

01-15-2016 LETTING ITEM 134

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

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

**PROJECT BRS-0331(120)  
SECTION 13-00202-00-BR**

**VERMILION COUNTY  
F.A.S. 331 / C.H. 21 / WALNUT AVE.  
PROPOSED STRUCTURE NO. 092-3528  
JOB NO. C-95-314-15  
COLLISON BRIDGE**

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 331	13-00202-00-BR	VERMILION	35	1
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 91527		

**INDEX OF SHEETS**

SHEET NO.	DESCRIPTION
1.	COVER SHEET
2.	SUMMARY OF QUANTITIES AND GENERAL NOTES
3.-4.	TYPICAL CROSS SECTIONS
5.	SCHEDULE OF QUANTITIES
6.	PLAN AND PROFILE
7.	GUARDRAIL & SHOULDER LAYOUT
8.-20.	BRIDGE PLANS
21.-22.	BORINGS
23.-35.	STATION CROSS SECTIONS

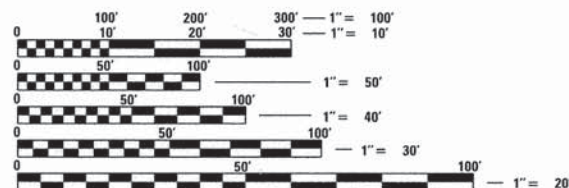
**HIGHWAY STANDARDS:**

000001-06	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
515001-03	NAME PLATE FOR BRIDGES
602301-04	INLET - TYPE A
602401-03	MANHOLE TYPE A
602701-02	MANHOLE STEPS
604001-04	FRAME AND LIDS TYPE 1
606001-06	CONCRETE CURB TYPE B AND COMBINATION CONCRETE CURB AND GUTTER
610001-06	SHOULDER INLET WITH CURB
630301-06	SHOULDER WIDENING FOR TYPE 1, (SPECIAL) GUARDRAIL TERMINALS
631032-08	TRAFFIC BARRIER TERMINAL, TYPE 6A
635006-03	REFLECTOR AND TERMINAL MARKER PLACEMENT
635011-02	REFLECTOR MARKER AND MOUNTING DETAILS
701901-04	TRAFFIC CONTROL DEVICES
BLR 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES; FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

**UTILITIES**

AMEREN ILLINOIS  
1155 E VORHEES ST  
DANVILLE IL 61832  
217-431-9726

FRONTIER COMMUNICATIONS  
112 W ELM ST  
SYCAMORE IL 60178  
815-895-1515



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.

**CONTRACT NO. 91527 PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS**



FUNCTIONAL CLASSIFICATION: MAJOR COLLECTOR RURAL  
DESIGN SPEED: 40 MPH  
DESIGN TRAFFIC: 700 ADT (2035)

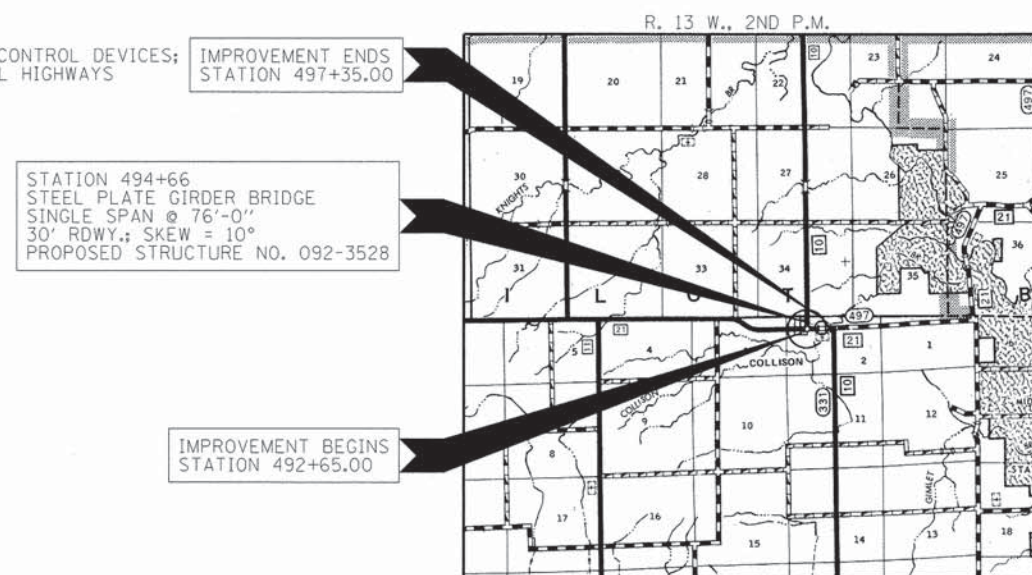
**ILLINOIS DEPARTMENT OF TRANSPORTATION**

APPROVED *October 26 2015*  
*Douglas R. Shuck*  
COUNTY ENGINEER

PASSED *November 4 2015*  
*B. K. Ross*  
DISTRICT FIVE ENGINEER OF LOCAL ROADS & STREETS

Releasing For Bid Based on Limited Review *November 3 2015*

*David C. Johnson*  
DEPUTY DIRECTOR OF HIGHWAYS  
REGION THREE ENGINEER  
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



**LOCATION MAP**

APPROXIMATE SCALE: 0 1 MILE  
NET LENGTH OF SECTION = 470.00 FEET = 0.089 MILES



**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

EXPIRES: 11/30/2017

PROJECT NUMBER: 14.0007.130

DATE: 10/22/15

SUMMARY OF QUANTITIES			
CODE NO.	ITEM	UNIT	CONSTRUCTION TYPE CODE 0011 QUANTITY
20200100	EARTH EXCAVATION	CU YD	345
20300100	CHANNEL EXCAVATION	CU YD	515
25100900	TURF REINFORCEMENT MAT	SQ YD	172
28000305	TEMPORARY DITCH CHECKS	FOOT	140
28000400	PERIMETER EROSION BARRIER	FOOT	89
A 28000500	INLET AND PIPE PROTECTION	EACH	1
A 28100807	STONE DUMPED RIPRAP, CLASS A4	TON	680
35100100	AGGREGATE BASE COURSE, TYPE A	TON	358
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	19
A 40600275	BITUMINOUS MATERIALS (PRIME COAT)	POUND	2920
40600982	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	SQ YD	225
40603230	POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	133
40603510	POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50	TON	111
44000400	GUTTER REMOVAL	FOOT	267
48101200	AGGREGATE SHOULDERS, TYPE B	TON	124
48300100	PORTLAND CEMENT CONCRETE SHOULDERS 6"	SQ YD	7
A 50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU YD	217
50300225	CONCRETE STRUCTURES	CU YD	38.2
50300255	CONCRETE SUPERSTRUCTURE	CU YD	93.6
50300260	BRIDGE DECK GROOVING	SQ YD	247
50300300	PROTECTIVE COAT	SQ YD	330
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1
50500505	STUD SHEAR CONNECTORS	EACH	825
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	26680
* 50901050	STEEL RAILING, TYPE SM	FOOT	159
51201600	FURNISHING STEEL PILES HP12X53	FOOT	800
51202305	DRIVING PILES	FOOT	800
51203600	TEST PILE STEEL HP12X53	EACH	2
51204650	PILE SHOES	EACH	10
51500100	NAME PLATES	EACH	1
52100520	ANCHOR BOLTS, 1"	EACH	20
A 542D0220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	34
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	68
59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	145
60100945	PIPE DRAINS 12"	FOOT	48
60235300	INLETS, TYPE A, TYPE 1 FRAME, CLOSED LID	EACH	1
60500060	REMOVING INLETS	EACH	2
60605000	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24	FOOT	148

\* SEE SPECIAL PROVISIONS

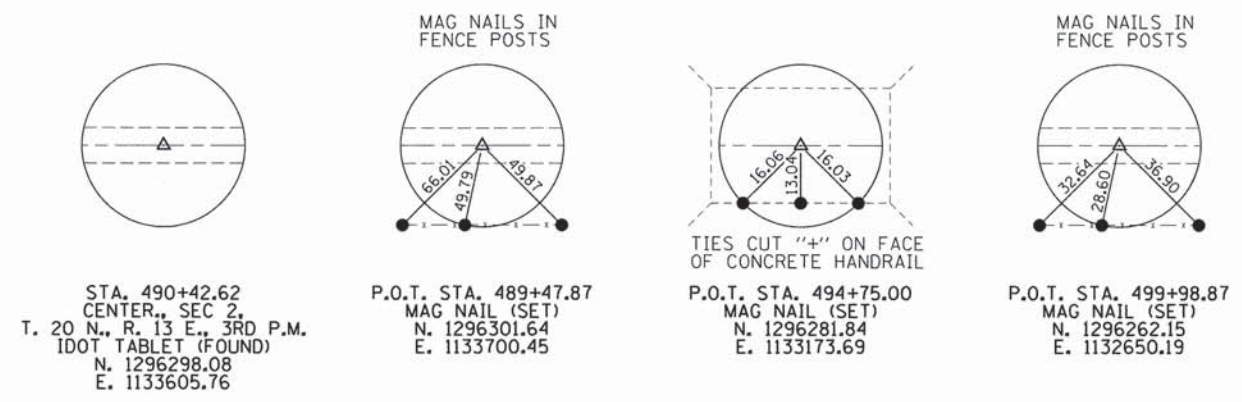
SUMMARY OF QUANTITIES			
CODE NO.	ITEM	UNIT	CONSTRUCTION TYPE CODE 0011 QUANTITY
61000335	TYPE G INLET BOX, STANDARD 610001	EACH	1
* 63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	4
* 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4
* 63200310	GUARDRAIL REMOVAL	FOOT	416
66201120	CONCRETE SHOULDER CURB	FOOT	16
67100100	MOBILIZATION	L SUM	1
70300100	SHORT TERM PAVEMENT MARKING	FOOT	141
* 78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	1058
* A 78200410	GUARDRAIL MARKERS, TYPE A	EACH	8
* A 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
A X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.3
A X5510100	STORM SEWER REMOVAL	FOOT	30
X7011830	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	EACH	1
A XX004566	CONCRETE CUT-OFF WALL	CU YD	8.0
A Z0004552	APPROACH SLAB REMOVAL	SQ YD	158
A Z0013798	CONSTRUCTION LAYOUT	L SUM	1
A Z0022800	FENCE REMOVAL	FOOT	85
A Z0046304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	136

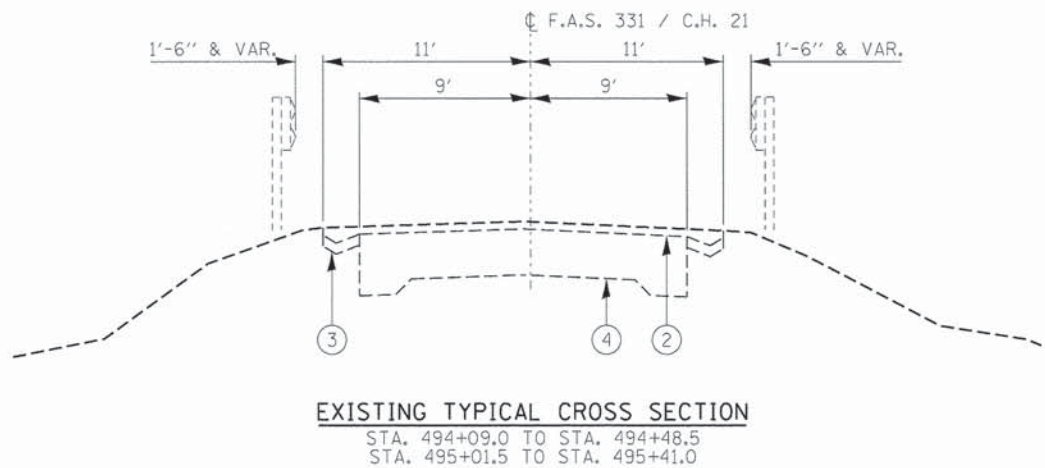
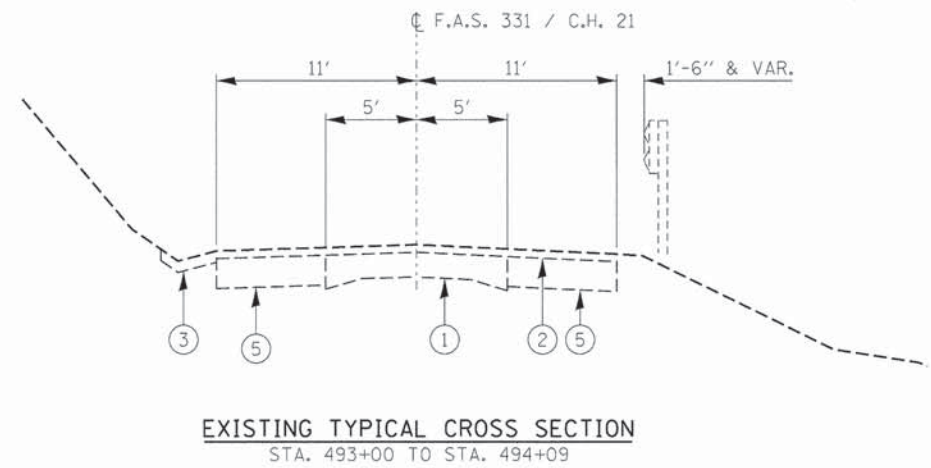
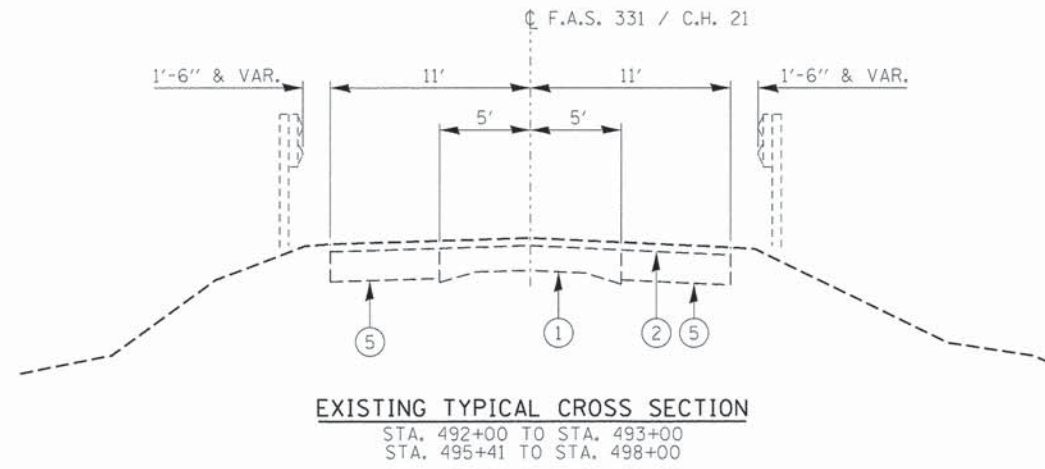
\* SEE SPECIAL PROVISIONS  
\* SPECIALTY ITEMS

**GENERAL NOTES**

- ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ADOPTED JANUARY 1, 2012," THESE PLANS AND THE SPECIAL PROVISIONS INCLUDED IN THE CONTRACT DOCUMENTS.
- THE REVISION NUMBERS OF THE STANDARDS LISTED IN THE PLANS ARE TO BE USED FOR CONSTRUCTING OF THIS SECTION.
- ALL CLEARING AND GRUBBING, FENCE REMOVAL AND REMOVAL OF EXISTING DRAINAGE STRUCTURES SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION. THE REMOVAL OF THE EXISTING PAVEMENT WILL BE PAID FOR AS EARTH EXCAVATION. ALL BITUMINOUS MATERIAL SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR IN A METHOD APPROVED BY THE ENGINEER. PROPER DISPOSAL OF BITUMINOUS MATERIAL SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- THE LOCATION OF EXISTING GAS MAINS, ELECTRIC POWER LINES, TELEPHONE LINES AND OTHER UTILITIES AS SHOWN ON THE PLANS ARE BASED ON CAREFUL FIELD INVESTIGATIONS 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 FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES:  

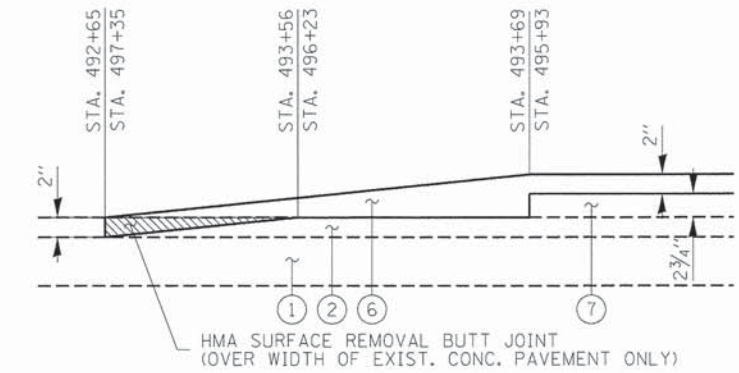
AGGREGATE BASE COURSE	2.05 TON / CU YD
AGGREGATE SURFACE COURSE	1.8 TON / CU YD
STONE DUMPED RIPRAP	1.75 TON / CU YD
HOT-MIX ASPHALT	112 LB / SQ YD / IN
BITUMINOUS MATERIALS	
ON PAVEMENT	0.05 LB./SQ.FT.
INTERMEDIATE LIFTS (FOG COAT)	0.025 LB./SQ.FT.
ON AGGREGATE SURFACE	0.25 LB./SQ.FT.
- THE AREA TO BE SEEDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE RIGHT OF WAY AND EASEMENTS AS DIRECTED BY THE ENGINEER.  
**ESTIMATED QUANTITY: SEEDING, CLASS 2 (SPECIAL) = 0.3 ACRES**
- THE CONTRACTOR SHALL CONSULT THE ENGINEER IN REGARD TO THE EXACT LENGTH OF PIPE CULVERTS AND PIPE DRAINS BEFORE ORDERING THESE ITEMS.
- ALL WASTE MATERIAL FROM EXCAVATION SHALL BE DISPOSED OF BY THE CONTRACTOR. NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- COMMITMENTS:  
  - TREES SHALL NOT BE CLEARED BETWEEN APRIL 1 THROUGH SEPTEMBER 30 TO MITIGATE ANY IMPACTS TO THE INDIANA AND NORTHERN LONG EARED BATS.
  - NO GRAVE SITES LOCATED WITHIN THE ADJACENT CEMETERY WILL BE IMPACTED BY CONSTRUCTION.
- ALL ROADSIDE SIGNS SHALL BE SALVAGED AND RE-ERECTED BEFORE THE ROADWAY IS OPENED TO TRAFFIC.





HMA - MIXTURE REQUIREMENTS		
LOCATION	CH 21 / FAS 331	CH 21 / FAS 331
MIXTURE USE	SURFACE	BINDER
AC/PG:	SBS PG 70-22	SBS PG 70-22
DESIGN AIR VOIDS:	4% @ Ndes=50	4% @ Ndes=50
MIX COMP (GRADATION)	IL 9.5	IL 19.0
FRICTION AGGREGATE:	MIX C	N.A
MIXTURE WEIGHT	112	112
QUALITY MANAGEMENT PROG	QC/QA	QC/QA
SUBLOT SIZE	N.A	N.A

PAVEMENT DESIGN (NON MECHANISTIC)  
 DESIGN PERIOD: 20 YEARS (2035)  
 STRUCTURAL DESIGN TRAFFIC: 536 (2025)  
 PV= 456 SU= 48 MU= 32  
 ROAD/STREET CLASSIFICATION: CLASS II  
 PERCENT OF STRUCTURAL DESIGN TRAFFIC IN DESIGN LANE:  
 P= 0.5 S= 0.5 M= 0.5  
 TRAFFIC FACTOR: ACTUAL TF = 0.24  
 PG GRADE: BINDER = 70-22 SURFACE = 70-22

