

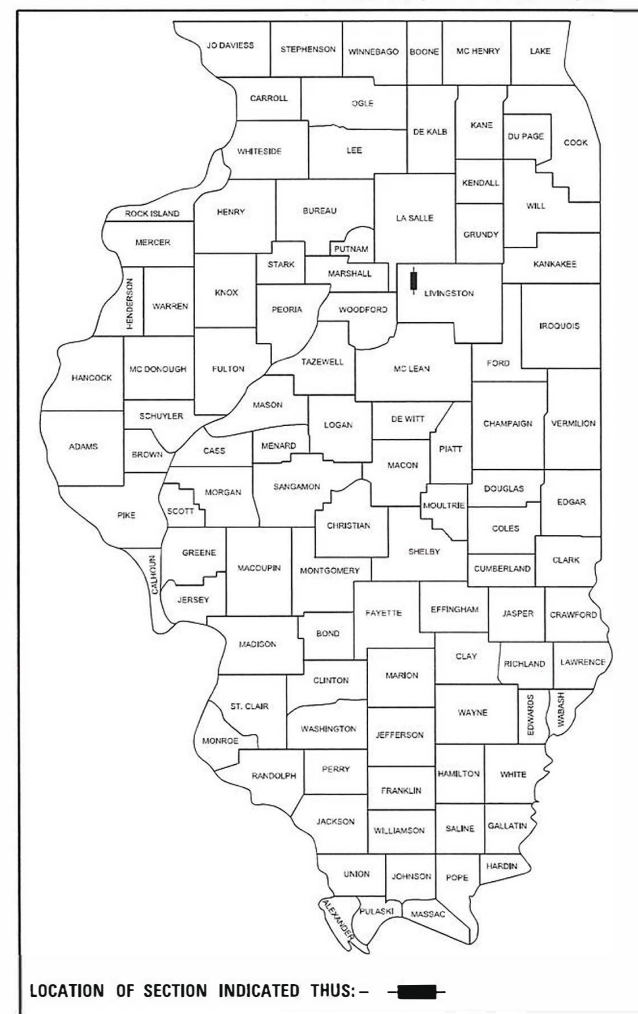
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 32	*	LIVINGSTON	21	1
FED. ROAD DIST. NO.	ILLINOIS CONTRACT NO. 87693		* 17-14152-00-BR / 17-01122-00-BR	

03-06-2020 LETTING ITEM 180

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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

**PROJECT 13AH(188)
SECTION 17-14152-00-BR / 17-01122-00-BR
LONG POINT / AMITY ROAD DISTRICT
LIVINGSTON COUNTY
T.R. 32 / 600E
PROPOSED STRUCTURE NO. 053-4223
C-93-008-19
DURRE BRIDGE**



ILLINOIS DEPARTMENT OF TRANSPORTATION

APPROVED 12/13/2019
Clay Mitchell
COUNTY ENGINEER

APPROVED 12/23/2019
David Sander
LONG POINT TOWNSHIP COMMISSIONER

APPROVED 12/23/2019
John Sander
AMITY TOWNSHIP COMMISSIONER

PASSED 1/3/2020
John Sander
DISTRICT THREE ENGINEER OF LOCAL ROADS & STREETS

Releasing For Bid Based on Limited Review 1/3/2020
John Sander
REGION TWO ENGINEER
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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.	BORINGS
13-21.	STATION CROSS SECTIONS

HIGHWAY STANDARDS:

000001-07	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
515001-04	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

UTILITIES

COMED
1910 S. BRIGGS STREET
JOLIET, IL 60433

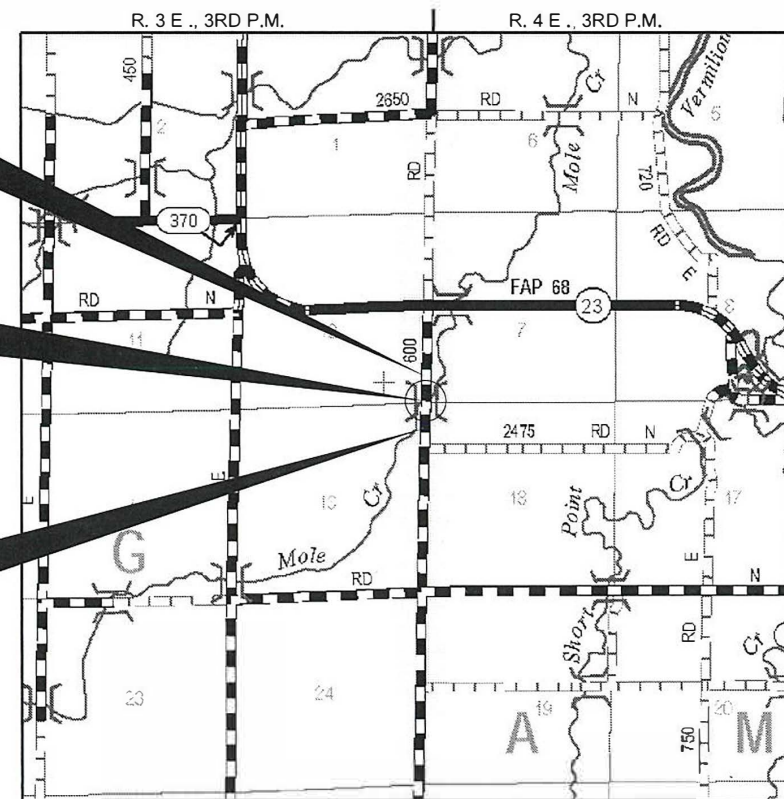
FAIRPOINT COMMUNICATIONS
48 W 1ST STREET
EL PASO, IL 61738

MEDIACOM
808 E NORTH STREET
ELBURN, IL 60119

STA. 10+00
PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE. SINGLE SPAN @ 70'-0"
27'-0" ROADWAY; SKEW=0°
EXISTING STRUCTURE NO. 053-3122
PROPOSED STRUCTURE NO. 053-4223

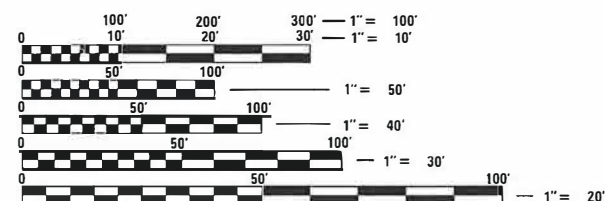
IMPROVEMENT ENDS
STATION 12+75

IMPROVEMENT BEGINS
STATION 7+50



LOCATION MAP

APPROXIMATE SCALE: 0 1/2 MILE
NET LENGTH OF SECTION = 525 FEET = 0.099 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: 75 ADT

WARNING

CALL 811 BEFORE YOU DIG
DIG NO: A1702447

DATE: 12/12/2019

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

184.000959
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION

EXPIRES: 11/30/2021 PROJECT NUMBER: 18.0077.130 DATE: 12/12/19

SUMMARY OF QUANTITIES

CODE NO.	ITEM	CONSTRUCTION TYPE CODE 0010	
		UNIT	TOTAL
20200100	EARTH EXCAVATION	CU YD	645
20300100	CHANNEL EXCAVATION	CU YD	205
20400800	FURNISHED EXCAVATION	CU YD	400
28100107	STONE RIPRAP, CLASS A4	SQ YD	500
28200200	FILTER FABRIC	SQ YD	500
35100100	AGGREGATE BASE COURSE, TYPE A	TON	730
40600275	BITUMINOUS MATERIALS (PRIME COAT)	POUND	2,293
40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	226
40603080	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	141
40604000	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5FG, MIX "C", N50	TON	85
48101200	AGGREGATE SHOULDERS, TYPE B	TON	103
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	23.4
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	1,890
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	2,820
50900205	STEEL RAILING, TYPE S1	FOOT	136
51200957	FURNISHING METAL SHELL PILES 12"X0.250"	FOOT	225
51202305	DRIVING PILES	FOOT	225
51203200	TEST PILE METAL SHELLS	EACH	1
51500100	NAME PLATES	EACH	1
542D0220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	40
542D0223	PIPE CULVERTS, CLASS D, TYPE 1 18"	FOOT	30
542D0229	PIPE CULVERTS, CLASS D, TYPE 1 24"	FOOT	36
60100965	PIPE DRAINS 18"	FOOT	20
67100100	MOBILIZATION	L SUM	1
72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
X2070302	POROUS GRANULAR EMBANKMENT, SPECIAL	TON	100
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.6
Z0046304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	126

SEE SPECIAL PROVISIONS
 * SPECIALTY ITEMS

GENERAL NOTES

- 1) ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, ADOPTED APRIL 1 2016", (HERE IN AFTER REFERRED TO AS THE STANDARD SPECIFICATIONS; THE "SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS" ADOPTED JANUARY 1, 2020; 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.
- 2) ALL CLEARING, GRUBBING, FENCE REMOVAL, PAVEMENT REMOVAL, AND REMOVAL OF EXISTING DRAINAGE STRUCTURES SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION. ALL AGGREGATE AND BITUMINOUS PAVEMENT SHALL BE REMOVED AND PROPERLY DISPOSED OF BY THE CONTRACTOR IN A METHOD APPROVED BY THE ENGINEER. REMOVAL AND DISPOSAL OF PAVEMENT SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- 3) 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.
- 4) ANY REFERENCE TO STANDARDS THROUGHOUT THE PLANS OR SPECIAL PROVISIONS SHALL BE INTERPRETED TO BE THE LATEST STANDARD OF THE DEPARTMENT.
- 5) 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.
- 6) THE CONTRACTOR SHALL PROVIDE ACCESS TO ABUTTING PROPERTY AT ALL TIMES DURING CONSTRUCTION OF THE PROJECT
- 7) THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES
 AGGREGATE SURFACE COURSE 2.05 TON/CU YD
 POROUS GRANULAR EMBANKMENT 2.0 TON/CU YD
 STONE RIPRAP, CLASS 4 1.75 TON/CU YD

BITUMINOUS MATERIALS RATES

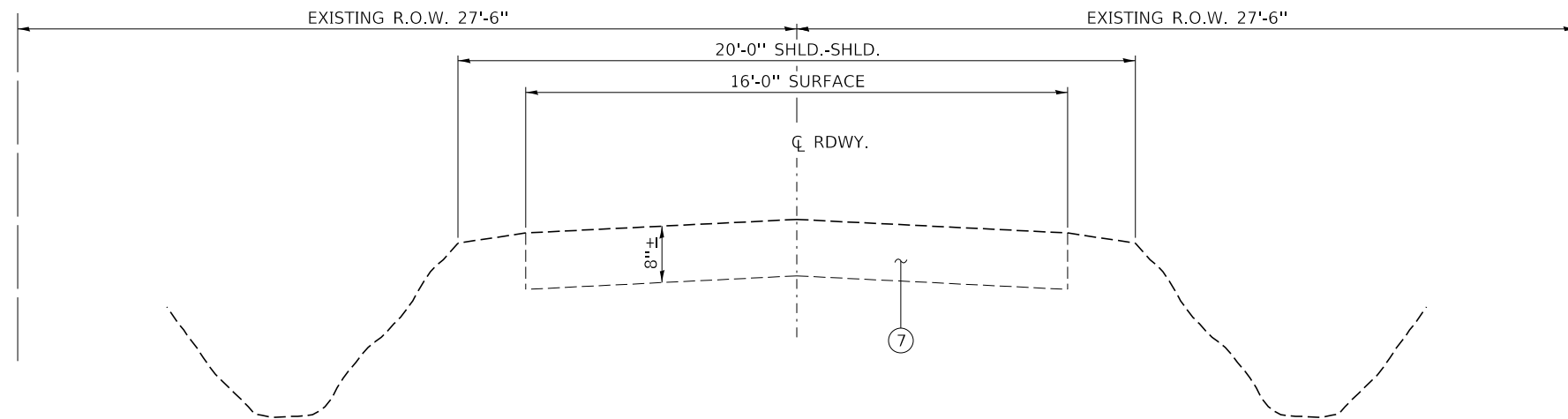
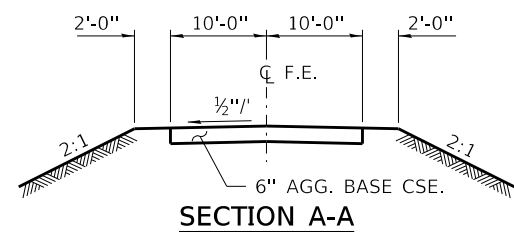
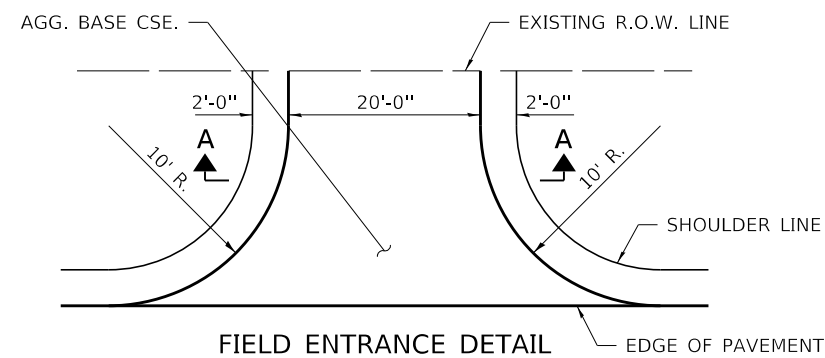
SURFACE TYPE	RESIDUAL RATE
AGGREGATE BASE	0.250 LB/SQ FT
MILLED HMA OR PCC (TACK COAT)	0.050 LB/SQ FT
EXISTING PAVEMENT (TACK COAT)	0.050 LB/SQ FT
TACK COAT (BETWEEN LIFTS)	0.025 LB/SQ FT
- 8) THE FINAL SURFACE OF ALL EMBANKMENT AREAS SHALL BE SEEDED. THE TOP 4 INCHES OF THE SEEDED AREAS SHALL BE TOPSOIL 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.
- 9) 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) = 0.6 ACRES
- 10) ALL WASTE MATERIAL FROM EXCAVATIONS SHALL BE DISPOSED OF BY THE CONTRACTOR. NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- 11) COMMITMENTS:
 1) TREES GREATER THAN 3" DIA. SHALL NOT BE CLEARED FROM APRIL 1 TO SEPTEMBER 30.

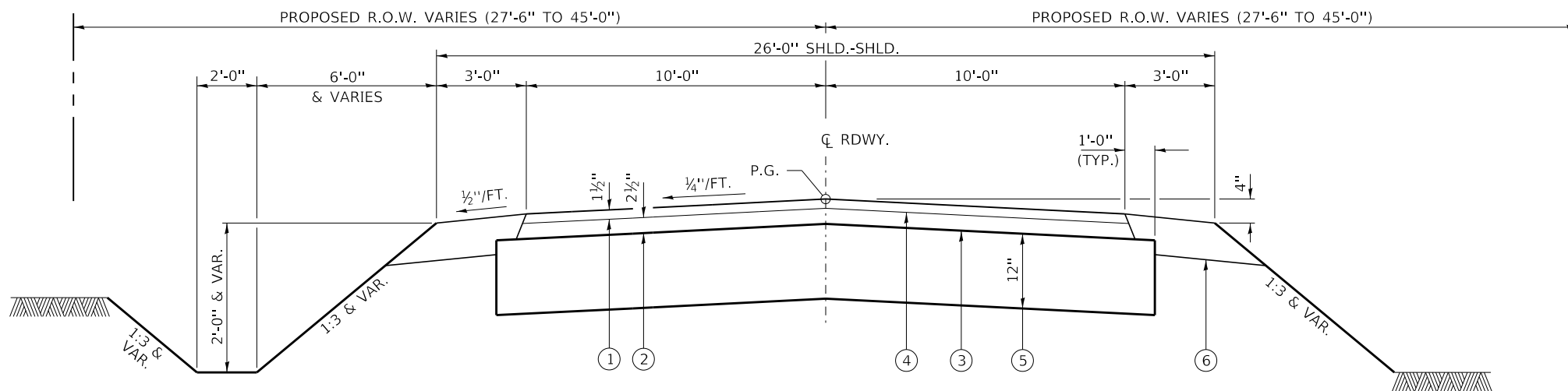
EARTHWORK SCHEDULE

LOCATION	EARTH EXCAVATION	CHANNEL EXCAVATION	SHRINKAGE FACTOR	PERCENT USED	EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT REQUIRED	EARTHWORK BALANCE
	CU.YD.	CU.YD.			CU.YD.	CU.YD.	CU.YD.
T.R. 32 / 600E							
STA 7+50.00 TO STA 9+64.33	257		25.00%	100.00%	192	582	-390
STA 9+64.33 TO STA 10+35.67		205	25.00%	70.00%	108		108
STA 10+35.67 TO STA 12+75.00	390		25.00%	100.00%	292	375	-83
ENTRANCE STA. 8+50.00						21	-21
ENTRANCE STA. 12+00.00						16	-16
TOTAL	646	205			592	994	-402
USE	645	205					400

FURNISHED 400 CU YDS



EXISTING TYPICAL CROSS SECTION
STA. 7+50 TO 12+75



PROPOSED TYPICAL CROSS SECTION
STA. 7+50 TO 12+75

TRANSITIONS FROM THE PROPOSED SHOULDERS TO THE EXISTING SHOULDERS ARE TO BE CONSTRUCTED FROM STA. 7+50 TO 8+00 AND STA. 12+25 TO STA. 12+75. 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 SURFACE

