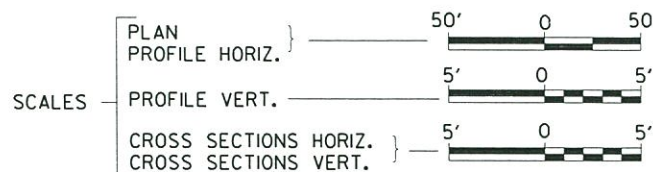
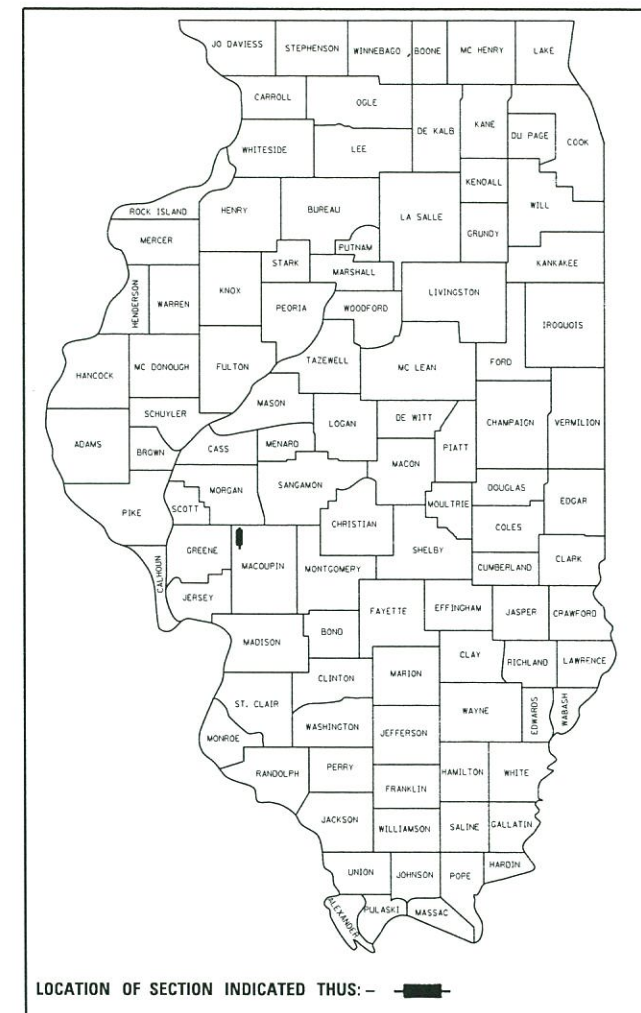


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED
SURFACE TRANSPORTATION PROGRAM – BRIDGE
MACOUPIN COUNTY
SECTION 13-00098-00-BR
F.A.S. 616 (CH 38) OVER BIG APPLE CREEK
PROJECT NO. BXVI(265)
JOB NUMBER C-96-233-14

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
616	13-00098-00-BR	MACOUPIN	31	1
FED. ROAD DIST. NO. 7		ILLINOIS	CONTRACT NO. 93662	

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1.	COVER SHEET
2.	GENERAL NOTES, TYPICAL SECTIONS, DETAILS, PAVEMENT DESIGN INFORMATION
3.	SUMMARY OF QUANTITIES, SCHEDULES OF QUANTITIES
4.	TRAFFIC CONTROL PLAN
5.	STORMWATER POLLUTION PREVENTION PLAN
6.	PLAN AND PROFILE
7.-19.	STRUCTURE PLANS
20.-31.	CROSS SECTIONS



REQUIRED HIGHWAY STANDARDS

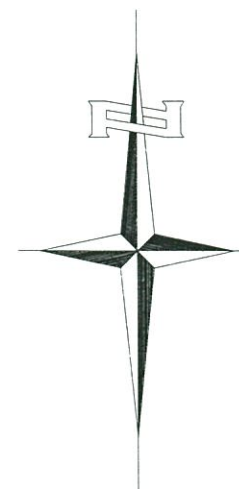
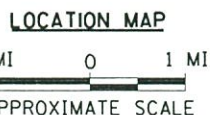
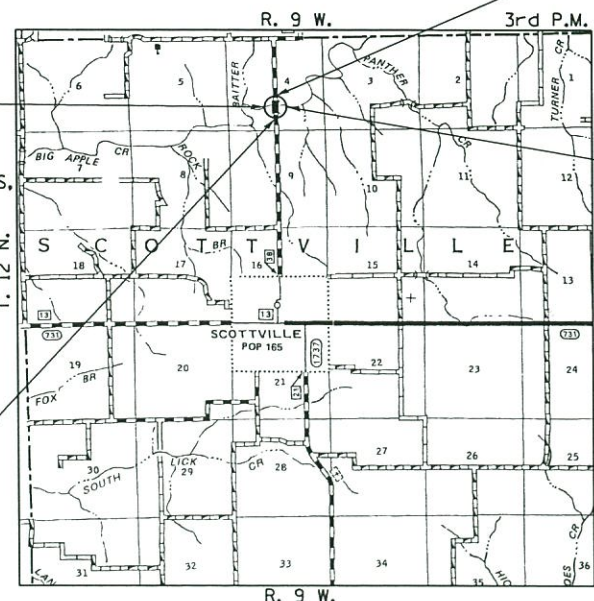
- 000001-06
- 280001-07
- 515001-03
- 701901-06 **07**
- 725001-01
- BLR 21-9

