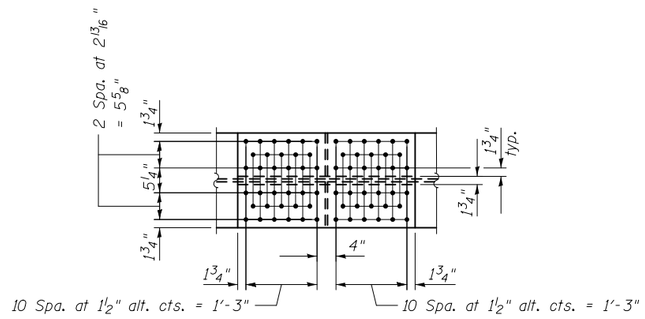
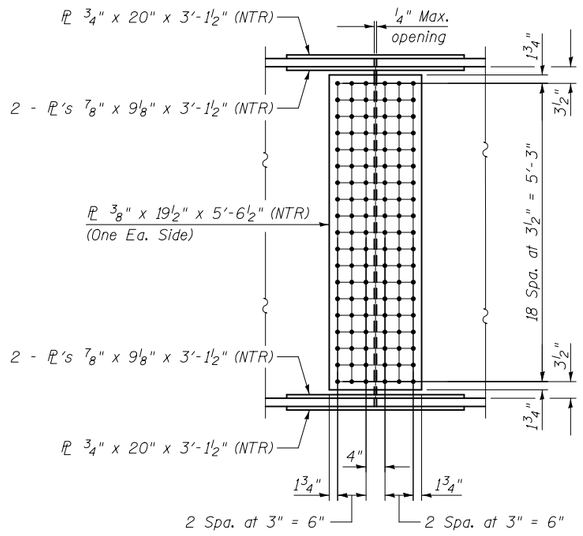


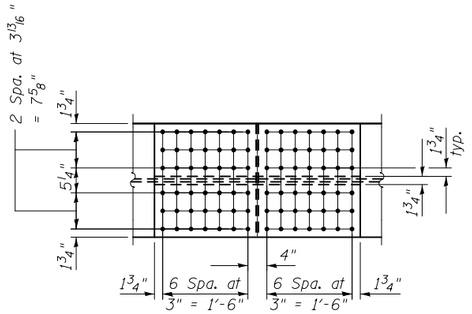
TOP AND BOTTOM FLANGE SPLICE



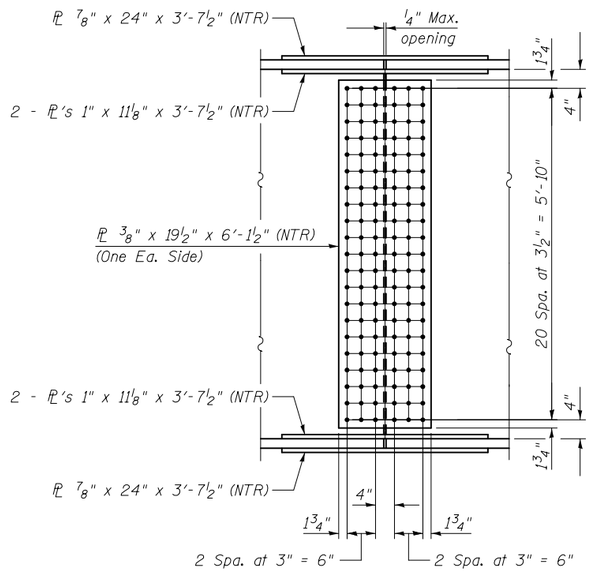
WEB SPLICE

FIELD SPLICE DETAIL - UNIT 1

(Field Splice 1, 2, 3, 4, 5 and 6)



TOP AND BOTTOM FLANGE SPLICE



WEB SPLICE

FIELD SPLICE DETAIL - UNIT 2

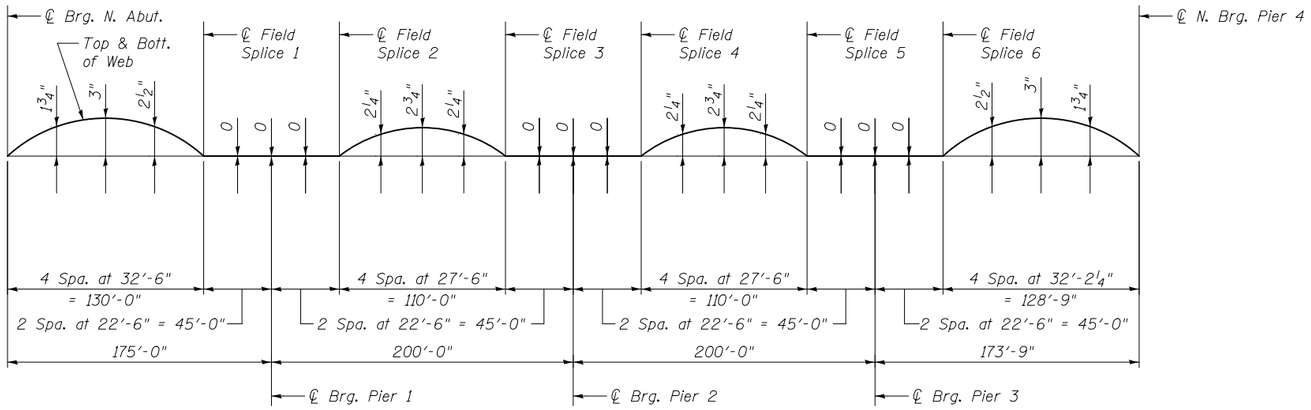
(Field Splice 7 and 8)

*TOP OF WEB ELEVATIONS

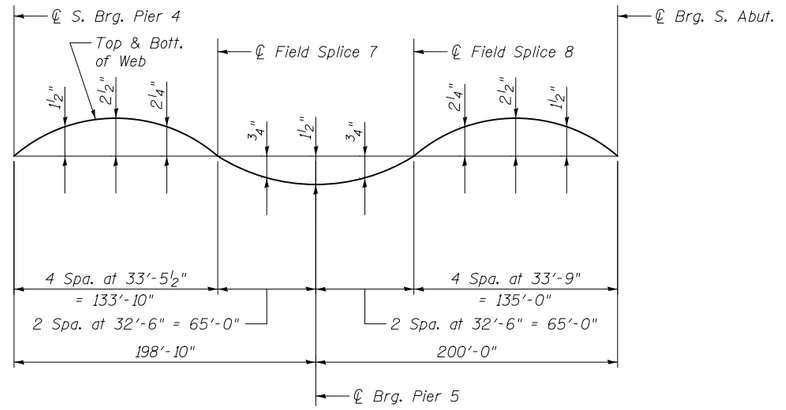
Girder No.	Unit 1											Unit 2				
	℄ Brg. N. Abut.	℄ Field Splice 1	℄ Brg. Pier 1	℄ Field Splice 2	℄ Field Splice 3	℄ Brg. Pier 2	℄ Field Splice 4	℄ Field Splice 5	℄ Brg. Pier 3	℄ Field Splice 6	℄ N. Brg. Pier 4	℄ S. Brg. Pier 4	℄ Field Splice 7	℄ Brg. Pier 5	℄ Field Splice 8	℄ Brg. S. Abut.
1	434.08	435.01	435.30	435.59	436.38	436.69	436.99	437.71	437.77	437.83	437.18	437.14	436.59	436.15	435.95	435.15
2	434.20	435.13	435.42	435.71	436.50	436.81	437.12	437.83	437.89	437.95	437.30	437.27	436.72	436.27	436.07	435.27
3	434.30	435.23	435.52	435.82	436.60	436.91	437.22	437.93	437.99	438.05	437.40	437.37	436.82	436.37	436.18	435.37
4	434.30	435.23	435.52	435.82	436.60	436.91	437.22	437.93	437.99	438.05	437.40	437.37	436.82	436.37	436.18	435.37
5	434.20	435.13	435.42	435.71	436.50	436.81	437.12	437.83	437.89	437.95	437.30	437.27	436.72	436.27	436.07	435.27
6	434.08	435.01	435.30	435.59	436.38	436.69	436.99	437.71	437.77	437.83	437.18	437.14	436.59	436.15	435.95	435.15

* For fabrication only.

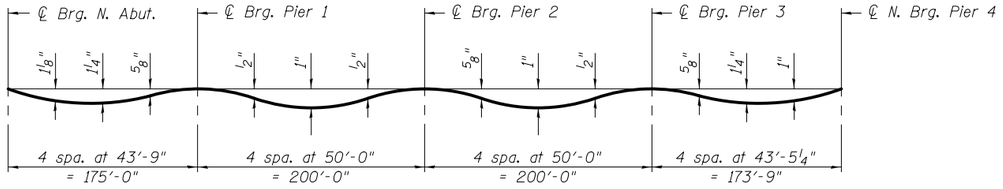
Notes:
Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
All splice plates shall be AASHTO M270 Grade 50 steel.



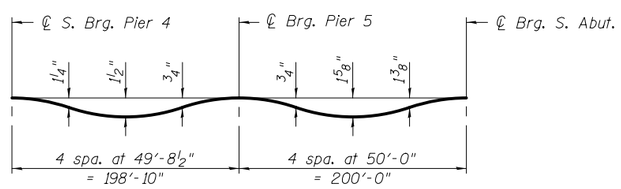
CAMBER DIAGRAM - UNIT 1



CAMBER DIAGRAM - UNIT 2



STEEL DEFLECTION DIAGRAM - UNIT 1



STEEL DEFLECTION DIAGRAM - UNIT 2

MODJESKI and MASTERS
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USER NAME =	DESIGNED - RLM	REVISED
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STATE OF ILLINOIS
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CAMBER DIAGRAMS
STRUCTURE NO. 014-0033
SHEET NO. 33 OF 61 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	102
		CONTRACT NO. 76479		
	ILLINOIS	FED. AID PROJECT		

EXTERIOR GIRDER MOMENT TABLE											
		Unit 1							Unit 2		
		0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.5 Sp. 3	Pier 3	0.6 Sp. 4	0.4 Sp. 5	Pier 5	0.6 Sp. 6
I_s	(in^4)	107974	107974	107974	107974	107974	107974	107974	178348	178348	178348
$I_c(n)$	(in^4)	182533	182533	182533	182533	182533	182533	182533	276839	276839	276839
$I_c(3n)$	(in^4)	141179	141179	141179	141179	141179	141179	141179	220185	220185	220185
$I_c(cr)$	(in^4)	118836	118836	118836	118836	118836	118836	118836	191719	191719	191719
S_s	(in^3)	2938	2938	2938	2938	2938	2938	2938	4350	4350	4350
$S_c(n)$	(in^3)	3479	3479	3479	3479	3479	3479	3479	4960	4960	4960
$S_c(3n)$	(in^3)	3226	3226	3226	3226	3226	3226	3226	4655	4655	4655
$S_c(cr)$	(in^3)	3042	3042	3042	3042	3042	3042	3042	4456	4456	4456
DC1	(k/')	1.091	1.091	1.091	1.091	1.091	1.091	1.091	1.211	1.211	1.211
M_{DC1}	('k)	2620.8	4195.0	1871.6	3746.2	1871.6	4195.0	2620.8	3606.3	6361.5	3606.3
DC2	(k/')	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
M_{DC2}	('k)	336.4	538.5	240.3	480.9	240.3	538.5	336.4	423.1	746.3	423.1
DW	(k/')	0.325	0.325	0.325	0.325	0.325	0.325	0.325	0.325	0.325	0.325
M_{DW}	('k)	729.0	1166.8	520.6	1042.0	520.6	1166.8	729.0	916.7	1617.1	916.7
M_{L+IM}	('k)	2766.5	1965.7	2656.0	2592.6	2656.0	1965.7	2766.5	3256.5	3033.6	3256.5
M_u (Strength I)	('k)	9631.3	11107.2	8068.8	11384	8068.8	11107.2	9631.3	12110.8	16619.2	12110.8
$\phi_f M_n$	('k)	17367	13234	17367	13234	17367	13234	17367	23604	18805	23604
f_s DC1	(ksi)	10.704	17.134	7.645	15.301	7.645	17.134	10.704	9.949	17.549	9.949
f_s DC2	(ksi)	1.251	2.003	0.894	1.897	0.894	2.003	1.251	1.091	1.924	1.091
f_s DW	(ksi)	2.712	4.340	1.936	4.110	1.936	4.340	2.712	2.363	4.169	2.363
f_s (L+IM)	(ksi)	9.542	6.780	9.161	10.227	9.161	6.780	9.542	7.879	7.339	7.879
f_s (Service II)	(ksi)	27.072	32.292	22.385	34.604	22.385	32.292	27.072	23.645	33.183	23.645
$0.95R_hF_{yf}$	(ksi)	47.500	47.500	47.500	47.500	47.500	47.500	47.500	47.500	47.500	47.500
V_f	(k)	27.1	28.9	23.3	28.9	23.3	28.9	27.1	27.5	26.5	27.5

INTERIOR GIRDER REACTION TABLE									
		Unit 1					Unit 2		
		N. Abut.	Pier 1	Pier 2	Pier 3	Pier 4	Pier 4	Pier 5	S. Abut.
R_{DC1}	(k)	73.4	230.1	215.0	230.1	73.4	91.1	302.7	91.1
R_{DC2}	(k)	10.1	31.5	29.5	31.5	10.1	11.3	37.5	11.3
R_{DW}	(k)	21.8	68.3	63.8	68.3	21.8	24.5	81.2	24.5
R_{L+IM}	(k)	99.4	215.2	215.0	215.2	99.4	103.5	228.1	103.5
R_{Total}	(k)	204.7	545.1	523.3	545.1	204.7	230.4	649.5	230.4

I_s, S_s: Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) due to non-composite dead loads ($in.^4$ and $in.^3$).

$I_c(n)$, $S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections due to short-term composite live loads ($in.^4$ and $in.^3$).

$I_c(3n)$, $S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections due to long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).

$I_c(cr)$, $S_c(cr)$: Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing f_s (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).

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_{L+IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

M_u (Strength I): Factored design moment (kip-ft.).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+IM}$

$\phi_f M_n$: 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_{nc}

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

f_s (Service II): Sum of stresses as computed below (ksi).
$f_{sDC1} + f_{sDC2} + f_{sDW} + 1.3\ f_s(L+IM)$

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

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

Note:
M_L and R_L include the effects of centrifugal force and superelevation.

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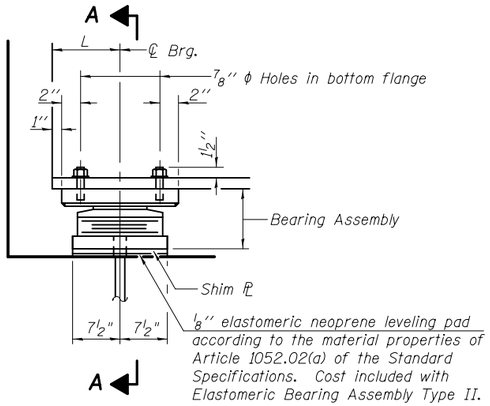
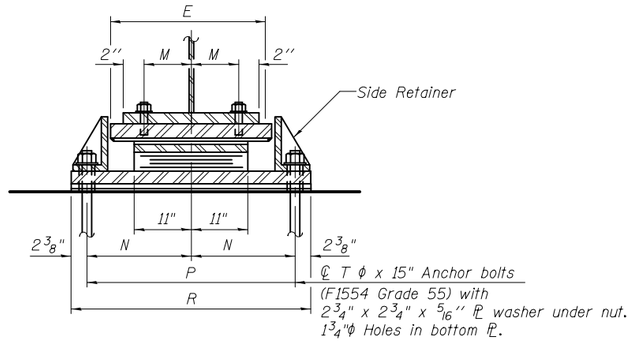
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DESIGN DATA TABLES AND NOTES
STRUCTURE NO. 014-0033
SHEET NO. 34 OF 61 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	103
		CONTRACT NO. 76479		
	ILLINOIS FED. AID PROJECT			

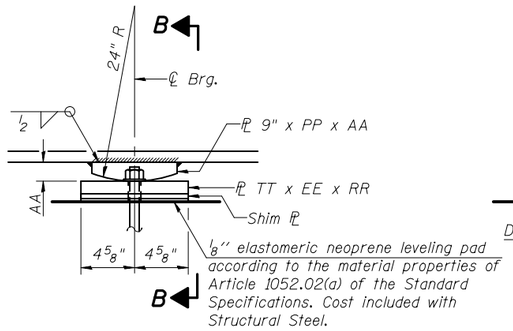


ELEVATION AT ABUT. AND PIER

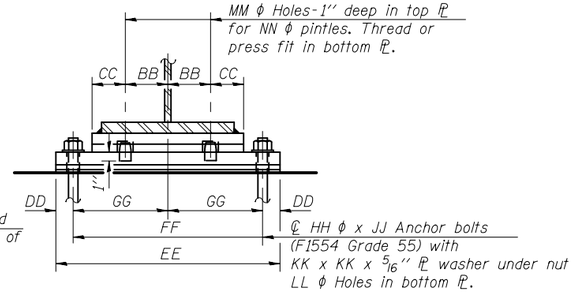


SECTION A-A

TYPE II ELASTOMERIC EXP. BRG.

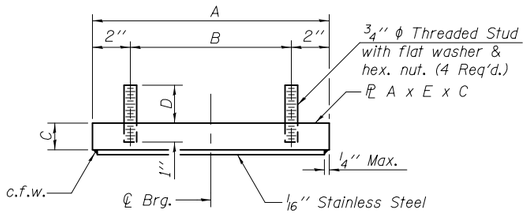


ELEVATION AT PIER

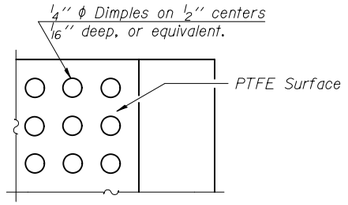


SECTION B-B

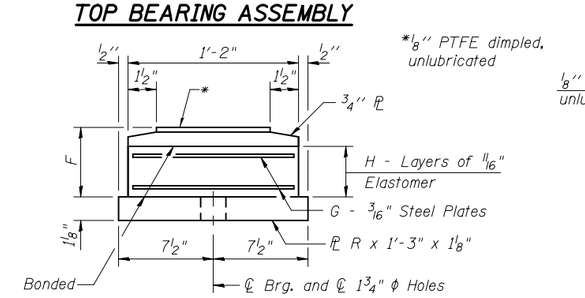
FIXED BEARING



TOP BEARING ASSEMBLY

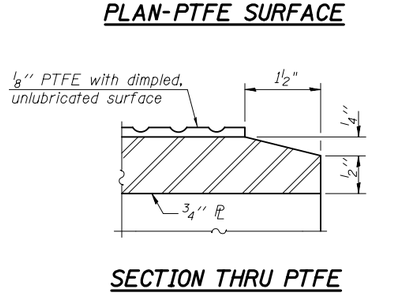


PLAN-PTFE SURFACE

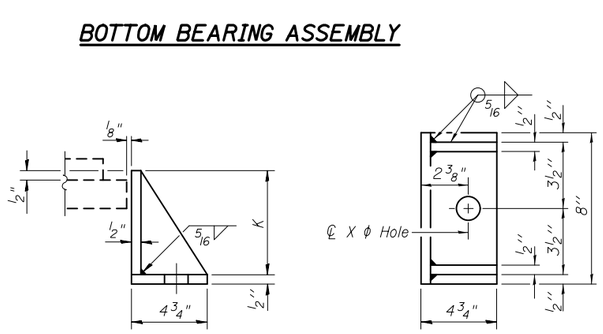


*1/8" PTFE dimpled, unlubricated

BOTTOM BEARING ASSEMBLY

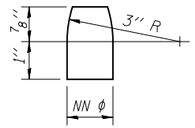


SECTION THRU PTFE



SIDE RETAINER

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



PINTLE

FIXED BEARING ASSEMBLY TABLE

Location	AA	BB	CC	DD	EE	FF	GG	HH	JJ	KK	LL	MM	NN	PP	RR	TT
Unit 1 - Pier 2	2 9/16"	5"	5 3/4"	2 5/8"	2'-3 1/8"	2'-0 1/2"	1'-0 1/4"	1 1/4"	18"	3"	1 3/4"	1 5/8"	1 1/4"	1'-9 1/2"	1 7/8"	9 1/4"
Unit 2 - Pier 5	3 1/4"	6"	6 3/4"	3 1/2"	2'-9"	2'-5 1/2"	1'-2 3/4"	1 1/2"	24"	3 1/2"	2"	1 1/2"	1 3/8"	2'-1 1/2"	2"	10"

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.

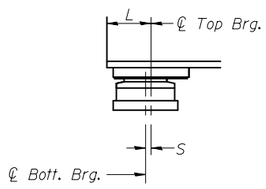
The 1/8" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

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.

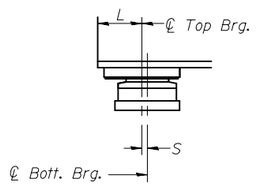
The structural steel plates of the Bearing Assemblies and Pintles shall conform to the requirements of AASHTO M270 Grade 50.

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 bearing details.

The anchor bolt sizes and grades shown constitute a calculated seismic structural fuse. Substitution of higher diameter and/or grade anchor bolts will not be allowed.



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



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

SETTING ANCHOR BOLTS AT ELASTOMERIC EXP. BRG.

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

ELASTOMERIC BEARING ASSEMBLY TABLE

Location	Top Bearing Assembly					Bottom Bearing Assembly			Miscellaneous							
	A	B	C	D	E	F	G	H	K	L	M	N	P	R	T	X
Unit 1 - N. Abut. & Pier 4	1'-6"	1'-2"	2 1/4"	3 1/4"	1'-8"	6 13/16"	6	7	9 9/16"	10"	8"	1'-0 1/2"	2'-1"	2'-5 3/4"	1"	1 1/2"
Unit 2 - Pier 4	1'-4"	1'-0"	2 9/16"	3 1/2"	2'-0"	5 15/16"	5	6	9"	9"	10"	1'-2 1/2"	2'-5"	2'-9 3/4"	1 1/4"	1 3/4"
Unit 2 - S. Abut.	1'-4"	1'-0"	2 9/16"	3 1/2"	2'-0"	4 3/16"	3	4	7 1/4"	9"	10"	1'-2 1/2"	2'-5"	2'-9 3/4"	1 1/4"	1 3/4"

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	24
Anchor Bolts, 1"	Each	24
Anchor Bolts, 1 1/4"	Each	36
Anchor Bolts, 1 1/2"	Each	12

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USER NAME =	DESIGNED - JTH	REVISED
	CHECKED - MJP	REVISED
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STATE OF ILLINOIS
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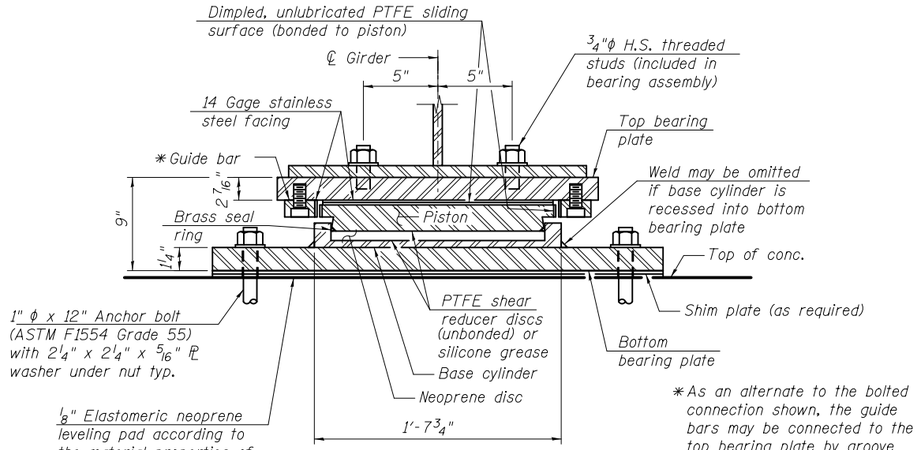
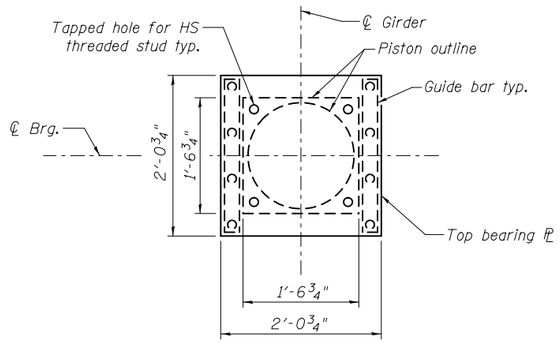
BEARING DETAILS
STRUCTURE NO. 014-0033
SHEET NO. 35 OF 61 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	104
		CONTRACT NO. 76479		
		ILLINOIS FED. AID PROJECT		

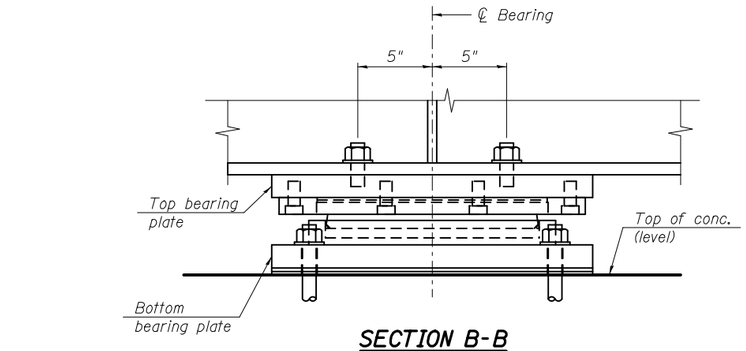


SECTION A-A

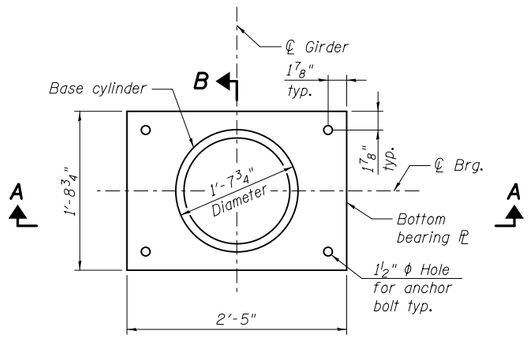
*As an alternate to the bolted connection shown, the guide bars may be connected to the top bearing plate by groove welds or the guide bars and top bearing plate may be fabricated as a single piece.



TOP BEARING ℄ AND PISTON PLAN



SECTION B-B

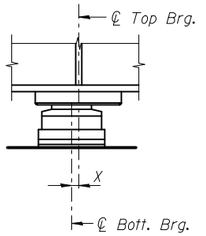


BOTTOM BEARING ℄ AND BASE CYLINDER PLAN

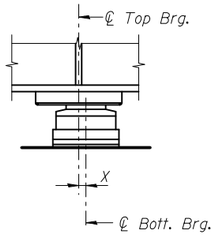
BEARING DESIGN DATA

Location	Vert. Design Load** (kips)	Horiz. Design Load** (kips)	Required Rotation Range*** (radians)	Max. Theor. Thermal Mvmt**** from 50 °F
Pier 1 and 3	510	70	0.01	1 1/4"

** Design Loads are the governing service loads with no dynamic load allowance.
*** Rotation allowances for fabrication tolerances (0.005 radians), installation uncertainties (0.005 radians) are excluded.
**** Total required movement is based on one way expansion (or contraction) of the superstructure along the centerline of girder when bearings are set at 50°F. Bearing movement tolerances are excluded.



BELOW 50°F
(Move bottom brg. away from fixed brg.)



ABOVE 50°F
(Move bottom brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT HLMR EXP. BRG.

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

Notes:
All steel for bearings shall conform to the requirements of AASHTO M270 Grade 50, unless otherwise noted.
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 may be either cast in place or installed in holes drilled after the supported member is in place. Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
Total bearing height is estimated based on manufacturer data. Actual bearing height may differ from contract plans. The Contractor shall be responsible for verifying bearing heights and adjusting seat elevations, if required, prior to placing pier concrete. Total bearing height is taken at the ℄ of bearing for bevelled top plates.
Bearing assemblies shall be designed and assembled to allow for replacement by jacking the superstructure.
Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates
The anchor bolt sizes and grades shown constitute a calculated seismic structural fuse. Substitution of higher diameter and/or grade anchor bolts will not be allowed.

BILL OF MATERIAL

Item	Unit	Total
High Load Multi-Rotational Bearings, Guided Expansion, 550k	Each	12
Anchor Bolts, 1"	Each	48

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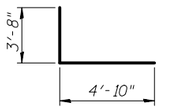
PLOT SCALE =	DRAWN - PRC	REVISED
PLOT DATE = 2/1/2013	CHECKED - JTH	REVISED

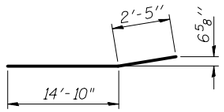
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HLMR GUIDED EXPANSION BEARING DETAILS
STRUCTURE NO. 014-0033
SHEET NO. 36 OF 61 SHEETS

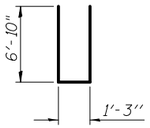
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	105
		CONTRACT NO. 76479		
	ILLINOIS FED. AID PROJECT			



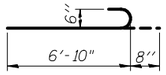
BAR h_2(E)



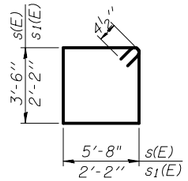
BAR h_4(E)



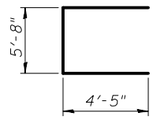
BAR n(E)



BAR n_1(E)

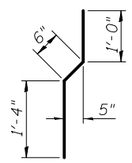


BARS s(E) & s_1(E)

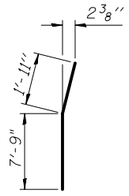


BAR u(E)

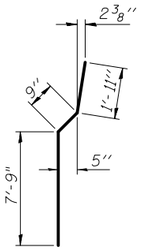
BAR v(E)



BAR v_1(E)



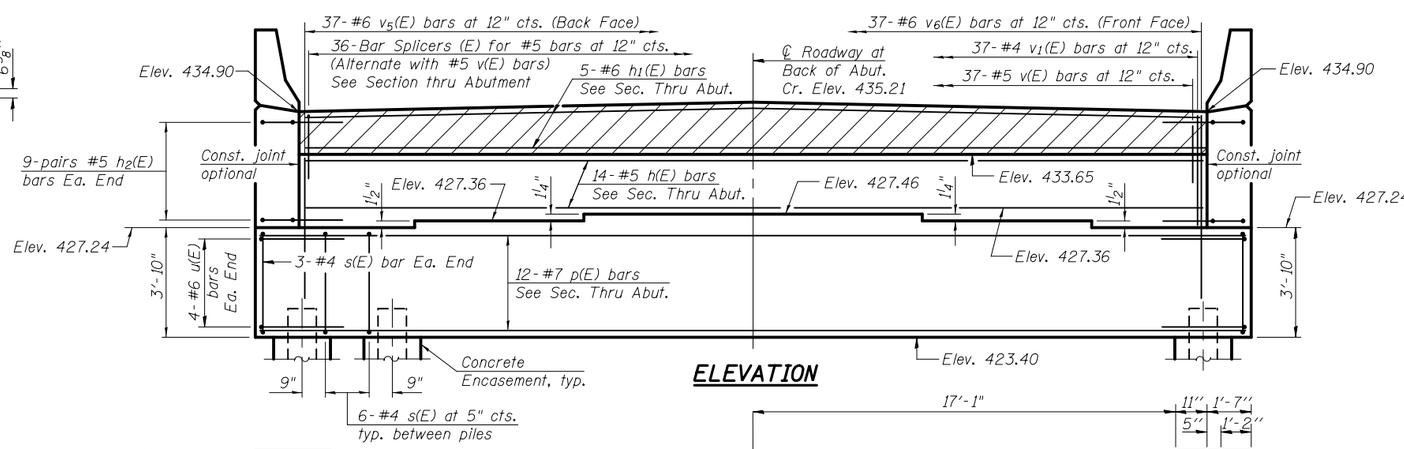
BAR v_3(E)



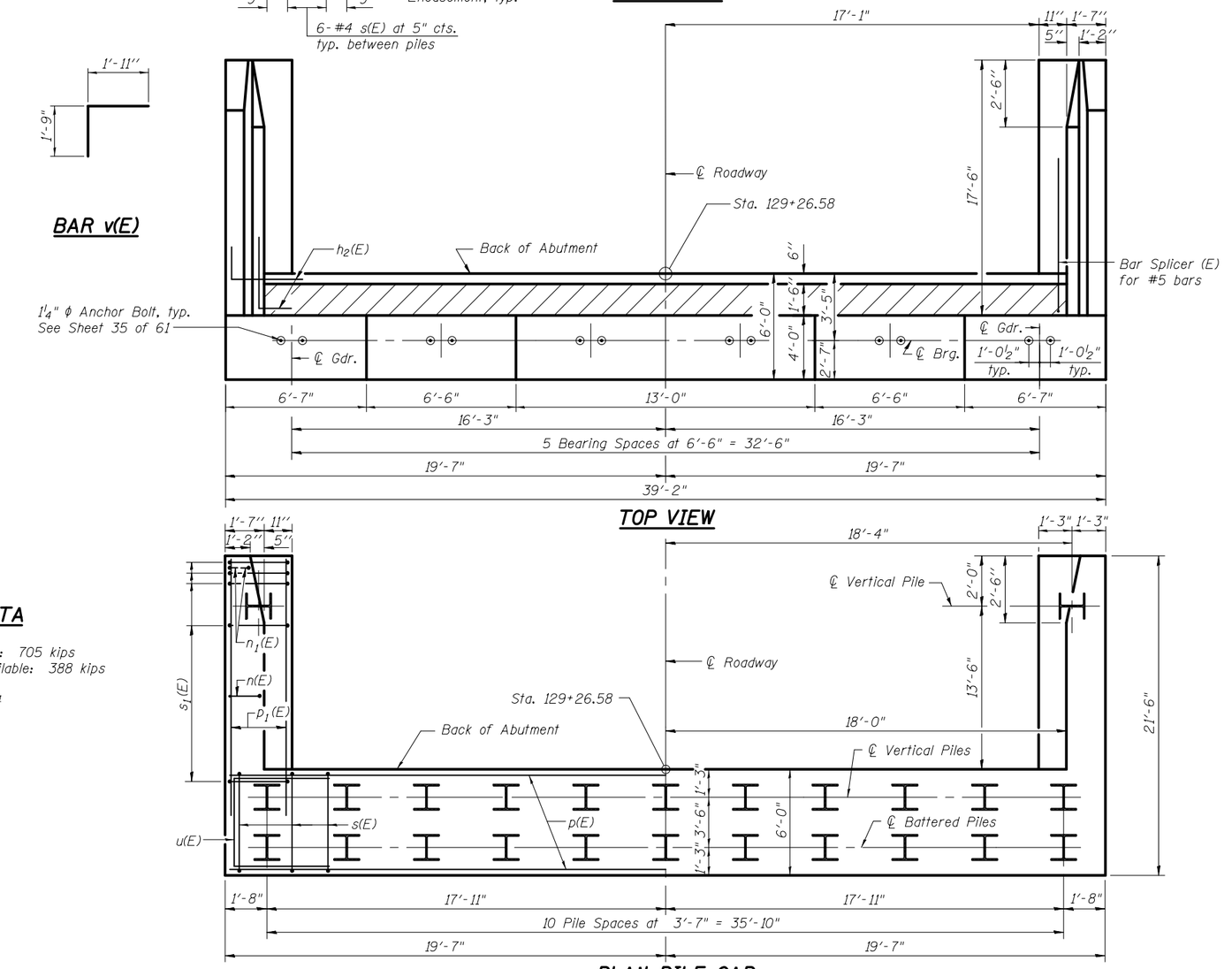
BAR v_4(E)

PILE DATA

Type: HP14x89
Nominal Required Bearing: 705 kips
Factored Resistance Available: 388 kips
Est. Length: 52 feet
No. Production Piles: 24
No. Test Piles: 0



ELEVATION



TOP VIEW

PLAN-PILE CAP

NORTH ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	14	#5	35'-8"	
h_1(E)	5	#6	35'-8"	
h_2(E)	36	#5	8'-6"	
h_3(E)	30	#4	17'-2"	
h_4(E)	22	#4	17'-3"	
n(E)	30	#6	14'-11"	
n_1(E)	12	#6	7'-6"	
p(E)	12	#7	38'-10"	
p_1(E)	20	#7	18'-5"	
s(E)	66	#4	19'-1"	
s_1(E)	38	#4	9'-5"	
u(E)	8	#6	14'-6"	
v(E)	37	#5	3'-8"	
v_1(E)	37	#4	2'-10"	
v_2(E)	36	#6	10'-2"	
v_3(E)	6	#6	9'-8"	
v_4(E)	30	#6	10'-5"	
v_5(E)	37	#6	8'-6"	
v_6(E)	37	#6	9'-10"	
Structure Excavation		Cu. Yd.	440	
Concrete Structures		Cu. Yd.	74.4	
Reinforcement Bars, Epoxy Coated		Pound	7,810	
Concrete Encasement		Cu. Yd.	13.1	
Furnishing Steel Piles, HP14x89		Foot	1248	
Driving Piles		Foot	1248	
Concrete Sealer		Sq. Ft.	505	

Notes:
Hatched area to be poured after superstructure false work has been removed.
For details of Bar Splicers, see sheet 50 of 61.
For details of piles and Concrete Encasement, see sheet 46 of 61.

