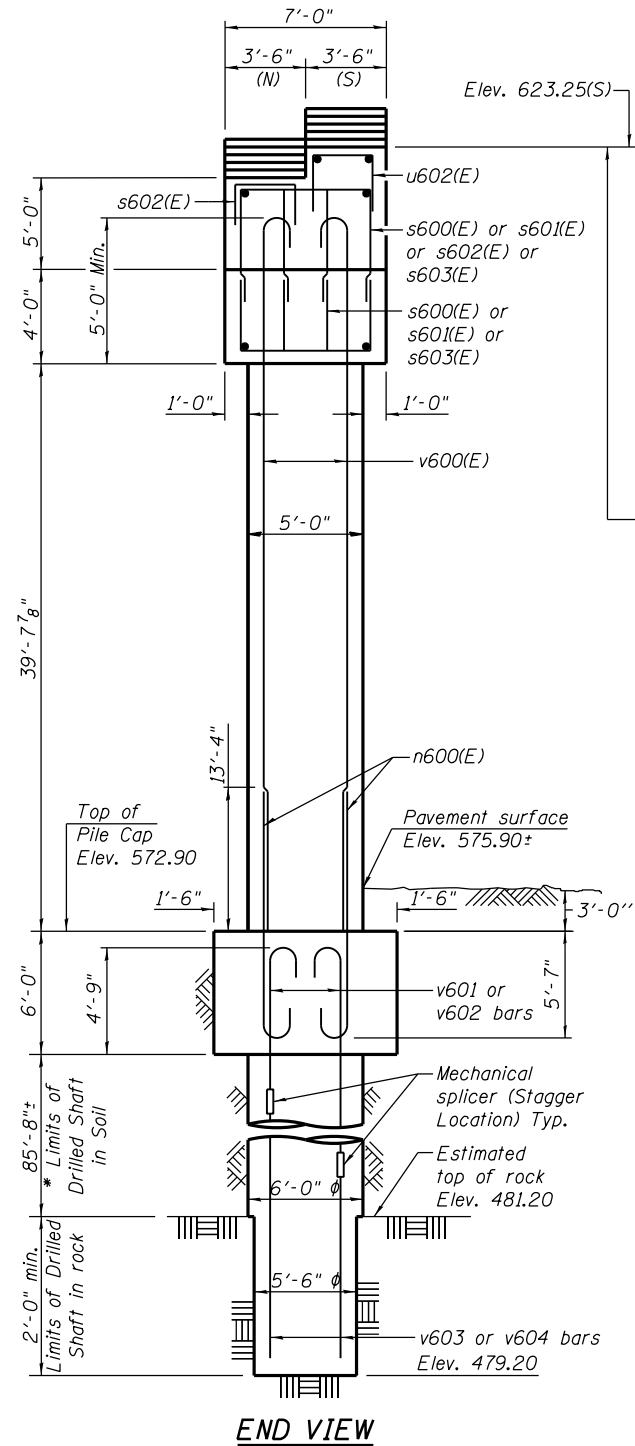
BARS A & B DIMENSIONS

Bar	A	B
s600(E)	4'-2"	4'-1"
s601(E)	4'-2"	6'-4"
s602(E)	6'-2"	6'-4"
s603(E)	4'-2"	4'-9"
t601(E)	22'-4"	4'-6"
t602(E)	22'-4"	2'-0"
u600(E)	6'-0"	4'-0"
u601(E)	7'-6"	4'-0"
u602(E)	2'-11"	1'-0"

BILL OF MATERIAL

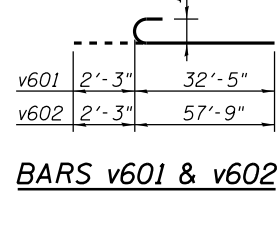
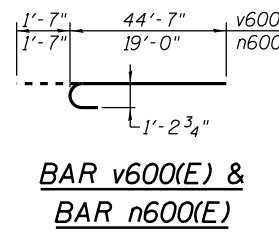
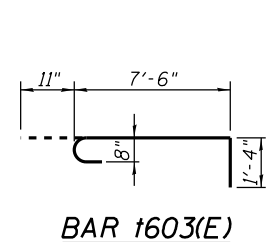
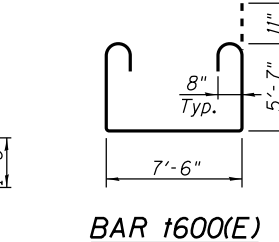
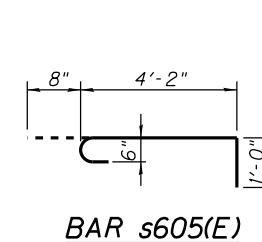
Bar	No.	Size	Length	Shape
h600(E)	6	#7	57'-0"	—
h601(E)	22	#7	45'-2"	—
h602(E)	14	#7	22'-6"	—
h603(E)	40	#5	7'-10"	—
h604(E)	20	#5	6'-1"	—
n600(E)	74	#11	20'-7"	U
p600(E)	14	#11	49'-1"	U
p601(E)	14	#11	43'-8"	—
p602(E)	20	#8	26'-5"	—
s600(E)	24	#6	12'-4"	□
s601(E)	224	#6	16'-10"	□
s602(E)	18	#6	18'-10"	□
s603(E)	40	#6	13'-8"	□
s604(E)	40	#6	28'-8"	□
s605(E)	160	#6	5'-10"	U
sp600	2	#6	87'-11"	W
t600(E)	31	#8	20'-6"	U
t601(E)	28	#11	31'-4"	U
t602(E)	22	#11	26'-4"	U
t603(E)	31	#8	9'-9"	U
u600(E)	18	#7	14'-0"	—
u601(E)	14	#7	15'-6"	—
u602(E)	94	#6	4'-11"	—
v600(E)	74	#11	46'-2"	U
v601	20	#14	34'-8"	U
v602	20	#14	60'-0"	U
v603	20	#14	34'-8"	—
v604	20	#14	60'-0"	—
Concrete Structures		Cu. Yd.	226.1	
Reinforcement Bars, Epoxy Coated		Pound	60,840	
Reinforcement Bars, Drilled Shaft in Soil		Pound	37,690	
Drilled Shaft in Soil		Cu. Yd.	179.4	
Drilled Shaft in Rock		Cu. Yd.	3.5	
Concrete Sealer		Sq. Ft.	2,761	
Braced Excavation		Cu. Yd.	133.2	
Crosshole Sonic Logging		Each	1	

** Length is height of spiral.



MIN. LAP LENGTH

- #6 bars: 3'-10"
- #8 bars: 6'-9"
- #11 bars: 13'-4"



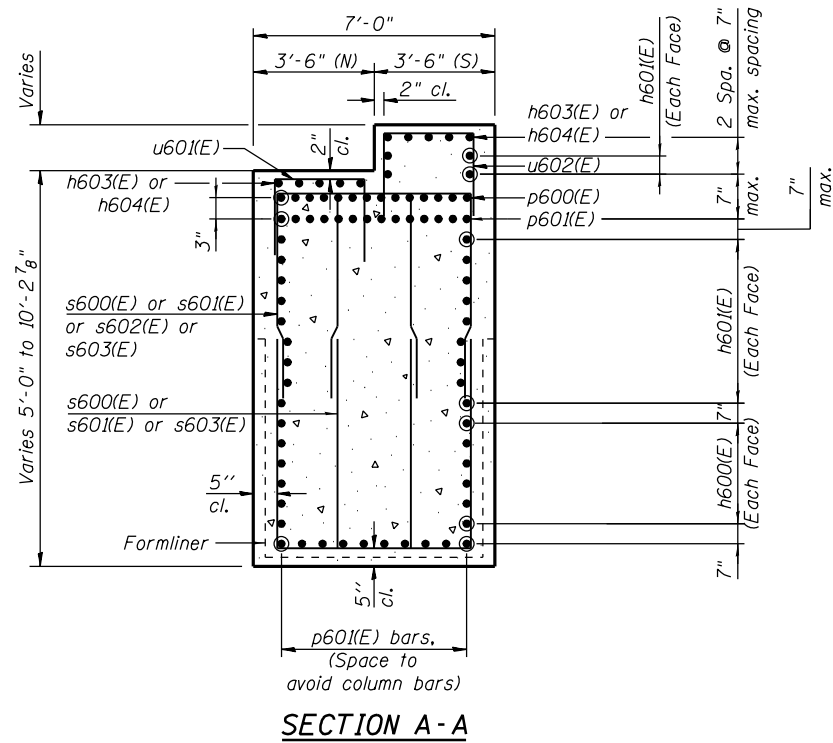
USER NAME = floresg	DESIGNED - RD	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 5/7/2014	DRAWN - BM	REVISED
	CHECKED - RD	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

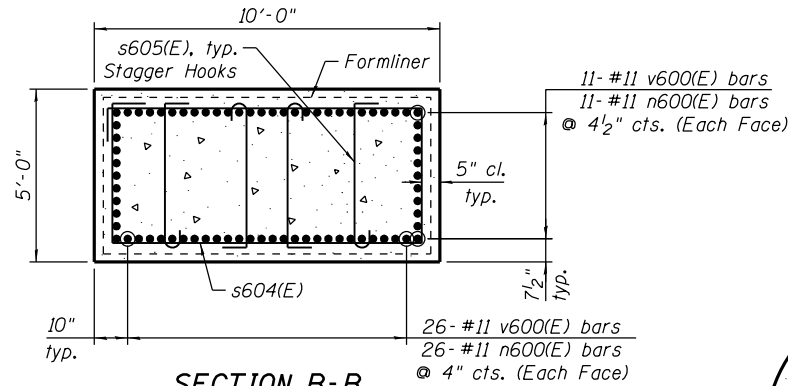
PIER 6 - PLAN AND ELEVATION
STRUCTURE NO. 016-1705

SHEET NO. S-128 OF S-165 SHEETS

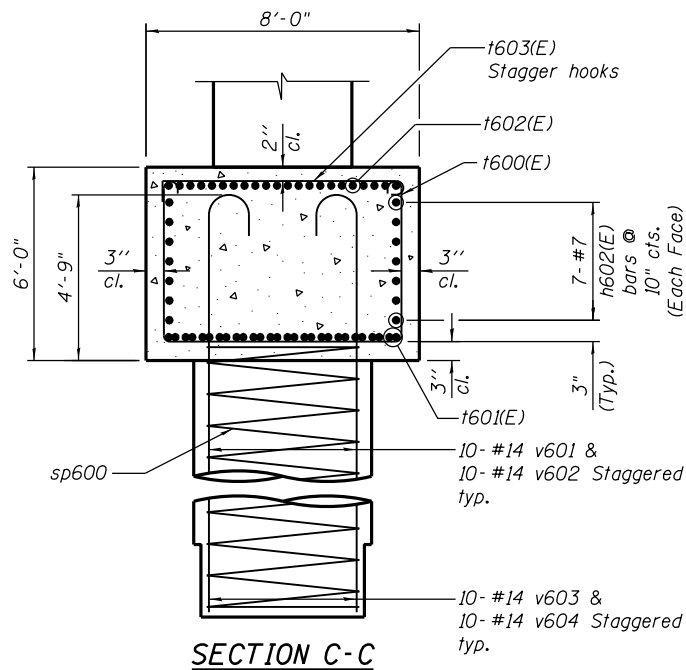
F.A.I. R.T.E. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 444
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	



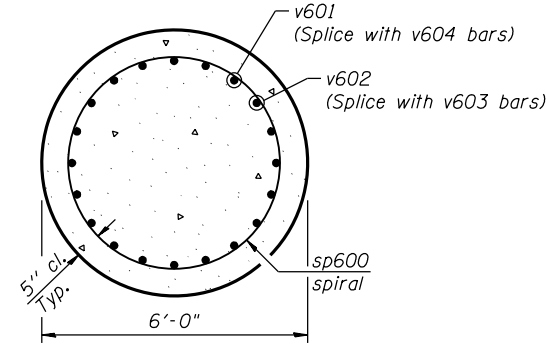
SECTION A-A



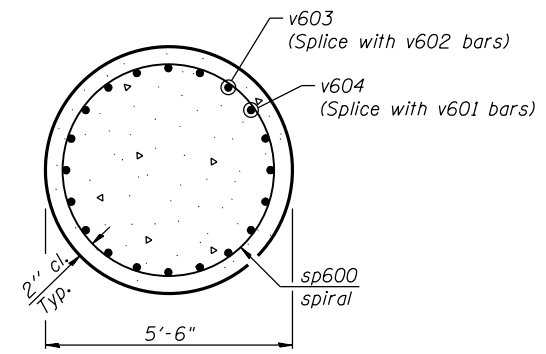
SECTION B-B



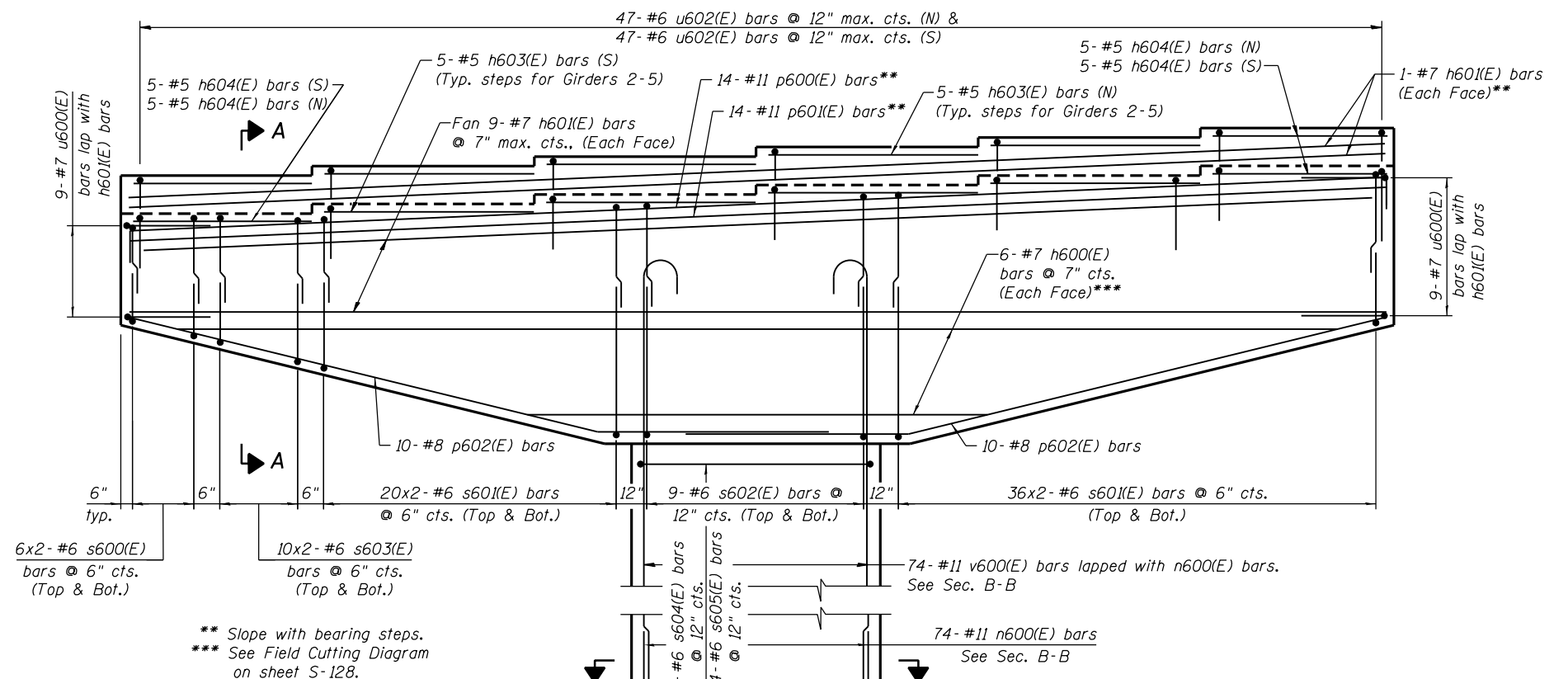
SECTION C-C



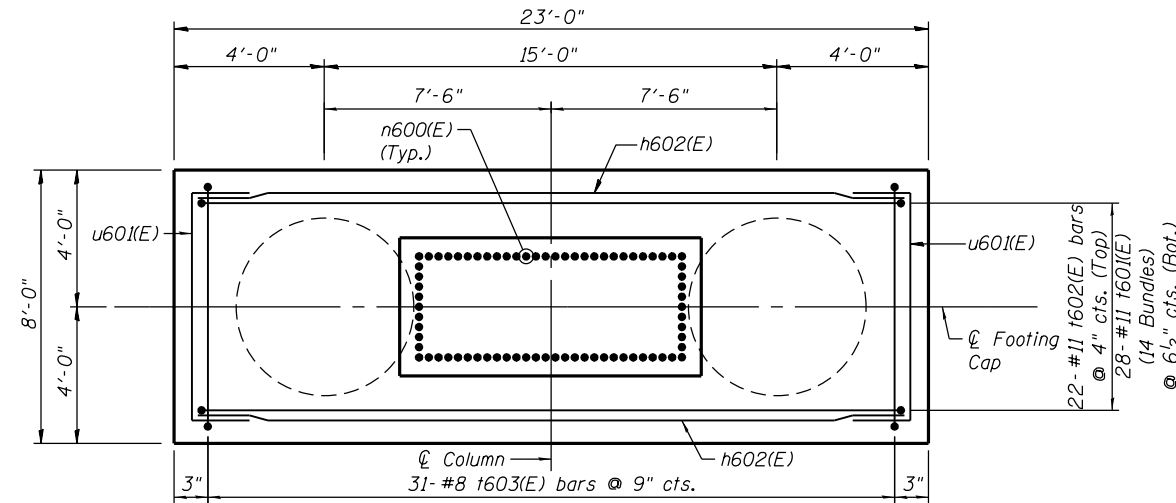
SECTION D-D



SECTION E-E



ELEVATION
(Looking North)



SECTION F-F

** Slope with bearing steps.
*** See Field Cutting Diagram on sheet S-128.

- NOTES:**
- Space reinforcement in cap to miss anchor bolts.
 - sp600 spiral
 - Provide 1/2 extra turns top and bottom. Extend spiral 3" into pile cap. Provide 4-#4 spacers or equivalent.
 - When splicing spiral reinforcement is necessary, the spirals shall be provided with 1/2 extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook.
 - Contractor shall use Mechanical Splicers in drilled shaft that will fit between spirals. Contractor shall field adjust spiral pitch to 12" maximum at Mechanical Splicer locations.
 - A Drilled Shaft shall be tested in accordance with Special Provisions for Crosshole Sonic Logging.
 - (N)-North, (S)-South.

0161705-60W28-S129-Pier.dgn



USER NAME = floresg	DESIGNED - RD	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 5/7/2014	DRAWN - BM	REVISED
	CHECKED - RD	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 6 DETAILS
STRUCTURE NO. 016-1705

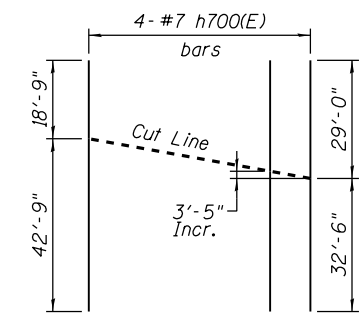
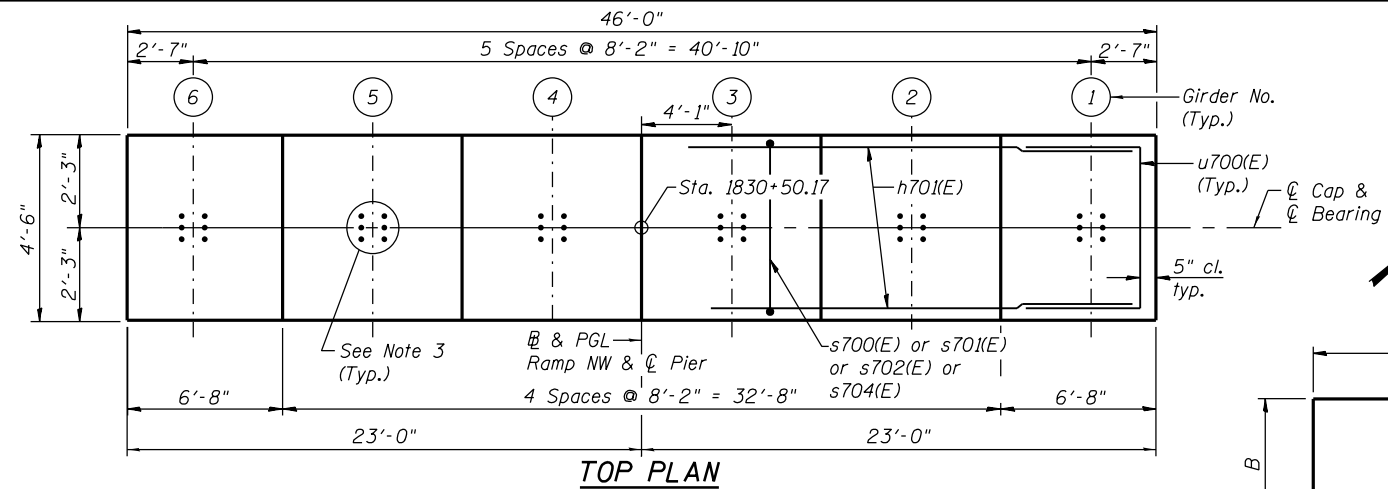
SHEET NO. S-129 OF S-165 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 445
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

NOTES:

1. Pour steps monolithically with cap.
2. ϕ of Pier is radial to ϕ Ramp NW at Sta. 1830+50.17.
3. For Anchor Bolts Details see sheets S-110 and S-111.
4. For Architectural Details see sheets S-143 thru S-145.
5. See sheet S-131 for Sections and Details.
6. For Drilled Shaft and Footing construction details, see sheet S-10.

* The quantities and detailing are based on the estimated elevations shown on the plans. The actual elevations may differ at each shaft and corresponding adjustments shall be made to the drilled shaft and reinforcement quantities and payment limits.



MIN. LAP LENGTH

- #6 bars: 3'-10"
- #8 bars: 6'-9"
- #11 bars: 13'-4"

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h700(E)	8	#7	61'-6"	—
h701(E)	20	#7	45'-2"	—
h702(E)	24	#5	7'-2"	—
h703(E)	12	#5	6'-0"	—
h704(E)	18	#7	24'-6"	—
n700(E)	70	#11	19'-5"	—
p700(E)	9	#11	49'-1"	—
p701(E)	9	#11	48'-7"	—
p702(E)	9	#11	44'-0"	—
p703(E)	12	#8	27'-1"	—
s700(E)	24	#6	11'-6"	—
s701(E)	64	#6	13'-4"	—
s702(E)	160	#6	16'-10"	—
s703(E)	12	#4	4'-10"	—
s704(E)	28	#6	18'-2"	—
s705(E)	44	#6	36'-8"	—
s706(E)	264	#6	4'-10"	—
sp700	2	#6	89'-9"	—
t700(E)	50	#7	21'-4"	—
t701(E)	30	#11	33'-4"	—
t702(E)	15	#11	28'-4"	—
t703(E)	50	#7	10'-6"	—
u700(E)	20	#7	11'-8"	—
u701(E)	47	#6	5'-8"	—
u703(E)	18	#7	16'-4"	—
v700(E)	70	#11	49'-2"	—
v701	26	#14	36'-9"	—
v702	26	#14	42'-9"	—
v703	26	#14	60'-0"	—
v704	26	#14	54'-0"	—
Concrete Structures		Cu. Yd.	216.7	
Reinforcement Bars, Epoxy Coated		Pound	60,350	
Reinforcement Bars		Pound	49,110	
Drilled Shaft in Soil		Cu. Yd.	249.4	
Drilled Shaft in Rock		Cu. Yd.	4.9	
Concrete Sealer		Sq. Ft.	2,899	
Braced Excavation		Cu. Yd.	151.2	
Earth Excavation (Special)		Cu. Yd.	76.0	
Permanent Casing		Foot	178	
Crosshole Sonic Logging		Each	1	

BARS A & B DIMENSIONS

Bar	A	B
s700(E)	2'-4"	4'-7"
s701(E)	2'-4"	5'-6"
s702(E)	2'-4"	7'-3"
s704(E)	3'-8"	7'-3"
t701(E)	24'-4"	4'-6"
t702(E)	24'-4"	2'-0"
u700(E)	3'-8"	4'-0"
u703(E)	8'-4"	4'-0"

BARS p700(E) & p701(E)

BARS s703(E)

BARS s705(E)

BAR p703(E)

BAR s703(E)

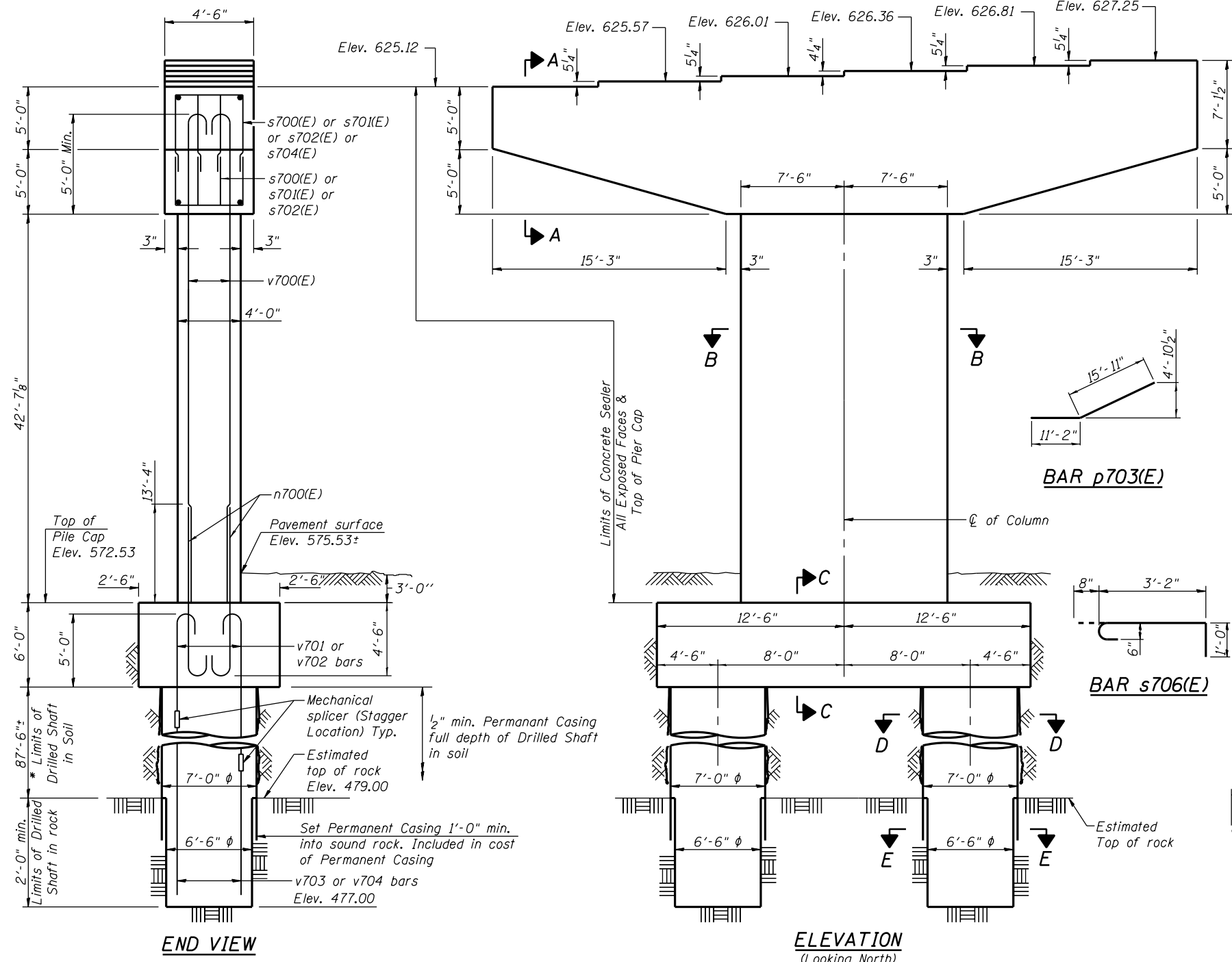
BAR t703(E)

BAR s706(E)

BAR t700(E)

BARS v701 & v702

BAR v700(E) BAR n700(E)



END VIEW

ELEVATION (Looking North)



USER NAME = floresg	DESIGNED - RD	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 5/7/2014	DRAWN - BM	REVISED
	CHECKED - RD	REVISED

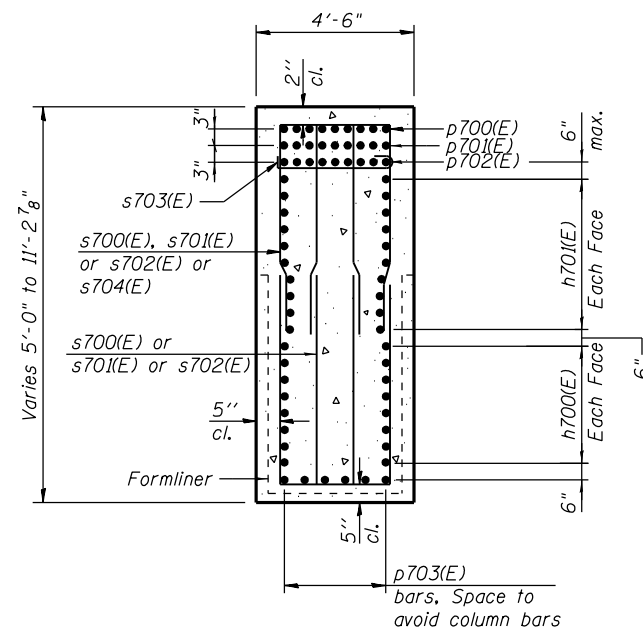
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 7 - PLAN AND ELEVATION
STRUCTURE NO. 016-1705

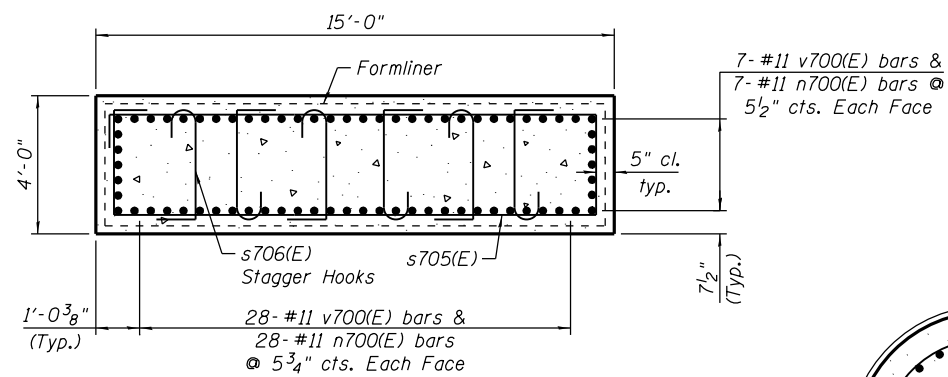
SHEET NO. S-130 OF S-165 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-01OR	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 446
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

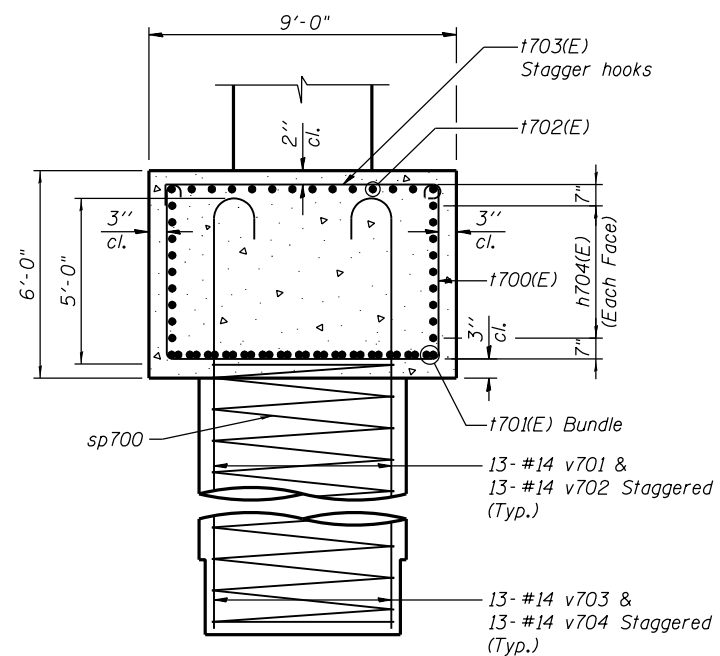
0161705-60W28-S130-Pier.dgn



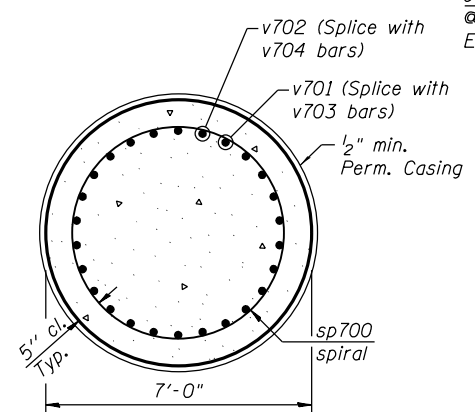
SECTION A-A



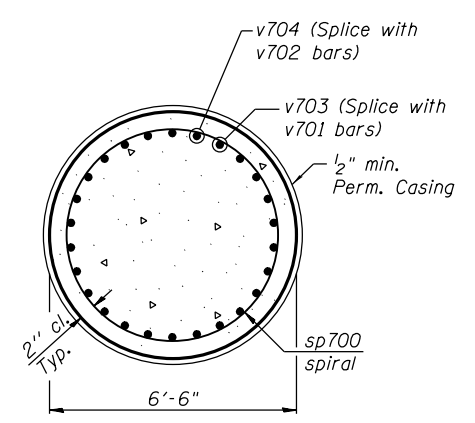
SECTION B-B



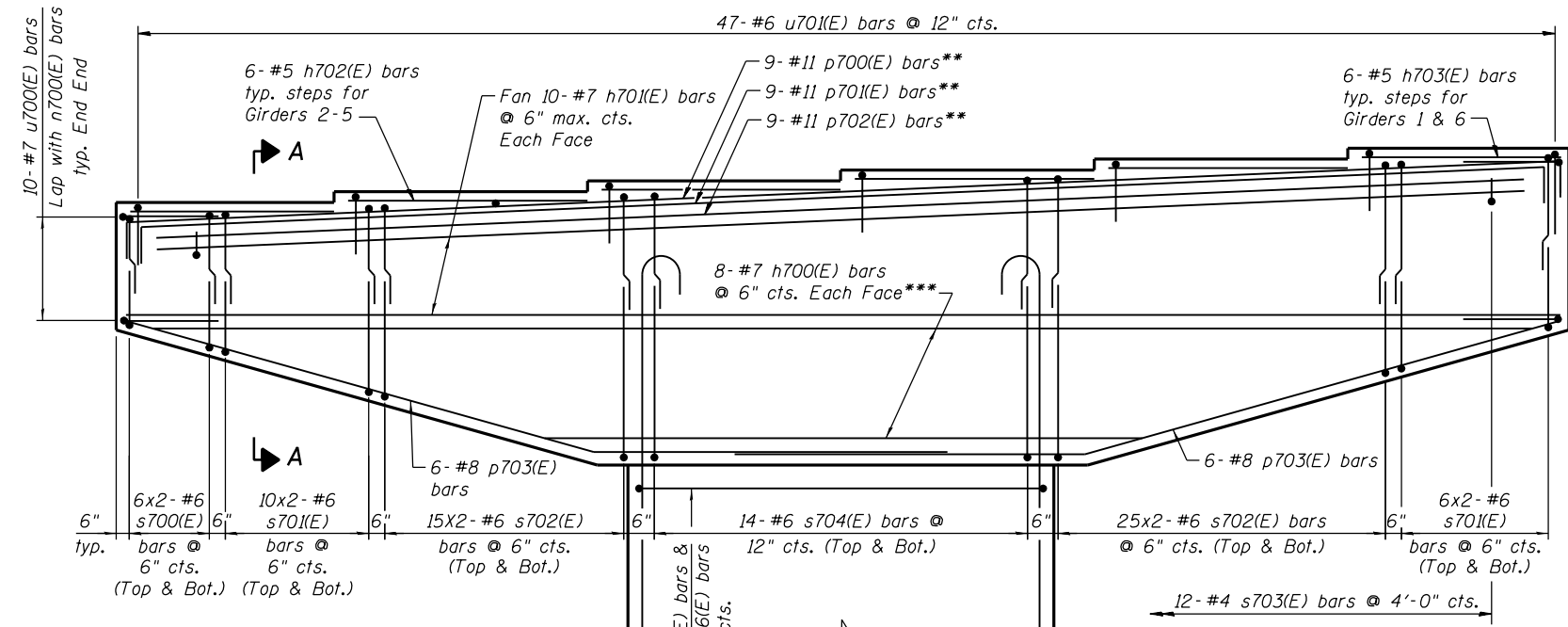
SECTION C-C



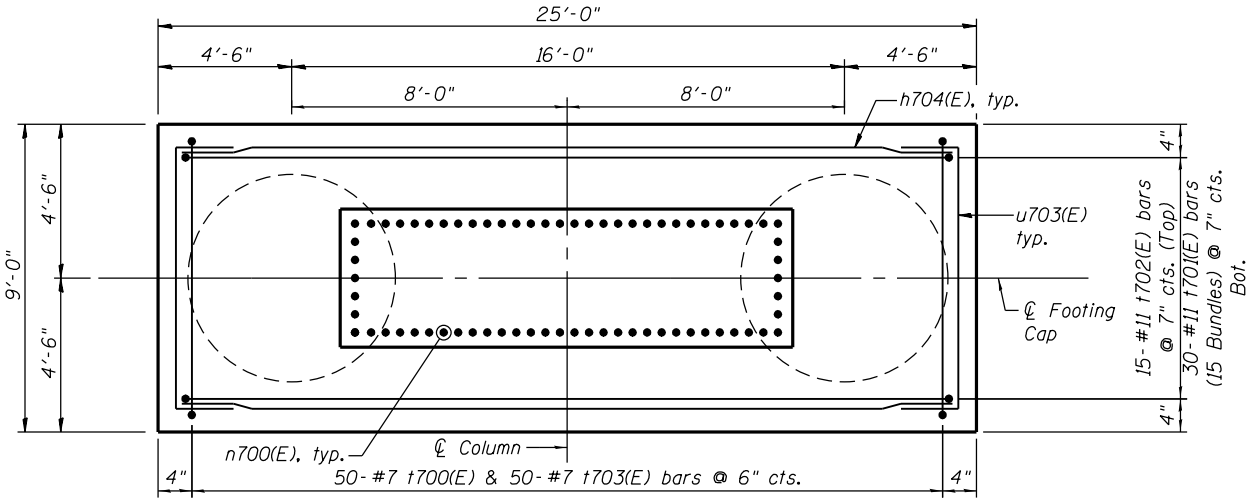
SECTION D-D



SECTION E-E



ELEVATION
(Looking North)
25'-0"



FOOTING PLAN

** Slope with bearing steps.
*** See Field Cutting Diagram on sheet S-130.

- NOTES:**
1. Space reinforcement in cap to miss anchor bolts.
 2. sp700 spiral
1) Provide 1/2 extra turns top and bottom. Extend spiral 3" into pile cap. Provide 4-#4 spacers or equivalent.
2) When splicing spiral reinforcement is necessary, the spirals shall be provided with 1/2 extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook.
 3. Contractor shall use Mechanical Splicers in drilled shaft that will fit between spirals. Contractor shall field adjust spiral pitch to 12" maximum at Mechanical Splicer locations.
 4. A Drilled Shaft shall be tested in accordance with Special Provisions for Crosshole Sonic Logging.
 5. Contractor is responsible for determining the casing thickness and the actual tip elevation to be used. See Article 516.06(d) of the Standard Specifications. Pay limits for the Permanent Casing are based on the minimum length shown.

0161705-60W28-S131-Pier.dgn



USER NAME = floresg	DESIGNED - RD	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 5/7/2014	DRAWN - BM	REVISED
	CHECKED - RD	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 7 DETAILS
STRUCTURE NO. 016-1705

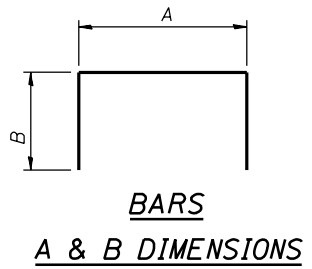
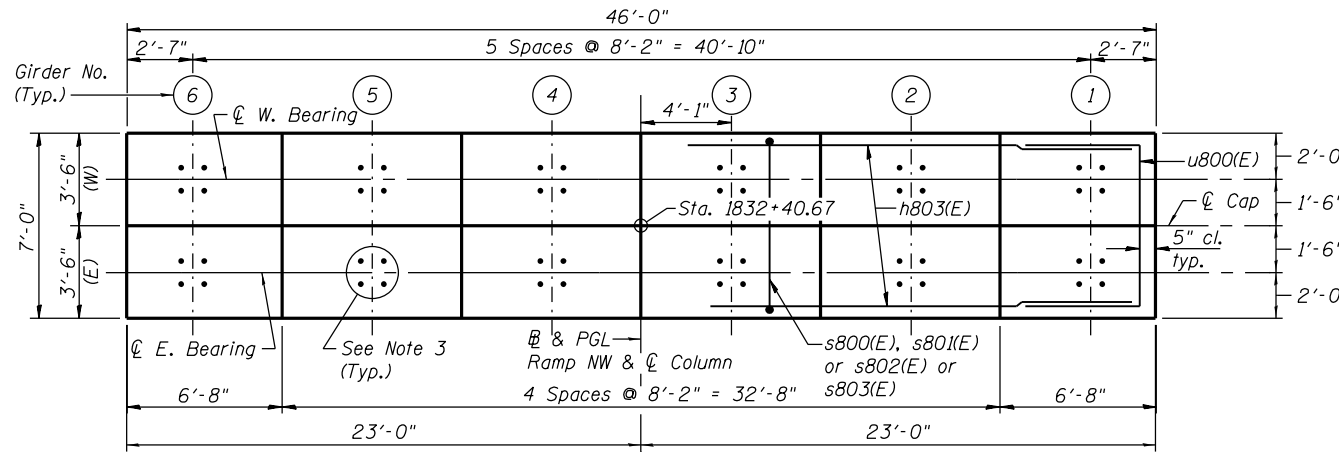
SHEET NO. S-131 OF S-165 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 447
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

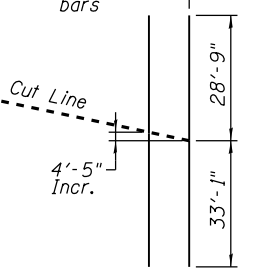
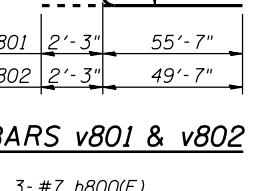
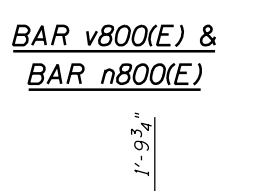
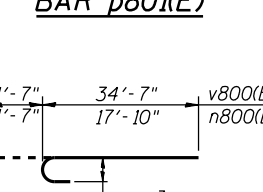
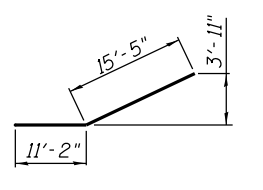
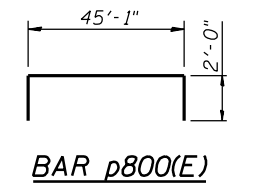
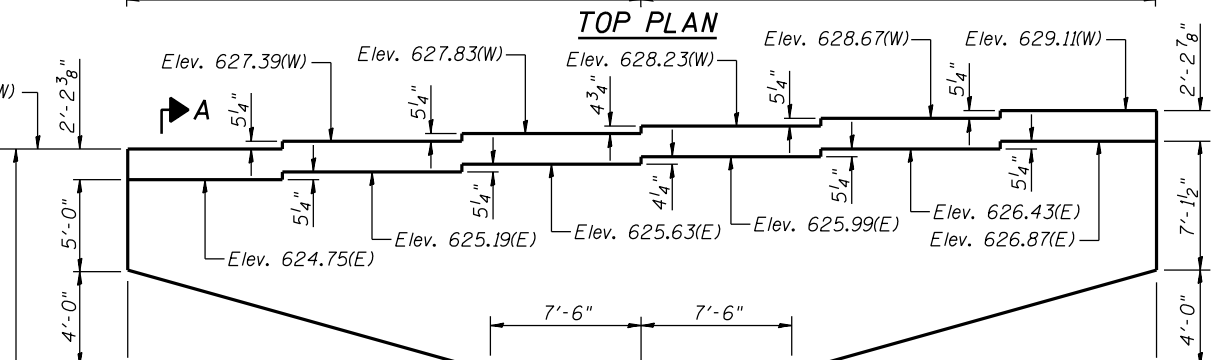
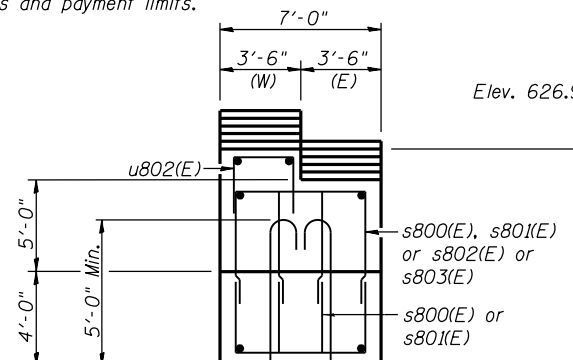
NOTES:

1. Pour steps monolithically with cap.
2. ϕ of Pier is radial to \mathcal{R} Ramp NW at Sta. 1832+40.67.
3. For Anchor Bolts Details see sheets S-108 & S-109.
4. For Architectural Details see sheets S-143 thru S-145.
5. See sheet S-133 & S-134 for Sections and Details.
6. (W)-West Girder, (E)-East Girder.
7. Concrete for Pier 8 shall be in accordance with Section 503 of Standard Specifications except that the max. design of concrete shall attain a compressive strength of 5,000 psi at 14 days.

* The quantities and detailing are based on the estimated elevations shown on the plans. The actual elevations may differ at each shaft and corresponding adjustments shall be made to the drilled shaft and reinforcement quantities and payment limits.



Bar	A	B
s800(E)	3'-8"	4'-7"
s801(E)	3'-8"	5'-6"
s802(E)	3'-8"	6'-8"
s803(E)	6'-2"	6'-8"
t800(E)	23'-4"	3'-3"
w800(E)	26'-4"	3'-3"
u800(E)	6'-0"	4'-0"
u801(E)	2'-11"	1'-0"
u802(E)	2'-11"	3'-6"
u804(E)	23'-6"	4'-0"



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h800(E)	6	#7	61'-10"	—
h801(E)	22	#7	45'-2"	—
h802(E)	20	#5	7'-2"	—
h803(E)	15	#5	6'-1"	—
h804(E)	20	#5	22'-0"	—
h805(E)	5	#5	14'-3"	—
h806(E)	22	#7	26'-6"	—
n800(E)	60	#11	19'-5"	U
p800(E)	18	#11	49'-1"	U
p801(E)	20	#8	27'-7"	U
s800(E)	16	#6	12'-10"	□
s801(E)	28	#6	14'-6"	□
s802(E)	84	#6	17'-6"	□
s803(E)	28	#6	19'-6"	□
s804(E)	29	#6	20'-4"	□
s805(E)	174	#6	4'-10"	□
sp800	5	#6	103'-10"	W
t800(E)	154	#11	29'-10"	□
u800(E)	22	#7	14'-0"	□
u801(E)	46	#6	4'-11"	□
u802(E)	46	#6	9'-11"	□
u804(E)	22	#7	31'-6"	□
v800(E)	60	#11	36'-2"	U
v801	70	#14	57'-10"	U
v802	70	#14	51'-10"	U
v803	70	#14	54'-0"	—
v804	70	#14	60'-0"	—
w800(E)	96	#11	32'-10"	□
Concrete Structures		Cu. Yd.	351.1	
Reinforcement Bars, Epoxy Coated		Pound	78,970	
Reinforcement Bars		Pound	140,480	
Drilled Shaft in Soil		Cu. Yd.	362.1	
Drilled Shaft in Rock		Cu. Yd.	11.8	
Concrete Sealer		Sq. Ft.	2,736	
Braced Excavation		Cu. Yd.	363.3	
Crosshole Sonic Logging		Each	1	

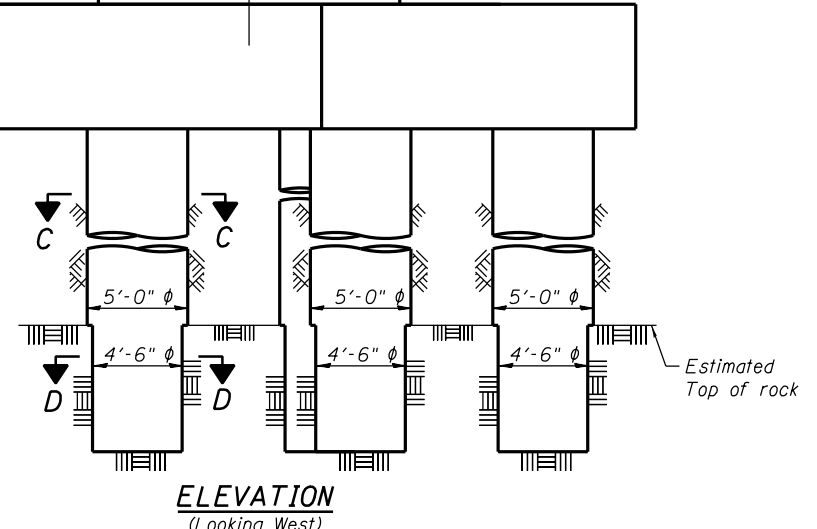
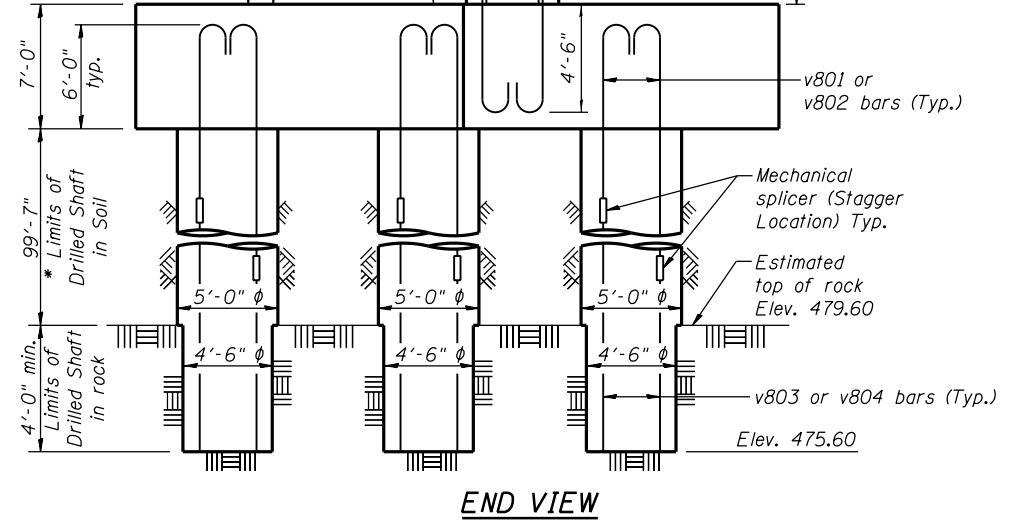
** Length is height of spiral.

MIN. LAP LENGTH

- #6 bars: 3'-10"
- #8 bars: 6'-9"
- #11 bars: 13'-4"

FIELD CUTTING DIAGRAM

Order h800(E) bars full length. Cut as shown and use remainder of bars



USER NAME = floresg	DESIGNED - RD	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 5/7/2014	DRAWN - BM	REVISED
	CHECKED - RD	REVISED

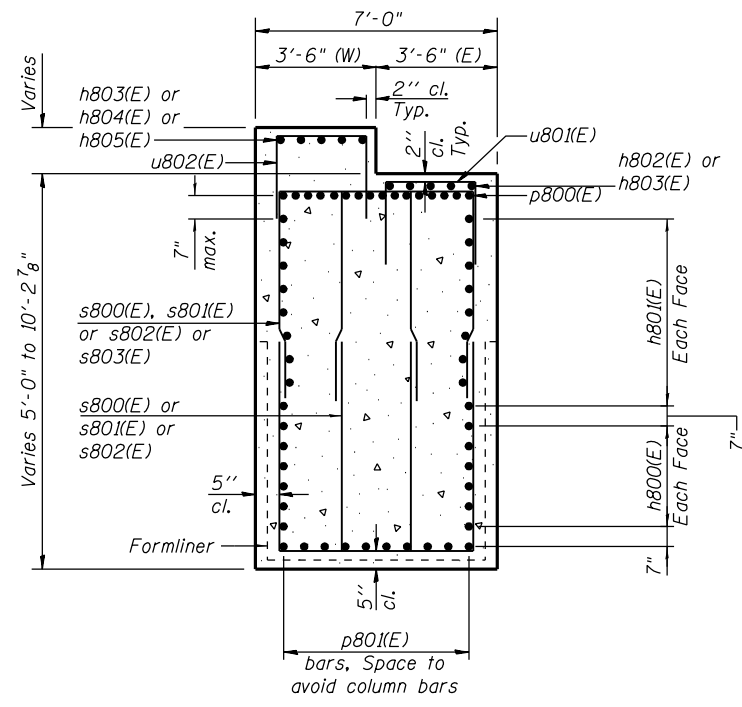
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 8 - PLAN AND ELEVATION
STRUCTURE NO. 016-1705

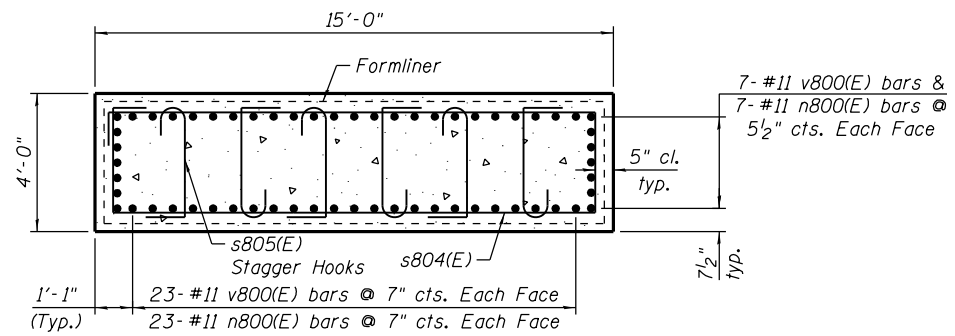
SHEET NO. S-132 OF S-165 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 448
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

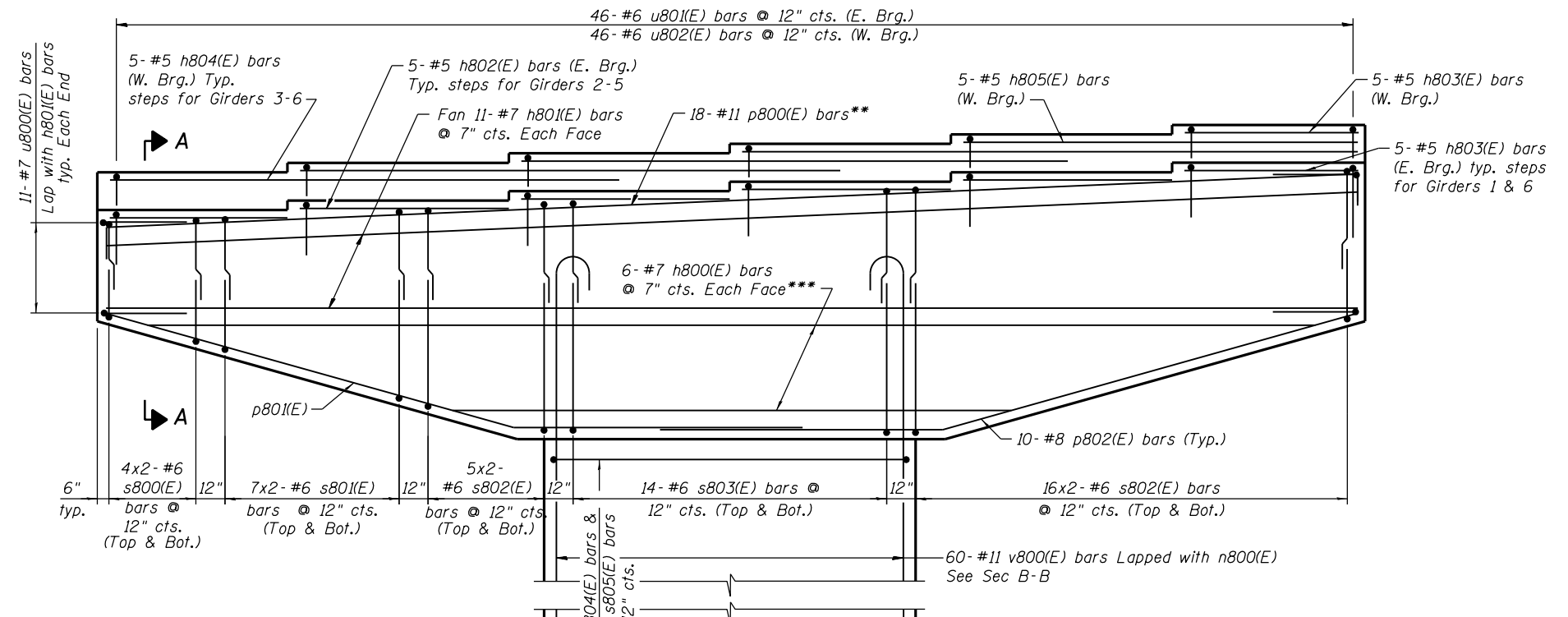
0161705-60W28-S132-Pier.dgn



SECTION A-A



SECTION B-B



** Slope with bearing steps.
*** See Field Cutting Diagram on sheet S-132.

For Footing Cap Reinforcement Details, See Sheet S-134.

6" Pitch, typ.
1-#6 sp800 bar see Note 2, typ. each shaft

ELEVATION
(Looking West)

NOTES:

1. Space reinforcement in cap to miss anchor bolts.
2. sp800 spiral and sp801 spiral
 - 1) Provide 1 1/2 extra turns top and bottom. Extend spiral 3" into pile cap. Provide 4-#4 spacers or equivalent.
 - 2) When splicing spiral reinforcement is necessary, the spirals shall be provided with 1 1/2 extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook.
3. Contractor shall use Mechanical Splicers in drilled shaft that will fit between spirals. Contractor shall field adjust spiral pitch to 12" maximum at Mechanical Splicer locations.
4. A Drilled Shaft shall be tested in accordance with Special Provisions for Crosshole Sonic Logging.
5. Work this sheet with sheet S-132 & S-134.

