

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1636	16-13113-00-BR	SANGAMON	37	1
FED. ROAD DIST. NO.		ILLINOIS CONTRACT NO. 93785		

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.	GUARDRAIL AND SHOULDER LAYOUT
6-19.	BRIDGE PLANS
20-37.	STATION CROSS SECTIONS

HIGHWAY STANDARDS:

000001-08	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
515001-04	NAME PLATE FOR BRIDGES
630301-09	SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
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
BLR 27-1	TRAFFIC BARRIER TERMINAL TYPE 5A

PLANS FOR PROPOSED
SURFACE TRANSPORTATION PROGRAM – BRIDGE

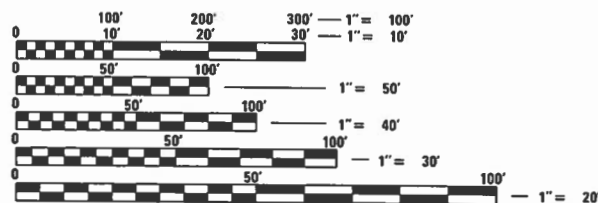
PROJECT ZAGJ(418)
SECTION 16-13113-00-BR
GARDNER ROAD DISTRICT
SANGAMON COUNTY
F.A.S. 1636 / IRWIN BRIDGE ROAD
PROPOSED STRUCTURE NO. 084-3447

UTILITIES

FRONTIER COMMUNICATIONS
330 W. BEECHER AVE.
JACKSONVILLE, IL. 62650

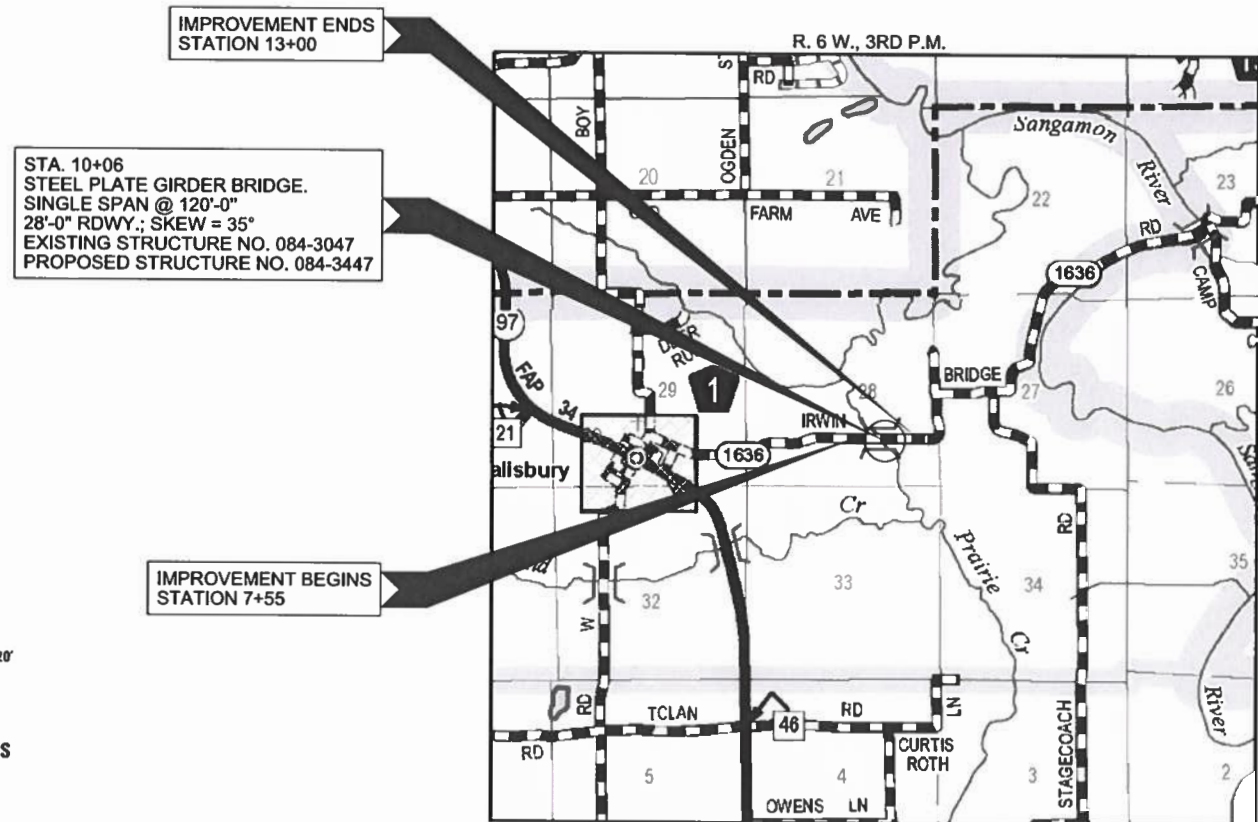
MENARD ELECTRIC CO-OP
14300 STATE HIGHWAY 97
PO BOX 200
PETERSBURG, IL. 62675

VILLAGE OF PLEASANT PLAINS
200 W. 4TH STREET
PLEASANT PLAINS, IL. 62677



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: MINOR COLLECTOR
DESIGN SPEED: 30 MPH
DESIGN TRAFFIC: 200 ADT



LOCATION MAP

APPROXIMATE SCALE: 0 1/2 MILE
NET LENGTH OF SECTION = 545 FEET = 0.103 MILES



LOCATION OF SECTION INDICATED THUS: -



WARNING

CALL 811 BEFORE YOU DIG
DIG NO: A1221253

ILLINOIS DEPARTMENT OF TRANSPORTATION

APPROVED *October 14 2022*
B. Davis
COUNTY ENGINEER

APPROVED *10-14 2022*
Don Smith
TOWNSHIP COMMISSIONER

PASSED *Oct. 15, 2022*
B. B. Lewis
DISTRICT SIX ENGINEER OF LOCAL ROADS & STREETS

Releasing For Bid Based on Limited Review
Oct. 15, 2022
John P. Ryan
REGION FOUR ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DATE: 09/07/2022

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

184-000950
ILLINOIS PROFESSIONAL DESIGN FIRM L.S. / P.E. / S.E. CORPORATION

EXPIRES: 11/30/2023 PROJECT NUMBER: 18.0640.130 DATE: 09/07/2022

SUMMARY OF QUANTITIES			
CODE NO.	ITEM	CONSTRUCTION TYPE CODE 0010	
		UNIT	QUANTITY
Δ 20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	74
Δ 20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	40
^ 20200100	EARTH EXCAVATION	CU YD	93
^ 20300100	CHANNEL EXCAVATION	CU YD	275
^ 20400800	FURNISHED EXCAVATION	CU YD	1,595
20700220	POROUS GRANULAR EMBANKMENT	CU YD	120
25100630	EROSION CONTROL BLANKET	SQ YD	1959
28000400	PERIMETER EROSION BARRIER	FOOT	1,150
^ 28100209	STONE RIPRAP, CLASS A5	TON	945
28200200	FILTER FABRIC	SQ YD	837
35100100	AGGREGATE BASE COURSE, TYPE A	TON	647
^ 40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	55
48101200	AGGREGATE SHOULDERS, TYPE B	TON	194
^ 50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU YD	268
^ 50300225	CONCRETE STRUCTURES	CU YD	43.6
^ 50300255	CONCRETE SUPERSTRUCTURE	CU YD	136.8
50300260	BRIDGE DECK GROOVING	SQ YD	387
50300300	PROTECTIVE COAT	SQ YD	464
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1
50500505	STUD SHEAR CONNECTORS	EACH	915
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	35,130
Δ 50900205	STEEL RAILING, TYPE S1	FOOT	252
51200957	FURNISHING METAL SHELL PILES 12" X 0.250"	FOOT	665
51202305	DRIVING PILES	FOOT	665
51203200	TEST PILE METAL SHELLS	EACH	1
51500100	NAME PLATES	EACH	1
52100520	ANCHOR BOLTS, 1"	EACH	20
542D1081	PIPE CULVERTS, CLASS D, TYPE 2 36"	FOOT	48
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	104
60146304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	160
Δ 63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	4

^ SEE SPECIAL PROVISIONS Δ SPECIALTY ITEMS

SUMMARY OF QUANTITIES			
CODE NO.	ITEM	CONSTRUCTION TYPE CODE 0010	
		UNIT	QUANTITY
Δ 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4
67100100	MOBILIZATION	L SUM	1
Δ 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
Δ ^ X0323013	TUBULAR STEEL GATE	EACH	2
# Z0076600	TRAINEES	HOUR	500
^ X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.75
# Z0076604	TRAINEES TRAINING PROGRAM GRADUATE	HOUR	500

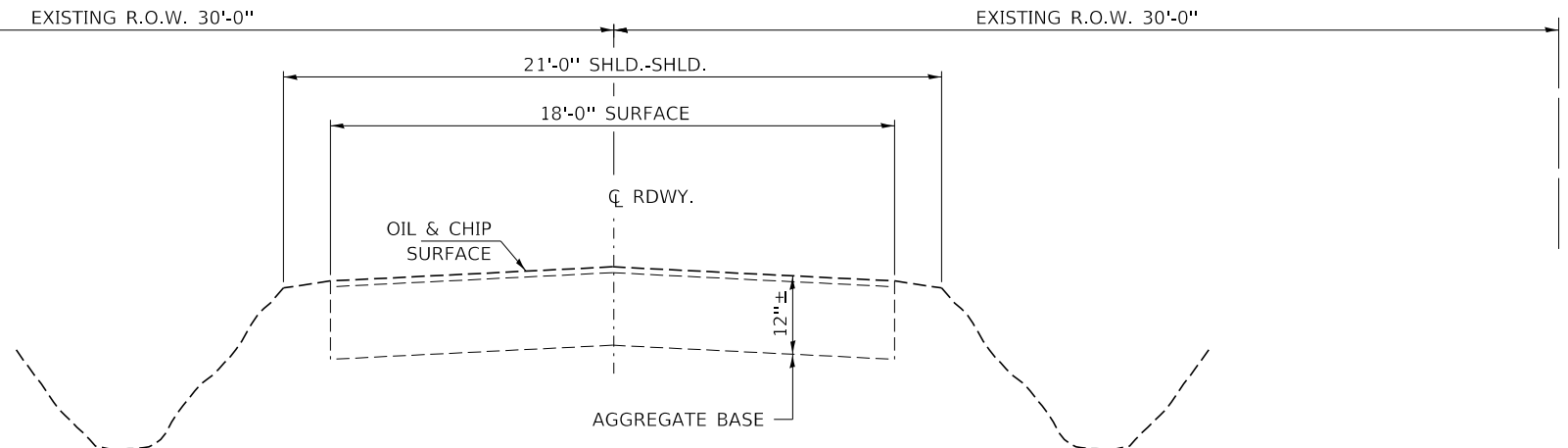
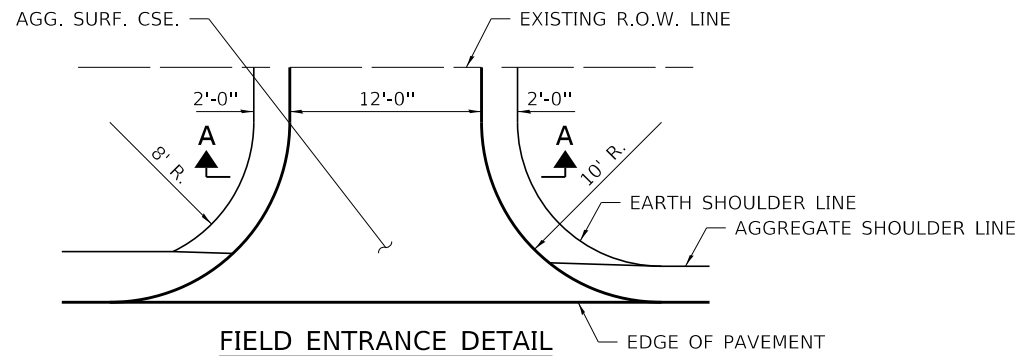
^ SEE SPECIAL PROVISIONS Δ SPECIALTY ITEMS #0042

GENERAL NOTES

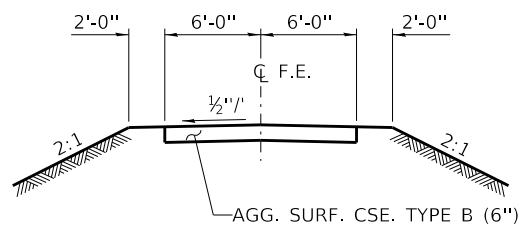
- ALL CLEARING, GRUBBING, AND REMOVAL OF EXISTING DRAINAGE STRUCTURES SHALL BE INCLUDED IN EARTH EXCAVATION. ALL MATERIAL SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR IN A METHOD APPROVED BY THE ENGINEER.
- THE LOCATION OF EXISTING GAS MAINS, ELECTRIC POWER LINES, TELEPHONE LINES AND OTHER UTILITIES AS SHOWN ON THE PLANS ARE BASED ON CAREFUL FIELD INVESTIGATIONS AND THE BEST INFORMATION AVAILABLE, BUT THE LOCATIONS ARE NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THEIR EXACT LOCATION FROM THE INDIVIDUAL UTILITY COMPANIES AND BY FIELD INSPECTION.
- WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.
- THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES:
 AGGREGATE BASE COURSE 2.05 TON / CU YD
 AGGREGATE SHOULDERS 2.0 TON / CU YD
 STONE RIPRAP 1.75 TON / CU YD
 HOX-MIX ASPHALT 112 LB / SQ YD / IN
 BITUMINOUS MATERIALS:
 AGGREGATE BASE (PRIME COAT) 0.25 LB / SQ FT
 MILLED OR AGED HMA (TACK COAT) 0.05 LB / SQ FT
 INTERMEDIATE LIFTS (TACK COAT) 0.080 LB / SQ FT
- THE TOP 4 INCHES OF THE EMBANKMENT AREAS SHALL BE VEGETATIVE SUSTAINING SOIL SUBJECT TO THE APPROVAL OF THE ENGINEER. THE COST OF SHAPING THE SLOPES AND PROVIDING VEGETATIVE SUSTAINING SOIL WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF FURNISHED EXCAVATION.
- GUARDRAIL REMOVAL AT THE PROJECT SITE IS TO BE COMPLETED BY THE SANGAMON COUNTY HIGHWAY DEPARTMENT.
- PAVEMENT MARKING IS TO BE COMPLETED BY THE SANGAMON COUNTY HIGHWAY DEPARTMENT.
- ALL WASTE MATERIAL FROM EXCAVATIONS SHALL BE DISPOSED OF BY THE CONTRACTOR. NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- TREES THREE (3) INCHES OR GREATER IN DIAMETER MAY NOT BE CLEARED FROM APRIL 1 TO SEPTEMBER 30.

EARTHWORK SCHEDULE							
LOCATION	EARTH EXCAVATION	CHANNEL EXCAVATION	SHRINKAGE FACTOR	PERCENT USED	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT REQUIRED	EARTHWORK BALANCE
	CU YD	CU YD			CU YD	CU YD	CU YD
STA 7+55 TO STA 9+43.76	36		25%	100%	27	767	-740
STA 9+43.76 TO STA 10+68.24		275	25%	70%	144		144
STA 10+68.24 TO STA 13+00	58		25%	100%	43	1040	-997
TOTAL	93	275			214	1806	-1593
USE	93	275					1595

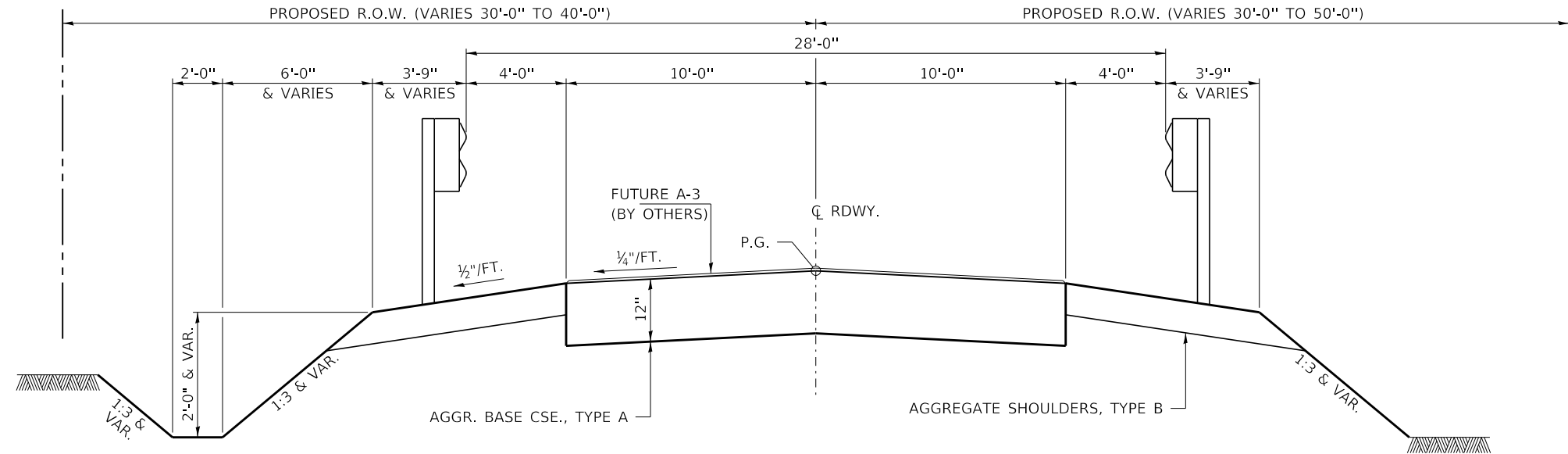
FURNISHED EXCAVATION 1595 CU YD



EXISTING TYPICAL CROSS SECTION
STA. 7+55 TO STA. 13+00



SECTION A-A



PROPOSED TYPICAL CROSS SECTION
STA. 7+55 TO STA. 13+00

SUGGESTED CUT SECTION
CONSTRUCT AS SHOWN IN
STATION CROSS SECTIONS

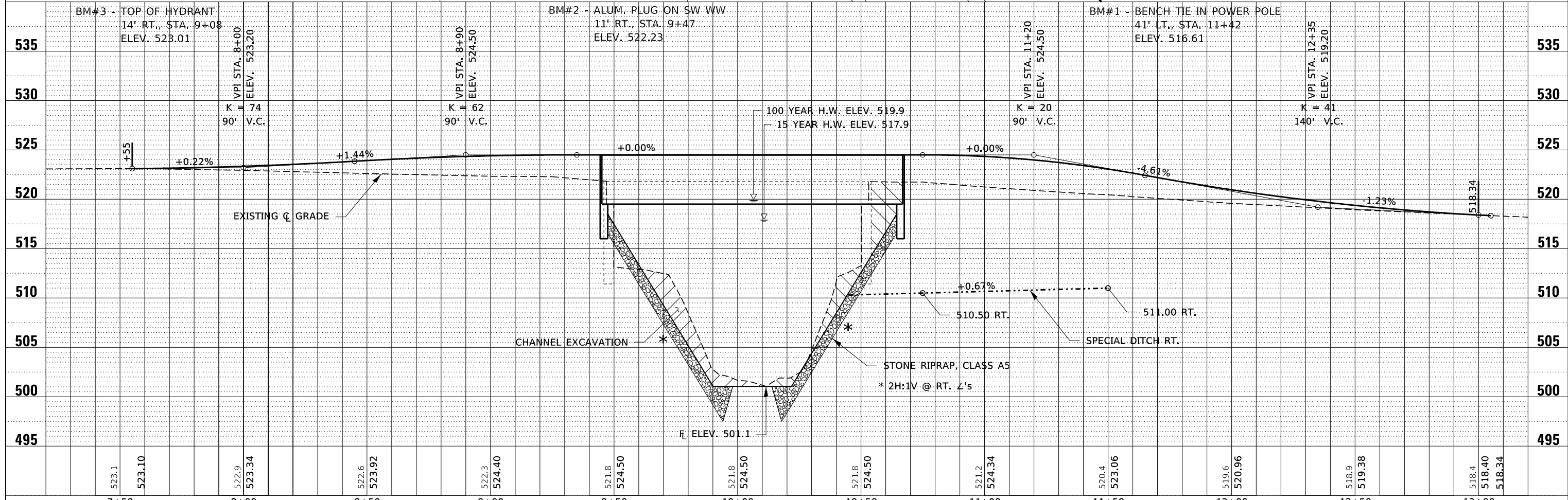
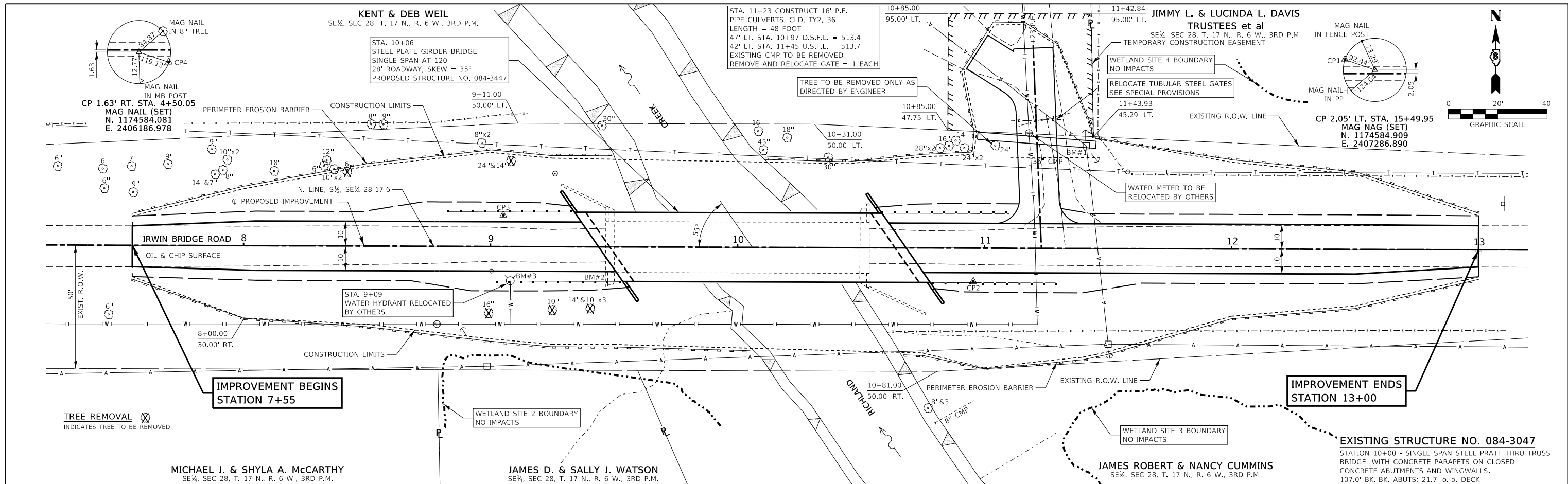
SUGGESTED FILL SECTION
CONSTRUCT AS SHOWN IN
STATION CROSS SECTIONS

TRANSITIONS FROM THE PROPOSED ROADWAY TO THE EXISTING ROADWAY ARE TO BE CONSTRUCTED FROM STA. 7+55 TO 8+05 AND STA. 12+50 TO STA. 13+00. SEE SHEET 5 FOR SHOULDER TRANSITIONS.