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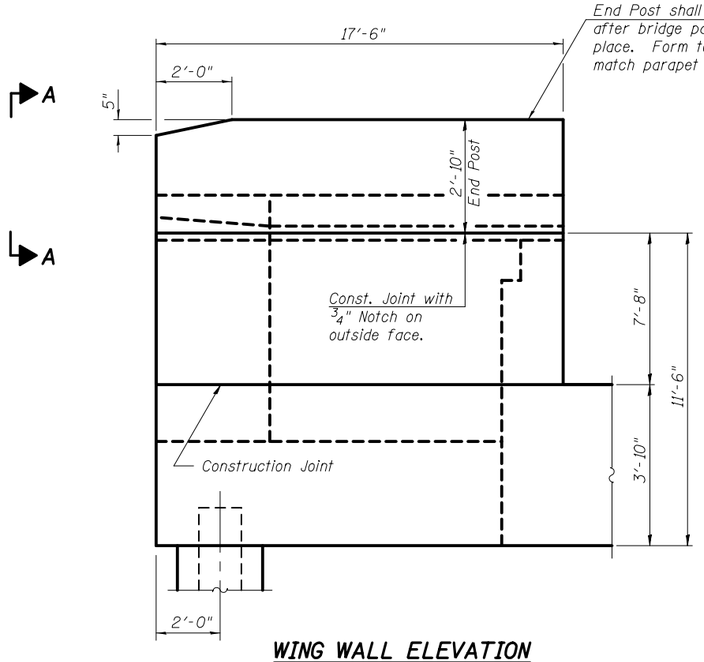
USER NAME =	DESIGNED - JTH	REVISED
	CHECKED - RLM	REVISED
PLOT SCALE =	DRAWN - PRC	REVISED
PLOT DATE = 2/1/2013	CHECKED - JTH	REVISED

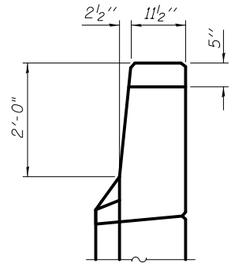
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT
STRUCTURE NO. 014-0033
SHEET NO. 37 OF 61 SHEETS

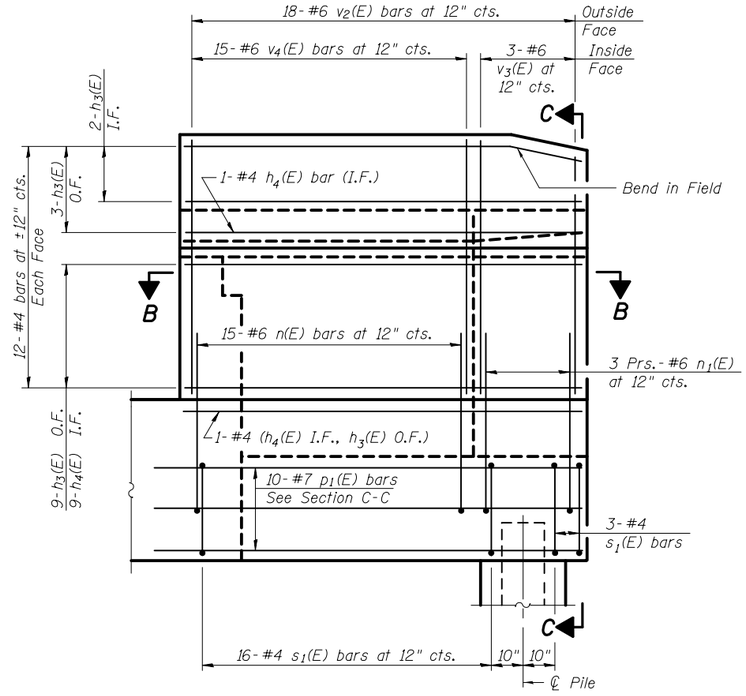
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	106
		CONTRACT NO. 76479		
	ILLINOIS FED. AID PROJECT			



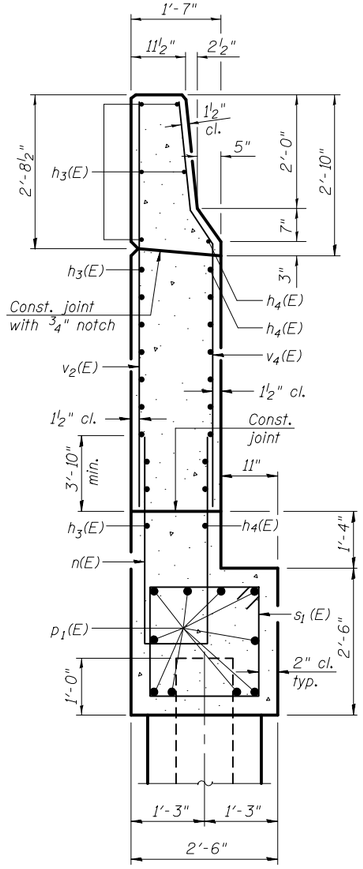
WING WALL ELEVATION
Showing Dimensions



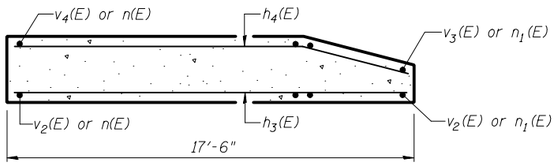
VIEW A-A



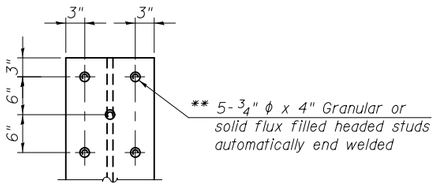
WING WALL ELEVATION
Showing Reinforcement



SECTION C-C

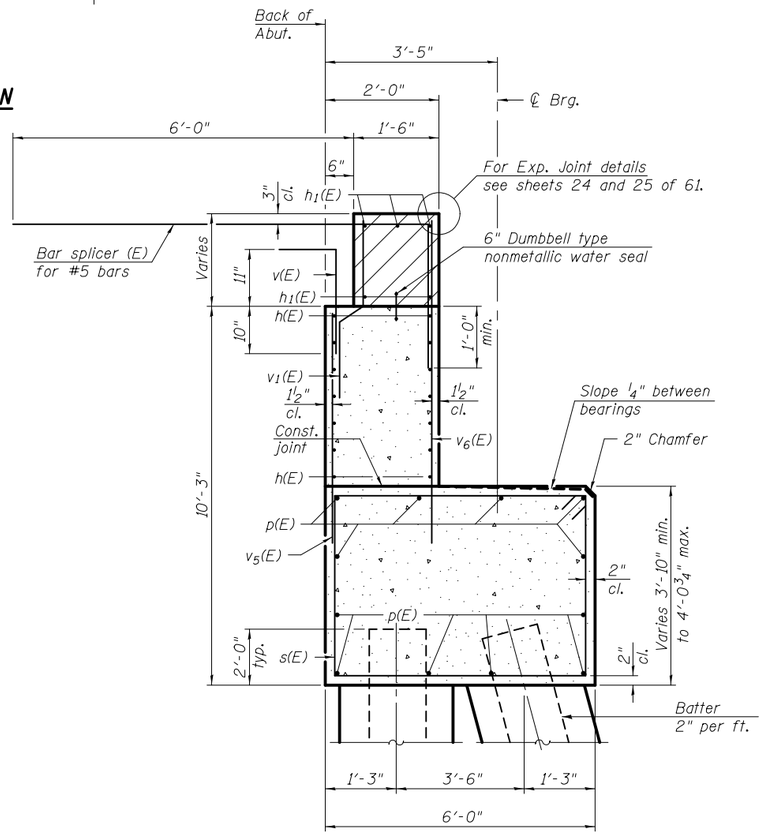


SECTION B-B



PILE ANCHORAGE

** Typical each flange, each abutment pile.
Not required at wingwall piles.
Cost included with Furnishing Piles.



SECTION THRU ABUTMENT

Notes:
Hatched area to be poured after superstructure false work has been removed. Quantity of concrete included with Concrete Superstructure on sheet 21 of 61.
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
Quantity of concrete in end post included with Concrete Superstructure on sheet 21 of 61.
For Concrete Encasement details, see sheet 46 of 61.

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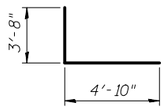
		CHECKED - RLM	REVISED
	PLOT SCALE =	DRAWN - PRC	REVISED
	PLOT DATE = 2/1/2013	CHECKED - JTH	REVISED

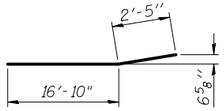
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT DETAILS
STRUCTURE NO. 014-0033
SHEET NO. 38 OF 61 SHEETS

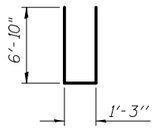
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	107
		CONTRACT NO. 76479		
	ILLINOIS	FED. AID PROJECT		



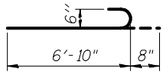
BAR $h_2(E)$



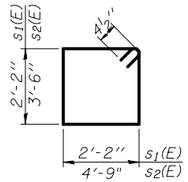
BAR $h_6(E)$



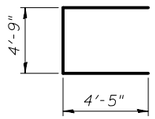
BAR $n(E)$



BAR $n_1(E)$

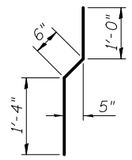


BARS $s_1(E)$ & $s_2(E)$

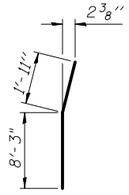


BAR $u_1(E)$

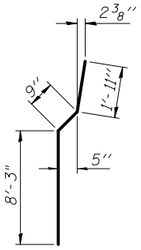
BAR $v(E)$



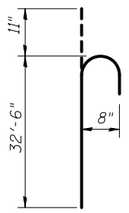
BAR $v_1(E)$



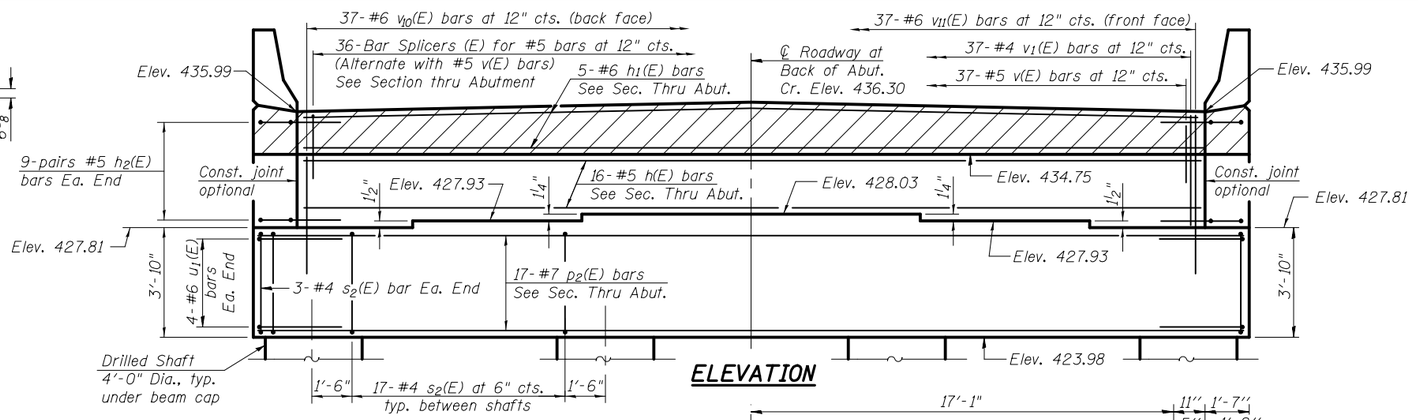
BAR $v_8(E)$



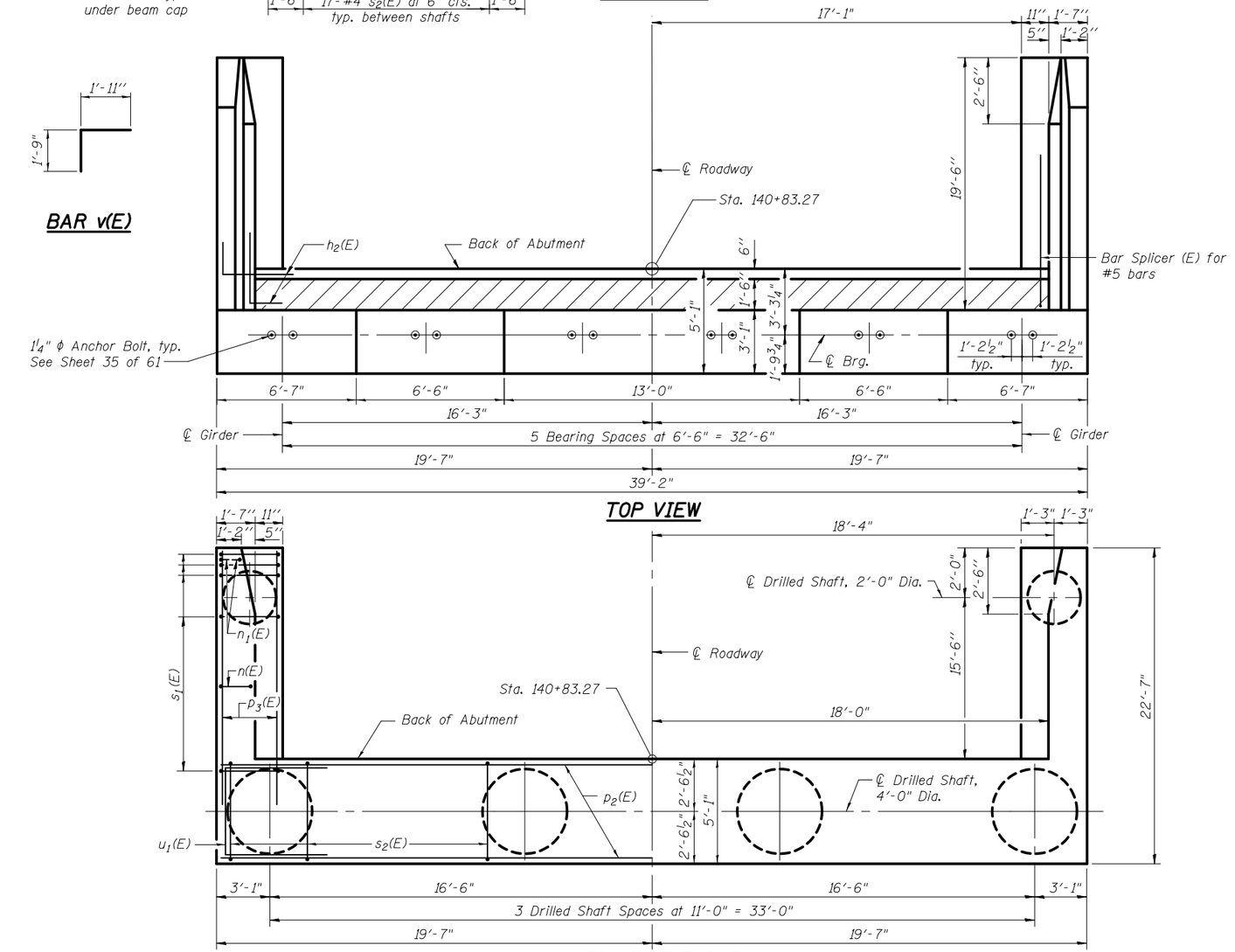
BAR $v_9(E)$



BAR $v_{12}(E)$



ELEVATION



TOP VIEW

PLAN-PILE CAP

SOUTH ABUTMENT BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	$h(E)$	16	#5	35'-8"	
	$h_1(E)$	5	#6	35'-8"	
	$h_2(E)$	36	#5	8'-6"	
	$h_5(E)$	30	#4	19'-2"	
	$h_6(E)$	22	#4	19'-3"	
	$n(E)$	34	#6	14'-11"	
	$n_1(E)$	12	#6	7'-6"	
	$p_2(E)$	17	#7	38'-10"	
	$p_3(E)$	20	#7	21'-4"	
	$s_1(E)$	40	#4	9'-5"	
	$s_2(E)$	57	#4	17'-3"	
*	$sp(E)$	4	#3	14'-0"	
*	$sp_1(E)$	4	#3	17'-4"	
*	$sp_2(E)$	2	#3	25'-1"	
	$u_1(E)$	8	#6	13'-7"	
	$v(E)$	37	#5	3'-8"	
	$v_1(E)$	37	#4	2'-10"	
	$v_7(E)$	40	#6	10'-8"	
	$v_8(E)$	6	#6	10'-2"	
	$v_9(E)$	34	#6	10'-11"	
	$v_{10}(E)$	37	#6	9'-1"	
	$v_{11}(E)$	37	#6	10'-5"	
	$v_{12}(E)$	76	#8	33'-5"	
	$v_{13}(E)$	12	#6	26'-1"	

Structure Excavation	Cu. Yd.	331
Concrete Structures	Cu. Yd.	74.7
Reinforcement Bars, Epoxy Coated	Pound	17,470
Drilled Shaft in Soil	Cu. Yd.	41.9
Drilled Shaft in Rock	Cu. Yd.	10.7
Concrete Sealer	Sq. Ft.	489

* Length is height of spiral.

Note:
For details of Bar Splicers, see Sheet 50 of 61.

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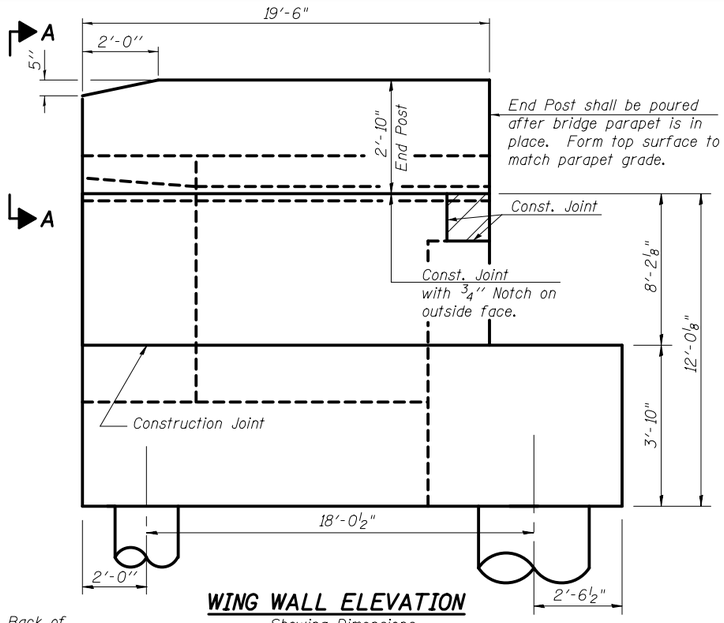
USER NAME =	DESIGNED - JTH	REVISED
	CHECKED - RLM	REVISED
PLOT SCALE =	DRAWN - PRC	REVISED
PLOT DATE = 2/1/2013	CHECKED - JTH	REVISED

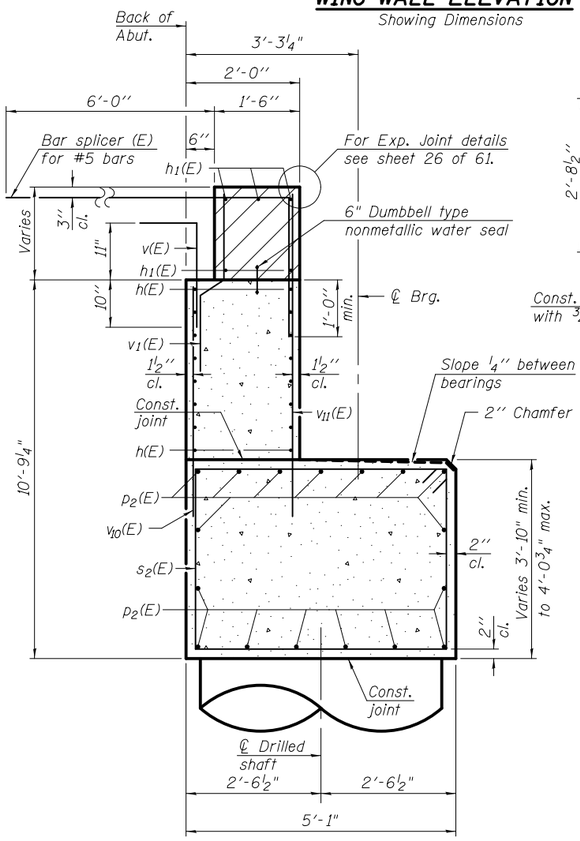
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT
STRUCTURE NO. 014-0033
SHEET NO. 39 OF 61 SHEETS

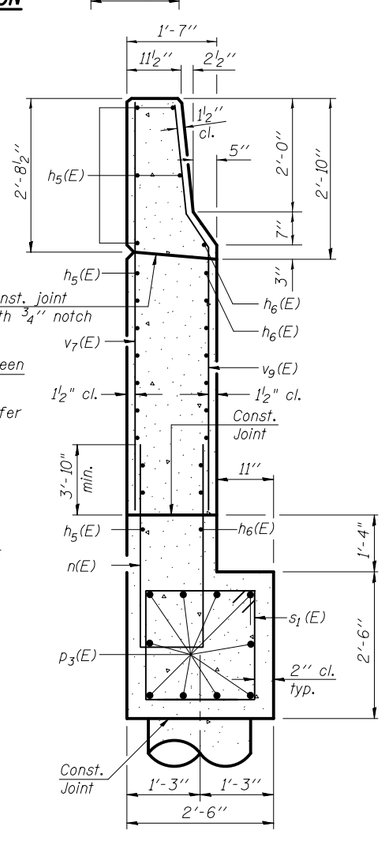
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	108
		CONTRACT NO. 76479		
	ILLINOIS FED. AID PROJECT			



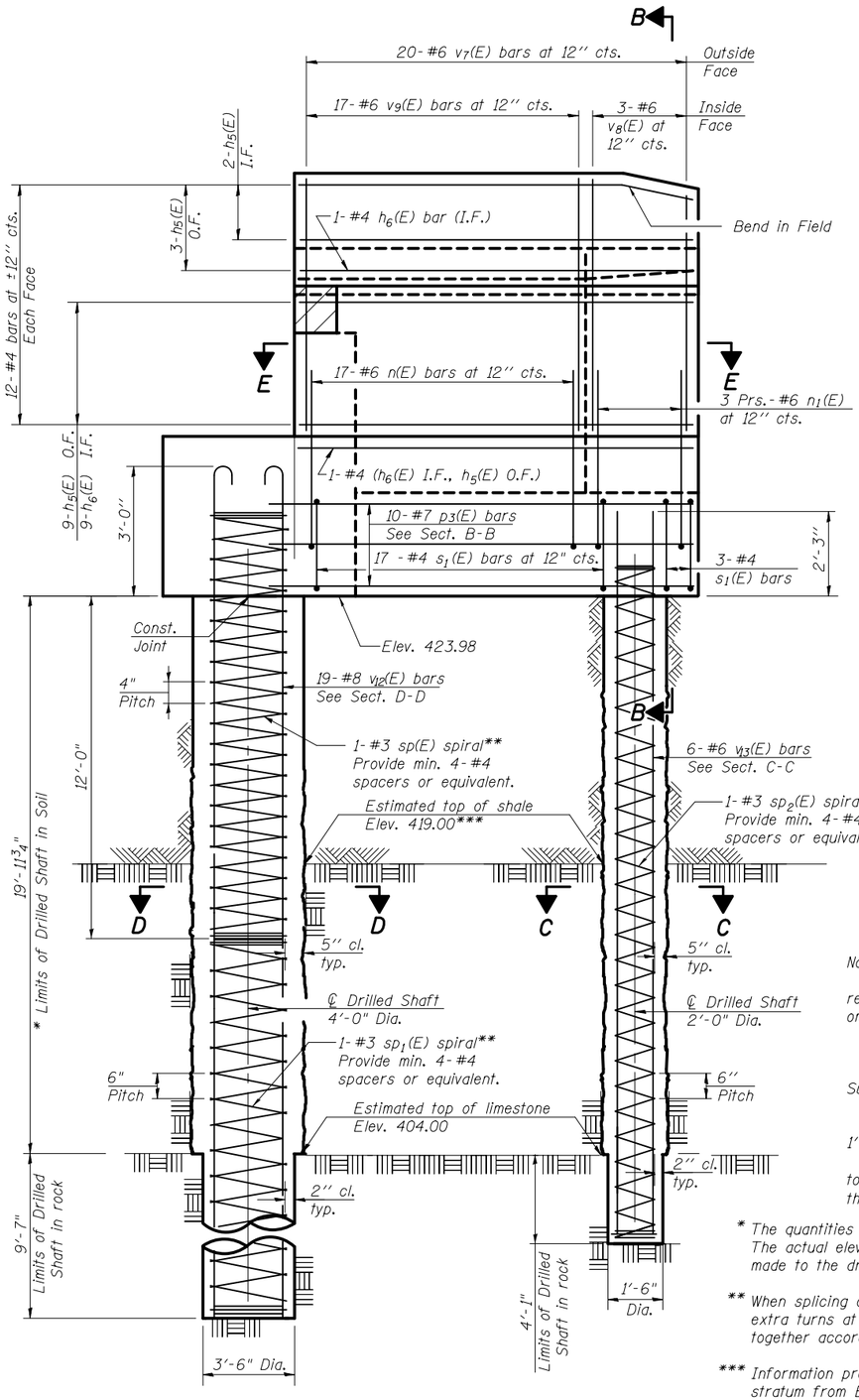
WING WALL ELEVATION
Showing Dimensions



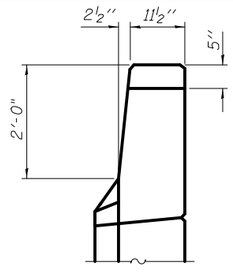
SECTION THRU ABUT.



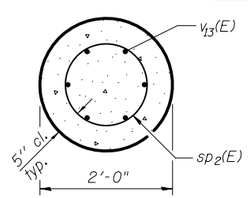
SECTION B-B



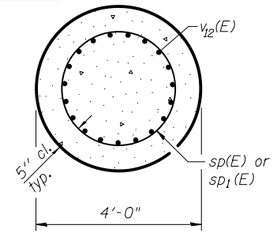
WING WALL & DRILLED SHAFT ELEVATION
Showing Reinforcement



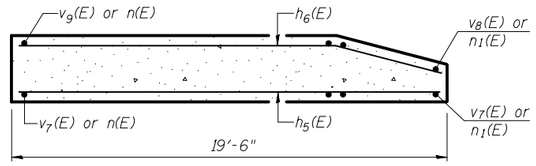
VIEW A-A



SECTION C-C



SECTION D-D



SECTION E-E

Notes:

Hatched area to be poured after superstructure false work has been removed. Quantity of concrete included with Concrete Superstructure on sheet 23 of 61.

Space reinforcement in cap to miss anchor bolts.

Pour steps monolithically with cap.

Quantity of concrete in end post included with Concrete Superstructure on sheet 23 of 61.

Provide 1 1/2 extra turns top and bottom of spiral for each drilled shaft.

Extend sp(E) spiral 2'-0" into abutment cap and extend sp2(E) spiral 1'-3" into wingwall cap.

Due to the presence of sand, drilled shaft construction will need to employ the use of slurry or casing to construct the shafts; the method chosen should be left up to the Contractor.

* *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.*

** *When splicing of 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.*

*** *Information provided in the Soil Boring and Rock Core Log B-8 indicate that the rock stratum from Elevation 419.00 to Elevation 404.00 is weak. It is assumed that shaft excavation within this region will not require the use of special rock augers and/or other rock excavation methods. Drilled shafts within this region will be paid for as Drilled Shaft In Soil except as described in the note regarding Limits of Drilled Shaft in Soil.*

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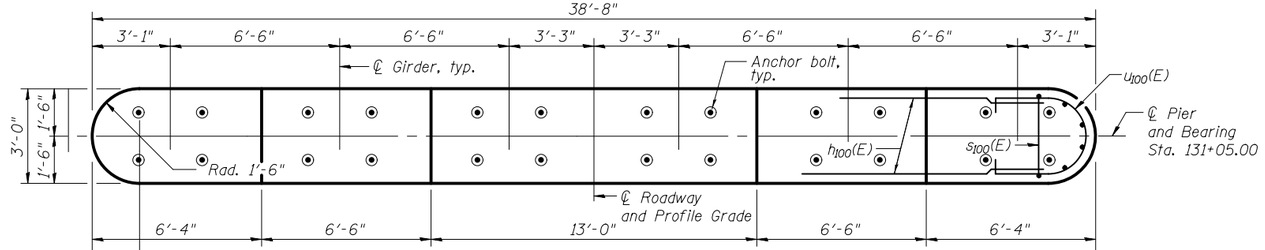
Experience greatest bridges.

USER NAME =	DESIGNED - JTH	REVISED
	CHECKED - RLM	REVISED
PLOT SCALE =	DRAWN - AEC	REVISED
PLOT DATE = 2/1/2013	CHECKED - JTH	REVISED

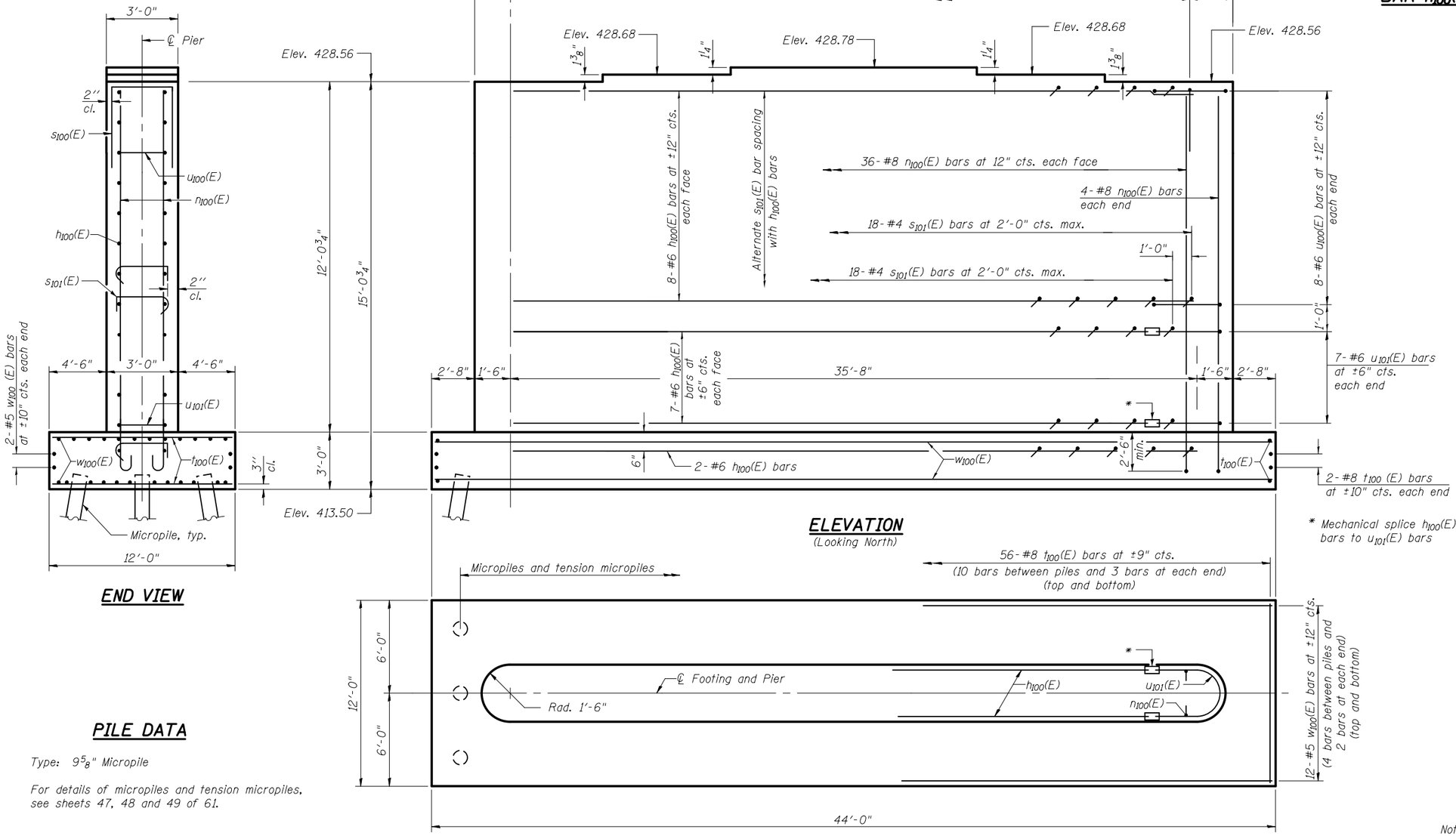
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT DETAILS
STRUCTURE NO. 014-0033
SHEET NO. 40 OF 61 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	109
		CONTRACT NO. 76479		
	ILLINOIS FED. AID PROJECT			



TOP PLAN



ELEVATION
(Looking North)

* Mechanical splice $h_{100}(E)$ bars to $u_{101}(E)$ bars

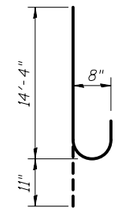
END VIEW

FOOTING PLAN

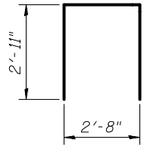
PILE DATA

Type: $9\frac{5}{8}$" Micropile

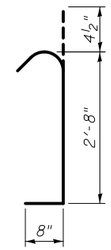
For details of micropiles and tension micropiles, see sheets 47, 48 and 49 of 61.



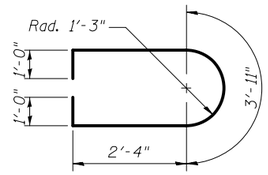
BAR $n_{100}(E)$



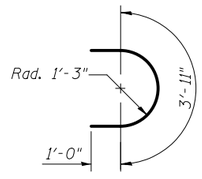
BAR $s_{100}(E)$



BAR $s_{101}(E)$



BAR $u_{100}(E)$



BAR $u_{101}(E)$

PIER 1
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h_{100}(E)$	32	#6	33'-8"	——
$n_{100}(E)$	80	#8	15'-3"	⊃
$s_{100}(E)$	36	#4	8'-6"	⊓
$s_{101}(E)$	288	#4	3'-9"	⊔
$t_{100}(E)$	116	#8	11'-6"	——
$u_{100}(E)$	16	#6	10'-7"	⊃
$u_{101}(E)$	14	#6	5'-11"	⊃
$w_{100}(E)$	28	#5	43'-6"	——
Structure Excavation		Cu. Yd.		143
Concrete Structures		Cu. Yd.		110.2
Reinforcement Bars, Epoxy Coated		Pound		11,020
Mechanical Splicers		Each		28

Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
See sheet 36 of 61 for anchor bolt layout and spacing.

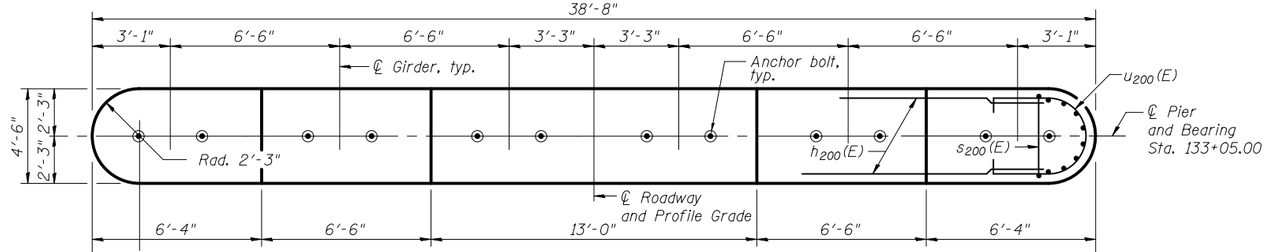
MODJESKI and MASTERS
Experience greet bridges.