EXISTING STRUCTURE NO. 059-3000
 THREE SPAN PPC DECK BEAM SUPERSTRUCTURE ON SOLID STEM CONCRETE PIERS SUPPORTED BY CONCRETE FOOTINGS ON TIMBER PILES AND CAST-IN-PLACE METAL SHELL PILE BENT ABUTMENTS WITH CONCRETE SLOPE WALLS, 171'-2" BK TO BK, AND 24'-0" O TO O DECK, 21° LT AH. SKEW. (TO BE REMOVED)

SECTION 13-00098-00-BR ENDS STATION 23+50.00

PROPOSED STRUCTURE SN 059-3017
 THREE SPAN 27" & 33" PPC DECK BEAM SUPERSTRUCTURE ON CONCRETE ENCASED PILE BENT PIERS AND CONCRETE SPILL-THRU PILE BENT ABUTMENTS, 207'-0" BK TO BK, AND 30'-0" O TO O DECK, 15° LT AH. SKEW.

SECTION 13-00098-00-BR BEGINS STATION 15+50.00



UTILITY COMPANIES

SCOTTVILLE RURAL WATER COMPANY
 SCOTTVILLE, ILLINOIS

ILLINOIS RURAL ELECTRIC
 WINCHESTER, ILLINOIS

FRONTIER COMMUNICATIONS
 JACKSONVILLE, ILLINOIS

J.U.L.I.E.
 JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
 1-800-892-0123
 OR 811

NET LENGTH OF PROJECT = 800.00 FEET = 0.152 MILES
 DESIGN CLASSIFICATION: MINOR COLLECTOR (NON-URBAN)
 DESIGN ADT = 125 (15)
 DESIGN SPEED = 40 MPH

Hutchison Engineering, Inc.
 JACKSONVILLE-SHOREWOOD
 PEORIA-QUAD CITIES

2017

JOB#3417

APPROVED September 14 2017
Thomas A Reinhart
 MACOUPIN COUNTY ENGINEER

PASSED 12-5 2017
Chris Isbell
 DISTRICT SIX ENGINEER OF
 LOCAL ROADS & STREETS

PASSED 12-5 2017
Jeff M Smith
 REGION FOUR ENGINEER
 STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION



Jeff M Smith
 SIGNATURE
 ENGINEER'S SEAL

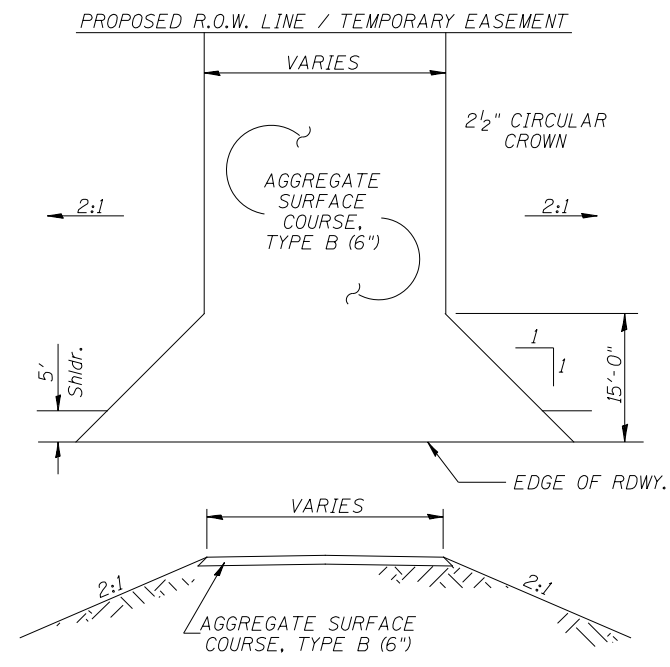
HOT-MIX ASPHALT MIXTURE REQUIREMENTS

MIXTURE USE	BINDER	SURFACE (MIX "C")
AC/PG	PG 64-22	PG 64-22
DESIGN AIR VOIDS	4% @ N50	4% @ N50
MIX COMPOSITION	IL-19.0	IL-9.5 or IL-12.5

If RAP option is selected, the asphalt cement grade may need to be adjusted. This will be determined by the Engineer.

