

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 245A	15-06125-00-BR	LIVINGSTON	20	1
FED. ROAD DIST. NO.		ILLINOIS	CONTRACT NO. 87699	

**INDEX OF SHEETS**

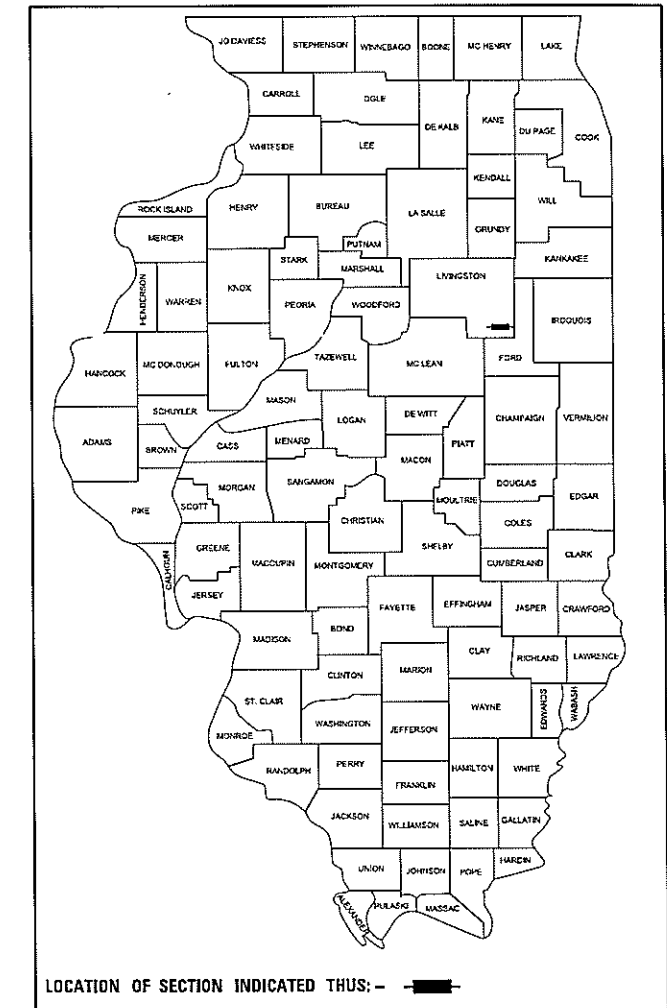
SHEET NO.	DESCRIPTION
1.	COVER SHEET
2.	SUMMARY OF QUANTITIES AND GENERAL NOTES
3.	TYPICAL CROSS SECTIONS
4.	PLAN AND PROFILE
5-11.	BRIDGE PLANS
12-13.	BURINGS
14-20.	STATION CROSS SECTIONS

HIGHWAY STANDARDS:

000001-07	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
515001-03	NAME PLATE FOR BRIDGES
701901-08	TRAFFIC CONTROL DEVICES
725001-01	OBJECT AND TERMINAL MARKERS
BLR 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

# PLANS FOR PROPOSED SURFACE TRANSPORTATION PROGRAM – BRIDGE

**PROJECT AAB6(087)  
SECTION 15-06125-00-BR  
CHATSWORTH ROAD DISTRICT  
LIVINGSTON COUNTY  
T.R. 245A / 400 N. ROAD  
PROPOSED STRUCTURE NO. 053-4221  
C-93-014-19  
BROWN BRIDGE**



**UTILITIES**

FRONTIER COMMUNICATIONS (NORTH)  
112 W. ELM ST.  
SYCAMORE, IL. 60178

CHICAP PIPELINE COMPANY  
3029 1600TH E. RD.  
CULLOM, IL. 60929

EASTERN ILLINI ELECTRIC COOP.  
330 W. OTTAWA ST.  
P.O. BOX 96  
PAXTON, IL. 60957

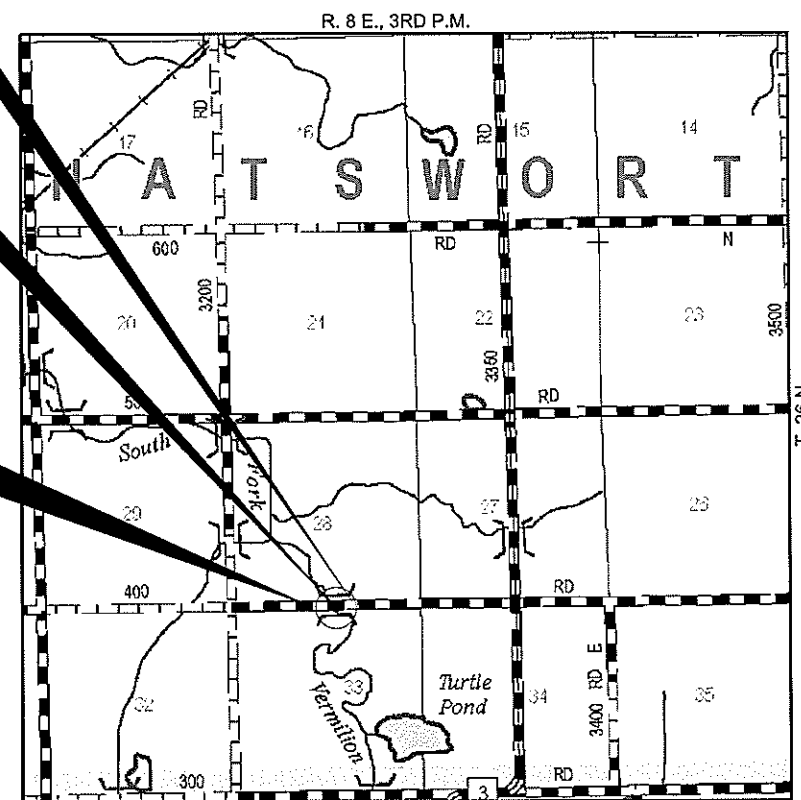
EXPLORER PIPELINE COMPANY  
1355 ROBBINS RD.  
HARTFORD, IL. 62048

BUCKEYE PARTNERS  
12920 BELL RD.  
LEMONT, IL. 60439

STA. 9+98  
PRECAST PRESTRESSED CONCRETE DECK BEAM  
BRIDGE. SINGLE SPAN @ 65'-0"  
27'-0" RDWY.; SKEW = 20°  
EXISTING STRUCTURE NO. 053-3375  
PROPOSED STRUCTURE NO. 053-4221

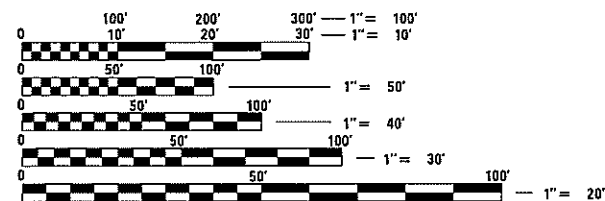
IMPROVEMENT ENDS  
STATION 12+00

IMPROVEMENT BEGINS  
STATION 8+00



LOCATION MAP

APPROXIMATE SCALE: 0 1/2 MILE  
NET LENGTH OF SECTION = 400 FEET = 0.076 MILES



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: LOCAL ROAD  
DESIGN SPEED: 30 MPH  
DESIGN TRAFFIC: 50 ADT



**WARNING**

**CALL 811 BEFORE YOU DIG**  
DIG NO: X1342562

**ILLINOIS DEPARTMENT OF TRANSPORTATION**

APPROVED 2-1-2019  
*Clay Metcalf*  
COUNTY ENGINEER

APPROVED 2-1-2019  
*Dash Melbott*  
TOWNSHIP COMMISSIONER

PASSED 2-7-2019  
*Dave RE*  
DISTRICT THREE ENGINEER OF LOCAL ROADS & STREETS

Releasing For Bid Based on Limited Review  
2-7-2019  
*Kevin Hankley*  
REGION TWO ENGINEER

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

DATE: 01/31/2019

**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

184.003959  
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION

EXPIRES: 11/30/2019 PROJECT NUMBER: 18.0138.130 DATE: 01/31/19

SUMMARY OF QUANTITIES			
CODE NO.	ITEM	CONSTRUCTION TYPE CODE 0010	
		UNIT	TOTAL
20200100	EARTH EXCAVATION	CU YD	295
20300100	CHANNEL EXCAVATION	CU YD	340
28100107	STONE RIPRAP, CLASS A4	SQ YD	314
28200200	FILTER FABRIC	SQ YD	314
35100100	AGGREGATE BASE COURSE, TYPE A	TON	561
40600275	BITUMINOUS MATERIALS (PRIME COAT)	POUND	1,723
40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	170
40603080	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	106
40603310	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50	TON	64
48101200	AGGREGATE SHOULDERS, TYPE B	TON	76
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	25.0
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	1,755
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	2,820
* 50900205	STEEL RAILING, TYPE S1	FOOT	127
51201400	FURNISHING STEEL PILES HP10X42	FOOT	585
51202305	DRIVING PILES	FOOT	585
51203400	TEST PILE STEEL HP10X42	EACH	1
51500100	NAME PLATES	EACH	1
* 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
67100100	MOBILIZATION	L SUM	1
X2070302	POROUS GRANULAR EMBANKMENT, SPECIAL	TON	80
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.3
Z0046304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	112

SEE SPECIAL PROVISIONS  
\* SPECIALTY ITEMS

EARTHWORK SUMMARY							
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.
TR 245A							
STA 8+00 TO STA 9+66.12	107		25.00%	100.00%	80	106	-26
STA 9+66.12 TO STA 10+29.88		340	25.00%	70.00%	179		179
STA 10+29.88 TO STA 12+00	186		25.00%	100.00%	140	41	99
TOTAL	293	340			399	147	252
USE	295	340					250

WASTE 250 CU YDS

**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", (HEREIN AFTER REFERRED TO AS THE STANDARD SPECIFICATIONS; THE "SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS" ADOPTED JANUARY 1, 2019; THE LATEST EDITION OF THE "ILLINOIS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS"; THE DETAILS IN THE PLANS AND THE "SPECIAL PROVISIONS" INCLUDED IN THE DOCUMENTS.
- ALL CLEARING, GRUBBING, FENCE REMOVAL, PAVEMENT REMOVAL, AND REMOVAL OF EXISTING DRAINAGE STRUCTURES SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION. ALL BITUMINOUS MATERIAL SHALL BE REMOVED AND PROPERLY DISPOSED OF BY THE CONTRACTOR IN A METHOD APPROVED BY THE ENGINEER. REMOVAL AND DISPOSAL OF BITUMINOUS MATERIAL SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- 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.
- ANY REFERENCE TO STANDARDS THROUGHOUT THE PLANS OR SPECIAL PROVISIONS SHALL BE INTERPRETED TO BE THE LATEST STANDARD OF THE DEPARTMENT.
- THE LOCATION ON THE PLANS OF EXISTING DRAINAGE STRUCTURES, TELEPHONE LINES, ELECTRIC LINES, WATER SERVICE LINES, GAS MAINS, AND OTHER UTILITY FACILITIES AS SHOWN ON THE PLANS ARE BASED ON 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.
- THE CONTRACTOR SHALL PROVIDE ACCESS TO ADJACENT PROPERTY AT ALL TIMES DURING CONSTRUCTION OF THE PROJECT.
- THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES
 

AGGREGATE BASE COURSE	2.05 TON/CU YD
HOT MIX ASPHALT	112 LBS/SQ YD/INCH THICKNESS
POROUS GRANULAR EMBANKMENT	2.0 TON/CU YD

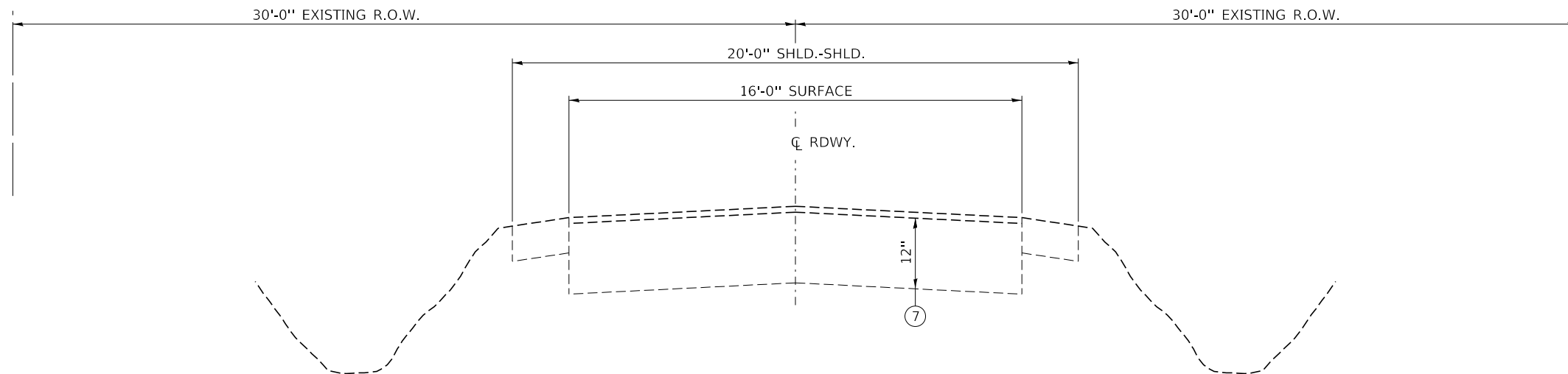
**BITUMINOUS MATERIALS RATES**

SURFACE TYPE	RESIDUAL RATE
AGGREGATE BASE	0.250 LB/SQ FT
MILLED HMA OR PCC (TACK COAT)	0.050 LB/SQ FT
EXISTING PAVEMENT (TACK COAT)	0.050 LB/SQ FT
TACK COAT (BETWEEN LIFTS)	0.025 LB/SQ FT

- THE FINAL SURFACE OF ALL EMBANKMENT AREAS SHALL BE SEEDED. THE TOP 4 INCHES OF THE SEEDED AREAS SHALL BE TOPSOIL SUBJECT TO THE APPROVAL OF THE ENGINEER. THE COST OF SHAPING THE SLOPES AND PROVIDING TOP SOIL WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION.
- THE AREA TO BE SEEDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE RIGHT OF WAY OR AS DIRECTED BY THE ENGINEER. SEEDING, CLASS 2 (SPECIAL) = 0.3 ACRES
- ALL WASTE MATERIAL FROM EXCAVATIONS SHALL BE DISPOSED OF BY THE CONTRACTOR. NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- COMMITMENTS:  
NONE

