

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

**PROJECT BROS-0105(062)
SECTION 12-09101-04-BR
ESMEN ROAD DISTRICT
LIVINGSTON COUNTY
T.R. 134B
PROPOSED STRUCTURE NO. 053-4214
C-93-067-15**

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 134B	12-09101-04-BR	LIVINGSTON	26	1
FED. ROAD DIST. NO.		ILLINOIS CONTRACT NO. 87626		

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1.	COVER SHEET
2.	SUMMARY OF QUANTITIES AND GENERAL NOTES
3.	TYPICAL CROSS SECTIONS
4.	PLAN AND PROFILE
5-14.	STATION CROSS SECTIONS
15-22.	BRIDGE PLANS
23-26.	BORINGS

HIGHWAY STANDARDS:

000001-06	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
515001-03	NAME PLATE FOR BRIDGES
701901-05	TRAFFIC CONTROL DEVICES
725001	OBJECT AND TERMINAL MARKERS
BLR 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

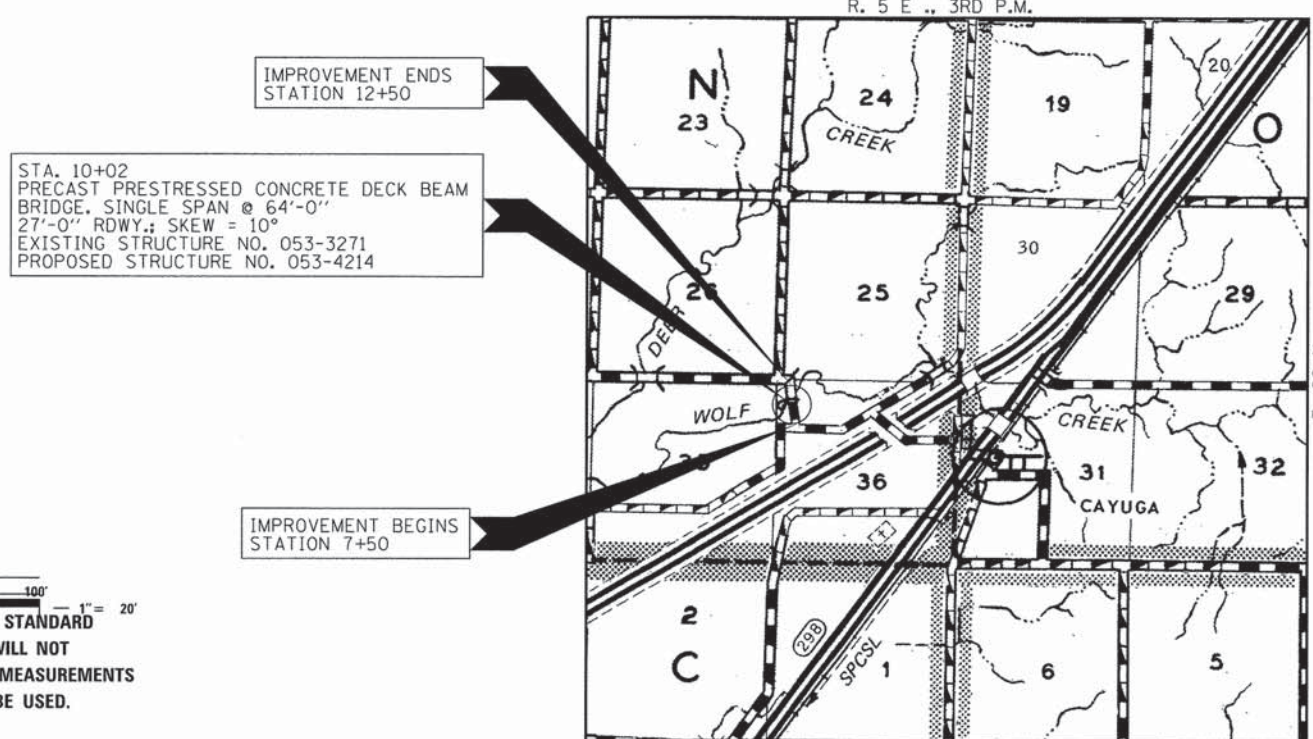
UTILITIES

COMMONWEALTH EDISON
1910 S. BRIGGS STREET
JOLIET, IL 60433

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



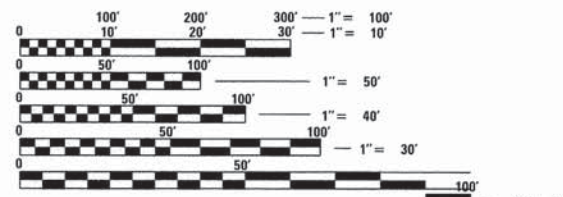
LOCATION OF SECTION INDICATED THUS: - ■ -



STA. 10+02
PRECAST PRESTRESSED CONCRETE DECK BEAM
BRIDGE. SINGLE SPAN @ 64'-0"
27'-0" RDWY.; SKEW = 10°
EXISTING STRUCTURE NO. 053-3271
PROPOSED STRUCTURE NO. 053-4214

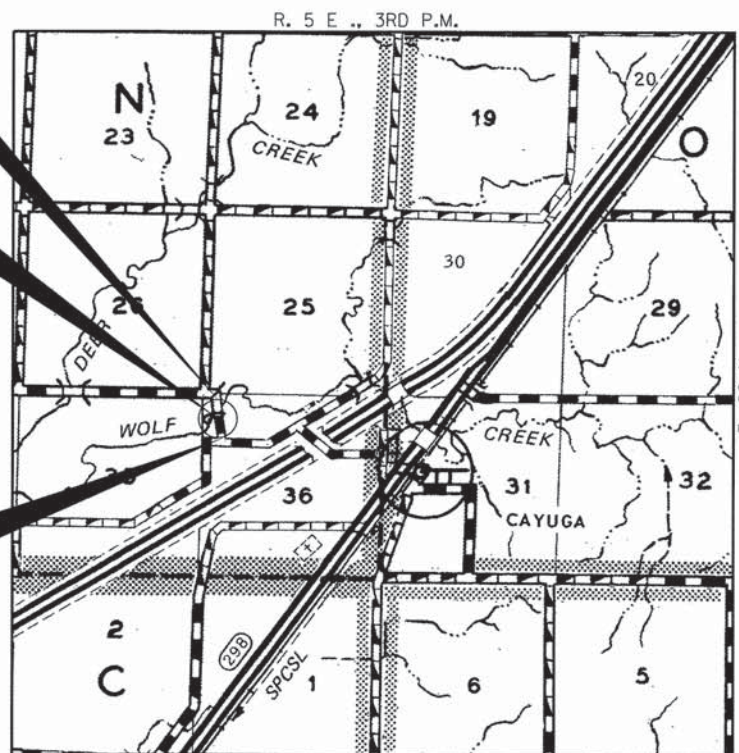
IMPROVEMENT ENDS
STATION 12+50

IMPROVEMENT BEGINS
STATION 7+50



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: 100 ADT



LOCATION MAP

APPROXIMATE SCALE: 0 1/2 MILE
NET LENGTH OF SECTION = 500 FEET = 0.095 MILES

WARNING

CALL 811 BEFORE YOU DIG
DIG NO: A1411234

ILLINOIS DEPARTMENT OF TRANSPORTATION

APPROVED MARCH 28, 2016
Clay Metcalf
COUNTY ENGINEER

APPROVED 3-29 2016
Carl Sussler
TOWNSHIP COMMISSIONER

PASSED 4-5 2016
David B. E.
DISTRICT THREE ENGINEER OF LOCAL ROADS & STREETS

Releasing For Bid Based on License Review 4-5 2016
Paul A. Lutz
REGION TWO ENGINEER
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DATE: 03/23/2016

EXPIRES: 11/30/2017

HAMPTON, LENZINI AND RENWICK, INC.
CIVIL ENGINEERS - STRUCTURAL ENGINEERS - LAND SURVEYORS

HLR
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
217.546.3400 www.hirengineering.com

184.000959
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION

PROJECT NUMBER: 14.0160.130 DATE: 03/23/16

SUMMARY OF QUANTITIES			
CODE NO.	ITEM	CONSTRUCTION TYPE CODE 0011	
		UNIT	TOTAL
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	16
20200100	EARTH EXCAVATION	CU YD	320
20300100	CHANNEL EXCAVATION	CU YD	190
20400800	FURNISHED EXCAVATION	CU YD	110
28000305	TEMPORARY DITCH CHECKS	FOOT	34
28000400	PERIMETER EROSION BARRIER	FOOT	220
28000500	INLET AND PIPE PROTECTION	EACH	3
28100107	STONE RIPRAP, CLASS A4	SQ YD	417
28200200	FILTER FABRIC	SQ YD	417
35101400	AGGREGATE BASE COURSE, TYPE B	TON	490
40600275	BITUMINOUS MATERIALS (PRIME COAT)	POUND	2,510
40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	198
40603082	HOT-MIX ASPHALT BINDER COURSE, IL-19.0 FG, N50	TON	124
40603310	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50	TON	84
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	27.2
50300280	CONCRETE ENCASEMENT	CU YD	2.8
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	1,728
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	2,870
50900205	STEEL RAILING, TYPE S1	FOOT	125
51201400	FURNISHING STEEL PILES HP10X42	FOOT	455
51202305	DRIVING PILES	FOOT	455
51203400	TEST PILE STEEL HP10X42	EACH	1
51500100	NAME PLATES	EACH	1
542D0220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	168
542D5479	PIPE CULVERTS, CLASS D, TYPE 1 EQUIVALENT ROUND-SIZE 24"	FOOT	42
58700300	CONCRETE SEALER	SQ FT	106
60100955	PIPE DRAINS 15"	FOOT	26
67100100	MOBILIZATION	L SUM	1
70101830	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	L SUM	1
78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
X2070302	POROUS GRANULAR EMBANKMENT, SPECIAL	TON	120
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.4
Z0046304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	95

SEE SPECIAL PROVISIONS
* SPECIALTY ITEMS

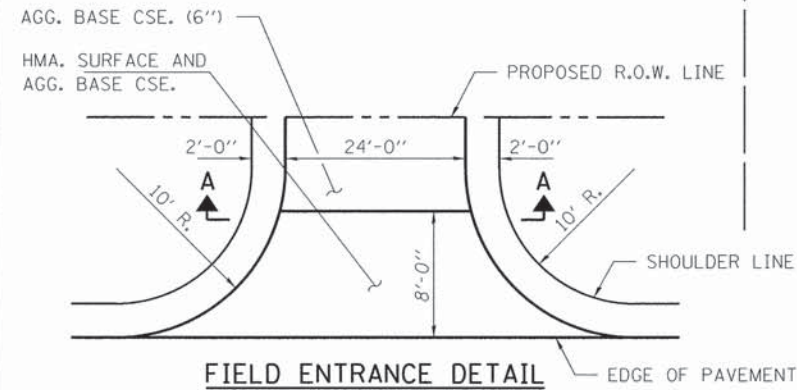
GENERAL NOTES

- ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, ADOPTED APRIL 1, 2016", (HEREIN AFTER REFERRED TO AS THE STANDARD SPECIFICATIONS); THE "SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS" ADOPTED APRIL 1, 2016; 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, 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 ADJUTING PROPERTY AT ALL TIMES DURING CONSTRUCTION OF THE PROJECT.
- THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES

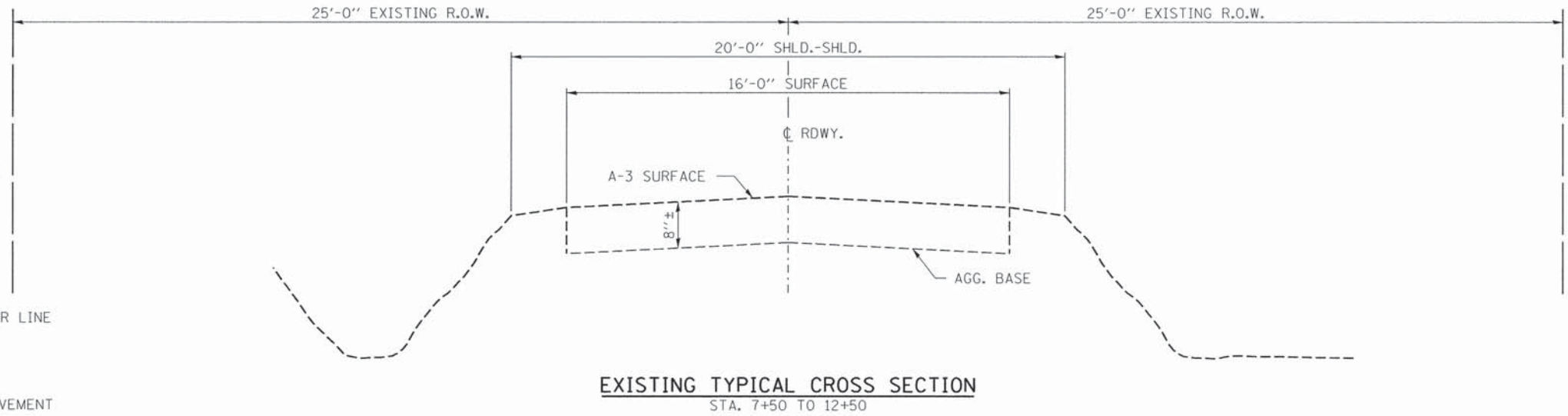
AGGREGATE BASE COURSE, TYPE B	2.05 TON/CU YD
POROUS GRANULAR EMBANKMENT	2.00 TON/CU YD
HOT-MIX ASPHALT	112 LBS/SQ. YD./INCH DEPTH
BITUMINOUS MATERIALS	
INTERMEDIATE LIFTS (TACK COAT)	0.025 LB./SQ.FT.
ON AGGREGATE BASE (PRIME COAT)	0.25 LB./SQ.FT.
- THE AREA TO BE SEEDDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE RIGHT OF WAY OR AS DIRECTED BY THE ENGINEER. SEEDING, CLASS 2 (SPECIAL) = 0.4 ACRES
- THE FINAL SURFACE OF ALL EMBANKMENT AREAS SHALL BE SEEDDED. THE TOP 4 INCHES OF THE SEEDDED AREAS SHALL BE 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 FURNISHED EXCAVATION.
- COMMITMENTS:
 - THE CONTRACTOR SHALL INSPECT THE STRUCTURE FOR SIGNS OF BATH USAGE PRIOR TO WORK STARTING BETWEEN APRIL 1 THROUGH SEPTEMBER 30. THE INSPECTION SHALL BE COMPLETED WITHIN 7 DAYS OF THE START OF WORK. SEE SPECIAL PROVISIONS FOR FURTHER DETAILS.

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.
TR 134B							
STA 7+50 TO STA 9+69.32	120		25.00%	100.00%	90	206	-116
STA 9+69.32 TO STA 10+34.68		190	25.00%	70.00%	100		100
STA 10+34.68 TO STA 12+50	198		25.00%	100.00%	148	201	-53
ENTRANCE EMBANKMENT						39	-39
TOTAL	317	190			338	447	-108
USE	320	190					-110