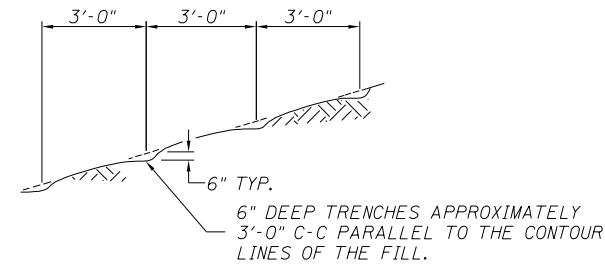
**STRUCTURAL DESIGN INFORMATION
COUNTY HIGHWAY 38**

ROAD CLASSIFICATION: CLASS IV 80,000 lb./20 YEAR DESIGN
 STRUCTURAL DESIGN TRAFFIC:
 PV = 110 SU = 11 MU = 4
 PERCENT OF STRUCTURAL DESIGN TRAFFIC IN DESIGN LANE:
 P = 88% S = 9% M = 3%
 DESIGN E_{r1} : 3 ksi
 ASPHALT PAVEMENT THICKNESS: 3 3/4"
 AGGREGATE BASE COURSE, TYPE A: 8"



PROPOSED FIELD ENTRANCES

STA 16+90 LT (20' WIDE)
 STA 18+30 RT (20' WIDE)
 STA 21+47 LT (16' WIDE)



NOTE: ALL SLOPES 3:1 OR STEEPER AND GREATER THAN 5' IN HEIGHT SHALL BE CONTOUR PLOWED AS SHOWN IN DETAIL. COST SHALL BE INCLUDED WITH SEEDING, CLASS 2 (SPECIAL).

DETAIL OF CONTOUR PLOWING

GENERAL NOTES

PLAN QUANTITIES FOR TREE REMOVAL HAVE BEEN BASED ON ALL TREES WITHIN THE PROPOSED RIGHT OF WAY. THIS QUANTITY MAY BE REVISED DURING CONSTRUCTION, AT THE DIRECTION OF THE ENGINEER, BY DELETING FROM THE TREE REMOVAL QUANTITIES, SUCH TREES THAT DO NOT INTERFERE WITH THE PROPOSED CONSTRUCTION.

THE REMOVAL OF EXISTING HOT-MIX ASPHALT SURFACE AND GRAVEL OR CRUSHED STONE BASE COURSE WHICH MAY BE NECESSARY FOR THE CONSTRUCTION OF THE PROJECT SHALL BE REMOVED AS EARTH EXCAVATION AND NO COMPENSATION WILL BE ALLOWED FOR ADDITIONAL LABOR OR EQUIPMENT REQUIRED.

ALL WASTE OR UNDESIRABLE MATERIAL AS IDENTIFIED BY THE ENGINEER SHALL BE DISPOSED OF OUTSIDE THE LIMITS OF THE RIGHT OF WAY AT THE CONTRACTOR'S EXPENSE.

ALL EXISTING PRIVATELY OWNED UTILITIES REQUIRING ADJUSTMENT WILL BE MADE BY THE UTILITY COMPANY INVOLVED. WHERE NO PROVISIONS HAVE BEEN MADE FOR ADJUSTMENTS ON THE PLANS, NO ADDITIONAL COMPENSATION WILL BE ALLOWED DUE TO DELAYS OR INCONVENIENCES CAUSED BY THE SAID UTILITY ADJUSTMENTS.

THE PROFILE GRADE ELEVATIONS SHOWN ON THE PLAN AND PROFILE SHEETS AND IN THE STATION CROSS SECTIONS ARE TO THE TOP OF THE FINISHED SURFACE.

ANY REFERENCE TO STANDARDS THROUGHOUT THE PLANS SHALL BE INTERPRETED TO BE THE LATEST STANDARDS OF THE ILLINOIS DEPARTMENT OF TRANSPORTATION.