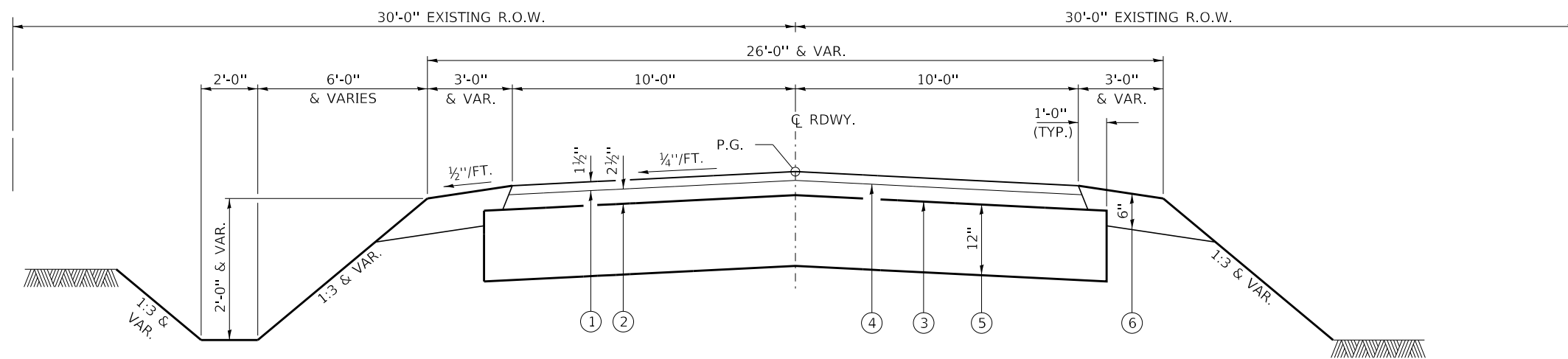
**ROADWAY SCHEDULE**

LOCATION	AGGREGATE BASE COURSE TYPE A	BITUMINOUS MATERIALS (PRIME COAT)	BITUMINOUS MATERIALS (TACK COAT)	HOT-MIX ASPHALT BINDER COURSE IL 19.0, N50	HOT-MIX ASPHALT SURFACE COURSE MIX "C", N50	AGGREGATE SHOULDERS, TYPE B	POROUS GRANULAR EMBANKMENT (SPECIAL)
	CU.YD.	POUND	POUND	TON	TON	TON	TON
TR 245A	35100100	40600275	40600290	40603080	40603310	48101200	X2070302
	TON	POUND	POUND	TON	TON	TON	TON
STA 8+00 TO STA 9+66.12	277	851	84	52	31.5	38	40
STA 10+29.88 TO STA 12+00	284	872	86	54	32.0	38	40
TOTAL	561	1723	170	106	64	76	80



**EXISTING TYPICAL CROSS SECTION**

STA. 8+00 TO 12+00



**PROPOSED TYPICAL CROSS SECTION**

STA. 8+00 TO 12+00

SUGGESTED CUT SECTION  
CONSTRUCT AS SHOWN IN  
STATION CROSS SECTIONS

SUGGESTED FILL SECTION  
CONSTRUCT AS SHOWN IN  
STATION CROSS SECTIONS

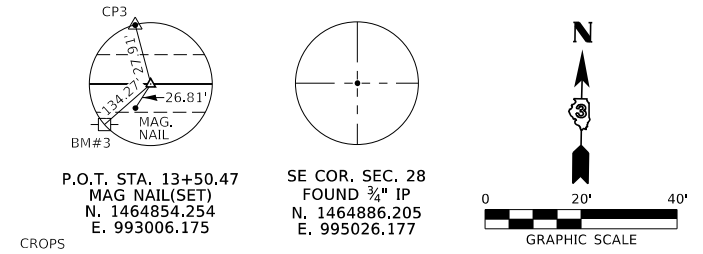
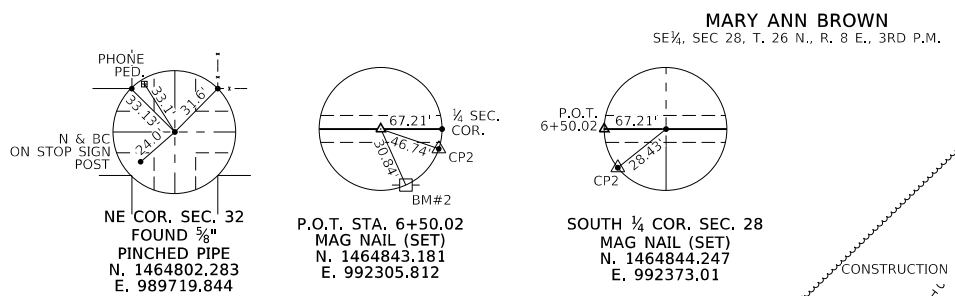
TRANSITIONS FROM THE PROPOSED SHOULDERS TO THE EXISTING SHOULDERS ARE TO BE CONSTRUCTED FROM STA. 8+00 TO 8+50 AND STA. 11+50 TO 12+00. SEE SHEET 5 FOR TRANSITION AT BRIDGE.

**LEGEND**

- ① HMA SURFACE COURSE, MIX C, N50 (1½" THICKNESS)
- ② HMA BINDER COURSE, IL.-19.0, N50 (2½" THICKNESS)
- ③ BITUMINOUS MATERIALS (PRIME COAT)
- ④ BITUMINOUS MATERIALS (TACK COAT)
- ⑤ AGGREGATE BASE COURSE, TYPE A (12")
- ⑥ AGGREGATE SHOULDERS, TYPE B (6")
- ⑦ EXISTING AGGREGATE BASE W/ A-3 SURFACE (12")

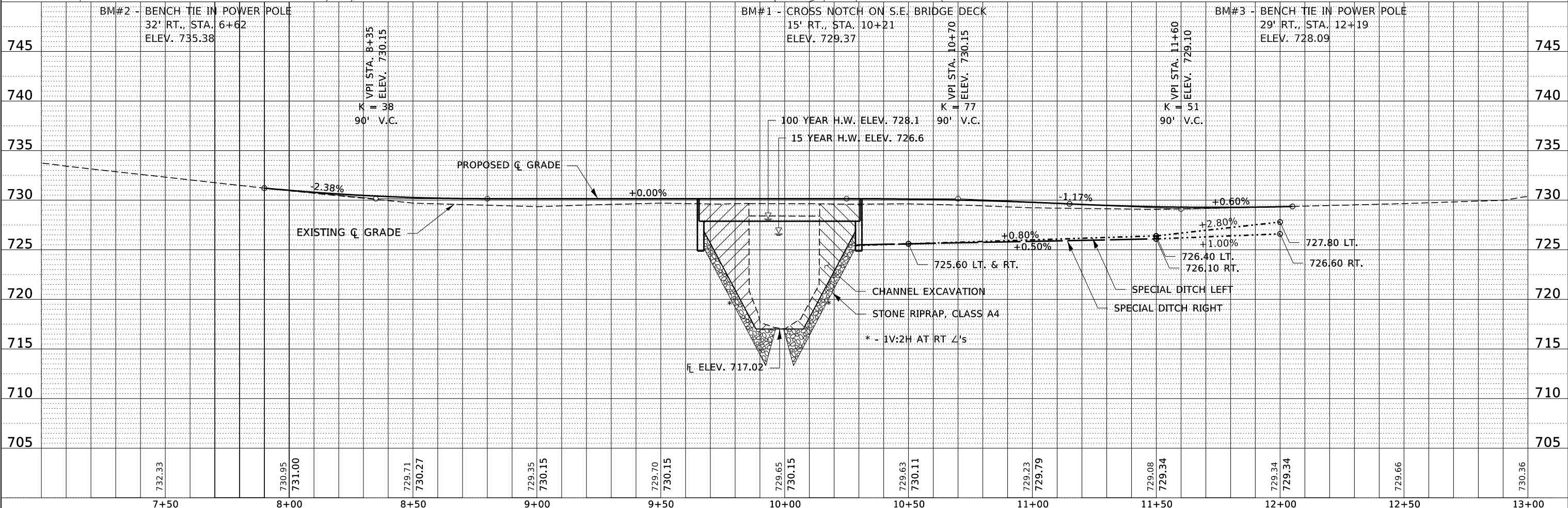
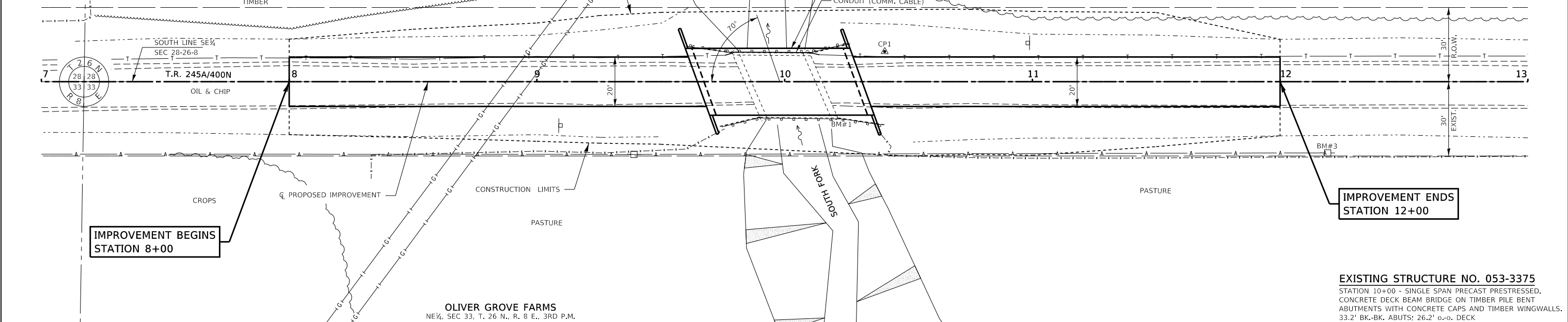
**HOT-MIX ASPHALT MIXTURE REQUIREMENTS**

LOCATIONS(S)	TR 245A	TR 245A
MIXTURE USE(S):	HOT-MIX ASPHALT SURFACE COURSE	HOT-MIX ASPHALT BINDER COURSE
PG:	PG 64-22	PG 64-22
DESIGN AIR VOIDS:	4% @ 50 Gyr.	4% @ 50 Gyr.
MIXTURE COMPOSITION: (MIXTURE GRADATION)	IL 9.5	IL 19.0
FRICTION AGGREGATE:	MIXTURE C	NONE
DENSITY TEST METHOD	CORES	CORES
MIXTURE WEIGHT:	112 LBS \ SY \ INCH THICKNESS	112 LBS \ SY \ INCH THICKNESS
QUALITY MANAGEMENT PROGRAM	QC/QA	QC/QA



PLAN	DATE
BY	
REVIEWED	
PLOTTED	
ALIGNMENT CHECKED	
GRADES CHECKED	
NOTE BOOK NO.	
STRUCTURE NOTATION CHKD	

PROFILE	DATE
BY	
REVIEWED	
PLOTTED	
GRADES CHECKED	
NOTE BOOK NO.	
STRUCTURE NOTATION CHKD	



FILE NAME = 180138-sht-plnprf.dgn	USER NAME = rmosick	DESIGNED - J.W.F.	REVISED -	<b>STATE OF ILLINOIS</b> <b>LIVINGSTON COUNTY HIGHWAY DEPARTMENT</b>	<b>PLAN &amp; PROFILE</b> <b>BROWN BRIDGE</b>	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC.	DRAWN - T.W.K.	REVISED -	245A			15-06125-00-BR	LIVINGSTON	20	4	
3065 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62710	CHECKED - S.W.M.	REVISED -	CHATSWORTH ROAD DISTRICT			CONTRACT NO. 87699				
ILLINOIS PROFESSIONAL DESIGN FIRM L.S./P.E./S.E. CORP. 184.000959	DATE - 01/31/19	REVISED -	SCALE: 5V:20H			SHEET NO. 1 OF 1 SHEETS	STA. 7+00 TO STA. 13+00	ILLINOIS FED. AID PROJECT AAB6(087)		

BENCHMARK: Cross notch on SE corner of bridge deck 15.0' Rt. Sta. 10+21, Elev. 729.37

EXISTING STRUCTURE NO. 053-3375: Sta. 10+00 - Single span precast prestressed concrete deck beam bridge on timber pile bent abutments with concrete caps and timber wingwalls. 33.2' fc.-fc. abuts; 26.0' o.-o. deck.

Structure closed to traffic during construction.

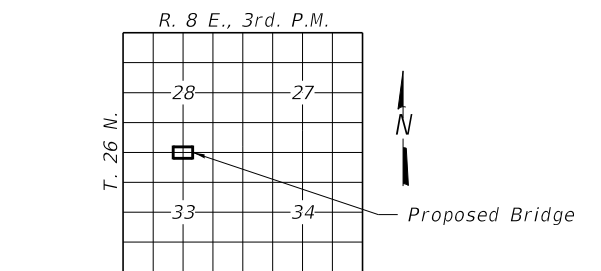
No Salvage

**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 the West Abutment or approved by the Engineer before ordering the remainder of piles.  
 All bars to 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.

**INDEX OF STRUCTURE SHEETS**

1. General Plan & Elevation
2. 27"x36" PPC Deck Beam
3. 27"x36" PPC Deck Beam Details
4. Superstructure Details
5. Steel Railing, Type S-1
6. Abutments
7. Steel HP Pile Details
- 8-9. Borings

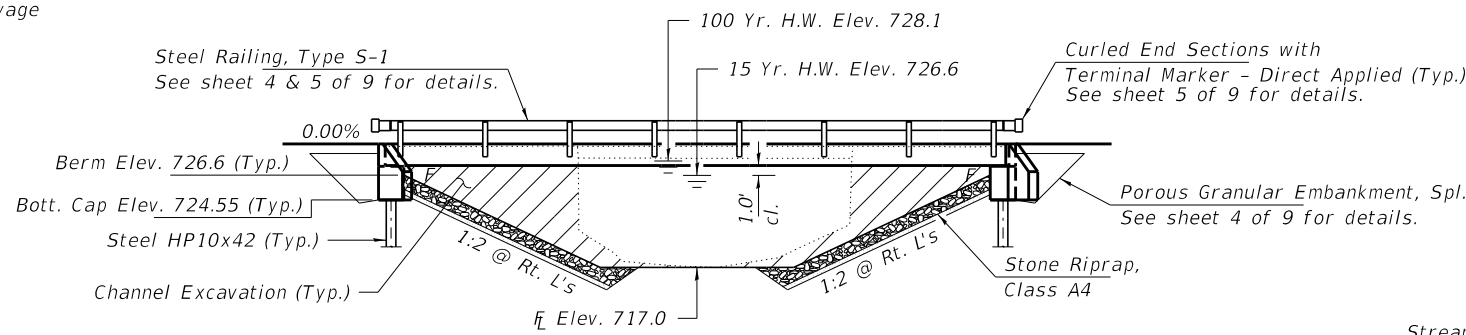


**LOCATION SKETCH**

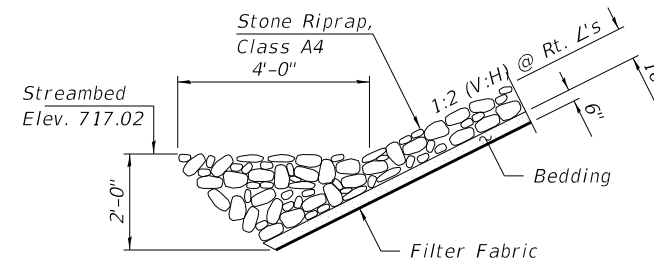
SOUTH FORK VERMILION RIVER  
 BUILT 201\_ BY  
 LIVINGSTON COUNTY  
 SEC. 15-06125-00-BR  
 CHATSWORTH ROAD DISTRICT  
 STR. NO. 053-4221  
 LOADING HL-93