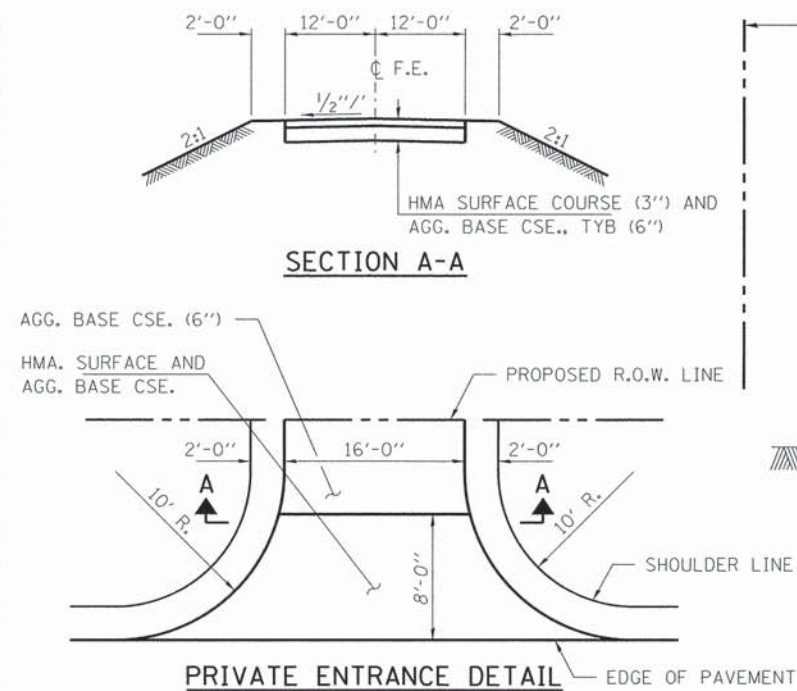
FURNISHED = 110 CU YDS



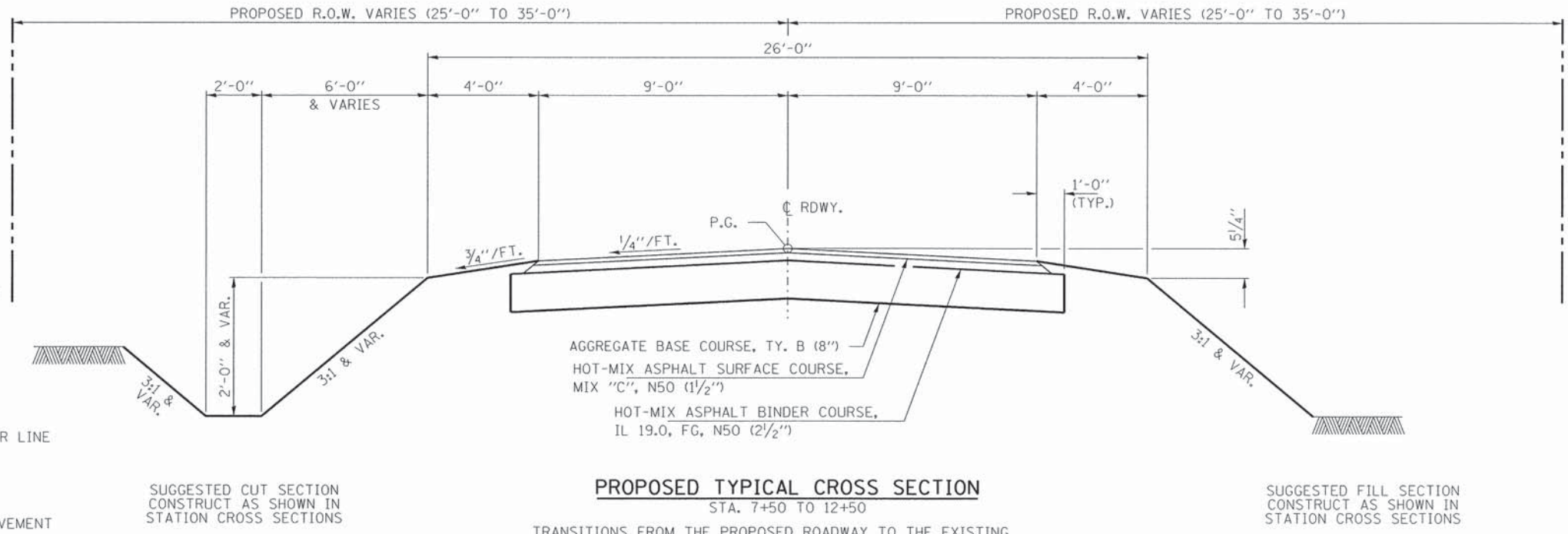
FIELD ENTRANCE DETAIL EDGE OF PAVEMENT



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

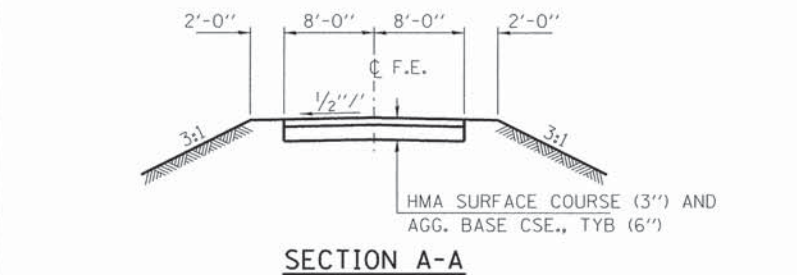


PRIVATE ENTRANCE DETAIL EDGE OF PAVEMENT



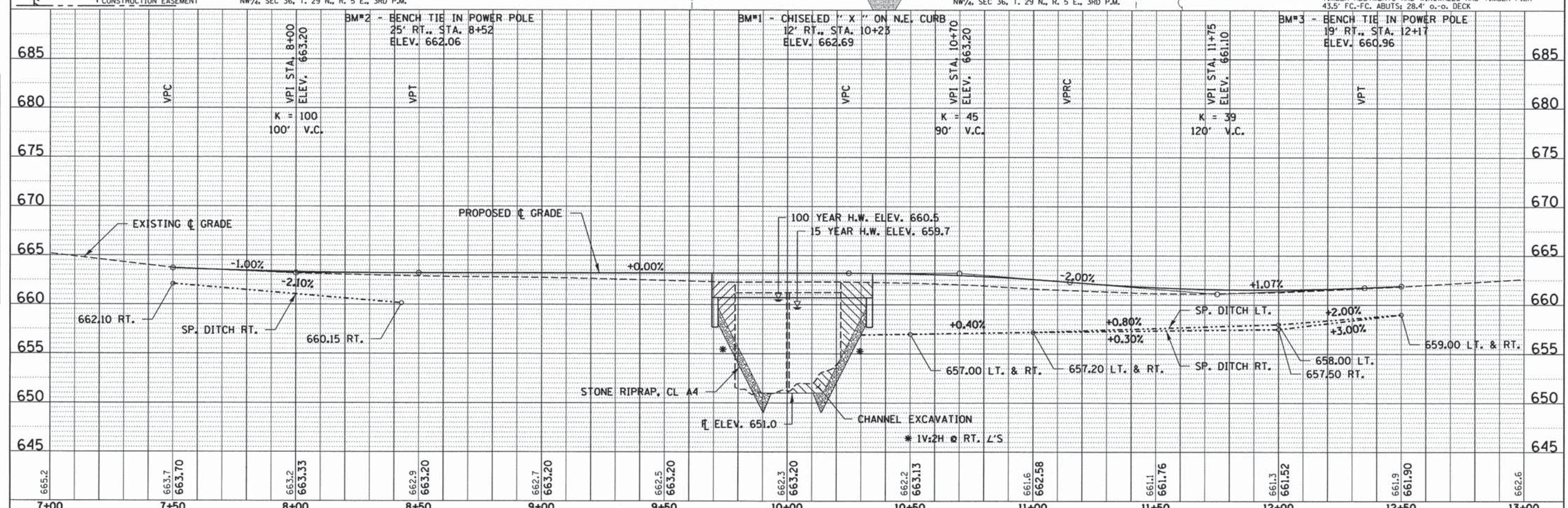
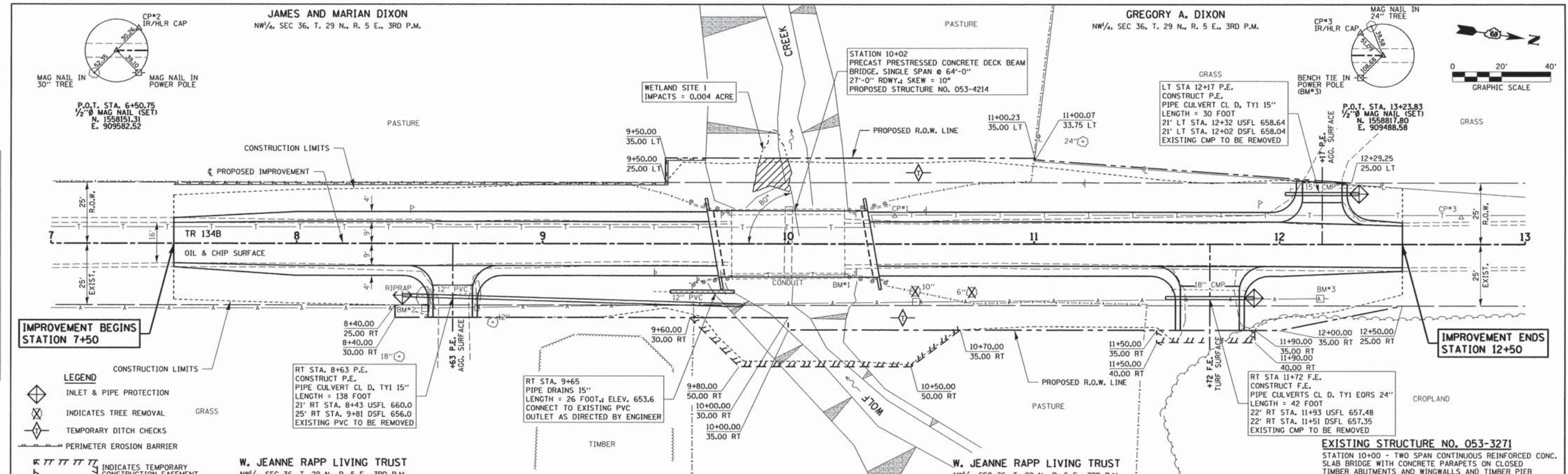
PROPOSED TYPICAL CROSS SECTION
STA. 7+50 TO 12+50

TRANSITIONS FROM THE PROPOSED ROADWAY TO THE EXISTING ROADWAY ARE TO BE CONSTRUCTED FROM STA. 7+50 TO 8+00 AND STA. 12+00 TO 12+50. SEE SHEET 12 FOR TRANSITION AT BRIDGE.



SECTION A-A

HOT-MIX ASPHALT MIXTURE REQUIREMENTS		
LOCATIONS(S)	TR 134B	TR 134B
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 FG
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
SUBLOT SIZE	N/A	N/A

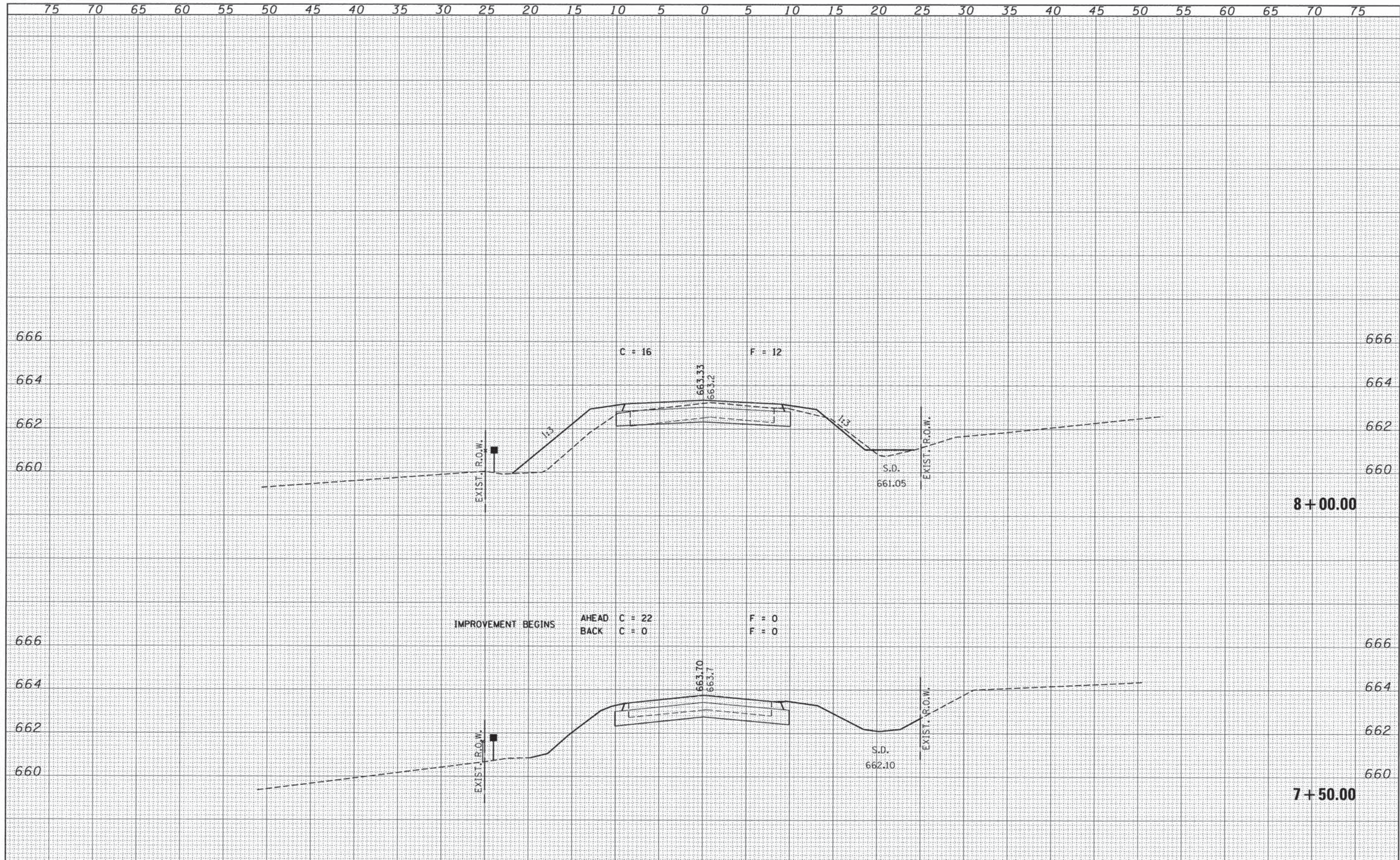


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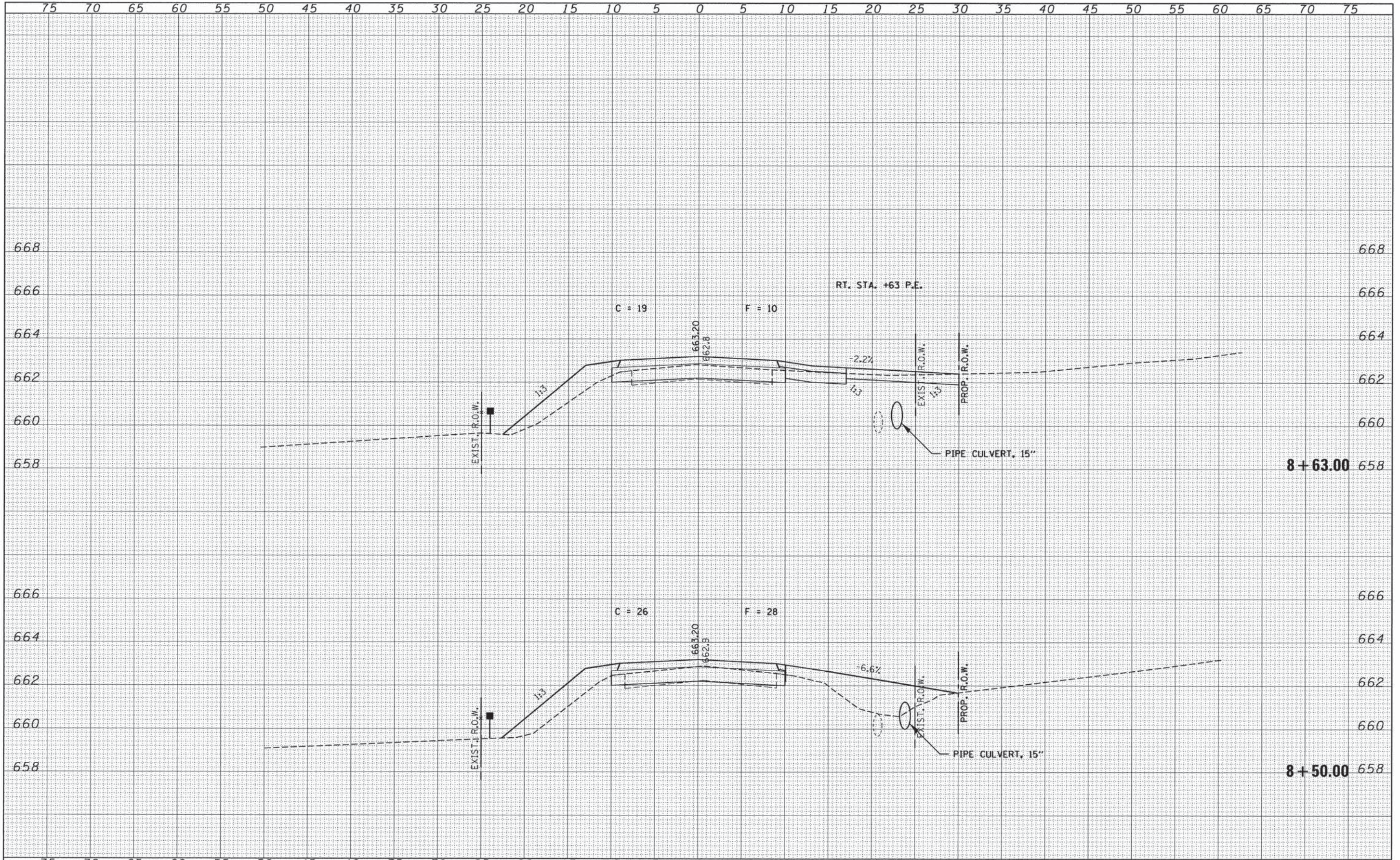
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HAMPTON, LENZINI AND RENWICK, INC.		DRAWN - L.G.C.	REVISED -						134B	12-09101-04-BR	LIVINGSTON	26	5
3085 STEVENSON DRIVE, SUITE 201		CHECKED - S.W.M.	REVISED -		ESMEN ROAD DISTRICT				CONTRACT NO. 87626				
SPRINGFIELD, ILLINOIS 62703		DATE - 03/23/16	REVISED -		ILLINOIS FED. AID PROJECT BROS-01051062								

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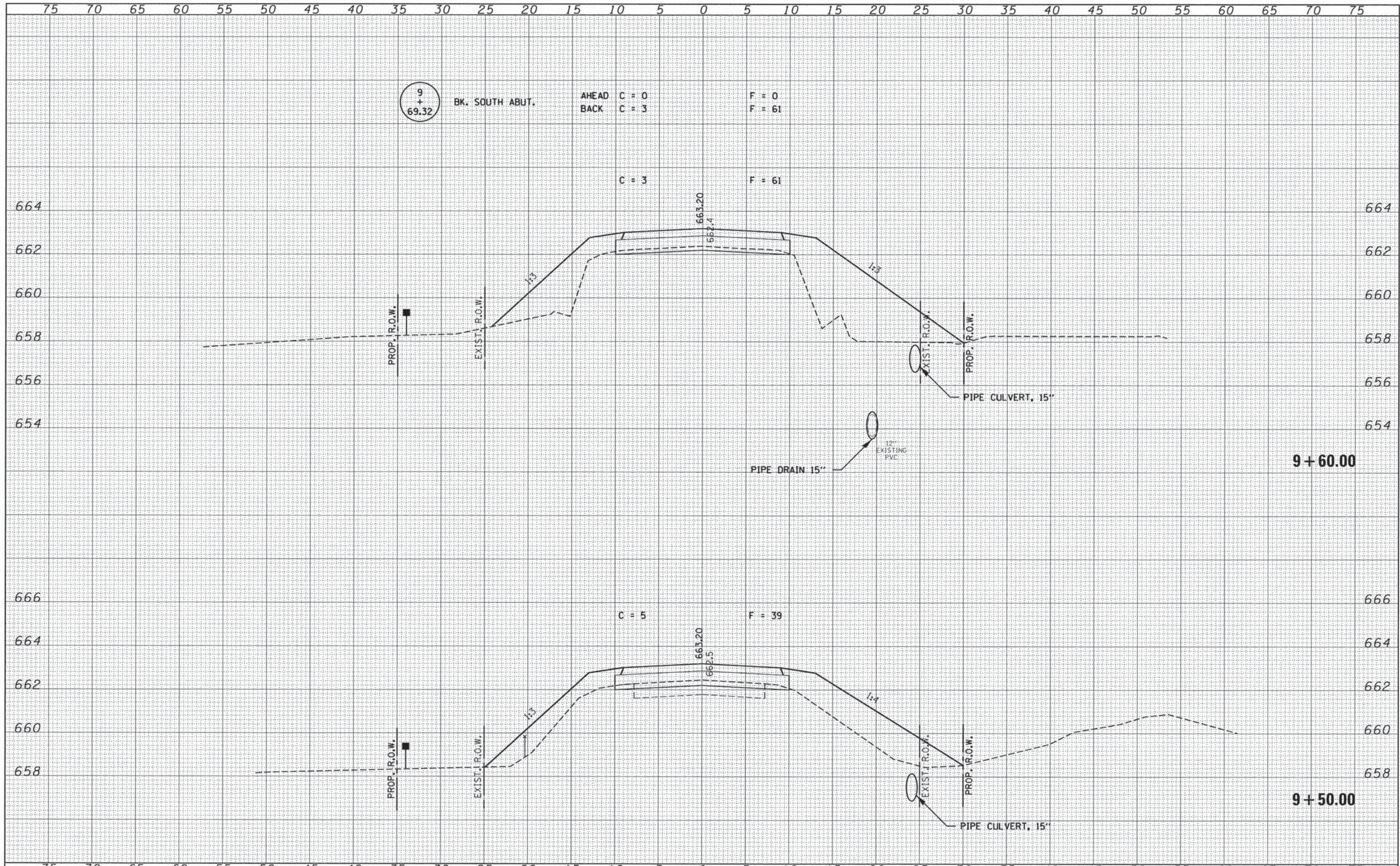
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HAMPTON, LENZINI AND REHWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62793 ILLINOIS PROFESSIONAL DESIGN FIRM L5/PE/SE CORP. 184-000059	PLOT SCALE =	DRAWN - L.G.C.	REVISED -		134B	12-09101-04-BR	LIVINGSTON	26	6				
PLOT DATE = 3/24/2016	DATE - 03/23/16	CHECKED - S.W.M.	REVISED -		ESMEN ROAD DISTRICT	CONTRACT NO. 87626							
		SCALE: 5H:2V			SHEET NO. 2 OF 10 SHEETS				STA. 8+50.00 TO STA. 8+63.00	ILLINOIS FED. AID PROJECT BROS-01050621			