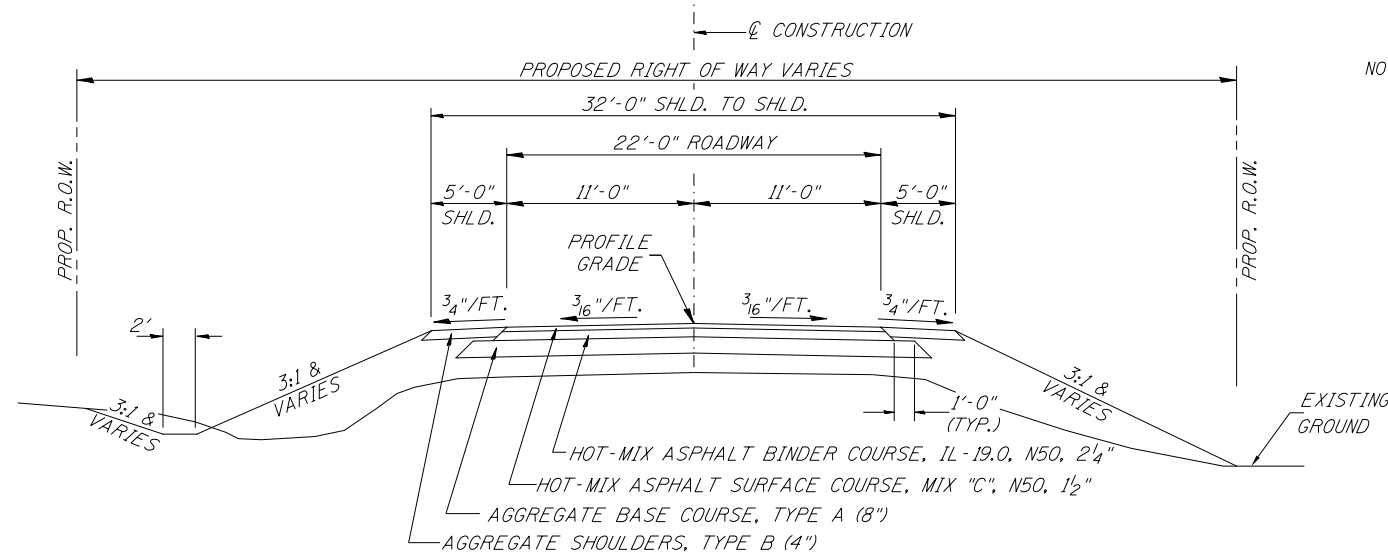
THE LOCATION OF UNDERGROUND UTILITIES SHOWN ON THE PLANS REPRESENTS THE BEST KNOWLEDGE OF THE COUNTY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS OF UNDERGROUND INSTALLATIONS BEFORE STARTING CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL INDEMNIFY THE COUNTY, ITS OFFICERS AND EMPLOYEES AGAINST ALL CLAIMS DUE TO DAMAGE TO CORPORATE OR PRIVATE PROPERTY RESULTING FROM HIS CONSTRUCTION OPERATIONS AS DESCRIBED IN ARTICLES 107.20 AND 107.26 OF THE STANDARD SPECIFICATIONS.

THE CONTRACTOR MAY BE REQUIRED TO CONDUCT SOME OF HIS GRADING AND TRENCHING OPERATIONS AROUND TRANSMISSION POLES AND UNDER TRANSMISSION LINES. THE ADDED COST OF SO DOING SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION.

MATERIAL FOR PIPE CULVERTS CLASS D SHALL BE REINFORCED CONCRETE CULVERT OR ALUMINIZED STEEL TYPE 2 CORRUGATED PIPE. NO OTHER MATERIAL WILL BE ACCEPTED.

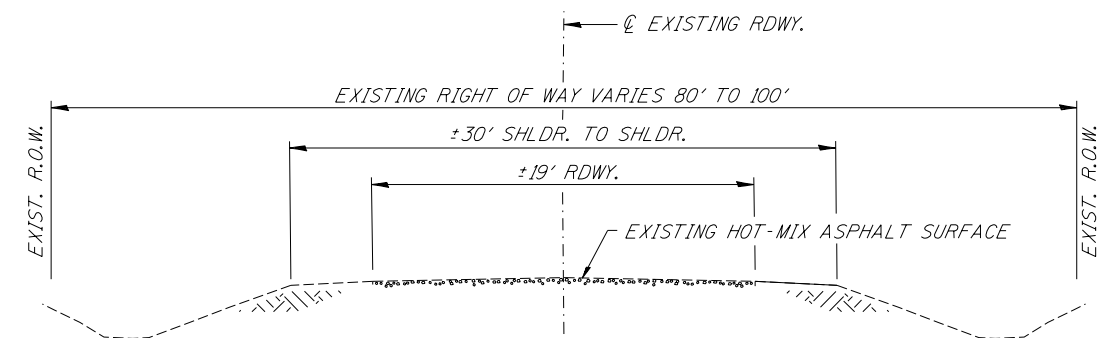
WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND PRESERVE PROPERTY MARKERS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR, OR AGENT, HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.

ALL ELEVATIONS SHOWN REFER TO U.S.G.S. MEAN SEA LEVEL DATUM.