0161705-60W28-S133-Pier.dgn



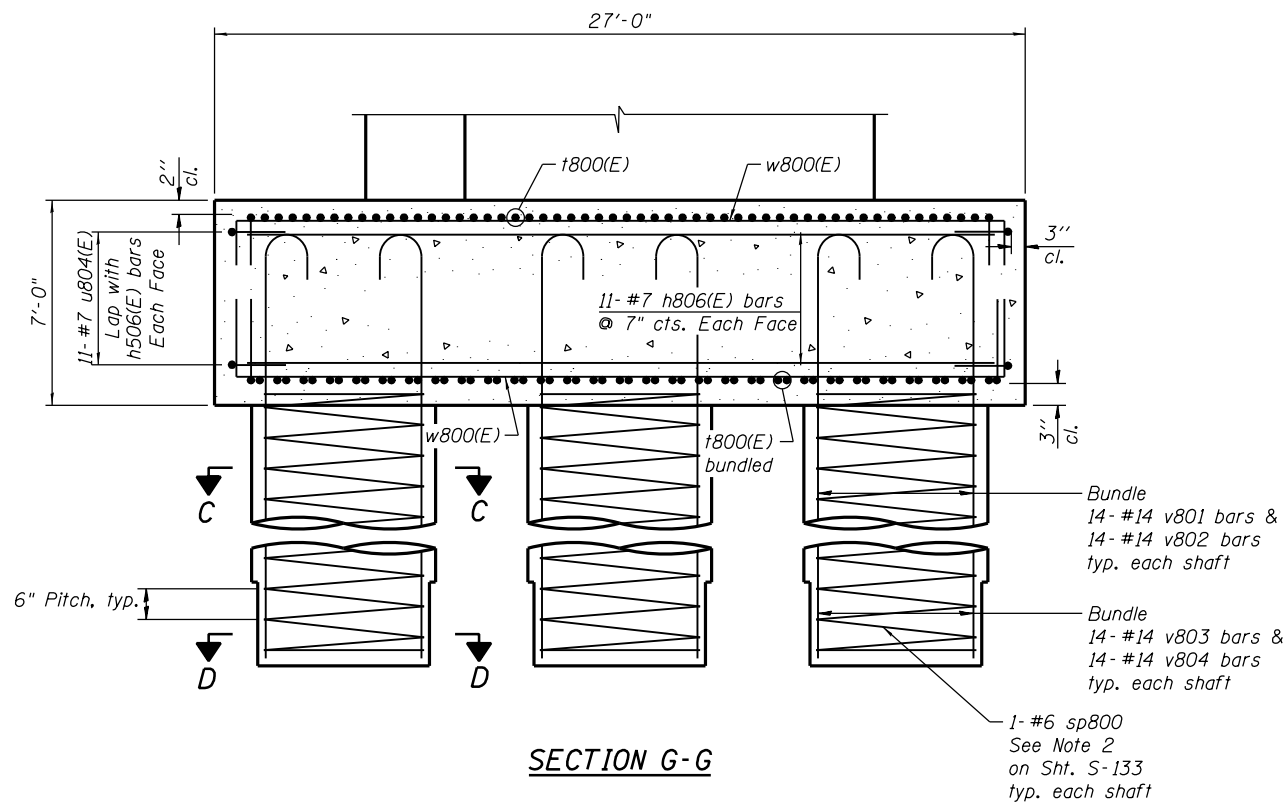
USER NAME = floresg	DESIGNED - RD	REVISED
	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - BM	REVISED
PLOT DATE = 5/7/2014	CHECKED - RD	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

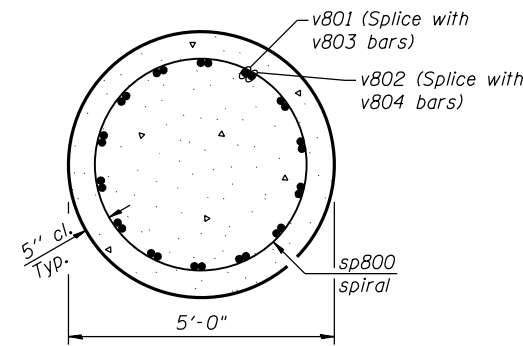
PIER 8 DETAILS I
STRUCTURE NO. 016-1705

SHEET NO. S-133 OF S-165 SHEETS

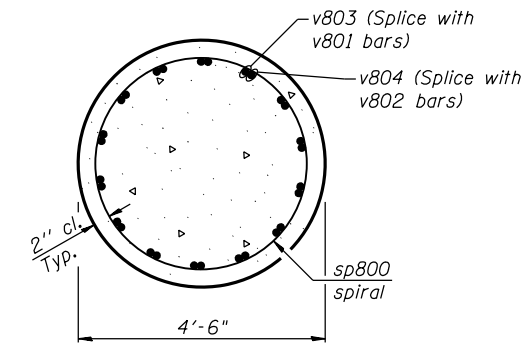
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	449
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				



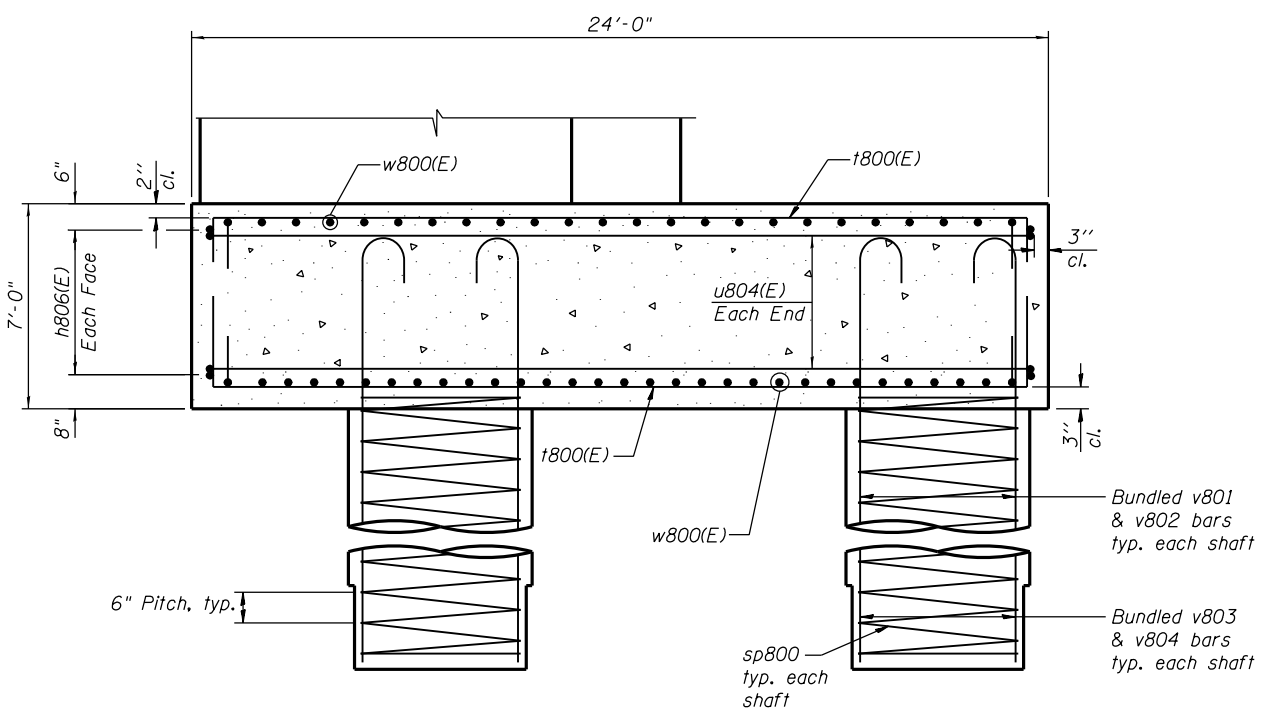
SECTION G-G



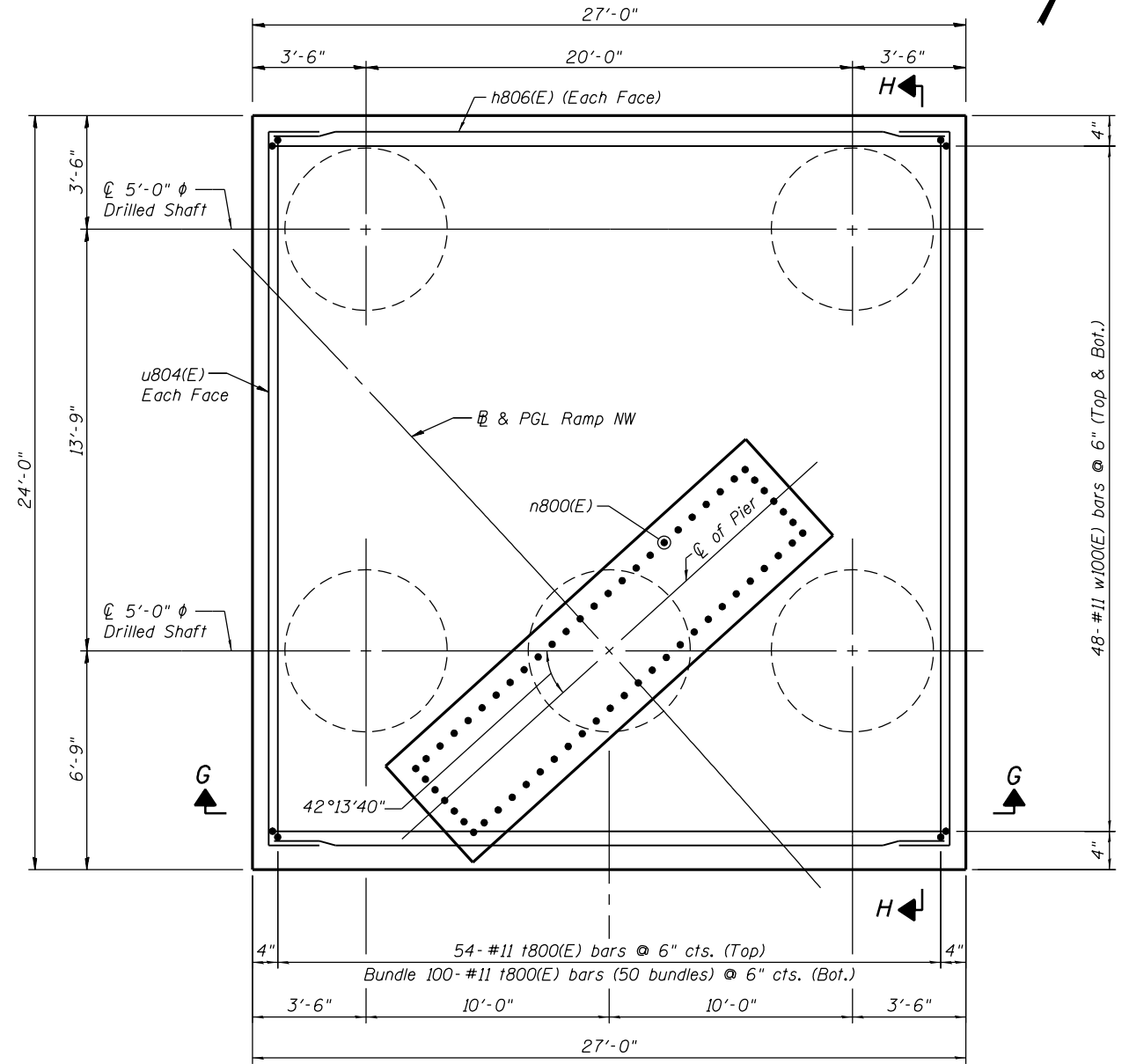
SECTION C-C



SECTION D-D



SECTION H-H



FOOTING PLAN

NOTES:

1. Work this sheet with sheet S-132 & S-133.

0161705-60W28-S134-Pier.dgn



USER NAME = floresg	DESIGNED - RD	REVISED
CHECKED - ATB	REVISOR	
PLOT SCALE = N.T.S.	DRAWN - BM	REVISOR
PLOT DATE = 5/7/2014	CHECKED - RD	REVISOR

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 8 DETAILS II
STRUCTURE NO. 016-1705

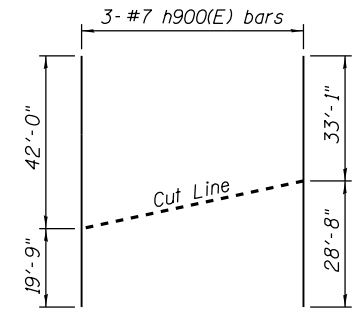
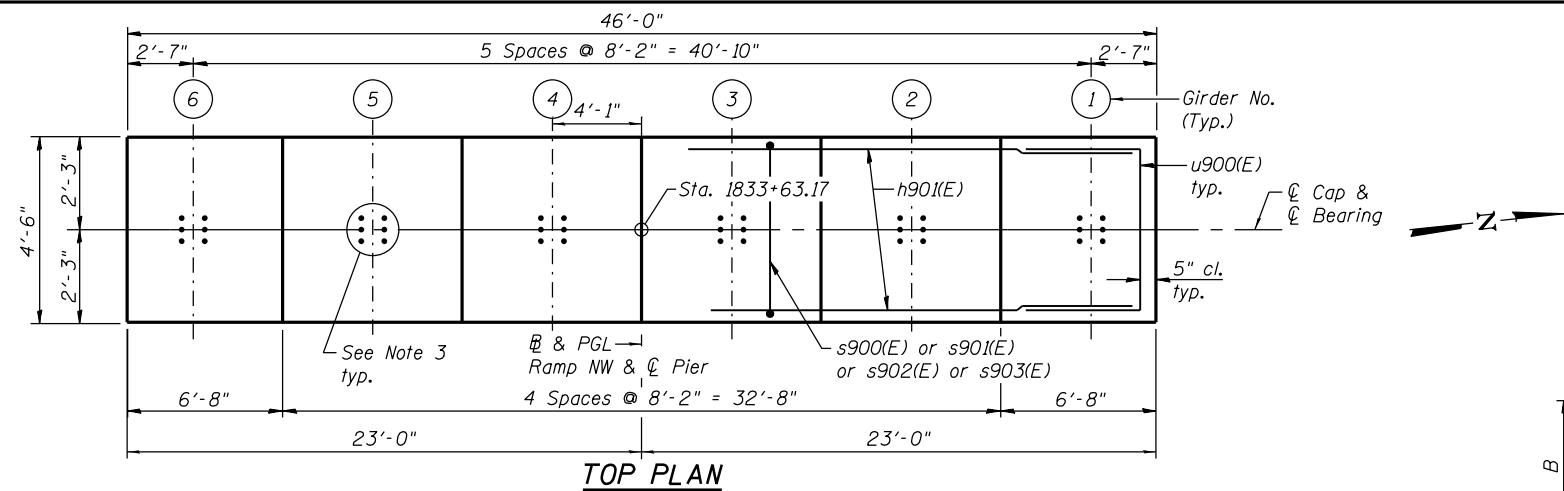
SHEET NO. S-134 OF S-165 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 449
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

NOTES:

1. Pour steps monolithically with cap.
2. ϕ of Pier is radial to ϕ Ramp NW at Sta. 1833+63.17.
3. For Anchor Bolts Details see sheets S-110 & S-111.
4. For Architectural Details see sheets S-143 thru S-145.
5. See sheet S-136 for Sections and Details.

* The quantities and detailing are based on the estimated elevations shown on the plans. The actual elevations may differ at each shaft and corresponding adjustments shall be made to the drilled shaft and reinforcement quantities and payment limits.



FIELD CUTTING DIAGRAM

Order h900(E) bars full length. Cut as shown and use remainder of bars.

BILL OF MATERIAL

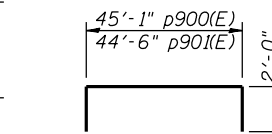
Bar	No.	Size	Length	Shape
h900(E)	6	#7	61'-9"	—
h901(E)	18	#7	45'-2"	—
h902(E)	14	#7	22'-6"	—
h903(E)	24	#5	7'-10"	—
h904(E)	12	#5	6'-1"	—
n900(E)	56	#11	20'-7"	U
p900(E)	8	#11	49'-1"	□
p901(E)	8	#11	48'-6"	□
p902(E)	8	#11	43'-8"	□
p903(E)	12	#8	26'-6"	□
s900(E)	20	#6	11'-2"	□
s901(E)	192	#6	15'-10"	□
s902(E)	28	#6	17'-0"	□
s903(E)	36	#6	12'-4"	□
s904(E)	27	#6	36'-8"	□
s905(E)	162	#6	4'-10"	□
sp900	2	#6	101'-6"	W
t900(E)	31	#7	20'-4"	□
t901(E)	20	#11	31'-4"	□
t902(E)	13	#11	26'-4"	□
t903(E)	31	#7	9'-6"	□
u900(E)	18	#6	11'-6"	□
u901(E)	14	#7	15'-6"	□
u902(E)	47	#6	5'-8"	□
v900(E)	56	#11	33'-5"	U
v901	20	#14	48'-3"	U
v902	20	#14	60'-0"	U
v903	20	#14	48'-3"	—
v904	20	#14	60'-0"	—
Concrete Structures		Cu. Yd.	167.9	
Reinforcement Bars, Epoxy Coated		Pound	43,400	
Reinforcement Bars		Pound	43,170	
Drilled Shaft in Soil		Cu. Yd.	207.9	
Drilled Shaft in Rock		Cu. Yd.	3.5	
Concrete Sealer		Sq. Ft.	2,243	
Structure Excavation		Cu. Yd.	114.2	
Crosshole Sonic Logging		Each	1	

** Length is height of spiral.

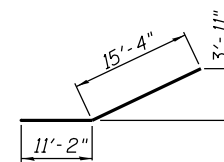
BARS A & B DIMENSIONS

Bar	A	B
s900(E)	2'-6"	4'-4"
s901(E)	2'-6"	6'-8"
s902(E)	3'-8"	6'-8"
s903(E)	2'-6"	4'-11"
t901(E)	22'-4"	4'-6"
t902(E)	22'-4"	2'-0"
u900(E)	3'-6"	4'-0"
u901(E)	7'-6"	4'-0"
u902(E)	3'-8"	1'-0"

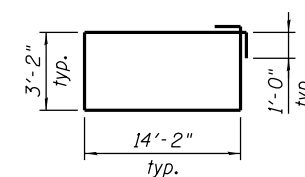
BARS p900(E) & p901(E)



BAR p903(E)



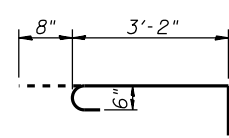
BARS s904(E)



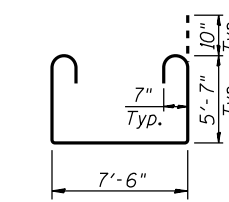
MIN. LAP LENGTH

- #6 bars: 3'-10"
- #8 bars: 6'-9"
- #11 bars: 13'-4"

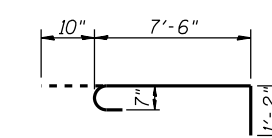
BAR s905(E)



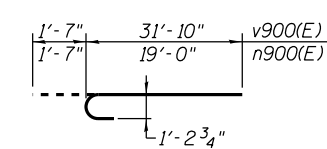
BAR t900(E)



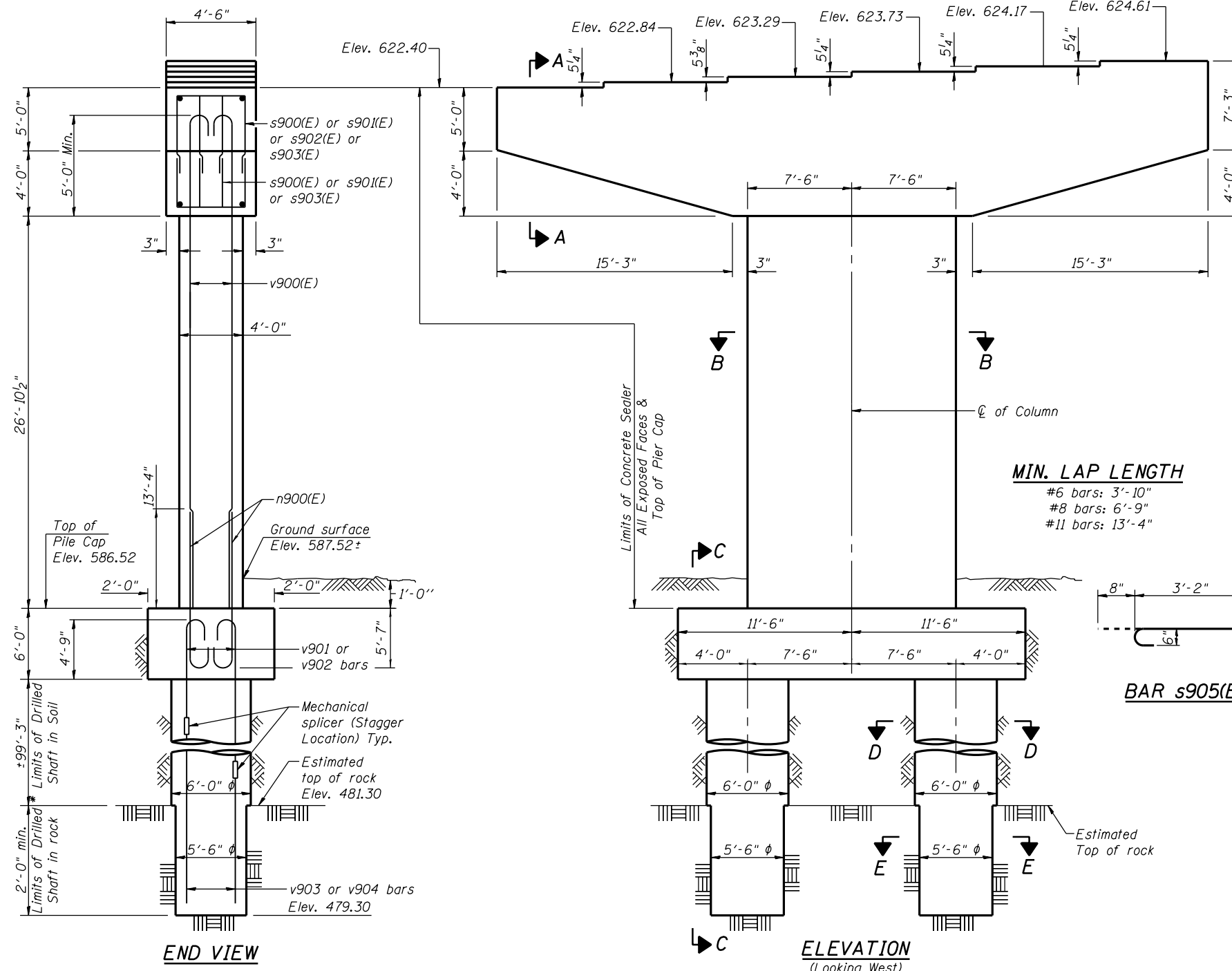
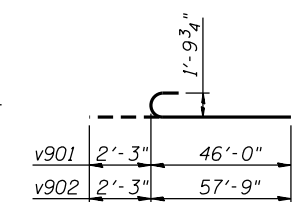
BAR t903(E)



BAR v900(E) & BAR n900(E)



BARS v901 & v902



END VIEW

ELEVATION (Looking West)



USER NAME = floresg	DESIGNED - RD	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 5/7/2014	DRAWN - BM	REVISED
	CHECKED - RD	REVISED

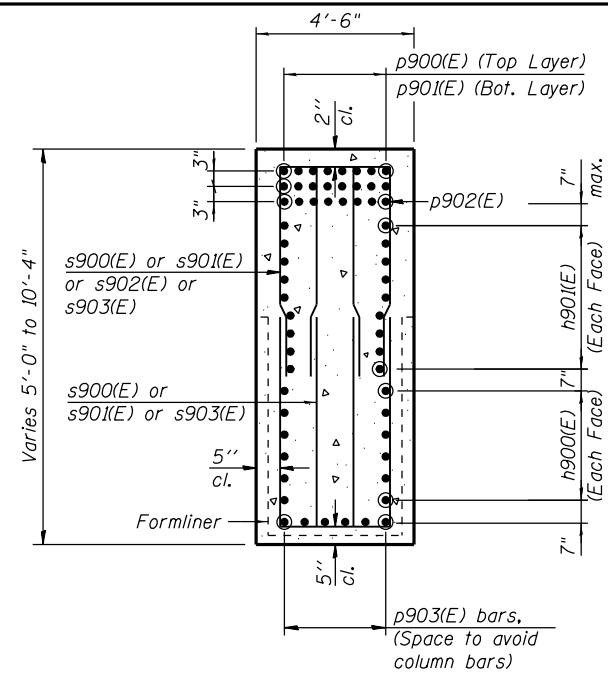
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 9 - PLAN AND ELEVATION
STRUCTURE NO. 016-1705

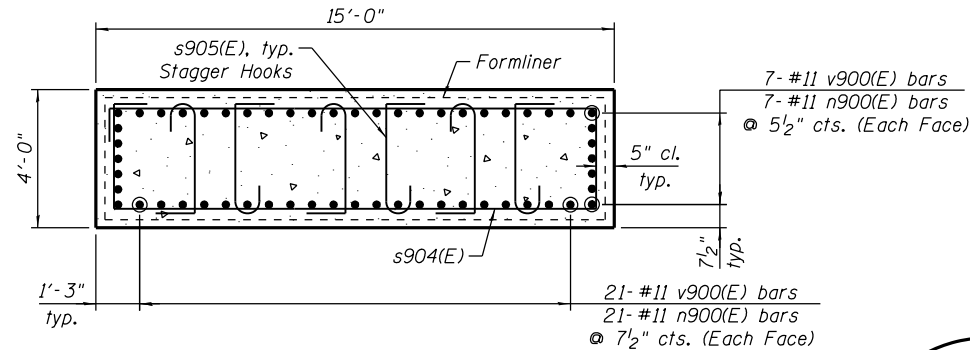
SHEET NO. S-135 OF S-165 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-01OR	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 450
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

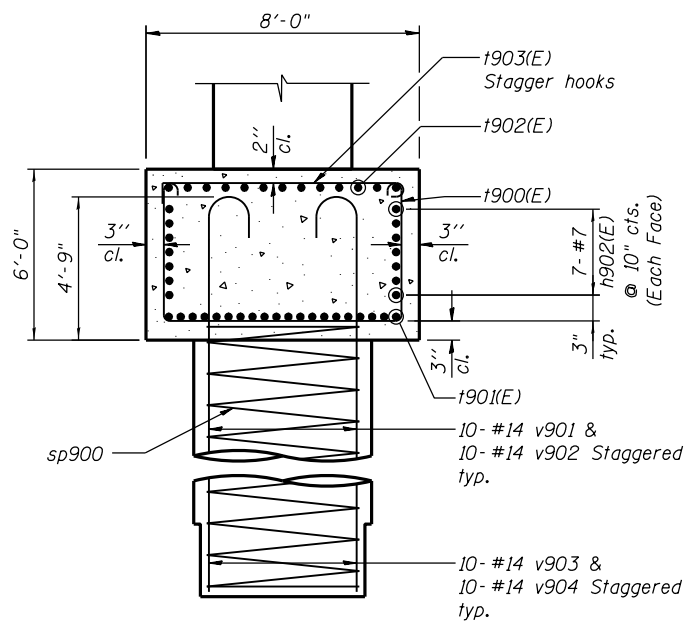
0161705-60W28-S135-Pier.dgn



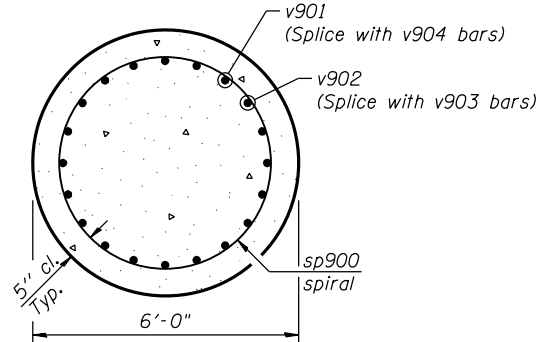
SECTION A-A



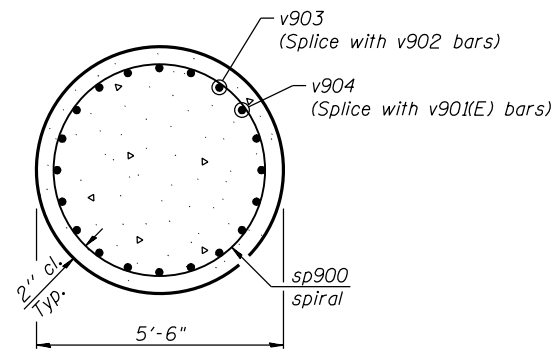
SECTION B-B



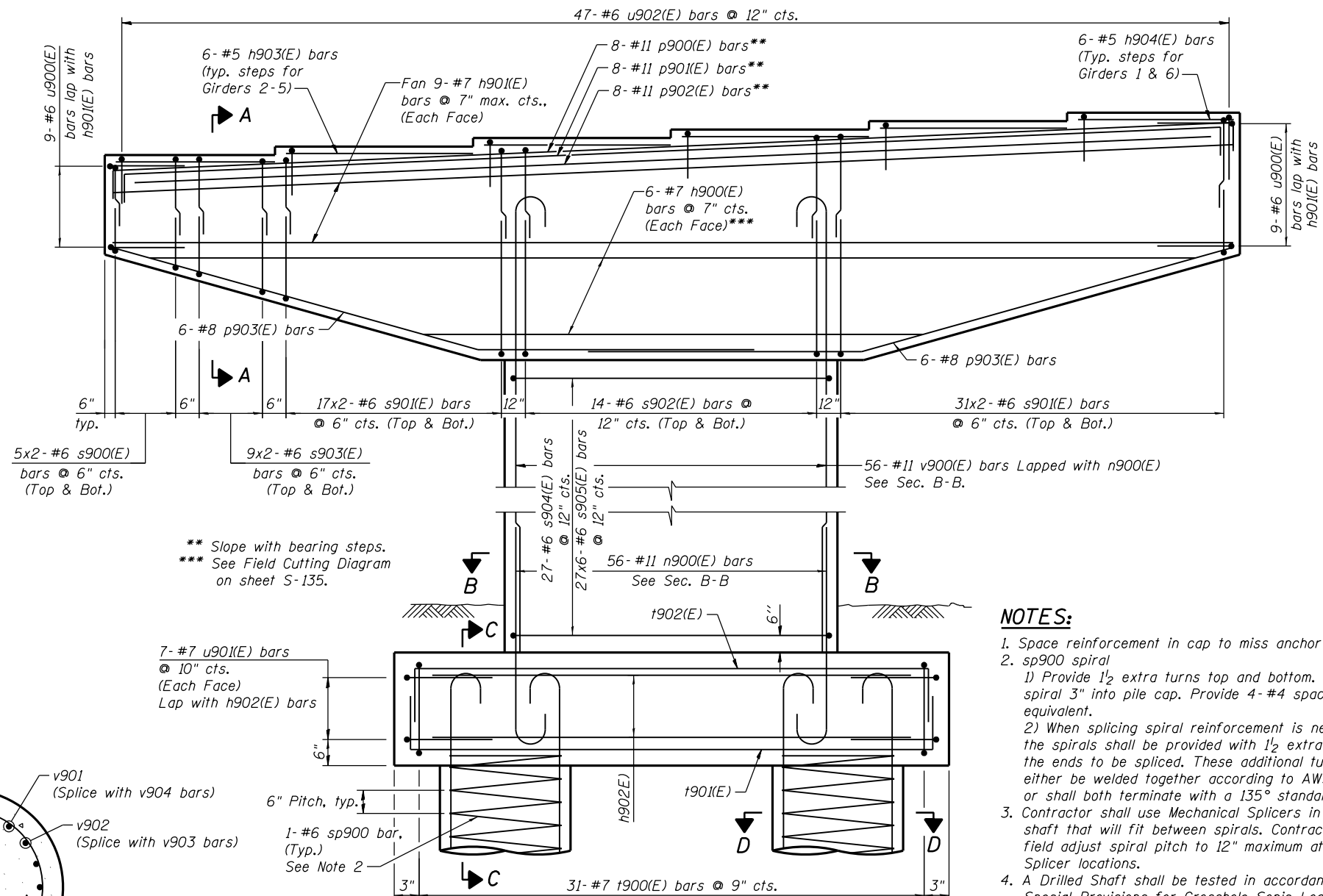
SECTION C-C



SECTION D-D



SECTION E-E

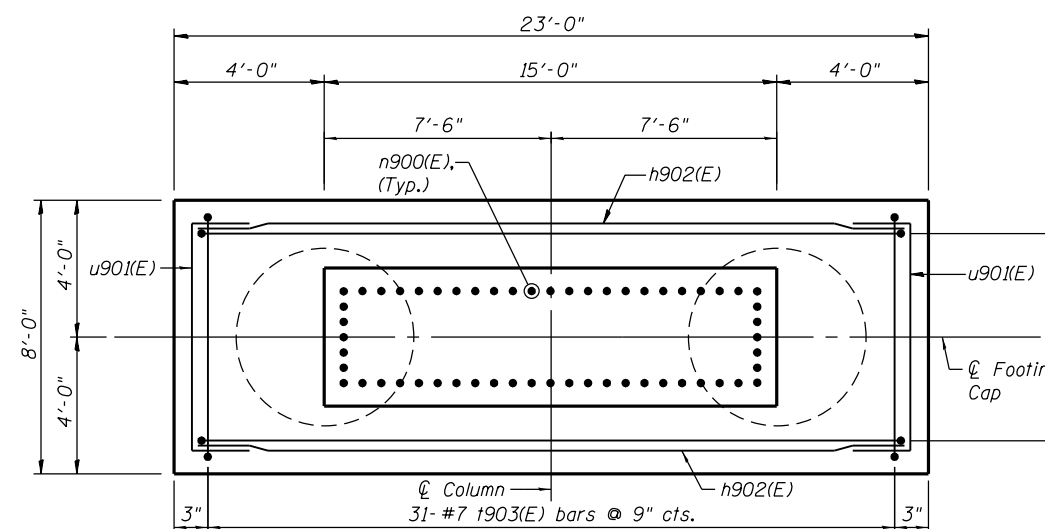


ELEVATION
(Looking West)

** Slope with bearing steps.
*** See Field Cutting Diagram on sheet S-135.

7-#7 u901(E) bars @ 10" cts. (Each Face)
Lap with h902(E) bars

- NOTES:**
- Space reinforcement in cap to miss anchor bolts.
 - sp900 spiral
 - Provide 1/2 extra turns top and bottom. Extend spiral 3" into pile cap. Provide 4-#4 spacers or equivalent.
 - When splicing spiral reinforcement is necessary, the spirals shall be provided with 1/2 extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook.
 - Contractor shall use Mechanical Splicers in drilled shaft that will fit between spirals. Contractor shall field adjust spiral pitch to 12" maximum at Mechanical Splicer locations.
 - A Drilled Shaft shall be tested in accordance with Special Provisions for Crosshole Sonic Logging.



FOOTING PLAN

0161705-60W28-S136-Pier.dgn



USER NAME = floresg	DESIGNED - RD	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 5/7/2014	DRAWN - BM	REVISED
	CHECKED - RD	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 9 DETAILS
STRUCTURE NO. 016-1705

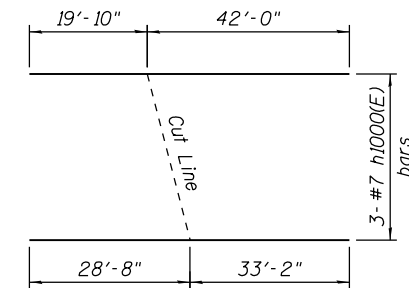
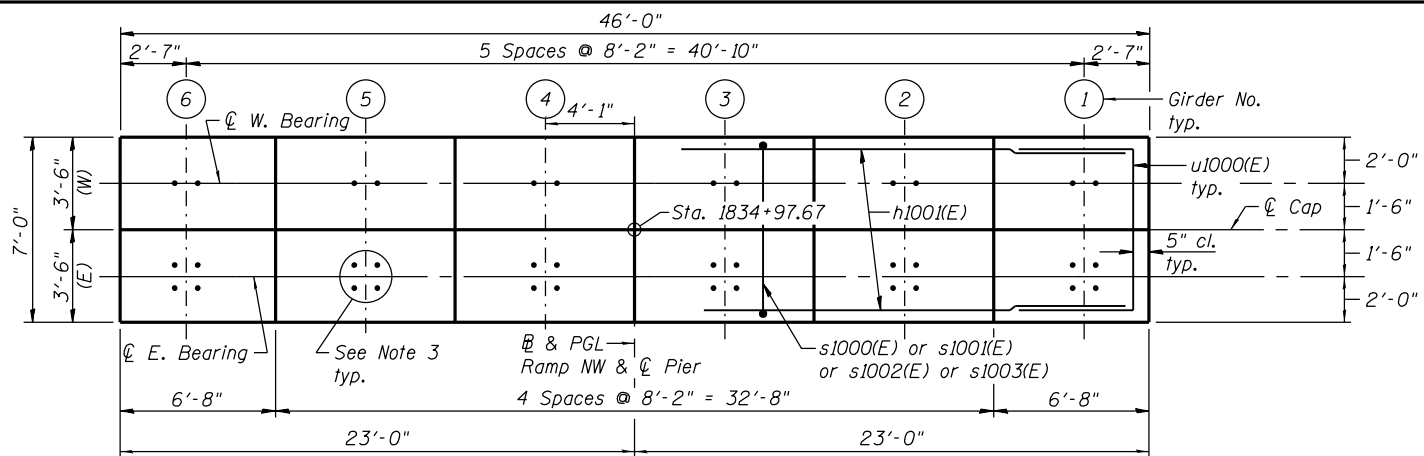
SHEET NO. S-136 OF S-165 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 451
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

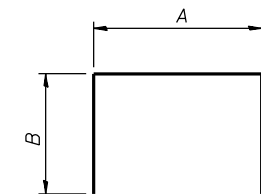
NOTES:

1. Four steps monolithically with cap.
2. ϕ of Pier is radial to ϕ Ramp NW at Sta. 1834+97.67.
3. For Anchor Bolts Details see sheet S-109.
4. For Architectural Details see sheets S-143 thru S-145.
5. See sheet S-138 For Sections and Details.
8. (W)-West Girder, (E)-East Girder.

* The quantities and detailing are based on the estimated elevations shown on the plans. The actual elevations may differ at each shaft and corresponding adjustments shall be made to the drilled shaft and reinforcement quantities and payment limits.



FIELD CUTTING DIAGRAM
Order h1000(E) bars Full Length. Cut as shown and use remainder of bars.



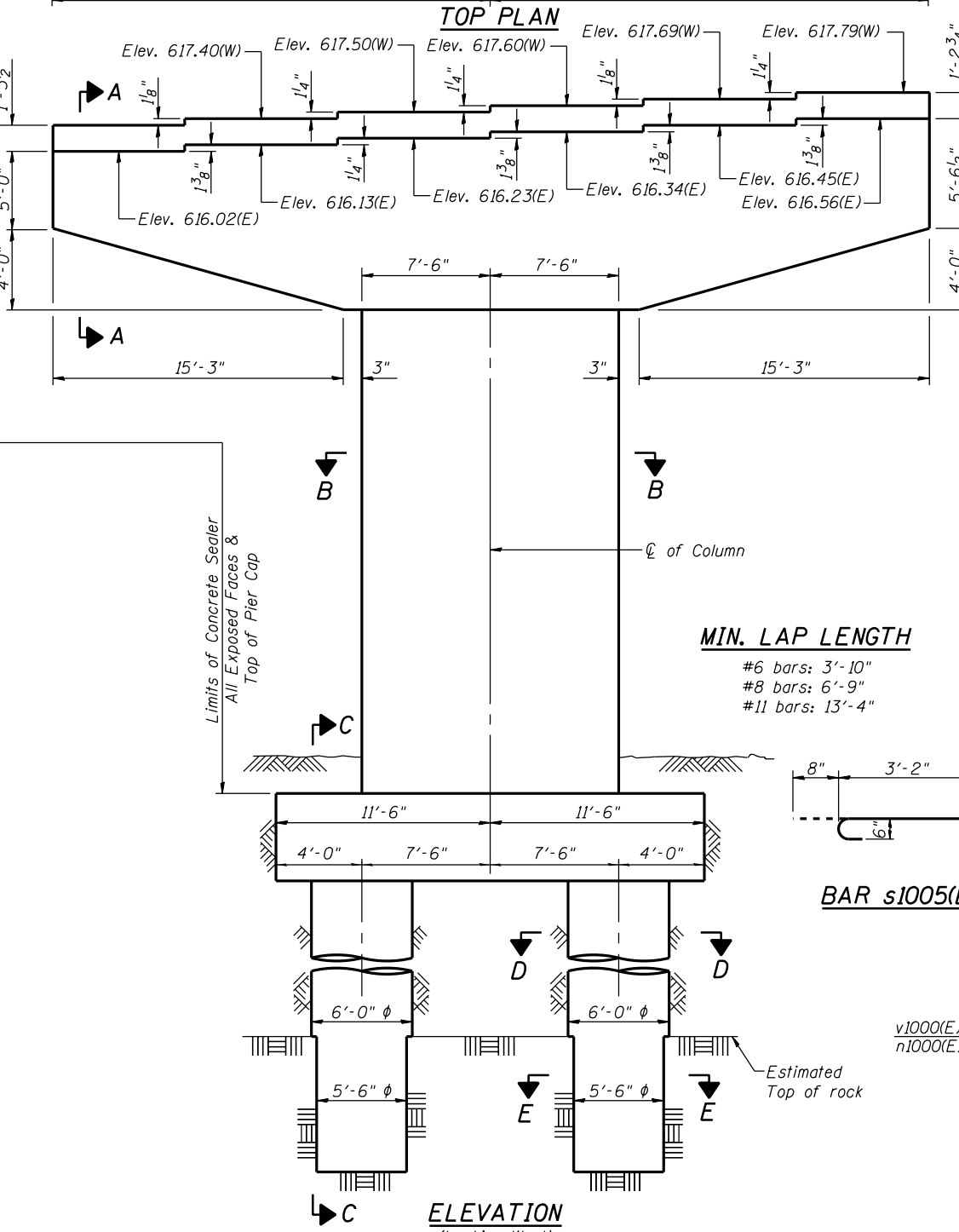
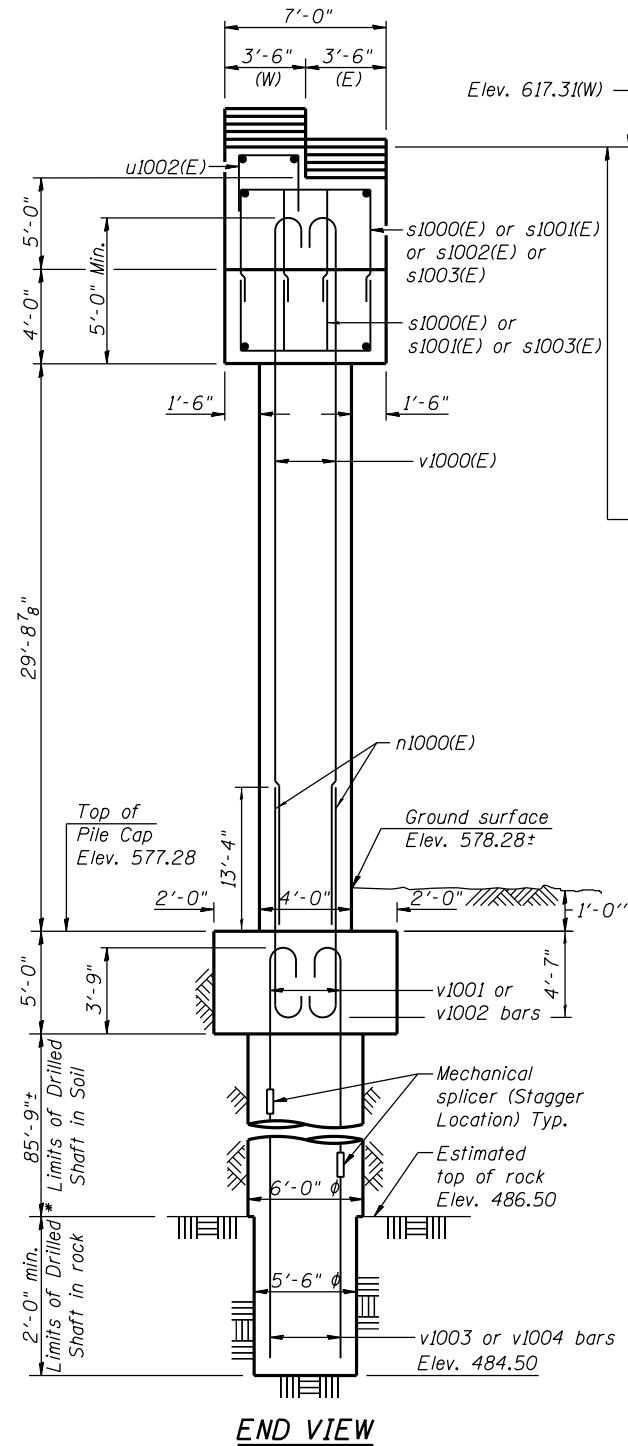
BARS A & B DIMENSIONS

Bar	A	B
s1000(E)	4'-2"	4'-11"
s1001(E)	4'-2"	6'-2"
s1002(E)	6'-2"	6'-2"
s1003(E)	4'-2"	4'-4"
t1001(E)	22'-4"	3'-6"
t1002(E)	22'-4"	2'-0"
u1000(E)	6'-0"	4'-0"
u1001(E)	7'-6"	4'-0"
u1002(E)	2'-11"	1'-0"

BILL OF MATERIAL

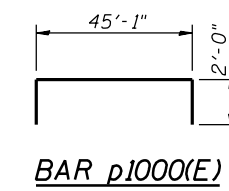
Bar	No.	Size	Length	Shape
h1000(E)	6	#7	61'-10"	—
h1001(E)	18	#7	45'-2"	—
h1002(E)	14	#7	22'-6"	—
h1003(E)	20	#5	7'-10"	—
h1004(E)	10	#5	6'-1"	—
n1000(E)	56	#11	19'-7"	U
p1000(E)	18	#11	49'-1"	L
p1001(E)	20	#8	26'-6"	L
s1000(E)	72	#6	14'-0"	□
s1001(E)	156	#6	16'-6"	□
s1002(E)	28	#6	18'-6"	□
s1003(E)	20	#6	12'-10"	□
s1004(E)	30	#6	36'-8"	□
s1005(E)	180	#6	4'-10"	U
sp1000	2	#6	88'-0"	W
t1000(E)	31	#7	18'-4"	L
t1001(E)	18	#11	29'-4"	L
t1002(E)	16	#11	26'-4"	L
t1003(E)	31	#7	9'-2"	U
u1000(E)	16	#7	14'-0"	□
u1001(E)	14	#7	15'-6"	□
u1002(E)	47	#6	4'-11"	□
v1000(E)	56	#11	36'-3"	U
v1001	20	#14	33'-9"	U
v1002	20	#14	60'-0"	U
v1003	20	#14	33'-9"	—
v1004	20	#14	60'-0"	—
Concrete Structures			Cu. Yd.	202.4
Reinforcement Bars, Epoxy Coated			Pound	43,550
Reinforcement Bars			Pound	37,420
Drilled Shaft in Soil			Cu. Yd.	179.6
Drilled Shaft in Rock			Cu. Yd.	3.5
Concrete Sealer			Sq. Ft.	2,601
Braced Excavation			Cu. Yd.	93.7
Crosshole Sonic Logging			Each	1

** Length is height of spiral.

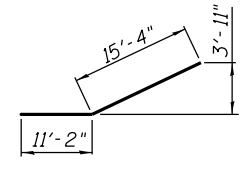


MIN. LAP LENGTH

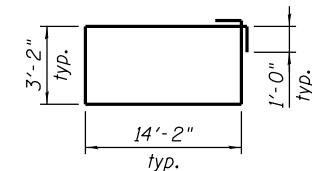
- #6 bars: 3'-10"
- #8 bars: 6'-9"
- #11 bars: 13'-4"



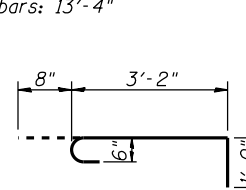
BAR p1000(E)



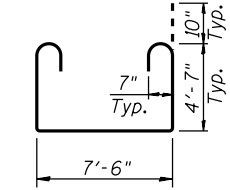
BAR p1001(E)



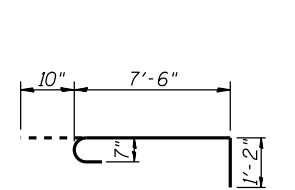
BAR s1004(E)



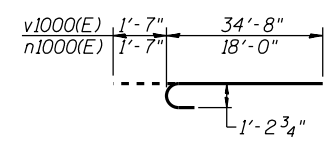
BAR s1005(E)



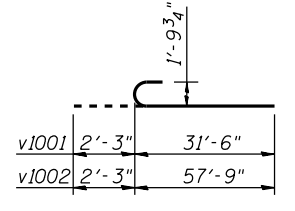
BAR t1000(E)



BAR t1003(E)



BAR v1000(E) & BAR n1000(E)



BARS v1001 & v1002



USER NAME = floresg
DESIGNED - RD
CHECKED - ATB
PLOT SCALE = N.T.S.
DRAWN - BM
PLOT DATE = 5/7/2014
CHECKED - RD

DESIGNED - RD
CHECKED - ATB
DRAWN - BM
CHECKED - RD

REVISED
REVISED
REVISED
REVISED

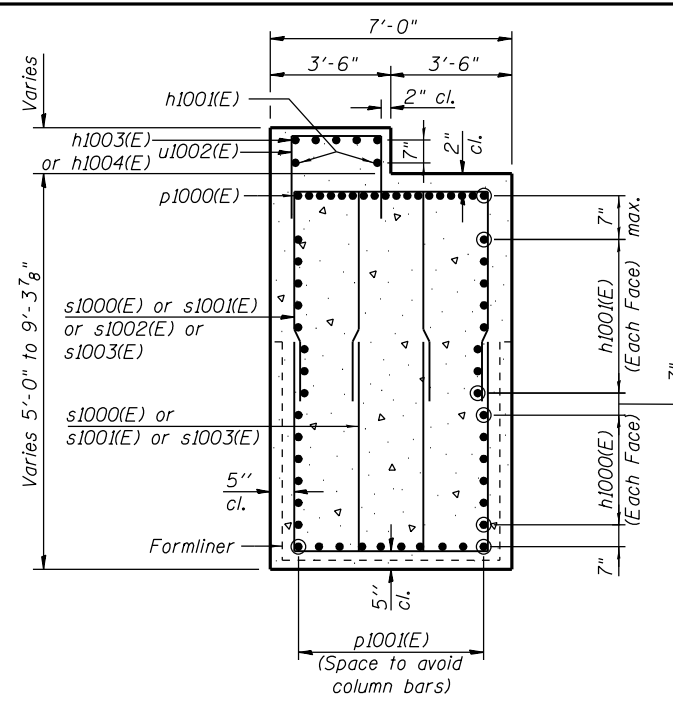
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 10 - PLAN AND ELEVATION
STRUCTURE NO. 016-1705

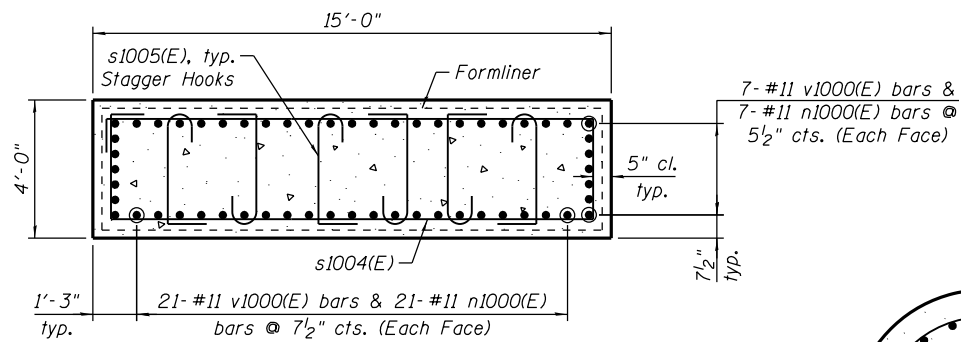
SHEET NO. S-137 OF S-165 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	452
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

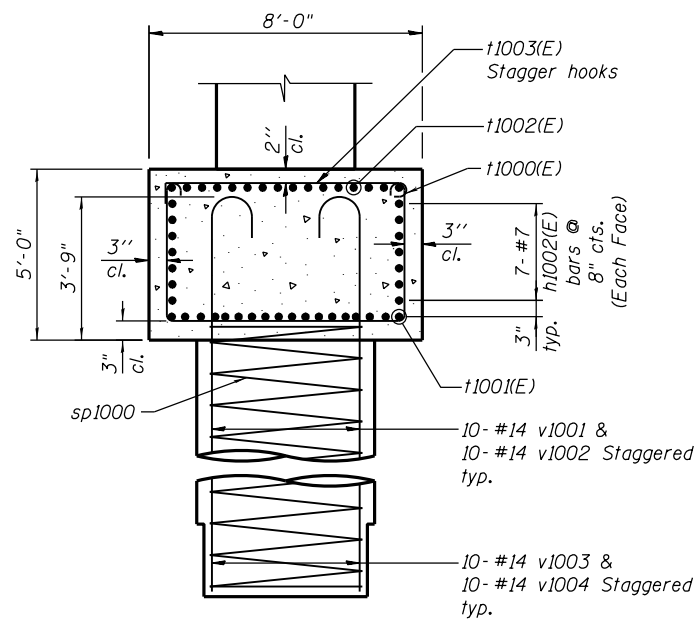
0161705-60W28-S137-Pier.dgn



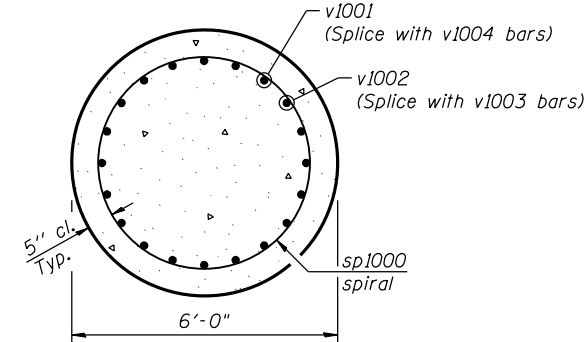
SECTION A-A



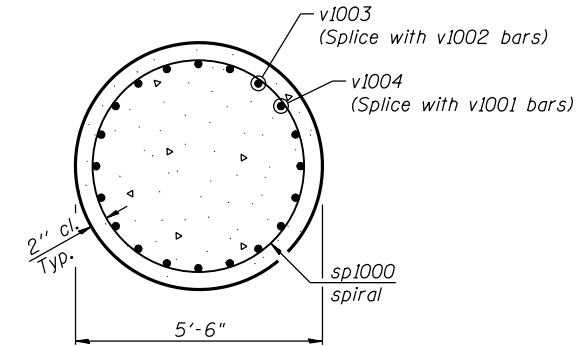
SECTION B-B



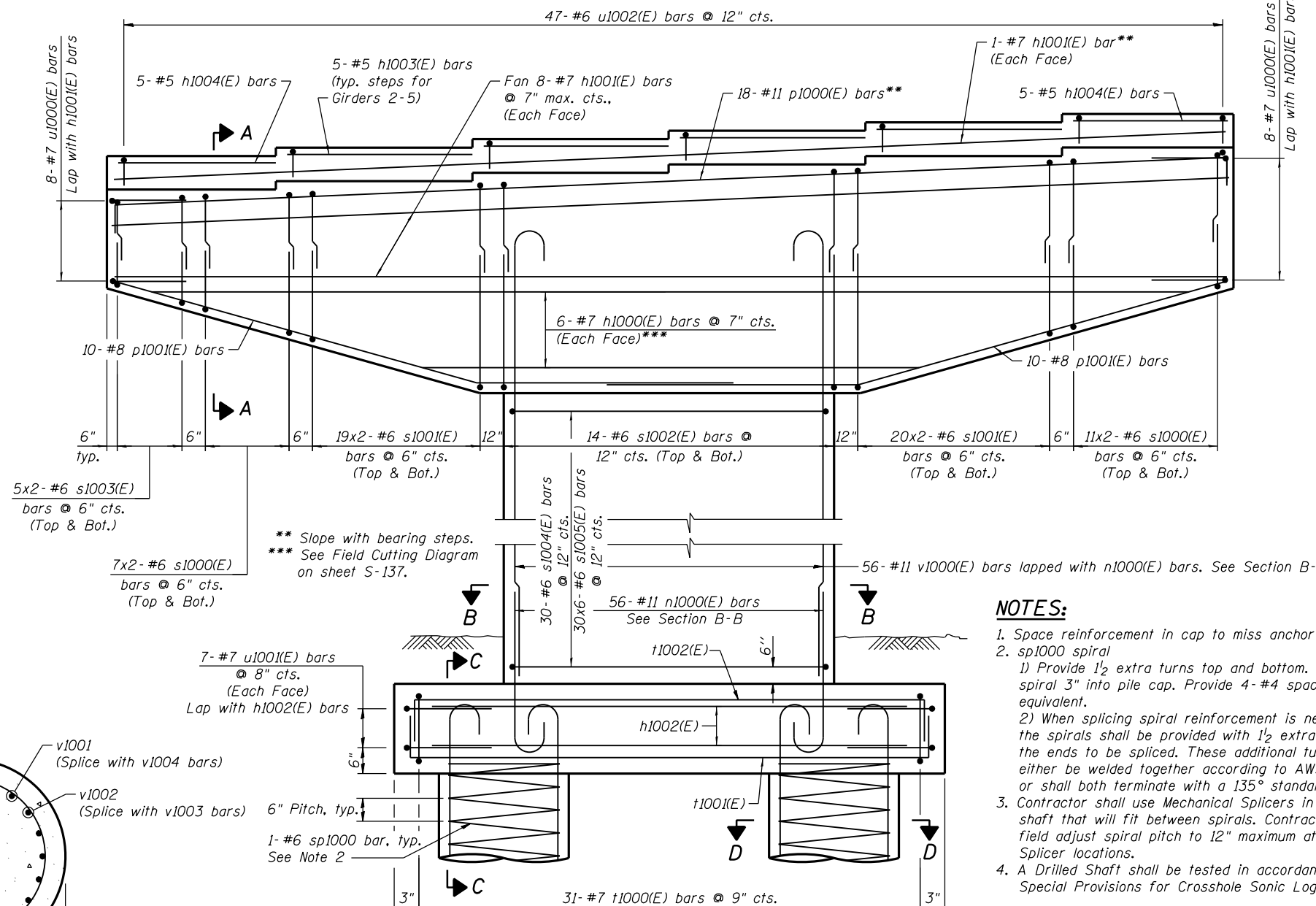
SECTION C-C



SECTION D-D



SECTION E-E

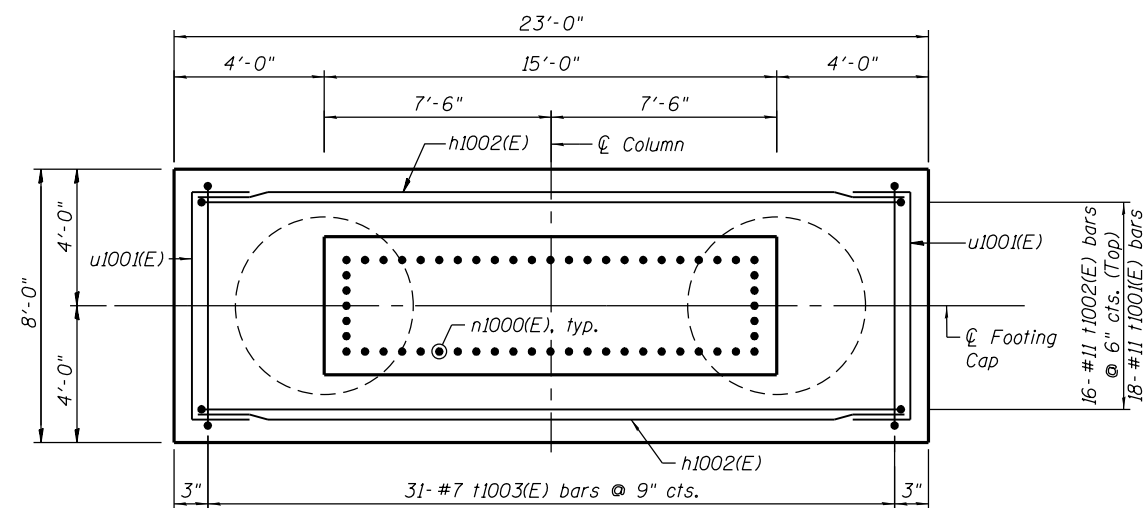


ELEVATION
(Looking West)

** Slope with bearing steps.
*** See Field Cutting Diagram on sheet S-137.

NOTES:

- Space reinforcement in cap to miss anchor bolts.
- sp1000 spiral
1) Provide 1/2 extra turns top and bottom. Extend spiral 3" into pile cap. Provide 4-#4 spacers or equivalent.
2) When splicing spiral reinforcement is necessary, the spirals shall be provided with 1/2 extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook.
- Contractor shall use Mechanical Splicers in drilled shaft that will fit between spirals. Contractor shall field adjust spiral pitch to 12" maximum at Mechanical Splicer locations.
- A Drilled Shaft shall be tested in accordance with Special Provisions for Crosshole Sonic Logging.



FOOTING PLAN

0161705-60W28-S138-Pier.dgn



USER NAME = floresg	DESIGNED - RD	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 5/7/2014	DRAWN - BM	REVISED
	CHECKED - RD	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 10 DETAILS
STRUCTURE NO. 016-1705

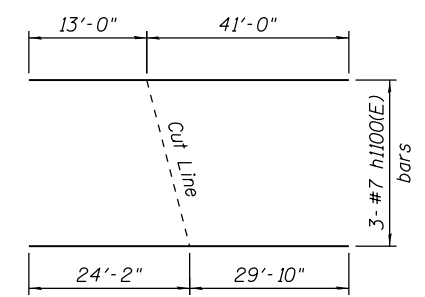
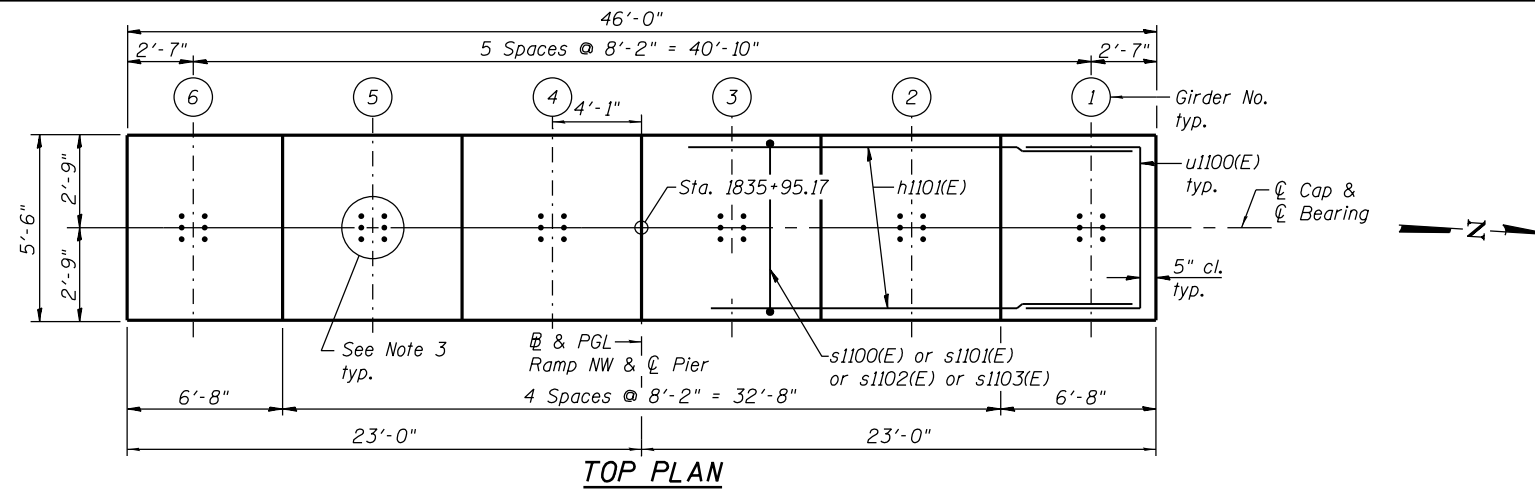
SHEET NO. S-138 OF S-165 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 453
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

NOTES:

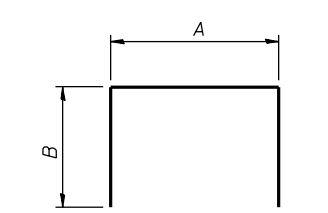
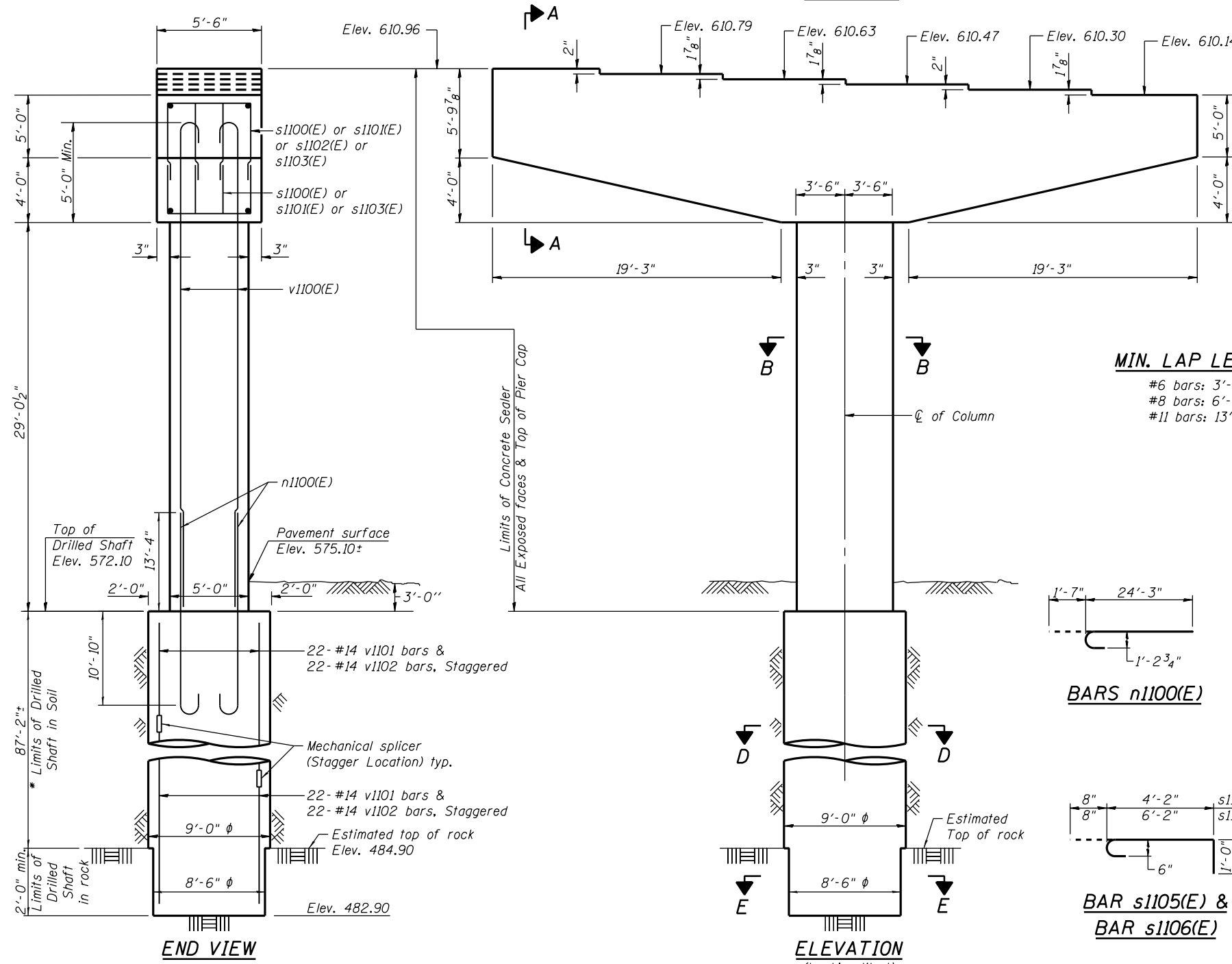
1. Pour steps monolithically with cap.
2. ϕ of Pier is radial to ϕ Ramp NW at Sta. 1835+95.17.
3. For Anchor Bolts Details see sheet S-108 & S-109.
4. For Architectural Details see sheets S-143 thru S-145.
5. See sheet S-140 for Sections and Details.

* The quantities and detailing are based on the estimated elevations shown on the plans. The actual elevations may differ at each shaft and corresponding adjustments shall be made to the drilled shaft and reinforcement quantities and payment limits.



FIELD CUTTING DIAGRAM

Order h1100(E) bars Full Length. Cut as shown and use remainder of bars.