**NAME PLATE**

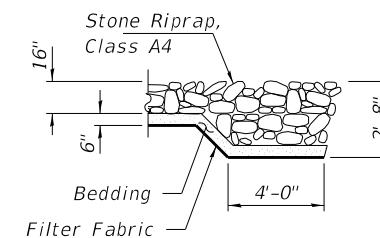
See Std. 515001



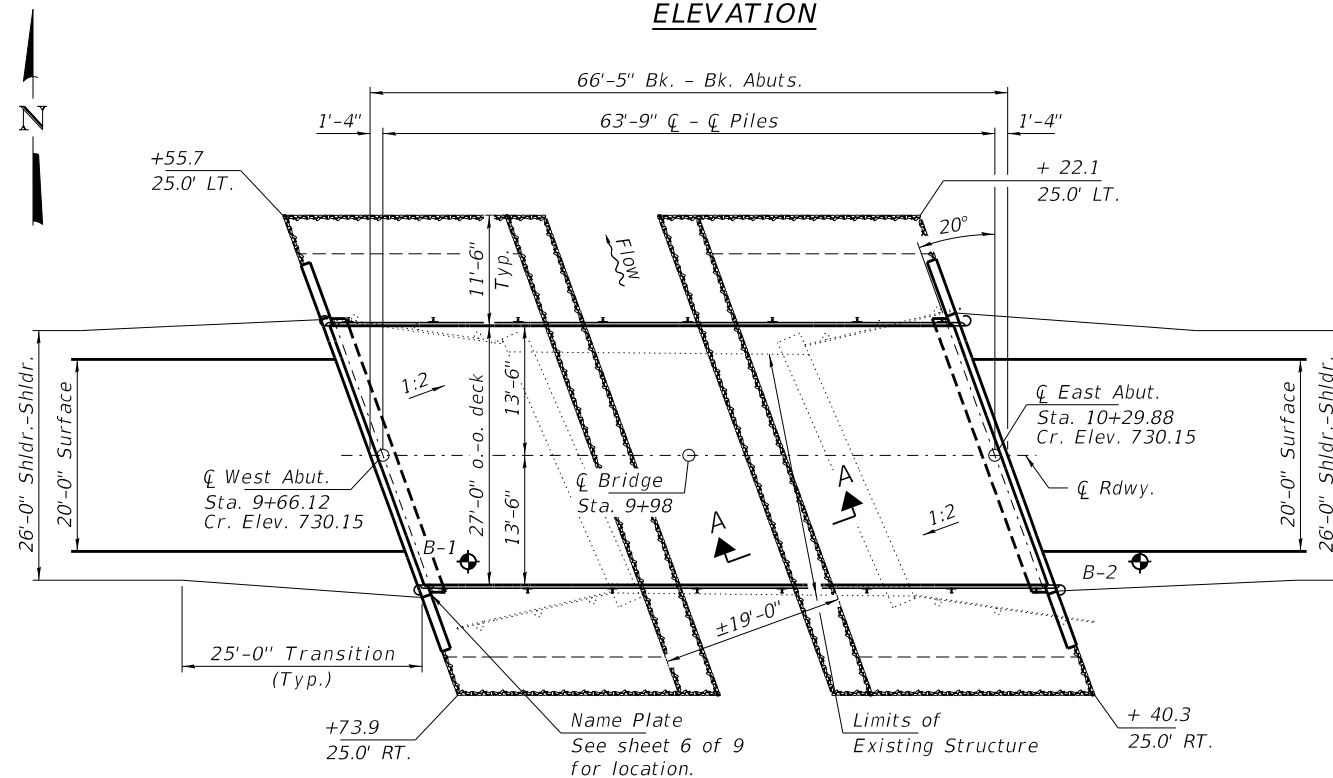
**ELEVATION**



**SECTION A-A**



**SECTION B-B**



**PLAN**

**DESIGN SCOUR ELEVATION TABLE**

Event/Limit State	Design Scour Elev. (ft.)		Item 113
	W. Abut.	E. Abut.	
Q100	724.6	724.6	8
Q500	724.6	724.6	
Design	724.6	724.6	
Check	724.6	724.6	

**DESIGN SPECIFICATIONS**

2017 AASHTO LRFD Bridge Design Specifications, 8th Edition with all interims.

**LOADING HL-93**

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

**DESIGN STRESSES**

**FIELD UNITS**

f'c = 3,500 psi  
 fy = 60,000 psi (Reinf.)

**PRECAST PRESTRESSED UNITS**

f'c = 6,000 psi  
 f'ci = 5,000 psi  
 fpu = 270,000 psi (1/2" low lax. strands)  
 fpbt = 201,960 psi (1/2" low lax. strands)  
 fy = 60,000 psi (Reinf.)

**SEISMIC DATA**

Seismic Performance Zone (SPZ) = 1  
 Design Spectral Acceleration at 1.0 sec. (SD1) = 0.115g  
 Design Spectral Acceleration at 0.2 sec. (SD5) = 0.186g  
 Soil Site Class = D

**WATERWAY INFORMATION**

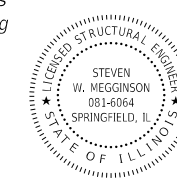
Drainage Area = 12.3 Sq. Mi.		Existing Low Grade Elev. 729.1 @ Sta. 11+50 Proposed Low Grade Elev. 729.3 @ Sta. 11+50								
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.	Natural H.W.E.	Head - Ft.	Headwater El.	Exist.	Prop.	Exist.	Prop.
Existing Overtop	10	1320	190 350	726.22	0.40 0.05	726.62	726.27			
Design	15	1510	200 370	726.61	0.51 0.04	727.12	726.65			
Base/Prop. Overtop	100	2460	240 430	728.05	1.58 0.50	729.63	728.55			
Scour Check	200	2810	250 430	728.43	1.40 0.76	728.83	729.19			
Max. Calc.	500	3310	250 430	728.91	1.41 1.02	730.32	729.93			

10 Year Velocity through Existing Bridge = 6.9 fps

10 Year Velocity through Proposed Bridge = 3.8 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."

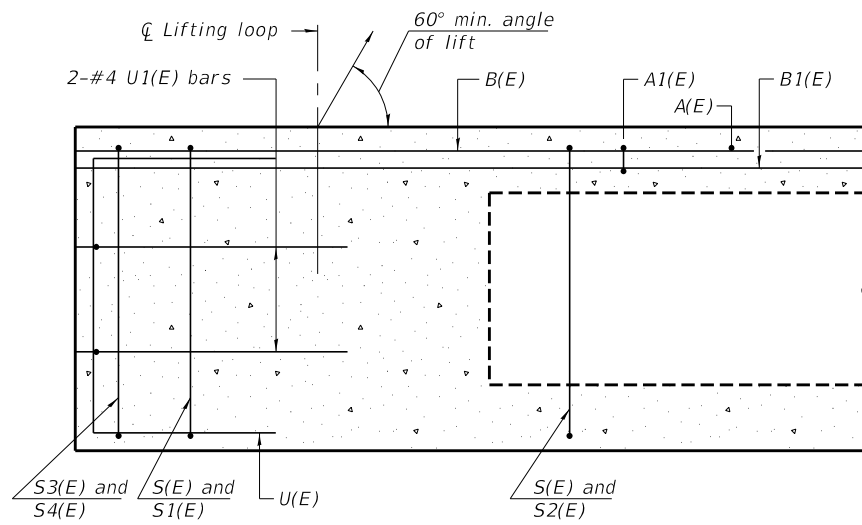
*Steven W. Megginson* 01/31/2019  
 ILLINOIS STRUCTURAL ENGINEER NO. 081-6064



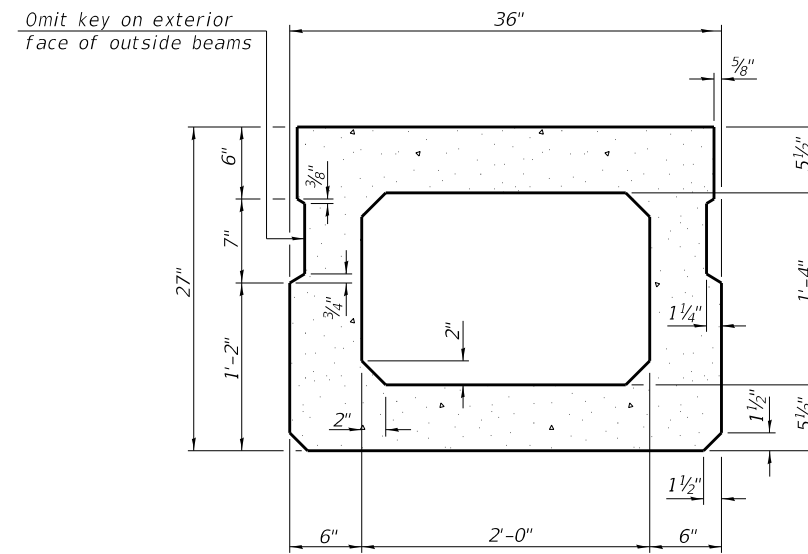
Expires 11-30-2020

**TOTAL BILL OF MATERIAL**

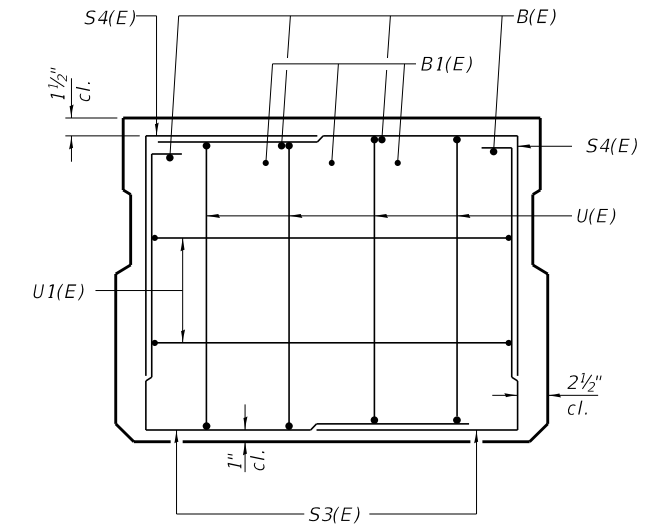
ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			340
Stone Riprap, Class A4	Sq. Yd.			314
Filter Fabric	Sq. Yd.			314
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		25.0	25.0
Precast Prestressed Conc. Deck Beams (27" Depth)	Sq. Ft.	1,755		1,755
Reinforcement Bars, Epoxy Coated	Pound		2,820	2,820
Steel Railing, Type S-1	Foot	127		127
Furnishing Steel Piles HP10x42	Foot		585	585
Driving Piles	Foot		585	585
Test Pile Steel HP10x42	Each		1	1
Name Plates	Each		1	1
Terminal Marker - Direct Applied	Each	4		4
Porous Granular Embankment, Special	Ton		80	80
Pipe Underdrains for Structures 4"	Foot		112	112



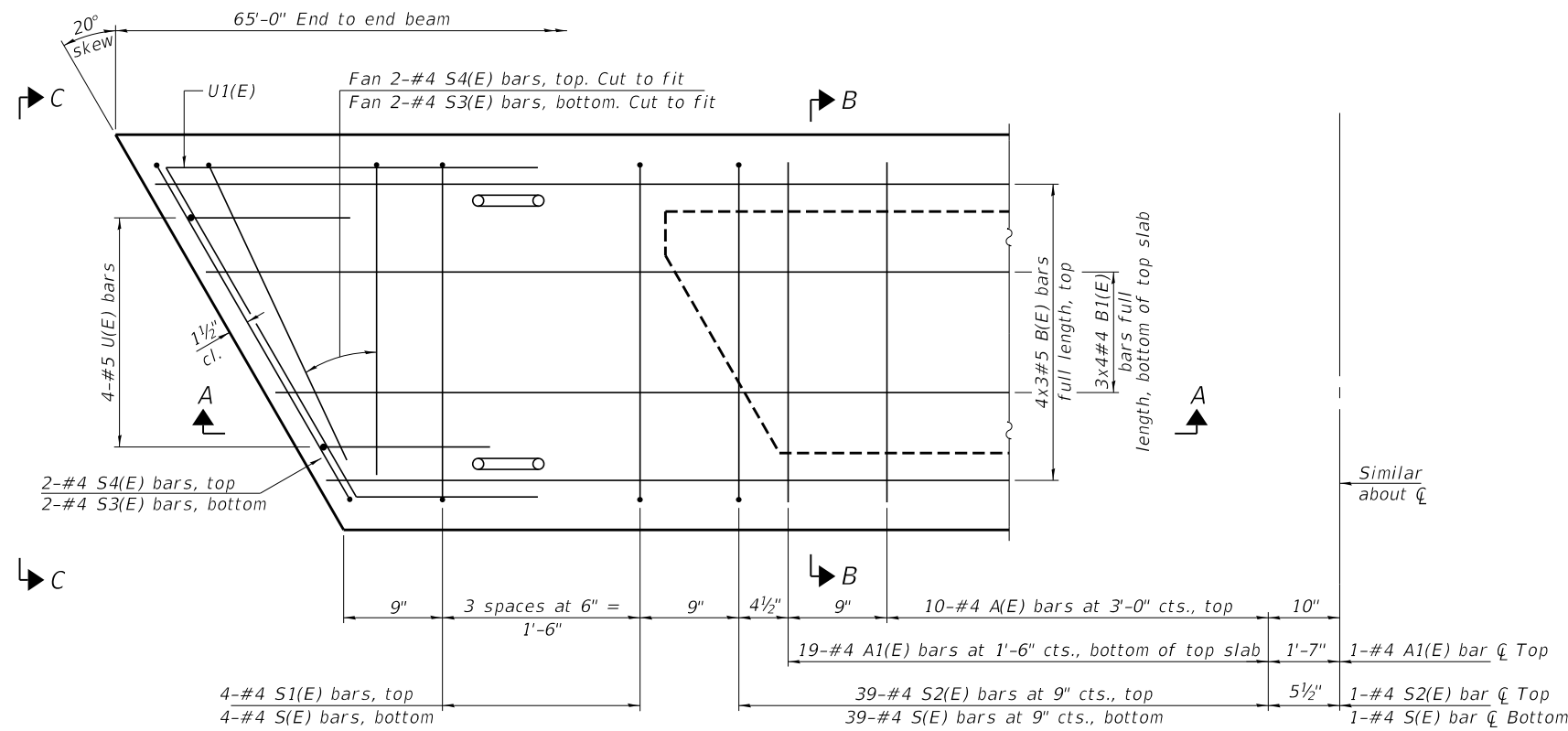
SECTION A-A



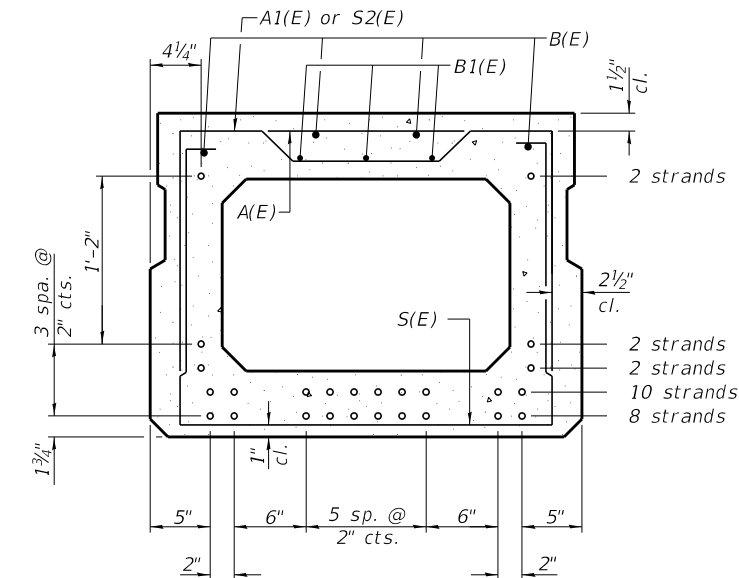
SECTION B-B  
(Showing dimensions)



VIEW C-C



PLAN VIEW



SECTION B-B

(Showing reinforcement and permissible strand locations)  
Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

**BAR LIST**  
**ONE BEAM ONLY**  
(For information only)

Bar	No.	Size	Length	Shape
A(E)	20	#4	2'-7"	—
A1(E)	39	#4	2'-10"	—
B(E)	12	#5	23'-3"	—
B1(E)	12	#4	17'-7"	—
S(E)	87	#4	7'-5"	□
S1(E)	8	#4	5'-11"	□
S2(E)	79	#4	6'-2"	□
S3(E)	8	#4	4'-10"	┘
S4(E)	8	#4	4'-1"	┘
U(E)	8	#5	4'-6"	┘
U1(E)	4	#4	6'-1"	┘

Note:  
See sheets 3 and 4 of 9 for additional details and Bill of Material.