PROPOSED TYPICAL SECTION

STA. 15+50.00 TO STA. 19+02.50
 STA. 21+09.50 TO STA. 23+50.00
 EXCEPT TRANSITIONS
 BRIDGE OMISSION
 STA. 19+02.50 TO STA. 21+09.50



EXISTING TYPICAL SECTION

FILE NAME = V:\Bridge\3417-Macoupin\3417\001.dgn	USER NAME = JHutchison	DESIGNED -	REVISED -
		DRAWN -	REVISED -
		CHECKED -	REVISED -
		DATE -	REVISED -

**MACOUPIN COUNTY
 COUNTY HIGHWAY 38
 OVER BIG APPLE CREEK**

GENERAL NOTES, DETAILS, TYPICAL SECTIONS, PAVEMENT DESIGN INFORMATION		
SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA. 15+50.00 TO STA. 23+50.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
616	13-00098-00-BR	MACOUPIN	31	2
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 93662	
			FED. AID PROJECT BXV1(265)	

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	QUANTITY
20100500	TREE REMOVAL, ACRES	ACRE	0.3
20200100	EARTH EXCAVATION	CU YD	1,940
20300100	CHANNEL EXCAVATION	CU YD	1,450
20400800	FURNISHED EXCAVATION	CU YD	2,725
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	750
28000305	TEMPORARY DITCH CHECKS	FOOT	420
28000400	PERIMETER EROSION BARRIER	FOOT	185
28000500	INLET AND PIPE PROTECTION	EACH	3
28200200	FILTER FABRIC	SQ YD	300
28300400	AGGREGATE DITCH	TON	159
35100100	AGGREGATE BASE COURSE, TYPE A	TON	695
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	168
40600275	BITUMINOUS MATERIALS (PRIME COAT)	POUND	3,913
40603080	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	183
40603310	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50	TON	209
44004000	PAVED DITCH REMOVAL	FOOT	258
48101200	AGGREGATE SHOULDERS, TYPE B	TON	115
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50104650	SLOPE WALL REMOVAL	SQ YD	930
50105220	PIPE CULVERT REMOVAL	FOOT	135
50200100	STRUCTURE EXCAVATION	CU YD	80
50200300	COFFERDAM EXCAVATION	CU YD	105
50201101	COFFERDAM (TYPE 1) (LOCATION-1)	EACH	1
50201102	COFFERDAM (TYPE 1) (LOCATION-2)	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	167.2
50300280	CONCRETE ENCASEMENT	CU YD	3.4
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	3,695
50400605	PRECAST PRESTRESSED CONCRETE DECK BEAMS (33" DEPTH)	SQ FT	2,453
50800105	REINFORCEMENT BARS	POUND	12,610
51201400	FURNISHING STEEL PILES HP10X42	FOOT	400
51201800	FURNISHING STEEL PILES HP14X73	FOOT	500
51202305	DRIVING PILES	FOOT	900
51203400	TEST PILE STEEL HP10X42	EACH	2
51203800	TEST PILE STEEL HP14X73	EACH	2
51500100	NAME PLATES	EACH	1
542D1060	PIPE CULVERTS, CLASS D, TYPE 2 15"	FOOT	98
542D1093	PIPE CULVERTS, CLASS D, TYPE 2 48"	FOOT	54
59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	19.6
67100100	MOBILIZATION	L SUM	1
72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	1.5
X2810208	STONE RIPRAP, CLASS A4 (SPECIAL)	TON	620
X7010216	TRAFFIC CONTROL AND PROTECTION (SPECIAL)	L SUM	1
XX006199	STEEL BRIDGE RAIL, TYPE SM (SPECIAL)	FOOT	414
XX008385	CONCRETE REMOVAL (SPECIAL)	EACH	1
Z0076600	TRAINEES	HOUR	500
Z0076604	TRAINEES TRAINING PROGRAM GRADUATE	HOUR	500

① SEE SPECIAL PROVISIONS
 # 0042
 Δ SPECIALTY ITEMS
 CONSTRUCTION CODE TYPE: 0010
 BRIDGE CODE TYPE: X080

PAVED DITCH REMOVAL

STATION TO STATION	SIDE	FOOT
15+50 - 16+58	LEFT	108
15+50 - 17+00	RIGHT	150
TOTAL		258

CONCRETE REMOVAL (SPECIAL)

STATION TO STATION	SIDE	WIDTH	EACH
20+67 - 21+03	RIGHT	6.7'	1
TOTAL			1

TREE REMOVAL, ACRES

STATION TO STATION	SIDE	WIDTH	LENGTH	AREA (ACRE)
15+50 - 19+25	RIGHT	31' AVG.	375'	0.26
18+75 - 19+30	LEFT	8' AVG.	55'	0.01
TOTAL				0.27
USE				0.3