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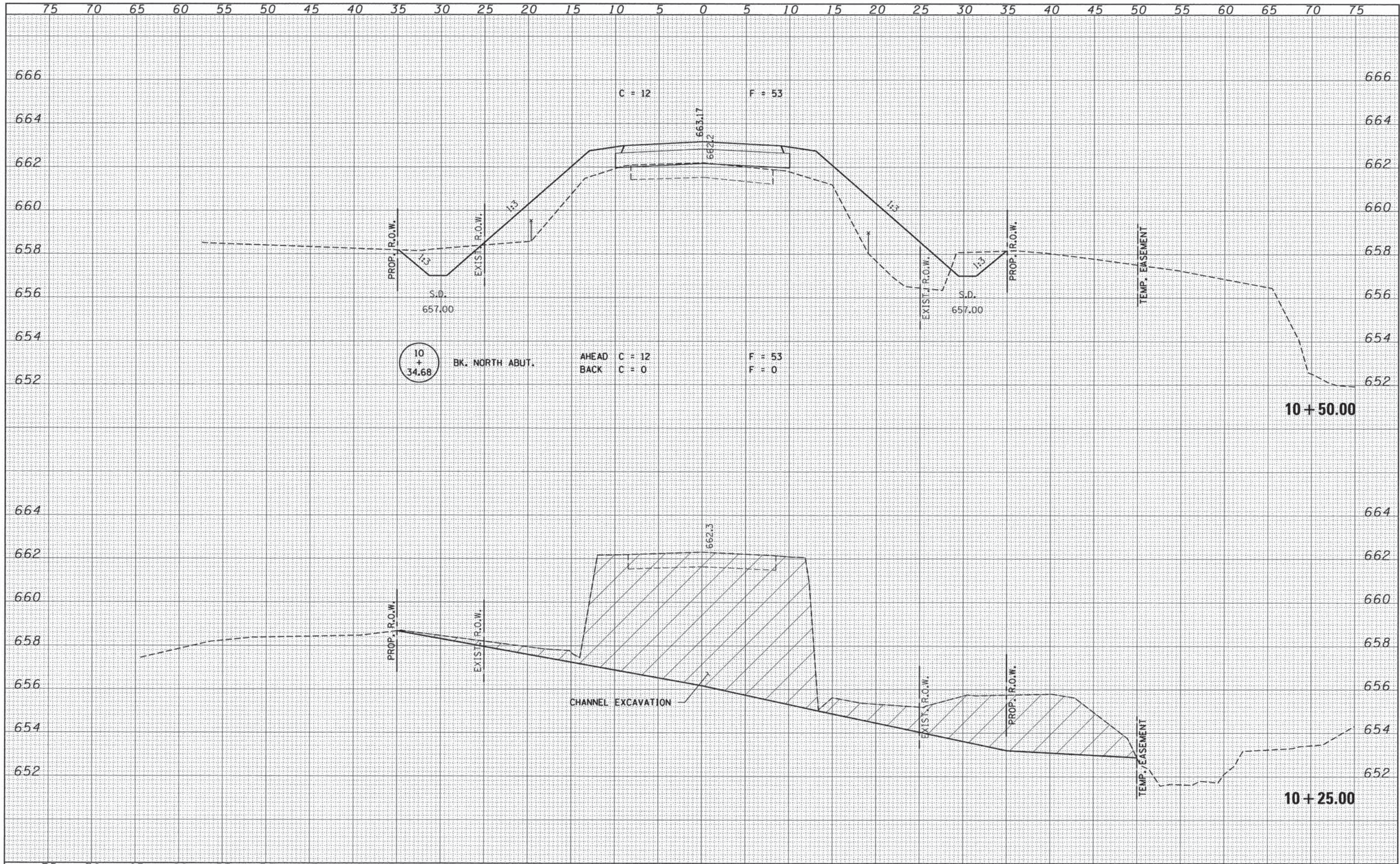


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HAMPTON, LENZINI AND RENWICK, INC. 3095 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 04-000009	PLOT SCALE =	DRAWN - L.G.C.	REVISED -		134B	12-09101-04-BR	LIVINGSTON	26	8				
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		DATE - 03/23/16	REVISED -		ILLINOIS FED. AID PROJECT BROS-01050621								

SCALE: 5H:2V SHEET NO. 4 OF 10 SHEETS STA. 9+50.00 TO STA. 9+75.00

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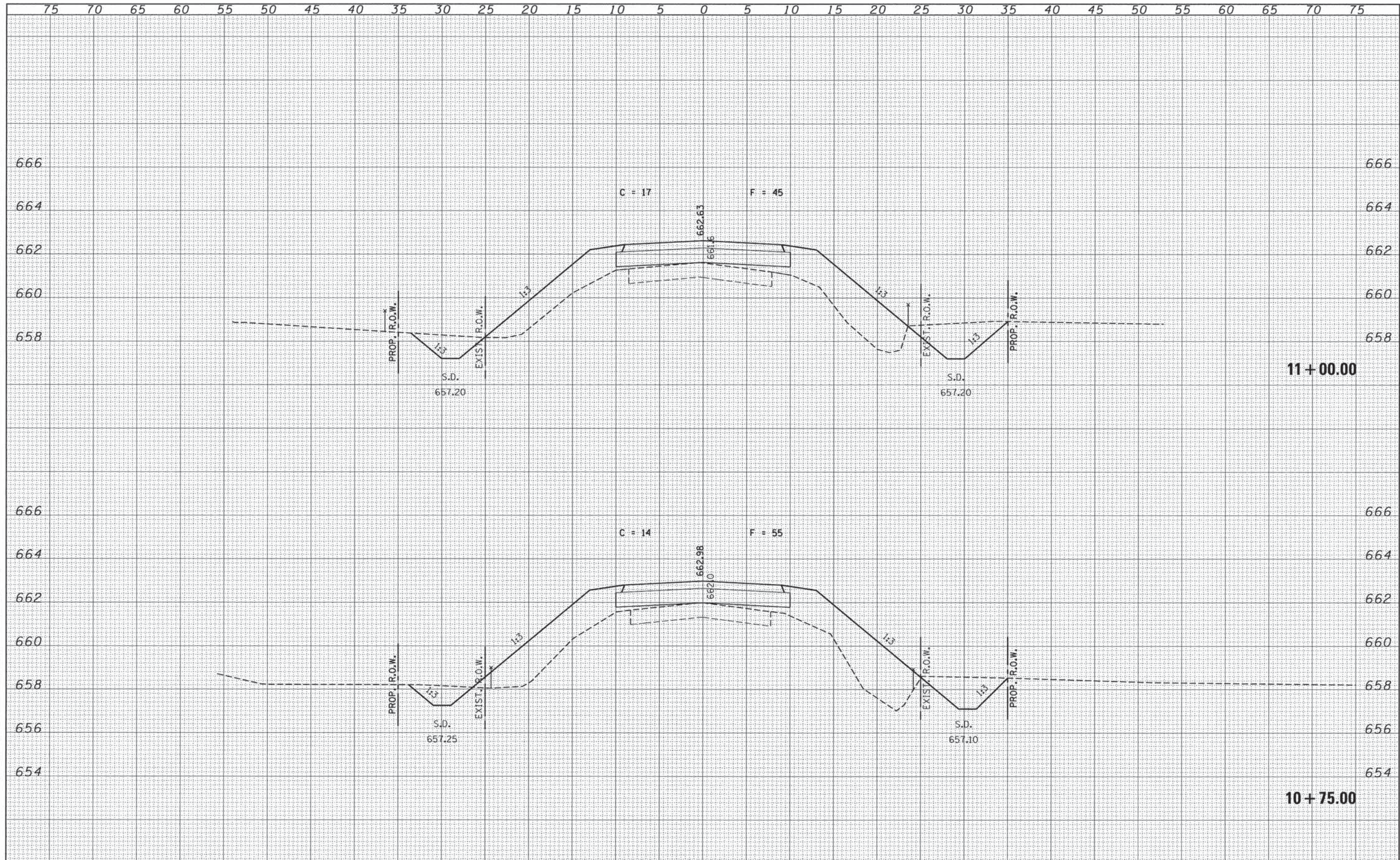


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		DATE - 03/23/16	REVISED -		ESMEN ROAD DISTRICT				CONTRACT NO. 87626

SCALE: 5H:2V SHEET NO. 6 OF 10 SHEETS STA. 10+50.00 TO STA. 10+50.00 [ILLINOIS] FED. AID PROJECT BROS-0105(062)

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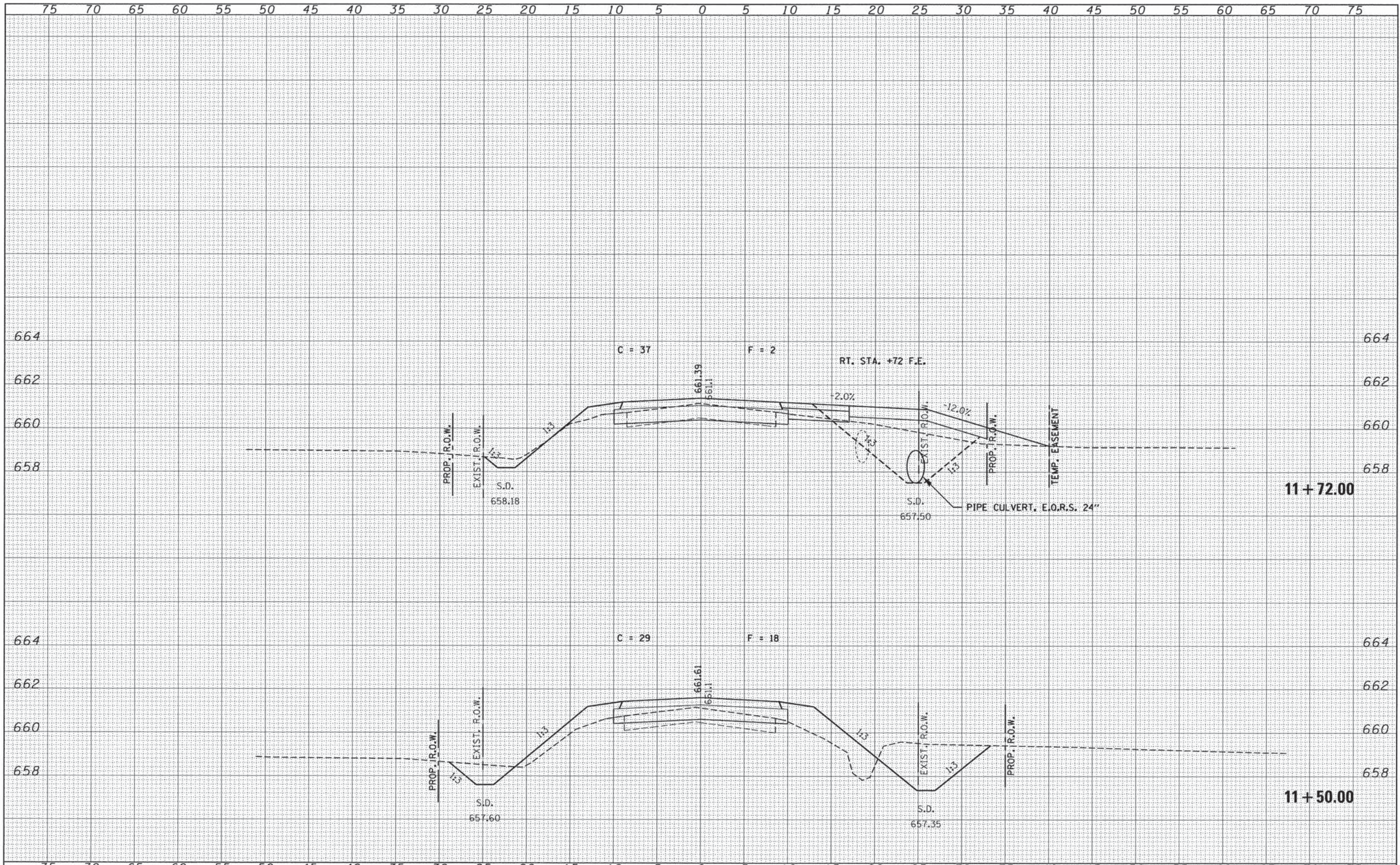


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HAMPTON, LENZINI AND RENWICK, INC. 3005 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62793 ILLINOIS PROFESSIONAL DESIGN FIRM L3/P/E/SE CORP. 184-000019	PLOT SCALE =	DRAWN - L.G.C.	REVISED -		TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT DATE = 3/24/2016		CHECKED - S.W.M.	REVISED -		134B	12-09101-04-BR	LIVINGSTON	26	11
		DATE - 03/23/16	REVISED -		ESMEN ROAD DISTRICT				CONTRACT NO. 87626

SCALE: 5H:2V SHEET NO. 7 OF 10 SHEETS STA. 10+75.00 TO STA. 11+00.00 ILLINOIS FED. AID PROJECT BR05-010510621

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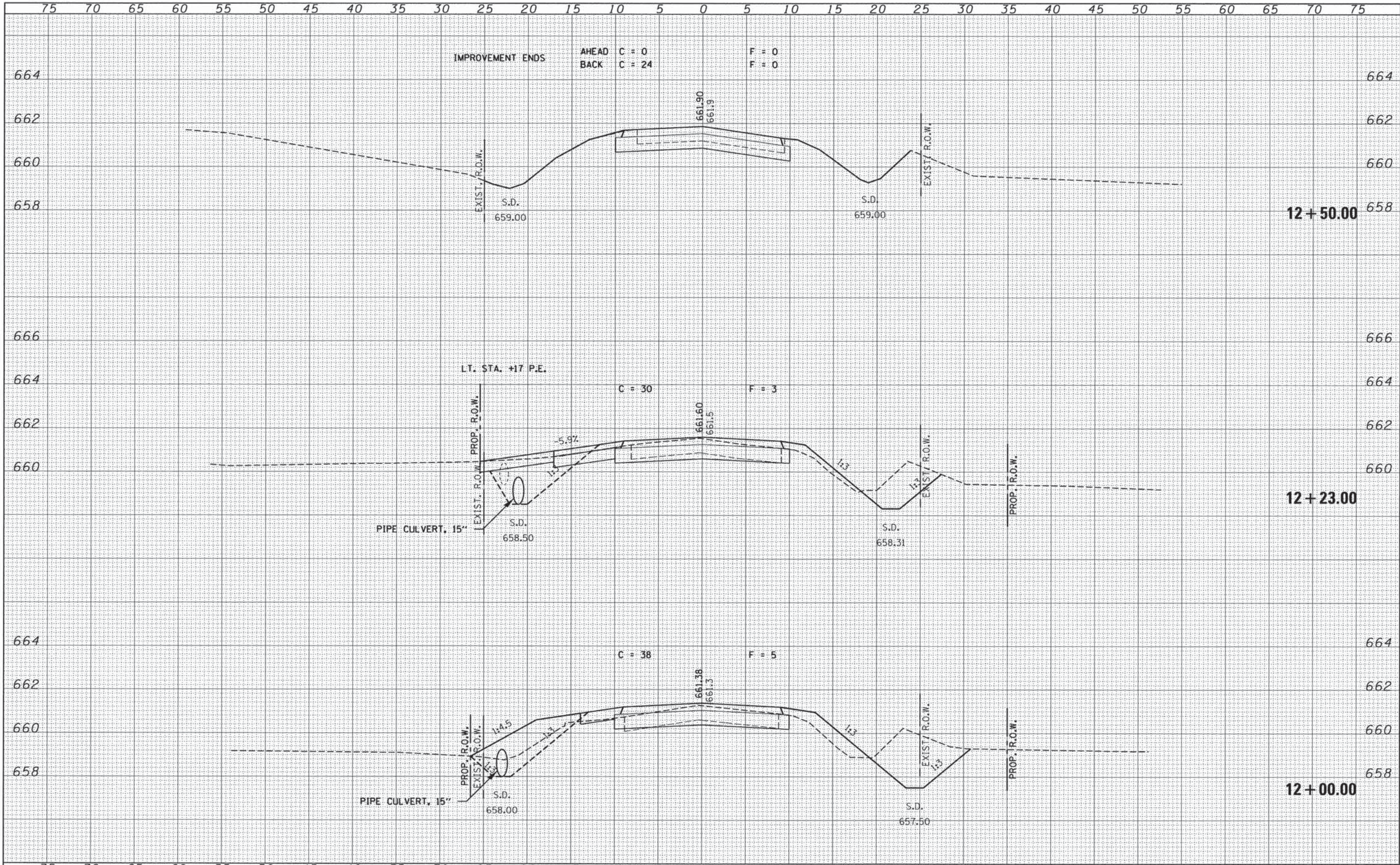
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HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62793 ILLINOIS PROFESSIONAL DESIGN FIRM L.S. / P.E. / S.E. / C.O.P.E. 184-000000	PLOT SCALE =	DRAWN - L.G.C.	REVISED -		134B	12-09101-04-BR	LIVINGSTON	26	12		
	PLOT DATE = 3/24/2016	CHECKED - S.W.M.	REVISED -		ESMEN ROAD DISTRICT		CONTRACT NO. 87626				
		DATE - 03/23/16	REVISED -		SCALE: 5H:2V		SHEET NO. 8 OF 10 SHEETS		STA. 11+50.00 TO STA. 11+72.00		[ILLINOIS] FED. AID PROJECT BR05-0105(062)