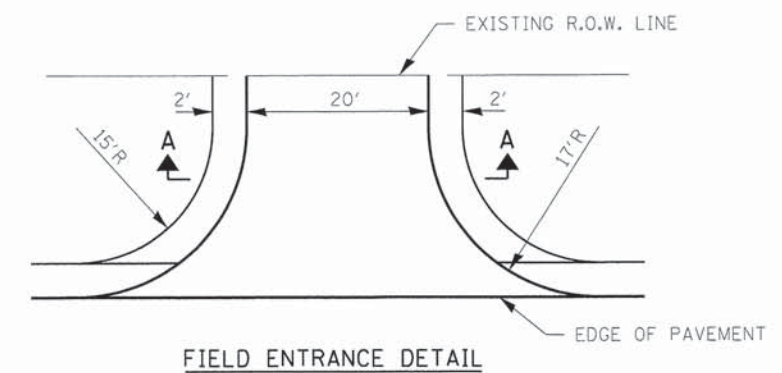
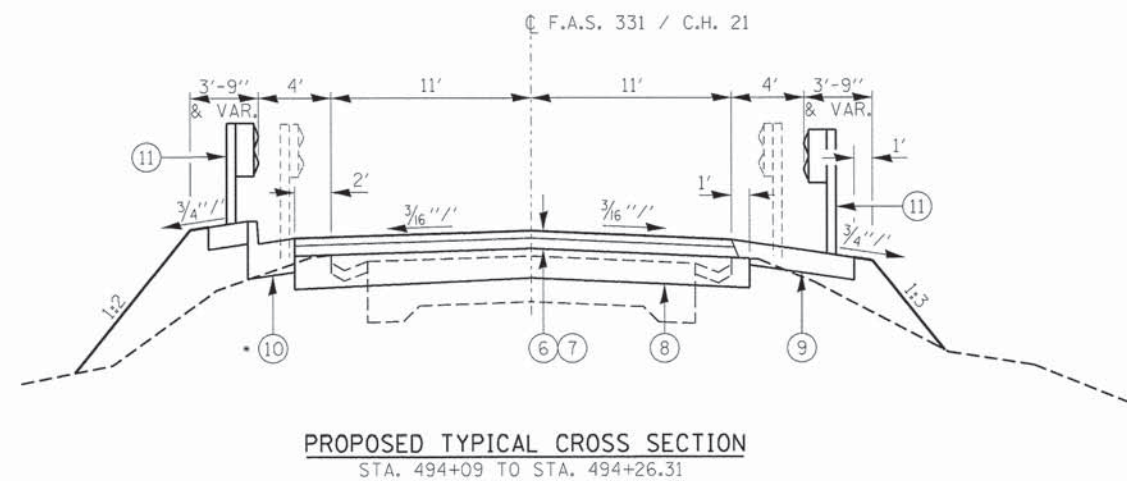
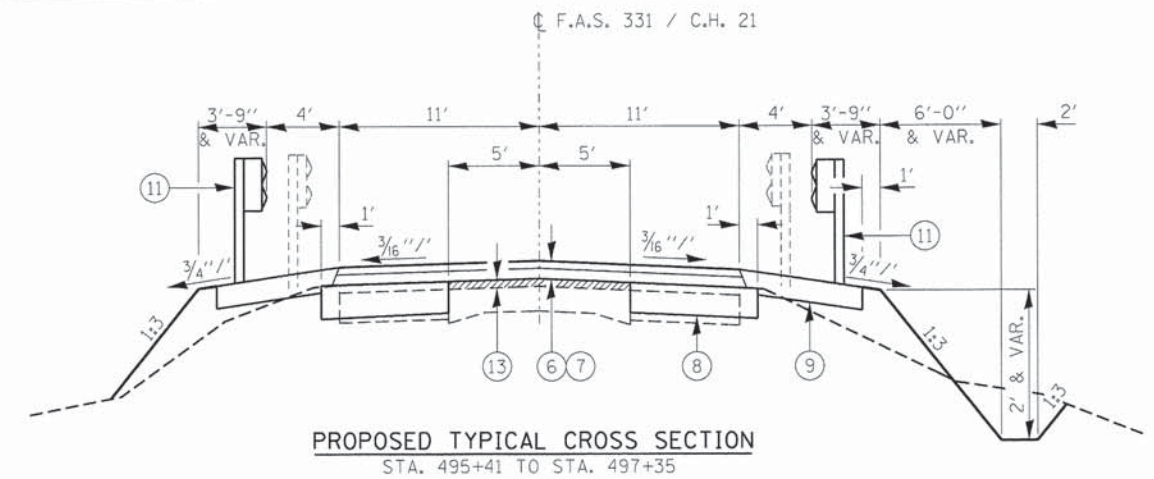
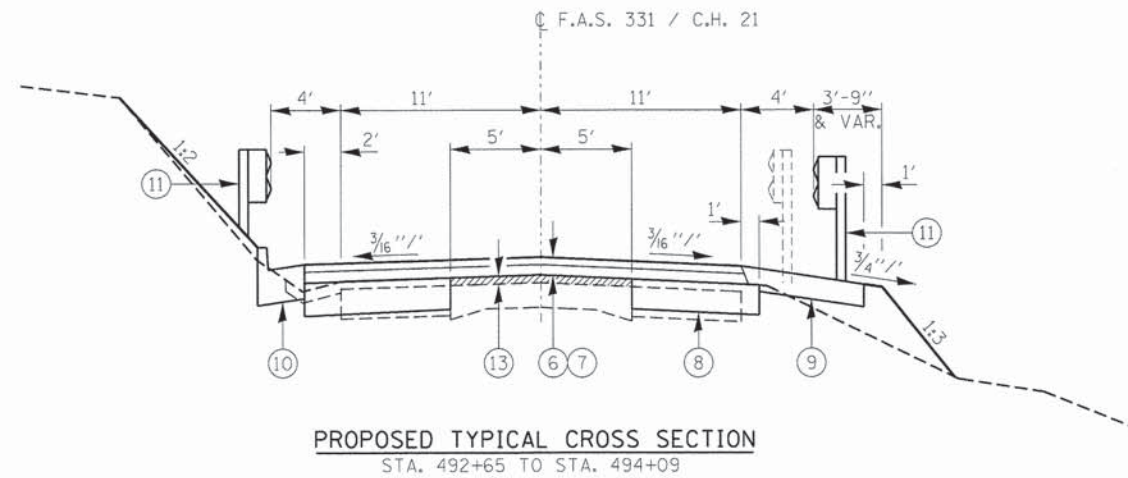


**BUTT JOINT DETAIL**

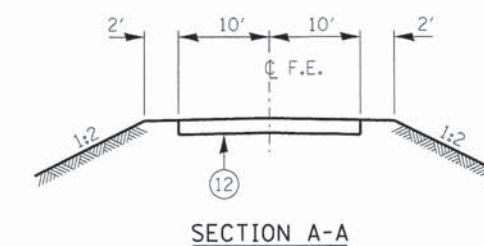
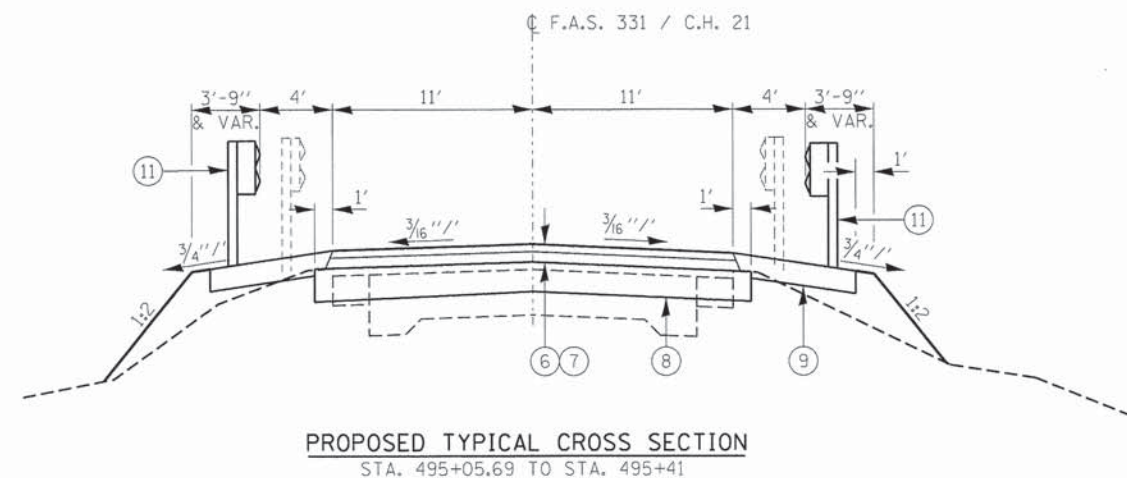
**LEGEND**

- ① EXIST CONCRETE PAVEMENT (9' - 6 1/2" - 9')
- ② EXISTING HMA SURFACE WITH BITUMINOUS TREATED AGGREGATE SEAL COAT
- ③ EXISTING PCC GUTTER
- ④ EXISTING PCC BRIDGE APPROACH PAVEMENT (16 1/2" - 10 1/2" - 16 1/2")
- ⑤ EXISTING AGGREGATE BASE COURSE
- ⑥ HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50 (2")
- ⑦ HOT-MIX ASPHALT BINDER COURSE, IL 19.0, N50 (2 3/4")
- ⑧ AGGREGATE BASE COURSE, TYPE A (8")
- ⑨ AGGREGATE SHOULDERS, TYPE B (6")
- ⑩ COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24
- ⑪ TRAFFIC BARRIER TERMINALS, TY 6A TYPE 1 (SPL) TANGENT
- ⑫ AGGREGATE SURFACE COURSE, TYPE B (6")
- ⑬ HMA SURFACE REMOVAL - BUTT JOINT

FILE NAME = 140007-shs-typesections.dgn	USER NAME =	DESIGNED - J.W.F.	REVISED -	<b>STATE OF ILLINOIS VERMILION COUNTY HIGHWAY DEPARTMENT</b>	<b>EXISTING TYPICAL SECTIONS F.A.S. 331 / C.H. 21 / WALNUT AVE</b>			F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 1300 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62763	PLOT SCALE =	DRAWN - T.W.K.	REVISED -		331	13-00202-00-BR	VERMILION	35	3			
ILLINOIS PROFESSIONAL DESIGN FIRM L8 / PE / SE CORP. 184.000989	PLOT DATE = 10/22/2015	CHECKED - S.W.M.	REVISED -		COLLISION BRIDGE			CONTRACT NO. 91527				
		DATE - 10/22/15	REVISED -		SCALE:	SHEET NO. 1 OF 2 SHEETS	STA.	TO STA.	(ILLINOIS) FED. AID PROJECT BRS-03311201			



NOTE: SEE PCC SHOULDER DETAILS  
SHEET 7. LT. STA. 494+13 TO 494+29.



- LEGEND**
- ① EXIST CONCRETE PAVEMENT (9" - 6 1/2" - 9")
  - ② EXISTING HMA SURFACE WITH BITUMINOUS TREATED AGGREGATE SEAL COAT
  - ③ EXISTING PCC GUTTER
  - ④ EXISTING PCC BRIDGE APPROACH PAVEMENT (16 1/2"-10 1/2"-16 1/2")
  - ⑤ EXISTING AGGREGATE BASE COURSE
  - ⑥ HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50 (2")
  - ⑦ HOT-MIX ASPHALT BINDER COURSE, IL 19.0, N50 (2 3/4")
  - ⑧ AGGREGATE BASE COURSE, TYPE A (8")
  - ⑨ AGGREGATE SHOULDERS, TYPE B (6")
  - ⑩ COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24
  - ⑪ TRAFFIC BARRIER TERMINALS TY 6A TYPE 1 (SPL) TANGENT
  - ⑫ AGGREGATE SURFACE COURSE, TYPE B (6")
  - ⑬ HMA SURFACE REMOVAL - BUTT JOINT

FILE NAME = 142007-shs-typsections.dgn	USER NAME =	DESIGNED - J.W.F.	REVISED -	<b>STATE OF ILLINOIS VERMILION COUNTY HIGHWAY DEPARTMENT</b>	<b>PROPOSED TYPICAL SECTIONS F.A.S. 331 / C.H. 21 / WALNUT AVE</b>		F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	DRAWN - T.W.K.	REVISED -		331	13-00202-00-BR	VERMILION	35	4		
ILLINOIS PROFESSIONAL DESIGN FIRM L.B. FEY & ASSOCIATES, INC.	PLOT DATE = 10/22/2015	CHECKED - S.W.M.	REVISED -		COLLISON BRIDGE		ILLINOIS FED. AID PROJECT BRS-03311201				
		DATE - 10/22/15	REVISED -		SCALE:	SHEET NO. 2 OF 2 SHEETS	STA.	TO STA.			

ROADWAY SCHEDULE								
LOCATION	AGGREGATE BASE COURSE TYPE A (8")	AGGREGATE SURFACE COURSE TYPE B (6")	BITUMINOUS MATERIALS PRIME COAT	HOT MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	POLYMRZD. HMA BINDER COURSE IL-19.0, N50 (2.75")	POLYMRZD. HMA SURFACE CSE. MIX C, N50 (2")	AGGREGATE SHOULDERS TYPE B (6")	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24
CH 21 / FAS 331	TON	TON	POUND	SQ YD	TON	TON	TON	FOOT
LT. STA 492+65.00 TO STA 494+13.00								148
CL. STA 492+65.00 TO STA 494+26.31	178		1200		59	48	36	
CL. STA 495+05.69 TO STA 497+35	180	19	1720		74	63	88	
CL. STA 492+65.00 TO STA 493+56				101				
CL. STA 496+23.00 TO STA 497+35				124				
TOTAL	358	19	2920	225	133	111	124	148

EROSION CONTROL SCHEDULE				
LOCATION	TURF REINFORCEMENT MAT	TEMPORARY DITCH CHECKS	PERIMETER EROSION BARRIER	INLET AND PIPE PROTECTION
CH 21 / FAS 331	SQ YD	FOOT	FOOT	EACH
LT. STA 494+18				1
RT. STA 493+35 TO STA 494+24			89	
LT. STA 495+07 TO STA 496+00	89			
RT. STA 495+00 TO STA 496+00	83			
RT. STA 495+00		15		
RT. STA 495+25		15		
RT. STA 495+50		14		
RT. STA 495+75		14		
RT. STA 496+00		14		
RT. STA 496+50		14		
LT. STA 495+25		12		
LT. STA 495+50		14		
LT. STA 495+75		14		
LT. STA 496+00		14		
TOTAL	172	140	89	1

REMOVAL SCHEDULE				
LOCATION	GUTTER REMOVAL	REMOVING INLETS	STORM SEWER REMOVAL	APPROACH SLAB REMOVAL (18')
CH 21 / FAS 331	FOOT	EACH	FOOT	SQ YD
LT. STA 493+00.0 TO STA 494+48.5	148.5			
CL. STA 494+09.0 TO STA 494+48.5				79
RT. STA 494+09.0 TO STA 494+48.5	39.5			
LT. STA 495+01.5 TO STA 495+41.0	39.5			
CL. STA 495+01.5 TO STA 495+41.0				79
RT. STA 495+01.5 TO STA 495+41.0	39.5			
LT. & RT. STA 495+40		2	30	
TOTAL	267	2	30	158

PAVEMENT MARKING SCHEDULE			
LOCATION	PAINT PAVEMENT MARKING - LINE 4"		SHORT TERM PAVEMENT MARKING 4' @ 40'
	SINGLE WHITE EDGE LINE	SKIPPED DASHED YELLOW CENTERLINE	
	78001110	78001110	70300100
CH 21 / FAS 331	FOOT	FOOT	FOOT
LT. STA 492+65.00 TO STA 497+35.00	470		47
CL. STA 492+65.00 TO STA 497+35.00		117.5	47
RT. STA 492+65.00 TO STA 497+35.00	470		47
SUBTOTAL	940	117.5	141
TOTAL		1058	141

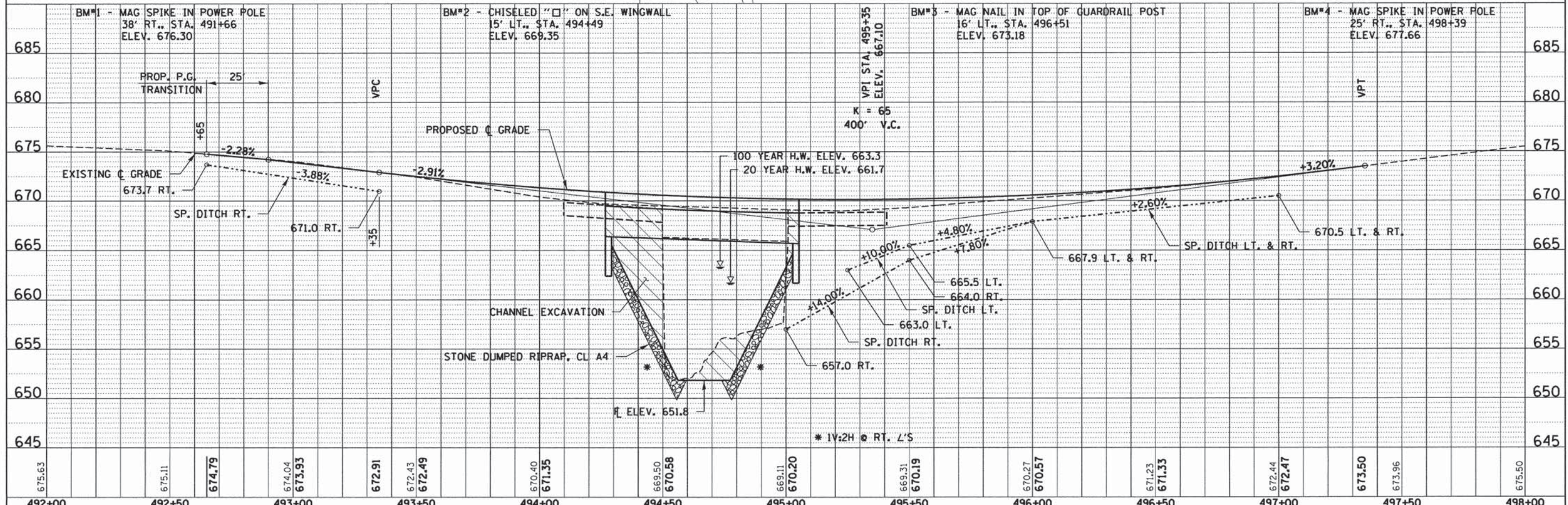
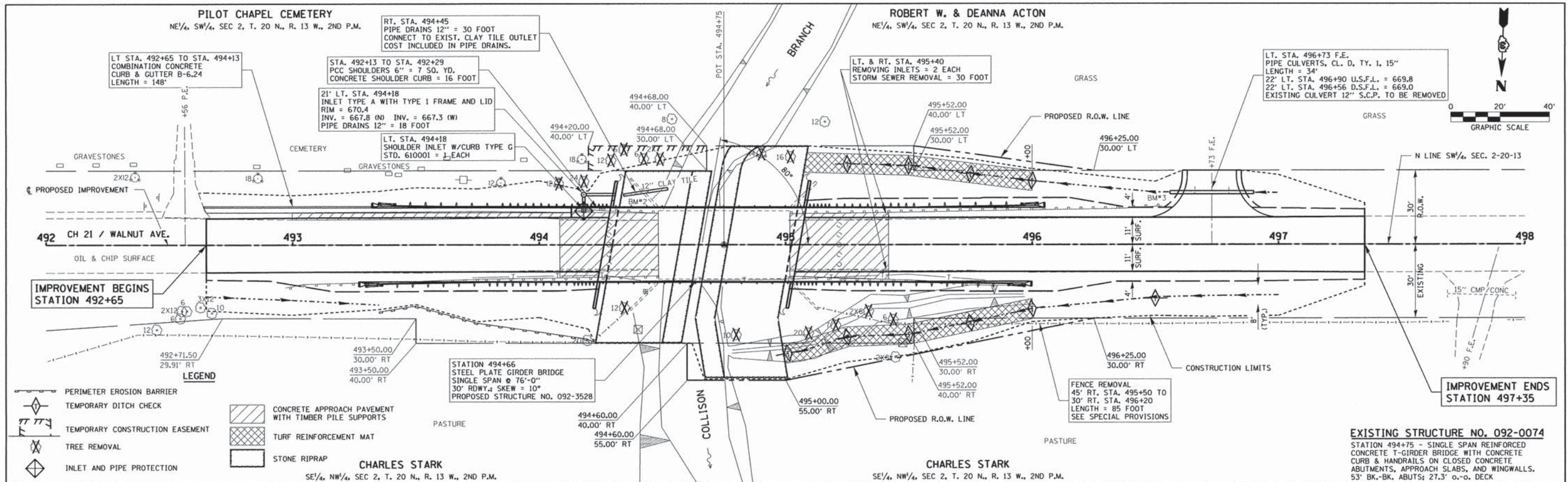
TREE REMOVAL (BY OTHERS)		
LOCATION	6 TO 15 UNITS DIAMETER UNITS	OVER 15 UNITS DIAMETER UNITS
CH 21 / FAS 331		
LT. STA 494+08	12	
LT. STA 494+18		24
LT. STA 494+29	12	
LT. STA 494+34	6	
LT. STA 494+42	6	
LT. STA 494+49	14	
LT. STA 494+90	14	
LT. STA 495+02		16
RT. STA 494+35	12	
RT. STA 494+80	10	
RT. STA 495+09		20
RT. STA 495+20	7	
RT. STA 495+34	12	
TOTAL	105	60

SHOULDER INLET SCHEDULE					
LOCATION	PIPE DRAINS 12"	INLETS, TYPE A TYPE 1 FRAME AND CLOSED LID	TYPE G INLET BOX STANDARD 610001	PCC SHOULDERS, 6" (4.6 FT WIDTH)	CONCRETE SHOULDER CURB
CH 21 / FAS 331	FOOT	EACH	EACH	SQ YD	FOOT
LT. STA 494+13 TO STA 494+29				7	16
LT. STA 494+13 TO STA 494+29					
LT. STA 494+18	18	1	1		
LT. STA 494+45	30				
TOTAL	48	1	1	7	16

EARTHWORK SCHEDULE								
LOCATION	EARTH EXCAVATION	CHANNEL EXCAVATION	STRUCTURE EXCAVATION	SHRINKAGE FACTOR	PERCENT USED	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT REQUIRED	EARTHWORK BALANCE
	CU.YD.	CU.YD.	CU.YD.			CU.YD.	CU.YD.	CU.YD.
CH 21 / FAS 331								
STA 492+65 TO STA 494+26.31	107			25.00%	100.00%	80	51	29
STA 494+26.31 TO STA 495+05.69	0		217	25.00%	100.00%	163	57	105
STA 495+05.69 TO STA 497+35	225			25.00%	100.00%	169	197	-28
ENTRANCE	13			25.00%	70.00%	7	12	-5
CHANNEL EXCAVATION		515		25.00%	70.00%	270		270
TOTAL	345	515	217			689	317	371
USE	345	515	217					375

WASTE 375 CU YD

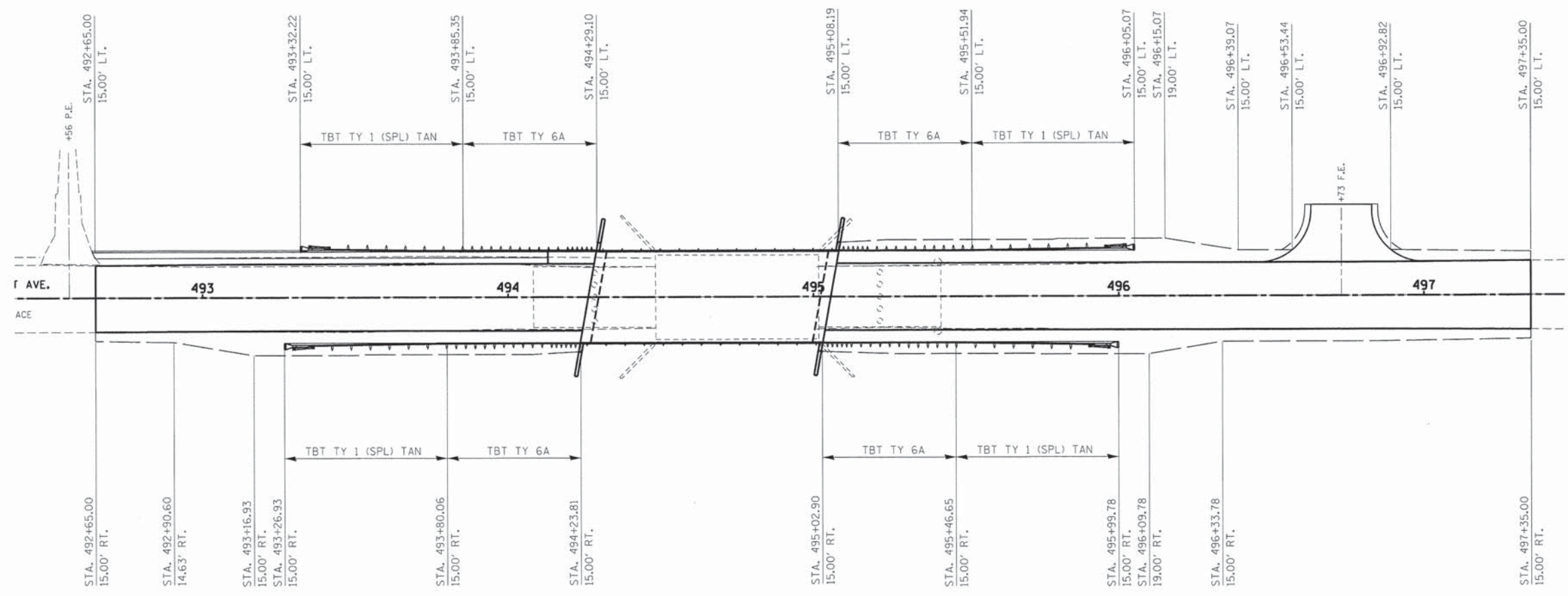
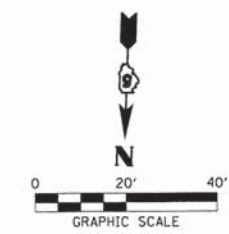
GUARDRAIL SCHEDULE					
LOCATION	TRAFFIC BARRIER TERMINAL TYPE 6A	TRAFFIC BARRIER TERMINAL TYPE 1, SPECIAL (TANGENT)	GUARDRAIL MARKERS TYPE A	TERMINAL MARKER DIRECT APPLIED	GUARDRAIL REMOVAL
CH 21 / FAS 331	EACH	EACH	EACH	EACH	FOOT
RT. STA 493+26.93 TO RT. STA 494+23.81	1	1	2	1	
LT. STA 493+32.22 TO LT. STA 494+29.10	1	1	2	1	
RT. STA 495+02.90 TO RT. STA 495+99.78	1	1	2	1	
LT. STA 495+08.19 TO LT. STA 496+05.07	1	1	2	1	
RT. STA 492+97 TO RT. STA 494+48					151
LT. STA 494+09 TO LT. STA 494+48					39
RT. STA 495+02 TO RT. STA 495+78					76
LT. STA 495+02 TO LT. STA 496+52					150
TOTAL	4	4	8	4	416



DATE	
BY	
REVISIONS	
NO.	
DATE	
BY	
REVISIONS	
NO.	
DATE	
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BY	
REVISIONS	
NO.	