TEMPORARY DITCH CHECKS

STATION	SIDE	FOOT
15+60	LEFT	12
15+60	RIGHT	12
15+70	LEFT	12
15+75	RIGHT	12
15+80	LEFT	12
15+90	LEFT	12
15+90	RIGHT	12
16+00	LEFT	12
16+05	RIGHT	12
16+10	LEFT	12
16+20	LEFT	12
16+20	RIGHT	12
16+30	LEFT	12
16+35	RIGHT	12
16+50	RIGHT	12
16+65	RIGHT	12
16+80	RIGHT	12
16+95	RIGHT	12
17+00	LEFT	12
17+10	LEFT	12
17+10	RIGHT	12
17+20	LEFT	12
17+25	RIGHT	12
17+30	LEFT	12
17+40	LEFT	12
17+40	RIGHT	12
17+50	LEFT	12
17+55	RIGHT	12
17+70	RIGHT	12
17+86	RIGHT	12
19+20	RIGHT	12
19+55	LEFT	12
20+50	RIGHT	12
20+90	LEFT	12
22+00	RIGHT	12
TOTAL		420

PIPE CULVERTS, CLASS D, TYPE 2 15"

STATION	SIDE	FOOT
16+90	LEFT	46
18+30	RIGHT	52
TOTAL		98

PIPE CULVERTS, CLASS D, TYPE 2 48"

STATION	SIDE	FOOT
21+47	LEFT	54
TOTAL		54

EARTHWORK SUMMARY

STATION TO STATION	EARTH EXCAVATION	CHANNEL EXCAVATION	STRUCTURE EXCAVATION	COFFERDAM EXCAVATION	FILL	WASTE (SHORTAGE)
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
RDWY 15+50.00 - 19+02.50	1,253				3,623	(2,683)
RDWY 21+09.50 - 23+50.00	685				557	(43)
CHANNEL		1,450				
STRUCTURE			80			
COFFERDAM				105		
TOTAL	1,938	1,450	80	105	4,180	(2,726)
USE	1,940	1,450	80	105	-	(2,725)

(@ 25% SHRINKAGE)

PERIMETER EROSION BARRIER

STATION TO STATION	SIDE	FOOT
16+43 - 16+88	LEFT	55
18+08 - 18+60	RIGHT	70
21+04 - 21+57	LEFT	60
TOTAL		185

INLET AND PIPE PROTECTION

STATION	SIDE	EACH
16+43	LEFT	1
18+08	RIGHT	1
21+57	LEFT	1
TOTAL		3

PIPE CULVERT REMOVAL

STATION	SIZE	SIDE	FOOT
16+75	12"	LEFT	34
18+33	12"	RIGHT	43
21+39	48"	LEFT	58
TOTAL			135

AGGREGATE SHOULDERS, TYPE B

STATION TO STATION	SIDE	WIDTH	LENGTH	TON
15+50.00 - 16+00.00	LEFT	3.50' AVG.	50.00'	4
15+50.00 - 16+00.00	RIGHT	3.50' AVG.	50.00'	4
16+00.00 - 16+56.23	LEFT	5.00'	56.23'	7
16+00.00 - 18+07.50	RIGHT	5.00'	207.50'	24
17+08.19 - 19+06.12	LEFT	5.00'	197.93'	23
18+52.50 - 18+98.88	RIGHT	5.00'	46.38'	5
21+05.88 - 23+00.00	RIGHT	5.00'	194.12'	23
21+13.12 - 21+21.29	LEFT	5.00'	8.17'	1
21+64.22 - 23+00.00	LEFT	5.00'	135.78'	16
23+00.00 - 23+50.00	LEFT	3.50' AVG.	50.00'	4
23+00.00 - 23+50.00	RIGHT	3.50' AVG.	50.00'	4
TOTAL				115

AGGREGATE SURFACE COURSE, TYPE B

STATION TO STATION	THICKNESS	WIDTH	LENGTH	TON
ENTRANCE - 16+90 LT	0.50'	20' & VAR.	60.4'	53
ENTRANCE - 18+30 RT	0.50'	20' & VAR.	83.0'	68
ENTRANCE - 21+47 LT	0.50'	16' & VAR.	66.7'	47
TOTAL				168

AGGREGATE DITCH**

STATION TO STATION	SIDE	WIDTH	TON	FILTER FABRIC (SQ YD)
15+50 - 18+08	RIGHT	6'	93	175
15+50 - 16+43	LEFT	6'	34	64
16+88 - 17+75	LEFT	6'	32	60
TOTAL			159	299