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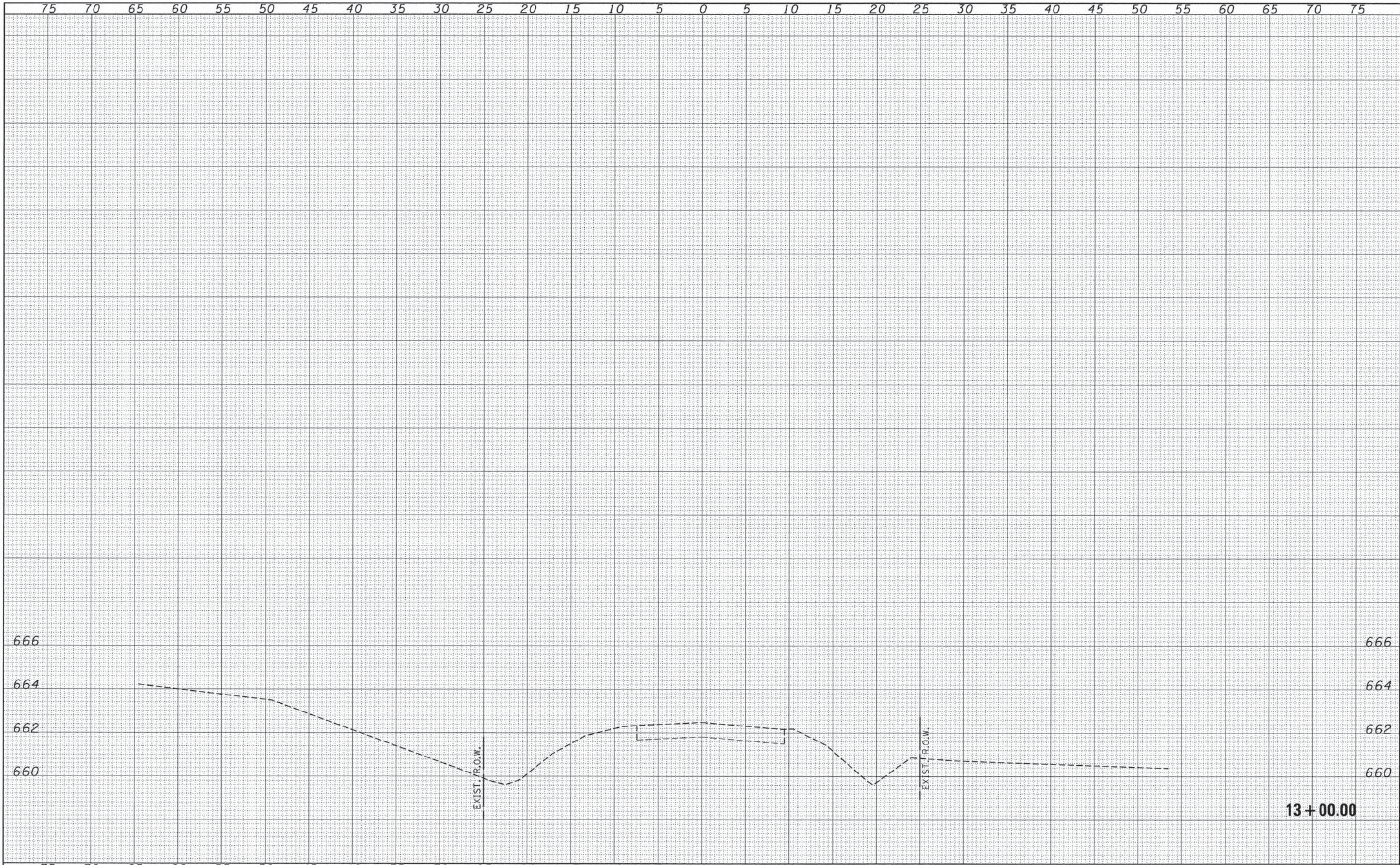
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HAMPTON, LENZINI AND REHWICK, INC. 3005 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L3 / P.E. / S.E. COMP. / 184-000019	PLOT SCALE =	DRAWN - L.G.C.	REVISED -						134B	12-09101-04-BR	LIVINGSTON	26	13
	PLOT DATE = 3/24/2016	CHECKED - S.W.M.	REVISED -		SCALE: 5H:2V				SHEET NO. 9 OF 10 SHEETS				
		DATE - 03/23/16	REVISED -		STA. 12+00.00 TO STA. 12+50.00				CONTRACT NO. 87626				

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AREAS CHECKED	



FILE NAME = 140160-shr-axs.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -	STATE OF ILLINOIS LIVINGSTON COUNTY HIGHWAY DEPARTMENT	STATION CROSS SECTIONS				TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND REHWICK, INC. 3085 STEVENSON DRIVE, SUITE 204 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L3 / P/E / SE COMP. 184-000019	PLOT SCALE =	DRAWN - L.G.C.	REVISED -		134B	12-09101-04-BR	LIVINGSTON	26	14				
	PLOT DATE = 3/24/2016	CHECKED - S.W.M.	REVISED -		ESMEN ROAD DISTRICT				CONTRACT NO. 87626				
		DATE - 03/23/16	REVISED -		ILLINOIS FED. AID PROJECT BROS-01050621								

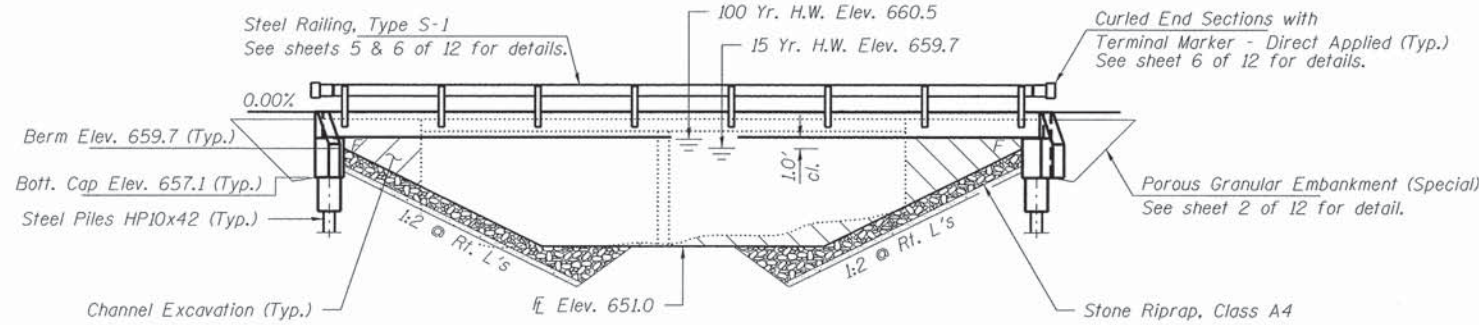
SCALE: 5H:2V SHEET NO. 10 OF 10 SHEETS STA. 13+00.00 TO STA. 13+00.00

BENCHMARK: Chiseled "X" on N.E. Curb 12.0' Rt., Sta. 10+23, Elev. 662.69

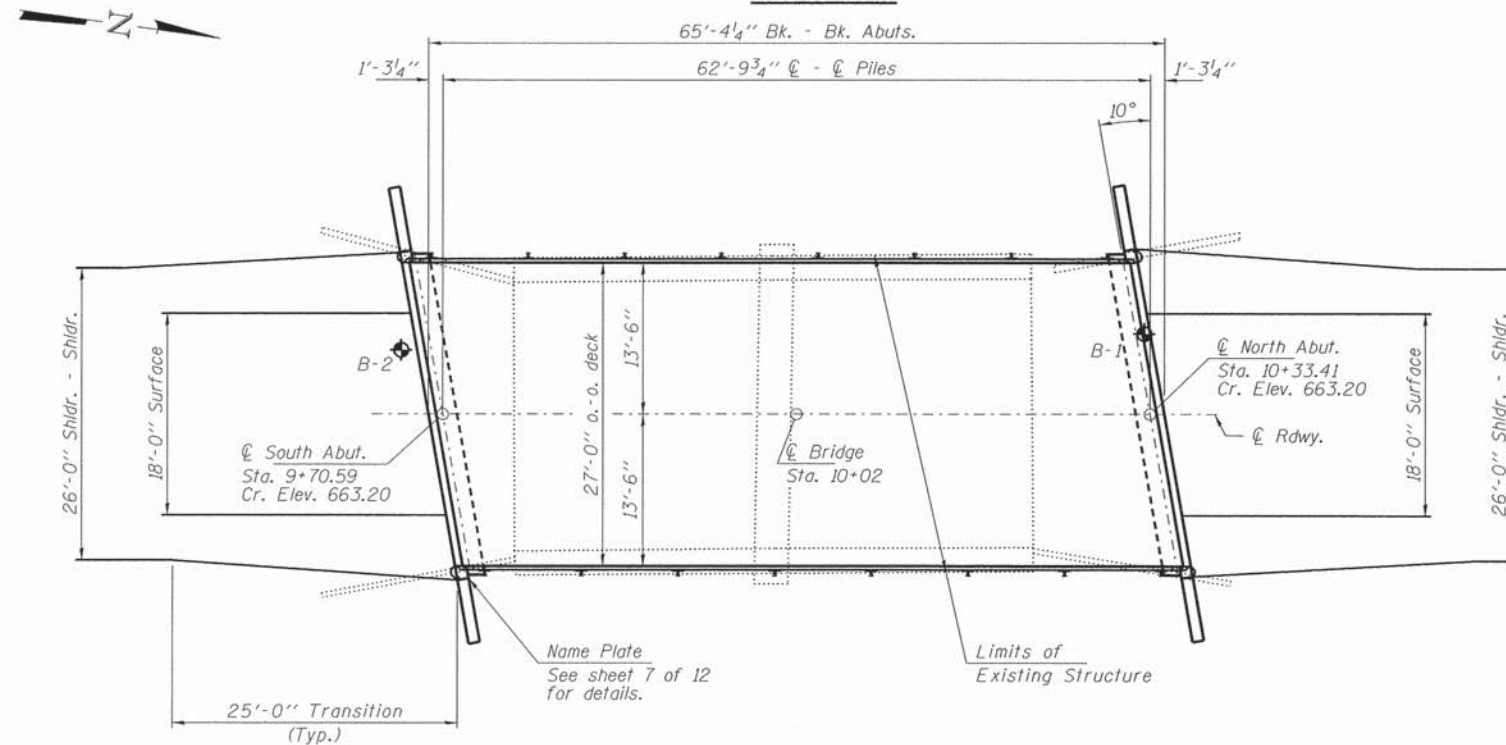
EXISTING STRUCTURE: Sta. 10+00 - Two span continuous reinforced concrete slab bridge with concrete parapets on closed timber abutments and wingwalls and timber pier. 43.5' fc.-fc. abuts; 28.4' o.-o. deck.

Structure closed to traffic during construction.

No Salvage



ELEVATION



PLAN

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications, 7th 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) = 0.108g
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.176g
Soil Site Class = D

WATERWAY INFORMATION

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Natural Head - Ft.		Headwater El.		
			Exist.	Prop.	H.W.E.	Exist.	Prop.	Exist.	Prop.
	10	1790	260	300	659.42	0.44	0.02	659.86	659.44
Design	15	2060	280	320	659.71	0.64	0.08	660.35	659.79
Base (Overtopping)	100	3400	310	380	660.62	1.74	1.64	662.36	662.26
Max. Calc.	200	3890	320	380	660.89	2.05	2.02	662.94	662.91

Existing Low Grade Elev. 661.1 @ Sta. 11+50
Proposed Low Grade Elev. 661.4 @ Sta. 11+70
Drainage Area = 10.7 Sq. Mi.

10 Year Velocity through Existing Bridge = 6.9 fps
10 Year Velocity through Proposed Bridge = 6.0 fps

DESIGN SCOUR ELEVATION TABLE

Event/Limit State	Design Scour Elevations (ft.)		Item 113
	S. Abut.	N. Abut.	
Q100	657.1	657.1	8
Q200	657.1	657.1	
Design	657.1	657.1	
Check	657.1	657.1	

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 03/23/16
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064



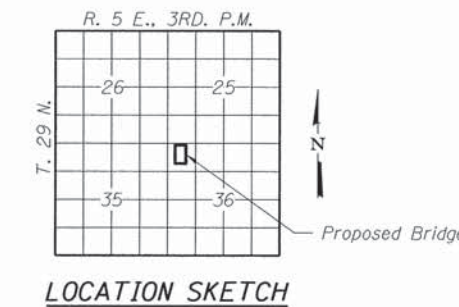
Expires 11-30-2016

GENERAL NOTES

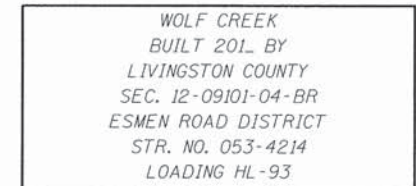
Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at the North Abutment or approved by the Engineer before ordering the remainder of piles.
Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. 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.
Concrete sealer shall be applied to the designated areas of the abutments.

INDEX OF STRUCTURE SHEETS

1. General Plan & Elevation
2. Abutment / Riprap Detail
3. 27"x36" PPC Deck Beam
4. 27"x36" PPC Deck Beam Details
5. Superstructure Details
6. Steel Railing, Type S-1
7. Abutments
8. HP Pile Details
- 9-12. Borings



LOCATION SKETCH



NAME PLATE

See Std. 515001

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER		TOTAL
		SUB	TOTAL	
Channel Excavation	Cu. Yd.		190	190
Stone Riprap, Class A4	Sq. Yd.		417	417
Filter Fabric	Sq. Yd.		417	417
Removal of Existing Structures	Each		1	1
Concrete Structures	Cu. Yd.	27.2		27.2
Concrete Encasement	Cu. Yd.	2.8		2.8
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	1,728		1,728
Reinforcement Bars, Epoxy Coated	Pound		2,870	2,870
Steel Railing, Type S-1	Foot	125		125
Furnishing Steel Piles HP10x42	Foot		455	455
Driving Piles	Foot		455	455
Test Pile Steel HP10x42	Each		1	1
Name Plates	Each		1	1
Porous Granular Embankment, Special	Ton		120	120
Pipe Underdrains for Structures 4"	Foot		95	95
Concrete Sealer	Sq. Ft.		106	106

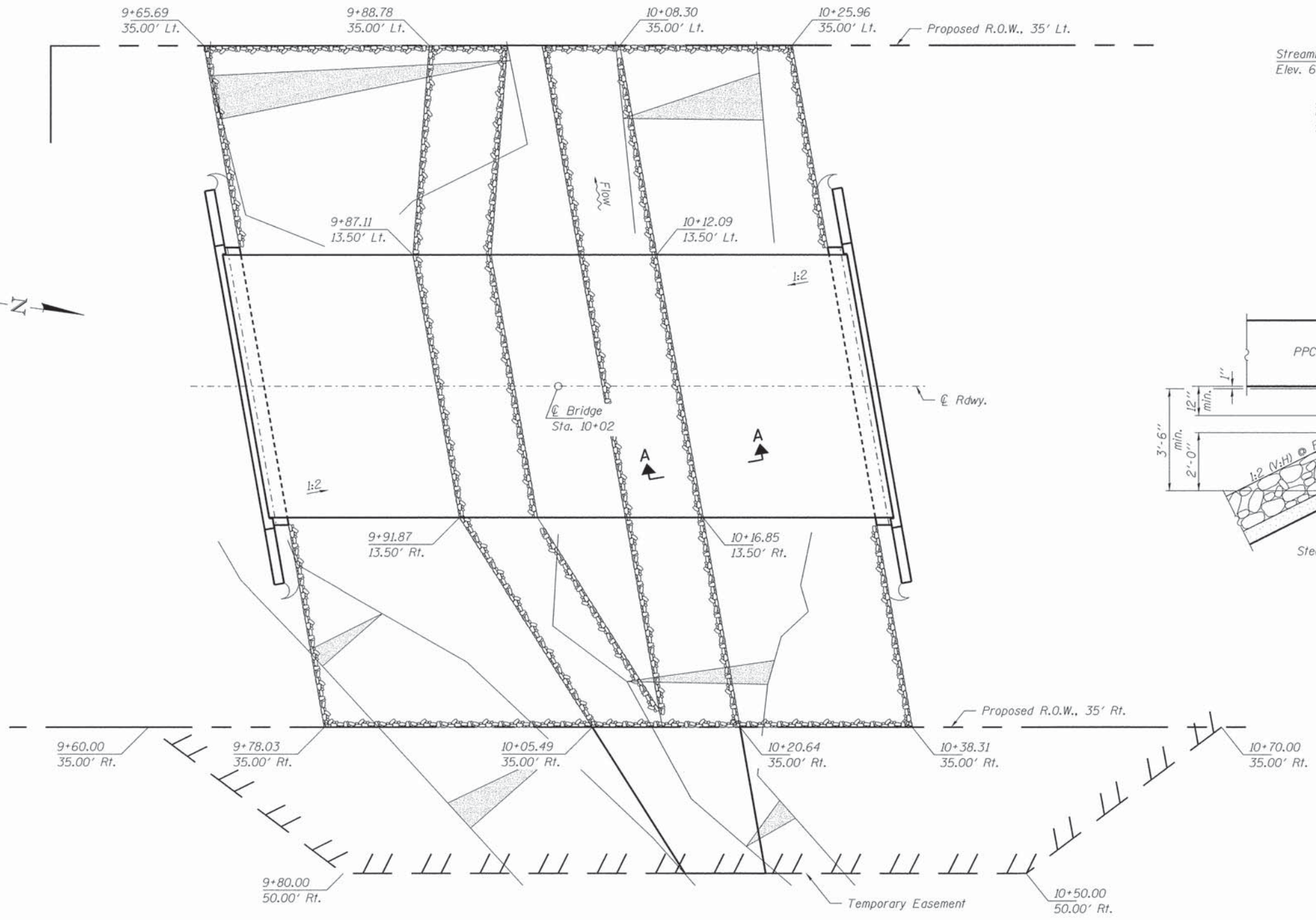
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	PLOT DATE = 3/24/2016	DRAWN - R.D.H.	REVISED -
		CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS
LIVINGSTON COUNTY HIGHWAY DEPARTMENT

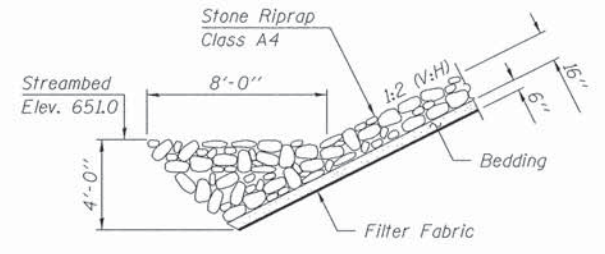
GENERAL PLAN & ELEVATION
STRUCTURE NO. 053-4214

SHEET NO. 1 OF 12 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
134B	12-09101-04-BR	LIVINGSTON	26	15
ESMEN ROAD DISTRICT			CONTRACT NO. 87626	
[ILLINOIS] FED. AID PROJECT BR05-0105(062)				

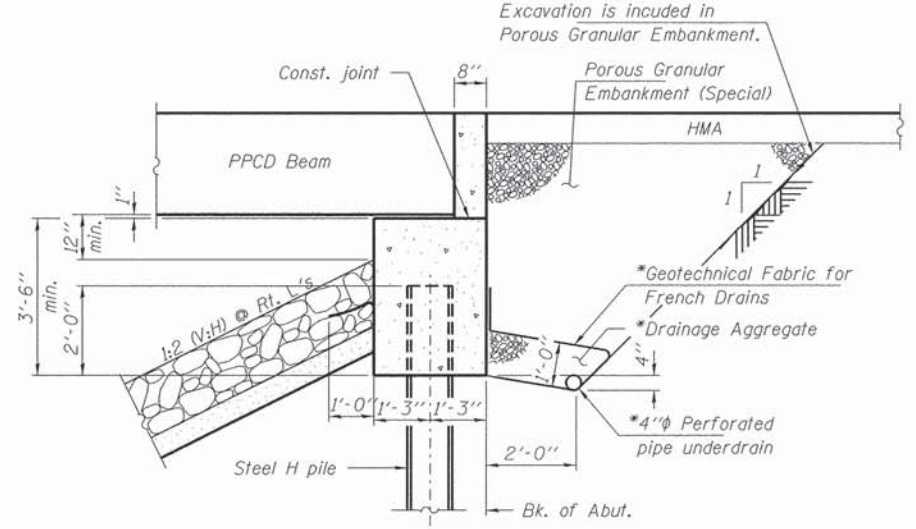


PLAN



SECTION A-A

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



SECTION THRU ABUTMENT

(Horiz. dim. @ Rt. L's)

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

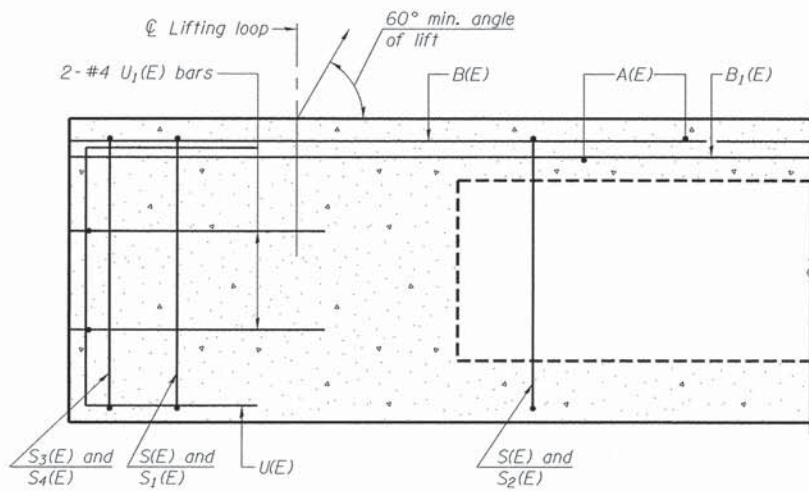
Note: Outlet pipe underdrains to the West only as directed by the engineer.