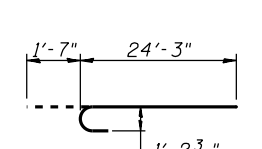


BARS A & B DIMENSIONS

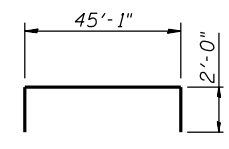
Bar	A	B
s1100(E)	3'-2"	5'-2"
s1101(E)	3'-2"	6'-3"
s1102(E)	4'-8"	6'-3"
s1103(E)	3'-2"	4'-5"
u1100(E)	4'-6"	4'-0"

MIN. LAP LENGTH

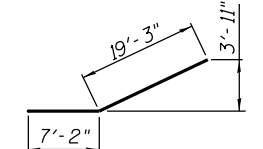
- #6 bars: 3'-10"
- #8 bars: 6'-9"
- #11 bars: 13'-4"



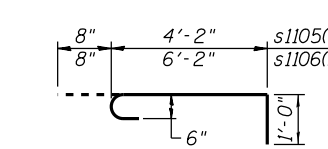
BAR n1100(E)



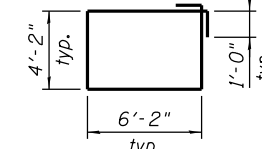
BAR p1100(E)



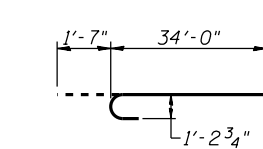
BAR p1102(E)



BAR s1105(E) & s1106(E)



BAR s1104(E)



BARS v1100(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h1100(E)	6	#7	54'-0"	—
h1101(E)	16	#7	45'-2"	—
n1100(E)	50	#11	25'-10"	U
p1100(E)	13	#11	49'-1"	—
p1101(E)	13	#11	43'-8"	—
p1102(E)	16	#8	26'-5"	—
s1100(E)	116	#6	13'-6"	□
s1101(E)	164	#6	15'-8"	□
s1102(E)	12	#6	17'-8"	□
s1103(E)	32	#6	12'-0"	□
s1104(E)	58	#6	22'-8"	□
s1105(E)	116	#6	5'-10"	□
s1106(E)	58	#6	7'-10"	□
sp1100	1	#6	89'-0"	W
u1100(E)	16	#6	12'-6"	□
v1100(E)	50	#11	35'-7"	U
v1101	44	#14	29'-0"	—
v1102	44	#14	60'-0"	—
Concrete Structures		Cu. Yd.	110.1	
Reinforcement Bars, Epoxy Coated		Pound	37,070	
Reinforcement Bars		Pound	36,930	
Drilled Shaft in Soil		Cu. Yd.	205.4	
Drilled Shaft in Rock		Cu. Yd.	4.2	
Concrete Sealer		Sq. Ft.	1,944	
Crosshole Sonic Logging		Each	1	

** Length is height of spiral.

0161705-60W28-S139-Pier.dgn



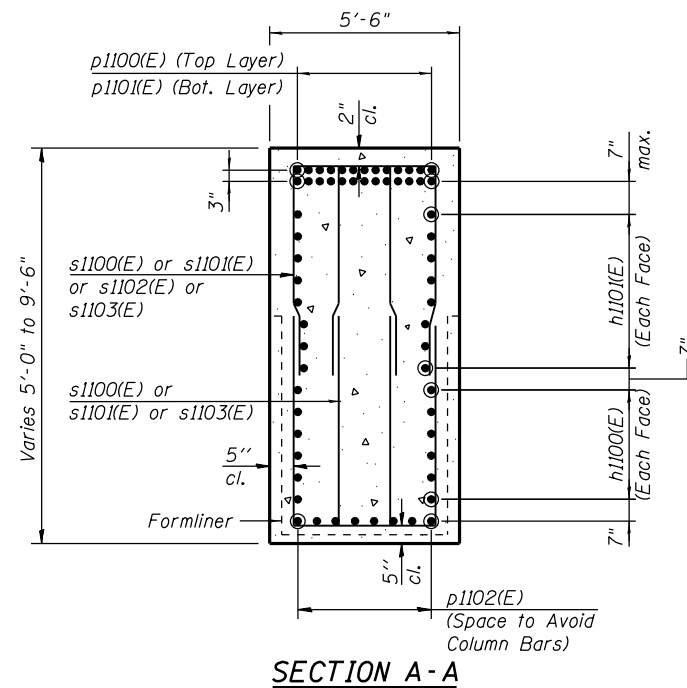
USER NAME = floresg	DESIGNED - RD	REVISED
	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - BM	REVISED
PLOT DATE = 5/7/2014	CHECKED - RD	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

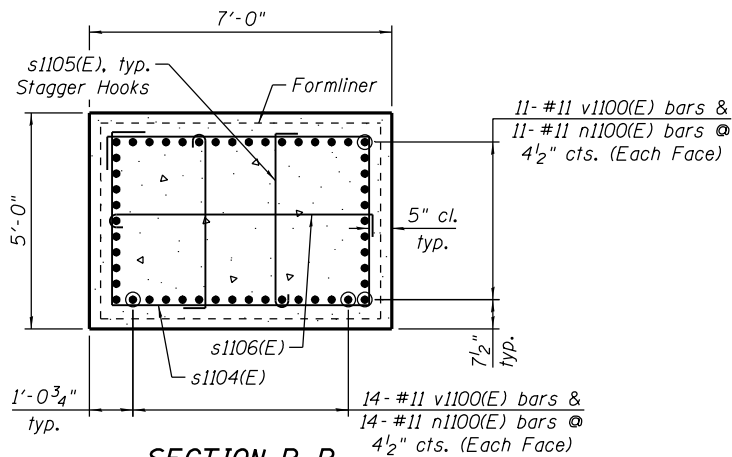
PIER 11 - PLAN AND ELEVATION
STRUCTURE NO. 016-1705

SHEET NO. S-139 OF S-165 SHEETS

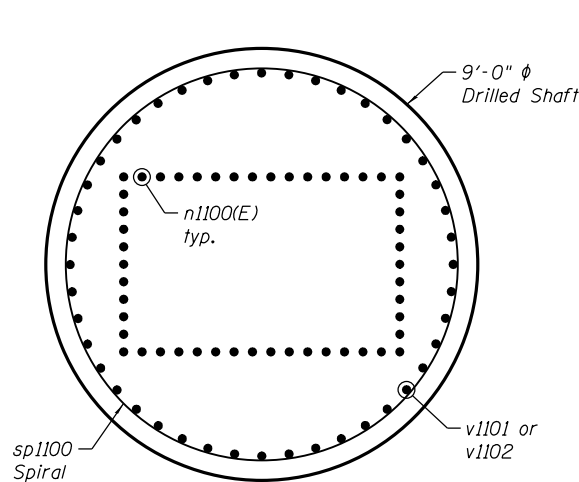
F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 454
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	



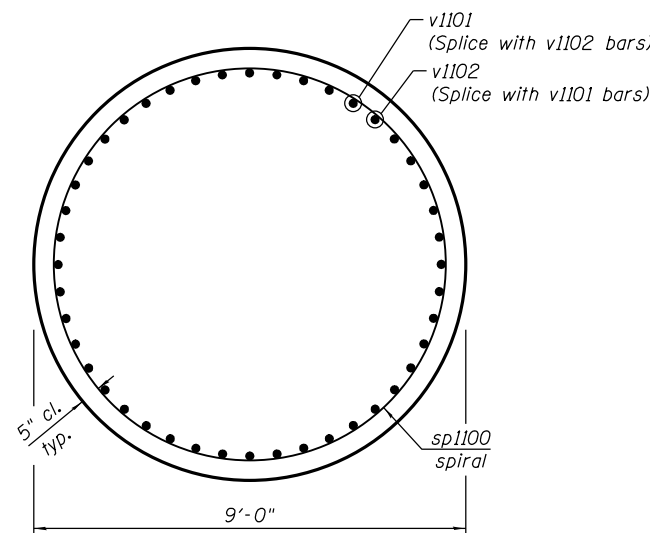
SECTION A-A



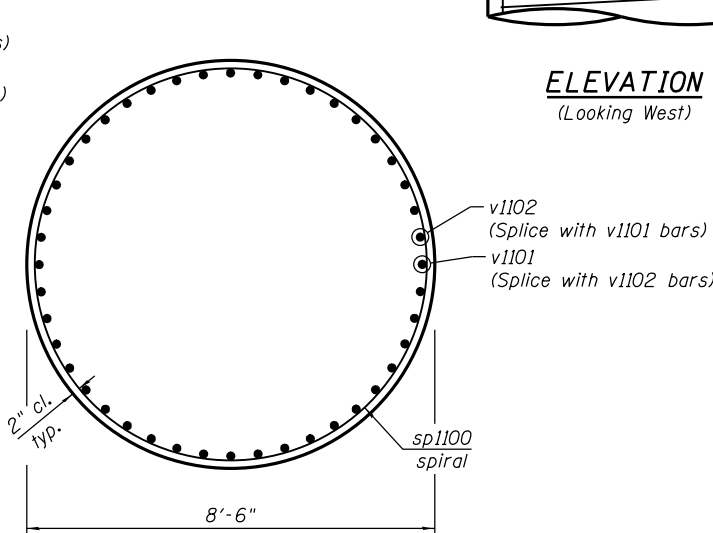
SECTION B-B



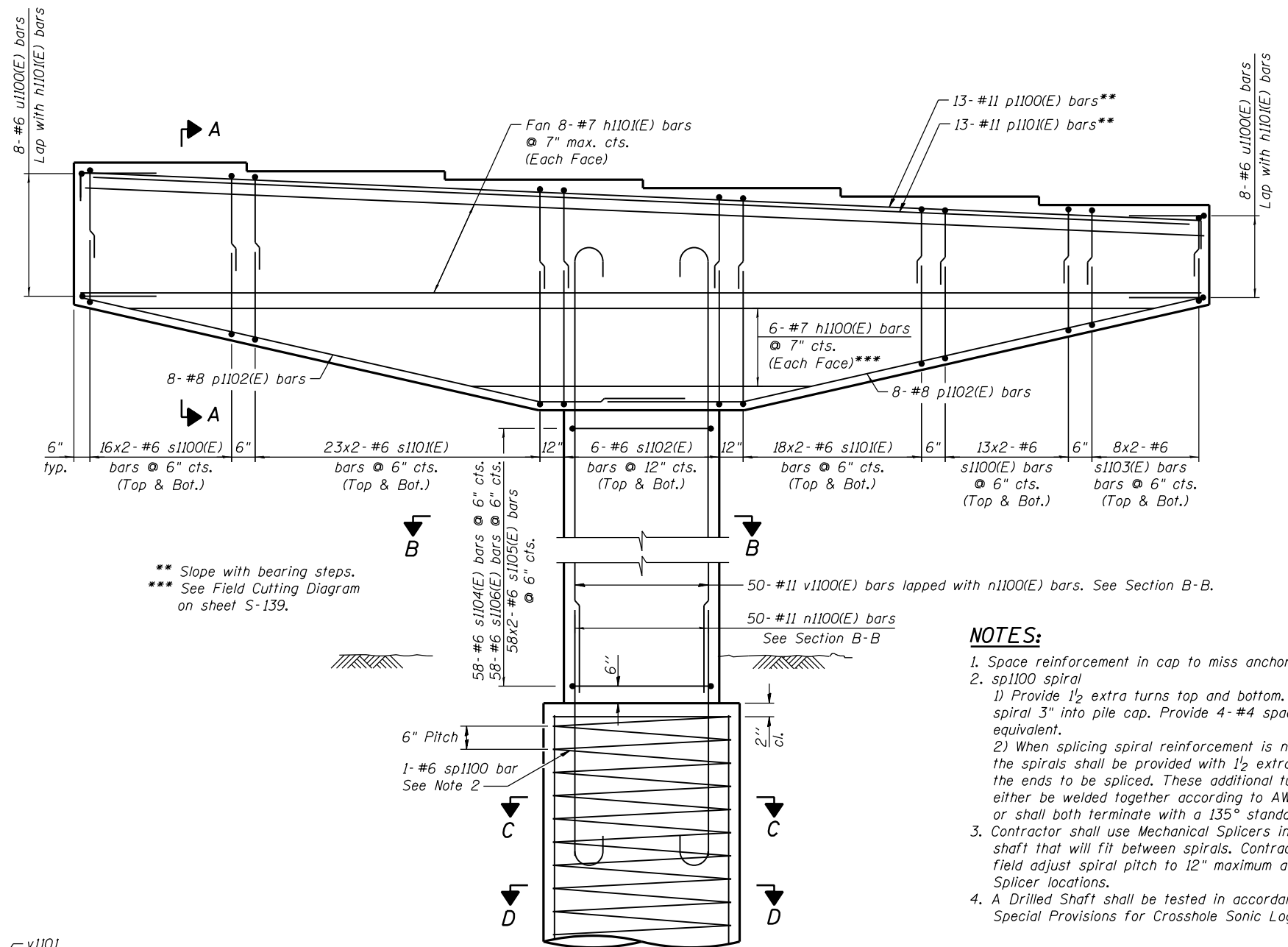
SECTION C-C



SECTION D-D



SECTION E-E



ELEVATION
(Looking West)

** Slope with bearing steps.
*** See Field Cutting Diagram on sheet S-139.

NOTES:

1. Space reinforcement in cap to miss anchor bolts.
2. sp1100 spiral
 - 1) Provide 1/2 extra turns top and bottom. Extend spiral 3" into pile cap. Provide 4-#4 spacers or equivalent.
 - 2) When splicing spiral reinforcement is necessary, the spirals shall be provided with 1/2 extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook.
3. Contractor shall use Mechanical Splicers in drilled shaft that will fit between spirals. Contractor shall field adjust spiral pitch to 12" maximum at Mechanical Splicer locations.
4. A Drilled Shaft shall be tested in accordance with Special Provisions for Crosshole Sonic Logging.

0161705-60W28-S140-Pier.dgn



USER NAME = floresg
DESIGNED - RD
CHECKED - ATB
PLOT SCALE = N.T.S.
DRAWN - BM
PLOT DATE = 5/7/2014
CHECKED - RD

DESIGNED - RD
CHECKED - ATB
DRAWN - BM
CHECKED - RD

REVISED
REVISED
REVISED
REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 11 DETAILS
STRUCTURE NO. 016-1705

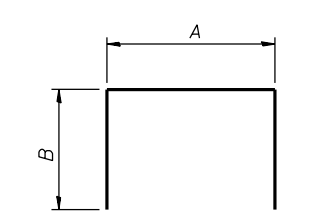
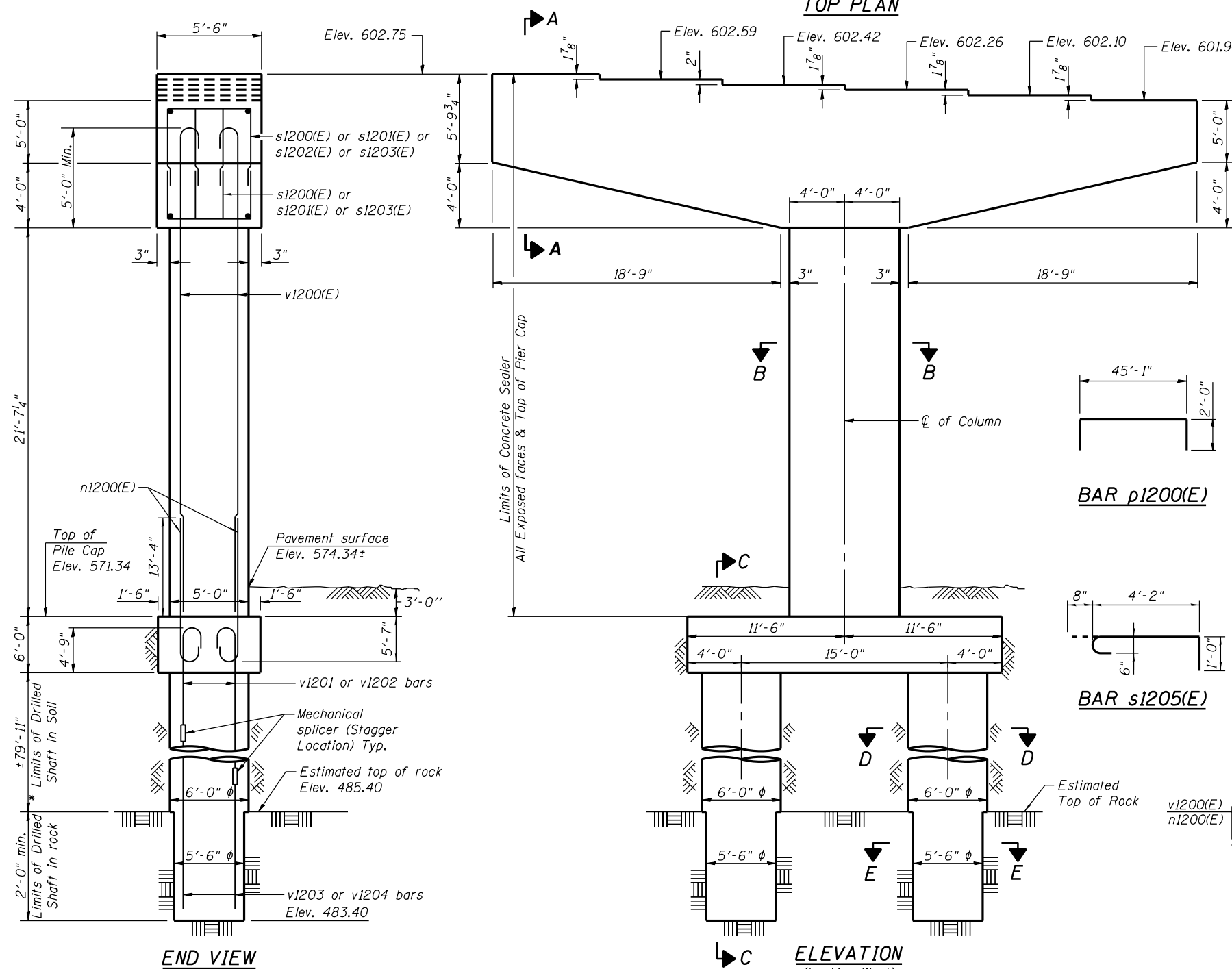
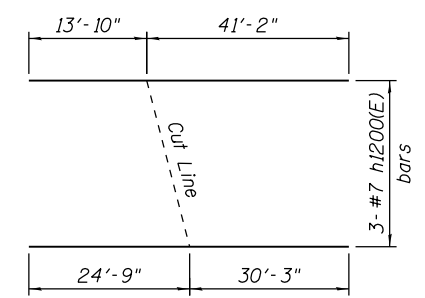
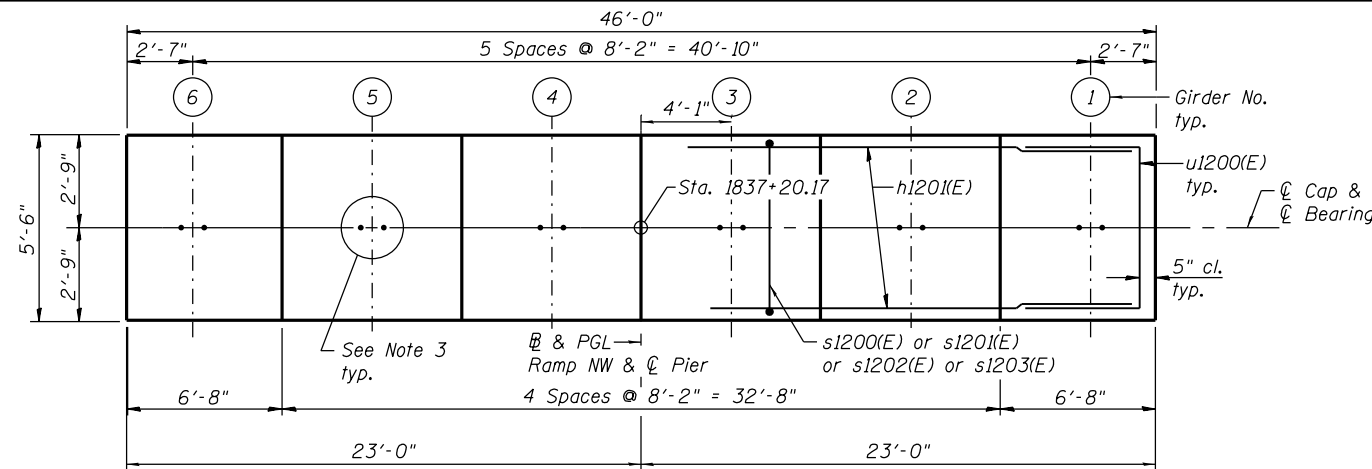
SHEET NO. S-140 OF S-165 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	455
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				

NOTES:

1. Pour steps monolithically with cap.
2. ϕ of Pier is radial to ϕ Ramp NW at Sta. 1837+20.17.
3. For Anchor Bolts Details see sheets S-106 & S-107.
4. For Architectural Details see sheets S-143 thru S-145.
5. See sheet S-142 for Sections and Details.

* The quantities and detailing are based on the estimated elevations shown on the plans. The actual elevations may differ at each shaft and corresponding adjustments shall be made to the drilled shaft and reinforcement quantities and payment limits.



MIN. LAP LENGTH

- #6 bars: 3'-10"
- #8 bars: 6'-9"
- #11 bars: 13'-4"

Bar	A	B
s1200(E)	3'-2"	5'-1"
s120(E)	3'-2"	6'-3"
s1202(E)	4'-8"	6'-3"
s1203(E)	3'-2"	4'-4"
t120(E)	22'-4"	4'-6"
t1202(E)	22'-4"	2'-0"
u1200(E)	4'-6"	4'-0"
u120(E)	7'-6"	4'-0"

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h1200(E)	6	#7	55'-0"	—
h120(E)	16	#7	45'-2"	—
h1202(E)	14	#7	22'-6"	—
n1200(E)	38	#11	20'-7"	U
p1200(E)	12	#11	49'-1"	┌┐
p120(E)	12	#11	43'-8"	—
p1202(E)	16	#8	26'-5"	┌┐
s1200(E)	96	#6	13'-4"	┌┐
s120(E)	180	#6	15'-8"	┌┐
s1202(E)	14	#6	17'-2"	┌┐
s1203(E)	28	#6	11'-10"	┌┐
s1204(E)	43	#6	24'-8"	┌┐
s1205(E)	129	#6	5'-10"	┌┐
sp1200	2	#6	82'-2"	W
t1200(E)	31	#8	20'-6"	┌┐
t120(E)	19	#11	31'-4"	┌┐
t1202(E)	16	#11	26'-4"	┌┐
t1203(E)	31	#8	9'-9"	┌┐
u1200(E)	16	#6	12'-6"	┌┐
u120(E)	14	#7	15'-6"	┌┐
v1200(E)	38	#11	28'-2"	U
v1201	20	#14	28'-11"	U
v1202	20	#14	60'-0"	U
v1203	20	#14	28'-11"	—
v1204	20	#14	60'-0"	—
Concrete Structures		Cu. Yd.	145.7	
Reinforcement Bars, Epoxy Coated		Pound	38,070	
Reinforcement Bars		Pound	33,790	
Drilled Shaft in Soil		Cu. Yd.	167.4	
Drilled Shaft in Rock		Cu. Yd.	3.5	
Concrete Sealer		Sq. Ft.	1,807	
Structure Excavation		Cu. Yd.	148.7	
Crosshole Sonic Logging		Each	1	

** Length is height of spiral.



USER NAME = floresg	DESIGNED - RD	REVISED
	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - BM	REVISED
PLOT DATE = 5/7/2014	CHECKED - RD	REVISED

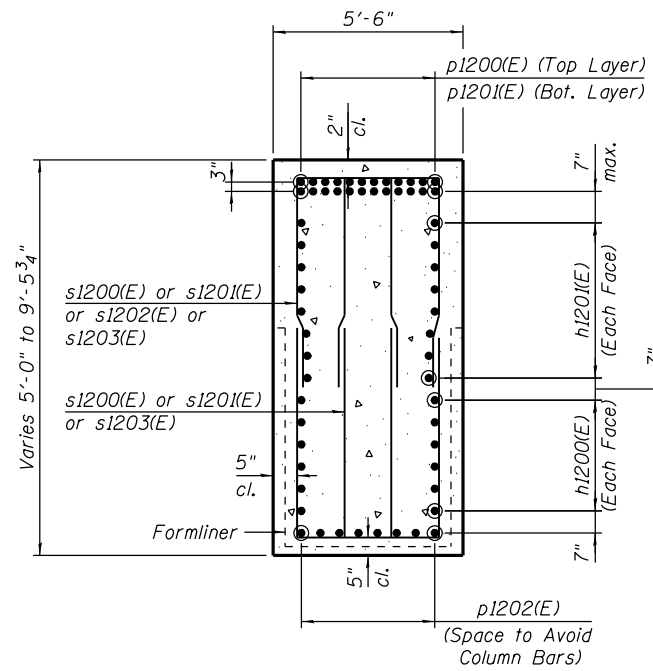
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 12 - PLAN AND ELEVATION
STRUCTURE NO. 016-1705

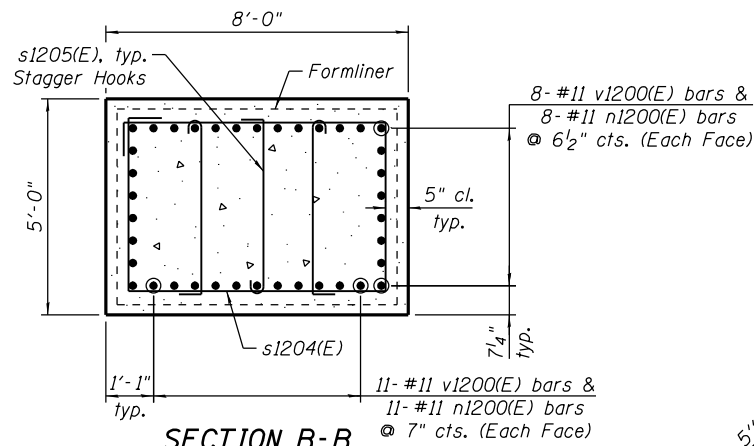
F.A.I. R.T.E. 90/94/290	SECTION 2013-01OR	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 456
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

SHEET NO. S-141 OF S-165 SHEETS

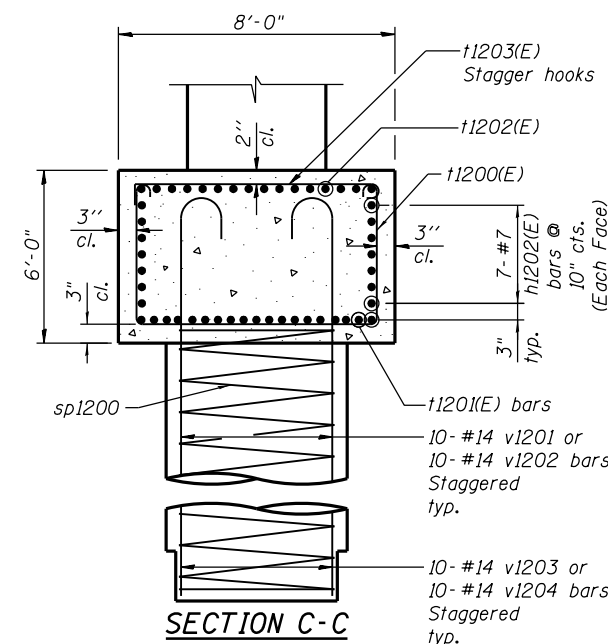
0161705-60W28-S141-Pier.dgn



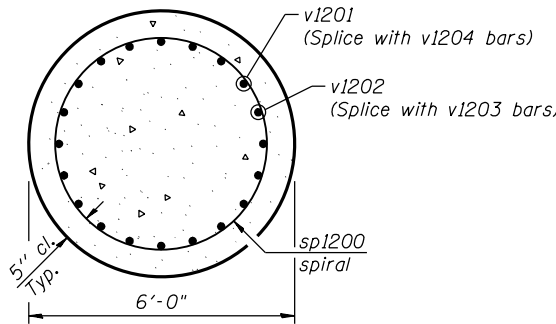
SECTION A-A



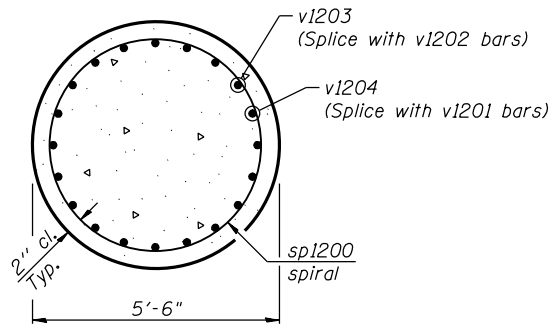
SECTION B-B



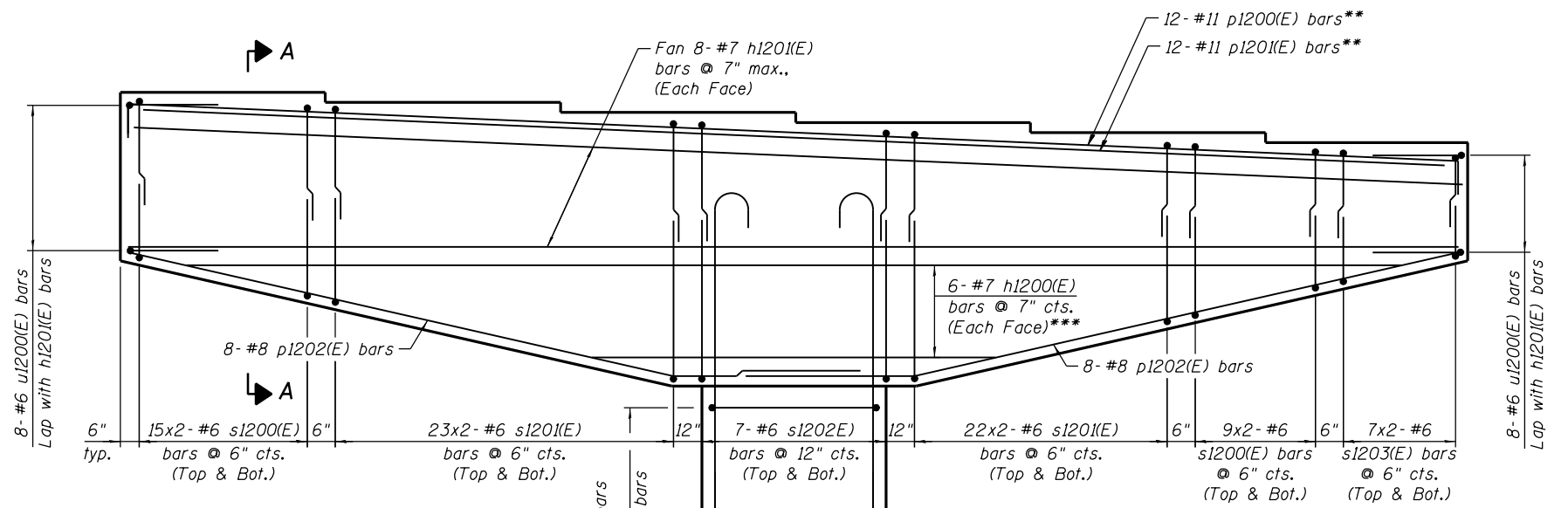
SECTION C-C



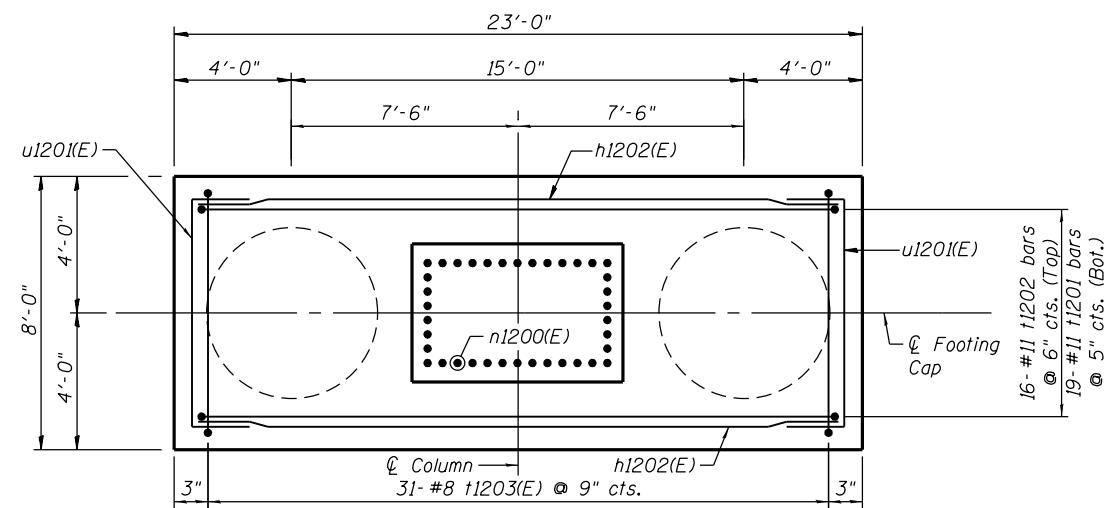
SECTION D-D



SECTION E-E



ELEVATION
(Looking West)



FOOTING PLAN

** Slope with bearing steps.
*** See Field Cutting Diagram on sheet S-141.

NOTES:

- Space reinforcement in cap to miss anchor bolts.
- sp1200 spiral
1) Provide 1/2 extra turns top and bottom. Extend spiral 3" into pile cap. Provide 4- #4 spacers or equivalent.
2) When splicing spiral reinforcement is necessary, the spirals shall be provided with 1/2 extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook.
- Contractor shall use Mechanical Splicers in drilled shaft that will fit between spirals. Contractor shall field adjust spiral pitch to 12" maximum at Mechanical Splicer locations.
- A Drilled Shaft shall be tested in accordance with Special Provisions for Crosshole Sonic Logging.

0161705-60W28-S142-Pier.dgn



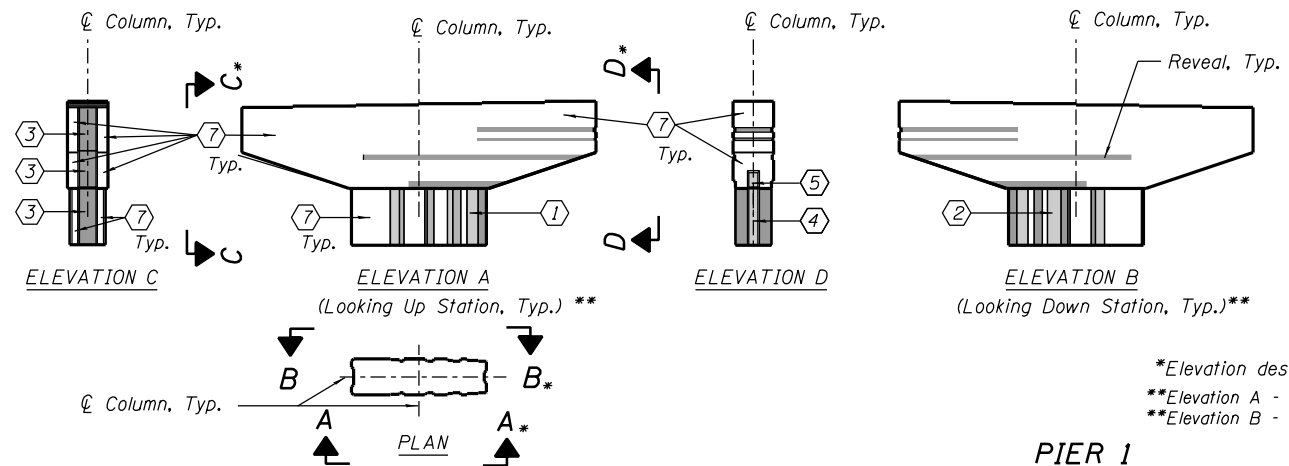
USER NAME = floresg	DESIGNED - RD	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 5/7/2014	DRAWN - BM	REVISED
	CHECKED - RD	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 12 DETAILS
STRUCTURE NO. 016-1705

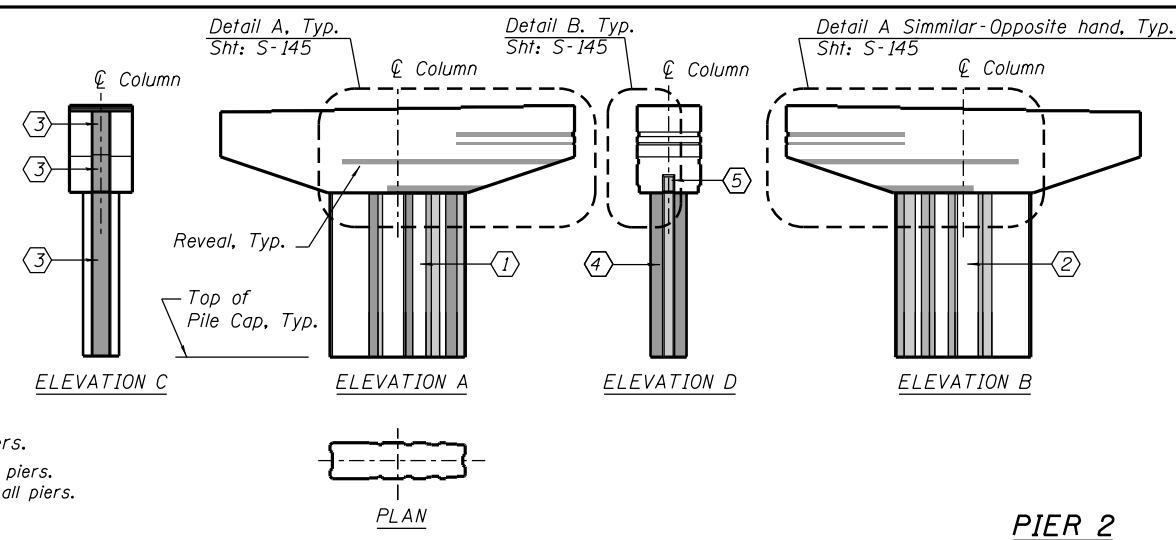
SHEET NO. S-142 OF S-165 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 457
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

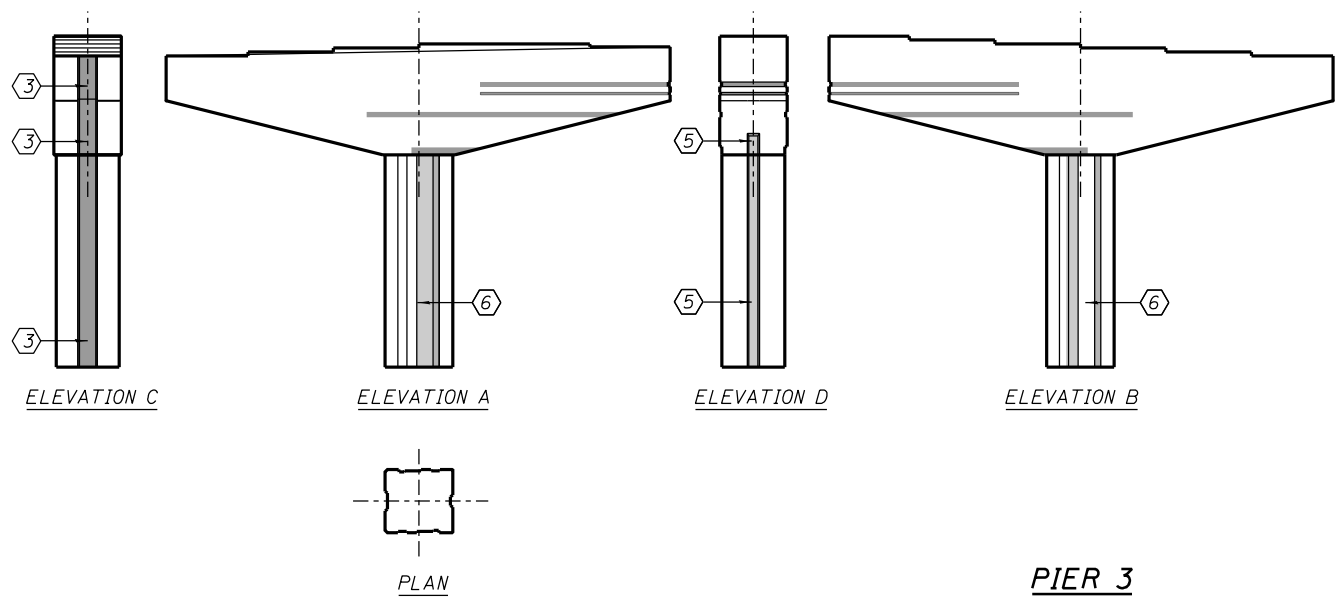


PIER 1

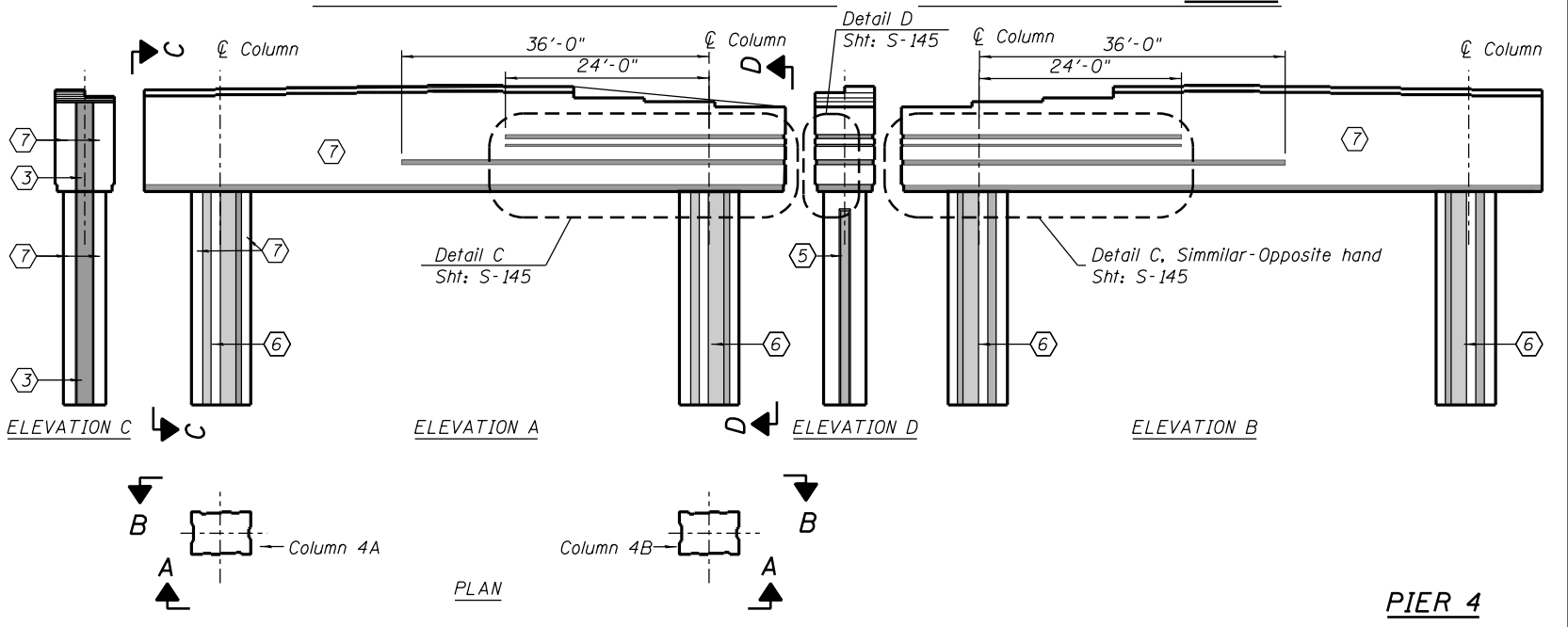
*Elevation designations are typical for all piers.
 **Elevation A - Looking Up Station, typical for all piers.
 **Elevation B - Looking Down Station, typical for all piers.



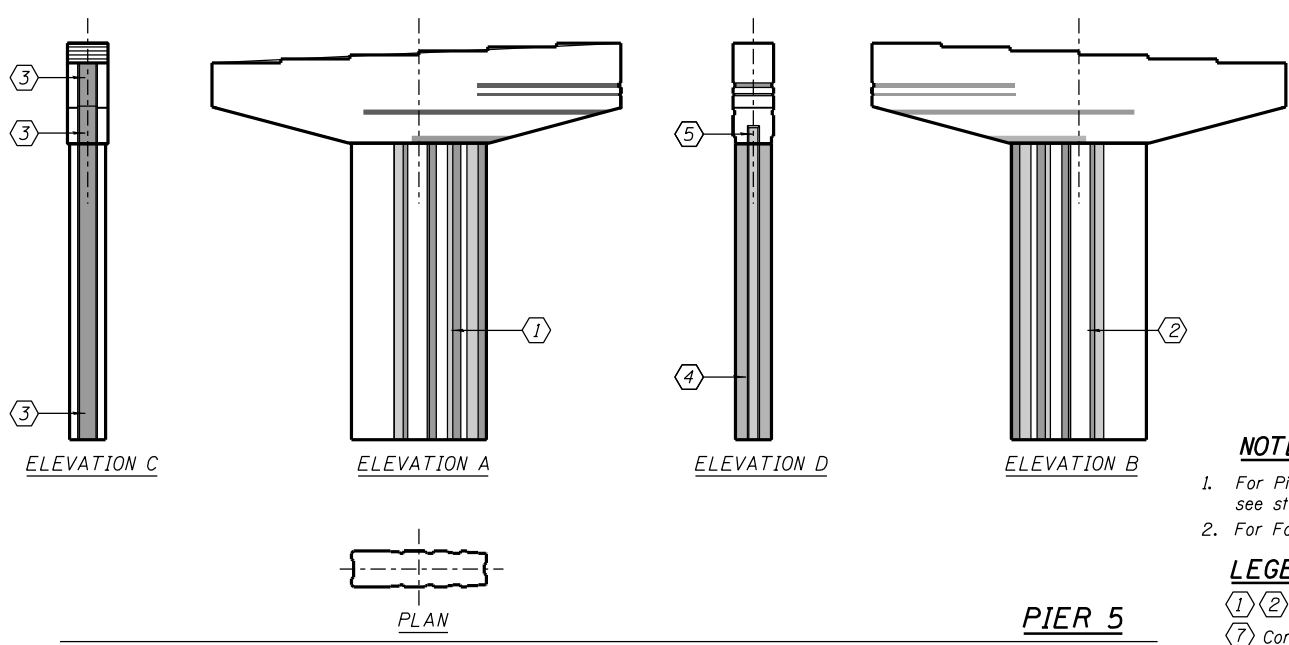
PIER 2



PIER 3



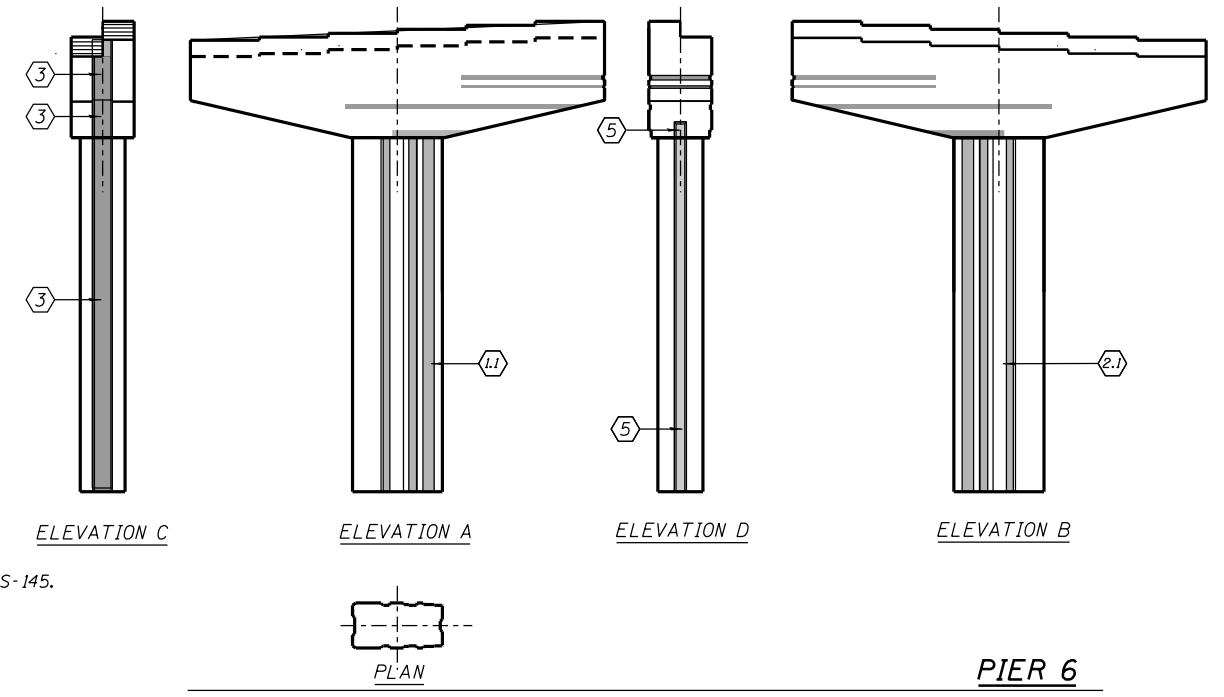
PIER 4



PIER 5

NOTES:
 1. For Pier and Pier Cap dimensions see structural drawings: S-116 to S-142.
 2. For Formliner and Reveal details see drawing S-145.

LEGEND:
 (1) (2) (3) (4) (5) (6) Textured Formliner
 (7) Contractor's form



PIER 6

0161705-60W28-S143-Pier-Elev.dgn

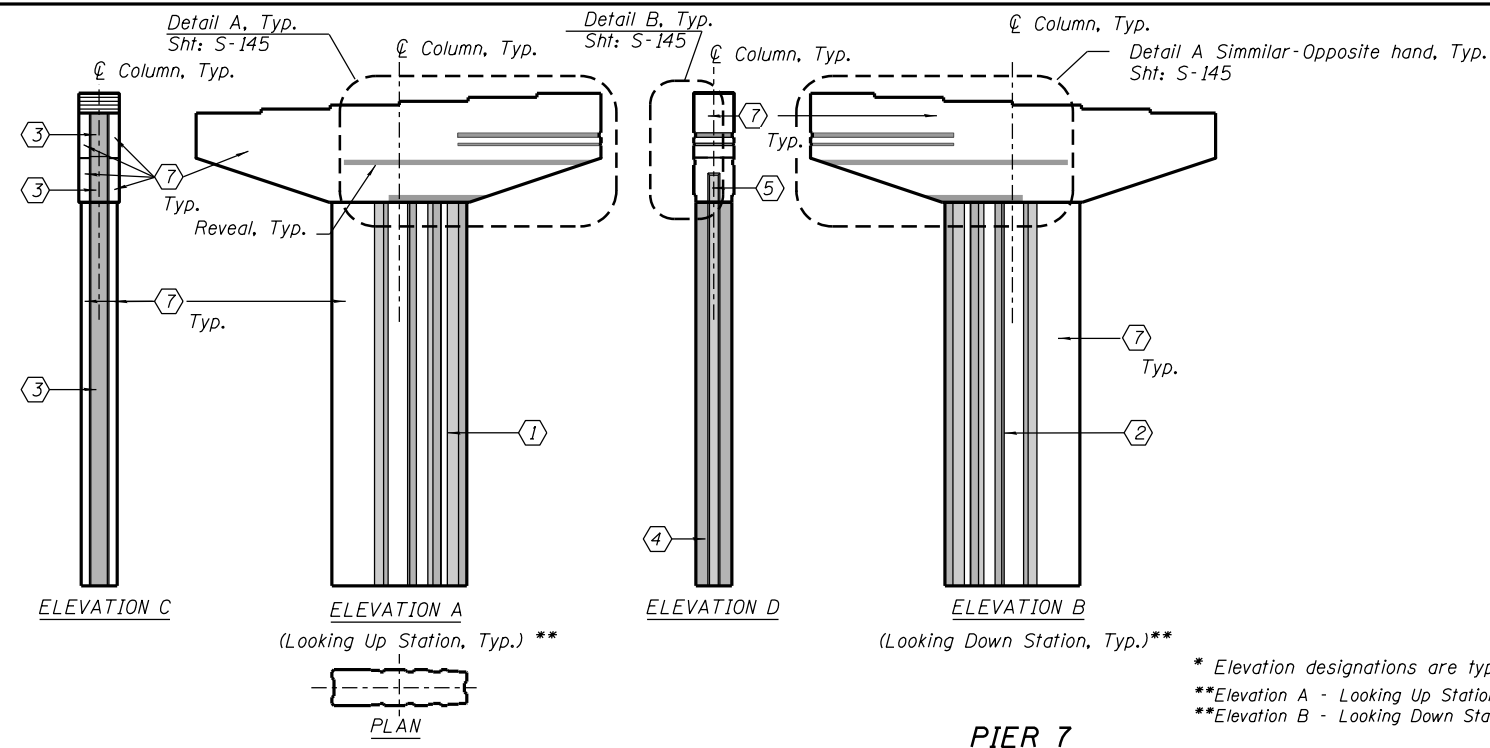


USER NAME = floresg	DESIGNED - MR	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 5/7/2014	DRAWN - MR	REVISED
	CHECKED - ATB	REVISED

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

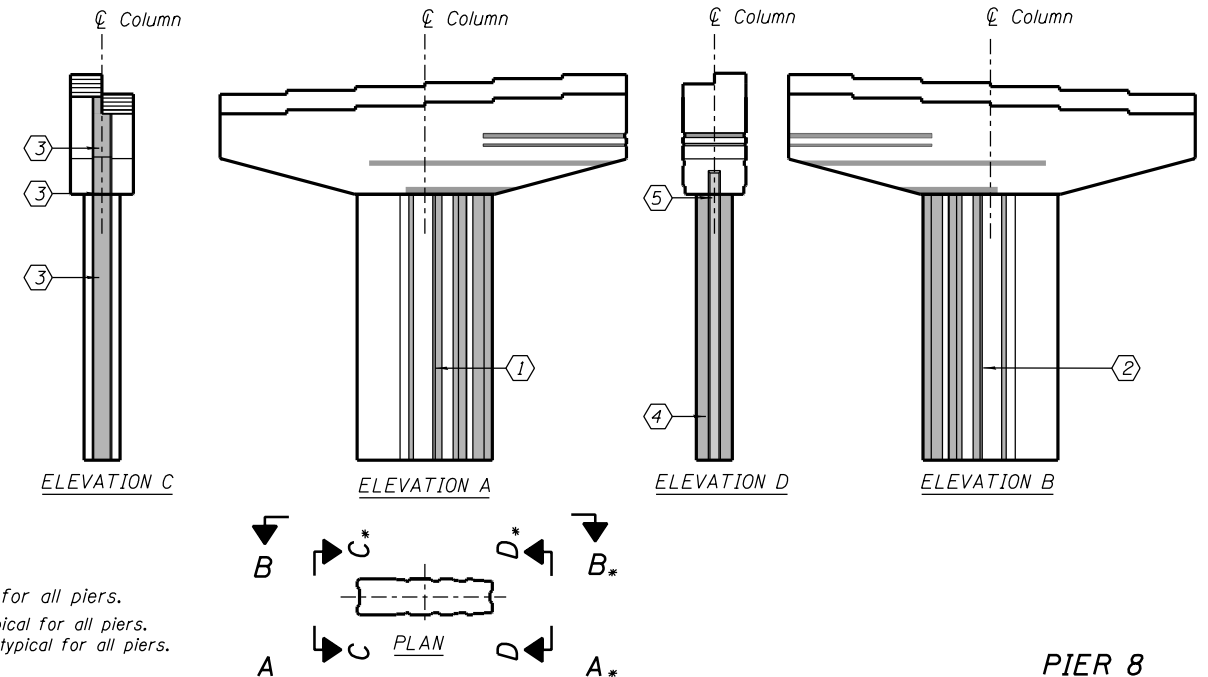
**ARCHITECTURAL DETAILS I
 STRUCTURE NO. 016-1705**
 SHEET NO. S-143 OF S-165 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 458
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

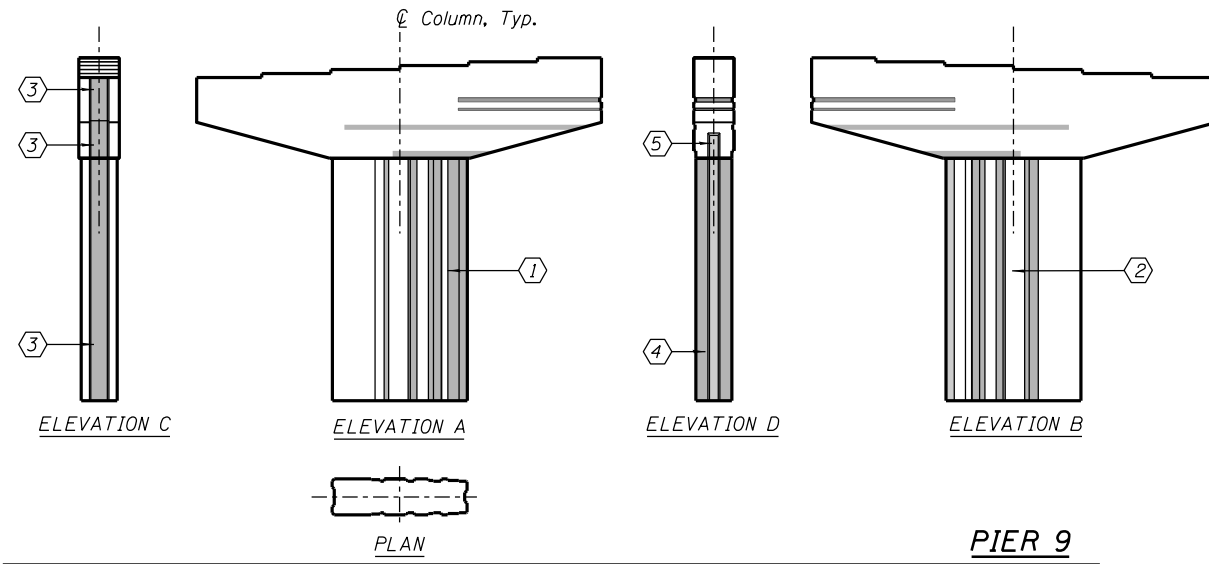


PIER 7

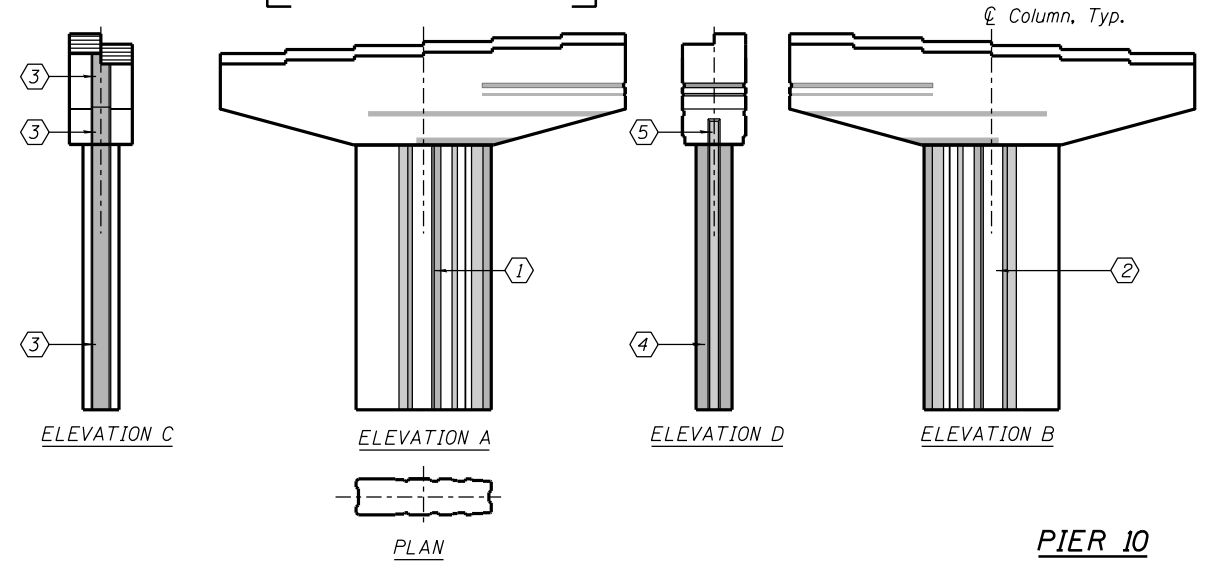
* Elevation designations are typical for all piers.
 **Elevation A - Looking Up Station, typical for all piers.
 **Elevation B - Looking Down Station, typical for all piers.