USER NAME =	DESIGNED - MJP	REVISED
	CHECKED - ACK	REVISED
PLOT SCALE =	DRAWN - PRC	REVISED
PLOT DATE = 2/1/2013	CHECKED - MJP	REVISED

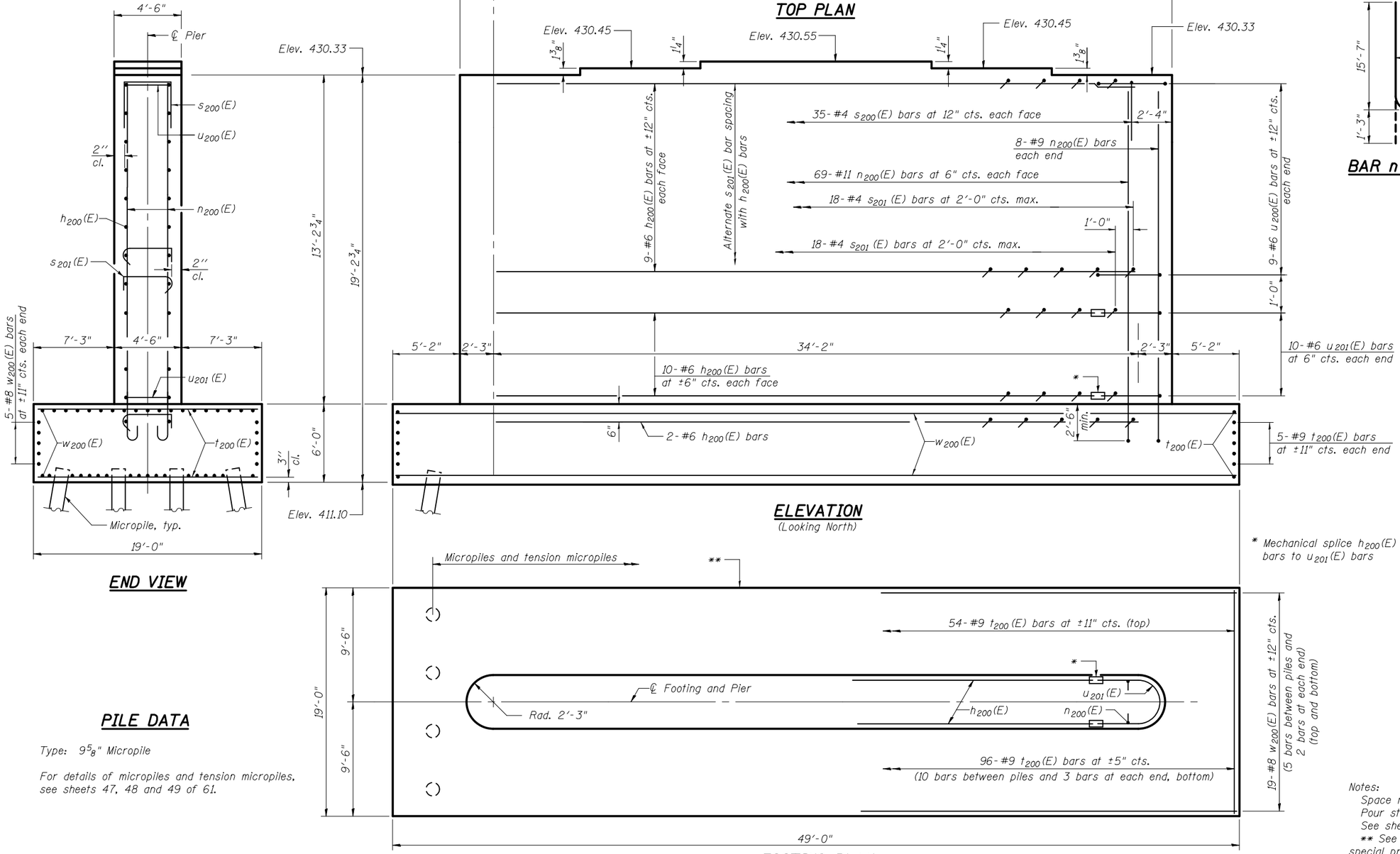
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 1
STRUCTURE NO. 014-0033
SHEET NO. 41 OF 61 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	110
		CONTRACT NO. 76479		
	ILLINOIS	FED. AID PROJECT		



TOP PLAN



ELEVATION
(Looking North)

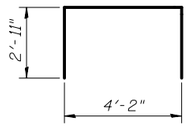
END VIEW

FOOTING PLAN

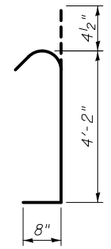
PILE DATA

Type: $9\frac{5}{8}$" Micropile

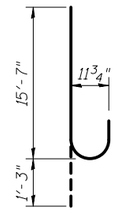
For details of micropiles and tension micropiles, see sheets 47, 48 and 49 of 61.



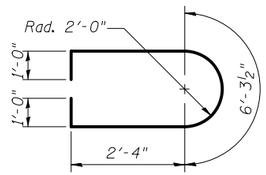
BAR $s_{200}(E)$



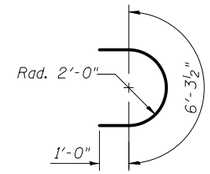
BAR $s_{201}(E)$



BAR $n_{200}(E)$



BAR $u_{200}(E)$



BAR $u_{201}(E)$

PIER 2
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h_{200}(E)$	40	#6	32'-2"	——
$n_{200}(E)$	154	#11	16'-10"	⊃
$s_{200}(E)$	35	#4	10'-0"	⊓
$s_{201}(E)$	360	#4	5'-3"	⊔
$t_{200}(E)$	160	#9	18'-6"	——
$u_{200}(E)$	18	#6	13'-0"	⊃
$u_{201}(E)$	20	#6	8'-4"	⊃
$w_{200}(E)$	48	#8	48'-6"	——
Structure Excavation		Cu. Yd.	362	
Concrete Structures		Cu. Yd.	290.8	
Reinforcement Bars, Epoxy Coated		Pound	34,090	
Mechanical Splicers		Each	40	

* Mechanical splice $h_{200}(E)$ bars to $u_{201}(E)$ bars

Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
See sheet 35 of 61 for anchor bolt layout and spacing.
** See Heat of Hydration Control for Concrete Structures special provision for footing concrete pour requirements.

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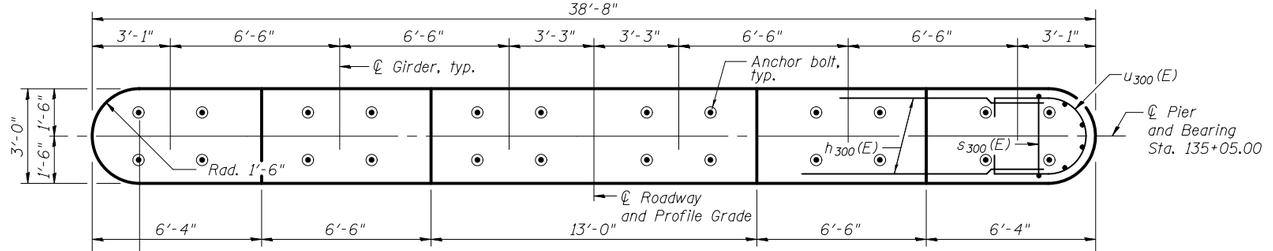
	CHECKED - ACK	REVISED
PLOT SCALE =	DRAWN - PRC	REVISED
PLOT DATE = 2/1/2013	CHECKED - MJP	REVISED

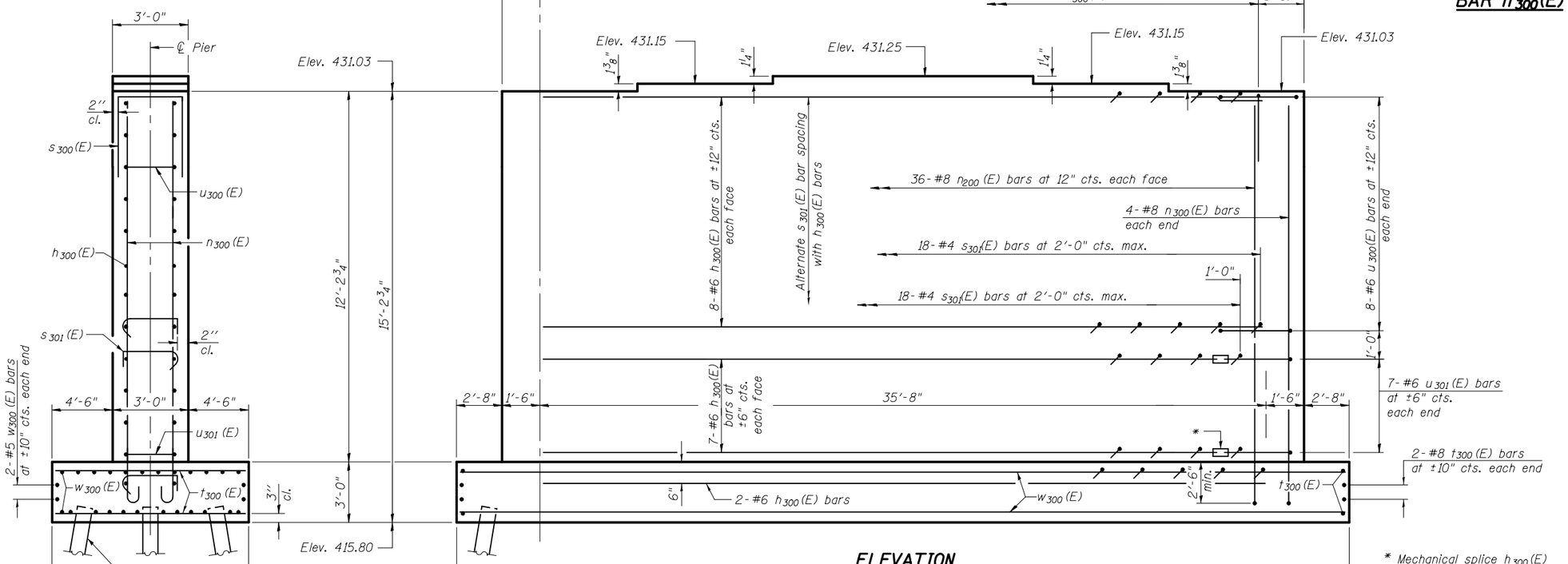
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2
STRUCTURE NO. 014-0033
SHEET NO. 42 OF 61 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	111
		CONTRACT NO. 76479		
	ILLINOIS FED. AID PROJECT			

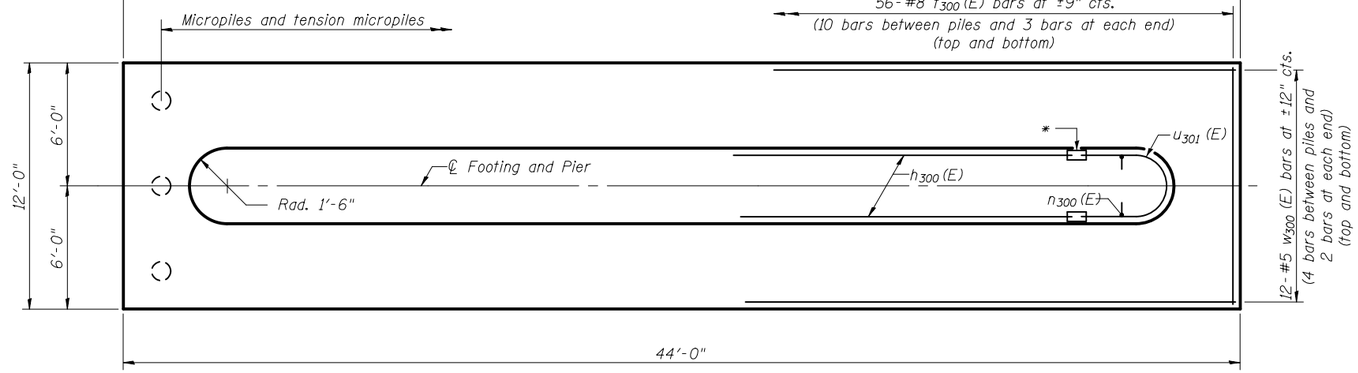


TOP PLAN



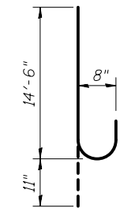
ELEVATION
(Looking North)

END VIEW

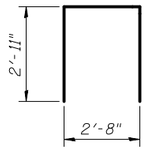


FOOTING PLAN

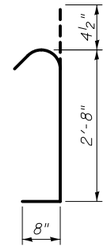
* Mechanical splice h_{300}(E) bars to u_{301}(E) bars



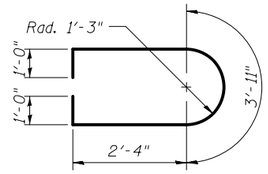
BAR n_{300}(E)



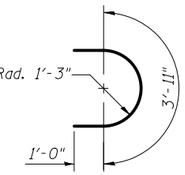
BAR s_{300}(E)



BAR s_{301}(E)



BAR u_{300}(E)



BAR u_{301}(E)

PILE DATA

Type: $9\frac{5}{8}$" Micropile

For details of micropiles and tension micropiles, see sheet 47, 48, and 49 of 61.

PIER 3
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_{300}(E)	32	#6	33'-8"	
n_{300}(E)	80	#8	15'-5"	
s_{300}(E)	36	#4	8'-6"	
s_{301}(E)	288	#4	3'-9"	
t_{300}(E)	116	#8	11'-6"	
u_{300}(E)	16	#6	10'-7"	
u_{301}(E)	14	#6	5'-11"	
w_{300}(E)	28	#5	43'-6"	
Structure Excavation		Cu. Yd.	143	
Concrete Structures		Cu. Yd.	111.0	
Reinforcement Bars, Epoxy Coated		Pound	11,050	
Mechanical Splicers		Each	28	

Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
See sheet 36 of 61 for anchor bolt layout and spacing.

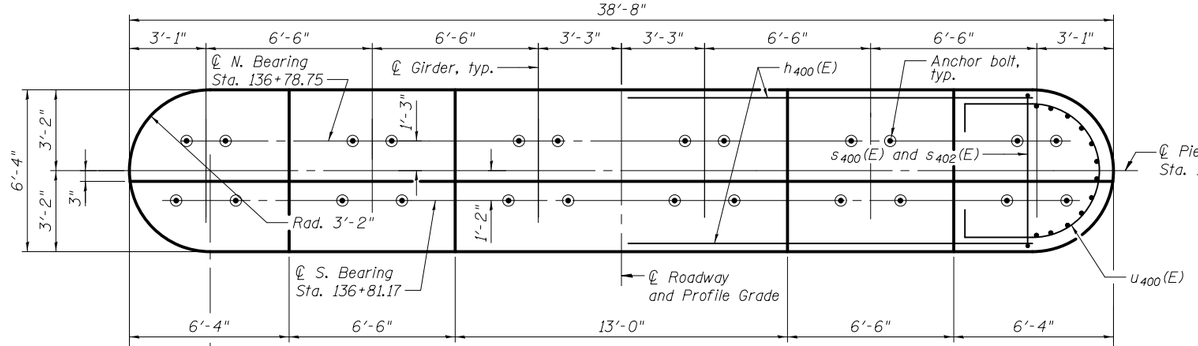
MODJESKI and MASTERS
Experience greet bridges.

USER NAME =	DESIGNED - MJP	REVISED
	CHECKED - ACK	REVISED
PLOT SCALE =	DRAWN - PRC	REVISED
PLOT DATE = 2/1/2013	CHECKED - MJP	REVISED

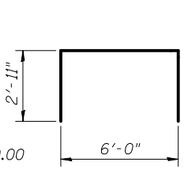
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 3
STRUCTURE NO. 014-0033
SHEET NO. 43 OF 61 SHEETS

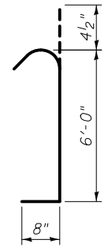
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	112
		CONTRACT NO. 76479		
	ILLINOIS	FED. AID PROJECT		



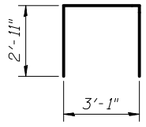
TOP PLAN



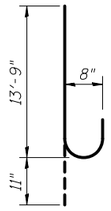
BAR s400(E)



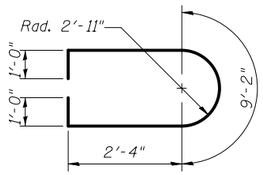
BAR s401(E)



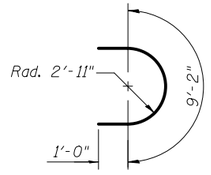
BAR s402(E)



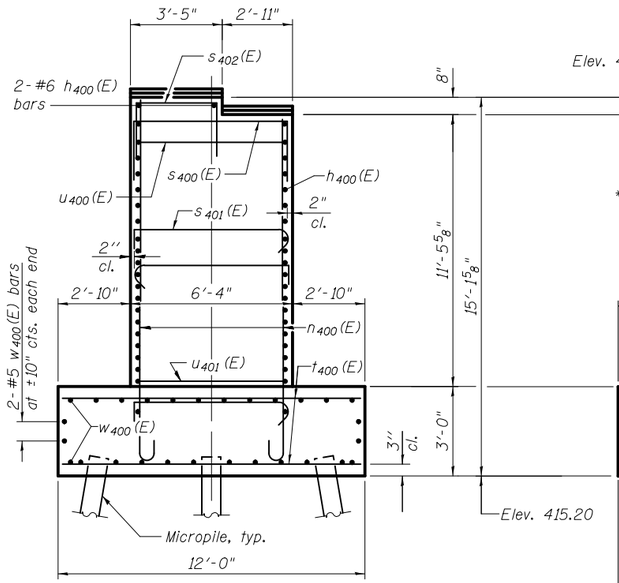
BAR n400(E)



BAR u400(E)

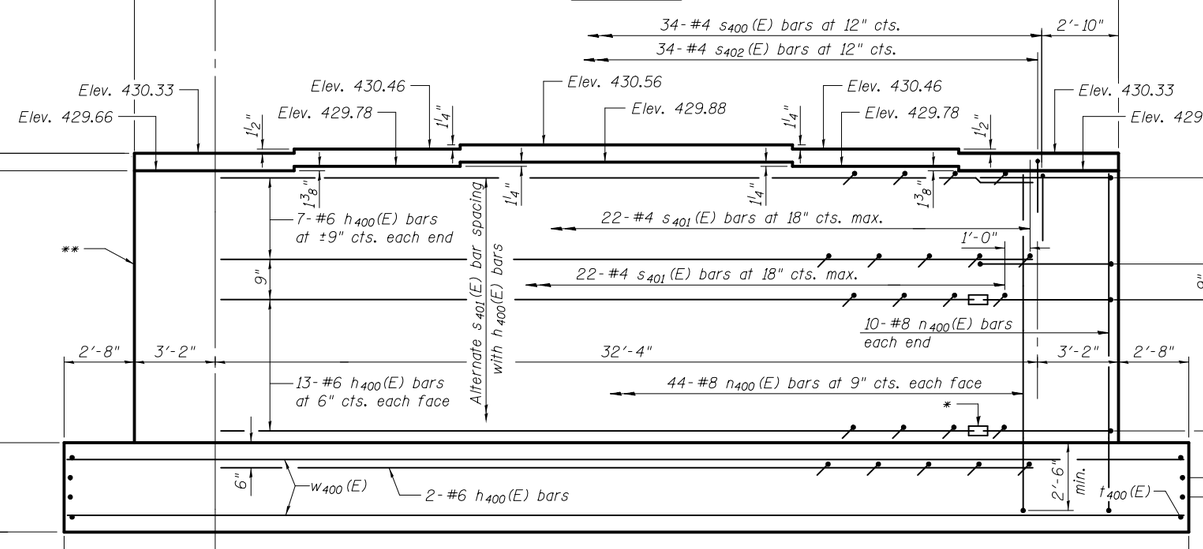


BAR u401(E)



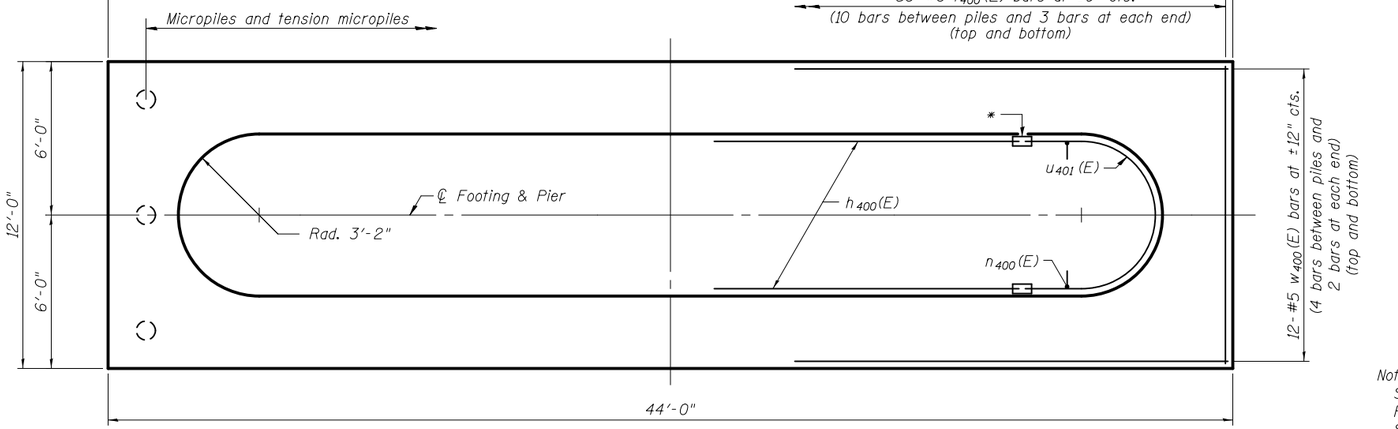
END VIEW

(Looking East)



ELEVATION

(Looking North)



FOOTING PLAN

PILE DATA

Type: $9\frac{5}{8}$" Micropile

For details of micropiles and tension micropiles, see sheets 47, 48 and 49 of 61.

PIER 4
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h_{400}(E)$	44	#6	30'-4"	——
$n_{400}(E)$	108	#8	14'-8"	⊃
$s_{400}(E)$	34	#4	11'-10"	⊓
$s_{401}(E)$	462	#4	7'-1"	⊔
$s_{402}(E)$	34	#4	8'-11"	⊓
$t_{400}(E)$	116	#6	11'-6"	——
$u_{400}(E)$	14	#6	15'-10"	⊃
$u_{401}(E)$	26	#6	11'-2"	⊃
$w_{400}(E)$	28	#5	43'-6"	——
Structure Excavation		Cu. Yd.	143	
Concrete Structures		Cu. Yd.	163.4	
Reinforcement Bars, Epoxy Coated		Pound	12,940	
Mechanical Splicers		Each	52	
Concrete Sealer		Sq. Ft.	1134	

* Mechanical splice $h_{400}(E)$ bars to $u_{401}(E)$ bars

Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
See sheet 35 of 61 for anchor bolt layout and spacing.
** See Heat of Hydration Control for Concrete Structures special provision for pier wall concrete pour requirements.

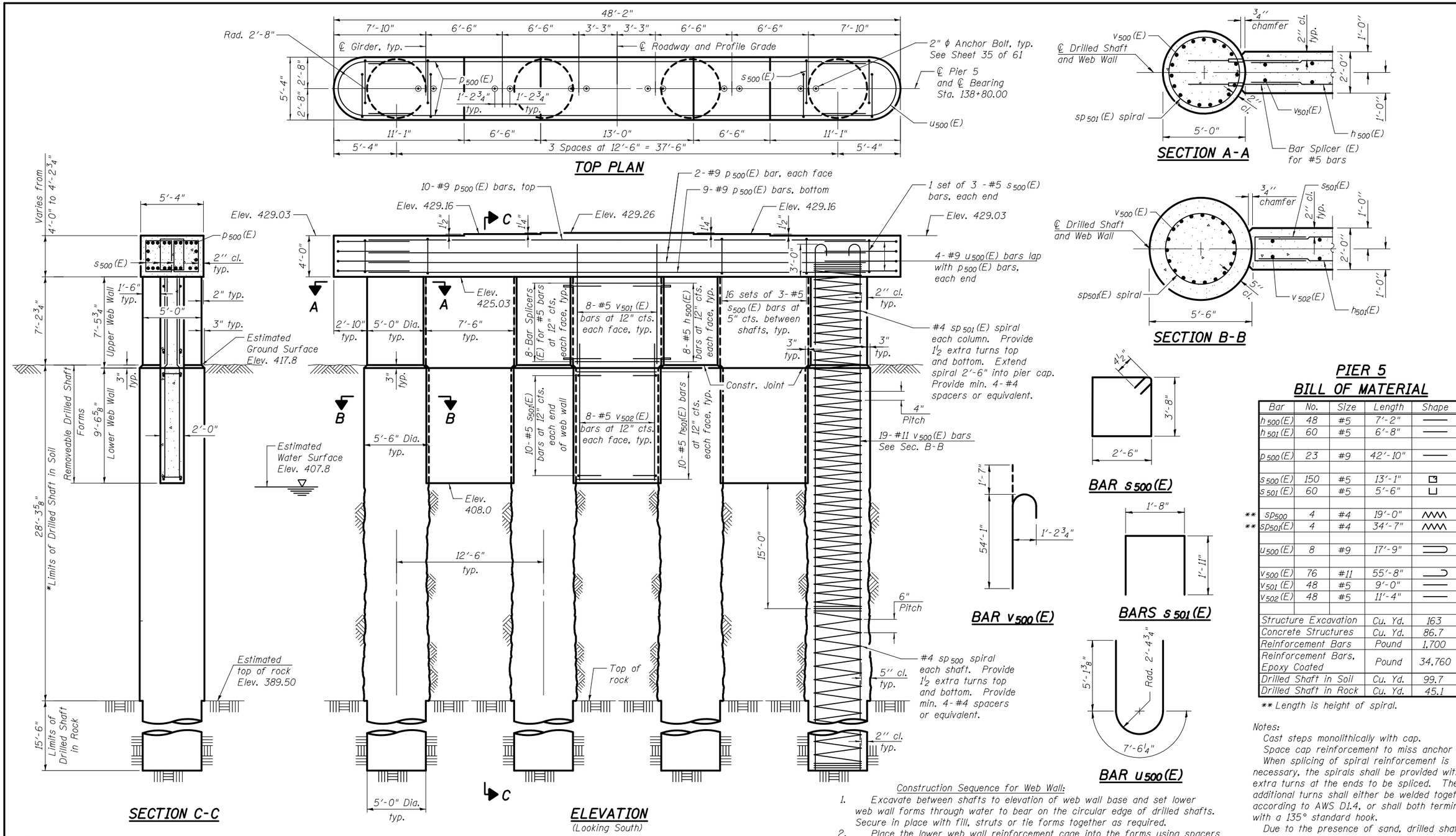
MODJESKI and MASTERS
Experience great bridges.

USER NAME =	DESIGNED - MJP	REVISED
	CHECKED - ACK	REVISED
PLOT SCALE =	DRAWN - PRC	REVISED
PLOT DATE = 2/1/2013	CHECKED - MJP	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 4
STRUCTURE NO. 014-0033
SHEET NO. 44 OF 61 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	113
		CONTRACT NO. 76479		
	ILLINOIS FED. AID PROJECT			



* If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the Contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

PIER 5
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h_{500}(E)$	48	#5	7'-2"	——
$h_{501}(E)$	60	#5	6'-8"	——
$p_{500}(E)$	23	#9	42'-10"	——
$s_{500}(E)$	150	#5	13'-1"	⊏
$s_{501}(E)$	60	#5	5'-6"	⊔
** sp_{500}	4	#4	19'-0"	∧∧∧
** $sp_{501}(E)$	4	#4	34'-7"	∧∧∧
$u_{500}(E)$	8	#9	17'-9"	⊃
$v_{500}(E)$	76	#11	55'-8"	⊃
$v_{501}(E)$	48	#5	9'-0"	——
$v_{502}(E)$	48	#5	11'-4"	——
Structure Excavation		Cu. Yd.	163	
Concrete Structures		Cu. Yd.	86.7	
Reinforcement Bars		Pound	1,700	
Reinforcement Bars, Epoxy Coated		Pound	34,760	
Drilled Shaft in Soil		Cu. Yd.	99.7	
Drilled Shaft in Rock		Cu. Yd.	45.1	

** Length is height of spiral.

Construction Sequence for Web Wall:

1. Excavate between shafts to elevation of web wall base and set lower web wall forms through water to bear on the circular edge of drilled shafts. Secure in place with fill, struts or tie forms together as required.
2. Place the lower web wall reinforcement cage into the forms using spacers to maintain proper clearances.
3. If the forms can be sealed against the shafts and streambed to allow dewatering, the reinforcement and the concrete placement may be completed in the dry. Alternatively, the rebar cage can be lowered into position through water and the concrete discharged at the base of the excavation through a tremie pipe or pump hose, displacing water, sediment, and tainted concrete out the top of the forms.
4. Construct Columns.
5. Construct upper web walls.

Notes:

Cast steps monolithically with cap.

Space cap reinforcement to miss anchor bolts.

When splicing of 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.

Due to the presence of sand, drilled shaft construction will need to employ the use of slurry or casing to construct the shafts; the method chosen should be left up to the Contractor.

See Heat of Hydration Control for Concrete Structures special provision for drilled shaft concrete placement requirements.

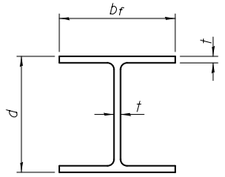
MODJESKI and MASTERS Experience great bridges.

USER NAME =	DESIGNED - RLM	REVISED
	CHECKED - JTH	REVISED
PLOT SCALE =	DRAWN - AEC	REVISED
PLOT DATE = 2/1/2013	CHECKED - RLM	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

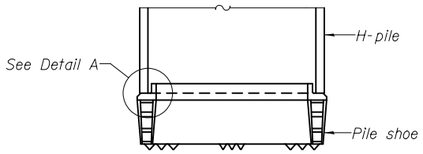
PIER 5
STRUCTURE NO. 014-0033
SHEET NO. 45 OF 61 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	114
		CONTRACT NO. 76479		
	ILLINOIS FED. AID PROJECT			

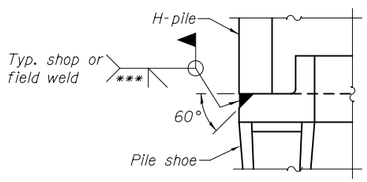


STEEL PILE TABLE

Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	$14\frac{1}{4}''$	$14\frac{7}{8}''$	$\frac{13}{16}''$	30''
x102	14''	$14\frac{3}{4}''$	$\frac{11}{16}''$	30''
x89	$13\frac{7}{8}''$	$14\frac{3}{4}''$	$\frac{5}{8}''$	30''
x73	$13\frac{5}{8}''$	$14\frac{5}{8}''$	$\frac{1}{2}''$	30''
HP 12x84	$12\frac{1}{4}''$	$12\frac{1}{4}''$	$\frac{11}{16}''$	24''
x74	$12\frac{1}{8}''$	$12\frac{1}{4}''$	$\frac{5}{8}''$	24''
x63	12''	$12\frac{1}{8}''$	$\frac{1}{2}''$	24''
x53	$11\frac{3}{4}''$	12''	$\frac{7}{16}''$	24''
HP 10x57	10''	$10\frac{1}{4}''$	$\frac{9}{16}''$	24''
x42	$9\frac{3}{4}''$	$10\frac{1}{8}''$	$\frac{7}{16}''$	24''
HP 8x36	8''	$8\frac{1}{8}''$	$\frac{7}{16}''$	18''

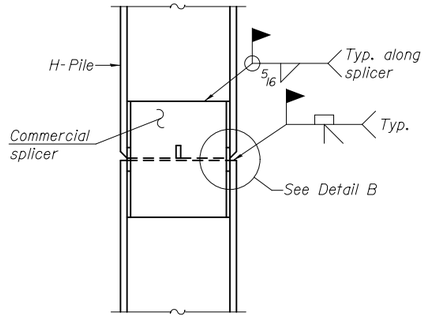


ELEVATION

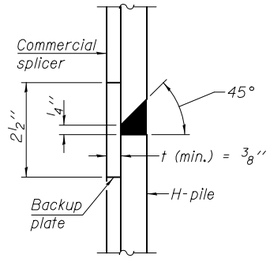


DETAIL A

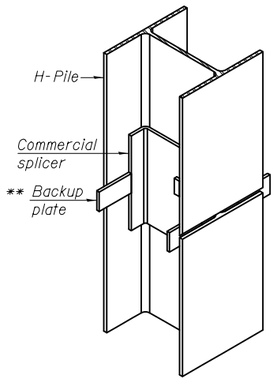
H-PILE SHOE ATTACHMENT



ELEVATION

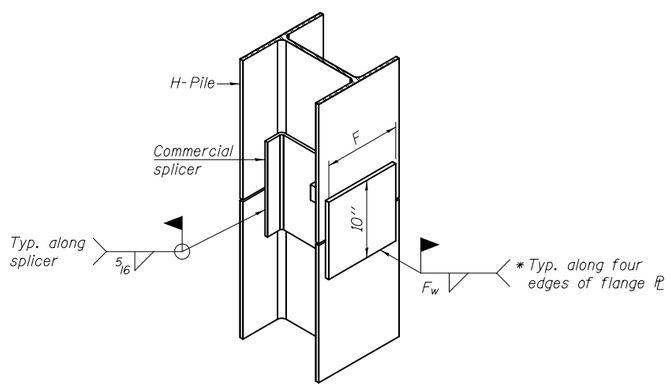


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



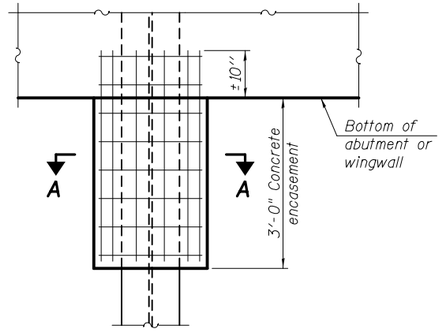
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

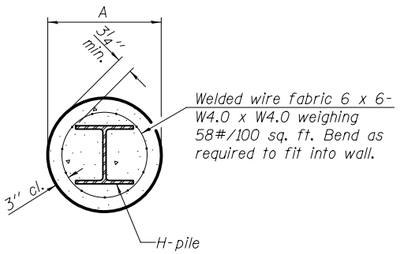
* Interrupt welds ¼'' from end of web and/or each flange.

** Remove portions of backup plates that extend outside the flanges.

*** Weld size per pile shoe manufacturer ($\frac{5}{16}''$ min.).



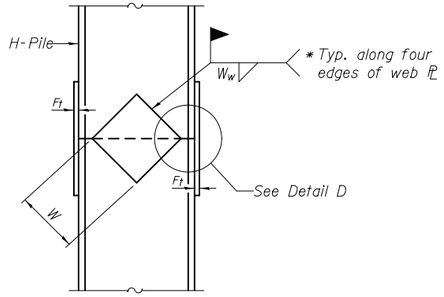
ELEVATION



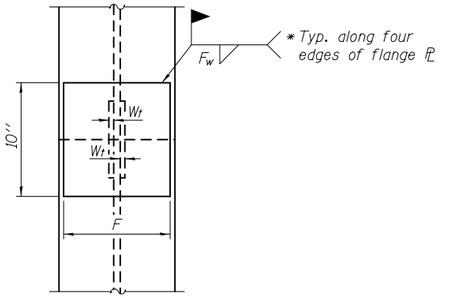
SECTION A-A

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

PILE ENCASEMENT

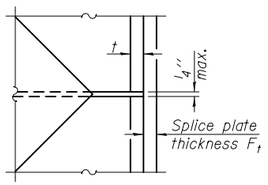


ELEVATION



END VIEW

WELDED PLATE FIELD SPLICE



DETAIL D

Designation	F	F_t	F_w	W	W_t	W_w
HP 14x117	$12\frac{1}{2}''$	1''	$\frac{7}{8}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x102	$12\frac{1}{2}''$	$\frac{7}{8}''$	$\frac{3}{4}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x89	$12\frac{1}{2}''$	$\frac{3}{4}''$	$\frac{11}{16}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x73	$12\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{9}{16}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
HP 12x84	10''	$\frac{7}{8}''$	$\frac{11}{16}''$	$6\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x74	10''	$\frac{7}{8}''$	$\frac{11}{16}''$	$6\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x63	10''	$\frac{5}{8}''$	$\frac{1}{2}''$	$6\frac{1}{2}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
x53	10''	$\frac{5}{8}''$	$\frac{1}{2}''$	$6\frac{1}{2}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
HP 10x57	8''	$\frac{3}{4}''$	$\frac{9}{16}''$	$5\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
x42	8''	$\frac{5}{8}''$	$\frac{9}{16}''$	$5\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
HP 8x36	7''	$\frac{5}{8}''$	$\frac{7}{16}''$	$4\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$

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

F-HP 1-27-12

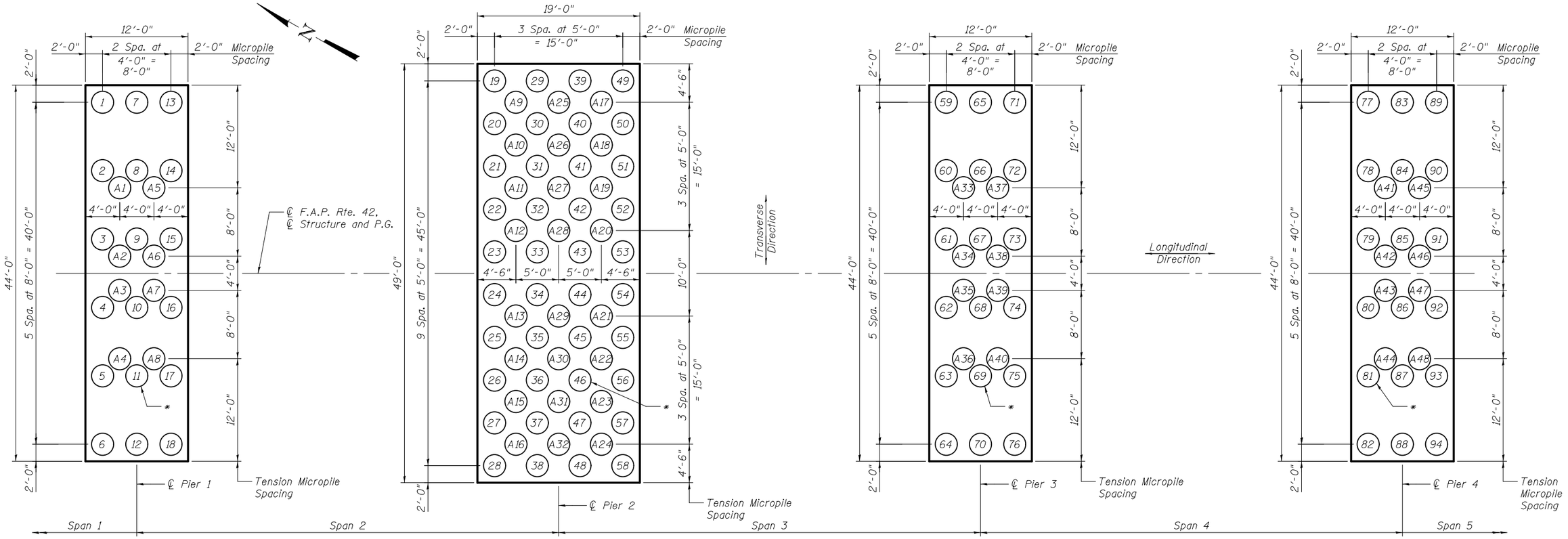
MODJESKI and MASTERS Experience great bridges.