FILE NAME = 148007-shr-p8pudgn	USER NAME =	DESIGNED - J.W.F.	REVISED -	<b>STATE OF ILLINOIS</b> <b>VERMILION COUNTY HIGHWAY DEPARTMENT</b>	<b>PLAN &amp; PROFILE</b> <b>F.A.S. 331 / C.H. 21 / WALNUT AVE</b>		F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC.		DRAWN - L.G.C.	REVISED -		331	13-00202-00-BR	VERMILION	35	6		
3085 STEVENSON DRIVE, SUITE 201		CHECKED - S.W.M.	REVISED -		COLLISION BRIDGE		CONTRACT NO. 91527				
SPRINGFIELD, ILLINOIS 62793		DATE - 10/22/15	REVISED -		SCALE: 20H:5V		SHEET NO. OF SHEETS STA. 492+00.00 TO STA. 498+00.00		ILLINOIS FED. AID PROJECT BRS-0331020		



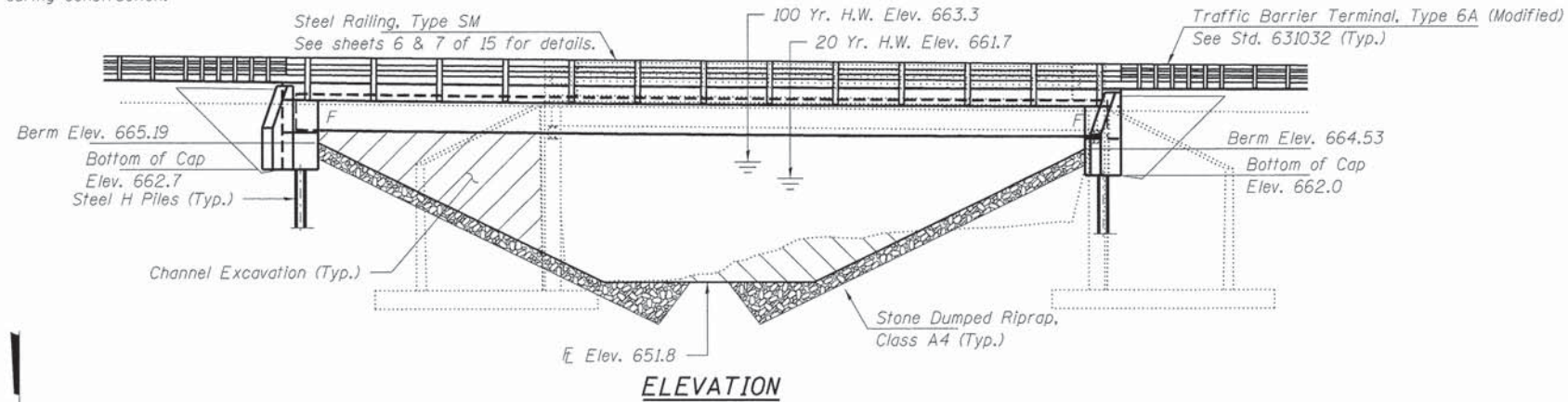
FILE NAME = 140087-shs-guardrail.dgn	USER NAME =	DESIGNED - J.W.F.	REVISED -	<b>STATE OF ILLINOIS VERMILION COUNTY HIGHWAY DEPARTMENT</b>	<b>GUARDRAIL &amp; SHOULDER LAYOUT F.A.S. 331 / C.H. 21 / WALNUT AVE</b>			F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3408 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L.S. / P.E. / S.E. CORP. 184.000959	PLOT SCALE =	DRAWN - T.W.K.	REVISED -		331	13-00202-00-BR	VERMILION	35	7			
PLOT DATE = 10/22/2015	DATE - 10/22/15	CHECKED - S.W.M.	REVISED -		COLLISON BRIDGE			CONTRACT NO. 91527				
		REVISOR -	REVISED -		SCALE:	SHEET NO.	OF SHEETS	STA.	TO STA.	ILLINOIS FED. AID PROJECT BR5-03311201		

BENCHMARK: Chiseled "□" on SE wingwall. 15' Lt., Sta. 494+49, Elev. 669.35

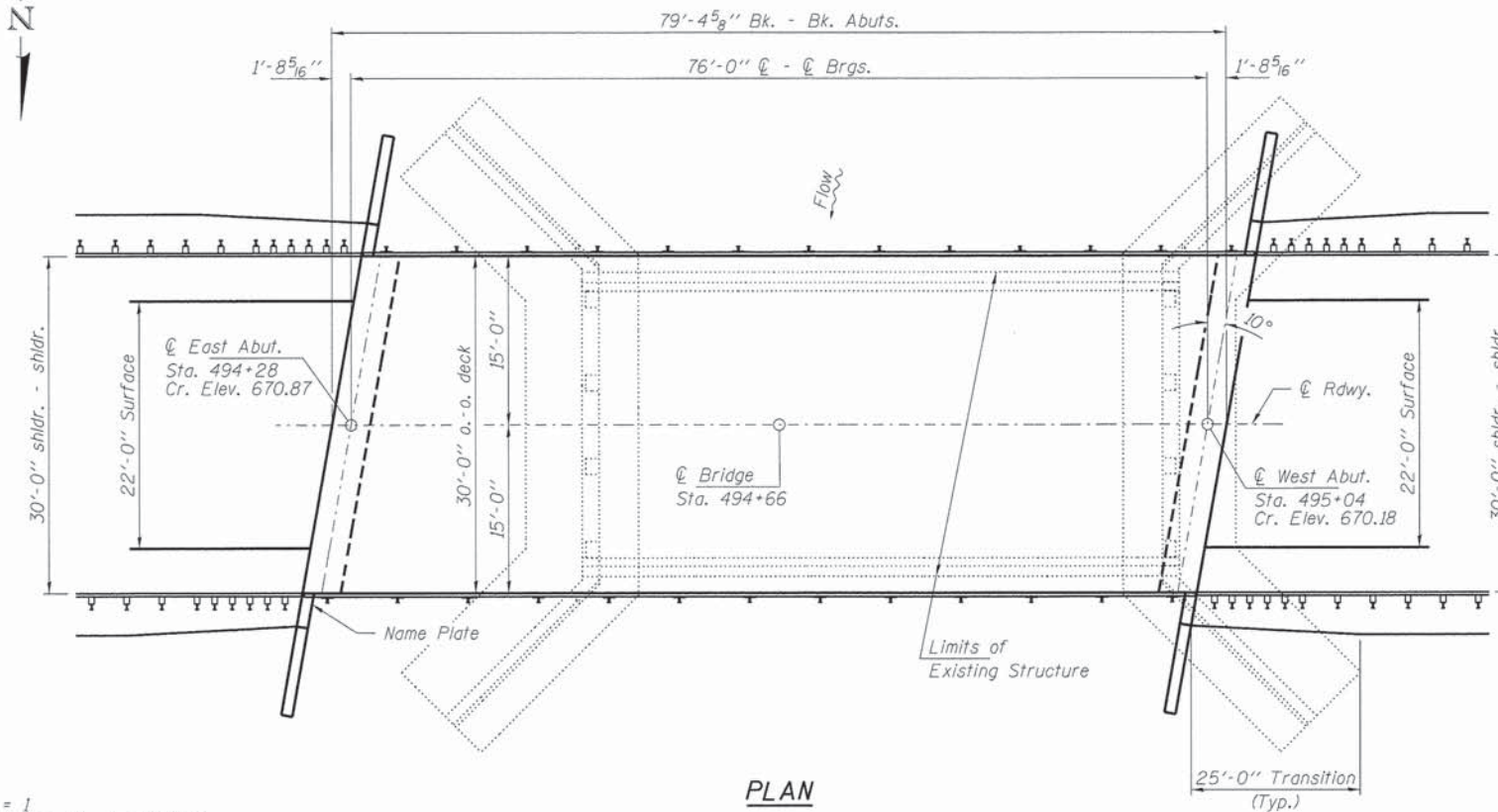
EXISTING STRUCTURE NO. 092-0074: Sta. 494+75 - Single span concrete T-beam bridge with concrete curb and parapets on closed concrete abutments and wingwalls. 49.9' fc.-fc. abuts.; 27.3' o.-o. deck.

Structure will be closed to traffic during construction.

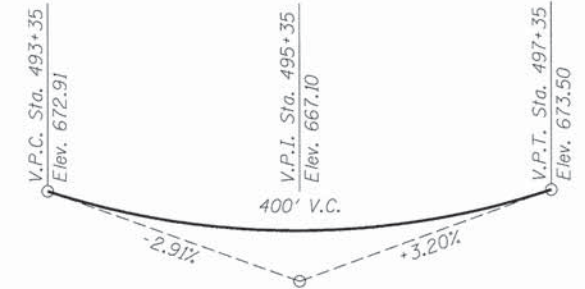
No Salvage



ELEVATION



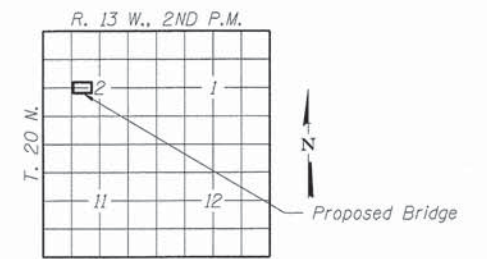
PLAN



PROFILE GRADE  
(along C roadway)

COLLISON BRANCH  
BUILT 2011 BY  
VERMILION COUNTY  
SEC. 13-00202-00-BR  
F.A.S. RT. 331 STA. 494+66  
STR. NO. 092-3528  
LOADING HL-93

NAME PLATE  
See Std. 515001



LOCATION SKETCH

**SEISMIC DATA**

Seismic Performance Zone (SPZ) = 1  
Design Spectral Acceleration at 1.0 sec. ( $S_{D1}$ ) = 0.129g  
Design Spectral Acceleration at 0.2 sec. ( $S_{D5}$ ) = 0.218g  
Soil Site Class = D

**DESIGN SPECIFICATIONS**

2012 AASHTO LRFD Bridge Design Specifications, 6th Edition with all applicable interims.

**LOADING HL-93**

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

**DESIGN STRESSES**

**FIELD UNITS**

$f'_c$  = 5,000 psi (Superstructure)  
 $f'_c$  = 3,500 psi (Substructure)  
 $f_y$  = 60,000 psi (Reinf.)  
 $f_y$  = 50,000 psi (Structural Steel) (M270 Gr. 50W)

Design Scour Elevations (ft.)			
	E. Abut.	W. Abut.	
Q100	662.7	662.0	
Q500	662.7	662.0	

**WATERWAY INFORMATION**

Flood	Freq. Yr.	C.F.S.	Opening Sq. Ft.		Natural Head - Ft.		Headwater El.		
			Exist.	Prop.	H.W.E. Exist.	Prop.	Exist.	Prop.	
Design	10	1370	320	340	660.95	0.04	0.00	660.99	660.95
Base	100	2710	430	480	663.27	0.11	0.04	663.38	663.31
Max. Calc.	500	3750	500	570	664.62	0.13	0.09	664.75	664.71

Existing Low Grade Elev. 669.0 @ Sta. 495+25  
Proposed Low Grade Elev. 670.2 @ Sta. 495+35  
Drainage Area = 5.3 Sq. Mi.

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 10/22/2015  
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064

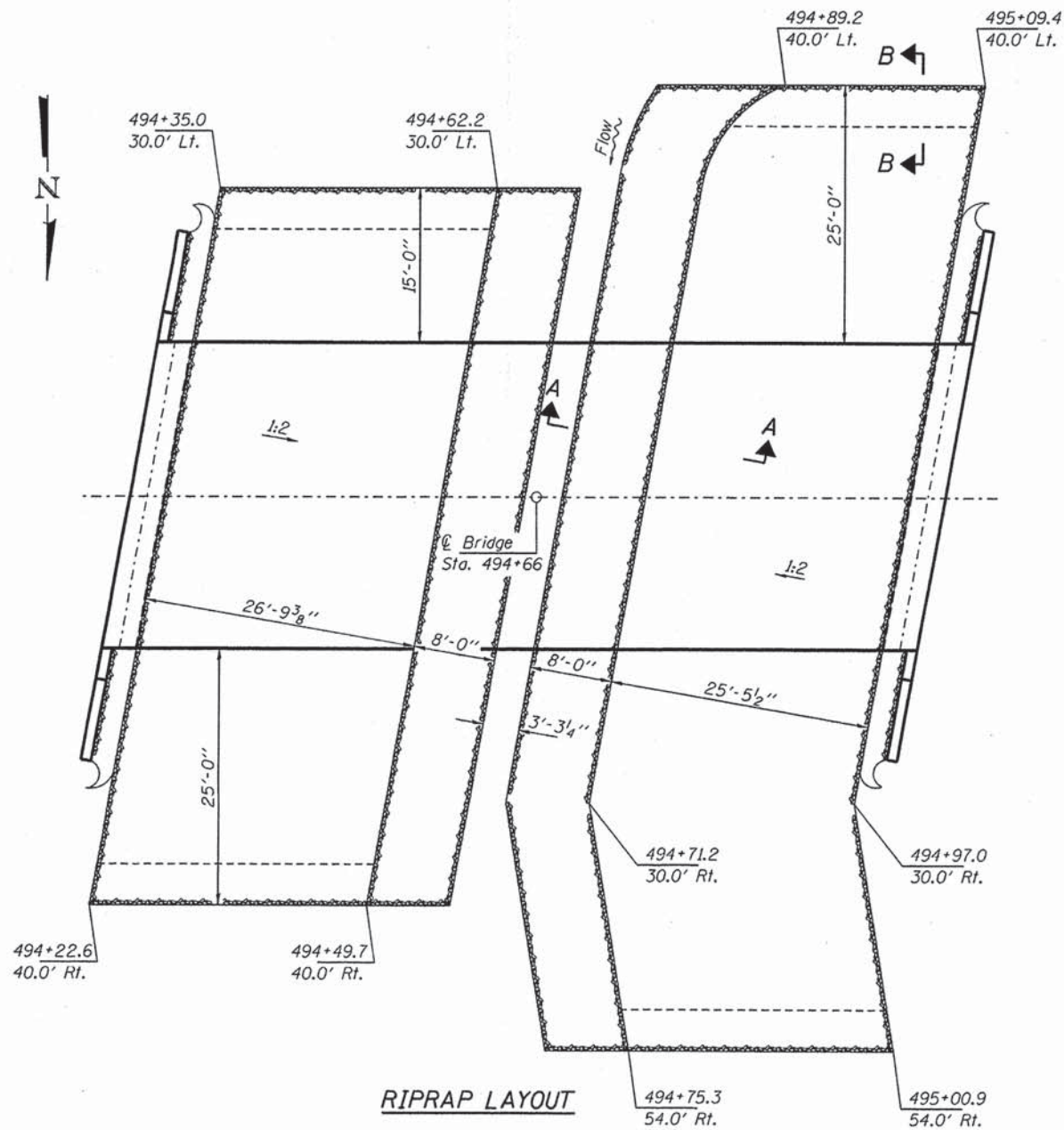


Expires 11-30-2016

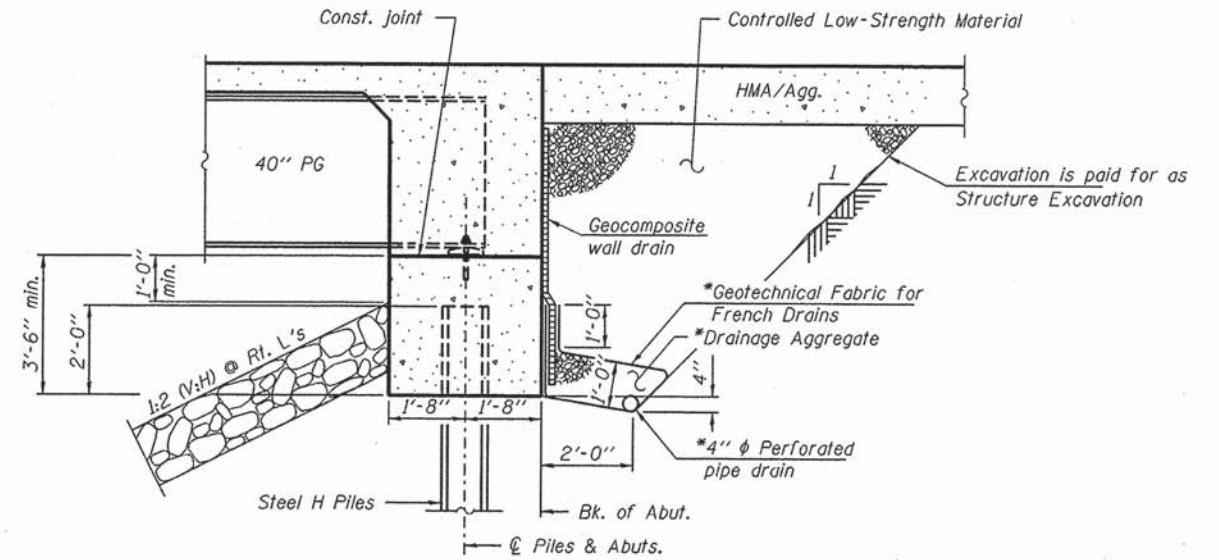
**GENERAL PLAN & ELEVATION**  
C.H. 21 / F.A.S. 331  
SECTION 13-00202-00-BR  
VERMILION COUNTY  
STATION 494+66.00  
STRUCTURE NO. 092-3528

FILE NAME = 148887-shr-bridge.dgn	USER NAME =	DESIGNED - T.J.A.	REVISED -	STATE OF ILLINOIS VERMILION COUNTY HIGHWAY DEPARTMENT	GENERAL PLAN STRUCTURE NO. 092-3528 SHEET NO. 1 OF 15 SHEETS	F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 217.548.3400 www.hireengineering.com	PLDT SCALE =	CHECKED - D.W.T.	REVISED -			331	13-00202-00-BR	VERMILION	35	8	
184.00989 ILLINOIS PROFESSIONAL DESIGN FIRM L3 / PE / SE CORPORATION	PLDT DATE = 10/22/2015	DRAWN - D.A.B.	REVISED -			COLLISON BRIDGE					CONTRACT NO. 91527
		CHECKED - S.W.M.	REVISED -			ILLINOIS FED. AID PROJECT BR5-033H1201					





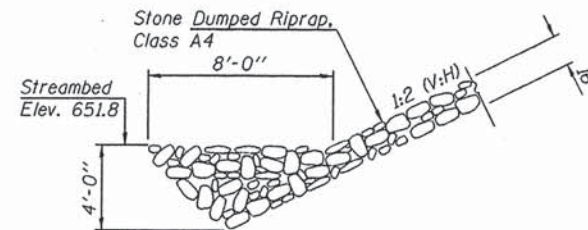
RIPRAP LAYOUT



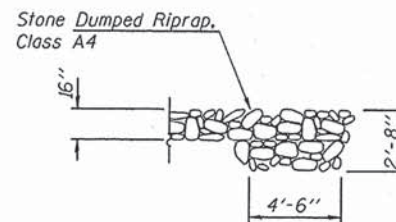
SECTION THRU INTEGRAL ABUTMENT  
(Horiz. dim. @ Rt. L's)

\*Included in the cost of Pipe Underdrains for Structures, 4"

All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101). Concrete headwalls shall be included in the cost of Pipe Underdrains for Structures 4".