Note:

Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.  
Bars indicated thus 4x3-#5 etc. indicates 4 lines of bars with 3 lengths per line.

**MINIMUM BAR LAP**

#4 bar = 1'-11"  
#5 bar = 2'-6"

PD-2736-R

2-17-2017

FILE NAME = 181038-shl-bridge.dgn	USER NAME = rmosick
<b>HAMPTON, LENZINI AND RENWICK, INC.</b> 3035 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	
PLOT SCALE =	PLOT DATE = 2/1/2019

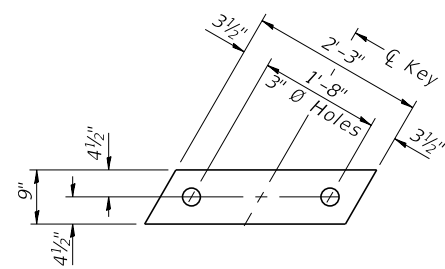
DESIGNED - J.R.B.	REVISED -
CHECKED - S.W.M.	REVISED -
DRAWN - M.M.P.	REVISED -
CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS  
LIVINGSTON COUNTY HIGHWAY DEPARTMENT

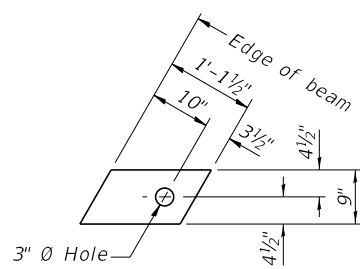
27" x 36" PPC DECK BEAM  
STRUCTURE NO. 053-4221

SHEET NO. 2 OF 9 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
245A	15-06125-00-BR	LIVINGSTON	20	6
CHATSWORTH ROAD DISTRICT		CONTRACT NO. 87699		
ILLINOIS FED. AID PROJECT AAB(087)				



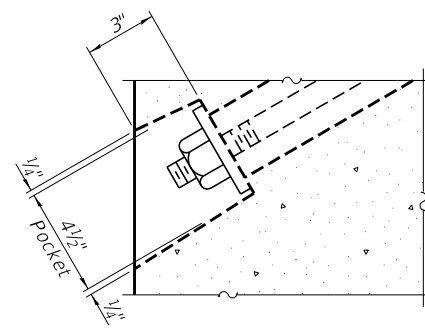
**FABRIC BEARING PAD**  
(Interior - 16 Req'd.)



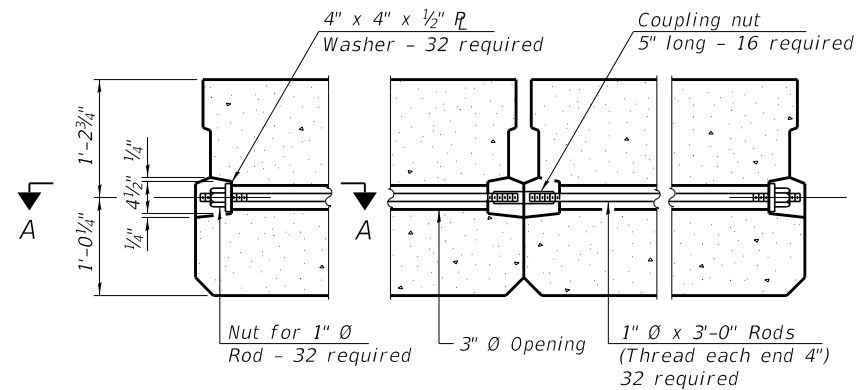
**FABRIC BEARING PAD**  
(Exterior - 4 Req'd.)

**FIXED**

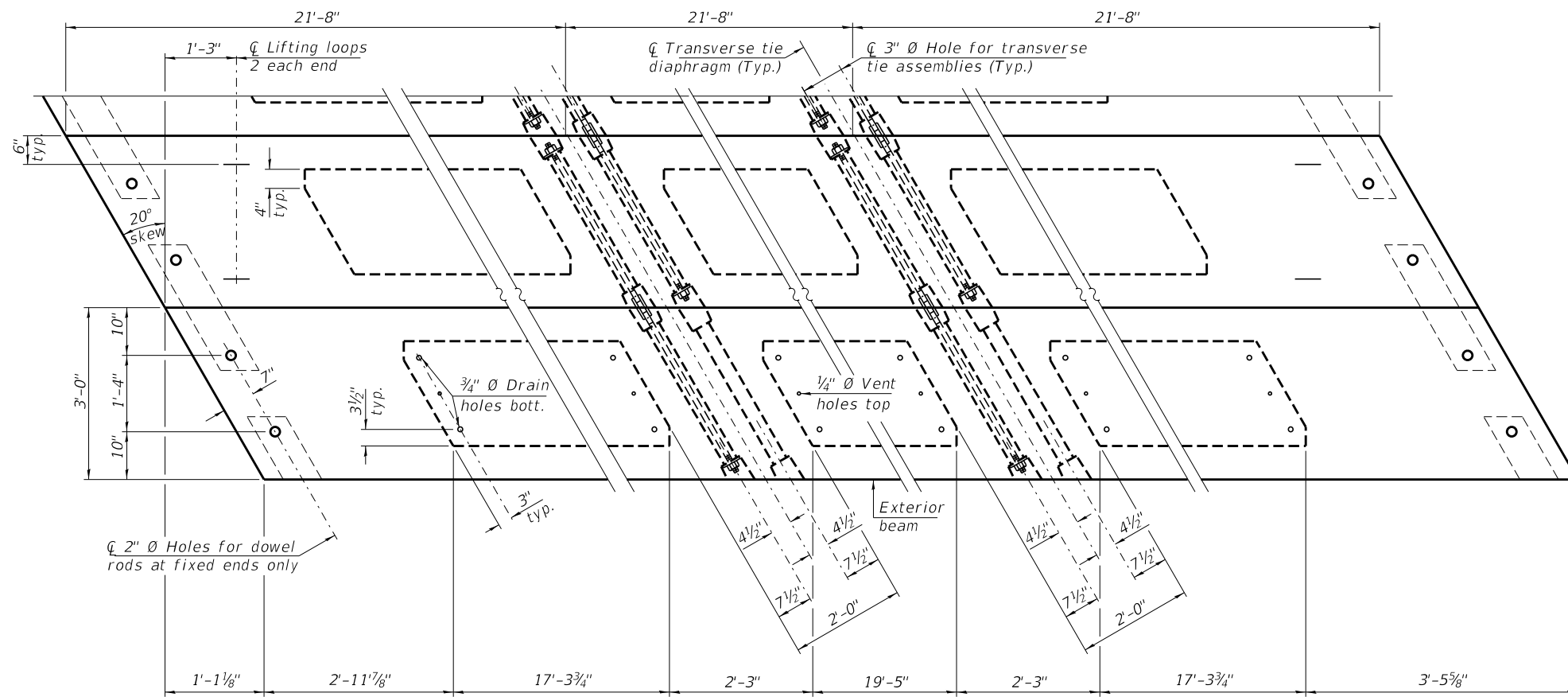
Notes:  
All bearing pads shall be 1" thick.  
Omit holes when using expansion bearings.  
Expansion bearing pad shall be bonded to the substructure.



**SECTION A-A**



**TYPICAL TRANSVERSE TIE ASSEMBLY**

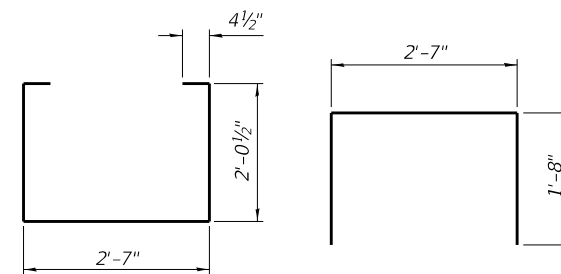


**PLAN VIEW**

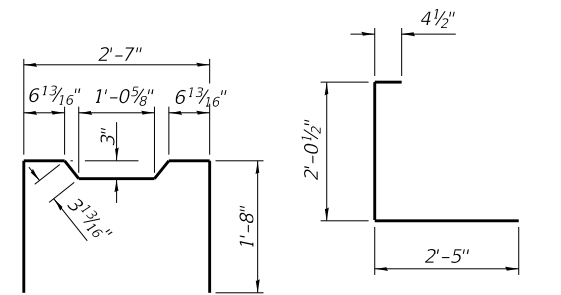
**NOTES**

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.  
The 1"  $\varnothing$  rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.  
Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.  
A minimum 2 1/2"  $\varnothing$  lifting pin shall be used to engage the lifting loops during handling.  
Corrosion Inhibitor, per Article 1020.05(b)(10) and 1021.07 of the Standard Specifications, shall be used in the concrete prestressed concrete deck beams.  
Compressive strength of prestressed concrete,  $f'_c$ , shall be 6000 psi.  
Compressive strength of prestressed concrete at release,  $f'_{ci}$ , shall be 5000 psi.  
All reinforcement bars designated (E) shall be epoxy coated.

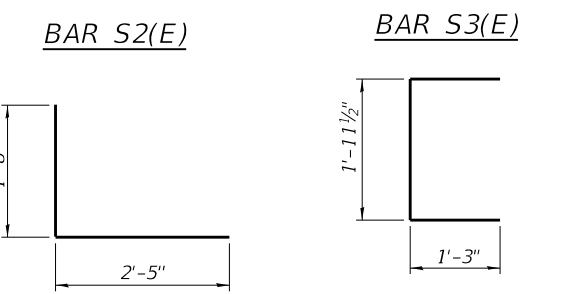
Note: Connect beams in pairs with the transverse tie configuration shown.



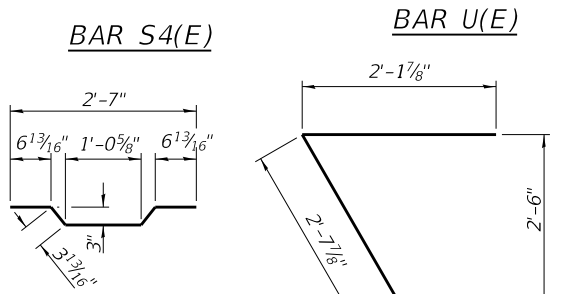
**BAR S(E)**



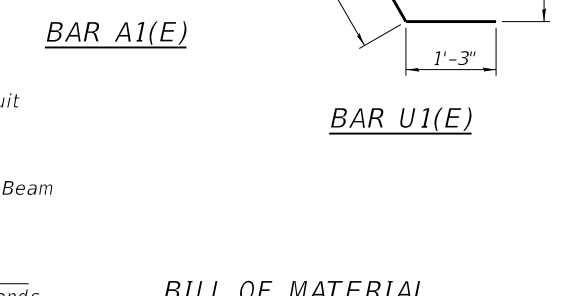
**BAR S1(E)**



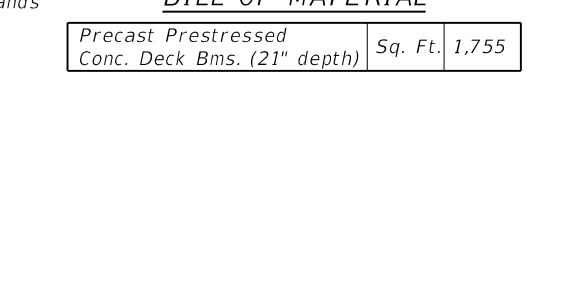
**BAR S2(E)**



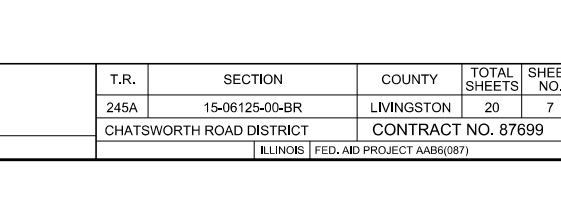
**BAR S3(E)**



**BAR S4(E)**



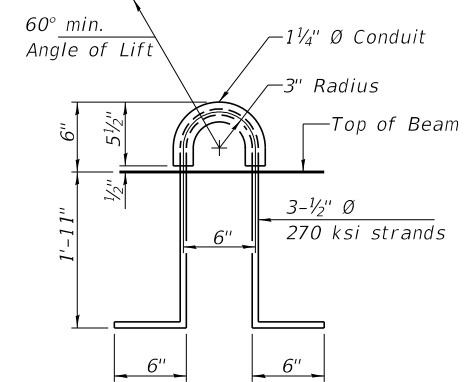
**BAR U(E)**



**BAR A1(E)**



**BAR U1(E)**



**LIFTING LOOP DETAIL**

**BILL OF MATERIAL**

Precast Prestressed Conc. Deck Bms. (21" depth)	Sq. Ft.	1,755
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PD-2736-RD

2-17-2017

FILE NAME = 181038-shl-bridge.dgn	USER NAME = rmosick
<b>HAMPTON, LENZINI AND RENWICK, INC.</b> 3035 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.009959	
DESIGNED - J.R.B.	CHECKED - S.W.M.
REVISIONS -	
PLOT SCALE =	DRAWN - M.M.P.
PLOT DATE = 2/1/2019	CHECKED - S.W.M.

DESIGNED - J.R.B.	REVISIONS -
CHECKED - S.W.M.	
DRAWN - M.M.P.	
CHECKED - S.W.M.	