HOT-MIX ASPHALT MIXTURE REQUIREMENTS

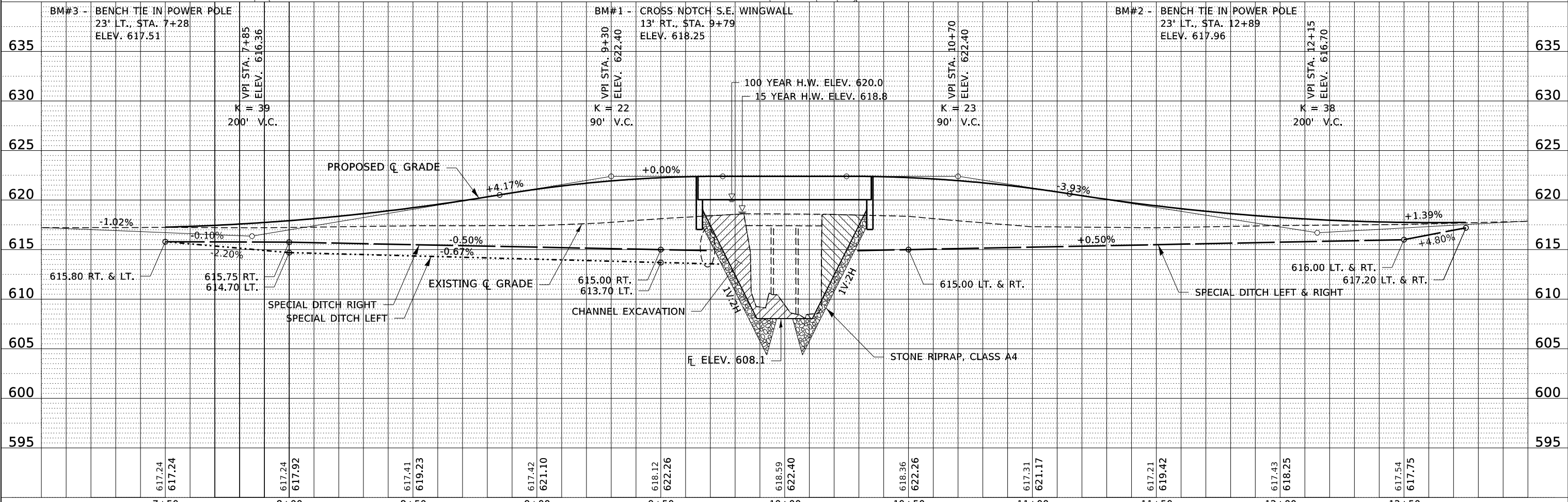
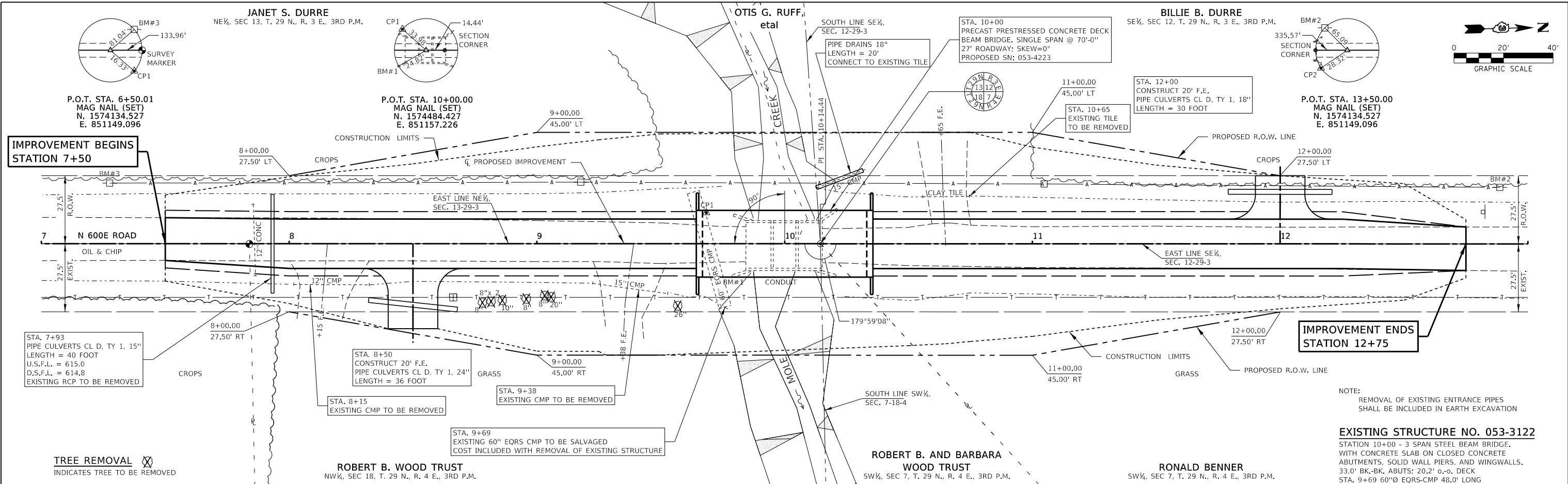
LOCATIONS(S)	T.R. 32 / 600E	T.R. 32 / 600E
MIXTURE USE(S):	HOT-MIX ASPHALT SURFACE COURSE	HOT-MIX ASPHALT BINDER COURSE
PG:	PG 64-22	PG 64-22
DESIGN AIR VOIDS:	4% @ 50 Gyr.	4% @ 50 Gyr.
MIXTURE COMPOSITION: (MIXTURE GRADATION)	IL 9.5	IL 19.0
FRICTION AGGREGATE:	MIXTURE C	NONE
DENSITY TEST METHOD	CORES	CORES
MIXTURE WEIGHT:	112 LBS / SY / INCH THICKNESS	112 LBS / SY / INCH THICKNESS
QUALITY MANAGEMENT PROGRAM	QC/QA	QC/QA

SUGGESTED CUT SECTION
CONSTRUCT AS SHOWN IN
STATION CROSS SECTIONS

SUGGESTED FILL SECTION
CONSTRUCT AS SHOWN IN
STATION CROSS SECTIONS

DATE	
BY	
REVIEWED	
PLANNED	
ALIGNED	
CHECKED	
NOTED	
FILE NAME	
NO.	

DATE	
BY	
REVIEWED	
PROFILES	
GRADES	
CHECKED	
NOTED	
FILE NAME	
NO.	



FILE NAME = 180077-shl-pnprf.dgn	USER NAME = rmosick	DESIGNED - J.W.F.	REVISED -	STATE OF ILLINOIS LIVINGSTON COUNTY HIGHWAY DEPARTMENT	PLAN & PROFILE N 600E ROAD	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
HAMPTON, LENZINI AND RENWICK, INC.	PLOT SCALE = \$\$\$CALE\$	DRAWN - T.W.K.	REVISED -			32	17-14152-00-BR / 17-01132-00-BR	LIVINGSTON	21	4	
3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT DATE = 12/12/2019	CHECKED - S.W.M.	REVISED -			LONG POINT / AMITY ROAD DISTRICT		CONTRACT NO. 87693		ILLINOIS FED. AID PROJECT I3AH(188)	
		DATE = 12/12/19	REVISED -			SCALE: 20H:5V	SHEET NO. 1 OF 1 SHEETS	STA. 7+00.00 TO STA. 13+00.00			

BENCHMARK: Cross Notch SE wingwall 13' Rt., Sta. 9+79, Elev. 618.25

EXISTING STRUCTURE NO. 053-3122: Sta. 10+00 - 3-span steel beam bridge with concrete slab on closed concrete abutments, solid wall piers, and wingwalls. 33.0' bk.-bk. abuts; 20.0' o.-o. deck.

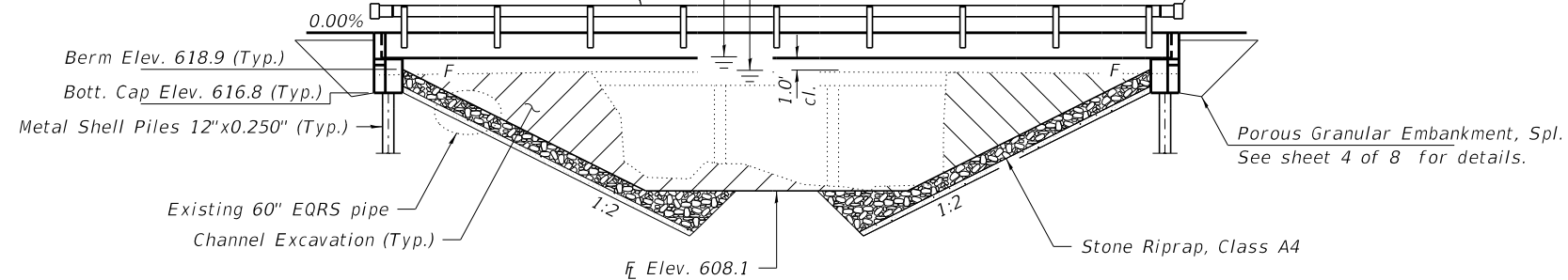
Structure closed to traffic during construction.

Salvage Existing 60" EQRS Pipe For Long Point Township.

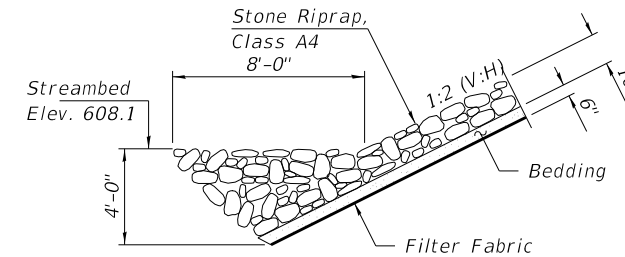
Steel Railing, Type S-1
See sheets 4 & 5 of 8 for details.

100 Yr. H.W. Elev. 620.0
15 Yr. H.W. Elev. 618.8

Curled End Sections (Typ.)
with Terminal Marker - Direct Applied.
See sheet 5 of 8 for details.



ELEVATION



SECTION A-A

GENERAL NOTES

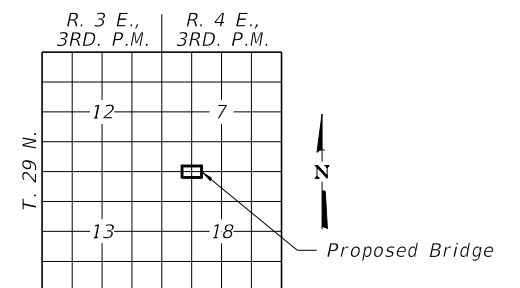
Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at South Abutment or approved by the Engineer before ordering the remainder of piles.
Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure. The Contractor shall sawcut the upper portion of the existing abutment at the stage removal line before Stage 1 removal to ensure the remaining portion will not be prematurely damaged.
Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (IL Modified). See Special Provisions.
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

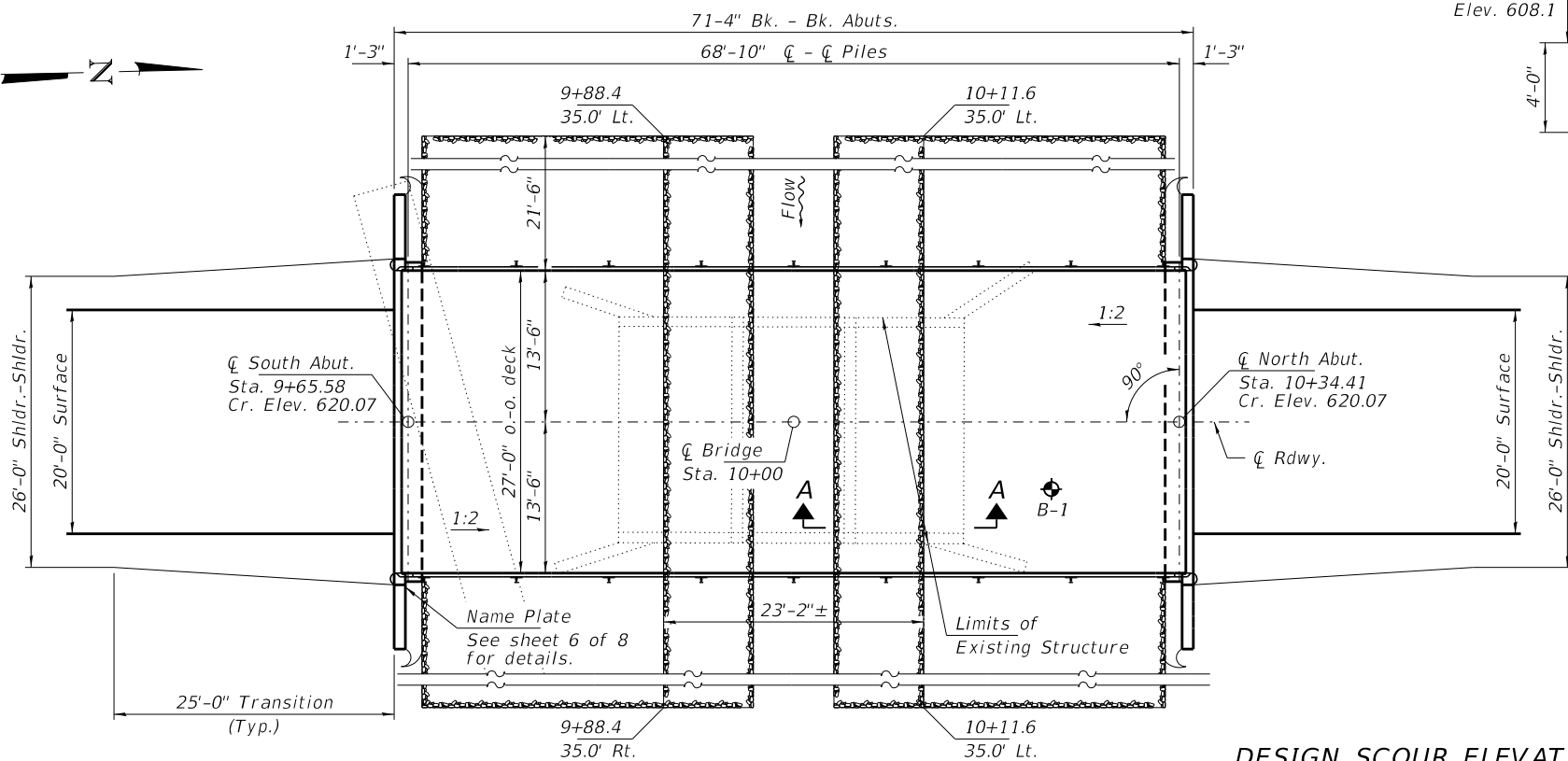
1. General Plan & Elevation
2. 27"x36" PPC Deck Beam
3. 27"x36" PPC Deck Beam Details
4. Superstructure Details
5. Steel Railing, Type S-1
6. Abutments
7. Metal Shell Pile Details
8. Borings

MOLE CREEK
BUILT 201_ BY
LIVINGSTON COUNTY
SEC. 17-14152-00-BR / 17-01122-00-BR
LONG POINT / AMITY ROAD DISTRICT
STR. NO. 053-4223
LOADING HL-93

NAME PLATE
See Std. 515001



LOCATION SKETCH



PLAN

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
 $f_y = 60,000$ psi (Reinf.)