SECTION A-A



SECTION B-B

**GENERAL NOTES**

Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts in painted areas and ASTM A325 Type 3 in unpainted areas. Bolts 3/8" φ, holes 1/2" φ, unless otherwise noted.  
 Calculated weight of Structural Steel = 54,410 lbs.  
 All structural steel shall be AASHTO M 270 Grade 50W (except expansion joints which shall be AASHTO M 270 Grade 50).  
 No field welding is permitted except as specified in the contract documents.  
 Reinforcement bars designated (E) shall be epoxy coated.  
 Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8" (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.  
 Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.  
 Structural steel shall only be painted for a distance equal to the depth of embedment into the concrete cap plus 3 inches. Painted areas shall be primed in the shop with a Department approved zinc rich primer. Field painting will not be required.  
 Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			515
Stone Dumped Riprap, Class A4	Ton			680
Removal of Existing Structures	Each			1
Structure Excavation	Cu. Yd.		217	217
Concrete Structures	Cu. Yd.		38.2	38.2
Concrete Superstructure	Cu. Yd.	93.6		93.6
Bridge Deck Grooving	Sq. Yd.	247		247
Protective Coat	Sq. Yd.	290	40	330
Furnishing and Erecting Structural Steel	L. Sum	1		1
Stud Shear Connectors	Each	825		825
Reinforcement Bars, Epoxy Coated	Pound	17,400	9,280	26,680
Steel Railing, Type SM	Foot	159		159
Furnishing Steel Piles HP12x53	Foot		800	800
Driving Piles	Foot		800	800
Test Pile Steel HP12x53	Each		2	2
Pile Shoes	Each		10	10
Name Plates	Each		1	1
Anchor Bolts, 1"	Each		20	20
Geocomposite Wall Drain	Sq. Yd.			68
Controlled Low-Strength Material	Cu. Yd.			145
Concrete Cut-off Wall	Cu. Yd.		8.0	8.0
Pipe Underdrains for Structures 4"	Foot			136

FILE NAME = 148807-shs-bridge.dgn  
 3085 STEVENSON DRIVE, SUITE 201  
 SPRINGFIELD, ILLINOIS 62703  
 217.846.3400 www.hireengineering.com  
 151.000059  
 ILLINOIS PROFESSIONAL DESIGN FIRM  
 L3 / P/E / SE CORPORATION

USER NAME =  
 DESIGNED - T.J.A.  
 CHECKED - D.W.T.  
 DRAWN - D.A.B.  
 PLOT DATE = 12/7/2015

DESIGNED - T.J.A.  
 CHECKED - D.W.T.  
 DRAWN - D.A.B.  
 CHECKED - S.W.M.

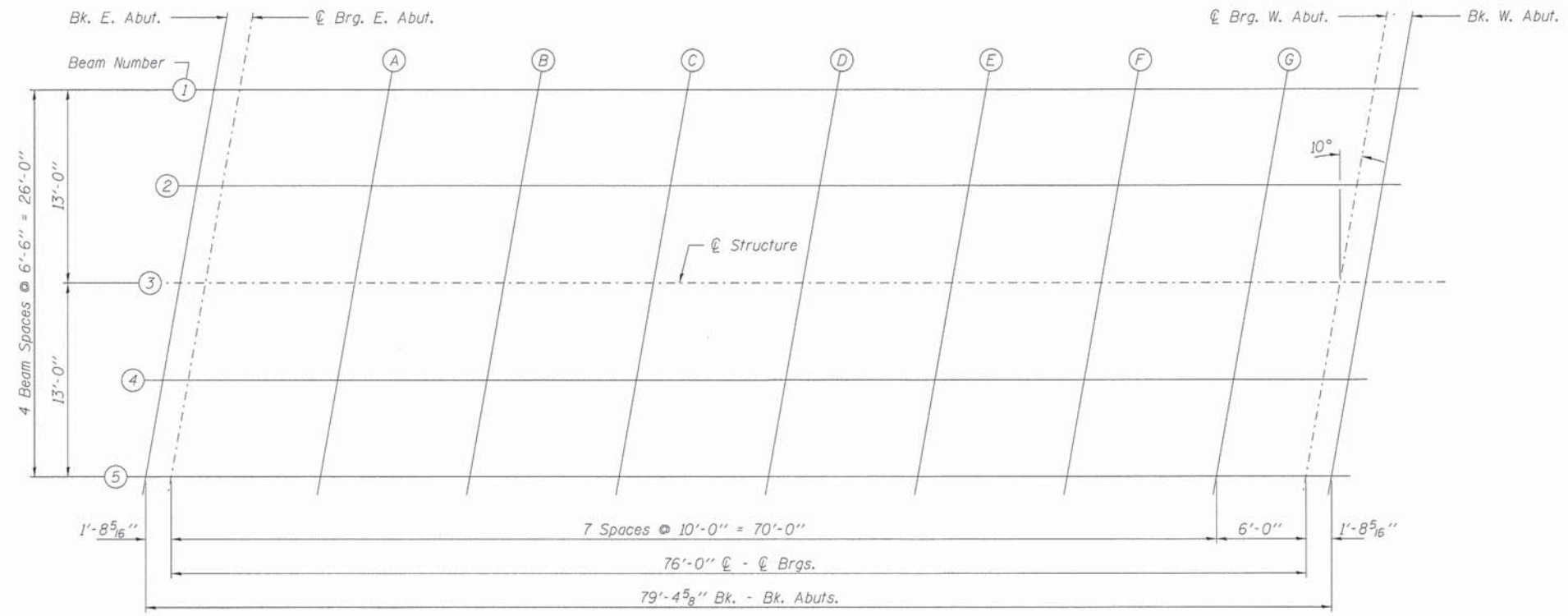
REVISED -  
 REVISED -  
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 REVISED -

STATE OF ILLINOIS  
 VERMILION COUNTY HIGHWAY DEPARTMENT

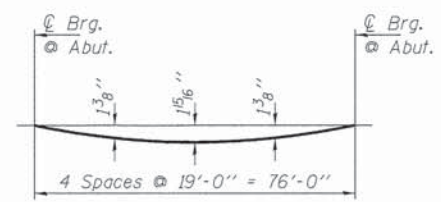
GENERAL DATA  
 STRUCTURE NO. 092-3528

SHEET NO. 2 OF 15 SHEETS

F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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COLLISION BRIDGE			CONTRACT NO. 91527	
[ILLINOIS] FED. AID PROJECT BR5-03311201				



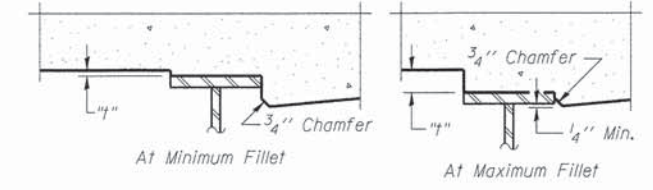
**PLAN**



**DEAD LOAD DEFLECTION DIAGRAM**

(Includes weight of concrete only.)

Note:  
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on sheet 4 of 15.



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown above. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheet 4 of 15, minus slab thickness, equals the fillet heights "t" above top flange of beams.

**FILLET HEIGHTS**

FILE NAME = 140007-sht-bridge.dgn	USER NAME =	DESIGNED - T.J.A.	REVISED -	<b>STATE OF ILLINOIS VERMILION COUNTY HIGHWAY DEPARTMENT</b>	<b>TOP OF SLAB ELEVATIONS STRUCTURE NO. 092-3528</b>	F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 217.541.3400 www.jirngengineering.com	PLOT SCALE =	CHECKED - D.W.T.	REVISED -			331	13-00202-00-BR	VERMILION	35	10	
184.000959 ILLINOIS PROFESSIONAL DESIGN FIRM L.L.P. / S.E. CORPORATION	PLOT DATE = 10/22/2015	DRAWN - D.A.B.	REVISED -			COLLISION BRIDGE					
		CHECKED - S.W.M.	REVISED -			CONTRACT NO. 91527					
						SHEET NO. 3 OF 15 SHEETS					
						ILLINOIS FED. AID PROJECT BR5-03311201					

**BEAM 1**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. E. Abut.	494+28.60	-13.00	670.59	670.59
☉ Brg. E. Abut.	494+30.29	-13.00	670.56	670.56
A	494+40.29	-13.00	670.43	670.49
B	494+50.29	-13.00	670.30	670.42
C	494+60.29	-13.00	670.20	670.35
D	494+70.29	-13.00	670.11	670.27
E	494+80.29	-13.00	670.03	670.17
F	494+90.29	-13.00	669.97	670.09
G	495+00.29	-13.00	669.92	669.97
☉ Brg. W. Abut.	495+06.29	-13.00	669.90	669.90
Bk. W. Abut.	495+07.98	-13.00	669.90	669.90

**BEAM 2**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. E. Abut.	494+27.45	-6.50	670.74	670.74
☉ Brg. E. Abut.	494+29.15	-6.50	670.72	670.72
A	494+39.15	-6.50	670.58	670.64
B	494+49.15	-6.50	670.45	670.57
C	494+59.15	-6.50	670.34	670.50
D	494+69.15	-6.50	670.25	670.42
E	494+79.15	-6.50	670.17	670.32
F	494+89.15	-6.50	670.11	670.23
G	494+99.15	-6.50	670.06	670.11
☉ Brg. W. Abut.	495+05.15	-6.50	670.04	670.04
Bk. W. Abut.	495+06.84	-6.50	670.04	670.04

**☉ STRUCTURE & BEAM 3**

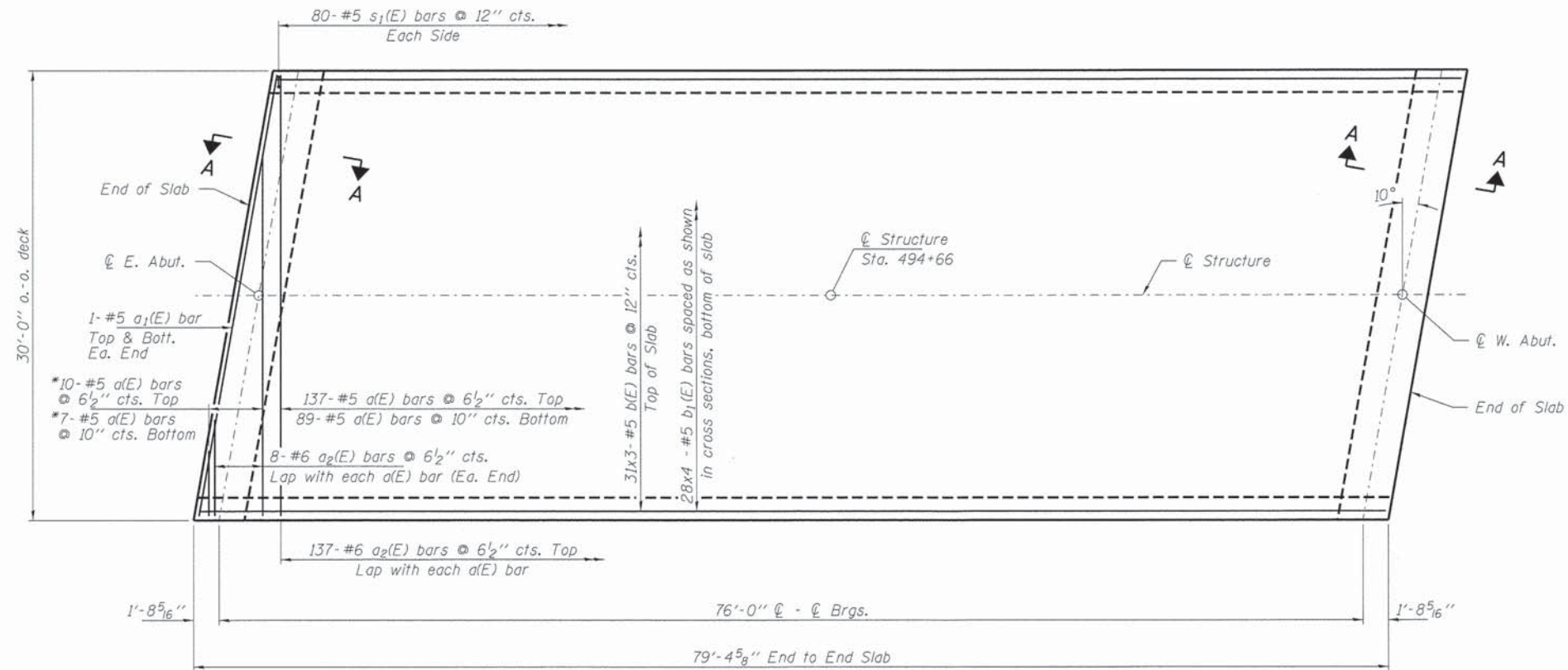
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. E. Abut.	494+26.31	0.00	670.89	670.89
☉ Brg. E. Abut.	494+28.00	0.00	670.87	670.87
A	494+38.00	0.00	670.73	670.79
B	494+48.00	0.00	670.60	670.72
C	494+58.00	0.00	670.49	670.65
D	494+68.00	0.00	670.40	670.56
E	494+78.00	0.00	670.32	670.46
F	494+88.00	0.00	670.25	670.37
G	494+98.00	0.00	670.20	670.25
☉ Brg. W. Abut.	495+04.00	0.00	670.18	670.18
Bk. W. Abut.	495+05.69	0.00	670.17	670.17

**BEAM 4**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. E. Abut.	494+25.16	6.50	670.78	670.78
☉ Brg. E. Abut.	494+26.85	6.50	670.75	670.75
A	494+36.85	6.50	670.61	670.67
B	494+46.85	6.50	670.48	670.60
C	494+56.85	6.50	670.37	670.52
D	494+66.85	6.50	670.27	670.44
E	494+76.85	6.50	670.19	670.33
F	494+86.85	6.50	670.12	670.24
G	494+96.85	6.50	670.07	670.12
☉ Brg. W. Abut.	495+02.85	6.50	670.05	670.05
Bk. W. Abut.	495+04.55	6.50	670.04	670.04

**BEAM 5**

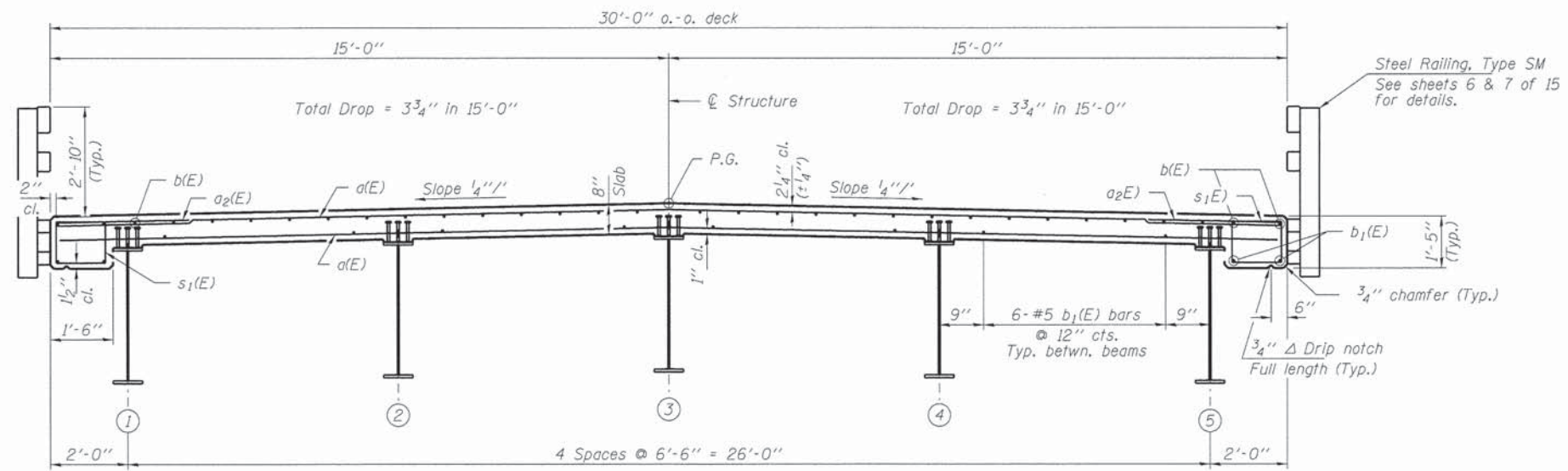
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. E. Abut.	494+24.02	13.00	670.66	670.66
☉ Brg. E. Abut.	494+25.71	13.00	670.63	670.63
A	494+35.71	13.00	670.49	670.55
B	494+45.71	13.00	670.36	670.48
C	494+55.71	13.00	670.24	670.40
D	494+65.71	13.00	670.15	670.31
E	494+75.71	13.00	670.06	670.21
F	494+85.71	13.00	669.99	670.11
G	494+95.71	13.00	669.94	669.99
☉ Brg. W. Abut.	495+01.71	13.00	669.92	669.92
Bk. W. Abut.	495+03.40	13.00	669.91	669.91



\* Order a(E) bars full length. Cut to fit skew & use remainder of bars in other end.

PLAN

MIN. BAR LAP  
#5 bars = 2'-7"



CROSS SECTION  
(Looking West)

SUPERSTRUCTURE  
BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	243	#5	29'-8"	—
a1(E)	4	#5	30'-1"	—
a2(E)	290	#6	5'-2"	—
b(E)	93	#5	28'-1"	—
b1(E)	112	#5	21'-9"	—
m(E)	6	#6	30'-1"	—
m1(E)	30	#5	4'-0"	—
m2(E)	24	#6	6'-2"	—
m3(E)	12	#6	1'-8"	—
s(E)	60	#5	11'-6"	□
s1(E)	160	#5	5'-3"	□
Concrete Superstructure			Cu. Yd.	93.6
Bridge Deck Grooving			Sq. Yd.	247
Protective Coat			Sq. Yd.	290
Reinforcement Bars, Epoxy Coated			Pound	17,400

FILE NAME = 148207-ht-bridgedgn  
 3085 STEVENSON DRIVE, SUITE 201  
 SPRINGFIELD, ILLINOIS 62703  
 217.546.3400 www.hlr-engineering.com  
 184.000009  
 ILLINOIS PROFESSIONAL DESIGN FIRM  
 L57PE/BE CORPORATION

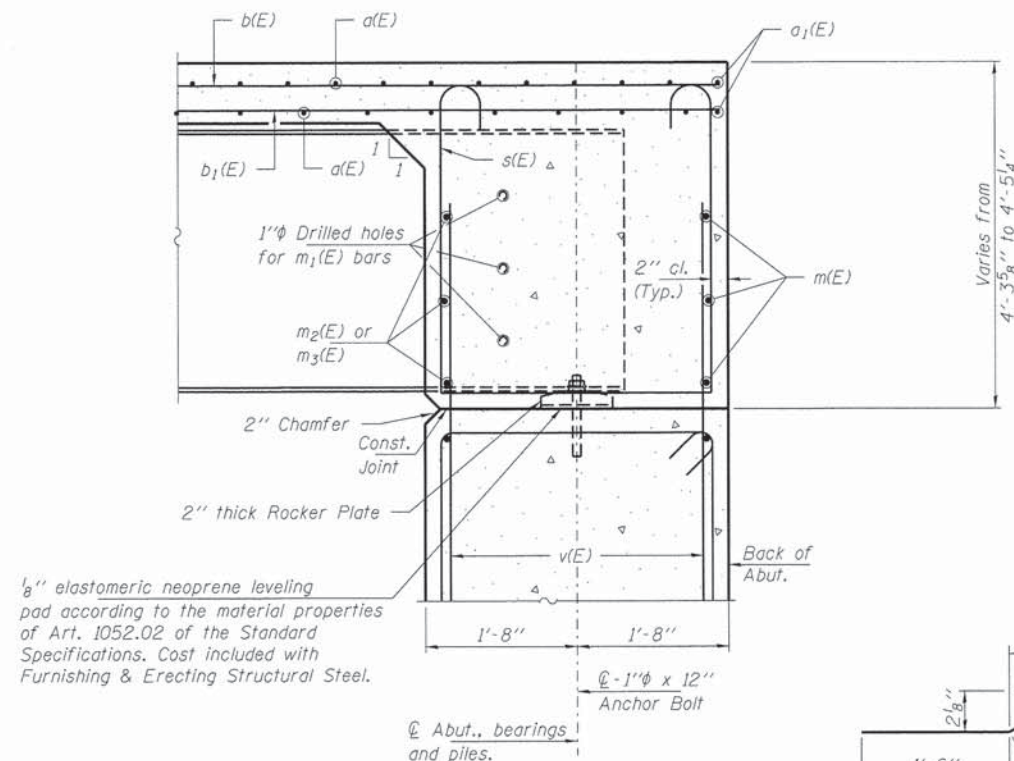
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 CHECKED - D.W.T.  
 DRAWN - D.A.B.  
 CHECKED - S.W.M.  
 PLOT SCALE =  
 PLOT DATE = 10/22/2015

DESIGNED - T.J.A.  
 CHECKED - D.W.T.  
 DRAWN - D.A.B.  
 CHECKED - S.W.M.  
 REVISED -  
 REVISED -  
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 REVISED -

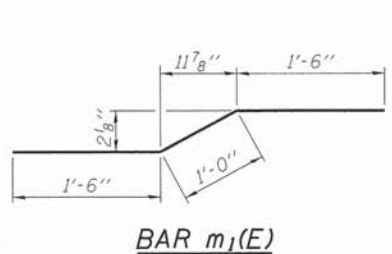
STATE OF ILLINOIS  
 VERMILION COUNTY HIGHWAY DEPARTMENT

SUPERSTRUCTURE  
 STRUCTURE NO. 092-3528  
 SHEET NO. 5 OF 15 SHEETS

F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	13-00202-00-BR	VERMILION	35	12
COLLISION BRIDGE			CONTRACT NO. 91527	
ILLINOIS FED. AID PROJECT BRS-03311201				