FILE NAME = 180640-shr-tysec.dgn	USER NAME = dfoley	DESIGNED - J.W.F.	REVISED -	STATE OF ILLINOIS SANGAMON COUNTY HIGHWAY DEPARTMENT	TYPICAL CROSS SECTIONS		F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3065 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L.S. / P.E. / S.E. CORP. 184.000959					DRAWN - R.D.H.	REVISED -	1636	16-13113-00-BR	SANGAMON	37	3
PLOT SCALE = \$SCALE\$					CHECKED - S.W.M.	REVISED -	GARDNER ROAD DISTRICT		CONTRACT NO. 93785		
PLOT DATE = 10/13/2022					DATE - 09/07/2022	REVISED -			ILLINOIS FED. AID PROJECT ZAGJ (418)		
						SCALE: NONE	SHEET NO. 1 OF 1 SHEETS		STA.	TO STA.	

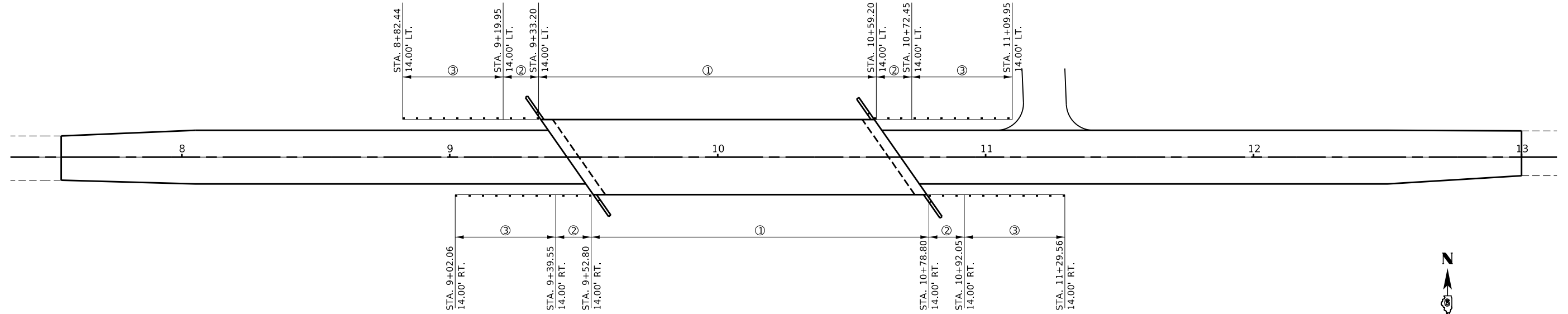
DATE	
BY	
PLAN	
REVIEWED	
PLOTTED	
ALIGNED	
CHECKED	
DATE	
NO.	

DATE	
BY	
PROFILE	
REVIEWED	
PLOTTED	
GRADES	
CHECKED	
DATE	
NO.	

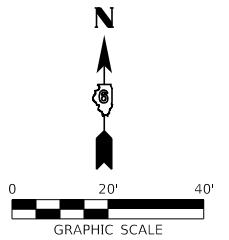


FILE NAME = 180640-sht-planprf.dgn	USER NAME = dfoley	DESIGNED - J.W.F.	REVISED -	STATE OF ILLINOIS SANGAMON COUNTY HIGHWAY DEPARTMENT	PLAN & PROFILE IRWIN BRIDGE ROAD	F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC.	3065 STEVENSON DRIVE, SUITE 201	DRAWN - T.W.K.	REVISED -			1636	16-13113-00-BR	SANGAMON	37	4
3065 STEVENSON DRIVE, SUITE 201	SPRINGFIELD, ILLINOIS 62703	CHECKED - S.W.M.	REVISED -			GARDNER ROAD DISTRICT				
ILLINOIS PROFESSIONAL DESIGN FIRM	LS / PE / SE CORP. 184.000959	DATE - 09/07/2022	REVISED -			CONTRACT NO. 93785		ILLINOIS FED. AID PROJECT ZAGJ (418)		

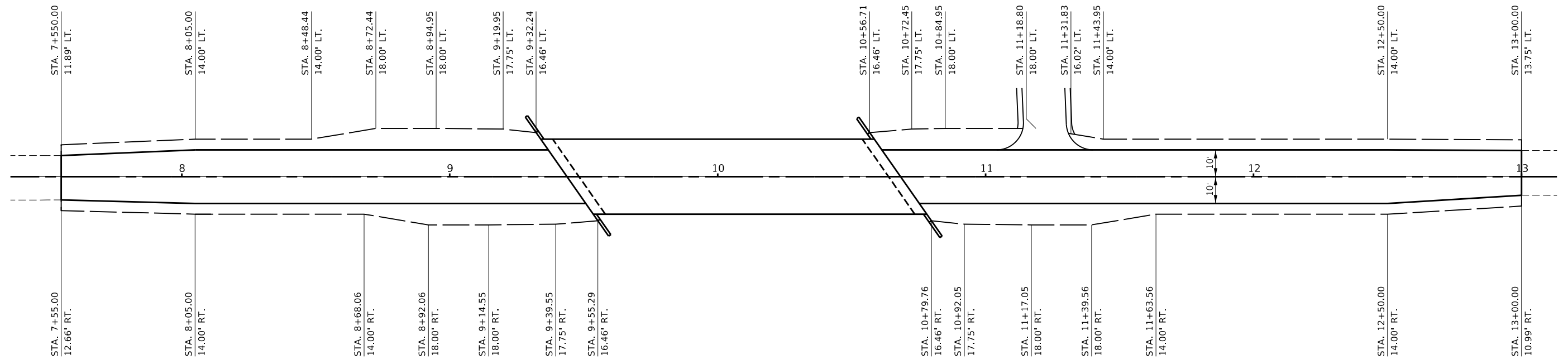
SCALE: 5V:20H SHEET NO. 1 OF 1 SHEETS STA. 7+00.00 TO STA. 13+00.00



GUARDRAIL LAYOUT



- ① STEEL RAILING, TYPE S-1
- ② TBT TY 5A
- ③ TBT TY 1, SPECIAL TANGENT



SHOULDER LAYOUT

FILE NAME = 180640-shr-std-grd.dgn
HAMPTON, LENZINI AND RENWICK, INC.
 3065 STEVENSON DRIVE, SUITE 201
 SPRINGFIELD, ILLINOIS 62703
 ILLINOIS PROFESSIONAL DESIGN FIRM
 LS / PE / SE CORP. 184.000959

USER NAME = dfoley
 PLOT SCALE = \$SCALE\$
 PLOT DATE = 10/13/2022

DESIGNED - J.W.F.
 DRAWN - R.D.H.
 CHECKED - S.W.M.
 DATE - 09/07/2022

REVISED -
 REVISED -
 REVISED -
 REVISED -

**STATE OF ILLINOIS
 SANGAMON COUNTY HIGHWAY DEPARTMENT**

GUARDRAIL AND SHOULDER LAYOUT
 SCALE: SHEET NO. 1 OF 1 SHEETS STA. TO STA.

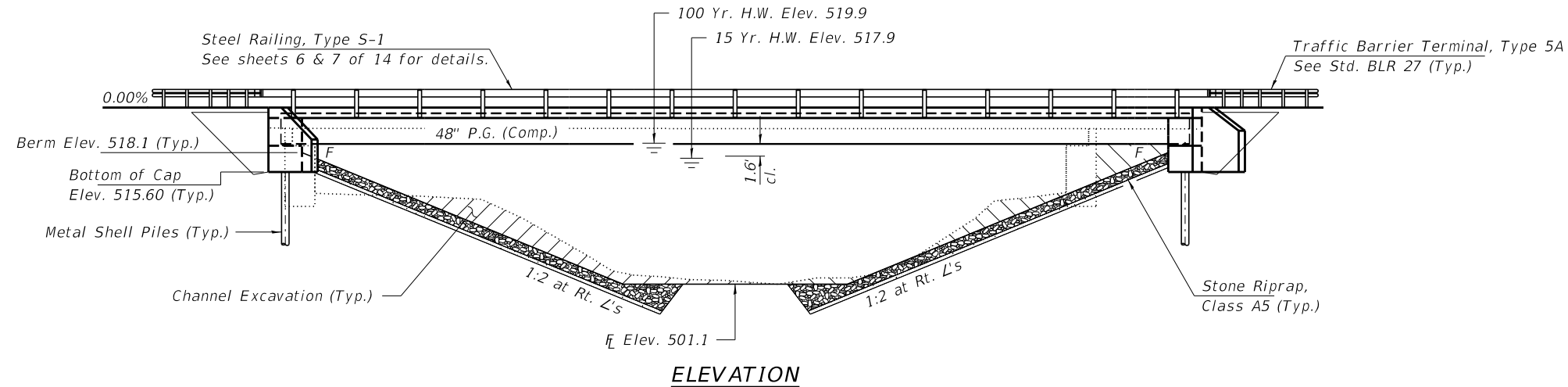
F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1636	16-13113-00-BR	SANGAMON	37	5
GARDNER ROAD DISTRICT		CONTRACT NO. 93785		
ILLINOIS FED. AID PROJECT ZAGJ (418)				

BENCHMARK: Aluminum plug on SW wingwall. 11' Rt., Sta. 9+47. Elev. 522.23

EXISTING STRUCTURE NO. 084-3047: Sta. 10+00 - Single span steel pratt thru truss bridge with concrete deck on closed concrete abutments and wingwalls. 107.0' bk.-bk. abuts., 21.7' o.-o. deck.

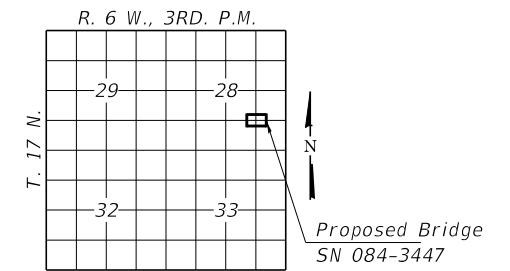
Structure closed to traffic during construction.

No Salvage



INDEX OF STRUCTURE SHEETS

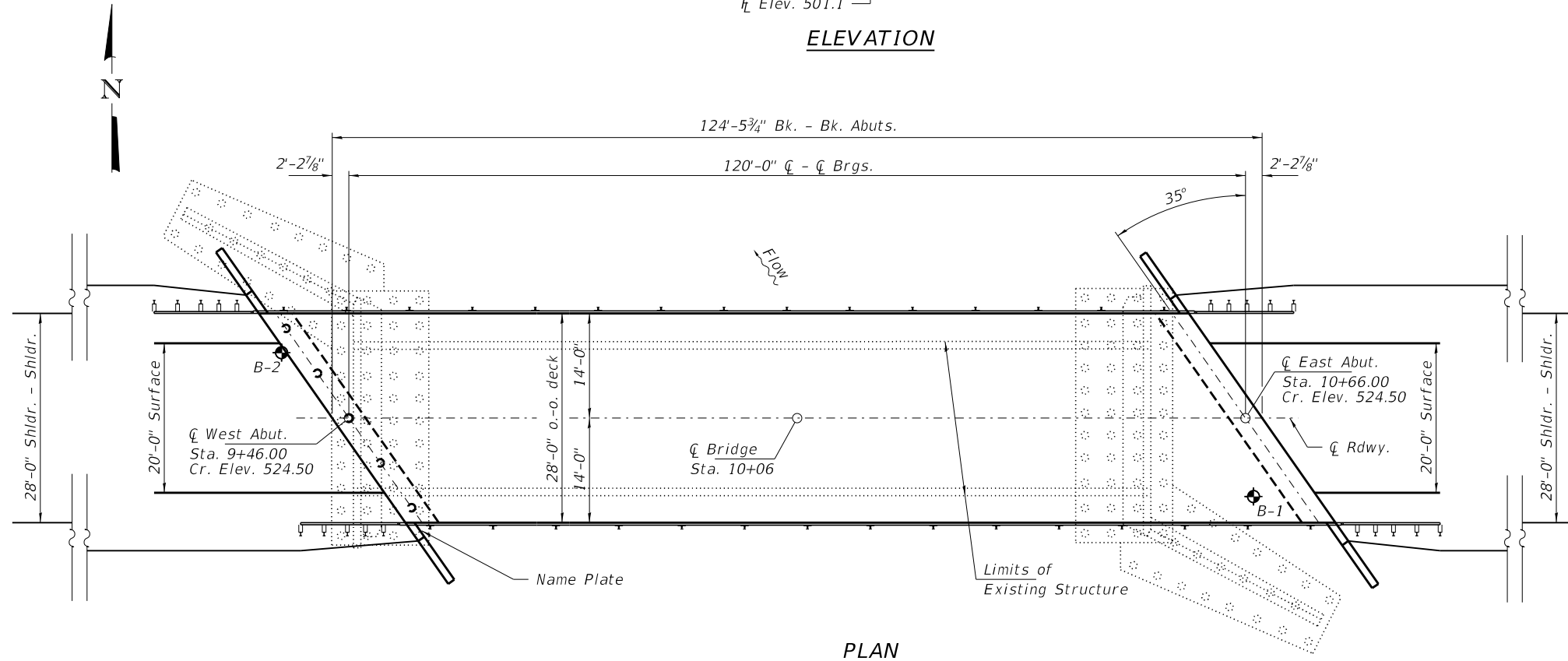
1. General Plan & Elevation
2. General Data
- 3-4. Top of Slab Elevations
5. Superstructure
6. Superstructure Details
7. Steel Railing, Type S-1
8. Structural Steel
- 9-10. Structural Steel Details
11. Abutments
12. Metal Shell Pile Details
- 13-14. Borings



LOCATION SKETCH

RICHLAND CREEK
 BUILT 202_ BY
 SANGAMON COUNTY
 SEC. 16-13113-00-BR
 GARDNER ROAD DISTRICT
 STR. NO. 084-3447
 LOADING HL-93

NAME PLATE
 See Std. 515001



PLAN

SEISMIC DATA

Seismic Performance Zone (SPZ) = 2
 Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.184g
 Design Spectral Acceleration at 0.2 sec. (S_{D5}) = 0.240g
 Soil Site Class = D

DESIGN SPECIFICATIONS

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

LOADING HL-93

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

DESIGN STRESSES

FIELD UNITS

f'_c = 4,000 psi (Superstructure)
 f'_c = 3,500 psi (Substructure)
 f_y = 60,000 psi (Reinforcement)
 f_y = 50,000 psi (Structural Steel)
 (M270 Gr. 50W)

WATERWAY INFORMATION

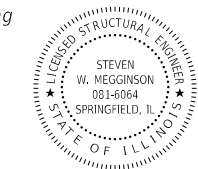
		Opening Sq. Ft.		Nat. Head - Ft.		Headwater El.			
Flood	Freq. Yr.	Q C.F.S.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	
Overtop	10	4970	920	950	517.5	0.4	0.4	517.9	517.9
Design	15	5660	950	980	517.9	0.4	0.4	518.3	518.3
Base	100	9130	1100	1140	519.9	0.4	0.4	520.3	520.3
Scour Check	200	10400	1100	1140	520.6	0.4	0.4	521.0	521.0
Max. Calc.	500	12200	1100	1140	521.4	0.3	0.4	521.7	521.8

Existing Low Grade Elev. 516.2 at Sta. 15+50
 Proposed Low Grade Elev. 516.2 at Sta. 15+50
 Drainage Area = 84.9 Sq. Mi.

10 Year Velocity through Existing Bridge = 5.4 fps 10 Year Velocity through Proposed Bridge = 5.2 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 09/07/2022
 ILLINOIS STRUCTURAL ENGINEER NO. 081-6064



Expires 11-30-2022

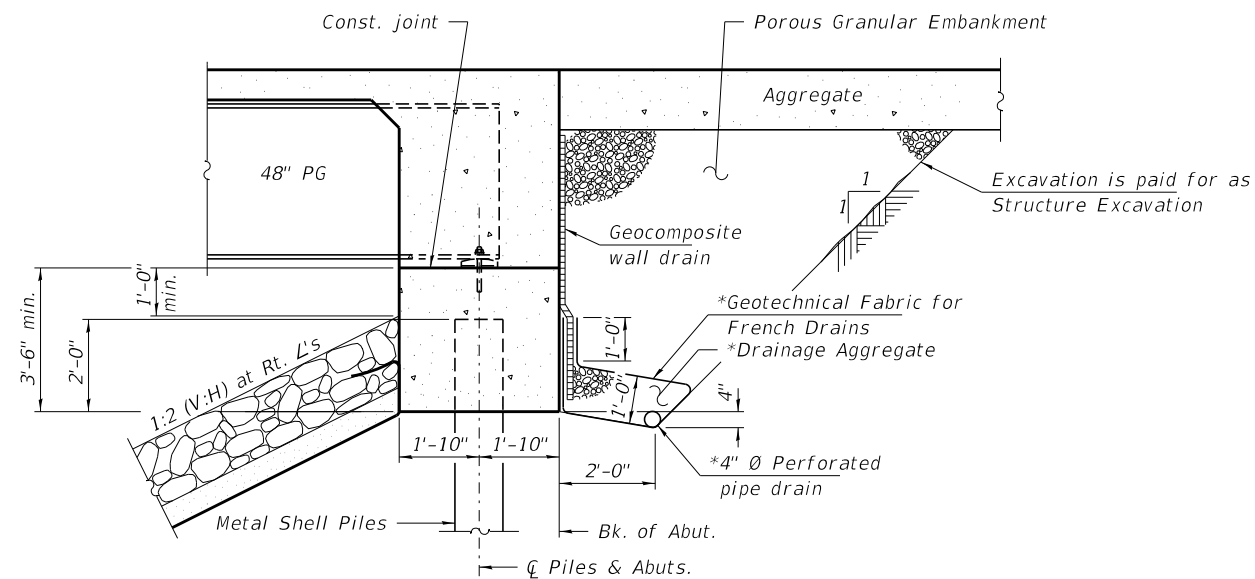
DESIGN SCOUR ELEVATION TABLE

Event/Limit	Design Scour Elev. (ft.)		Item 113
	W. Abut.	E. Abut.	
Q100	516.0	516.0	8
Q500	516.0	516.0	
Design	516.0	516.0	
Check	516.0	516.0	

GENERAL PLAN & ELEVATION

F.A.S. 1636
 SECTION 16-13113-00-BR
 SANGAMON COUNTY
 STATION 10+06
 STRUCTURE NO. 084-3447

FILE NAME = 180940-shi-bridge.dgn	USER NAME = dfoley	DESIGNED - P.R.R.	REVISED -	STATE OF ILLINOIS SANGAMON COUNTY HIGHWAY DEPARTMENT	GENERAL PLAN AND ELEVATION STRUCTURE NO. 084-3447	F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3035 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L.S./P.E./S.E. CORP. 184.000959	PLOT SCALE = \$SCALE\$	CHECKED - S.W.M.	REVISED -			1636	16-13113-00-BR	SANGAMON	37	6
PLOT DATE = 10/13/2022		DRAWN - R.D.H.	REVISED -			GARDNER ROAD DISTRICT				
		CHECKED - S.W.M.	REVISED -			CONTRACT NO. 93785		ILLINOIS		FED. AID PROJECT ZAGJ (418)

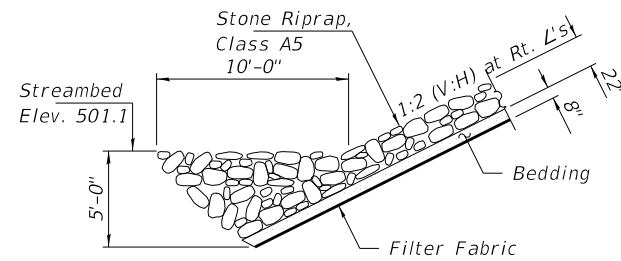


SECTION THRU INTEGRAL ABUTMENT
(Horiz. dim. at Rt. L's)

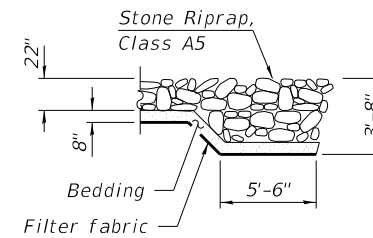
*Included in the cost of Pipe Underdrains for Structures, 4"

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

Concrete headwalls shall be included in the cost of Pipe Underdrains for Structures 4".



