

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1351	17-00138-00-BR	FORD	27	1
FED. ROAD DIST. NO.		ILLINOIS CONTRACT NO.	87740	

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1.	COVER SHEET
2.	SUMMARY OF QUANTITIES AND GENERAL NOTES
3.	TYPICAL CROSS SECTIONS
4.	SCHEDULE OF QUANTITIES
5.	PLAN AND PROFILE
6-7.	GUARDRAIL & SHOULDER LAYOUT
8-15.	BRIDGE PLANS
16-17.	BORINGS
18-27.	STATION CROSS SECTIONS

09-17-2021 LETTING ITEM 066

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PLANS FOR PROPOSED
SURFACE TRANSPORTATION PROGRAM
ON SYSTEM BRIDGE**

**SECTION 17-00138-00-BR
FORD COUNTY
F.A.S. 1351 / C.H. 18 / BUCKINGHAM ROAD
PROPOSED STRUCTURE NO. 027-3461
JOB C-93-096-97
PROJECT REN8(721)**

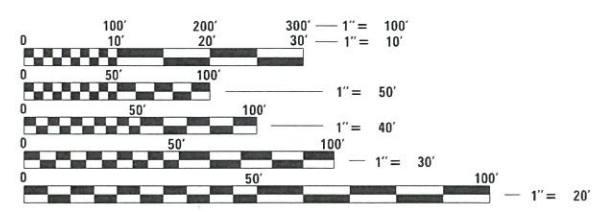
HIGHWAY STANDARDS:

000001-08	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
482001-02	HMA SHOULDER ADJACENT TO FLEXIBLE PAVEMENT
515001-04	NAME PLATE FOR BRIDGES
542401-04	METAL FLARED END SECTIONS FOR PIPE CULVERTS
630001-12	STEEL PLATE BEAM GUARDRAIL
630201-07	PCC / HMA STABILIZATION AT STEEL PLATE BEAM GUARDRAIL
630301-09	SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
701901-08	TRAFFIC CONTROL DEVICES
725001-01	OBJECT AND TERMINAL MARKERS
782006-01	GUARDRAIL AND BARRIER WALL REFLECTOR MOUNTING DETAILS
BLR 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
BLR 27-1	TRAFFIC BARRIER TERMINAL, TYPE 5A

UTILITIES

FRONTIER COMMUNICATIONS
109 E. MARKET STREET, 2ND FLOOR
BLOOMINGTON, IL 61701

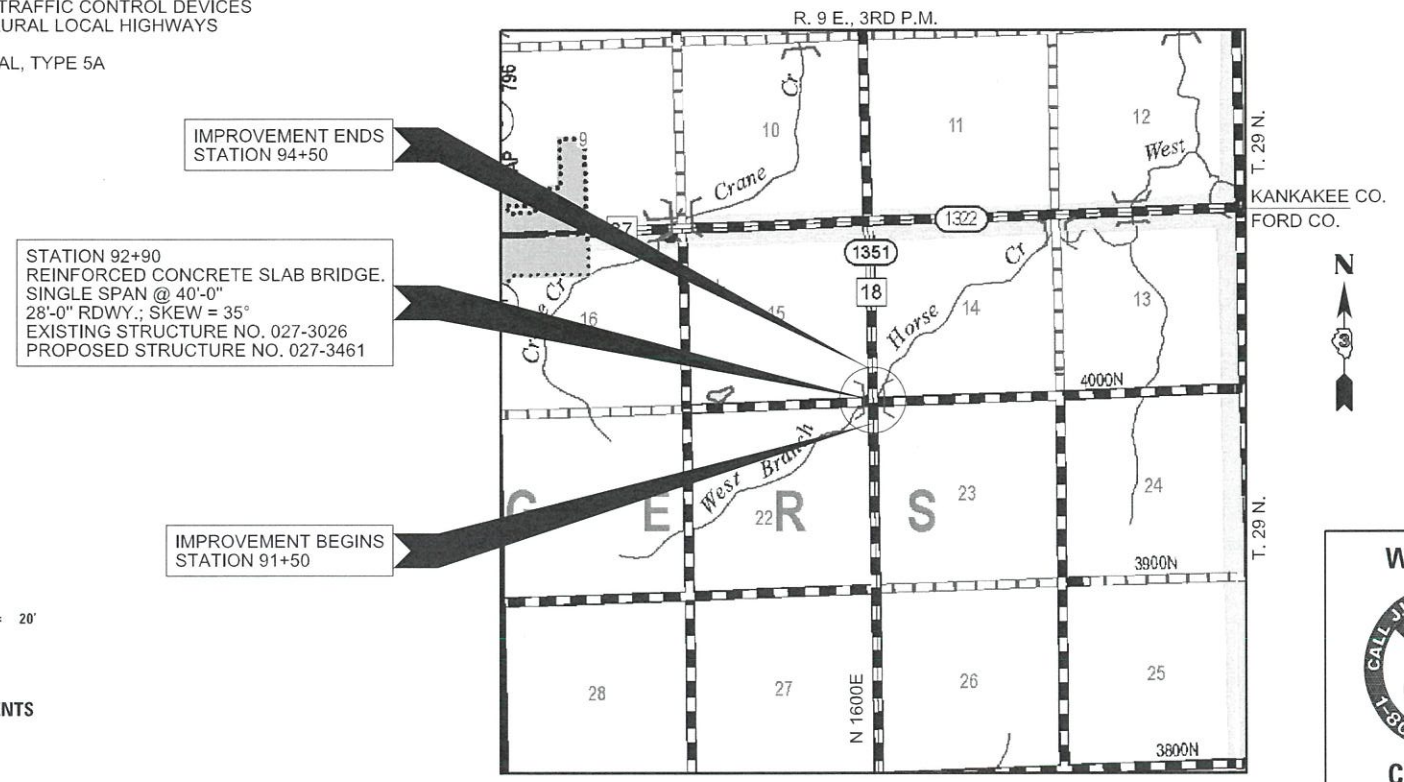
EASTERN ILLINI ELECTRIC
ENGINEERING DEPARTMENT
330 W. OTTAWA, PO BOX 96
PAXTON, IL 60957



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

FUNCTIONAL CLASSIFICATION: MAJOR COLLECTOR (RURAL)
DESIGN SPEED: 50 MPH
DESIGN TRAFFIC: 450 ADT (2016)

CONTRACT NO. 87740 PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS



IMPROVEMENT ENDS STATION 94+50

STATION 92+90
REINFORCED CONCRETE SLAB BRIDGE.
SINGLE SPAN @ 40'-0"
28'-0" RDWY.; SKEW = 35°
EXISTING STRUCTURE NO. 027-3026
PROPOSED STRUCTURE NO. 027-3461

IMPROVEMENT BEGINS STATION 91+50

LOCATION MAP

APPROXIMATE SCALE: 0 1/2 MILE
NET LENGTH OF SECTION = 425 FEET = 0.080 MILES

WARNING

**CALL 811
BEFORE YOU DIG**

DIG NO: A0120158 / A0120153

ILLINOIS DEPARTMENT OF TRANSPORTATION

APPROVED January 22, 2021
[Signature]
COUNTY ENGINEER

PASSED February 18, 2021
[Signature]

Releasing For Bid Based on Limited Review
February 18, 2021
[Signature]
REGION TWO ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DATE: 01/21/2021

HAMPTON, LENZINI AND RENWICK, INC.
CIVIL ENGINEERS - STRUCTURAL ENGINEERS - LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
217.546.3400 www.hlrengineering.com

SUMMARY OF QUANTITIES

CODE NO.	ITEM	CONSTRUCTION TYPE CODE 0010	
		UNIT	TOTAL QUANTITY
20200100	EARTH EXCAVATION	CU YD	415
20300100	CHANNEL EXCAVATION	CU YD	55
20700110	POROUS GRANULAR EMBANKMENT	TON	92
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	247
31101200	SUBBASE GRANULAR MATERIAL, TYPE B, 4"	SQ YD	389
35101400	AGGREGATE BASE COURSE, TYPE B	TON	685
40600275	BITUMINOUS MATERIALS (PRIME COAT)	POUND	1,478
40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	135
40603080	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	118
40604050	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "C", N50	TON	71
48203013	HOT-MIX ASPHALT SHOULDERS, 4"	SQ YD	389
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50105220	PIPE CULVERT REMOVAL	FOOT	145
50300225	CONCRETE STRUCTURES	CU YD	32.4
50300255	CONCRETE SUPERSTRUCTURE	CU YD	79.8
50300260	BRIDGE DECK GROOVING	SQ YD	136
50300300	PROTECTIVE COAT	SQ YD	175
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	33,930
* 50900205	STEEL RAILING, TYPE S1	FOOT	87
51200957	FURNISHING METAL SHELL PILES 12" X 0.250"	FOOT	360
51202305	DRIVING PILES	FOOT	360
51203200	TEST PILE METAL SHELLS	EACH	1
51500100	NAME PLATES	EACH	1
54262730	METAL FLARED END SECTIONS 30"	EACH	2
542D0220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	30
542D0229	PIPE CULVERTS, CLASS D, TYPE 1 24"	FOOT	10
542D0235	PIPE CULVERTS, CLASS D, TYPE 1 30"	FOOT	64
542D5515	PIPE CULVERTS, CLASS D, TYPE 1 EQUIVALENT ROUND-SIZE 60"	FOOT	50
* 63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	1
* 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	2

^ SEE SPECIAL PROVISIONS

* SPECIALTY ITEMS

SUMMARY OF QUANTITIES

CODE NO.	ITEM	CONSTRUCTION TYPE CODE 0010	
		UNIT	TOTAL QUANTITY
63200310	GUARDRAIL REMOVAL	FOOT	290
67100100	MOBILIZATION	L SUM	1
* 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
^ X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.25
* ^ X6311205	TRAFFIC BARRIER TERMINAL, TYPE 5A (SPECIAL)	EACH	1
* ^ X6330725	STEEL PLATE BEAM GUARDRAIL (SHORT RADIUS)	FOOT	65

^ SEE SPECIAL PROVISIONS

* SPECIALTY ITEMS

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ADOPTED APRIL 1, 2016," THESE PLANS AND THE SPECIAL PROVISIONS INCLUDED IN THE CONTRACT DOCUMENTS.
- THE LOCATION OF EXISTING GAS MAINS, ELECTRIC POWER LINES, TELEPHONE LINES AND OTHER UTILITIES AS SHOWN ON THE PLANS ARE BASED ON CAREFUL FIELD INVESTIGATION AND THE BEST INFORMATION AVAILABLE, BUT THE LOCATIONS ARE NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THEIR EXACT LOCATION FROM THE INDIVIDUAL UTILITY COMPANIES AND BY FIELD INSPECTION.
- WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.
- THE CONTRACTOR SHALL CONSULT THE ENGINEER IN REGARD TO THE EXACT LENGTH OF PIPE CULVERTS AND PIPE DRAINS BEFORE ORDERING THESE ITEMS.
- THE REVISION NUMBER INDICATED FOR THE STANDARDS LISTED IN THE INDEX SHEETS SHALL BE USED IN THE CONSTRUCTION OF THIS SECTION.
- PIPE DRAINS AND PIPE CULVERTS SHALL BE PRECOATED IN ACCORDANCE WITH ARTICLE 1006.01(b) OF THE STANDARD SPECIFICATIONS.
- THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES.

AGGREGATE SURFACE & BASE COURSE, SHOULD	2.05 TON/CU YD
HOT-MIX ASPHALT	112 LBS/SQ YD/INCH THICKNESS
BITUMINOUS MATERIALS (PRIME COAT)	0.25 POUNDS/SQ YD
BITUMINOUS MATERIALS (TACK COAT)	0.025 POUNDS/SQ YD
STONE DUMPED RIPRAP	1.75 TON/CU YD
TEMPORARY EROSION CONTROL SEEDING	100 LBS / ACRE
POROUS GRANULAR EMBANKMENT	1.5 TON/CU YD
- EARTH SURFACES SHALL BE SEEDED WITHIN 14 DAYS OF THE END OF ACTIVE DISTURBANCE. THE AREA TO BE SEEDED SHALL CONSIST OF ALL EARTH SURFACES DISTURBED DURING CONSTRUCTION AND AS DIRECTED BY THE ENGINEER. ESTIMATED AREAS OF SEEDING:
SEEDING, CLASS 2 (SPECIAL) 0.25 ACRES
- THE CONTRACTOR HAS THE OPTION OF USING A VIBRATING SCREEN IN LIEU OF A FINISHING MACHINE FOR THE CONCRETE SUPERSTRUCTURE, AT THE APPROVAL OF THE ENGINEER.
- COMMITMENTS:
1) NONE

PROPOSED ALIGNMENT		
	NORTHING	EASTING
P.O.T. STATION 38+00	1566301.008	1029463.684
P.I. STATION 88+45.71	1571346.302	1029399.004
P.I. STATION 92+21.66	1571722.23	1029394.738
P.O.T. STATION 97+45.66	1572246.17	1029386.721

HOT-MIX ASPHALT MIXTURE REQUIREMENTS			
LOCATIONS(S)	CH 18 / FAS 1351	CH 18 / FAS 1351	CH 18 / FAS 1351
MIXTURE USE(S):	HOT-MIX ASPHALT SURFACE COURSE	HOT-MIX ASPHALT BINDER COURSE	HMA SHOULDERS (TOP LIFT)
PG:	PG 64-22	PG 64-22	PG 64-22
DESIGN AIR VOIDS:	4% @ 50 Gyr.	4% @ 50 Gyr.	4% @ Ndes 50
MIXTURE COMPOSITION: (MIXTURE GRADATION)	IL 9.5	IL 19.0	IL 9.5
FRICTION AGGREGATE:	MIXTURE C	NONE	NONE
DENSITY TEST METHOD	CORES	CORES	MIXTURE C
MIXTURE WEIGHT:	112 LBS \ SY \ INCH	112 LBS \ SY \ INCH	112 LBS \ SY \ INCH
QUALITY MANAGEMENT PROGRAM	QC/QA	QC/QA	QC/QA
SUBLOT SIZE	N/A	N/A	N/A

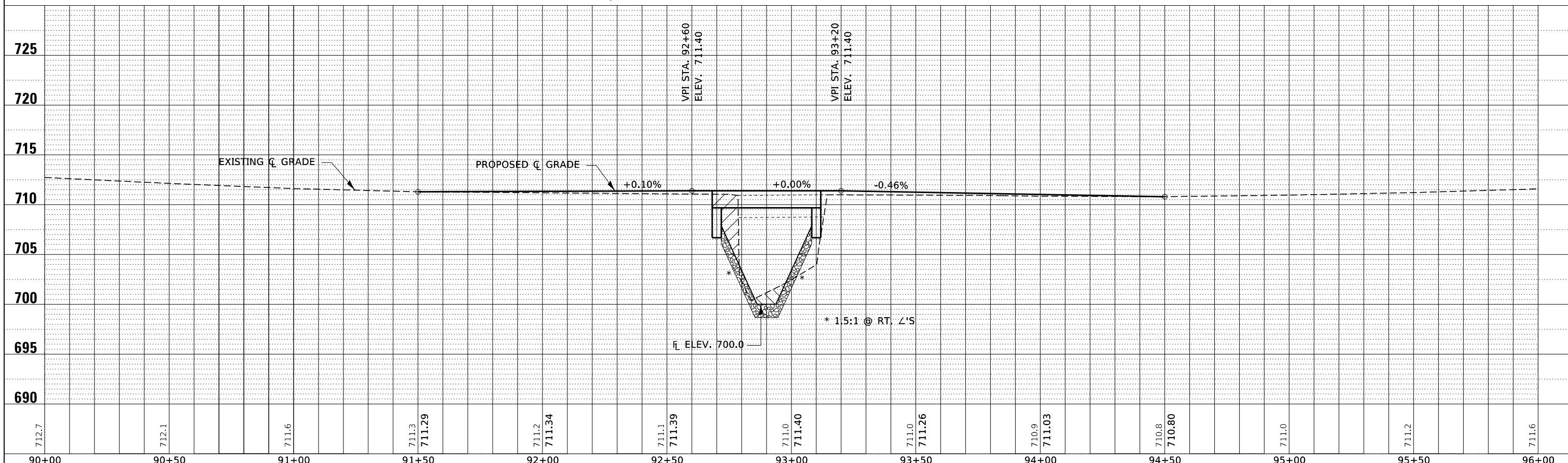
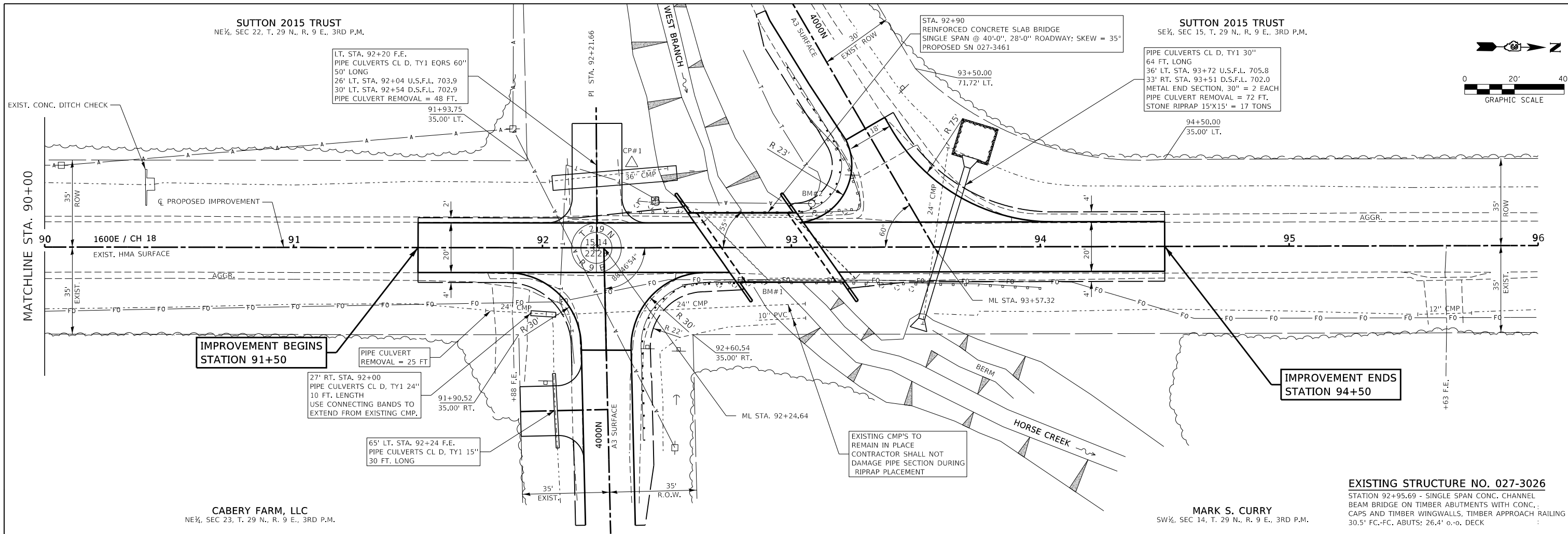
EARTHWORK SCHEDULE							
LOCATION	EARTH EXCAVATION	CHANNEL EXCAVATION	SHRINKAGE FACTOR	PERCENT USED	EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT REQUIRED	EARTHWORK BALANCE
	CU.YD.	CU.YD.			CU.YD.	CU.YD.	CU.YD.
C.H. 18/BUCKINGHAM ROAD							
STA. 91+50.00 TO STA. 92+68.17	218		25.00%	100.00%	163	22	141
STA. 92+68.17 TO STA. 93+11.83		55	25.00%	70.00%	29		29
STA. 93+11.83 TO STA. 94+50.00	197		25.00%	100.00%	148	93	55
TOTAL	415	55			340	115	225
USE	415	55					225