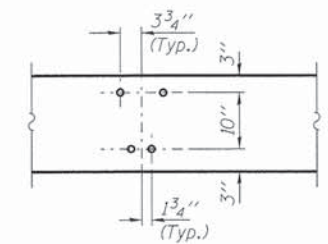


**SECTION A-A**  
Dimensions at right angles to abutment, except as shown.



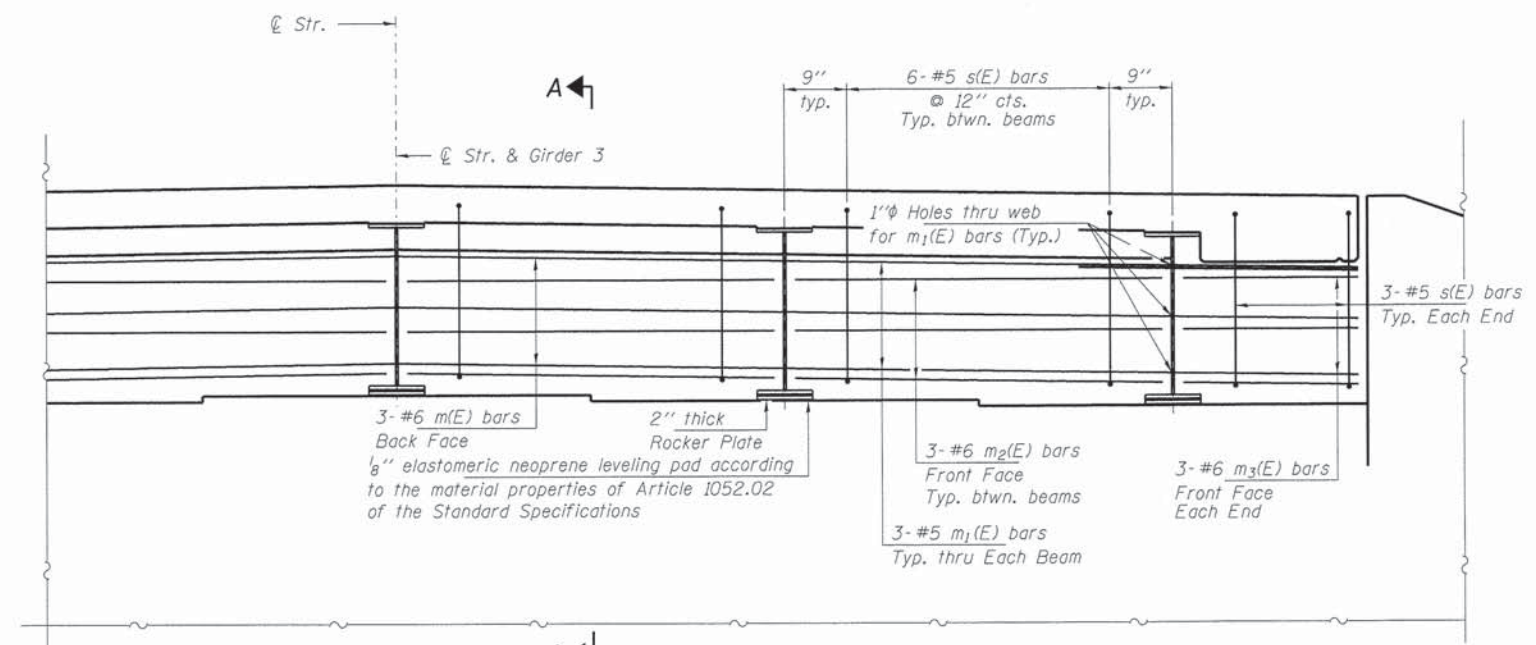
**BAR m<sub>1</sub>(E)**

**BAR s<sub>1</sub>(E)**



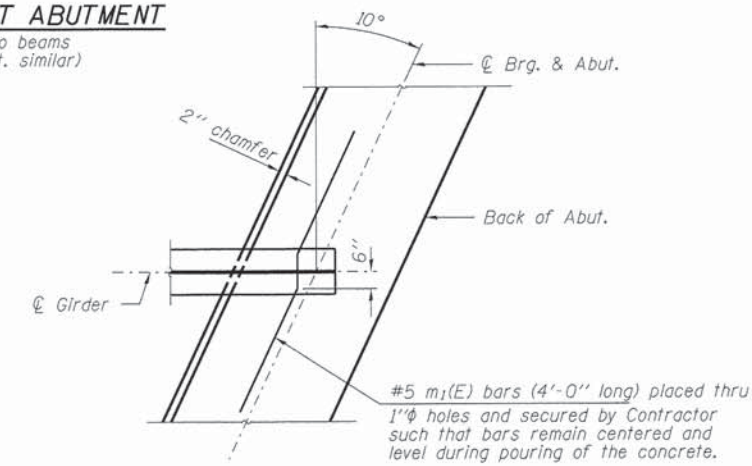
**DETAIL A**

**Notes:**  
Reinforcement bars in diaphragm are billed with Superstructure on sheet 5 of 15.  
Concrete in diaphragm is included with Concrete Superstructure on sheet 5 of 15.  
The s(E) bars shall be placed parallel to the beams.  
Spacing for these bars shall be at right angles to the beams.



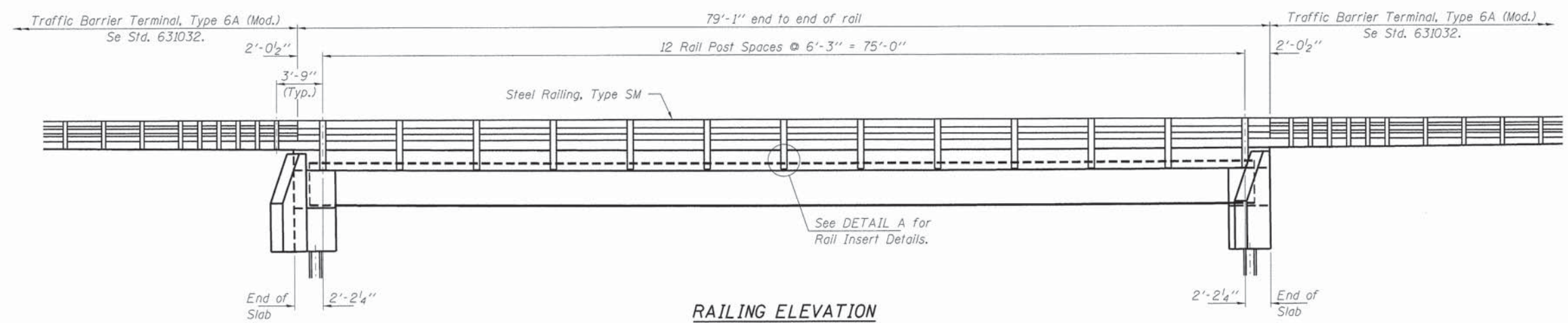
**DIAPHRAGM ELEVATION AT ABUTMENT**

Dimensions at right angles to beams  
(West Abut. shown, East Abut. similar)



**PLAN**

(Showing bottom flange of beam)



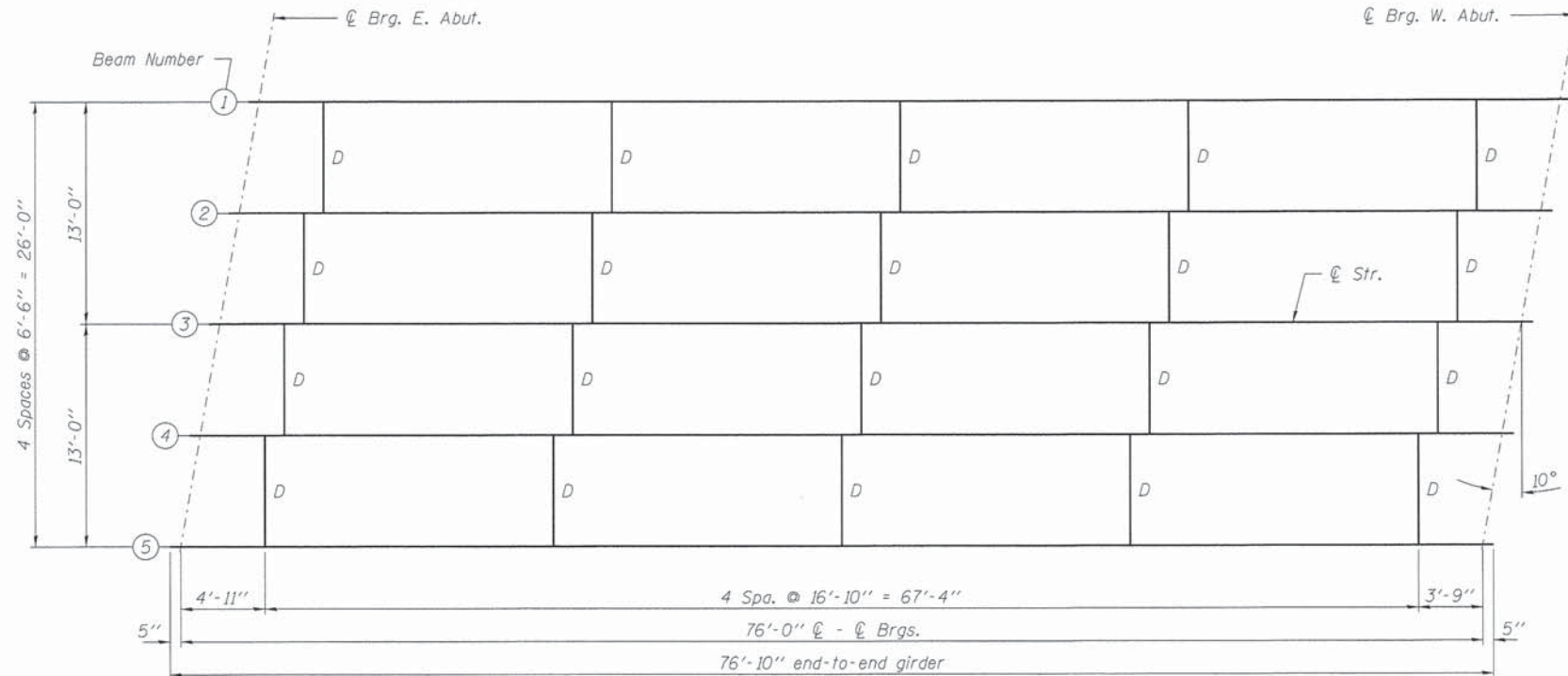
**RAILING ELEVATION**

Showing Rail Post Spaces

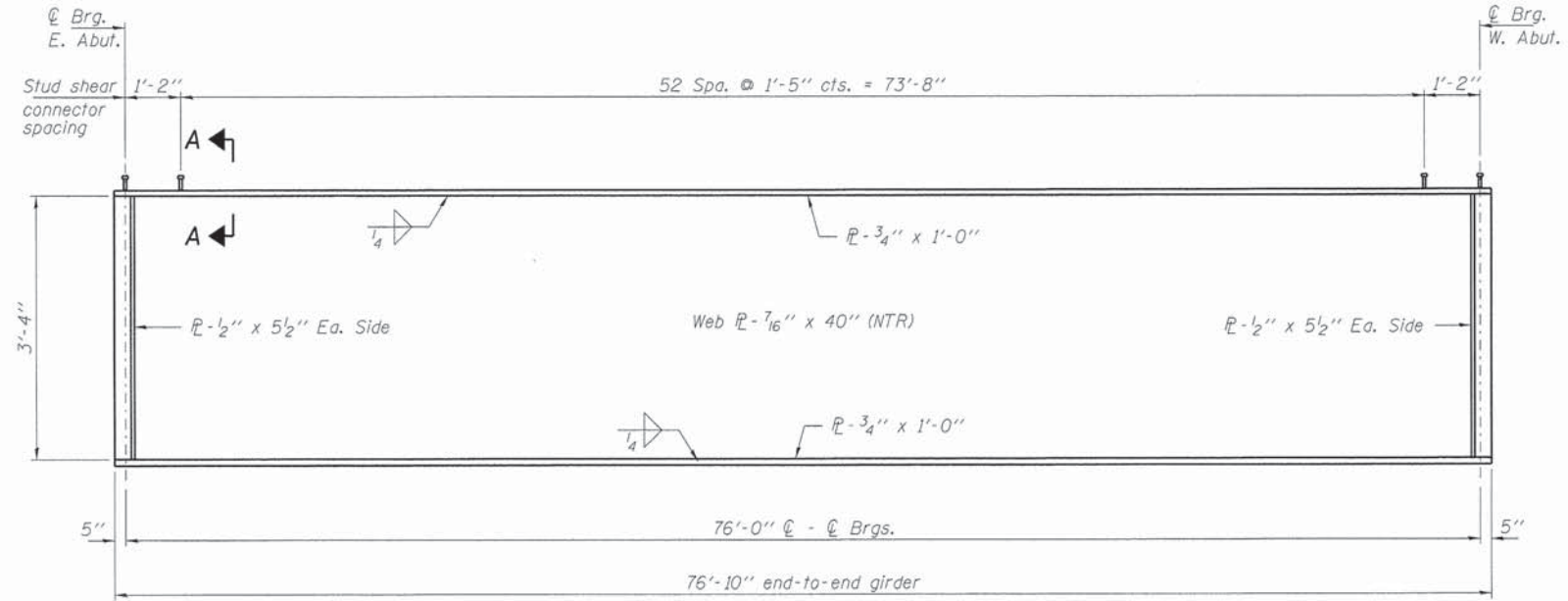
See sheet 7 of 15 for Railing Details.

FILE NAME = 140007-sh1-br1.dgn	USER NAME =	DESIGNED - T.J.A.	REVISED -	<b>STATE OF ILLINOIS VERMILION COUNTY HIGHWAY DEPARTMENT</b>	<b>SUPERSTRUCTURE DETAILS STRUCTURE NO. 092-3528</b>	F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 217.546.3400 www.jhlengineering.com	PLOT SCALE =	CHECKED - D.W.T.	REVISED -			331	13-00202-00-BR	VERMILION	35	13	
184.00099 ILLINOIS PROFESSIONAL DESIGN FIRM L.L.P. / S.E. CORPORATION	PLOT DATE = 10/22/2015	DRAWN - D.A.B.	REVISED -			COLLISION BRIDGE		CONTRACT NO. 91527		ILLINOIS FED. AID PROJECT BRS-03311201	
						SHEET NO. 6 OF 15 SHEETS					

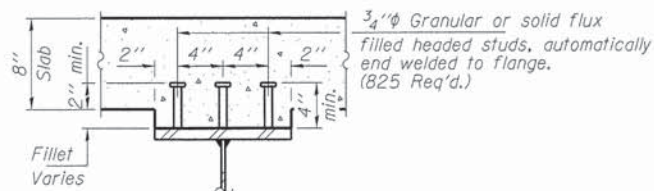




**FRAMING PLAN**



**GIRDER ELEVATION**



**SECTION A-A**

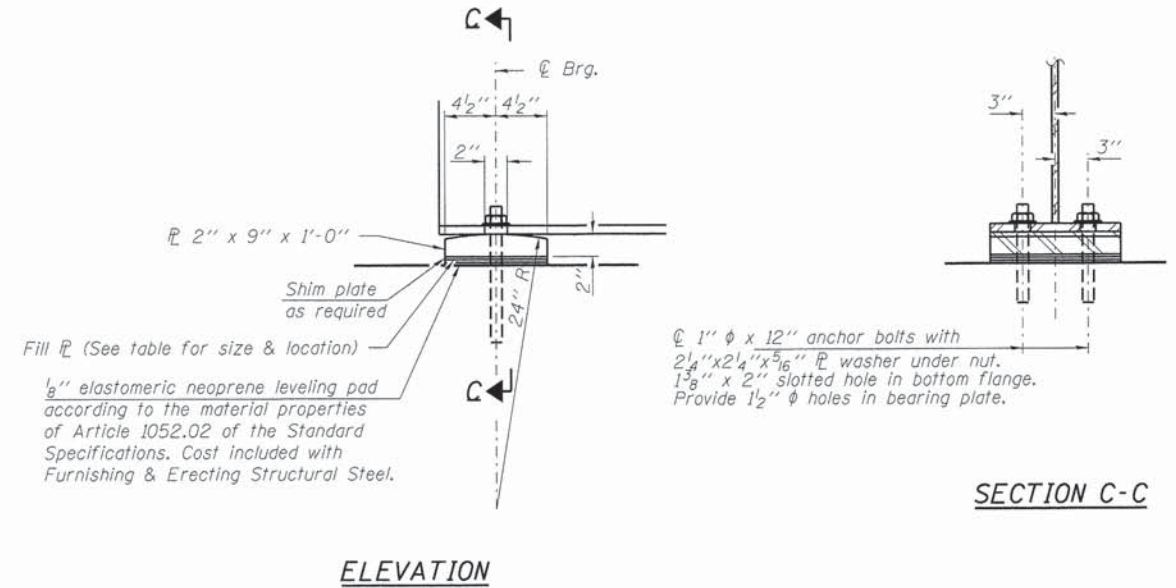
**Notes:**  
 Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.  
 All girders and splices, including bearing stiffeners and diaphragms shall be AASHTO M270, Grade 50W.  
 For additional structural steel details see sheets 9 & 10 of 15.  
 All cross frames and diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.

Location	℄ Brg. E. Abut.	℄ Brg. W. Abut.
BEAM 1	669.83	669.17
BEAM 2	669.99	669.31
BEAM 3	670.14	669.45
BEAM 4	670.02	669.32
BEAM 5	669.90	669.19

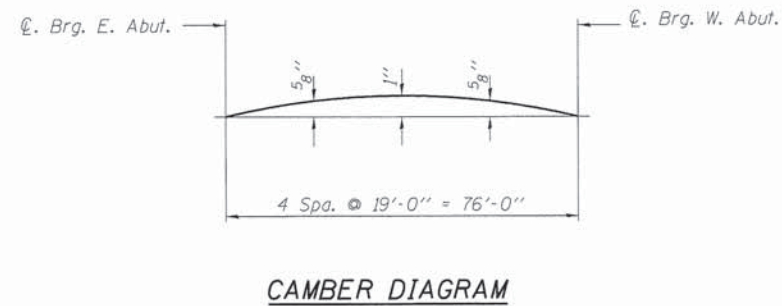
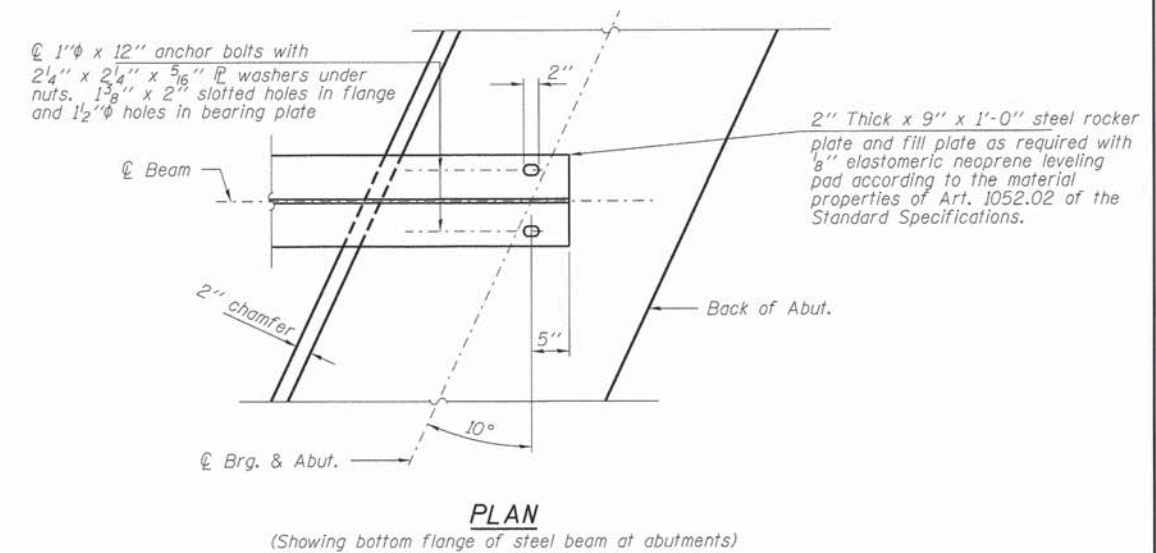
**TOP OF BEAM ELEVATIONS**  
 (For fabrication only)  
 (Does not include Dead Load Deflections)