SECTION A-A



SECTION B-B

GENERAL NOTES

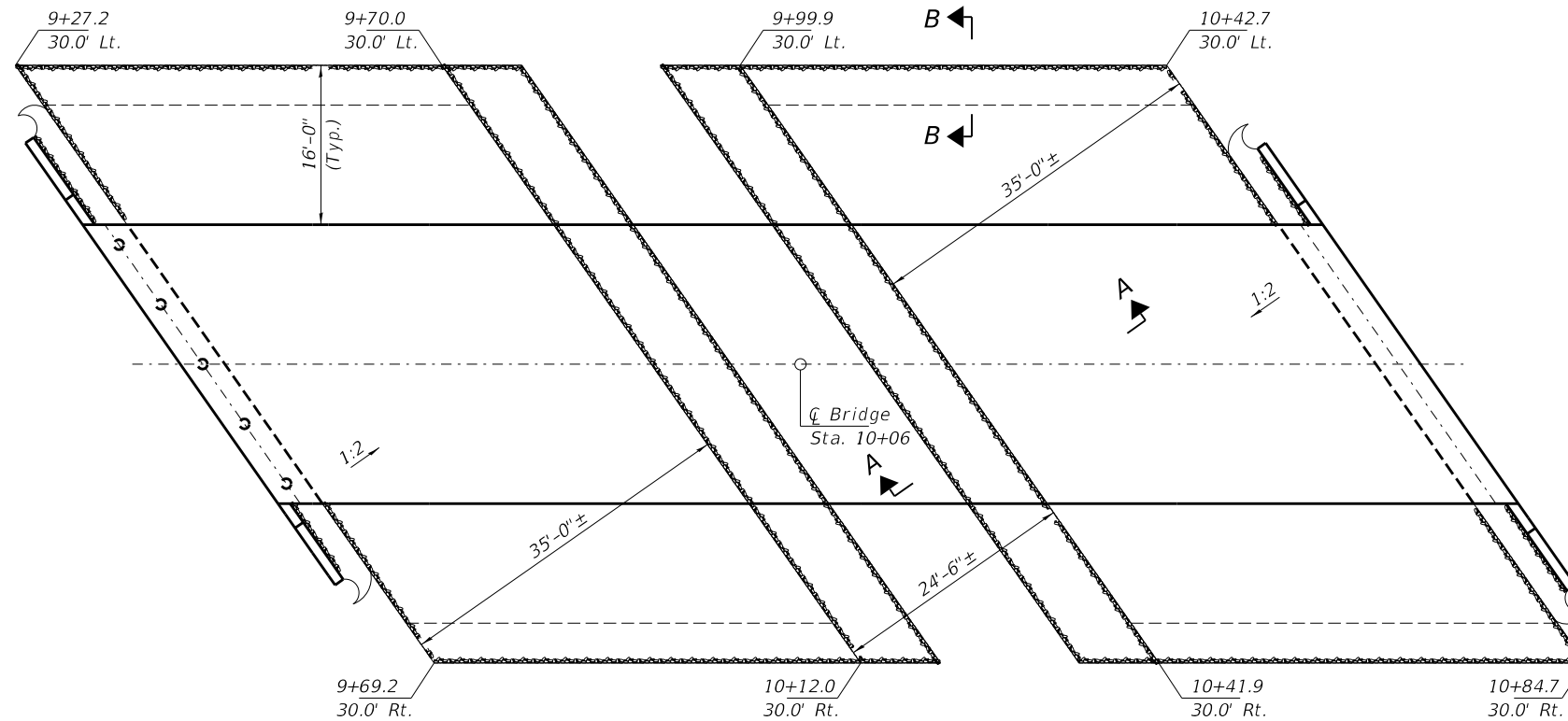
Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts in painted areas and ASTM A325 Type 3 in unpainted areas. Bolts 7/8"Ø, holes 1 5/16"Ø, unless otherwise noted.

Calculated weight of Structural Steel = 149,600 lbs.
All structural steel shall be AASHTO M 270 Grade 50W.
No field welding is permitted except as specified in the contract documents.
Reinforcement bars designated (E) shall be epoxy coated.
Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

Structural steel shall only be painted from distance equal to the depth of embedment into the concrete cap plus 3 inches. Painted areas shall be primed in the shop with a Department approved zinc rich primer. Field painting will not be required.

Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure.

The top surface of the deck shall be screeded with a straight edge. Further finishing shall be delayed until the water sheen appears, but not to the point of rendering further manipulation ineffective. The surface then shall be roughened with a suitable stiff-bristled broom or wire brush drawn in transverse direction removing any laitance present and breaking up the water sheen. The corrugations formed shall be uniform in appearance and in no case more than 1/4" in depth.



RIPRAP LAYOUT

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			275
Porous Granular Embankment	Cu. Yd.			120
Stone Riprap, Class A5	Ton			945
Filter Fabric	Sq. Yd.			837
Removal of Existing Structures	Each			1
Structure Excavation	Cu. Yd.		268	268
Concrete Structures	Cu. Yd.		43.6	43.6
Concrete Superstructure	Cu. Yd.	136.8		136.8
Bridge Deck Grooving	Sq. Yd.	387		387
Protective Coat	Sq. Yd.	426	38	464
Furnishing and Erecting Structural Steel	L. Sum	1		1
Stud Shear Connectors	Each	915		915
Reinforcement Bars, Epoxy Coated	Pound	27,650	7,480	35,130
Steel Railing, Type S-1	Foot	252		252
Furnishing Metal Shell Piles 12"x0.250"	Foot		665	665
Driving Piles	Foot		665	665
Test Pile Metal Shells	Each		1	1
Name Plates	Each		1	1
Anchor Bolts, 1"	Each		20	20
Geocomposite Wall Drain	Sq. Yd.			104
Pipe Underdrains for Structures 4"	Foot			160

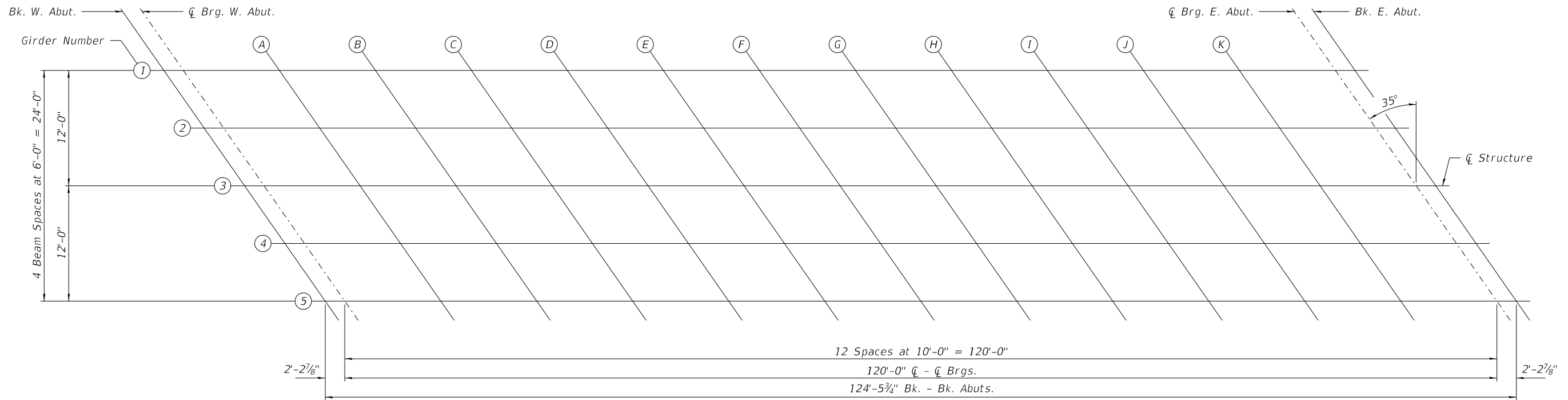
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HAMPTON, LENZINI AND RENWICK, INC. 3035 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT SCALE = \$SCALE\$	CHECKED - S.W.M.	REVISED -
PLOT DATE = 10/13/2022		DRAWN - R.D.H.	REVISED -
		CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS
SANGAMON COUNTY HIGHWAY DEPARTMENT

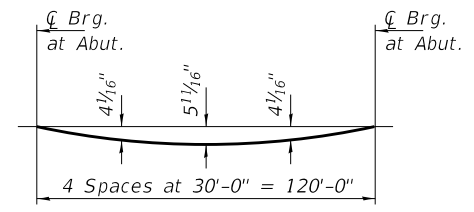
GENERAL DATA
STRUCTURE NO. 084-3447

SHEET NO. 2 OF 14 SHEETS

F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1636	16-13113-00-BR	SANGAMON	37	7
GARDNER ROAD DISTRICT		CONTRACT NO. 93785		
ILLINOIS FED. AID PROJECT ZAGJ (418)				



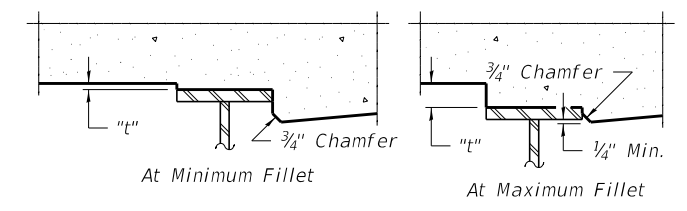
PLAN



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only.)

Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on sheet 4 of 14.



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown above. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheet 4 of 14, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

FILE NAME = 180940-shi-bridge.dgn	USER NAME = dfoley	DESIGNED - P.R.R.	REVISED -	STATE OF ILLINOIS SANGAMON COUNTY HIGHWAY DEPARTMENT	TOP OF SLAB ELEVATIONS STRUCTURE NO. 084-3447	F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3035 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -			1636	16-13113-00-BR	SANGAMON	37	8
	PLOT SCALE = \$SCALE\$	DRAWN - R.D.H.	REVISED -			GARDNER ROAD DISTRICT		CONTRACT NO. 93785		
	PLOT DATE = 10/13/2022	CHECKED - S.W.M.	REVISED -			SHEET NO. 3 OF 14 SHEETS		ILLINOIS FED. AID PROJECT ZAGJ (418)		

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	9+35.36	-12.00	524.25	524.25
☉ Brg. W. Abut.	9+37.60	-12.00	524.25	524.25
A	9+47.60	-12.00	524.25	524.35
B	9+57.60	-12.00	524.25	524.43
C	9+67.60	-12.00	524.25	524.51
D	9+77.60	-12.00	524.25	524.57
E	9+87.60	-12.00	524.25	524.60
F	9+97.60	-12.00	524.25	524.61
G	10+07.60	-12.00	524.25	524.60
H	10+17.60	-12.00	524.25	524.57
I	10+27.60	-12.00	524.25	524.51
J	10+37.60	-12.00	524.25	524.43
K	10+47.60	-12.00	524.25	524.35
☉ Brg. E. Abut.	10+57.60	-12.00	524.25	524.25
Bk. E. Abut.	10+59.84	-12.00	524.25	524.25

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	9+39.56	-6.00	524.38	524.38
☉ Brg. W. Abut.	9+41.80	-6.00	524.38	524.38
A	9+51.80	-6.00	524.38	524.47
B	9+61.80	-6.00	524.38	524.56
C	9+71.80	-6.00	524.38	524.63
D	9+81.80	-6.00	524.38	524.69
E	9+91.80	-6.00	524.38	524.73
F	10+01.80	-6.00	524.38	524.74
G	10+11.80	-6.00	524.38	524.73
H	10+21.80	-6.00	524.38	524.69
I	10+31.80	-6.00	524.38	524.63
J	10+41.80	-6.00	524.38	524.56
K	10+51.80	-6.00	524.38	524.47
☉ Brg. E. Abut.	10+61.80	-6.00	524.38	524.38
Bk. E. Abut.	10+64.04	-6.00	524.38	524.38

☉ STRUCTURE & BEAM 3

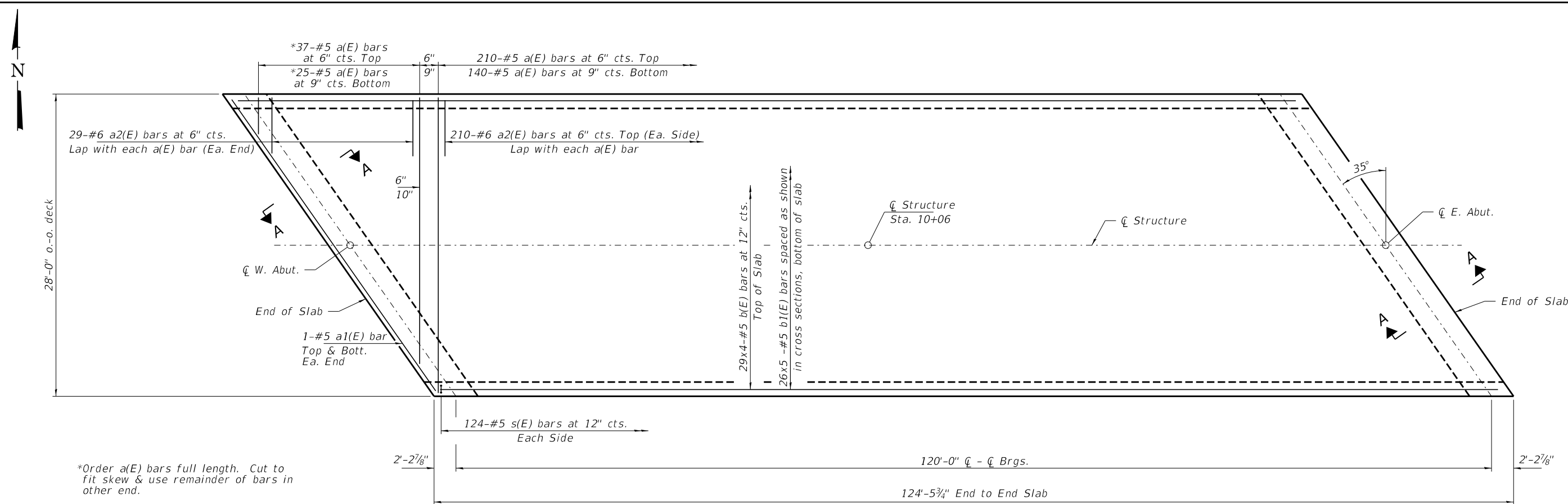
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	9+43.76	0.00	524.50	524.50
☉ Brg. W. Abut.	9+46.00	0.00	524.50	524.50
A	9+56.00	0.00	524.50	524.60
B	9+66.00	0.00	524.50	524.68
C	9+76.00	0.00	524.50	524.76
D	9+86.00	0.00	524.50	524.82
E	9+96.00	0.00	524.50	524.85
F	10+06.00	0.00	524.50	524.86
G	10+16.00	0.00	524.50	524.85
H	10+26.00	0.00	524.50	524.82
I	10+36.00	0.00	524.50	524.76
J	10+46.00	0.00	524.50	524.68
K	10+56.00	0.00	524.50	524.60
☉ Brg. E. Abut.	10+66.00	0.00	524.50	524.50
Bk. E. Abut.	10+68.24	0.00	524.50	524.50

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	9+47.96	6.00	524.38	524.38
☉ Brg. W. Abut.	9+50.20	6.00	524.38	524.38
A	9+60.20	6.00	524.38	524.47
B	9+70.20	6.00	524.38	524.56
C	9+80.20	6.00	524.38	524.63
D	9+90.20	6.00	524.38	524.69
E	10+00.20	6.00	524.38	524.73
F	10+10.20	6.00	524.38	524.74
G	10+20.20	6.00	524.38	524.73
H	10+30.20	6.00	524.38	524.69
I	10+40.20	6.00	524.38	524.63
J	10+50.20	6.00	524.38	524.56
K	10+60.20	6.00	524.38	524.47
☉ Brg. E. Abut.	10+70.20	6.00	524.38	524.38
Bk. E. Abut.	10+72.44	6.00	524.38	524.38

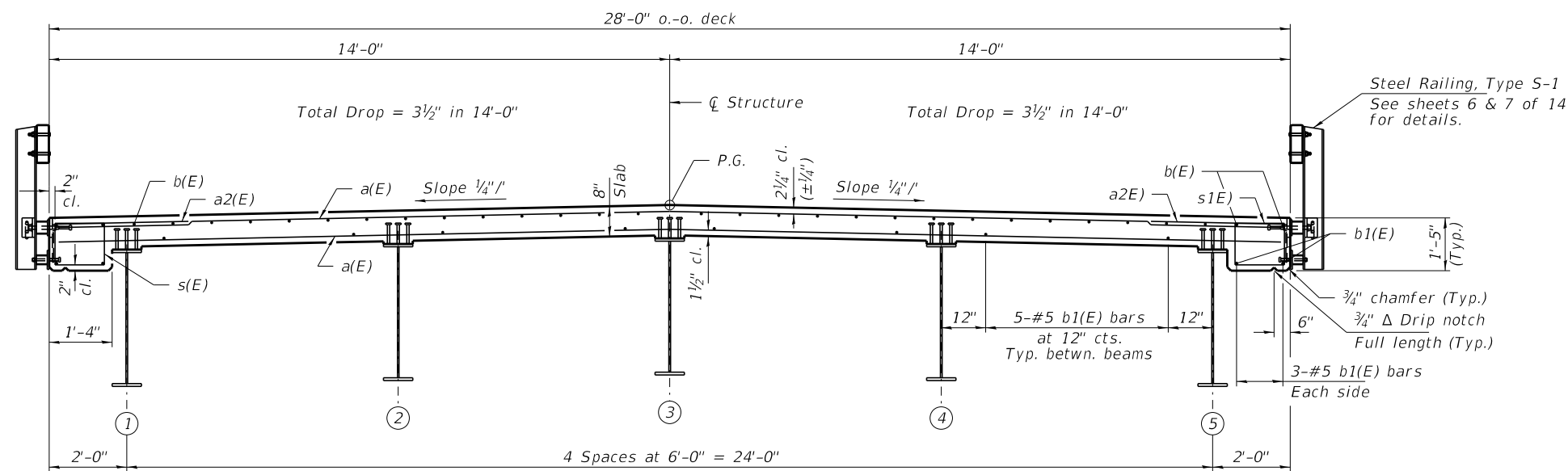
BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	9+52.16	12.00	524.25	524.25
☉ Brg. W. Abut.	9+54.40	12.00	524.25	524.25
A	9+64.40	12.00	524.25	524.35
B	9+74.40	12.00	524.25	524.43
C	9+84.40	12.00	524.25	524.51
D	9+94.40	12.00	524.25	524.57
E	10+04.40	12.00	524.25	524.60
F	10+14.40	12.00	524.25	524.61
G	10+24.40	12.00	524.25	524.60
H	10+34.40	12.00	524.25	524.57
I	10+44.40	12.00	524.25	524.51
J	10+54.40	12.00	524.25	524.43
K	10+64.40	12.00	524.25	524.35
☉ Brg. E. Abut.	10+74.40	12.00	524.25	524.25
Bk. E. Abut.	10+76.64	12.00	524.25	524.25



PLAN

Notes:
 See sheet 6 of 14 for superstructure details.
 Bars indicated thus 29x5-#5 etc. indicates 29 lines of bars with 5 lengths per line.
 See sheet 6 of 14 for Section A-A.
 Bridge Deck Grooving shall extend to the edge of the deck.