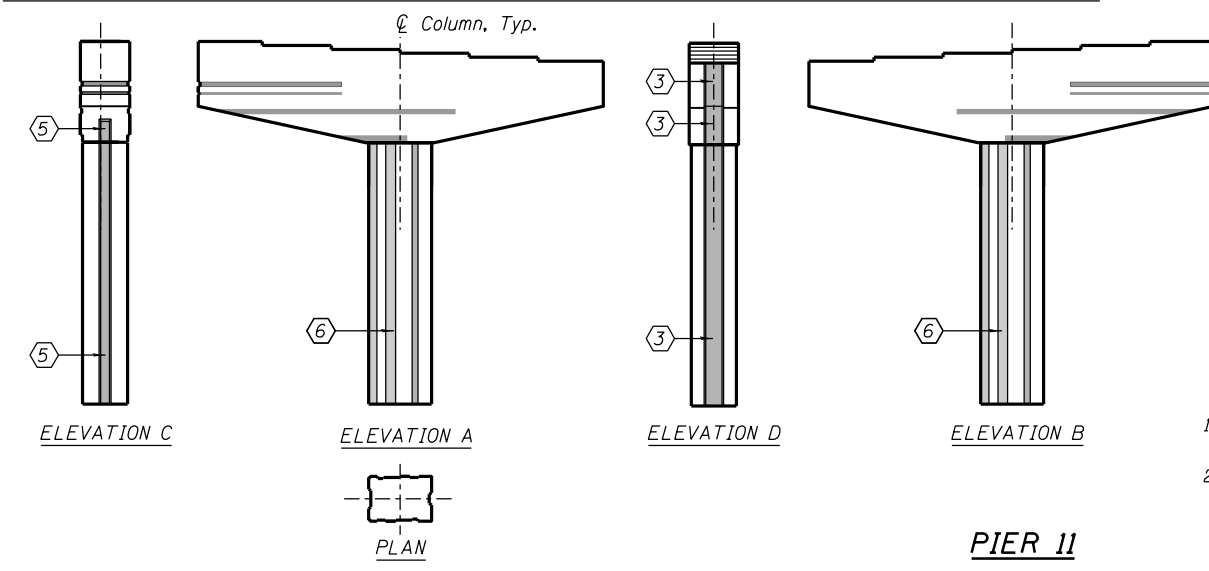
PIER 8



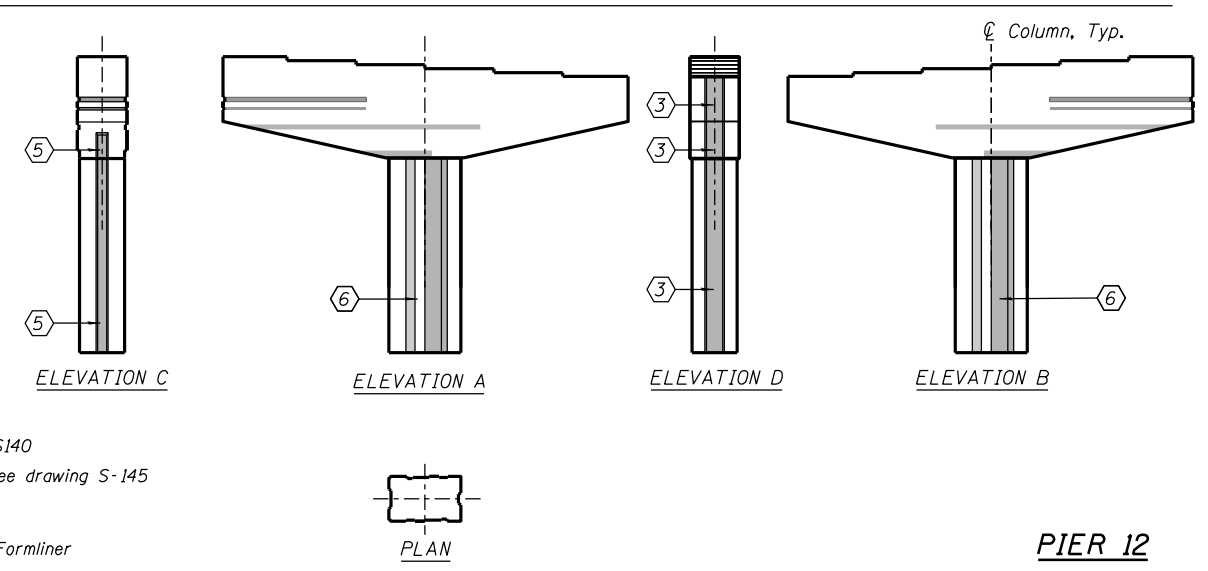
PIER 9



PIER 10



PIER 11



PIER 12

NOTES:
 1. For Pier and Pier Cap dimensions see structural drawings: S-116 - S140
 2. For Formliner and Reveal details see drawing S-145

LEGEND:
 ①②③④⑤⑥ Textured Formliner

0161705-60W28-S144-Pier Elev.dgn

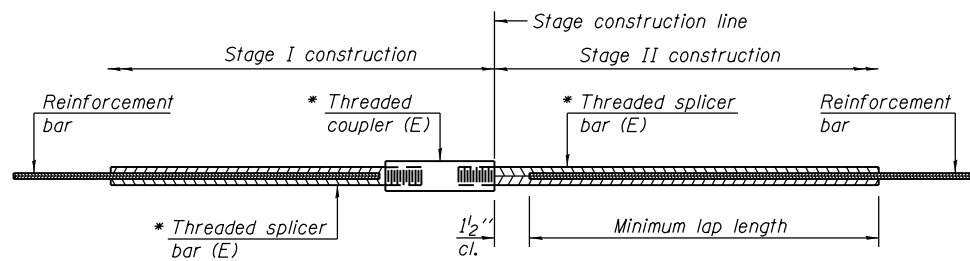


USER NAME = floresg	DESIGNED -	REVISED
	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - MR	REVISED
PLOT DATE = 5/7/2014	CHECKED - ATB	REVISED

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**ARCHITECTURAL DETAILS II
 STRUCTURE NO. 016-1705**
 SHEET NO. S-144 OF S-165 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 459
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	



STANDARD BAR SPLICER ASSEMBLY

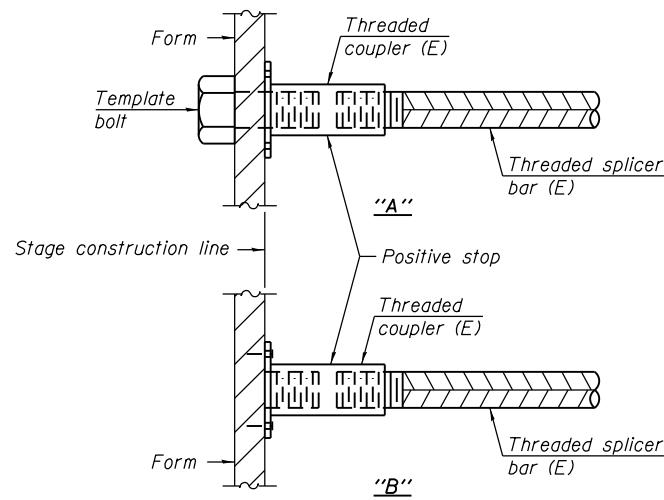
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"	6'-5"	6'-10"	7'-9"	8'-7"	9'-8"

- Table 1: Black bar, 0.8 Class C
- Table 2: Black bar, Top bar lap, 0.8 Class C
- Table 3: Epoxy bar, 0.8 Class C
- Table 4: Epoxy bar, Top bar lap, 0.8 Class C
- Table 5: Epoxy bar, Class C
- Table 6: Epoxy bar, Top bar top, Class C

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

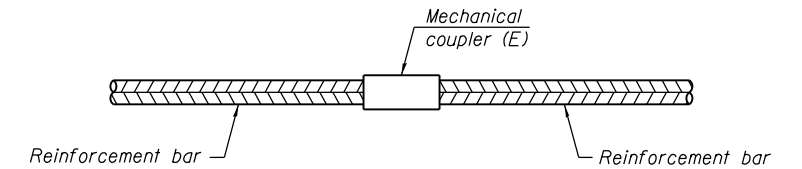
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length



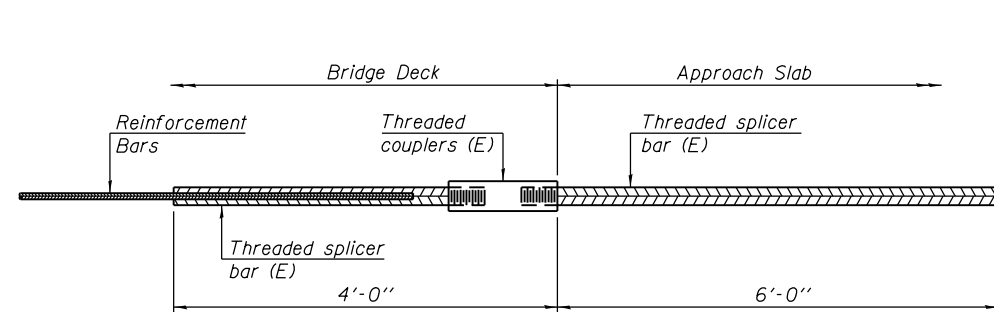
INSTALLATION AND SETTING METHODS

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



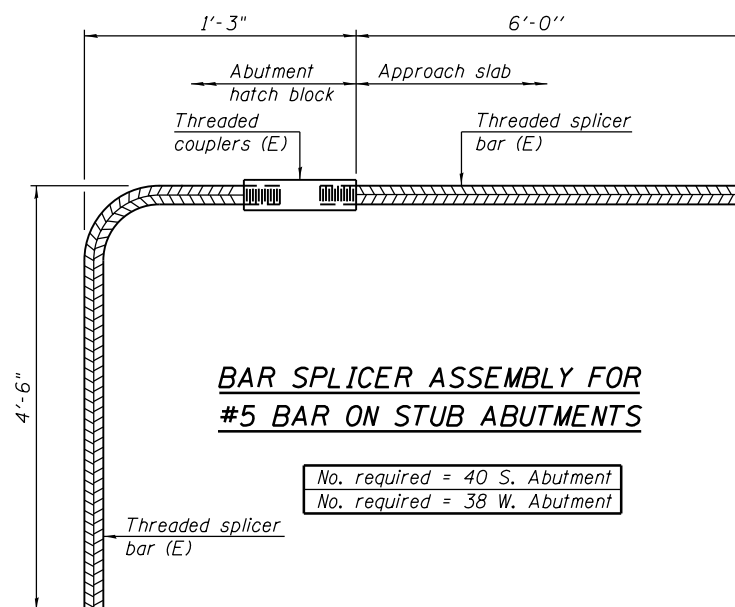
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required
Pier 2	# 14	40
Pier 3	# 14	160
Pier 4	# 14	88
Pier 5	# 14	40
Pier 6	# 14	40
Pier 7	# 14	52
Pier 8	# 14	140
Pier 9	# 14	40
Pier 10	# 14	40
Pier 11	# 14	44
Pier 12	# 14	40



BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

No. required =



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required = 40 S. Abutment
 No. required = 38 W. Abutment

NOTES

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

0161705-60W28-5146-Bar Splice.dgn

BSD-1

1-27-12



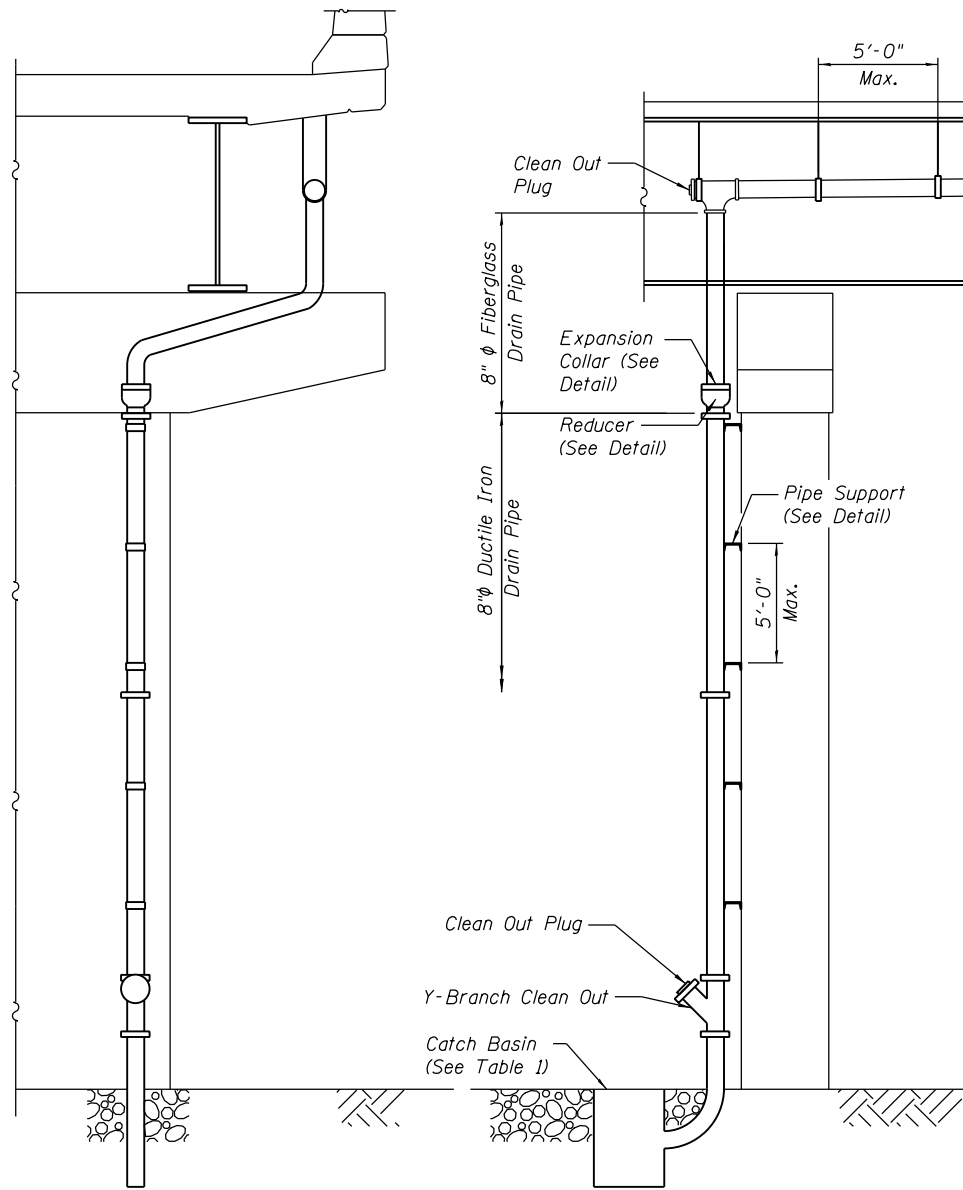
USER NAME = floresg	DESIGNED - MK	REVISED
PLOT SCALE = N.T.S.	CHECKED - ATB	REVISED
PLOT DATE = 5/7/2014	DRAWN - MRK	REVISED
	CHECKED - ATB	REVISED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY DETAILS
 STRUCTURE NO. 016-1705

SHEET NO. S-146 OF S-165 SHEETS

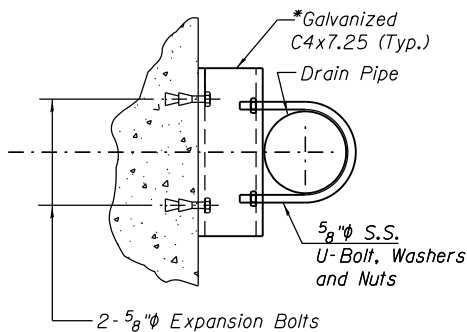
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	461
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				



ELEVATION VIEW
(Looking Up Station)

DRAINAGE SYSTEM

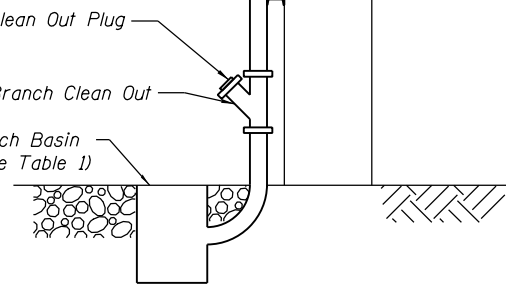
- S. Abutment
- Pier 1
- Pier 2
- Pier 3
- Pier 10



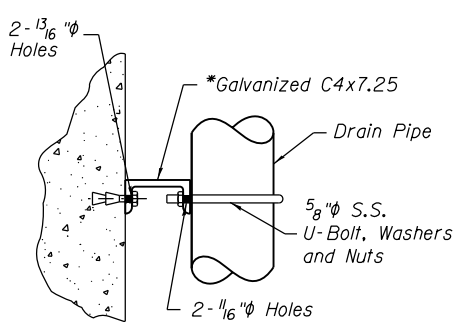
PLAN

PIPE SUPPORT DETAIL

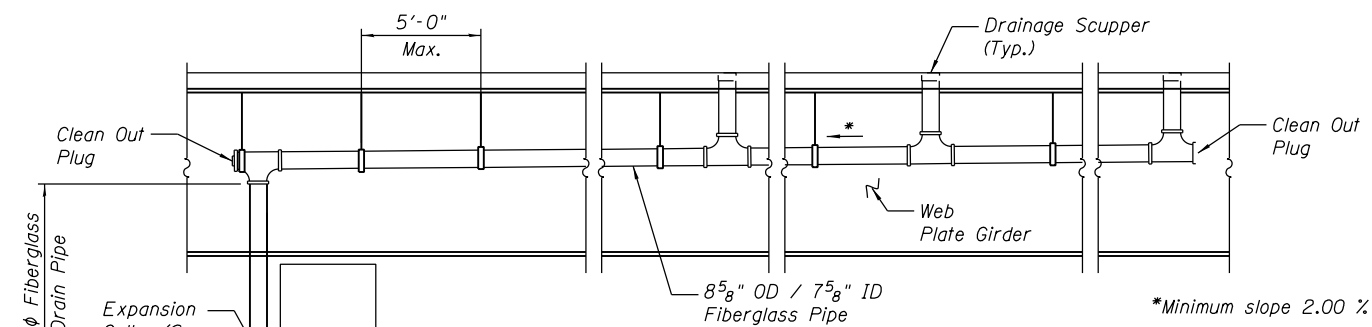
*Provide curved C6x8.2 to fit Round Pier Columns where needed



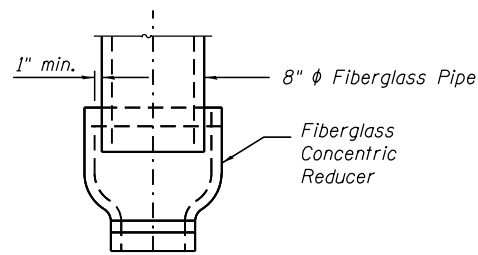
END VIEW



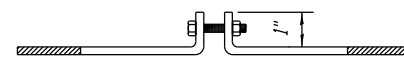
ELEVATION



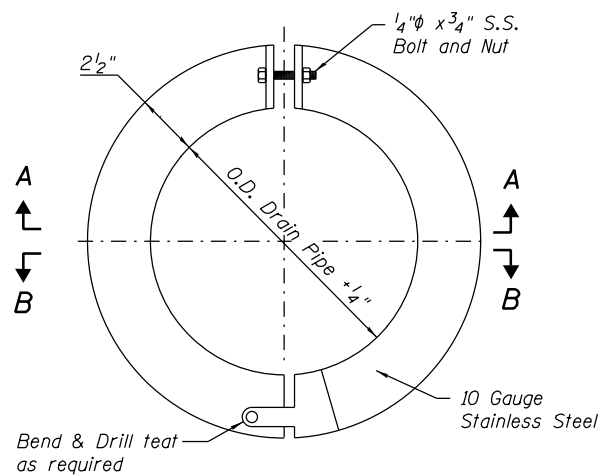
*Minimum slope 2.00 %



REDUCER DETAIL



SECTION A-A

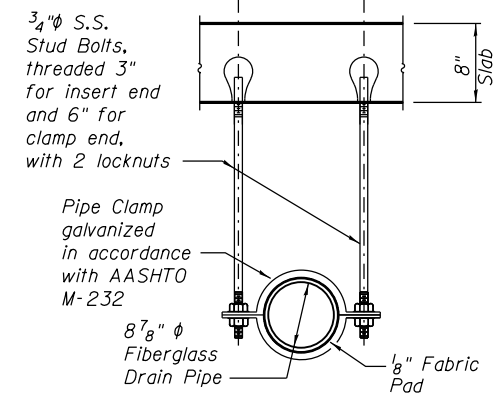


DETAIL OF EXPANSION COLLAR

TABLE 1

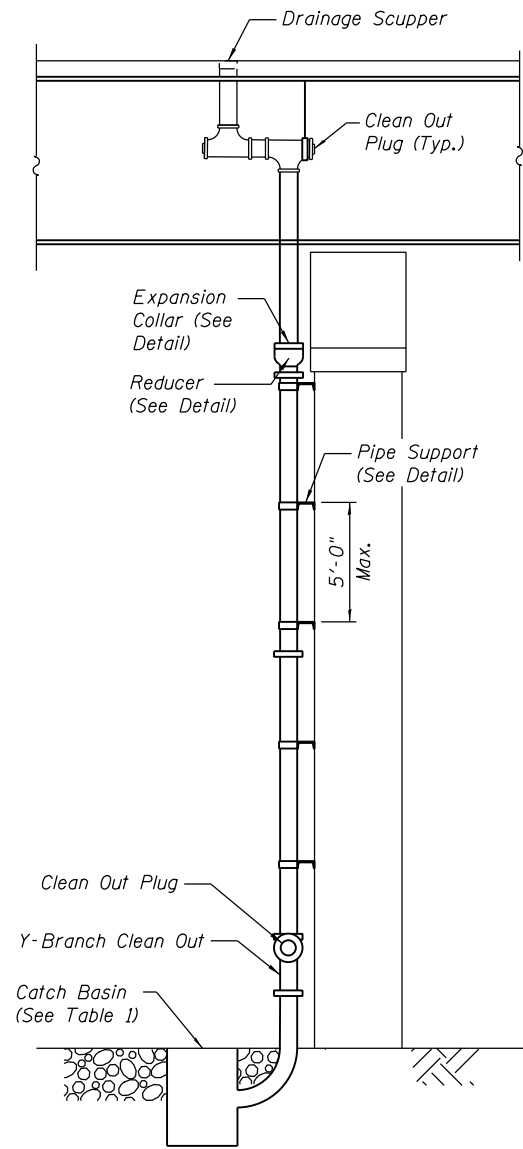
Catch Basin Location	Structure Number
S Abutment	S-35
Pier 1	S-37
Pier 2	S-38
Pier 2	S-38A
Pier 3	S-39
Pier 4	S-40
Pier 5	S-41
Pier 6	S-43
Pier 8	S-44
Pier 10	S-49
W Abutment	S-53

Single coil, flared loop inserts cast in deck for 3/4" stud bolts



PIPE SUPPORT DETAIL

** Dimension as required by Pipe Clamp



END VIEW

DRAINAGE SYSTEM

- Pier 4
- Pier 5
- Pier 6
- Pier 8
- W. Abutment

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage System	L. Sum	1

NOTES:

- If piping configuration allows, the Contractor shall locate drain pipe for Piers 5, 6 and 8 within the reveals indicated in the Architectural Details. This installation, along with necessary additional pipe bends, supports and related appurtenances are included in the cost of Drainage System.
- S.S. denotes Stainless Steel.

0161705-60W28-5147-Drainage System Details.dgn



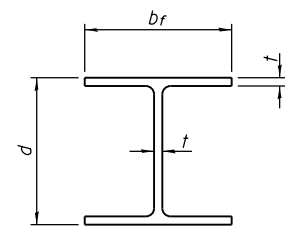
USER NAME = floresg	DESIGNED - MK	REVISED
PLOT SCALE = N.T.S.	CHECKED - DD	REVISED
PLOT DATE = 5/7/2014	DRAWN - MK	REVISED
	CHECKED - ATB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRAINAGE SYSTEM DETAILS
STRUCTURE NO. 016-1705

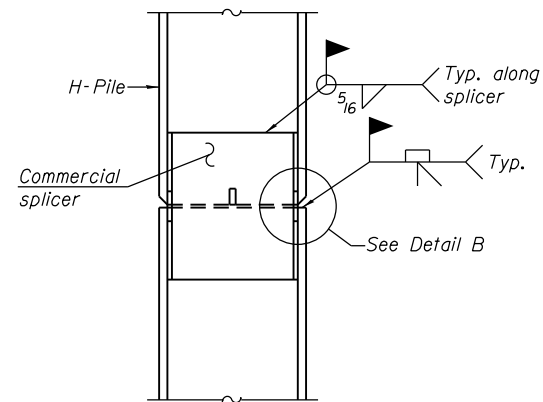
SHEET NO. S-147 OF S-165 SHEETS

F.A.I. RTE. 90/94/290	SECTION 2013-010R	COUNTY COOK	TOTAL SHEETS 747	SHEET NO. 462
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

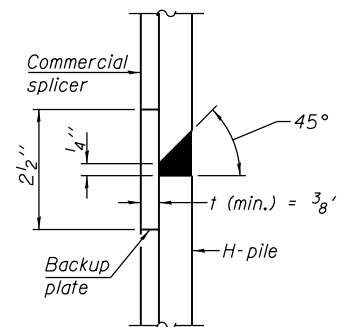


STEEL PILE TABLE

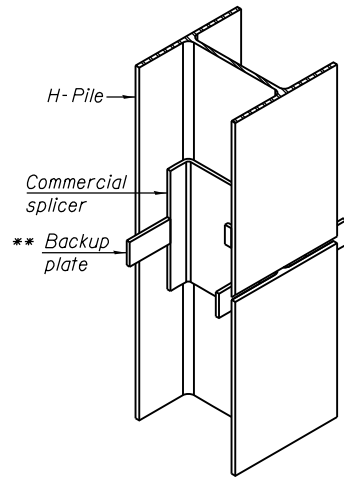
Designation	Depth d	Flange width br	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	1 3/16"	30"
x102	14"	14 3/4"	1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	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

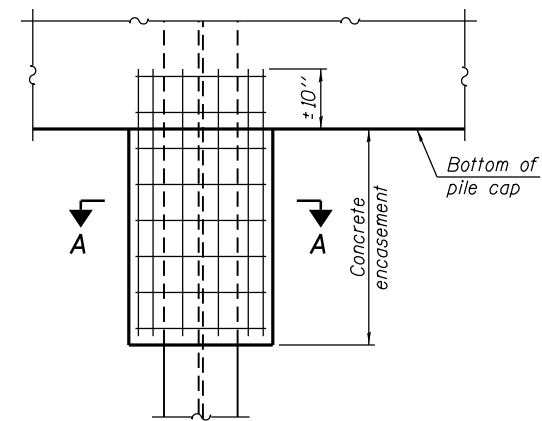


DETAIL "B"



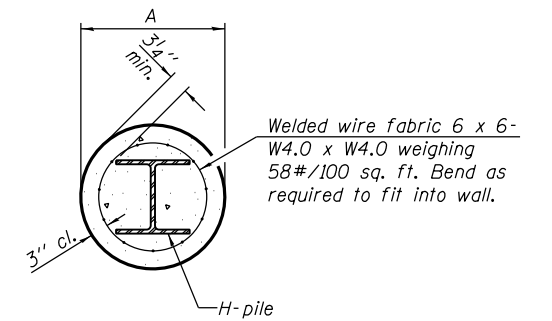
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



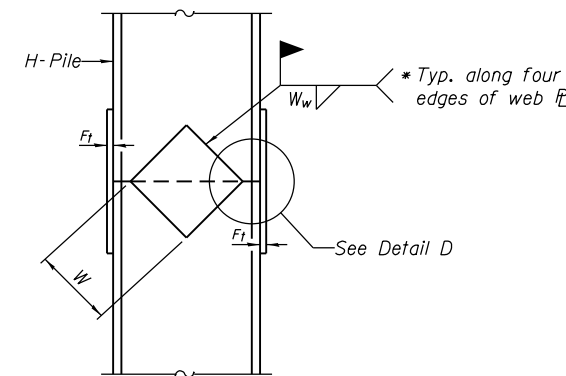
ELEVATION

PILE ENCASEMENT

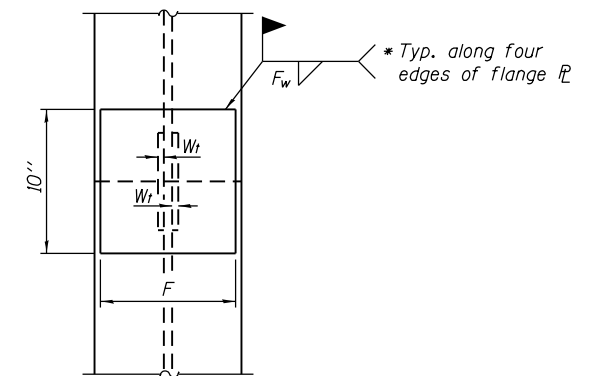


SECTION A-A

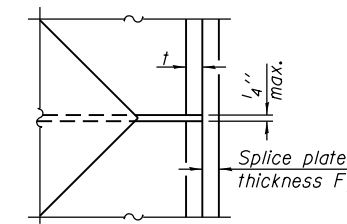
Note:
Forms for encasement may be omitted when soil conditions permit.



ELEVATION



END VIEW



DETAIL D

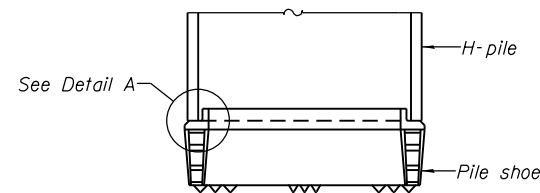
WELDED PLATE FIELD SPLICE

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	1/16"	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"

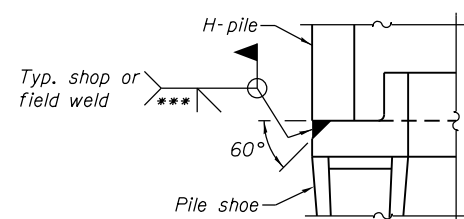
WELDED COMMERCIAL SPLICE ALTERNATE

- * 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.).

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

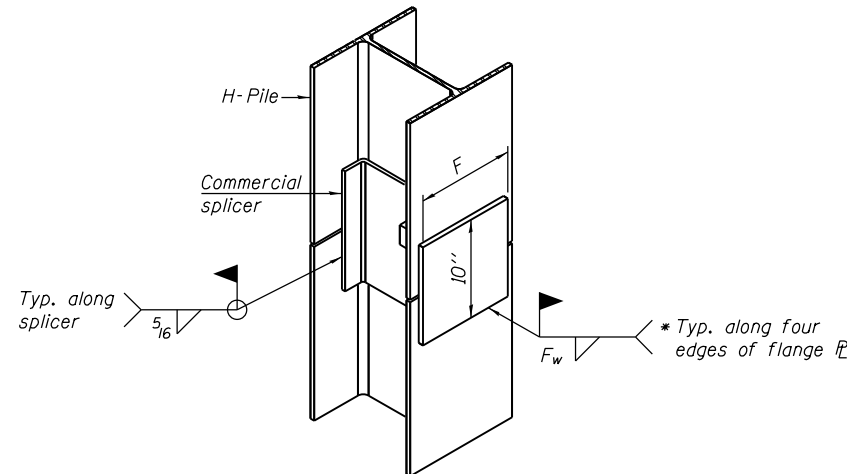


ELEVATION



DETAIL A

H-PILE SHOE ATTACHMENT



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.).

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

0161705-60W28-5148-Pile.dgn

F-HP 1-27-12



USER NAME = floresg	DESIGNED - ABT	REVISOR
PLOT SCALE = N.T.S.	CHECKED - EJO	REVISION
PLOT DATE = 5/7/2014	DRAWN - MRK	REVISION
	CHECKED - ABT	REVISION

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS
STRUCTURE NO. 016-1705

SHEET NO. S-148 OF S-165 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	464
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				

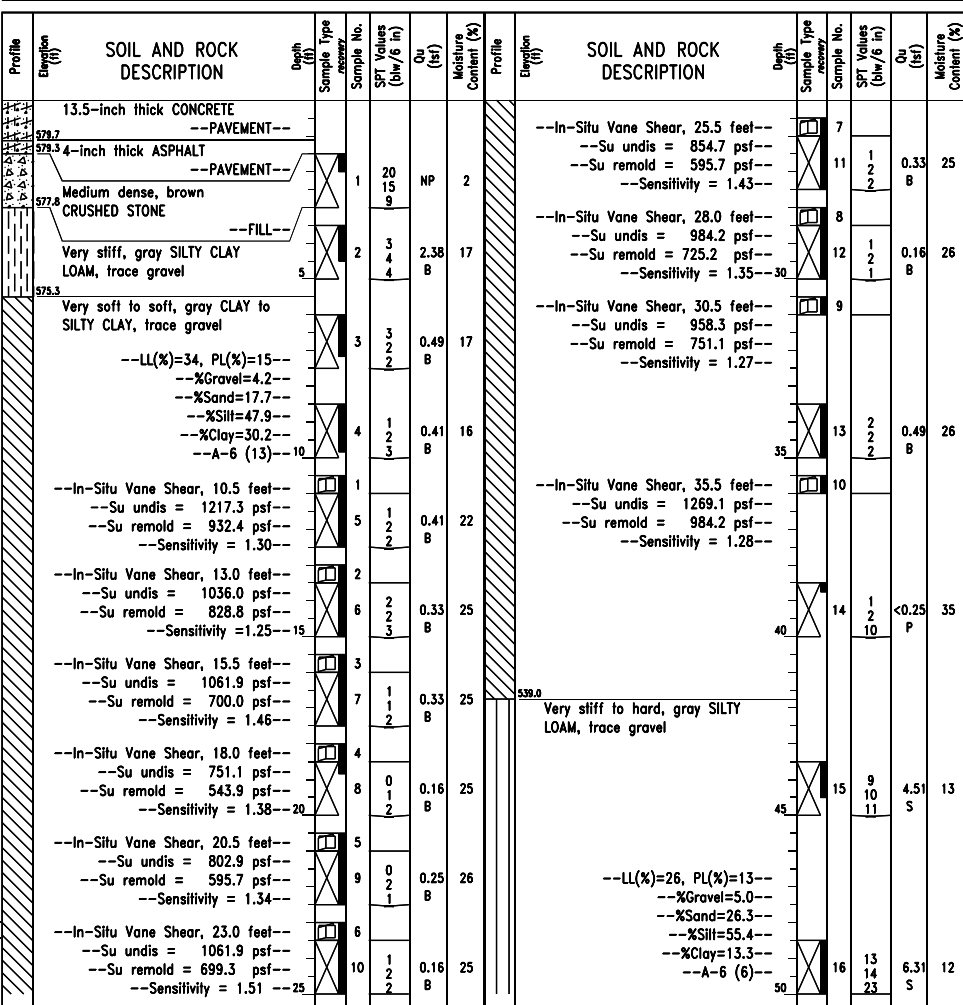
Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

BORING LOG 02-RWB-05
WEI Job No.: 1100-04-01

Datum: NAVD 88
Elevation: 580.79 ft
North: 1896721.51 ft
East: 1171834.02 ft
Station: 1816+92.12
Offset: 4.4239 LT

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Page 1 of 2



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	06-09-2013	Complete Drilling	06-11-2013
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR
Driller	R&T	Logger	D. Kolpacki
Checked by	C. Marin	Drilling Method	2.25" HSA to 7.5', mud rotary thereafter, boring backfilled upon completion
While Drilling	DRY	At Completion of Drilling	NA
Time After Drilling	NA	Depth to Water	NA

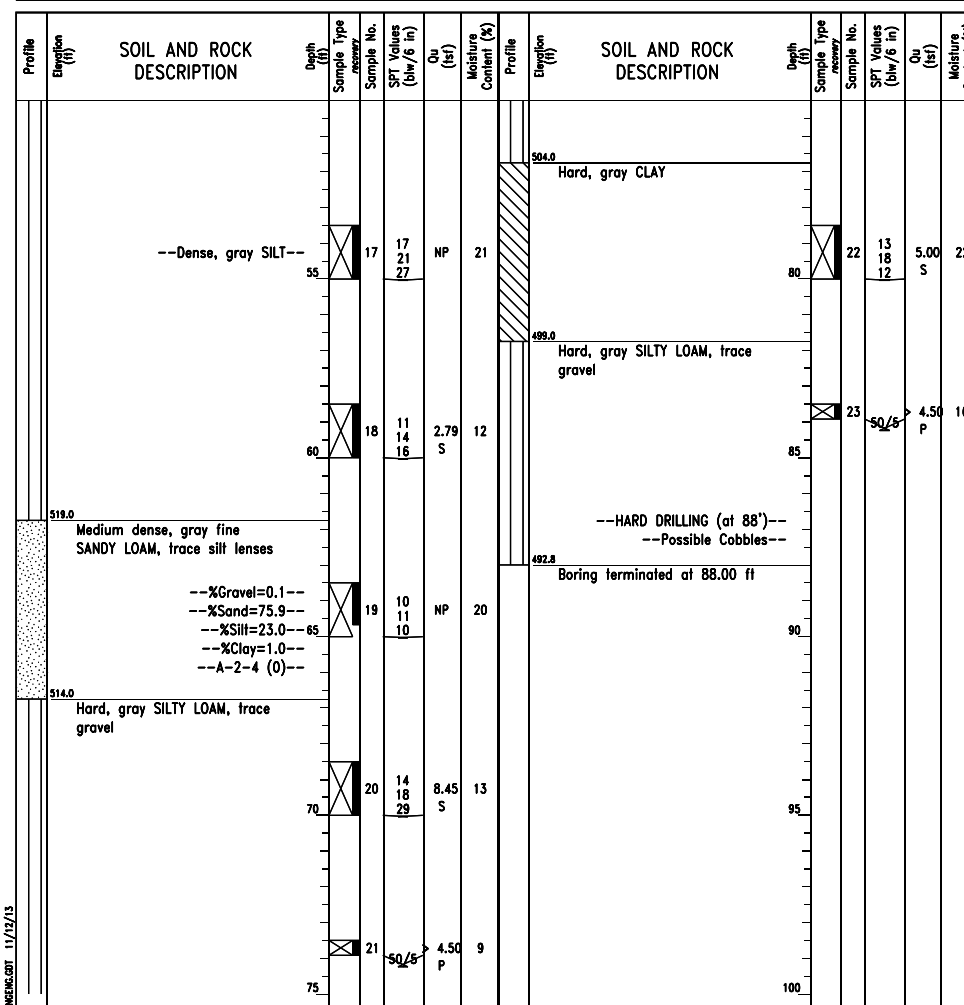
Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

BORING LOG 02-RWB-05
WEI Job No.: 1100-04-01

Datum: NAVD 88
Elevation: 580.79 ft
North: 1896721.51 ft
East: 1171834.02 ft
Station: 1816+92.12
Offset: 4.4239 LT

Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Page 2 of 2



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	06-09-2013	Complete Drilling	06-11-2013
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR
Driller	R&T	Logger	D. Kolpacki
Checked by	C. Marin	Drilling Method	2.25" HSA to 7.5', mud rotary thereafter, boring backfilled upon completion
While Drilling	DRY	At Completion of Drilling	NA
Time After Drilling	NA	Depth to Water	NA

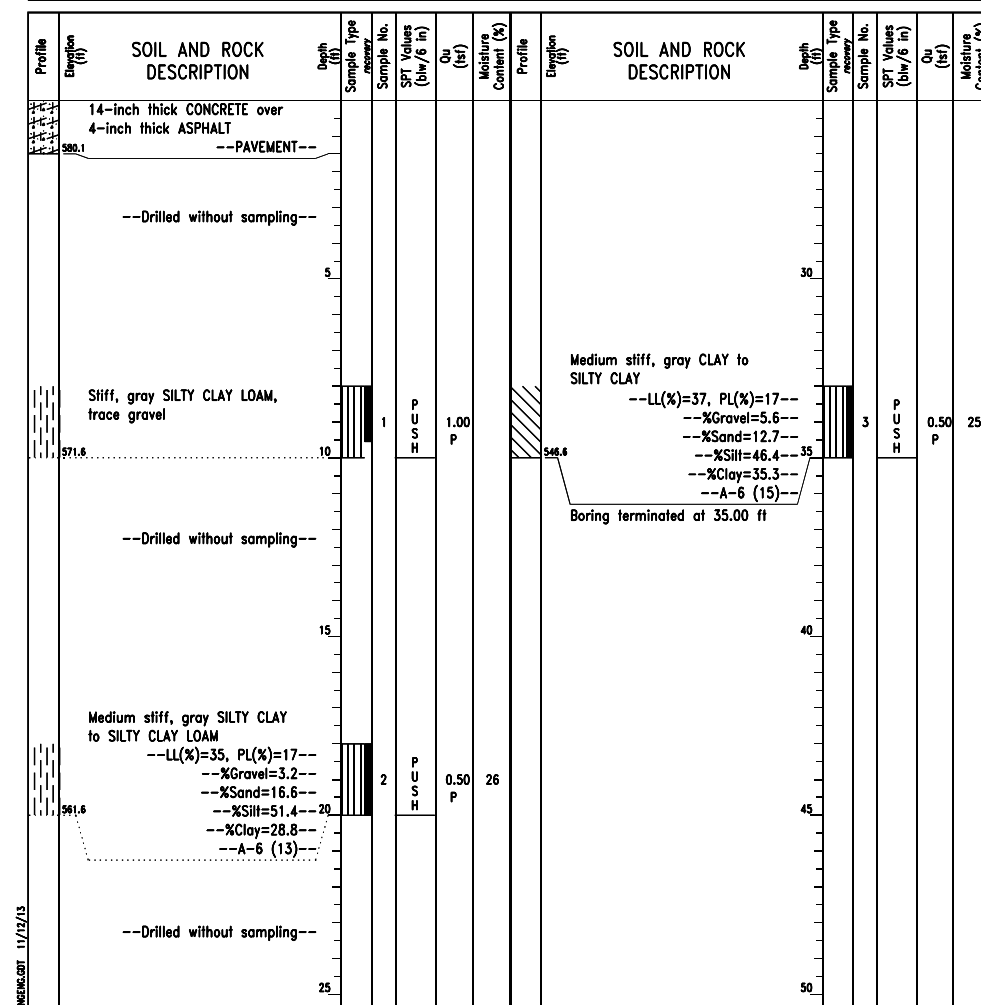
Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

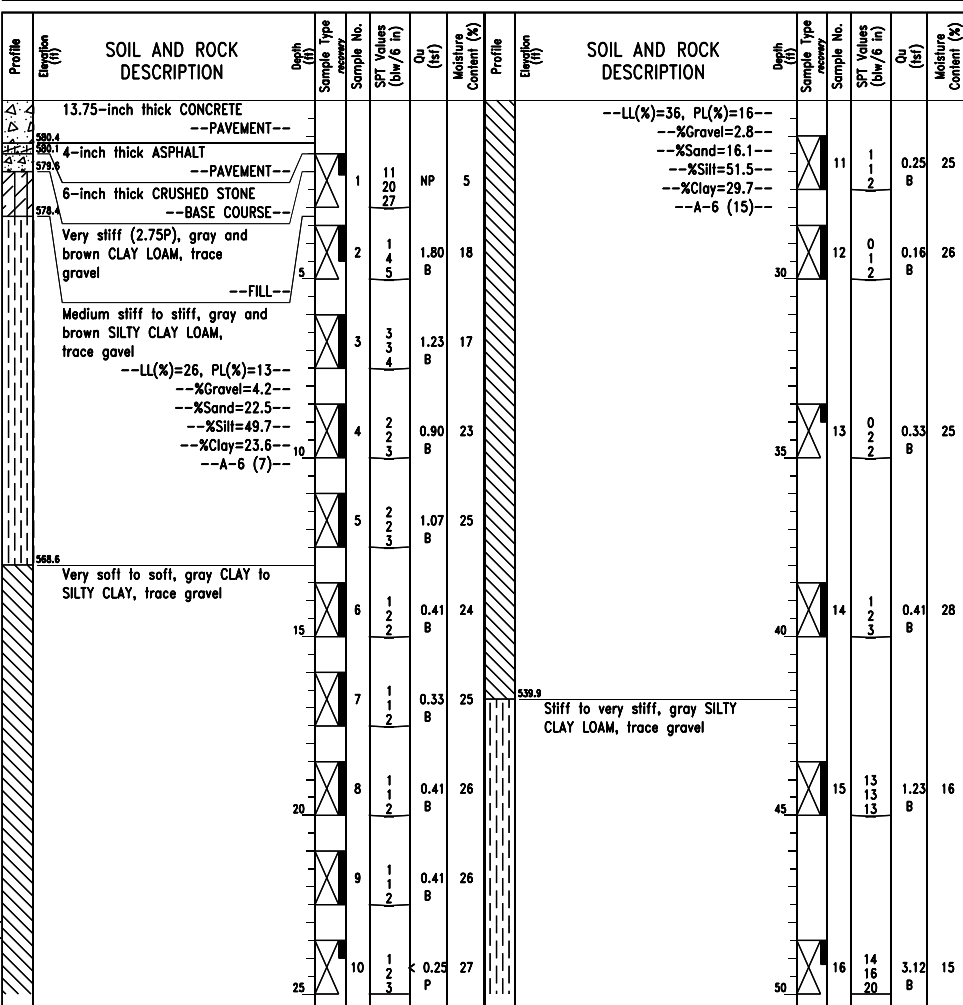
BORING LOG 02-RWB-06ST
WEI Job No.: 1100-04-01

Datum: NAVD 88
Elevation: 581.65 ft
North: 1896797.01 ft
East: 1171830.80 ft
Station: 1817+67.62
Offset: 3.8490 LT

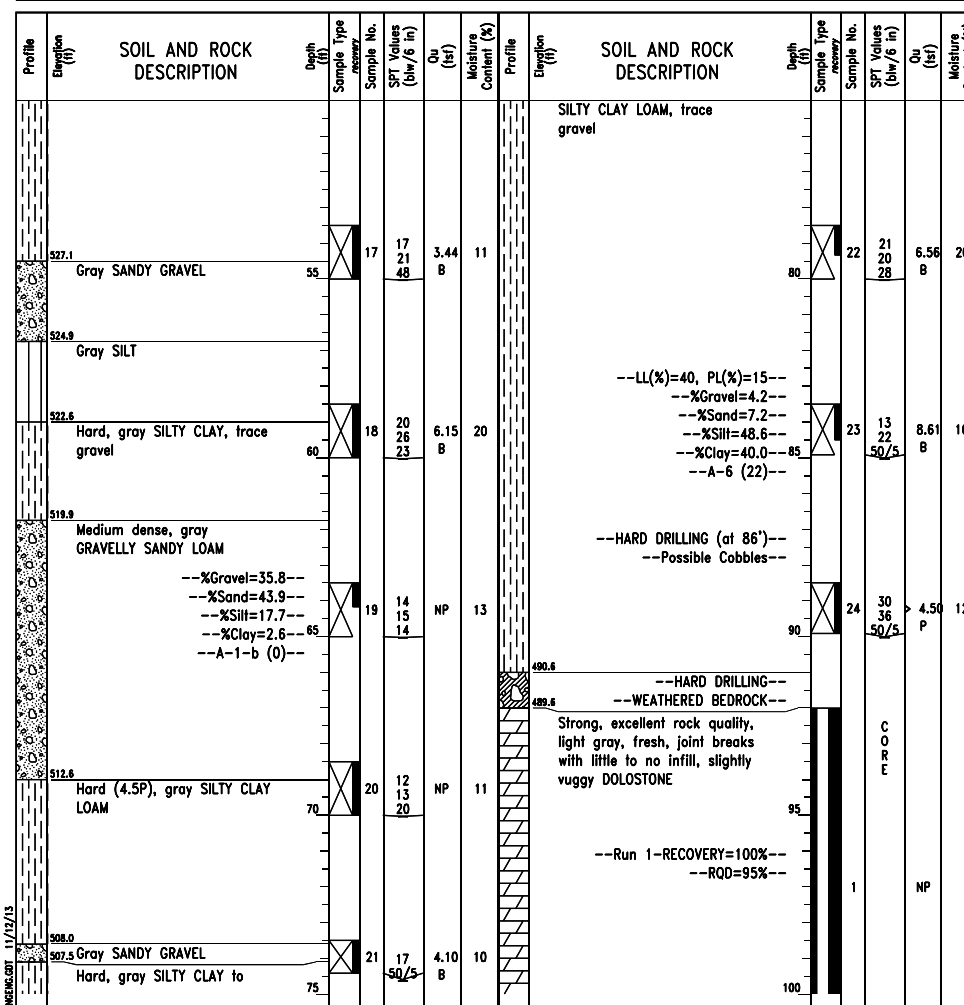
Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Page 1 of 1

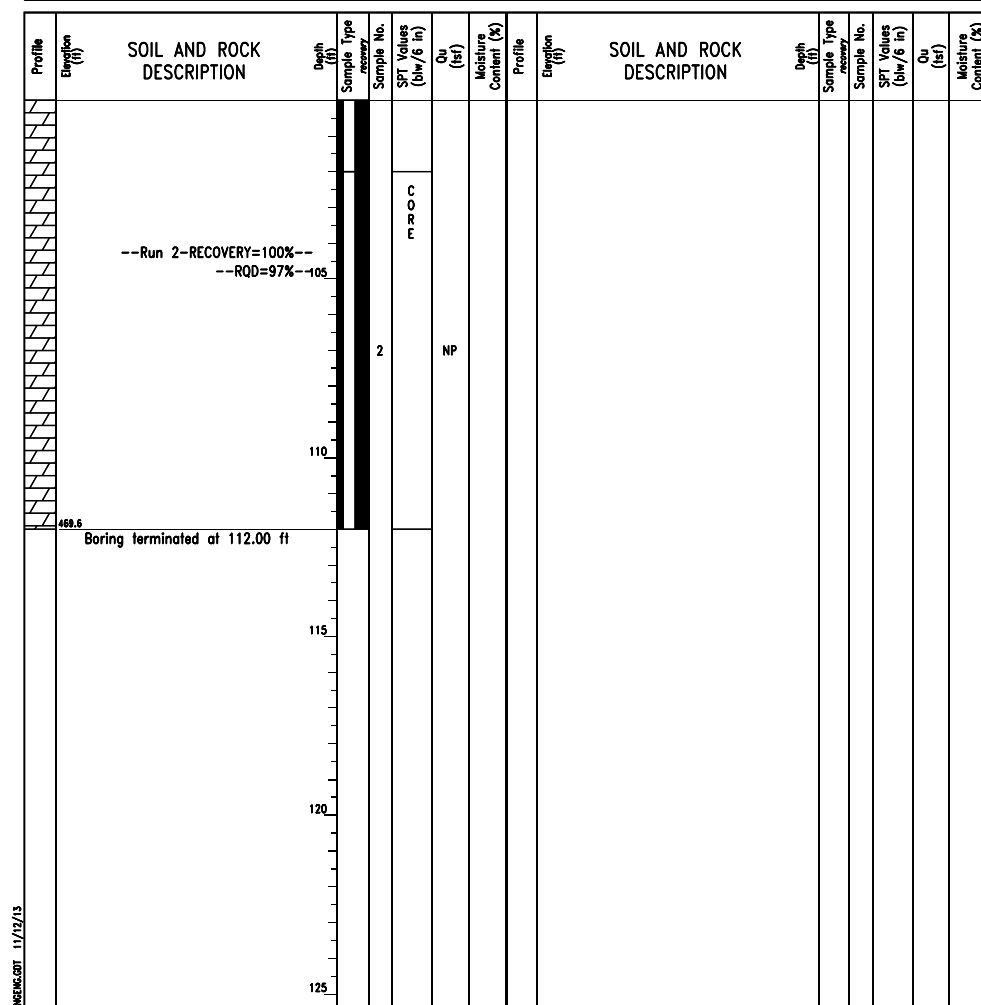




GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	06-16-2013	Complete Drilling	06-17-2013
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR
Driller	P&N	Logger	A. Happel
Checked by	C. Marin	Drilling Method	2.25" HSA to 10', mud rotary thereafter, boring
backfilled upon completion		While Drilling	NA
		At Completion of Drilling	NA
		Time After Drilling	NA
		Depth to Water	NA



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	06-16-2013	Complete Drilling	06-17-2013
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR
Driller	P&N	Logger	A. Happel
Checked by	C. Marin	Drilling Method	2.25" HSA to 10', mud rotary thereafter, boring
backfilled upon completion		While Drilling	NA
		At Completion of Drilling	NA
		Time After Drilling	NA
		Depth to Water	NA



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	06-16-2013	Complete Drilling	06-17-2013
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR
Driller	P&N	Logger	A. Happel
Checked by	C. Marin	Drilling Method	2.25" HSA to 10', mud rotary thereafter, boring
backfilled upon completion		While Drilling	NA
		At Completion of Drilling	NA
		Time After Drilling	NA
		Depth to Water	NA

0161705-60W28-S150-Boring.dgn



USER NAME = floresg	DESIGNED - ABT	REVISED
PLOT SCALE = N.T.S.	CHECKED - EJO	REVISED
PLOT DATE = 5/7/2014	DRAWN - MRK	REVISED
	CHECKED - ABT	REVISED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BORING LOGS - II
 STRUCTURE NO. 016-1705
 SHEET NO. S-150 OF S-165 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	466
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)
582.0	13-inch thick CONCRETE --PAVEMENT--												
582.0	Medium dense, gray CRUSHED STONE --FILL--	1	14	11	NP	4			11	0	0	0.33	27
590.1	Very stiff, gray SILTY CLAY, trace gravel	2	2	4	5	2.62	27		12	0	0	0.41	25
577.6	Medium stiff, gray CLAY to SILTY CLAY, trace gravel	3	1	3	5	0.98	25		13	1	3	0.90	26
572.6	Soft, gray SILTY LOAM, trace gravel	5	1	1	2	0.49	21		14	1	2	0.41	29
570.1	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel	6	0	0	1	0.41	26		15	10	14	5.74	15
		7	0	0	1	0.33	20	541.4					
		8	0	0	0	0.41	27		16	10	15	4.10	21
		9	0	1	2	0.25	22						
		10	0	0	0	0.41	26						

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	06-20-2013	Complete Drilling	06-21-2013	While Drilling	∇	NA	
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR	At Completion of Drilling	∇	NA	
Driller	P&N	Logger	A. Happel	Time After Drilling	NA		
Checked by	C. Marin			Depth to Water	∇	NA	
Drilling Method	2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion			The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.			

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)
582.0	13-inch thick CONCRETE --PAVEMENT--												
582.0	Medium dense, gray CRUSHED STONE --FILL--	1	14	11	NP	4			11	0	0	0.33	27
590.1	Very stiff, gray SILTY CLAY, trace gravel	2	2	4	5	2.62	27		12	0	0	0.41	25
577.6	Medium stiff, gray CLAY to SILTY CLAY, trace gravel	3	1	3	5	0.98	25		13	1	3	0.90	26
572.6	Soft, gray SILTY LOAM, trace gravel	5	1	1	2	0.49	21		14	1	2	0.41	29
570.1	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel	6	0	0	1	0.41	26		15	10	14	5.74	15
		7	0	0	1	0.33	20	541.4					
		8	0	0	0	0.41	27		16	10	15	4.10	21
		9	0	1	2	0.25	22						
		10	0	0	0	0.41	26						
		11	0	0	0	0.41	26						
		12	0	0	0	0.41	26						
		13	0	0	0	0.41	26						
		14	0	0	0	0.41	26						
		15	0	0	0	0.41	26						
		16	0	0	0	0.41	26						
		17	12	18	27	10.08	15						
		18	11	14	18	NP	14						
		19	19	23	23	NP	16						
		20	16	26	31	NP	14						
		21	5	20	34	NP	5						
		22	16	15	18	NP	14						
		23	16	15	18	NP	14						
		24	16	15	18	NP	14						
		25	16	15	18	NP	14						
		26	16	15	18	NP	14						
		27	16	15	18	NP	14						
		28	16	15	18	NP	14						
		29	16	15	18	NP	14						
		30	16	15	18	NP	14						
		31	16	15	18	NP	14						
		32	16	15	18	NP	14						
		33	16	15	18	NP	14						
		34	16	15	18	NP	14						
		35	16	15	18	NP	14						
		36	16	15	18	NP	14						
		37	16	15	18	NP	14						
		38	16	15	18	NP	14						
		39	16	15	18	NP	14						
		40	16	15	18	NP	14						
		41	16	15	18	NP	14						
		42	16	15	18	NP	14						
		43	16	15	18	NP	14						
		44	16	15	18	NP	14						
		45	16	15	18	NP	14						
		46	16	15	18	NP	14						
		47	16	15	18	NP	14						
		48	16	15	18	NP	14						
		49	16	15	18	NP	14						
		50	16	15	18	NP	14						
		51	16	15	18	NP	14						
		52	16	15	18	NP	14						
		53	16	15	18	NP	14						
		54	16	15	18	NP	14						
		55	16	15	18	NP	14						
		56	16	15	18	NP	14						
		57	16	15	18	NP	14						
		58	16	15	18	NP	14						
		59	16	15	18	NP	14						
		60	16	15	18	NP	14						
		61	16	15	18	NP	14						
		62	16	15	18	NP	14						
		63	16	15	18	NP	14						
		64	16	15	18	NP	14						
		65	16	15	18	NP	14						
		66	16	15	18	NP	14						
		67	16	15	18	NP	14						
		68	16	15	18	NP	14						
		69	16	15	18	NP	14						
		70	16	15	18	NP	14						
		71	16	15	18	NP	14						
		72	16	15	18	NP	14						
		73	16	15	18	NP	14						
		74	16	15	18	NP	14						
		75	16	15	18	NP	14						
		76	16	15	18	NP	14						
		77	16	15	18	NP	14						
		78	16	15	18	NP	14						
		79	16	15	18	NP	14						
		80	16	15	18	NP	14						
		81	16	15	18	NP	14						
		82	16	15	18	NP	14						
		83	16	15	18	NP	14						
		84	16	15	18	NP	14						
		85	16	15	18	NP	14						
		86	16	15	18	NP	14						
		87	16	15	18	NP	14						
		88	16	15	18	NP	14						
		89	16	15	18	NP	14						
		90	16	15	18	NP	14						
		91	16	15	18	NP	14						
		92	16	15	18	NP	14						
		93	16	15	18	NP	14						
		94	16	15	18	NP	14						
		95	16	15	18	NP	14						
		96	16	15	18	NP	14						
		97	16	15	18	NP	14						
		98	16	15	18	NP	14						
		99	16	15	18	NP	14						
		100	16	15	18	NP	14						

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	06-20-2013	Complete Drilling	06-21-2013	While Drilling	∇	NA	

Wang Engineering
 wangeng@wangeng.com
 1145 N Main Street
 Lombard, IL 60148
 Telephone: 630 953-9928
 Fax: 630 953-9938

BORING LOG 1705-B-03
 WEI Job No.: 1100-04-01
 Client: AECOM
 Project: Circle Interchange Reconstruction
 Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
 Elevation: 581.97 ft
 North: 1897265.33 ft
 East: 1171824.88 ft
 Station: 1822+35.70
 Offset: 5.86 RT

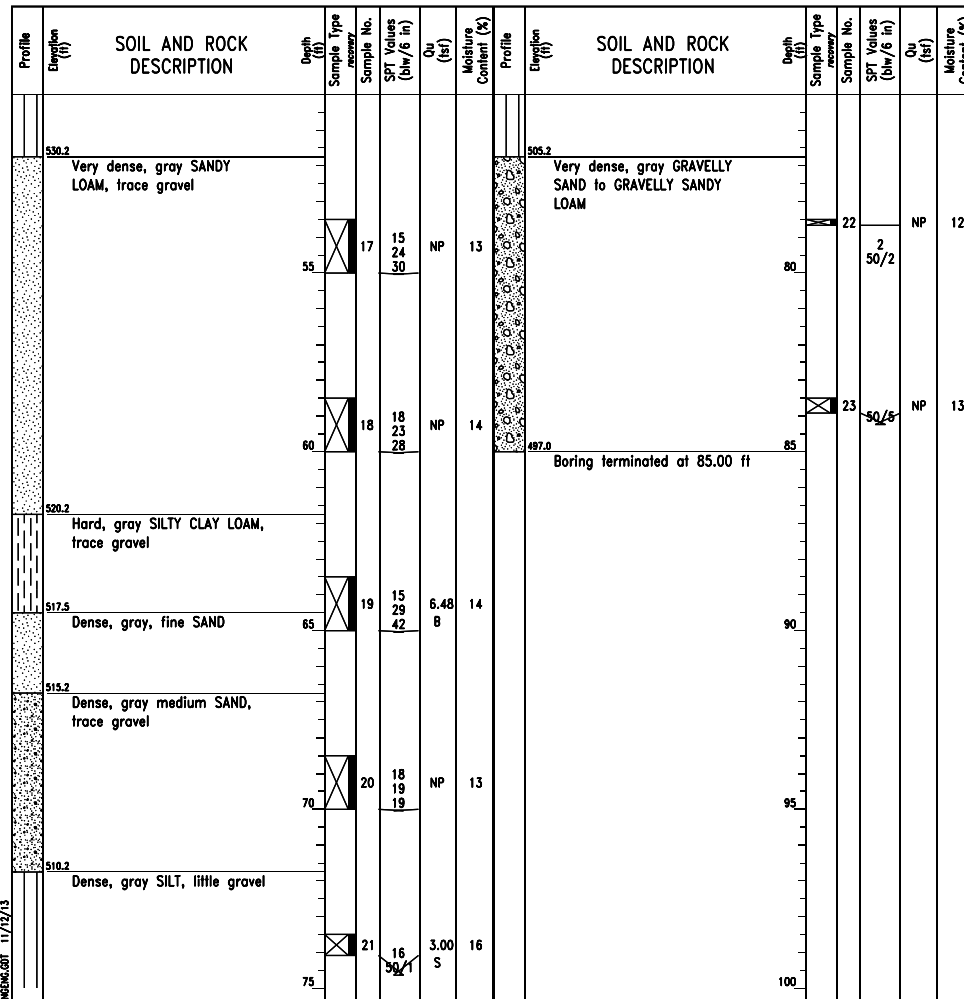
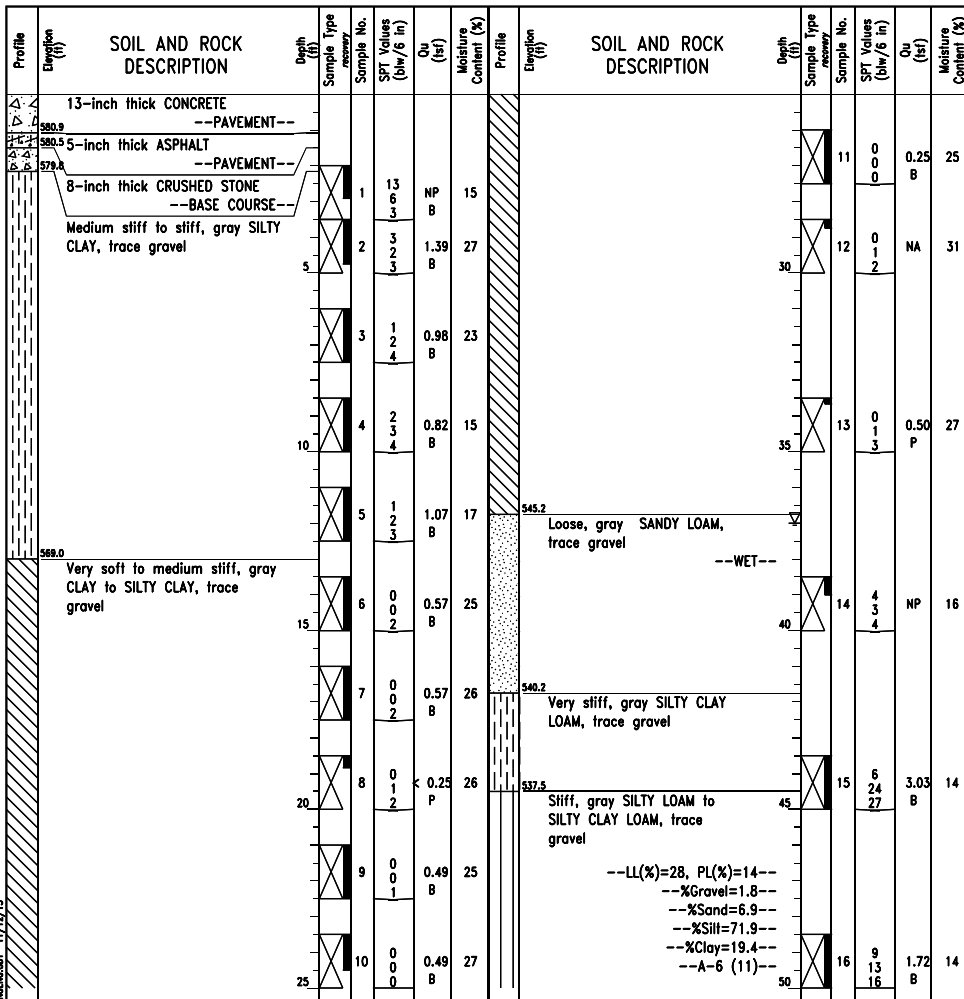
Page 1 of 2

Wang Engineering
 wangeng@wangeng.com
 1145 N Main Street
 Lombard, IL 60148
 Telephone: 630 953-9928
 Fax: 630 953-9938

BORING LOG 1705-B-03
 WEI Job No.: 1100-04-01
 Client: AECOM
 Project: Circle Interchange Reconstruction
 Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
 Elevation: 581.97 ft
 North: 1897265.33 ft
 East: 1171824.88 ft
 Station: 1822+35.70
 Offset: 5.86 RT

Page 2 of 2



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	06-25-2013	Complete Drilling	06-25-2013
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR
Driller	R&N	Logger	A. Happel
Checked by	C. Marin	Time After Drilling	NA
Drilling Method	2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion	Depth to Water	NA
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.			

GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	06-25-2013	Complete Drilling	06-25-2013
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR
Driller	R&N	Logger	A. Happel
Checked by	C. Marin	Time After Drilling	NA
Drilling Method	2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion	Depth to Water	NA
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.			

0161705-60W28-5153-BorIng.dgn



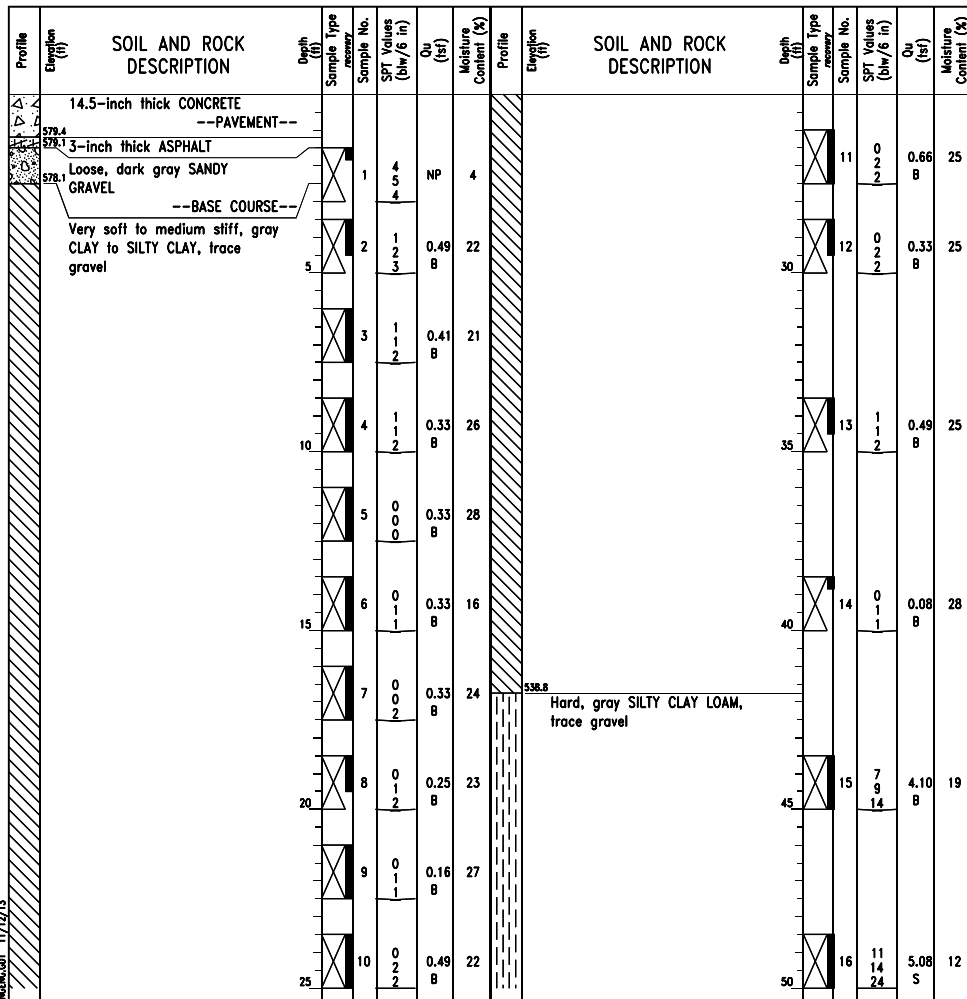
USER NAME = floresg	DESIGNED - ABT	REVISED
	CHECKED - EJO	REVISED
PLOT SCALE = N.T.S.	DRAWN - MRK	REVISED
PLOT DATE = 5/7/2014	CHECKED - ABT	REVISED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

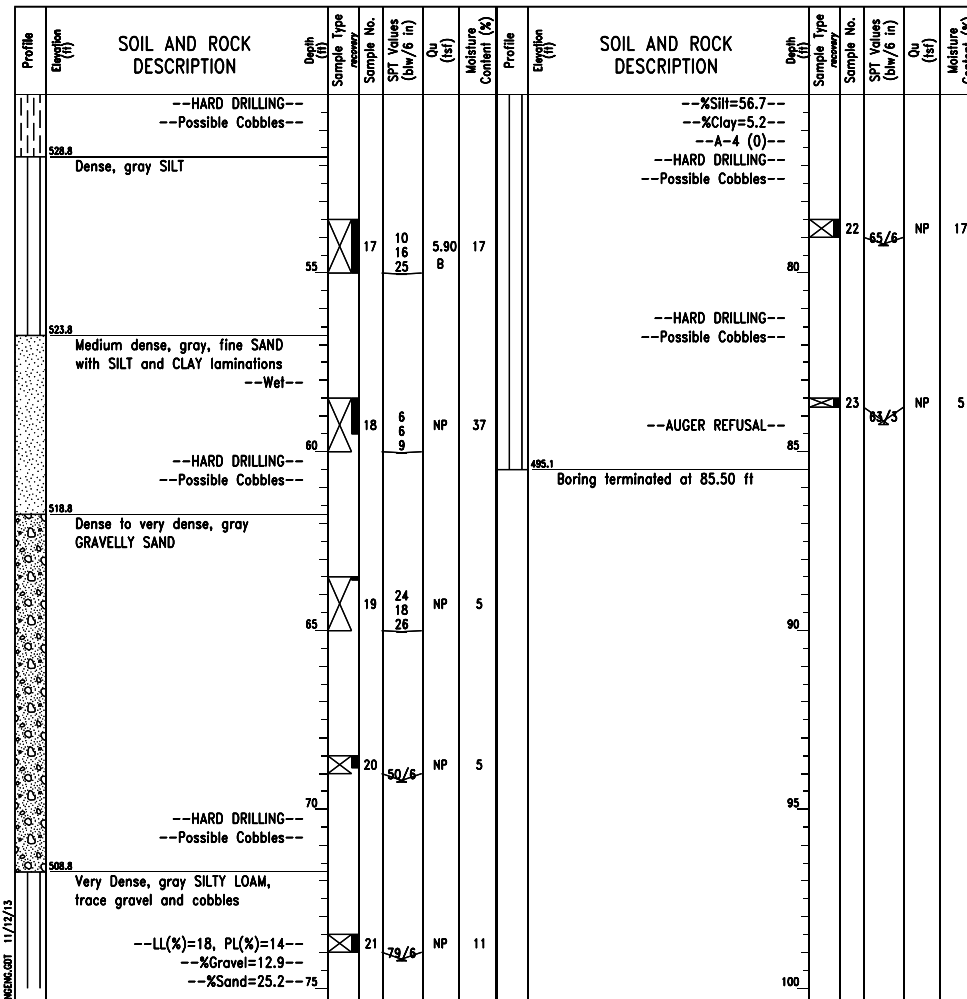
BORING LOGS - V
 STRUCTURE NO. 016-1705

SHEET NO. S-153 OF S-165 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	469
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	07-02-2013	Complete Drilling	07-03-2013
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 TMR
Driller	R&N	Logger	A. Happel
Checked by	C. Marin	Time After Drilling	NA
Drilling Method	2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion	Depth to Water	NA
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.		The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.	