WASTE EXCAVATION 225 CU YDS

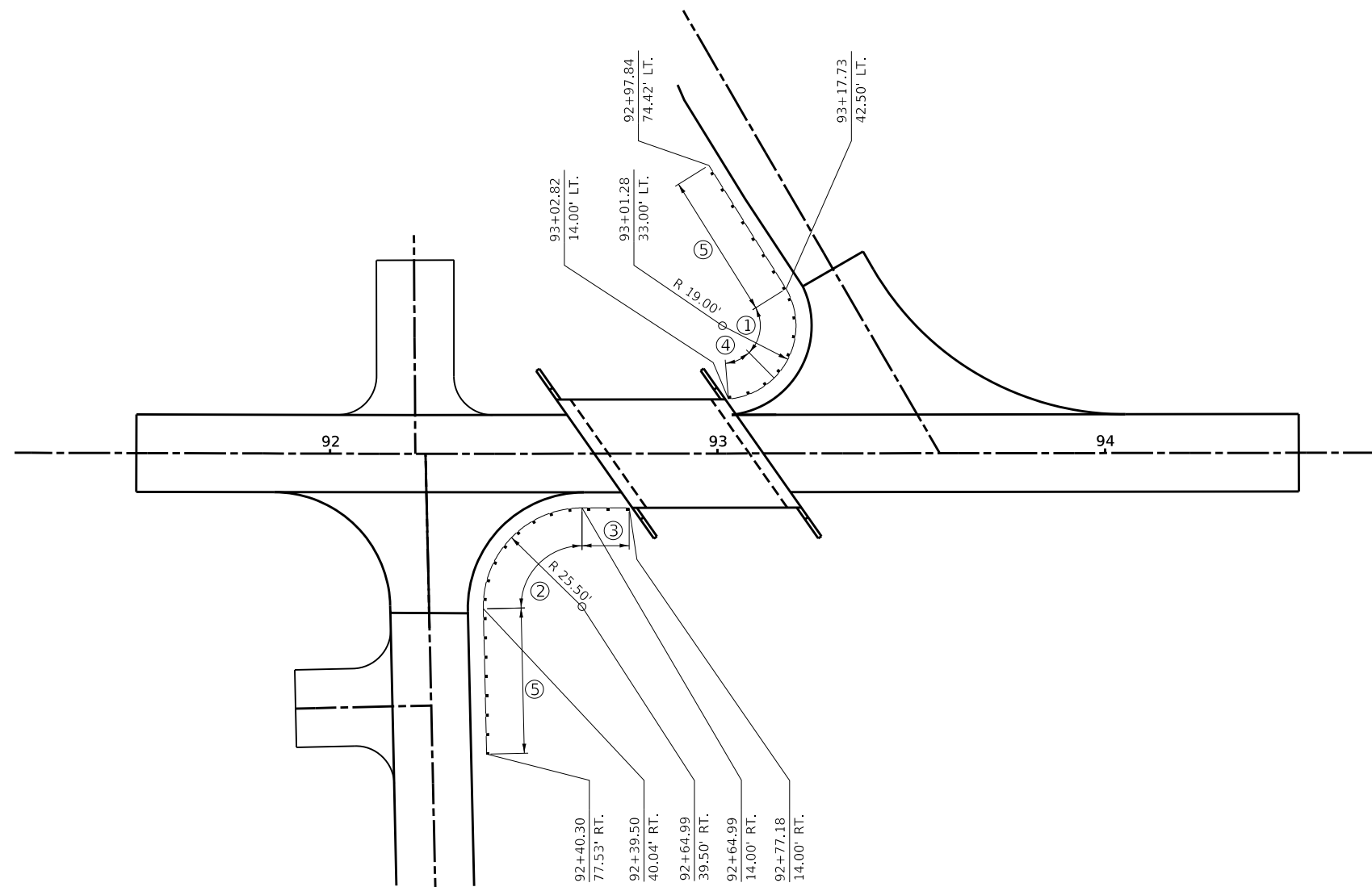
ROADWAY SCHEDULE							
LOCATION	AGGREGATE BASE COURSE, TYPE B	BITUMINOUS MATERIALS (PRIME COAT)	BITUMINOUS MATERIALS (TACK COAT)	SUB-BASE GRANULAR MATERIAL, TY C B"	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "C", N50	HOT MIX ASPHALT-SHOULDERS, 4"
	35101400	40600275	40600290	31101200	40603080	40604050	48203013
C.H. 18/BUCKINGHAM ROAD	TON	POUND	POUND	SQ YD	TON	TON	SQ YD
STA. 91+50.00 TO STA. 92+68.17	344	678	62	184	53	32	184
STA. 93+11.83 TO STA. 94+50.00	341	800	73	205	66	39	205
TOTAL	685	1478	135	389	118	71	389
USE	685	1478	135	389	118	71	389

DATE	
BY	
REVIEWED	
PLANNED	
ALIGNED	
CHECKED	
NO. _____	
PLAN	
NOTE BOOK	
NO. _____	

DATE	
BY	
REVIEWED	
PLANNED	
GRADES CHECKED	
NO. _____	
PROFILE	
NOTE BOOK	
NO. _____	



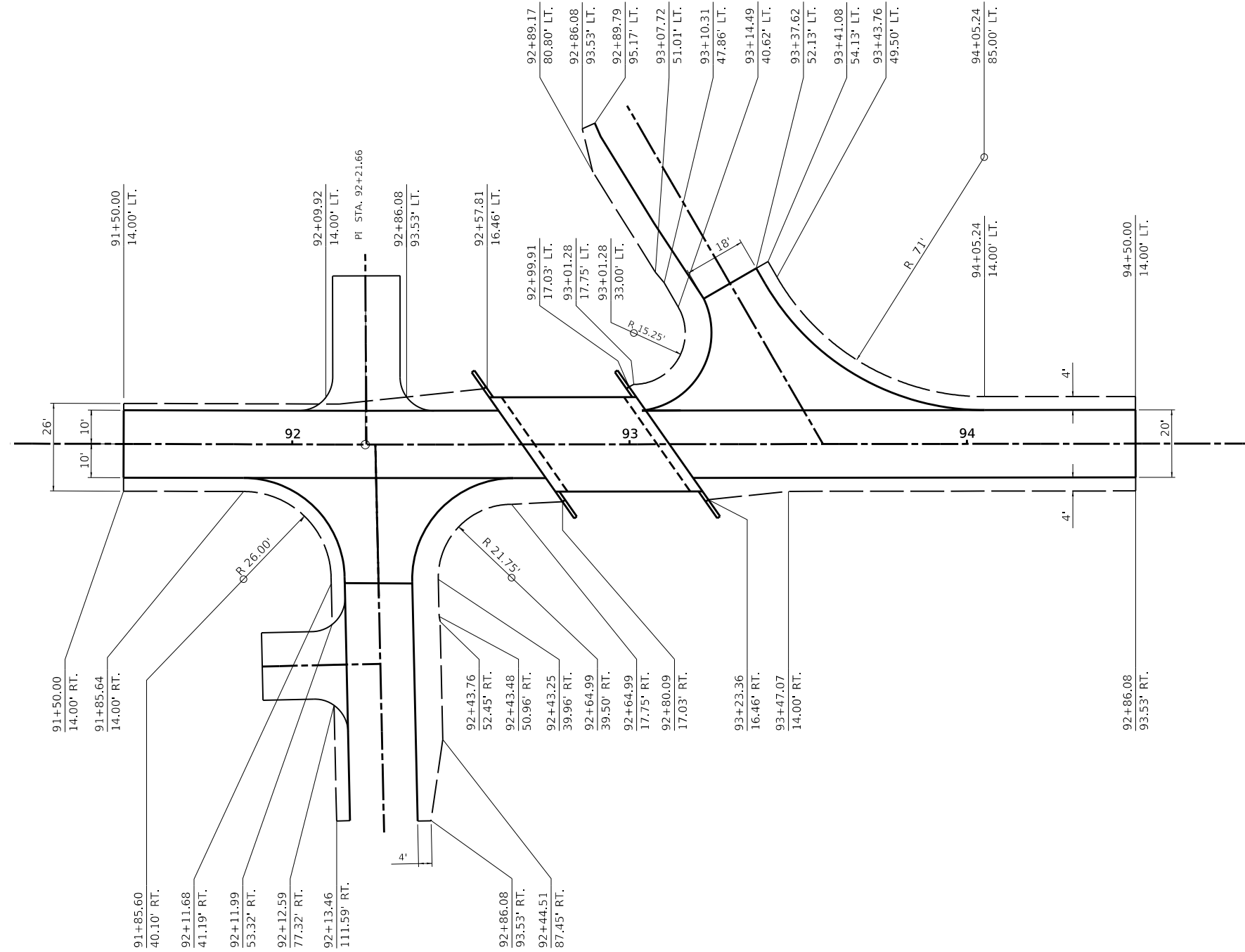
FILE NAME = 190774-shl-FHPrf.dgn	USER NAME = rmosick	DESIGNED - J.W.F.	REVISED -	STATE OF ILLINOIS FORD COUNTY HIGHWAY DEPARTMENT	PLAN & PROFILE BUCKINGHAM ROAD / C.H. 18	F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
HAMPTON, LENZINI AND RENWICK, INC.		DRAWN - T.W.K.	REVISED -			1351	17-00138-00-BR	FORD	27	5	
3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62710 ILLINOIS PROFESSIONAL DESIGN FIRM L.S. / P.E. / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -			CONTRACT NO. 87740					
		DATE - 01/21/2021	REVISED -			SCALE: 5V:20H	SHEET NO. 1 OF 1 SHEETS	STA. 90+00.00 TO STA. 96+00.00	ILLINOIS FED. AID PROJECT REN(721)		



LEGEND

- ① STEEL PLATE BEAM GUARDRAIL, (SHORT RADIUS) = 25 FT.
- ② STEEL PLATE BEAM GUARDRAIL, (SHORT RADIUS) = 40 FT.
- ③ TBT TY 5A = 1 EACH
- ④ TBT TY 5A, (SPECIAL) = 1 EACH
- ⑤ TBT TY 1 SPL TANGENT = 2 EACH

FILE NAME = 190774-shit-guards\lder layout.dgn	USER NAME = rmosick	DESIGNED - J.W.F.	REVISED -	STATE OF ILLINOIS FORD COUNTY HIGHWAY DEPARTMENT	GUARDRAIL LAYOUT			F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3065 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		DRAWN - R.D.H.	REVISED -		1351	17-00138-00-BR	FORD	27	6			
PLOT SCALE = \$\$SCALE\$		CHECKED - S.W.M.	REVISED -		CONTRACT NO. 87740							
PLOT DATE = 1/22/2021		DATE - 01/21/2021	REVISED -		SCALE:	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.	ILLINOIS FED. AID PROJECT REN8(721)			



**STATE OF ILLINOIS
 FORD COUNTY HIGHWAY DEPARTMENT**

SHOULDER LAYOUT

BENCHMARK: Cross Notch "X" on SE wingwall. 14.2' Rt., Sta. 92+92, Elev. 711.36

EXISTING STRUCTURE NO. 027-3026: Sta. 92+95.69- Single span concrete channel beam bridge on timber abutments with concrete cap and timber wingwalls. 30.5' fc.-fc. abuts.; 26.4' o.-o. deck.

Structure will be closed to traffic during construction.

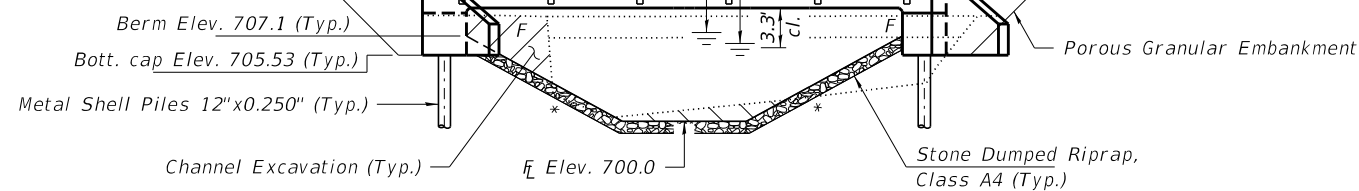
No Salvage

Traffic Barrier Terminal, Type 5A
NW & SE corners only.
See Std. BLR 27-1

Steel Railing, Type S-1
See sheets 2 & 6 of 10
for details.

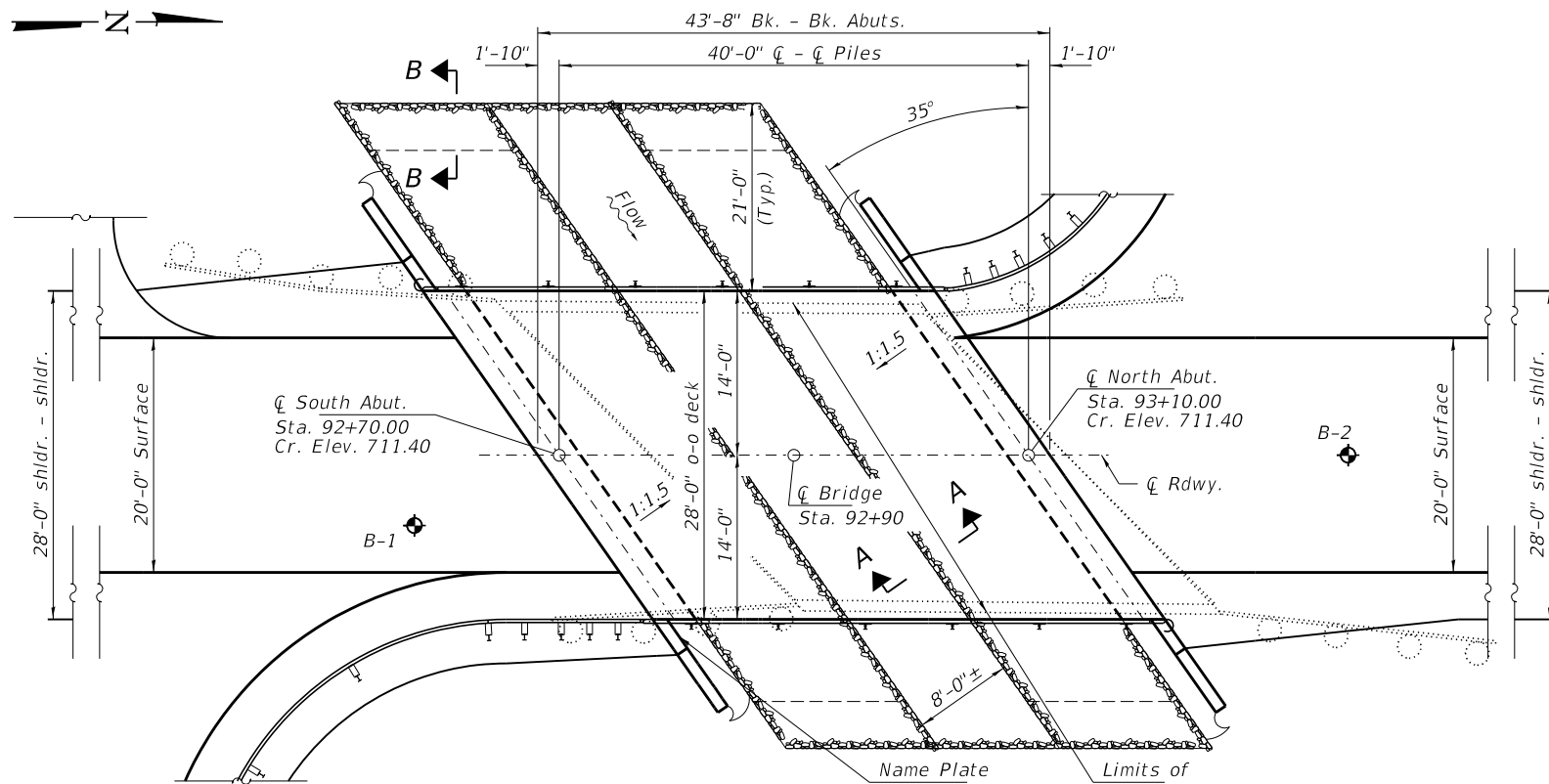
100 Yr. H.W. Elev. 707.4
20 Yr. H.W. Elev. 706.5

Curled End Sections with
Terminal Marker - Direct Applied. (Typ.)
See sheets 2 & 6 of 10 for details.
NE & SW corners only.



ELEVATION

* 1:1.5 at Rt. Z's



PLAN

DESIGN SCOUR ELEVATION TABLE

Event/Limit State	Design Scour Elev. (ft.)		Item 113
	S. Abut.	N. Abut.	
Q100	705.5	705.5	8
Q200	705.5	705.5	
Design	705.5	705.5	
Check	705.5	705.5	

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.076g
Design Spectral Acceleration at 0.2 sec. (S_{D5}) = 0.130g
Soil Site Class = C

DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition with all interims.

LOADING HL-93

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

DESIGN STRESSES

f'_c = 4,000 psi (Super)
f'_c = 3,500 psi (Sub)
f_y = 60,000 psi (Reinf.)

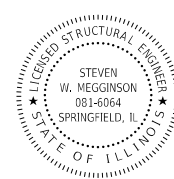
WATERWAY INFORMATION

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. Head - Ft.		Headwater El.		
			Exist.	Prop.	H.W.E.	Prop.	Exist.	Prop.	
Ten-Year	10	267	80	90	706.0	0.1	0.1	706.1	706.1
Design	20	330	90	100	706.5	0.1	0.1	706.6	706.6
Base	100	481	110	130	707.4	0.3	0.2	707.7	707.6
Scour Check	200	550	120	140	707.6	0.4	0.2	708.0	707.8
Max. Calc.	500	645	120	150	707.9	0.5	0.4	708.4	708.3

Existing Low Grade Elev. 710.8 @ Sta. 94+50
Proposed Low Grade Elev. 710.8 @ Sta. 94+50
10 Year Velocity through Existing Bridge = 3.3 fps 10 Year Velocity through Proposed Bridge = 3.0 fps

I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current "AASHTO LRFD Specifications."

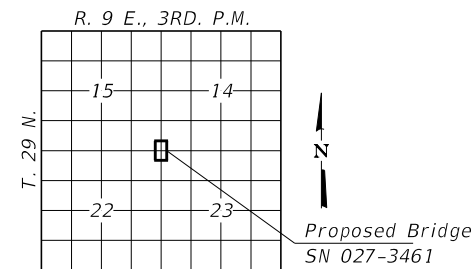
Steven W. Megginson 01/21/2021
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064



Expires 11-30-2022

GENERAL NOTES

Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at South Abutment or approved by the Engineer before ordering the remainder of piles. Reinforcement bars designated (E) shall be epoxy coated.
Excavation required to construct the Abutments shall be included in the cost of Concrete Structures. No additional compensation will be allowed for Structure Excavation.
All proposed construction activities shall be in accordance with Nationwide Permit number 14 of the Department of the Army authorized under Section 404 of the Clean Water Act.
The IEPA has issued Section 401 Water Quality Certification for this activity. See Special Provisions for conditions.
The Contractor shall make allowance for the deflection of forms, shrinkage, and settlement of falsework, in addition to allowance for dead load deflection.
Protective Coat shall be applied to the top surface and the sides of the concrete deck and wingwalls.
Bridge Deck Grooving shall be completed on the bridge deck. Pavement rollers shall not be allowed on bridge deck grooving.
All construction joints shall be bonded.