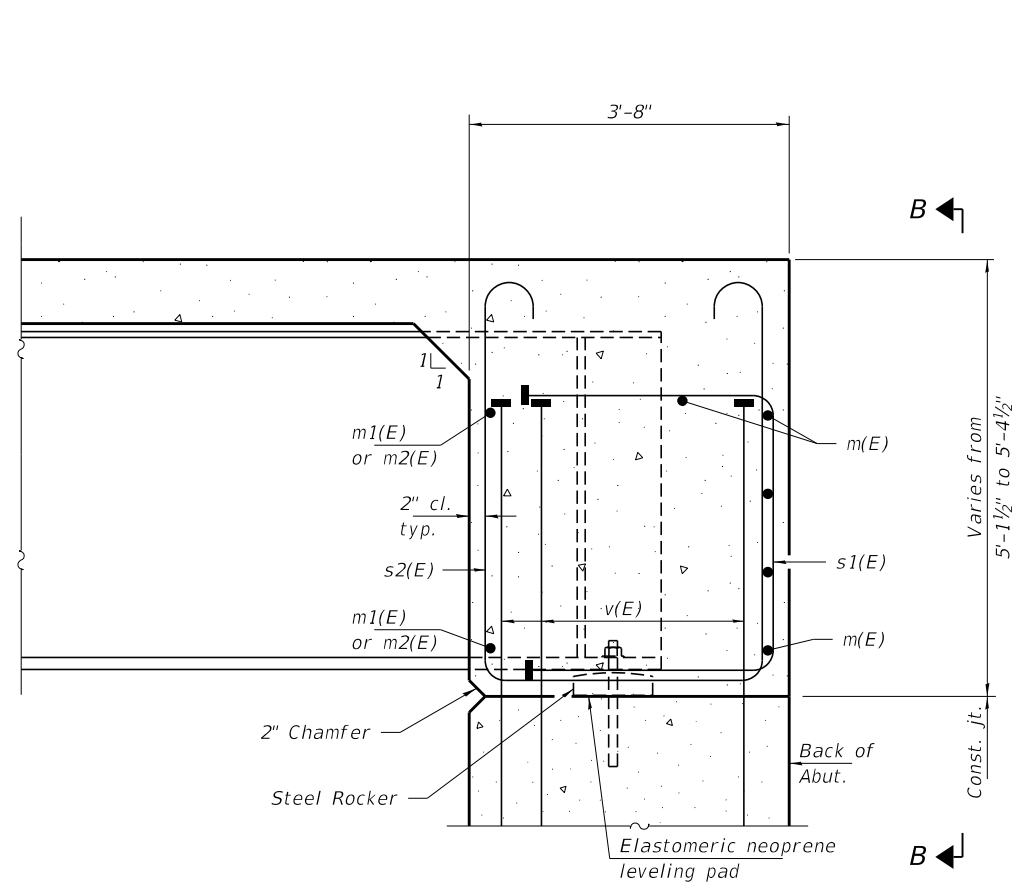


CROSS SECTION
(Looking East)

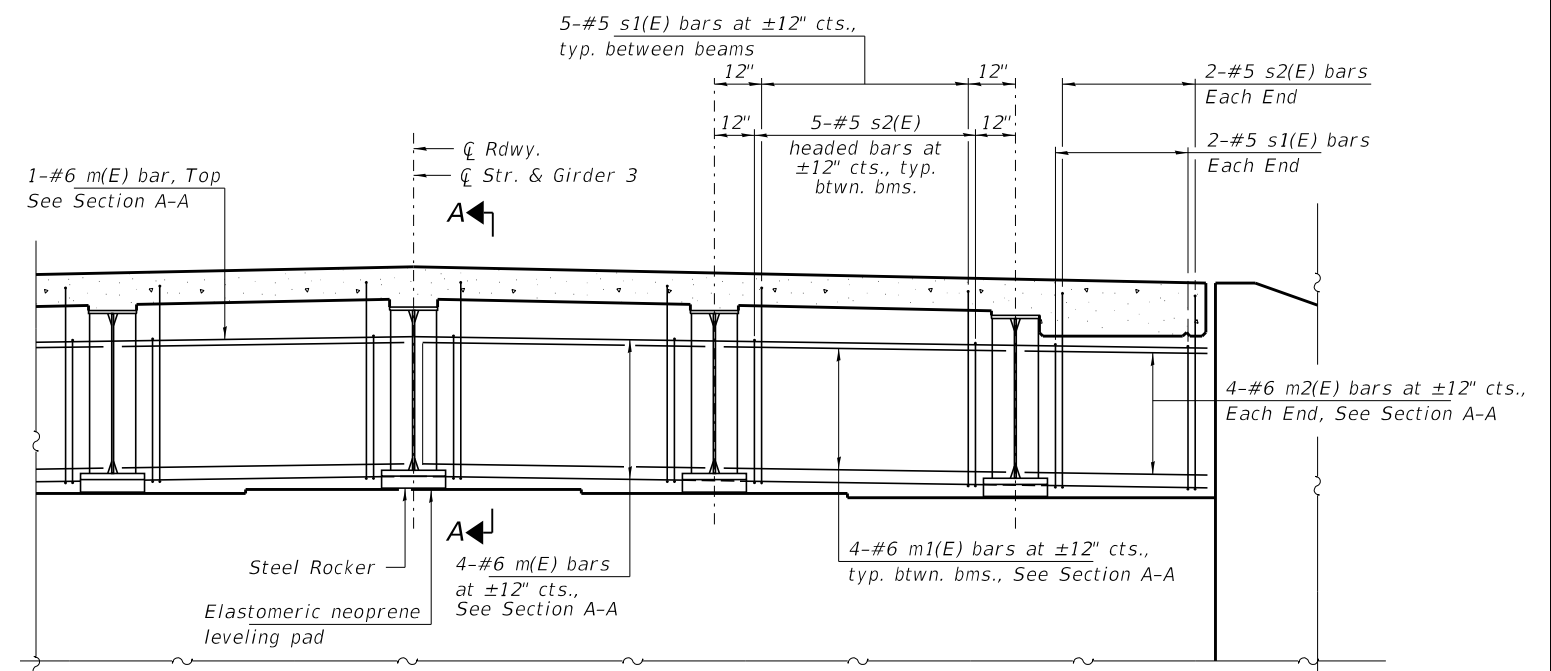
MIN. BAR LAP
 #5 bars = 3'-6"

**SUPERSTRUCTURE
 BILL OF MATERIAL**

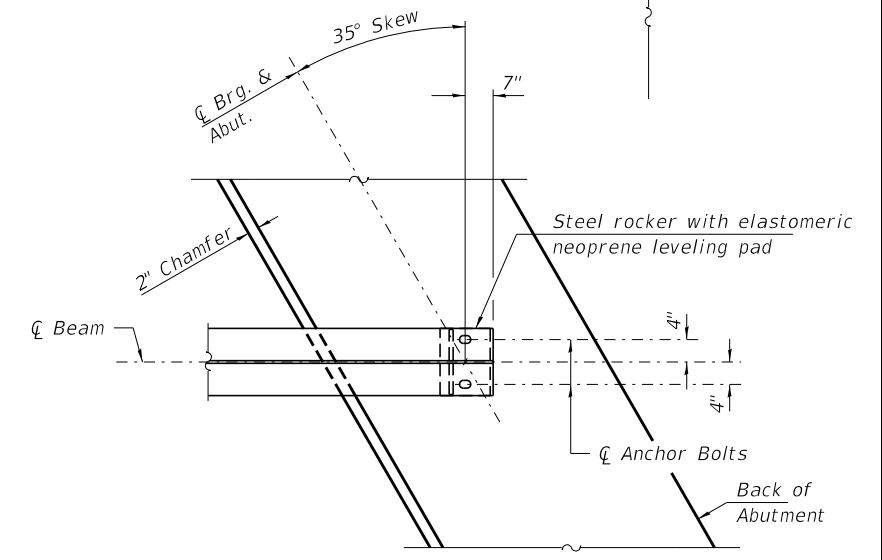
BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	412	#5	27'-8"	—
a1(E)	4	#5	33'-9"	—
a2(E)	478	#6	6'-6"	—
b(E)	116	#5	33'-8"	—
b1(E)	130	#5	27'-8"	—
m(E)	10	#6	27'-8"	—
m1(E)	32	#6	5'-8"	—
m2(E)	16	#6	1'-8"	—
s(E)	248	#5	5'-1"	□
s1(E)	48	#5	8'-3"	□
s2(E)	48	#5	13'-6"	□
Concrete Superstructure			Cu. Yd.	136.8
Protective Coat			Sq. Yd.	426
Reinforcement Bars, Epoxy Coated			Pound	27,650
Bridge Deck Grooving			Sq. Yd.	387



SECTION A-A
(at Rt. L's)

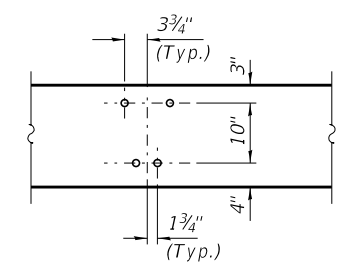


DIAPHRAGM AT ABUTMENT
Dimensions at right angles to beams
(West Abut. shown, East Abut. similar)

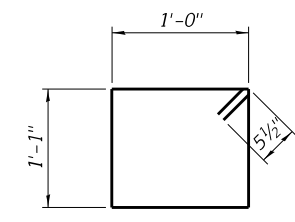


PLAN AT ABUTMENT
(Showing bottom flange of beam)

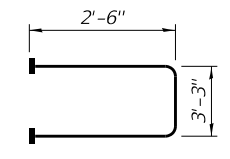
Notes:
Reinforcement bars in diaphragm are billed with Superstructure on sheet 5 of 14.
Concrete in diaphragm is included with Concrete Superstructure on sheet 5 of 14.
The s(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.



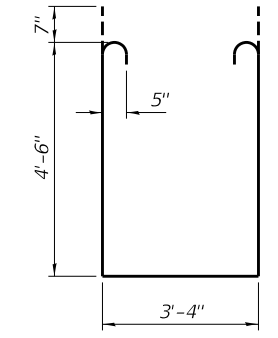
DETAIL A



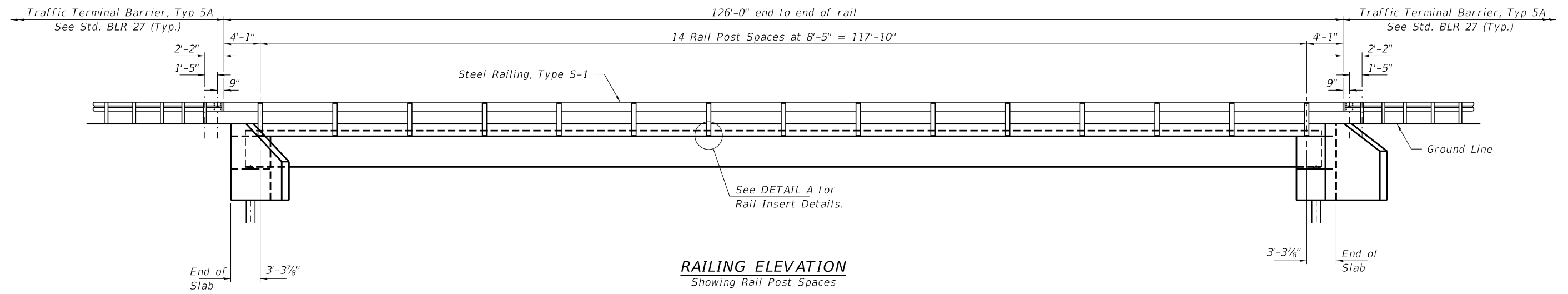
BAR s(E)



BAR s1(E)
(Headed)



BAR s2(E)

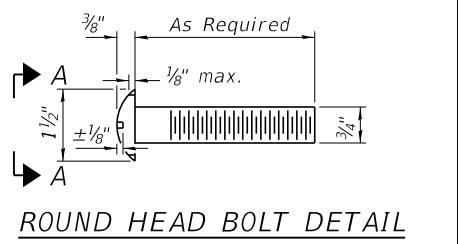
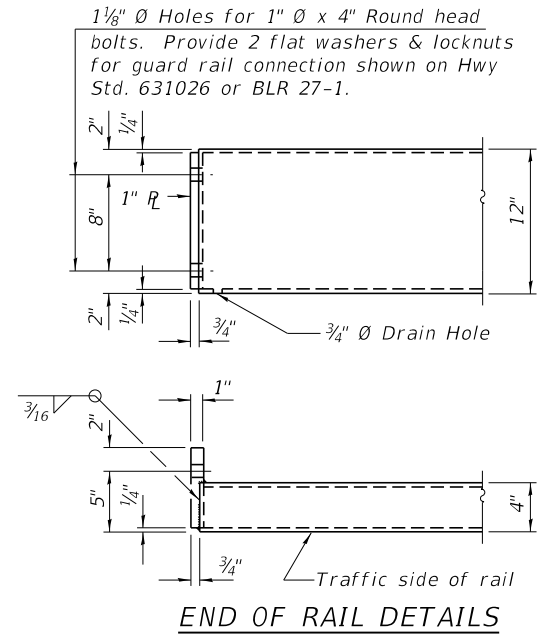
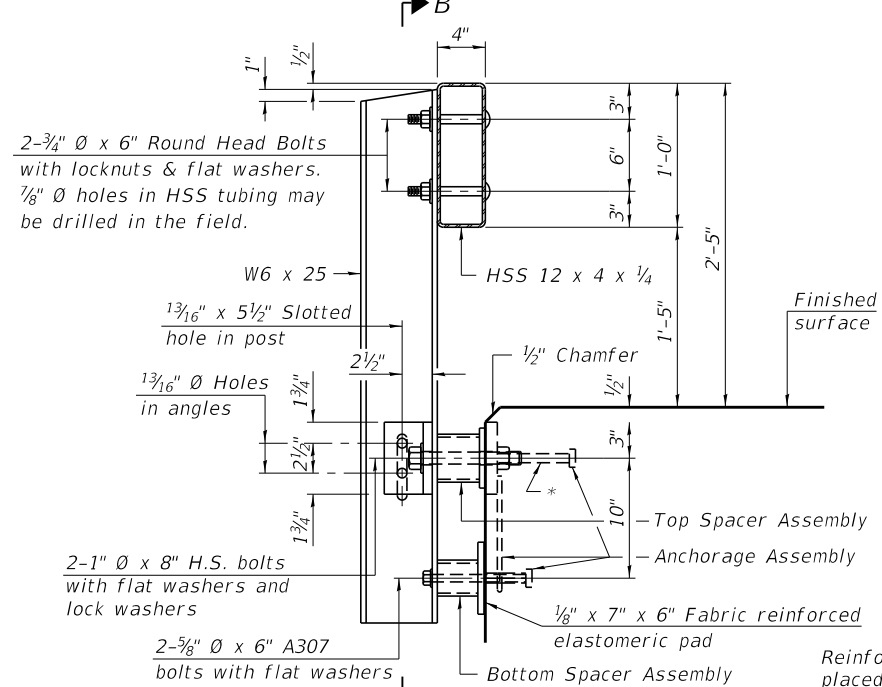
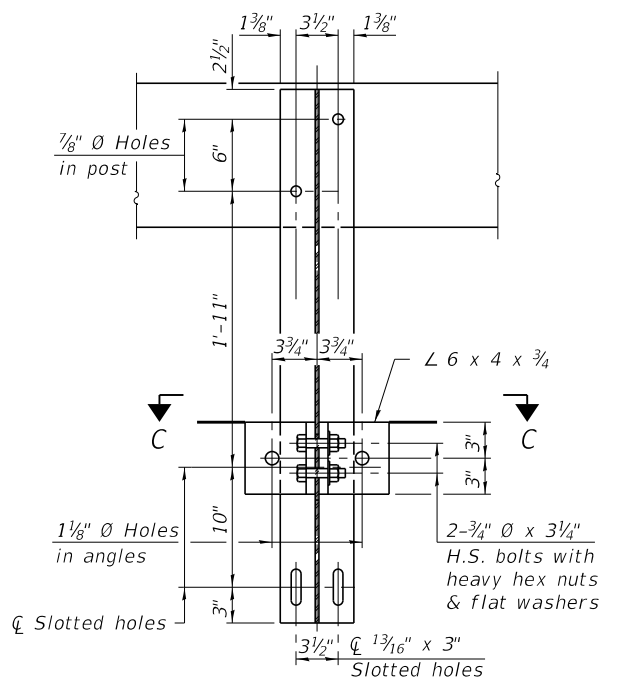


RAILING ELEVATION
Showing Rail Post Spaces

See sheet 7 of 14 for Railing Details.

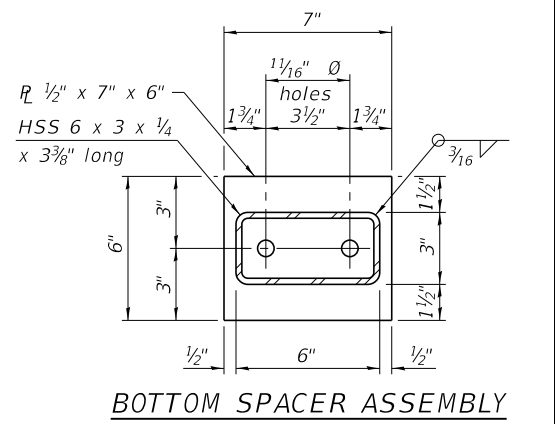
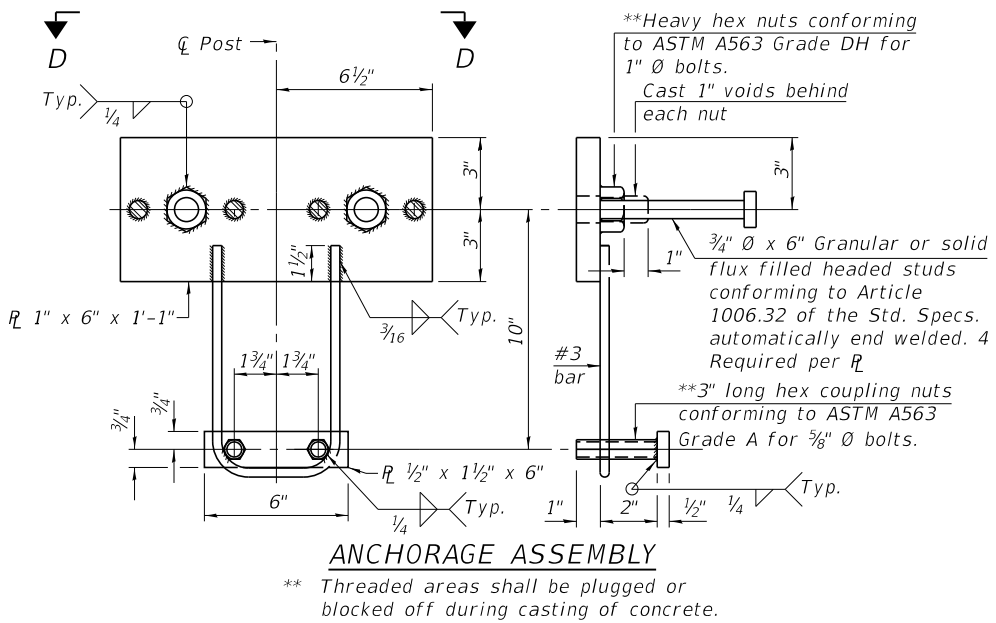
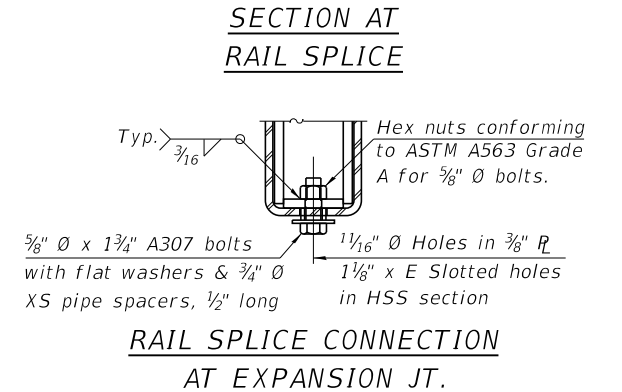
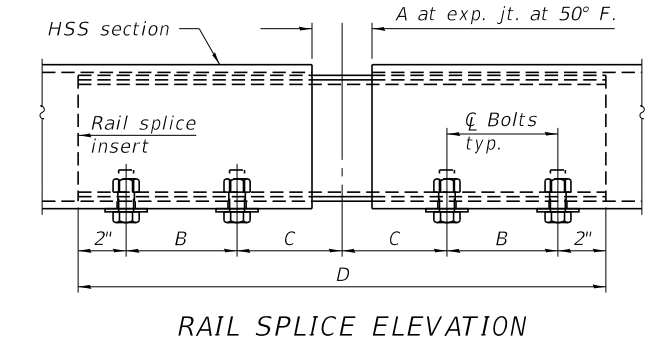
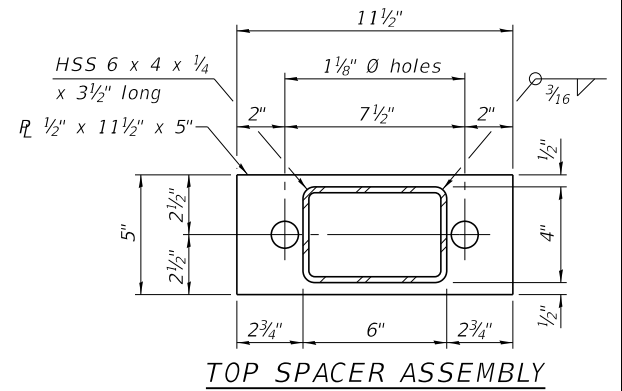
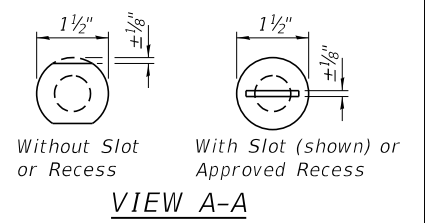
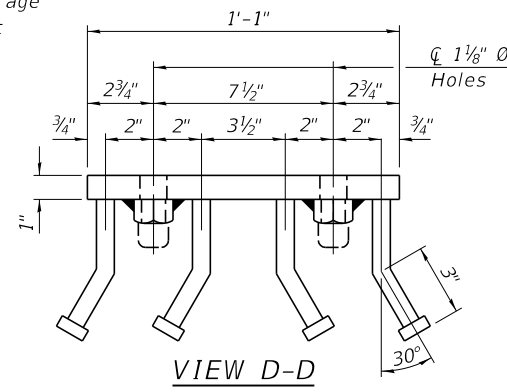
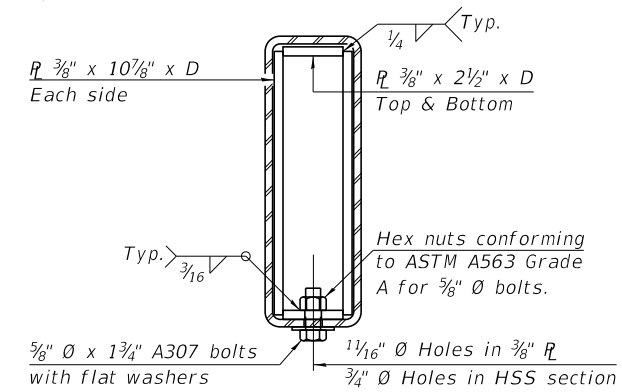
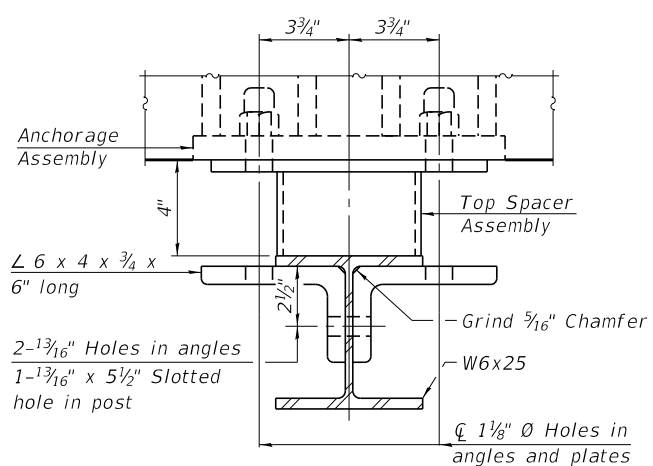
FILE NAME = 180940-shi-bridge.dgn	USER NAME = dfoley	DESIGNED - P.R.R.	REVISED -	STATE OF ILLINOIS SANGAMON COUNTY HIGHWAY DEPARTMENT	SUPERSTRUCTURE DETAILS STRUCTURE NO. 084-3447	F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
HAMPTON, LENZINI AND RENWICK, INC. 3035 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L.S./P.E./S.E. CORP. 184.000959	PLOT SCALE = \$SCALE\$	CHECKED - S.W.M.	REVISED -			1636	16-13113-00-BR	SANGAMON	37	11	
	PLOT DATE = 10/13/2022	DRAWN - R.D.H.	REVISED -			GARDNER ROAD DISTRICT CONTRACT NO. 93785					
		CHECKED - S.W.M.	REVISED -			ILLINOIS FED. AID PROJECT ZAGJ (418)					

Notes:
 A sufficient number of shims of various thicknesses, sized to fit behind the top spacer assembly, 5" x 11 1/2", and bottom spacer assembly, 6" x 7", shall be provided to adjust posts for proper alignment. If the summation of shims is greater than 1/4" (top) or 1/2" (bottom), longer bolts are required. Cost included with Steel Railing, Type S-1.
 All steel rail elements including shims shall be galvanized according to Article 509.05 of the Standard Specifications.
 All HSS tubing serving as railing shall be CVN tested according to Article 1006.34(b) of the Standard Specifications.
 Rail splice inserts may be built out of 2 - 3/8" bent plates in lieu of the 4 plate rail splice inserts shown, provided the outside dimensions are matched.
 All round head bolts shall be ASTM A307 with locknuts according to ASTM A563 grade A.