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HAMPTON, LENZINI AND REHWICK, INC. 2003 STEVENSON DRIVE, SUITE 207 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L31.PE / SE CORP. 184-000009	
DESIGNED - L.A.P.	REVISIONS
CHECKED - S.W.M.	REVISIONS
DRAWN - R.D.H.	REVISIONS
CHECKED - S.W.M.	REVISIONS
PLOT SCALE =	
PLOT DATE = 3/24/2016	

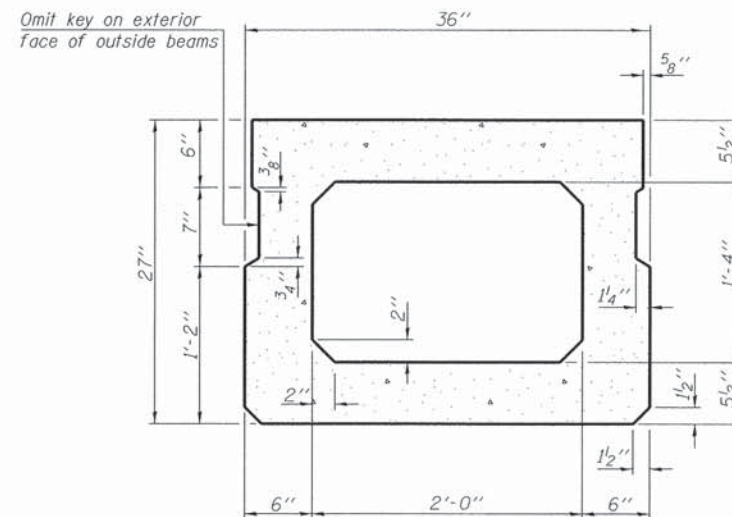
**STATE OF ILLINOIS
LIVINGSTON COUNTY HIGHWAY DEPARTMENT**

**ABUTMENT / RIPRAP DETAIL
STRUCTURE NO. 053-4214
SHEET NO. 2 OF 12 SHEETS**

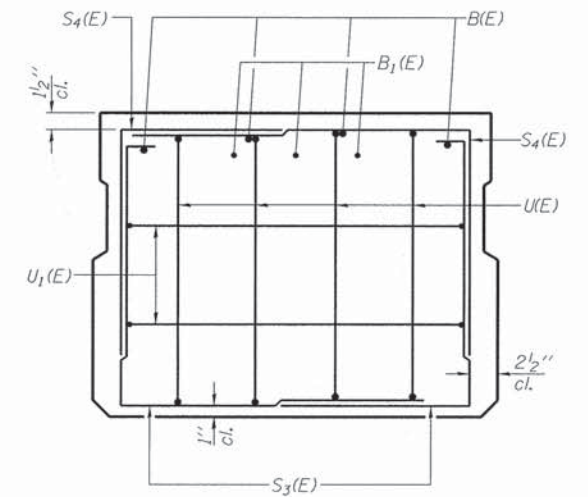
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134B	12-09101-04-BR	LIVINGSTON	26	16
ESMEN ROAD DISTRICT			CONTRACT NO. 87626	
[ILLINOIS] FED. AID PROJECT BR05-0105(062)				



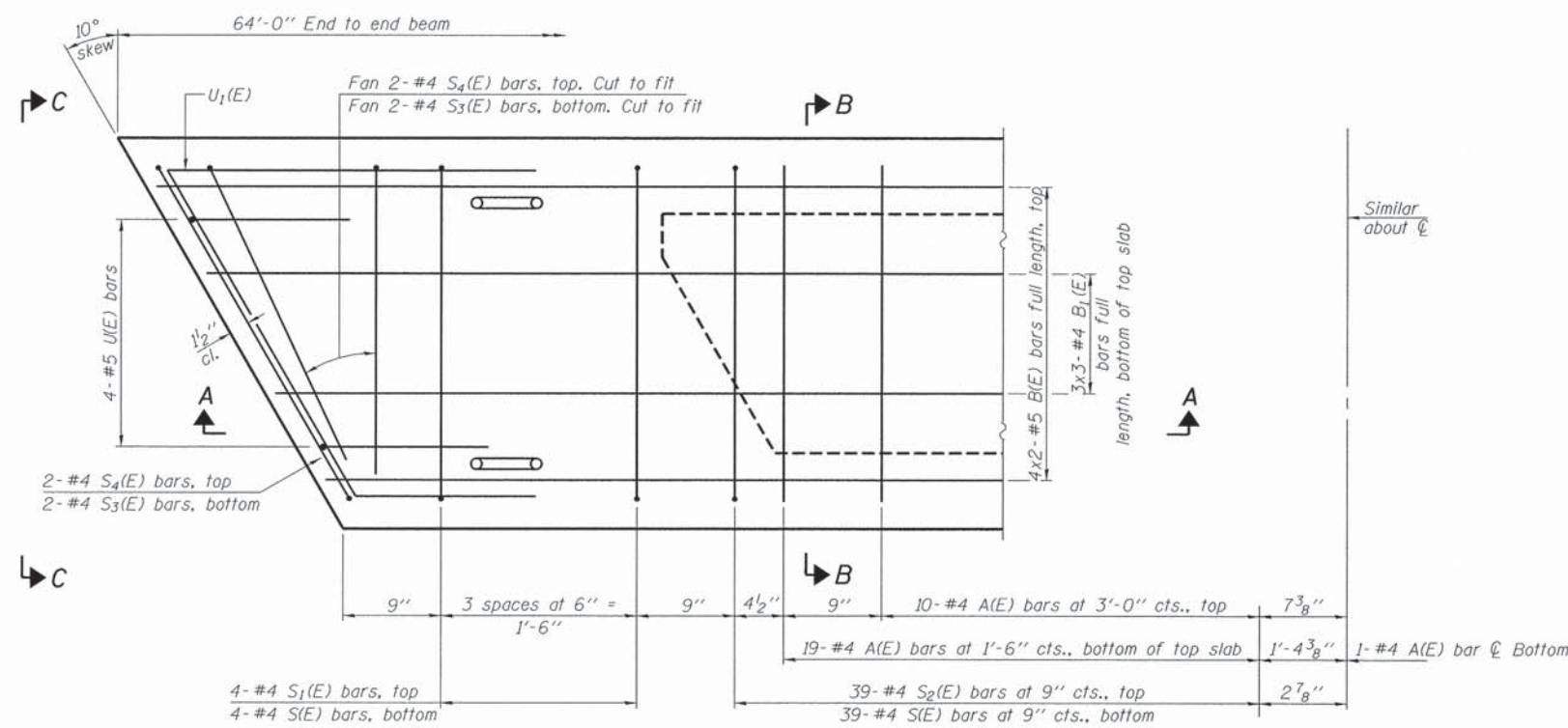
SECTION A-A



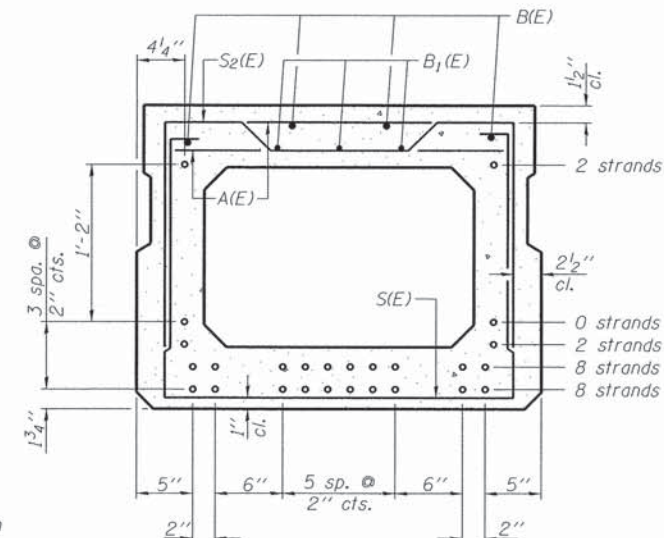
SECTION B-B
(Showing dimensions)



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)	59	#4	2'-7"	—
B(E)	8	#5	33'-2"	—
B1(E)	9	#4	22'-7"	—
S(E)	86	#4	7'-5"	U
S1(E)	8	#4	5'-11"	U
S2(E)	78	#4	6'-2"	U
S3(E)	8	#4	4'-9"	U
S4(E)	8	#4	4'-0"	U
U(E)	8	#5	4'-6"	U
U1(E)	4	#4	5'-6"	U

Note: See sheet 4 of 10 for additional details and Bill of Material.

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.

MINIMUM BAR LAP

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

PD-2736-R 6-8-15

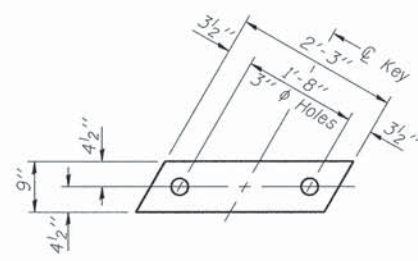
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ILR ILLINOIS PROFESSIONAL DESIGN FIRM L.S. FRY, P.E. COMM. 184.000059	PLOT DATE = 3/24/2016	DRAWN - R.D.H.	REVISED -
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STATE OF ILLINOIS
LIVINGSTON COUNTY HIGHWAY DEPARTMENT

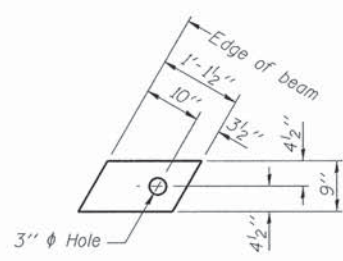
27" x 36" PPC DECK BEAM
STRUCTURE NO. 053-4214

SHEET NO. 3 OF 12 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
134B	12-09101-04-BR	LIVINGSTON	26	17
ESMEN ROAD DISTRICT		CONTRACT NO. 87626		
ILLINOIS FED. AID PROJECT BROS-01050621				



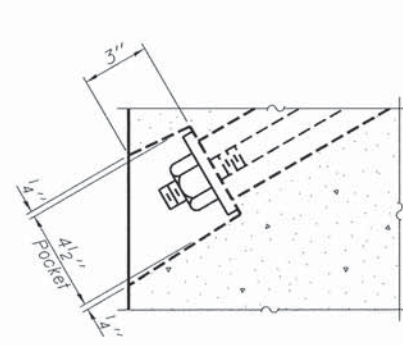
FABRIC BEARING PAD
(Interior - 16 req'd)



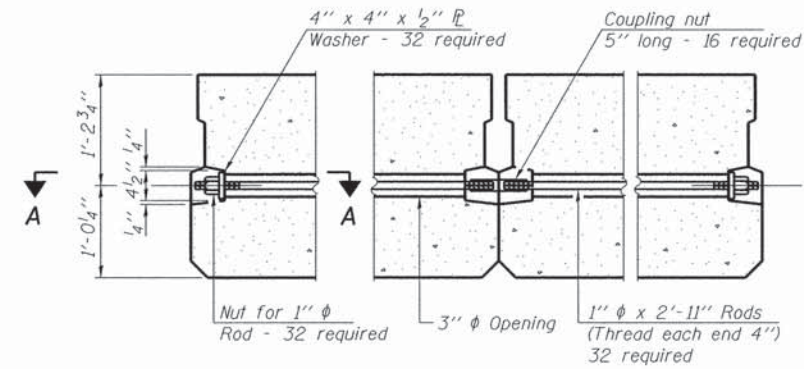
FABRIC BEARING PAD
(Exterior - 4 req'd)

FIXED

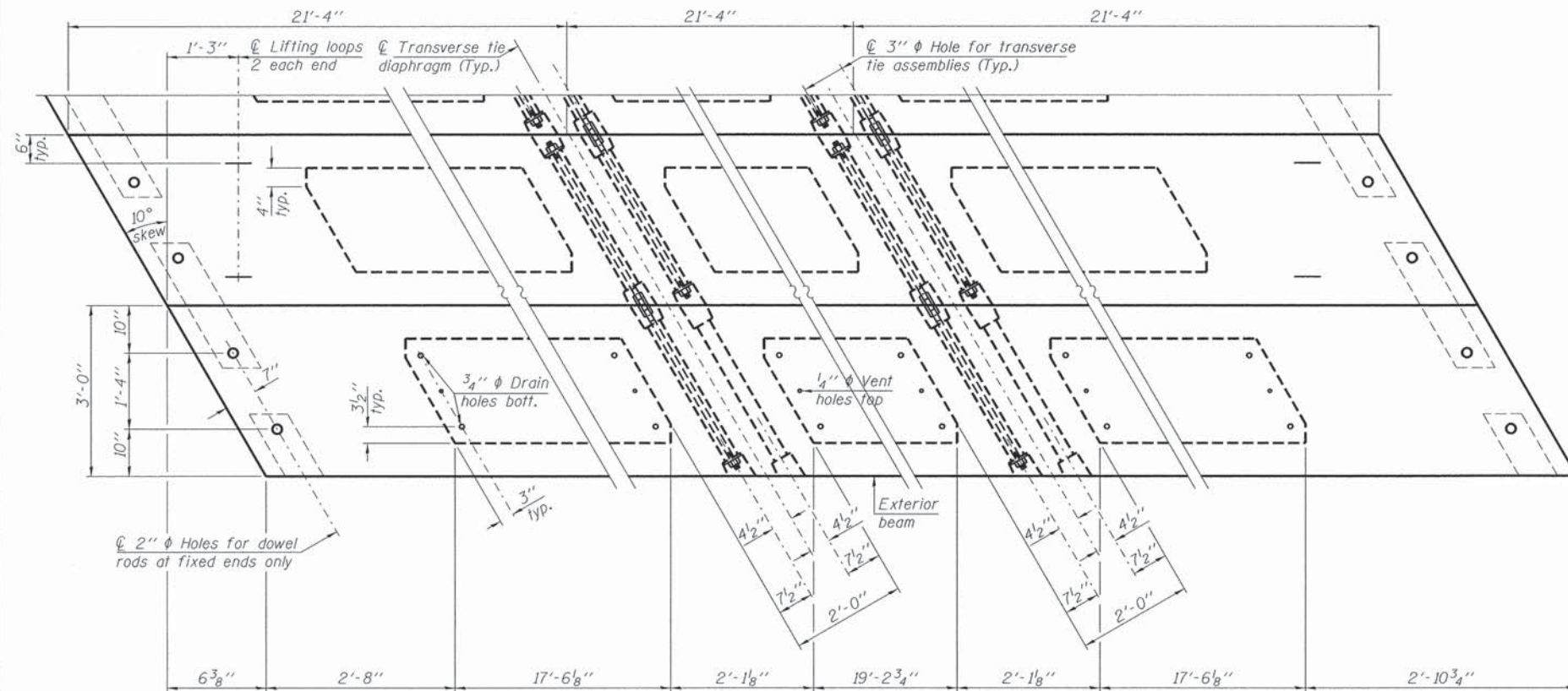
Notes:
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.