LOCATION SKETCH



PROFILE GRADE

INDEX OF STRUCTURE SHEETS

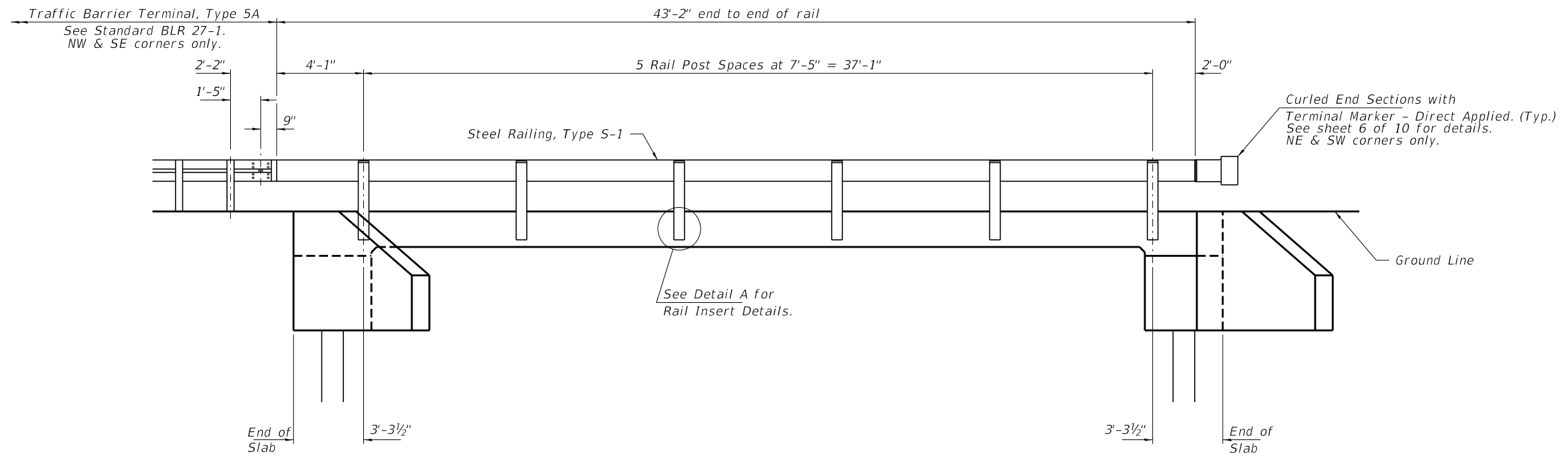
1. General Plan & Elevation
2. General Details
3. Slab Elevations
4. Superstructure
5. Superstructure Details
6. Steel Railing, Type S-1
7. Abutments
8. Metal Shell Pile Details
- 9-10. Borings

WEST BRANCH HORSE CREEK
BUILT 202 BY
FORD COUNTY
C.H. 18 / BUCKINGHAM ROAD
SEC. 17-00138-00-BR
STR. NO. 027-3461
LOADING HL-93

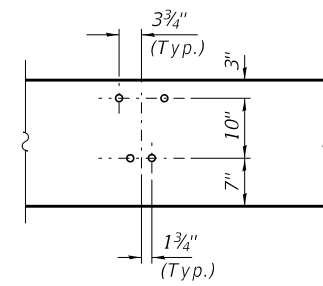
NAME PLATE
See Std. 515001

TOTAL BILL OF MATERIAL

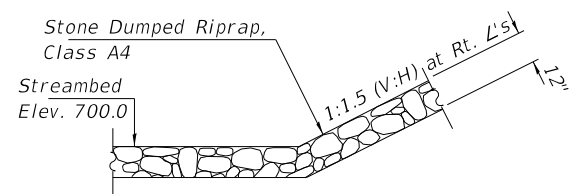
ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			55
Stone Dumped Riprap, Class A4	Ton			230
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		32.4	32.4
Concrete Superstructure	Cu. Yd.	79.8		79.8
Bridge Deck Grooving	Sq. Yd.	136		136
Protective Coat	Sq. Yd.	152	23	175
Reinforcement Bars, Epoxy Coated	Pound	29,670	4,260	33,930
Steel Railing, Type S-1	Foot	87		87
Furnishing Metal Shell Piles 12"x0.250"	Foot		360	360
Driving Piles	Foot		360	360
Test Pile Metal Shells	Each		1	1
Name Plates	Each		1	1
Porous Granular Embankment	Ton			92



ELEVATION
Showing Rail Post Spaces
See sheet 6 of 10 for Railing Details.

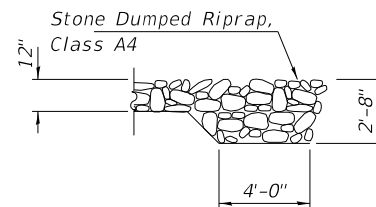


DETAIL A

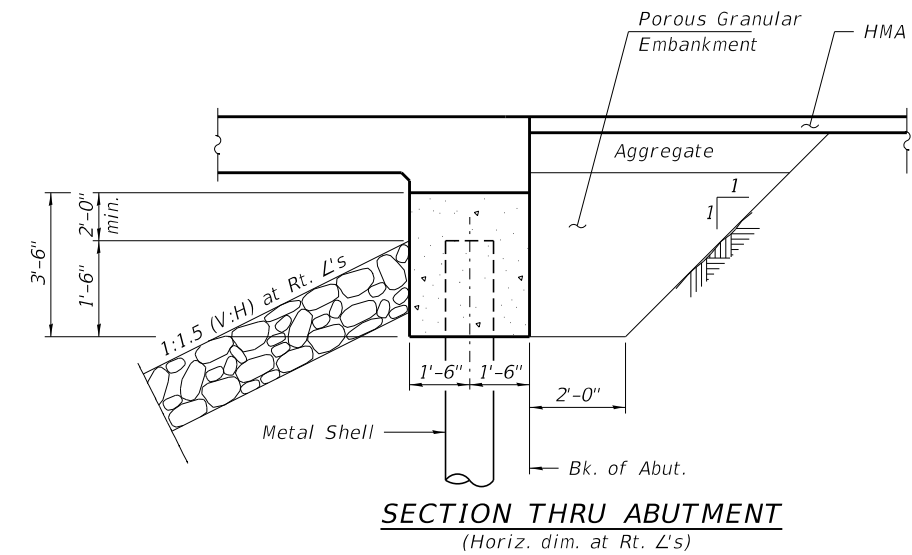


SECTION A-A

Note: See Special Provisions for Stone Dumped Riprap, Class A4.

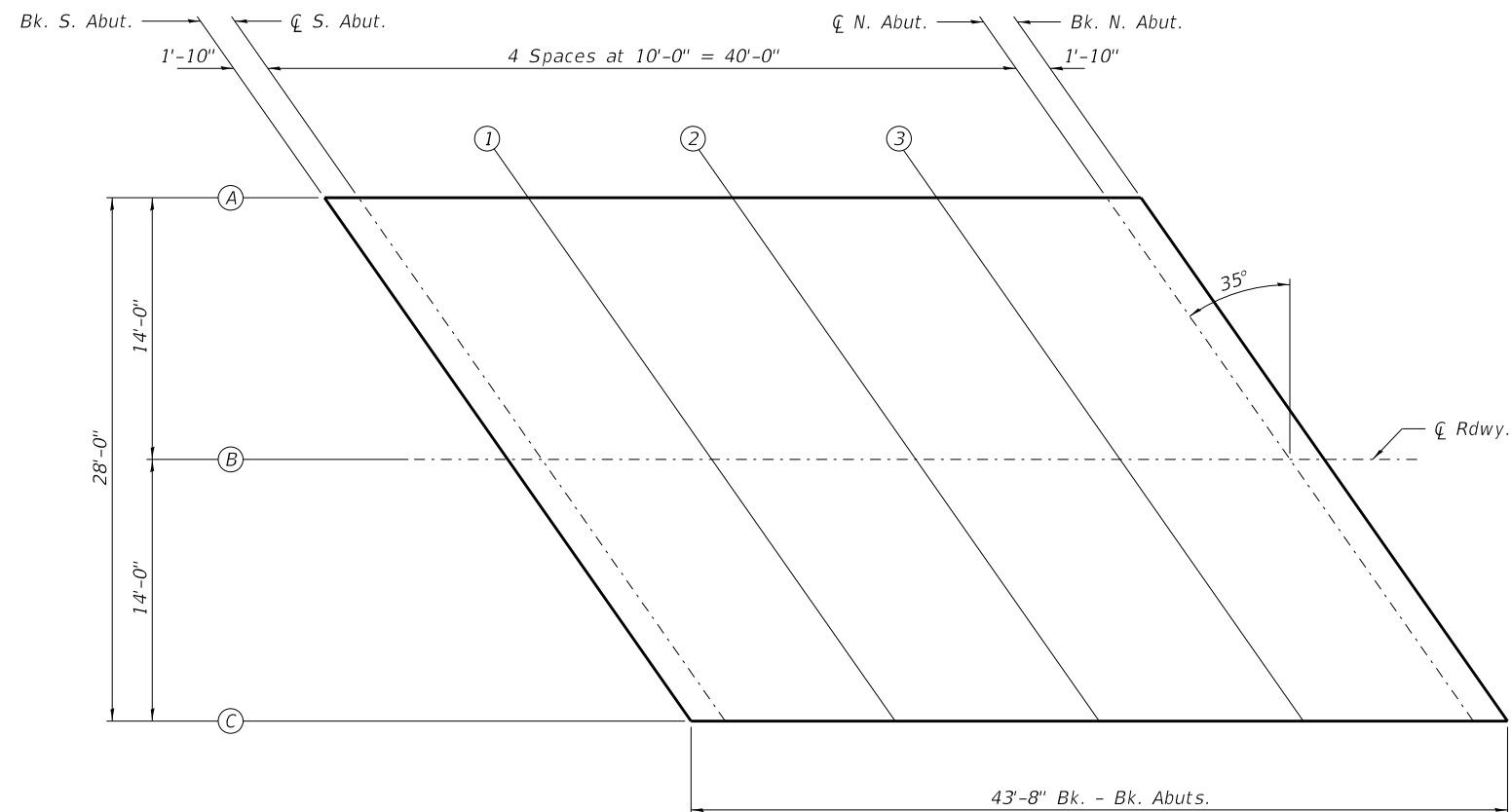
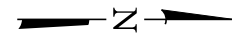


SECTION B-B



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

FILE NAME = 190774-shi-bridge.dgn	USER NAME = rthosick	DESIGNED - J.R.B.	REVISED -	STATE OF ILLINOIS FORD COUNTY HIGHWAY DEPARTMENT	GENERAL DETAILS STRUCTURE NO. 027-3461	F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3035 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L.S. / P.E. / S.E. CORP. 184.000959	PLOT SCALE = \$SCALE\$	CHECKED - S.W.M.	REVISED -			1351	17-00138-00-BR	FORD	27	9
PLOT DATE = 1/22/2021		DRAWN - R.D.H.	REVISED -			CONTRACT NO. 87740				
		CHECKED - S.W.M.	REVISED -			ILLINOIS FED. AID PROJECT REN8(721)				



PLAN

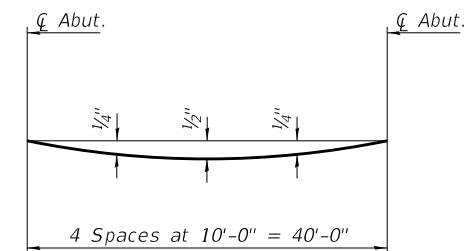
TABLE OF ELEVATIONS

LOCATION		BK. S. ABUT.	CL S. ABUT.	SPAN 1			CL. N. ABUT.	BK. N. ABUT.
LINE	T.	711.108	711.108	1	2	3	711.108	711.108
A	ADJ.	711.108	711.108	711.111	711.112	711.111	711.108	711.108
**	Bott. of Slab	709.442	709.442	709.444	709.445	709.444	709.442	709.442

LOCATION		BK. S. ABUT.	CL S. ABUT.	SPAN 1			CL. N. ABUT.	BK. N. ABUT.
LINE	T.	711.400	711.400	1	2	3	711.400	711.400
B	ADJ.	711.400	711.400	711.402	711.403	711.402	711.400	711.400
	Bott. of Slab	709.733	709.733	709.736	709.737	709.736	709.733	709.733

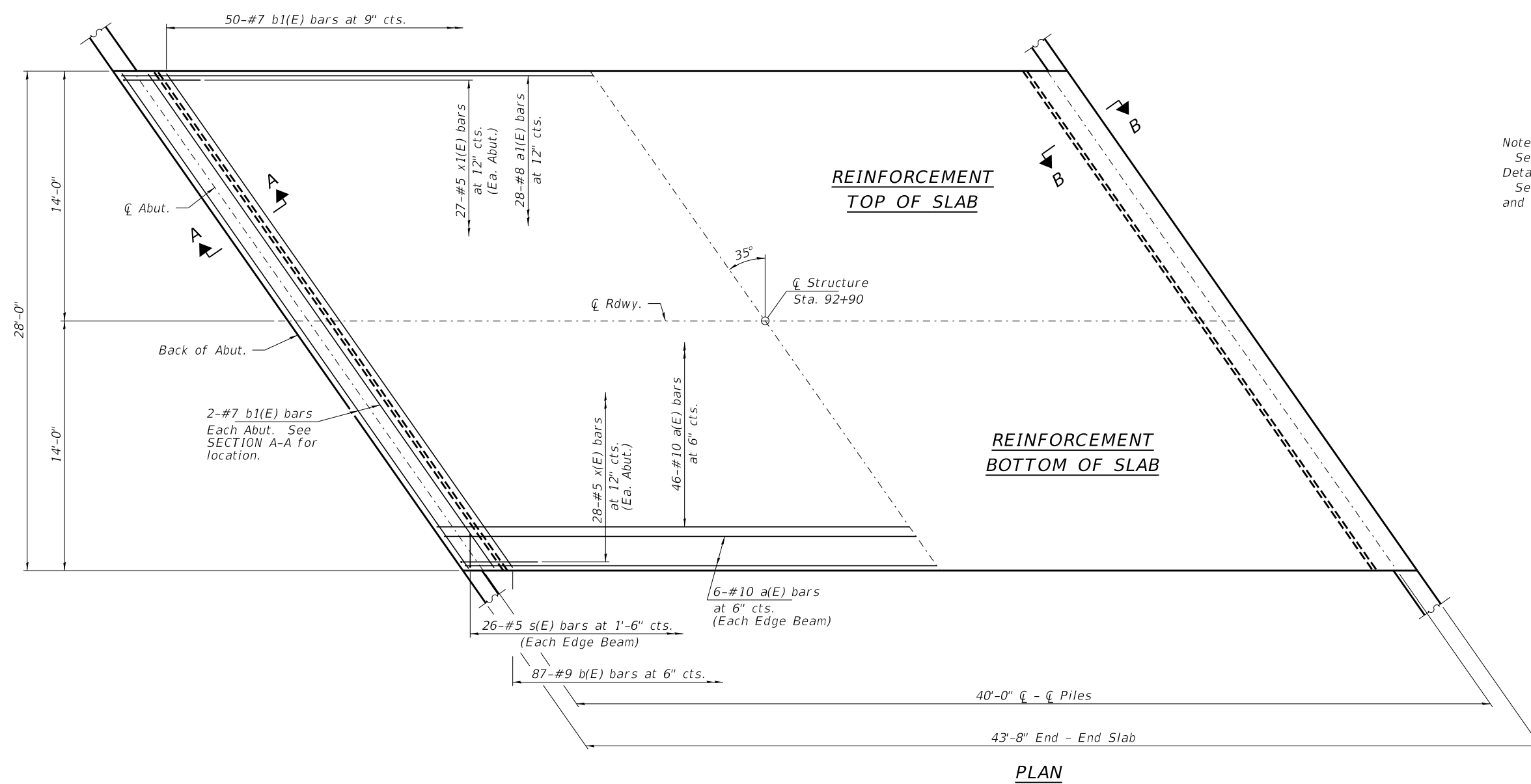
LOCATION		BK. S. ABUT.	CL S. ABUT.	SPAN 1			CL. N. ABUT.	BK. N. ABUT.
LINE	T.	711.108	711.108	1	2	3	711.108	711.108
C	ADJ.	711.108	711.108	711.111	711.112	711.111	711.108	711.108
**	Bott. of Slab	709.442	709.442	709.444	709.445	709.444	709.442	709.442

T. - Theoretical elevation at top of slab
 Adj. - T adjusted for dead load deflection
 ** Bottom of slab elevation equals bottom of edge beam

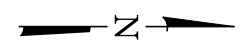


DEAD LOAD DEFLECTION DIAGRAM
 (Includes weight of concrete only.)

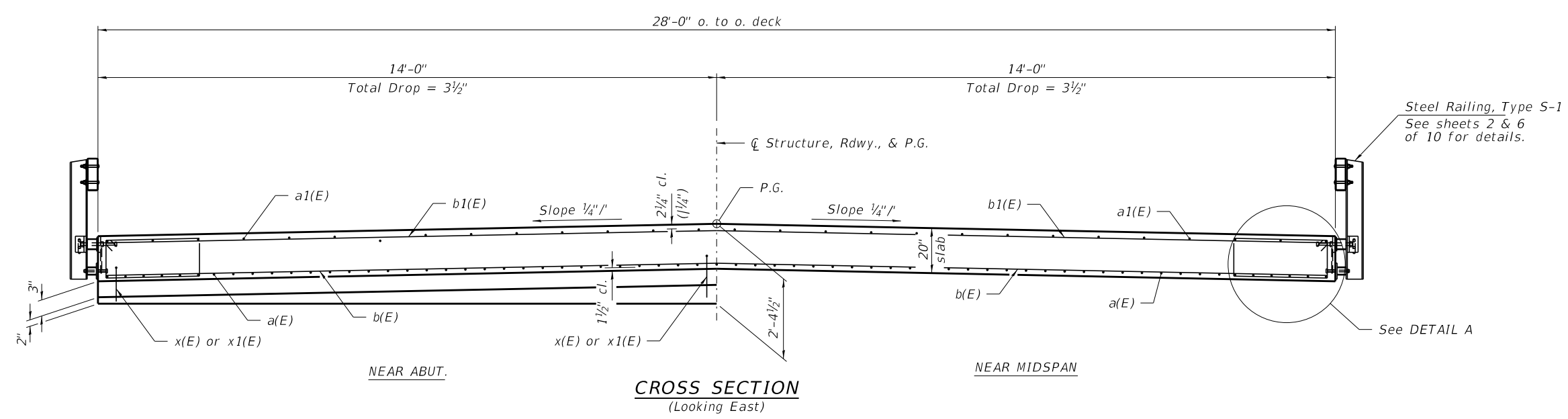
Notes:
 The deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown.
 The Contractor shall make allowance for the deflection of forms, shrinkage and settlement of falsework in addition to allowance for dead load deflection.