**FIXED BEARING AT ABUTMENT**  
(10 required)

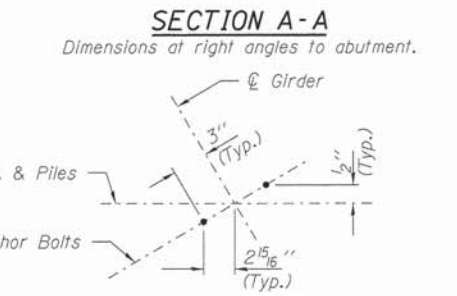
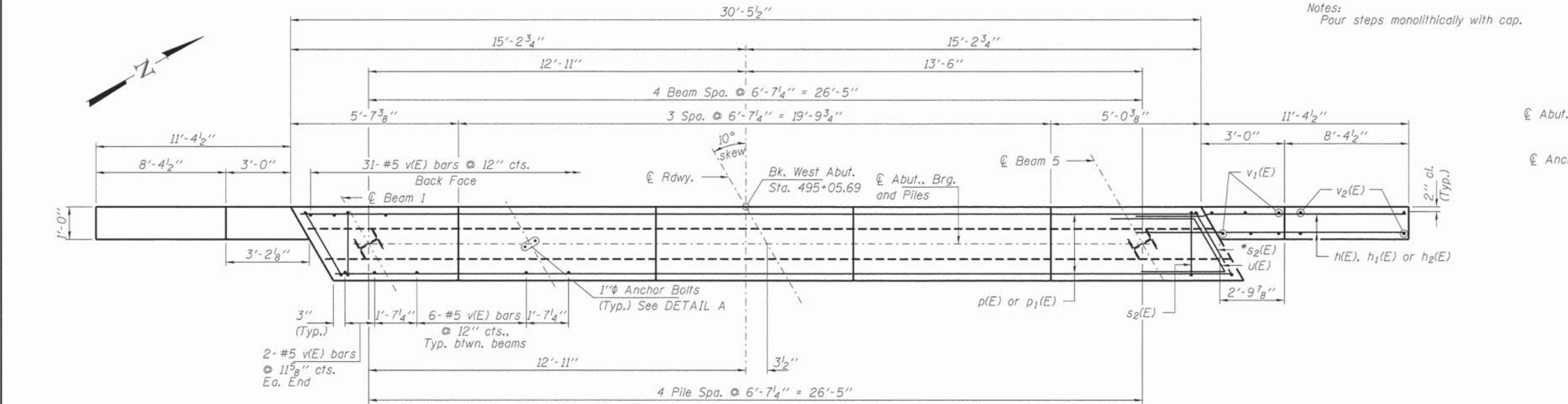
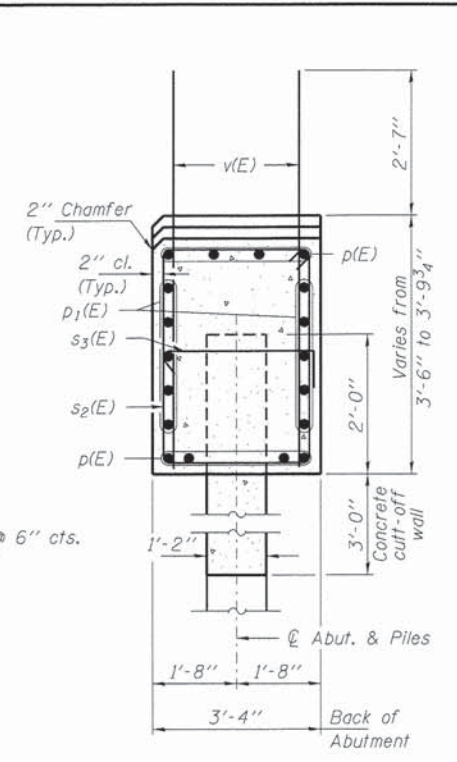
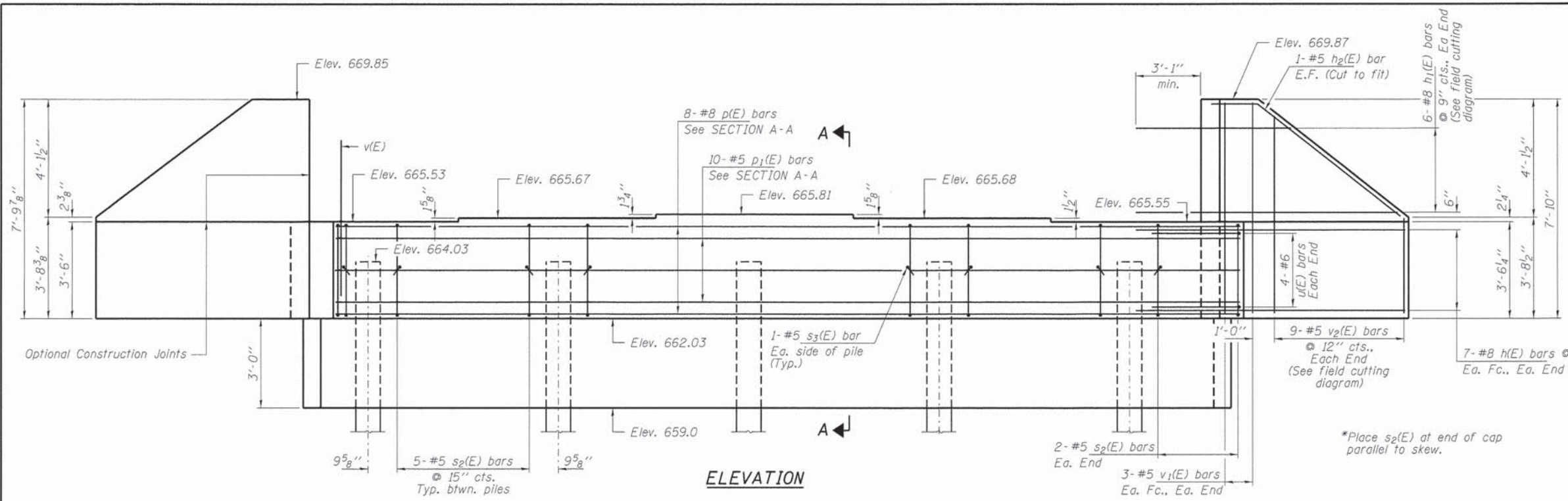


**Notes:**  
 Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.  
 Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy = 36 ksi). 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.  
 All steel plates of the bearing assembly shall be M270 Grade 50W.

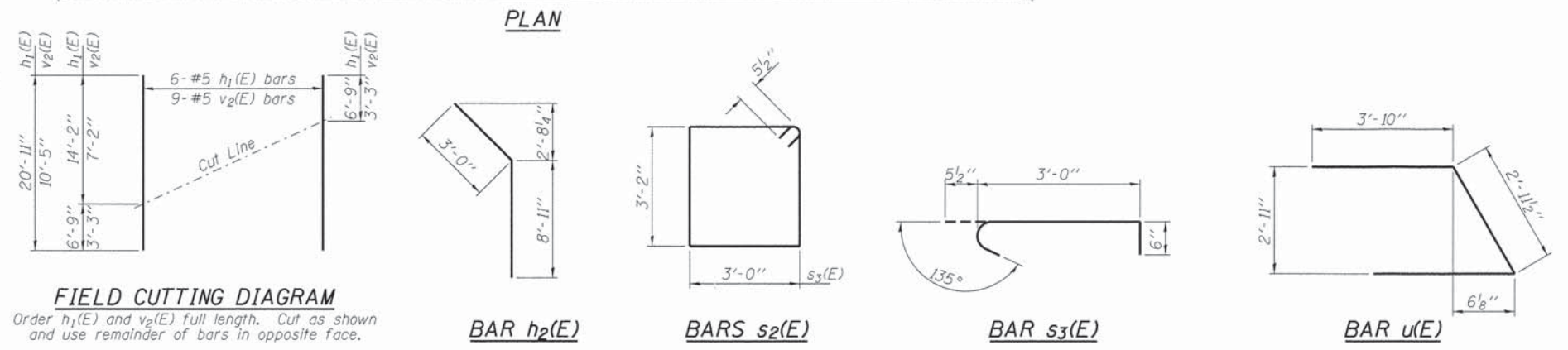
**BILL OF MATERIAL**

Item	Unit	Quantity
Anchor bolts, 1"	Each	20





**PILE DATA**  
 Type: Steel HP12x53  
 Nominal Required Bearing: 304 Kips/pile  
 Factored Resistance Available: 167 Kips/pile  
 Est. Length: 100  
 No. Production Piles: 4  
 No. Test Piles: 1



AI-2440-L 8-31-12

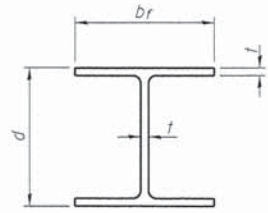
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3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 217-545-3400 www.jtkengineering.com	PLOT SCALE =	CHECKED - D.W.T.	REVISED -
184-000959 ILLINOIS PROFESSIONAL DESIGN FIRM L.L.P. / S.E. CORPORATION	PLOT DATE = 10/22/2015	DRAWN - D.A.B.	REVISED -
		CHECKED - S.W.M.	REVISED -

DESIGNED - T.J.A.	REVISED -
CHECKED - D.W.T.	REVISED -
DRAWN - D.A.B.	REVISED -
CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS  
 VERMILION COUNTY HIGHWAY DEPARTMENT

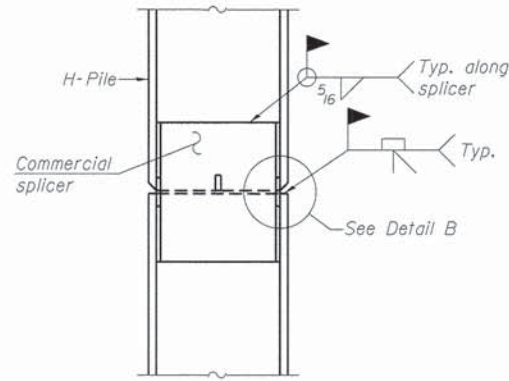
WEST ABUTMENT  
 STRUCTURE NO. 092-3528  
 SHEET NO. 12 OF 15 SHEETS

F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	13-00202-00-BR	VERMILION	35	19
COLLISION BRIDGE			CONTRACT NO. 91527	
ILLINOIS FED. AID PROJECT BR5-03311201				

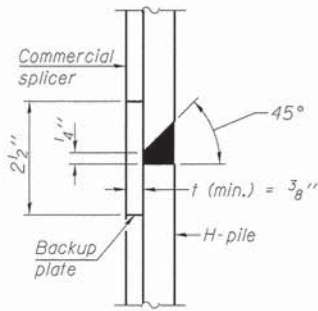


**STEEL PILE TABLE**

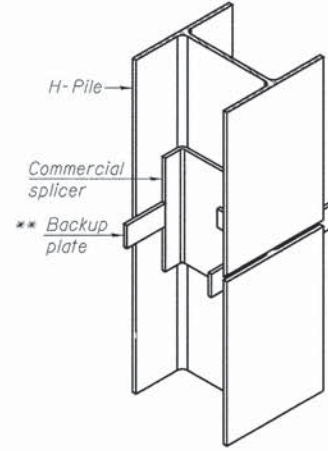
Designation	Depth d	Flange width br	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	1 3/16"	30"
x102	14"	14 3/4"	1 1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1 1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"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



**ELEVATION**

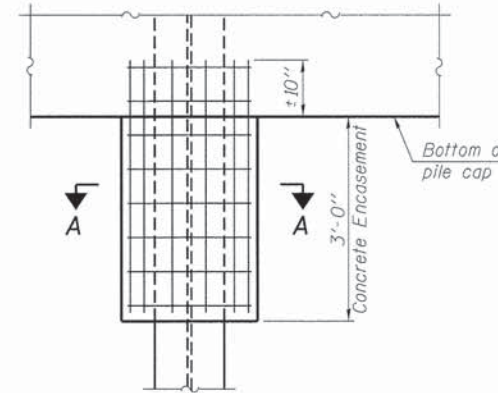


**DETAIL "B"**



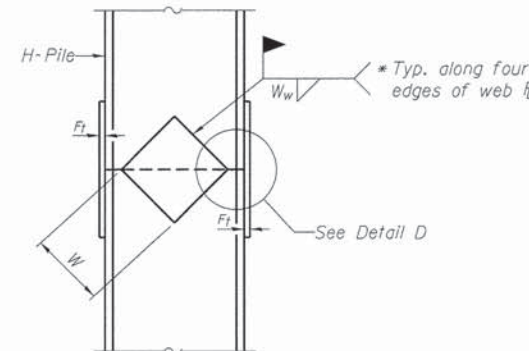
**ISOMETRIC VIEW**

**WELDED COMMERCIAL SPLICE**

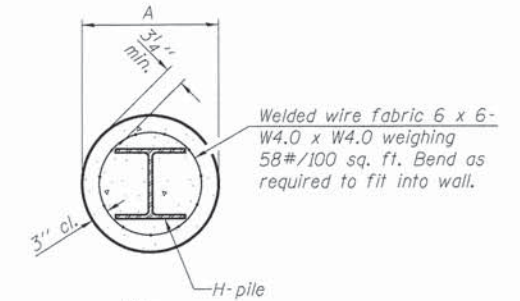


**ELEVATION**

**PILE ENCASEMENT**

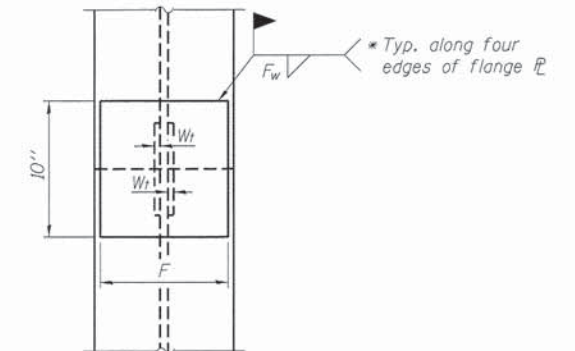


**ELEVATION**

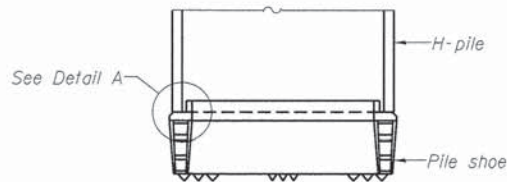


**SECTION A-A**

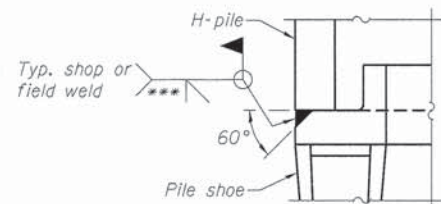
Note:  
Forms for encasement may be omitted when soil conditions permit.



**END VIEW**

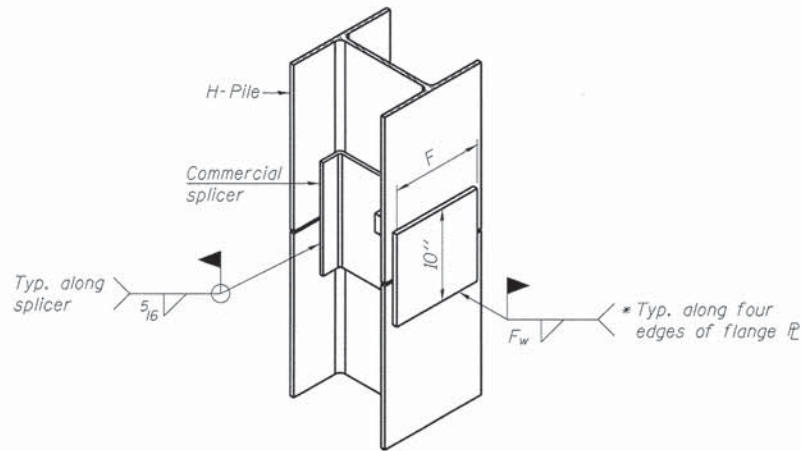


**ELEVATION**



**DETAIL A**

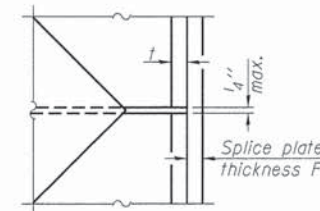
**H-PILE SHOE ATTACHMENT**



**ISOMETRIC VIEW**

**WELDED COMMERCIAL SPLICE ALTERNATE**

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



**DETAIL D**

**WELDED PLATE FIELD SPLICE**

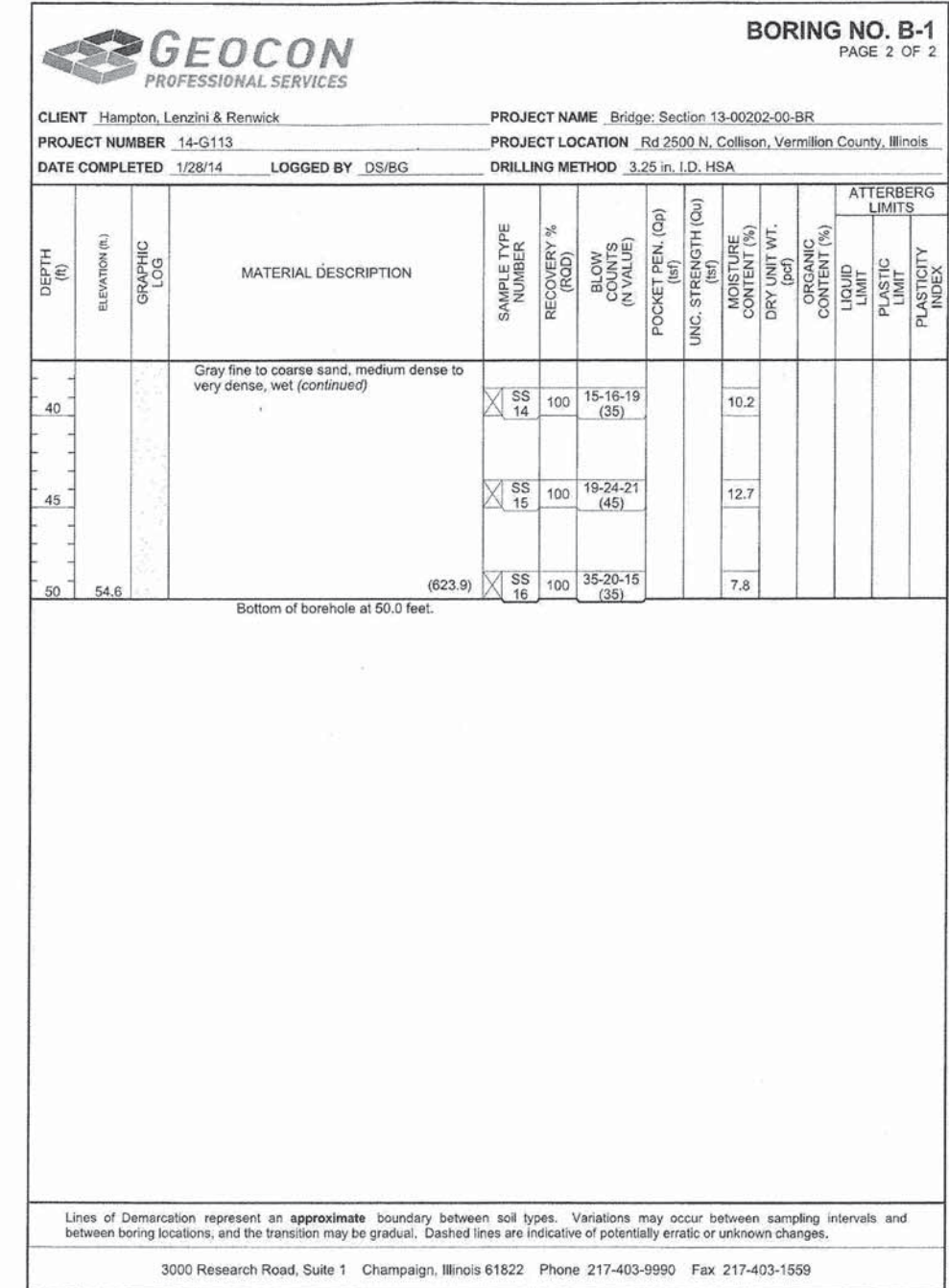
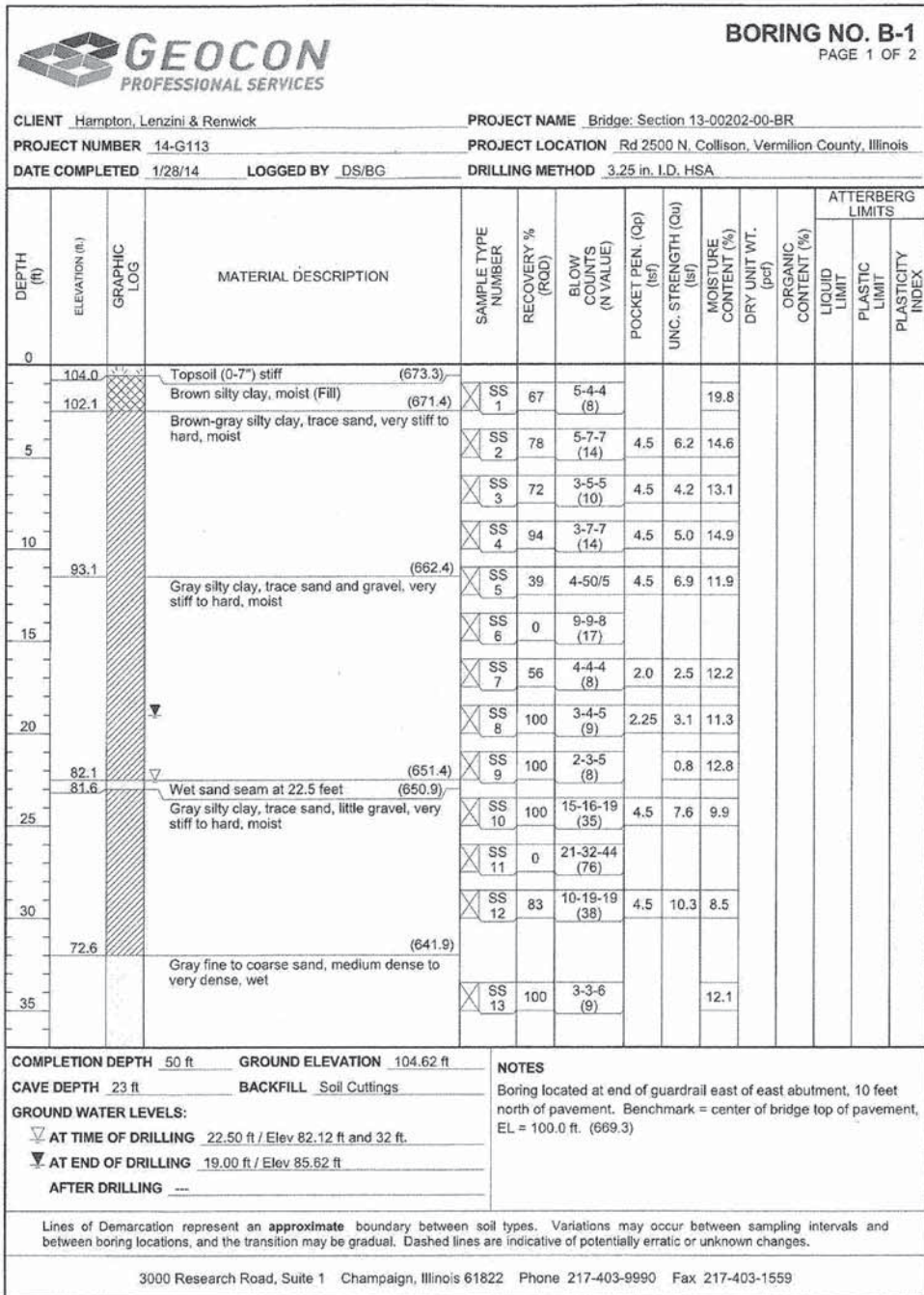
Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	1/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"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