SECTION A-A



TYPICAL TRANSVERSE TIE ASSEMBLY

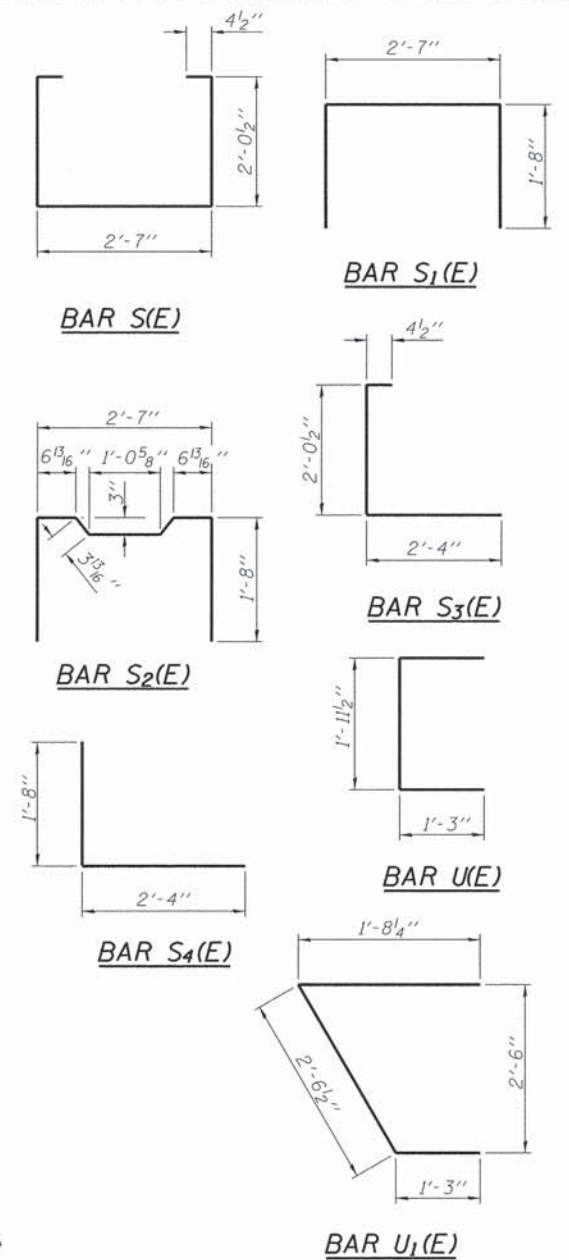


PLAN VIEW

NOTES

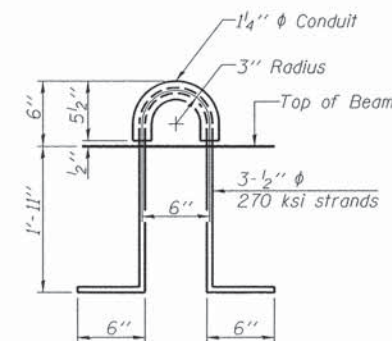
Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.
Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions).
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)(12) 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.	1,728
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LIFTING LOOP DETAIL

PD-2736-RD 6-8-15

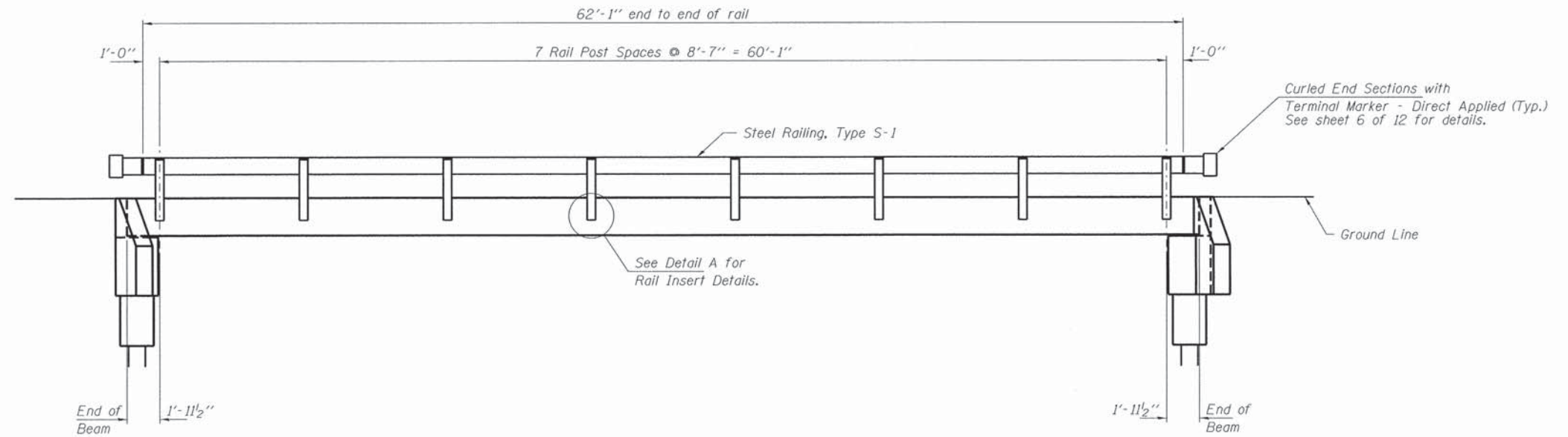
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	PLOT DATE = 3/24/2016

DESIGNED - L.A.P.	REVISIONS
CHECKED - S.W.M.	REVISIONS -
DRAWN - R.D.H.	REVISIONS -
CHECKED - S.W.M.	REVISIONS -

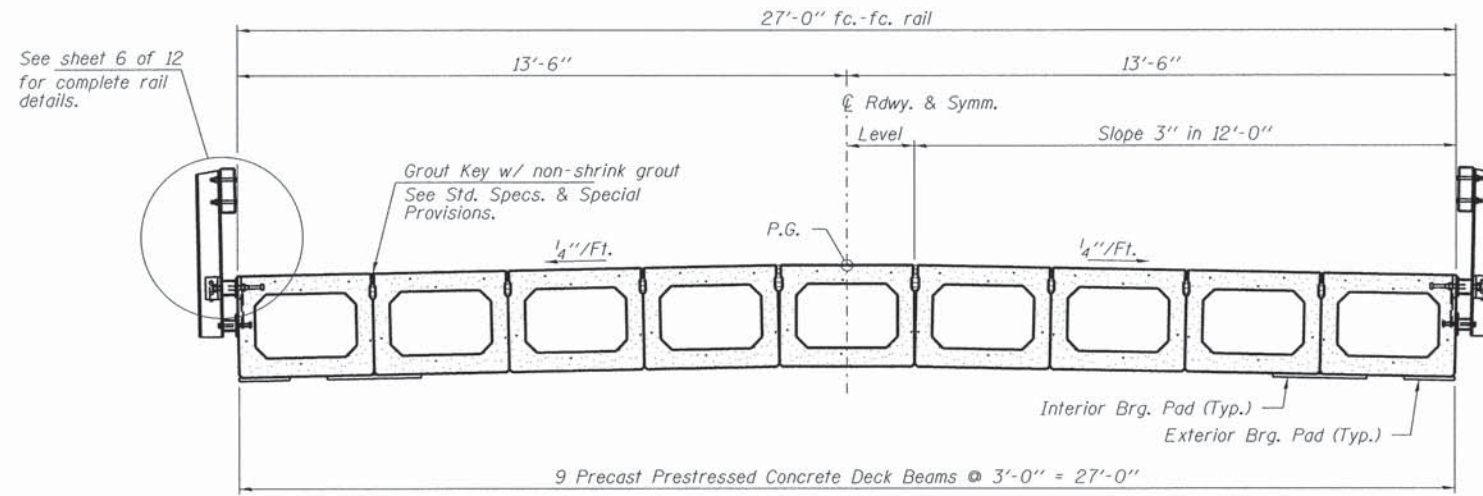
STATE OF ILLINOIS
LIVINGSTON COUNTY HIGHWAY DEPARTMENT

27" x 36" PPC DECK BEAM DETAILS
STRUCTURE NO. 053-4214
SHEET NO. 4 OF 12 SHEETS

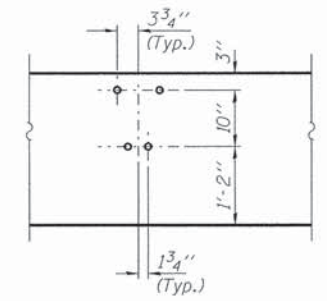
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
134B	12-09101-04-BR	LIVINGSTON	26	18
ESMEN ROAD DISTRICT			CONTRACT NO. 87626	
ILLINOIS FED. AID PROJECT BROS-0105(062)				



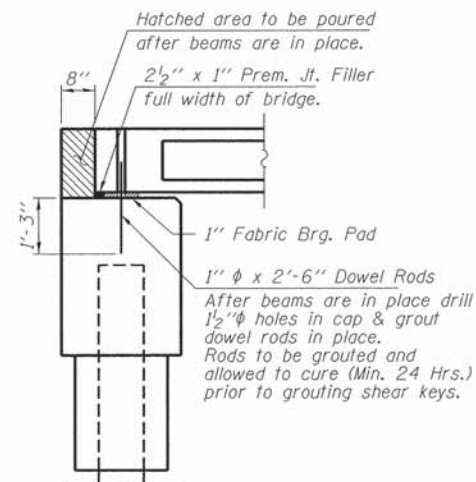
ELEVATION
Showing Rail Post Spacing
See sheet 6 of 12 for Railing Details.



CROSS SECTION
See sheets 3 & 4 of 12 for Superstructure.

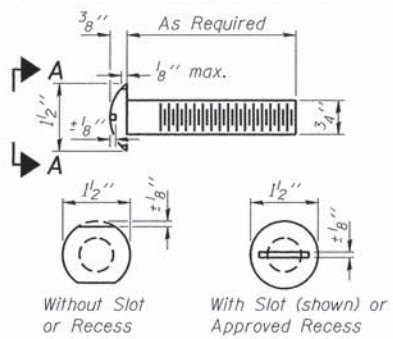


DETAIL A

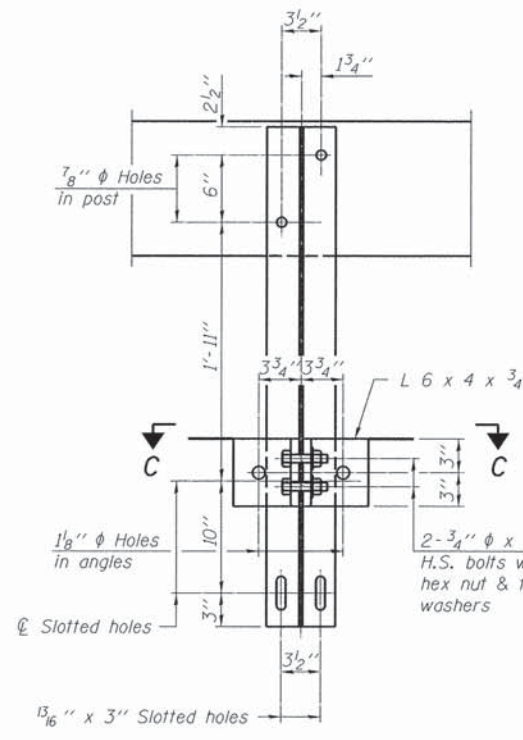
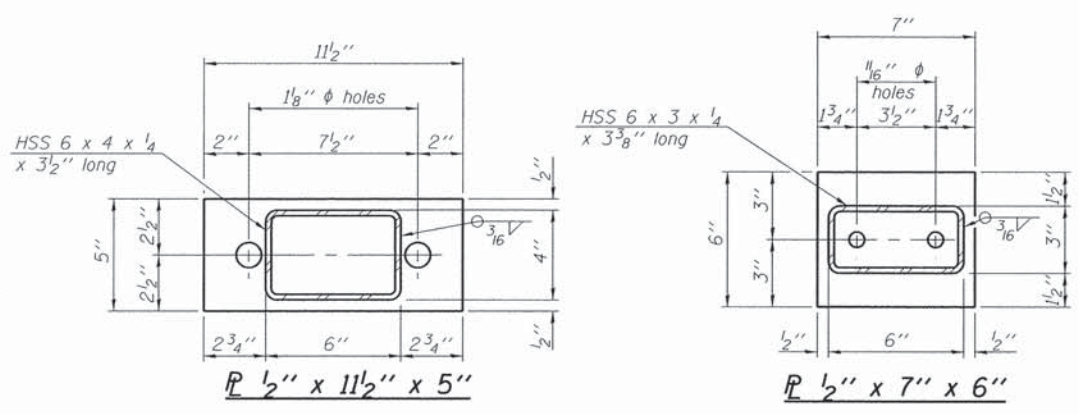


SECTION AT ABUTMENTS
© Rt. L's

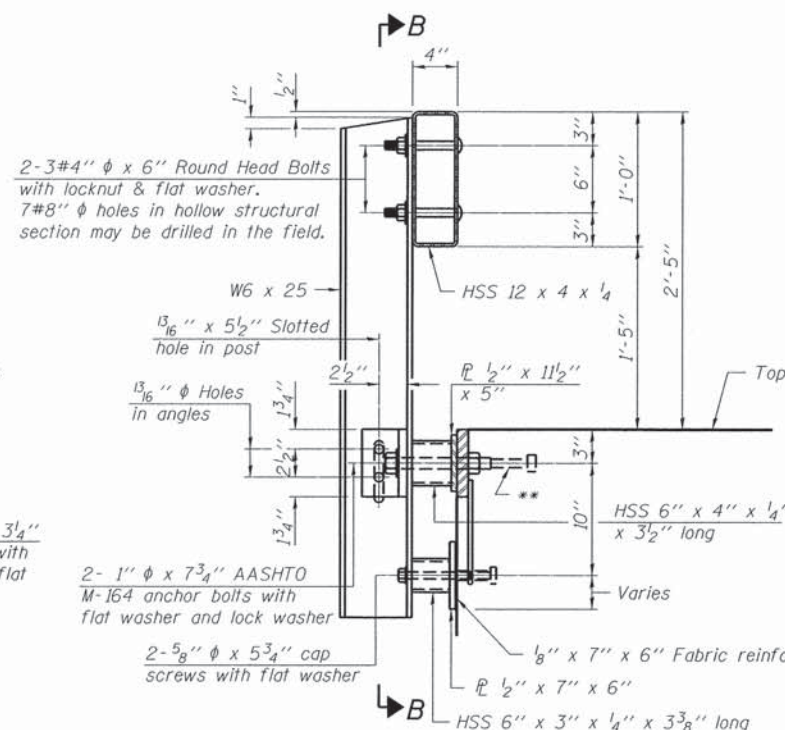
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ILLINOIS PROFESSIONAL DESIGN FIRM L.L. / P.E. / S.E. COMP. 184-000899	PLOT DATE = 3/24/2016	DRAWN - R.D.H.	REVISED -			ESMEN ROAD DISTRICT		CONTRACT NO. 87626		ILLINOIS FED. AID PROJECT BROS-01050621	
		CHECKED - S.W.M.	REVISED -			SHEET NO. 5 OF 12 SHEETS					



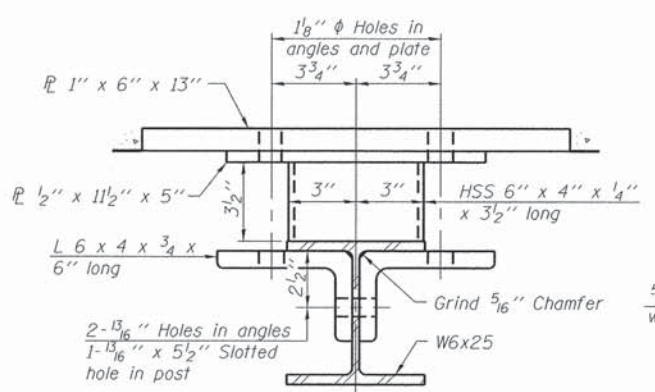
**VIEW A-A
ROUND HEAD BOLT**



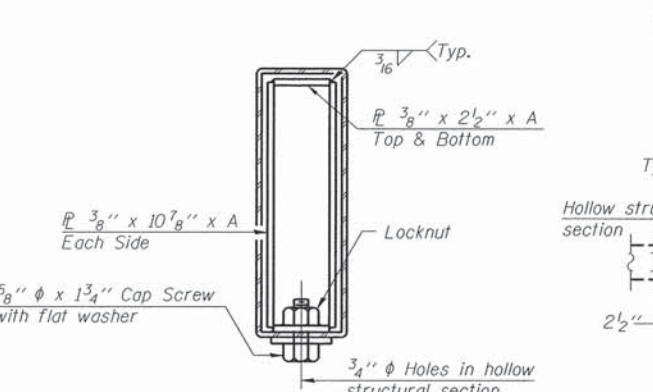
SECTION B-B



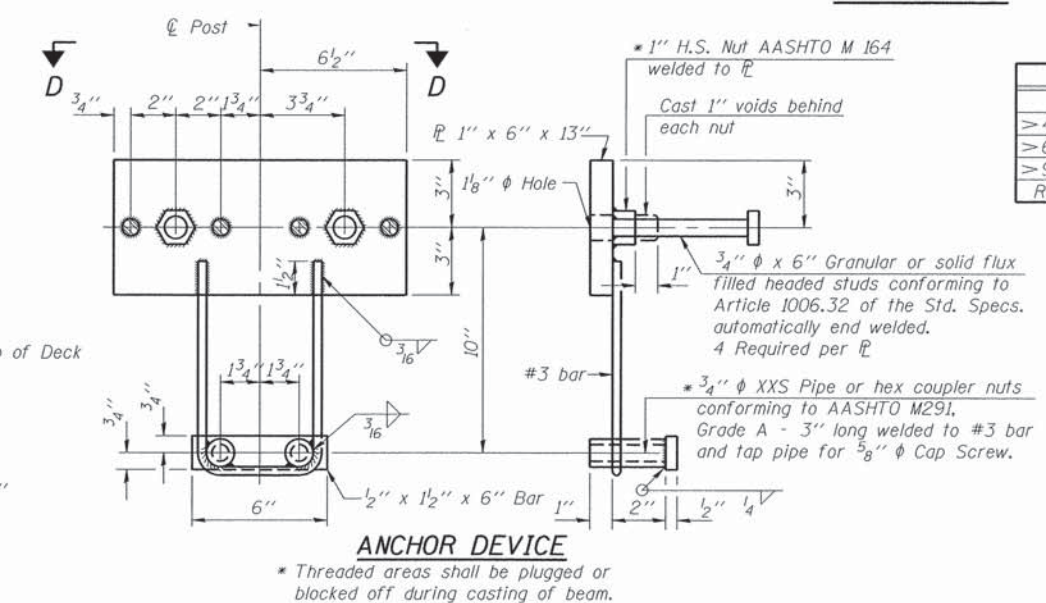
SECTION AT RAILING POST



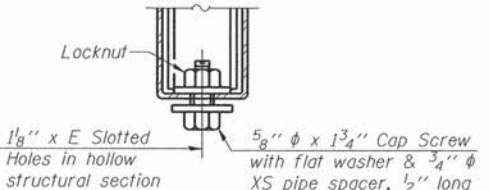
SECTION C-C



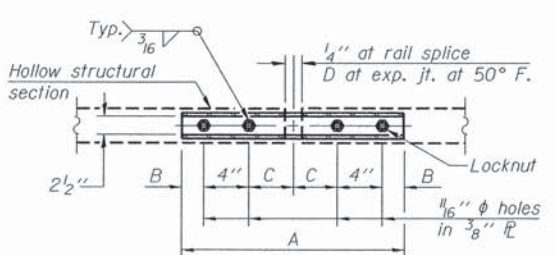
SECTIONS AT RAIL SPLICE



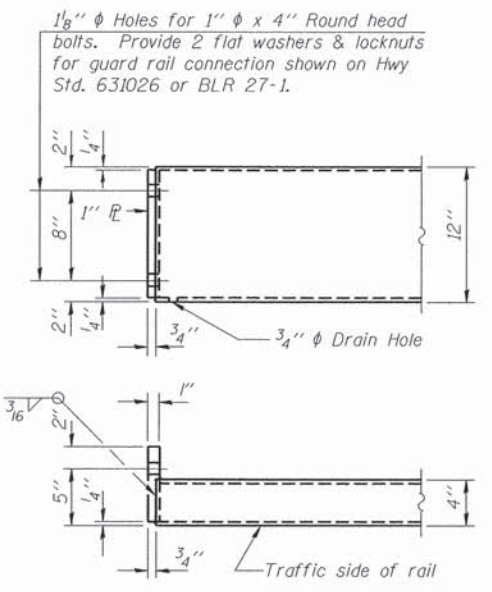
ANCHOR DEVICE



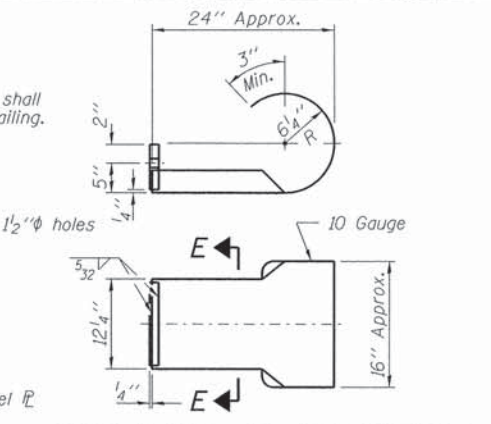
**RAIL SPLICE CONNECTION
AT EXPANSION JT.**



**PLAN-BOTT. SPLICE R
TYPICAL**



END OF RAIL DETAILS



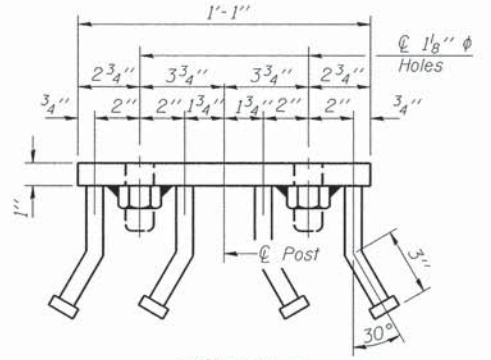
**SECTION E-E
CURLLED END SECTION DETAILS**

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	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.
** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.