PRECAST PRESTRESSED UNITS

$f'_c = 6,000$ psi
 $f'_{ci} = 5,000$ psi
 $f_{pu} = 270,000$ psi ($1/2"$ low lax. strands)
 $f_{pbt} = 201,960$ psi ($1/2"$ low lax. strands)
 $f_y = 60,000$ psi (Reinf.)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.107g
Design Spectral Acceleration at 0.2 sec. (S_{D5}) = 0.173g
Soil Site Class = D

WATERWAY INFORMATION

		Existing Overtopping Elev. 617.2 @ Sta. 7+50		Proposed Overtopping Elev. 617.2 @ Sta. 7+50					
		Drainage Area = 20.9 Sq. Mi.							
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Nat. H.W.E. Exist.	Head - Ft. Exist.	Headwater El. Exist.	Prop. H.W.E. Prop.	Head - Ft. Prop.	Headwater El. Prop.
Overtop	10	1930	210	430	618.57	0.19	0.04	618.76	618.61
Design	15	2200	210	450	618.84	0.16	0.06	619.00	618.90
Base	100	3590	210	510	619.96	0.13	0.01	620.09	619.97
Scour Check	200	4090	210	510	620.36	0.13	0.01	620.49	620.37
Max. Calc.	500	4820	210	510	620.70	0.11	0.00	620.81	620.70

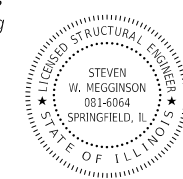
10 Year Velocity through Existing Bridge = 2.0 fps 10 Year Velocity through Proposed Bridge = 1.9 fps

DESIGN SCOUR ELEVATION TABLE

Event/Limit State	Design Scour Elev. (ft.)		Item 113
	S. Abut.	N. Abut.	
Q100	616.8	616.8	8
Q200	616.8	616.8	
Design	616.8	616.8	
Check	616.8	616.8	

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 12/12/19
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064

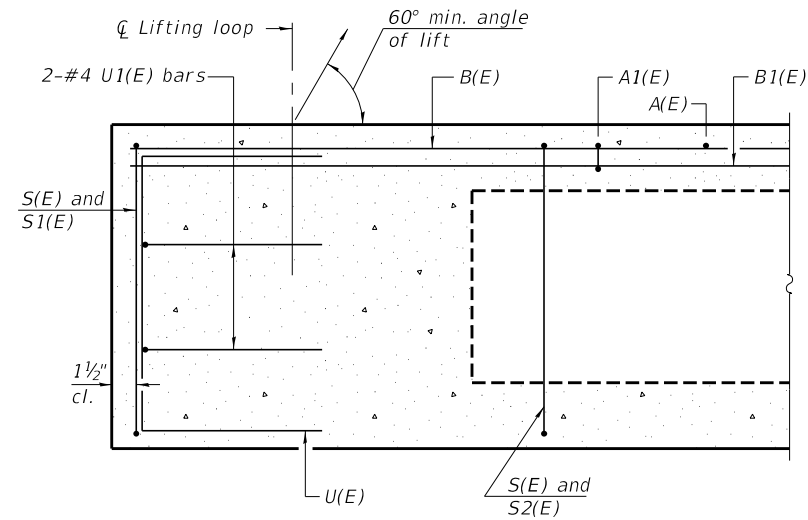


Expires 11-30-2020

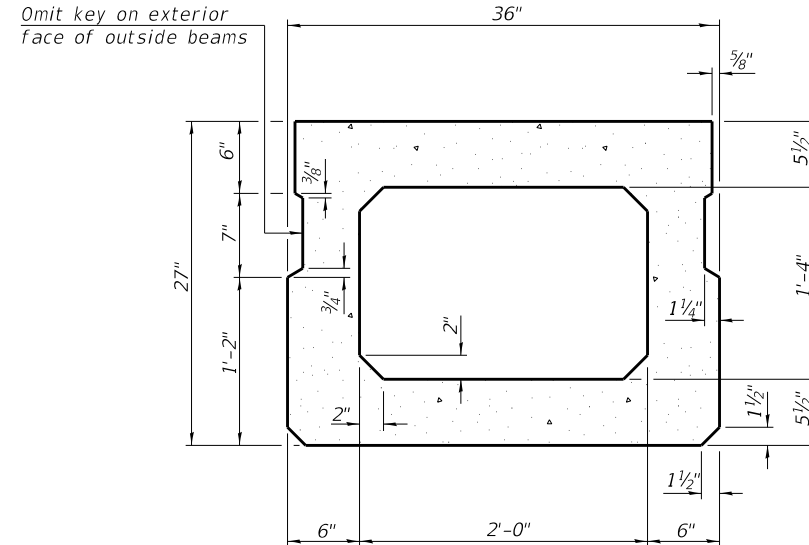
TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			205
Stone Riprap, Class A4	Sq. Yd.			500
Filter Fabric	Sq. Yd.			500
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		23.4	23.4
Precast Prestressed Conc. Deck Beams (27" Depth)	Sq. Ft.	1,890		1,890
Reinforcement Bars, Epoxy Coated	Pound		2,820	2,820
Steel Railing, Type S-1	Foot	136		136
Furnishing Metal Shell Piles 12"x0.250"	Foot		225	225
Driving Piles	Foot		225	225
Test Pile Metal Shells	Each		1	1
Name Plates	Each		1	1
Terminal Marker - Direct Applied	Each	4		4
Porous Granular Embankment, Special	Ton		100	100
Pipe Underdrains for Structures 4"	Foot		126	126

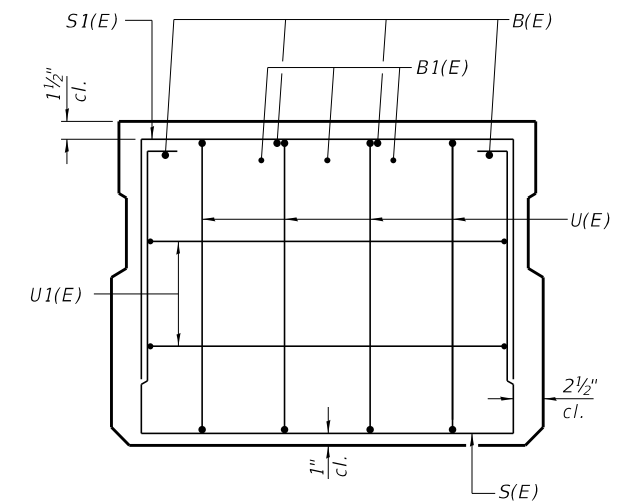
FILE NAME = 180077-shl-bridge.dgn	USER NAME = rmosick	DESIGNED - M.M.P.	REVISED -	STATE OF ILLINOIS LIVINGSTON COUNTY HIGHWAY DEPARTMENT	GENERAL PLAN & ELEVATION STRUCTURE NO. 053-4223	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3035 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT SCALE =	CHECKED - S.W.M.	REVISED -			32	17-14152-00-BR / 17-01122-00-BR	LIVINGSTON	21	5
PLOT DATE = 12/12/2019		DRAWN - M.M.P.	REVISED -			LONG POINT / AMITY ROAD DISTRICT		CONTRACT NO. 87693		
		CHECKED - S.W.M.	REVISED -			ILLINOIS FED. AID PROJECT (3AH)188				



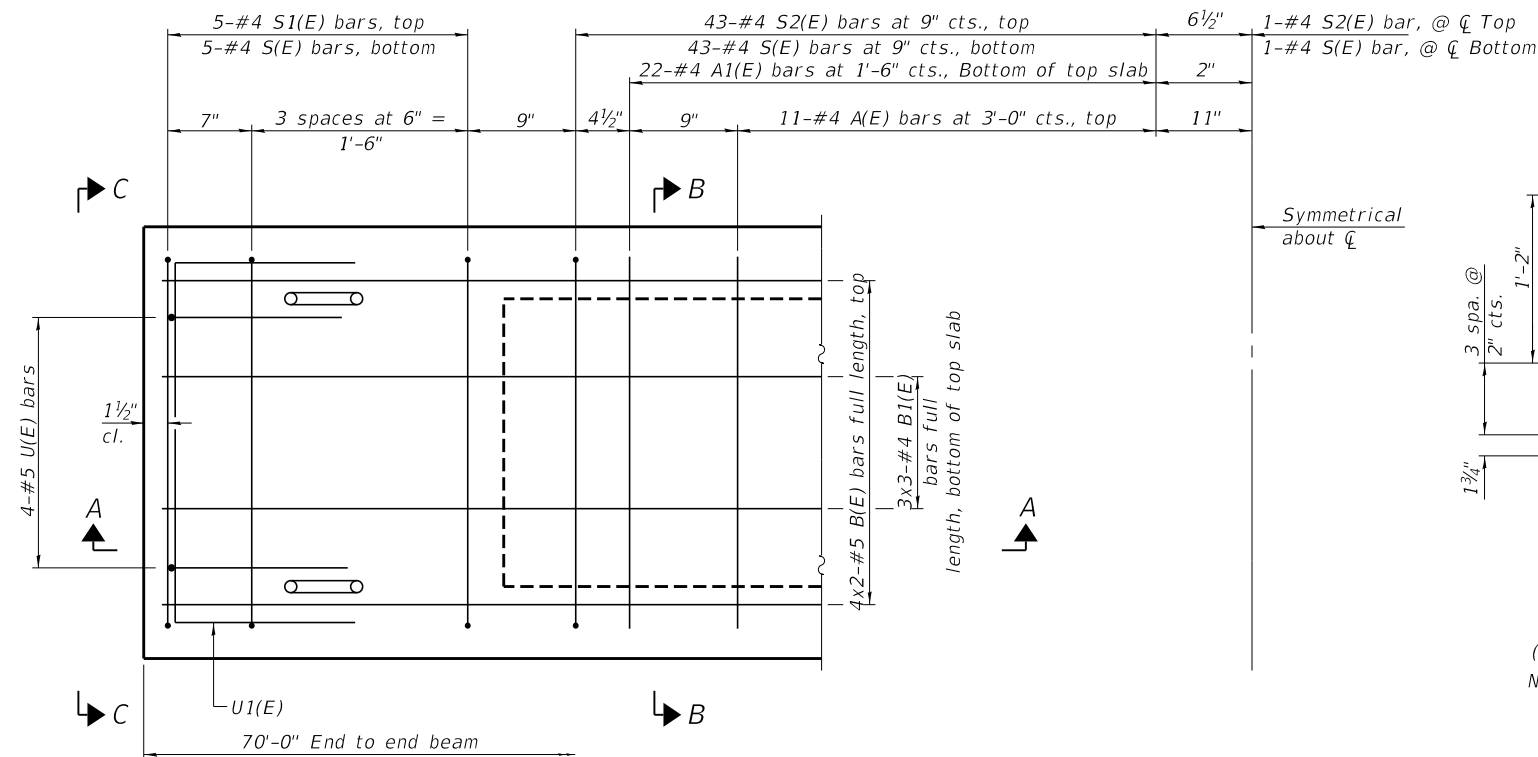
SECTION A-A



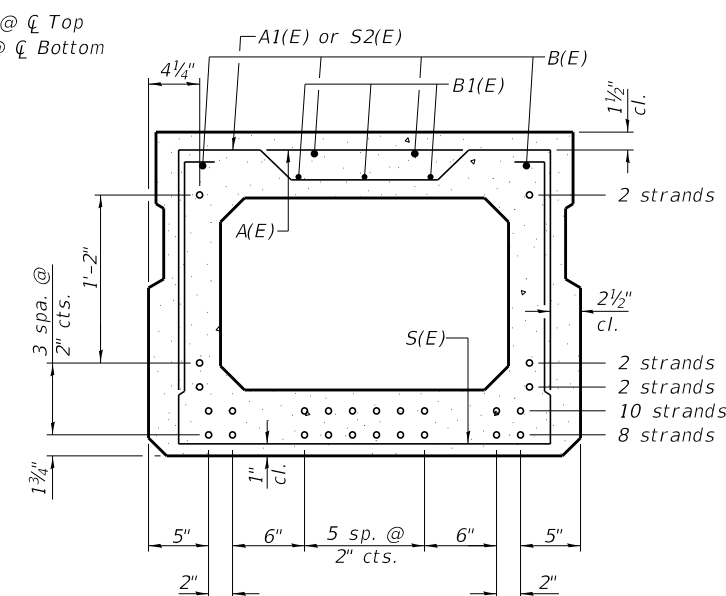
SECTION B-B
(Showing dimensions)



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.

Symmetrical about \bar{C}

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	22	#4	2'-7"	—
A1(E)	44	#4	2'-10"	~
B(E)	8	#5	36'-2"	—
B1(E)	9	#4	24'-6"	—
S(E)	97	#4	7'-5"	⌋
S1(E)	10	#4	5'-11"	⌋
S2(E)	87	#4	6'-2"	⌋
U(E)	8	#5	4'-6"	⌋
U1(E)	4	#4	5'-0"	⌋

Note:
See sheet 3 & 4 of 8 for additional details and Bill of Material.

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

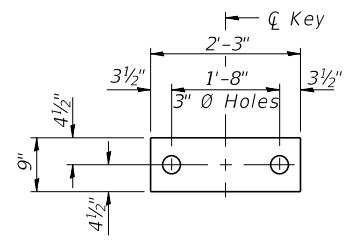
Notes:
Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.
Bars indicated thus 4x2-#5 etc. indicates 4 lines of bars with 2 lengths per line.

PD-2736-0

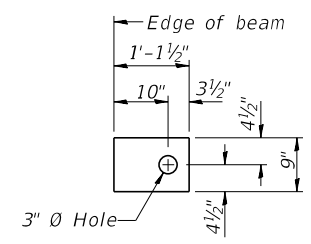
2-17-2017

FILE NAME = 180077-shl-bridge.dgn	USER NAME = rmosick	DESIGNED - M.M.P.	REVISED -	STATE OF ILLINOIS LIVINGSTON COUNTY HIGHWAY DEPARTMENT	27" x 36" PPC DECK BEAM STRUCTURE NO. 053-4223	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 -			32	17-14152-00-BR / 17-01122-00-BR	LIVINGSTON	21	6
	PLOT DATE = 12/12/2019	DRAWN - M.M.P.	REVISED -			LONG POINT / AMITY ROAD DISTRICT		CONTRACT NO. 87693		
		CHECKED - S.W.M.	REVISED -			ILLINOIS		FED. AID PROJECT 13AH(188)		

SHEET NO. 2 OF 8 SHEETS

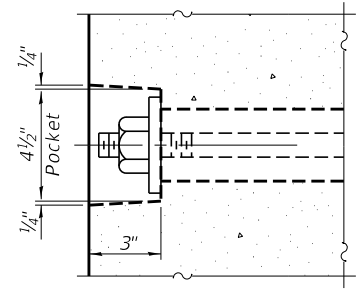


FABRIC BEARING PAD
(Interior - 16 Req'd.)

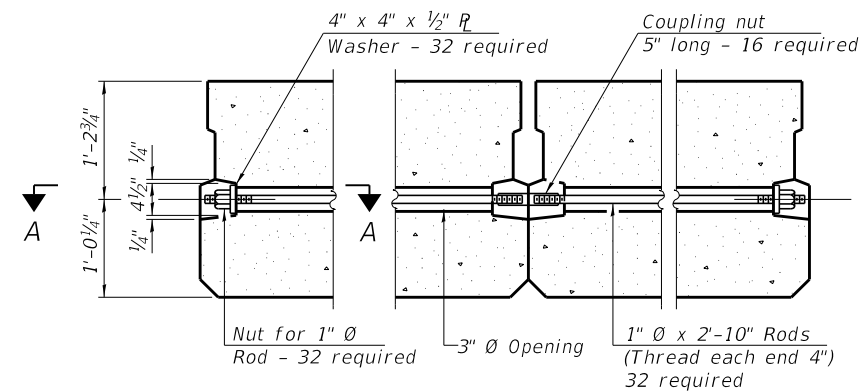


FABRIC BEARING PAD
(Exterior - 4 Req'd.)

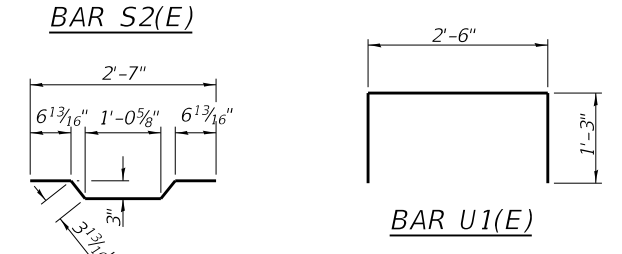
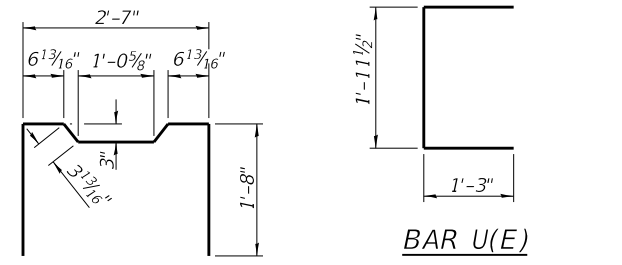
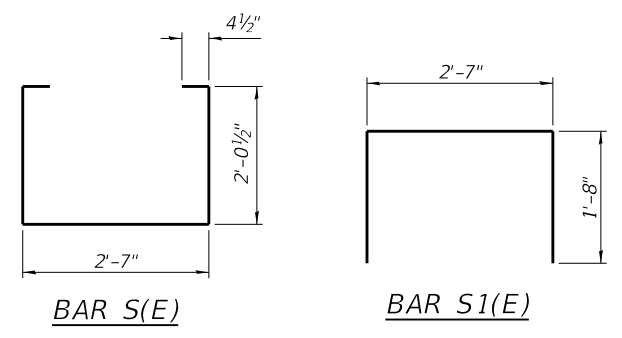
Notes:
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.