USER NAME =	DESIGNED - RLM	REVISED
	CHECKED - JTH	REVISED
PLOT SCALE =	DRAWN - AEC	REVISED
PLOT DATE = 2/1/2013	CHECKED - RLM	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL H-PILE DETAILS
STRUCTURE NO. 014-0033
SHEET NO. 46 OF 61 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	115
		CONTRACT NO. 76479		
	ILLINOIS FED. AID PROJECT			



LOCATION	PIER 1 (STRAIGHT)	PIER 1 (BATTERED 1.5:12)	PIER 2 (BATTERED 2:12 TRANS. AND LONG.)	PIER 3 (STRAIGHT)	PIER 3 (BATTERED 1.5:12)	PIER 4 (STRAIGHT)	PIER 4 (BATTERED 1.5:12)	PIER 1 (BATTERED 8:12)	PIER 2 (BATTERED 8:12)	PIER 2 (BATTERED 2:12 TRANS. AND 5.5:12 LONG.)	PIER 3 (BATTERED 8:12)	PIER 4 (BATTERED 8:12)
KIND	MICROPILE							TENSION MICROPILE				
TYPE	M2	M1	M3	M2	M1	M2	M1	A1	A2	A3	A4	A4
NUMBER	6	12	40	6	12	6	12	8	8	16	8	8
FACTORED DESIGN BEARING OR AXIAL MICROPILE COMPRESSIVE RESISTANCE (k)	374	377	586	404	407	404	407	-	-	-	-	-
FACTORED AXIAL MICROPILE TENSILE RESISTANCE (k)	298	298	530	298	298	298	298	521	340	336	481	481
BOTTOM OF FOOTING ELEVATION (Ft.)	413.50	413.50	411.10	415.80	415.80	415.20	415.20	413.50	411.10	411.10	415.80	415.20
MINIMUM ESTIMATED TIP OF PERMANENT STEEL CASING	365.50	365.50	387.70	377.50	377.50	378.50	378.50	-	-	-	-	-
TOP OF MICROPILE ELEVATION (Ft.)	414.50	414.50	412.10	416.80	416.80	416.20	416.20	415.50	413.10	413.10	417.80	417.20
ESTIMATED DEPTH TO BEDROCK	32'	32'	30.9'	33.3'	33.3'	30.7'	30.7'	32'	30.9'	30.9'	33.3'	30.7'
ESTIMATED TOTAL MICROPILE LENGTH	49'	49'	56'	39'	38'	37'	38'	61'	49'	45'	47'	46'

(A1) Tension Micropile

(1) Micropile

* Micropile Proof Load Test

TYPE	MICROPILE DESCRIPTION	CASING OD	CASING WALL THICKNESS	CASING LENGTH	BAR SIZE	ROCK SOCKET DEPTH	DESIGN LOAD (COMPRESSION)	DESIGN LOAD (TENSION)	MICROPILE NUMBERS
A1	TENSION MICROPILE AT PIER 1 BATTERED 8:12 TRANS.	NA	NA	NA	#24	25.9'	0	508k	A1-A8
A2	TENSION MICROPILE AT PIER 2 BATTERED 8:12 TRANS.	NA	NA	NA	#20	18.3'	0	304k	A25-A32
A3	TENSION MICROPILE AT PIER 2 BATTERED 2:12 TRANS. AND 5.5:12 LONG.	NA	NA	NA	#20	16.9'	0	315k	A9-A24
A4	TENSION MICROPILE AT PIERS 3 AND 4 BATTERED 8:12 TRANS.	NA	NA	NA	#24	10.3' (Pier 3), 12.7' (Pier 4)	0	476k	A33-A48
M1	MICROPILE AT PIERS 1, 3 AND 4 BATTERED 1.5:12 LONG.	$9\frac{5}{8}$"	0.465"	32'-0"	#18	20.6' (Pier 1), 9.6' (Pier 3), 10.6' (Pier 4)	371k	0	1-6, 13-18, 59-64, 71-82, 89-94
M2	MICROPILE AT PIERS 1, 3 AND 4 NO BATTER	$9\frac{5}{8}$"	0.465"	32'-0"	#14	20.5' (Pier 1), 9.5' (Pier 3), 10.5' (Pier 4)	310k	0	7-12, 65-70, 83-88
M3	MICROPILE AT PIER 2 BATTERED 2:12 TRANS. AND LONG.	$9\frac{5}{8}$"	0.465"	26'-0"	#24	30'	555k	210k	19-58

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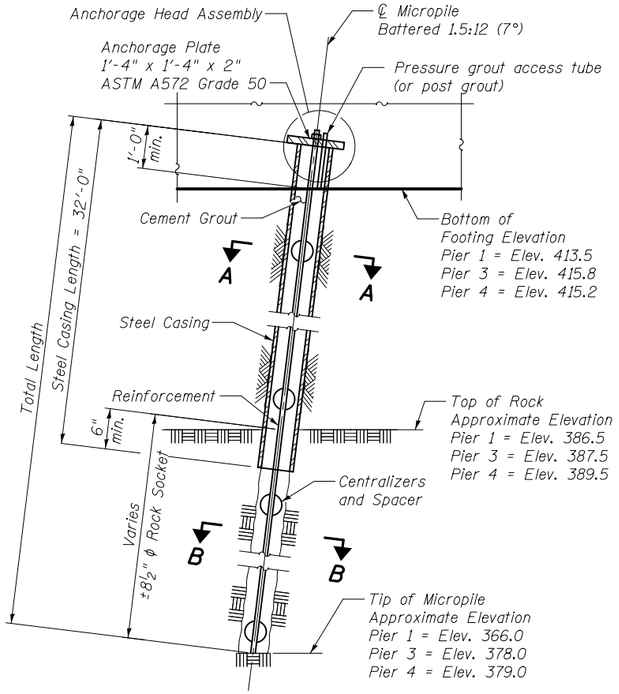
USER NAME =	DESIGNED - ACK	REVISED
	CHECKED - MJP	REVISED
PLOT SCALE =	DRAWN - AEC	REVISED
PLOT DATE = 2/1/2013	CHECKED - ACK	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

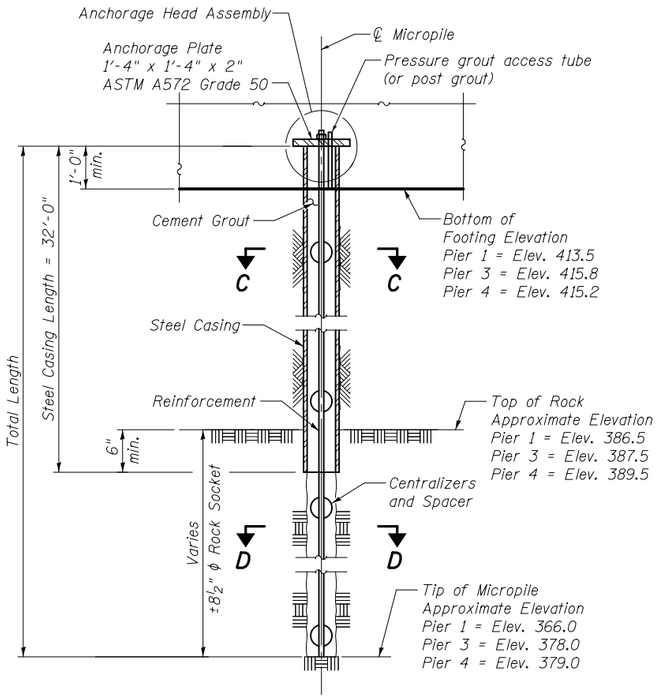
MICROPILE DETAILS – 1
STRUCTURE NO. 014–0033
SHEET NO. 47 OF 61 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	116
		CONTRACT NO. 76479		
	ILLINOIS	FED. AID PROJECT		



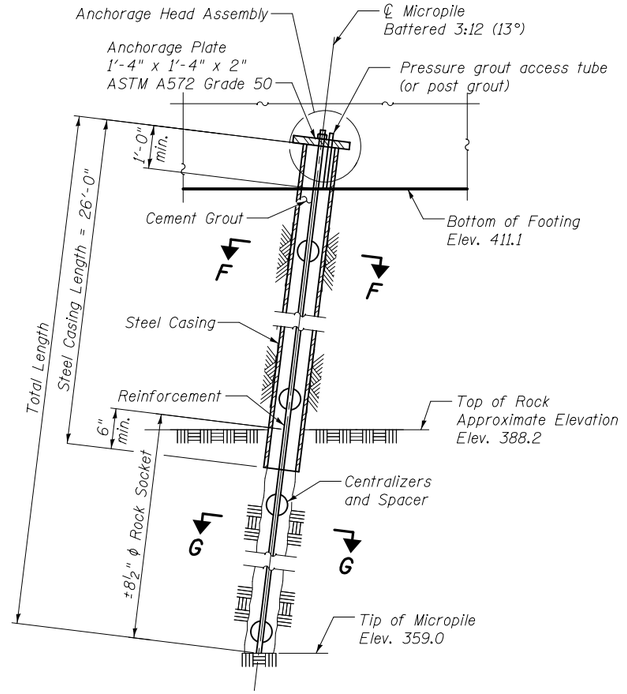
MICROPILE DETAIL - M1

371k maximum compression design load



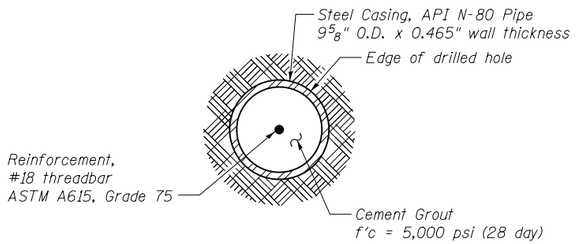
MICROPILE DETAIL -M2

310k maximum compression design load

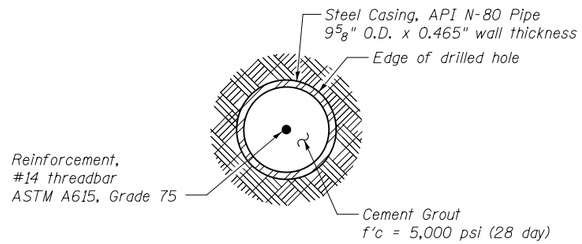


MICROPILE DETAIL - M3

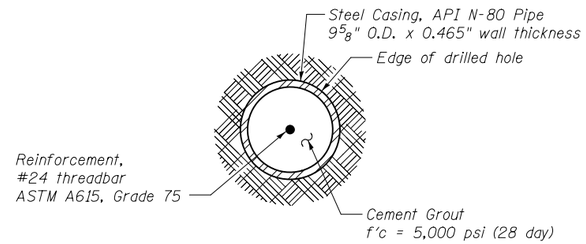
555k maximum compression design load
210k maximum tension design load



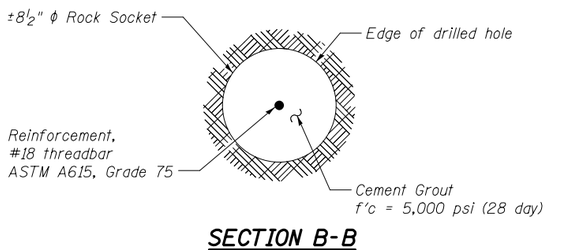
SECTION A-A



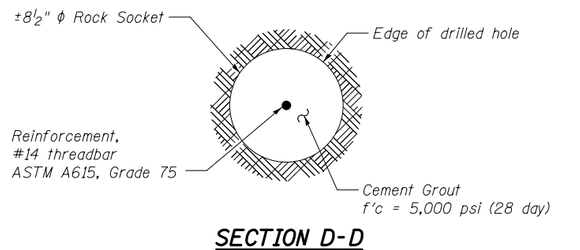
SECTION C-C



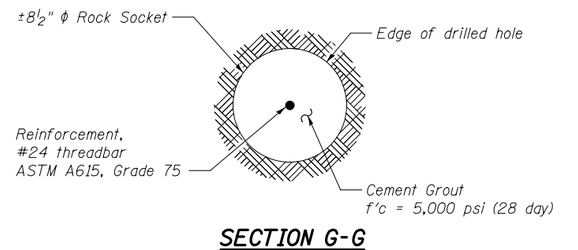
SECTION F-F



SECTION B-B



SECTION D-D



SECTION G-G

BILL OF MATERIAL

Item	Unit	Total
Micro-piles	Each	94
Micropile Proof Load Test	Each	4
Tension Micropiles	Each	48
Tension Micropile Load Test	Each	4

Note:
Steel casing shall not be spliced within 10 feet of the top of the pile. Splices shall be capable of developing the full moment capacity of the Steel Casing.

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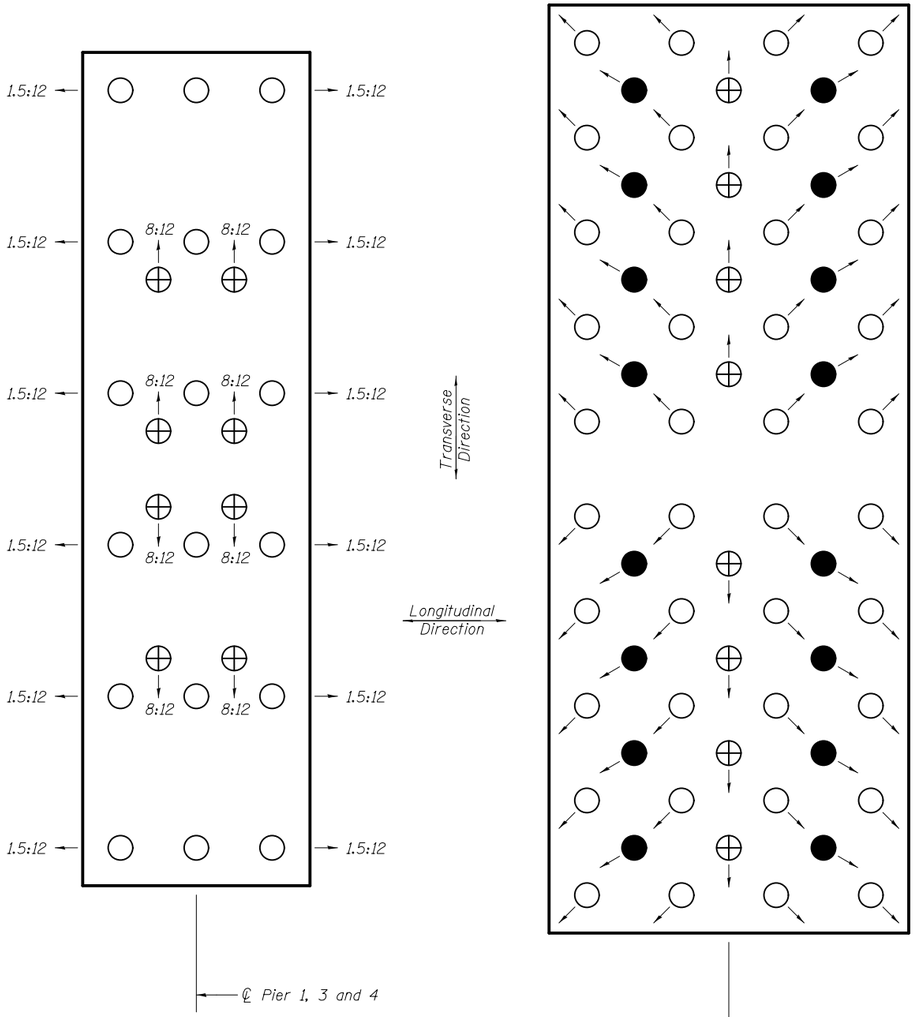
Experience great bridges.

USER NAME =	DESIGNED - ACK	REVISED
	CHECKED - MJP	REVISED
PLOT SCALE =	DRAWN - PRC	REVISED
PLOT DATE = 2/1/2013	CHECKED - ACK	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MICROPILE DETAILS – 2
STRUCTURE NO. 014-0033
SHEET NO. 48 OF 61 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	117
		CONTRACT NO. 76479		
	ILLINOIS FED. AID PROJECT			



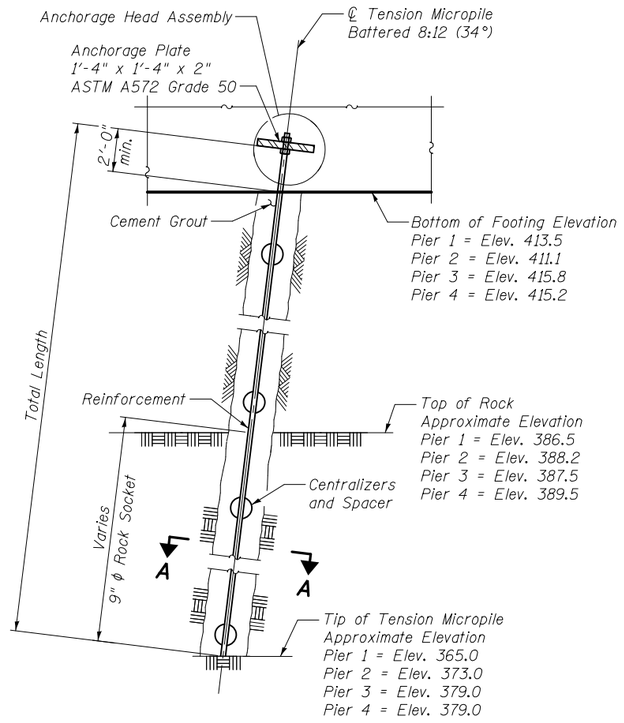
Micropile

Tension Micropile

Micropile Battered at 2:12 Transversely and 2:12 Longitudinally

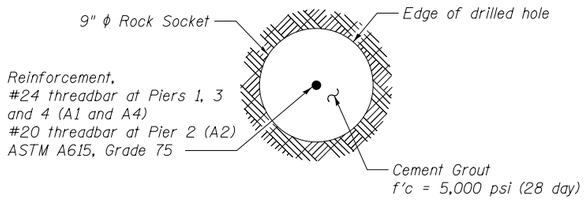
Tension Micropile Battered at 8:12 Transversely

Tension Micropile Battered at 2:12 Transversely and 5.5:12 Longitudinally

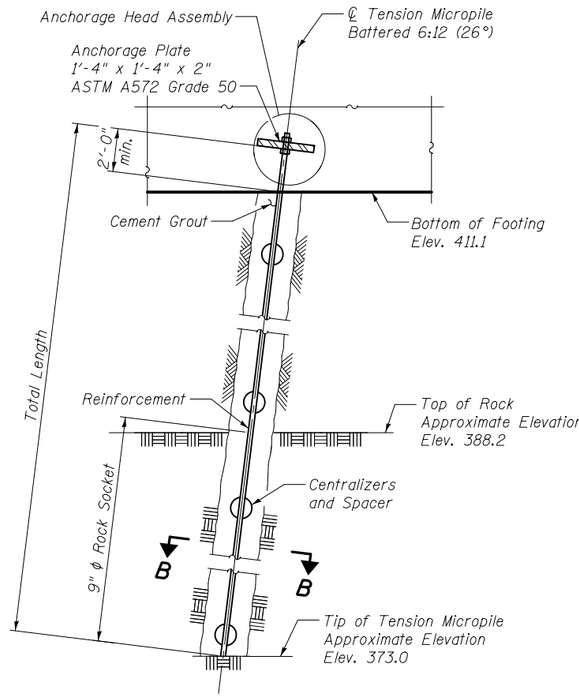


TENSION MICROPILE DETAIL - A1, A2 AND A4

508k maximum tension design load at Pier 1 (A1)
304k maximum tension design load at Pier 2 (A2)
476k maximum tension design load at Piers 3 and 4 (A4)

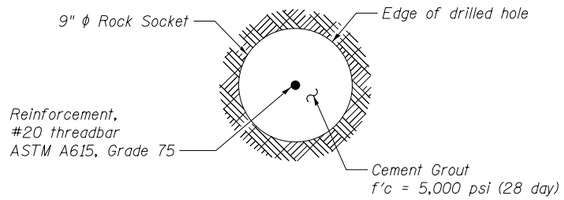


SECTION A-A



TENSION MICROPILE DETAIL - A3

315k maximum tension design load



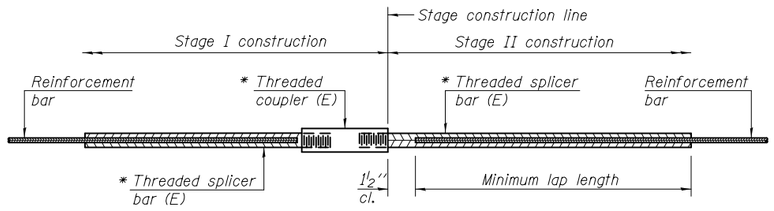
SECTION B-B

MODJESKI and MASTERS Experience great bridges.	USER NAME =	DESIGNED - ACK	REVISED
		CHECKED - MJP	REVISED
	PLOT SCALE =	DRAWN - AEC	REVISED
	PLOT DATE = 2/1/2013	CHECKED - ACK	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MICROPILE DETAILS – 3
STRUCTURE NO. 014–0033
SHEET NO. 49 OF 61 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	118
		CONTRACT NO. 76479		
	ILLINOIS FED. AID PROJECT			



STANDARD BAR SPLICER ASSEMBLY

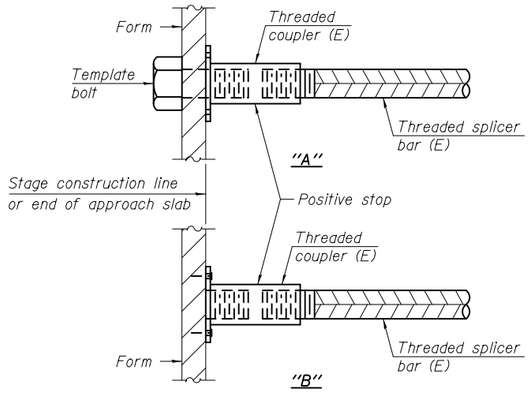
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"	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 + 1½" + thread length

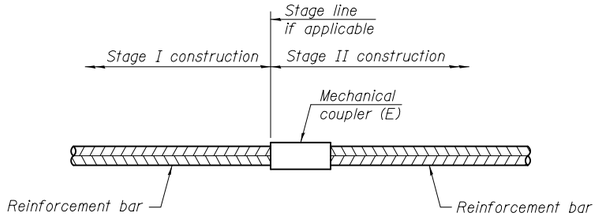
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

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



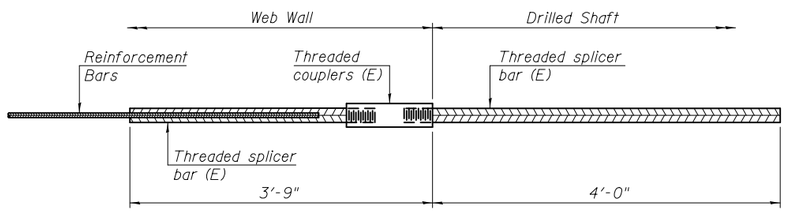
INSTALLATION AND SETTING METHODS

"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.



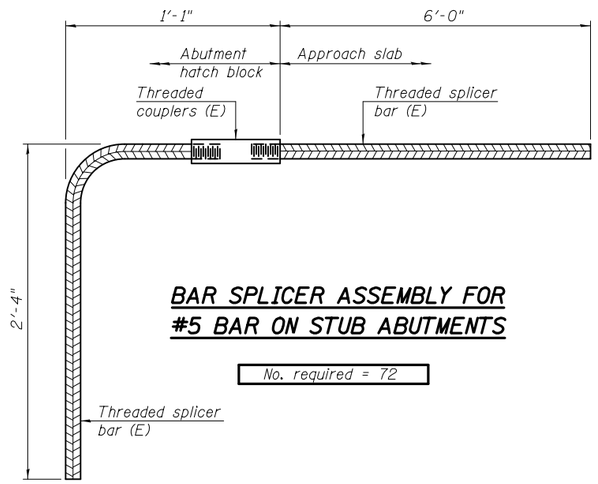
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required
Pier 1	#6	28
Pier 2	#6	40
Pier 3	#6	28
Pier 4	#6	52



BAR SPLICER ASSEMBLY FOR #5 BAR ON PIER 5 WEB WALL

No. required = 96



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required = 72

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.

MODJESKI and MASTERS
Experience great bridges.

USER NAME =	DESIGNED - RLM	REVISED	
	CHECKED - JTH	REVISED	
PLOT SCALE =	DRAWN - PRC	REVISED	
PLOT DATE = 2/1/2013	CHECKED - RLM	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 014-0033
SHEET NO. 50 OF 61 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	119
		CONTRACT NO. 76479		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
SCI Engineering

SOIL BORING LOG

Date 02/07/12

ROUTE FAP Route 42 (IL 127) DESCRIPTION IL 127 Over Kaskaskia River LOGGED BY SCI (CLM)

SECTION 1-1BR-2 LOCATION Carlyle, IL, SEC. 31, TWP. 2N, RNG. 2W

COUNTY Clinton DRILLING METHOD HSA w/mud rotary HAMMER TYPE Manual

STRUCT. NO. 014-0014
Station 140+00

BORING NO. B-1
Station 128+72
Offset 28 ft LT
Ground Surface Elev. 435.5 ft

Surface Water Elev. -- ft
Stream Bed Elev. -- ft

Groundwater Elev.:
First Encounter 412.0 ft ▼
Upon Completion -- ft
After -- Hrs. -- ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				CLAY: Brown and gray, trace sand [A-6]
	4 6 8	4.5 HP	12	
432.0				
	2 2 3	0.7 S/14	17	SANDY CLAY: Brown [A-7-6]
-5				
				Atterberg limits test performed
428.5	2 4 4	1.3 B	20	
				SILT: Gray, trace gravel [A-4]
	2 5 5	1.7 B	22	
-10				
424.0	3 3 5	1.0 B	27	CLAY: Gray, trace organics [A-7-6]
	2 3 4	1.1 B	30	Atterberg limits test performed
-15				
419.5	3 4 5	1.4 B	25	SILTY CLAY: Gray and brown, trace sand [A-6]
				0.5" sand seam
-20	2 4 4	1.2 B	26	
				SILTY CLAY: Gray and brown, trace sand [A-6] *(continued)*
	2 5 7	2.4 B	25	
▼				
	2 3 4	0.6 B	27	Atterberg limits test performed
-25				
410.0				
	2 2 3	0.2 B	29	SILTY LOAM: Brown and gray [A-4]
	2 4 2	1.2 B	28	GSA performed filled the augers with water at 30 feet
406.0				
-30				SANDY LOAM: Gray [A-2]
404.0				SAND: Gray, fine [A-3]
	3 5 6	NC		GSA performed
-35				
398.5				SAND: Gray, fine [A-2]
	7 8 8	NC		GSA performed trace gravel and coal
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
SCI Engineering

SOIL BORING LOG

Date 02/07/12

ROUTE FAP Route 42 (IL 127) DESCRIPTION IL 127 Over Kaskaskia River LOGGED BY SCI (CLM)

SECTION 1-1BR-2 LOCATION Carlyle, IL, SEC. 31, TWP. 2N, RNG. 2W

COUNTY Clinton DRILLING METHOD HSA w/mud rotary HAMMER TYPE Manual

STRUCT. NO. 014-0014
Station 140+00

BORING NO. B-1
Station 128+72
Offset 28 ft LT
Ground Surface Elev. 435.5 ft

Surface Water Elev. -- ft
Stream Bed Elev. -- ft

Groundwater Elev.:
First Encounter 412.0 ft ▼
Upon Completion -- ft
After -- Hrs. -- ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				SAND: Gray, fine [A-2] *(continued)*
	9 18 23	NC		
-45				began mud rotary drilling at 45 feet
				hard drilling
386.5	7 38 29	NC		
Sandy GRAVEL [A-1] 386.0				
-50				SHALEY CLAY: Gray
382.5				SHALE: Gray
381.5	50/3" 50/1" 50/1"	0.9 S/10	15	Mud Rotary Bit Refusal and Split Spoon Sampler Refusal at 54.0 ft.
-55				
				Boring grouted to 54 ft.
-60				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
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Illinois Department of Transportation
Division of Highways
SCI Engineering

SOIL BORING LOG

Date 02/10/12

ROUTE FAP Route 42 (IL 127) DESCRIPTION IL 127 Over Kaskaskia River LOGGED BY SCI (CLM)

SECTION 1-1BR-2 LOCATION Carlyle, IL, SEC. 31, TWP. 2N, RNG. 2W

COUNTY Clinton DRILLING METHOD MUD ROTARY HAMMER TYPE Manual

STRUCT. NO. 014-0014
Station 140+00

BORING NO. B-2
Station 130+67
Offset 9 ft RT
Ground Surface Elev. 436.0 ft

Surface Water Elev. 420.8 ft
Stream Bed Elev. 418.5 ft

Groundwater Elev.:
First Encounter -- ft
Upon Completion -- ft
After -- Hrs. -- ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
435.8				ASPHALT - 2 inches
435.1				REINFORCED CONCRETE - 8.5 inches
				Open air below bridge deck
-5				
-10				
-15				
420.8				Flowing water
418.5				Soft material, weight of casing. Casing pushed in to create seal for mud rotary drilling
-20				
				Soft material, weight of casing. Casing pushed in to create seal for mud rotary drilling *(continued)*
414.0				Began mud rotary drilling at 22 feet
				SILTY CLAY: Brown, trace sand [A-6]
	2 3 3	0.6 B	26	Atterberg limits test performed
-25				
410.5				SILT: Brown, trace sand [A-4]
	2 2 2	0.5 B	28	Atterberg limits test performed
408.0				SANDY LOAM: Brown, fine [A-4]
	2 4 7	NC	24	GSA performed
406.5				SANDY CLAY LOAM: Brown and gray, fine [A-3]
-30				
	2 1 1	NC	27	
402.0				SAND: Gray, fine to medium, trace gravel [A-2]
-35	1 5 8	0.2 B	34	GSA performed
	3 4 4	NC		trace organics
-40	7 8 8	NC		GSA performed

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
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Illinois Department of Transportation
Division of Highways
SCI Engineering

SOIL BORING LOG

Date 02/10/12

ROUTE FAP Route 42 (IL 127) DESCRIPTION IL 127 Over Kaskaskia River LOGGED BY SCI (CLM)

SECTION 1-1BR-2 LOCATION Carlyle, IL, SEC. 31, TWP. 2N, RNG. 2W

COUNTY Clinton DRILLING METHOD MUD ROTARY HAMMER TYPE Manual

STRUCT. NO. 014-0014
Station 140+00

BORING NO. B-2
Station 130+67
Offset 9 ft RT
Ground Surface Elev. 436.0 ft

Surface Water Elev. 420.8 ft
Stream Bed Elev. 418.5 ft

Groundwater Elev.:
First Encounter -- ft
Upon Completion -- ft
After -- Hrs. -- ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				SAND: Gray, fine to medium, trace gravel [A-2] *(continued)*
	10 13 12	NC		increasing gravel
-45	9 14 22	NC		
	14 14 31	NC		
386.5				Mud Rotary Bit Refusal and Split Spoon Sampler Refusal at 49.5 ft
-50	52/0.5"	NA		Boring grouted to 49.5 ft.
-55				
-60				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
SCI Engineering

SOIL BORING LOG

Date 02/10/12

ROUTE FAP Route 42 (IL 127) DESCRIPTION IL 127 Over Kaskaskia River LOGGED BY SCI (HHF)

SECTION 1-1BR-2 LOCATION Carlyle, IL, SEC. 31, TWP. 2N, RNG. 2W

COUNTY Clinton DRILLING METHOD MUD ROTARY HAMMER TYPE Automatic

STRUCT. NO. 014-0014
Station 140+00

BORING NO. B-3
Station 132+39
Offset 9 ft RT
Ground Surface Elev. 436.0 ft

Surface Water Elev. 419.2 ft
Stream Bed Elev. 418.3 ft

Groundwater Elev.:
First Encounter -- ft
Upon Completion -- ft
After -- Hrs. -- ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
435.7				ASPHALT - 3.5 inches
435.1				REINFORCED CONCRETE - 7.25 inches
				Open air below bridge deck
-5				
-10				
-15				
419.2				Flowing water
418.3				Began mud rotary drilling at 18 feet
	3 2 2	0.5 B	32	CLAY: Brown, trace sand and gravel [A-7-6] Atterberg limits test performed
-20				
	1 3 2	0.7 B	27	CLAY: Brown, trace sand and gravel [A-7-6] *(continued)* becomes brown and gray
413.0				CLAY: Brown and gray, trace gravel [A-6] Atterberg limits test performed
-25	2 2 4	1.7 S/20	25	
	1 1 3	1.0 B	28	
-30	1 1 2	0.4 B	29	increasing sand content Atterberg limits test performed
404.0	2 2 4	0.6 B	25	SAND: Brown and gray, fine [A-3]
402.5				SANDY LOAM: Gray [A-2] GSA performed
-35	2 2 2	NC		
400.5				SAND: Gray and black, fine to medium [A-2]
	2 3 3	NC		
398.3				Rough drilling, drilling fluid return indicated gravel
397.5				SAND: Brown and gray, fine to medium [A-2]
396.0 -40	10 3 5	NC		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
SCI Engineering

SOIL BORING LOG

Date 02/10/12

ROUTE FAP Route 42 (IL 127) DESCRIPTION IL 127 Over Kaskaskia River LOGGED BY SCI (HHF)

SECTION 1-1BR-2 LOCATION Carlyle, IL, SEC. 31, TWP. 2N, RNG. 2W

COUNTY Clinton DRILLING METHOD MUD ROTARY HAMMER TYPE Automatic

STRUCT. NO. 014-0014
Station 140+00

BORING NO. B-3
Station 132+39
Offset 9 ft RT
Ground Surface Elev. 436.0 ft

Surface Water Elev. 419.2 ft
Stream Bed Elev. 418.3 ft

Groundwater Elev.:
First Encounter -- ft
Upon Completion -- ft
After -- Hrs. -- ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				GSA performed lost mud rotary return
	5 7 10	NC		no sample recovery
393.0				SAND: Brown, with gravel, trace clay [A-2] GSA performed
-45	5 5 4	NC		
	12 18 50/6"	NC		Interbedded fine sand [A-3] and coarse gravel [A-1] seams
388.0				Mud Rotary Bit Refusal and Split Spoon Sampler Refusal at 48.0 ft
	50/0"	NA		
-50				Boring grouted to 48 ft.
-55				
-60				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

MODJESKI and MASTERS
Experience great bridges.

USER NAME =	DESIGNED - RLM	REVISED
	CHECKED - JTH	REVISED
PLOT SCALE =	DRAWN - PRC	REVISED
PLOT DATE = 2/1/2013	CHECKED - RLM	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOG B-3
STRUCTURE NO. 014-0033
SHEET NO. 53 OF 61 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	122
		CONTRACT NO. 76479		
	ILLINOIS FED. AID PROJECT			

Illinois Department of Transportation
Division of Highways
SCI Engineering, Inc.

ROCK CORE LOG

Date 9/28/12

ROUTE FAP Route 42 (IL 127) DESCRIPTION IL 127 Over Kaskaskia River LOGGED BY SCI (HHF)

SECTION 1-1BR-2 LOCATION Carlyle, IL, SEC. 31, TWP. 2N, RNG. 2W,
Latitude , Longitude

COUNTY Clinton CORING METHOD Wireline

STRUCT. NO. 014-0014
Station 140+00

BORING NO. B-3x
Station 132+36
Offset 8.5 ft LT
Ground Surface Elev. 436.0 ft

CORING BARREL TYPE & SIZE NX
Core Diameter 2.3 in
Top of Rock Elev. 388.00 ft
Begin Core Elev. 388.00 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
LIMESTONE: Gray, hard, slight weathering, fossiliferous	387.50	1	88	0	3	
CLAYEY SHALE: Gray, soft to very soft, highly weathered	386.70	2	100	87	1	2.0
LIMESTONE: Gray, hard, trace sand	-50					
Becomes fossiliferous	-55	3	97	95	3.4	
CLAYEY SHALE: Gray, soft, moderately to highly weathered	380.25					
2 inch CORE LOSS	379.25					
SHALE: Dark gray to black, moderately hard, slightly weathered, with thin coal seams						37.1
	-60	4	100	30	4.6	
Approximate 45 degree fracture, rock is wet						
SANDSTONE: Gray, fine grained, hard, calcareous	375.00					
SHALE: Dark gray to black, moderately hard, slightly weathered, with thin coal seams	374.30					
Approximate 50 degree fracture, rock is wet Approximate 50 degree fracture, rock is wet						
1 inch COAL SEAM 2 inch COAL SEAM	371.20	5	100	73	5.2	
CLAYEY SHALE: Light gray, soft, highly weathered, calcareous is spots	-65					7.2

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

BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
SCI Engineering, Inc.