Notes:
 See sheets 5 of 10 for Superstructure
 Details and Bill of Material.
 See sheet 5 of 10 for SECTION A-A,
 and DETAIL A.

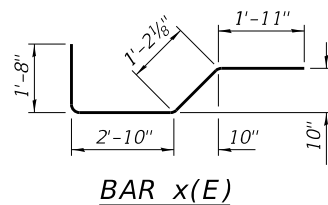


PLAN

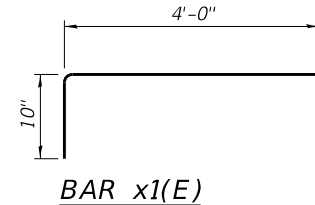


CROSS SECTION
 (Looking East)

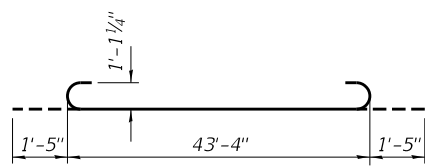
FILE NAME = 190774-shi-bridge.dgn	USER NAME = rtholck	DESIGNED - J.R.B.	REVISED -	STATE OF ILLINOIS FORD COUNTY HIGHWAY DEPARTMENT	SUPERSTRUCTURE STRUCTURE NO. 027-3461	F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
HAMPTON, LENZINI AND RENWICK, INC. 3035 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT SCALE = \$SCALE\$	CHECKED - S.W.M.	REVISED -			1351	17-00138-00-BR	FORD	27	11	
PLOT DATE = 1/22/2021	DRAWN - R.D.H.	CHECKED - S.W.M.	REVISED -			CONTRACT NO. 87740					
						SHEET NO. 4 OF 10 SHEETS					



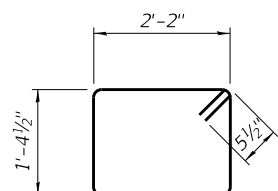
BAR x(E)



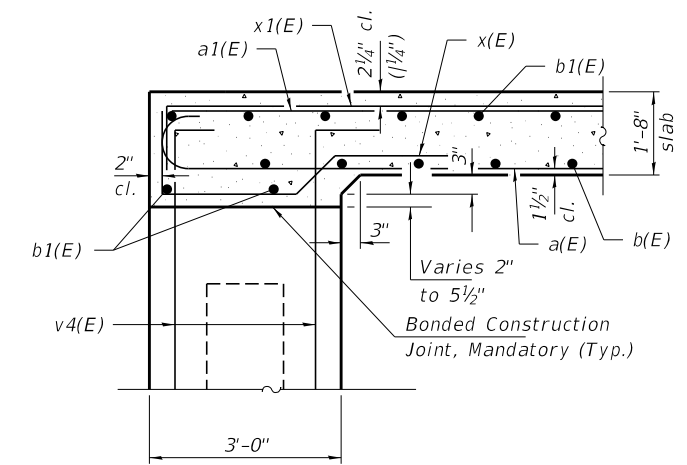
BAR x1(E)



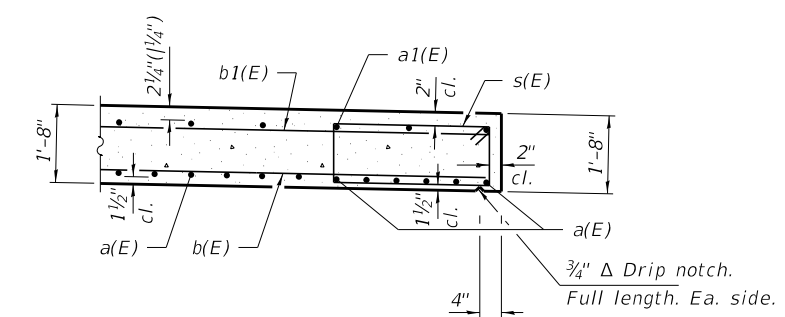
BAR a(E)



BAR s(E)



SECTION A-A

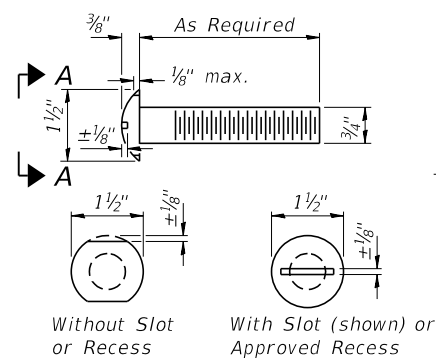


DETAIL A

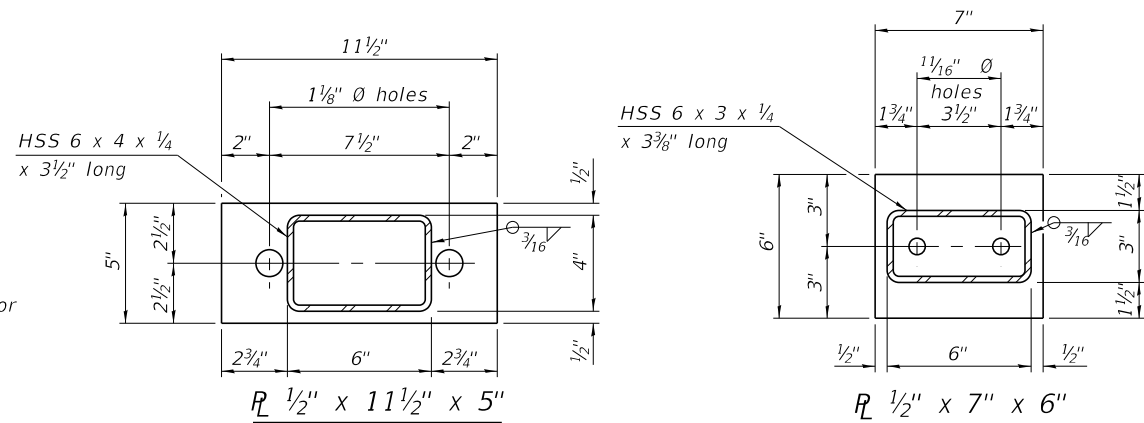
**SUPERSTRUCTURE
BILL OF MATERIAL**

BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	58	#10	46'-2"	
a1(E)	28	#8	43'-4"	
b(E)	87	#9	33'-10"	
b1(E)	54	#7	33'-10"	
s(E)	52	#5	8'-1"	
x(E)	56	#5	7'-8"	
x1(E)	54	#5	4'-10"	
Concrete Superstructure			Cu. Yd.	79.8
Protective Coat			Sq. Yd.	152
Reinforcement Bars, Epoxy Coated			Pound	29,670

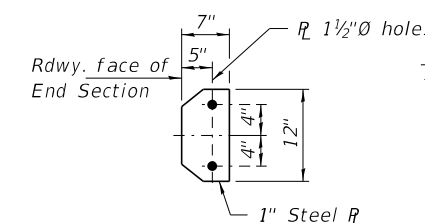
Reinforcement bars designated (E) shall be epoxy coated.



VIEW A-A
ROUND HEAD BOLT



Note: Cost of curled end sections shall be included with the Steel Railing. (2 Required) (NE & SW corners)

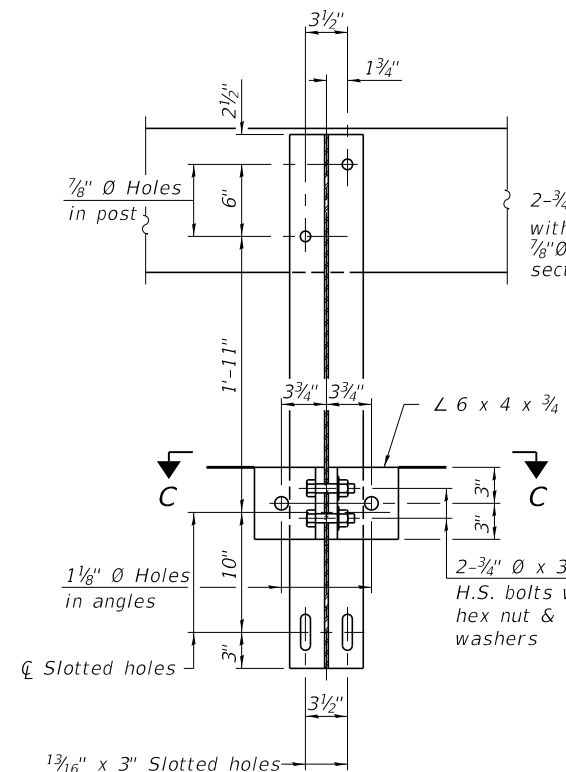


SECTION E-E **CURLED END SECTION DETAILS**

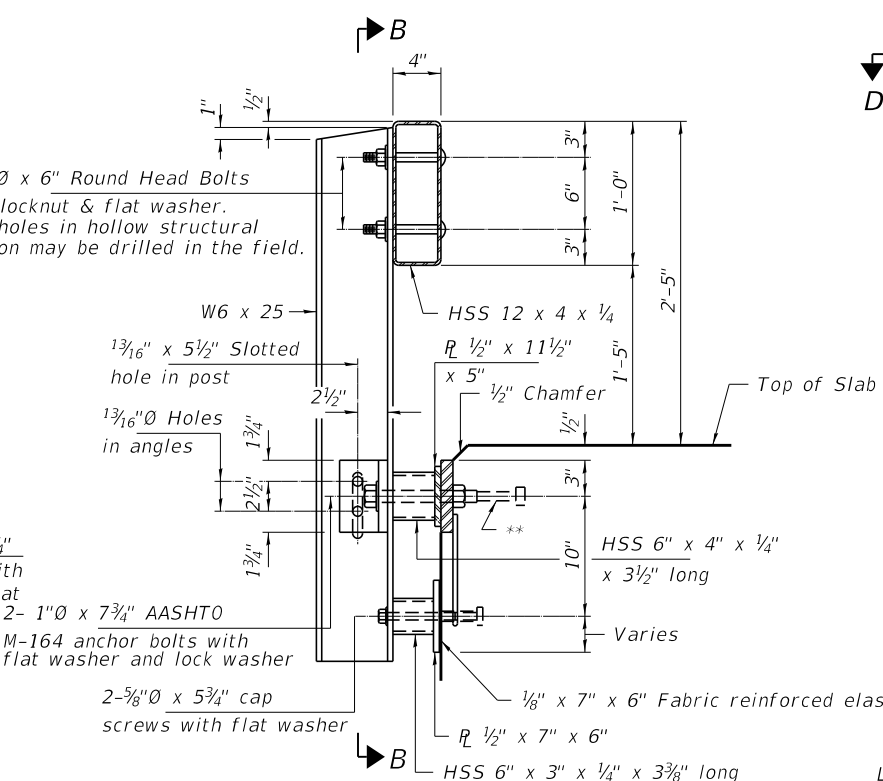
SPLICE DIMENSIONS

T	D	A	B	C	E
≤ 4"	2 1/2"	1'-8"	2"	4"	2 1/2"
> 4" ≤ 6 1/2"	3 3/4"	2'-0"	2 1/2"	5 1/2"	3 1/2"
> 6 1/2" ≤ 9"	5"	2'-4"	3 1/2"	6 1/2"	9"
> 9" ≤ 13"	7"	2'-10"	4 1/2"	8 1/2"	11"
Rail Splice	1/4"	1'-8"	2"	4"	

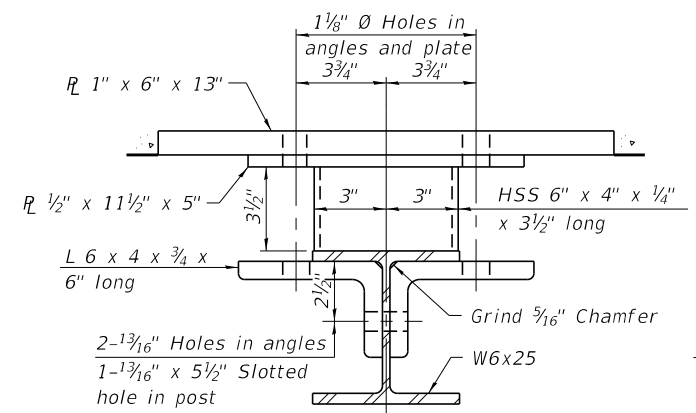
T = Total movement at expansion joint as shown on the design plans.



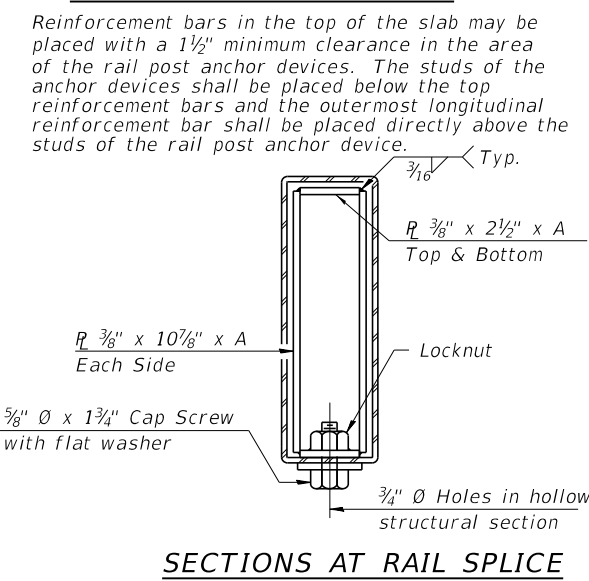
SECTION B-B



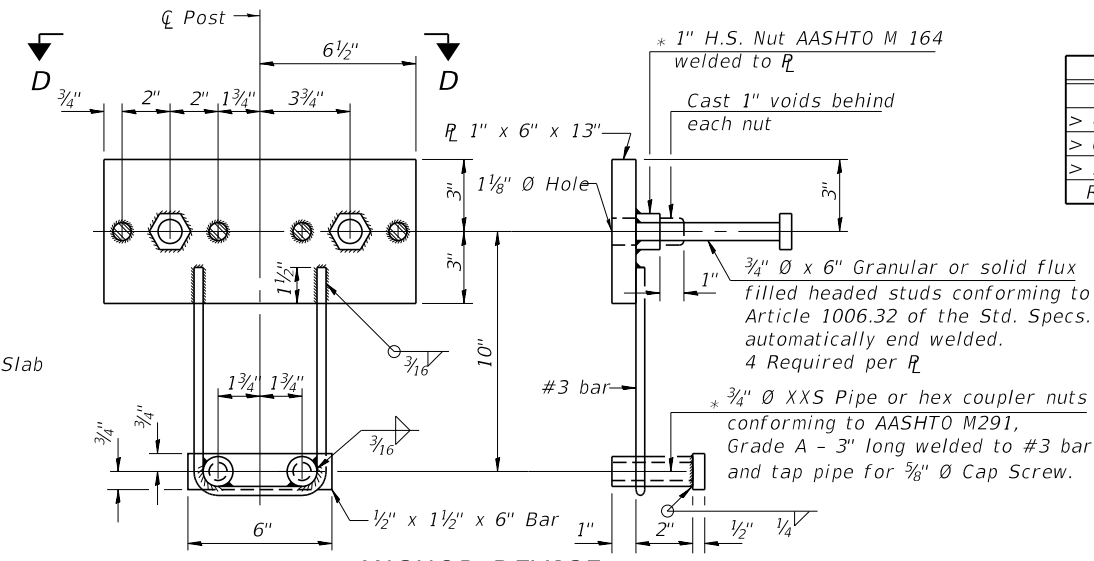
SECTION AT RAILING POST



SECTION C-C

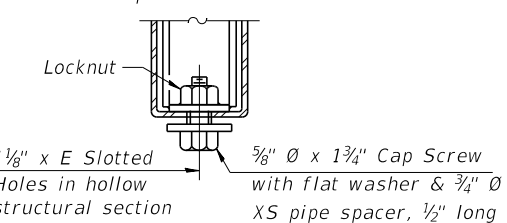


SECTIONS AT RAIL SPLICE

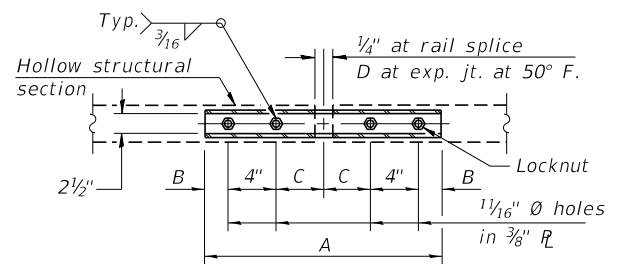


ANCHOR DEVICE

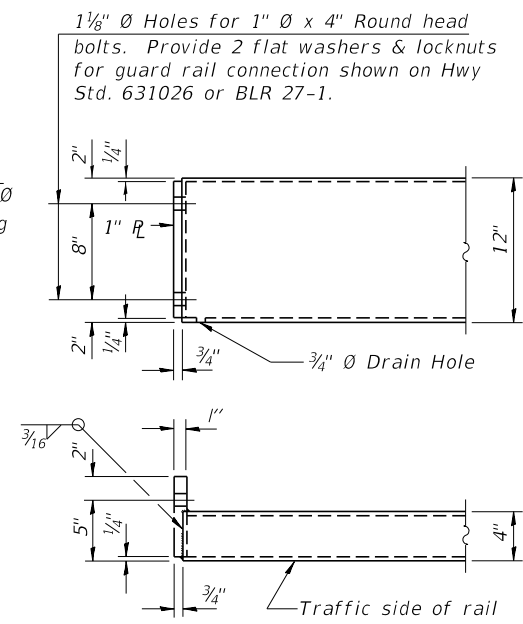
* Threaded areas shall be plugged or blocked off during casting of beam.