VIEW D-D

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	125

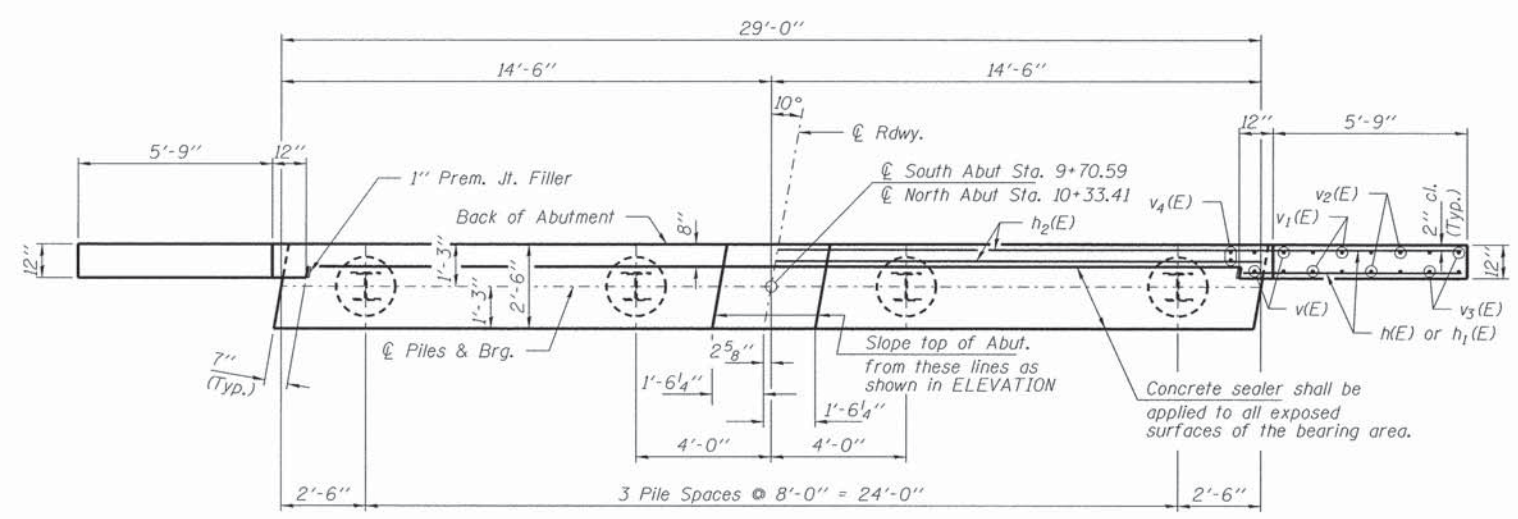
R-23A 1-12-15 (10'-9" Maximum Post Spacing)

FILE NAME = 14016@-sht-br-ridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED
HAMPTON, LENZINI AND RENWICK, INC. 205 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62793	PLOT SCALE =	CHECKED - S.W.M.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM 13 1/2 P.C. COMP. 104 000000	PLOT DATE = 3/24/2016	DRAWN - R.D.H.	REVISED -
		CHECKED - S.W.M.	REVISED -

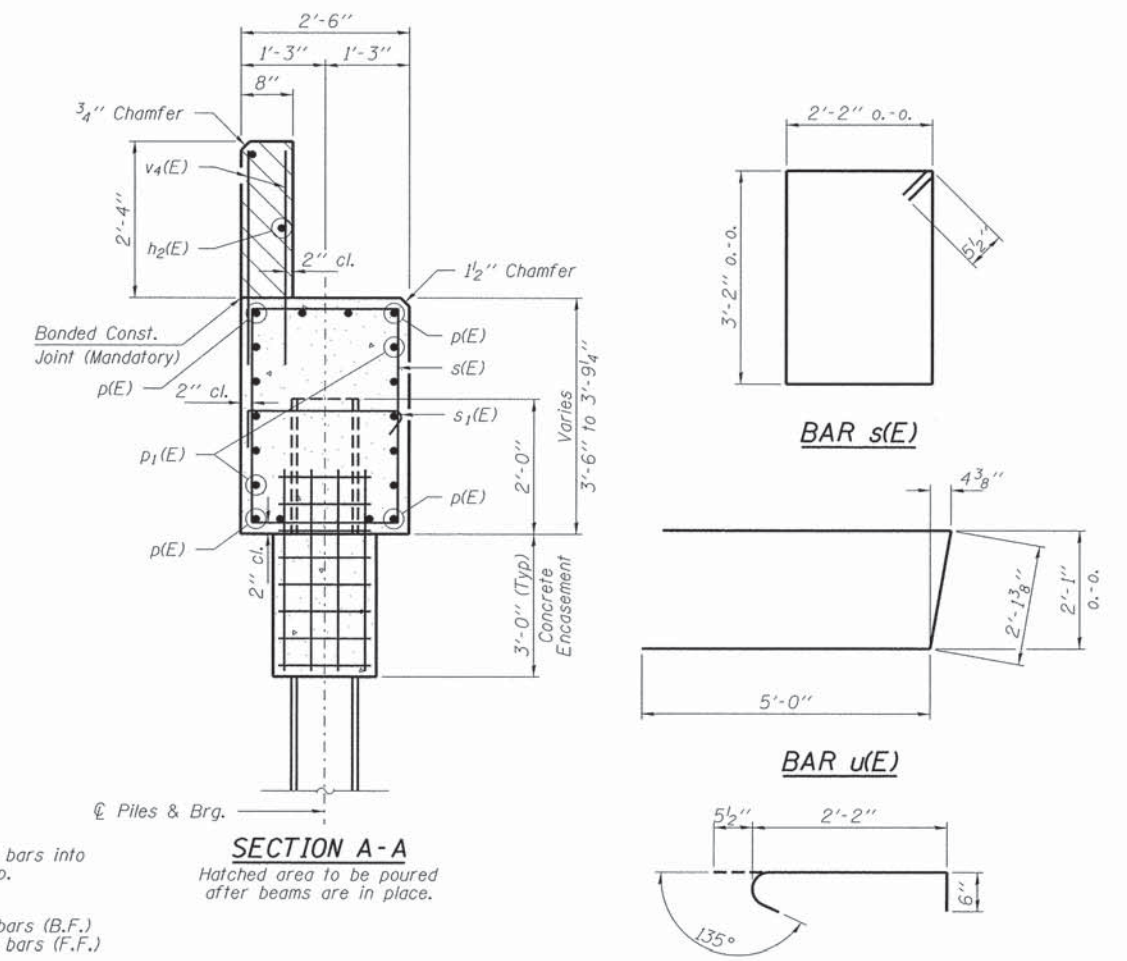
STATE OF ILLINOIS
LIVINGSTON COUNTY HIGHWAY DEPARTMENT

STEEL RAILING, TYPE S-1
STRUCTURE NO. 053-4214
SHEET NO. 6 OF 12 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
134B	12-09101-04-BR	LIVINGSTON	26	20
ESMEN ROAD DISTRICT			CONTRACT NO. 87626	
ILLINOIS FED. AID PROJECT BR05-01050621				



PLAN

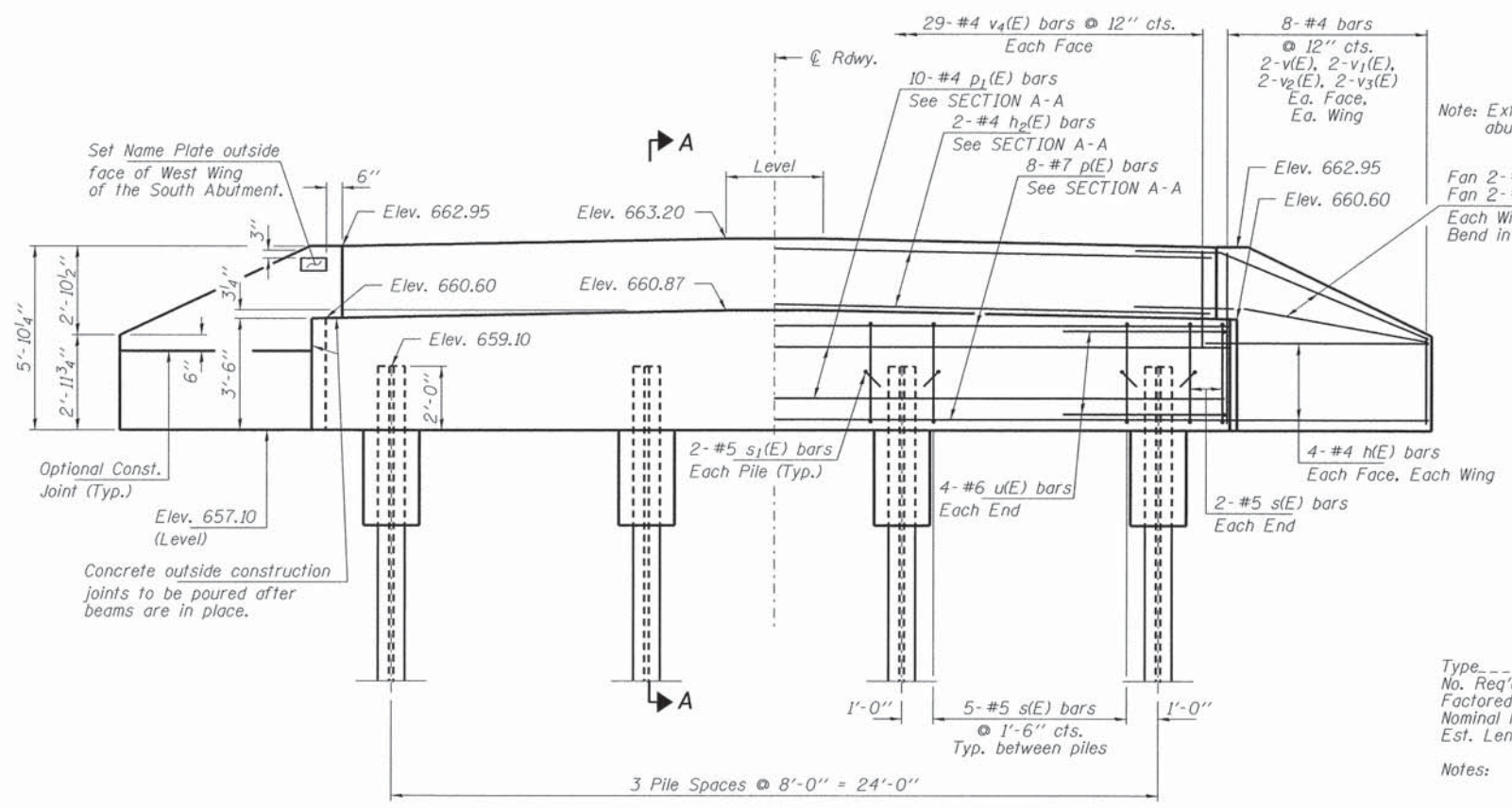


SECTION A-A

BAR s(E)

BAR u(E)

BAR s1(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 ----- Steel HP10x42
 No. Req'd. (2 Abutments) ----- 8
 Factored Resistance Available ----- 184 Kips/Pile
 Nominal Req'd Bearing ----- 335 Kips/Pile
 Est. Length ----- 65 Ft./Pile

Notes: *Includes one test pile to be driven in a permanent location at the North 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	#5	8'-0"	—
h1(E)	8	#5	6'-6"	—
h2(E)	4	#5	28'-8"	—
p(E)	16	#7	28'-8"	—
p1(E)	20	#4	28'-8"	—
s(E)	38	#5	11'-7"	□
s1(E)	16	#5	3'-2"	┌
u(E)	16	#6	12'-2"	┌
v(E)	16	#4	5'-6"	—
v1(E)	16	#4	4'-7"	—
v2(E)	16	#4	3'-8"	—
v3(E)	16	#4	2'-9"	—
v4(E)	116	#4	3'-2"	—
Concrete Structures			Cu. Yd.	27.2
Concrete Encasement			Cu. Yd.	2.8
Reinforcement Bars, Epoxy Coated			Pound	2,870
Steel Piles HP10x42			Foot	455
Test Pile Steel HP10x42			Each	1
Name Plates			Each	1
Concrete Sealer			Sq. Ft.	106

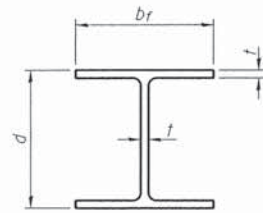
All reinforcement bars shall be epoxy coated

FILE NAME = 140160-shr-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED
HAMPTON, LENZINI AND RENWICK, INC. 3055 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62783 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE / CORP. 184.000069	PLOT SCALE =	CHECKED - S.W.M.	REVISED -
	PLOT DATE = 3/24/2016	DRAWN - R.D.J.H.	REVISED -
		CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS
 LIVINGSTON COUNTY HIGHWAY DEPARTMENT

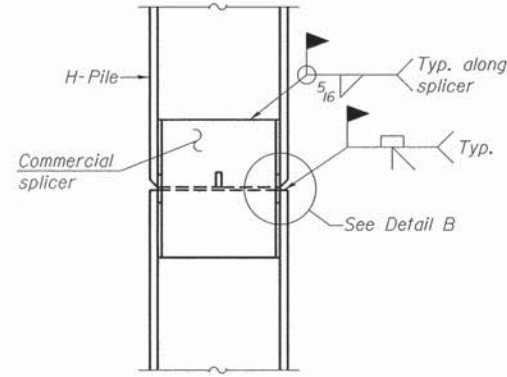
ABUTMENTS
 STRUCTURE NO. 053-4214
 SHEET NO. 7 OF 12 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
134B	12-09101-04-BR	LIVINGSTON	26	21
ESMEN ROAD DISTRICT			CONTRACT NO. 87626	
ILLINOIS FED. AID PROJECT BROS-01050621				

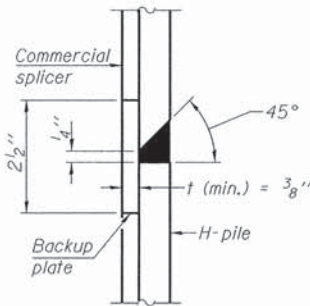


STEEL PILE TABLE

Designation	Depth d	Flange width b _f	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"	1/16"	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"	1/16"	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"

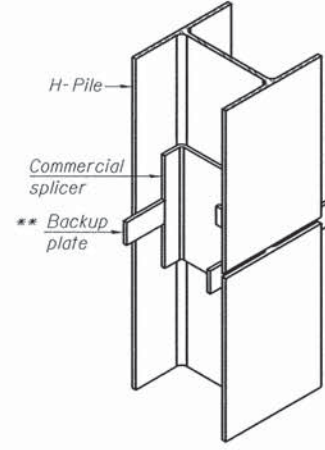


ELEVATION

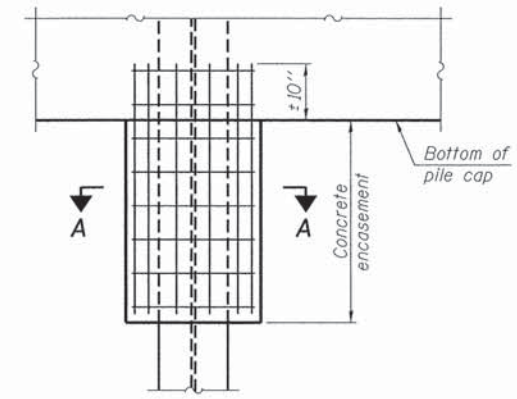


DETAIL "B"

WELDED COMMERCIAL SPLICE

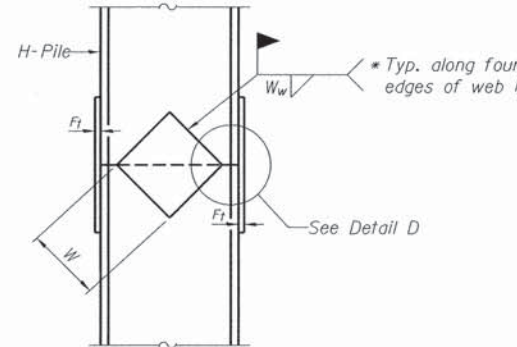


ISOMETRIC VIEW



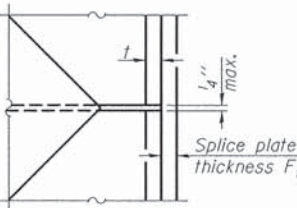
ELEVATION

PILE ENCASEMENT

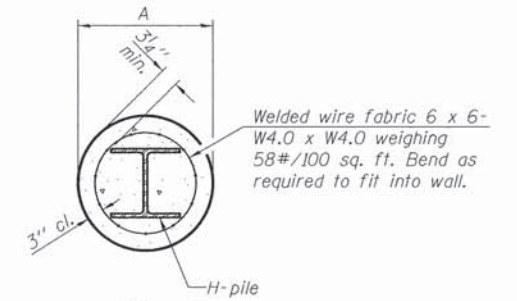


ELEVATION

DETAIL D

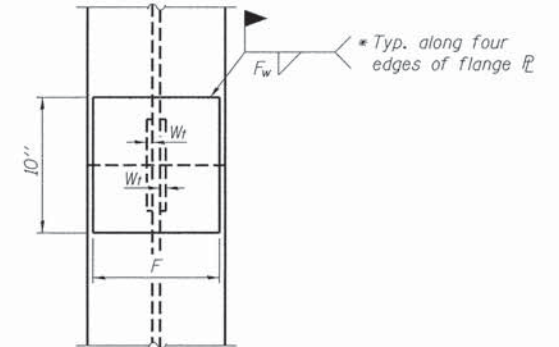


WELDED PLATE FIELD SPLICE

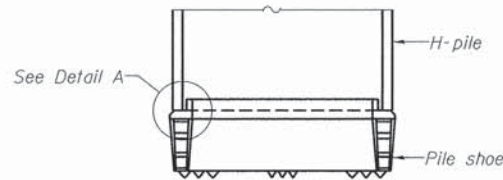


SECTION A-A

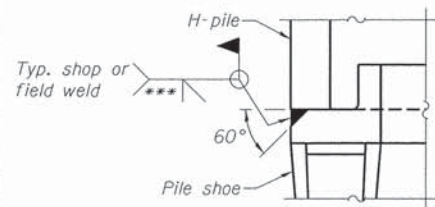
Note:
Forms for encasement may be omitted when soil conditions permit.