ROCK CORE LOG

Date 9/28/12

ROUTE FAP Route 42 (IL 127) DESCRIPTION IL 127 Over Kaskaskia River LOGGED BY SCI (HHF)

SECTION 1-1BR-2 LOCATION Carlyle, IL, SEC. 31, TWP. 2N, RNG. 2W,
Latitude , Longitude

COUNTY Clinton CORING METHOD Wireline

STRUCT. NO. 014-0014
Station 140+00

BORING NO. B-3x
Station 132+36
Offset 8.5 ft LT
Ground Surface Elev. 436.0 ft

CORING BARREL TYPE & SIZE NX
Core Diameter 2.3 in
Top of Rock Elev. 388.00 ft
Begin Core Elev. 388.00 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
CLAYEY SHALE: Light gray, soft, highly weathered, calcareous is spots *(continued)*	367.40					
SHALE: Light gray, moderately hard, slightly to moderately weathered, trace sand		6	100	100	4	
	-70	7	100	93	1.1	5.6
With sand 1 inch SANDSTONE SEAM 7 inch layers of INTERBEDDED SANDSTONE, SILTSTONE, AND SHALE	362.00					
SANDSTONE: Dark gray, very fine grained, moderately hard, slightly weathered, few thin shale seams	-75	8	100	100	2.25	31.8
	358.30					
Boring terminated at 77.8 ft.	-80					
	-85					

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

BBS, form 138 (Rev. 8-99)

MODJESKI and MASTERS
Experience great bridges.

USER NAME =	DESIGNED - RLM	REVISED
	CHECKED - JTH	REVISED
PLOT SCALE =	DRAWN - PRC	REVISED
PLOT DATE = 2/1/2013	CHECKED - RLM	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROCK CORE LOG B-3X
STRUCTURE NO. 014-0033
SHEET NO. 54 OF 61 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	123
		CONTRACT NO. 76479		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
SCI Engineering

SOIL BORING LOG

Date 02/08/12

ROUTE FAP Route 42 (IL 127) DESCRIPTION IL 127 Over Kaskaskia River LOGGED BY SCI (JVH)

SECTION 1-1BR-2 LOCATION Carlyle, IL, SEC. 31, TWP. 2N, RNG. 2W

COUNTY Clinton DRILLING METHOD MUD ROTARY HAMMER TYPE Manual

STRUCT. NO. 014-0014
Station 140+00

BORING NO. B-4
Station 134+09
Offset 10 ft LT
Ground Surface Elev. 436.0 ft

Surface Water Elev. 421.0 ft
Stream Bed Elev. 420.4 ft

Groundwater Elev.:
First Encounter -- ft
Upon Completion -- ft
After -- Hrs. -- ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
435.7				ASPHALT - 3.5 inches
435.2				REINFORCED CONCRETE - 6.5 inches
				Open air below bridge deck
-5				
-10				
421.0				
-15				
420.4				Flowing water
				Soft material, weight of casing. Casing pushed in to seal off for mud rotary drilling
-20				
				Soft material, weight of casing. Casing pushed in to seal off for mud rotary drilling *(continued)*
-25				
				Began mud rotary drilling at 27 feet
408.0				
	1 2 1	NC	23	SILT: Brown [A-4]
-30				Sample too disturbed for a UCS test Atterberg limits test performed
404.5				
	2 3 8	NC	27	SAND: Brown and gray, fine [A-2] trace gravel
403.0				GSA performed
	9 10 9	NC		SAND: Brown and gray, fine [A-3] some gravel GSA performed
-35				
400.5				
	3 3 4	NC		SAND: Brown and gray, fine [A-2] GSA performed
	13 20 23	NC		some gravel
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
SCI Engineering

SOIL BORING LOG

Date 02/08/12

ROUTE FAP Route 42 (IL 127) DESCRIPTION IL 127 Over Kaskaskia River LOGGED BY SCI (JVH)

SECTION 1-1BR-2 LOCATION Carlyle, IL, SEC. 31, TWP. 2N, RNG. 2W

COUNTY Clinton DRILLING METHOD MUD ROTARY HAMMER TYPE Manual

STRUCT. NO. 014-0014
Station 140+00

BORING NO. B-4
Station 134+09
Offset 10 ft LT
Ground Surface Elev. 436.0 ft

Surface Water Elev. 421.0 ft
Stream Bed Elev. 420.4 ft

Groundwater Elev.:
First Encounter -- ft
Upon Completion -- ft
After -- Hrs. -- ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				SAND: Brown and gray, fine [A-2] *(continued)*
	8 20 21	NC		trace gravel
393.0				Boring cave-in during drilling at 43 feet
	9 11 13	3.8 S/10	18	SHALEY CLAY: Brown, some rock fragments
391.5				CLAYEY SHALE to WEATHERED SHALE: Gray
-45				Hard drilling observed
388.4				Limestone chips oberserved in drilling fluid
	50/1.5"	NA		Mud Rotary Bit Refusal and Split Spoon Sampler Refusal at 47.6 ft
-50				Boring grouted to 47.63 ft.
-55				
-60				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
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Illinois Department of Transportation
Division of Highways
SCI Engineering

SOIL BORING LOG

Date 02/09/12

ROUTE FAP Route 42 (IL 127) DESCRIPTION IL 127 Over Kaskaskia River LOGGED BY SCI (CLM)

SECTION 1-1BR-2 LOCATION Carlyle, IL, SEC. 31, TWP. 2N, RNG. 2W

COUNTY Clinton DRILLING METHOD MUD ROTARY HAMMER TYPE Manual

STRUCT. NO. 014-0014
Station 140+00

BORING NO. B-5
Station 135+45
Offset 9 ft RT
Ground Surface Elev. 436.0 ft

Surface Water Elev. 421.1 ft
Stream Bed Elev. 421.0 ft

Groundwater Elev.:
First Encounter -- ft
Upon Completion -- ft
After -- Hrs. -- ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
ASPHALT - 5 inches 435.6 REINFORCED CONCRETE - 5 inches 435.2 Open air below bridge deck				Soft material, weight of casing. Casing pushed in to seal off for mud rotary drilling *(continued)*			
				Began mud rotary drilling at 22.75 feet 413.3			
-5				CLAY: Brown, some sand, trace gravel [A-7] -25	4 8 7	0.6 B	26
				SILT: Brown, trace clay nodules [A-4] 410.5			
				Atterberg limits test performed	2 2 3	0.2 B	26
				407.5			
-10				SILTY LOAM: Brown [A-4] -30 Sample too disturbed for a UCS test Atterberg limits test performed	1 2 1	NC	24
				Atterberg limits test performed	4 4 3	0.9 B	24
				402.5			
421.1 -15 Flowing water 421.0				SAND: Gray, trace organics, trace gravel [A-2] GSA performed -35	2 2 3	NC	25
Soft material, weight of casing. Casing pushed in to seal off for mud rotary drilling				400.5			
				SANDY LOAM: Fine, trace gravel [A-3] GSA performed	3 5 6	NC	21
				398.0			
-20				SAND: Brown and gray, fine to coarse, with gravel [A-2] GSA performed 396.0 -40	5 7 10	NC	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
SCI Engineering

SOIL BORING LOG

Date 02/09/12

ROUTE FAP Route 42 (IL 127) DESCRIPTION IL 127 Over Kaskaskia River LOGGED BY SCI (CLM)

SECTION 1-1BR-2 LOCATION Carlyle, IL, SEC. 31, TWP. 2N, RNG. 2W

COUNTY Clinton DRILLING METHOD MUD ROTARY HAMMER TYPE Manual

STRUCT. NO. 014-0014
Station 140+00

BORING NO. B-5
Station 135+45
Offset 9 ft RT
Ground Surface Elev. 436.0 ft

Surface Water Elev. 421.1 ft
Stream Bed Elev. 421.0 ft

Groundwater Elev.:
First Encounter -- ft
Upon Completion -- ft
After -- Hrs. -- ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
GRAVEL: Coarse [A-1]			
394.5			
SAND: Gray, some gravel [A-2]	10 18 27	NC	
	18 23 16	NC	
-45			
390.5			
SHALEY CLAY to CLAYEY SHALE based on drilling fluid observations			
387.5			
SHALE: Gray	50/5"	2.6 S/15	11
-50			
no sample recovery	50/2"	NA	
382.5			
Boring terminated at 53.5 ft.	50/0.5"	NA	
Boring grouted to 53.5 ft.			
-55			
-60			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
SCI Engineering, Inc.

ROCK CORE LOG

Date 9/27/12

ROUTE FAP Route 42 (IL 127) DESCRIPTION IL 127 Over Kaskaskia River LOGGED BY SCI (HHF)

SECTION 1-1BR-2 LOCATION Carlyle, IL, SEC. 31, TWP. 2N, RNG. 2W,
Latitude , Longitude

COUNTY Clinton CORING METHOD Wireline

STRUCT. NO. 014-0014
Station 140+00

BORING NO. B-5x
Station 135+42
Offset 8.5 ft LT
Ground Surface Elev. 436.0 ft

CORING BARREL TYPE & SIZE NX
Core Diameter 2.3 in
Top of Rock Elev. 387.50 ft
Begin Core Elev. 387.50 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
GRAVEL: Brown and gray, fine to coarse grained	387.35	1	94	61	1	
SHALE: Greenish-gray, soft, highly weathered 2 inch SANDSTONE SEAM Becomes sandy, moderately soft, moderately weathered	-50 385.40					
SANDSTONE: Gray, fine grained, hard, swith thin shale seams	384.35					
SHALE: Gray, moderately soft, moderately to highly weathered, with thin sandstone layers	383.60	2	100	42	1	
SANDSTONE: Gray, fine grained, hard, few thin shale seams	382.10	3	100	65	1	
INTERBEDDED SANDSTONE and SHALE: Gray and dark gray	381.35					
SANDSTONE: Gray, fine grained, hard 2 inch SHALE SEAM 1/2 inch SHALE SEAM 2 inch SHALE SEAM	-55					112.9
INTERBEDDED SANDSTONE and SHALE: Gray and dark gray	378.70	4	100	75	1.4	
SANDSTONE: Gray, fine grained, hard 1 inch SHALE SEAM	376.10 -60					
INTERBEDDED SANDSTONE, SILTSTONE, and SHALE: Gray and dark gray	374.45					
SANDSTONE: Gray, fine grained, hard, few shale seams	373.60					
INTERBEDDED SANDSTONE, SILTSTONE, and SHALE: Gray and dark gray	372.10	5	100	70	1	
SANDSTONE: Gray, fine grained, hard, few thin shale seams, some banding	371.30 -65					39.3
INTERBEDDED SANDSTONE, SILTSTONE, and SHALE: Gray and dark gray	370.65					
	367.50					

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

BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
SCI Engineering, Inc.

ROCK CORE LOG

Date 9/27/12

ROUTE FAP Route 42 (IL 127) DESCRIPTION IL 127 Over Kaskaskia River LOGGED BY SCI (HHF)

SECTION 1-1BR-2 LOCATION Carlyle, IL, SEC. 31, TWP. 2N, RNG. 2W,
Latitude , Longitude

COUNTY Clinton CORING METHOD Wireline

STRUCT. NO. 014-0014
Station 140+00

BORING NO. B-5x
Station 135+42
Offset 8.5 ft LT
Ground Surface Elev. 436.0 ft

CORING BARREL TYPE & SIZE NX
Core Diameter 2.3 in
Top of Rock Elev. 387.50 ft
Begin Core Elev. 387.50 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
SANDSTONE: Dark gray, very fine grained, moderately hard, slightly weathered, few thin shale seams	-70	6	100	88	1.2	30.6
Becomes hard, no shale seams	362.50					65.2
Boring terminated at 73.5 ft.	-75					
	-80					
	-85					

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

BBS, form 138 (Rev. 8-99)

MODJESKI and MASTERS
Experience great bridges.

USER NAME =	DESIGNED - RLM	REVISED
	CHECKED - JTH	REVISED
PLOT SCALE =	DRAWN - PRC	REVISED
PLOT DATE = 2/1/2013	CHECKED - RLM	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROCK CORE LOG B-5X
STRUCTURE NO. 014-0033
SHEET NO. 57 OF 61 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	126
		CONTRACT NO. 76479		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
SCI Engineering

SOIL BORING LOG

Date 02/09/12

ROUTE FAP Route 42 (IL 127) DESCRIPTION IL 127 Over Kaskaskia River LOGGED BY SCI (HHF)

SECTION 1-1BR-2 LOCATION Carlyle, IL, SEC. 31, TWP. 2N, RNG. 2W

COUNTY Clinton DRILLING METHOD MUD ROTARY HAMMER TYPE Automatic

STRUCT. NO. 014-0014
Station 140+00

BORING NO. B-6
Station 137+15
Offset 10 ft LT
Ground Surface Elev. 436.0 ft

Surface Water Elev. 421.0 ft
Stream Bed Elev. 420.0 ft

Groundwater Elev.:
First Encounter -- ft
Upon Completion -- ft
After -- Hrs. -- ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
ASPHALT - 2.25 inches (435.8) / REINFORCED CONCRETE - 7.25 inches (435.2) / Open air below bridge deck			
-5			
-10			
421.0 -15 Flowing water / 420.0 Soft material, weight of casing. Casing pushed in to seal off for mud rotary drilling			
417.5 began mud rotary drilling at 18.5 feet / no sample recovery -20	3 2 2	NC	
SILTY LOAM: Brown to brown and gray [A-4] *(continued)*	3 WOH WOH	0.1 B	25
Sample too disturbed for a UCS test / Atterberg limits test performed -25	WOH WOH WOH	NC	27
Sample too disturbed for a UCS test	WOH WOH 1	NC	28
Sample too disturbed for a UCS test / Atterberg limits test performed -30	1 WOH WOH	NC	24
404.0 no sampling due to casing problems / SANDY LOAM: Gray [A-2]			
GSA performed -35	7 3 2	NC	
400.5 SAND: Brown and gray, fine to medium, trace gravel [A-2] / GSA performed	3 4 5	NC	
GSA performed / increasing gravel -40	8 6 6	NC	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
SCI Engineering

SOIL BORING LOG

Date 02/09/12

ROUTE FAP Route 42 (IL 127) DESCRIPTION IL 127 Over Kaskaskia River LOGGED BY SCI (HHF)

SECTION 1-1BR-2 LOCATION Carlyle, IL, SEC. 31, TWP. 2N, RNG. 2W

COUNTY Clinton DRILLING METHOD MUD ROTARY HAMMER TYPE Automatic

STRUCT. NO. 014-0014
Station 140+00

BORING NO. B-6
Station 137+15
Offset 10 ft LT
Ground Surface Elev. 436.0 ft

Surface Water Elev. 42[illegible].0 ft
Stream Bed Elev. 420.0 ft

Groundwater Elev.:
First Encounter -- ft
Upon Completion -- ft
After -- Hrs. -- ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
395.5 SILTY LOAM: Gray [A-6] / Atterberg limits test performed	3 3 4	0.7 B	19
392.0 SAND: Gray [A-2] -45	9 10 12	NC	
389.5 SHALE: Gray	8 18 38	1.6 S/5	15
Hard, slow drilling -50	50/3"	NA	15
	50/4"	0.6 S/5	19
382.3 Boring terminated at 53.8 ft. / Boring grouted to 53.75 ft. -55	50/3"	NA	18

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
SCI Engineering

SOIL BORING LOG

Date 02/09/12

ROUTE FAP Route 42 (IL 127) DESCRIPTION IL 127 Over Kaskaskia River LOGGED BY SCI (HHF)

SECTION 1-1BR-2 LOCATION Carlyle, IL, SEC. 31, TWP. 2N, RNG. 2W

COUNTY Clinton DRILLING METHOD MUD ROTARY HAMMER TYPE Automatic

STRUCT. NO. 014-0014
Station 140+00

BORING NO. B-7
Station 139+28
Offset 9 ft RT
Ground Surface Elev. 436.0 ft

Surface Water Elev. 421.5 ft
Stream Bed Elev. 405.0 ft

Groundwater Elev.:
First Encounter -- ft
Upon Completion -- ft
After -- Hrs. -- ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
435.8				ASPHALT - 2 inches
435.1				REINFORCED CONCRETE - 9 inches
				Open air below bridge deck
-5				
-10				
421.5				Flowing water
-15				
-20				
				Flowing water *(continued)*
-25				
-30				
405.0				Soft material, weight of casing. Casing pushed in to seal off for mud rotary drilling
-35				
399.0				Began mud rotary drilling at 37 feet
				SAND: Brown, tan, black, fine to medium [A-3]
	2 2 3	NC		GSA performed
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
SCI Engineering

SOIL BORING LOG

Date 02/09/12

ROUTE FAP Route 42 (IL 127) DESCRIPTION IL 127 Over Kaskaskia River LOGGED BY SCI (HHF)

SECTION 1-1BR-2 LOCATION Carlyle, IL, SEC. 31, TWP. 2N, RNG. 2W

COUNTY Clinton DRILLING METHOD MUD ROTARY HAMMER TYPE Automatic

STRUCT. NO. 014-0014
Station 140+00

BORING NO. B-7
Station 139+28
Offset 9 ft RT
Ground Surface Elev. 436.0 ft

Surface Water Elev. 421.5 ft
Stream Bed Elev. 405.0 ft

Groundwater Elev.:
First Encounter -- ft
Upon Completion -- ft
After -- Hrs. -- ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
395.5				SAND: Fine to coarse, with gravel [A-2]
	3 2 3	NC		GSA performed
393.0				difficult drilling at 43 feet, gravel observed in drilling fluid
				SAND: Gray, tan, black, fine to medium [A-3]
-45	6 6 9	NC		GSA performed
389.5				SHALE: Gray
	7 31 50/4"	NC	18	
-50	50/3"	NA	14	
384.8	50/3"	NA		Borehole continued with rock coring.
-55				
-60				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
SCI Engineering

ROCK CORE LOG

Date 02/09/12

ROUTE FAP Route 42 (IL 127) DESCRIPTION IL 127 Over Kaskaskia River LOGGED BY SCI (HHF)

SECTION 1-1BR-2 LOCATION Carlyle, IL, SEC. 31, TWP. 2N, RNG. 2W

COUNTY Clinton CORING METHOD Wireline

STRUCT. NO. 014-0014
Station 140+00

CORING BARREL TYPE & SIZE NX
Core Diameter 2.25 in
Top of Rock Elev. 389.5 ft
Begin Core Elev. 384.8 ft

BORING NO. B-7
Station 139+28
Offset 9 ft RT
Ground Surface Elev. 436.0 ft

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)	Description
384.8							ARGILLACEOUS SANDSTONE: Gray, fine grained, moderately hard, slightly to moderately weathered, with interbedded layers of soft shale, occasional iron staining.
	1	100	98	1.6			
-55					11.2	8.9	
	2	100	100	2.1			
-60					2.7	6.2	
-65					2.3	5.8	
369.8							Boring terminated at 66.3 ft.
-70							

Color pictures of the cores Yes
Cores will be stored for examination until
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)
BBS, form 138 (Rev. 8-99)

MODJESKI and MASTERS
Experience great bridges.

USER NAME =	DESIGNED - RLM	REVISED	
	CHECKED - JTH	REVISED	
PLOT SCALE =	DRAWN - PRC	REVISED	
PLOT DATE = 2/1/2013	CHECKED - RLM	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING AND ROCK CORE LOG B-7
STRUCTURE NO. 014-0033
SHEET NO. 59 OF 61 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	128
		CONTRACT NO. 76479		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
SCI Engineering, Inc.

ROCK CORE LOG

Date 9/25/12

ROUTE FAP Route 42 (IL 127) DESCRIPTION IL 127 Over Kaskaskia River LOGGED BY SCI (HHF)

SECTION 1-1BR-2 LOCATION Carlyle, IL, SEC. 31, TWP. 2N, RNG. 2W,
Latitude , Longitude

COUNTY Clinton CORING METHOD Wireline

STRUCT. NO. 014-0014
Station 140+00

BORING NO. B-7x
Station 139+25
Offset 8.0 ft LT
Ground Surface Elev. 436.0 ft

CORING BARREL TYPE & SIZE NX
Core Diameter 2.3 in
Top of Rock Elev. 389.50 ft
Begin Core Elev. 389.50 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
SHALE: Greenish-gray, soft, highly weathered, sandy	389.00	1	89	70	1.8	
SANDSTONE: Gray, fine grained, moderately soft, slighly weathered	387.40					
SHALE: Gray, soft to moderately soft, moderately to highly weathered, with siltstone stringers	386.25 -50	2	100	7	1.2	
SANDSTONE: Gray, fine grained, moderately soft, slighly weathered, some banding	385.70					85.9
SHALE: Gray, soft to moderately soft, moderately to highly weathered, with siltstone stringers						
1 inch SANDSTONE SEAM						
5 inch SANDSTONE SEAM						
3 inch SANDSTONE SEAM	381.50	3	100	70	1	
INTERBEDDED SANDSTONE, SILTSTONE, and SHALE: Gray and dark gray, soft to moderately soft	-55					
	377.50					
ARGILLACEOUS SANDSTONE: Dark gray, fine grained, moderately soft, slightly weathered	376.20 -60	4	100	88	3.2	
INTERBEDDED SANDSTONE, SILTSTONE, and SHALE: Gray and dark gray, moderately soft	374.60					
ARGILLACEOUS SANDSTONE: Dark gray, very fine grained, moderately soft, slightly weathered	371.85	5	100	67	4	
INTERBEDDED SANDSTONE, SILTSTONE, and SHALE: Gray and dark gray, moderately hard	-65	6	96	80	1.1	75.1
	369.50					

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

BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
SCI Engineering, Inc.

ROCK CORE LOG

Date 9/25/12

ROUTE FAP Route 42 (IL 127) DESCRIPTION IL 127 Over Kaskaskia River LOGGED BY SCI (HHF)

SECTION 1-1BR-2 LOCATION Carlyle, IL, SEC. 31, TWP. 2N, RNG. 2W,
Latitude , Longitude

COUNTY Clinton CORING METHOD Wireline

STRUCT. NO. 014-0014
Station 140+00

BORING NO. B-7x
Station 139+25
Offset 8.0 ft LT
Ground Surface Elev. 436.0 ft

CORING BARREL TYPE & SIZE NX
Core Diameter 2.3 in
Top of Rock Elev. 389.50 ft
Begin Core Elev. 389.50 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
SANDSTONE: Gray, fine grained, moderately soft, slighly weathered, slight banding	368.60					
INTERBEDDED SANDSTONE, SILTSTONE, and SHALE: Gray and dark gray, moderately soft	367.00					
SANDSTONE: Dark gray, fine grained, hard	366.40	7	100	70	1	
INTERBEDDED SANDSTONE, SILTSTONE, and SHALE: Gray and dark gray	-70					146.5
SANDSTONE: Dark gray, fine grained, hard, slight banding	365.40					
INTERBEDDED SANDSTONE, SILTSTONE, and SHALE: Gray and dark gray	364.65					
SANDSTONE: Dark gray, very fine grained, hard	362.00	8	100	90	1.2	
	-75					123.7
INTERBEDDED SANDSTONE, SILTSTONE, and SHALE: Gray and dark gray	359.70 359.30					
SANDSTONE: Dark gray, fine grained, hard, slight banding						115.0
2 inch SHALE SEAM	358.10					
SILTSTONE: Dark gray, hard, slightly weathered, some banding						
	356.25 -80	9	100	100	2.7	73.9
Boring terminated at 79.8 ft.						
	-85					

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

BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
SCI Engineering

SOIL BORING LOG

Page 1 of 1

Date 2/7-8/2012

ROUTE FAP Route 42 (IL 127) DESCRIPTION IL 127 Over Kaskaskia River LOGGED BY SCI (HHF)

SECTION 1-1BR-2 LOCATION Carlyle, IL, SEC. 31, TWP. 2N, RNG. 2W

COUNTY Clinton DRILLING METHOD HSA HAMMER TYPE Automatic

STRUCT. NO. 014-0014
Station 140+00

BORING NO. B-8
Station 141+51
Offset 32 ft LT
Ground Surface Elev. 435.5 ft

Surface Water Elev. -- ft
Stream Bed Elev. -- ft

Groundwater Elev.:
First Encounter -- ft
Upon Completion -- ft
After -- Hrs. -- ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Soil Description
435.3				ASPHALT - 2 inches
434.5				FILL: Crushed gravel, clay, sand - 10 inches
	3 2 3	1.4 S/15	24	FILL: Silty clay, brown, trace sand [A-6] Atterberg limits test performed
432.5				
	3 3 4	NC	21	FILL: Silt, brown to brown and gray [A-4] Sample too disturbed for a UCS test
-5				
	4 7 7	NC	15	Sample too disturbed for a UCS test
			18	
426.8				
	1 3 5	1.3 B	20	SANDY CLAY: Brown [A-6] Atterberg limits test performed
-10 425.0				
	3 7 12	NC	11	SANDY LOAM: Brown, fine to coarse [A-2] GSA performed
422.5				
	50/3"	NA	14	SANDY CLAY: Brown, with gravel, iron staining [A-6] Sample too disturbed for a UCS test Atterberg limits test performed
-15 420.5				
	50/5"	NA	8	WEATHERED SANDSTONE: Gray
	50/5"	NA	8	
-20				
-25				WEATHERED SANDSTONE: Gray *(continued)*
				50/5" NA 7
411.5				Borehole continued with rock coring.
				50/4.5" NA 8
-30				
-35				
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
SCI Engineering

ROCK CORE LOG

Page 1 of 1

Date 2/7-8/2012

ROUTE FAP Route 42 (IL 127) DESCRIPTION IL 127 Over Kaskaskia River LOGGED BY SCI (HHF)

SECTION 1-1BR-2 LOCATION Carlyle, IL, SEC. 31, TWP. 2N, RNG. 2W

COUNTY Clinton CORING METHOD Wireline

STRUCT. NO. 014-0014
Station 140+00

BORING NO. B-8
Station 141+51
Offset 32 ft LT
Ground Surface Elev. 435.5 ft

CORING BARREL TYPE & SIZE NX

Core Diameter 2.25 in
Top of Rock Elev. 419.5 ft
Begin Core Elev. 411.5 ft

DEPTH (ft)	CORE (#)	RECOVERY (%)	RQD (%)	CORE TIME (min/ft)	STRENGTH (tsf)	MOISTURE (%)	Soil Description
411.5	1	100	100	2.2			ARGILLACEOUS SANDSTONE: Dark gray, fine grained, hard, slightly weathered
-25							1/4" SHALE seam
							1/4" SHALE seam
407.5					2.8	6.2	SILTSTONE: Gray, moderately hard, slightly to moderately weathered
406.5	2	100	93	2.3			SHALE: Dark gray, very soft, highly weathered 1/2" SHALE seam
-30					0.3	7.5	
404.3							LIMESTONE: Light gray and gray, very hard, slightly weathered, fossiliferous Parting
							Partially infilled parting
							Partially infilled parting
-35					402.0	1.5	
396.5							Boring terminated at 39.0 ft.
-40							

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

BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
SCI Engineering

SOIL BORING LOG

Page 1 of 1

Date 02/10/12

ROUTE FAP Route 42 (IL 127) DESCRIPTION IL 127 Over Kaskaskia River LOGGED BY SCI (HHF)

SECTION 1-1BR-2 LOCATION Carlyle, IL, SEC. 31, TWP. 2N, RNG. 2W

COUNTY Clinton DRILLING METHOD HSA HAMMER TYPE Automatic

STRUCT. NO. 014-0014
Station 140+00

BORING NO. B-9
Station 141+04
Offset 22 ft LT
Ground Surface Elev. 435.5 ft

Surface Water Elev. -- ft
Stream Bed Elev. -- ft

Groundwater Elev.:
First Encounter -- ft
Upon Completion -- ft
After -- Hrs. -- ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Soil Description
	1 1 2	C.9 S/20	29	FILL: Clay, brown, trace sand [A-7-6]
	1 1 2	C.5 S/20	31	Atterberg limits test performed trace gravel
-5				
	1 2 4	1.9 S/20	32	iron staining
427.5				
	2 2 3	1.7 S/20	28	SILTY LOAM: Brown and gray, trace sand [A-4] Atterberg limits test performed
-10				
	3 4 5	1.7 S/20	14	
422.5				
	3 6 16	NC	16	SILTY LOAM: Brown and gray, heavy iron staining [A-4] Sample too disturbed for a UCS test Atterberg limits test performed
-15 419.5				
	50/5"	NA	6	WEATHERED SANDSTONE: Gray
417.6	50/5"	NA		Auger Refusal at 17.5 ft; Split Spoon Sampler Refusal at 17.92 ft.
-20				Boring grouted to 17.92 ft.

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

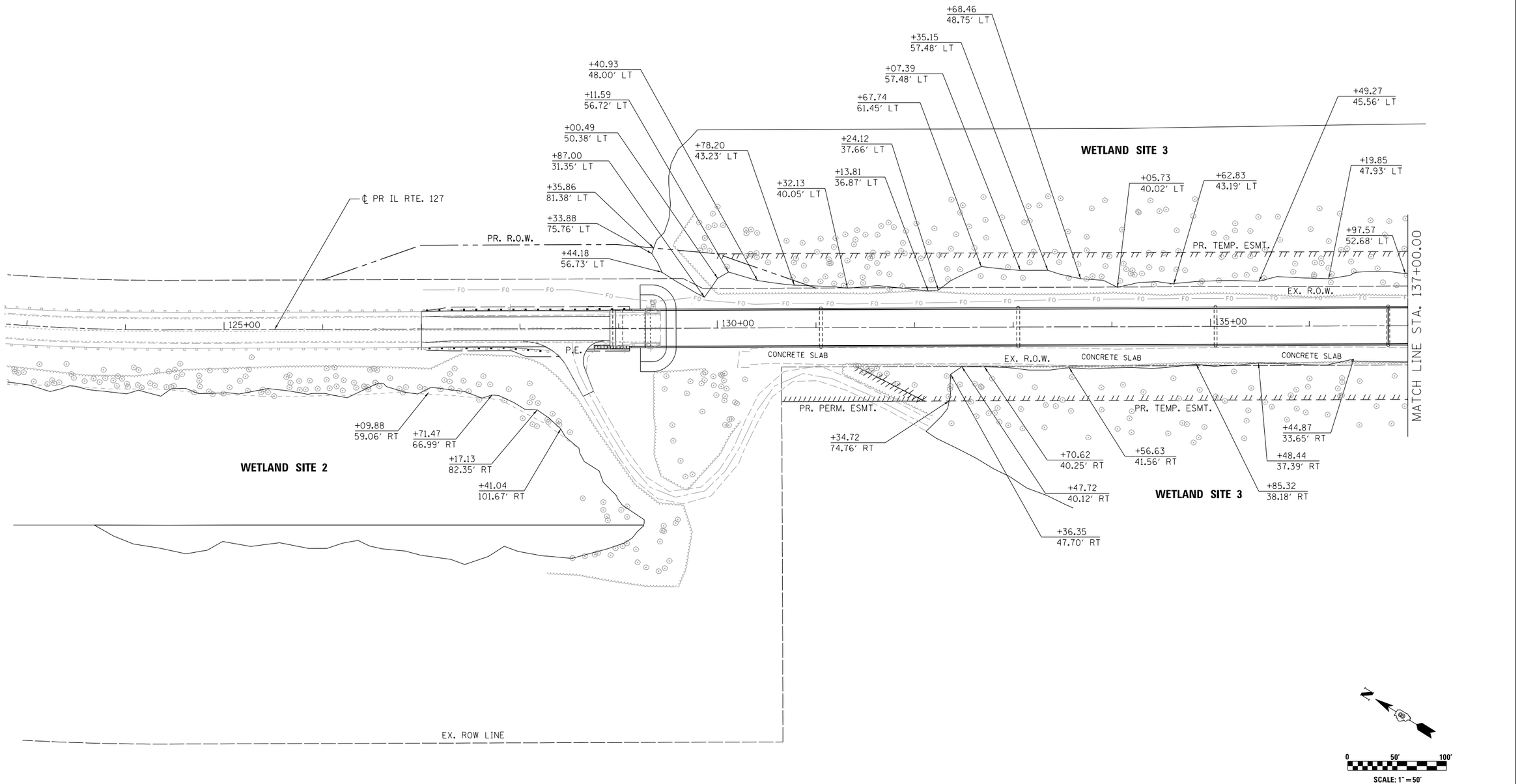
MODJESKI and MASTERS
Experience great bridges.