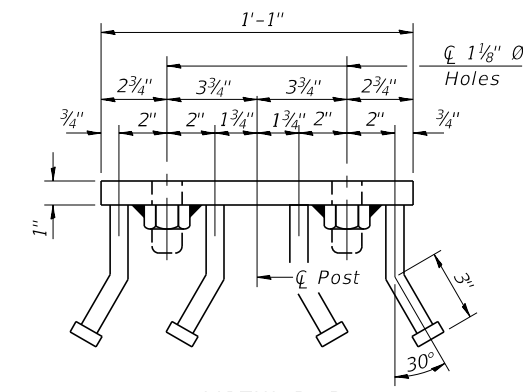
RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN-BOTT. SPLICE R TYPICAL



END OF RAIL DETAILS



VIEW D-D

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	87

R-23A 2-17-2017 (10'-9" Maximum Post Spacing)

FILE NAME = 190774-shi-bridge.dgn	USER NAME = rthosck	DESIGNED - J.R.B.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC.	PLOT SCALE = \$SCALE\$	CHECKED - S.W.M.	REVISED -
3085 STEVENSON DRIVE, SUITE 201	PLOT DATE = 1/22/2021	DRAWN - R.D.H.	REVISED -
SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM			
LS / PE / SE CORP. 184.009959			

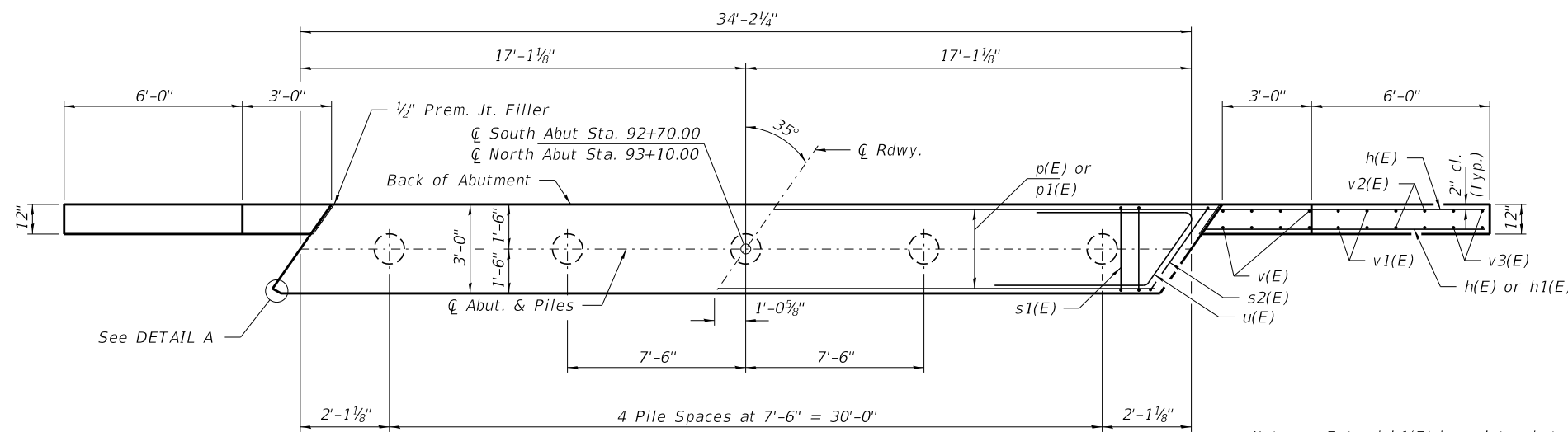
STATE OF ILLINOIS
FORD COUNTY HIGHWAY DEPARTMENT

STEEL RAILING, TYPE S-1
STRUCTURE NO. 027-3461

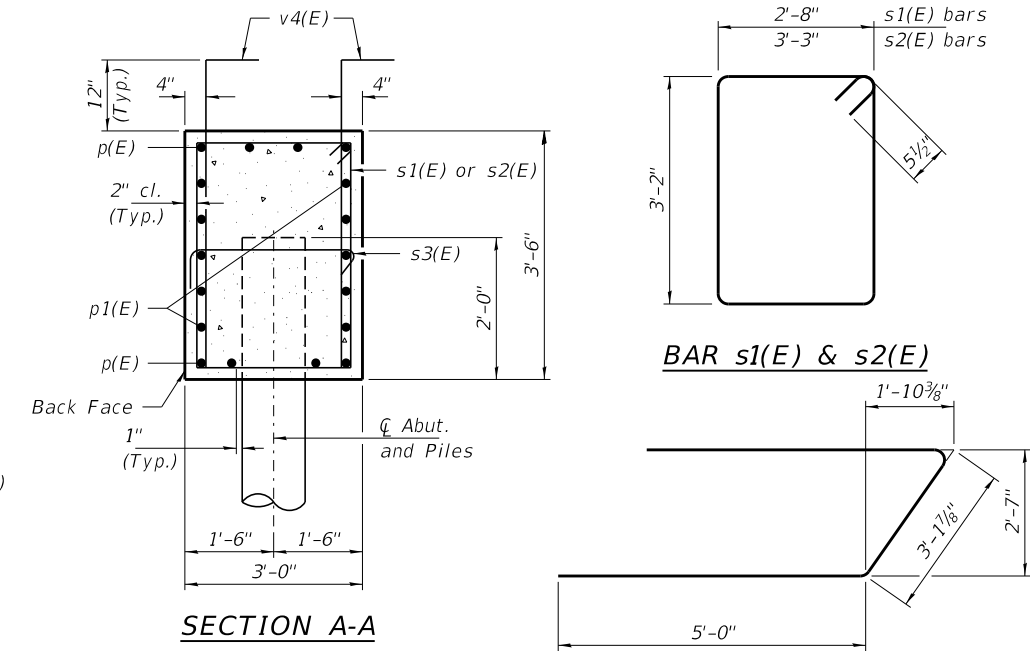
SHEET NO. 6 OF 10 SHEETS

F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1351	17-00138-00-BR	FORD	27	13
CONTRACT NO. 87740				

ILLINOIS FED. AID PROJECT RENR(721)

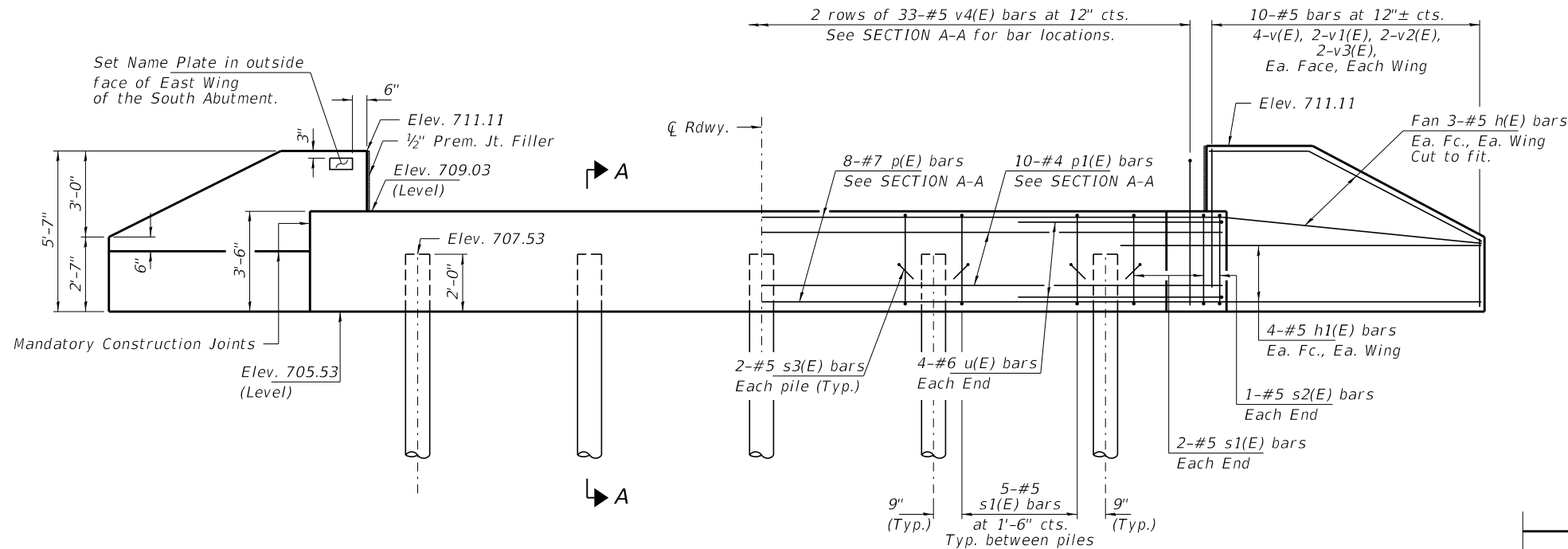


PLAN



SECTION A-A

Notes: Extend h1(E) bars into abutment cap and superstructure.
 Top of wing shall be poured monolithic with the deck. Bottom of wing shall be poured monolithic with the abutment cap. Entire quantity included with Concrete Structures.
 For details of piles, see sheet 8 of 9.
 Protective coat shall be applied to the front face and top of wing wall.



ELEVATION
(Looking North)

PILE DATA

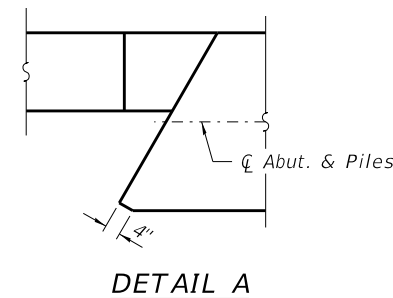
Type: Metal Shell Piles 12"x0.250"
 Nominal Required Bearing: 235 Kips/Pile
 Factored Resistance Available: 130 Kips/Pile
 Est. Length: 40 Ft/Pile
 No. Production Piles: 9
 No. Test Piles: 1

Notes: One test pile shall be driven in a permanent location at the South Abutment.

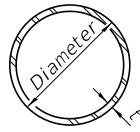
The test pile shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.

BILL OF MATERIAL - 2 ABUTS.

BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	24	#5	11'-3"	—
h1(E)	32	#5	8'-9"	—
p(E)	16	#7	33'-10"	—
p1(E)	20	#4	33'-10"	—
s1(E)	48	#5	12'-7"	□
s2(E)	4	#5	13'-9"	□
s3(E)	20	#5	4'-0"	┌
u(E)	16	#6	13'-2"	—
v(E)	32	#5	5'-2"	—
v1(E)	16	#5	4'-2"	—
v2(E)	16	#5	3'-3"	—
v3(E)	16	#5	2'-3"	—
v4(E)	132	#5	5'-2"	└
Concrete Structures			Cu. Yd.	32.4
Protective Coat			Sq. Yd.	23
Reinforcement Bars, Epoxy Coated			Pound	4,260
Furnishing Metal Shell Piles 12"x0.250"			Foot	360
Driving Piles			Foot	360
Test Pile Metal Shell			Each	1
Name Plates			Each	1

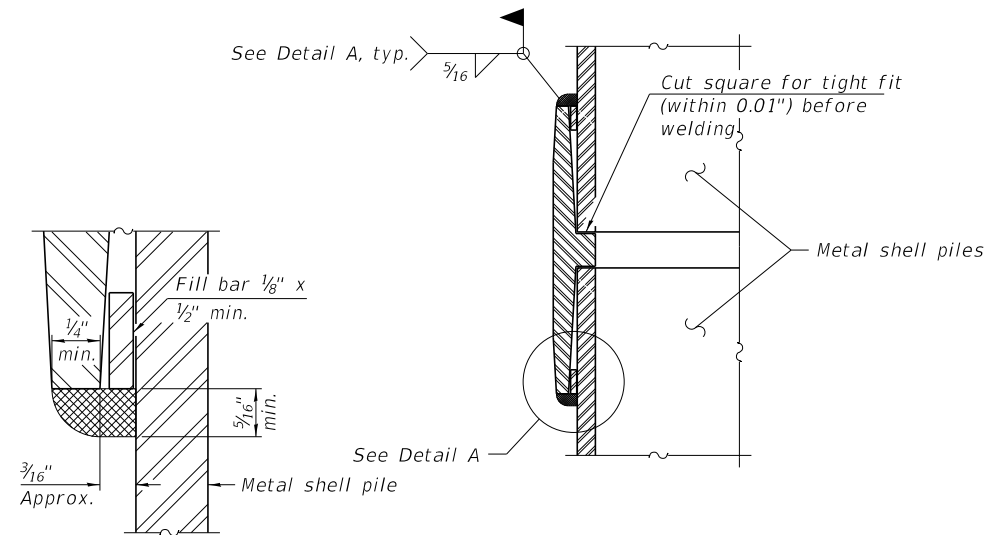


DETAIL A

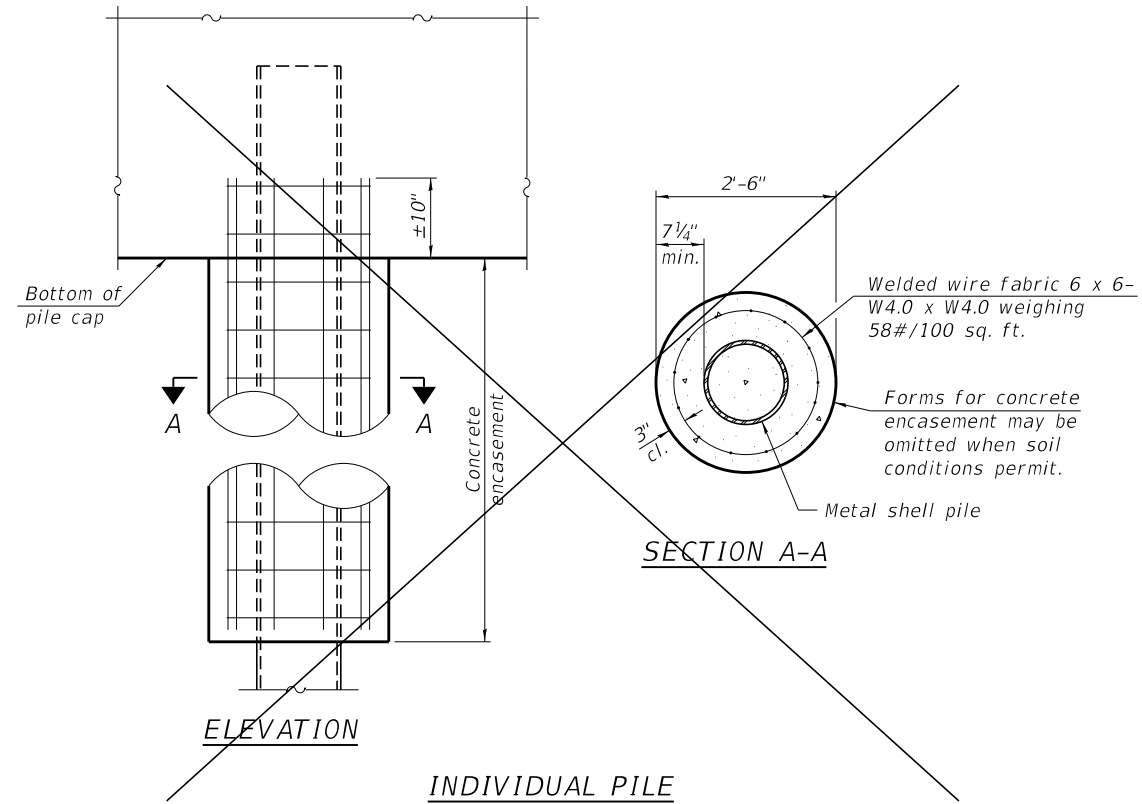


METAL SHELL PILE TABLE

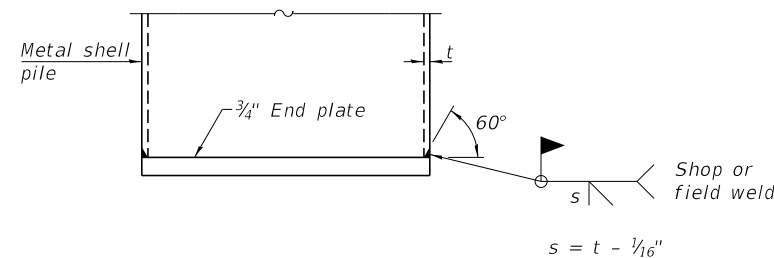
Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd. ³ /ft.)
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361
PP16	0.312"	52.32	0.0478
PP16	0.375"	62.64	0.0470



DETAIL A

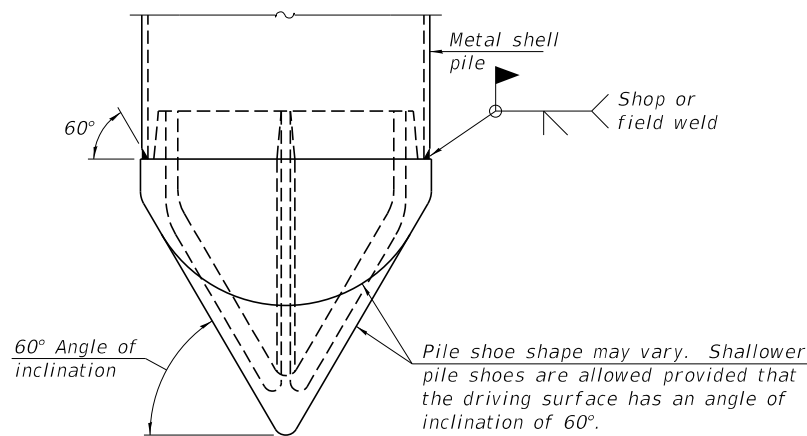


INDIVIDUAL PILE CONCRETE ENCASUREMENT
(Not required)