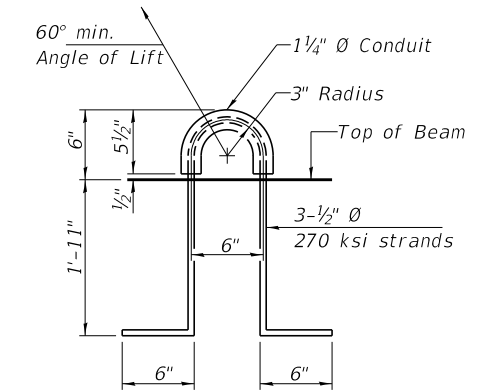
SECTION A-A



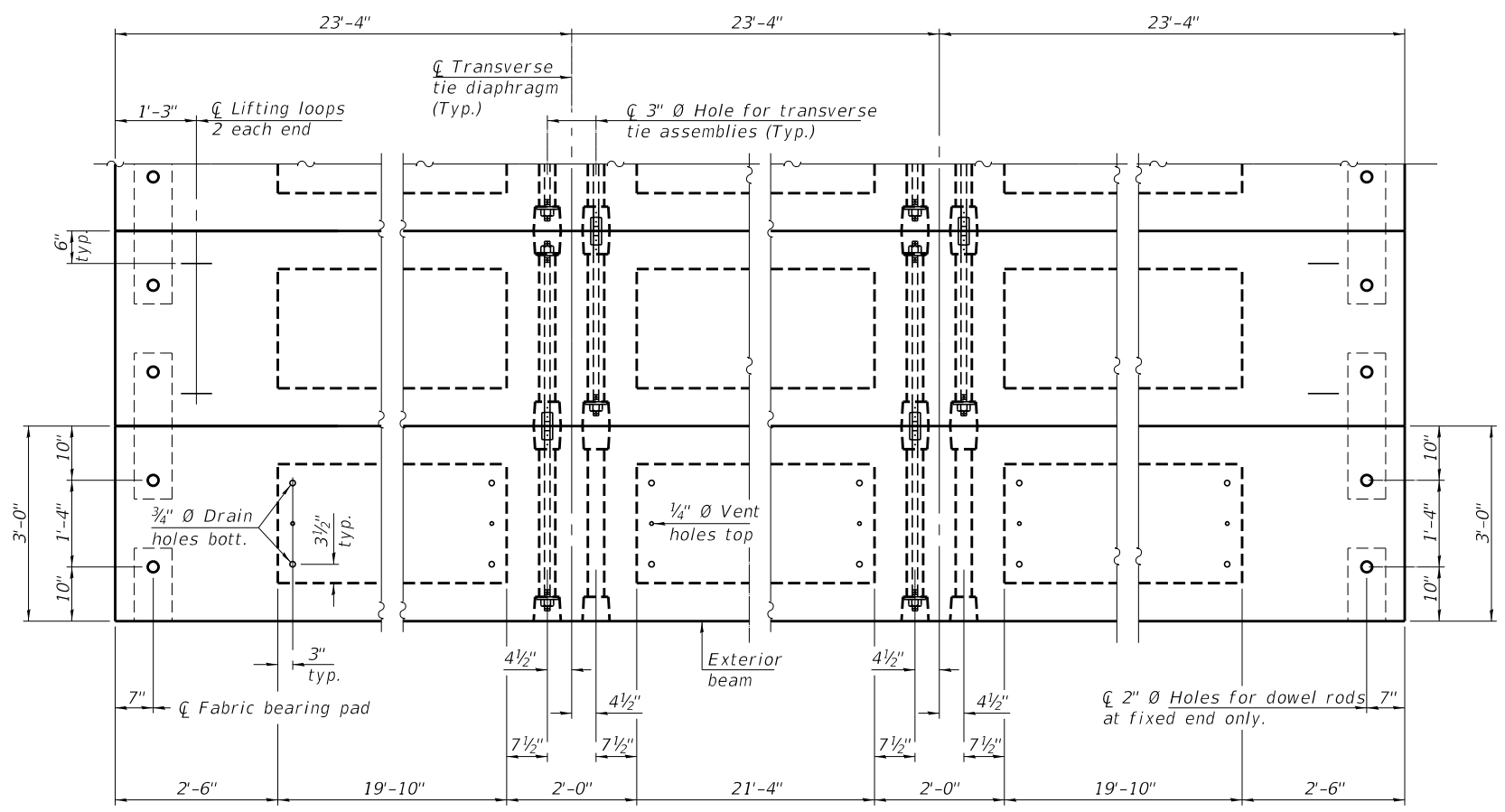
TYPICAL TRANSVERSE TIE ASSEMBLY



BAR A1(E)



LIFTING LOOP DETAIL



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" diameter 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" diameter 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 for precast 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.
Reinforcement bars designated (E) shall be epoxy coated.

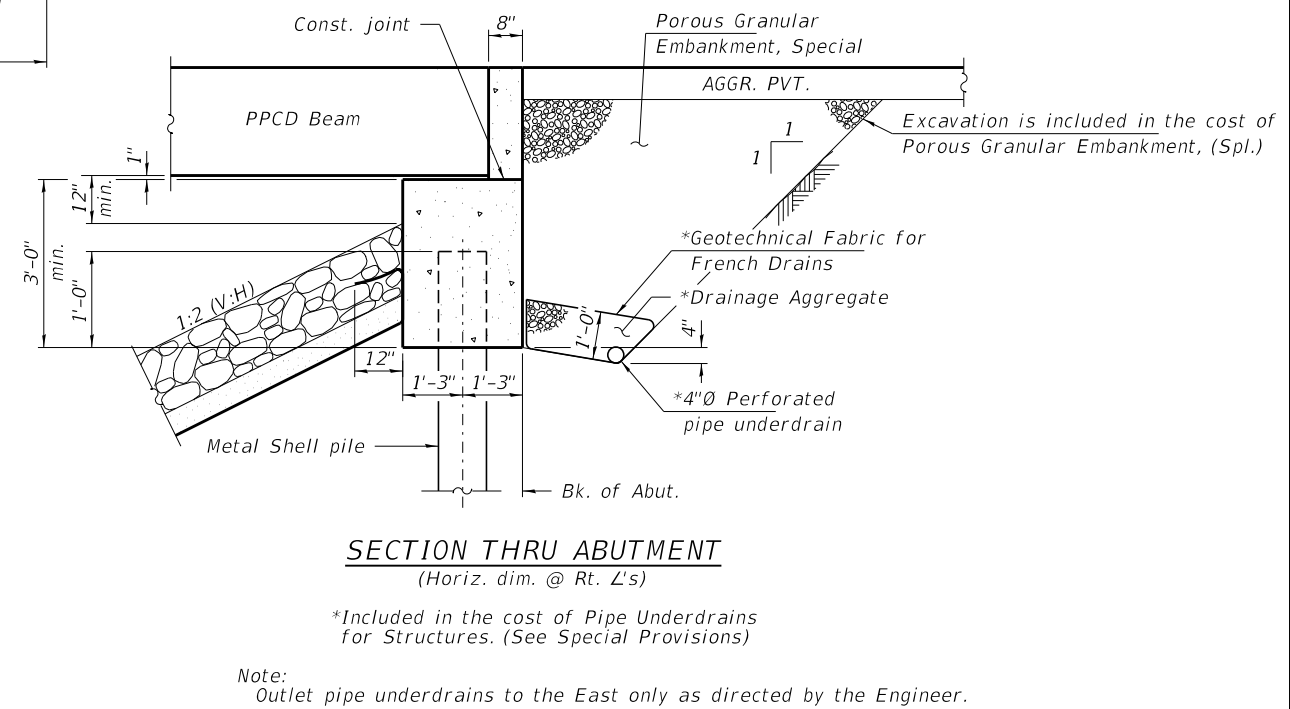
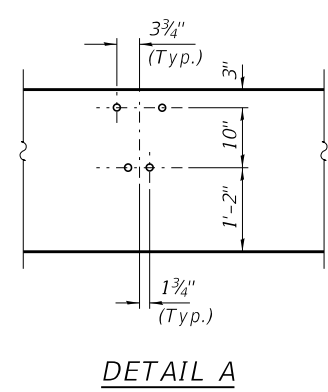
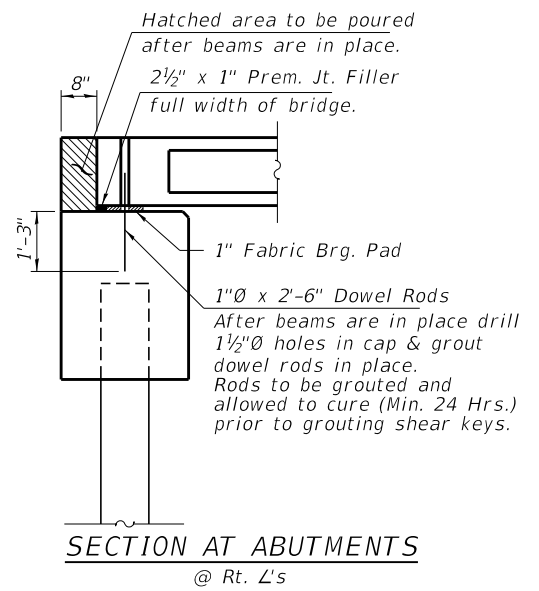
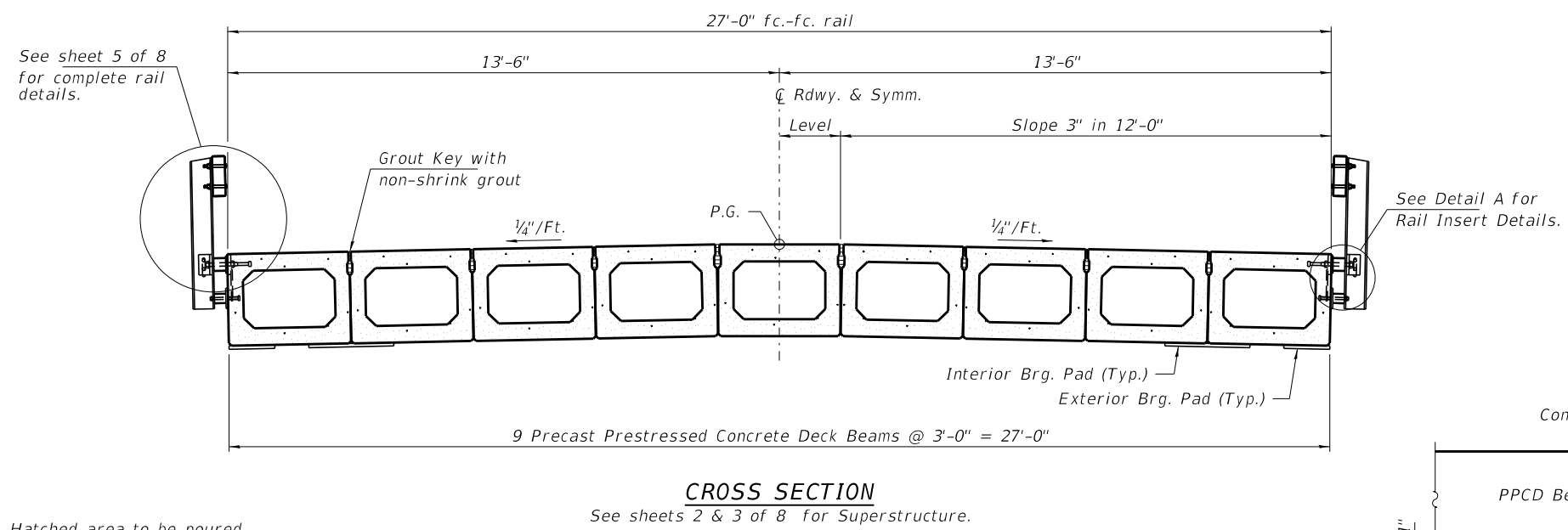
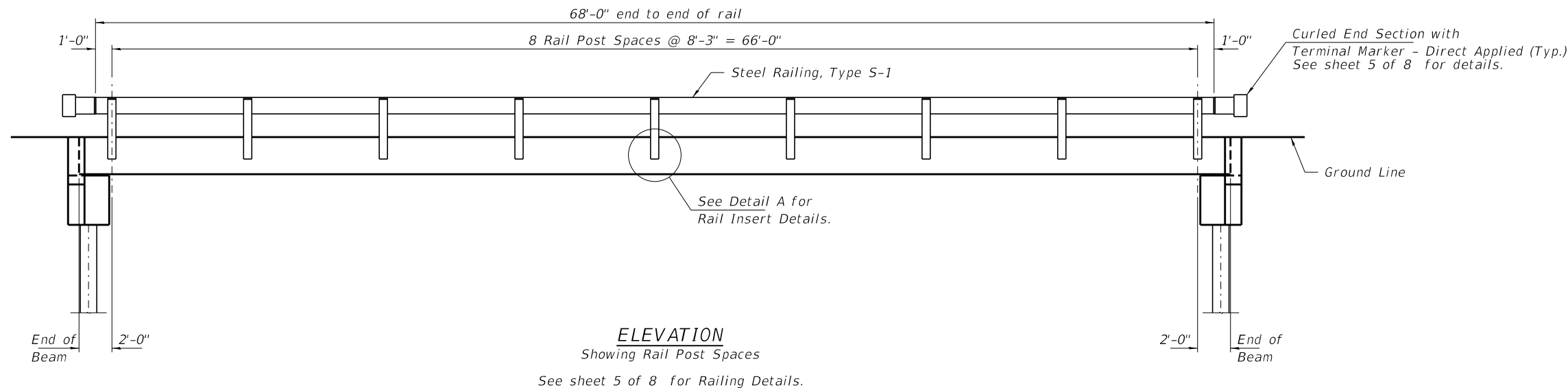
Note: Connect beams in pairs with the transverse tie configuration shown.

BILL OF MATERIAL

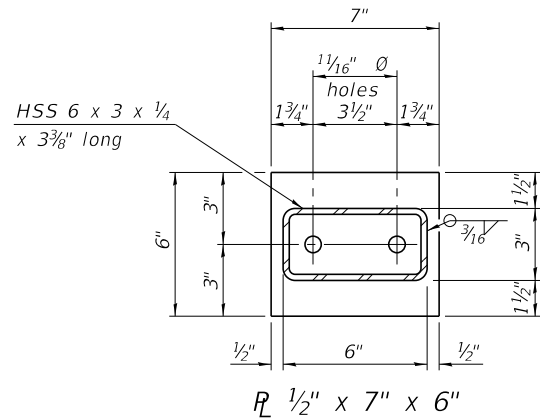
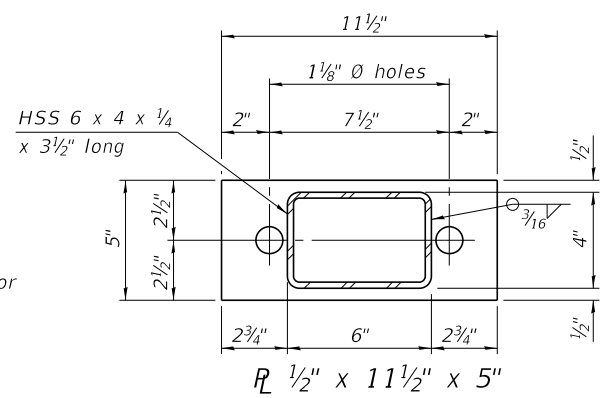
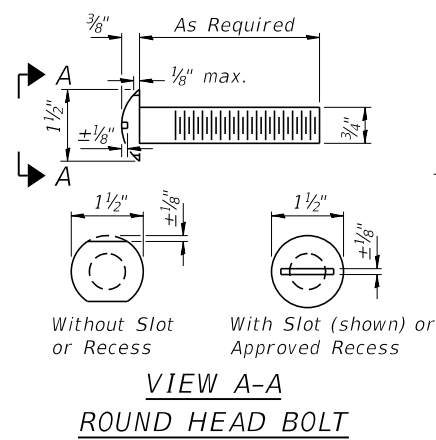
Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft.	1,890
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PD-2736-0D 2-17-2017

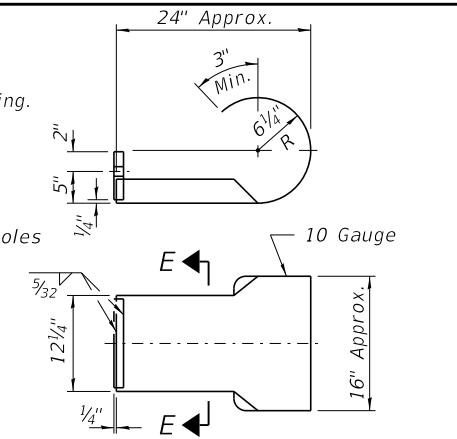
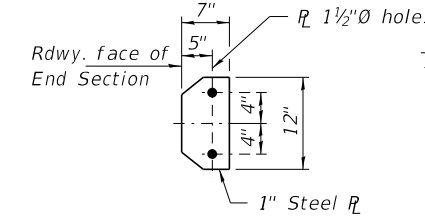
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HAMPTON, LENZINI AND RENWICK, INC. 3035 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT SCALE =	CHECKED - S.W.M.	REVISED -			32	17-14152-00-BR / 17-01122-00-BR	LIVINGSTON	21	7
	PLOT DATE = 12/12/2019	DRAWN - M.M.P.	REVISED -			LONG POINT / AMITY ROAD DISTRICT		CONTRACT NO. 87693		
		CHECKED - S.W.M.	REVISED -			ILLINOIS		FED. AID PROJECT 13AH(188)		



FILE NAME = 180077-shl-bridge.dgn	USER NAME = rmosick	DESIGNED - M.M.P.	REVISED -	STATE OF ILLINOIS LIVINGSTON COUNTY HIGHWAY DEPARTMENT	SUPERSTRUCTURE DETAILS STRUCTURE NO. 053-4223	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.		
HAMPTON, LENZINI AND RENWICK, INC. <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 -	32	17-14152-00-BR / 17-01122-00-BR	LIVINGSTON	21	8
PLOT SCALE =						DRAWN - M.M.P.	REVISED -	LONG POINT / AMITY ROAD DISTRICT			CONTRACT NO. 87693	
PLOT DATE = 12/12/2019						CHECKED - S.W.M.	REVISED -	SHEET NO. 4 OF 8 SHEETS				
<small>ILLINOIS FED. AID PROJECT (3AH)188</small>												