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

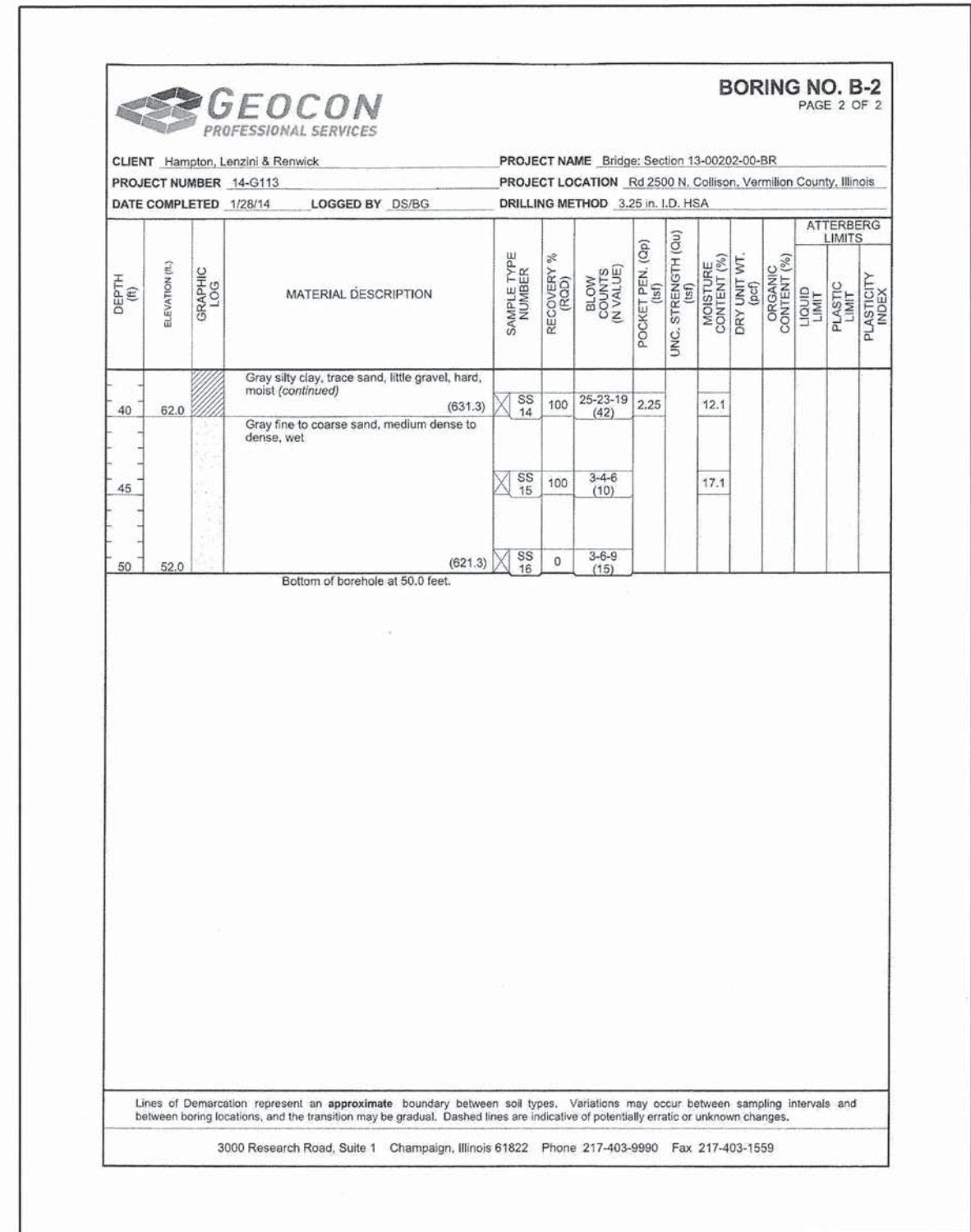
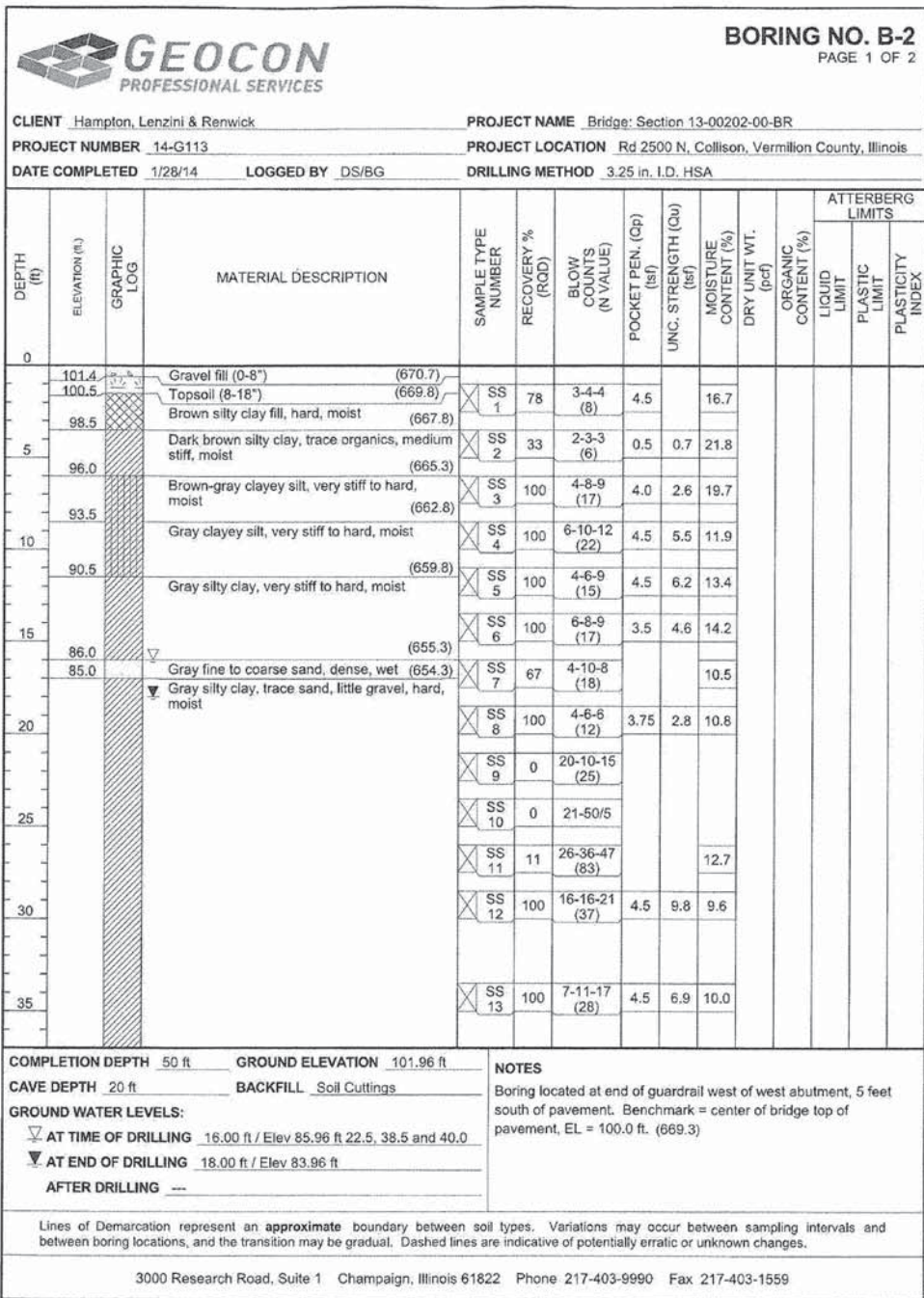
F-HP

1-27-12

FILE NAME = 140207-sh1-brdgedg.dgn	USER NAME =	DESIGNED - T.J.A.	REVISED -	<b>STATE OF ILLINOIS VERMILION COUNTY HIGHWAY DEPARTMENT</b>	<b>HP PILE DETAILS STRUCTURE NO. 092-3528</b>	F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
3285 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 217.545.3450 www.jhrengineering.com		CHECKED - D.W.T.	REVISED -			331	13-00202-00-BR	VERMILION	35	20	
184.000959	PLOT SCALE =	DRAWN - D.A.B.	REVISED -			COLLISION BRIDGE		CONTRACT NO. 91527			
ILLINOIS PROFESSIONAL DESIGN FIRM L.L.P. / S.E. CORPORATION	PLOT DATE = 10/22/2015	CHECKED - S.W.M.	REVISED -			SHEET NO. 13 OF 15 SHEETS					
						ILLINOIS FED. AID PROJECT BRS-03311201					



BORING B-1

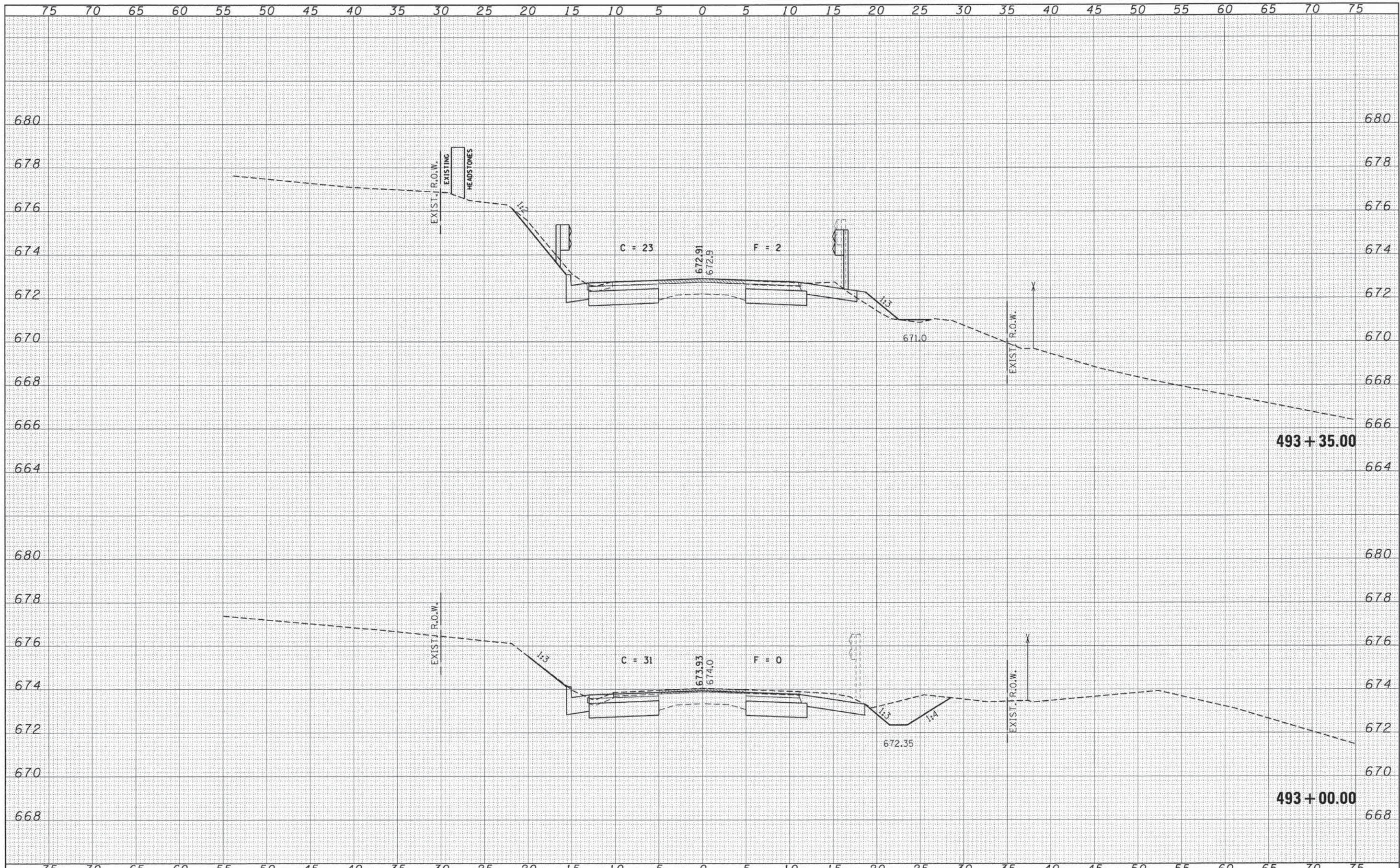


BORING B-2



DATE	
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DESIGNED	
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DATE	
FILE NAME	
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DESIGNED	
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DATE	
FILE NAME	
USER NAME	
DESIGNED	
DRAWN	
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DATE	



FILE NAME = 140007-sht-sxs.dgn	USER NAME =	DESIGNED - J.W.F.	REVISED -	<b>STATE OF ILLINOIS</b> <b>VERMILION COUNTY HIGHWAY DEPARTMENT</b>	<b>STATION CROSS SECTIONS</b> <b>F.A.S. 331 / C.H. 21 / WALNUT AVE.</b>		F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC.		DRAWN - T.W.K.	REVISED -		331	13-00202-00-BR	VERMILION	35	24		
1808 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62783	PLOT SCALE =	CHECKED - S.W.M.	REVISED -		COLLISION BRIDGE		CONTRACT NO. 91527				
ILLINOIS PROFESSIONAL DESIGN FIRM L3 / PE / SE CORP. 184-000089	PLOT DATE = 10/22/2015	DATE - 10/22/15	REVISED -		SCALE: 5H:2V		SHEET NO. 2 OF 13 SHEETS		STA. 493+00.00 TO STA. 493+35.00	ILLINOIS FED. AID PROJECT BR5-03311201	



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

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



FILE NAME = 140207-sh1-axs.dgn  
 HAMPSON, LENZINI AND RENWICK, INC.  
 388 STEVENSON DRIVE, SUITE 201  
 SPRINGFIELD, ILLINOIS 62703  
 ILLINOIS PROFESSIONAL DESIGN FIRM  
 LEI FEE REG. CORP. 14-020693

USER NAME =  
 DESIGNED - J.W.F.  
 DRAWN - T.W.K.  
 CHECKED - S.W.M.  
 DATE - 10/22/15  
 PLOT SCALE =  
 PLOT DATE = 10/22/2015

DESIGNED - J.W.F.  
 DRAWN - T.W.K.  
 CHECKED - S.W.M.  
 DATE - 10/22/15  
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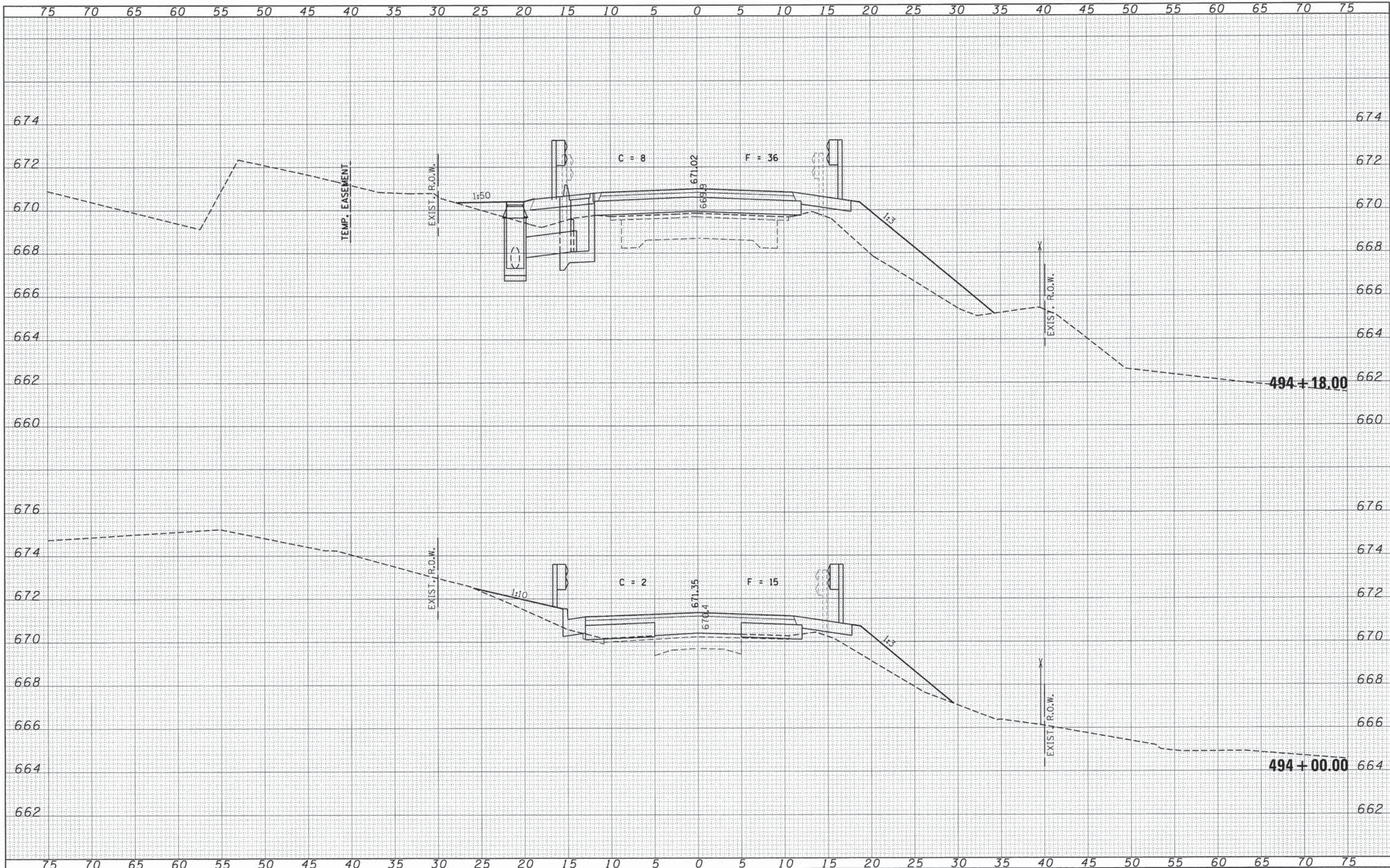
STATE OF ILLINOIS  
 VERMILION COUNTY HIGHWAY DEPARTMENT

STATION CROSS SECTIONS  
 F.A.S. 331 / C.H. 21 / WALNUT AVE.  
 SCALE: 5H:2V  
 SHEET NO. 3 OF 13 SHEETS  
 STA. 493+50.00 TO STA. 493+75.00

F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	13-00202-00-BR	VERMILION	35	25
COLLISON BRIDGE			CONTRACT NO. 91527	
ILLINOIS FED. AID PROJECT BRS-03310201				

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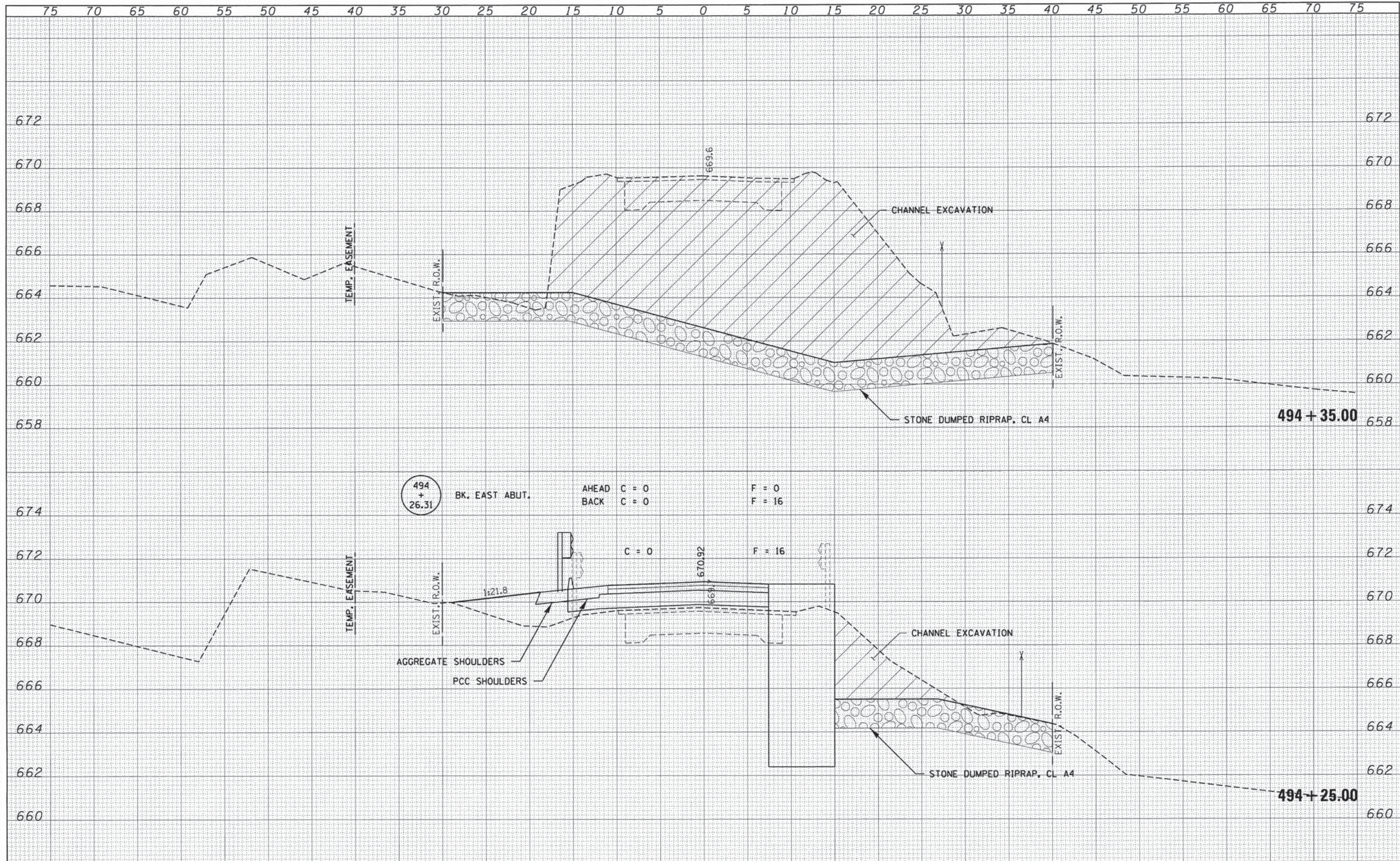
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FILE NAME = 148007-ahf-sws.dgn	USER NAME =	DESIGNED - J.W.F.	REVISED -	<b>STATE OF ILLINOIS</b> <b>VERMILION COUNTY HIGHWAY DEPARTMENT</b>	<b>STATION CROSS SECTIONS</b>			F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
<b>HAMPTON, LENZINI AND RENWICK, INC.</b> <small>308 STEVENSON DRIVE, SUITE 201          SPRINGFIELD, ILLINOIS 62763</small>		DRAWN - T.W.K.	REVISED -		331	13-00202-00-BR	VERMILION	35	26			
<b>ILLINOIS PROFESSIONAL DESIGN FIRM</b> <small>LL / PE / SE CORP. 184-000889</small>		CHECKED - S.W.M.	REVISED -		COLLISON BRIDGE			CONTRACT NO. 91527				
PLOT SCALE =		DATE - 10/22/15	REVISED -		SCALE: 5H:2V			SHEET NO. 4 OF 13 SHEETS STA. 494+00.00 TO STA. 494+20.00				
PLOT DATE = 10/22/2015								ILLINOIS FED. AID PROJECT BR5-03311201				