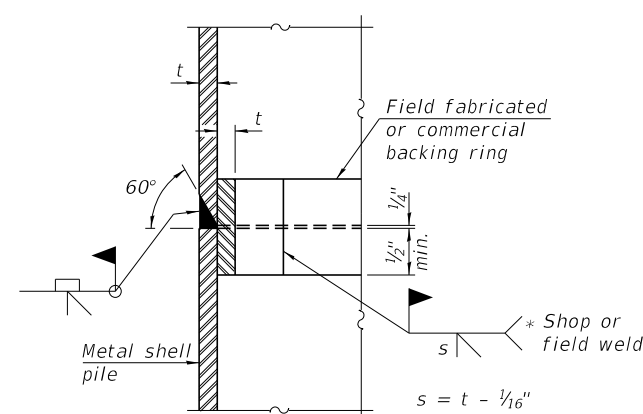
END PLATE ATTACHMENT

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



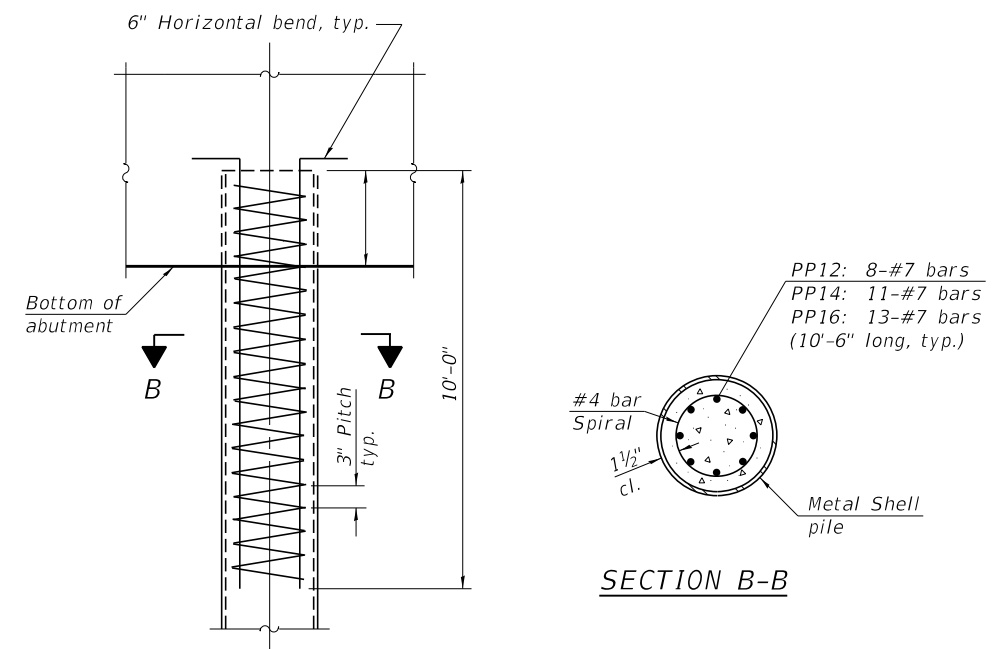
PILE SHOE ATTACHMENT

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



COMPLETE PENETRATION WELD SPLICE

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



ELEVATION

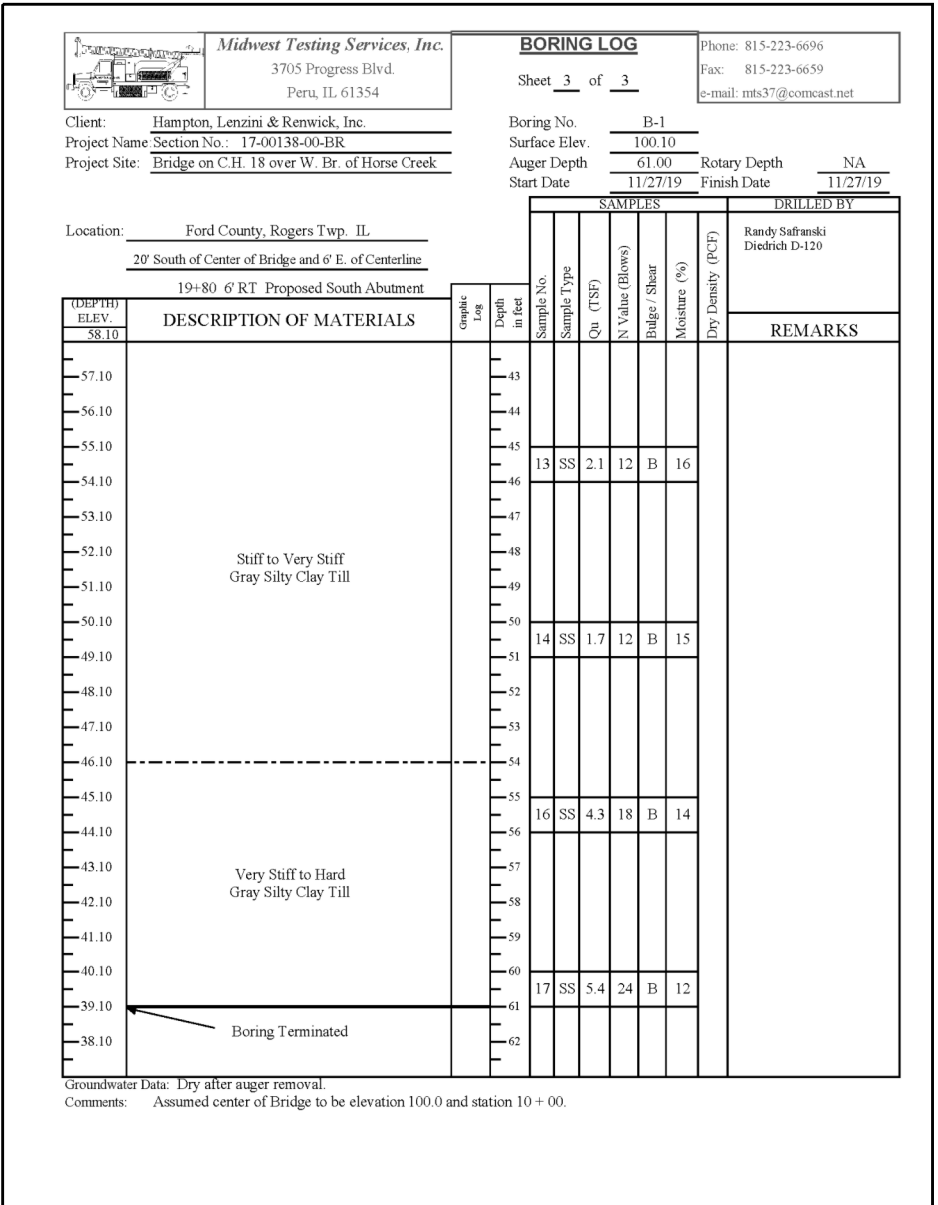
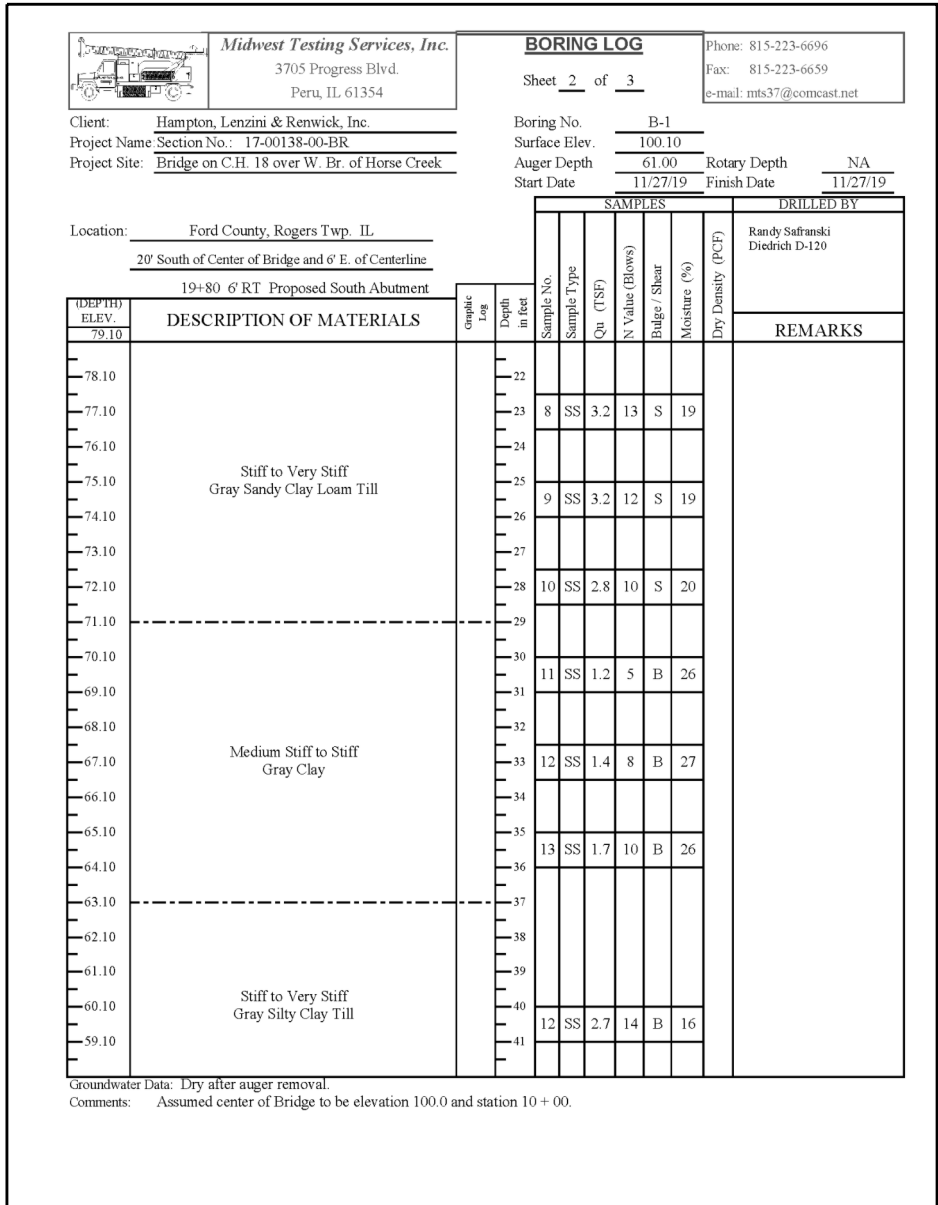
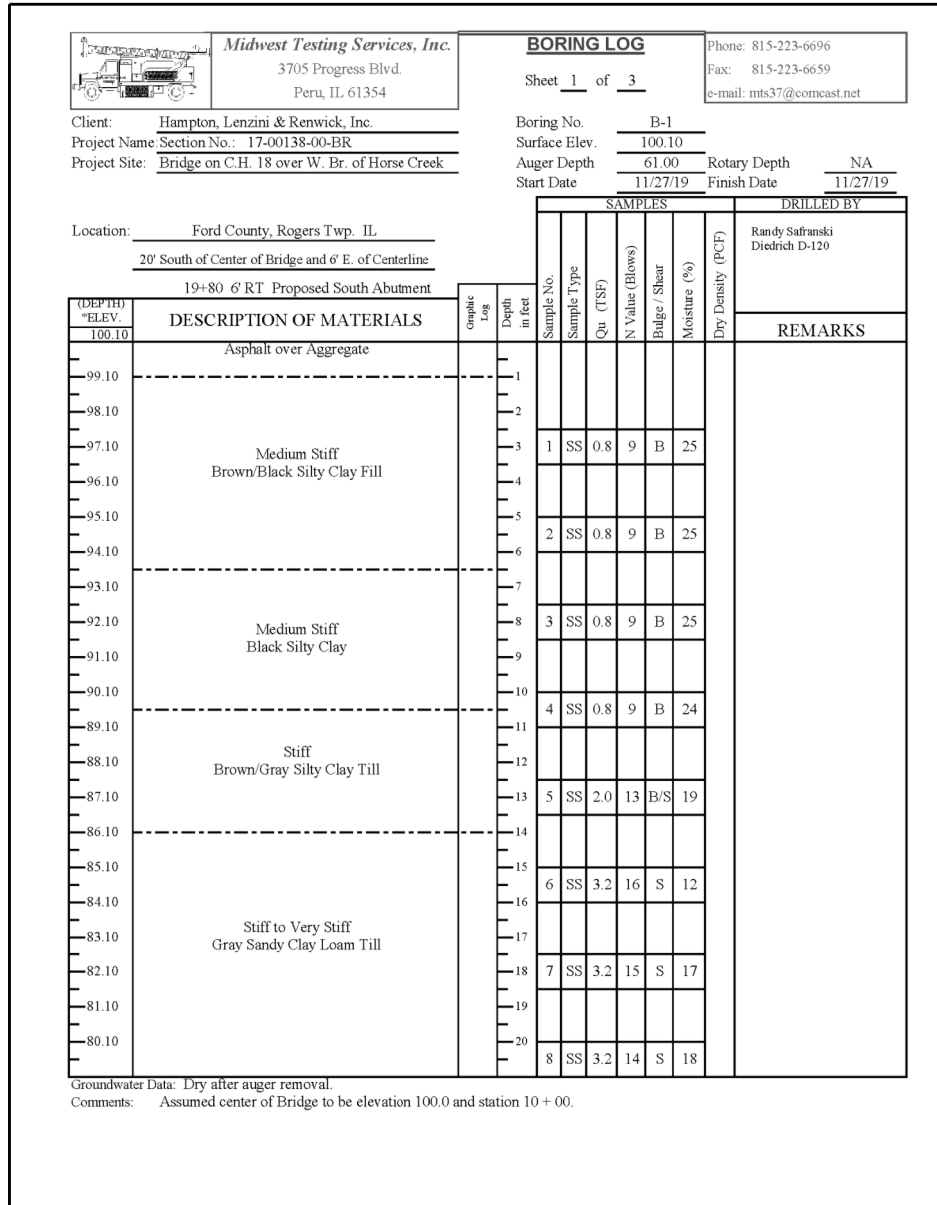
SECTION B-B

REINFORCEMENT AT ABUTMENTS
(Omit when concrete encasement is specified)

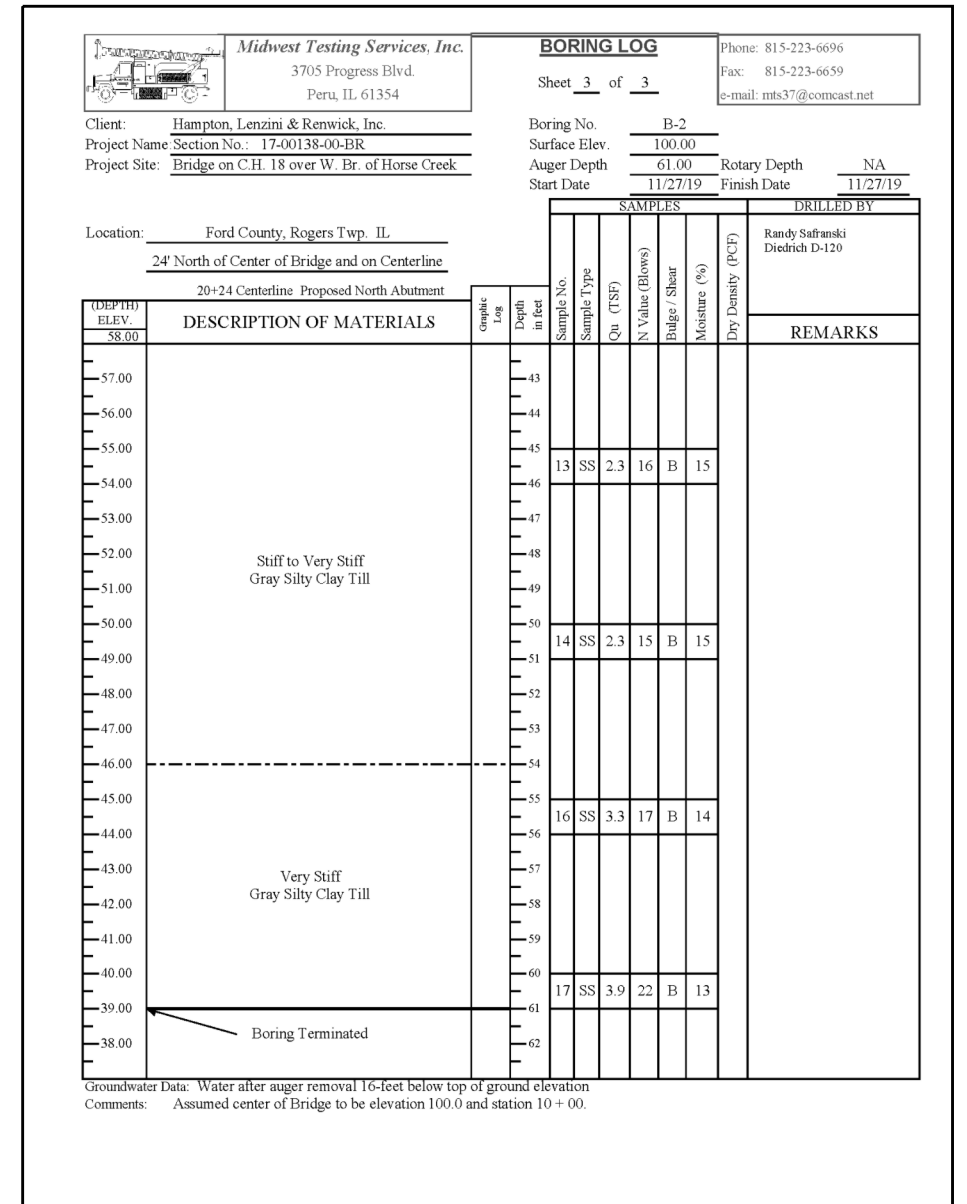
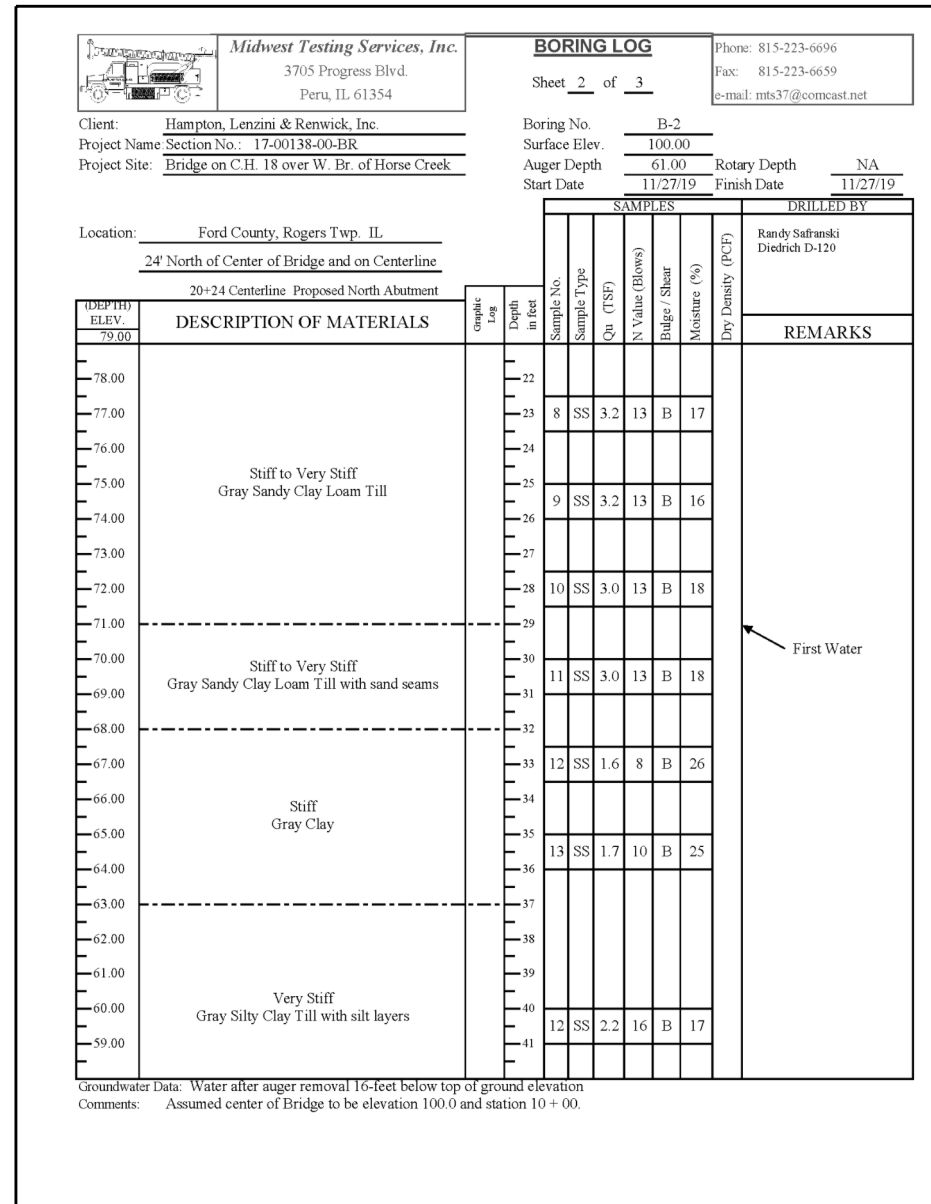
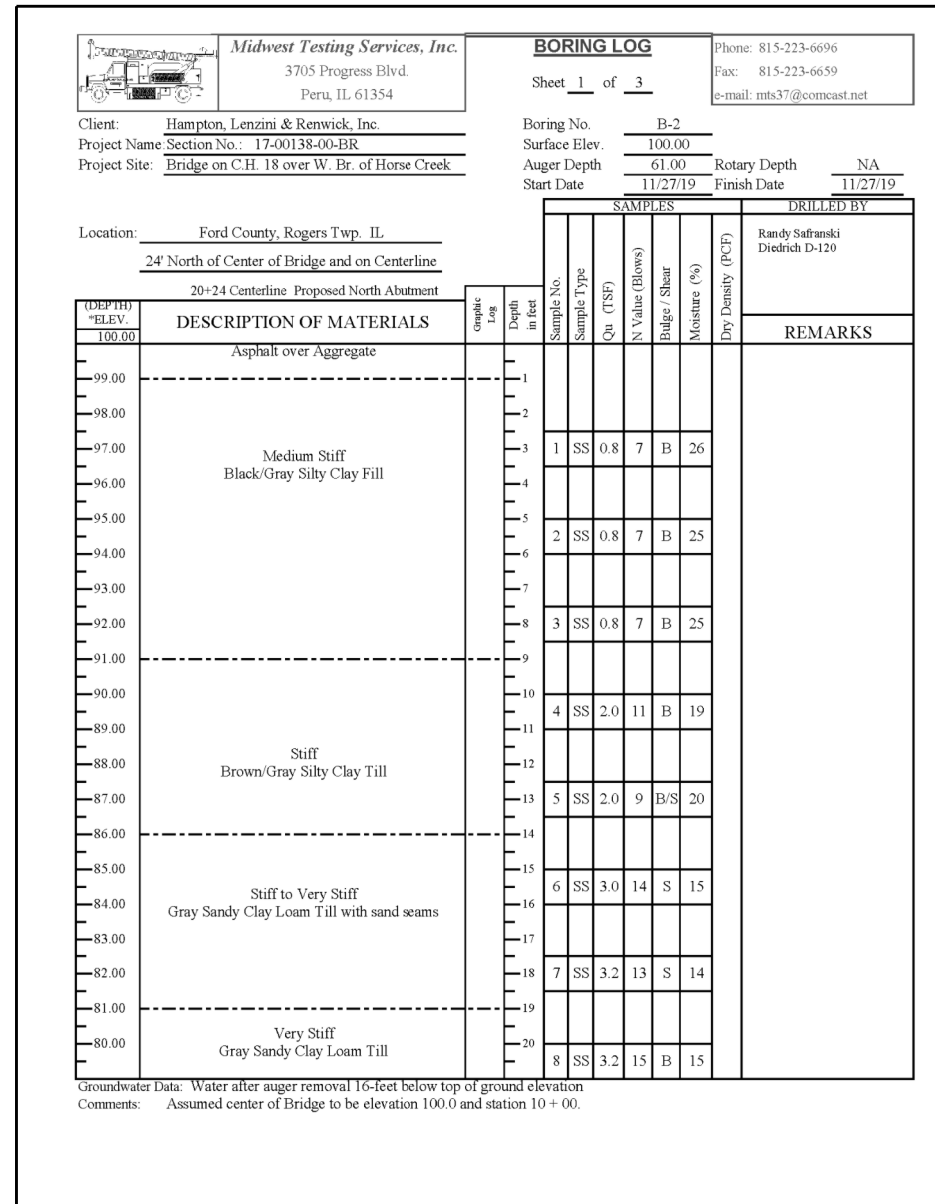
Note:
The metal shell piles shall be according to Article 1006.05 of the Standard Specifications.