Reinforcement bars in the top of the slab may be placed with a 1 1/2" minimum clearance in the area of the rail post anchor devices. 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.

* The outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchorage assembly. The anchorage studs may be bent down 1/2" to accommodate the top reinforcement bar placement.



RAILING CRITERIA

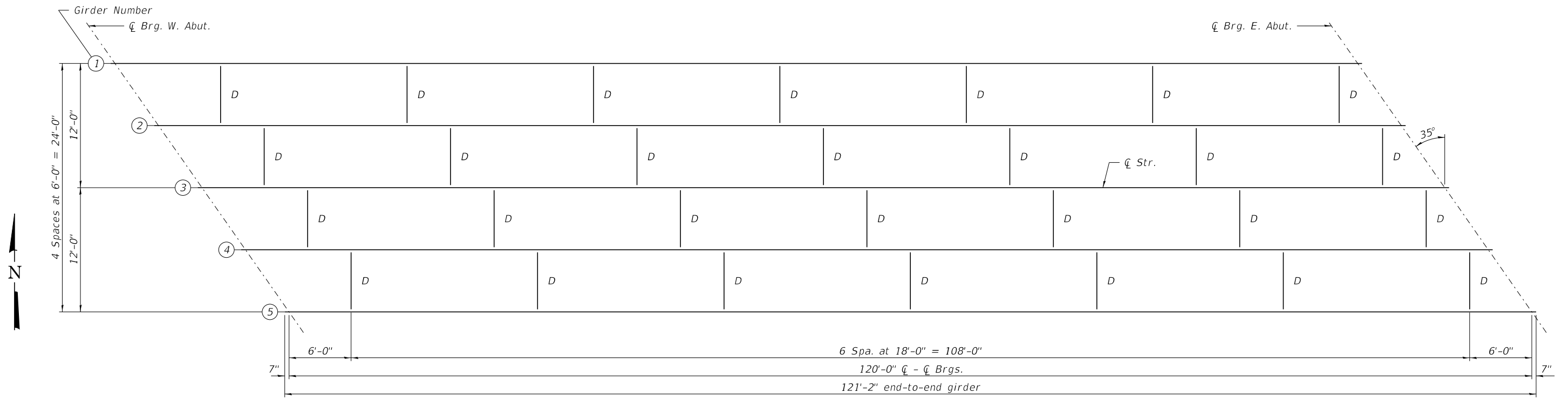
NCHRP 350 Test Level	2
Railing Weight (plf)	50
Max Post Spacing	10'-9"
HMA thickness range (in)	1 1/4" - 3 1/8"

SPLICE DIMENSIONS

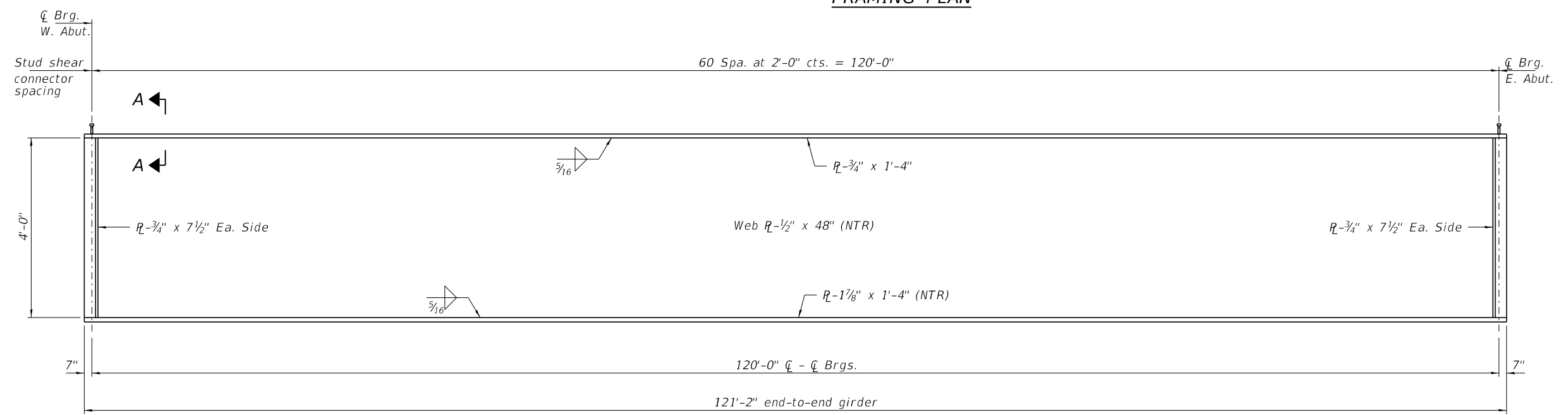
Location	T	A	B	C	D	E
All locs. not over exp. jts.	0	1/4"	4"	4"	1'-8"	-
Over Strip Seal Jt.	≤4"	2 1/2"	4 3/8"	4 3/8"	1'-10"	3 1/16"
Over Finger or Modular Jt.	≤9 1/2"	5 1/2"	7 3/8"	7 1/4"	2'-9 1/4"	5 1 3/16"
Over Finger or Modular Jt.	≤15"	8 1/4"	10 1/8"	10"	3'-8 1/4"	8 9/16"

T = ; total movement along centerline of roadway at expansion joint.

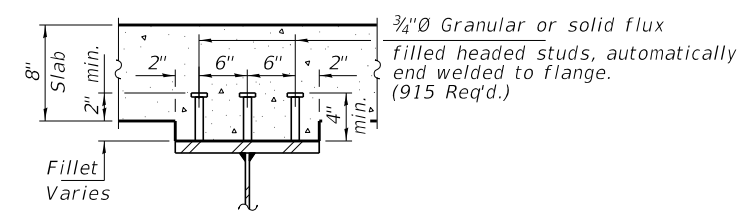
** Threaded areas shall be plugged or blocked off during casting of concrete.



FRAMING PLAN



GIRDER ELEVATION

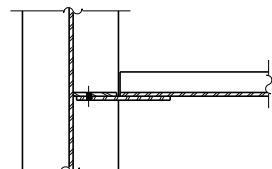


SECTION A-A

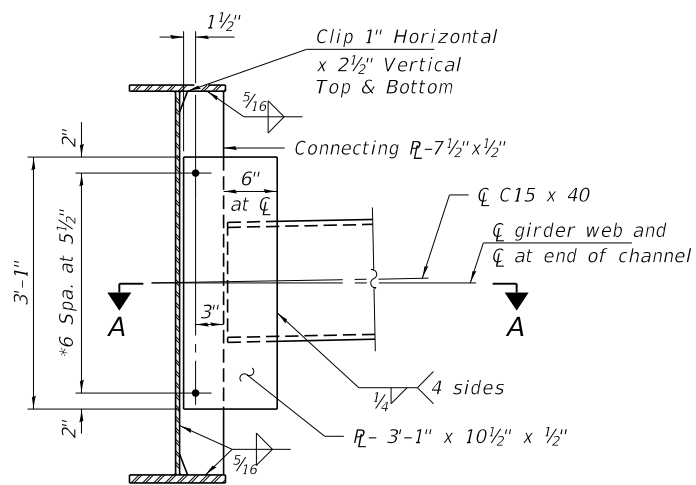
Notes:
 Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
 All girders and splices, including bearing stiffeners and diaphragms shall be AASHTO M270, Grade 50W.
 For additional structural steel details see sheets 9 & 10 of 14.
 All cross frames and diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.

Location	☐ Brg. W. Abut.	☐ Brg. E. Abut.
BEAM 1	523.50	523.50
BEAM 2	523.59	523.59
BEAM 3	523.67	523.67
BEAM 4	523.51	523.51
BEAM 5	523.35	523.35

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

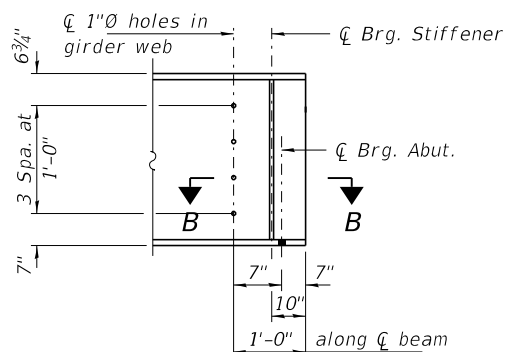


SECTION A-A

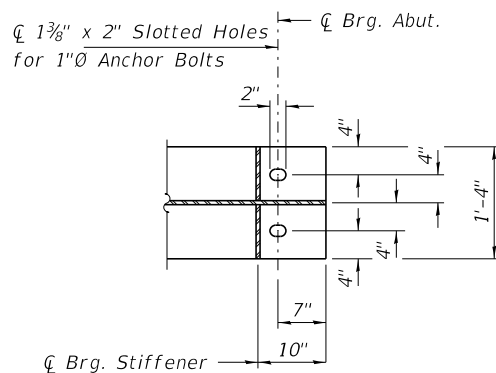


INTERIOR DIAPHRAGM D
(28 required)

Note:
Two hardened washers required for each set of oversized holes.
*3/4" Ø HS bolts, 1 3/16" Ø holes



TYP. END OF GIRDER ELEVATION

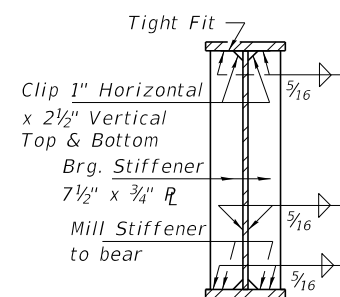


SECTION B-B

Notes:
For additional structural steel details see sheets 8 & 10 of 14.
All splices and diaphragms, including stiffeners and diaphragms shall be AASHTO M270, Grade 50W.
Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

INTERIOR GIRDER MOMENT TABLE		
0.5 Sp. 1		
I_s	(in ⁴)	23,154
$I_c(n)$	(in ⁴)	60,850
$I_c(3n)$	(in ⁴)	43,943
$I_c(cr)$	(in ⁴)	26,625
S_s	(in ³)	817
$S_c(n)$	(in ³)	1,462
$S_c(3n)$	(in ³)	1,342
$S_c(cr)$	(in ³)	820
DC1	(k/ft)	0.87
MDC1	(k)	1,470
DC2	(k/ft)	0.03
MDC2	(k)	51
DW	(k/ft)	0.30
MDW	(k)	540
LLDF	(k)	0.500
$M_{\ell} + IM$	(k)	1,828
M_u (Strength I)	(k)	5,914
$\phi F Mn$	(k)	7,139
f_s DC1	(ksi)	21.6
f_s DC2	(ksi)	0.5
f_s DW	(ksi)	4.8
f_s ($\ell + IM$)	(ksi)	15.0
f_s (Service II)	(ksi)	46.4
0.95Rh Fyf	(ksi)	47.5
f_s (Total)(Strength I)	(ksi)	-
$\phi F Fn$	(ksi)	-
Vf	(k)	32.0

	GIRDER REACTION TABLE	
	Abutment	
	Interior	Exterior
LLDF	(k) 0.765	0.765
OCF	(k) -	1.140
RDC1	(k) 43.0	49.1
RDC2	(k) 1.6	1.9
RDW	(k) 15.8	18.1
R_{ℓ}	(k) 75.0	85.6
R_{IM}	(k) 16.3	18.6
R_{Total}	(k) 151.7	173.3



SECTION AT ABUTMENT BEARING STIFFENER R'S

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) due to non-composite dead loads (in.⁴ and in.³).

$I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections due to short-term composite live loads (in.⁴ and in.³).

$I_c(3n), S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections, due to long-term composite (superimposed) dead loads (in.⁴ and in.³).

$I_c(cr), S_c(cr)$: Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing f_s (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads (in.⁴ and in.³).

DC1: Un-factored non-composite dead load (kips/ft.).

MDC1: Un-factored moment due to non-composite dead load (kip-ft.).

DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).

MDC2: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).

DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).

MDW: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).

$M_{\ell} + IM$: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

M_u (Strength I): Factored design moment (kip-ft.).
1.25 (MDC1 + MDC2) + 1.5 MDW + 1.75 $M_{\ell} + IM$

$\phi F Mn$: Compact composite positive moment capacity computed according to Article 6.10.7.1 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (kip-ft.).

f_s DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).
MDC1/ S_{nc}

f_s DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).
MDC2/ $S_c(3n)$ or MDC2/ $S_c(cr)$ as applicable.

f_s DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).
MDW/ $S_c(3n)$ or MDW/ $S_c(cr)$ as applicable.

f_s ($\ell + IM$): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live load plus impact loads as calculated below (ksi).
 $M_{\ell} + IM / S_c(n)$ or $M_{\ell} + IM / S_c(cr)$ as applicable.

f_s (Service II): Sum of stresses as computed below (ksi).
 $f_s DC1 + f_s DC2 + f_s DW + 1.3 f_s(\ell + IM)$

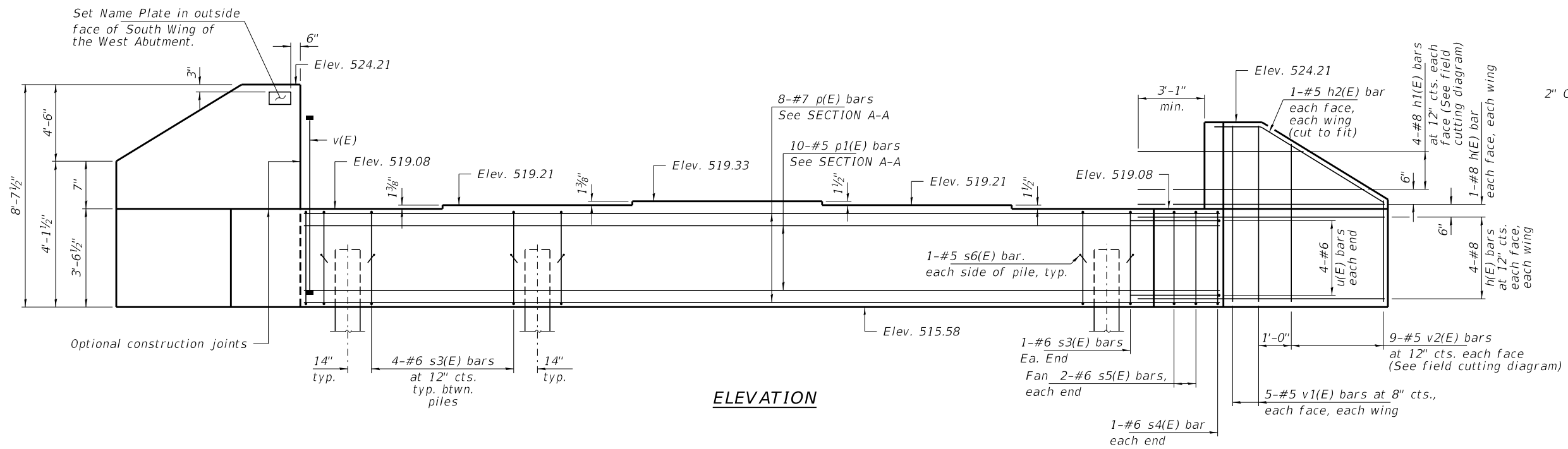
0.95RhFyf: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).

f_s (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).
1.25 ($f_s DC1 + f_s DC2$) + 1.5 $f_s DW + 1.75 f_s(\ell + IM)$

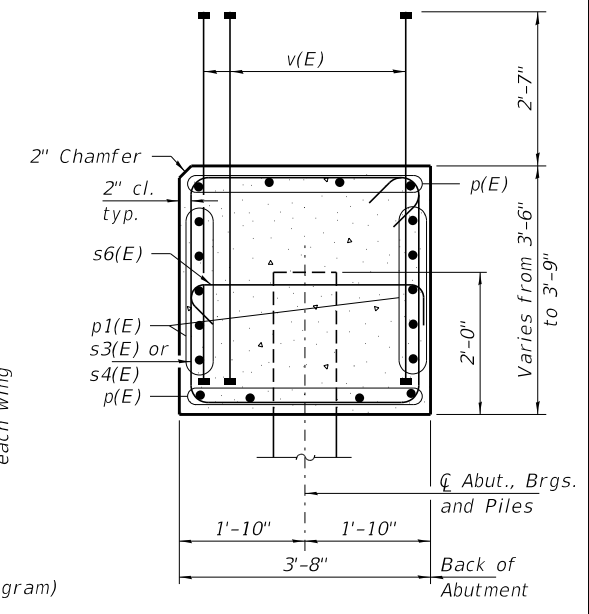
$\phi F Fn$: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).

Vf: Maximum factored shear range in span computed according to Article 6.10.10.

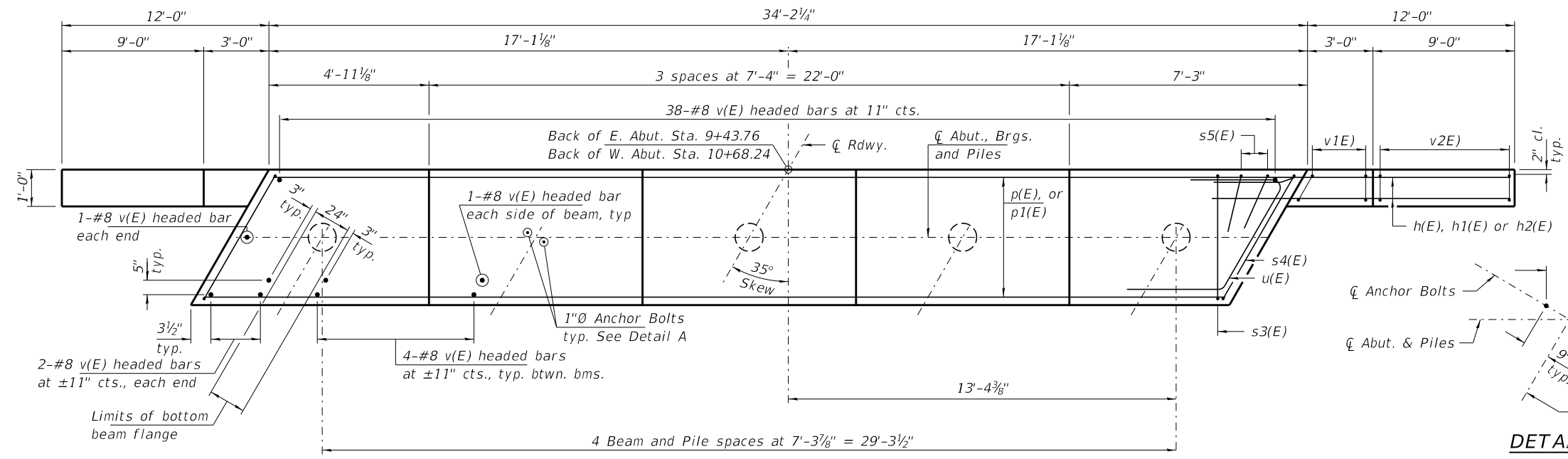
Note:
 M_{ℓ} and R_{ℓ} include the effects of centrifugal force and superelevation.



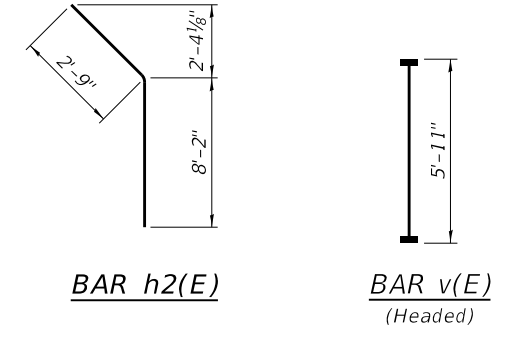
ELEVATION



SEC. THRU ABUT.
Dimensions at right angles to abutment.

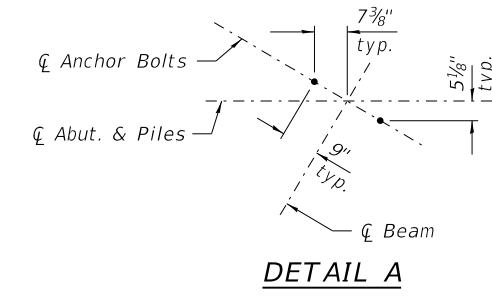


PLAN



BAR h2(E)

BAR v(E)
(Headed)

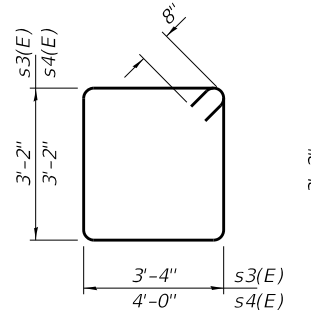


DETAIL A

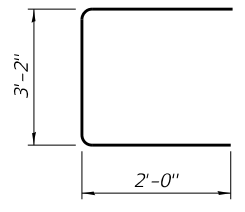
Note:
Pile locations can be varied up to 1.0 ft to avoid existing piling.