USER NAME =	DESIGNED - RLM	REVISED
	CHECKED - JTH	REVISED
PLOT SCALE =	DRAWN - PRC	REVISED
PLOT DATE = 2/1/2013	CHECKED - RLM	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING AND ROCK CORE LOG B-8, B-9
STRUCTURE NO. 014-0033
SHEET NO. 61 OF 61 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	130
		CONTRACT NO. 76479		
	ILLINOIS	FED. AID PROJECT		



E:\0824\Plan Sheets\Q76479-sht-wetland.dgn

LIN ENGINEERING, LTD. Consulting Engineers Westmont, Illinois	USER NAME = Plotted by Scott	DESIGNED - RK	REVISED -
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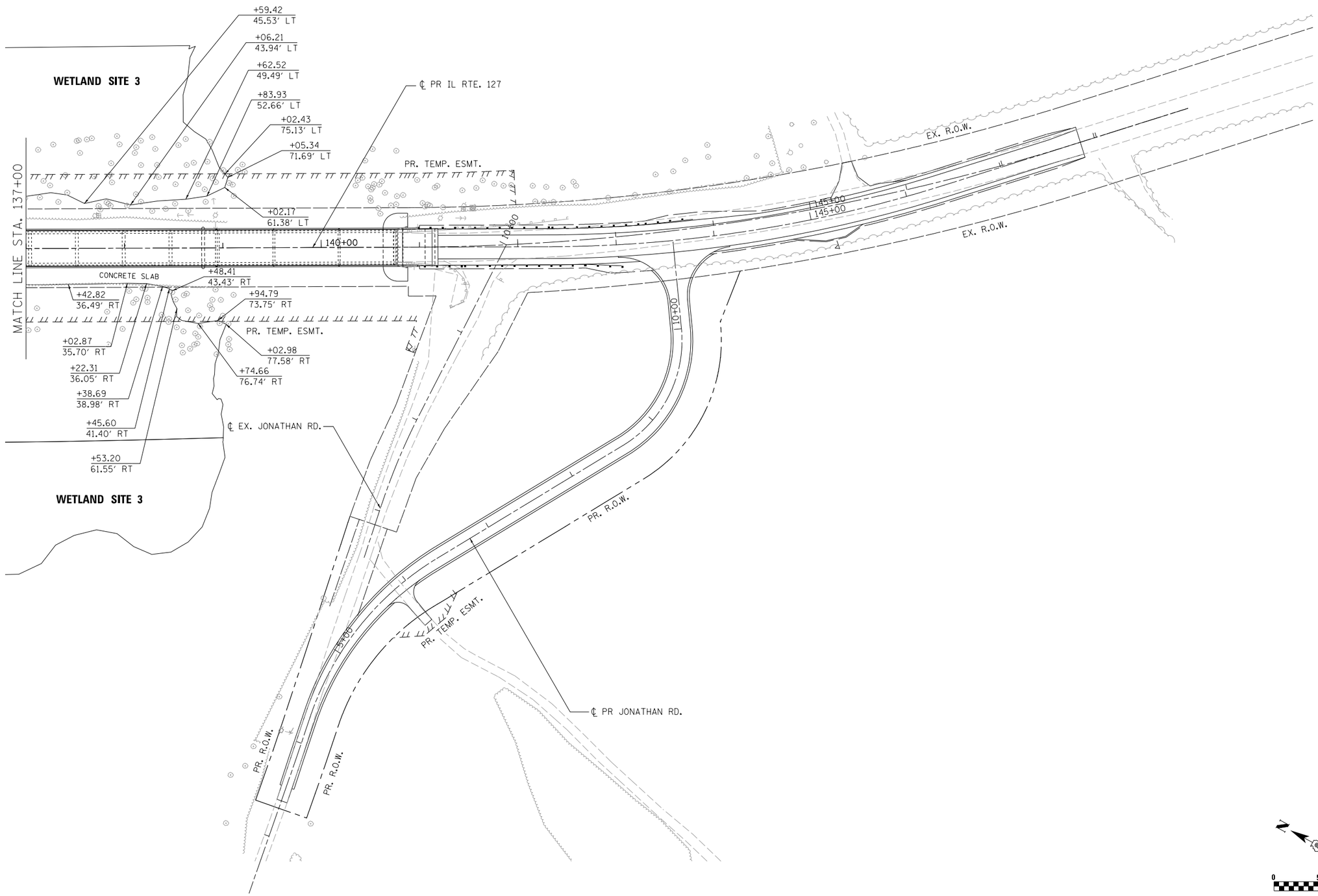
	PLOT DATE =	DATE - 2-1-2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WETLAND DETAILS
ILLINOIS ROUTE 127

SCALE: 1"=50' | SHEET NO. 1 OF 2 SHEETS | STA. 127+00 TO STA. 137+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	131
		CONTRACT NO. 76479		
	ILLINOIS	FED. AID PROJECT		



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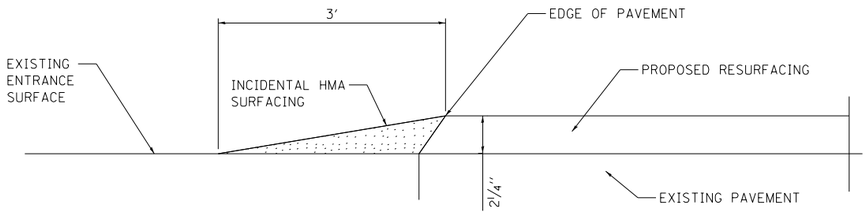
	PLOT DATE =	DATE - 2-1-2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

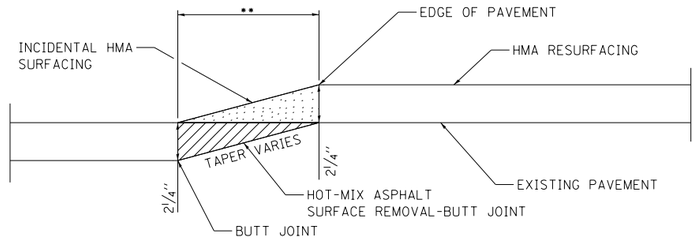
WETLAND DETAILS
ILLINOIS ROUTE 127

SCALE: 1"=50' | SHEET NO. 2 OF 2 SHEETS | STA. 137+00 TO STA. 147+85

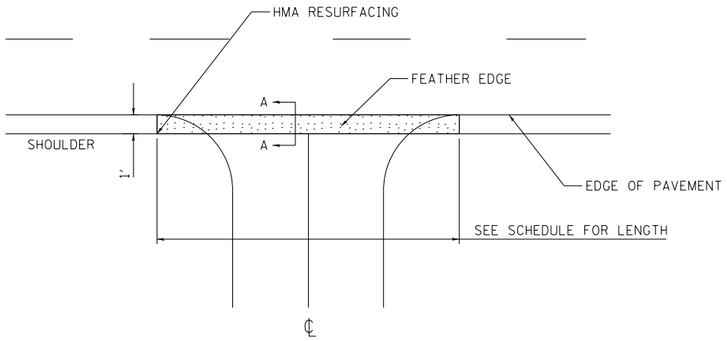
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	132
		CONTRACT NO. 76479		
	ILLINOIS FED. AID PROJECT			



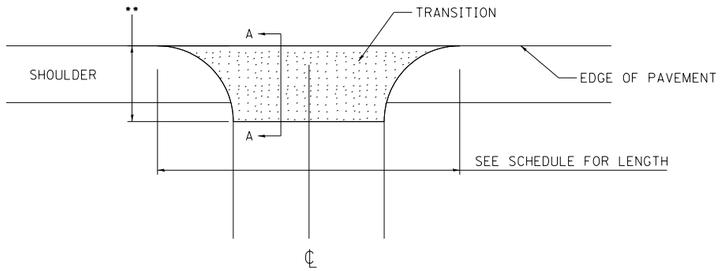
FEATHER EDGE DETAIL
SECTION A-A



TRANSITION DETAIL
SECTION A-A
BUTT-JOINT ADDITION



ENTRANCE DETAIL
CE, PE, FE



SIDEROAD DETAIL

*EOP ELEVATION CHANGE	**TOTAL TRANSITION LENGTH
¾"	3.5'
1"	5'
1½"	7.5'
2"	10'
2½"	12.5'
3"	15'
3½"	17.5'
4"	20'
4½"	22.5'
5"	25'
5½"	27.5'
6"	30'

NOTE:
WHERE THE HMA TRANSITION IS MATCHING INTO AN EXISTING HMA SIDE ROAD SURFACE, A MILLED BUTT JOINT SHALL BE CONSTRUCTED WITHIN THE LIMITS OF THE TOTAL TRANSITION LENGTH ON THE LOCAL ROUTE.

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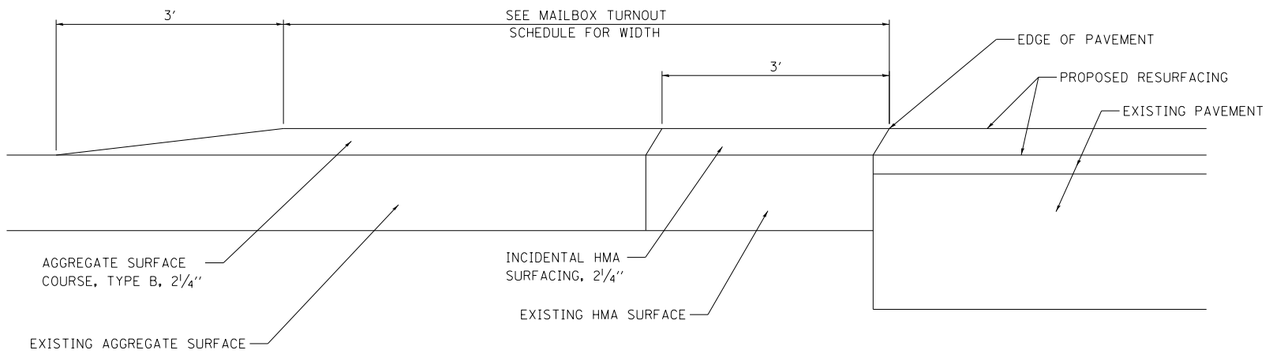
PLOT DATE =	DATE - 2-1-2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

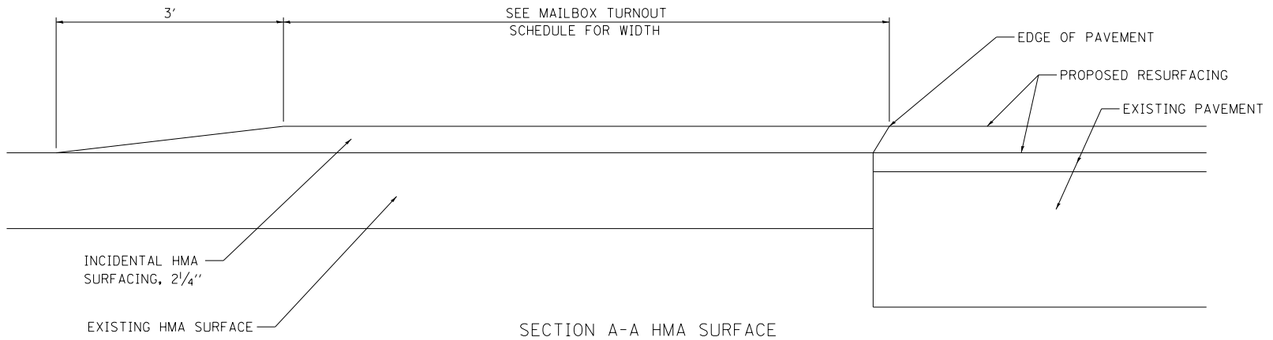
RESURFACING DETAILS

SCALE: N.T.S. | SHEET NO. 1 OF 2 SHEETS | STA. N/A TO STA. N/A

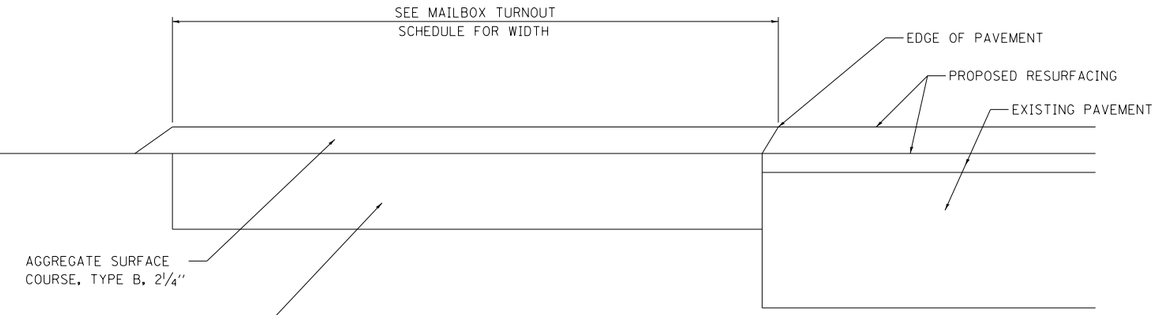
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	133
		CONTRACT NO. 76479		
	ILLINOIS FED. AID PROJECT			



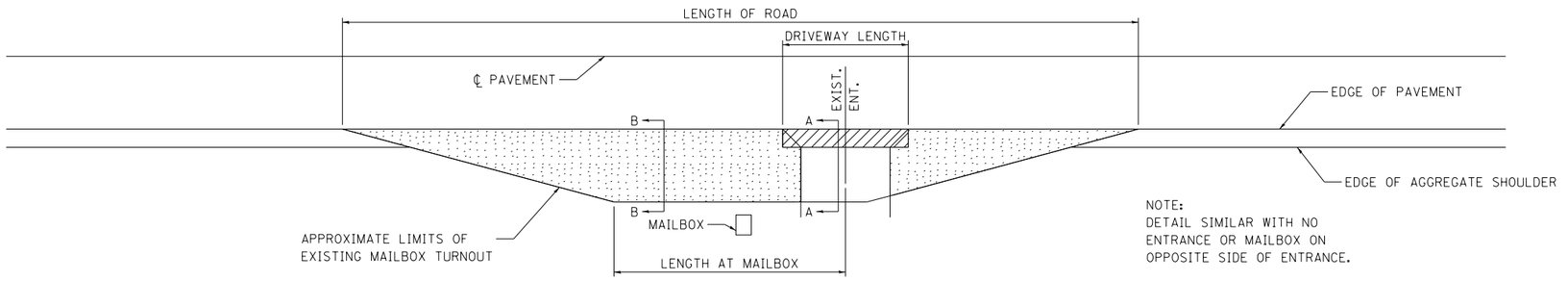
SECTION A-A AGGREGATE SURFACE



SECTION A-A HMA SURFACE



SECTION B-B



MAILBOX TURNOUT DETAIL FOR SLANT ROAD RESURFACING ONLY

E:\18241\Plan Sheets\08764?9-sht-details.dgn

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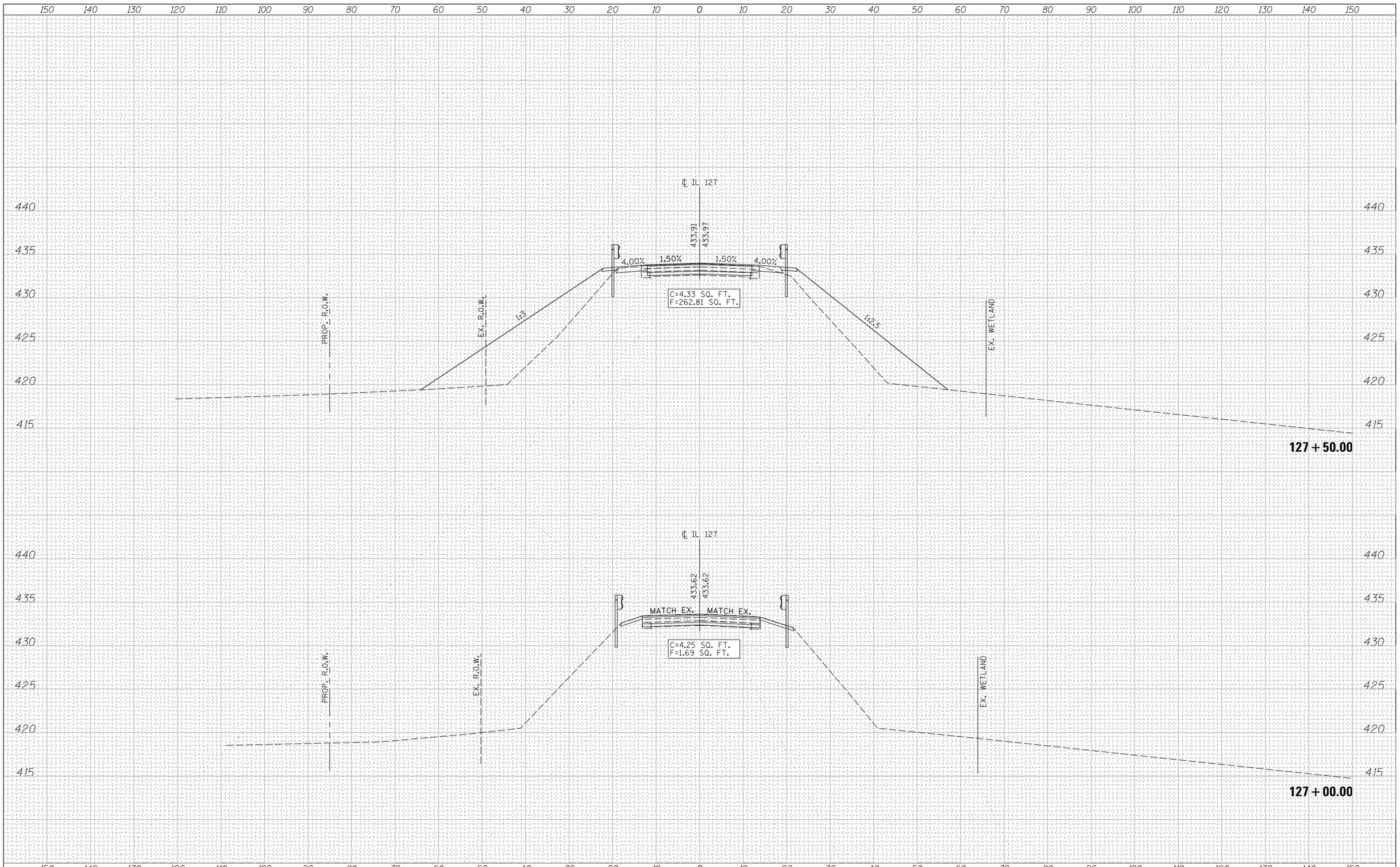
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RESURFACING DETAILS

SCALE: N.T.S. | SHEET NO. 2 OF 2 SHEETS | STA. N/A TO STA. N/A

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	134
		CONTRACT NO. 76479		
	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY	NOTE BOOK	NO.
	SURVEYED	BY
	PLOTTED	
	TEMPLATE	
	AREAS	
	AREAS CHECKED	DATE



ORIGINAL SURVEY	NOTE BOOK	NO.
	SURVEYED	BY
	PLOTTED	
	TEMPLATE	
	AREAS	
	AREAS CHECKED	DATE

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PLOT DATE =	DATE - 2-1-2013	REVISED -	

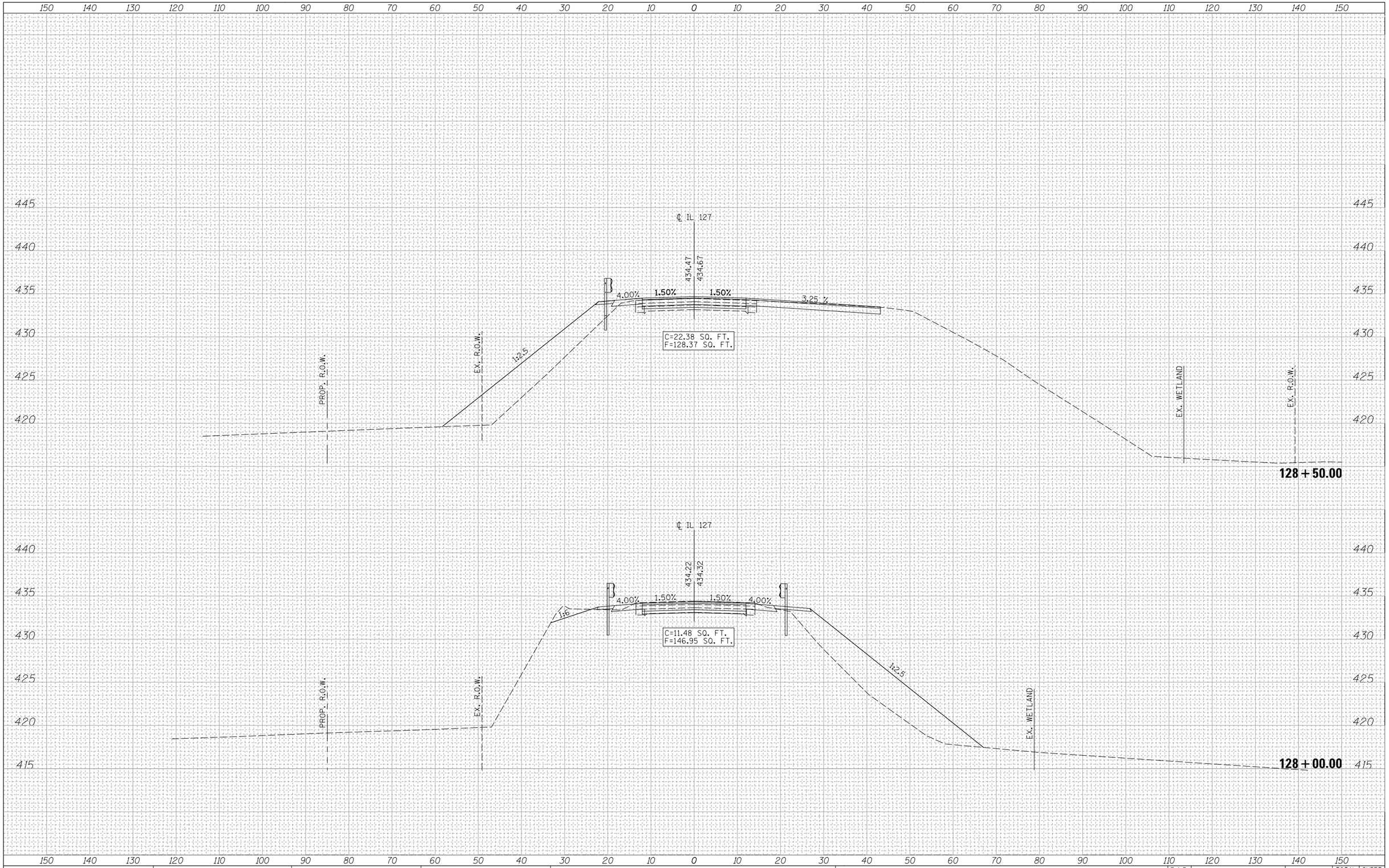
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
IL 127 OVER KASKASKIA RIVER

SCALE: 1"=10'H. 5'V | SHEET NO. 1 OF 25 SHEETS | STA. 127+00.00 TO STA.127+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	135
		CONTRACT NO. 76479		
	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY		BY	DATE
	SURVEYED		
	PLOTTED		
NOTE BOOK	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		



ORIGINAL SURVEY		BY	DATE
	SURVEYED		
	PLOTTED		
NOTE BOOK	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		

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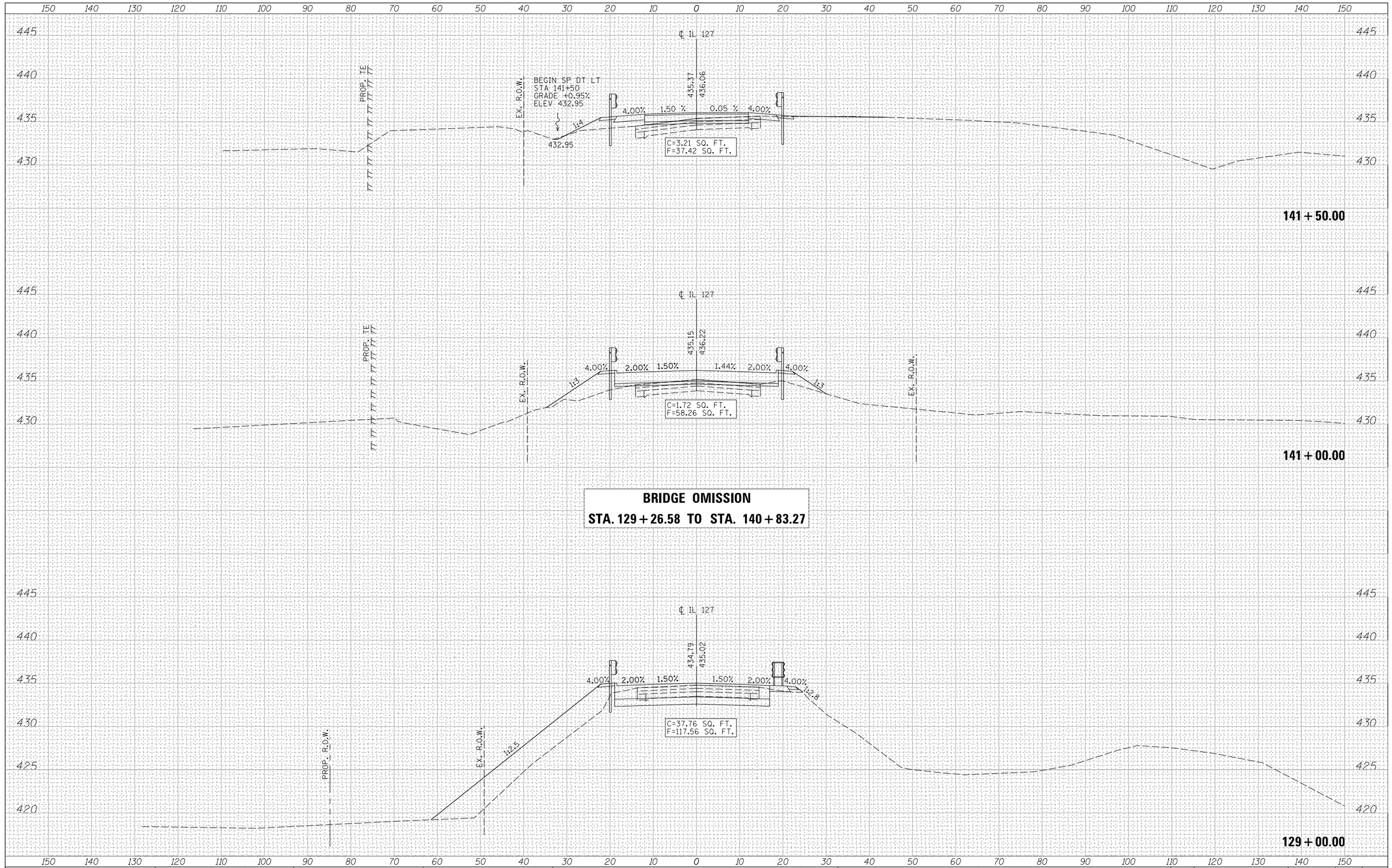
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
IL 127 OVER KASKASKIA RIVER

SCALE: 1"=10'H, 5'V | SHEET NO. 2 OF 25 SHEETS | STA. 128+00.00 TO STA.128+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	136
		CONTRACT NO. 76479		
	ILLINOIS FED. AID PROJECT			



FINAL SURVEY

NOTE BOOK	SURVEYED	BY	DATE
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY

NOTE BOOK	SURVEYED	BY	DATE
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

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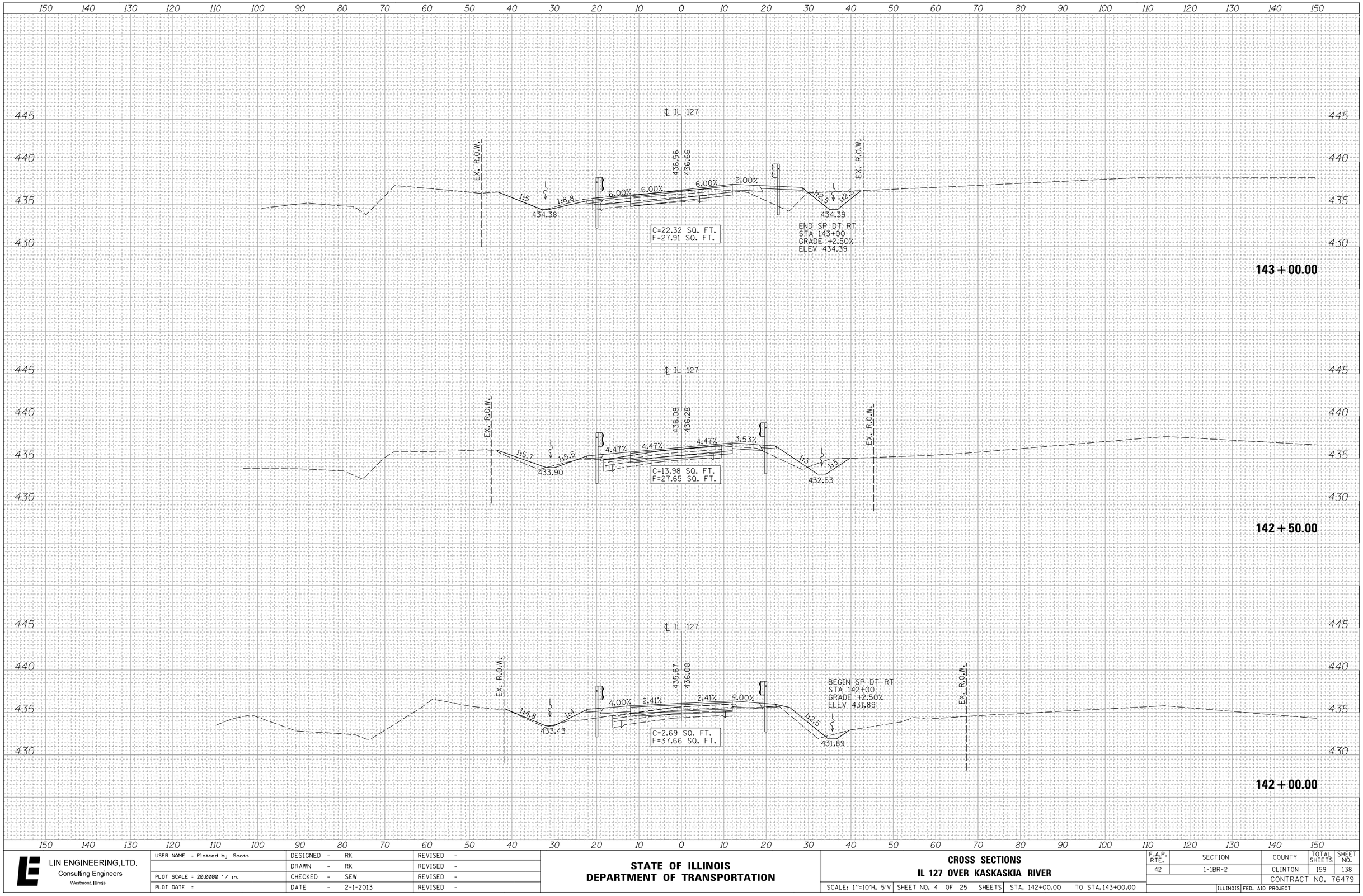
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
IL 127 OVER KASKASKIA RIVER

SCALE: 1"=10'H, 5'V | SHEET NO. 3 OF 25 SHEETS | STA. 129+00.00 TO STA.141+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	137
		CONTRACT NO. 76479		
	ILLINOIS FED. AID PROJECT			



FINAL SURVEY	BY	DATE
NOTE BOOK		
NO.		

SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED

ORIGINAL SURVEY	BY	DATE
NOTE BOOK		
NO.		

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TEMPLATE
AREAS
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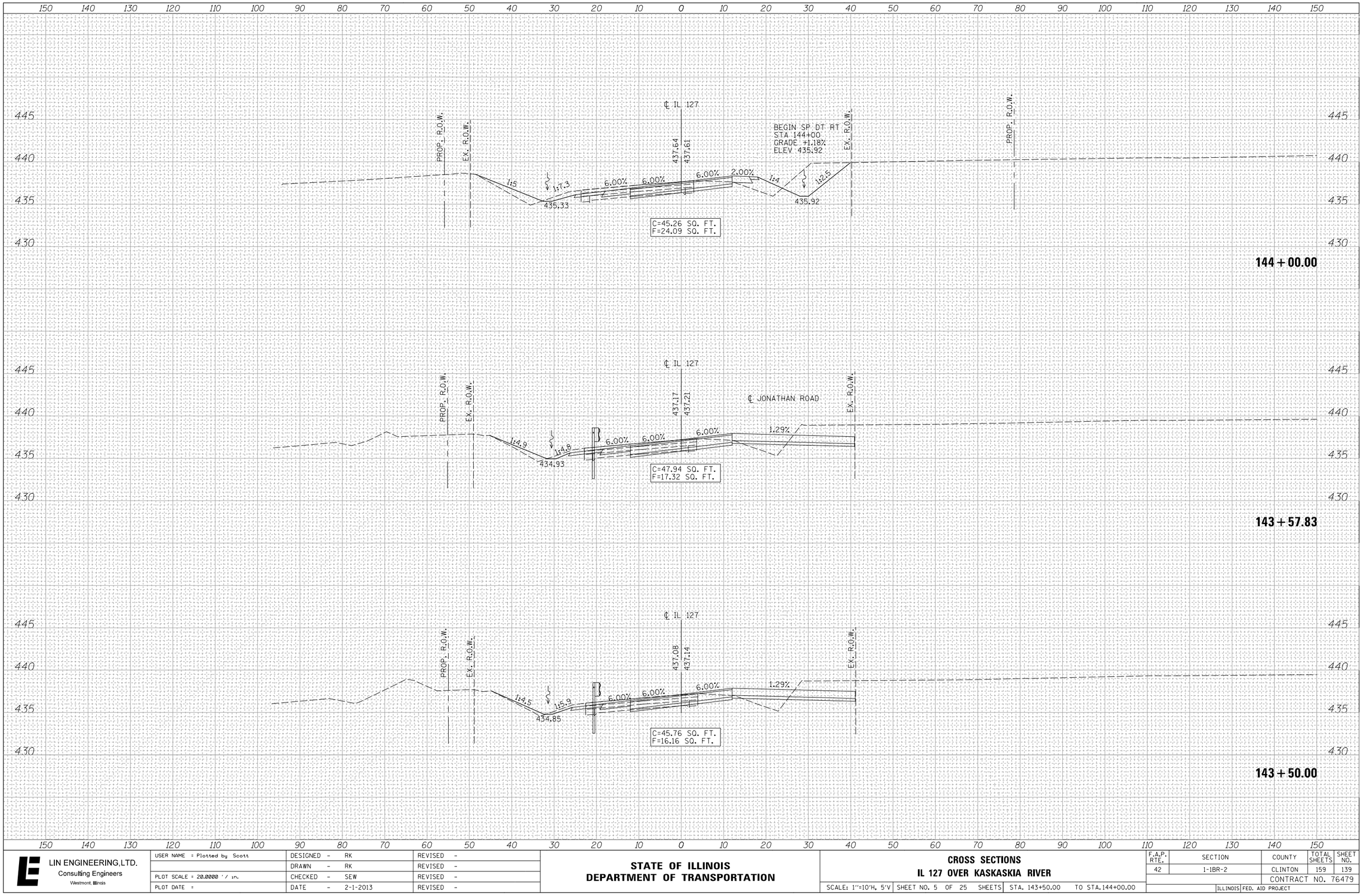
PLOT DATE =	DATE - 2-1-2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
IL 127 OVER KASKASKIA RIVER

SCALE: 1"=10'H, 5'V | SHEET NO. 4 OF 25 SHEETS | STA. 142+00.00 TO STA.143+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	138
		CONTRACT NO. 76479		
	ILLINOIS	FED. AID PROJECT		



FINAL SURVEY		BY	DATE
	SURVEYED		
	PLOTTED		
NOTE BOOK	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		

ORIGINAL SURVEY		BY	DATE
	SURVEYED		
	PLOTTED		
NOTE BOOK	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		

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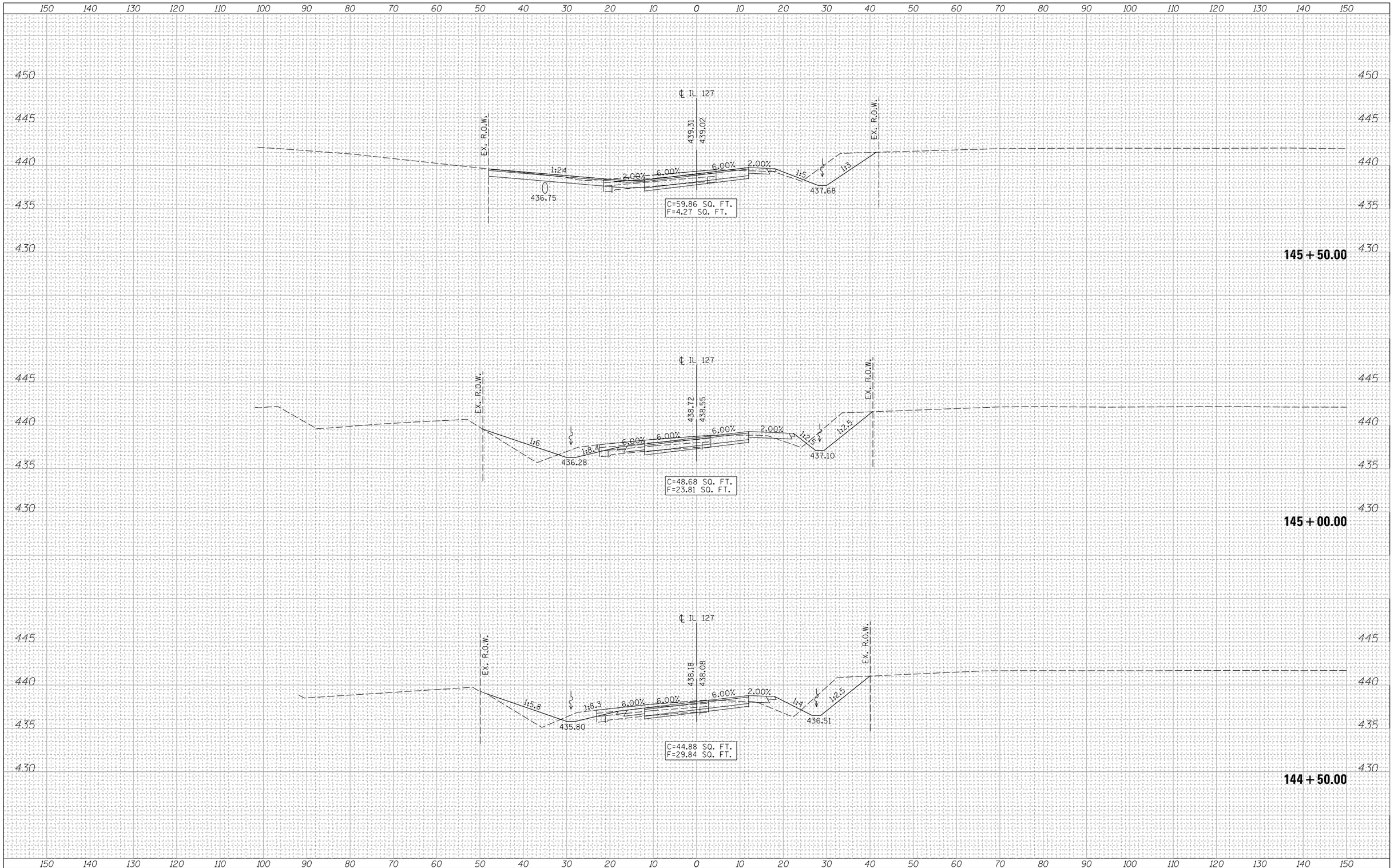
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
IL 127 OVER KASKASKIA RIVER

SCALE: 1"=10'H, 5'V | SHEET NO. 5 OF 25 SHEETS | STA. 143+50.00 TO STA.144+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	139
		CONTRACT NO. 76479		
	ILLINOIS FED. AID PROJECT			