F-MS 1-1-2020

FILE NAME = 190774-shi-bridge.dgn	USER NAME = rthosck	DESIGNED - J.R.B.	REVISED -	STATE OF ILLINOIS FORD COUNTY HIGHWAY DEPARTMENT	METAL SHELL PILE DETAILS STRUCTURE NO. 027-3461	F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT SCALE = \$SCALE\$	CHECKED - S.W.M.	REVISED -			1351	17-00138-00-BR	FORD	27	15
PLOT DATE = 1/22/2021	DRAWN - R.D.H.	CHECKED - S.W.M.	REVISED -			CONTRACT NO. 87740				
						ILLINOIS FED. AID PROJECT REN8(721)				



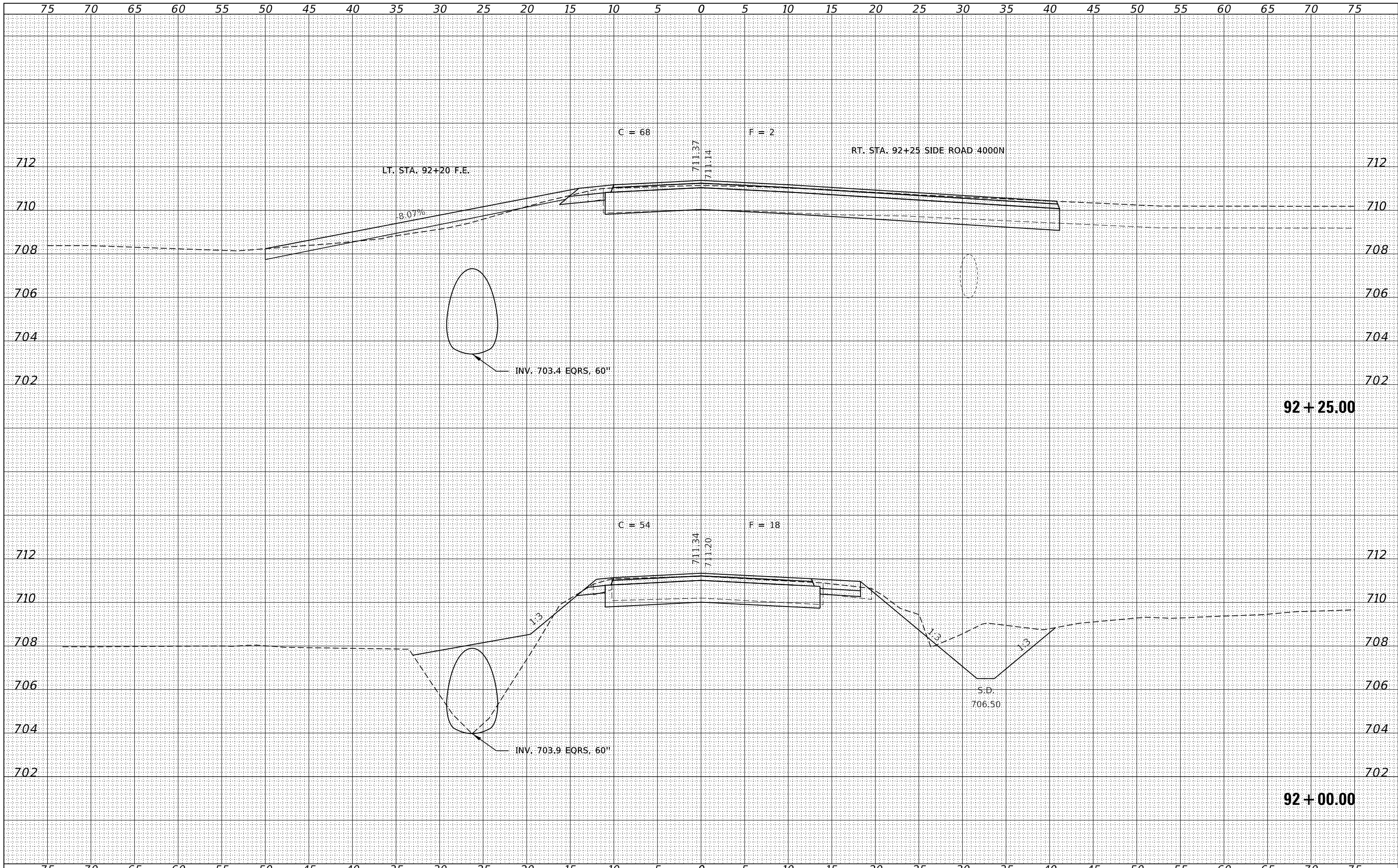
BORING-1



BORING-2

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

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



FILE NAME = 190774-cht-xssheets.dgn
 DESIGNED - J.V.F.
 DRAWN - T.W.K.
 CHECKED - S.W.M.
 DATE - 01/21/2021

USER NAME = rmosck
 PLOT SCALE = \$SCALES
 PLOT DATE = 1/22/2021

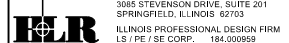
REVISIED -
 REVISIED -
 REVISIED -
 REVISIED -

**STATE OF ILLINOIS
 FORD COUNTY HIGHWAY DEPARTMENT**

STATION CROSS SECTIONS

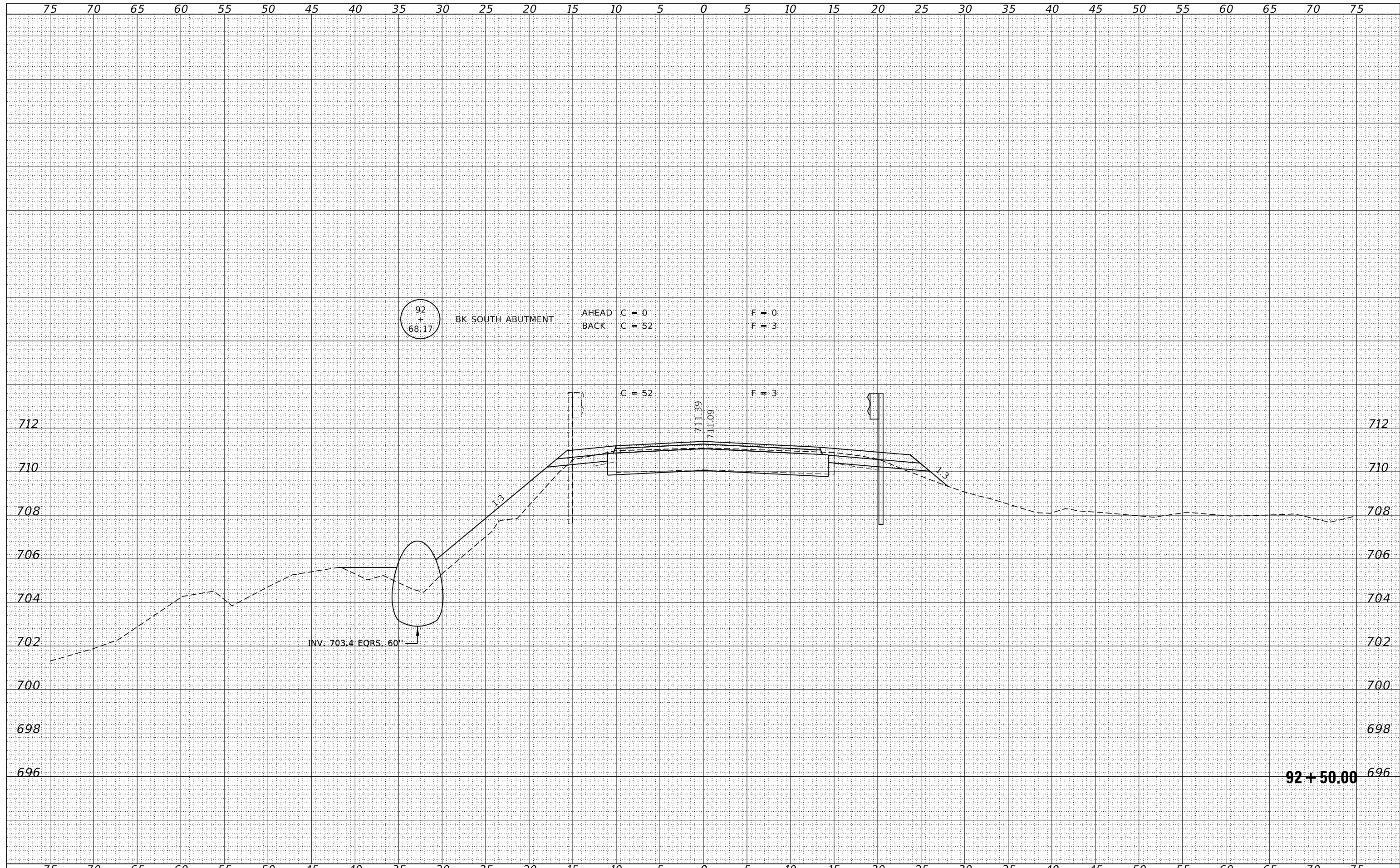
SCALE: 5H:2V SHEET NO. 3 OF 10 SHEETS STA. 92+00.00 TO STA. 92+25.00

F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1351	17-00138-00-BR	FORD	27	20
CONTRACT NO. 87740				
ILLINOIS FED. AID PROJECT RENR(721)				



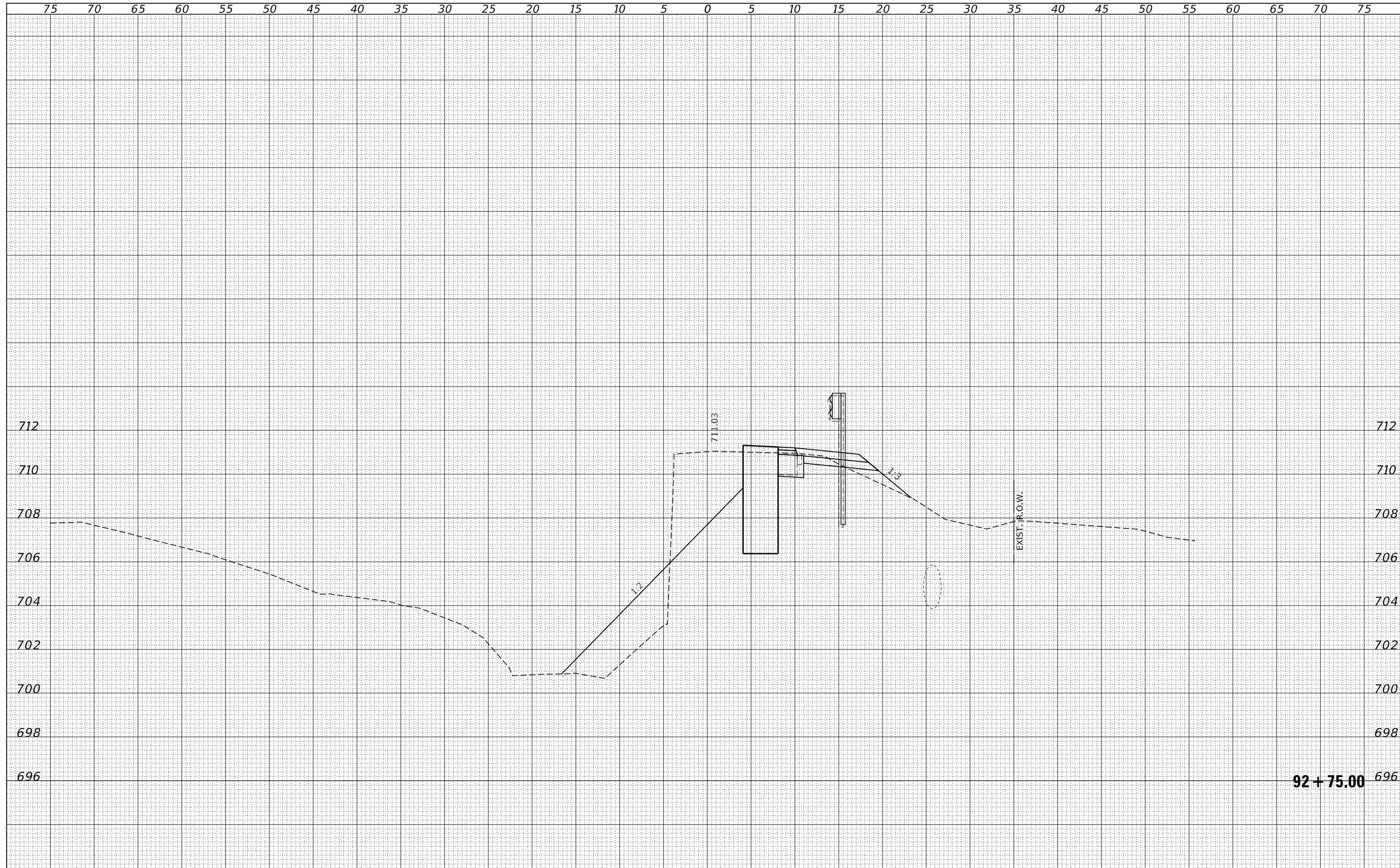
DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
FINAL SURVEY	
NOTE BOOK	
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DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
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CHECKED	
ORIGINAL SURVEY	
NOTE BOOK	
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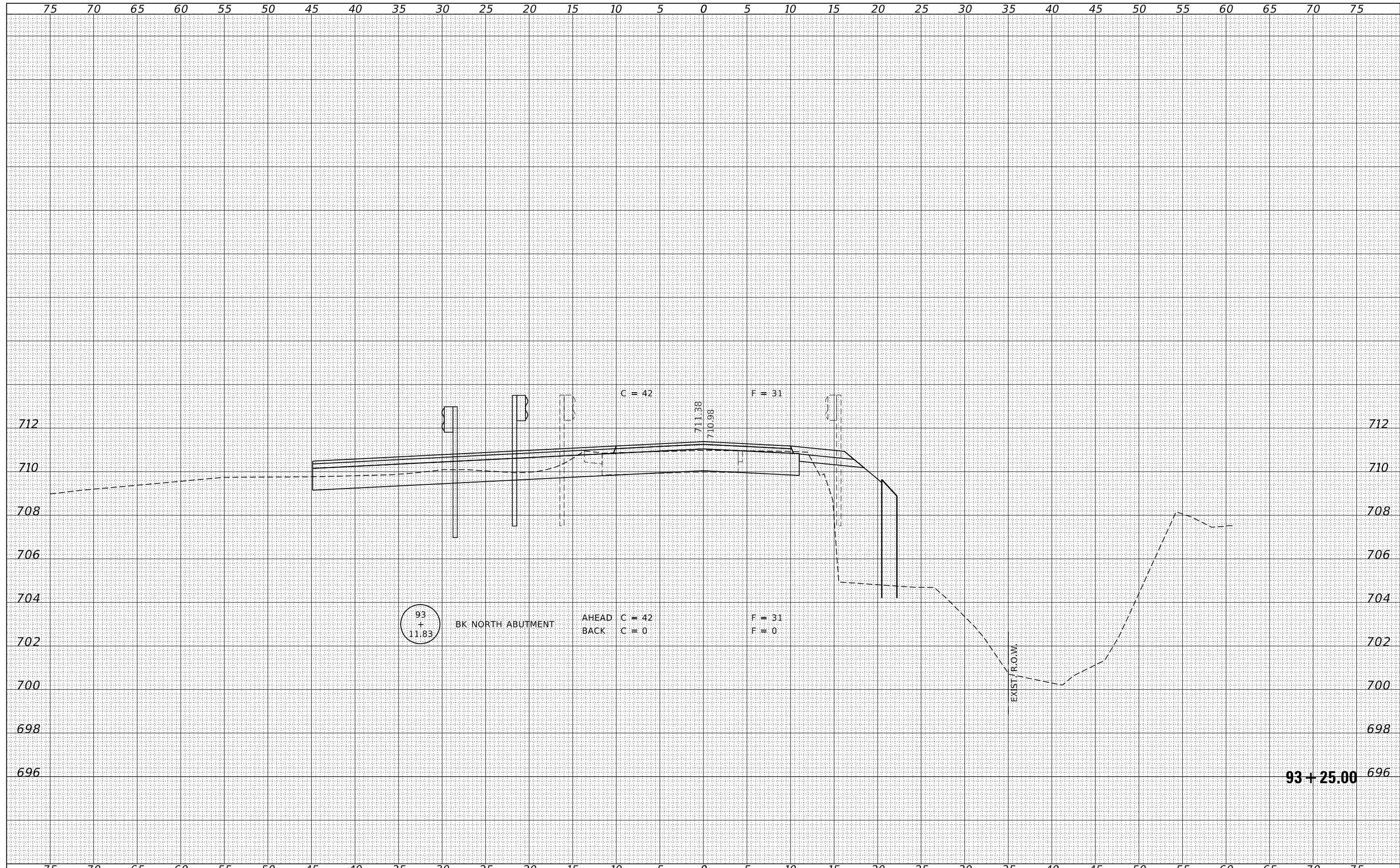
BY	DATE
FINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
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	AREAS CHECKED