PILE DATA

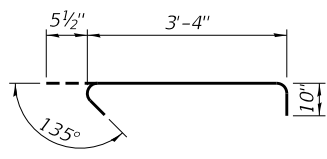
Type: Metal Shell Piles 12"x0.250"
Nominal Required Bearing: 285 Kips/pile
Factored Resistance Available: 184 Kips/pile
Est. Length: South Abutment 65 Ft/Pile
Est. Length: North Abutment 85 Ft/Pile
No. Production Piles: 9
No. Test Piles: 1



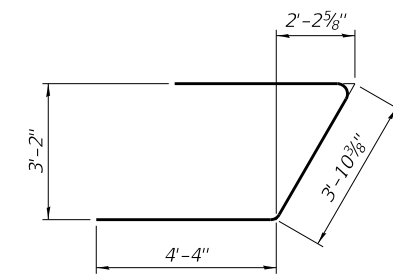
BAR s3(E) & s4(E)



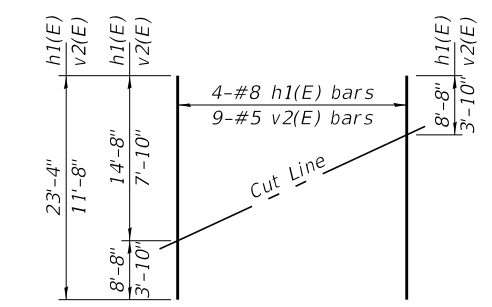
BAR s5(E)



BAR s6(E)



BAR u(E)



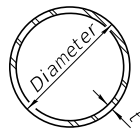
FIELD CUTTING DIAGRAM

Order h1(E) and v2(E) full length. Cut as shown and use remainder of bars in opposite wing.

BILL OF MATERIAL - 2 ABUTS.

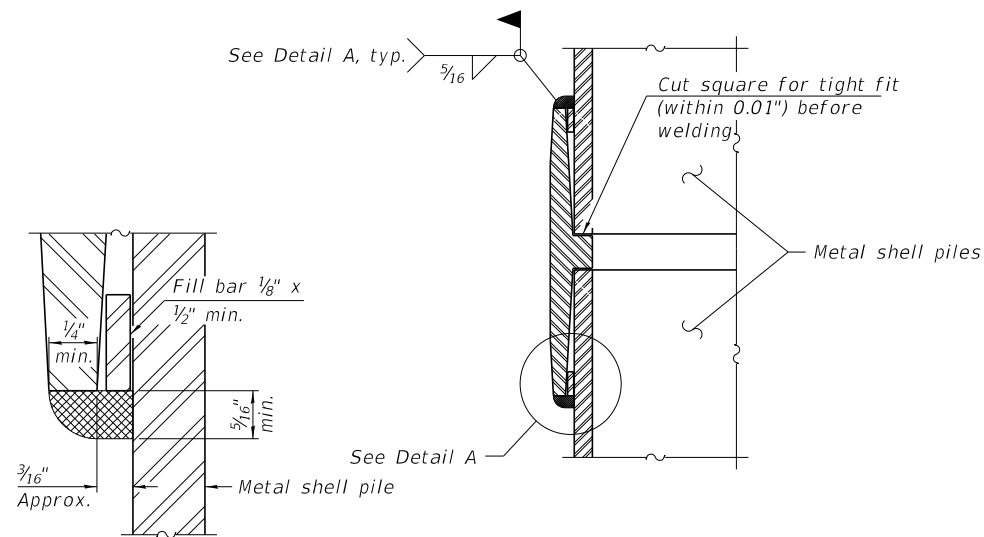
Bar	No.	Size	Length	Shape
h(E)	40	#8	14'-9"	—
h1(E)	16	#8	23'-4"	—
h2(E)	8	#5	10'-11"	—
p(E)	16	#7	33'-10"	—
p1(E)	20	#5	33'-10"	—
s3(E)	36	#6	14'-4"	□
s4(E)	4	#6	16'-0"	□
s5(E)	8	#6	7'-2"	□
s6(E)	20	#5	4'-8"	□
u(E)	16	#6	12'-7"	┘
v(E)	140	#5	5'-11"	—
v1(E)	40	#5	8'-3"	—
v2(E)	36	#5	11'-8"	—
Protective Coat		Sq. Yd.	38	
Structure Excavation		Cu. Yd.	268	
Concrete Structures		Cu. Yd.	43.6	
Reinforcement Bars, Epoxy Coated		Pound	7,480	
Furn. Metal Shell Piles 12"x0.250"		Foot	665	
Driving Piles		Foot	665	
Test Pile Metal Shells		Each	1	
Name Plates		Each	1	

For details of piles see sheet 12 of 14.

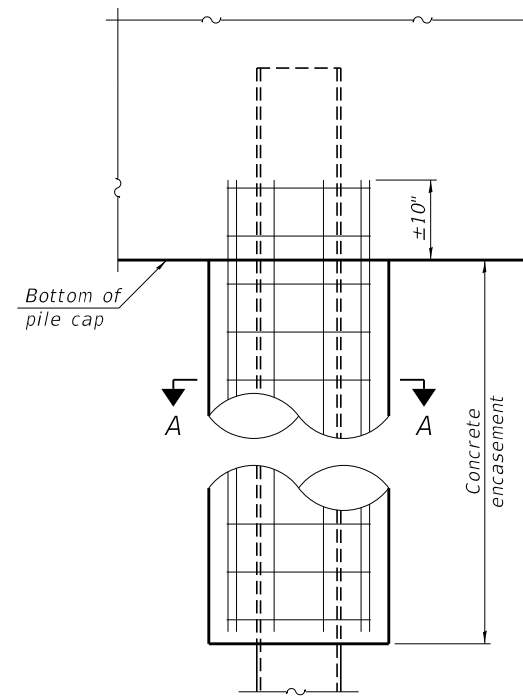


METAL SHELL PILE TABLE

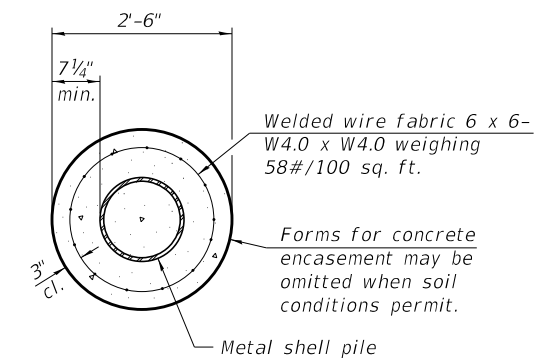
Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd. ³ /ft.)
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361
PP16	0.312"	52.32	0.0478
PP16	0.375"	62.64	0.0470



DETAIL A

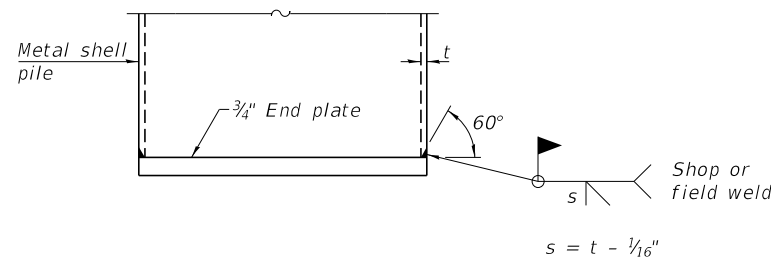


ELEVATION



SECTION A-A

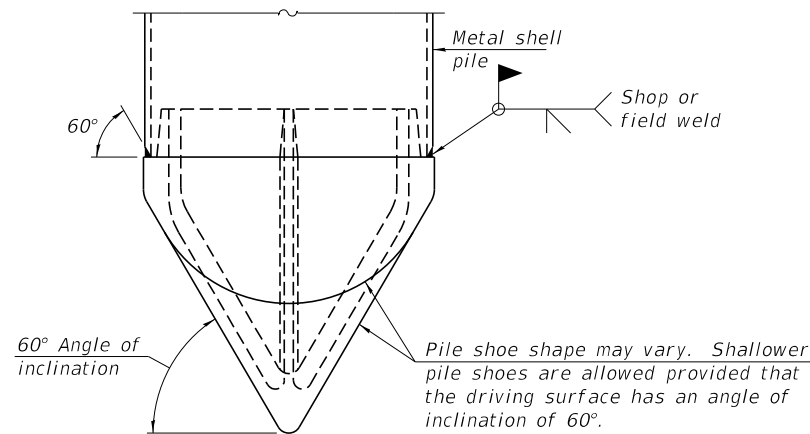
INDIVIDUAL PILE CONCRETE ENCASUREMENT
(When specified)



END PLATE ATTACHMENT

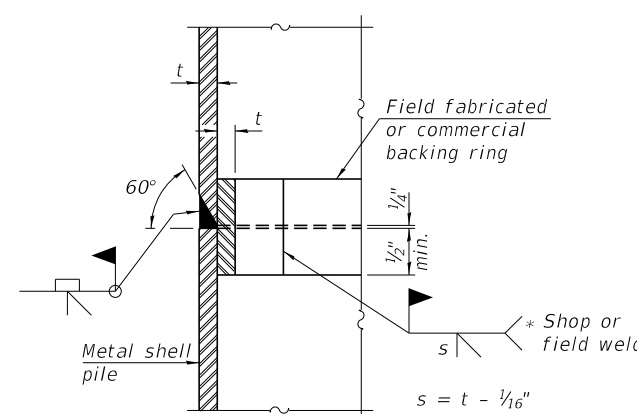
WELDED COMMERCIAL SPLICE

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



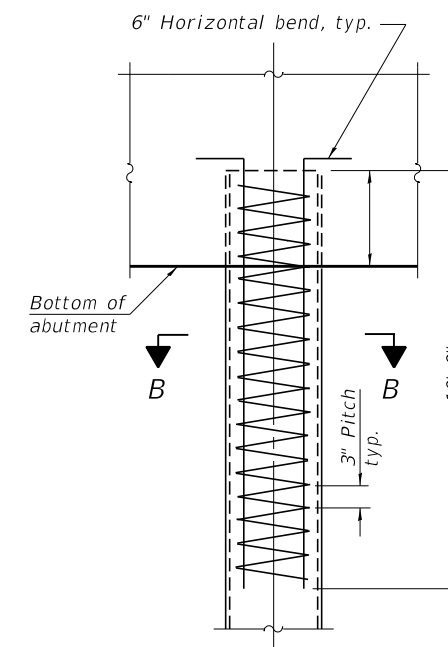
PILE SHOE ATTACHMENT

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

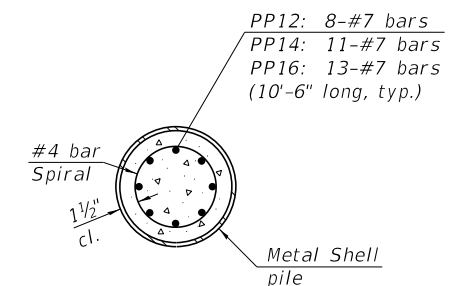


COMPLETE PENETRATION WELD SPLICE

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



ELEVATION



SECTION B-B

REINFORCEMENT AT ABUTMENTS
(Omit when concrete encasement is specified)

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

F-MS 1-1-2020

FILE NAME = 180940-shi-bridge.dgn	USER NAME = dfoley	DESIGNED - P.R.R.	REVISED -	STATE OF ILLINOIS SANGAMON COUNTY HIGHWAY DEPARTMENT	METAL SHELL PILE DETAILS STRUCTURE NO. 084-3447	F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT SCALE = \$SCALE\$	CHECKED - S.W.M.	REVISED -			1636	16-13113-00-BR	SANGAMON	37	17
	PLOT DATE = 10/13/2022	DRAWN - R.D.H.	REVISED -			GARDNER ROAD DISTRICT		CONTRACT NO. 93785		
		CHECKED - S.W.M.	REVISED -			ILLINOIS		FED. AID PROJECT ZAGJ (418)		



Illinois Department of Transportation
Division of Highway
Reynolds Drilling Corporation

SOIL BORING LOG

Page 1 of 3

Date 10/22/18

ROUTE SN 084-3047 FAS1656 DESCRIPTION Bridge Replacement Boring LOGGED BY DH

SECTION T17NR06W28SE LOCATION FAS1656, SEC. 28, TWP. 17, RNG. 06, 3rd PM

COUNTY Sangamon County DRILLING METHOD HSA HAMMER TYPE Hydraulic

STRUCT. NO.	Station	DEPTH (ft)	BULGE (in)	UCS (tsf)	MOISTURE (%)	SOIL DESCRIPTION	DEPTH (ft)	BULGE (in)	UCS (tsf)	MOISTURE (%)
SN 084-3047	9.37	0.0				ASPHALT				
B-2	8.75	100.06				Groundwater Elev.: 81.1 ft				
						Surface Water Elev. _____ ft				
						Stream Bed Elev. _____ ft				
						Groundwater Elev.: First Encounter _____ ft				
						Upon Completion _____ ft				
						After _____ Hrs.				
						A-4 SILTY LOAM- Gray, moist, little sand (continued)				
						Elev. 520.36 98.56				
						A-6 SILTY CLAY LOAM- Brown, moist, trace-little sand				
						Elev. 498.36 76.56				
						A-4 LOAM- Gray, moist some fine-medium sand				
						Elev. 493.36 71.56				
						A-4 SILTY LOAM- Gray, moist-very moist, little sand				
						Elev. 488.36 66.56				
						A-6 SILTY CLAY LOAM- Gray, moist-very moist, trace-little sand				
						Elev. 508.36 86.56				
						A-4 SILTY LOAM- Gray, moist, little sand				
						Elev. 483.36 61.56				
						A-4 LOAM- Gray, moist, little-some sand				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) RRS from 137 (Rev. 8.99)



Illinois Department of Transportation
Division of Highway
Reynolds Drilling Corporation

SOIL BORING LOG

Page 2 of 3

Date 10/22/18

ROUTE SN 084-3047 FAS1656 DESCRIPTION Bridge Replacement Boring LOGGED BY DH

SECTION T17NR06W28SE LOCATION FAS1656, SEC. 28, TWP. 17, RNG. 06, 3rd PM

COUNTY Sangamon County DRILLING METHOD HSA HAMMER TYPE Hydraulic

STRUCT. NO.	Station	DEPTH (ft)	BULGE (in)	UCS (tsf)	MOISTURE (%)	SOIL DESCRIPTION	DEPTH (ft)	BULGE (in)	UCS (tsf)	MOISTURE (%)
SN 084-3047	9.37	0.0				A-4 LOAM- Gray, moist, little-some sand (continued)				
B-2	8.75	100.06				Groundwater Elev.: 81.1 ft				
						Surface Water Elev. _____ ft				
						Stream Bed Elev. _____ ft				
						Groundwater Elev.: First Encounter _____ ft				
						Upon Completion _____ ft				
						After _____ Hrs.				
						A-1-b SAND- Gray, moist, dense (continued)				
						Elev. 458.36 36.56				
						A-4 SILTY LOAM- Gray moist, little sand				
						Elev. 448.36 26.56				
						A-4 SILTY LOAM- Gray brown, moist				
						Elev. 463.36 41.56				
						A-1-b SAND- Gray, moist, dense				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) RRS from 137 (Rev. 8.99)



Illinois Department of Transportation
Division of Highway
Reynolds Drilling Corporation

SOIL BORING LOG

Page 3 of 3

Date 10/22/18

ROUTE SN 084-3047 FAS1656 DESCRIPTION Bridge Replacement Boring LOGGED BY DH

SECTION T17NR06W28SE LOCATION FAS1656, SEC. 28, TWP. 17, RNG. 06, 3rd PM

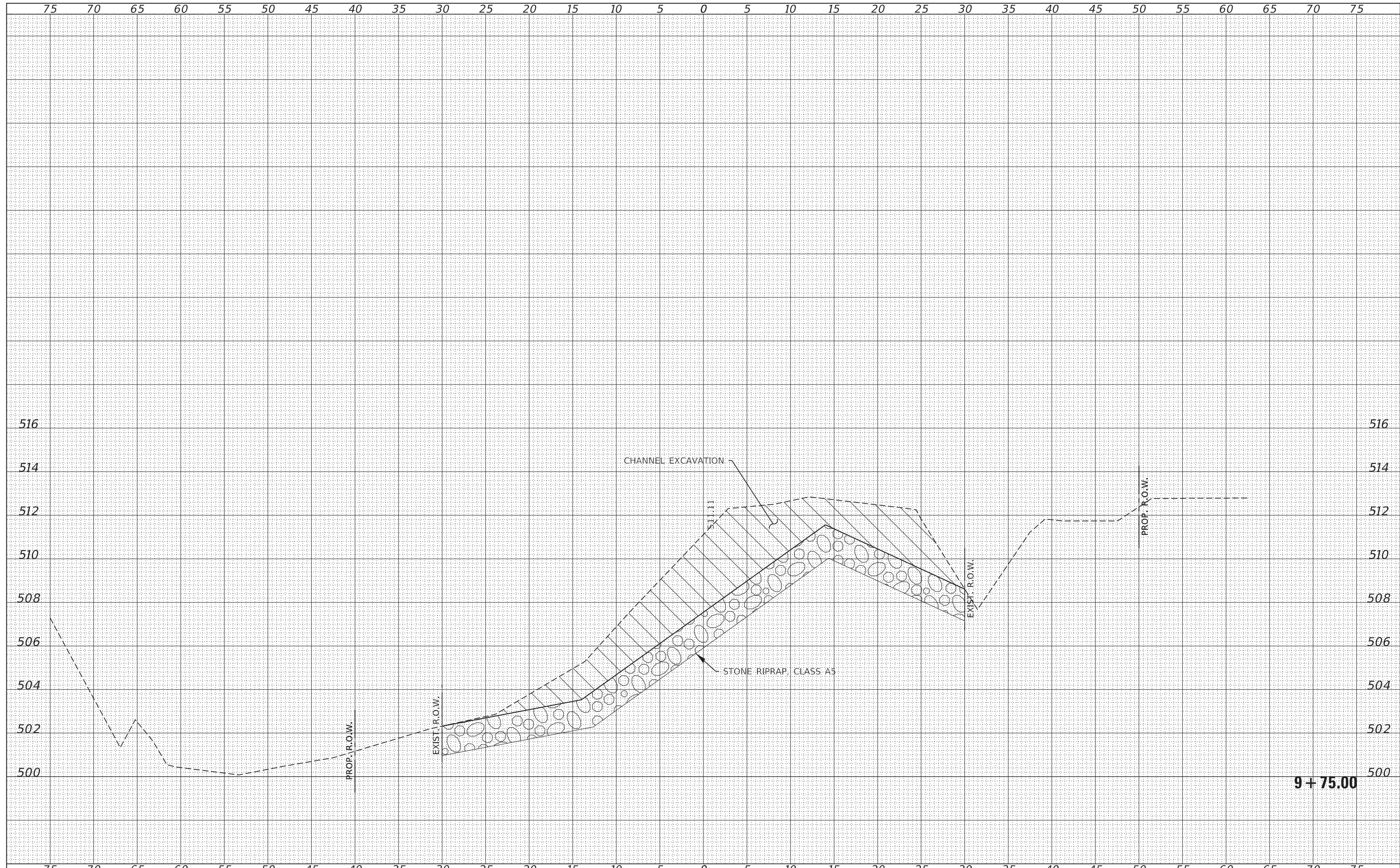
COUNTY Sangamon County DRILLING METHOD HSA HAMMER TYPE Hydraulic

STRUCT. NO.	Station	DEPTH (ft)	BULGE (in)	UCS (tsf)	MOISTURE (%)	SOIL DESCRIPTION	DEPTH (ft)	BULGE (in)	UCS (tsf)	MOISTURE (%)
SN 084-3047	9.37	0.0				A-4 SILTY LOAM- Gray brown, moist (continued)				
B-2	8.75	100.06				Groundwater Elev.: 81.1 ft				
						Surface Water Elev. _____ ft				
						Stream Bed Elev. _____ ft				
						Groundwater Elev.: First Encounter _____ ft				
						Upon Completion _____ ft				
						After _____ Hrs.				
						A-4 SILT- Dark brown, moist, organic silt layer				
						Elev. 434.36 11.56				
						Coal				
						Elev. 431.86 10.06				
						Shale				
						Elev. 431.36 9.56				
						A-4 SILTY LOAM- Gray brown, moist				
						Elev. 428.36 6.56				
						Sandstone				
						Elev. 427.86 6.06				
						End of Boring				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) RRS from 137 (Rev. 8.99)

BORING-2

FILE NAME = 180940-shi-bridge.dgn	USER NAME = dfoley	DESIGNED - P.R.R.	REVISED -	STATE OF ILLINOIS SANGAMON COUNTY HIGHWAY DEPARTMENT	BORING STRUCTURE NO. 084-3447	F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3035 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT SCALE = \$SCALE\$	CHECKED - S.W.M.	REVISED -			1636	16-13113-00-BR	SANGAMON	37	19
PLOT DATE = 10/13/2022	CHECKED - S.W.M.	DRAWN - R.D.H.	REVISED -			GARDNER ROAD DISTRICT		CONTRACT NO. 93785		
		CHECKED - S.W.M.	REVISED -			SHEET NO. 14 OF 14 SHEETS				



BY	DATE

ORIGINAL SURVEY	SURVEYED	DATE
NOTE BOOK	PLOTTED	
	TEMPLATE	
	AREAS	
	CHECKED	

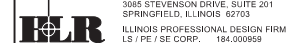
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 USER NAME = dfoley
 DESIGNED - J.W.F.
 DRAWN - T.W.K.
 CHECKED - S.W.M.
 DATE - 09/07/2022
 PLOT SCALE = \$SCALE\$
 PLOT DATE = 10/13/2022