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



SECTION E-E

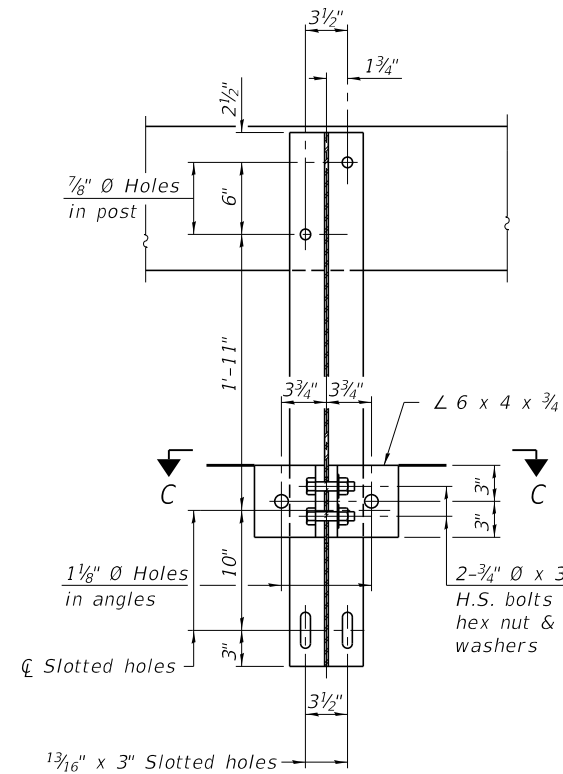
CURLED END SECTION DETAILS

SPLICE DIMENSIONS

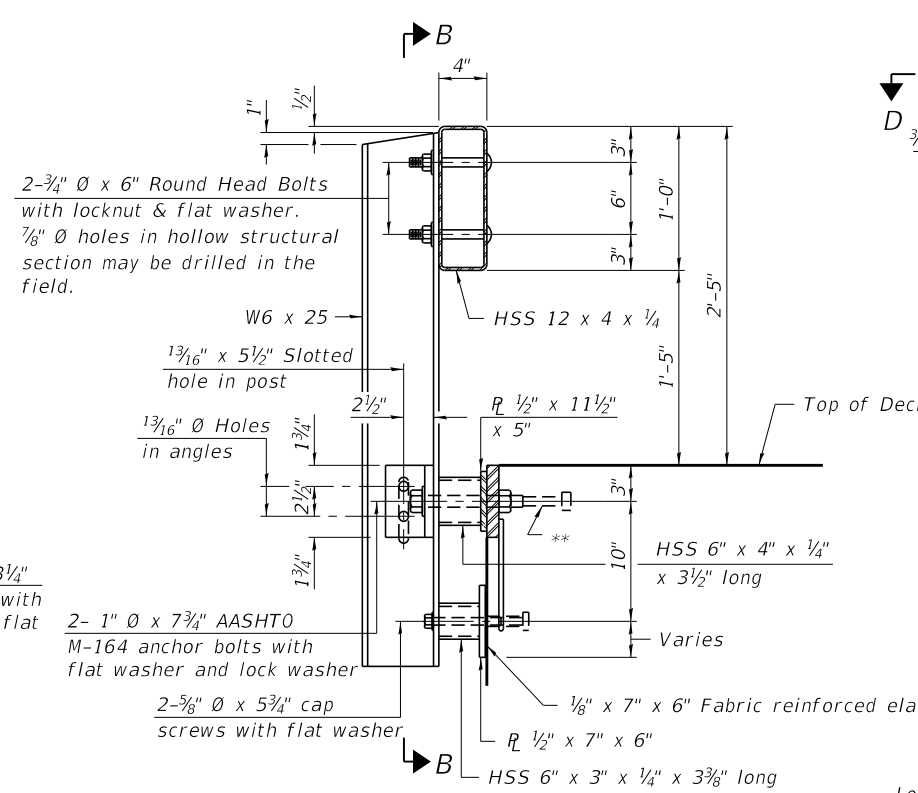
T	D	A	B	C	E
≤ 4"	2 1/2"	1'-8"	2"	4"	2 1/2"
> 4" ≤ 6 1/2"	3 3/4"	2'-0"	2 1/2"	5 1/2"	3 1/2"
> 6 1/2" ≤ 9"	5"	2'-4"	3 1/2"	6 1/2"	9"
> 9" ≤ 13"	7"	2'-10"	4 1/2"	8 1/2"	11"
Rail Splice	1/4"	1'-8"	2"	4"	—

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

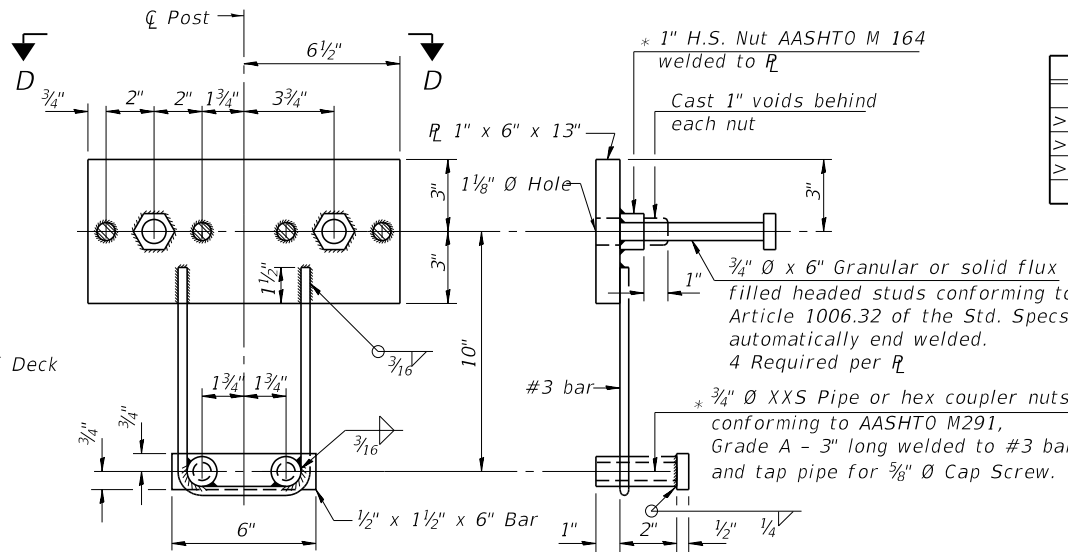
Notes:
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.



SECTION B-B

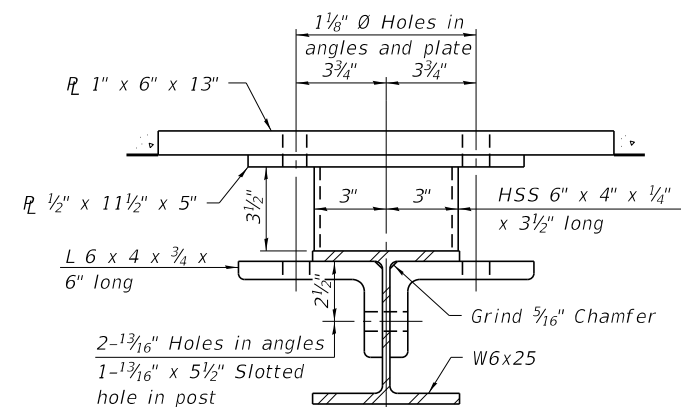


SECTION AT RAILING POST

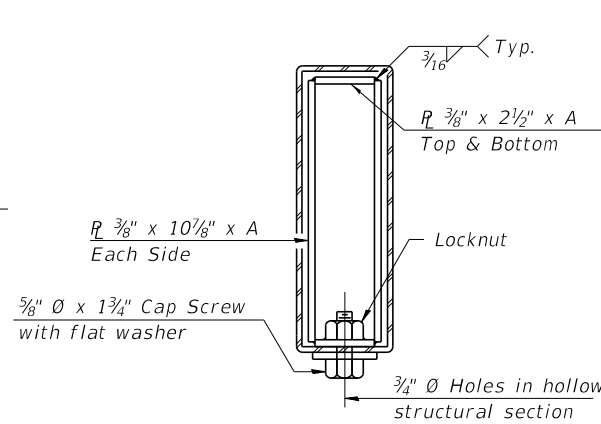


ANCHOR DEVICE

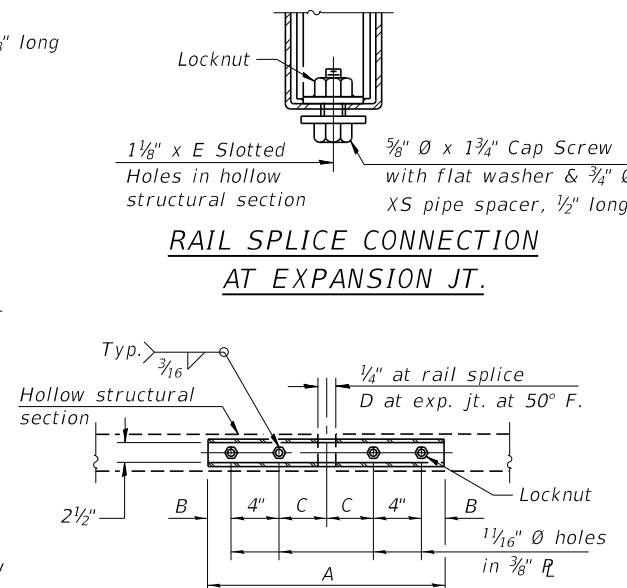
* Threaded areas shall be plugged or blocked off during casting of beam.



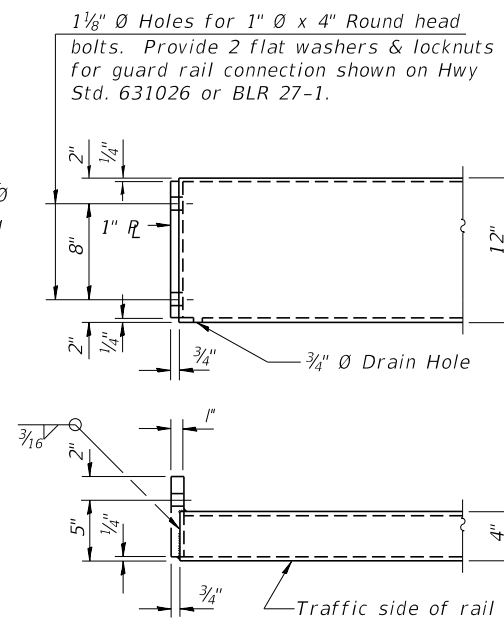
SECTION C-C



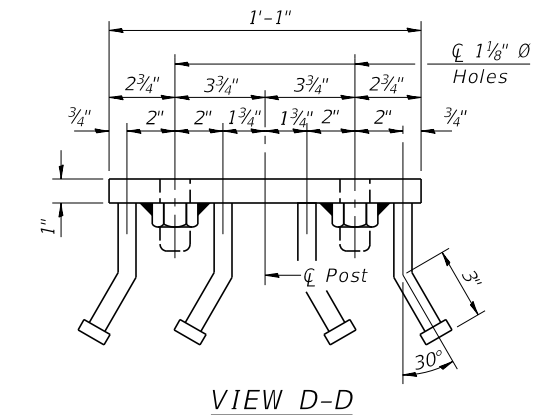
SECTIONS AT RAIL SPLICE



PLAN-BOTT. SPLICE R TYPICAL



END OF RAIL DETAILS

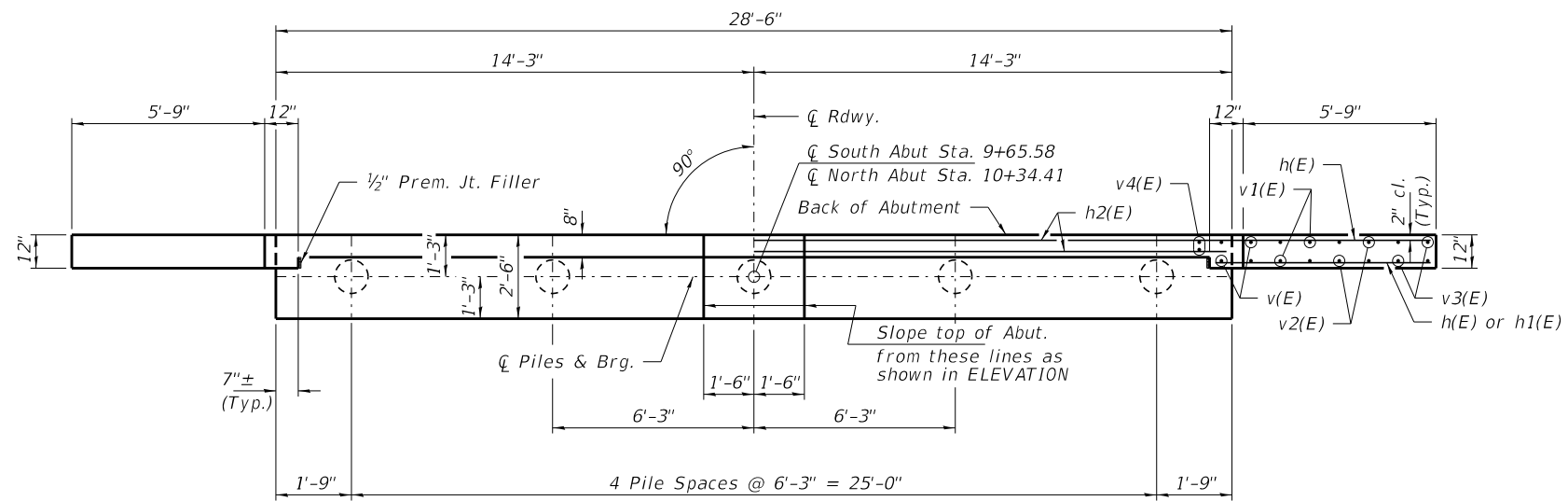


VIEW D-D

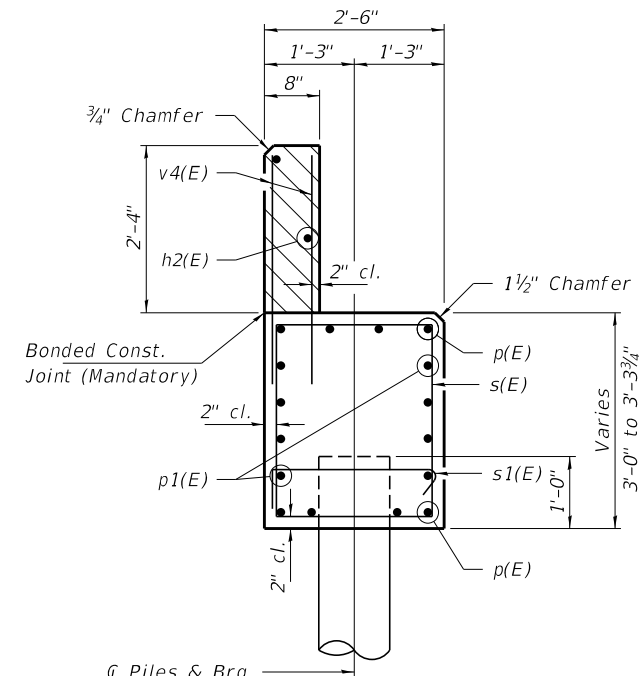
BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	136

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



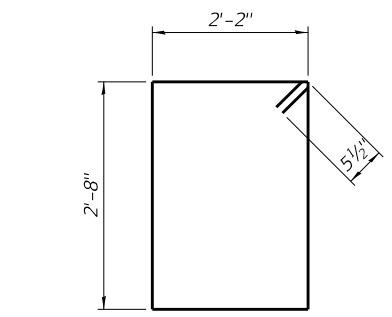
PLAN



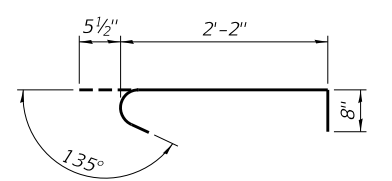
SECTION A-A

Hatched area to be poured after beams are in place.

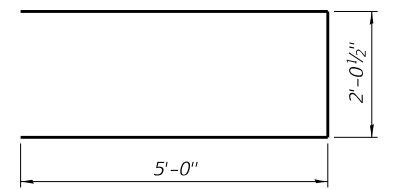
Cast top of wingwall flush with exterior beam face after beams have been erected.