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



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

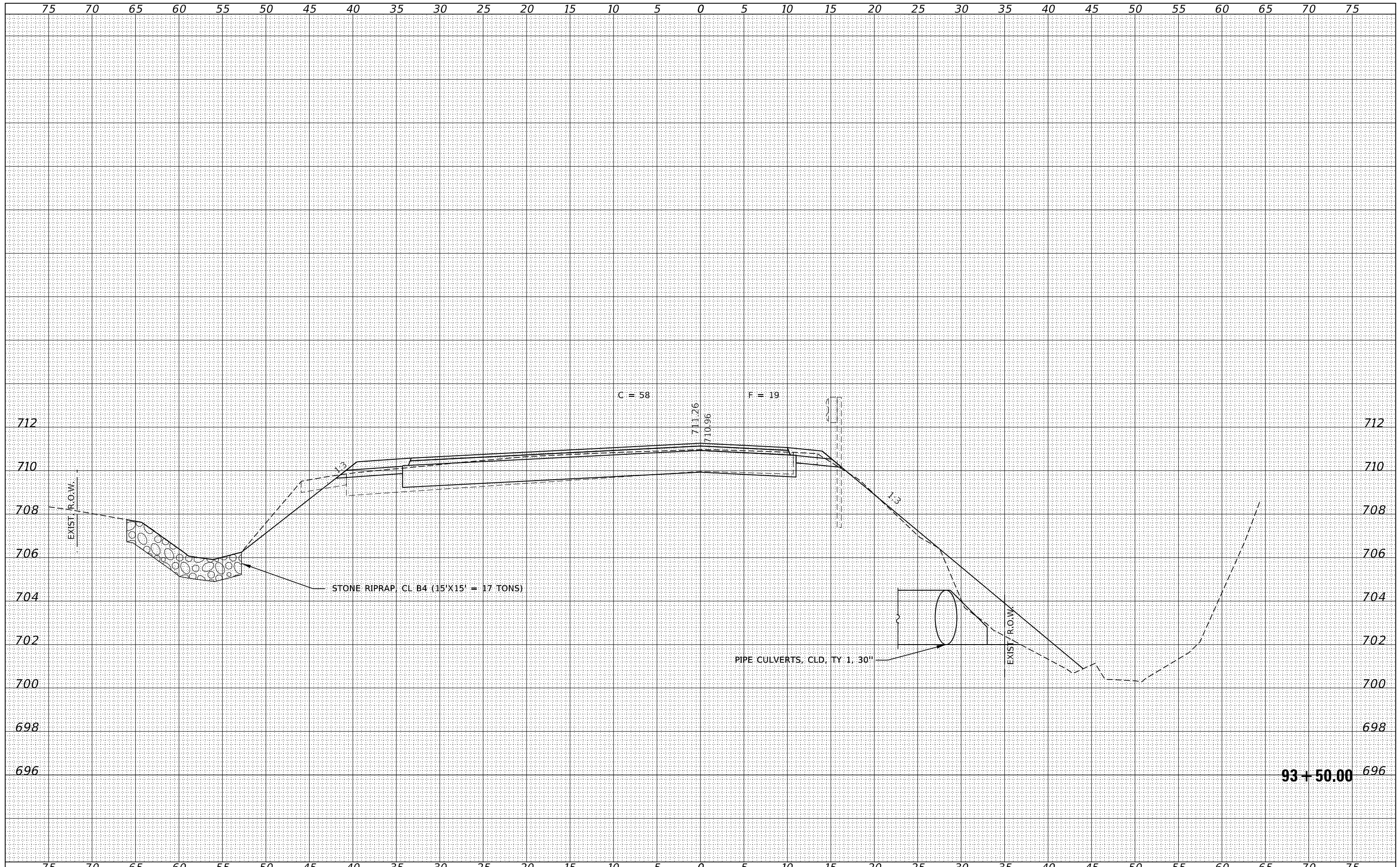


FILE NAME = 190774-cht-xssheets.dgn	USER NAME = rmosck	DESIGNED - J.V.F.	REVISED -	STATE OF ILLINOIS FORD COUNTY HIGHWAY DEPARTMENT	STATION CROSS SECTIONS			F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3885 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L.S./P.E. CORP. 184-009958	PLOT SCALE = \$SCALES	DRAWN - T.W.K.	REVISED -		1351	17-00138-00-BR	FORD	27	23			
PLOT DATE = 1/22/2021	CHECKED - S.W.M.	REVISIED -	REVISIED -		CONTRACT NO. 87740							
DATE - 01/21/2021	REVISIED -	REVISIED -	REVISIED -		ILLINOIS FED. AID PROJECT RENR(721)							

SCALE: 5H:2V SHEET NO. 6 OF 10 SHEETS STA. 93+25.00 TO STA. 93+25.00

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

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



FILE NAME = 190774-ohi-ssheets.dgn
HAMPTON, LENZINI AND RENWICK, INC.
 3885 STEVENSON DRIVE, SUITE 201
 SPRINGFIELD, ILLINOIS 62703
 ILLINOIS PROFESSIONAL DESIGN FIRM
 LS / PE / SE CORP. 184-009958

USER NAME = rmosck
 DESIGNED - J.W.F.
 DRAWN - T.W.K.
 CHECKED - S.W.M.
 DATE - 01/21/2021
 PLOT SCALE = \$SCALES
 PLOT DATE = 1/22/2021

REVISIONS:
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 REVISED -

STATE OF ILLINOIS
 FORD COUNTY HIGHWAY DEPARTMENT

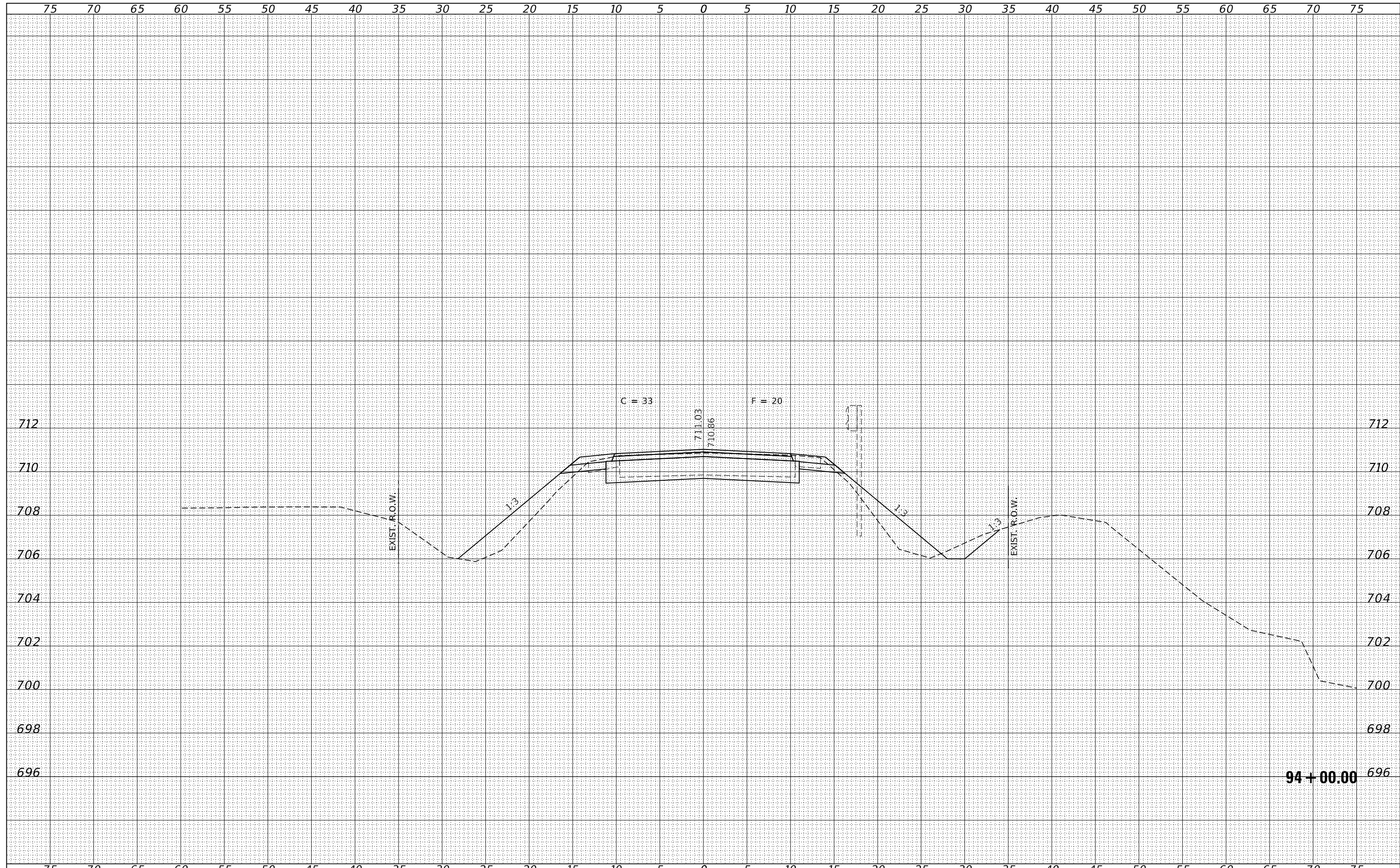
STATION CROSS SECTIONS

SCALE: 5H:2V SHEET NO. 7 OF 10 SHEETS STA. 93+50.00 TO STA. 93+50.00

F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1351	17-00138-00-BR	FORD	27	24
CONTRACT NO. 87740				
ILLINOIS FED. AID PROJECT RENR(721)				

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

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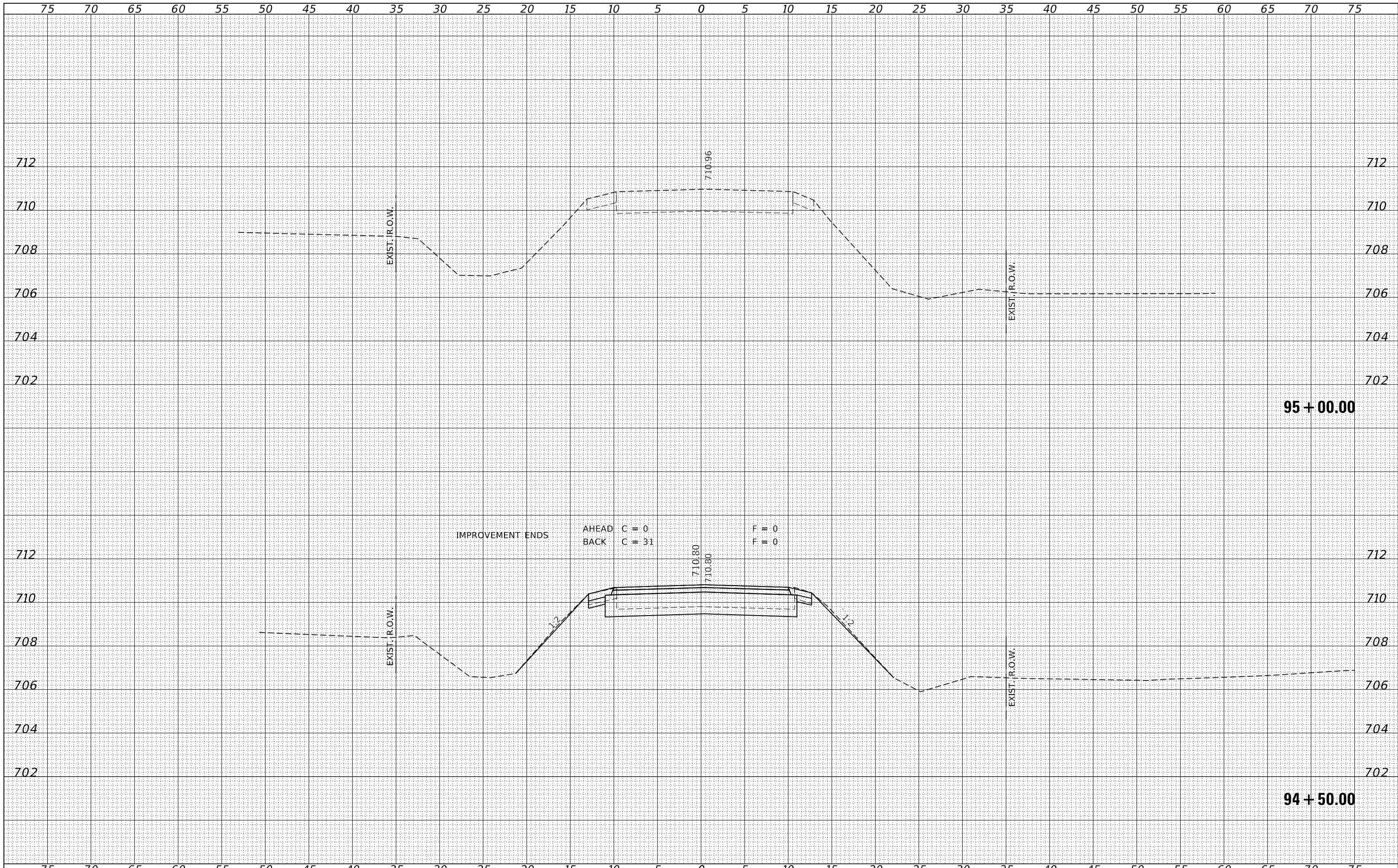


94 + 00.00

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HAMPSON, LENZINI AND RENWICK, INC. 3885 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L.S. / P.E. / S.E. CORP. 184.000959				PLOT SCALE = 5/8"=1'-0"		DRAWN - T.W.K.		REVISIED -						1351		17-00138-00-BR		FORD		27		25							
PLOT DATE = 1/22/2021				DATE = 01/21/2021		CHECKED - S.W.M.		REVISED -		SCALE: 5H:2V				SHEET NO. 8 OF 10 SHEETS		STA. 94+00.00 TO STA. 94+00.00				CONTRACT NO. 87740									
																						ILLINOIS				FED. AID PROJECT RENR(721)			

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

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



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 DESIGNED - J.V.F.
 DRAWN - T.W.K.
 CHECKED - S.W.M.
 DATE - 01/21/2021

PLOT SCALE = \$SCALE\$
 PLOT DATE = 1/22/2021

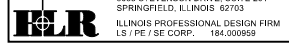
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**STATE OF ILLINOIS
 FORD COUNTY HIGHWAY DEPARTMENT**

STATION CROSS SECTIONS

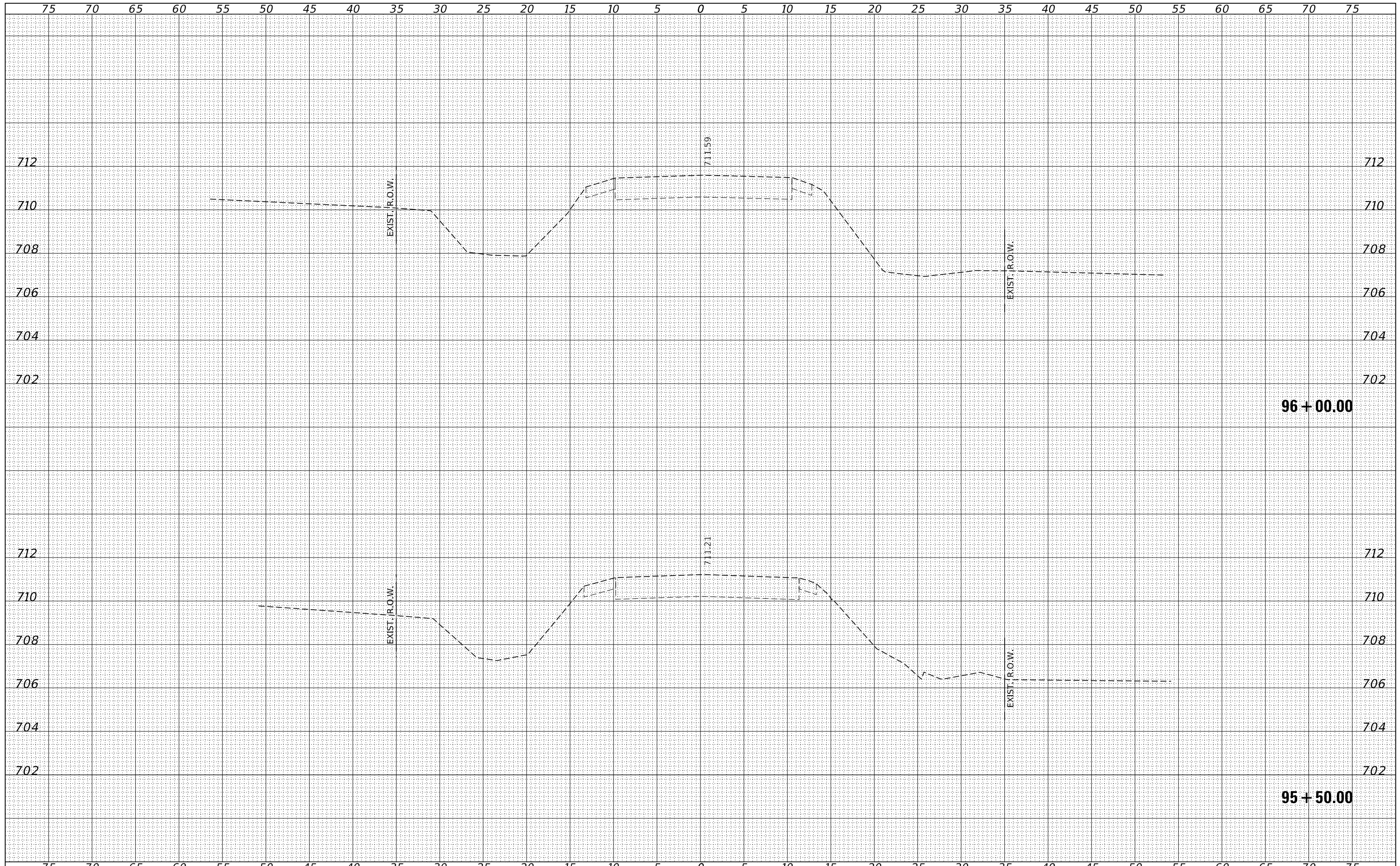
SCALE: 5H:2V SHEET NO. 9 OF 10 SHEETS STA. 94+50.00 TO STA. 95+00.00

F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1351	17-00138-00-BR	FORD	27	26
CONTRACT NO. 87740				
ILLINOIS FED. AID PROJECT RENR(721)				



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

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



FILE NAME = 190774-cht-xssheets.dgn
 DESIGNED - J.W.F.
 DRAWN - T.W.K.
 CHECKED - S.W.M.
 DATE - 01/21/2021

USER NAME = rmosck
 PLOT SCALE = \$\$SCALE\$\$
 PLOT DATE = 1/22/2021

REVISIED -
 REVISIED -
 REVISIED -
 REVISIED -

**STATE OF ILLINOIS
 FORD COUNTY HIGHWAY DEPARTMENT**

STATION CROSS SECTIONS

SCALE: 5H:2V SHEET NO. 10 OF 10 SHEETS STA. 95+50.00 TO STA. 96+00.00

F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1351	17-00138-00-BR	FORD	27	27
CONTRACT NO. 87740				
ILLINOIS FED. AID PROJECT RENR(721)				