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	07-02-2013	Complete Drilling	07-03-2013
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 TMR
Driller	R&N	Logger	A. Happel
Checked by	C. Marin	Time After Drilling	NA
Drilling Method	2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion	Depth to Water	NA
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.		The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.	

0161705-60W28-5154-Bor-Ing.dgn



USER NAME = floresg	DESIGNED - ABT	REVISED
	CHECKED - EJO	REVISED
PLOT SCALE = N.T.S.	DRAWN - MRK	REVISED
PLOT DATE = 5/7/2014	CHECKED - ABT	REVISED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BORING LOGS - VI
 STRUCTURE NO. 016-1705

SHEET NO. S-154 OF S-165 SHEETS

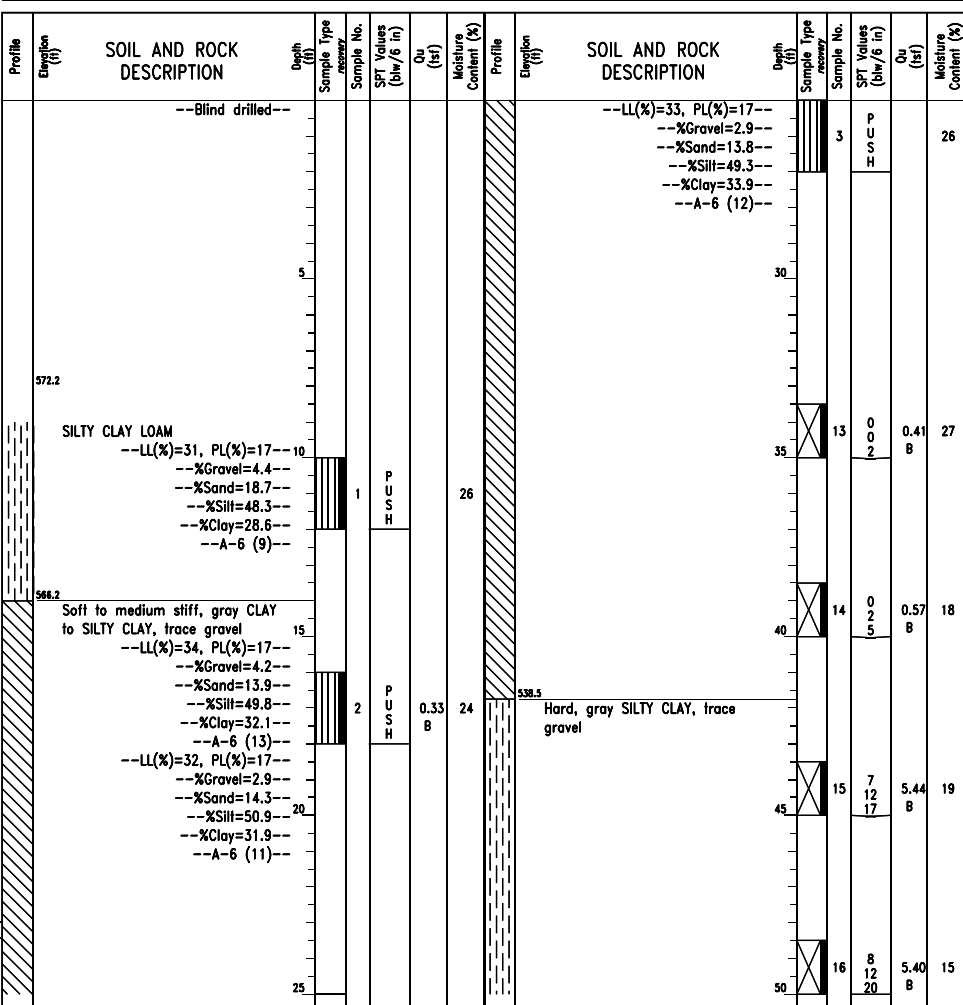
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	469A
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

BORING LOG 1705-B-05A
WEI Job No.: 1100-04-01
Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 580.24 ft
North: 1897604.27 ft
East: 1171792.75 ft
Station: 1825+76.16
Offset: 3.92 RT

Page 1 of 2



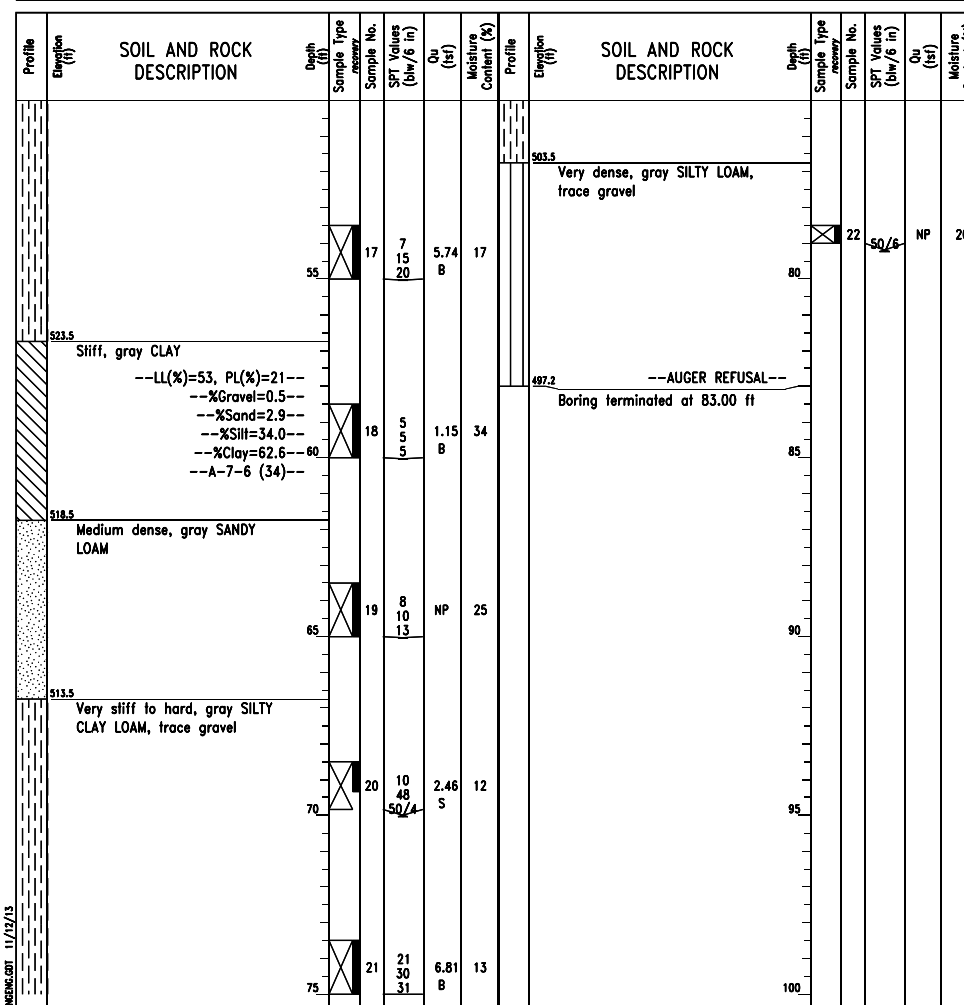
GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	07-23-2013	Complete Drilling	07-24-2013
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 TMR
Driller	R&N	Logger	A. Happel
Checked by	C. Marin	Drilling Method	2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion
While Drilling	NA	At Completion of Drilling	NA
Time After Drilling	NA	Depth to Water	NA

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

BORING LOG 1705-B-05A
WEI Job No.: 1100-04-01
Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 580.24 ft
North: 1897604.27 ft
East: 1171792.75 ft
Station: 1825+76.16
Offset: 3.92 RT

Page 2 of 2



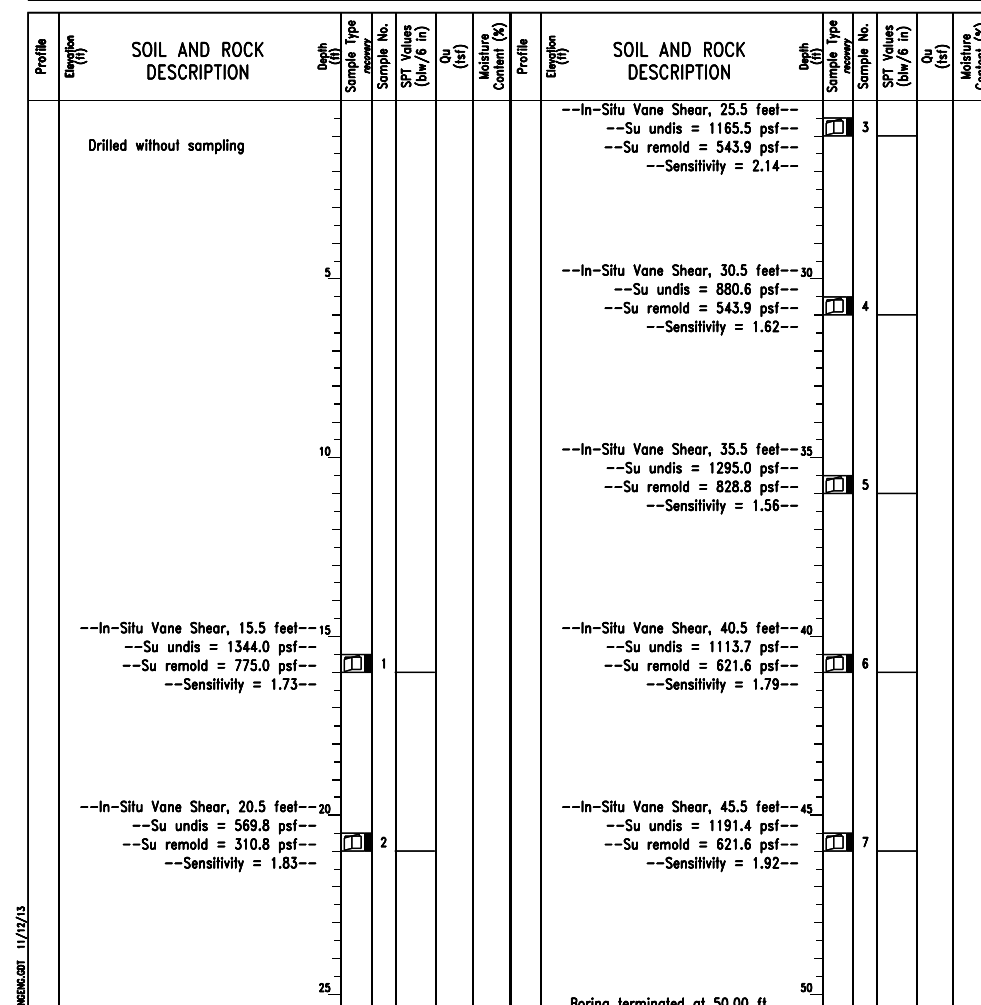
GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	07-23-2013	Complete Drilling	07-24-2013
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 TMR
Driller	R&N	Logger	A. Happel
Checked by	C. Marin	Drilling Method	2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion
While Drilling	NA	At Completion of Drilling	NA
Time After Drilling	NA	Depth to Water	NA

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

BORING LOG 1705-B-06
WEI Job No.: 1100-04-01
Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 591.98 ft
North: 1897750.88 ft
East: 1171805.18 ft
Station: 1827+14.75
Offset: 38.52 RT

Page 1 of 1



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	07-26-2013	Complete Drilling	07-26-2013
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR
Driller	R&J	Logger	A. Tomaras
Checked by	C. Marin	Drilling Method	3.25" HSA, boring backfilled upon completion
While Drilling	NA	At Completion of Drilling	NA
Time After Drilling	NA	Depth to Water	NA

0161705-60W28-5156-BorIng.dgn

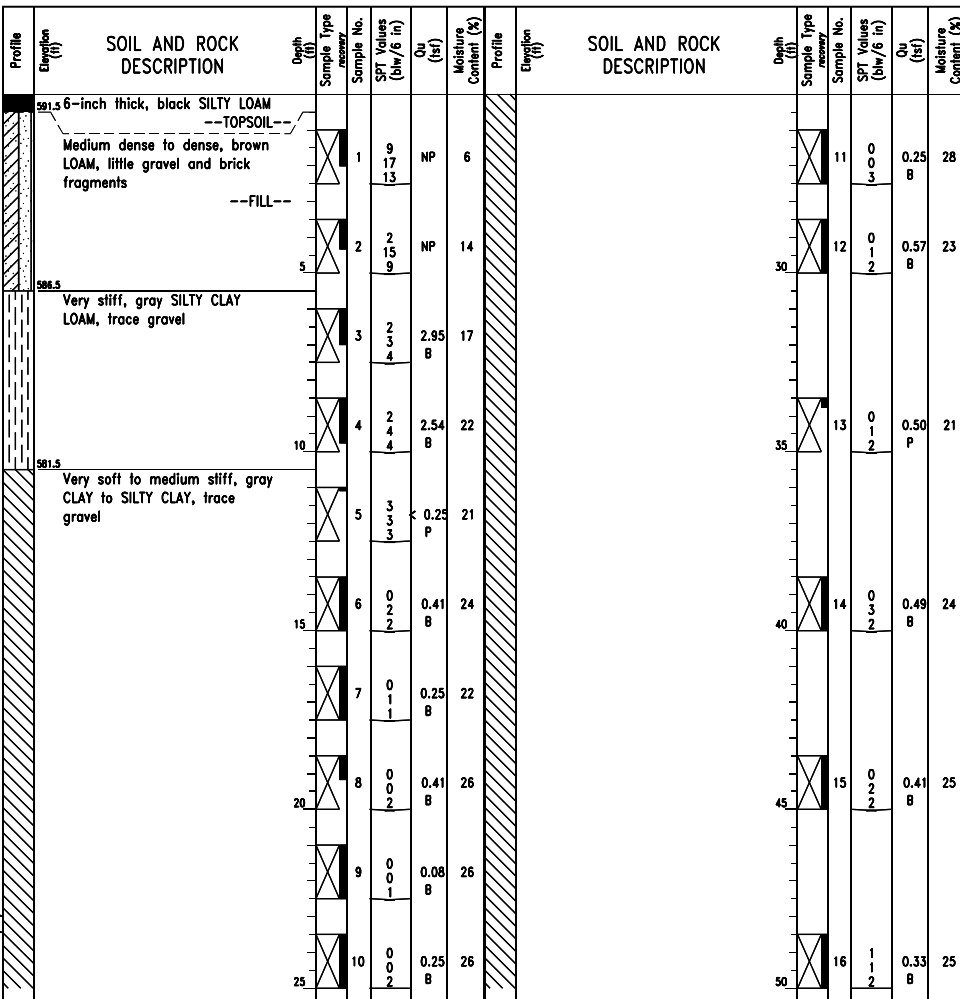


USER NAME = floresg	DESIGNED - ABT	REVISED
PLOT SCALE = N.T.S.	CHECKED - EJO	REVISED
PLOT DATE = 5/7/2014	DRAWN - MRK	REVISED
	CHECKED - ABT	REVISED

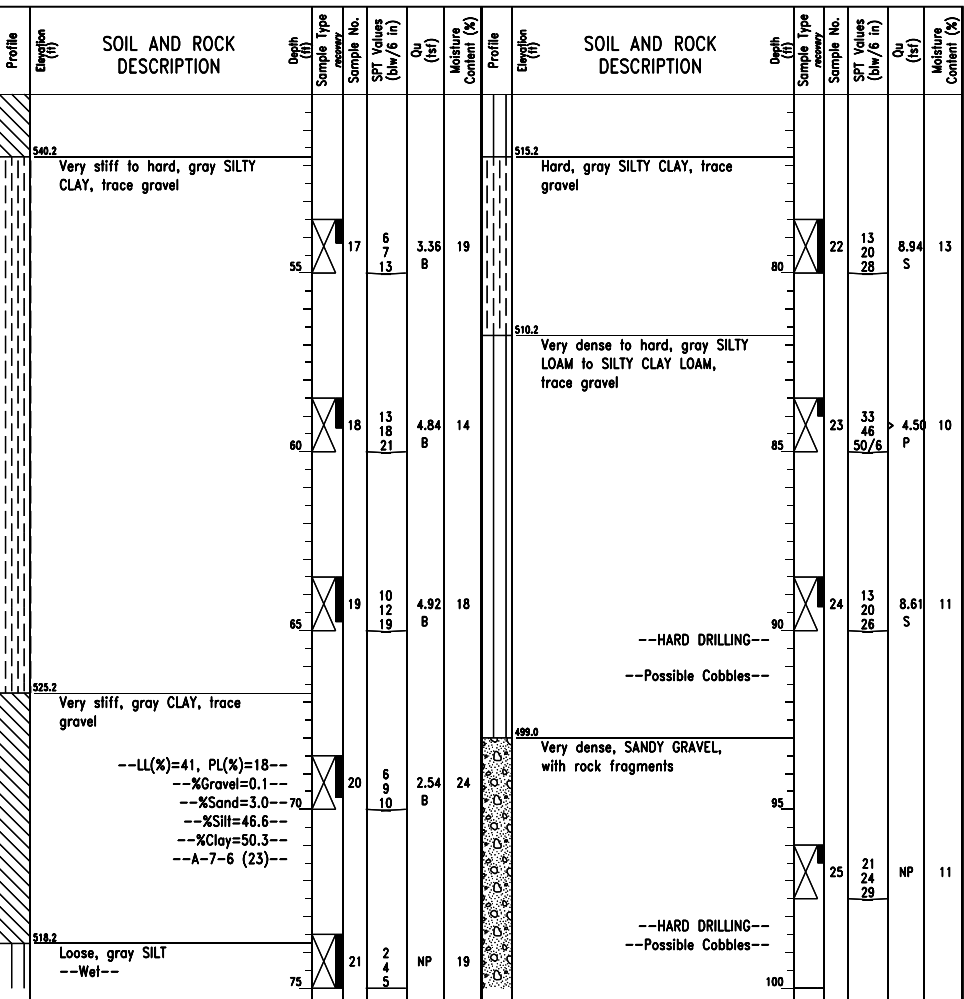
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS - VIII
STRUCTURE NO. 016-1705
SHEET NO. S-156 OF S-165 SHEETS

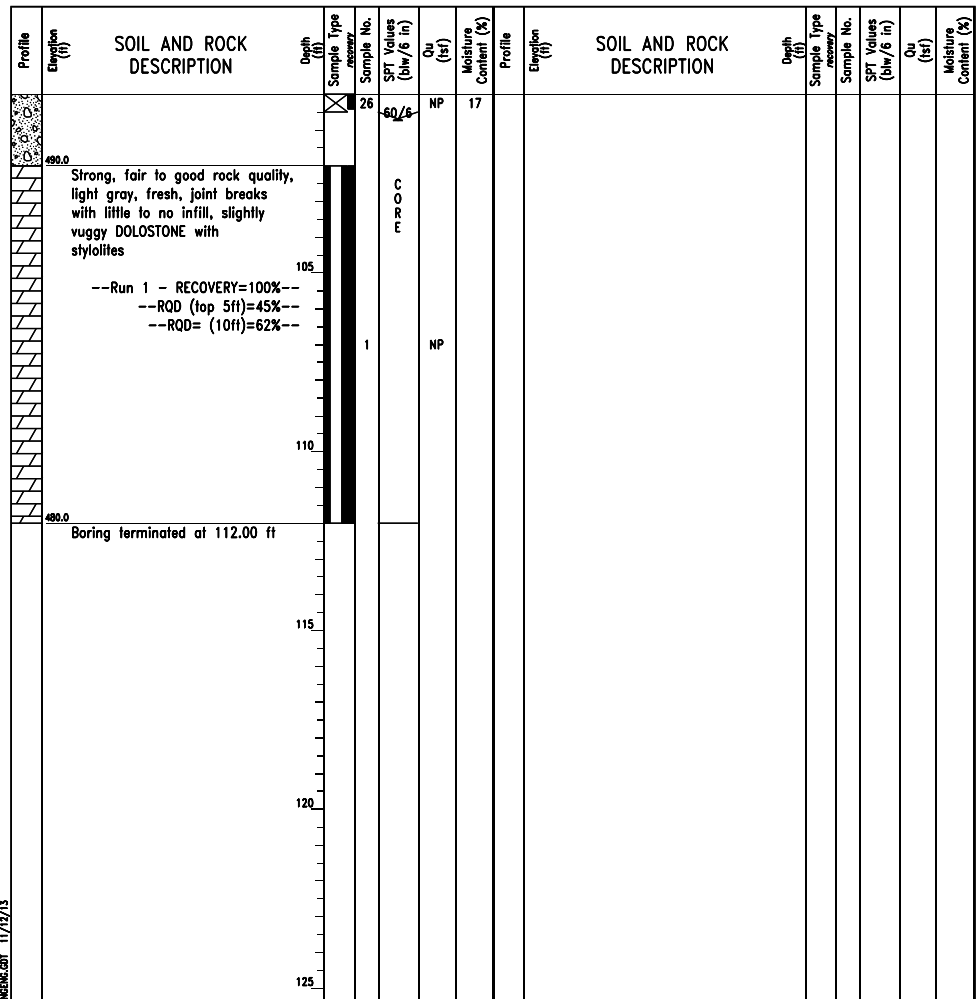
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	469C
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	07-25-2013	Complete Drilling	07-26-2013
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR
Driller	R&J	Logger	A. Tomaras
Checked by	C. Marin	Drilling Method	2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion
While Drilling	NA	At Completion of Drilling	NA
Time After Drilling	NA	Depth to Water	NA



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	07-25-2013	Complete Drilling	07-26-2013
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR
Driller	R&J	Logger	A. Tomaras
Checked by	C. Marin	Drilling Method	2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion
While Drilling	NA	At Completion of Drilling	NA
Time After Drilling	NA	Depth to Water	NA



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	07-25-2013	Complete Drilling	07-26-2013
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR
Driller	R&J	Logger	A. Tomaras
Checked by	C. Marin	Drilling Method	2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion
While Drilling	NA	At Completion of Drilling	NA
Time After Drilling	NA	Depth to Water	NA

0161705-60W28-5157-Boring.dgn



USER NAME = floresg	DESIGNED - ABT	REVISED
PLOT SCALE = N.T.S.	CHECKED - EJO	REVISED
PLOT DATE = 5/7/2014	DRAWN - MRK	REVISED
	CHECKED - ABT	REVISED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BORING LOGS - IX
 STRUCTURE NO. 016-1705
 SHEET NO. S-157 OF S-165 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	469D
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				

Wang Engineering
 wangeng@wangeng.com
 1145 N Main Street
 Lombard, IL 60148
 Telephone: 630 953-9928
 Fax: 630 953-9938

BORING LOG 1705-B-07
 WEI Job No.: 1100-04-01
 Client: AECOM
 Project: Circle Interchange Reconstruction
 Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
 Elevation: 576.23 ft
 North: 1897855.27 ft
 East: 1171688.90 ft
 Station: 1828+55.18
 Offset: 28.83 LT

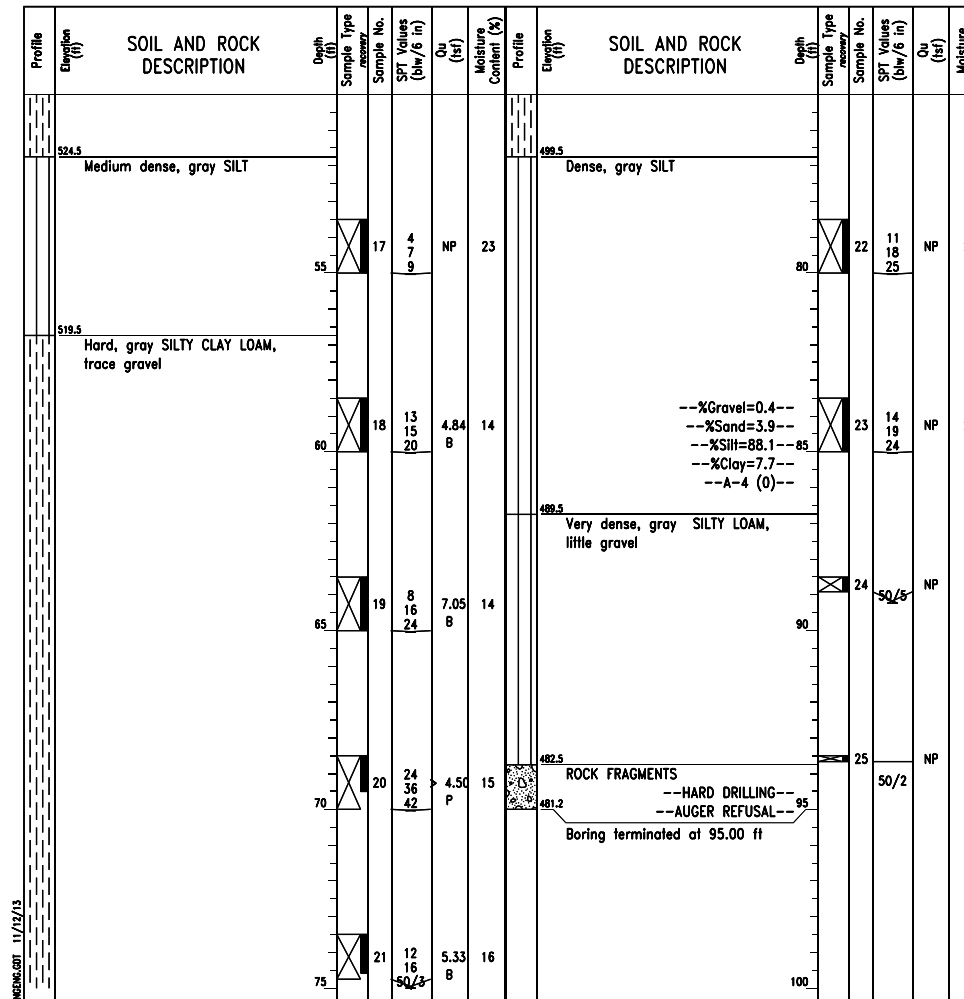
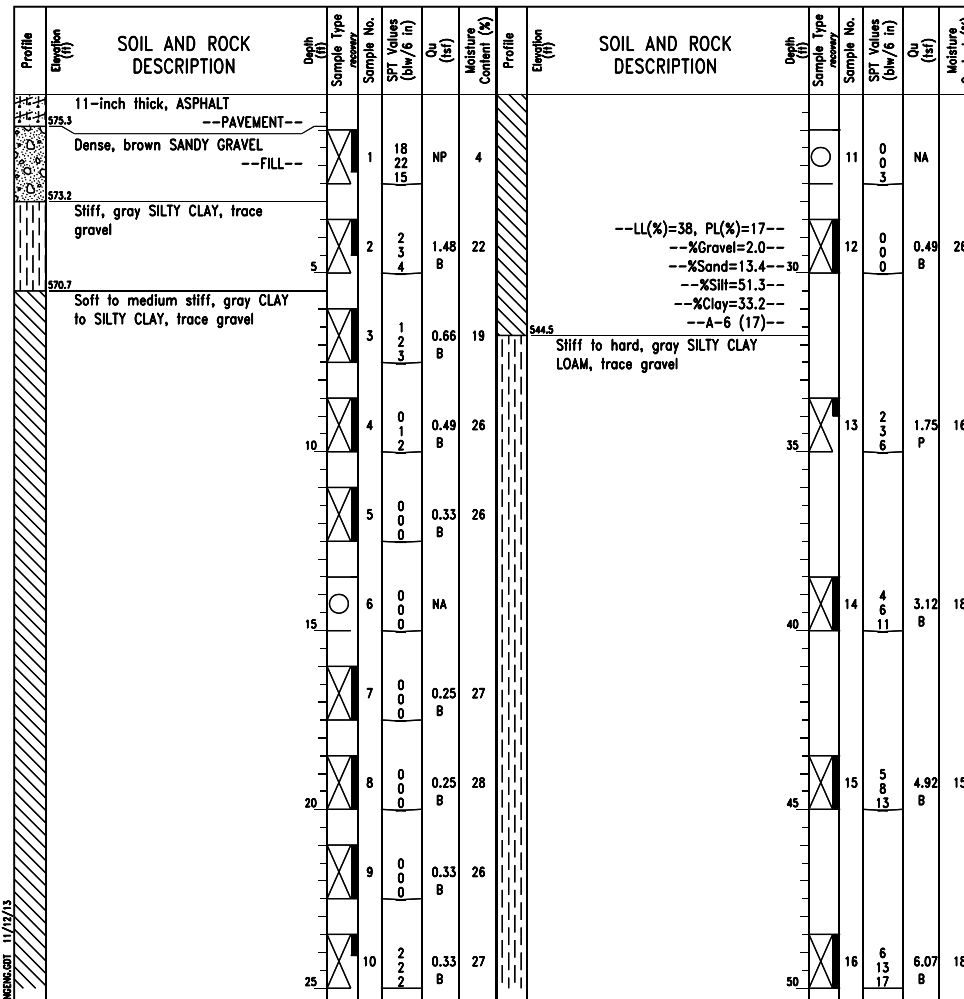
Page 1 of 2

Wang Engineering
 wangeng@wangeng.com
 1145 N Main Street
 Lombard, IL 60148
 Telephone: 630 953-9928
 Fax: 630 953-9938

BORING LOG 1705-B-07
 WEI Job No.: 1100-04-01
 Client: AECOM
 Project: Circle Interchange Reconstruction
 Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
 Elevation: 576.23 ft
 North: 1897855.27 ft
 East: 1171688.90 ft
 Station: 1828+55.18
 Offset: 28.83 LT

Page 2 of 2



GENERAL NOTES

Begin Drilling 07-24-2013 Complete Drilling 07-25-2013
 Drilling Contractor Wang Testing Services Drill Rig D-50 TMR
 Driller R&N Logger F. Bozga Checked by C. Marin
 Drilling Method 2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion

WATER LEVEL DATA

While Drilling NA
 At Completion of Drilling MUD (11')
 Time After Drilling NA
 Depth to Water NA
 The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

GENERAL NOTES

Begin Drilling 07-24-2013 Complete Drilling 07-25-2013
 Drilling Contractor Wang Testing Services Drill Rig D-50 TMR
 Driller R&N Logger F. Bozga Checked by C. Marin
 Drilling Method 2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion

WATER LEVEL DATA

While Drilling NA
 At Completion of Drilling MUD (11')
 Time After Drilling NA
 Depth to Water NA
 The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

0161705-60W28-5158-BorIng.dgn



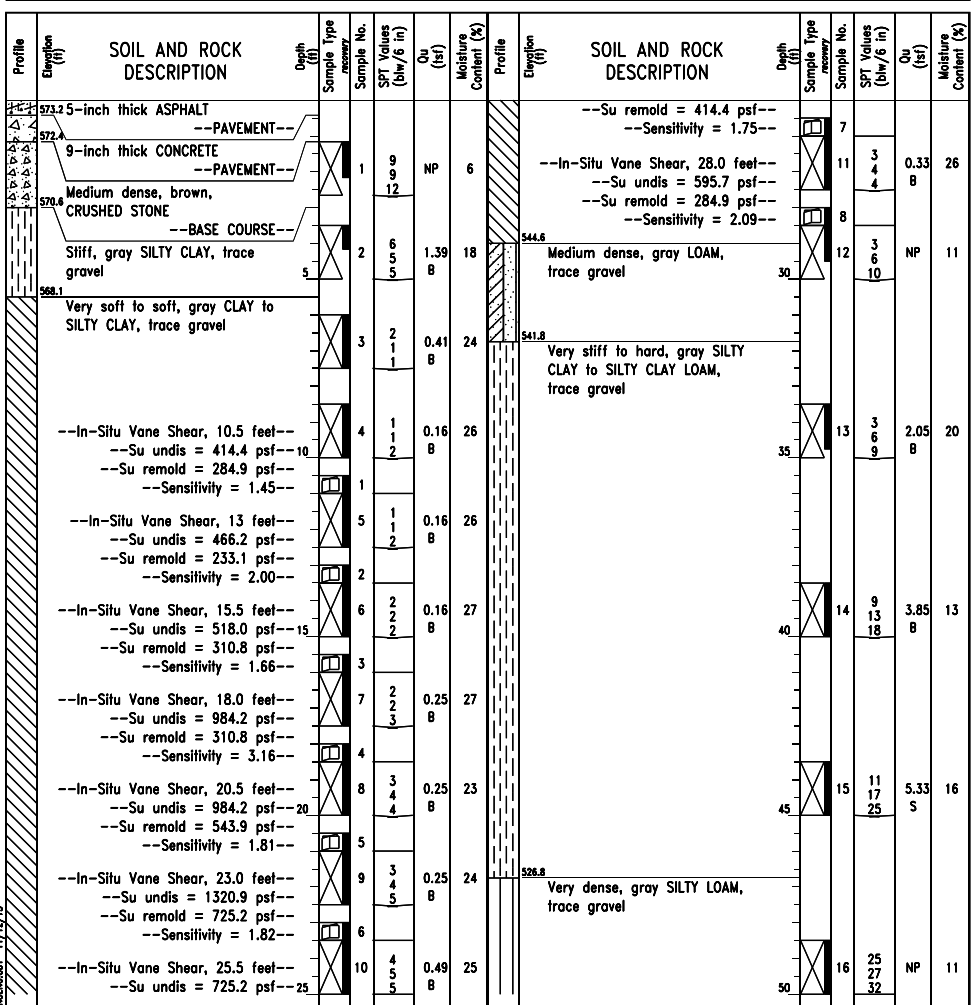
USER NAME = floresg	DESIGNED - ABT	REVISED
PLOT SCALE = N.T.S.	CHECKED - EJO	REVISED
PLOT DATE = 5/7/2014	DRAWN - MRK	REVISED
	CHECKED - ABT	REVISED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

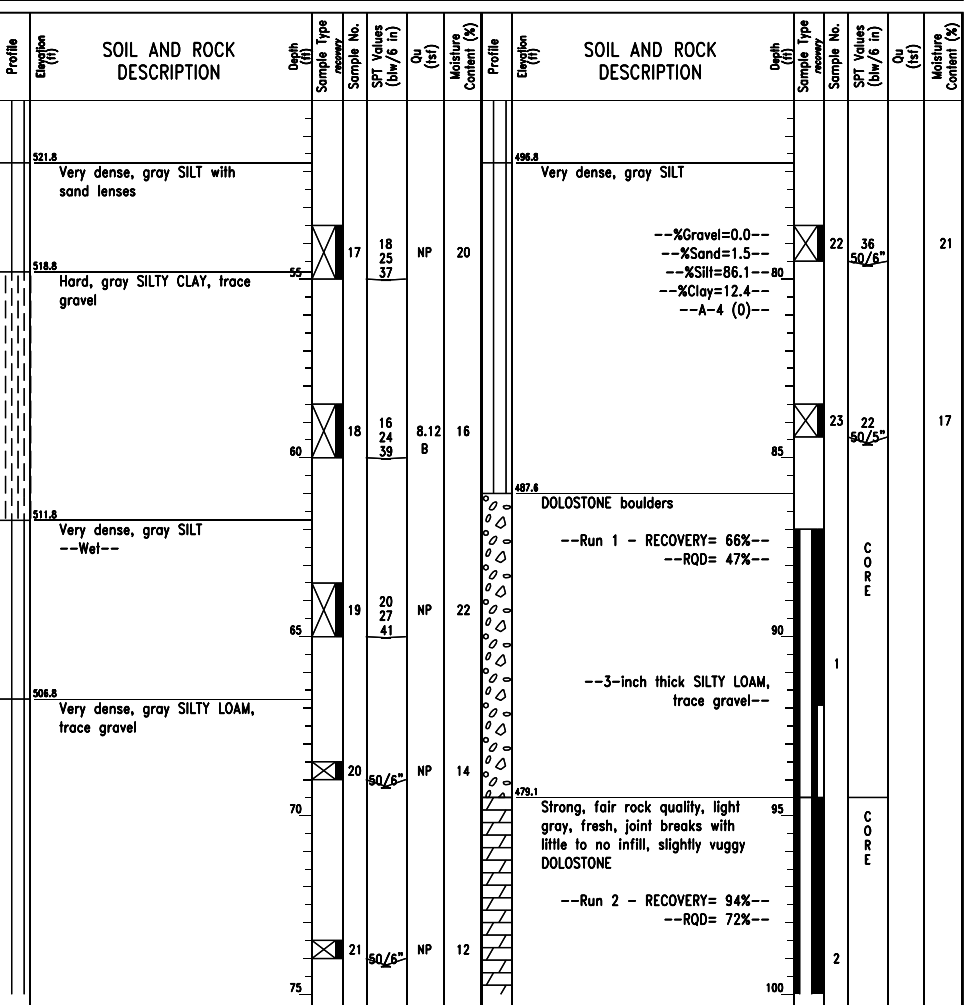
BORING LOGS - X
 STRUCTURE NO. 016-1705

SHEET NO. S-158 OF S-165 SHEETS

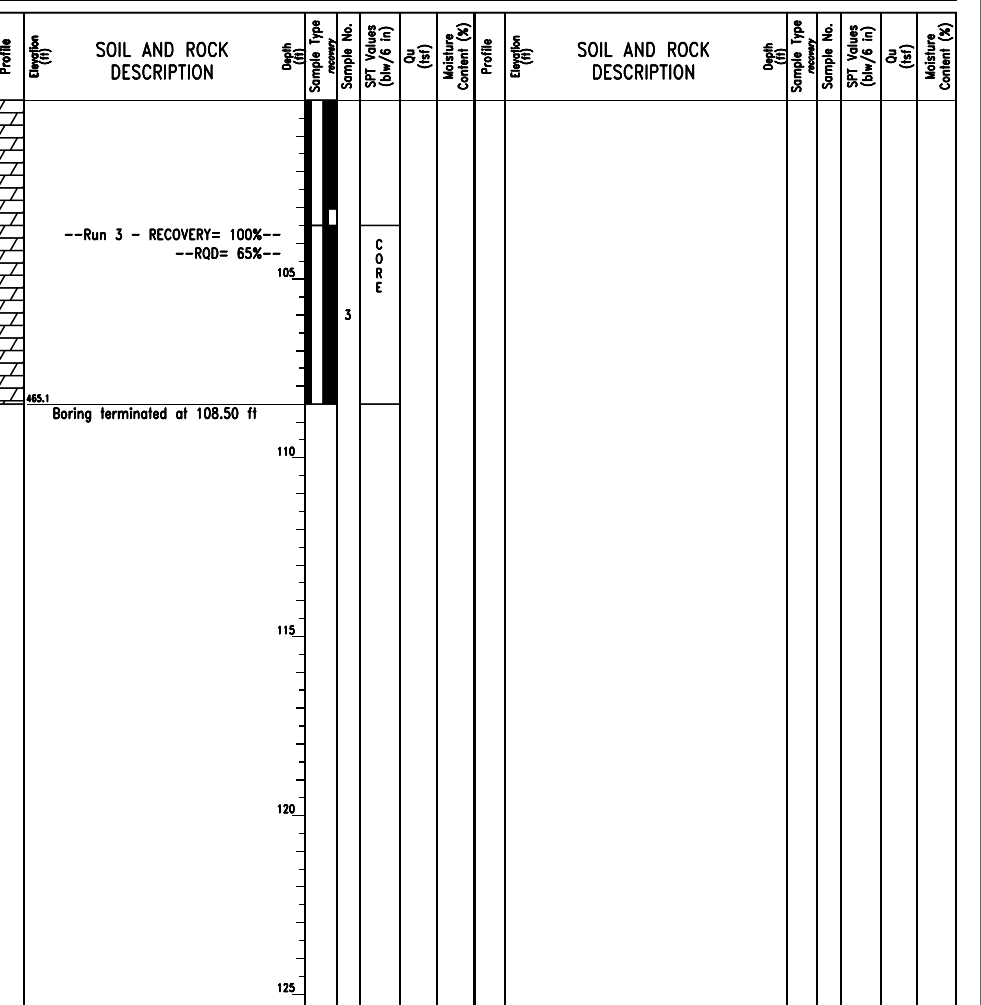
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	469E
CONTRACT NO. 60W28				
ILLINOIS FED. AID PROJECT				



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	09-08-2013	Complete Drilling	09-10-2013
Drilling Contractor	Wang Testing Services	Drill Rig	D-25 ATV
Driller	P&N	Logger	D. Kolpacki
Checked by	DRAFT	Drilling Method	2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion
		Depth to Water	NA



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	09-08-2013	Complete Drilling	09-10-2013
Drilling Contractor	Wang Testing Services	Drill Rig	D-25 ATV
Driller	P&N	Logger	D. Kolpacki
Checked by	DRAFT	Drilling Method	2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion
		Depth to Water	NA



Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)
589.7	10-inch thick, dark brown LOAM --TOPSOIL--	0	1	6 13 10	NP	10	589.7	10-inch thick, dark brown LOAM --TOPSOIL--	0	11	0 2 1	0.25	24
587.4	Medium dense, brown and gray, SILTY LOAM, trace roots and gravel	1					587.4	Medium dense, brown and gray, SILTY LOAM, trace roots and gravel	1				
587.4	--FILL--						587.4	--FILL--					
585.1	Medium dense, brown, medium SAND	2				14	585.1	Medium dense, brown, medium SAND	2				25
585.1	Medium to very stiff, gray SILTY CLAY, trace gravel	3				20	585.1	Medium to very stiff, gray SILTY CLAY, trace gravel	3				29
580.1	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel	4				22	580.1	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel	4				25
		5				22			5				
		6				18			6				
		7				26			7				
		8				21			8				
		9				23			9				
		10				23			10				

GENERAL NOTES
 Begin Drilling 07-29-2013 Complete Drilling 07-29-2013
 Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR
 Driller R&J Logger A. Tomaras Checked by C. Marin
 Drilling Method 2.25" SSA to 10', mud rotary thereafter, boring
 backfilled upon completion

WATER LEVEL DATA
 While Drilling NA
 At Completion of Drilling NA
 Time After Drilling NA
 Depth to Water NA
 The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)
513.8	Hard, gray SILTY LOAM to SILTY CLAY LOAM, trace gravel	17				20	513.8	Hard, gray SILTY LOAM to SILTY CLAY LOAM, trace gravel	17				
533.8	Very stiff, gray SILTY CLAY, trace gravel	18				15	533.8	Very stiff, gray SILTY CLAY, trace gravel	18				
528.8	Hard, gray CLAY, trace gravel	19				23	528.8	Hard, gray CLAY, trace gravel	19				
523.8	Hard, gray SILTY CLAY LOAM, trace gravel and sand lenses	20				10	523.8	Hard, gray SILTY CLAY LOAM, trace gravel and sand lenses	20				
518.8	Medium dense, gray SILTY LOAM	21				21	518.8	Medium dense, gray SILTY LOAM	21				

GENERAL NOTES
 Begin Drilling 07-29-2013 Complete Drilling 07-29-2013
 Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR
 Driller R&J Logger A. Tomaras Checked by C. Marin
 Drilling Method 2.25" SSA to 10', mud rotary thereafter, boring
 backfilled upon completion

WATER LEVEL DATA
 While Drilling NA
 At Completion of Drilling NA
 Time After Drilling NA
 Depth to Water NA
 The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)
482.5	Very dense, GRAVEL / WEATHERED DOLOSTONE BEDROCK	27				20	482.5	Very dense, GRAVEL / WEATHERED DOLOSTONE BEDROCK	27				
479.8	Boring terminated at 111.00 ft	28					479.8	Boring terminated at 111.00 ft	28				

GENERAL NOTES
 Begin Drilling 07-29-2013 Complete Drilling 07-29-2013
 Drilling Contractor Wang Testing Services Drill Rig CME-55 TMR
 Driller R&J Logger A. Tomaras Checked by C. Marin
 Drilling Method 2.25" SSA to 10', mud rotary thereafter, boring
 backfilled upon completion

WATER LEVEL DATA
 While Drilling NA
 At Completion of Drilling NA
 Time After Drilling NA
 Depth to Water NA
 The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

0161705-60W28-S160-Boring.dgn



USER NAME = floresg	DESIGNED - ABT	REVISED
PLOT SCALE = N.T.S.	CHECKED - EJO	REVISED
PLOT DATE = 5/7/2014	DRAWN - MRK	REVISED
	CHECKED - ABT	REVISED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BORING LOGS - XII
STRUCTURE NO. 016-1705
 SHEET NO. S-160 OF S-165 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	469C
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)
587.3	12-inch thick, dark brown LOAM --TOPSOIL--	1	4	10	NP	10	587.3	--LL(%)=35, PL(%)=17-- --%Gravel=2.9-- --%Sand=13.3-- --%Silt=49.9-- --%Clay=33.9-- --A-6 (14)--	11	1	1	0.08	26
584.3	Medium dense, brown LOAM, trace gravel, crushed stone, and brick fragments --FILL--	2	9	6	NP	8	584.3	--In-Situ Vane Shear, 28.0 feet-- --Su undis = 699.3 psf-- --Su remold = 414.9 psf-- --Sensitivity = 1.69--	12	2	2	0.08	22
582.8	Medium dense, brown SAND --FILL--	3	3	3	3.50	16	582.8		13	3	0	0.16	25
580.3	Very stiff, gray SILTY CLAY, trace gravel	4	3	2	0.41	22	580.3	--In-Situ Vane Shear, 35.5 feet-- --Su undis = 880.6 psf-- --Su remold = 518.0 psf-- --Sensitivity = 1.70--	14	4	3	0.57	23
	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel	5	1	2	0.49	19		--In-Situ Vane Shear, 40.5 feet-- --Su undis = 1809.5 psf-- --Su remold = 1137.4 psf-- --Sensitivity = 1.59--	15	5	6	0.33	25
	--In-Situ Vane Shear, 13.0 feet-- --Su undis = 1061.9 psf-- --Su remold = 543.9 psf-- --Sensitivity = 1.95--	6	2	2	0.41	20		--In-Situ Vane Shear, 45.5 feet-- --Su undis = 2585.0 psf-- --Su remold = 1551.0 psf-- --Sensitivity = 1.66--	16	6	7	0.33	19
	--In-Situ Vane Shear, 18.0 feet-- --Su undis = 1191.4 psf-- --Su remold = 543.9 psf-- --Sensitivity = 2.19--	7	0	2	0.33	25		Very stiff, gray SILTY CLAY, trace gravel	17	7	2	2.79	19
	--In-Situ Vane Shear, 23.0 feet-- --Su undis = 802.9 psf-- --Su remold = 414.4 psf-- --Sensitivity = 1.94--	8	1	2	0.41	22			18	8	14	9.51	12
		9	0	0	0.16	22			19	9	10	14	31
		10	0	2	0.25	24			20	10	10	14	31

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	07-30-2013	Complete Drilling	08-01-2013	While Drilling	☑	DRY	
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR	At Completion of Drilling	☑	NA	
Driller	R&J	Logger	A. Tomaras	Checked by	NA		
Drilling Method	2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion			Depth to Water	☑	NA	

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)
533.8	Medium dense, gray, medium SAND	17	8	12	4.84	14	533.8		22	18	22	8.94	13
531.5	Hard, gray SILTY CLAY, trace gravel and fine sand lenses	18	6	10	4.02	19	531.5		23	37	37	50/5	13
504.0	Very dense, gray SILT to SILTY LOAM, trace to some gravel	19	5	12	4.18	19	504.0		24	50/2	NP	11	11
521.5	Stiff, gray, laminated layers of CLAY and SILT	20	5	4	1.31	27	521.5		25	50/6	NP	11	11
516.5	Hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel	21	10	14	9.51	12	516.5		26	20	26	40	17
492.0	Very dense, gray SILT	22	10	14	9.51	12	492.0		27	NP	NR		

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	07-30-2013	Complete Drilling	08-01-2013	While Drilling	☑	DRY	
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR	At Completion of Drilling	☑	NA	
Driller	R&J	Logger	A. Tomaras	Checked by	NA		
Drilling Method	2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion			Depth to Water	☑	NA	

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)
486.5	Very dense, gray GRAVELLY SAND, trace cobbles --HARD DRILLING-- --Possible Cobbles--	27	NP	50/2	NR		486.5		27	NP	NR		
481.3	Strong, poor to fair rock quality, light gray, fresh, vertical and horizontal joints, joint breaks with little to no infill, horizontal stylolites, slightly vuggy DOLOSTONE	28	1	NP	NP		481.3		28	1	NP	NP	
471.3	Boring terminated at 117.00 ft	29					471.3		29				

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	07-30-2013	Complete Drilling	08-01-2013	While Drilling	☑	DRY	
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR	At Completion of Drilling	☑	NA	
Driller	R&J	Logger	A. Tomaras	Checked by	NA		
Drilling Method	2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion			Depth to Water	☑	NA	

0161705-60W28-5161-Boring.dgn

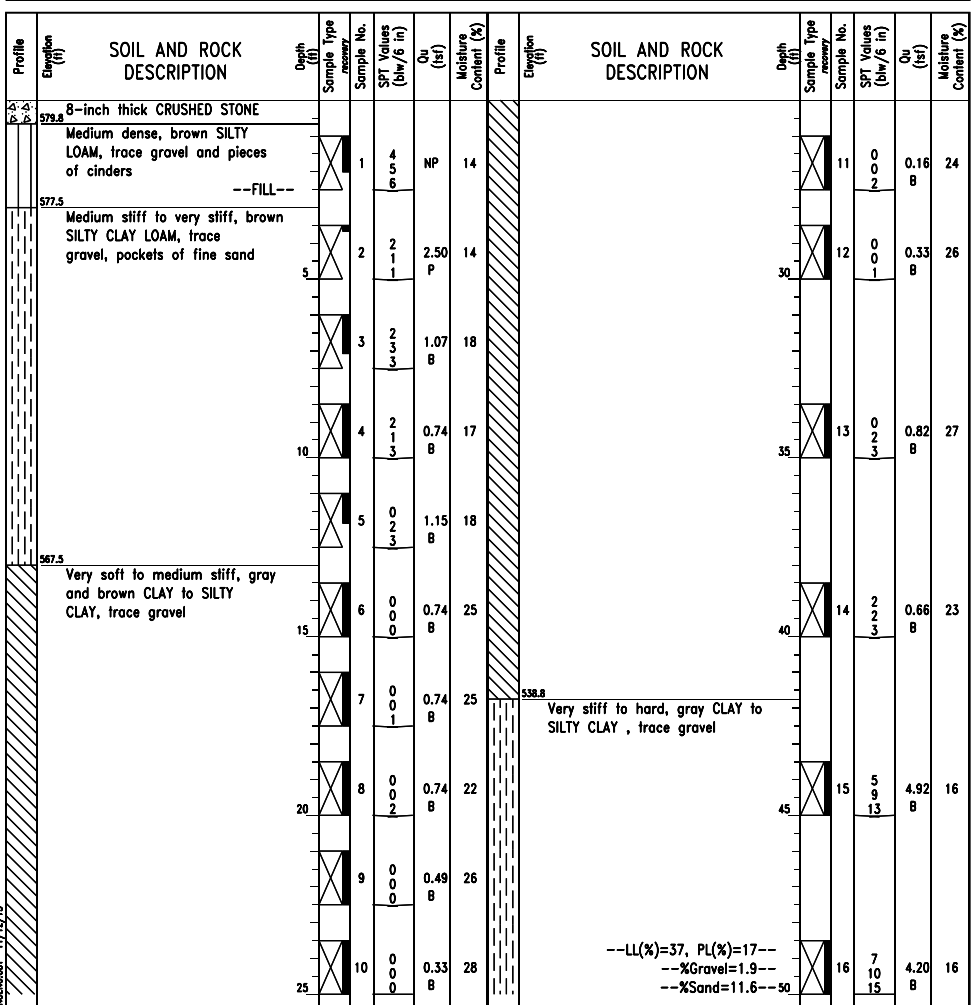


USER NAME = floresg	DESIGNED - ABT	REVISED
PLOT SCALE = N.T.S.	CHECKED - EJO	REVISED
PLOT DATE = 5/7/2014	DRAWN - MRK	REVISED
	CHECKED - ABT	REVISED

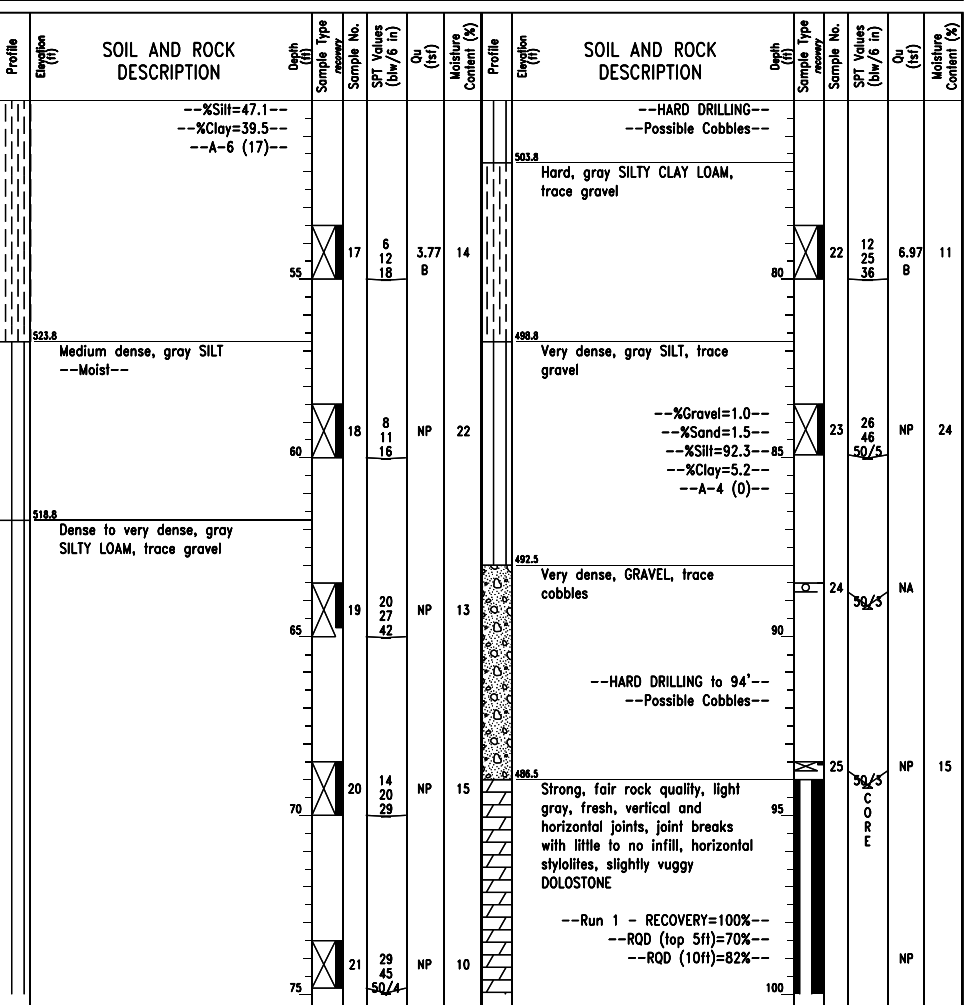
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BORING LOGS - XIII
STRUCTURE NO. 016-1705
 SHEET NO. S-161 OF S-165 SHEETS

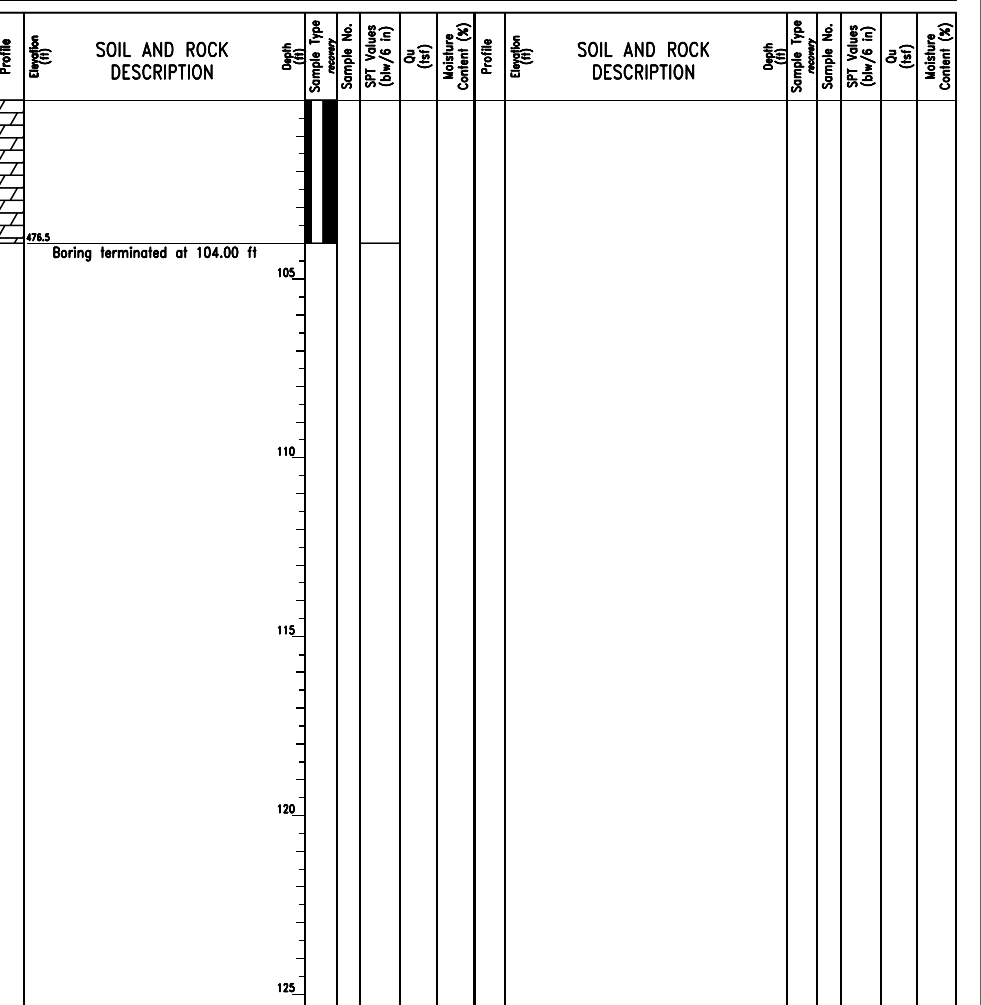
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	469H
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	07-28-2013	Complete Drilling	07-29-2013
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 TMR
Driller	R&N	Logger	A. Happel
Checked by	C. Marin	Drilling Method	2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion
While Drilling	NA	At Completion of Drilling	NA
Time After Drilling	NA	Depth to Water	NA



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	07-28-2013	Complete Drilling	07-29-2013
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 TMR
Driller	R&N	Logger	A. Happel
Checked by	C. Marin	Drilling Method	2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion
While Drilling	NA	At Completion of Drilling	NA
Time After Drilling	NA	Depth to Water	NA



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	07-28-2013	Complete Drilling	07-29-2013
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 TMR
Driller	R&N	Logger	A. Happel
Checked by	C. Marin	Drilling Method	2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion
While Drilling	NA	At Completion of Drilling	NA
Time After Drilling	NA	Depth to Water	NA

0161705-60W2B-5162-BorIng.dgn



USER NAME = floresg	DESIGNED - ABT	REVISED
PLOT SCALE = N.T.S.	CHECKED - EJO	REVISED
PLOT DATE = 5/7/2014	DRAWN - MRK	REVISED
	CHECKED - ABT	REVISED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BORING LOGS - XIV
 STRUCTURE NO. 016-1705
 SHEET NO. S-162 OF S-165 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	4691
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				

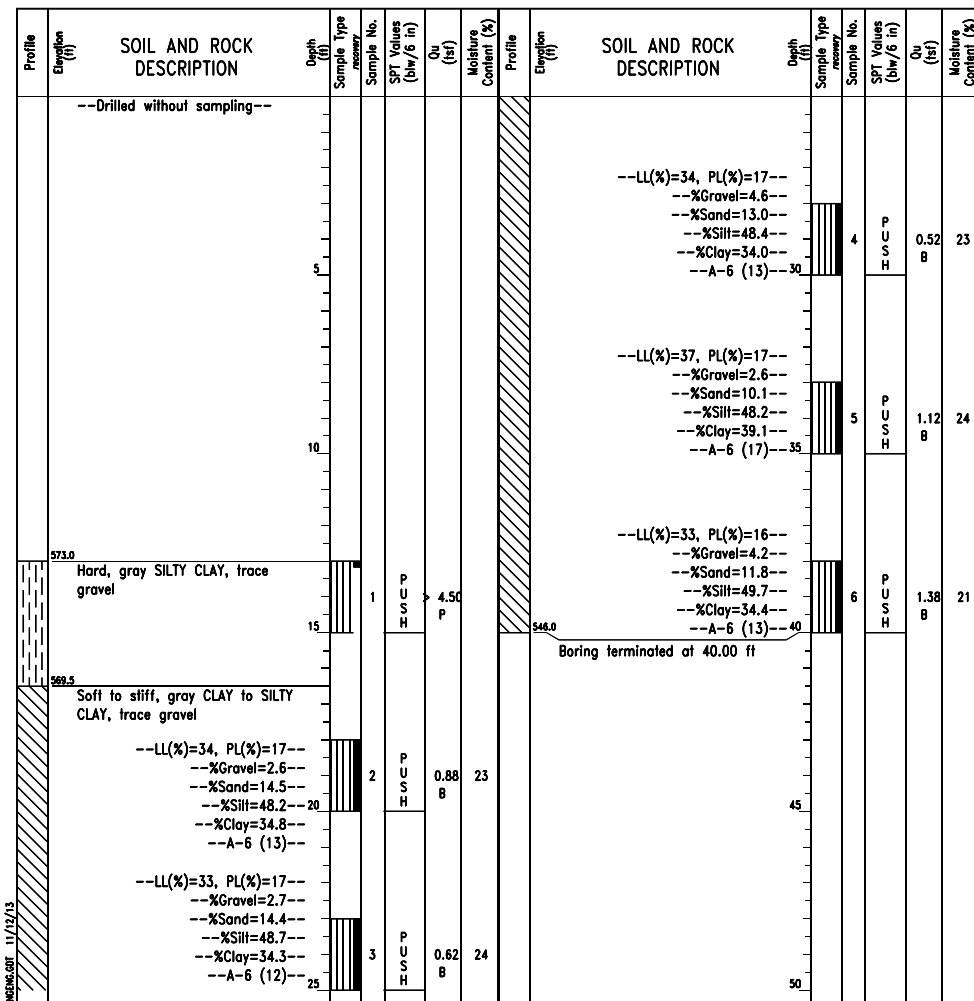


wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

BORING LOG 1705-B-11A

WEI Job No.: 1100-04-01
Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 586.03 ft
North: 1898136.23 ft
East: 1171162.02 ft
Station: 1835+03.66
Offset: 2.61 RT



GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	08-04-2013	Complete Drilling	08-05-2013	While Drilling	☑	DRY	
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 TMR	At Completion of Drilling	☑	DRY	
Driller	R&K	Logger	A. Tomaras	Checked by	C. Marin		
Drilling Method	3.25" HSA, boring backfilled upon completion			Depth to Water	☑	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