** Aggregate Ditch shall conform to material type B-3 of the Standard Specifications

PAVEMENT SCHEDULE

STATION TO STATION	WIDTH	LENGTH	PRIME COAT POUND 0.25 LB/SQ FT	HOT-MIX ASPHALT SURF CSE TON 112#/SQ YD/IN	HOT-MIX ASPHALT BINDER CSE TON 112#/SQ YD/IN	AGGREGATE BASE COURSE, TYPE A TON
15+50.00 - 16+00.00	22.72' AVG.	50.00'	284			
16+00.00 - 19+02.50	24.63'	302.50'	1,863			
21+09.50 - 23+00.00	24.63'	190.50'	1,173			
23+00.00 - 23+50.00	22.66' AVG.	50.00'	283			
15+50.00 - 16+00.00	20.22' AVG.	50.00'		9		
16+00.00 - 19+02.50	22.13'	302.50'		63		
BRIDGE DECK	30.00'	207.00'	*310	88		
21+09.50 - 23+00.00	22.13'	190.50'		40		
23+00.00 - 23+50.00	20.15' AVG.	50.00'		9		
15+50.00 - 16+00.00	20.53' AVG.	50.00'			14	
16+00.00 - 19+02.50	22.44'	302.50'			95	
21+09.50 - 23+00.00	22.44'	190.50'			60	
23+00.00 - 23+50.00	20.46' AVG.	50.00'			14	
15+50.00 - 16+00.00	23.39' AVG.	50.00'				55
16+00.00 - 19+02.50	25.29'	302.50'				359
21+09.50 - 23+00.00	25.29'	190.50'				226
23+00.00 - 23+50.00	23.31' AVG.	50.00'				55
TOTAL			3,913	209	183	695

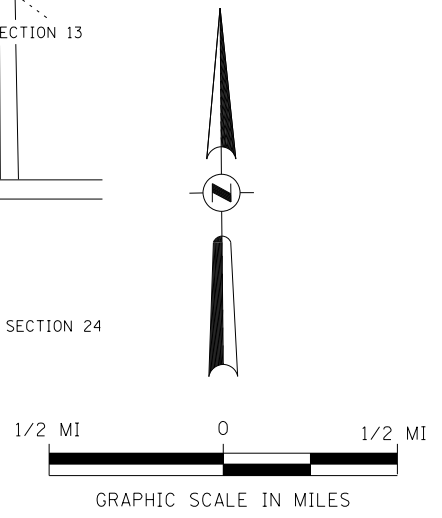
*0.05 LB/SQ FT

R 9 W, 3rd PM



- 1 ROAD CLOSED
2 1/4 MILES AHEAD
LOCAL TRAFFIC ONLY
R11-3
- 2 ROAD CLOSED
1 3/4 MILES AHEAD
LOCAL TRAFFIC ONLY
R11-3
- 3 ROAD CLOSED
3/4 MILES AHEAD
LOCAL TRAFFIC ONLY
R11-3
- 4 ROAD CLOSED
AHEAD
W20-3
- 5 ROAD CLOSED
500 FT
W20-3
- 6 TYPE III BARRICADES