REVISIED -
 REVISIED -
 REVISIED -
 REVISIED -

STATE OF ILLINOIS
 SANGAMON COUNTY HIGHWAY DEPARTMENT

STATION CROSS SECTIONS
 SCALE: 5H:2V
 SHEET NO. 6 OF 18 SHEETS
 STA. 9+75.00 TO STA. 9+75.00

F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1636	16-13113-00-BR	SANGAMON	37	25
GARDNER ROAD DISTRICT			CONTRACT NO. 93785	
ILLINOIS FED. AID PROJECT ZAGJ (418)				

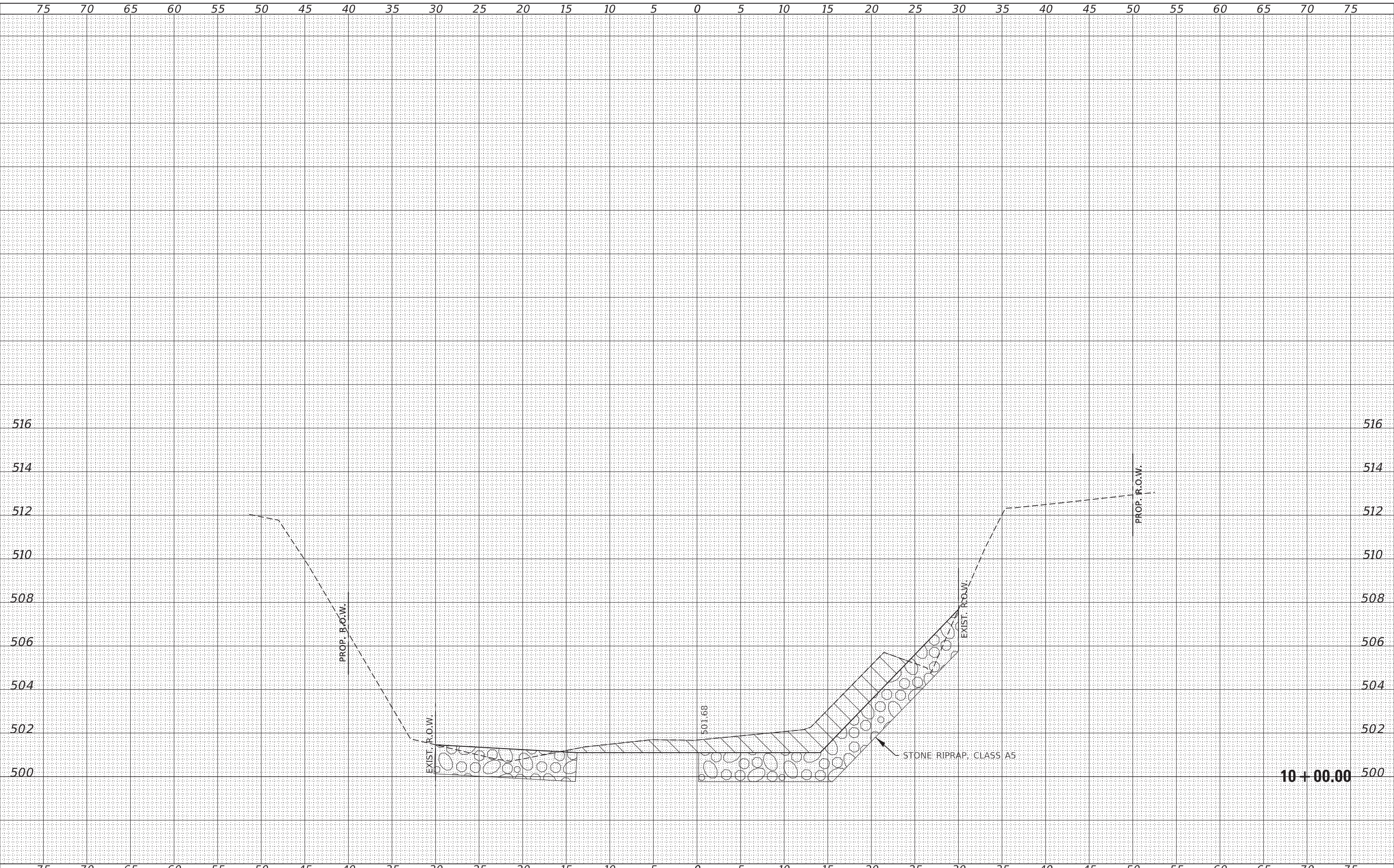


HAMPTON, LENZINI AND RENWICK, INC.
 3885 STEVENSON DRIVE, SUITE 201
 SPRINGFIELD, ILLINOIS 62703
 ILLINOIS PROFESSIONAL DESIGN FIRM
 LS / PE / SE CORP. 184.000958

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

BY	DATE

BY	DATE



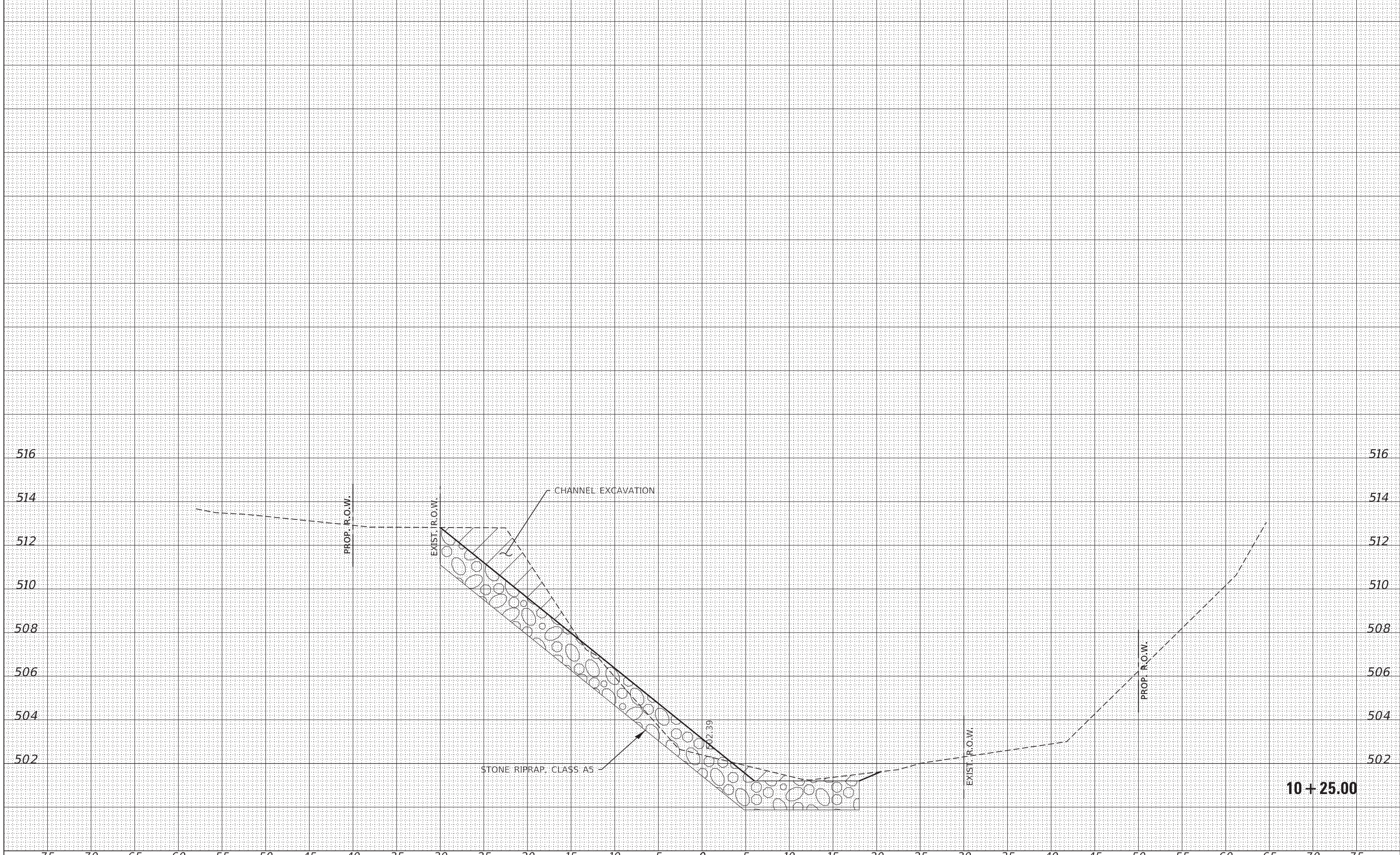
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HAMPTON, LENZINI AND RENWICK, INC. 3885 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L.S. / P.E. / S.E. CORP. 184.000958	PLOT SCALE = \$SCALE\$	DRAWN - T.W.K.	REVISED -		F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT DATE = 10/13/2022	CHECKED - S.W.M.	REVISED -	REVISED -		1636	16-13113-00-BR	SANGAMON	37	26
DATE - 09/07/2022	REVISED -	REVISED -	REVISED -		GARDNER ROAD DISTRICT		CONTRACT NO. 93785		
					ILLINOIS		FED. AID PROJECT ZAGJ (418)		

SCALE: 5H:2V SHEET NO. 7 OF 18 SHEETS STA. 10+00.00 TO STA. 10+00.00

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

BY:		DATE:	
FINISH SURVEY	SURVEYED		
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
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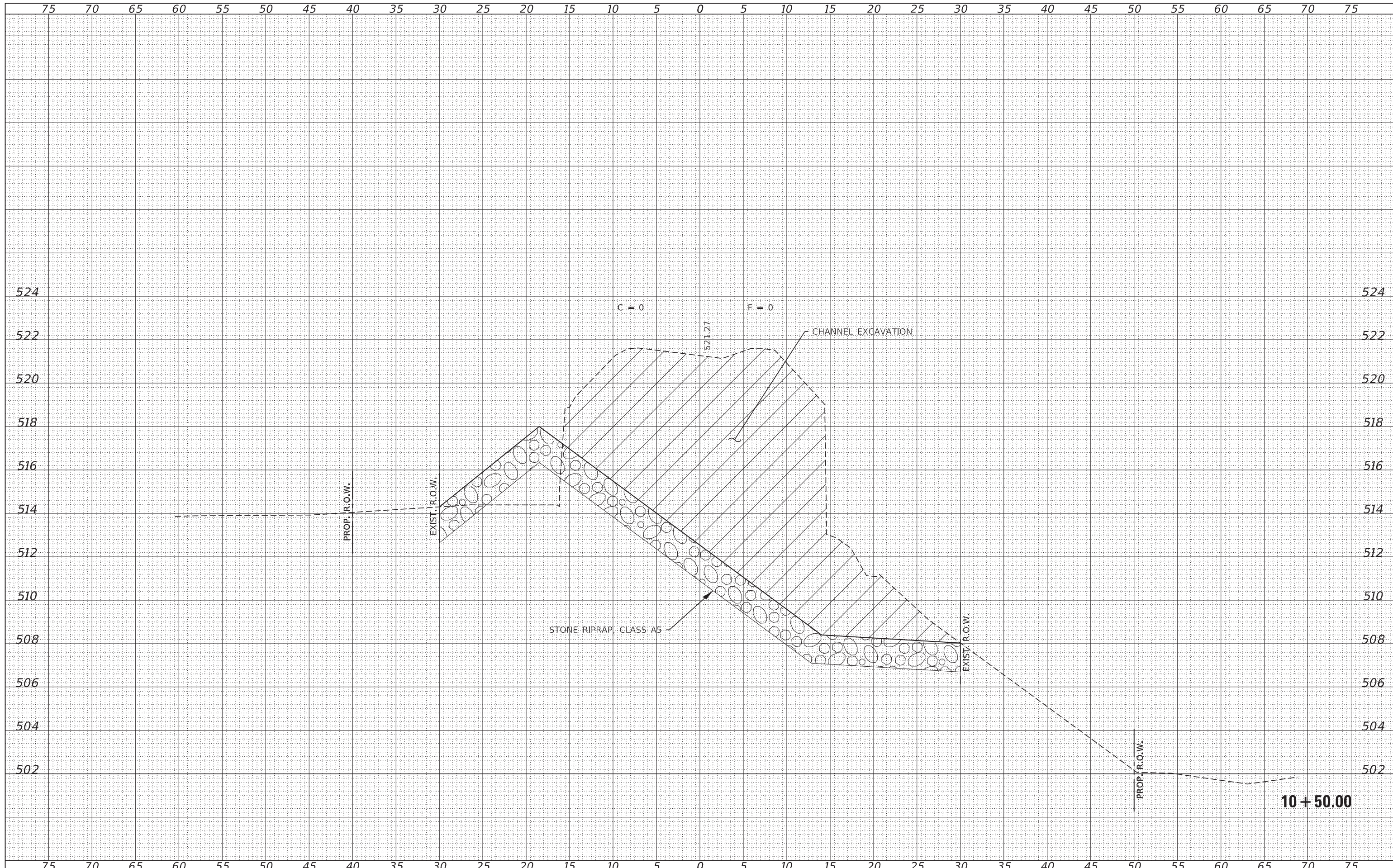


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		DRAWN - T.W.K.	REVISED -					1636	16-13113-00-BR	SANGAMON	37	27
		CHECKED - S.W.M.	REVISED -		SCALE: 5H:2V SHEET NO. 8 OF 18 SHEETS STA. 10+25.00 TO STA. 10+25.00			GARDNER ROAD DISTRICT		CONTRACT NO. 93785	ILLINOIS FED. AID PROJECT ZAGJ (418)	
		DATE - 09/07/2022	REVISED -									

HLR HAMPTON, LENZINI AND RENWICK, INC.
 3085 STEVENSON DRIVE, SUITE 201
 SPRINGFIELD, ILLINOIS 62703
 ILLINOIS PROFESSIONAL DESIGN FIRM
 LS / PE / SE CORP. 184-000958

BY	DATE
FINAL SURVEY	SURVEYED
NOTE BOOK	TEMPLATED
NO.	AREAS CHECKED

BY	DATE
ORIGINAL SURVEY	SURVEYED
NOTE BOOK	TEMPLATED
NO.	AREAS CHECKED



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HAMPTON, LENZINI AND RENWICK, INC.
 3885 STEVENSON DRIVE, SUITE 201
 SPRINGFIELD, ILLINOIS 62703
 ILLINOIS PROFESSIONAL DESIGN FIRM
 LS / PE / SE CORP. 184.009858

USER NAME = ofoley
 PLOT SCALE = \$\$CALES
 PLOT DATE = 10/13/2022

DESIGNED - J.W.F.
 DRAWN - T.W.K.
 CHECKED - S.W.M.
 DATE - 09/07/2022

REVISED -
 REVISED -
 REVISED -
 REVISED -

**STATE OF ILLINOIS
 SANGAMON COUNTY HIGHWAY DEPARTMENT**

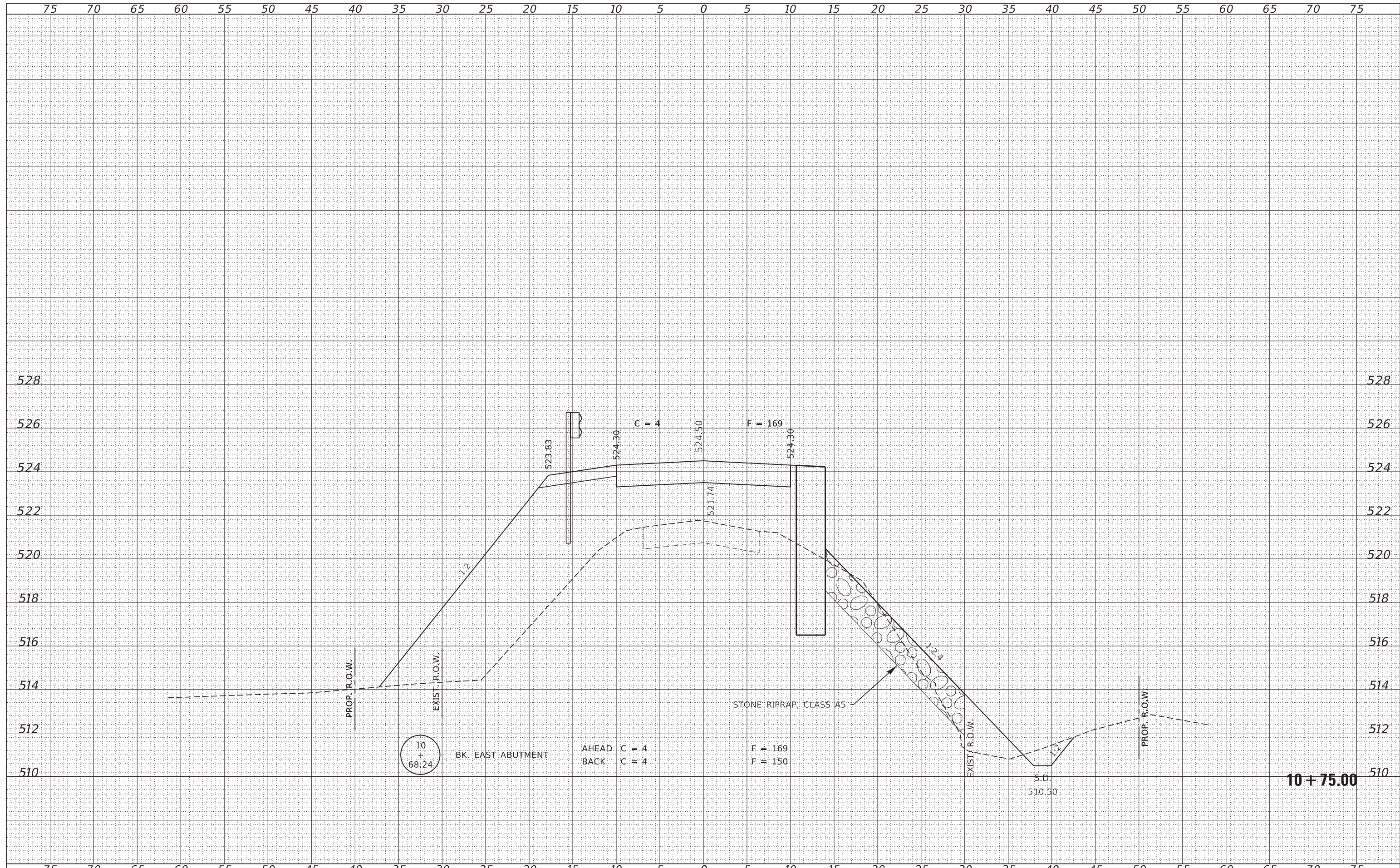
STATION CROSS SECTIONS

SCALE: 5H:2V SHEET NO. 9 OF 18 SHEETS STA. 10+50.00 TO STA. 10+50.00

F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1636	16-13113-00-BR	SANGAMON	37	28
GARDNER ROAD DISTRICT		CONTRACT NO. 93785		
		ILLINOIS FED. AID PROJECT ZAGJ (418)		

DATE	
BY	
FINISHED SURVEY	
NOTED SURVEY	
PLOTTED SURVEY	
TEMPLATE SURVEY	
AREAS SURVEY	
CHECKED SURVEY	

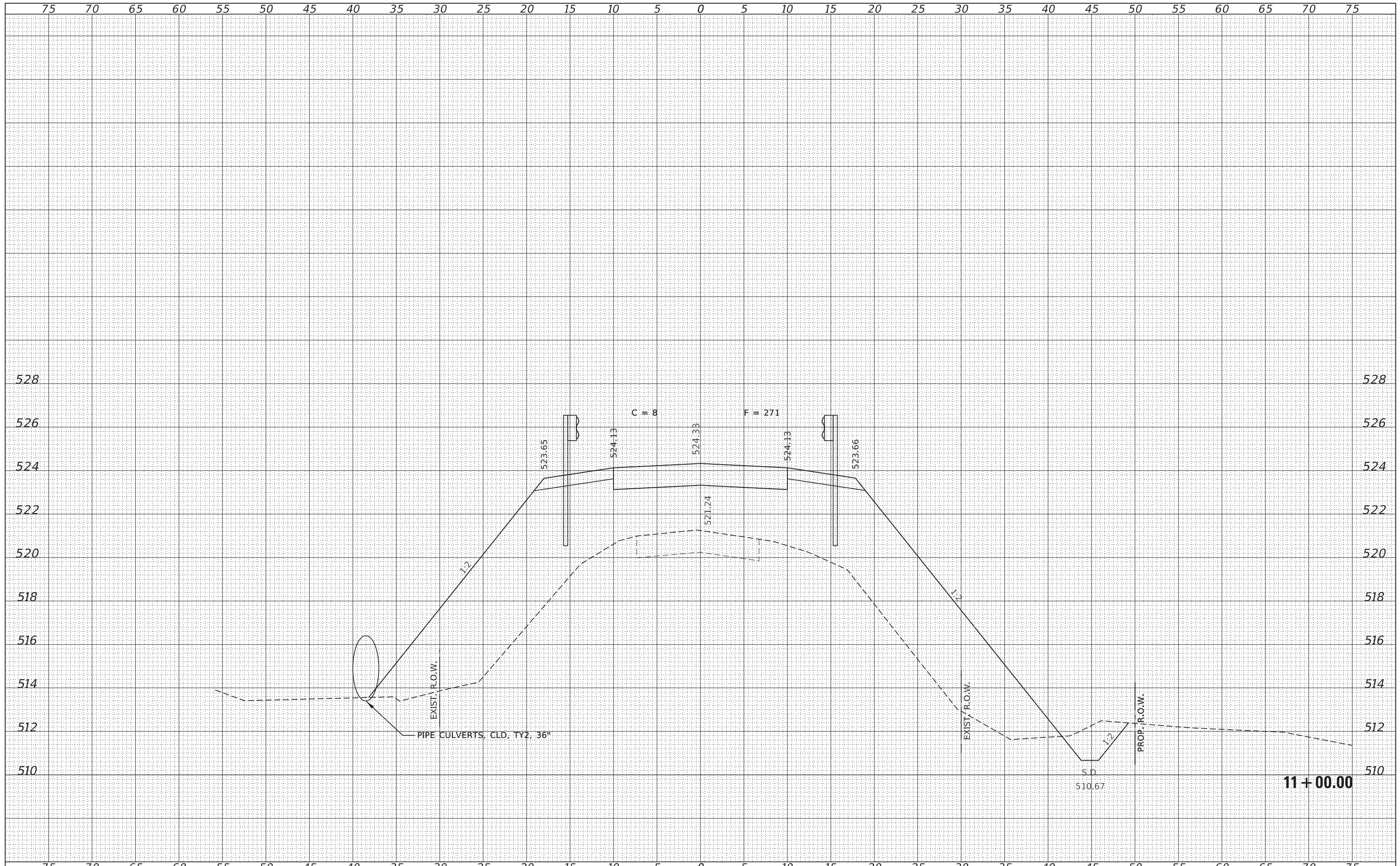
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BY	
ORIGINAL SURVEY	
NOTED SURVEY	
PLOTTED SURVEY	
TEMPLATE SURVEY	
AREAS SURVEY	
CHECKED SURVEY	