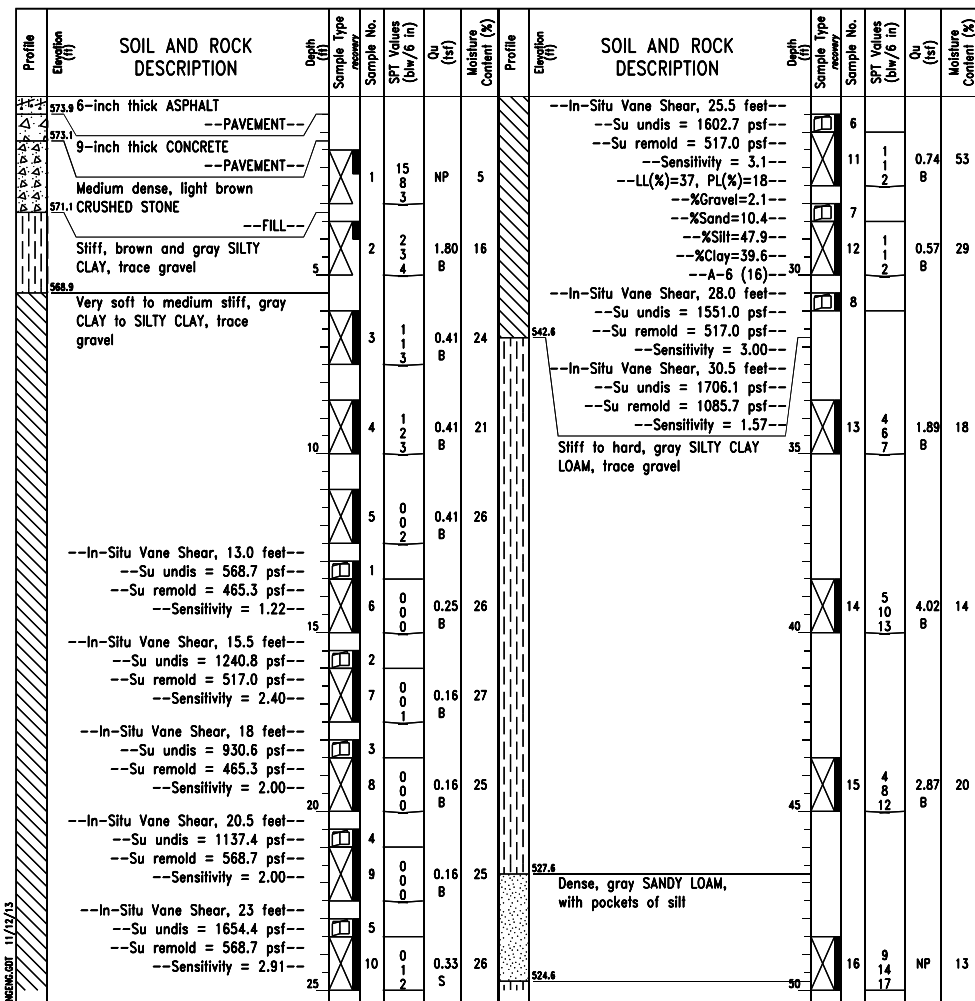


wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

BORING LOG 1705-B-12

WEI Job No.: 1100-04-01
Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 574.38 ft
North: 1898167.88 ft
East: 1171080.64 ft
Station: 1835+82.90
Offset: 39.30 RT



GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	07-31-2013	Complete Drilling	08-05-2013	While Drilling	☑	DRY	
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 TMR	At Completion of Drilling	☑	NA	
Driller	R&N	Logger	A. Happel	Checked by	C. Marin		
Drilling Method	2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion			Depth to Water	☑	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

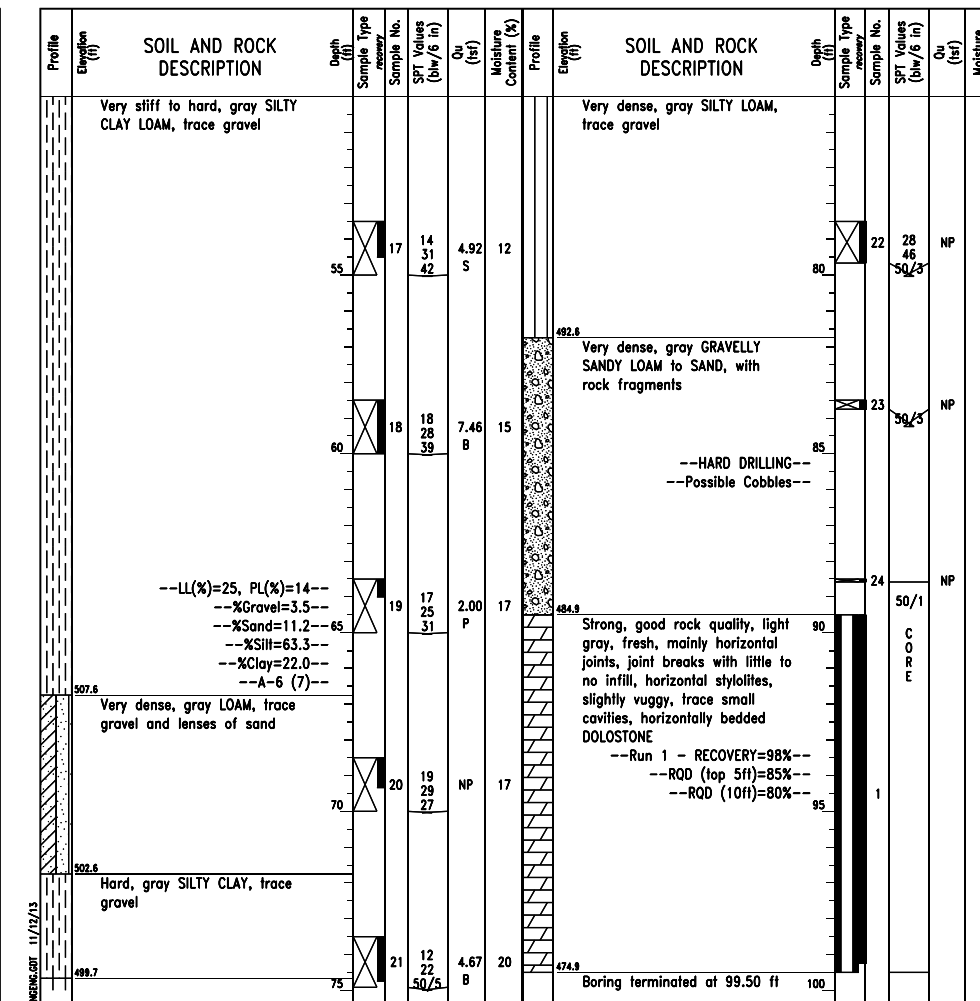


wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

BORING LOG 1705-B-12

WEI Job No.: 1100-04-01
Client: AECOM
Project: Circle Interchange Reconstruction
Location: Section 17, T39N, R14E of 3rd PM

Datum: NAVD 88
Elevation: 574.38 ft
North: 1898167.88 ft
East: 1171080.64 ft
Station: 1835+82.90
Offset: 39.30 RT



GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	07-31-2013	Complete Drilling	08-05-2013	While Drilling	☑	DRY	
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 TMR	At Completion of Drilling	☑	NA	
Driller	R&N	Logger	A. Happel	Checked by	C. Marin		
Drilling Method	2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion			Depth to Water	☑	NA	
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							



USER NAME = floresg
PLOT SCALE = N.T.S.
PLOT DATE = 5/7/2014

DESIGNED - ABT
CHECKED - EJO
DRAWN - MRK
CHECKED - ABT

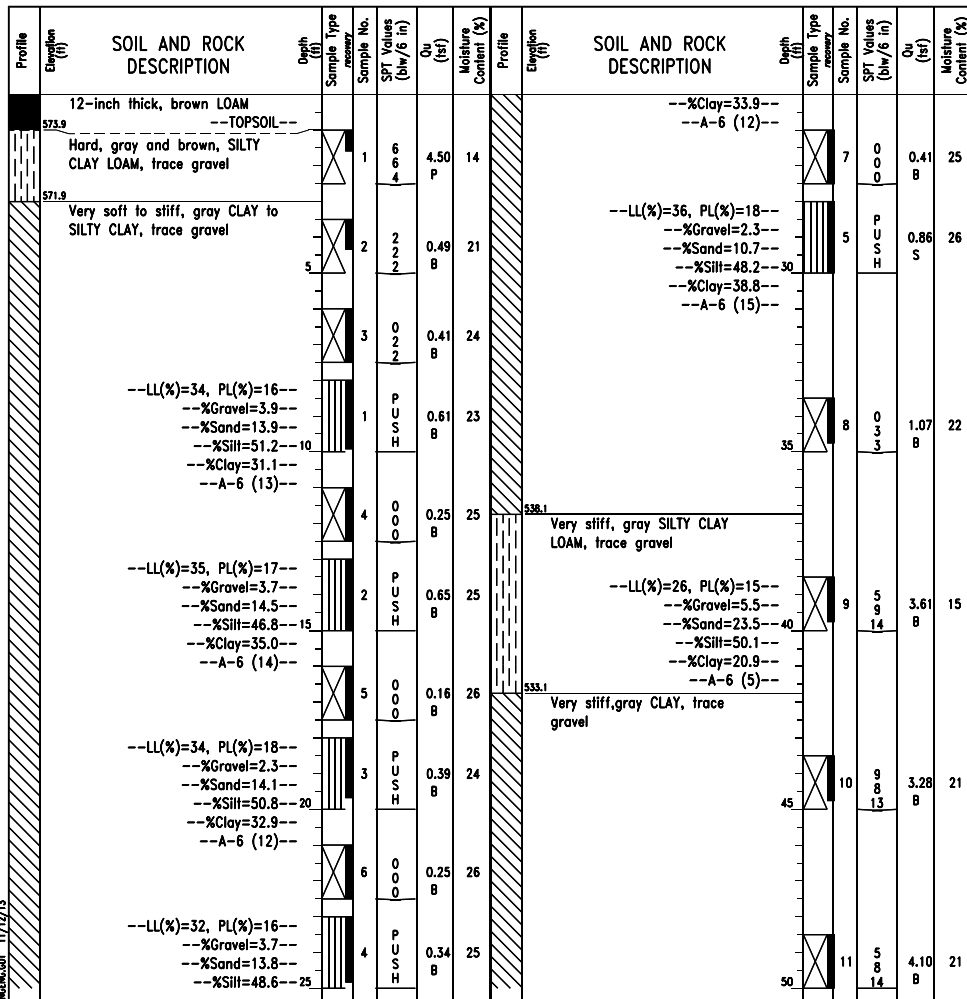
REVISED
REVISED
REVISED
REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

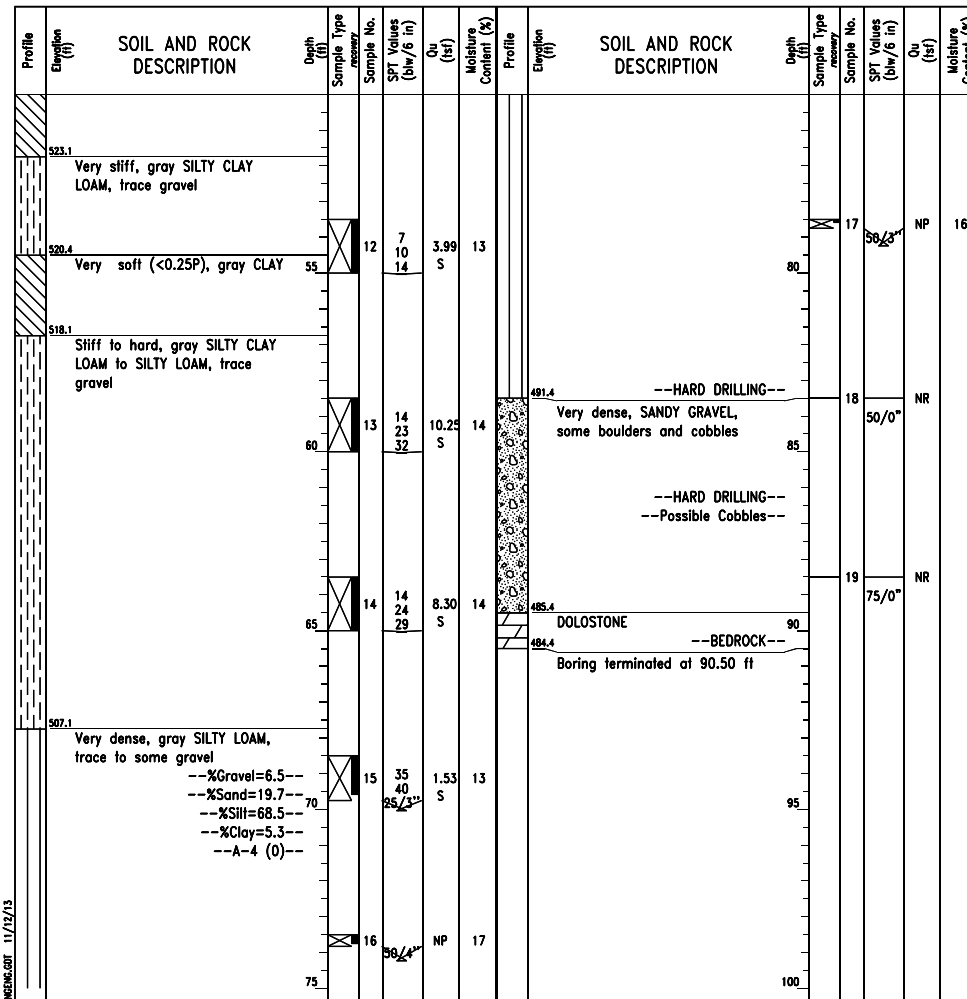
BORING LOGS - XV
STRUCTURE NO. 016-1705
SHEET NO. S-163 OF S-165 SHEETS

F.A.I. R.T.E. 90/94/290
SECTION 2013-010R
COUNTY COOK
TOTAL SHEETS 747
SHEET NO. 469J
CONTRACT NO. 60W28
ILLINOIS FED. AID PROJECT

0161705-60W28-S163-Bor-Log.dgn



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	08-06-2013	Complete Drilling	08-11-2013
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 TMR
Driller	R&N	Logger	A. Tomaras
Checked by	C. Marin	Drilling Method	2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion
While Drilling	NA	At Completion of Drilling	NA
Time After Drilling	NA	Depth to Water	NA



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	08-06-2013	Complete Drilling	08-11-2013
Drilling Contractor	Wang Testing Services	Drill Rig	D-50 TMR
Driller	R&N	Logger	A. Tomaras
Checked by	C. Marin	Drilling Method	2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion
While Drilling	NA	At Completion of Drilling	NA
Time After Drilling	NA	Depth to Water	NA

0161705-60W28-5164-BorIng.dgn



USER NAME = floresg	DESIGNED - ABT	REVISED
	CHECKED - EJO	REVISED
PLOT SCALE = N.T.S.	DRAWN - MRK	REVISED
PLOT DATE = 5/7/2014	CHECKED - ABT	REVISED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BORING LOGS - XVI
 STRUCTURE NO. 016-1705

SHEET NO. S-164 OF S-165 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	469K
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)
579.6	1-inch thick brown SILTY LOAM --TOPSOIL-- Very loose to loose, brown and gray to gray LOAM, trace gravel --FILL--	1	4	4	NP	9	579.6	--In-Situ Vane Shear, 25.5 feet-- --Su undis = 1243.2 psf-- --Su remold = 725.2 psf-- --Sensitivity = 1.714--	1	4	4	0.57	25
579.2	Very soft to soft, gray CLAY to SILTY CLAY, trace gravel	2	2	2	NP	10	--LL(%)=35, PL(%)=17-- --%Gravel=2.6-- --%Sand=9.8-- --%Silt=46.6-- --%Clay=41.0--30 --A-6 (15)--	2	2	2	0.25	27	
		3	1	1	P	16	--In-Situ Vane Shear, 30.5 feet-- --Su undis = 2481.6 psf-- --Su remold = 1085.7 psf-- --Sensitivity = 2.29--	3	1	1	0.25	16	
		4	1	1	B	25	--In-Situ Vane Shear, 35.5 feet-- --Su undis = 1964.6 psf-- --Su remold = 1344.2 psf-- --Sensitivity = 1.46--	4	1	1	0.41	25	
		5	0	2	B	25	Stiff to very stiff, gray SILTY CLAY, trace gravel	5	0	2	0.49	25	
		6	1	1	B	23		6	1	1	0.49	23	
		7	0	1	B	27		7	0	1	0.16	27	
		8	0	1	B	26		8	0	1	0.25	26	
		9	1	2	B	23		9	1	2	0.41	23	
		10	2	2	B	25		10	2	2	0.49	25	
		11	2	2	B	25		11	2	2	0.49	25	
		12	2	2	B	25		12	2	2	0.49	25	
		13	2	2	B	25		13	2	2	0.49	25	
		14	4	4	B	23		14	4	4	1.56	23	
		15	6	6	B	18		15	6	6	2.54	18	
		16	5	7	B	22		16	5	7	2.62	22	

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	08-13-2013	Complete Drilling	08-15-2013	While Drilling	▽	73.50 ft	
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR	At Completion of Drilling	▽	NA	
Driller	R&J	Logger	A. Tomaras	Time After Drilling	NA		
Checked by	C. Marin			Depth to Water	▽	NA	
Drilling Method	3.25" HSA, boring backfilled upon completion			The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.			

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)
524.0	--Silt=49.4-- --%Clay=46.4-- --A-6 (19)-- Very dense, gray SILTY LOAM, trace gravel	17	29	36	NP	11	524.0		22	54/6	NP	18	
519.0	Hard, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel	18	27	30	S	13	519.0		23	75/0	NR		
	--LL(%)=29, PL(%)=16-- --%Gravel=1.9-- --%Sand=11.1--60 --%Silt=56.4-- --%Clay=30.6-- --A-6 (10)--	18	27	30	S	13	492.2	--WEATHERED BEDROCK--	23	75/0	NR		
		19	13	20	S	13	490.2	Strong, good rock quality, light gray, fresh, mainly horizontal joints, joint breaks with little to no infill, horizontal stylolites, slightly vuggy, trace small cavities, horizontally bedded DOLOSTONE	1		CORE		
		20	36	46	S	10	490.2	--Run 1-RECOVERY=82%-- --RQD =73%--90					
		21	55/6	NP	14		490.2	--Run 2-RECOVERY=95%-- --RQD =80%--	2		CORE		
		21	55/6	NP	14		490.2	Boring terminated at 95.50 ft					

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	08-13-2013	Complete Drilling	08-15-2013	While Drilling	▽	73.50 ft	
Drilling Contractor	Wang Testing Services	Drill Rig	CME-55 TMR	At Completion of Drilling	▽	NA	
Driller	R&J	Logger	A. Tomaras	Time After Drilling	NA		
Checked by	C. Marin			Depth to Water	▽	NA	
Drilling Method	3.25" HSA, boring backfilled upon completion			The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.			

0161705-60W28-5165-Bor-Log.dgn



USER NAME = floresg	DESIGNED - ABT	REVISED
	CHECKED - EJO	REVISED
PLOT SCALE = N.T.S.	DRAWN - MRK	REVISED
PLOT DATE = 5/7/2014	CHECKED - ABT	REVISED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BORING LOGS - XVII
 STRUCTURE NO. 016-1705

SHEET NO. S-165 OF S-165 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	469L
CONTRACT NO.			60W28	
ILLINOIS FED. AID PROJECT				

FOR INFORMATION ONLY

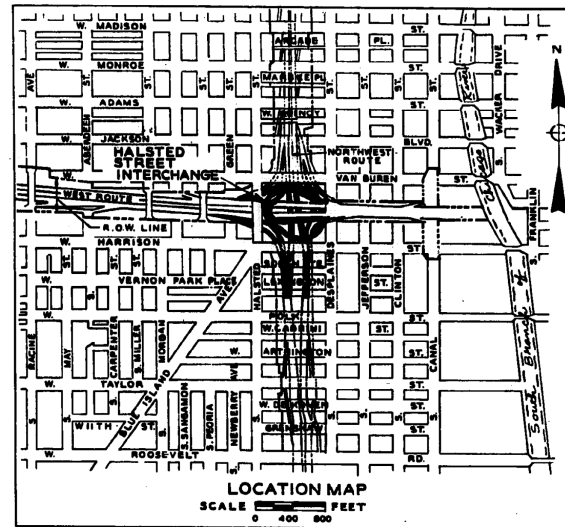
STATE OF ILLINOIS
CITY OF CHICAGO
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING

NORTHWEST ROUTE SUPERHIGHWAY

PLANS FOR
HALSTED STREET INTERCHANGE
SECTION 0101.6-1P

FAI ROUTE NO. 94 PROJECT I-94-3 (1)-51 (NEW NUMBER)
FAI ROUTE NO. 4 PROJECT I-04-8 (89) (OLD NUMBER)

REVISED BY: []
DATE: []
F.A.I. 0101.6-1P COO: 118
728 5000 BY: []



APPROVED AS TO SEWER ALTERATIONS AND ADDITIONS

[Signature]
CHIEF ENGINEER OF SEWERS
DEPUTY FOR SEWER

CITY OF CHICAGO
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
DATE AUGUST 13, 1959
APPROVED *[Signature]*
CHIEF SURVEY AND SUPERHIGHWAY ENGINEER
APPROVED *[Signature]*
ASSISTANT CHIEF ENGINEER
APPROVED *[Signature]*
CHIEF ENGINEER
APPROVED *[Signature]*
COMMISSIONER

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
APPROVED _____ 19____
DIVISION ENGINEER DATE

THE DEPARTMENT OF
PUBLIC WORKS AND BUILDINGS
DIVISION OF HIGHWAYS
APPROVED _____ 19____
APPROVED _____ 19____
DIRECTOR

SHEET NO. 6-1 OF 118 SHEETS

FILE PATH = C:\Projects\14-0425 - 60W28 StreetBulbs\14-0425-60W28-st-AS-BUILT-01.dgn



D160W28-st-AS-BUILT-01.dgn
USER NAME = auyeungh
PLOT SCALE = 1.0000' / in.
PLOT DATE = 4/25/2014

DESIGNED -
DRAWN -
CHECKED -
DATE - 04/28/14

REVISED -
REVISED -
REVISED -
REVISED -

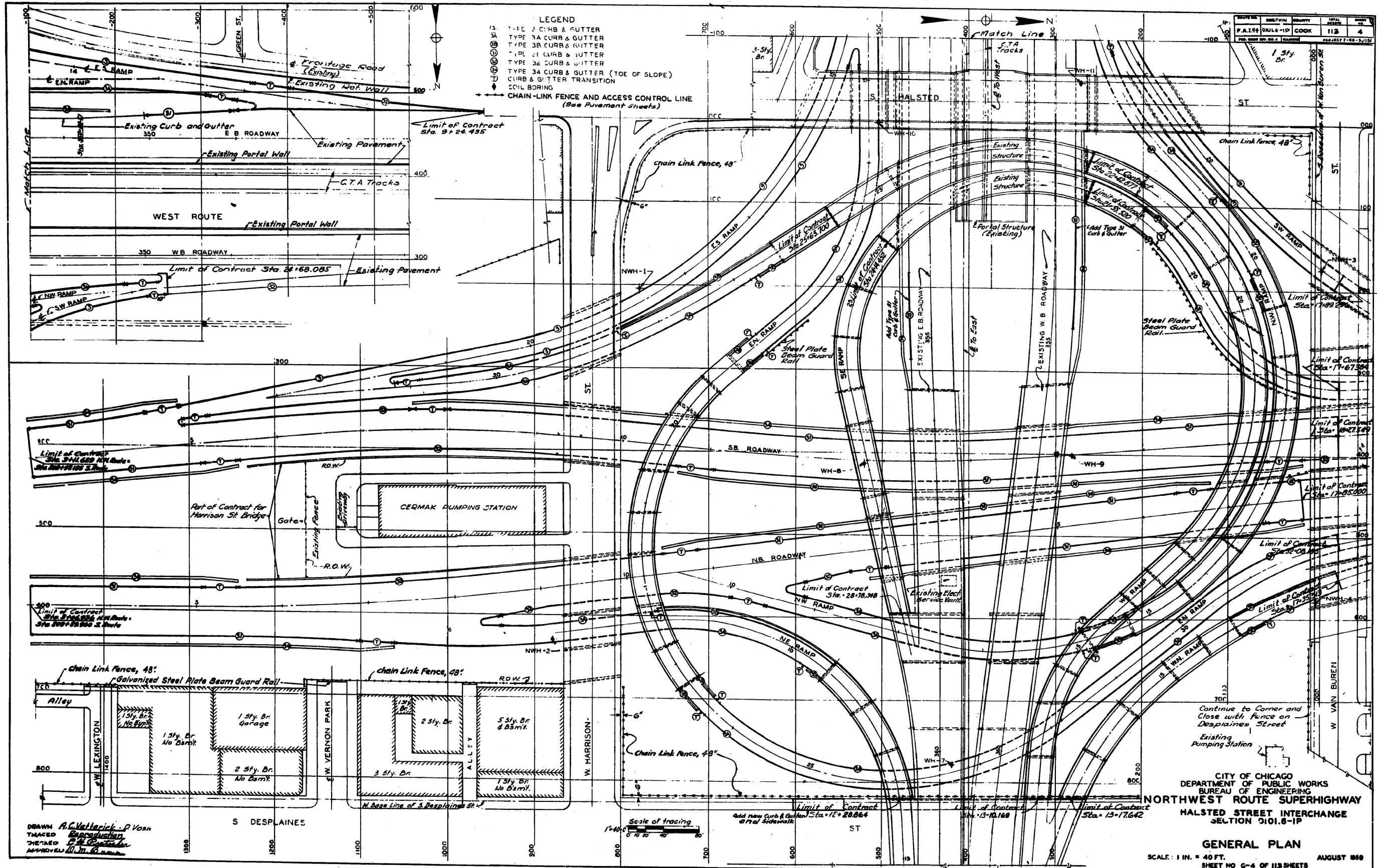
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS
SN 016-2449 & SN 016-2451

SCALE: SHEET 1 OF 48 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	471
CONTRACT NO. 60W28				
ILLINOIS FED. AID PROJECT				

FOR INFORMATION ONLY



CITY OF CHICAGO
 DEPARTMENT OF PUBLIC WORKS
 BUREAU OF ENGINEERING
NORTHWEST ROUTE SUPERHIGHWAY
HALSTED STREET INTERCHANGE
 SECTION 0101.6-1P
GENERAL PLAN
 SCALE: 1 IN. = 40 FT.
 SHEET NO G-4 OF 113 SHEETS
 AUGUST 1959

FILE PATH = C:\Project\14-0425 - 60W28 - 60W28 - 60W28 - sht-AS-BUILT-03.dgn



D160W28-sht-AS-BUILT-03.dgn
 USER NAME = ayeungh
 PLOT SCALE = 1:8000 / 1 in.
 PLOT DATE = 4/25/2014

DESIGNED -
 DRAWN -
 CHECKED -
 DATE - 04/28/14

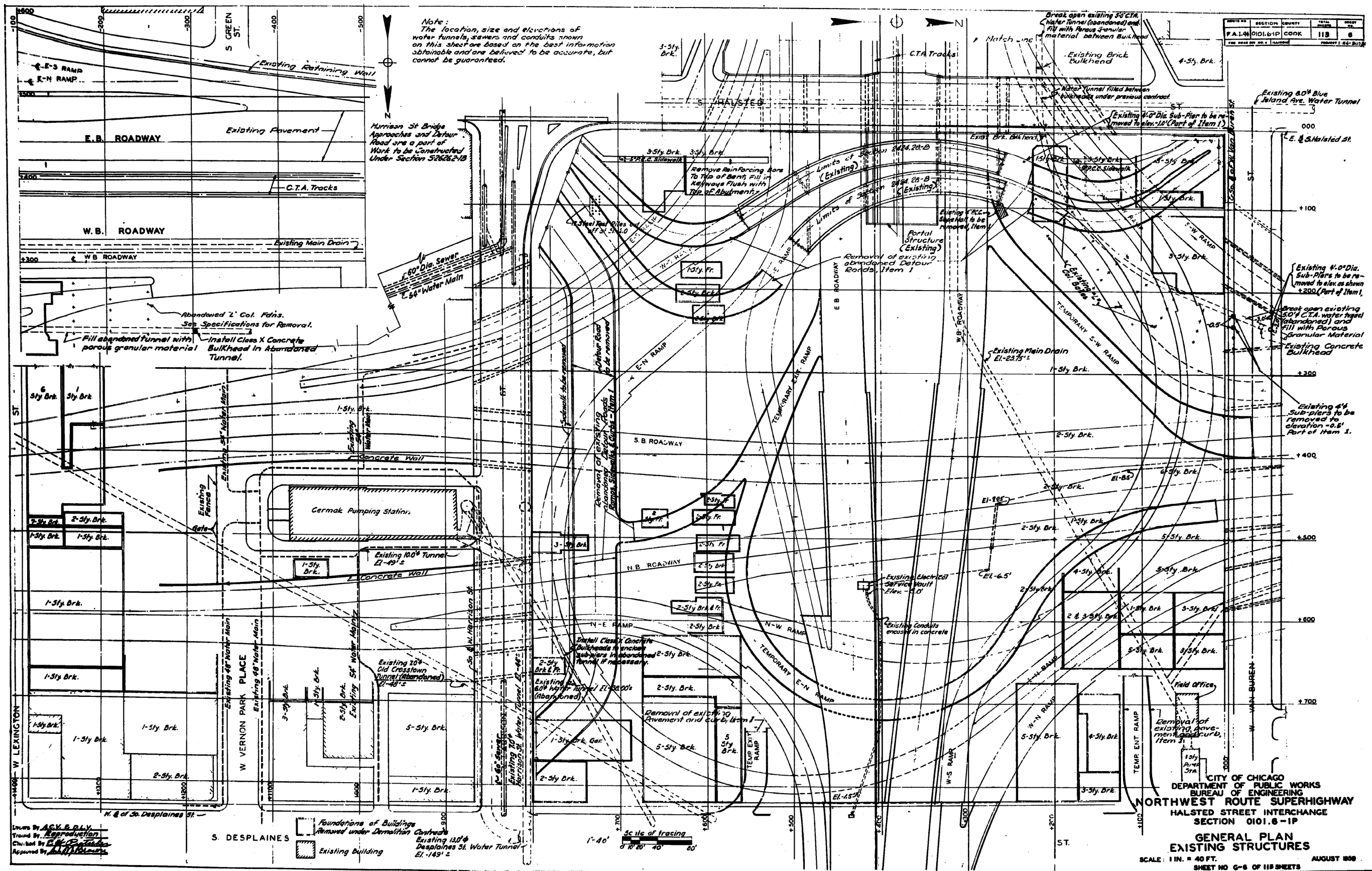
REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS
 SN 016-2449 & SN 016-2451
 SCALE: NTS
 SHEET 3 OF 48 SHEETS
 STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	473
CONTRACT NO. 60W28				
ILLINOIS FED. AID PROJECT				

FOR INFORMATION ONLY



SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 90/94/290	COOK	747	474

CITY OF CHICAGO
 DEPARTMENT OF PUBLIC WORKS
 BUREAU OF ENGINEERING
NORTHWEST ROUTE SUPERHIGHWAY
 HALSTED STREET INTERCHANGE
 SECTION 0101.6-1P
GENERAL PLAN
EXISTING STRUCTURES
 SCALE: 1 IN. = 40 FT.
 SHEET NO. G-6 OF 118 SHEETS
 AUGUST 1990

FILE PATH = C:\Projects\11-0425 - 60W28 Structure\11-0425-60W28-AS-BUILT-04.dgn



D160W28-sht-AS-BUILT-04.dgn
 USER NAME = ayeung
 PLOT SCALE = 1:8000 / 1 in.
 PLOT DATE = 4/25/2014

DESIGNED -
 DRAWN -
 CHECKED -
 DATE - 04/28/14

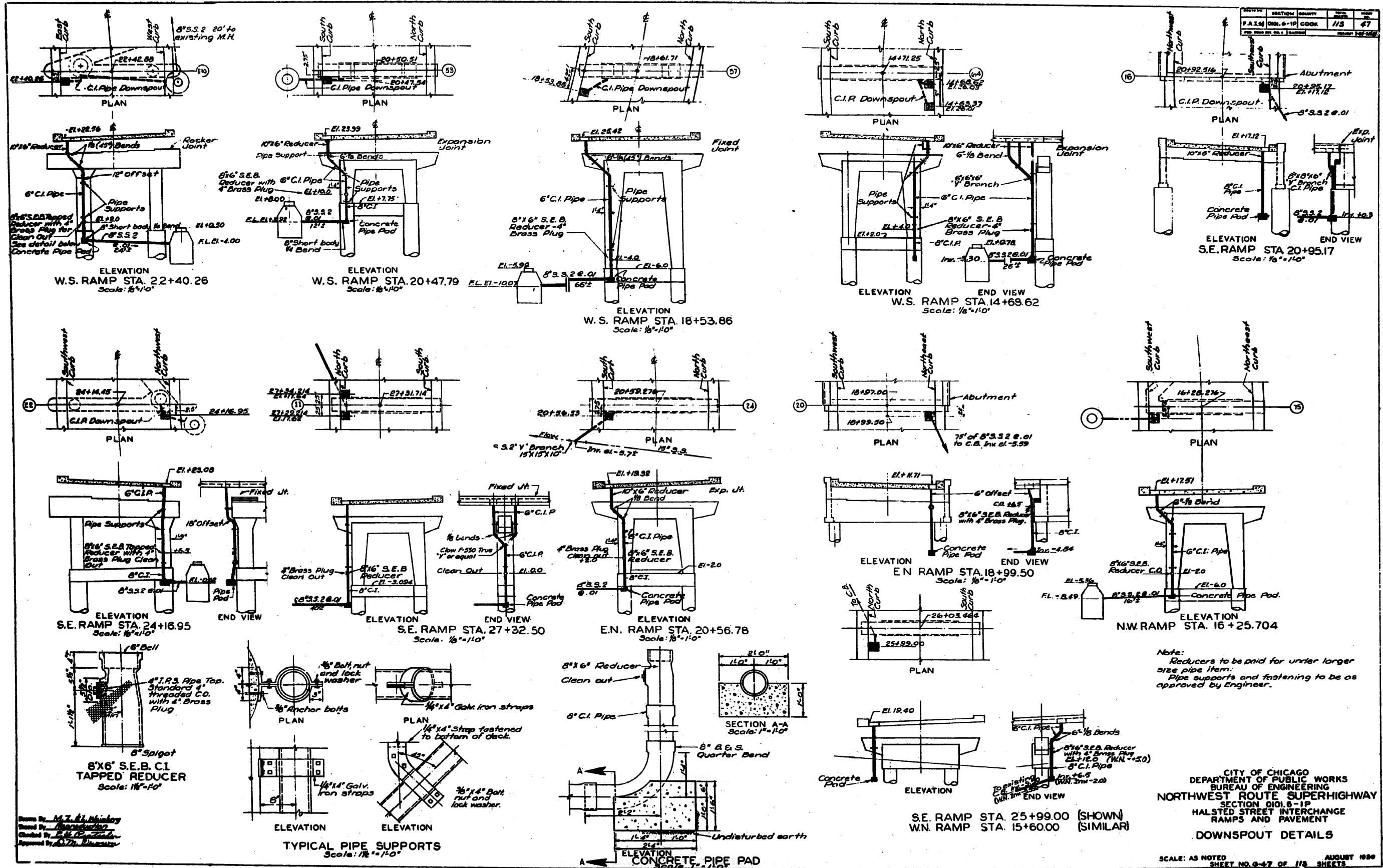
REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS
 SN 016-2449 & SN 016-2451
 SCALE: NTS SHEET 4 OF 48 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	474
CONTRACT NO. 60W28				
ILLINOIS FED. AID PROJECT				

FOR INFORMATION ONLY



Note:
 Reducers to be paid for under larger
 size pipe item.
 Pipe supports and fastening to be as
 approved by Engineer.

CITY OF CHICAGO
 DEPARTMENT OF PUBLIC WORKS
 BUREAU OF ENGINEERING
 NORTHWEST ROUTE SUPERHIGHWAY
 SECTION 010.6-1P
 HALSTED STREET INTERCHANGE
 RAMPS AND PAVEMENT
 DOWNSPOUT DETAILS

SCALE: AS NOTED
 SHEET NO. 9-47 OF 118 SHEETS
 AUGUST 1999

FILE PATH = C:\Projects\14-0425 - 60W28-StruckBulbs\14-0425-AS-BUILT-05.dgn



D160W28-sht-AS-BUILT-05.dgn
 USER NAME = ayejuehng
 PLOT SCALE = 1.0000 / in.
 PLOT DATE = 4/25/2014

DESIGNED -	REVISED -
DRAWN -	REVISED -
CHECKED -	REVISED -
DATE - 04/28/14	REVISED -

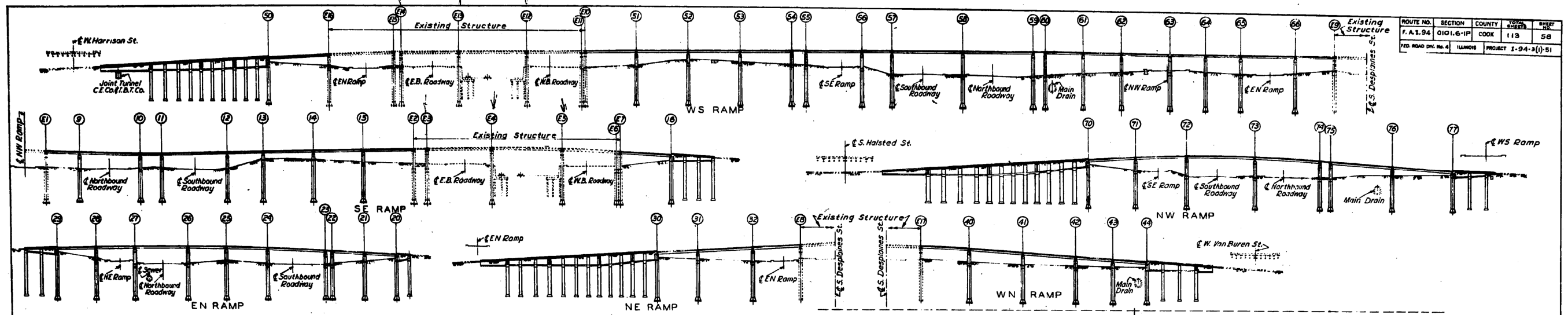
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS
 SN 016-2449 & SN 016-2451

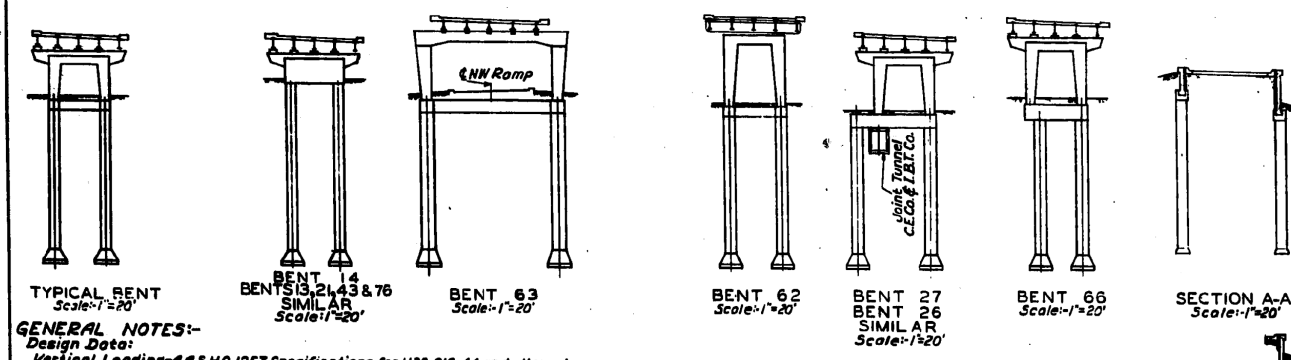
SCALE: NTS SHEET 5 OF 48 SHEETS STA. TO STA.

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	475
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

FOR INFORMATION ONLY



ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	0101.6-1P	COOK	113	58
FED. ROAD DIST. NO. 4	ILLINOIS	PROJECT	I-94-3(1)-51	

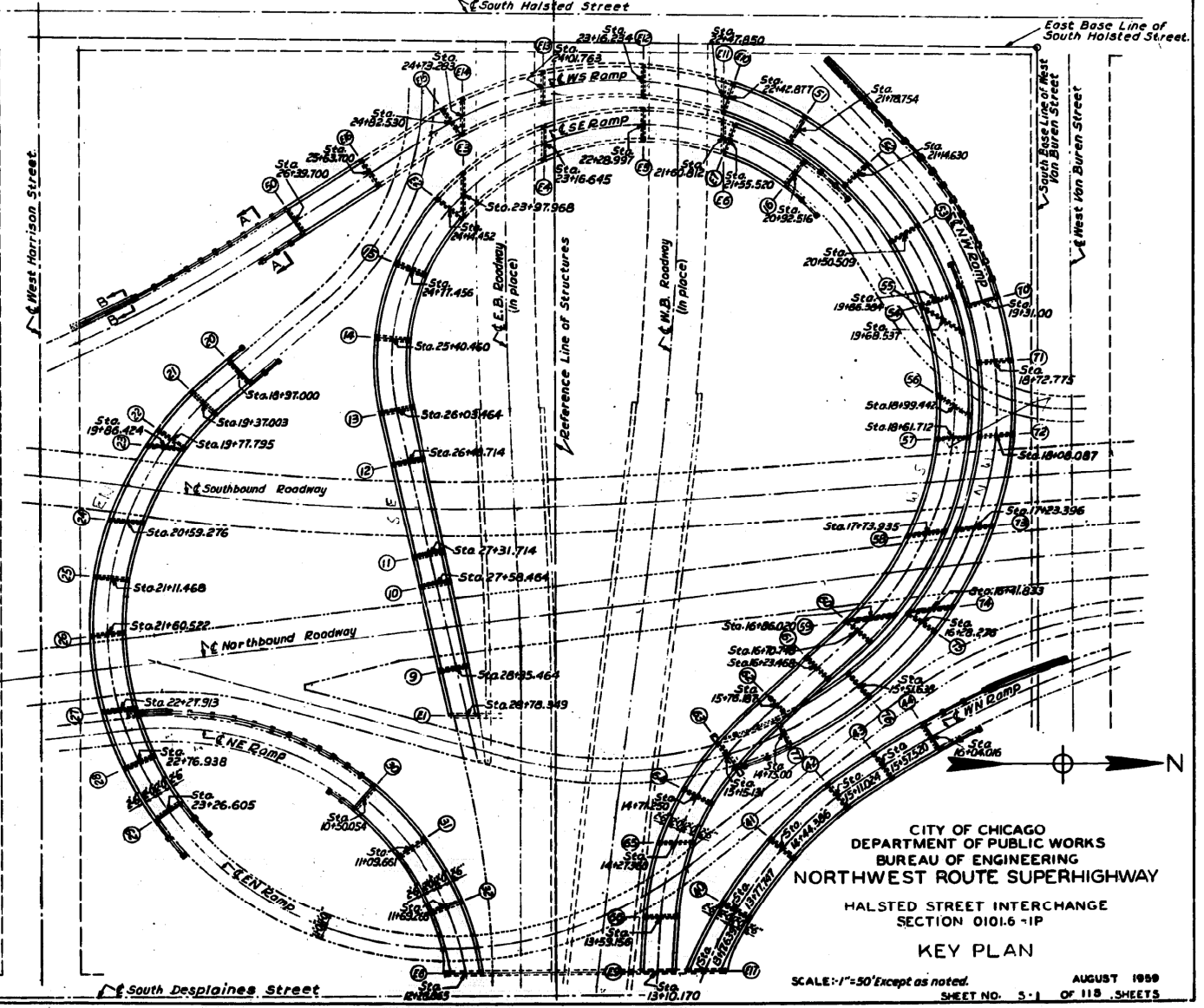


GENERAL NOTES:-
 Design Data:
 Vertical Loading - A.A.S.H.O. 1957 Specifications for H20-S16-44 and alternate live load as defined in Section 404 of the Bureau of Public Roads Policy and Procedure Memorandum 20-4, dated Aug. 6, 1954.
 Lateral Loading - Soil pressure of 40 lbs. per cu. ft. equivalent fluid pressure.
 Working Stresses - Structural Steel $f_s = 18,000$ p.s.i.
 Reinforcing Steel $f_s = 20,000$ p.s.i.
 Reinforced Concrete without earth pressure $f_c = 1400$ p.s.i.
 Reinforced Concrete with earth pressure $f_c = 800$ p.s.i.
 Bearing on Soil - Sub-piers under Bents = 12,000 p.s.f.
 Bearing on Soil - Sub-piers under Retaining Walls = 6,000 p.s.f.

STRUCTURAL ITEMS:-
 Item 5 Class X Concrete
 Item 6 Reinforcement Bars
 Item 8 Structural Steel
 Item 9 Sub-pier Shoes
 Item 10 Sub-pier Bells

The following notes apply to sheets S-1 to S-31 inclusive. These notes will be supplemented by additional notes as the individual sheets may require.
 No construction joints except those shown on the plans will be allowed unless otherwise ordered by the Engineer.
 All exposed edges of concrete shall be chamfered $\frac{3}{8}$ inch unless otherwise shown on plans.
 Concrete surfaces shall be finished in accordance with specifications. Unless otherwise shown on plans or ordered in writing by the Engineer, spliced bars in the bottom of slabs, beams and girders and in walls, columns and haunches shall be lapped 24 diameters; bars near the top of slabs, beams and girders having more than 16 inches of concrete under the bars shall be lapped 35 diameters where applied.
 All other reinforcing bar details shall be in accordance with the "Manual of Standard Practice for Detailing Reinforced Concrete Structures", issued by the American Concrete Institute.
 For material and designation of Reinforcing Steel, see Specifications.
 For material and designation of Structural Steel, see Specifications.
 Rivets "R" - Holes "H" unless otherwise shown.
 High Tension Bolts may be used in lieu of Rivets for all field connections.
 For welding see specifications. All welds shall be "continuous fillet unless otherwise noted."
 All dimensions and elevations given to existing structures shall be verified by the Contractor in the field.

IN CHARGE *[Signature]*
 DESIGNED BY *[Signature]*
 DRAWN BY *[Signature]*
 CHECKED BY *[Signature]*
 APPROVED BY *[Signature]*



CITY OF CHICAGO
 DEPARTMENT OF PUBLIC WORKS
 BUREAU OF ENGINEERING
 NORTHWEST ROUTE SUPERHIGHWAY
 HALSTED STREET INTERCHANGE
 SECTION 0101.6-1P
 KEY PLAN
 SCALE: 1"=50' except as noted.
 AUGUST 1959
 SHEET NO. 5-1 OF 113 SHEETS

FILE PATH = C:\Projects\14-0425 - 60W28 - Struct\Bul14\0101.6-1P-AS-BUILT-06.dgn



D160W28-sht-AS-BUILT-06.dgn
 USER NAME = auyeuungh
 PLOT SCALE = 1.0000 / in.
 PLOT DATE = 4/25/2014

DESIGNED -	REVISED -
DRAWN -	REVISED -
CHECKED -	REVISED -
DATE - 04/28/14	REVISED -

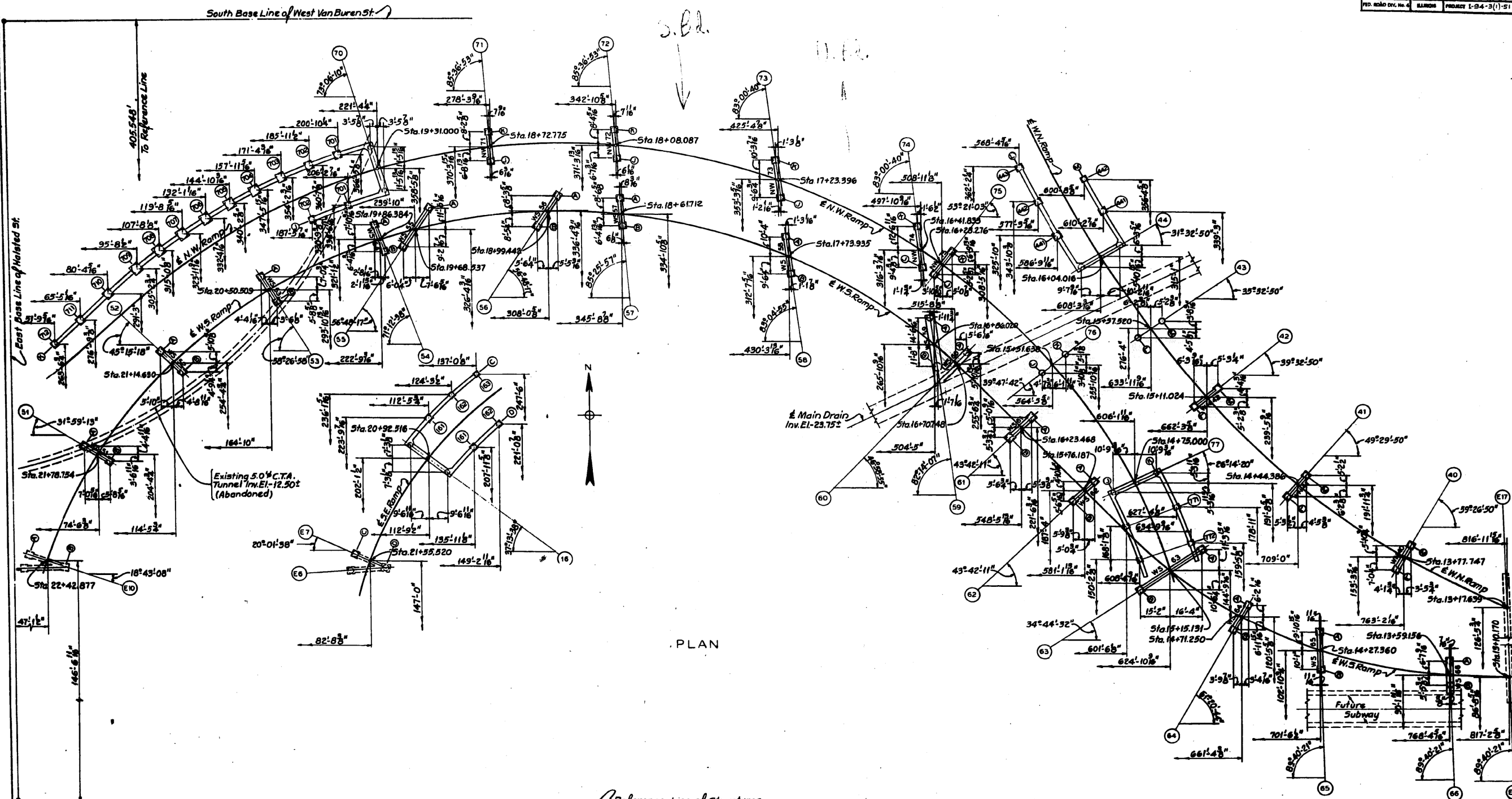
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS
 SN 016-2449 & SN 016-2451
 SCALE: NTS SHEET 6 OF 48 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	476
CONTRACT NO. 60W28				ILLINOIS FED. AID PROJECT

FOR INFORMATION ONLY

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
7. A. I. 94	0101.6-1P	COOK	113	59
RD. 6020 D.V. No. 4	BARROS	PROJECT 1-94-3(1)-51		



PLAN

IN CHARGE *M. L. ...*
 DESIGNED BY *M. R. ...*
 DRAWN BY *Christian Walter*
 CHECKED BY *D. Kasunski, J. Curtis*
 APPROVED BY *F. J. ...*

- References:
- General Notes
 - Foundation Plan South of Reference Line
 - Sub-Pier Schedule and Foundation Girders
 - Abutments and Retaining Walls
 - Concrete Bents
 - Sheet 5-1
 - Sheet 5-3
 - Sheets 5-5 to 5-8
 - Sheets 5-11 to 5-14

CITY OF CHICAGO
 DEPARTMENT OF PUBLIC WORKS
 BUREAU OF ENGINEERING
NORTHWEST ROUTE SUPERHIGHWAY
 HALSTED STREET INTERCHANGE
 SECTION 0101.6-1P
FOUNDATION PLAN
 (NORTH OF REFERENCE LINE)
 SCALE: 1"=20'-0"
 AUGUST 1999
 SHEET NO. 3-2 OF 113 SHEETS

FILE PATH = C:\Projects\14-0425 - 60W28 Structure\14-0425-60W28-Str-AS-BUILT-07.dgn



D160W28-str-AS-BUILT-07.dgn
 USER NAME = ayeungh
 PLOT SCALE = 1:8000 / 1"=80'
 PLOT DATE = 4/25/2014

DESIGNED -	REVISED -
DRAWN -	REVISED -
CHECKED -	REVISED -
DATE - 04/28/14	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

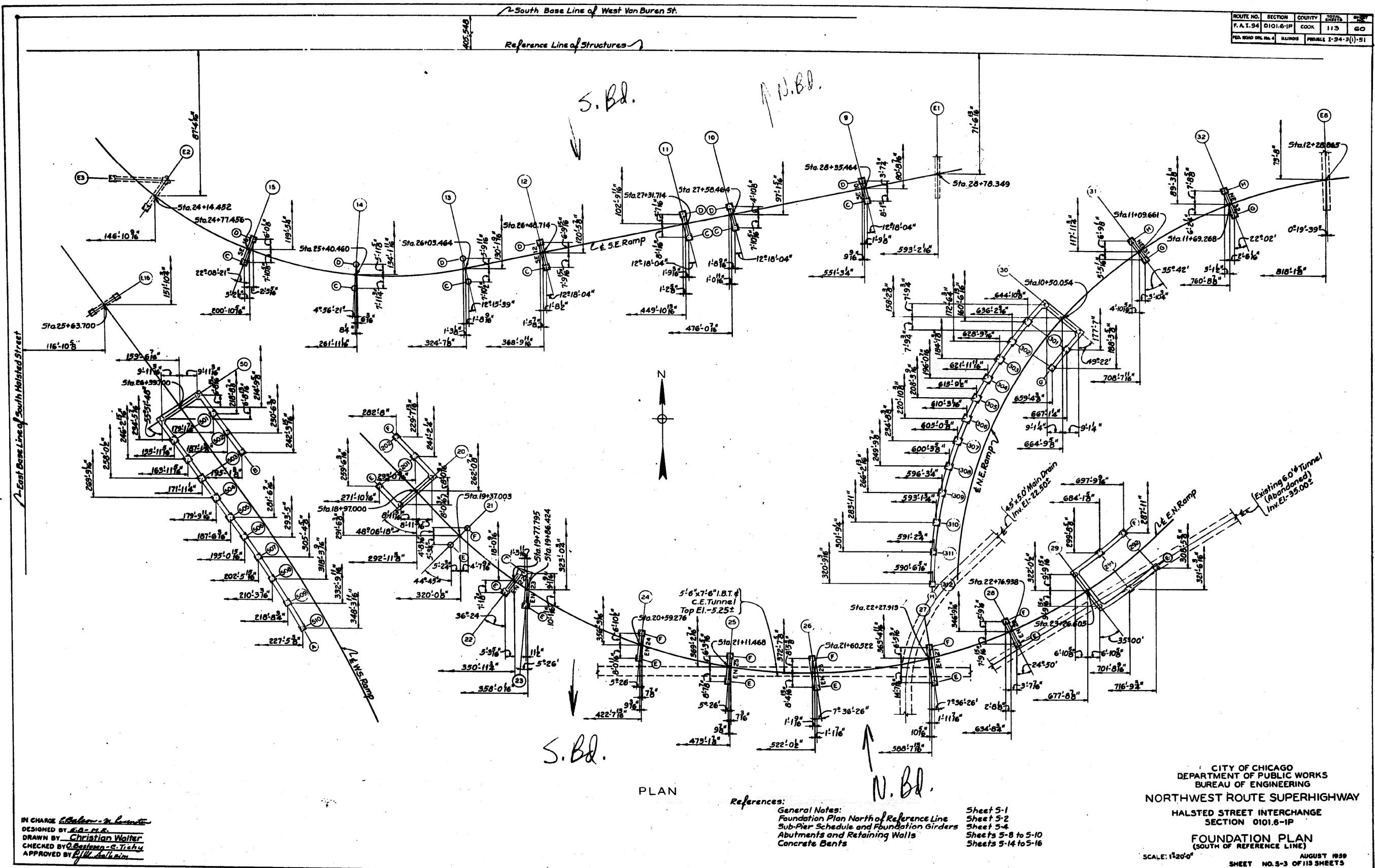
EXISTING AS-BUILTS
 SN 016-2449 & SN 016-2451

SCALE: NTS SHEET 7 OF 48 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	477
CONTRACT NO. 60W28				
ILLINOIS FED. AID PROJECT				

FOR INFORMATION ONLY

ROUTE NO.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
F.A.I. 94	0101.6-1P	COOK	113	60
PROJ. ROAD DIST. NO.	MILEAGE	PROJECT	I-94-3(1)-51	



IN CHARGE *C. Balcer - N. G. G. G.*
 DESIGNED BY *E. A. P. R.*
 DRAWN BY *Christian Walter*
 CHECKED BY *C. G. G. G. G.*
 APPROVED BY *R. W. G. G. G.*

References:
 General Notes:
 Foundation Plan North of Reference Line
 Sub-Pier Schedule and Foundation Girders
 Abutments and Retaining Walls
 Concrete Bents

Sheet 5-1
 Sheet 5-2
 Sheet 5-4
 Sheets 5-8 to 5-10
 Sheets 5-14 to 5-16

CITY OF CHICAGO
 DEPARTMENT OF PUBLIC WORKS
 BUREAU OF ENGINEERING
 NORTHWEST ROUTE SUPERHIGHWAY
 HALSTED STREET INTERCHANGE
 SECTION 0101.6-1P
 FOUNDATION PLAN
 (SOUTH OF REFERENCE LINE)
 SCALE: 1"=20'-0"
 AUGUST 1999
 SHEET NO. 5-3 OF 113 SHEETS

FILE PATH = C:\Project\14-0425 - 60W28-Structure\14-0425 - 60W28-Structure\AS-BUILT-08.dgn



D160W28-sht-AS-BUILT-08.dgn
 USER NAME = ayeunggh
 PLOT SCALE = 1.0000 / 1 in.
 PLOT DATE = 4/25/2014

DESIGNED -	REVISED -
DRAWN -	REVISED -
CHECKED -	REVISED -
DATE - 04/28/14	REVISED -

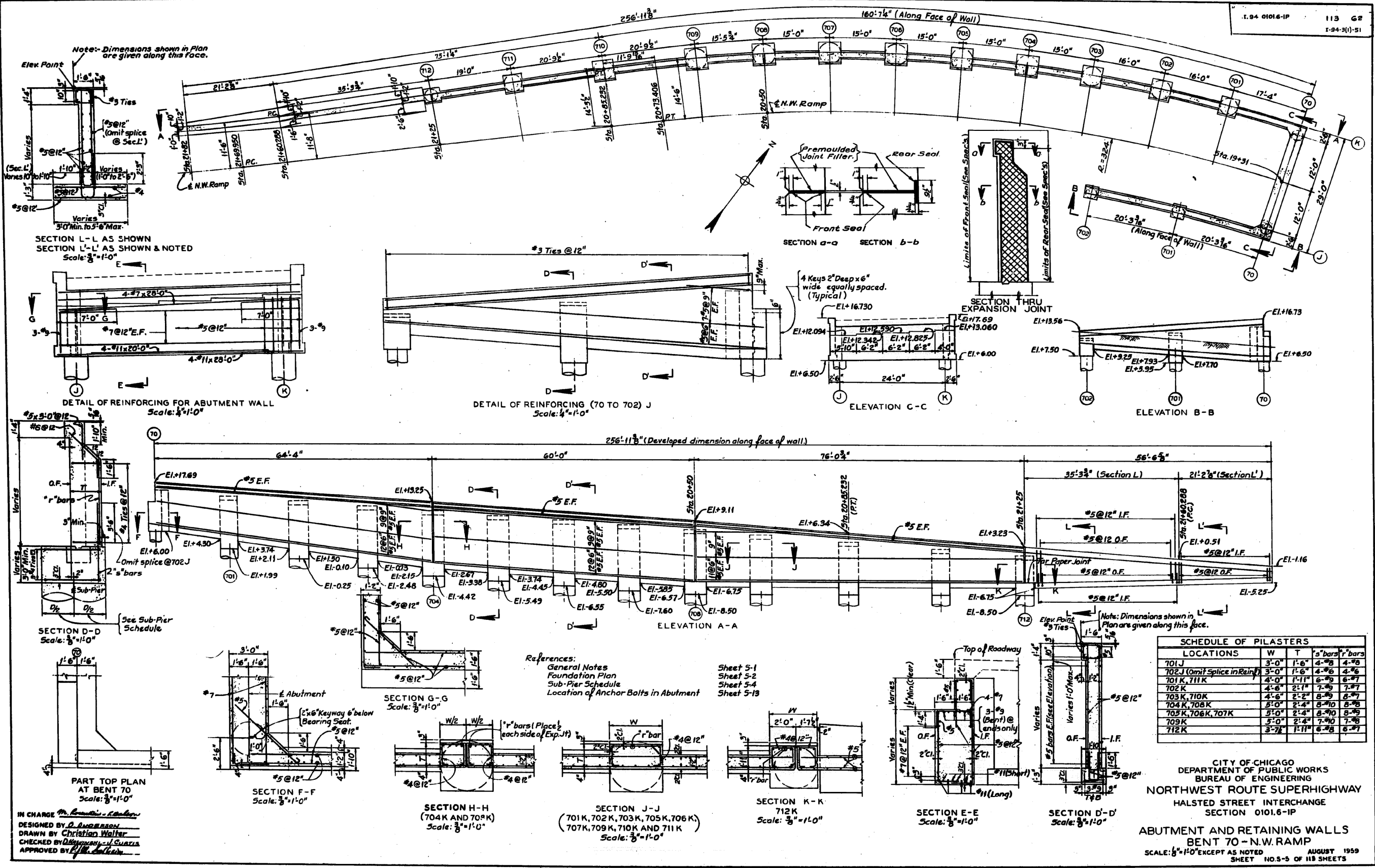
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS
 SN 016-2449 & SN 016-2451
 SCALE: NTS
 SHEET 8 OF 48 SHEETS
 STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	478
CONTRACT NO. 60W28				
ILLINOIS FED. AID PROJECT				

FOR INFORMATION ONLY

1.94 01016-1P 113 G2
1-94-3(1)-51



FILE PATH = C:\Projects\114-0425 - 60W28 Structure\114-0425-60W28-Str-Built-10.dgn



D160W28-sh-t-AS-BUILT-10.dgn
USER NAME = ayeungh
PLOT SCALE = 1.0000 / in.
PLOT DATE = 4/25/2014