FINAL SURVEY

NO.	NOTE BOOK	SURVEYED	BY	DATE
		PLOTTED		
		TEMPLATE		
		AREAS		
		AREAS CHECKED		

ORIGINAL SURVEY

NO.	NOTE BOOK	SURVEYED	BY	DATE
		PLOTTED		
		TEMPLATE		
		AREAS		
		AREAS CHECKED		

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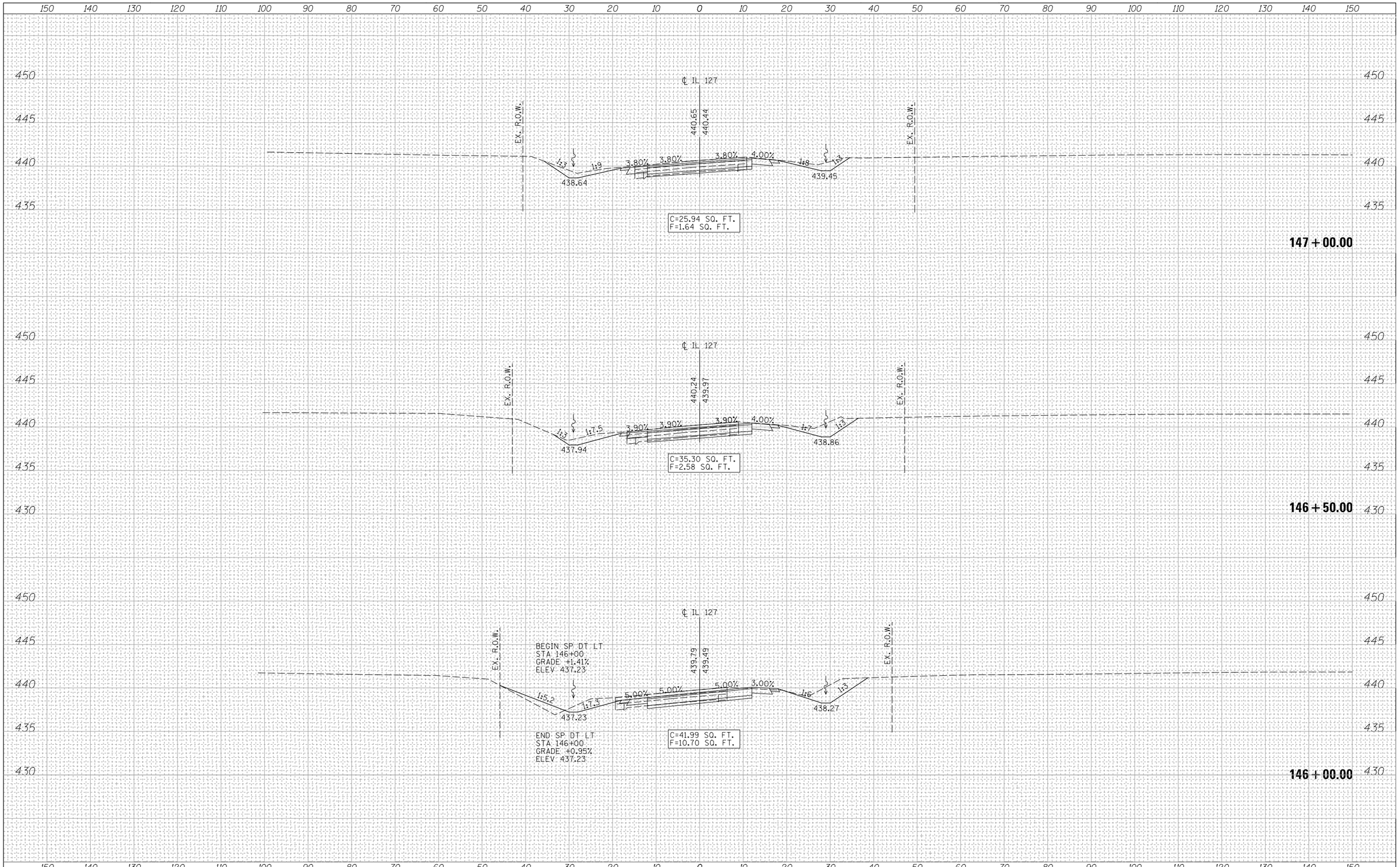
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
IL 127 OVER KASKASKIA RIVER

SCALE: 1"=10'H, 5'V | SHEET NO. 6 OF 25 SHEETS | STA. 144+50.00 TO STA. 145+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	140
		CONTRACT NO. 76479		
	ILLINOIS FED. AID PROJECT			

FINAL SURVEY	NOTE BOOK	SURVEYED	PLOTTED	TEMPLATE	AREAS	AREAS CHECKED	NO.	BY	DATE



ORIGINAL SURVEY	NOTE BOOK	SURVEYED	PLOTTED	TEMPLATE	AREAS	AREAS CHECKED	NO.	BY	DATE

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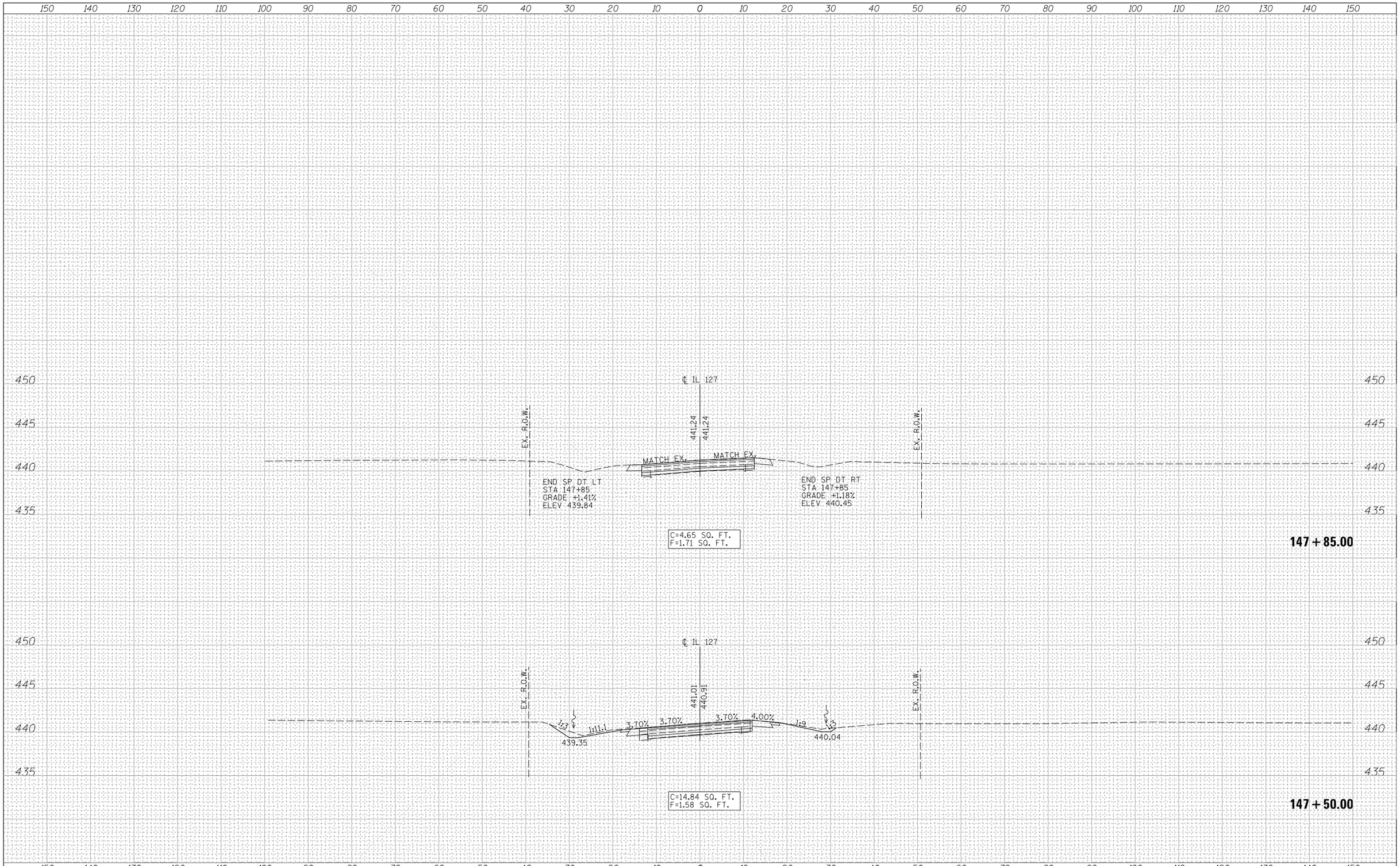
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
IL 127 OVER KASKASKIA RIVER

SCALE: 1"=10'H. 5'V | SHEET NO. 7 OF 25 SHEETS | STA. 146+00.00 TO STA.147+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	141
		CONTRACT NO. 76479		
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		



ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

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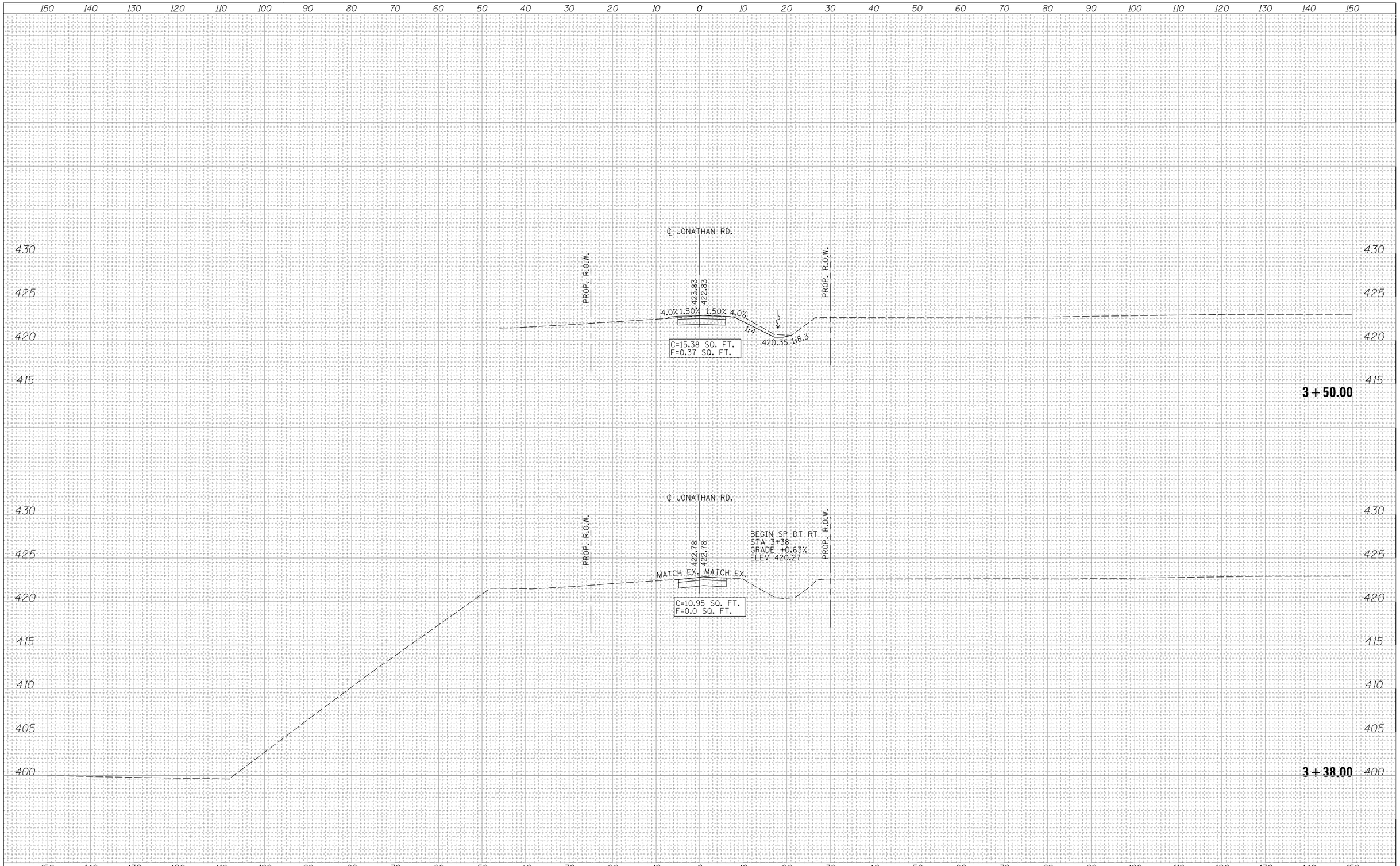
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
IL 127 OVER KASKASKIA RIVER

SCALE: 1"=10'H, 5'V | SHEET NO. 8 OF 25 SHEETS | STA. 147+50.00 TO STA. 147+85.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	142
		CONTRACT NO. 76479		
	ILLINOIS FED. AID PROJECT			

FINAL SURVEY	NOTE BOOK	NO.
SURVEYED	BY	
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED	DATE	



ORIGINAL SURVEY	NOTE BOOK	NO.
SURVEYED	BY	
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED	DATE	

LIN ENGINEERING, LTD.
Consulting Engineers
Westmont, Illinois

USER NAME = Plotted by Scott	DESIGNED - RC	REVISED -
	DRAWN - RC	REVISED -
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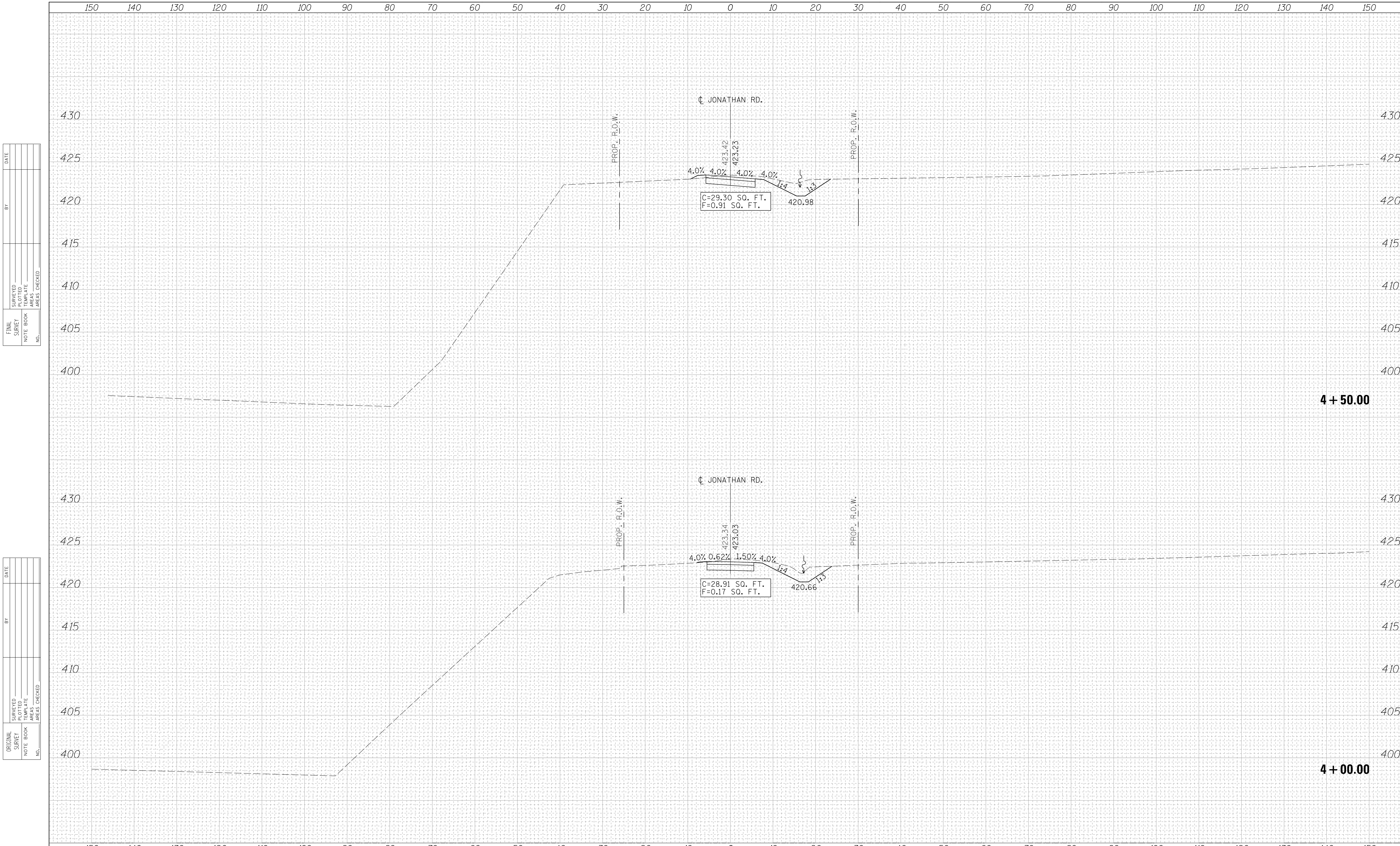
PLOT DATE =	DATE - 2-1-2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
JONATHAN ROAD

SCALE: 1"=10'H, 5'V | SHEET NO. 9 OF 25 SHEETS | STA. 3+38.00 | TO STA. 3+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	143
		CONTRACT NO. 76479		
	ILLINOIS FED. AID PROJECT			



LIN ENGINEERING, LTD. Consulting Engineers Westmont, Illinois	USER NAME = Plotted by Scott	DESIGNED - RC	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CROSS SECTIONS JONATHAN ROAD
		DRAWN - RC	REVISED -		
	PLOT SCALE = 20.0000 ' / in.	CHECKED - SEW	REVISED -		
	PLOT DATE =	DATE - 2-1-2013	REVISED -		SCALE: 1"=10'H, 5'V SHEET NO. 10 OF 25 SHEETS STA. 4+00.00 TO STA. 4+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	144
		CONTRACT NO. 76479		
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY	NOTE BOOK	NO.
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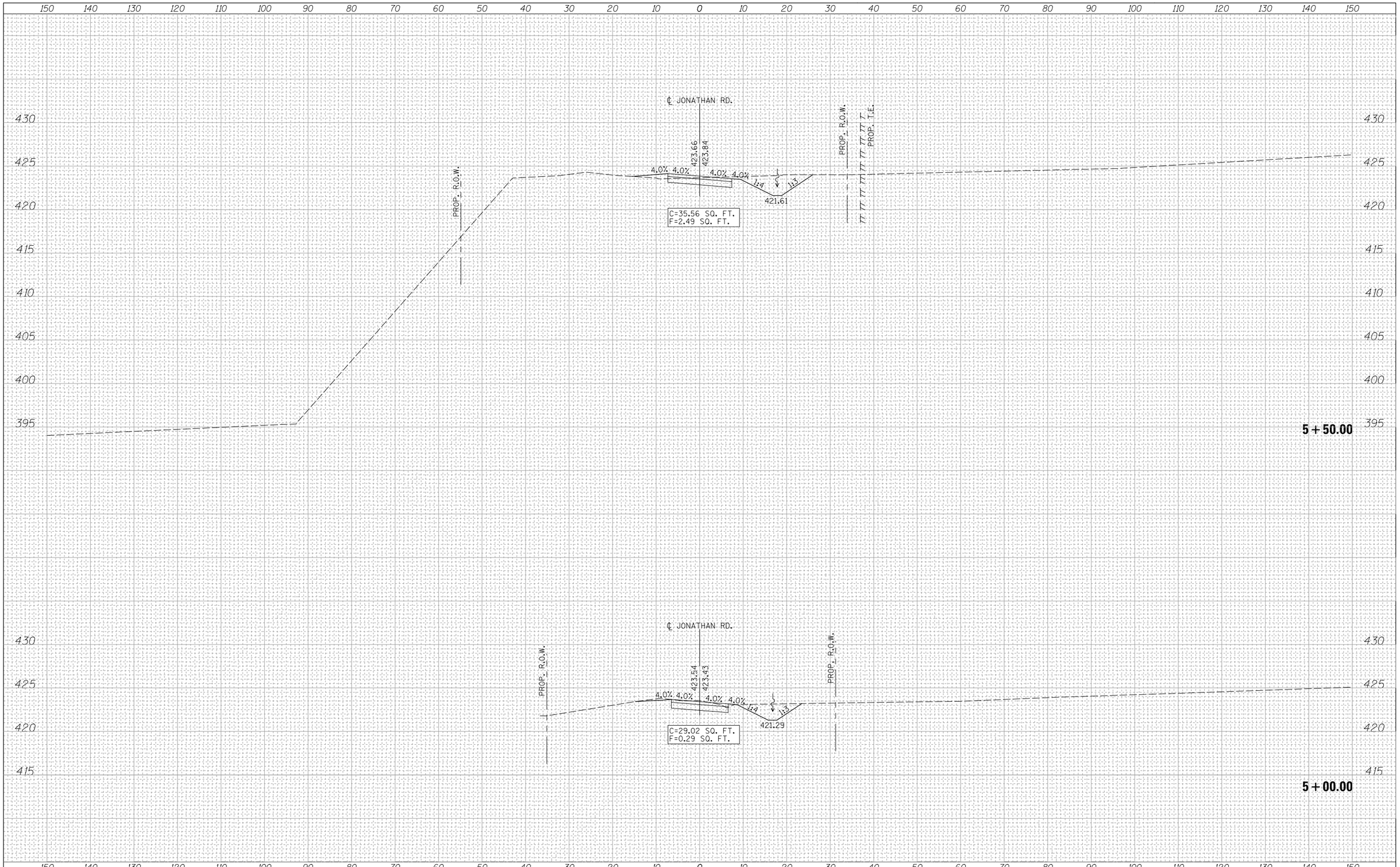
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		DATE



ORIGINAL SURVEY	NOTE BOOK	NO.
SURVEYED		BY
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		DATE

LIN ENGINEERING,LTD.
Consulting Engineers
Westmont, Illinois

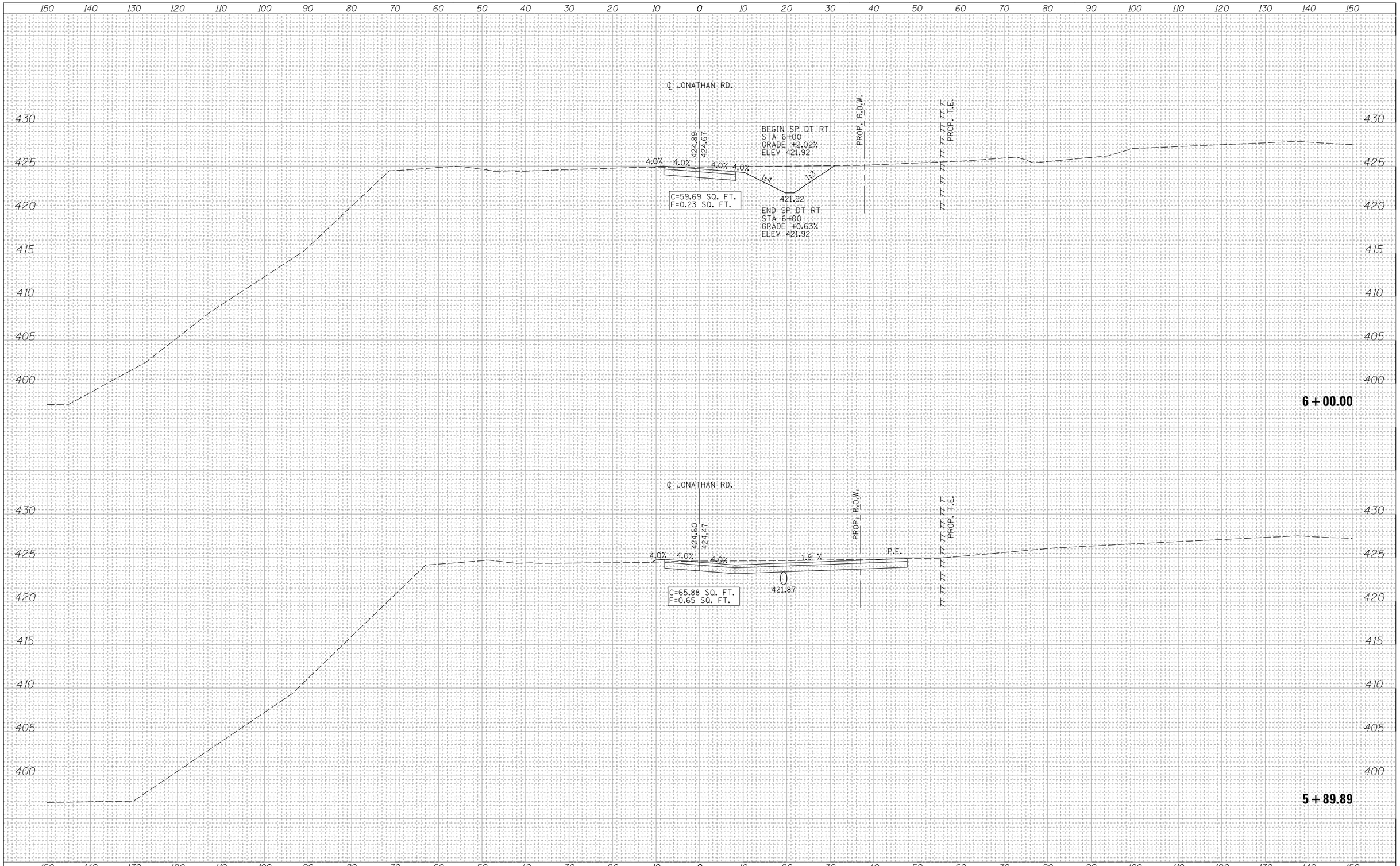
USER NAME = Plotted by Scott	DESIGNED - RC	REVISED -
	DRAWN - RC	REVISED -
PLOT SCALE = 20.0000 ' / in.	CHECKED - SEW	REVISED -
PLOT DATE =	DATE - 2-1-2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
JONATHAN ROAD

SCALE: 1"=10'H. 5'V | SHEET NO. 11 OF 25 SHEETS | STA. 5+00.00 TO STA.5+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	145
		CONTRACT NO. 76479		
		ILLINOIS FED. AID PROJECT		



FINAL SURVEY	NOTE BOOK	NO.
SURVEYED	BY	
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED	DATE	

ORIGINAL SURVEY	NOTE BOOK	NO.
SURVEYED	BY	
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED	DATE	

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Consulting Engineers
Westmont, Illinois

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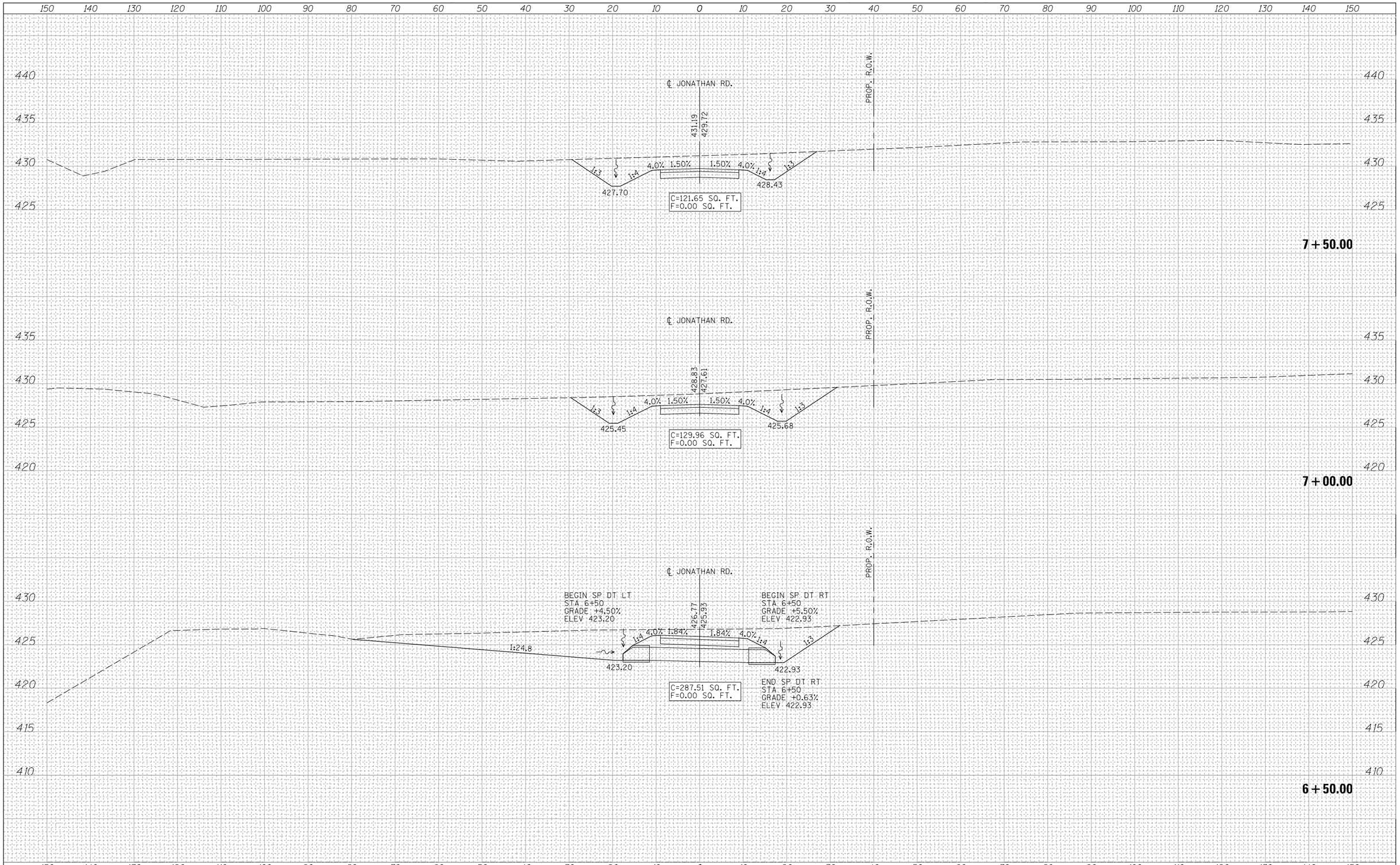
	DRAWN - RC	REVISED -
PLOT SCALE = 20.0000 ' / in.	CHECKED - SEW	REVISED -
PLOT DATE =	DATE - 2-1-2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
JONATHAN ROAD

SCALE: 1"=10'H, 5'V | SHEET NO. 12 OF 25 SHEETS | STA. 5+89.89 | TO STA. 6+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	146
		CONTRACT NO. 76479		
	ILLINOIS	FED. AID PROJECT		



FINAL SURVEY	BY	DATE
NOTE BOOK		
NO.		

SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED

ORIGINAL SURVEY	BY	DATE
NOTE BOOK		
NO.		

SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED

LIN ENGINEERING, LTD.
Consulting Engineers
Westmont, Illinois

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	DRAWN - RC	REVISED -	
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PLOT DATE =	DATE - 2-1-2013	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

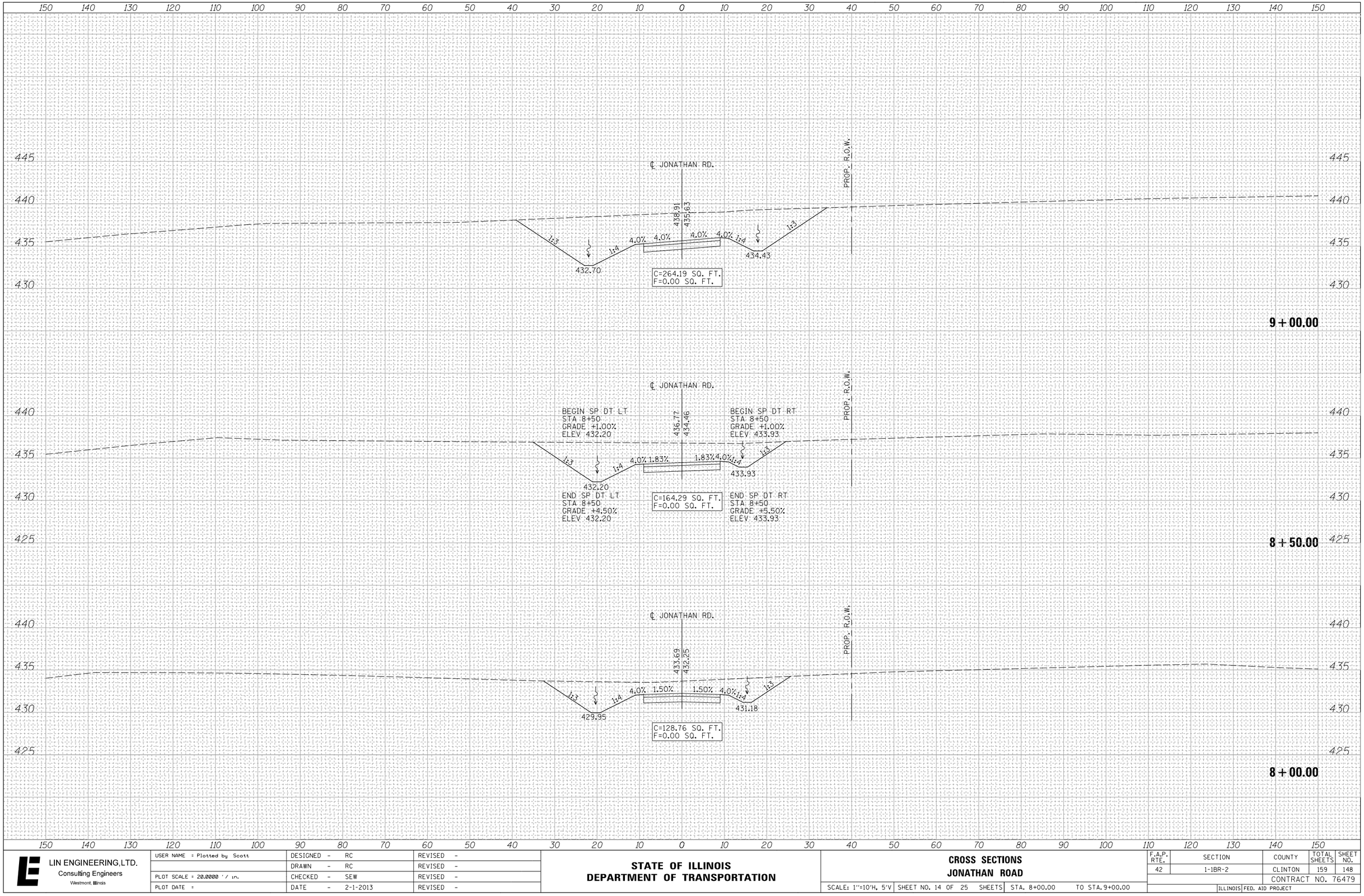
CROSS SECTIONS
JONATHAN ROAD

SCALE: 1"=10'H, 5'V | SHEET NO. 13 OF 25 SHEETS | STA. 6+50.00 TO STA. 7+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	147
		CONTRACT NO. 76479		
	ILLINOIS FED. AID PROJECT			

FINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

BY	DATE



ORIGINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

BY	DATE

LIN ENGINEERING, LTD. Consulting Engineers Westmont, Illinois	USER NAME = Plotted by Scott	DESIGNED - RC	REVISED -
		DRAWN - RC	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED - SEW	REVISED -
	PLOT DATE =	DATE - 2-1-2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
JONATHAN ROAD

SCALE: 1"=10'H. 5'V | SHEET NO. 14 OF 25 SHEETS | STA. 8+00.00 | TO STA. 9+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	148
		CONTRACT NO. 76479		
		ILLINOIS FED. AID PROJECT		

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

445 440 435 430

℄ JONATHAN RD.

PROP. R.O.W.

438.83
437.57

1:3 1:4 4.0% 1.50% 1.16% 4.0% 1:4 1:3

433.88
END SP DT LT
STA 10+50
GRADE +0.36%
ELEV 433.88

C=206.15 SQ. FT.
F=0.00 SQ. FT.

435.72
END SP DT RT
STA 10+50
GRADE +0.58%
ELEV 435.72

10 + 50.00

℄ JONATHAN RD.

PROP. R.O.W.

BEGIN SP DT LT
STA 10+00
GRADE +0.36%
ELEV 433.70

BEGIN SP DT RT
STA 10+00
GRADE +0.58%
ELEV 435.43

439.29
436.49

1:3 1:4 4.0% 2.92% 2.92% 4.0% 1:4 1:3

433.70
END SP DT LT
STA 10+00
GRADE +4.50%
ELEV 433.70

C=223.86 SQ. FT.
F=0.00 SQ. FT.

435.43
END SP DT RT
STA 10+00
GRADE +1.00%
ELEV 435.43

10 + 00.00

℄ JONATHAN RD.

PROP. R.O.W.

439.40
436.28

1:3 1:4 4.0% 4.0% 4.0% 4.0% 1:4 1:3

433.20

C=265.28 SQ. FT.
F=0.00 SQ. FT.