FILE NAME = 180640-sh1-xssheets.dgn	USER NAME = dfoley	DESIGNED - J.W.F.	REVISED -	STATE OF ILLINOIS SANGAMON COUNTY HIGHWAY DEPARTMENT	STATION CROSS SECTIONS			F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC.		DRAWN - T.W.K.	REVISED -		1636	16-13113-00-BR	SANGAMON	37	29			
3885 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L.S./P.E. CORP. 184.000958		CHECKED - S.W.M.	REVISED -		GARDNER ROAD DISTRICT			CONTRACT NO. 93785				
		DATE - 09/07/2022	REVISED -		SCALE: 5H:2V	SHEET NO. 10 OF 18 SHEETS	STA. 10+75.00 TO STA. 10+75.00	ILLINOIS FED. AID PROJECT ZAGJ (418)				

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

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



FILE NAME = 180640-shi-xssheets.dgn
 DESIGNED - J.W.F.
 DRAWN - T.W.K.
 CHECKED - S.W.M.
 DATE - 09/07/2022
 USER NAME = ofoley
 PLOT SCALE = \$SCALES
 PLOT DATE = 10/13/2022

REVISIED -
 REVISIED -
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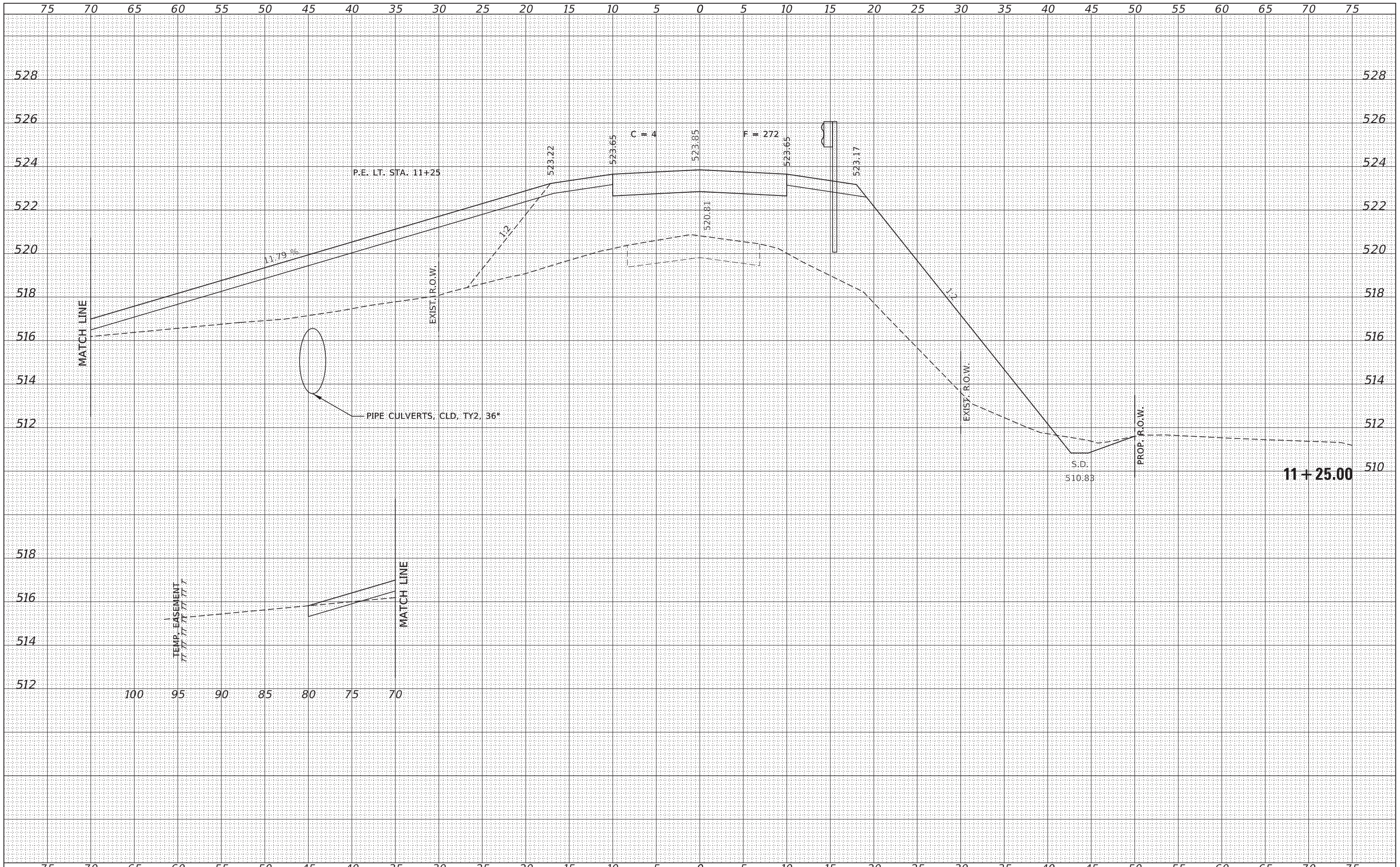
**STATE OF ILLINOIS
 SANGAMON COUNTY HIGHWAY DEPARTMENT**

STATION CROSS SECTIONS
 SCALE: 5H:2V
 SHEET NO. 11 OF 18 SHEETS
 STA. 11+00.00 TO STA. 11+00.00

F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1636	16-13113-00-BR	SANGAMON	37	30
GARDNER ROAD DISTRICT		CONTRACT NO. 93785		
ILLINOIS FED. AID PROJECT ZAGJ (418)				

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



FILE NAME = 180640-ohi-vssheets.dgn
 HAMPTON, LENZINI AND RENWICK, INC.
 3885 STEVENSON DRIVE, SUITE 201
 SPRINGFIELD, ILLINOIS 62703
 ILLINOIS PROFESSIONAL DESIGN FIRM
 LS / PE / SE CORP. 184.009958

USER NAME = ofoley
 DESIGNED - J.W.F.
 DRAWN - T.W.K.
 CHECKED - S.W.M.
 DATE - 09/07/2022
 PLOT SCALE = \$SCALES
 PLOT DATE = 10/13/2022

REVISIED -
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STATE OF ILLINOIS
 SANGAMON COUNTY HIGHWAY DEPARTMENT

STATION CROSS SECTIONS

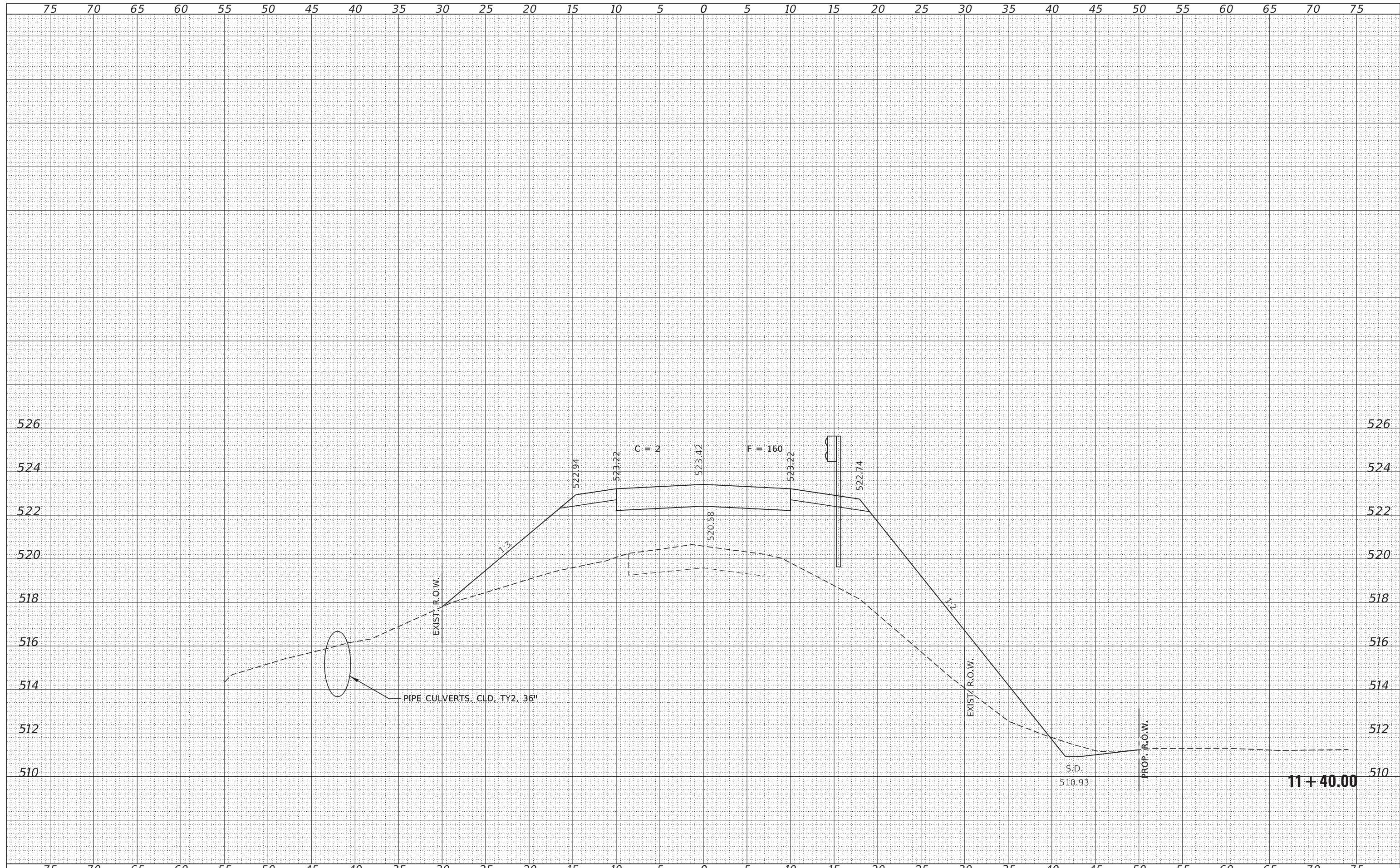
SCALE: 5H:2V SHEET NO. 12 OF 18 SHEETS STA. 11+25.00 TO STA. 11+25.00


F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1636	16-13113-00-BR	SANGAMON	37	31
GARDNER ROAD DISTRICT		CONTRACT NO. 93785		

ILLINOIS FED. AID PROJECT ZAGJ (418)

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

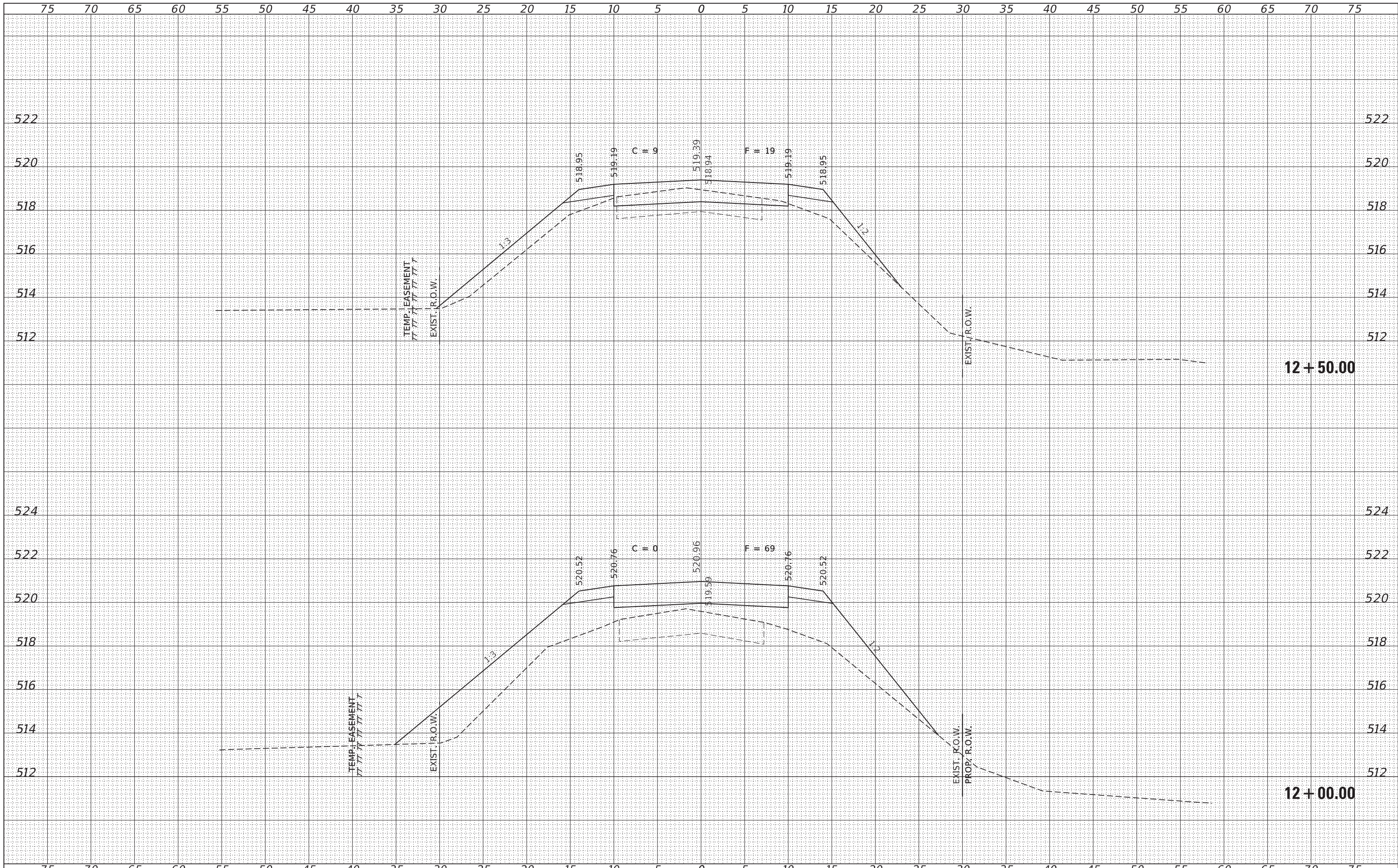
BY _____	DATE _____
ORIGINAL SURVEY	SURVEYED
NOTE BOOK _____	PLOTTED
NO. _____	TEMPLATE
	AREAS CHECKED
	AREAS CHECKED



FILE NAME = 180640-sh1-xssheets.dgn	USER NAME = ofoley	DESIGNED - J.W.F.	REvised -	STATE OF ILLINOIS SANGAMON COUNTY HIGHWAY DEPARTMENT	STATION CROSS SECTIONS	F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
 HAMPTON, LENZINI AND RENWICK, INC. 3885 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L5 / PE / SE CORP. 184.000958	PLOT SCALE = \$Scales	CHECKED - S.W.M.	REvised -			1636	16-13113-00-BR	SANGAMON	37	32
PLOT DATE = 10/13/2022	DATE = 09/07/2022	REvised -	SCALE: 5H:2V	SHEET NO. 13 OF 18 SHEETS	STA. 11+40.00 TO STA. 11+40.00	ILLINOIS FED. AID PROJECT ZAGJ (418)				

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 = 180640-sh1-xssheets.dgn
 USER NAME = ofoley
 DESIGNED - J.W.F.
 DRAWN - T.W.K.
 CHECKED - S.W.M.
 DATE - 09/07/2022
 PLOT SCALE = \$SCALE\$
 PLOT DATE = 10/13/2022

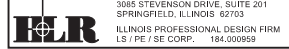
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STATE OF ILLINOIS
 SANGAMON COUNTY HIGHWAY DEPARTMENT

STATION CROSS SECTIONS

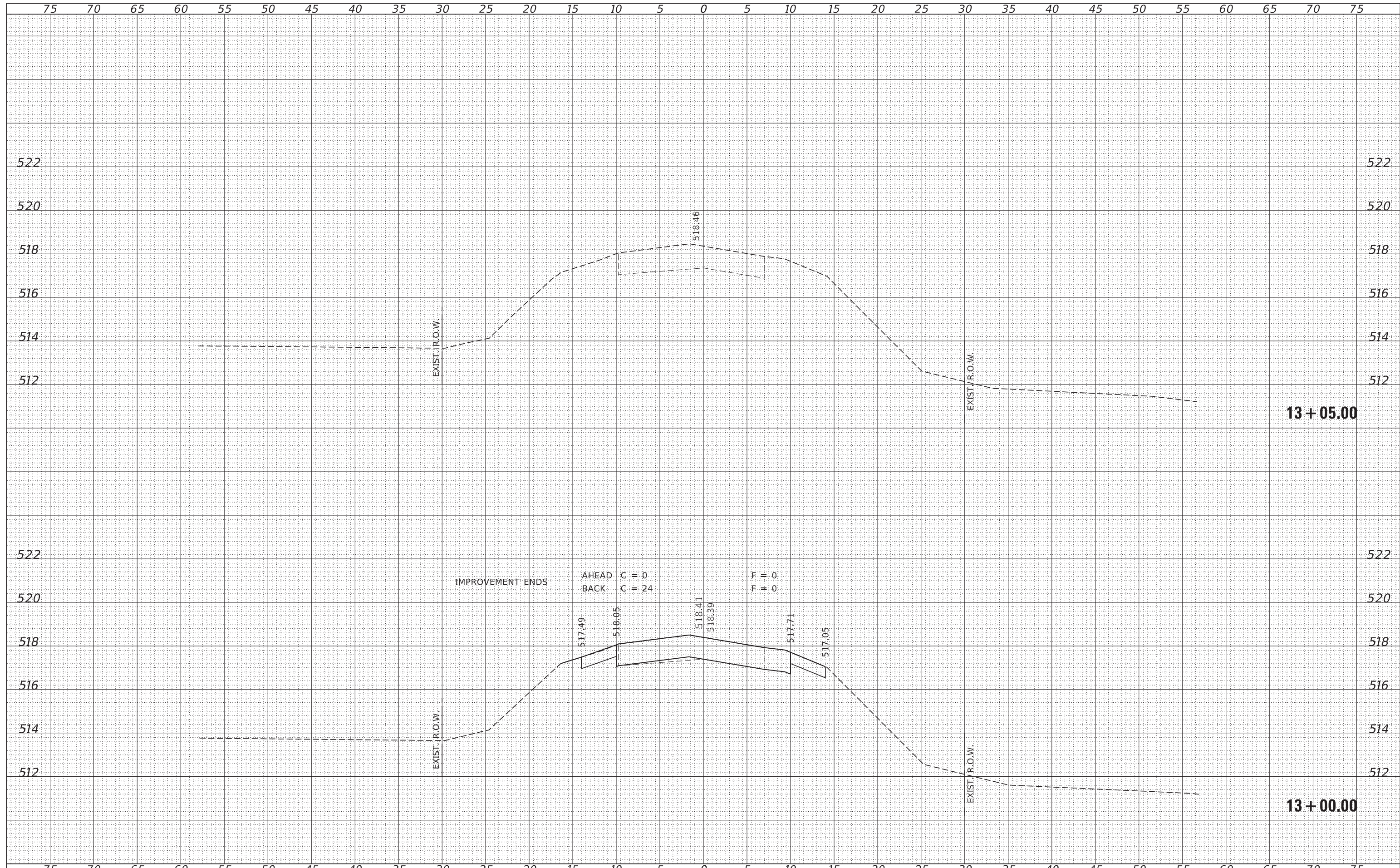
SCALE: 5H:2V SHEET NO. 16 OF 18 SHEETS STA. 12+00.00 TO STA. 12+50.00

F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1636	16-13113-00-BR	SANGAMON	37	35
GARDNER ROAD DISTRICT			CONTRACT NO. 93785	
ILLINOIS FED. AID PROJECT ZAGJ (418)				



DATE	
BY	
FINISHED SURVEY	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
AREAS CHECKED	

DATE	
BY	
ORIGINAL SURVEY	
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TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
AREAS CHECKED	



FILE NAME = 180640-sh1-xssheets.dgn
 USER NAME = ofoley
 DESIGNED - J.W.F.
 DRAWN - T.W.K.
 CHECKED - S.W.M.
 DATE - 09/07/2022
 PLOT SCALE = \$SCALE\$
 PLOT DATE = 10/13/2022

REVISIONS
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 REVISED -

STATE OF ILLINOIS
SANGAMON COUNTY HIGHWAY DEPARTMENT

STATION CROSS SECTIONS
 SCALE: 5H:2V
 SHEET NO. 17 OF 18 SHEETS
 STA. 13+00.00 TO STA. 13+05.00

F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1636	16-13113-00-BR	SANGAMON	37	36
GARDNER ROAD DISTRICT		CONTRACT NO. 93785		
ILLINOIS FED. AID PROJECT ZAGJ (418)				