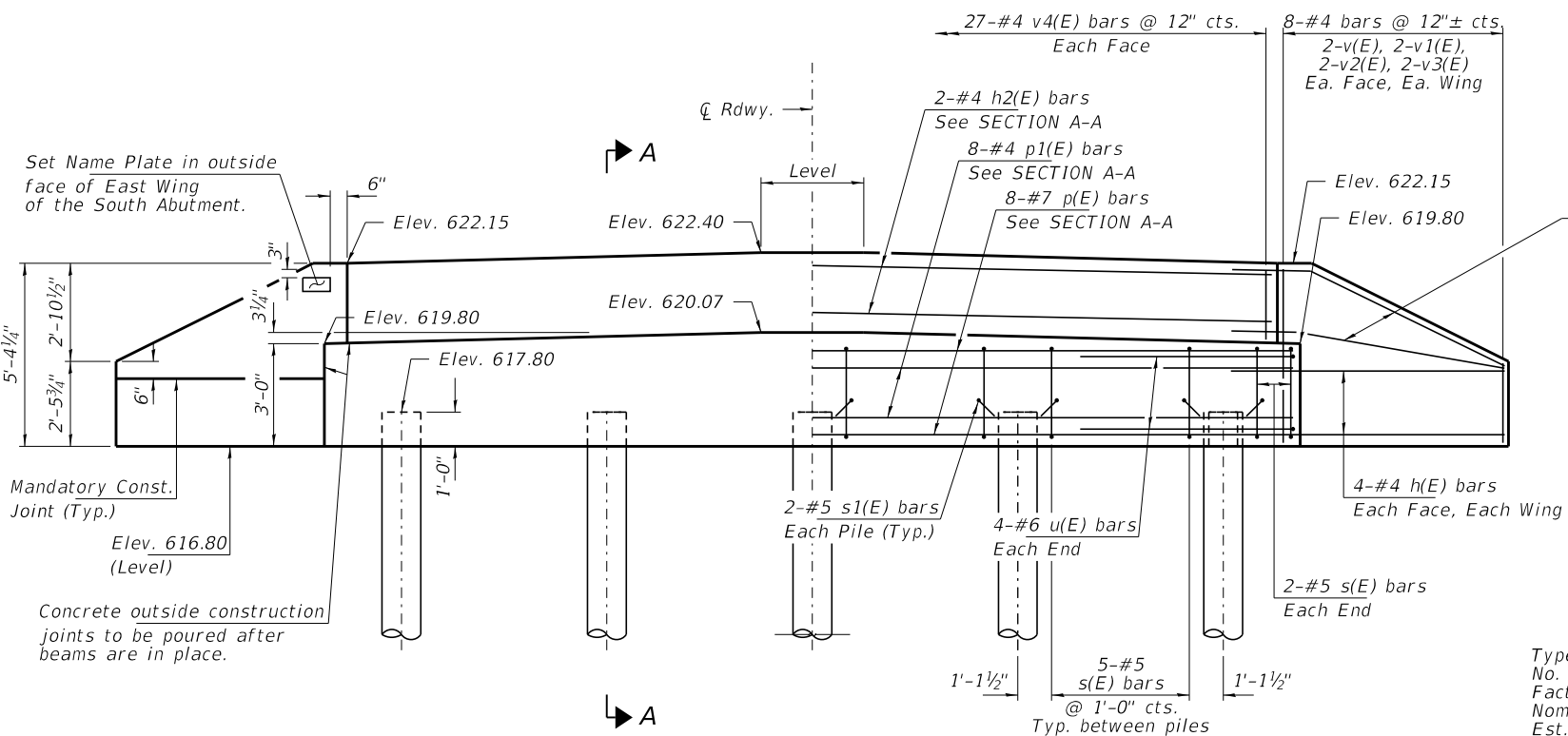
BARS s(E)



BAR s1(E)



BAR u(E)



ELEVATION

Note: Extend h(E) bars into abutment cap.

Fan 2-#4 h(E) bars (B.F.)
Fan 2-#4 h1(E) bars (F.F.)
Each Wing, Bend in field.

PILE DATA

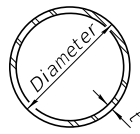
Type..... Metal Shell Piles 12"x0.250"
No. Req'd. (2 Abuts.)..... 10*
Factored Resistance Available (Rf)..... 160 Kips/Pile
Nominal Required Bearing (Rn)..... 291 Kips/Pile
Est. Length..... 25 Ft/Pile

Notes: * Includes one test pile to be driven in a permanent location at the South Abutment.

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

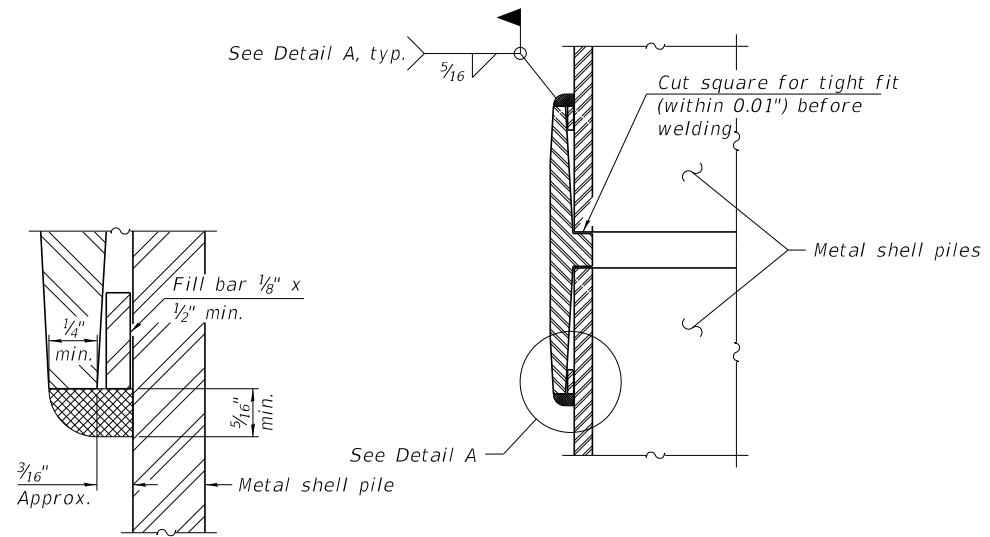
BILL OF MATERIAL - 2 ABUTS.

BAR	NO.	SIZE	LENGTH	SHAPE	
h(E)	40	#4	8'-0"	=====	
h1(E)	8	#4	6'-6"	=====	
h2(E)	4	#4	28'-2"	=====	
p(E)	16	#7	28'-2"	=====	
p1(E)	16	#4	28'-2"	=====	
s(E)	48	#5	10'-7"	□	
s1(E)	20	#5	3'-4"	┌┐	
u(E)	16	#6	12'-1"	U	
v(E)	16	#4	4'-11"	=====	
v1(E)	16	#4	4'-0"	=====	
v2(E)	16	#4	3'-1"	=====	
v3(E)	16	#4	2'-2"	=====	
v4(E)	108	#4	3'-2"	=====	
Concrete Structures				Cu. Yd.	23.4
Reinf. Bars, Epoxy Coated				Pound	2,820
Metal Shell Piles 12"x0.250"				Foot	225
Test Pile Metal Shells				Each	1
Name Plates				Each	1

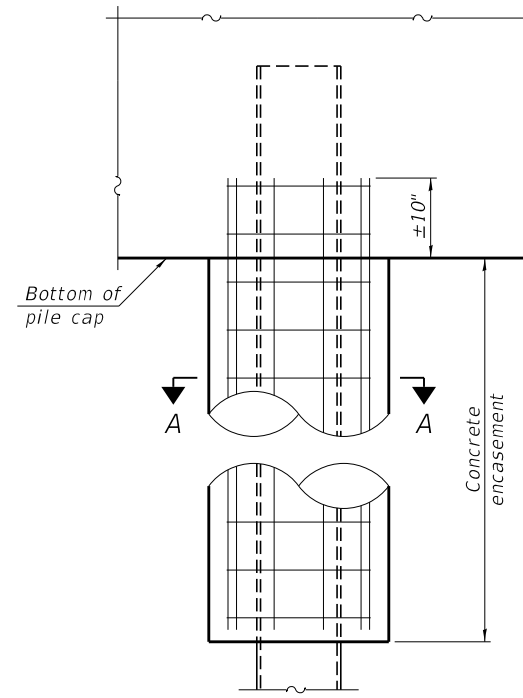


METAL SHELL PILE TABLE

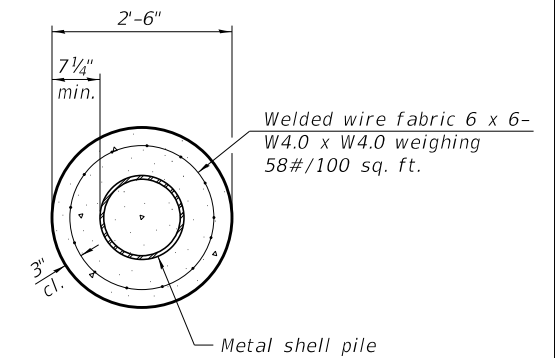
Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd. ³ /ft.)
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361
PP16	0.312"	52.32	0.0478
PP16	0.375"	62.64	0.0470



DETAIL A

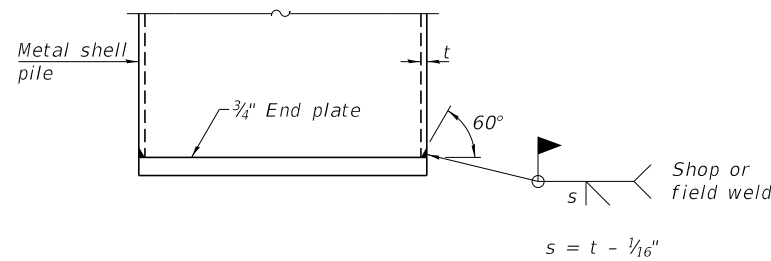


ELEVATION



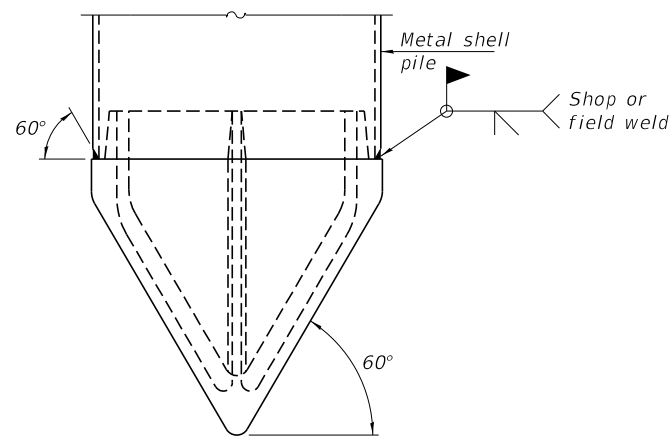
SECTION A-A

INDIVIDUAL PILE CONCRETE ENCASEMENT AT PIERS



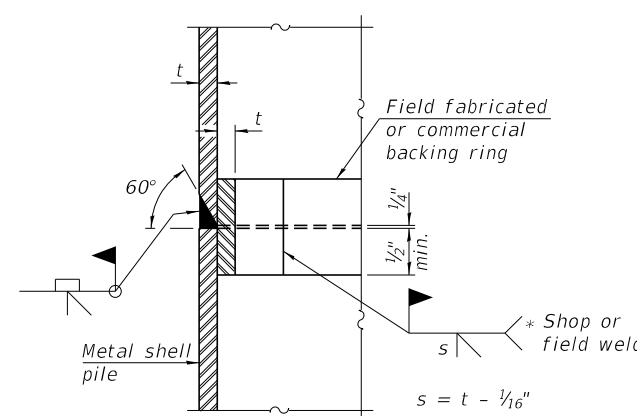
END PLATE ATTACHMENT

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

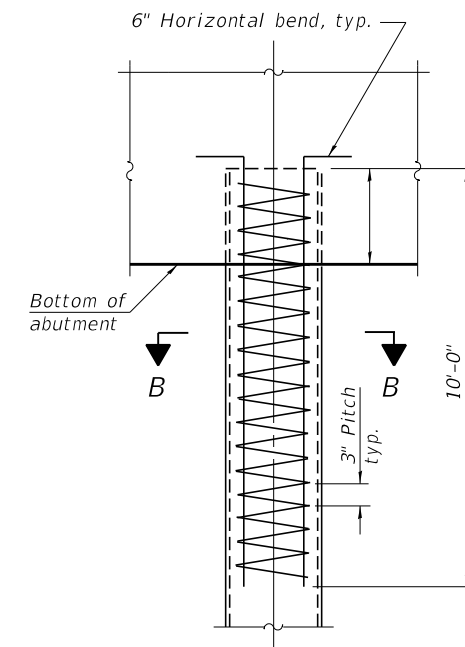


PILE SHOE ATTACHMENT

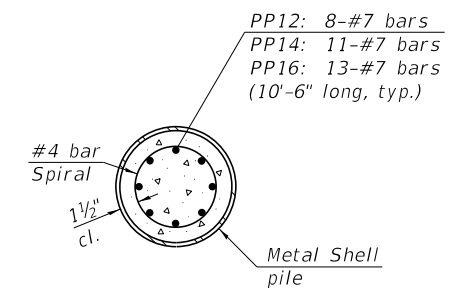
(When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 90-60 or AASHTO M 103 Grade 65-35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall have tapered leads to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld).