434.93

9 + 50.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

FINAL SURVEY — NOTE BOOK — NO.
SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK — NO.
SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

LIN ENGINEERING, LTD.
Consulting Engineers
Westmont, Illinois

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	DRAWN - RC	REVISED -
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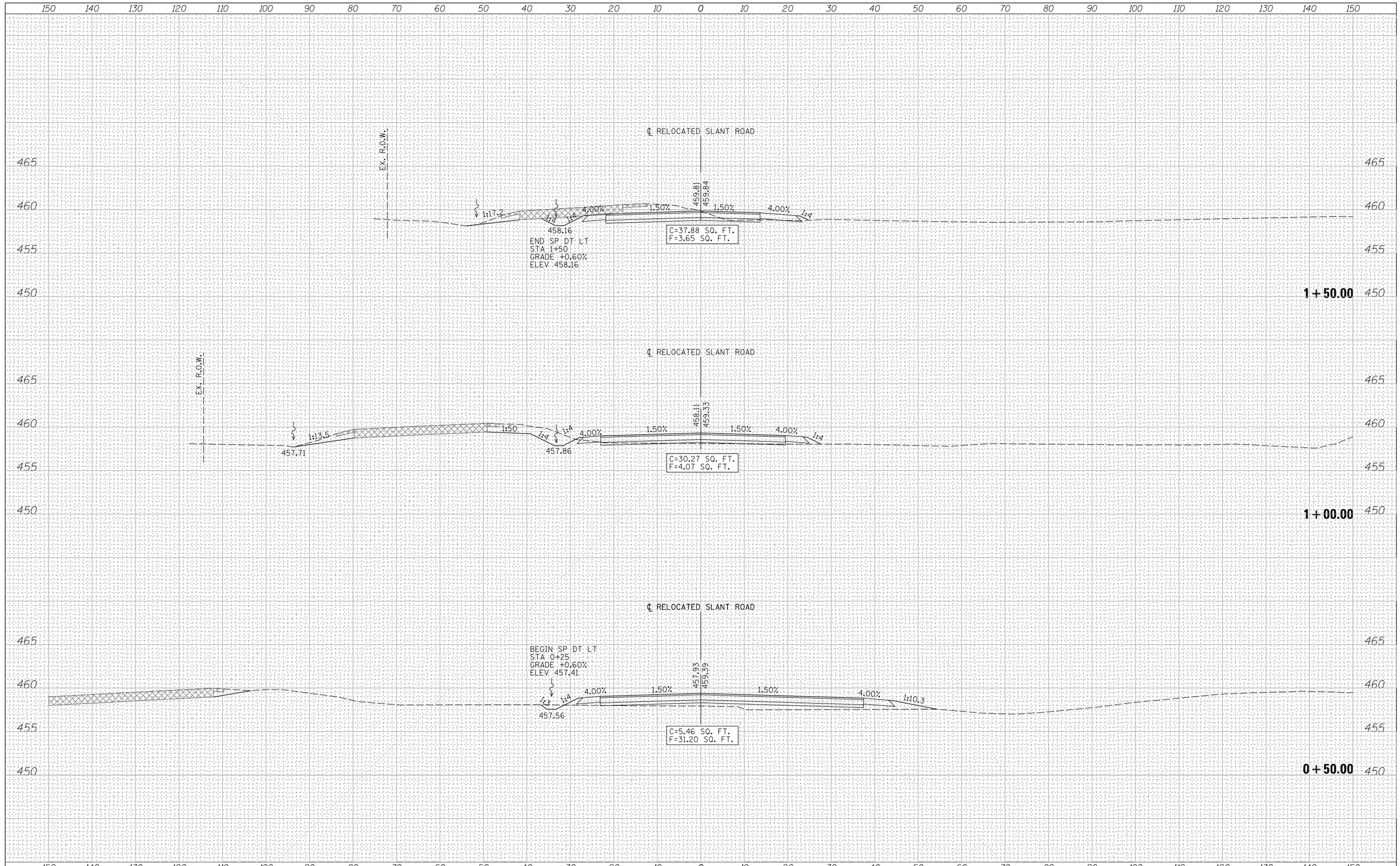
PLOT DATE =	DATE - 2-1-2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
JONATHAN ROAD

SCALE: 1"=10'H, 5'V | SHEET NO. 15 OF 25 SHEETS | STA. 9+50.00 TO STA.10+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	149
		CONTRACT NO. 76479		
		ILLINOIS FED. AID PROJECT		



FINAL SURVEY

NO.	NOTE BOOK	SURVEYED	BY	DATE
		PLOTTED		
		TEMPLATE		
		AREAS		
		AREAS CHECKED		

ORIGINAL SURVEY

NO.	NOTE BOOK	SURVEYED	BY	DATE
		PLOTTED		
		TEMPLATE		
		AREAS		
		AREAS CHECKED		

LIN ENGINEERING, LTD.
Consulting Engineers
Westmont, Illinois

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	DRAWN - RC	REVISED -	
PLOT SCALE = 20.0000 ' / in.	CHECKED - SEW	REVISED -	
PLOT DATE =	DATE - 2-1-2013	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
RELOCATED SLANT ROAD

SCALE: 1"=10'H, 5'V | SHEET NO. 16 OF 25 SHEETS | STA. 0+50.00 | TO STA. 1+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	150
		CONTRACT NO. 76479		
	ILLINOIS FED. AID PROJECT			

FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

470
465
460
455
450

℄ RELOCATED SLANT ROAD

461.04 461.04

MATCH EX. MATCH EX.

C=10.25 SQ. FT.
F=0.00 SQ. FT.

2+68.38

EX. R.O.W.

℄ RELOCATED SLANT ROAD

SEE INTERSECTION DETAIL SHEET

460.60 460.44

3.35% 1.50%

C=12.73 SQ. FT.
F=0.00 SQ. FT.

2+00.00

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

LIN ENGINEERING, LTD.
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Westmont, Illinois

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	DRAWN - RC	REVISED -
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PLOT DATE =	DATE - 2-1-2013	REVISED -

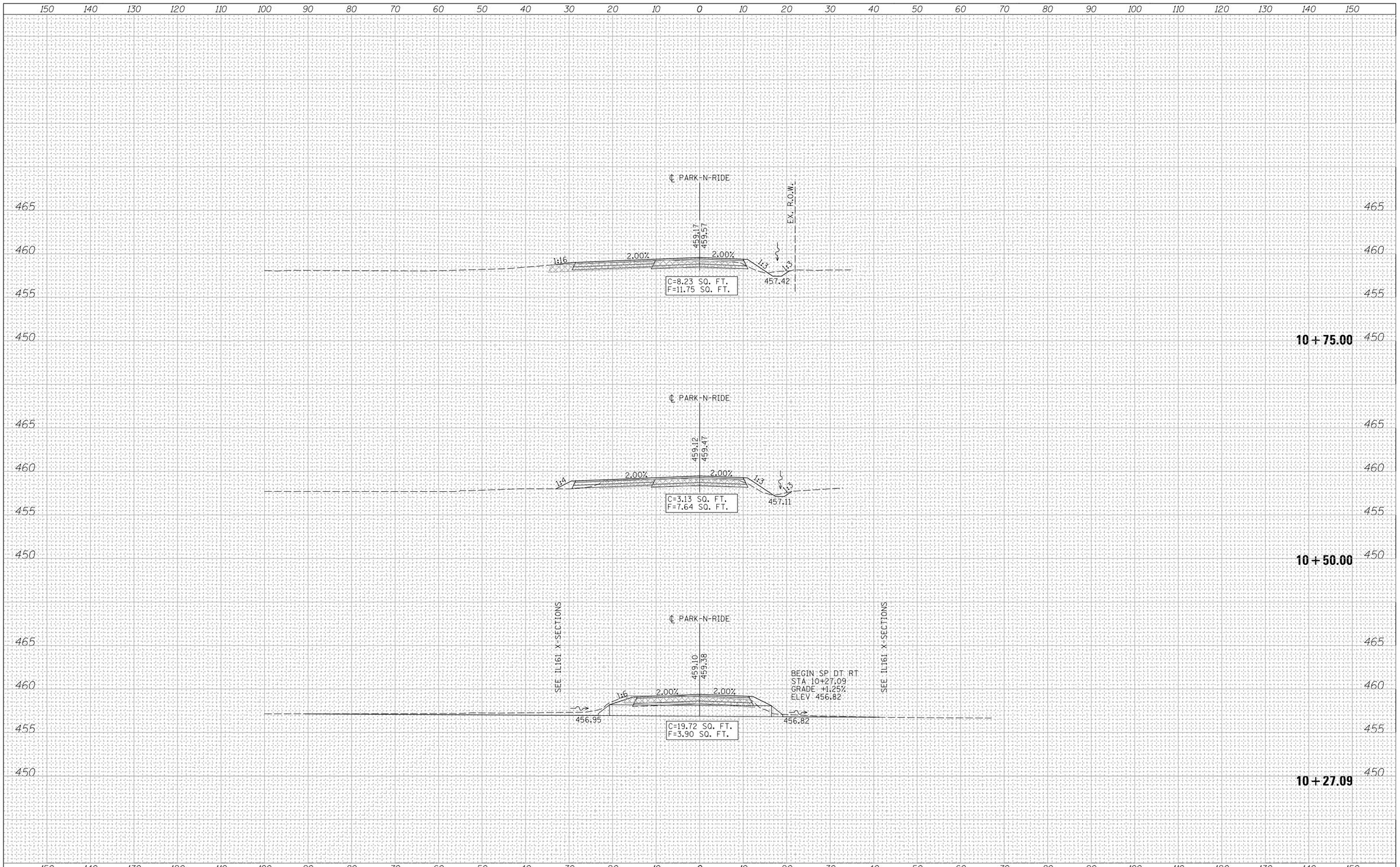
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
RELOCATED SLANT ROAD

SCALE: 1"=10'H, 5'V | SHEET NO. 17 OF 25 SHEETS | STA. 2+00.00 | TO STA. 2+68.38

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	151
		CONTRACT NO. 76479		
	ILLINOIS FED. AID PROJECT			

FINAL SURVEY	NOTE BOOK	SURVEYED	BY
NO.		PLOTTED	
		TEMPLATE	
		AREAS	
		AREAS CHECKED	DATE



ORIGINAL SURVEY	NOTE BOOK	SURVEYED	BY
NO.		PLOTTED	
		TEMPLATE	
		AREAS	
		AREAS CHECKED	DATE

LIN ENGINEERING, LTD.
Consulting Engineers
Westmont, Illinois

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PLOT DATE =	DATE - 2-1-2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

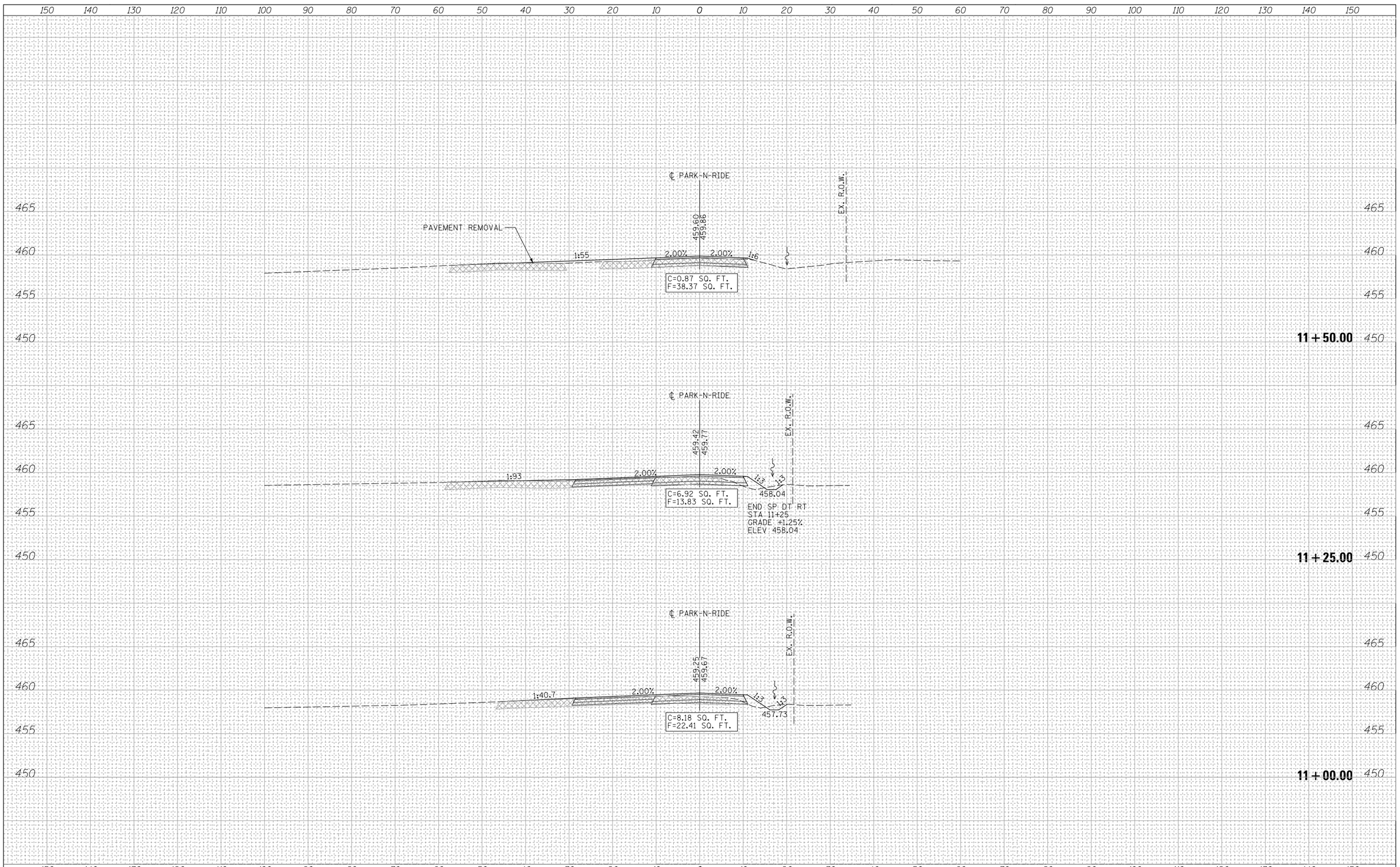
CROSS SECTIONS
PARK-N-RIDE

SCALE: 1"=10'H, 5'V | SHEET NO. 18 OF 25 SHEETS | STA. 10+27.09 TO STA. 10+75.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	152
		CONTRACT NO. 76479		
		ILLINOIS	FED. AID PROJECT	

FINAL SURVEY	NOTE BOOK	NO.
	SURVEYED	
	PLOTTED	
	TEMPLATE	
	AREAS	
	AREAS CHECKED	

BY	DATE



ORIGINAL SURVEY	NOTE BOOK	NO.
	SURVEYED	
	PLOTTED	
	TEMPLATE	
	AREAS	
	AREAS CHECKED	

BY	DATE

LIN ENGINEERING, LTD.
Consulting Engineers
Westmont, Illinois

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PLOT DATE =	DATE - 2-1-2013	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

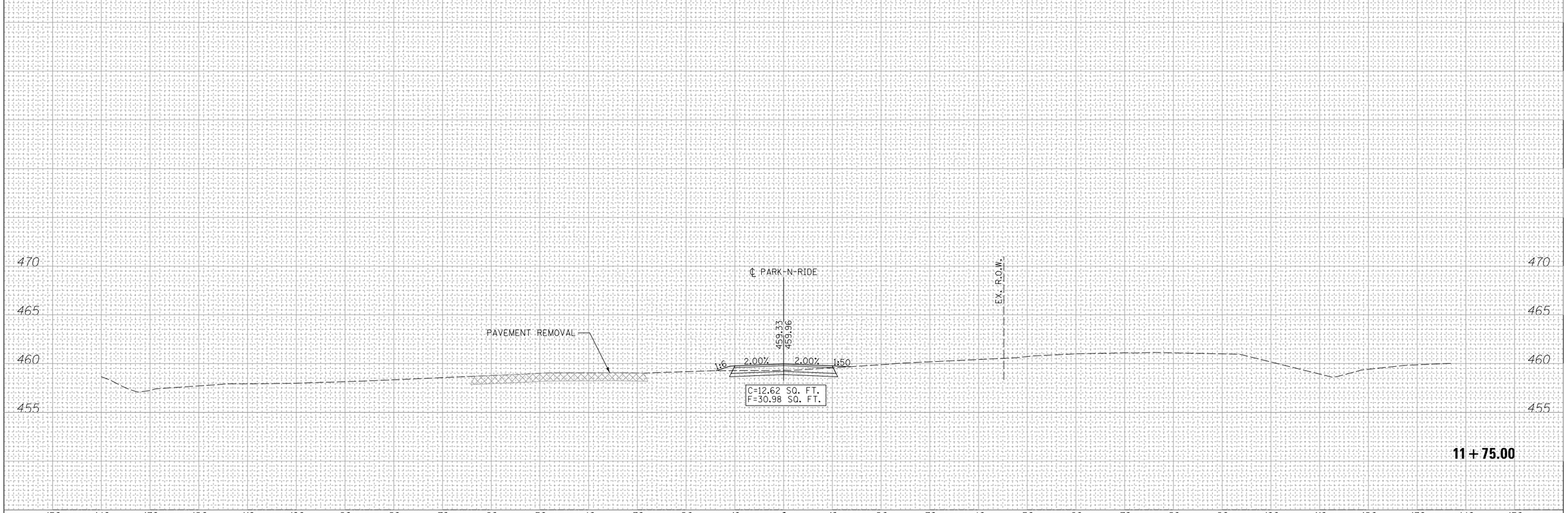
CROSS SECTIONS
PARK-N-RIDE

SCALE: 1"=10'H, 5'V | SHEET NO. 19 OF 25 SHEETS | STA. 11+00.00 | TO STA. 11+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	153
		CONTRACT NO. 76479		
	ILLINOIS FED. AID PROJECT			

FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		



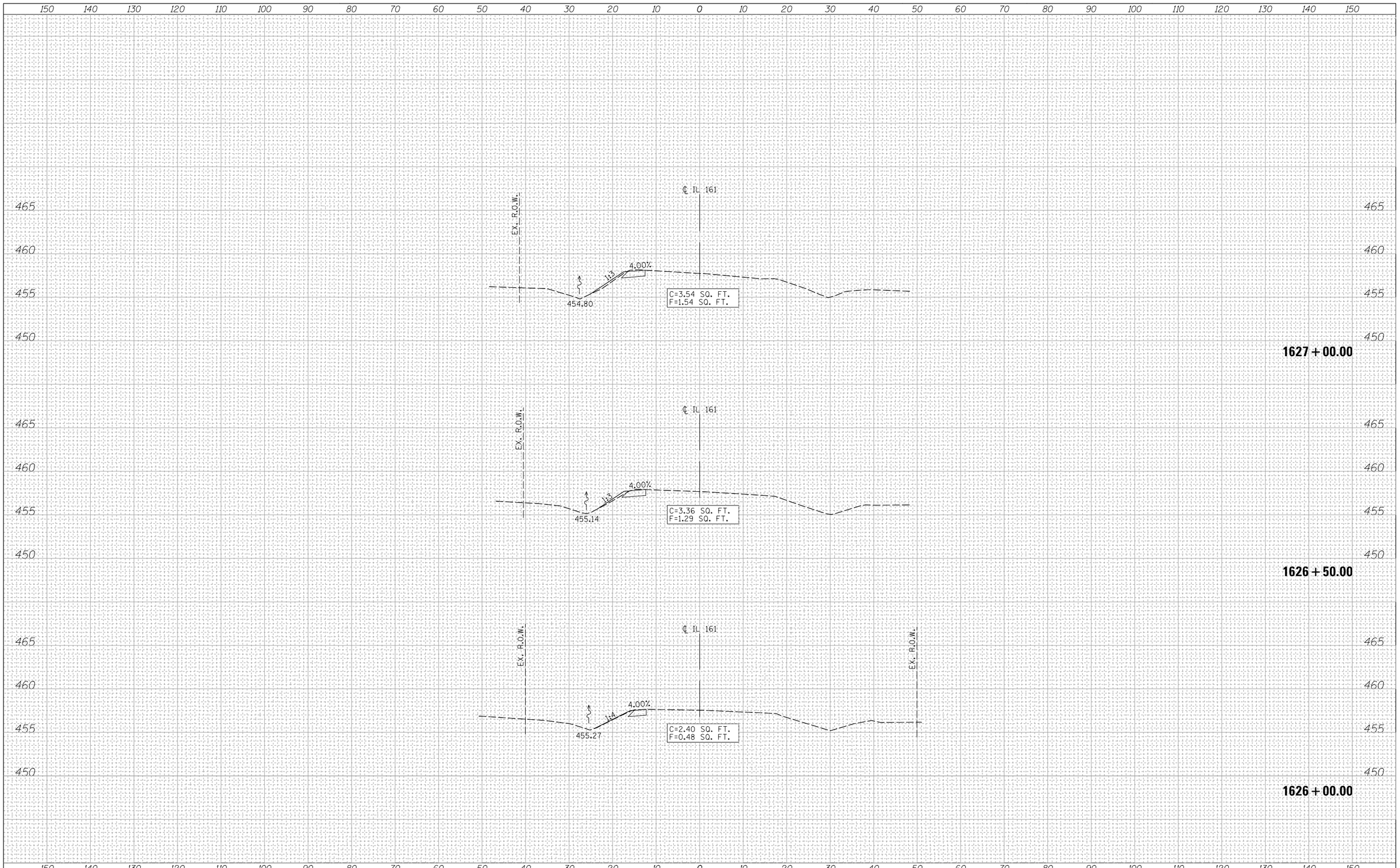
LIN ENGINEERING, LTD. Consulting Engineers Westmont, Illinois	USER NAME = Plotted by Scott	DESIGNED - RC	REVISED -
		DRAWN - RC	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED - SEW	REVISED -
	PLOT DATE =	DATE - 2-1-2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
PARK-N-RIDE

SCALE: 1"=10'H, 5'V | SHEET NO. 20 OF 25 SHEETS | STA. 11+75.00 | TO STA. 11+75.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	154
		CONTRACT NO. 76479		
	ILLINOIS FED. AID PROJECT			



FINAL SURVEY	BY	DATE
NOTE BOOK	SURVEYED	
NO.	PLOTTED	
	TEMPLATE	
	AREAS	
	AREAS CHECKED	

ORIGINAL SURVEY	BY	DATE
NOTE BOOK	SURVEYED	
NO.	PLOTTED	
	TEMPLATE	
	AREAS	
	AREAS CHECKED	

LIN ENGINEERING,LTD.
Consulting Engineers
Westmont, Illinois

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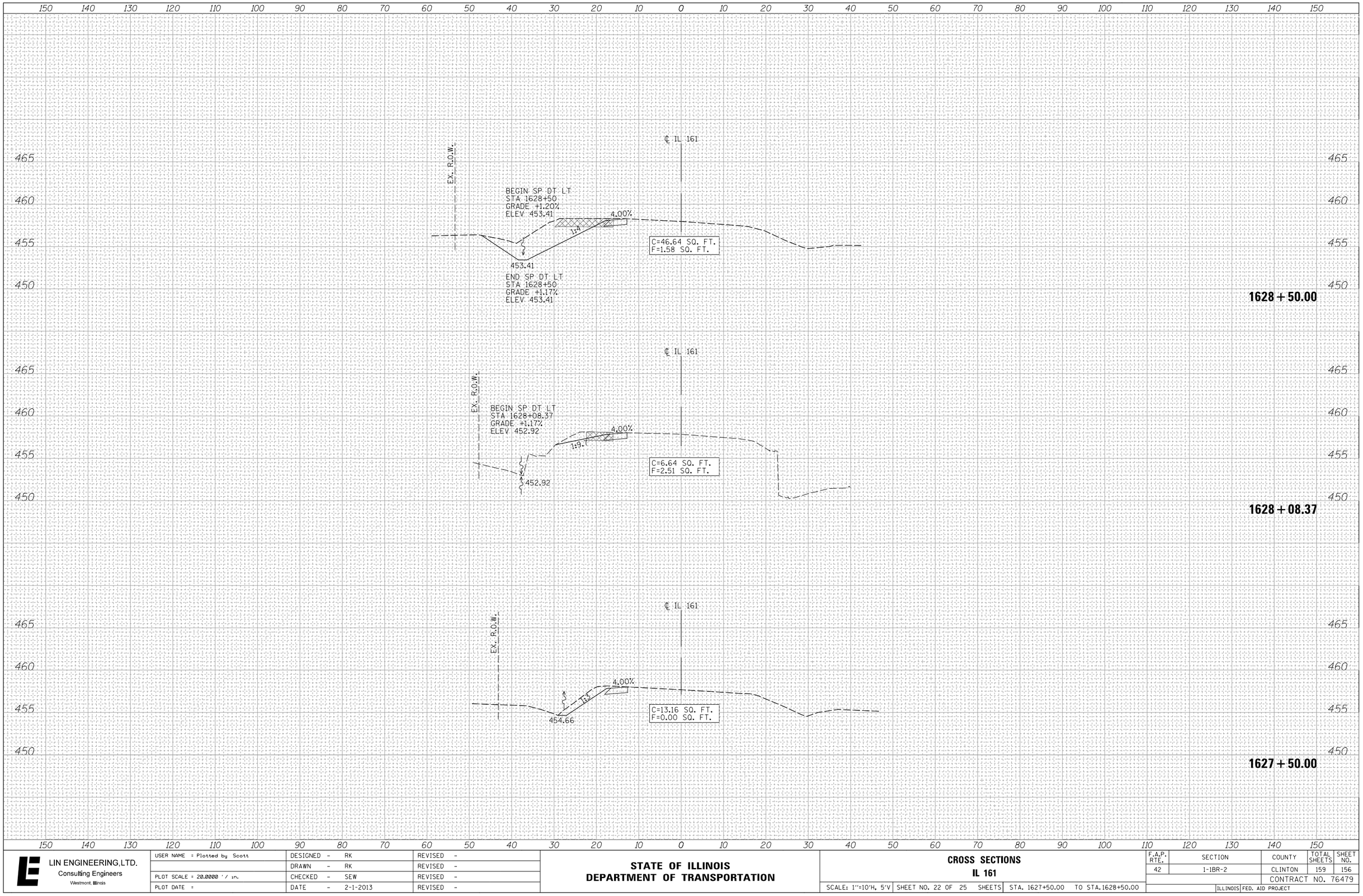
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
IL 161

SCALE: 1"=10'H. 5'V | SHEET NO. 21 OF 25 SHEETS | STA. 1626+00.00 TO STA.1627+00.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	155
		CONTRACT NO. 76479		
		ILLINOIS FED. AID PROJECT		



FINAL SURVEY

NO.	NOTE BOOK	DATE

AREAS CHECKED
TEMPLATE
PLOTTED
SURVEYED
BY
DATE

ORIGINAL SURVEY

NO.	NOTE BOOK	DATE

AREAS CHECKED
TEMPLATE
PLOTTED
SURVEYED
BY
DATE

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Westmont, Illinois

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
IL 161

SCALE: 1"=10'H, 5'V | SHEET NO. 22 OF 25 SHEETS | STA. 1627+50.00 TO STA. 1628+50.00

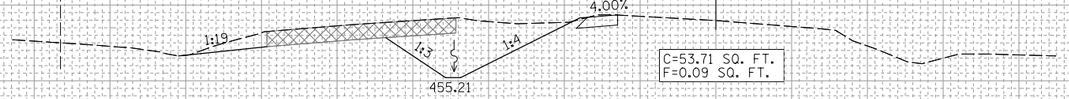
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	156
		CONTRACT NO. 76479		
	ILLINOIS FED. AID PROJECT			

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

465 460 455 450

EX. R.O.W.

℄ IL 161

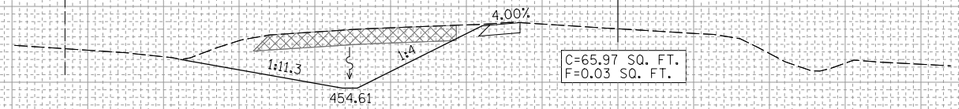


C=53.71 SQ. FT.
F=0.09 SQ. FT.

1630 + 00.00

EX. R.O.W.

℄ IL 161

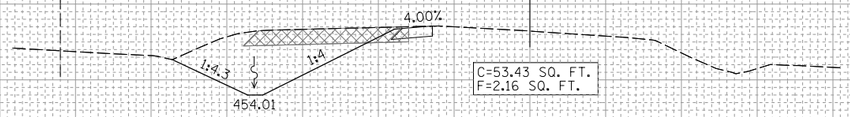


C=65.97 SQ. FT.
F=0.03 SQ. FT.

1629 + 50.00

EX. R.O.W.

℄ IL 161



C=53.43 SQ. FT.
F=2.16 SQ. FT.

1629 + 00.00

FINAL SURVEY	BY	DATE
NOTE BOOK	SURVEYED	
NO.	PLOTTED	
	TEMPLATE	
	AREAS	
	AREAS CHECKED	

ORIGINAL SURVEY	BY	DATE
NOTE BOOK	SURVEYED	
NO.	PLOTTED	
	TEMPLATE	
	AREAS	
	AREAS CHECKED	

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Westmont, Illinois

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

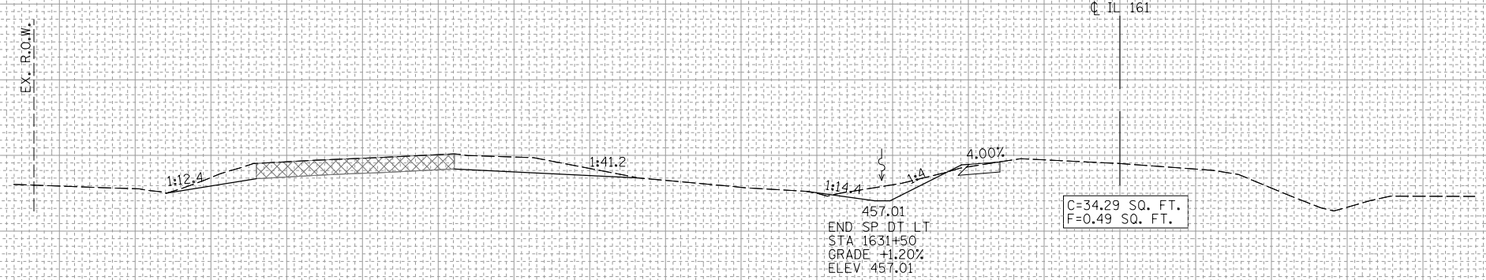
CROSS SECTIONS
IL 161

SCALE: 1"=10'H, 5'V | SHEET NO. 23 OF 25 SHEETS | STA. 1629+00.00 TO STA.1630+00.00

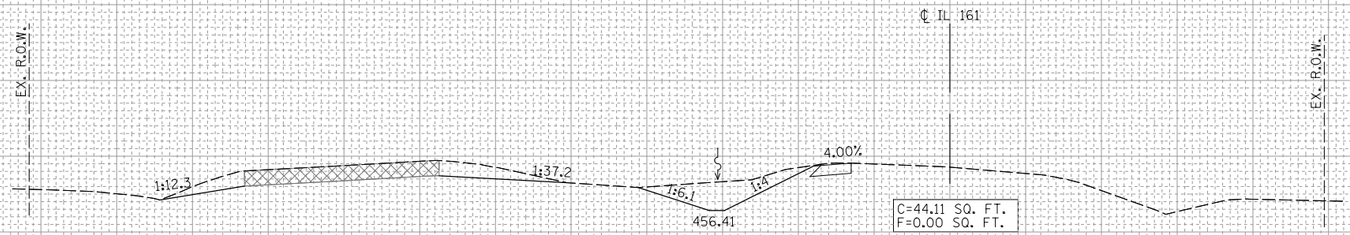
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	157
		CONTRACT NO. 76479		
	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY	NOTE BOOK	NO.
SURVEYED	BY	
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		DATE

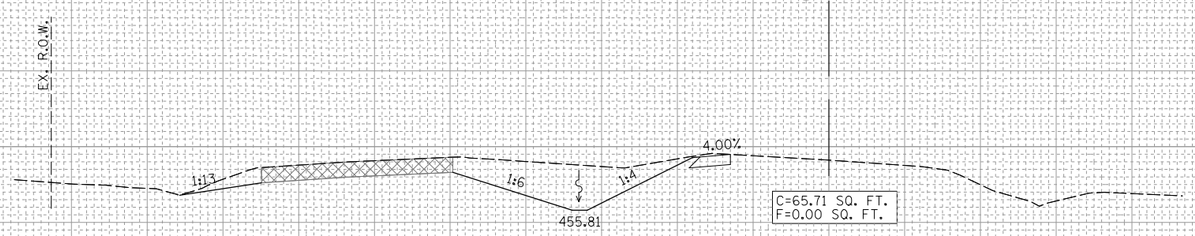
SEE INTERSECTION DETAILS
STA. 1632 + 00 TO STA. 1632 + 50



1631 + 50.00



1631 + 00.00



1630 + 50.00

ORIGINAL SURVEY	NOTE BOOK	NO.
SURVEYED	BY	
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		DATE

LIN ENGINEERING, LTD.
Consulting Engineers
Westmont, Illinois

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	DRAWN - RK	REVISED -
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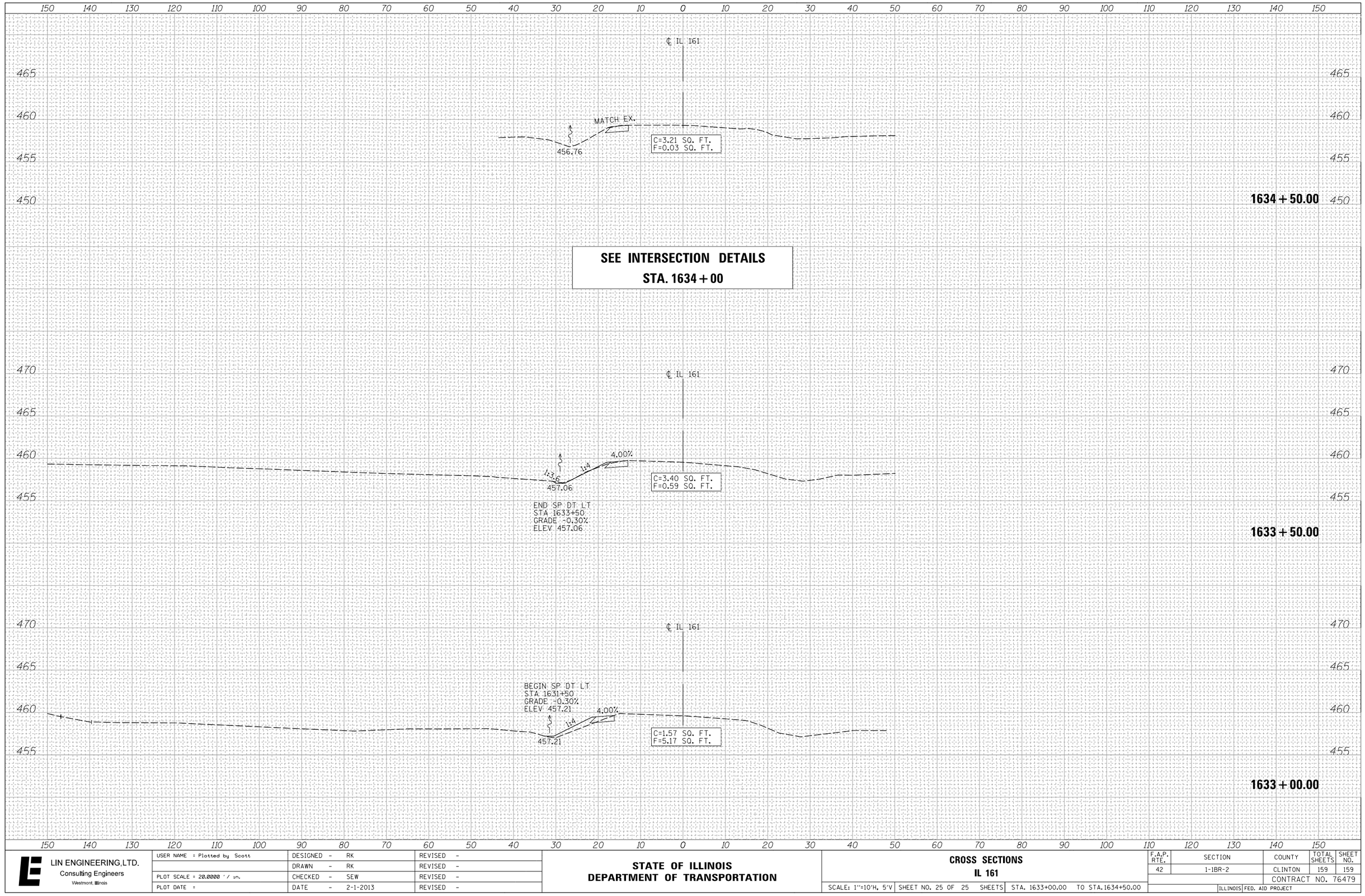
PLOT DATE =	DATE - 2-1-2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
IL 161

SCALE: 1"=10'H. 5'V | SHEET NO. 24 OF 25 SHEETS | STA. 1630+50.00 TO STA. 1631+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	158
		CONTRACT NO. 76479		
	ILLINOIS	FED. AID PROJECT		



FINAL SURVEY	NOTE BOOK	NO.	BY	DATE
SURVEYED				
PLOTTED				
TEMPLATE				
AREAS				
AREAS CHECKED				

ORIGINAL SURVEY	NOTE BOOK	NO.	BY	DATE
SURVEYED				
PLOTTED				
TEMPLATE				
AREAS				
AREAS CHECKED				

LIN ENGINEERING, LTD.
Consulting Engineers
Westmont, Illinois

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	DRAWN - RK	REVISED -
PLOT SCALE = 20.0000 ' / in.	CHECKED - SEW	REVISED -
PLOT DATE =	DATE - 2-1-2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
IL 161

SCALE: 1"=10'H, 5'V | SHEET NO. 25 OF 25 SHEETS | STA. 1633+00.00 TO STA.1634+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	159
		CONTRACT NO. 76479		
	ILLINOIS FED. AID PROJECT			