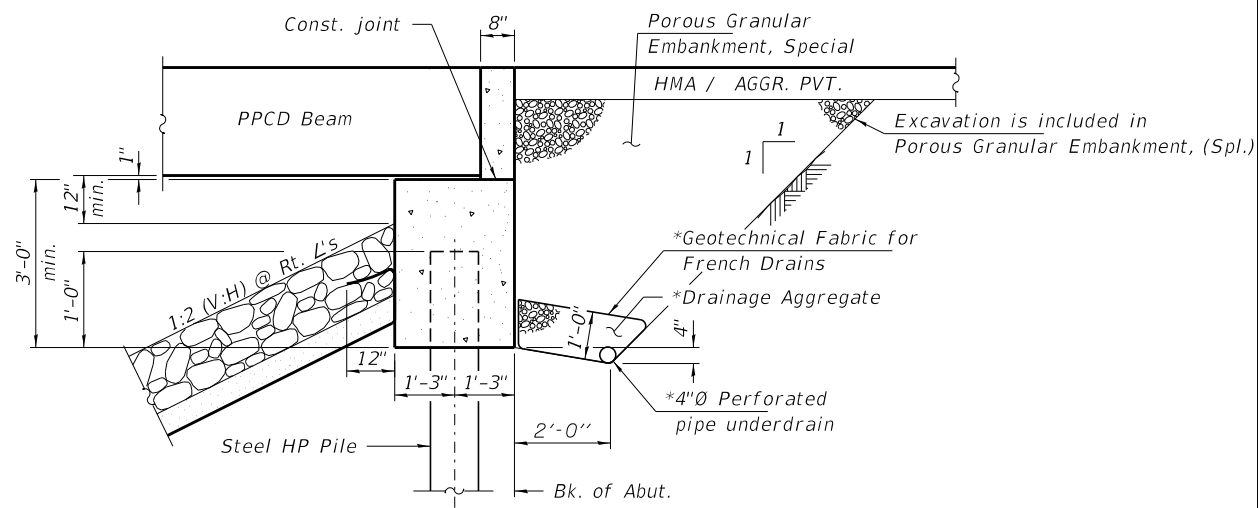
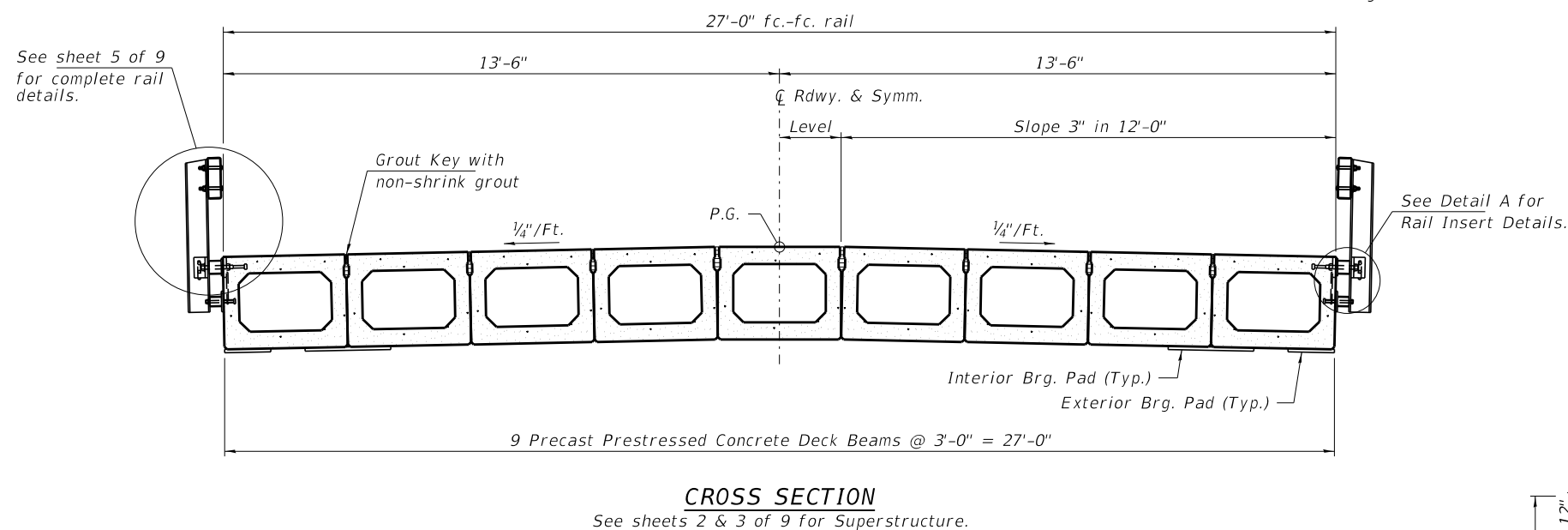
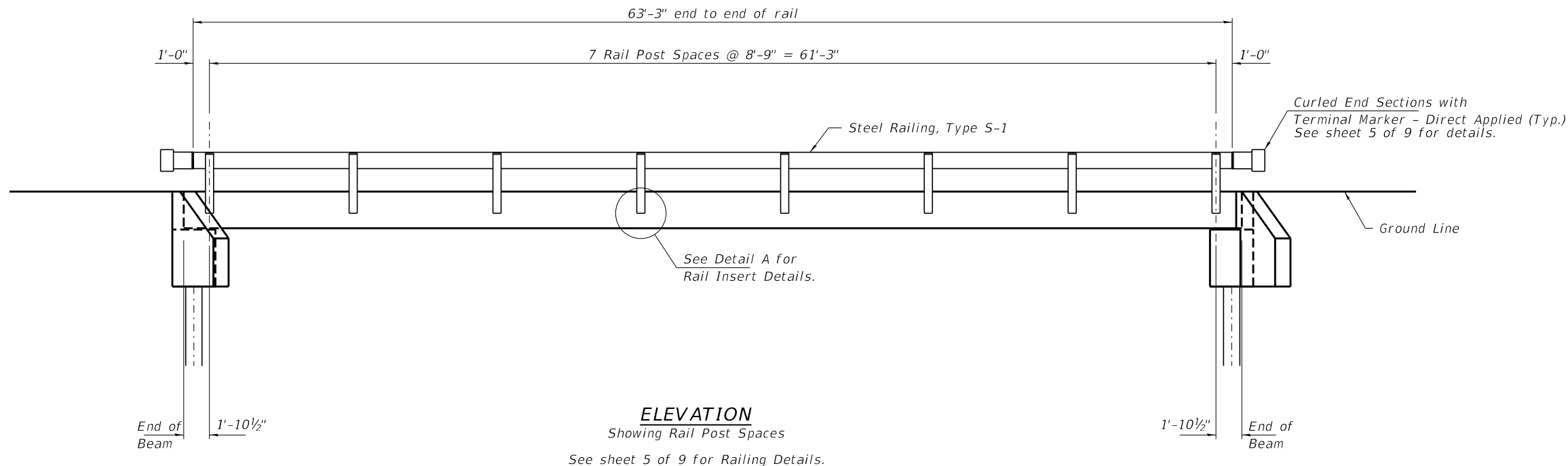
**STATE OF ILLINOIS  
LIVINGSTON COUNTY HIGHWAY DEPARTMENT**

**27" x 36" PPC DECK BEAM DETAILS  
STRUCTURE NO. 053-4221**

SHEET NO. 3 OF 9 SHEETS

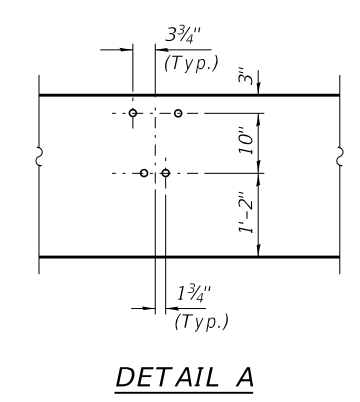
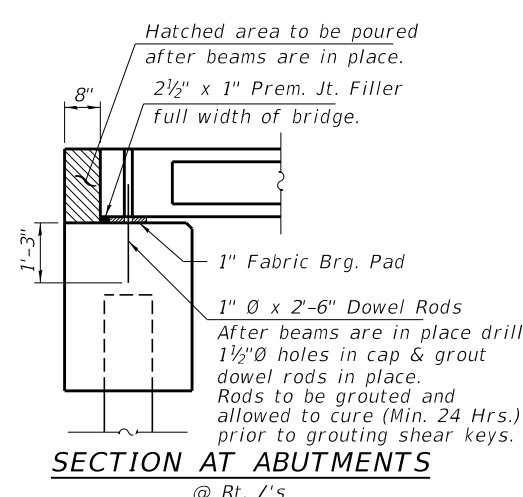
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
245A	15-06125-00-BR	LIVINGSTON	20	7
CHATSWORTH ROAD DISTRICT		CONTRACT NO. 87699		

ILLINOIS | FED. AID PROJECT AAB(087)



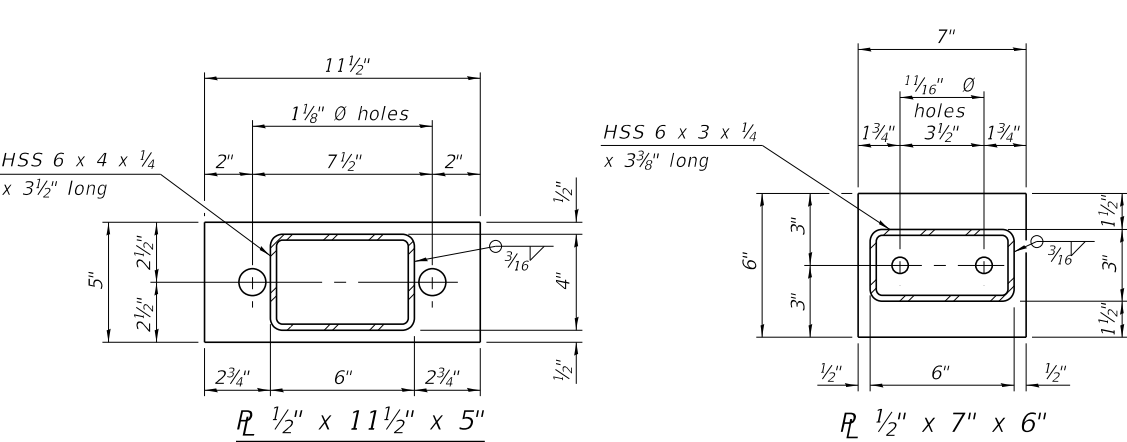
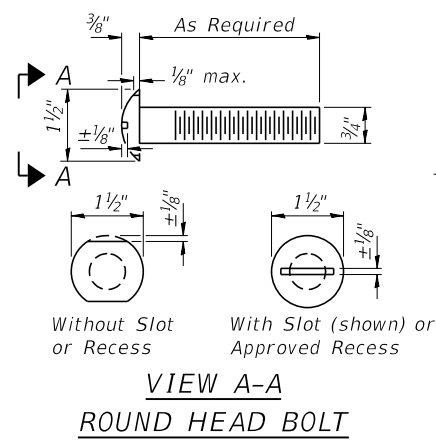
\*Included in the cost of Pipe Underdrains for Structures. (See Special Provisions)

Note: Outlet pipe underdrains to the South only as directed by the Engineer.

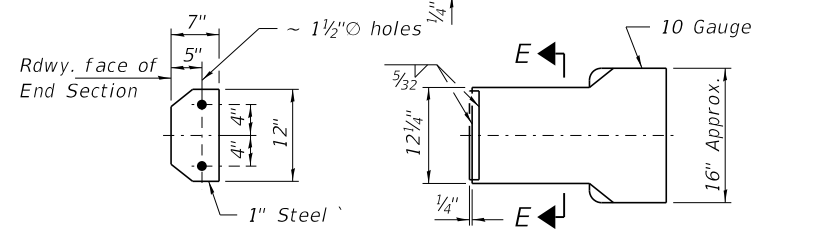


FILE NAME = 181038-shl-bridge.dgn	USER NAME = rmosick	DESIGNED - J.R.B.	REVISED -	<b>STATE OF ILLINOIS LIVINGSTON COUNTY HIGHWAY DEPARTMENT</b>	<b>SUPERSTRUCTURE DETAILS STRUCTURE NO. 053-4221</b>	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.		
<b>HAMPTON, LENZINI AND RENWICK, INC.</b> <small>3035 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959</small>						CHECKED - S.W.M.	REVISED -	245A	15-06125-00-BR	LIVINGSTON	20	8
PLOT SCALE =						DRAWN - M.M.P.	REVISED -	CHATSWORTH ROAD DISTRICT		CONTRACT NO. 87699		
PLOT DATE = 2/1/2019						CHECKED - S.W.M.	REVISED -	SHEET NO. 4 OF 9 SHEETS				
<small>ILLINOIS   FED. AID PROJECT AAB6(087)</small>												

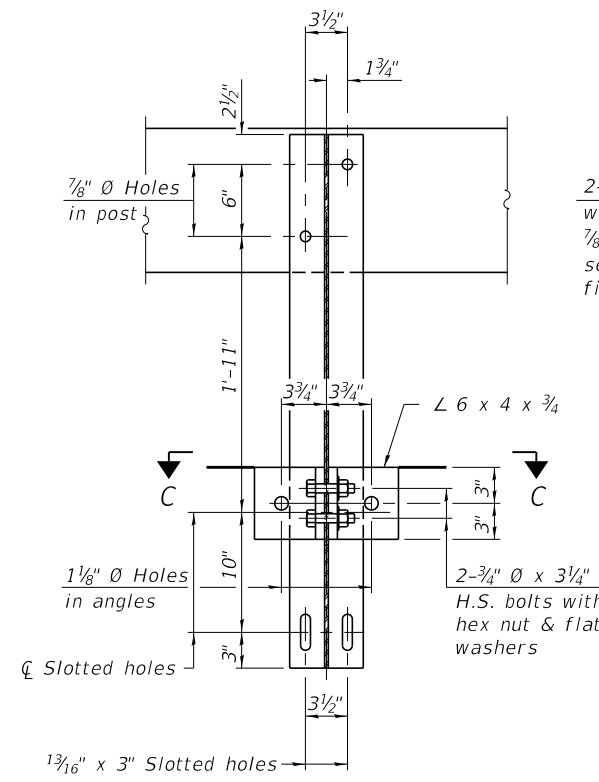




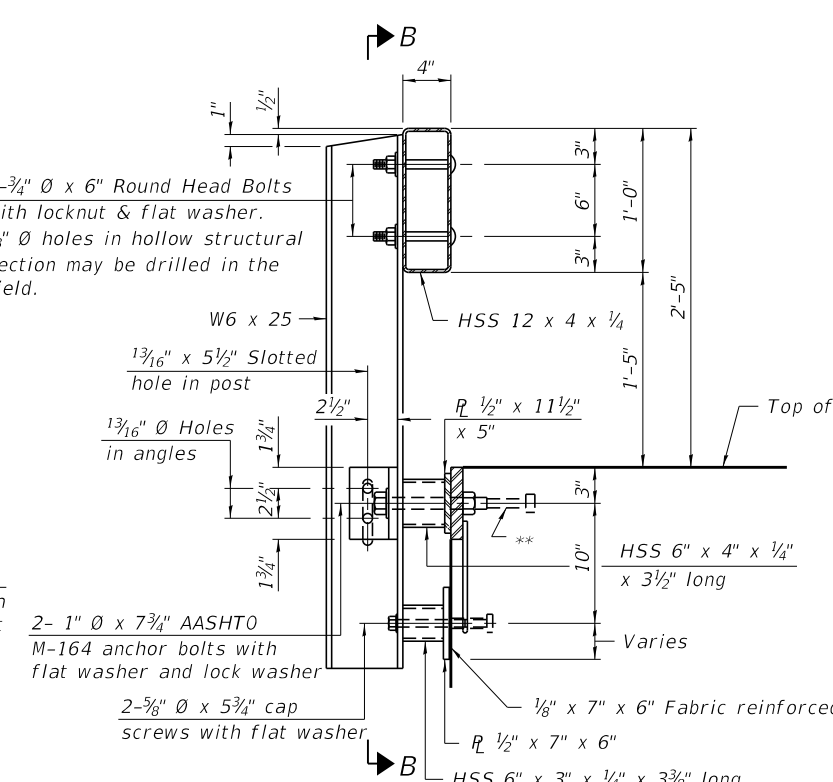
Note: Cost of curled end sections shall be included with the Steel Railing. (4 Required)