END VIEW

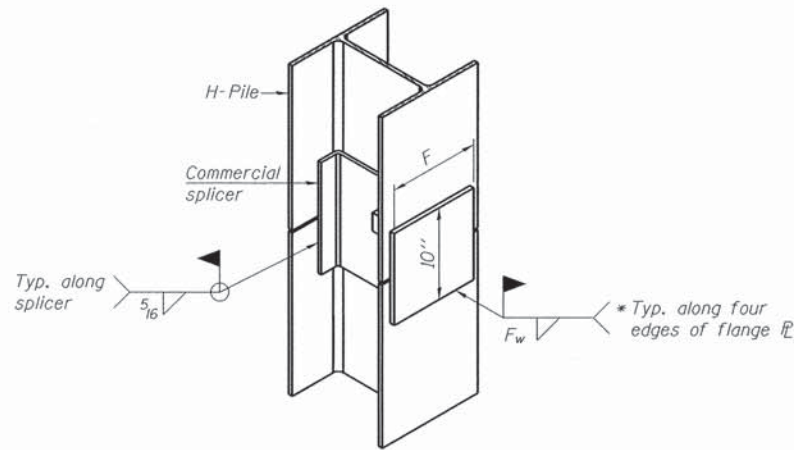


ELEVATION



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.).

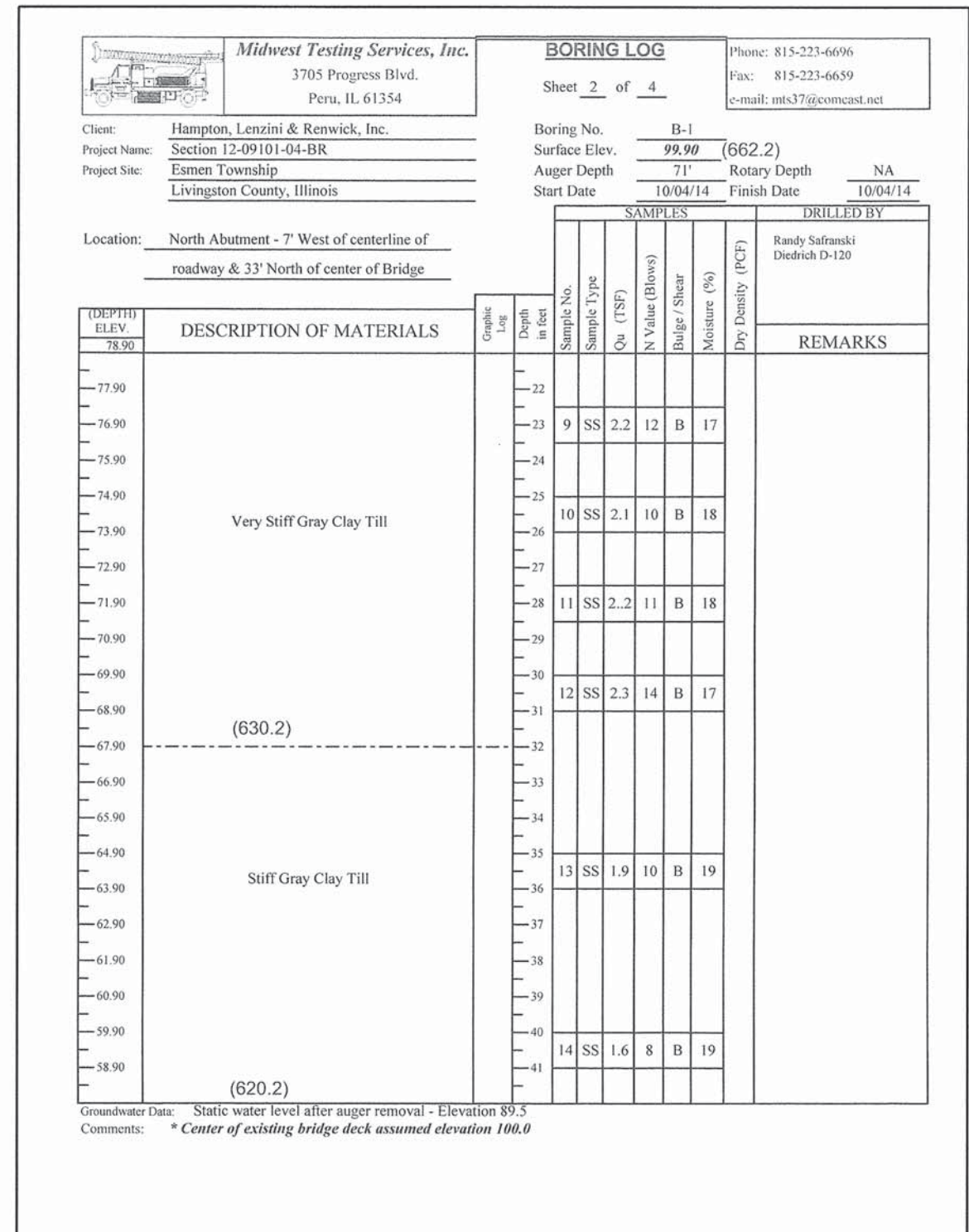
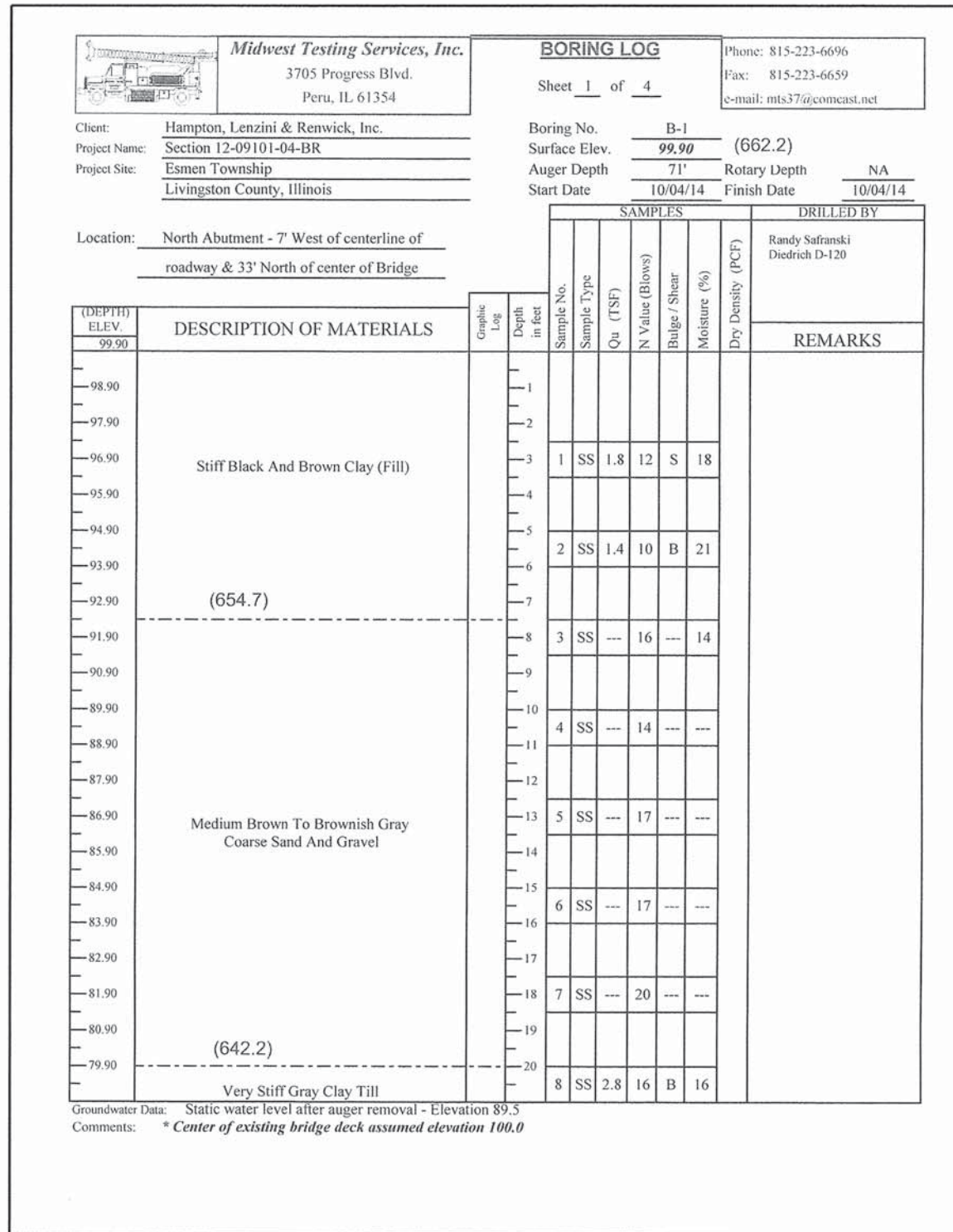
Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.

Designation	F	F _t	F _w	W	W _t	W _w
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"

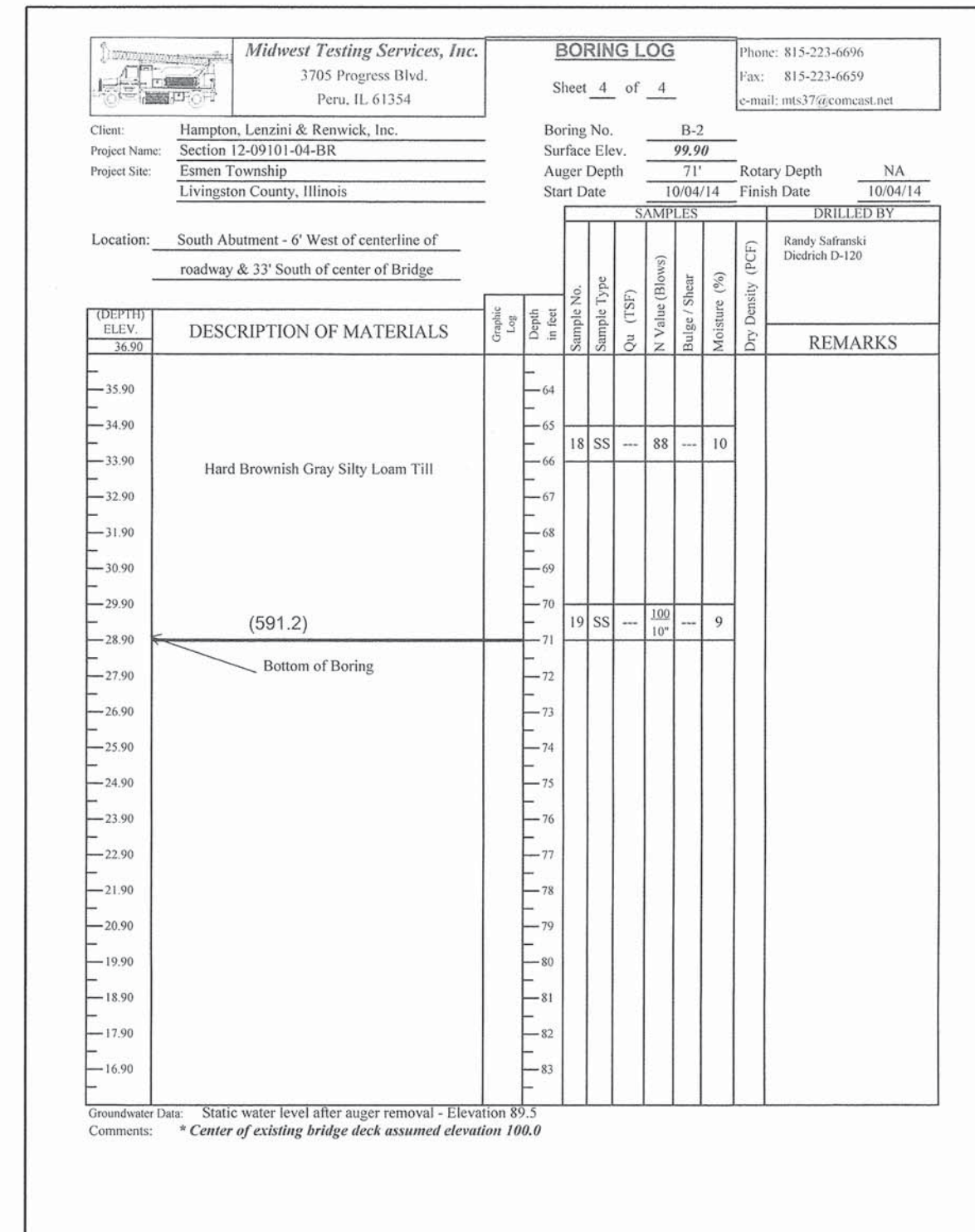
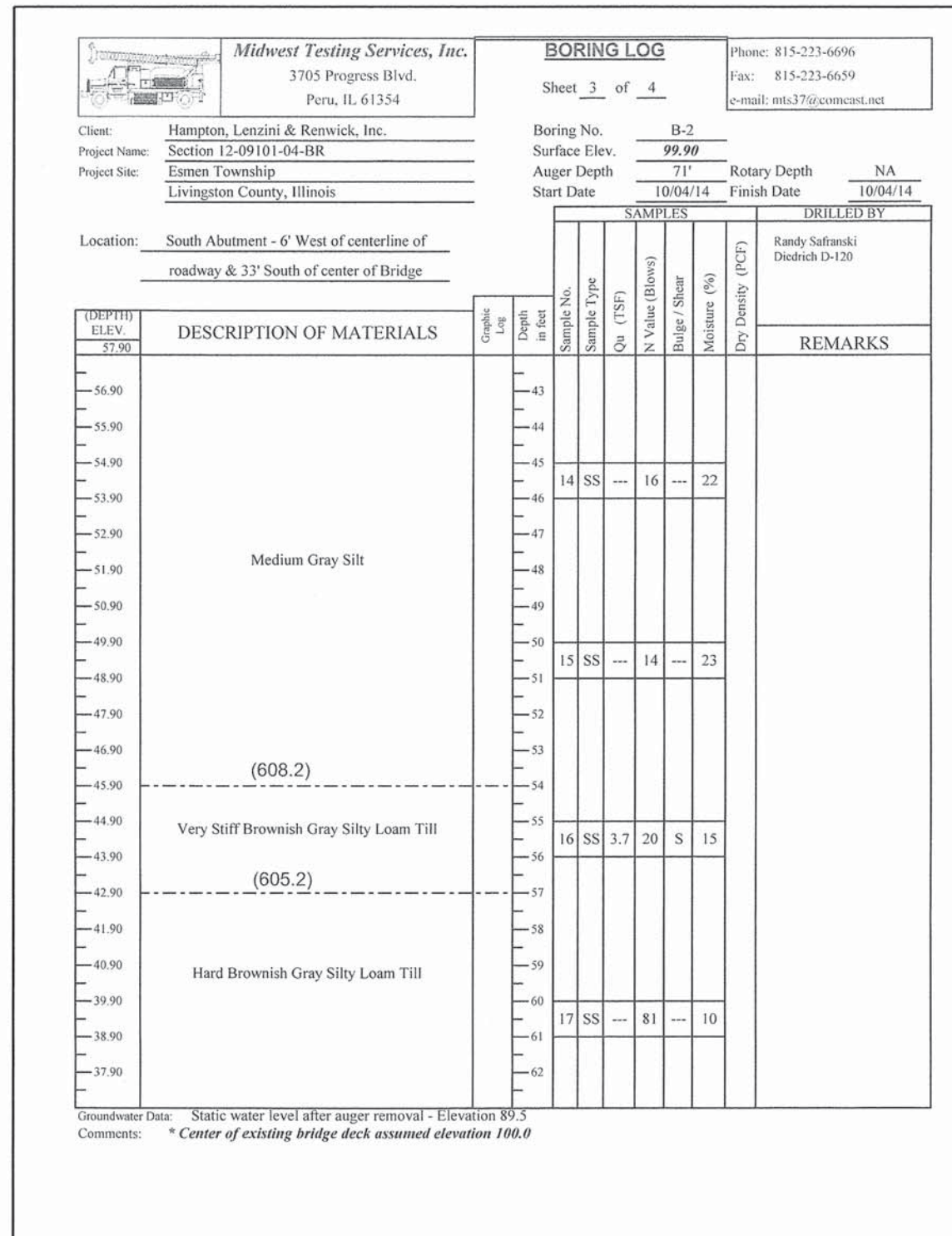
F-HP

1-27-12

FILE NAME = 148160-sht-br-ldgn.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED	STATE OF ILLINOIS LIVINGSTON COUNTY HIGHWAY DEPARTMENT	HP PILE DETAILS STRUCTURE NO. 053-4214	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
HAMPTON, LENZINI AND RENWICK, INC. 3035 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62763	PLOT SCALE =	CHECKED - S.W.M.	REVISED -			134B	12-09101-04-BR	LIVINGSTON	26	22	
ILLINOIS PROFESSIONAL DESIGN FIRM L.S. / P.E. / S.E. CORP. 194.000069	PLOT DATE = 3/24/2016	DRAWN - R.D.H.	REVISED -			ESMEN ROAD DISTRICT		CONTRACT NO. 87626		ILLINOIS FED. AID PROJECT BROS-01050621	
		CHECKED - S.W.M.	REVISED -			SHEET NO. 8 OF 12 SHEETS					



BORING-1
(Sheet 1 of 2)



BORING-2
(Sheet 2 of 2)