DATE	
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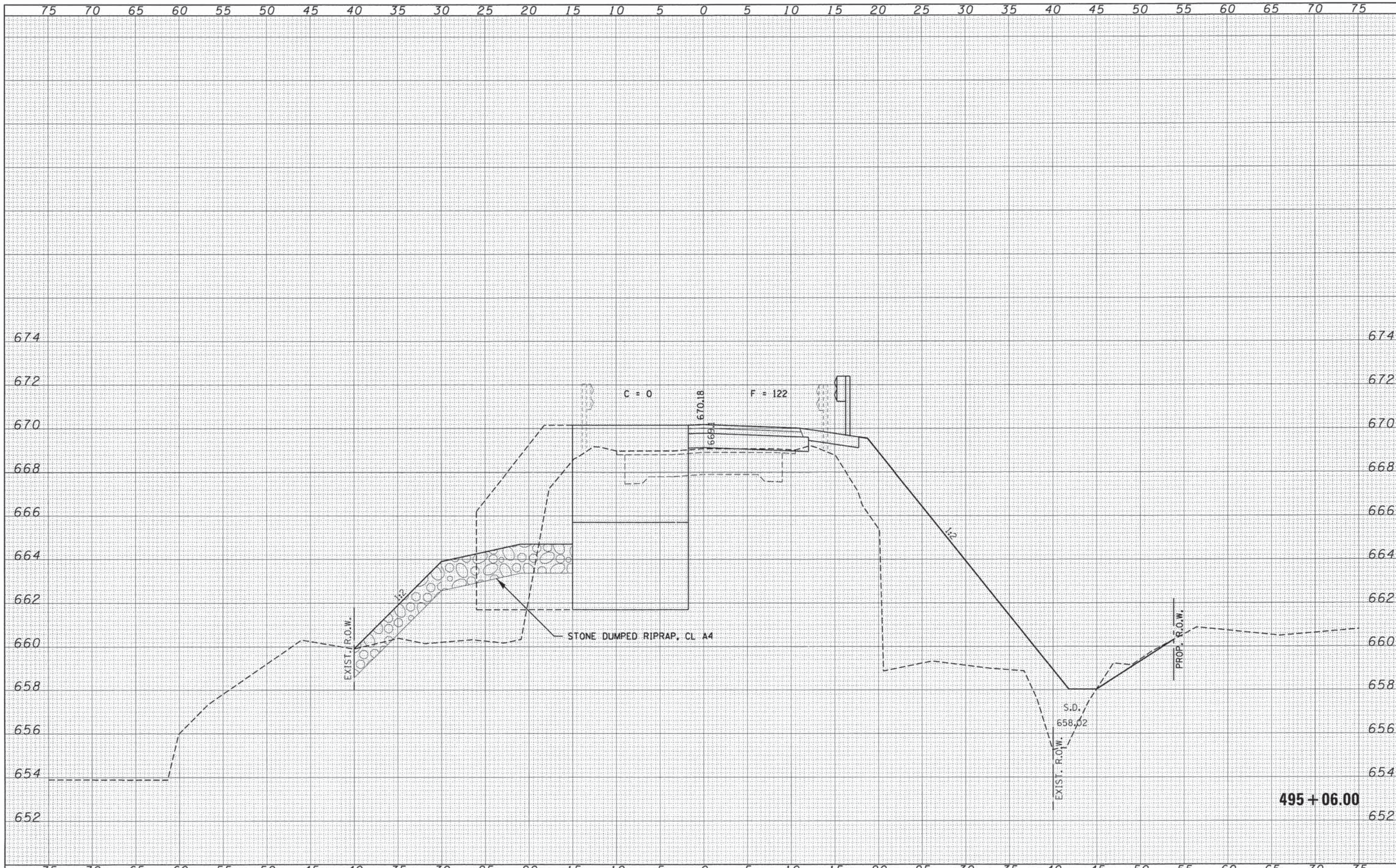
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ORIGINAL SURVEY	
NOTE BOOK	
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FILE NAME = 142007-sh1-sss.dgn	USER NAME =	DESIGNED - J.W.F.	REVISED -	<b>STATE OF ILLINOIS</b> <b>VERMILION COUNTY HIGHWAY DEPARTMENT</b>				<b>STATION CROSS SECTIONS</b> <b>F.A.S. 331 / C.H. 21 / WALNUT AVE.</b>				F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
<b>HAMPTON, LENZINI AND RENWICK, INC.</b> <small>300 STEVENSON DRIVE, SUITE 201          SPRINGFIELD, ILLINOIS 62761</small> <small>ILLINOIS PROFESSIONAL DESIGN FIRM          L.S./P.E. CORP. 184-009989</small>	PLOT SCALE = PLOT DATE = 10/22/2015	DRAWN - T.W.K. CHECKED - S.W.M. DATE - 10/22/15	REVISED - REVISED - REVISED - REVISED -					SCALE: 5H:2V	SHEET NO. 5 OF 13 SHEETS	STA. 494+25.00 TO STA. 494+35.00	331	13-00202-00-BR	VERMILION	35	27	COLLISION BRIDGE CONTRACT NO. 91527 <small>ILLINOIS FED. AID PROJECT BRS-033110201</small>







DATE	
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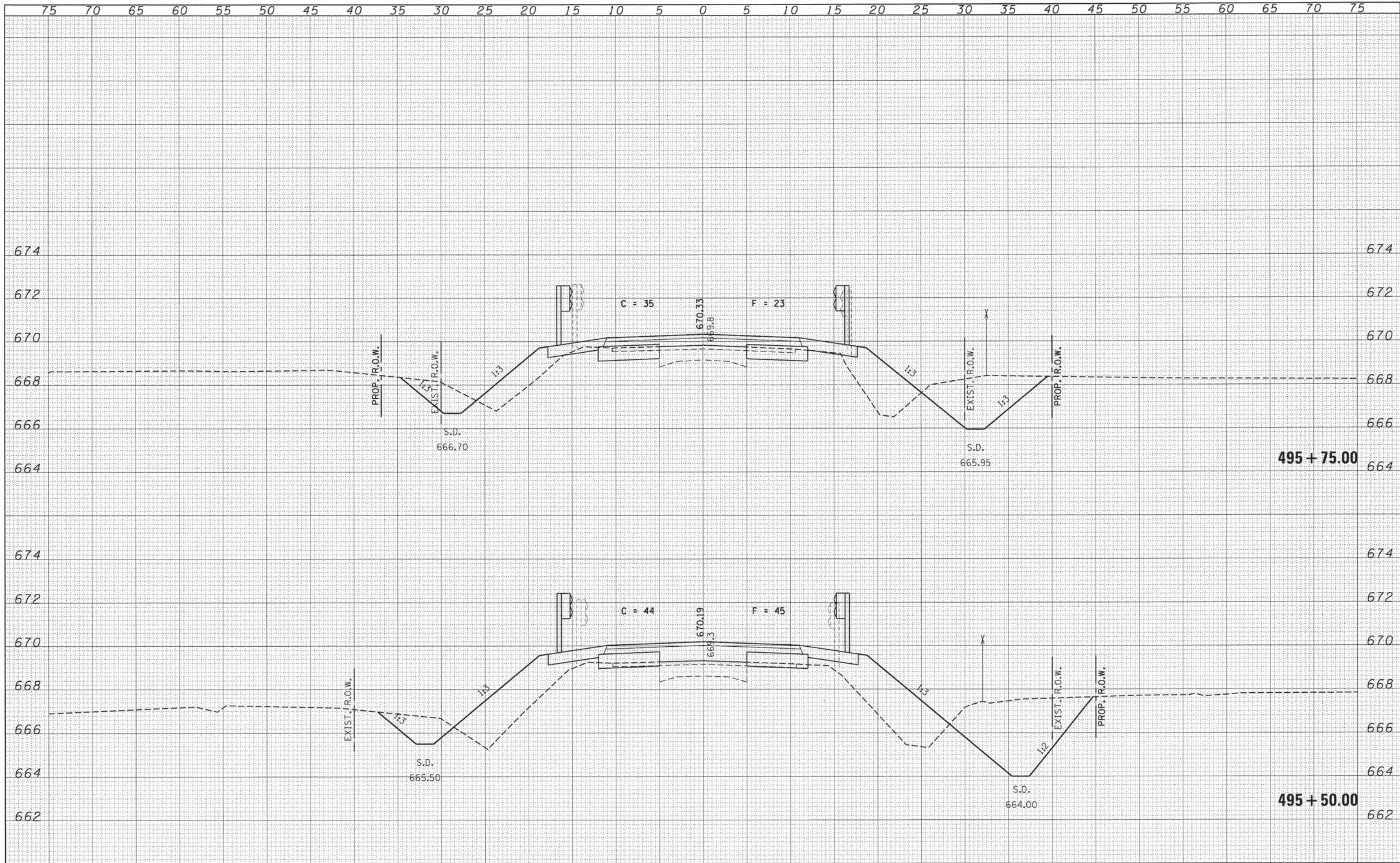
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HAMPTON, LENZINI AND RENWICK, INC. 3008 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62753 ILLINOIS PROFESSIONAL DESIGN FIRM 18 / PE / SE CORP. 184.000959		DRAWN - T.W.K.	REVISED -		331	13-00202-00-BR	VERMILION	35	30				
PLLOT SCALE =	CHECKED - S.W.M.	REVISED -			COLLISION BRIDGE				CONTRACT NO. 91527				
PLLOT DATE = 10/22/2015	DATE - 10/22/15	REVISED -			SCALE: 5H:2V				SHEET NO. 8 OF 13 SHEETS	STA. 495+06.00 TO STA. 495+06.00	ILLINOIS FED. AID PROJECT BRS-03311201		



DATE	
BY	
CONVERTED SURVEY	
NOTED	
TEMPLATE	
AREAS	
CHECKED	
FINAL SURVEY	
NOTE BOOK	
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DATE	
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NO.	



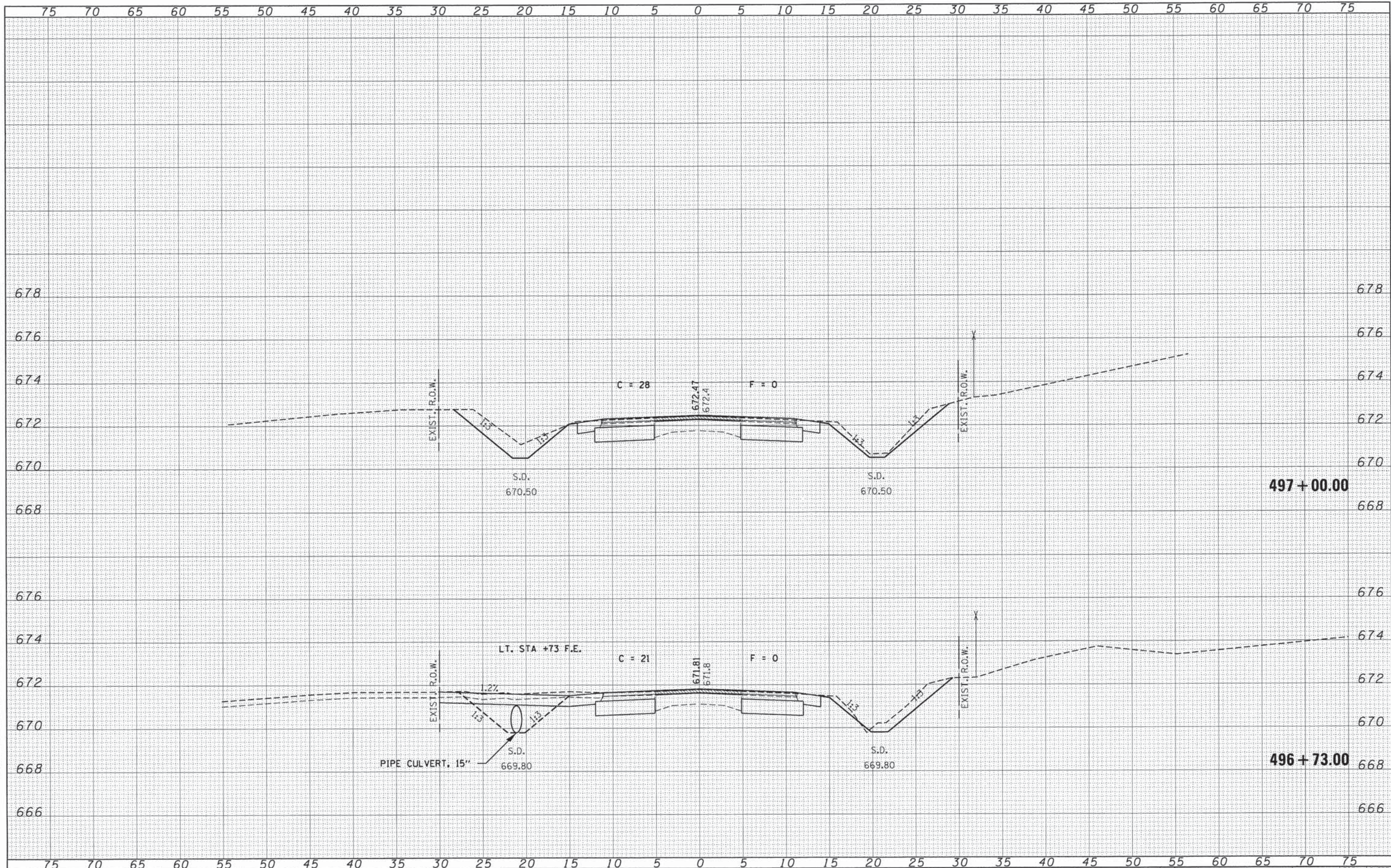
FILE NAME = 140007-sh1-sws.dgn	USER NAME =	DESIGNED - J.W.F.	REVISED -	<b>STATE OF ILLINOIS</b> <b>VERMILION COUNTY HIGHWAY DEPARTMENT</b>	<b>STATION CROSS SECTIONS</b> <b>F.A.S. 331 / C.H. 21 / WALNUT AVE.</b>		F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC.		DRAWN - T.W.K.	REVISED -		331	13-00202-00-BR	VERMILION	35	32		
1008 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62763		CHECKED - S.W.M.	REVISED -		COLLISION BRIDGE		CONTRACT NO. 91527				
ILLINOIS PROFESSIONAL DESIGN FIRM L3 / PE / SE CORP. 184-000093	PLOT SCALE =	DATE - 10/22/15	REVISED -		SCALE: 5H:2V	SHEET NO. 10 OF 13 SHEETS	STA. 495+50.00 TO STA. 495+75.00	ILLINOIS FED. AID PROJECT BR5-03311201			





DATE	
BY	
SURVEYED	
NOTE BOOK	
TEMP. PLATE	
AREAS	
CHECKED	
NO.	

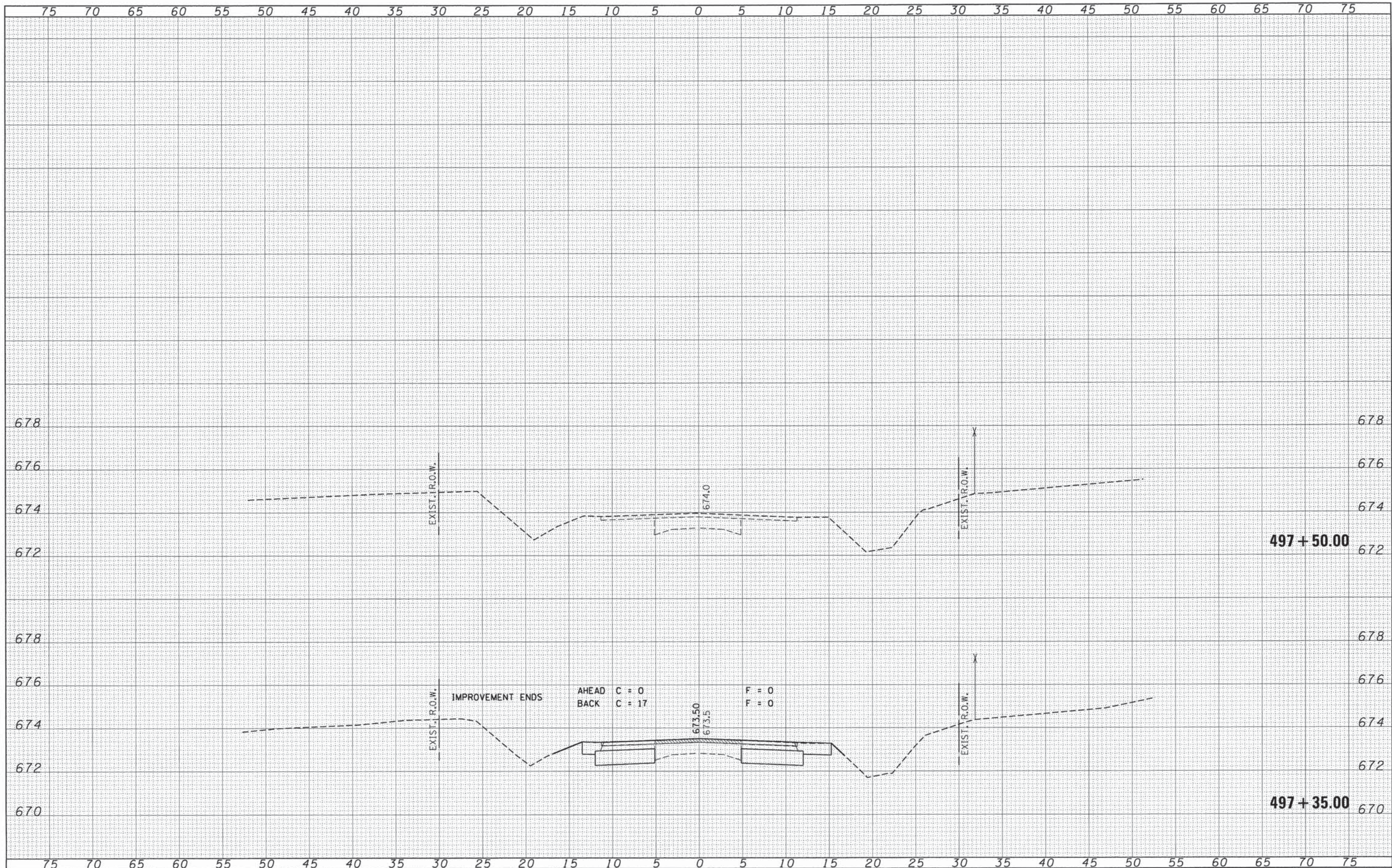
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BY	
SURVEYED	
NOTE BOOK	
TEMP. PLATE	
AREAS	
CHECKED	
NO.	



FILE NAME = 140207-sht-xxx.dgn	USER NAME =	DESIGNED - J.W.F.	REVISED -	<b>STATE OF ILLINOIS</b> <b>VERMILION COUNTY HIGHWAY DEPARTMENT</b>	<b>STATION CROSS SECTIONS</b> <b>F.A.S. 331 / C.H. 21 / WALNUT AVE.</b>		F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC.		DRAWN - T.W.K.	REVISED -		331	13-00202-00-BR	VERMILION	35	34		
300 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	CHECKED - S.W.M.	REVISED -		COLLISION BRIDGE				CONTRACT NO. 91527		
ILLINOIS PROFESSIONAL DESIGN FIRM L3 / PE / SE CORP. 184-000068	PLOT DATE = 10/22/2015	DATE - 10/22/15	REVISED -		SCALE: 5H:2V    SHEET NO. 12 OF 13 SHEETS    STA. 496+73.00 TO STA. 497+00.00		ILLINOIS FED. AID PROJECT BRS-0331(1201)				

DATE	
BY	
REVIEWED	
REVISIONS	
NO. DATE	
FINAL SURVEY	
NOTE BOOK	
TEMPLATE	
AREAS CHECKED	
NO.	

DATE	
BY	
REVIEWED	
REVISIONS	
NO. DATE	
ORIGINAL SURVEY	
NOTE BOOK	
TEMPLATE	
AREAS CHECKED	
NO.	



FILE NAME = 140207-sht-sss.dgn  
 HAMPTON, LENZINI AND RENWICK, INC.  
 3085 STEVENSON DRIVE, SUITE 201  
 SPRINGFIELD, ILLINOIS 62761  
 ILLINOIS PROFESSIONAL DESIGN FIRM  
 LS / PE / SE CORP. 184-000909

USER NAME =  
 DESIGNED - J.W.F.  
 DRAWN - T.W.K.  
 CHECKED - S.W.M.  
 DATE - 10/22/15  
 PLOT SCALE =  
 PLOT DATE = 10/22/2015

DESIGNED - J.W.F.  
 DRAWN - T.W.K.  
 CHECKED - S.W.M.  
 DATE - 10/22/15  
 REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

STATE OF ILLINOIS  
 VERMILION COUNTY HIGHWAY DEPARTMENT

STATION CROSS SECTIONS  
 F.A.S. 331 / C.H. 21 / WALNUT AVE.  
 SCALE: 5H:2V  
 SHEET NO. 13 OF 13 SHEETS  
 STA. 497+35.00 TO STA. 497+50.00

F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	13-00202-00-BR	VERMILION	35	35
COLLISION BRIDGE			CONTRACT NO. 91527	
ILLINOIS FED. AID PROJECT BR5-0331(20)				