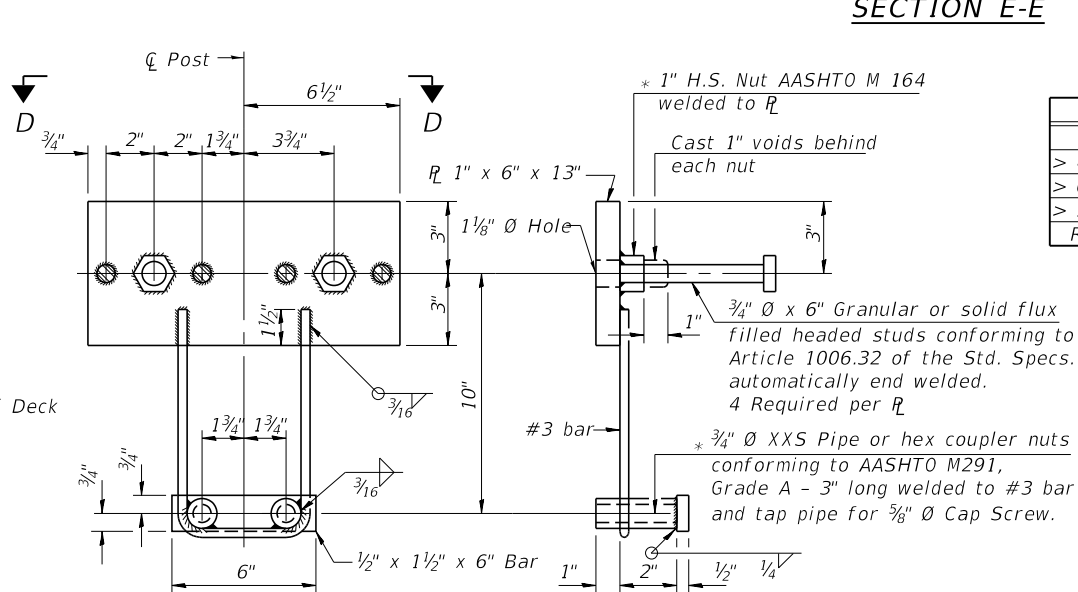
SECTION E-E CURLED END SECTION DETAILS



SECTION B-B



SECTION AT RAILING POST



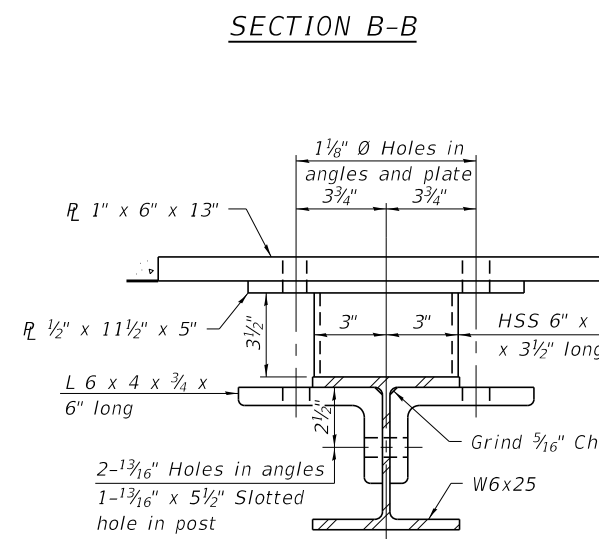
ANCHOR DEVICE

**SPLICE DIMENSIONS**

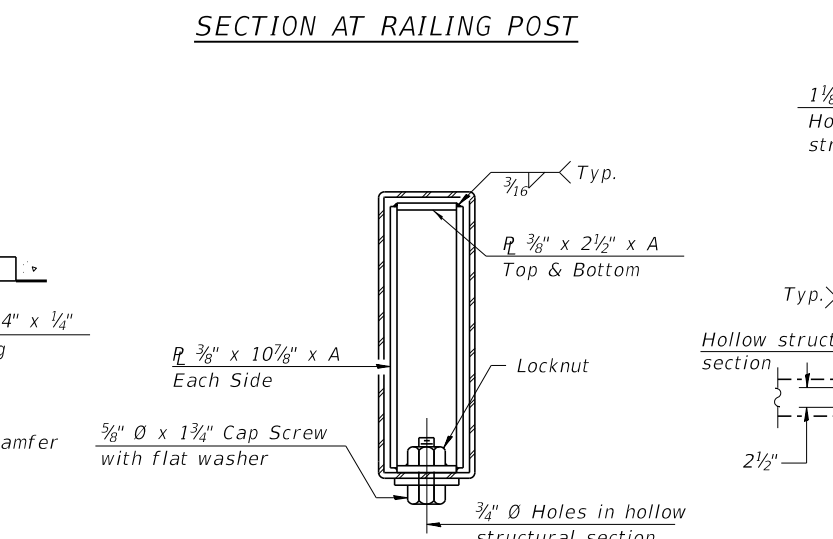
T	D	A	B	C	E
≤ 4"	2 1/2"	1'-8"	2"	4"	2 1/2"
> 4" ≤ 6 1/2"	3 3/4"	2'-0"	2 1/2"	5 1/2"	3 1/2"
> 6 1/2" ≤ 9"	5"	2'-4"	3 1/2"	6 1/2"	9"
> 9" ≤ 13"	7"	2'-10"	4 1/2"	8 1/2"	11"
Rail Splice	1/4"	1'-8"	2"	4"	—

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

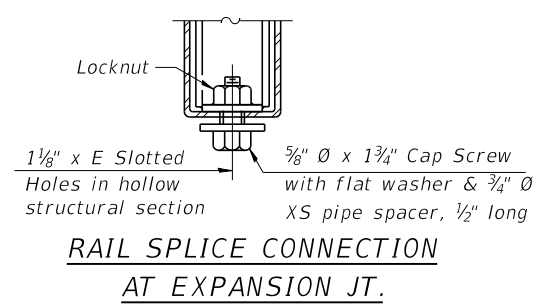
Notes:  
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.  
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.



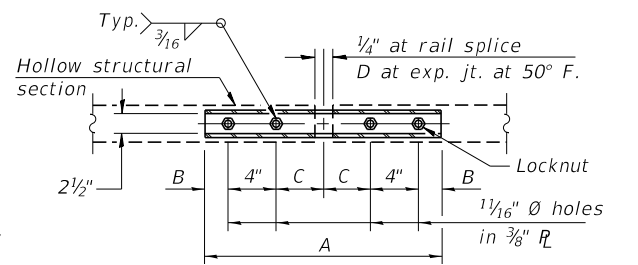
SECTION C-C



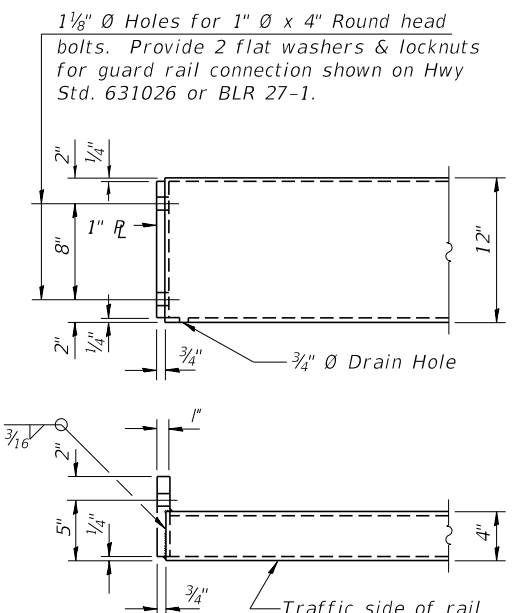
SECTIONS AT RAIL SPLICE



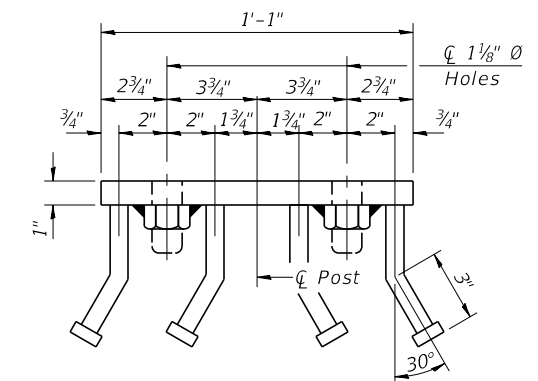
RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN-BOTT. SPLICE R TYPICAL



END OF RAIL DETAILS



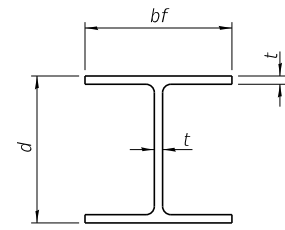
VIEW D-D

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	127

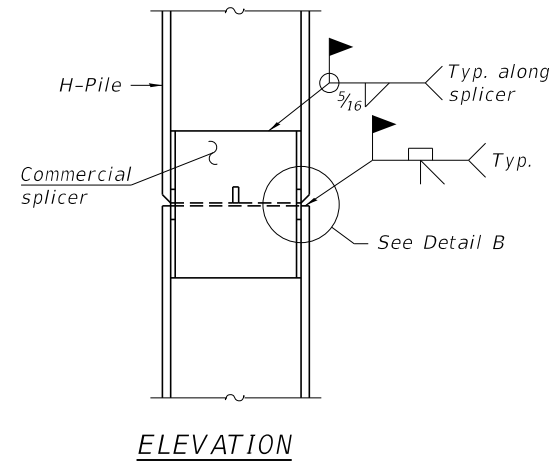
R-23A 8-11-2017 (10'-9" Maximum Post Spacing)



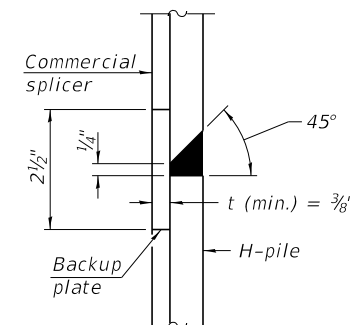


**STEEL PILE TABLE**

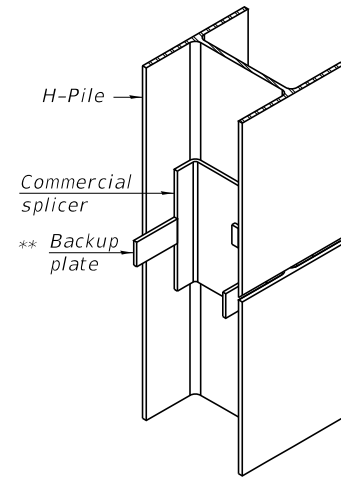
Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	1 3/16"	30"
x102	14"	14 3/4"	1 1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 3/8"	14 3/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1 1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"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