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



ELEVATION



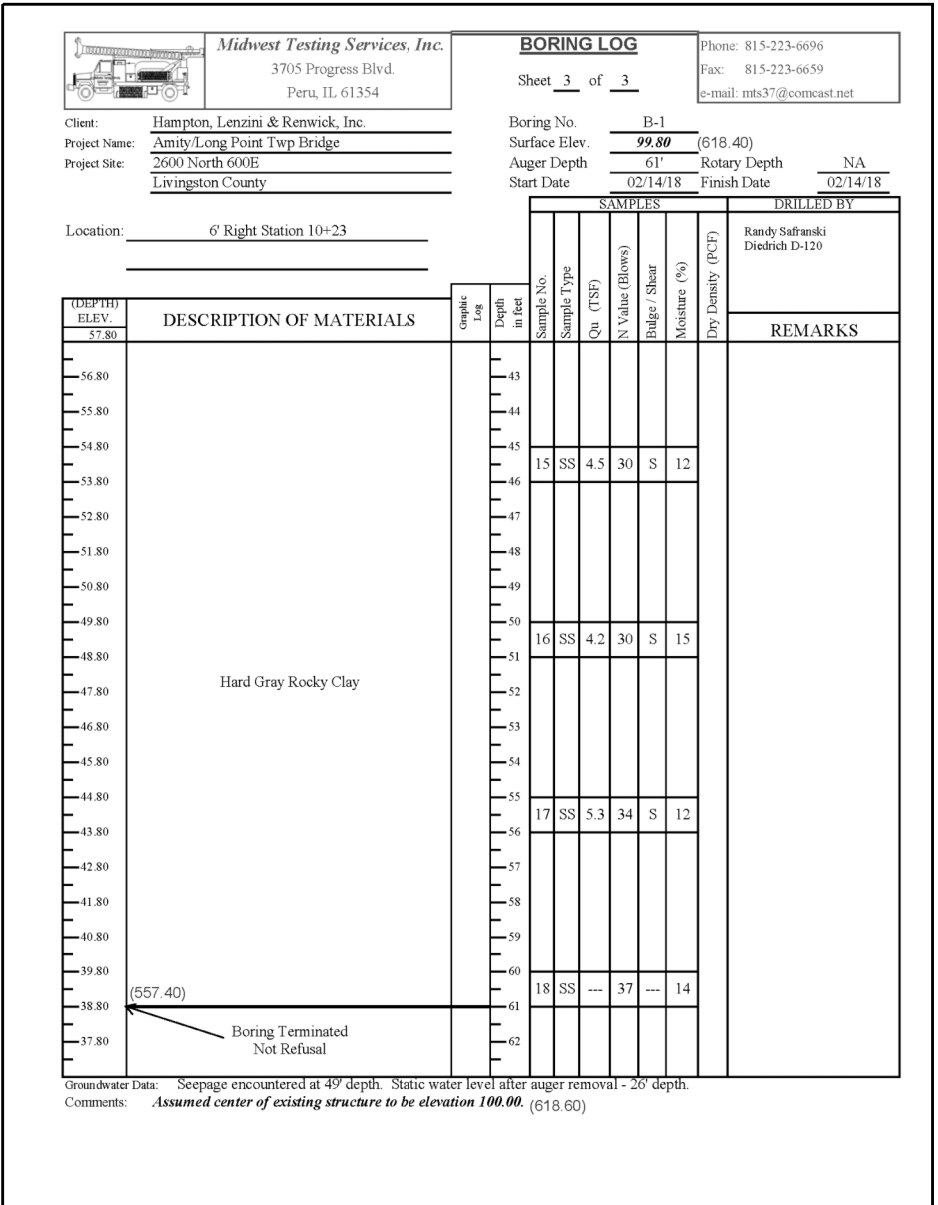
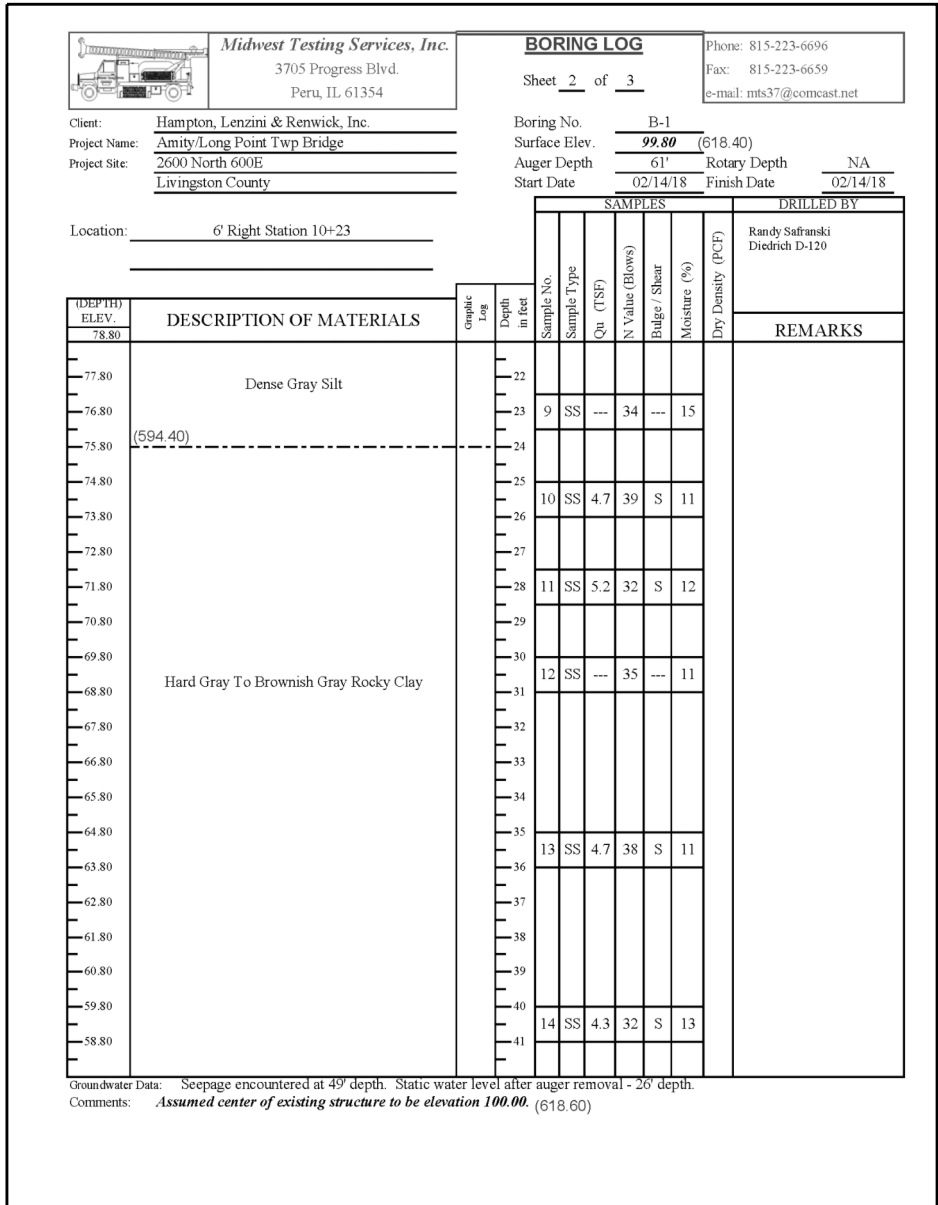
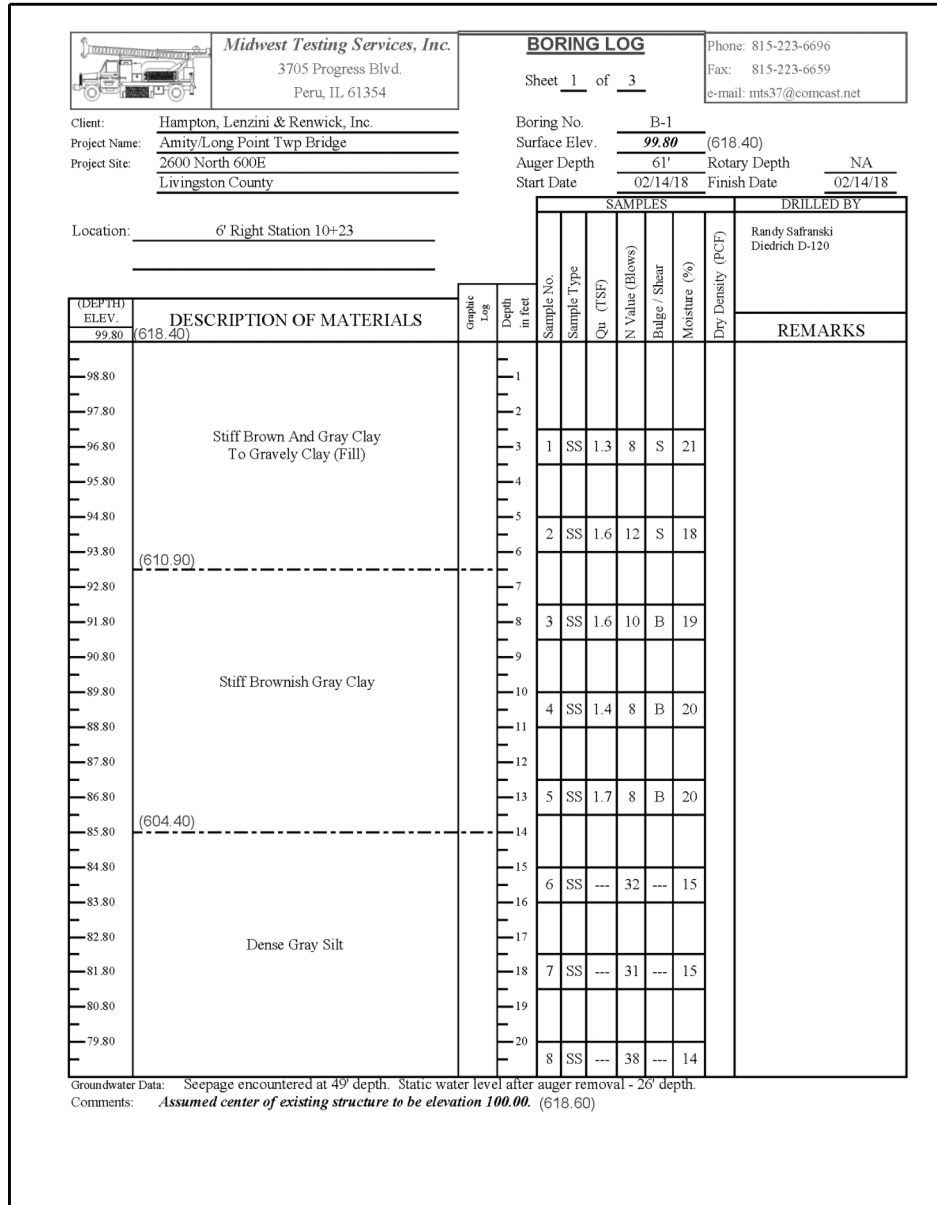
SECTION B-B

REINFORCEMENT AT ABUTMENTS

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

F-MS 8-11-2017

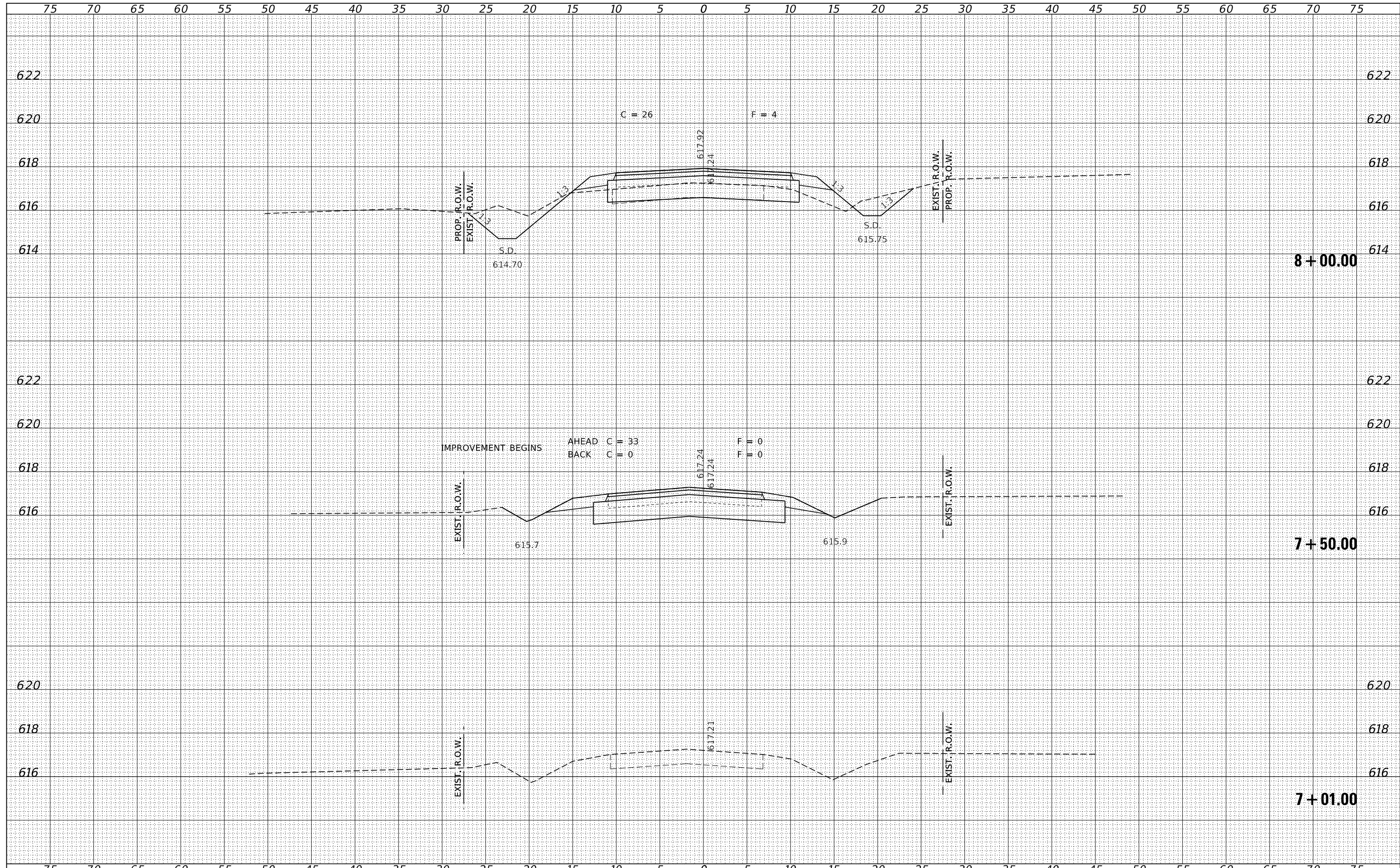
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HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT SCALE =	CHECKED - S.W.M.	REVISIONS -			32	17-14152-00-BR / 17-01122-00-BR	LIVINGSTON	21	11
	PLOT DATE = 12/12/2019	DRAWN - M.M.P.	REVISIONS -			LONG POINT / AMITY ROAD DISTRICT		CONTRACT NO. 87693		
		CHECKED - S.W.M.	REVISIONS -			ILLINOIS		FED. AID PROJECT 13AH(188)		



BORING-1

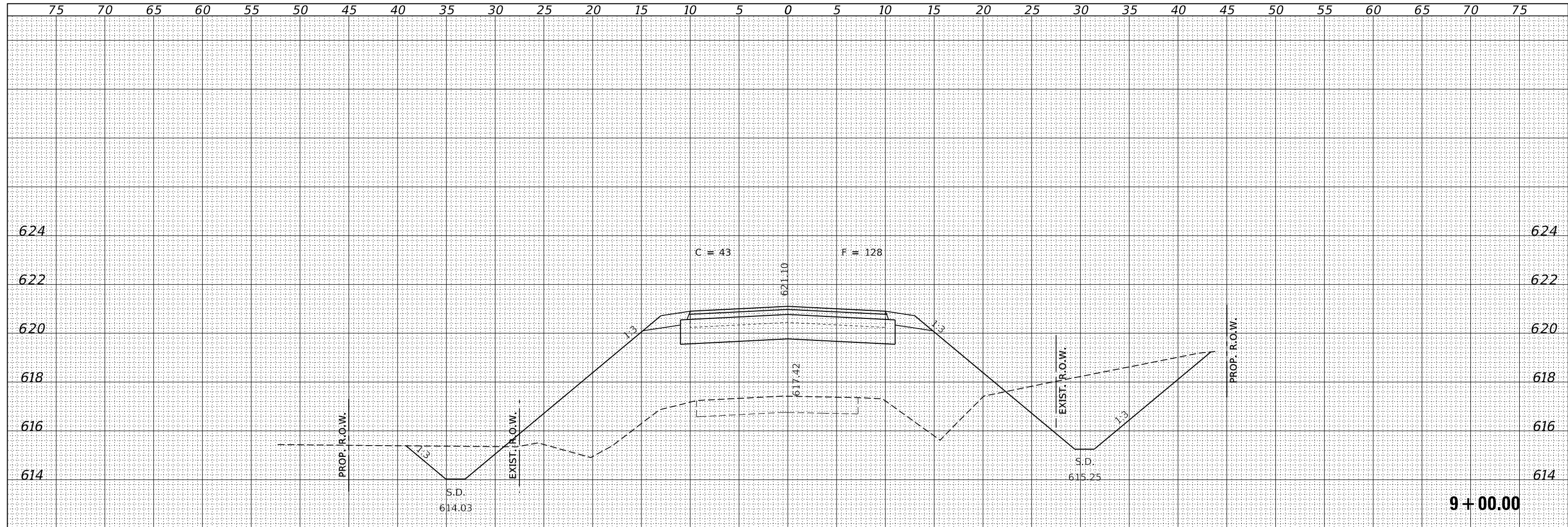
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BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
FINAL SURVEY	
NOTE BOOK	
NO.	

DATE	
BY	
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NOTE BOOK	
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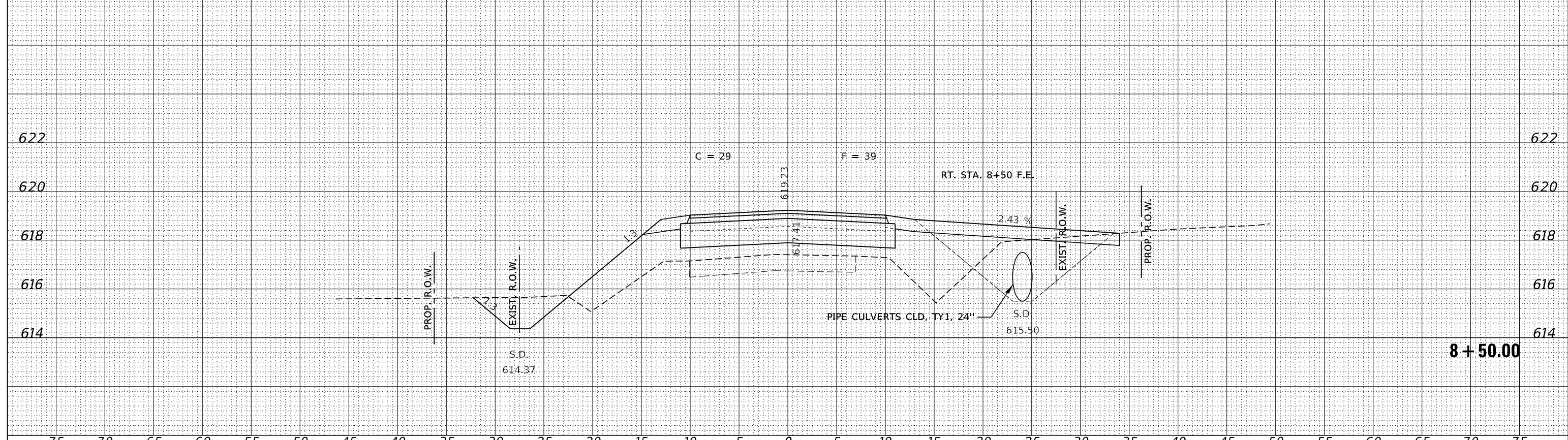


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HAMPTON, LENZINI AND RENWICK, INC. 3885 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L.S. / P.E. / S.E. CORP. 184.000958		DRAWN - T.W.K.	REVISED -		32	17-14152-00-BR/17-01132-00-BR	LIVINGSTON	21	13			
PLOT SCALE = \$\$SCALE\$		CHECKED - S.W.M.	REVISED -		LONG POINT / AMITY ROAD DISTRICT				CONTRACT NO. 87693			
PLOT DATE = 12/12/2019		DATE - 12/12/19	REVISED -		SCALE: 5H:2V	SHEET NO. 1 OF 9 SHEETS	STA. 7+01.00	TO STA. 8+00.00	ILLINOIS FED. AID PROJECT IS34H(188)			

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	



DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	



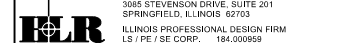
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 DESIGNED - J.W.F.
 DRAWN - T.W.K.
 CHECKED - S.W.M.
 DATE - 12/12/19
 PLOT SCALE = \$Scales
 PLOT DATE = 12/12/2019