DESIGNED -
DRAWN -
CHECKED -
DATE - 04/28/14

REVISED -
REVISED -
REVISED -
REVISED -

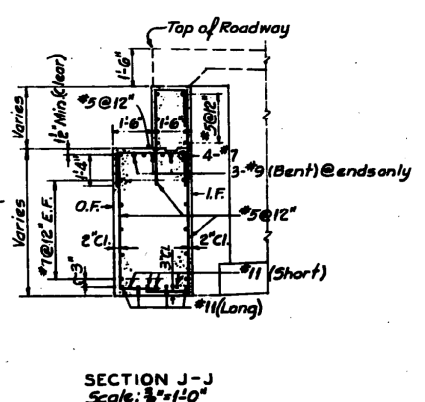
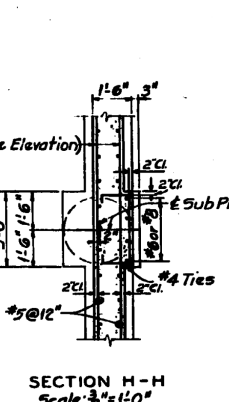
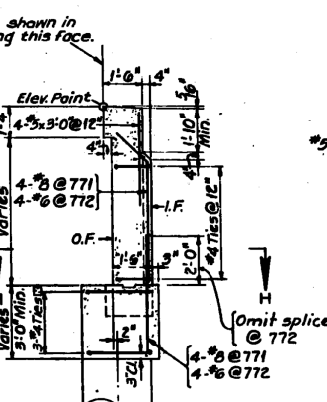
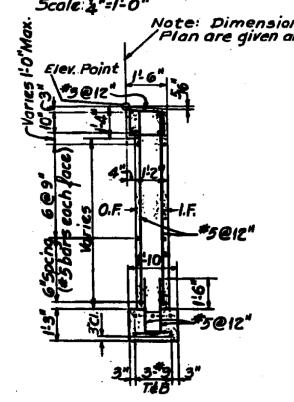
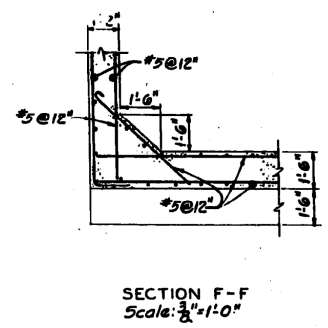
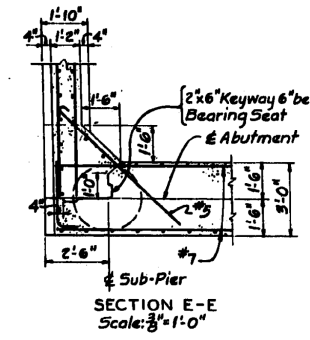
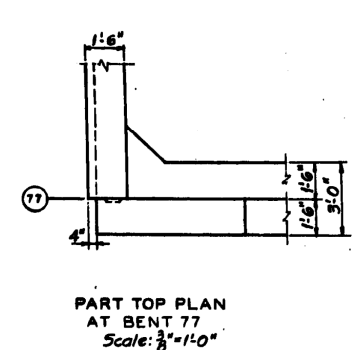
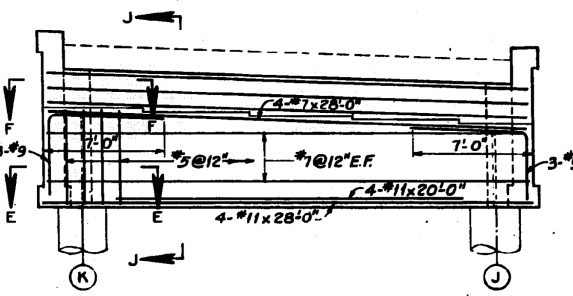
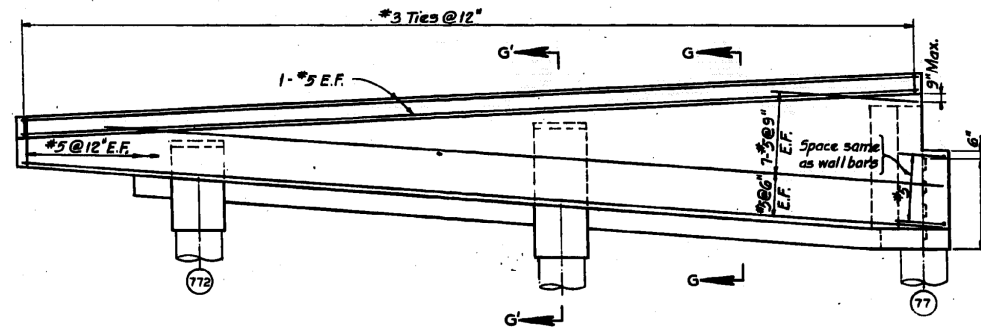
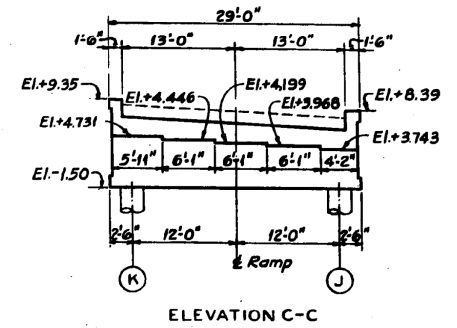
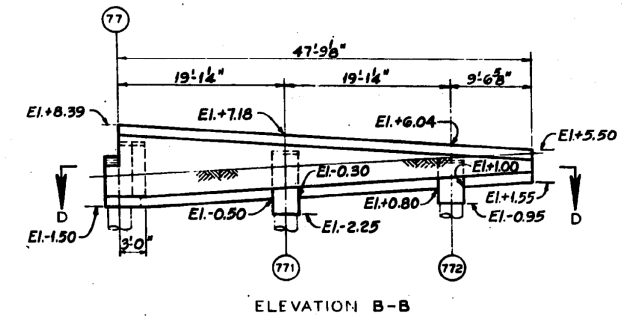
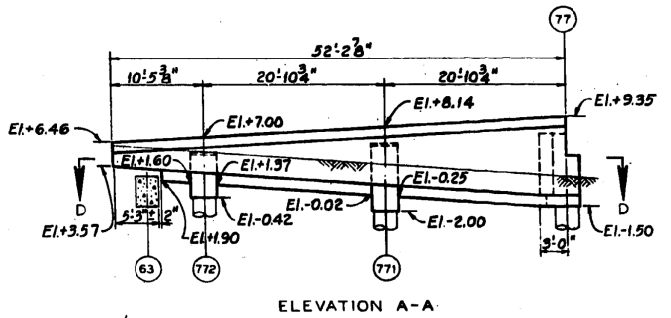
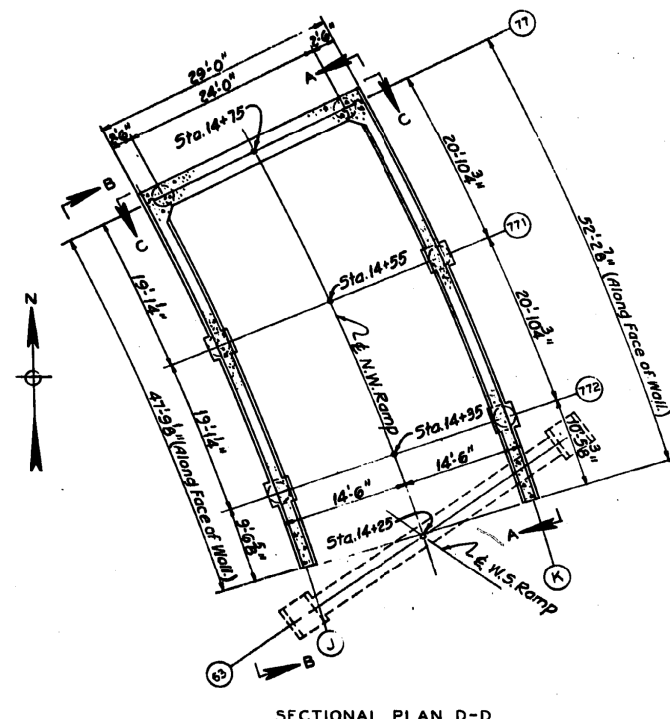
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS
SN 016-2449 & SN 016-2451
SCALE: NTS SHEET 10 OF 48 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	480
CONTRACT NO. 60W28				
ILLINOIS FED. AID PROJECT				

FOR INFORMATION ONLY

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 94	0101.6-1P	COOK	113	63
FED. ROAD DIST. NO. 4	ILLINOIS	PROJECT 1-94-3(1)-51		



IN CHARGE: *[Signature]*
 DESIGNED BY: *[Signature]*
 DRAWN BY: *[Signature]*
 CHECKED BY: *[Signature]*
 APPROVED BY: *[Signature]*

References:
 General Notes Sheet 5-1
 Foundation Plan Sheet 5-2
 Sub-Pier Schedule Sheet 5-4
 Location of Anchor Bolts in Abutment Sheet 5-13

CITY OF CHICAGO
 DEPARTMENT OF PUBLIC WORKS
 BUREAU OF ENGINEERING
 NORTHWEST ROUTE SUPERHIGHWAY
 HALSTED STREET INTERCHANGE
 SECTION 0101.6-1P
 ABUTMENT AND RETAINING WALLS
 BENT 77-N.W. RAMP
 SCALE: 1/8"=1'-0" EXCEPT AS NOTED
 SHEET NO. 5-B OF 113 SHEETS
 AUGUST 1999

FILE PATH = C:\Projects\11-0425 - 60W28 Structure\11-0425 - 60W28 Structure\11-0425 - 60W28-AS-BUILT-11.dgn



D160W28-sht-AS-BUILT-11.dgn	DESIGNED -	REVISED -
USER NAME = auyeungh	DRAWN -	REVISED -
PLOT SCALE = 1.0000' / 1"	CHECKED -	REVISED -
PLOT DATE = 4/25/2014	DATE - 04/28/14	REVISED -

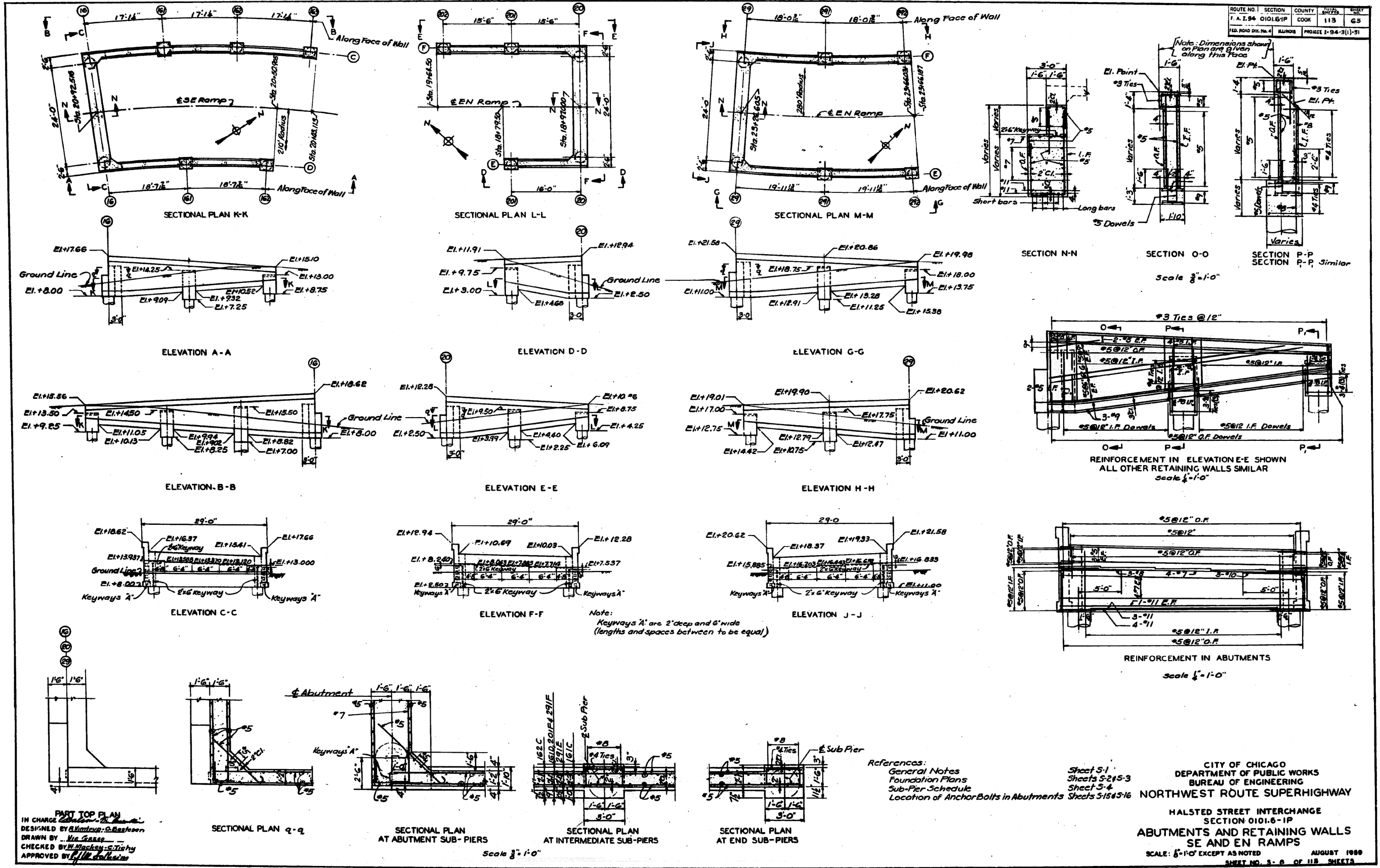
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS
 SN 016-2449 & SN 016-2451

SCALE: NTS SHEET 11 OF 48 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	481
				CONTRACT NO. 60W28
ILLINOIS FED. AID PROJECT				

FOR INFORMATION ONLY



ROUTE NO. 1	SECTION	COUNTY	SHEET
F. A. I. 94	0101.6-1P	COOK	113
FED. ROAD DIV. No. 4	ILLINOIS	PROJECT 1-94-3(1)-51	65

PART TOP PLAN
IN CHARGE: [Signature]
DESIGNED BY: [Signature]
DRAWN BY: [Signature]
CHECKED BY: [Signature]
APPROVED BY: [Signature]

FILE PATH = C:\Projects\14-0425 - 60W28-StruckBulbs\14-0425-60W28-StruckBulbs\14-0425-60W28-StruckBulbs-BUILD-13.dgn



D160W28-sht-AS-BUILT-13.dgn
USER NAME = auyeyungh
PLOT SCALE = 1:8000 / 1"
PLOT DATE = 4/25/2014

DESIGNED -	REVISED -
DRAWN -	REVISED -
CHECKED -	REVISED -
DATE - 04/28/14	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

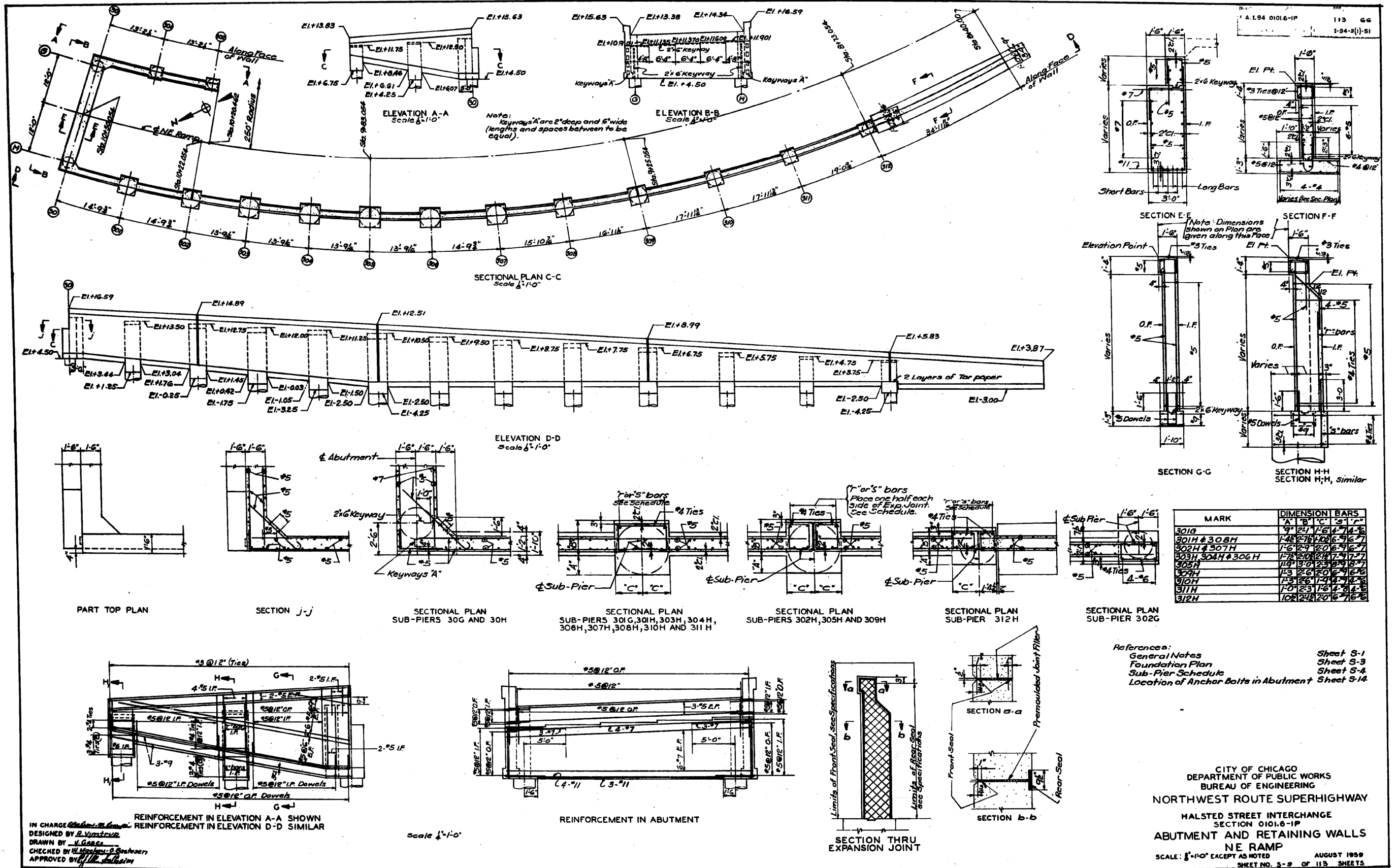
EXISTING AS-BUILTS
SN 016-2449 & SN 016-2451

SCALE: NTS SHEET 13 OF 48 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	483
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

CITY OF CHICAGO
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
NORTHWEST ROUTE SUPERHIGHWAY
HALSTED STREET INTERCHANGE
SECTION 0101.6-1P
ABUTMENTS AND RETAINING WALLS
SE AND EN RAMP
SCALE: 3/8"=1'-0" EXCEPT AS NOTED
AUGUST 1989
SHEET NO. 3 OF 113 SHEETS

FOR INFORMATION ONLY



FILE PATH = C:\Projects\14-0425 - 60W28 Structure\14-0425 - 60W28-Struct\AS-BUILT-14.dgn



D160W28-sht-AS-BUILT-14.dgn
 USER NAME = ayeunggh
 PLOT SCALE = 1:8000 / 1"=80'
 PLOT DATE = 4/25/2014

DESIGNED -
 DRAWN -
 CHECKED -
 DATE - 04/28/14

REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS
 SN 016-2449 & SN 016-2451

CITY OF CHICAGO
 DEPARTMENT OF PUBLIC WORKS
 BUREAU OF ENGINEERING
 NORTHWEST ROUTE SUPERHIGHWAY
 HALSTED STREET INTERCHANGE
 SECTION 0101.6-1P
 ABUTMENT AND RETAINING WALLS
 NE RAMP
 SCALE: 1/4"=1'-0" EXCEPT AS NOTED
 SHEET NO. S-9 OF 113 SHEETS

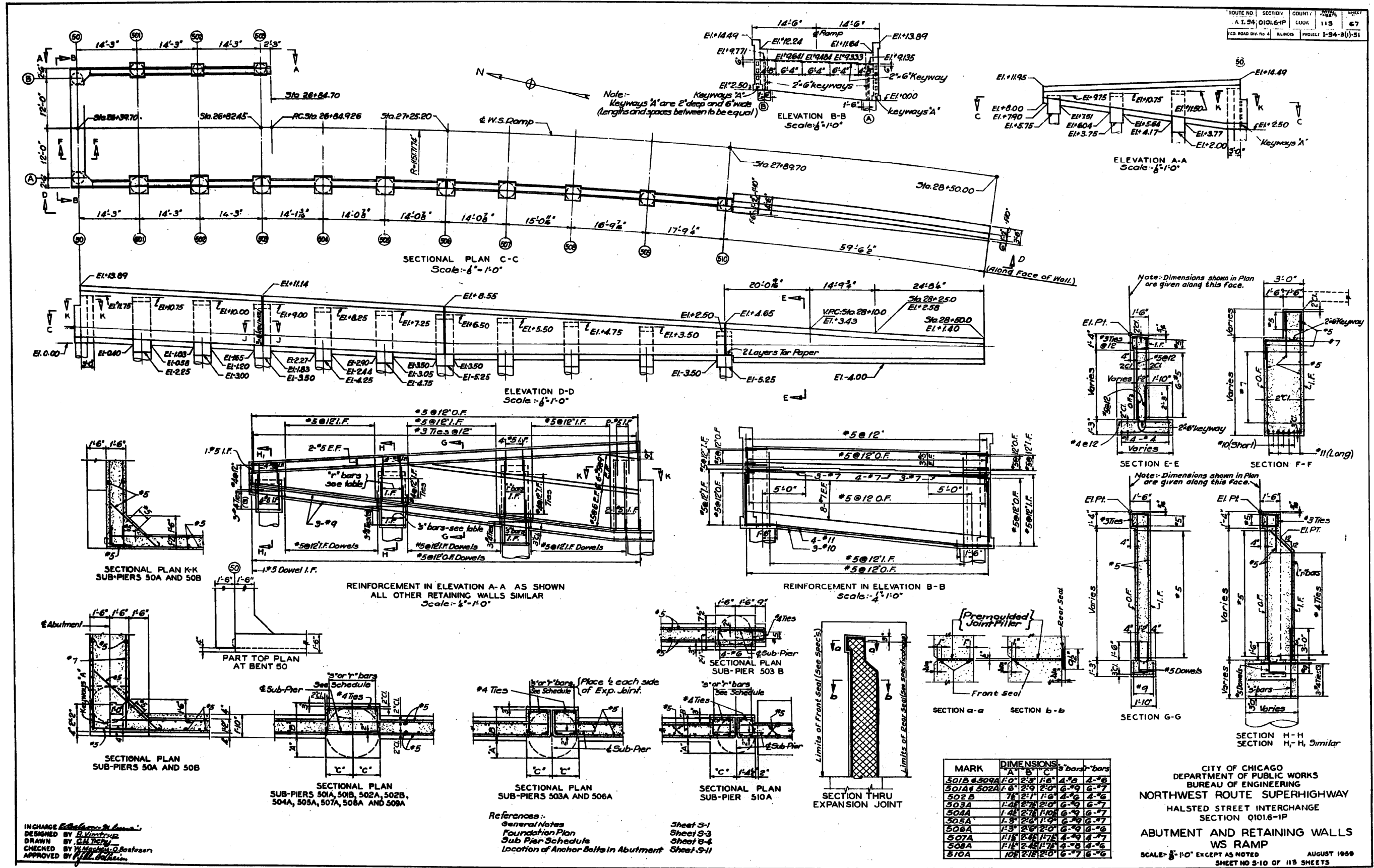
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	484

CONTRACT NO. 60W28
 ILLINOIS FED. AID PROJECT

SCALE: NTS SHEET 14 OF 48 SHEETS STA. TO STA.

FOR INFORMATION ONLY

ROUTE NO.	SECTION	COUNTY	SHEET
A. I. 94	0101.6-1P	COOK	113
CD ROAD DIV. NO. 4	ILLINOIS	PROJECT	I-94-2(1)-91



FILE PATH = C:\Project\14-0425 - 60W28 - 60W28 - 60W28 - sht-AS-BUILT-15.dgn



D160W28-sht-AS-BUILT-15.dgn
USER NAME = auyeuqh
PLOT SCALE = 1:8000 / in.
PLOT DATE = 4/25/2014

DESIGNED -
DRAWN -
CHECKED -
DATE - 04/28/14

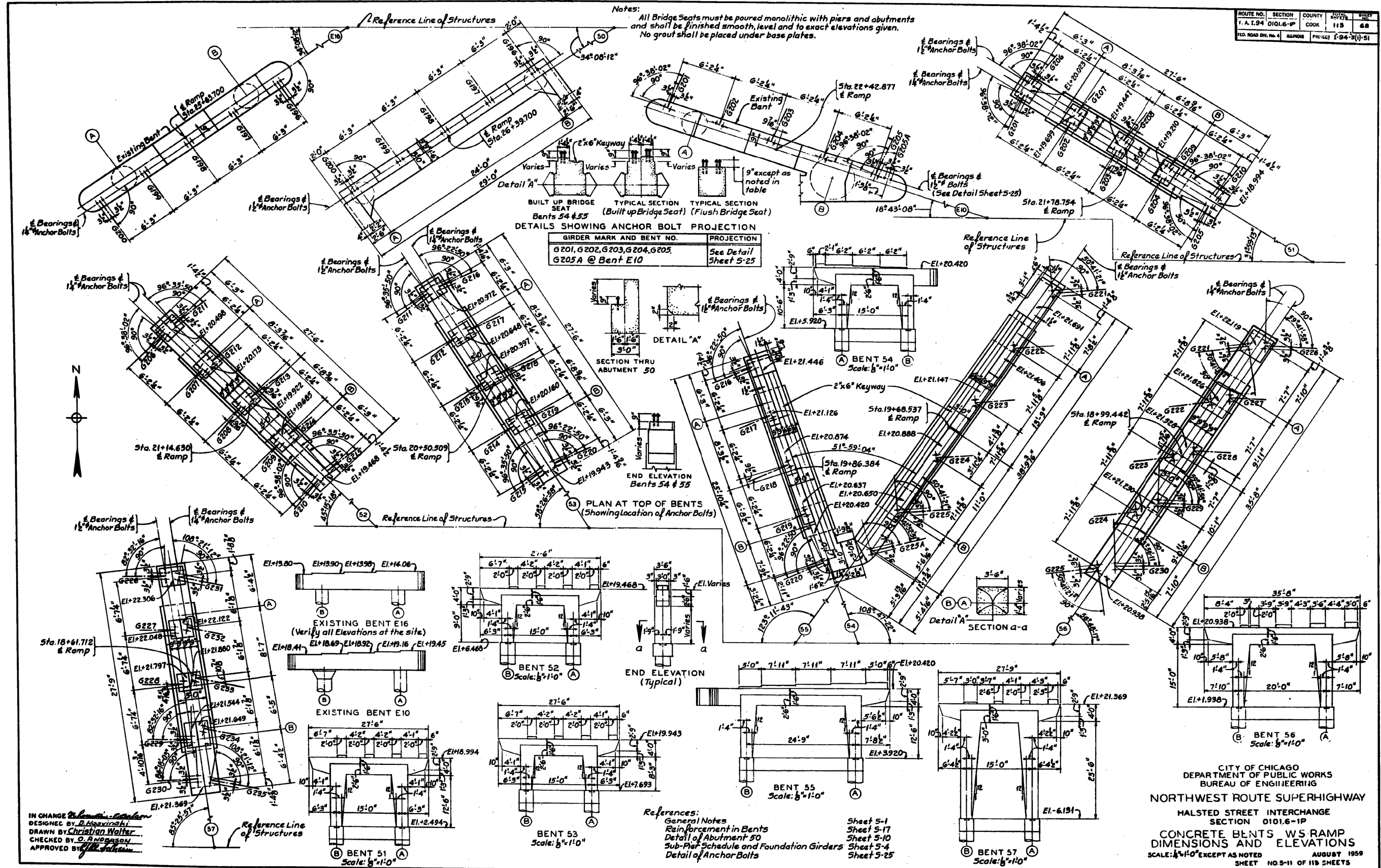
REVISED -
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS
SN 016-2449 & SN 016-2451
SCALE: NTS SHEET 15 OF 48 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	485
				CONTRACT NO. 60W28
ILLINOIS FED. AID PROJECT				

FOR INFORMATION ONLY



ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 94	0101.6-1P	COOK	113	68
FED. ROAD DIST. NO. 4	SECTION	PROJECT	1-94-3(1)-51	

Notes:
All Bridge Seats must be poured monolithic with piers and abutments and shall be finished smooth, level and to exact elevations given. No grout shall be placed under base plates.

GIRDER MARK AND BENT NO.	PROJECTION
G201, G202, G203, G204, G205	See Detail Sheet 5-25
G205A @ Bent E10	See Detail Sheet 5-25

References:
General Notes
Reinforcement in Bents
Detail of Abutment 30
Sub-Plot Schedule and Foundation Girders
Detail of Anchor Bolts

Sheet 5-1
Sheet 5-17
Sheet 5-10
Sheet 5-4
Sheet 5-25

IN CHANGE
DESIGNED BY
DRAWN BY
CHECKED BY
APPROVED BY

CITY OF CHICAGO
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
NORTHWEST ROUTE SUPERHIGHWAY
HALSTED STREET INTERCHANGE
SECTION 0101.6-1P
CONCRETE BENTS WS RAMP
DIMENSIONS AND ELEVATIONS
SCALE: 1/4"=1'-0" EXCEPT AS NOTED
AUGUST 1959
SHEET NO. 5-11 OF 113 SHEETS

FILE PATH = C:\Projects\14-0425 - 60W28 Structure\14-0425 - 60W28 Structure\14-0425 - 60W28 - sht-AS-BUILT-16.dgn



D160W28-sht-AS-BUILT-16.dgn
USER NAME = ayeuqh
PLOT SCALE = 1:8000 / in.
PLOT DATE = 4/25/2014

DESIGNED -	REVISED -
DRAWN -	REVISED -
CHECKED -	REVISED -
DATE - 04/28/14	REVISED -

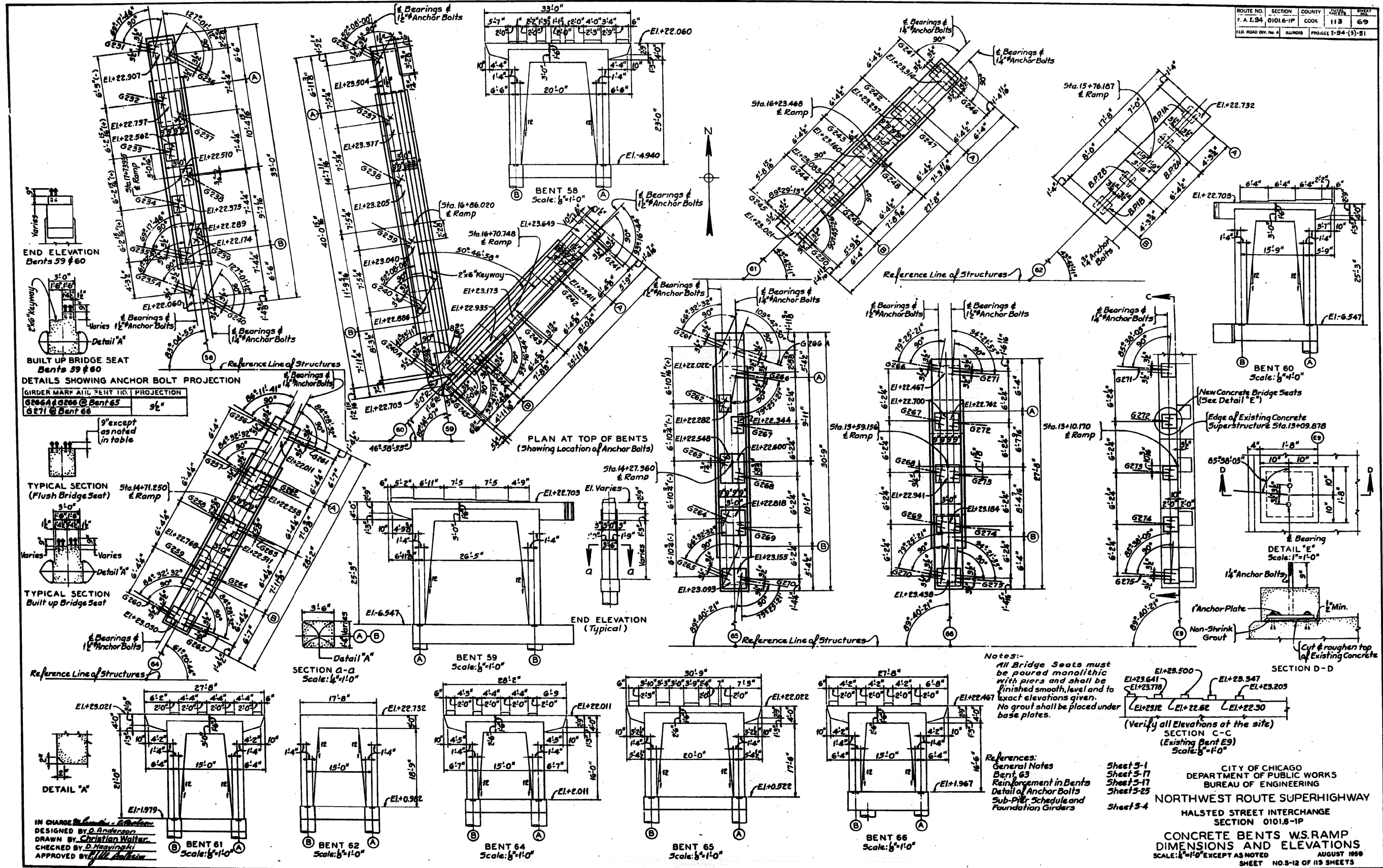
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS
SN 016-2449 & SN 016-2451
SCALE: NTS SHEET 16 OF 48 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	486
CONTRACT NO. 60W28				ILLINOIS FED. AID PROJECT

FOR INFORMATION ONLY

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. 194	0101.6-1P	COOK	113	69
ILL. ROAD DIV. No. 4	ILLINOIS	PROJECT 1-94-(3)-81		



IN CHARGE: *[Signature]*
 DESIGNED BY: *[Signature]*
 DRAWN BY: *[Signature]*
 CHECKED BY: *[Signature]*
 APPROVED BY: *[Signature]*

Notes:
 All Bridge Seats must be poured monolithic with piers and shall be finished smooth, level and to exact elevations given. No grout shall be placed under base plates.

References:
 General Notes
 Bent 63
 Reinforcement in Bents
 Detail of Anchor Bolts
 Sub-Pier Schedule and Foundation Girders

CITY OF CHICAGO
 DEPARTMENT OF PUBLIC WORKS
 BUREAU OF ENGINEERING
NORTHWEST ROUTE SUPERHIGHWAY
 HALSTED STREET INTERCHANGE
 SECTION 0101.6-1P
CONCRETE BENTS W.S.RAMP
 DIMENSIONS AND ELEVATIONS
 SCALE: 1/8"=1'-0" EXCEPT AS NOTED
 SHEET NO. 3-12 OF 113 SHEETS

FILE PATH = C:\Projects\14-0425 - 60W28 Structure\Bulbs\0101028-INT-AS-BUILT-17.dgn



D:\60W28-sht-AS-BUILT-17.dgn
 USER NAME = ayeuengh
 PLOT SCALE = 1.0000 / in.
 PLOT DATE = 4/25/2014

DESIGNED -	REVISD -
DRAWN -	REVISD -
CHECKED -	REVISD -
DATE - 04/28/14	REVISD -

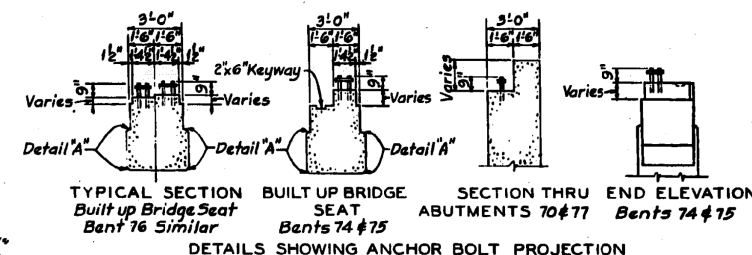
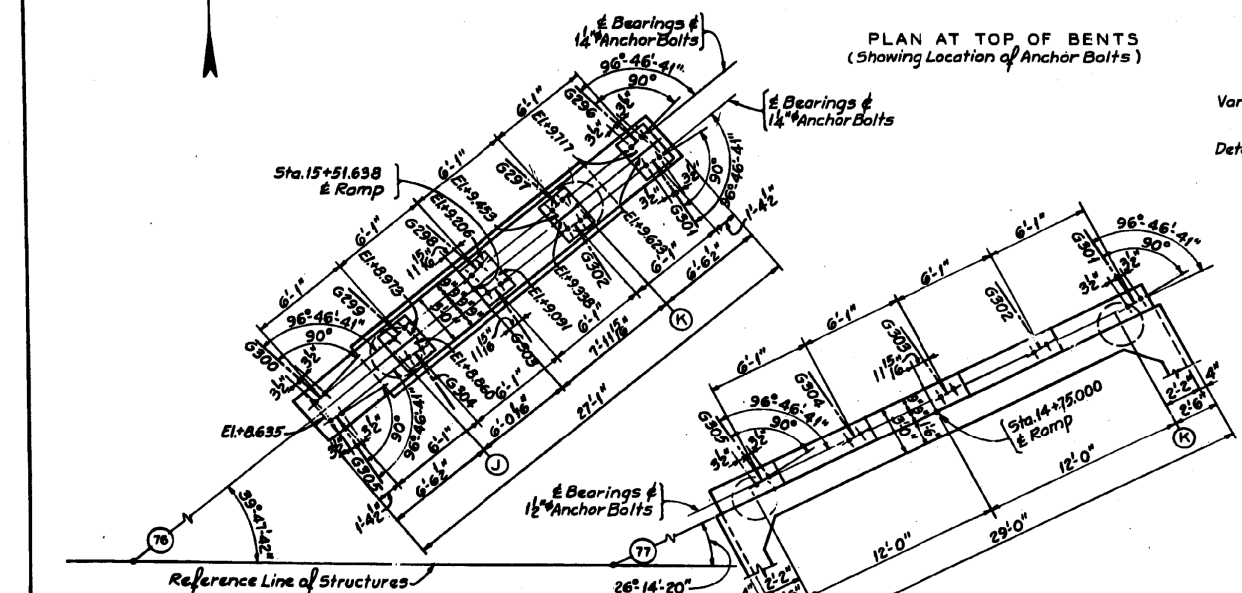
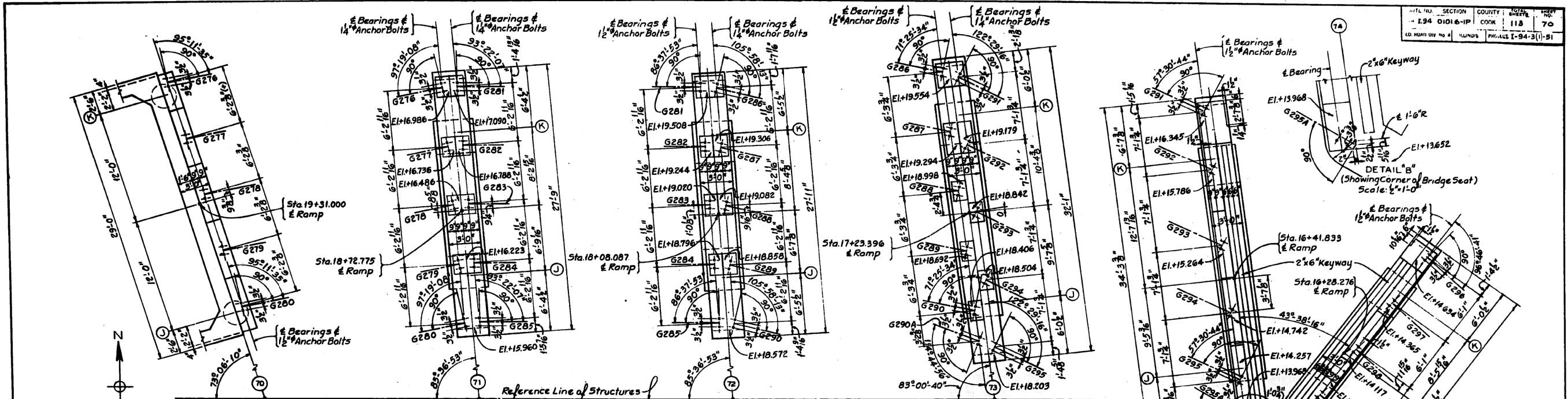
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS
 SN 016-2449 & SN 016-2451
 SCALE: NTS SHEET 17 OF 48 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	487
				CONTRACT NO. 60W28
ILLINOIS FED. AID PROJECT				

FOR INFORMATION ONLY

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
E94 0101.6-1P	COOK	118	70
ED. ROAD DIST. NO. 4	MUNICIPALITY	PROJECT NO. E-94-3(1)-51	

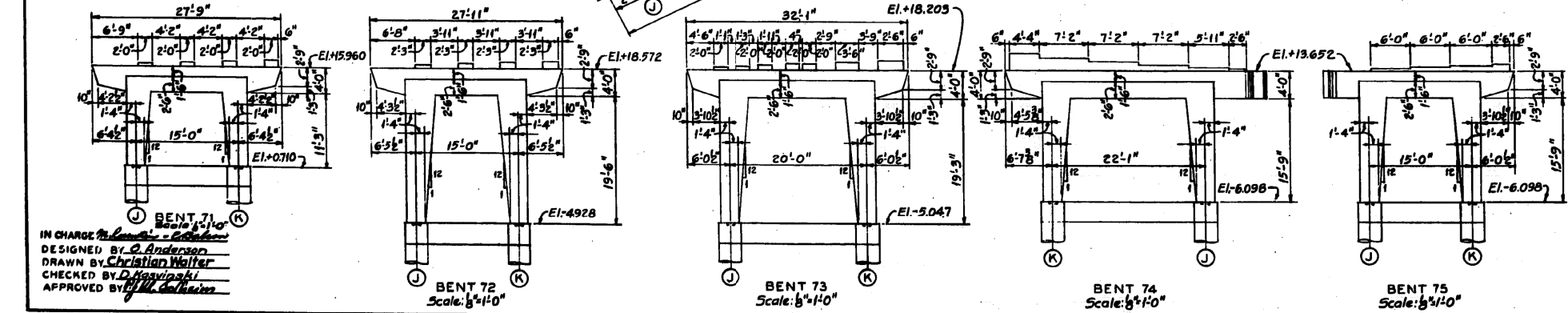
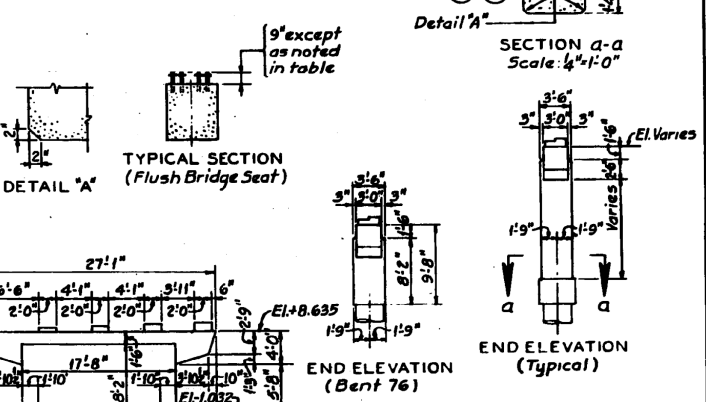


Notes:
All Bridge Seats must be poured monolithic with piers and abutments and shall be finished smooth, level and to exact elevations given. No grout shall be placed under base plates.

References:
General Notes
Reinforcement in Bents
Details of Abutment 70
Details of Abutment 77
Sub-Pier Schedule and Foundation Girders Sheet 5-4
Detail of Anchor Bolts

Sheet 5-1
Sheet 5-17
Sheet 5-5
Sheet 5-6
Sheet 5-4
Sheet 5-25

GIRDER MARK AND BENT NO.	PROJECTION
G 290A @ Bent 73	9 1/2'
G 290 @ Bent 72	9'
G 300 @ Bent 76	10'



IN CHARGE: *[Signature]*
DESIGNED BY: O. Anderson
DRAWN BY: Christian Walter
CHECKED BY: D. Karpinski
APPROVED BY: *[Signature]*

CITY OF CHICAGO
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
NORTHWEST ROUTE SUPERHIGHWAY
HALSTED STREET INTERCHANGE
SECTION 0101.6-1P
CONCRETE BENTS N.W. RAMP
DIMENSIONS AND ELEVATIONS
SCALE: 1/8"=1'-0" EXCEPT AS NOTED
SHEET NO. 5-13 OF 118 SHEETS
AUGUST 1989

FILE PATH = C:\Projects\14-0425 - 60W28 Structure\14-0425-60W28-AS-BUILT-18.dgn



D16W28-sht-AS-BUILT-18.dgn
USER NAME = auyeuqh
PLOT SCALE = 1:8000 / in.
PLOT DATE = 4/25/2014

DESIGNED -
DRAWN -
CHECKED -
DATE - 04/28/14

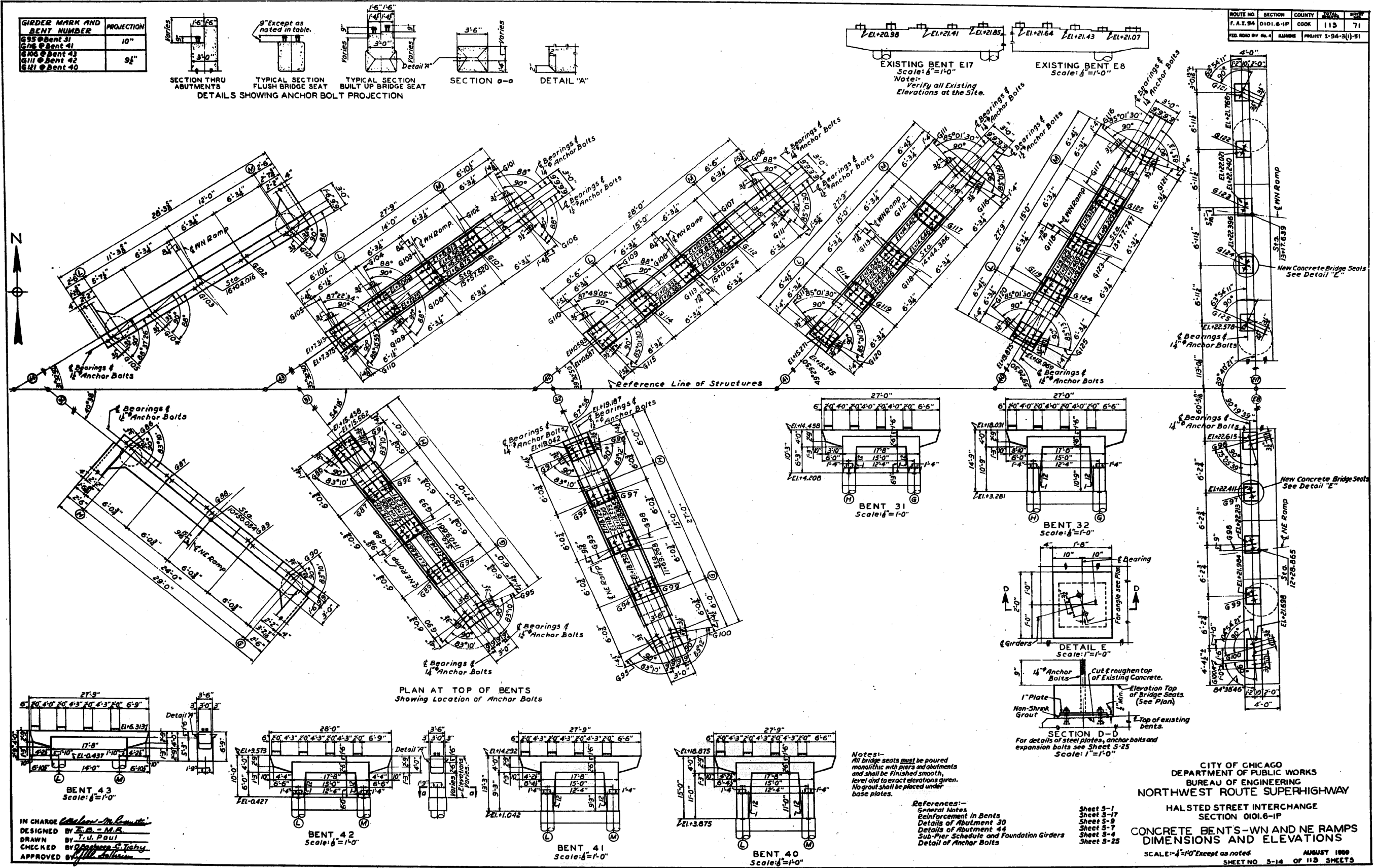
REVISED -
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS
SN 016-2449 & SN 016-2451
SCALE: NTS SHEET 18 OF 48 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	488
				CONTRACT NO. 60W28
ILLINOIS FED. AID PROJECT				

FOR INFORMATION ONLY



FILE PATH = C:\Projects\11-0425 - 60W28 Structure\11-0425-AS-BUILT-19.dgn



D160W28-sht-AS-BUILT-19.dgn
 USER NAME = auyeyungh
 PLOT SCALE = 1.0000 / in.
 PLOT DATE = 4/25/2014

DESIGNED -
 DRAWN -
 CHECKED -
 DATE - 04/28/14

REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

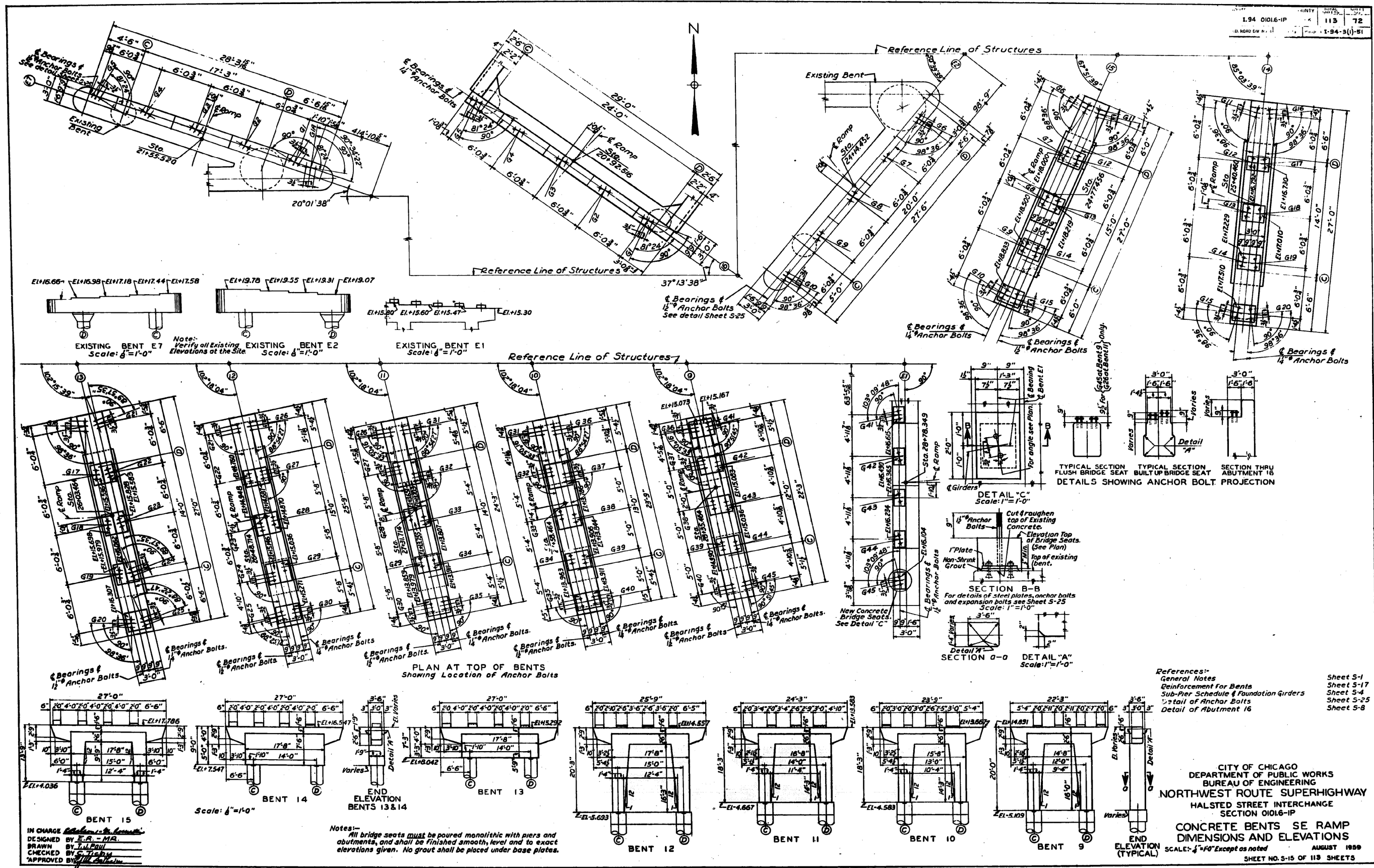
EXISTING AS-BUILTS
 SN 016-2449 & SN 016-2451

SCALE: NTS SHEET 19 OF 48 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	489
				CONTRACT NO. 60W28
ILLINOIS FED. AID PROJECT				

FOR INFORMATION ONLY

1.94 01016-IP 113 72
 U.S. ROAD DIV. 1-94-3(j)-51



FILE PATH = C:\Projects\14-0425 - 60W28 Structure\14-0425-AS-BUILT-20.dgn

IN CHARGE: *[Signature]*
 DESIGNED BY: E.A. - M.R.
 DRAWN BY: J.L. PAUL
 CHECKED BY: S. TISHY
 APPROVED BY: *[Signature]*



D160W28-sht-AS-BUILT-20.dgn
 USER NAME = ayeungh
 PLOT SCALE = 1:8000 / in.
 PLOT DATE = 4/25/2014

DESIGNED -	REVISED -
DRAWN -	REVISED -
CHECKED -	REVISED -
DATE - 04/28/14	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

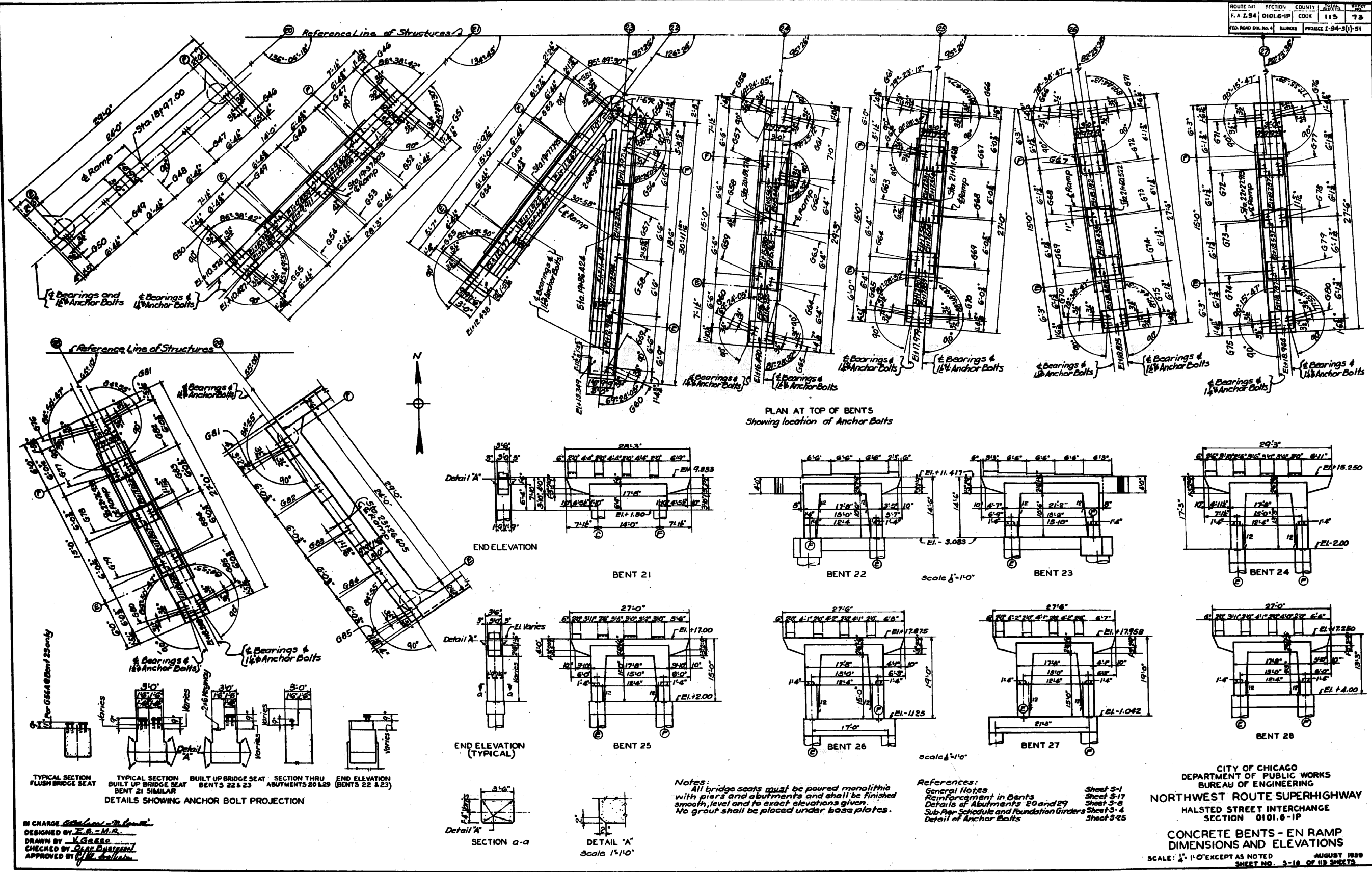
EXISTING AS-BUILTS
 SN 016-2449 & SN 016-2451

SCALE: NTS SHEET 20 OF 48 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	490
CONTRACT NO. 60W28			ILLINOIS FED. AID PROJECT	

FOR INFORMATION ONLY

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 1-94	0101.6-1P	COOK	115	73
FEED ROAD DIV. NO. 4	ALABAMA	PROJECT	I-94-3(1)-51	



FILE PATH = C:\Projects\14-0425 - 60W28 - 60W28 - 60W28 - sht-AS-BUILT-21.dgn



D160W28-sht-AS-BUILT-21.dgn
USER NAME = ayeungh
PLOT SCALE = 1:8000 / 1 in.
PLOT DATE = 4/25/2014

DESIGNED -
DRAWN -
CHECKED -
DATE - 04/28/14

REVISED -
REVISED -
REVISED -
REVISED -

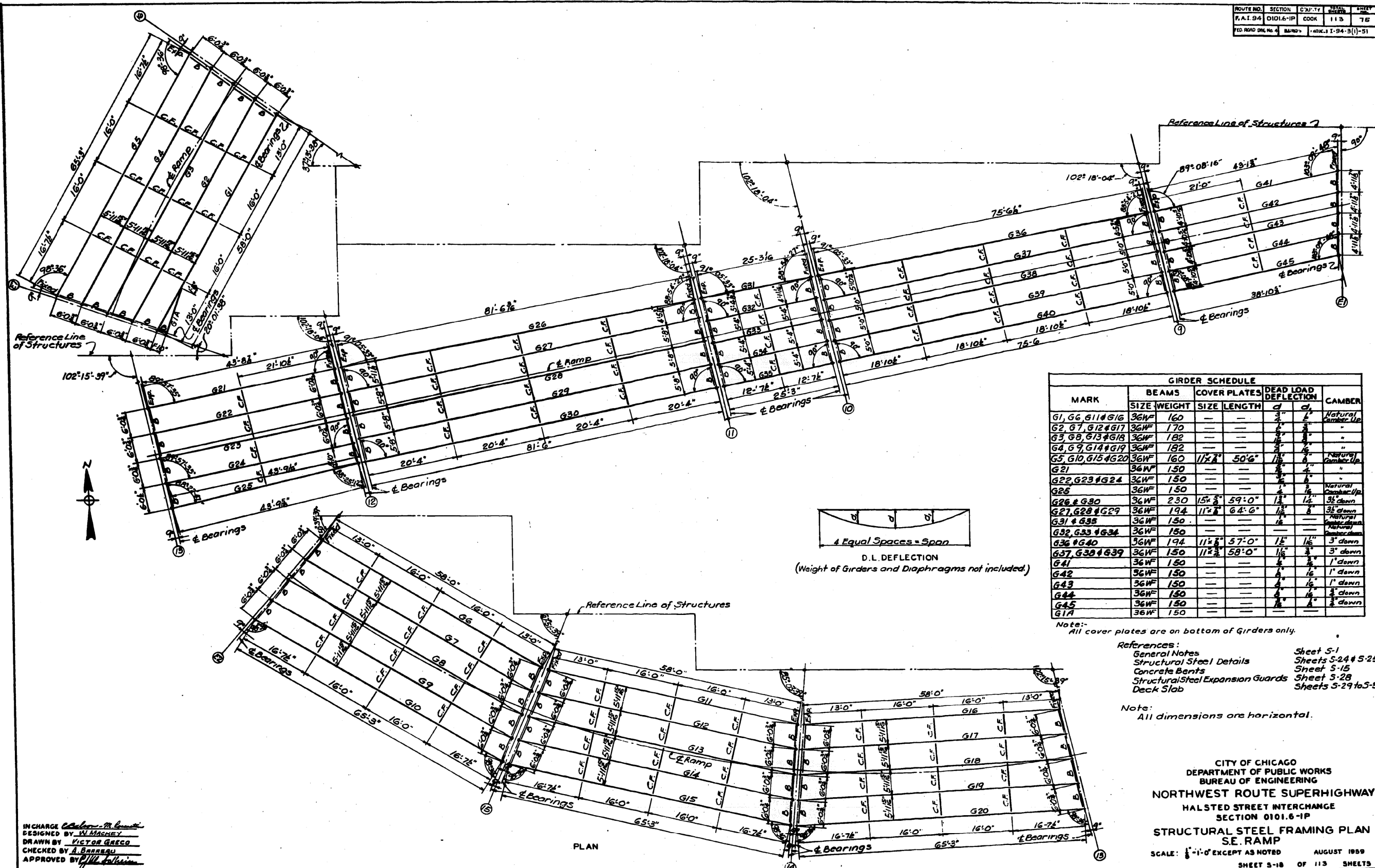
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS
SN 016-2449 & SN 016-2451
SCALE: NTS SHEET 21 OF 48 SHEETS STA. TO STA.

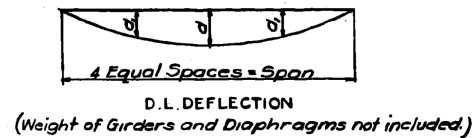
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	491
				CONTRACT NO. 60W28
ILLINOIS FED. AID PROJECT				

FOR INFORMATION ONLY

ROUTE NO.	SECTION	COUNTY	SHEET
F.A.I. 94	D101.6-1P	COOK	113 76
FD ROAD DIST. No.	BLAND	NO. 1	I-94-3(1)-51



MARK	BEAMS		COVER PLATES		DEAD LOAD DEFLECTION		CAMBER
	SIZE	WEIGHT	SIZE	LENGTH	d	e	
G1, G6, G11 & G16	36WF	160	—	—	3/4"	1/4"	Natural Camber Up
G2, G7, G12 & G17	36WF	170	—	—	3/4"	1/4"	"
G3, G8, G13 & G18	36WF	182	—	—	3/4"	1/4"	"
G4, G9, G14 & G19	36WF	182	—	—	3/4"	1/4"	"
G5, G10, G15 & G20	36WF	160	11/2"	50'-6"	3/4"	1/4"	Natural Camber Up
G21	36WF	150	—	—	3/4"	1/4"	"
G22, G23 & G24	36WF	150	—	—	3/4"	1/4"	"
G25	36WF	150	—	—	3/4"	1/4"	Natural Camber Up
G26 & G30	36WF	230	15'-3"	59'-0"	1 1/2"	1/4"	3/8" down
G27, G28 & G29	36WF	194	11'-8"	64'-0"	1 1/2"	1/4"	3/8" down
G31 & G35	36WF	150	—	—	1 1/2"	1/4"	Natural Camber down
G32, G33 & G34	36WF	150	—	—	1 1/2"	1/4"	Natural Camber down
G36 & G40	36WF	194	11'-8"	57'-0"	1 1/2"	1/4"	3" down
G37, G38 & G39	36WF	150	11'-3"	58'-0"	1 1/2"	1/4"	3" down
G41	36WF	150	—	—	1 1/2"	1/4"	1" down
G42	36WF	150	—	—	1 1/2"	1/4"	1" down
G43	36WF	150	—	—	1 1/2"	1/4"	1" down
G44	36WF	150	—	—	1 1/2"	1/4"	1" down
G45	36WF	150	—	—	1 1/2"	1/4"	1" down
G1A	36WF	150	—	—	—	—	—



Note: All cover plates are on bottom of Girders only.

References:
 General Notes
 Structural Steel Details
 Concrete Bents
 Structural Steel Expansion Guards
 Deck Slab

Sheet S-1
 Sheets S-24 & S-25
 Sheet S-15
 Sheet S-28
 Sheets S-29 to S-31

Note: All dimensions are horizontal.