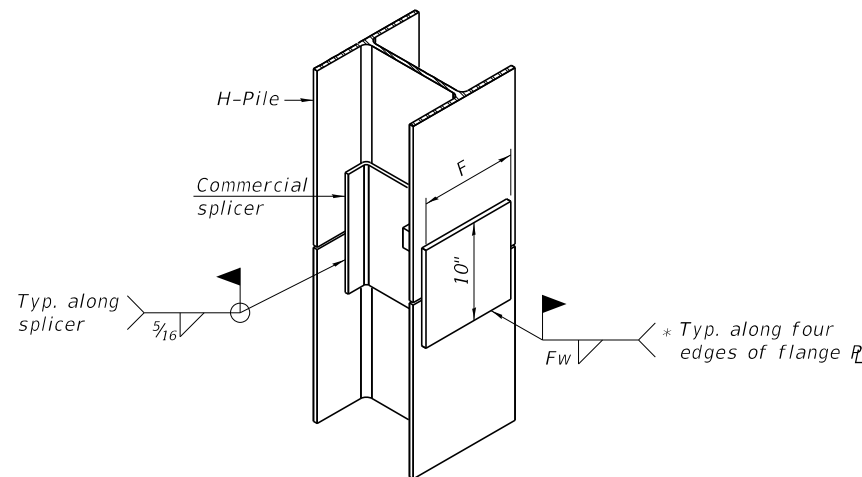


**DETAIL "B"**



**ISOMETRIC VIEW**

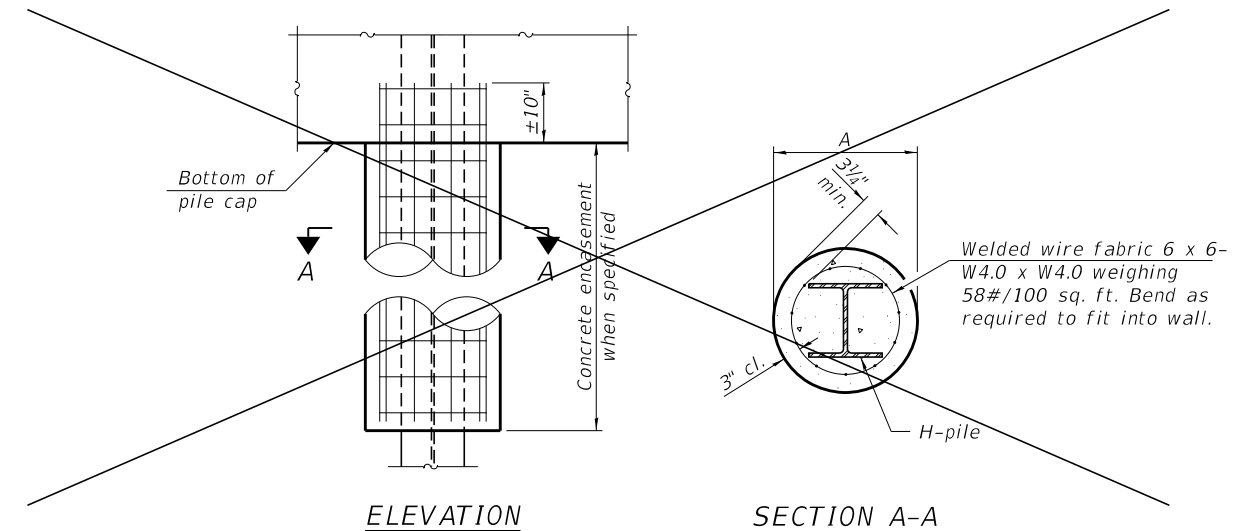
**WELDED COMMERCIAL SPLICE**



**ISOMETRIC VIEW**

**WELDED COMMERCIAL SPLICE ALTERNATE**

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

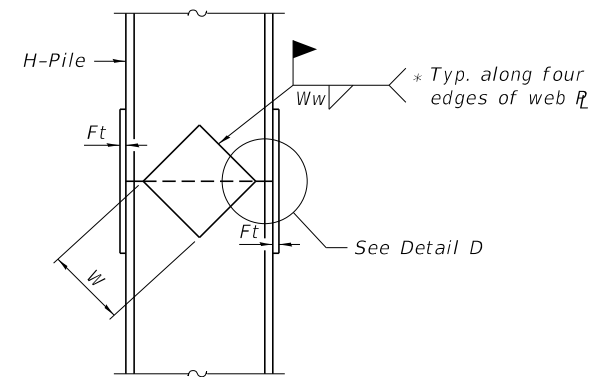


**ELEVATION**

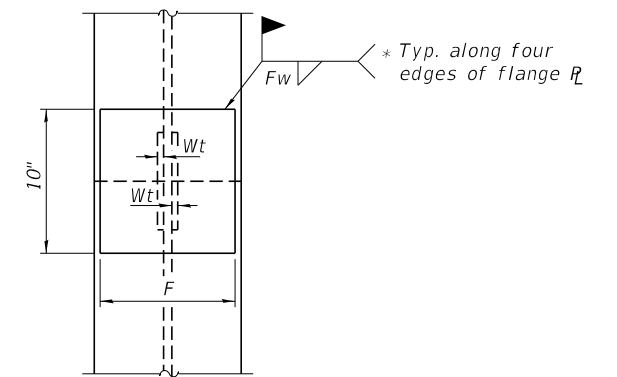
**SECTION A-A**

**INDIVIDUAL PILE CONCRETE ENCASUREMENT**

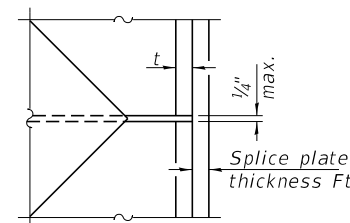
(Forms for encasement may be omitted when soil conditions permit).  
(Not Required)



**ELEVATION**



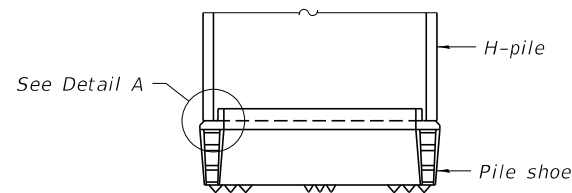
**END VIEW**



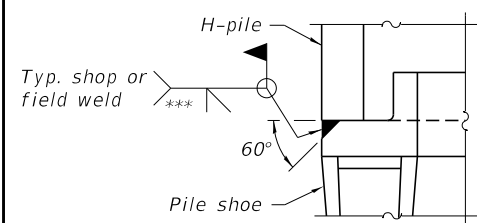
**DETAIL D**

**WELDED PLATE FIELD SPLICE**

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	1 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 1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1 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"



**ELEVATION**



**DETAIL A**

**SHOE ATTACHMENT**

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

F-HP 8-11-2017

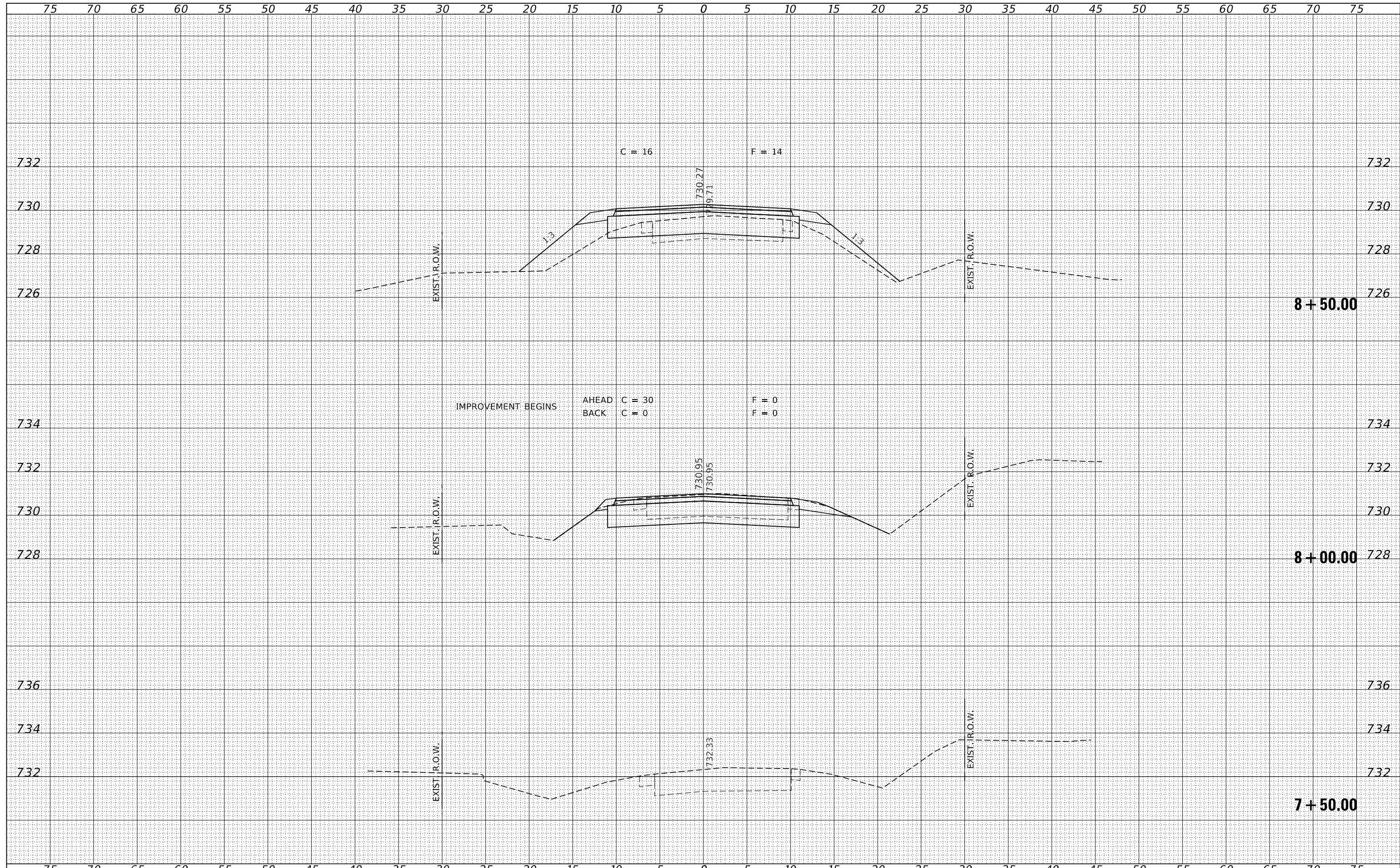
FILE NAME = 181038-shl-bridge.dgn	USER NAME = rmosck	DESIGNED - J.R.B.	REVISED -	<b>STATE OF ILLINOIS LIVINGSTON COUNTY HIGHWAY DEPARTMENT</b>	<b>HP PILE DETAILS STRUCTURE NO. 053-4221</b>	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
HAMPTON, LENZINI AND RENWICK, INC. 3035 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT SCALE =	CHECKED - S.W.M.	REVISED -			245A	15-06125-00-BR	LIVINGSTON	20	11	
	PLOT DATE = 2/1/2019	DRAWN - M.M.P.	REVISED -			CHATHSWORTH ROAD DISTRICT CONTRACT NO. 87699					
		CHECKED - S.W.M.	REVISED -			ILLINOIS FED. AID PROJECT AAB(087)					





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

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

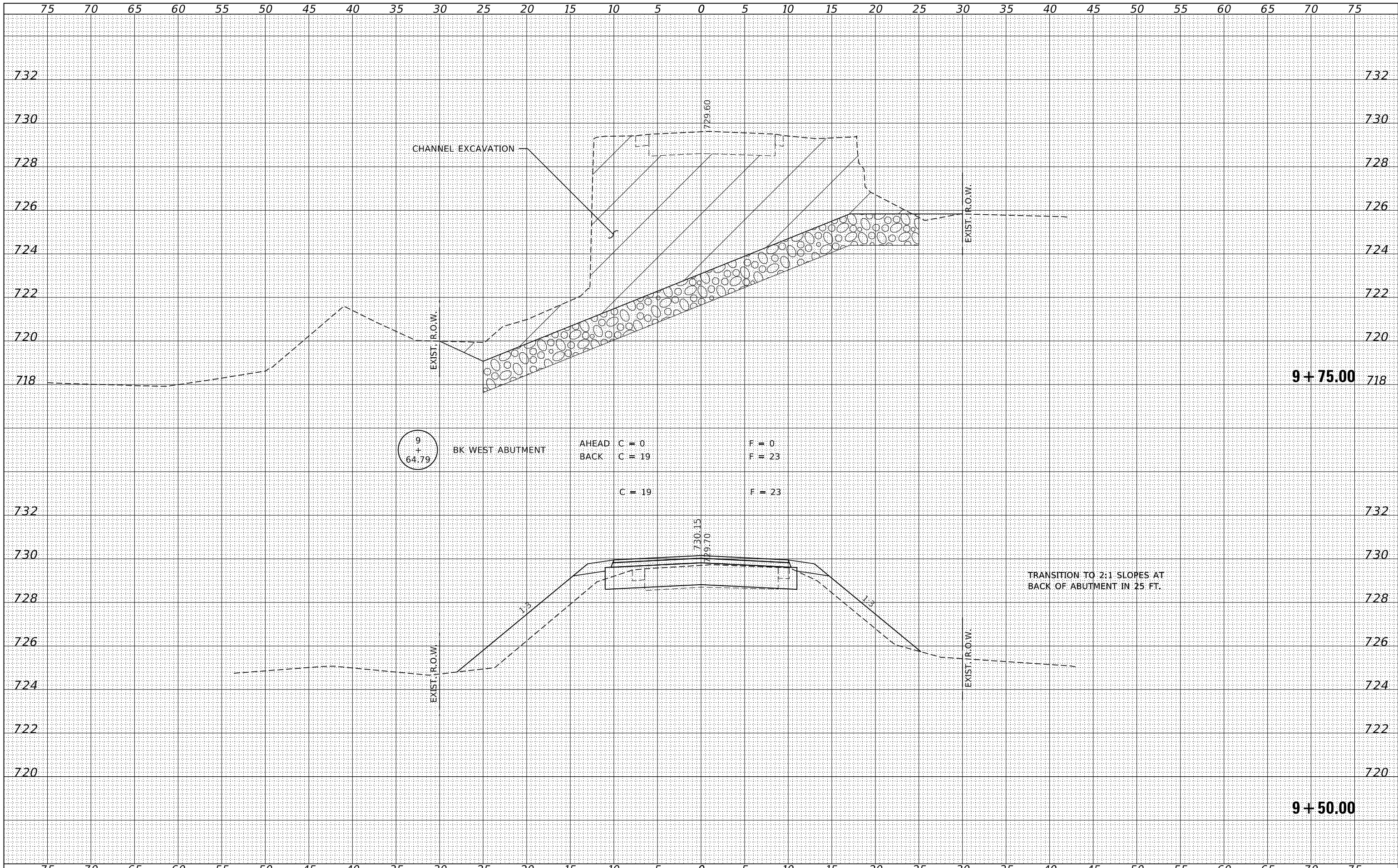


FILE NAME = 180138-shl-vssheets.dgn	USER NAME = rmosck	DESIGNED - J.V.F.	REVISED -	<b>STATE OF ILLINOIS</b> <b>LIVINGSTON COUNTY HIGHWAY DEPARTMENT</b>	<b>STATION CROSS SECTIONS</b> <b>BROWN BRIDGE</b>		T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC.		DRAWN - T.W.K.	REVISED -		245A	15-06125-00-BR	LIVINGSTON	20	14		
3885 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L/S / PE / SE CORP. 184.000958		CHECKED - S.W.M.	REVISED -		CHATSORTH ROAD DISTRICT				CONTRACT NO. 87699		
		DATE - 01/31/19	REVISED -		SCALE: 5H:2V	SHEET NO. 1 OF 7 SHEETS	STA. 7+50.00	TO STA. 8+50.00	ILLINOIS FED. AID PROJECT AAB6(087)		



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

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



9  
+  
64.79

BK WEST ABUTMENT

AHEAD C = 0 F = 0  
 BACK C = 19 F = 23  
 C = 19 F = 23

TRANSITION TO 2:1 SLOPES AT  
 BACK OF ABUTMENT IN 25 FT.