REVISOR -
 REVISION -
 REVISION -
 REVISION -
 REVISION -

STATE OF ILLINOIS
 LIVINGSTON COUNTY HIGHWAY DEPARTMENT

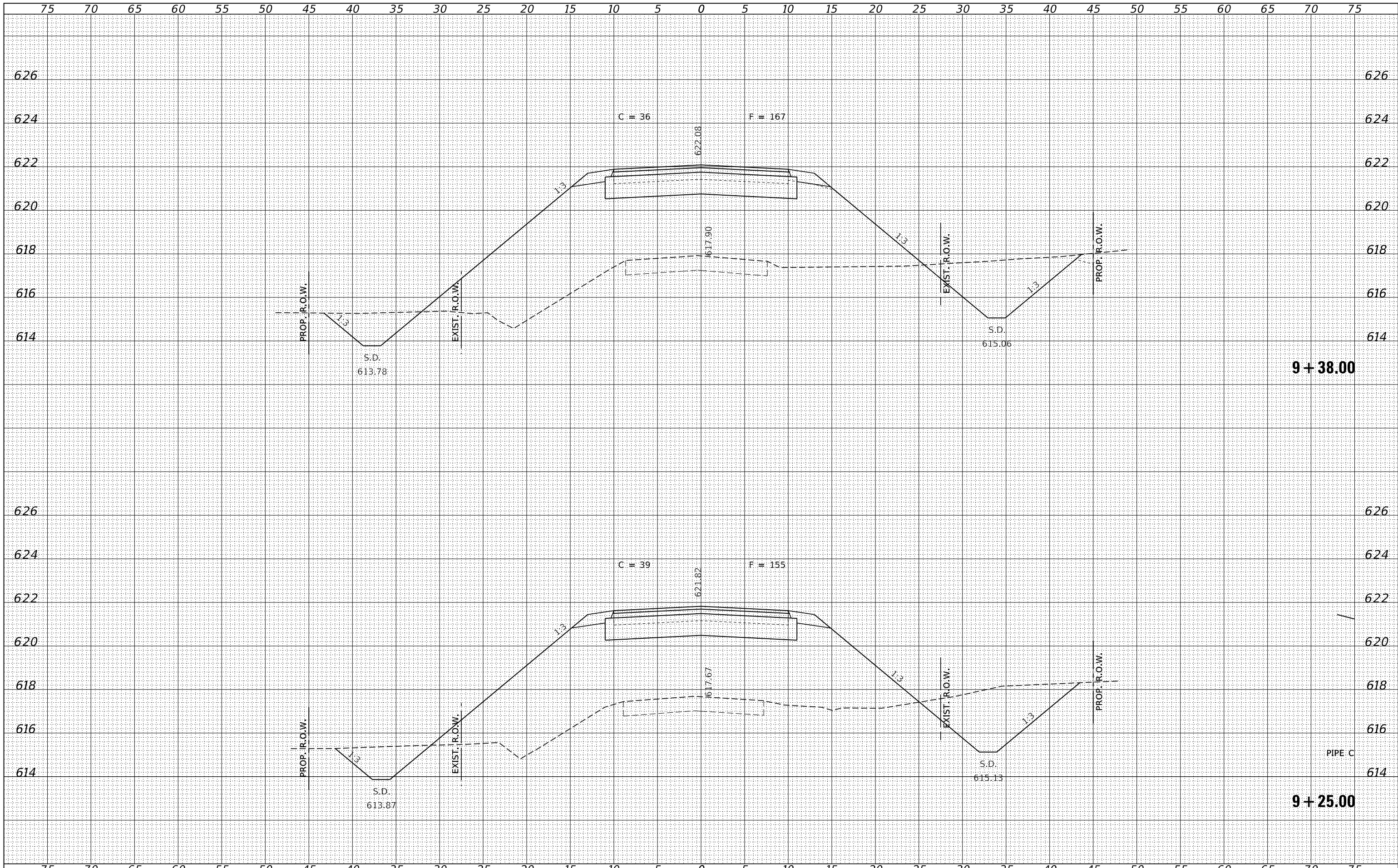
STATION CROSS SECTIONS
 SCALE: 5H:2V
 SHEET NO. 2 OF 9 SHEETS
 STA. 8+50.00 TO STA. 9+00.00

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
32	17-14152-00-BR/17-01132-00-BR	LIVINGSTON	21	14
LONG POINT / AMITY ROAD DISTRICT			CONTRACT NO. 87693	



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

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



FILE NAME = 180077-shl-xssheets.dgn
 DESIGNED - J.W.F.
 DRAWN - T.W.K.
 CHECKED - S.W.M.
 DATE - 12/12/19

USER NAME = rmosck
 PLOT SCALE = \$SCALE\$
 PLOT DATE = 12/12/2019

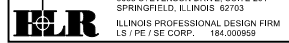
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STATE OF ILLINOIS
 LIVINGSTON COUNTY HIGHWAY DEPARTMENT

STATION CROSS SECTIONS

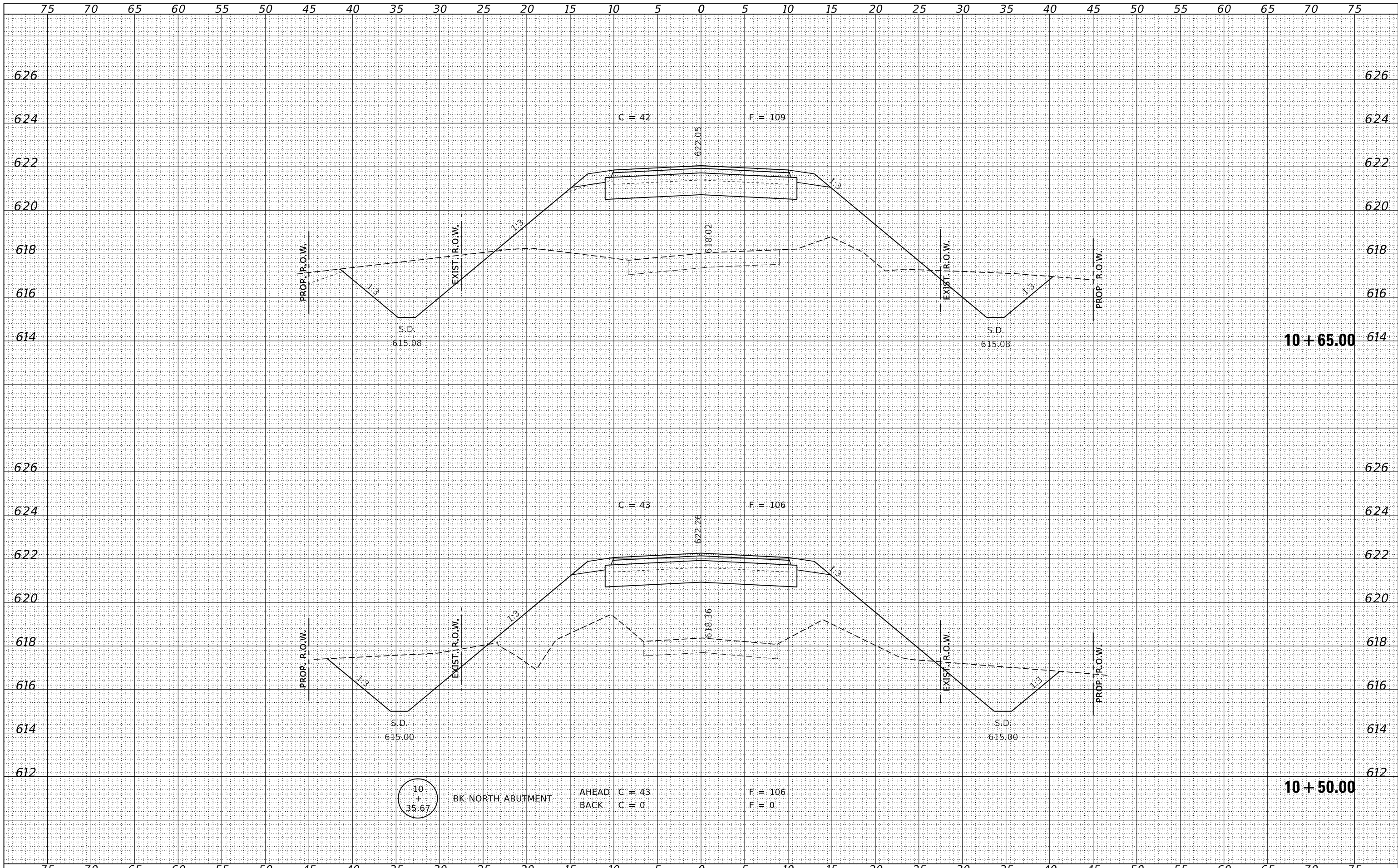
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T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
32	17-14152-00-BR/17-01132-00-BR	LIVINGSTON	21	15
LONG POINT / AMITY ROAD DISTRICT			CONTRACT NO. 87693	
ILLINOIS FED. AID PROJECT 13AH(188)				



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

DATE	
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NOTE BOOK	
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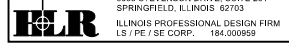
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 DRAWN - T.W.K.
 CHECKED - S.W.M.
 DATE - 12/12/19
 PLOT SCALE = \$SCALE\$
 PLOT DATE = 12/12/2019

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STATE OF ILLINOIS
 LIVINGSTON COUNTY HIGHWAY DEPARTMENT

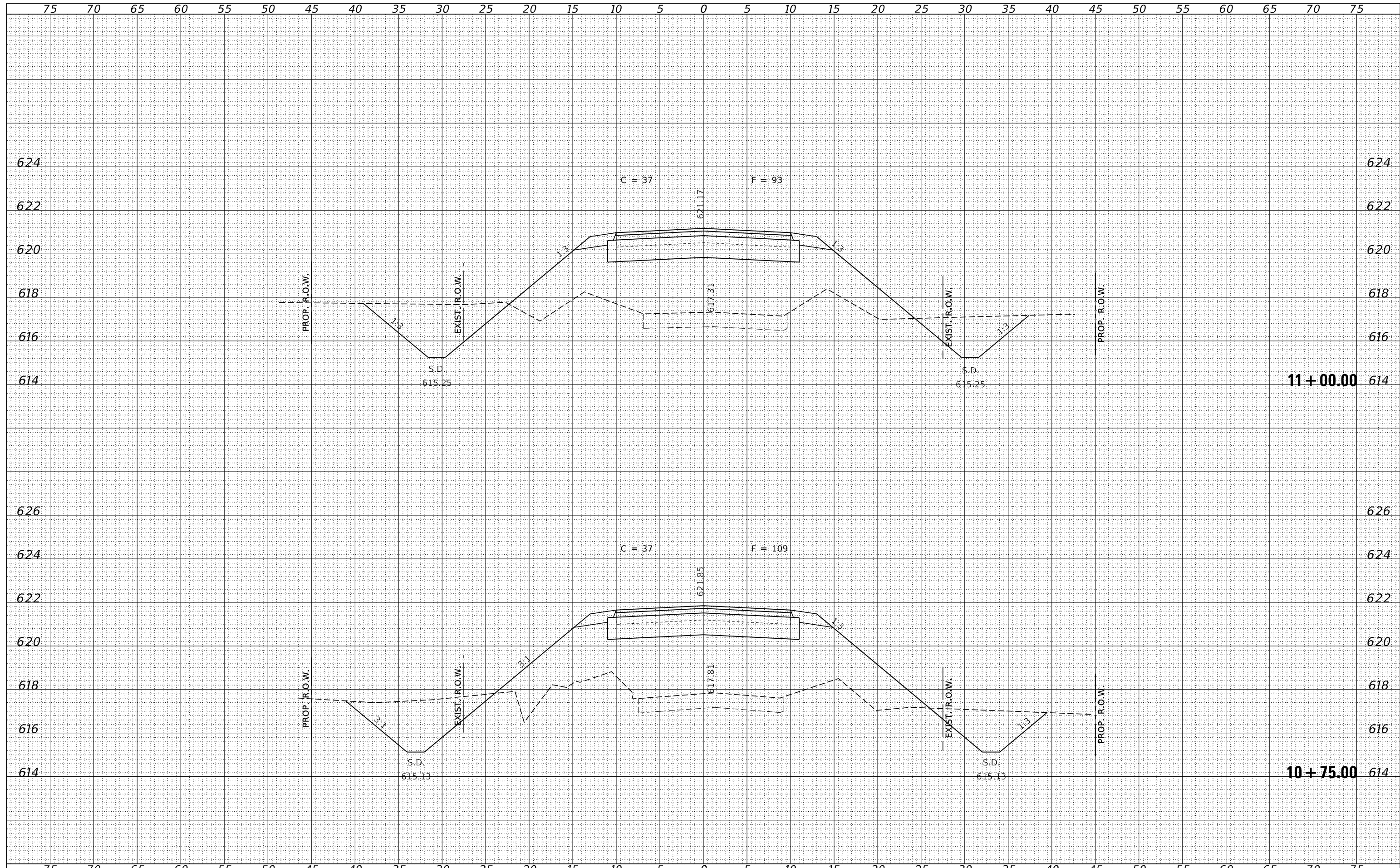
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 SHEET NO. 6 OF 9 SHEETS
 STA. 10+50.00 TO STA. 10+65.00

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
32	17-14152-00-BR/17-01132-00-BR	LIVINGSTON	21	18
LONG POINT / AMITY ROAD DISTRICT			CONTRACT NO. 87693	
ILLINOIS FED. AID PROJECT IS34H(188)				



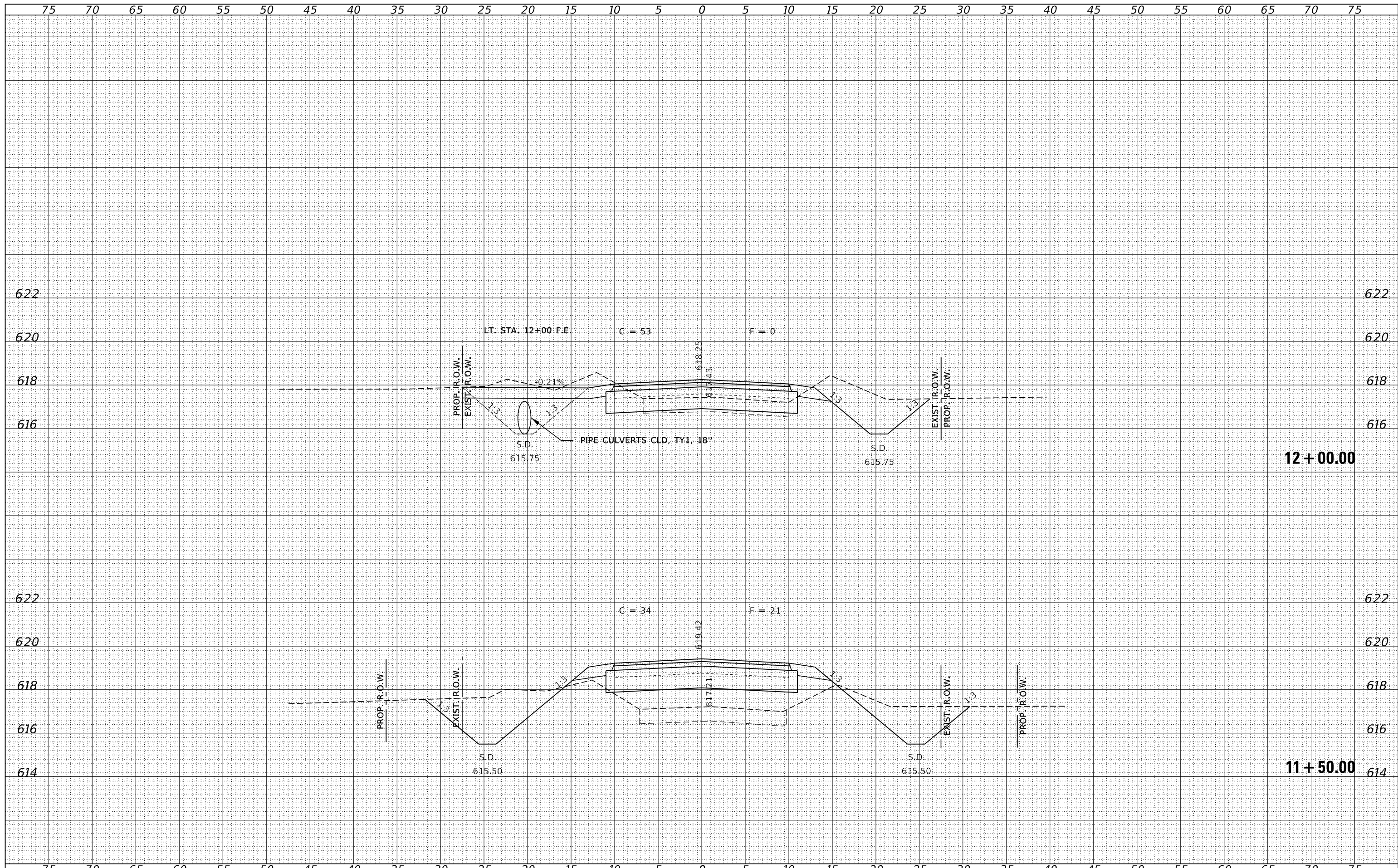
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NOTE BOOK	PLOTTED
NO.	TEMPLATE
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DATE	
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ORIGINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS
	CHECKED



DATE	
BY	
FINISHED SURVEY	
NOTED SURVEY	
PLANNED SURVEY	
TEMPLE SURVEY	
AREAS SURVEY	
CHECKED SURVEY	
NO.	

DATE	
BY	
ORIGINAL SURVEY	
NOTED SURVEY	
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AREAS SURVEY	
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FILE NAME = 180077-shl-vssheets.dgn
 DESIGNED - J.W.F.
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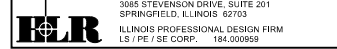
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 PLOT SCALE = \$SCALES
 PLOT DATE = 12/12/2019

REVISER -
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 REVISER -

STATE OF ILLINOIS
 LIVINGSTON COUNTY HIGHWAY DEPARTMENT

STATION CROSS SECTIONS
 SCALE: 5H:2V
 SHEET NO. 8 OF 9 SHEETS
 STA. 11+50.00 TO STA. 12+00.00

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
32	17-14152-00-BR/17-01132-00-BR	LIVINGSTON	21	20
LONG POINT / AMITY ROAD DISTRICT		CONTRACT NO. 87693		
ILLINOIS FED. AID PROJECT ISAH(188)				



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

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