CITY OF CHICAGO
 DEPARTMENT OF PUBLIC WORKS
 BUREAU OF ENGINEERING
 NORTHWEST ROUTE SUPERHIGHWAY
 HALSTED STREET INTERCHANGE
 SECTION 0101.6-1P
 STRUCTURAL STEEL FRAMING PLAN
 S.E. RAMP
 SCALE: 1/8" = 1'-0" EXCEPT AS NOTED
 AUGUST 1999
 SHEET S-18 OF 113 SHEETS

IN CHARGE: *Victor M. Greco*
 DESIGNED BY: *W. Maghey*
 DRAWN BY: *VICTOR GRECO*
 CHECKED BY: *A. Barreque*
 APPROVED BY: *J. J. Tolson*

FILE PATH = C:\Projects\14-0425 - 60W28 Structure\14-0425 - 60W28 Structure\14-0425 - sht-AS-BUILT-23.dgn



D160W28-sht-AS-BUILT-23.dgn
 USER NAME = auyeungh
 PLOT SCALE = 1:80000 / 1"
 PLOT DATE = 4/25/2014

DESIGNED -
 DRAWN -
 CHECKED -
 DATE - 04/28/14

REVISED -
 REVISED -
 REVISED -
 REVISED -

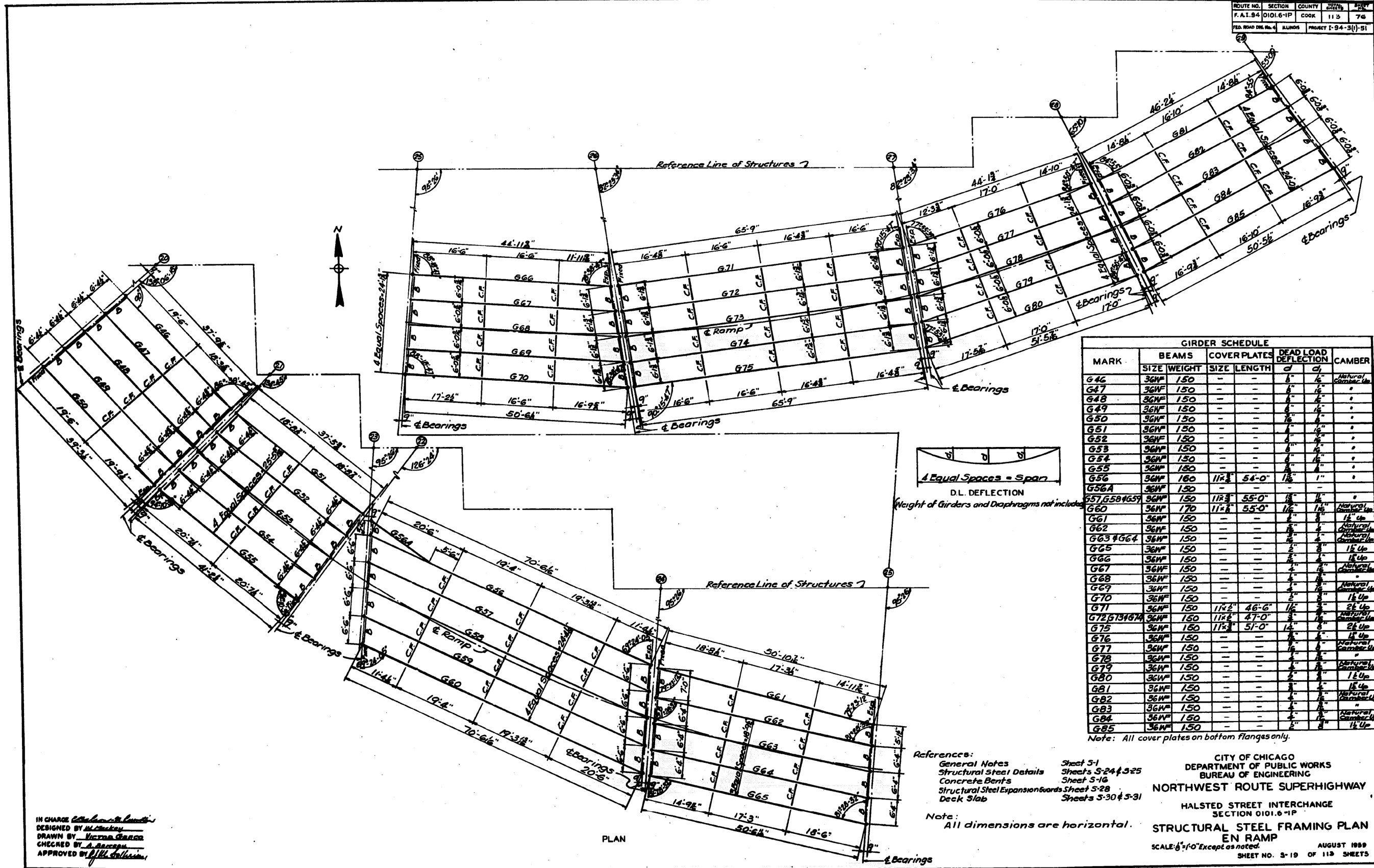
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS
 SN 016-2449 & SN 016-2451
 SCALE: NTS
 SHEET 23 OF 48 SHEETS
 STA. TO STA.

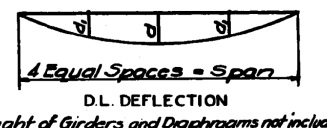
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	493
CONTRACT NO. 60W28				
ILLINOIS FED. AID PROJECT				

FOR INFORMATION ONLY

ROUTE NO.	SECTION	COUNTY	SHEET	TOTAL SHEETS
F.A.I. 94	0101.6-1P	COOK	113	76
FED. ROAD DIST. NO. 4	ILLINOIS	PROJECT	I-94-3(1)-51	



MARK	BEAMS		COVER PLATES		DEAD LOAD DEFLECTION		CAMBER
	SIZE	WEIGHT	SIZE	LENGTH	d	c	
G46	36WF	150	-	-	1/2"	1/2"	Natural Camber Up
G47	36WF	150	-	-	1/2"	1/2"	"
G48	36WF	150	-	-	1/2"	1/2"	"
G49	36WF	150	-	-	1/2"	1/2"	"
G50	36WF	150	-	-	1/2"	1/2"	"
G51	36WF	150	-	-	1/2"	1/2"	"
G52	36WF	150	-	-	1/2"	1/2"	"
G53	36WF	150	-	-	1/2"	1/2"	"
G54	36WF	150	-	-	1/2"	1/2"	"
G55	36WF	150	-	-	1/2"	1/2"	"
G56	36WF	160	11x2"	54'-0"	1/2"	1/2"	"
G56A	36WF	150	-	-	-	-	"
G57, G58, G59	36WF	150	11x2"	55'-0"	1/2"	1/2"	"
G60	36WF	170	11x2"	55'-0"	1/2"	1/2"	Natural Camber Up
G61	36WF	150	-	-	1/2"	1/2"	1 1/2" Up
G62	36WF	150	-	-	1/2"	1/2"	Natural Camber Up
G63 & G64	36WF	150	-	-	1/2"	1/2"	Natural Camber Up
G65	36WF	150	-	-	1/2"	1/2"	1 1/2" Up
G66	36WF	150	-	-	1/2"	1/2"	1 1/2" Up
G67	36WF	150	-	-	1/2"	1/2"	Natural Camber Up
G68	36WF	150	-	-	1/2"	1/2"	Natural Camber Up
G69	36WF	150	-	-	1/2"	1/2"	1 1/2" Up
G70	36WF	150	-	-	1/2"	1/2"	1 1/2" Up
G71	36WF	150	11x2"	46'-6"	1/2"	1/2"	2 1/2" Up
G72, G73, G74	36WF	150	11x2"	47'-0"	1/2"	1/2"	Natural Camber Up
G75	36WF	150	11x2"	51'-0"	1/2"	1/2"	2 1/2" Up
G76	36WF	150	-	-	1/2"	1/2"	1 1/2" Up
G77	36WF	150	-	-	1/2"	1/2"	Natural Camber Up
G78	36WF	150	-	-	1/2"	1/2"	"
G79	36WF	150	-	-	1/2"	1/2"	Natural Camber Up
G80	36WF	150	-	-	1/2"	1/2"	1 1/2" Up
G81	36WF	150	-	-	1/2"	1/2"	1 1/2" Up
G82	36WF	150	-	-	1/2"	1/2"	Natural Camber Up
G83	36WF	150	-	-	1/2"	1/2"	"
G84	36WF	150	-	-	1/2"	1/2"	Natural Camber Up
G85	36WF	150	-	-	1/2"	1/2"	1 1/2" Up



References:
 General Notes Sheet 5-1
 Structural Steel Details Sheets 5-24 & 5-25
 Concrete Bents Sheet 5-16
 Structural Steel Expansion Joints Sheet 5-28
 Deck Slab Sheets 5-30 & 5-31

Note:
 All dimensions are horizontal.

CITY OF CHICAGO
 DEPARTMENT OF PUBLIC WORKS
 BUREAU OF ENGINEERING
 NORTHWEST ROUTE SUPERHIGHWAY
 HALSTED STREET INTERCHANGE
 SECTION 0101.6-1P
 STRUCTURAL STEEL FRAMING PLAN
 EN RAMP
 SCALE: 1/4" = 1'-0" Except as noted.
 AUGUST 1999
 SHEET NO. 3-19 OF 113 SHEETS

IN CHARGE: *[Signature]*
 DESIGNED BY: *[Signature]*
 DRAWN BY: *[Signature]*
 CHECKED BY: *[Signature]*
 APPROVED BY: *[Signature]*

FILE PATH = C:\Projects\14-0425 - 60W28 StructSteel\14-0425-sht-AS-BUILT-24.dgn



D160W28-sht-AS-BUILT-24.dgn
 USER NAME = ayeunghg
 PLOT SCALE = 1:8000 / 1" = 80'-0"
 PLOT DATE = 4/25/2014

DESIGNED -	REVISED -
DRAWN -	REVISED -
CHECKED -	REVISED -
DATE - 04/28/14	REVISED -

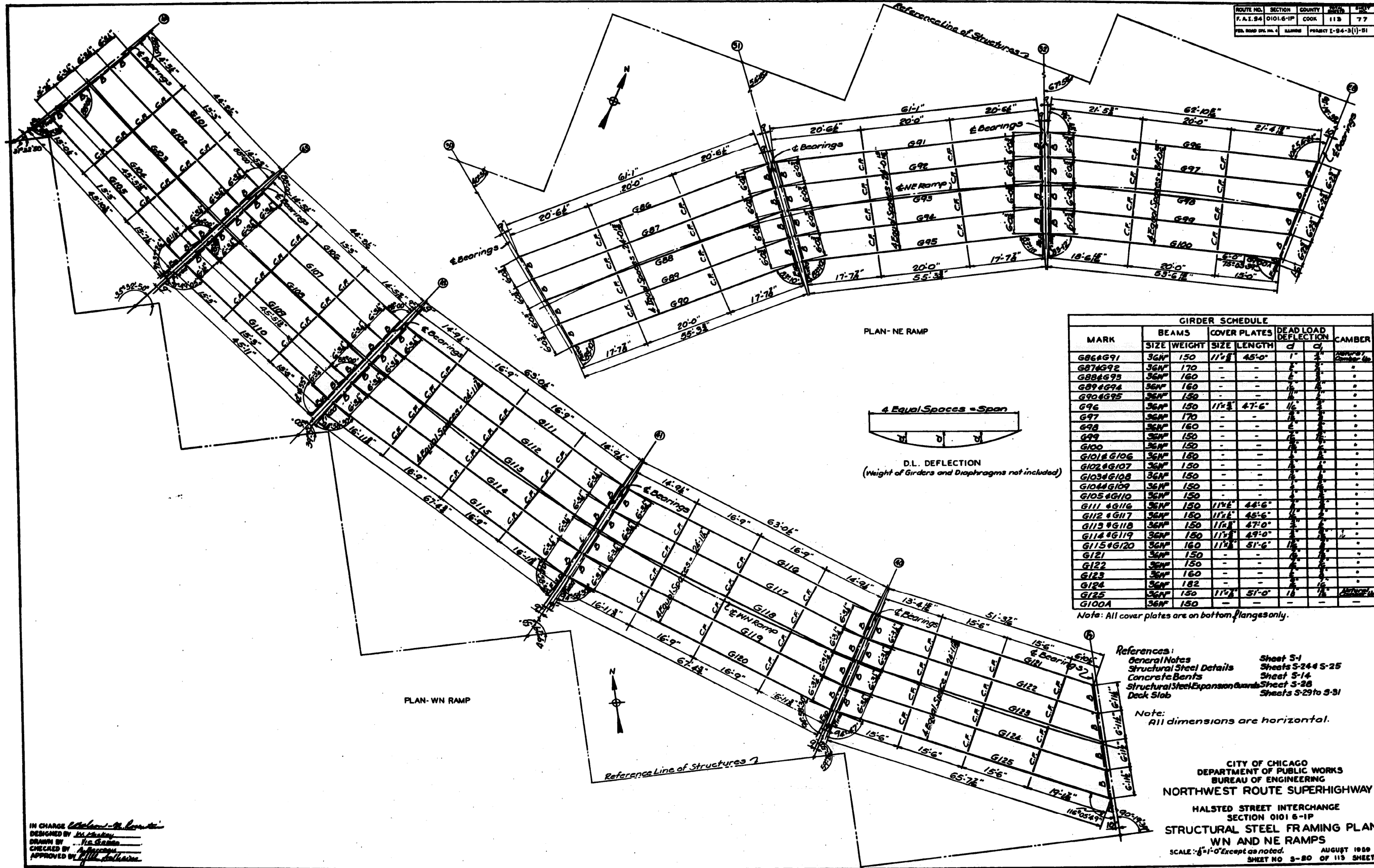
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS
 SN 016-2449 & SN 016-2451
 SCALE: NTS SHEET 24 OF 48 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	494
CONTRACT NO. 60W28				
ILLINOIS FED. AID PROJECT				

FOR INFORMATION ONLY

ROUTE NO.	SECTION	COUNTY	DATE	SHEET
F.A.I. 94	0101.6-1P	COOK	113	77
FED. ROAD DIST. NO.	PLANING	PROJECT	I-94-3(1)-91	



MARK	BEAMS		COVER PLATES		DEAD LOAD DEFLECTION		CAMBER
	SIZE	WEIGHT	SIZE	LENGTH	C	D	
G86 & G91	36N	150	11 1/2"	45'-0"	1"	2"	
G87 & G92	36N	170	-	-	-	-	
G88 & G93	36N	160	-	-	-	-	
G89 & G94	36N	160	-	-	-	-	
G90 & G95	36N	150	-	-	-	-	
G96	36N	150	11 1/2"	47'-6"	1 1/2"	2"	
G97	36N	170	-	-	-	-	
G98	36N	160	-	-	-	-	
G99	36N	150	-	-	-	-	
G100	36N	150	-	-	-	-	
G101 & G106	36N	180	-	-	-	-	
G102 & G107	36N	150	-	-	-	-	
G103 & G108	36N	150	-	-	-	-	
G104 & G109	36N	150	-	-	-	-	
G105 & G110	36N	150	-	-	-	-	
G111 & G116	36N	150	11 1/2"	44'-6"	1"	2"	
G112 & G117	36N	150	11 1/2"	45'-6"	1"	2"	
G113 & G118	36N	150	11 1/2"	47'-0"	1"	2"	
G114 & G119	36N	150	11 1/2"	49'-0"	1"	2"	
G115 & G120	36N	160	11 1/2"	51'-6"	1 1/2"	2"	
G121	36N	150	-	-	-	-	
G122	36N	150	-	-	-	-	
G123	36N	160	-	-	-	-	
G124	36N	182	-	-	-	-	
G125	36N	150	11 1/2"	51'-0"	1"	2"	
G100A	36N	150	-	-	-	-	

Note: All cover plates are on bottom flanges only.

- References:
- General Notes
 - Structural Steel Details
 - Concrete Bents
 - Structural Steel Expansion Joints
 - Deck Slab
- Sheet 5-1
Sheets 5-24 & 5-25
Sheet 5-14
Sheet 5-28
Sheets 5-29 to 5-31

Note: All dimensions are horizontal.

CITY OF CHICAGO
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
NORTHWEST ROUTE SUPERHIGHWAY
HALSTED STREET INTERCHANGE
SECTION 0101.6-1P
STRUCTURAL STEEL FRAMING PLAN
WN AND NE RAMPS
SCALE: 1/8" = 1'-0" Except as noted. AUGUST 1999
SHEET NO 3-80 OF 113 SHEETS

IN CHARGE: *[Signature]*
DESIGNED BY: *[Signature]*
DRAWN BY: *[Signature]*
CHECKED BY: *[Signature]*
APPROVED BY: *[Signature]*

FILE PATH = C:\Projects\14-0425 - 60W28 Structure\14-0425 - 60W28 Structure\14-0425 - 60W28 - sht-AS-BUILT-25.dgn



D160W28-sht-AS-BUILT-25.dgn
USER NAME = ayeungh
PLOT SCALE = 1:8000 / in.
PLOT DATE = 4/25/2014

DESIGNED	-	REVISED	-
DRAWN	-	REVISED	-
CHECKED	-	REVISED	-
DATE	04/28/14	REVISED	-

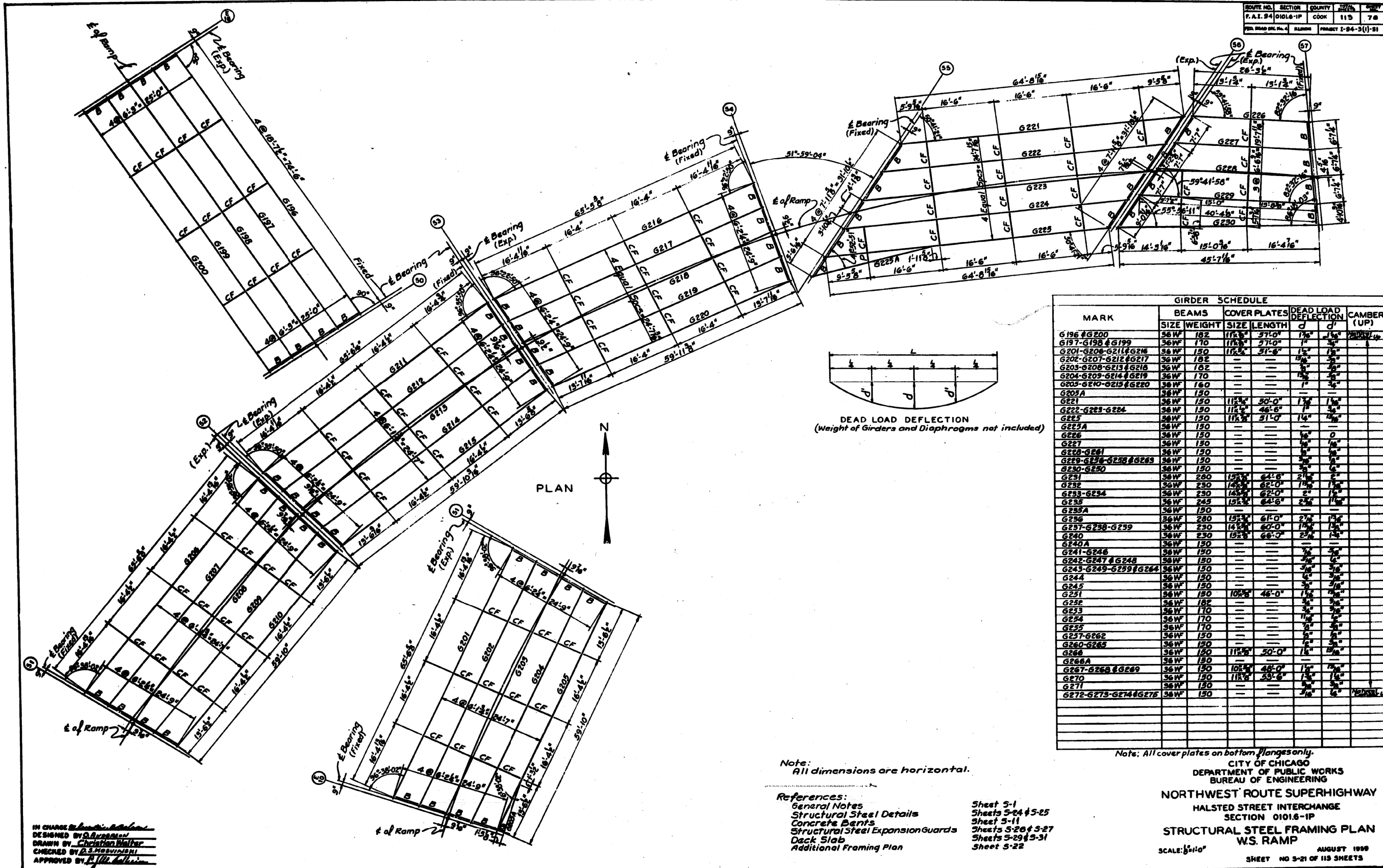
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS
SN 016-2449 & SN 016-2451
SCALE: NTS SHEET 25 OF 48 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	495
CONTRACT NO. 60W28				ILLINOIS FED. AID PROJECT

FOR INFORMATION ONLY

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 94	01016-IP	COOK	115	78
PROJ. ROAD DIST. No.	BLANK	PROJECT	I-94-3(1)-81	



MARK	BEAMS		COVER PLATES		DEAD LOAD DEFLECTION		CAMBER (UP)
	SIZE	WEIGHT	SIZE	LENGTH	d	d'	
G 196	#G200	36W 182	11 1/2"	37'-0"	1 1/2"	1 1/2"	2.0000 Up
G 197-G 198	#G199	36W 170	11 1/2"	37'-0"	1 1/2"	1 1/2"	2.0000 Up
G 201-G 206-G 211	#G216	36W 150	11 1/2"	31'-6"	1 1/2"	1 1/2"	2.0000 Up
G 207-G 212	#G217	36W 182	11 1/2"	37'-0"	1 1/2"	1 1/2"	2.0000 Up
G 203-G 208-G 213	#G218	36W 182	11 1/2"	37'-0"	1 1/2"	1 1/2"	2.0000 Up
G 204-G 209-G 214	#G219	36W 170	11 1/2"	37'-0"	1 1/2"	1 1/2"	2.0000 Up
G 205-G 210-G 215	#G220	36W 160	11 1/2"	37'-0"	1 1/2"	1 1/2"	2.0000 Up
G 205A		36W 150	11 1/2"	37'-0"	1 1/2"	1 1/2"	2.0000 Up
G 221		36W 150	11 1/2"	30'-0"	1 1/2"	1 1/2"	2.0000 Up
G 222-G 223-G 224		36W 190	11 1/2"	46'-6"	1 1/2"	1 1/2"	2.0000 Up
G 225		36W 150	11 1/2"	31'-0"	1 1/2"	1 1/2"	2.0000 Up
G 225A		36W 150	11 1/2"	31'-0"	1 1/2"	1 1/2"	2.0000 Up
G 226		36W 150	11 1/2"	31'-0"	1 1/2"	1 1/2"	2.0000 Up
G 227		36W 150	11 1/2"	31'-0"	1 1/2"	1 1/2"	2.0000 Up
G 228-G 231		36W 150	11 1/2"	31'-0"	1 1/2"	1 1/2"	2.0000 Up
G 232-G 236-G 238-G 239		36W 150	11 1/2"	31'-0"	1 1/2"	1 1/2"	2.0000 Up
G 240		36W 150	11 1/2"	31'-0"	1 1/2"	1 1/2"	2.0000 Up
G 240A		36W 150	11 1/2"	31'-0"	1 1/2"	1 1/2"	2.0000 Up
G 241-G 246		36W 150	11 1/2"	31'-0"	1 1/2"	1 1/2"	2.0000 Up
G 247-G 248		36W 150	11 1/2"	31'-0"	1 1/2"	1 1/2"	2.0000 Up
G 243-G 249-G 259	#G264	36W 150	11 1/2"	31'-0"	1 1/2"	1 1/2"	2.0000 Up
G 244		36W 150	11 1/2"	31'-0"	1 1/2"	1 1/2"	2.0000 Up
G 245		36W 150	11 1/2"	31'-0"	1 1/2"	1 1/2"	2.0000 Up
G 251		36W 150	10'-0"	46'-0"	1 1/2"	1 1/2"	2.0000 Up
G 252		36W 182	11 1/2"	37'-0"	1 1/2"	1 1/2"	2.0000 Up
G 253		36W 170	11 1/2"	37'-0"	1 1/2"	1 1/2"	2.0000 Up
G 254		36W 170	11 1/2"	37'-0"	1 1/2"	1 1/2"	2.0000 Up
G 255		36W 170	11 1/2"	37'-0"	1 1/2"	1 1/2"	2.0000 Up
G 257-G 262		36W 150	11 1/2"	31'-0"	1 1/2"	1 1/2"	2.0000 Up
G 260-G 265		36W 150	11 1/2"	31'-0"	1 1/2"	1 1/2"	2.0000 Up
G 266		36W 150	11 1/2"	31'-0"	1 1/2"	1 1/2"	2.0000 Up
G 266A		36W 150	11 1/2"	31'-0"	1 1/2"	1 1/2"	2.0000 Up
G 267-G 268-G 269		36W 150	10'-0"	46'-0"	1 1/2"	1 1/2"	2.0000 Up
G 270		36W 150	11 1/2"	31'-0"	1 1/2"	1 1/2"	2.0000 Up
G 271		36W 150	11 1/2"	31'-0"	1 1/2"	1 1/2"	2.0000 Up
G 272-G 273-G 274	#G276	36W 150	11 1/2"	31'-0"	1 1/2"	1 1/2"	2.0000 Up

Note: All cover plates on bottom flanges only.

CITY OF CHICAGO
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING

NORTHWEST ROUTE SUPERHIGHWAY
HALSTED STREET INTERCHANGE
SECTION 01016-IP

STRUCTURAL STEEL FRAMING PLAN
W.S. RAMP

SCALE: 3/8"=1'-0" AUGUST 1999
SHEET NO 5-21 OF 115 SHEETS

Note:
All dimensions are horizontal.

References:
General Notes
Structural Steel Details
Concrete Bents
Structural Steel Expansion Guards
Deck Slab
Additional Framing Plan

Sheet 5-1
Sheets 5-24 & 5-25
Sheet 5-11
Sheets 5-26 & 5-27
Sheets 5-29 & 5-31
Sheet 5-22

IN CHARGE: *[Signature]*
DESIGNED BY: *[Signature]*
DRAWN BY: *[Signature]*
CHECKED BY: *[Signature]*
APPROVED BY: *[Signature]*

FILE PATH = C:\Projects\14-0425 - 60W28 Structure\14-0425 - 60W28 Structure\14-0425 - 60W28-AS-BUILT-26.dgn



D160W28-sht-AS-BUILT-26.dgn
USER NAME = auyeungh
PLOT SCALE = 1:8000 / 1"=80'
PLOT DATE = 4/25/2014

DESIGNED -	REVISED -
DRAWN -	REVISED -
CHECKED -	REVISED -
DATE - 04/28/14	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

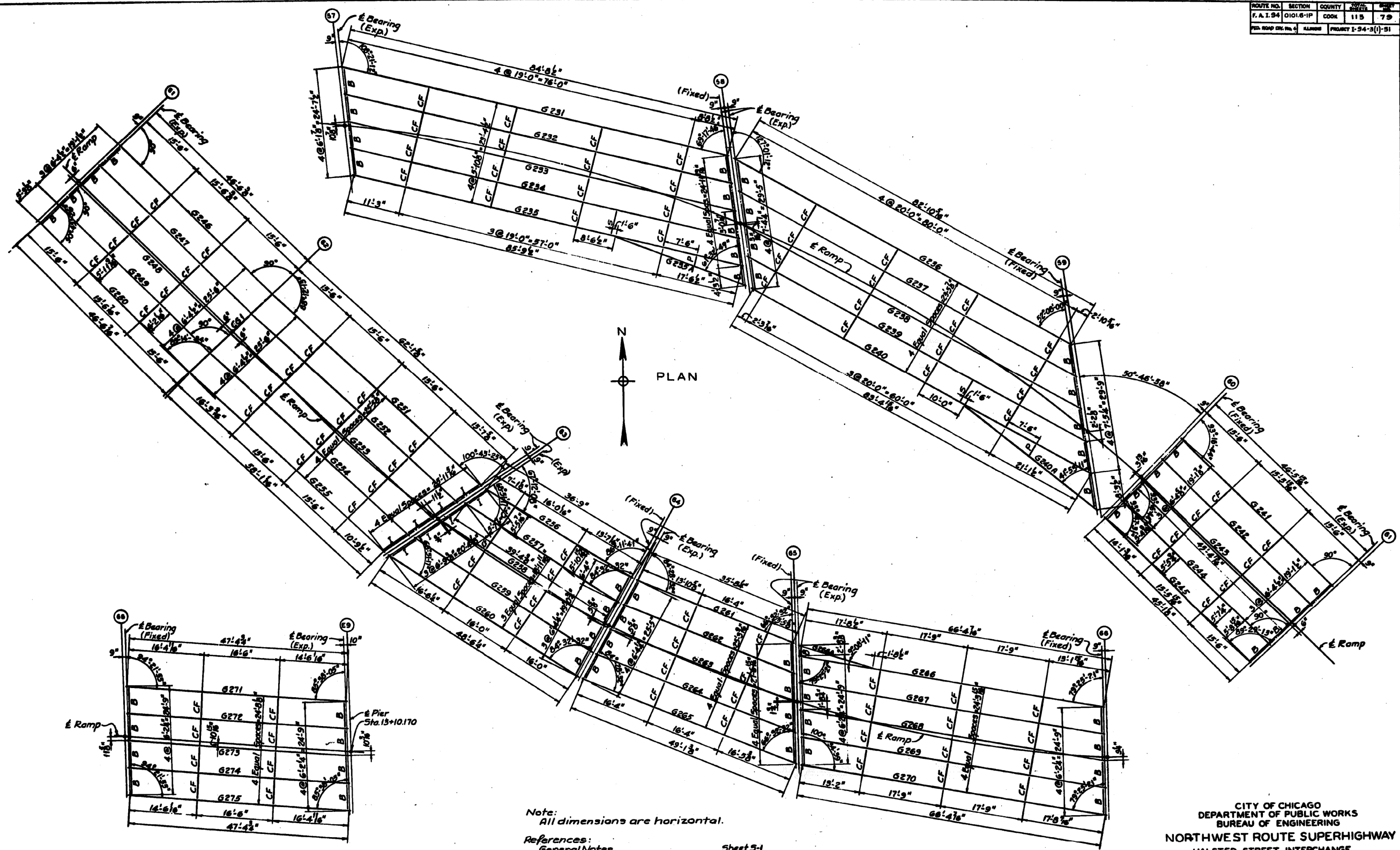
EXISTING AS-BUILTS
SN 016-2449 & SN 016-2451

SCALE: NTS SHEET 26 OF 48 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	496
CONTRACT NO. 60W28				
ILLINOIS FED. AID PROJECT				

FOR INFORMATION ONLY

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. I. 94	0101.6-1P	COOK	113	79
PLAN RAMP ORL No. 4	ALIGNED	PRIORITY 1-94-3(1)-21		



Note:
All dimensions are horizontal.

- References:
- General Notes
 - Structural Steel Details
 - Concrete Beris
 - Structural Steel Expansion Guards
 - Deck Slab
 - Additional Framing Plan
 - Girder Schedule

- Sheet 5-1
- Sheets 5-24 & 5-25
- Sheets 5-11 & 5-12
- Sheets 5-26 & 5-27
- Sheets 5-28 & 5-31
- Sheet 5-21
- Sheet 5-21

IN CHARGE *[Signature]*
DESIGNED BY *[Signature]*
DRAWN BY *[Signature]*
CHECKED BY *[Signature]*
APPROVED BY *[Signature]*

CITY OF CHICAGO
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
NORTHWEST ROUTE SUPERHIGHWAY
HALSTED STREET INTERCHANGE
SECTION 0101.6-1P
STRUCTURAL STEEL FRAMING PLAN
W.S. RAMP
SCALE: 1/4" = 1'-0"
AUGUST 1999
SHEET NO. 3-22 OF 113 SHEETS

FILE PATH = C:\Projects\14-0425 - 60W28 StructBulds\14-0425-sht-AS-BUILT-27.dgn



D160W28-sht-AS-BUILT-27.dgn
USER NAME = auyeungh
PLOT SCALE = 1:8000 / 1 in.
PLOT DATE = 4/25/2014

DESIGNED -	REVISED -
DRAWN -	REVISED -
CHECKED -	REVISED -
DATE - 04/28/14	REVISED -

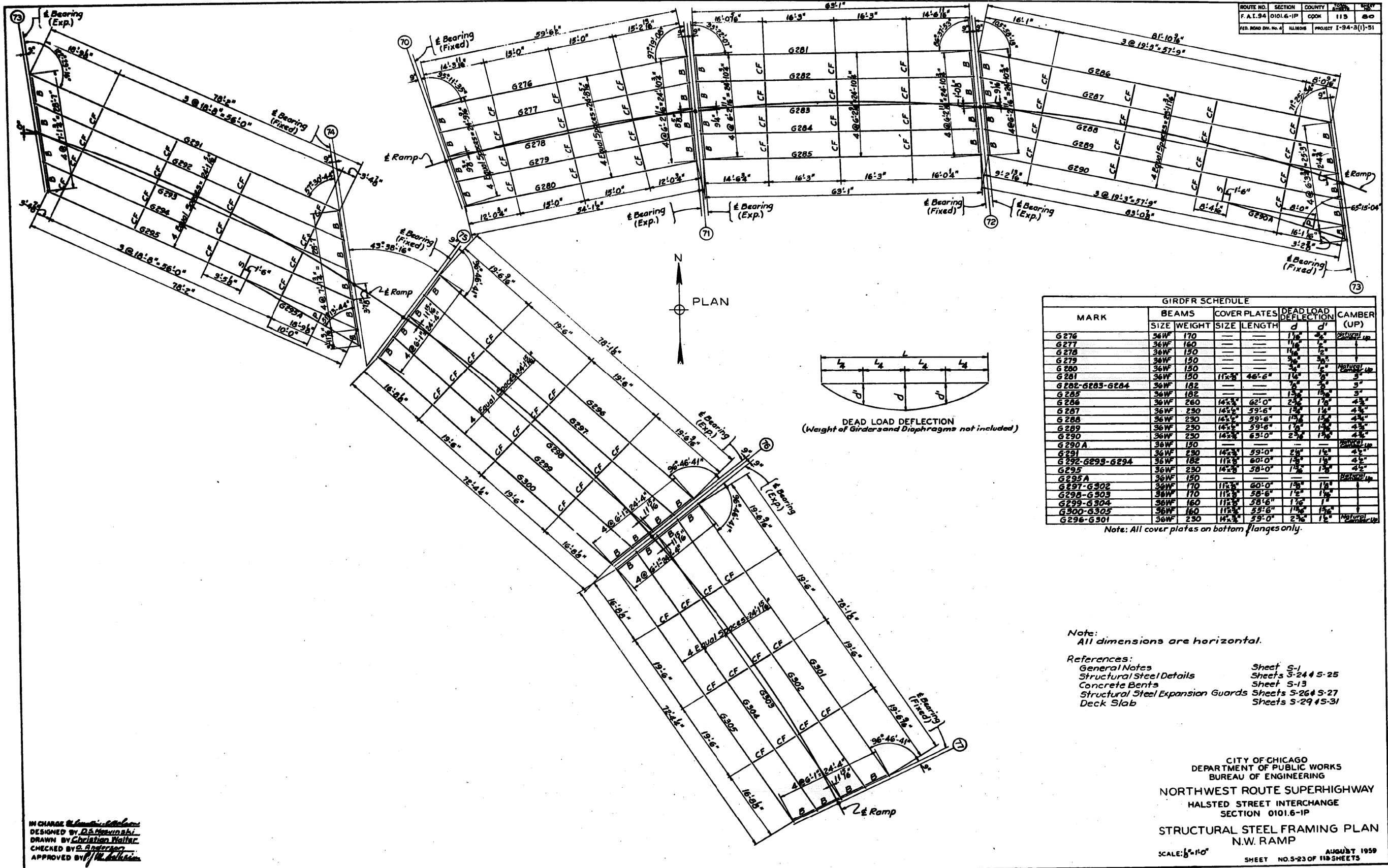
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS
SN 016-2449 & SN 016-2451

SCALE: NTS SHEET 27 OF 48 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	497
CONTRACT NO. 60W28				
ILLINOIS FED. AID PROJECT				

FOR INFORMATION ONLY



ROUTE NO.	SECTION	COUNTY	POST MILE
F. A. I. 94	0101.6-1P	COOK	113
FED. ROAD DIV. NO. 4	ILLINOIS	PROJECT	I-94-3(1)-51

MARK	BEAMS		COVER PLATES		DEAD LOAD DEFLECTION		CAMBER (UP)
	SIZE	WEIGHT	SIZE	LENGTH	d	d'	
G276	36WF	170			1 1/2"	2 1/2"	Natural Up
G277	36WF	160			1 1/2"	2 1/2"	Natural Up
G278	36WF	150			1 1/2"	2 1/2"	Natural Up
G279	36WF	150			3/4"	2 1/2"	Natural Up
G280	36WF	150			3/4"	2 1/2"	Natural Up
G281	36WF	150	11x3"	46'-6"	1 1/2"	2 1/2"	5"
G282-G283-G284	36WF	182			7/8"	2 1/2"	5"
G285	36WF	182			1 1/2"	2 1/2"	5"
G286	36WF	260	14x3"	62'-0"	2 1/2"	1 1/2"	4 1/2"
G287	36WF	230	14x3"	59'-6"	1 1/2"	1 1/2"	4 1/2"
G288	36WF	230	14x3"	59'-6"	1 1/2"	1 1/2"	4 1/2"
G289	36WF	230	14x3"	59'-6"	1 1/2"	1 1/2"	4 1/2"
G290	36WF	230	14x3"	63'-0"	2 1/2"	1 1/2"	4 1/2"
G290A	36WF	190					Natural Up
G291	36WF	230	14x3"	59'-0"	2 1/2"	1 1/2"	4 1/2"
G292-G293-G294	36WF	182	11x3"	60'-0"	1 1/2"	1 1/2"	4 1/2"
G295	36WF	230	14x3"	58'-0"	1 1/2"	1 1/2"	4 1/2"
G295A	36WF	150					Natural Up
G297-G302	36WF	170	11x3"	60'-0"	1 1/2"	1 1/2"	1"
G298-G303	36WF	170	11x3"	58'-6"	1 1/2"	1 1/2"	1"
G299-G304	36WF	160	11x3"	58'-6"	1 1/2"	1 1/2"	1"
G300-G305	36WF	160	11x3"	59'-6"	1 1/2"	1 1/2"	1"
G296-G301	36WF	230	14x3"	59'-0"	2 1/2"	1 1/2"	Natural Up

Note: All cover plates on bottom flanges only.

Note: All dimensions are horizontal.

- References:
- General Notes Sheet S-1
 - Structural Steel Details Sheets S-24 & S-25
 - Concrete Bents Sheet S-13
 - Structural Steel Expansion Guards Sheets S-26 & S-27
 - Deck Slab Sheets S-29 & S-31

CITY OF CHICAGO
 DEPARTMENT OF PUBLIC WORKS
 BUREAU OF ENGINEERING
 NORTHWEST ROUTE SUPERHIGHWAY
 HALSTED STREET INTERCHANGE
 SECTION 0101.6-1P
 STRUCTURAL STEEL FRAMING PLAN
 N.W. RAMP
 SCALE: 1/8"=1'-0"
 SHEET NO. 5-23 OF 118 SHEETS

IN CHARGE: *[Signature]*
 DESIGNED BY: D.S. [Signature]
 DRAWN BY: Christian Walter
 CHECKED BY: [Signature]
 APPROVED BY: [Signature]

FILE PATH = C:\Project\14-0425 - 60W28 - Structure\Builts\DI60W28-sht-AS-BUILT-28.dgn



DI60W28-sht-AS-BUILT-28.dgn
 USER NAME = auyeungh
 PLOT SCALE = 1:8000 / 1"
 PLOT DATE = 4/25/2014

DESIGNED -	REVISED -
DRAWN -	REVISED -
CHECKED -	REVISED -
DATE - 04/28/14	REVISED -

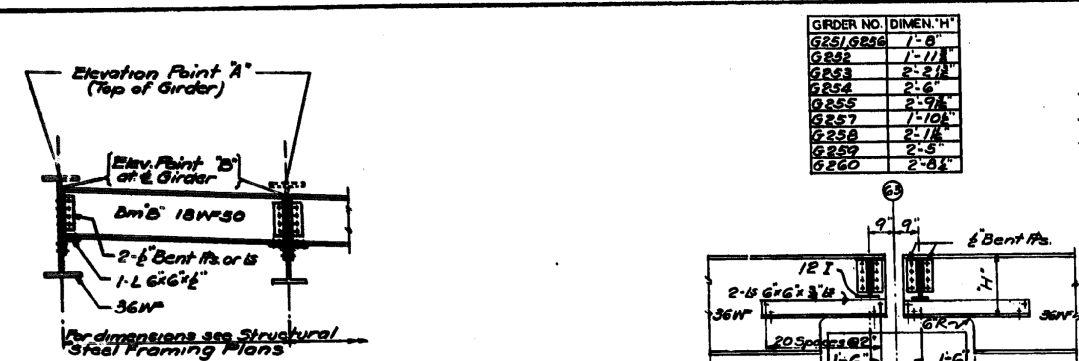
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS
 SN 016-2449 & SN 016-2451
 SCALE: NTS SHEET 28 OF 48 SHEETS STA. TO STA.

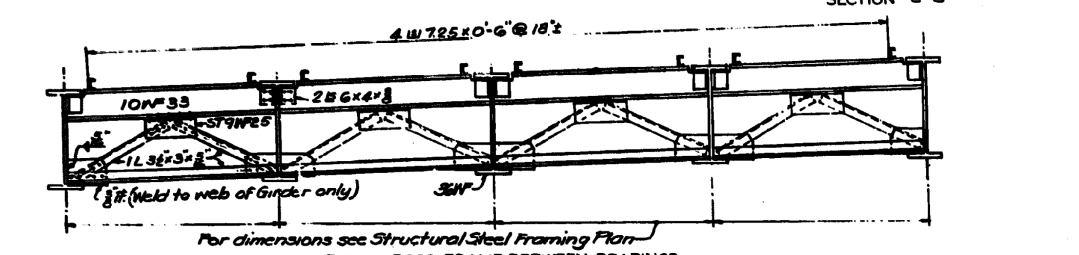
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	498
CONTRACT NO. 60W28				
ILLINOIS FED. AID PROJECT				

FOR INFORMATION ONLY

1.94 0101.6-IP 118 01
1-94-3(1)-51

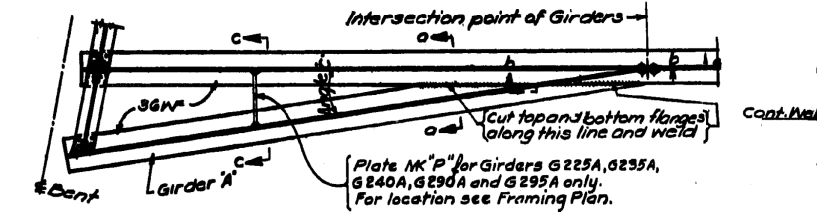


TYPICAL SECTION AT & BEARINGS (except for Bents 62 & 63)

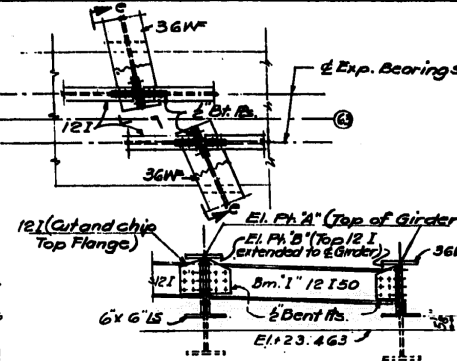


TYPICAL CROSS FRAME BETWEEN BEARINGS

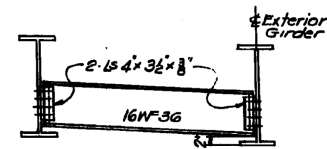
GIRDER NO.	ANGLE °C
G1A	9-10-25
G25A	10-25-25
G25B	9-38-25
G25C	7-48-25
G25D	7-48-25
G25E	7-48-25
G25F	7-48-25
G25G	7-48-25
G25H	7-48-25
G25I	7-48-25
G25J	7-48-25
G25K	7-48-25
G25L	7-48-25
G25M	7-48-25
G25N	7-48-25
G25O	7-48-25
G25P	7-48-25
G25Q	7-48-25
G25R	7-48-25
G25S	7-48-25
G25T	7-48-25
G25U	7-48-25
G25V	7-48-25
G25W	7-48-25
G25X	7-48-25
G25Y	7-48-25
G25Z	7-48-25



DETAIL OF 'A' GIRDERS



SECTION AT & BEARINGS (BENT 63)

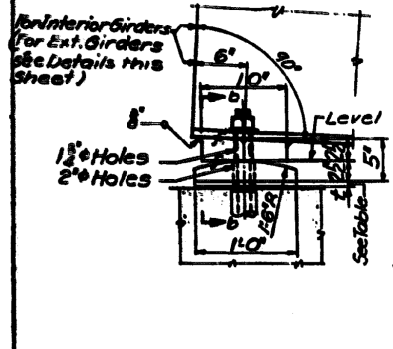


DETAIL STRUT 'S'

GIRDER NO.	WEST BEARING		EAST BEARING		GIRDER NO.	WEST BEARING		EAST BEARING		GIRDER NO.	WEST BEARING		EAST BEARING	
	ELEV. POINT A	ELEV. POINT B	ELEV. POINT A	ELEV. POINT B		ELEV. POINT A	ELEV. POINT B	ELEV. POINT A	ELEV. POINT B		ELEV. POINT A	ELEV. POINT B	ELEV. POINT A	ELEV. POINT B
G1	20.087	19.876	16.427	16.120	G86	15.318	15.042	18.875	18.578	G231	25.775	25.442	26.372	26.043
G1A	20.077	19.818	—	—	G87	15.047	14.802	18.583	18.333	G232	25.539	25.208	26.154	25.850
G2	20.417	20.135	16.557	16.359	G88	14.797	14.557	18.333	18.094	G233	25.297	24.975	25.979	25.658
G3	20.638	20.380	16.828	16.599	G89	14.563	14.318	18.094	17.849	G234	25.066	24.741	25.792	25.465
G4	20.898	20.625	17.047	16.844	G90	14.318	14.078	17.875	17.604	G235	24.801	24.508	25.604	25.273
G5	21.132	20.870	17.365	17.083	G91	18.979	18.667	22.458	22.203	G235A	—	—	25.473	25.140
G6	22.497	22.234	21.213	21.005	G92	18.708	18.422	22.167	21.958	G236	26.376	26.054	26.973	26.640
G7	22.747	22.474	21.437	21.245	G93	18.458	18.182	21.937	21.714	G237	26.154	25.829	26.794	26.469
G8	23.008	22.719	21.677	21.490	G94	18.219	17.943	21.677	21.474	G238	25.927	25.603	26.622	26.298
G9	23.238	22.963	21.958	21.754	G95	18.000	17.695	21.448	21.229	G239	25.706	25.378	26.457	26.131
G10	23.415	23.203	22.260	21.974	G96	22.604	22.292	26.031	25.719	G240	25.477	25.152	26.303	25.969
G11	21.213	20.974	19.974	19.745	G97	22.323	22.047	25.849	25.594	G240A	—	—	26.117	25.784
G12	21.437	21.219	20.229	19.984	G98	22.000	21.807	25.641	25.464	G241	27.063	26.730	26.728	26.429
G13	21.677	21.458	20.469	20.229	G99	21.667	21.563	25.401	25.255	G242	26.825	26.492	26.651	26.347
G14	21.958	21.703	20.687	20.469	G100	21.448	21.323	25.115	25.037	G243	26.587	26.254	26.574	26.265
G15	22.260	21.948	20.957	20.714	G100A	—	—	25.115	24.979	G244	26.349	26.016	26.497	26.182
G16	19.974	19.714	18.719	18.484	G101	6.500	6.255	9.729	9.427	G245	26.117	25.817	26.435	26.108
G17	20.167	19.958	18.974	18.729	G102	6.750	7.505	9.979	9.677	G246	26.728	26.415	26.158	25.936
G18	20.489	20.198	19.156	18.969	G103	7.000	7.760	10.229	9.927	G247	26.651	26.338	26.274	26.002
G19	20.687	20.443	19.437	19.213	G104	7.250	7.910	10.479	10.182	G248	26.574	26.261	26.382	26.068
G20	20.937	20.646	19.734	19.453	G105	7.469	7.234	10.729	10.427	G249	26.497	26.184	26.463	26.134
G21	18.750	18.458	17.474	17.462	G106	9.749	9.336	12.990	12.708	G250	26.435	26.122	26.544	26.200
G22	19.000	18.698	18.177	18.870	G107	10.042	9.786	13.240	12.958	G251	26.158	25.936	25.557	25.286
G23	19.245	18.943	18.365	18.057	G108	10.292	10.036	13.500	13.208	G252	26.274	26.002	25.837	25.540
G24	19.479	19.182	18.562	18.245	G109	10.542	10.286	13.750	13.463	G253	26.382	26.068	26.125	25.809
G25	19.724	19.427	18.681	18.376	G110	10.792	10.531	14.000	13.713	G254	26.463	26.134	26.390	26.067
G26	17.974	17.656	17.042	16.719	G111	13.079	12.807	17.708	17.396	G255	26.544	26.200	26.655	26.325
G27	18.156	17.838	17.120	16.797	G112	13.313	13.057	17.958	17.646	G256	25.557	25.286	25.425	25.171
G28	18.338	18.010	17.224	16.901	G113	13.552	13.312	18.208	17.901	G257	25.763	25.480	26.722	25.424
G29	18.505	18.187	17.328	17.005	G114	13.802	13.562	18.458	18.157	G258	26.037	25.750	25.925	25.678
G30	18.687	18.365	17.398	17.109	G115	14.115	13.812	18.698	18.401	G259	26.304	26.023	26.182	25.932
G31	17.000	16.719	17.135	16.818	G116	17.819	17.505	22.292	21.996	G260	26.580	26.306	26.444	26.186
G32	17.120	16.812	17.203	16.875	G117	18.063	17.755	22.542	22.245	G261	25.425	25.169	25.433	25.180
G33	17.224	16.911	17.360	16.981	G118	18.313	18.005	22.792	22.495	G262	25.672	25.423	25.676	25.447
G34	17.328	17.005	17.513	17.195	G119	18.563	18.255	23.042	22.745	G263	25.925	25.677	25.928	25.714
G35	17.396	17.064	17.580	17.257	G120	18.813	18.505	23.292	23.000	G264	26.182	25.931	26.232	25.981
G36	17.135	16.833	18.442	18.098	G121	22.354	22.043	25.182	24.876	G265	26.444	26.186	26.507	26.249
G37	17.203	16.949	18.469	18.127	G122	22.604	22.333	25.432	25.156	G266	25.609	25.360	25.881	25.646
G38	17.260	16.949	18.443	18.125	G123	22.896	22.588	25.687	25.364	G266A	25.509	25.175	—	—
G39	17.323	17.005	18.406	18.078	G124	23.146	22.834	25.944	25.571	G267	25.758	25.520	26.114	25.872
G40	17.380	17.057	18.359	18.031	G125	23.385	23.068	26.195	25.724	G268	26.014	25.760	26.355	26.078
G41	18.580	18.255	20.031	19.708	G196	17.254	16.927	18.279	17.917	G269	26.232	26.000	26.598	26.324
G42	18.500	18.209	19.906	19.574	G197	17.358	17.016	18.078	17.760	G270	26.569	26.240	26.852	26.550
G43	18.453	18.116	19.781	19.443	G198	17.418	17.109	17.922	17.609	G271	26.964	26.672	26.617	26.322
G44	18.406	18.115	19.651	19.333	G199	17.499	17.198	17.771	17.455	G272	26.176	25.895	26.761	26.471
G45	18.380	18.068	19.521	19.203	G200	17.602	17.292	17.594	17.302	G273	26.355	26.118	26.914	26.638
G46	18.253	18.657	17.750	17.490	G201	22.354	22.043	25.182	24.876	G274	26.598	26.341	27.055	26.771
G47	11.150	10.844	13.021	12.745	G202	22.604	22.333	25.432	25.156	G275	26.852	26.564	27.192	26.904
G48	11.302	11.021	13.276	13.000	G203	22.968	22.642	25.687	25.364	G276	16.500	16.166	20.426	20.092
G49	11.479	11.194	13.581	13.255	G204	23.277	22.933	25.944	25.622	G277	16.252	15.918	20.163	19.829
G50	11.656	11.375	13.792	13.510	G205	23.627	23.245	26.204	25.881	G278	16.004	15.670	19.900	19.566
G51	12.812	12.568	14.833	14.548	G206	23.977	23.557	26.464	26.142	G279	15.756	15.422	19.637	19.303
G52	13.078	12.823	15.083	14.823	G207	24.327	23.867	26.724	26.402	G280	15.508	15.174	19.374	19.040
G53	13.328	13.073	15.333	15.078	G208	24.677	24.177	26.984	26.662	G281	20.504	20.175	22.922	22.588
G54	13.583	13.328	15.583	15.328	G209	25.027	24.487	27.244	26.922	G282	20.242	19.912	22.698	22.364
G55	13.844	13.583	15.833	15.578	G210	25.377	24.797	27.504	27.182	G283	19.940	19.651	22.474	22.140
G56	14.105	13.844	16.083	15.828	G211	25.727	25.107	27.764	27.442	G284	19.677	19.390	22.250	21.916
G57	14.366	14.105	16.333	16.078	G212	26.077	25.417	28.024	27.702	G285	19.414	19.129	22.026	21.692
G58	14.627	14.366	16.583	16.328	G213	26.427	25.717	28.284	27.962	G286	22.955	22.621	23.001	22.673
G59	14.888	14.627	16.833	16.578	G214	26.777	26.027	28.544	28.222	G287	22.723	22.397	22.711	22.377
G60	15.149	14.888	17.083	16.828	G215	27.127	26.377	28.804	28.482	G288	22.499	22.173	22.415	22.081
G61	15.410	15.149	17.333	17.078	G216	27.477	26.627	29.064	28.742	G289	22.275	21.949	22.109	21.785
G62	15.671	15.410	17.583	17.328	G217	27.827	26.877	29.324	28.992	G290	22.051	21.725	21.823	21.489
G63	15.932	15.671	17.833	17.578	G218	28.177	27.127	29.584	29.262	G290A	—	—	21.667	21.333
G64	16.193	15.932	18.083	17.828	G219	28.527	27.377	29.844	29.522	G291	22.971	22.637	19.762	19.428
G65	16.454	16.193	18.333	18.078	G220	28.877	27.627	30.104	29.782	G292	22.633	22.299	19.240	18.906
G66	16.715	16.454	18.583	18.328	G22									

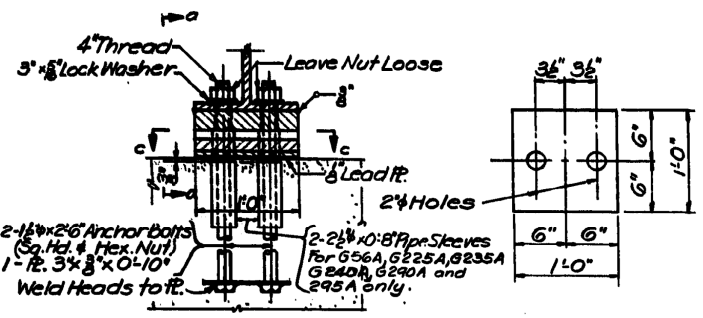
FOR INFORMATION ONLY

I.94 010.6-1P 113 02
I-94-3(1)-51



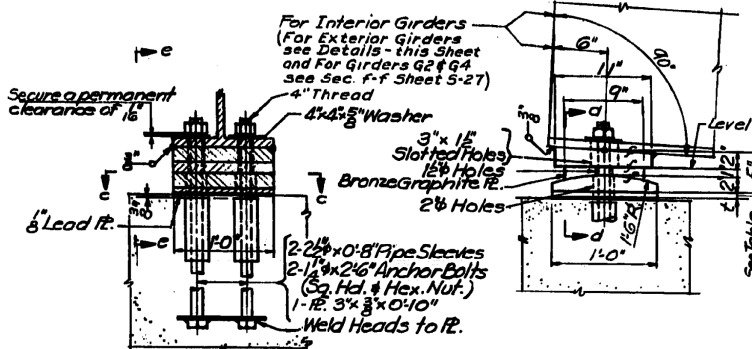
SECTION a-a

TYPICAL FIXED END
(216 REQUIRED)



SECTION b-b

SECTION c-c



SECTION d-d

TYPICAL EXPANSION END
(232 REQUIRED)

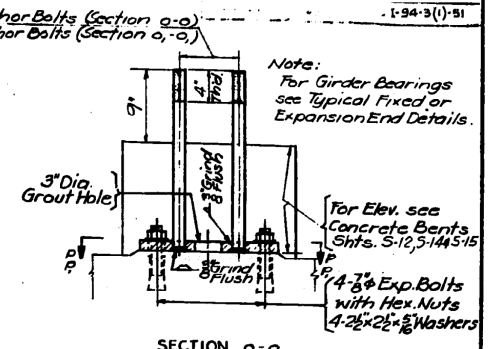
SECTION e-e

SCHEDULE OF SHIM THICKNESS "t"

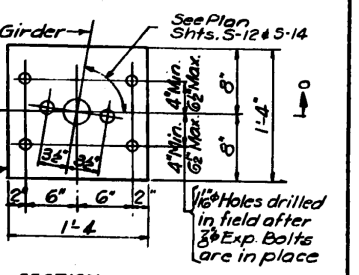
BENT NO.	GIRDER NUMBERS	"p"	"w"
E 7	G1A, G1, G2, G3, G4	2"	2"
E 7	G5	4"	18"
E 2	G6, G7, G8, G9	2"	2"
E 10	G201	2 1/2"	2 1/2"
E 10	G202, G203, G205A	2 1/2"	2 1/2"
E 10	G204	2 1/2"	2"
E 10	G205	4"	18"
E 16	G196, G197, G198, G199	2"	1"
E 16	G200	2"	2"
E 2	G10	4"	28"

SCHEDULE OF PLATE THICKNESS P & W

BENT NO.	GIRDER NUMBERS	"p"	"w"
E 7	G1A, G1, G2, G3, G4	2"	2"
E 7	G5	4"	18"
E 2	G6, G7, G8, G9	2"	2"
E 10	G201	2 1/2"	2 1/2"
E 10	G202, G203, G205A	2 1/2"	2 1/2"
E 10	G204	2 1/2"	2"
E 10	G205	4"	18"
E 16	G196, G197, G198, G199	2"	1"
E 16	G200	2"	2"
E 2	G10	4"	28"

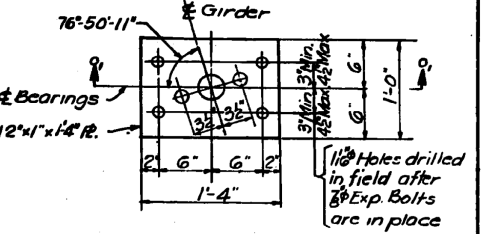


SECTION o-o



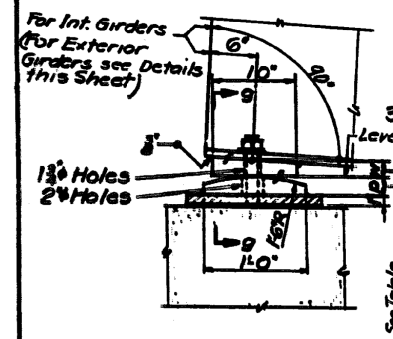
SECTION p-p

ANCHOR PLATE DETAIL
BENTS E8, E9 AND E17
(16 REQUIRED)



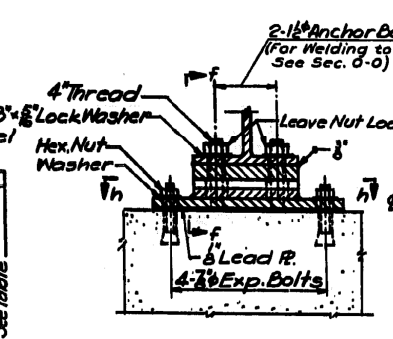
SECTION r-r

ANCHOR PLATE DETAIL
BENT E1
(5 REQUIRED)

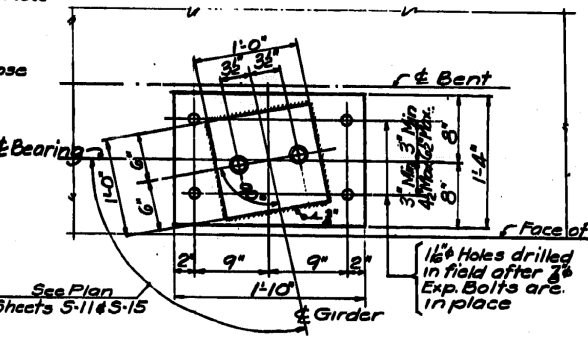


SECTION f-f

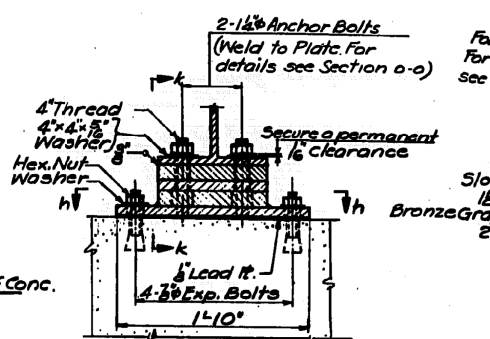
FIXED END
BENTS E2, E7 AND E10
(13 REQUIRED)



SECTION g-g

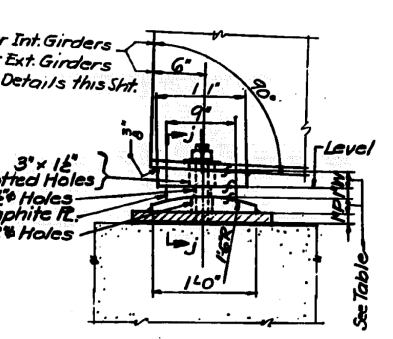


SECTION h-h

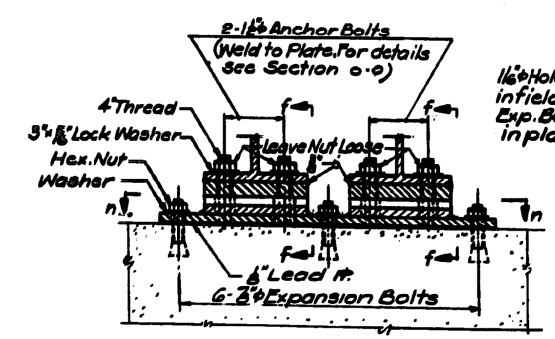


SECTION j-j

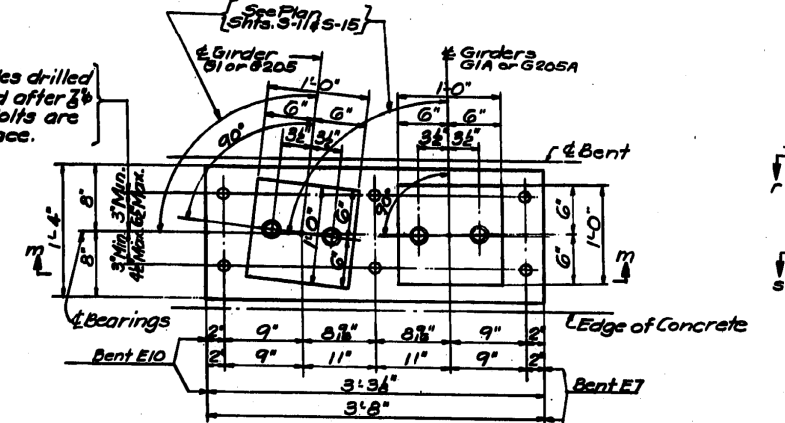
EXPANSION END
BENT E16
(5 REQUIRED)



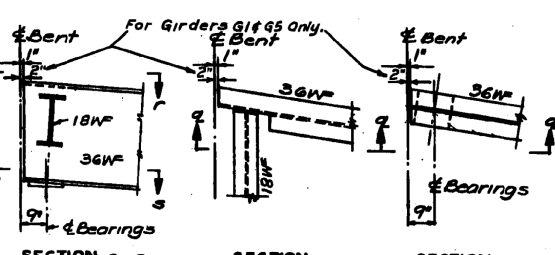
SECTION k-k



SECTION m-m



SECTION n-n
(2 REQUIRED)



SECTION q-q SECTION r-r SECTION s-s
DETAILS OF EXTERIOR GIRDER ENDS
Size 1/2 x 1/2

Note: For Girder Bearings see Typical Fixed or Expansion End Details.

- References:
- General Notes
 - Structural Steel Details
 - Structural Steel Framing Plans
 - Structural Steel Expansion Guards
 - Location and Projection of Anchor Bolts
 - Sheet S-1
 - Sheet S-24
 - Sheets S18a-S23
 - Sheets S26a-S28
 - Sheets S11a-S16

CITY OF CHICAGO
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING
NORTHWEST ROUTE SUPERHIGHWAY
HALSTED STREET INTERCHANGE
SECTION 010.6-1P
STRUCTURAL STEEL
GIRDER BEARINGS

SCALE: 1/2" = 1'-0" EXCEPT AS NOTED
AUGUST 1989
SHEET NO. 5-25 OF 119 SHEETS

FILE PATH = C:\Project\14-0425 - 60W28-StructBul\14-0425-60W28-StructBul\14-0425-60W28-StructBul.dgn

IN CHARGE: [Signature]
DESIGNED BY: [Signature]
DRAWN BY: [Signature]
CHECKED BY: [Signature]
APPROVED BY: [Signature]



D160W28-sht-AS-BUILT-30.dgn
USER NAME = auyeung
PLOT SCALE = 1:8000 / in.
PLOT DATE = 4/25/2014

DESIGNED -
DRAWN -
CHECKED -
DATE - 04/28/14

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING AS-BUILTS
SN 016-2449 & SN 016-2451

F.A.I. R.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-010R	COOK	747	500
CONTRACT NO. 60W28				
ILLINOIS FED. AID PROJECT				

SCALE: NTS SHEET 30 OF 48 SHEETS STA. TO STA.