FILE NAME = 180138-shl-xssheets.dgn  
 USER NAME = rmosck  
 DESIGNED - J.W.F.  
 DRAWN - T.W.K.  
 CHECKED - S.W.M.  
 DATE - 01/31/19  
 PLOT SCALE = \$SCALE\$  
 PLOT DATE = 2/1/2019

REVISIONS  
 REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

STATE OF ILLINOIS  
 LIVINGSTON COUNTY HIGHWAY DEPARTMENT

STATION CROSS SECTIONS  
 BROWN BRIDGE

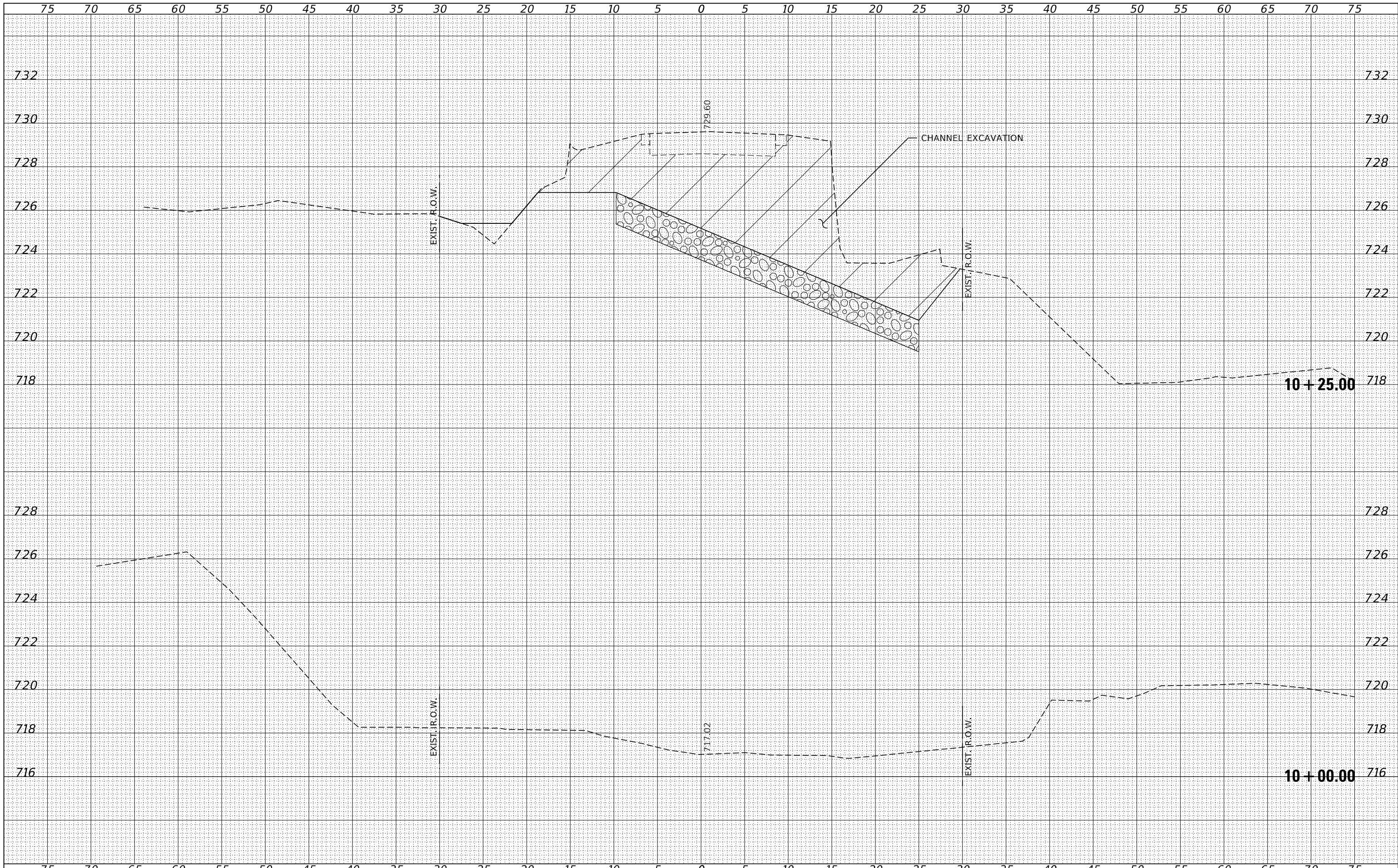
SCALE: 5H:2V SHEET NO. 3 OF 7 SHEETS STA. 9+50.00 TO STA. 9+75.00

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
245A	15-06125-00-BR	LIVINGSTON	20	16
CHATSWORTH ROAD DISTRICT			CONTRACT NO. 87699	
ILLINOIS FED. AID PROJECT AAB6(087)				



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

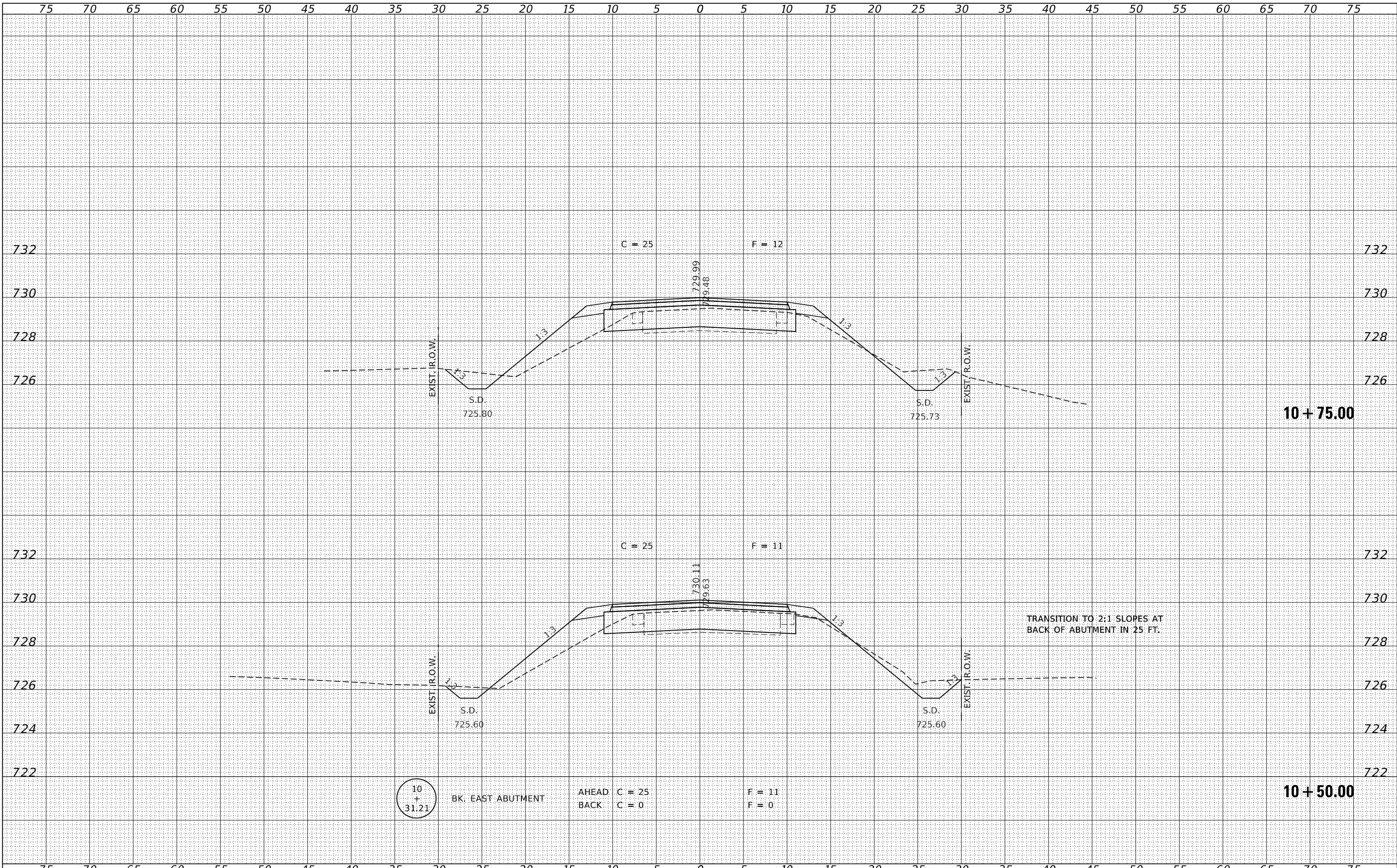
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BY	
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NO.	TEMPLATE
	AREAS
	CHECKED



FILE NAME = 180138-shl-vssheets.dgn	USER NAME = rmosck	DESIGNED - J.V.F.	REVISED -	<b>STATE OF ILLINOIS</b> <b>LIVINGSTON COUNTY HIGHWAY DEPARTMENT</b>	<b>STATION CROSS SECTIONS</b> <b>BROWN BRIDGE</b>			T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC.		DRAWN - T.W.K.	REVISED -		245A	15-06125-00-BR	LIVINGSTON	20	17			
3885 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L/S / P/E / SE CORP. 184.009958		CHECKED - S.W.M.	REVISED -		CHATSORTH ROAD DISTRICT				CONTRACT NO. 87699			
		DATE - 01/31/19	REVISED -		SCALE: 5H:2V	SHEET NO. 4 OF 7 SHEETS	STA. 10+00.00	TO STA. 10+25.00	ILLINOIS FED. AID PROJECT AAB6(087)			

BY	DATE

ORIGINAL SURVEY	SURVEYED	DATE



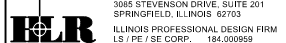
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 CHECKED - S.W.M.  
 DATE - 01/31/19  
 PLOT SCALE = \$SCALES  
 PLOT DATE = 2/1/2019

REVISID -  
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STATE OF ILLINOIS  
 LIVINGSTON COUNTY HIGHWAY DEPARTMENT

STATION CROSS SECTIONS  
 BROWN BRIDGE  
 SCALE: 5H:2V  
 SHEET NO. 5 OF 7 SHEETS  
 STA. 10+50.00 TO STA. 10+75.00

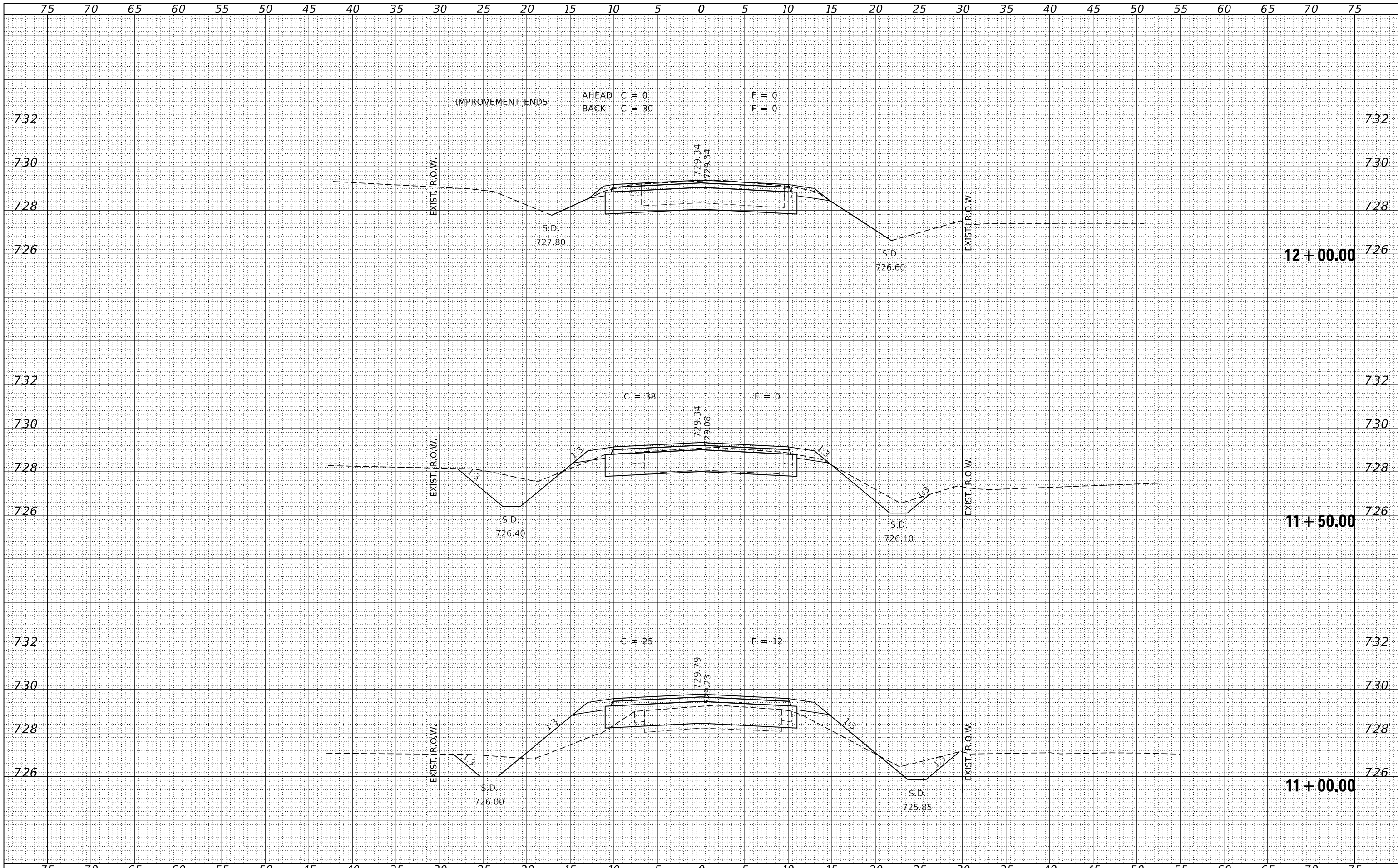
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245A	15-06125-00-BR	LIVINGSTON	20	18
CHATSWORTH ROAD DISTRICT		CONTRACT NO. 87699		



ILLINOIS FED. AID PROJECT AAB6(087)

DATE	
BY	
ORIGINAL SURVEY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
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BY	
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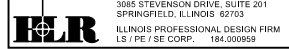
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 DATE - 01/31/19  
 PLOT SCALE = \$Scales\$  
 PLOT DATE = 2/1/2019

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STATE OF ILLINOIS  
 LIVINGSTON COUNTY HIGHWAY DEPARTMENT

STATION CROSS SECTIONS  
 BROWN BRIDGE  
 SCALE: 5H:2V      SHEET NO. 6 OF 7 SHEETS      STA. 11+00.00 TO STA. 12+00.00

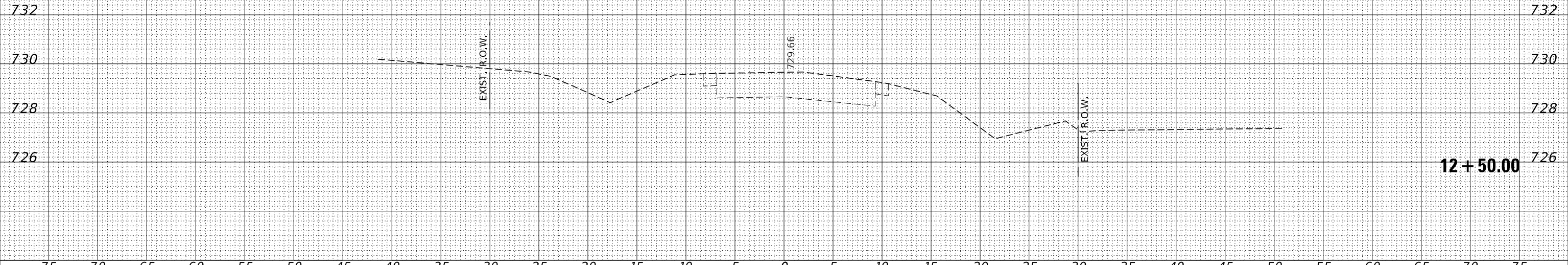
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245A	15-06125-00-BR	LIVINGSTON	20	19
CHATSWORTH ROAD DISTRICT			CONTRACT NO. 87699	
ILLINOIS FED. AID PROJECT AAB6(087)				



75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

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

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



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FILE NAME = 180138-shl-xssheets.dgn  
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 DRAWN - T.W.K.  
 CHECKED - S.W.M.  
 DATE - 01/31/19  
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 PLOT DATE = 2/1/2019

DESIGNED - J.W.F.  
 DRAWN - T.W.K.  
 CHECKED - S.W.M.  
 DATE - 01/31/19  
 REVISIONS:  
 REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

STATE OF ILLINOIS  
 LIVINGSTON COUNTY HIGHWAY DEPARTMENT

STATION CROSS SECTIONS  
 BROWN BRIDGE

SCALE: 5H:2V SHEET NO. 7 OF 7 SHEETS STA. 12+50.00 TO STA. 12+50.00

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
245A	15-06125-00-BR	LIVINGSTON	20	20
CHATSWORTH ROAD DISTRICT			CONTRACT NO. 87699	