SEE STANDARD BLR 21
AND SPECIAL PROVISIONS



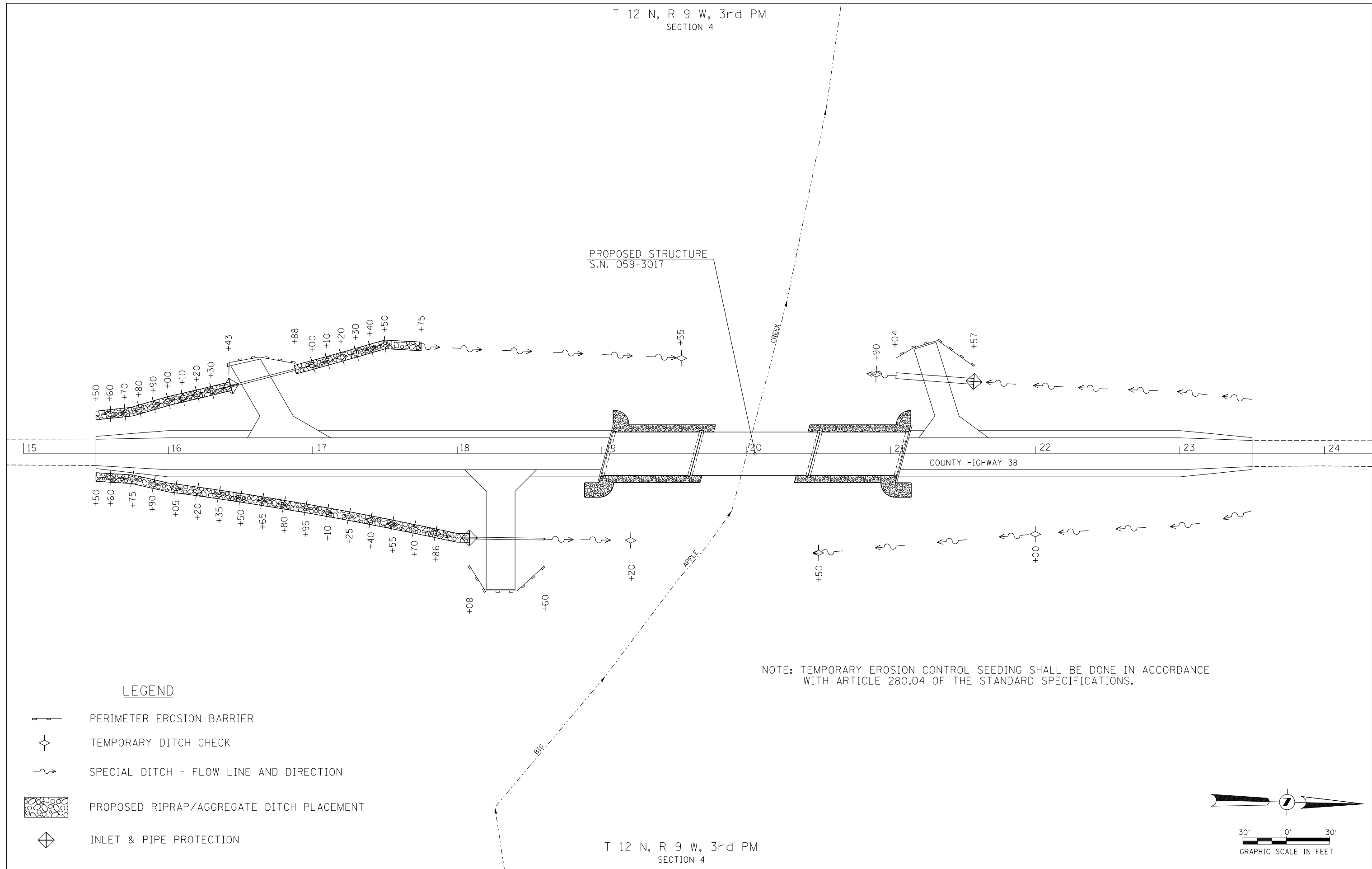
FILE NAME = V:\Bridge\3417-Macoupin\3417h001.dgn	USER NAME = JHutchison	DESIGNED -	REVISED -
		DRAWN -	REVISED -
		CHECKED -	REVISED -
		DATE - 03/02/09	REVISED -

**MACOUPIN COUNTY
COUNTY HIGHWAY 38
OVER BIG APPLE CREEK**

TRAFFIC CONTROL PLAN			
SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA. 15+50.00	TO STA. 23+50.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
616	13-00098-00-BR	MACOUPIN	31	4
FED. ROAD DIST. NO. 7 (ILLINOIS)			FED. AID PROJECT BXV(265)	

T 12 N, R 9 W, 3rd PM
SECTION 4








PROPOSED STRUCTURE
S.N. 059-3017

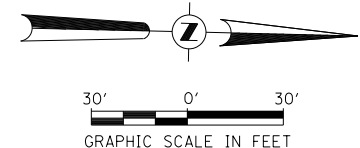
COUNTY HIGHWAY 38

NOTE: TEMPORARY EROSION CONTROL SEEDING SHALL BE DONE IN ACCORDANCE WITH ARTICLE 280.04 OF THE STANDARD SPECIFICATIONS.

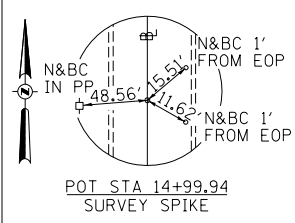
LEGEND

-  PERIMETER EROSION BARRIER
-  TEMPORARY DITCH CHECK
-  SPECIAL DITCH - FLOW LINE AND DIRECTION
-  PROPOSED RIPRAP/AGGREGATE DITCH PLACEMENT
-  INLET & PIPE PROTECTION

T 12 N, R 9 W, 3rd PM
SECTION 4

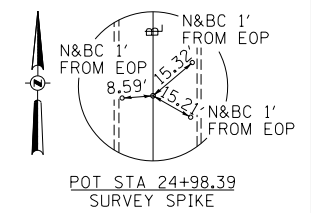


FILE NAME = V:\Bridge\3417-Macoupin\3417s001.dgn	USER NAME = JHutchison	DESIGNED -	REVISED -	MACOUPIN COUNTY COUNTY HIGHWAY 38 OVER BIG APPLE CREEK	STORM WATER POLLUTION PREVENTION PLAN		F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = 60.0000' / in.	CHECKED -	REVISED -				616	13-00098-00-BR	MACOUPIN	31	5
PLOT DATE = 9/22/2017	DATE -	REVISED -	SCALE: 1"=30'	SHEET NO. 1 OF 1 SHEETS	STA. 15+50.00 TO STA. 23+50.00	FED. ROAD DIST. NO. 7 ILLINOIS	CONTRACT NO. 93662 FED. AID PROJECT BXVI(265)				



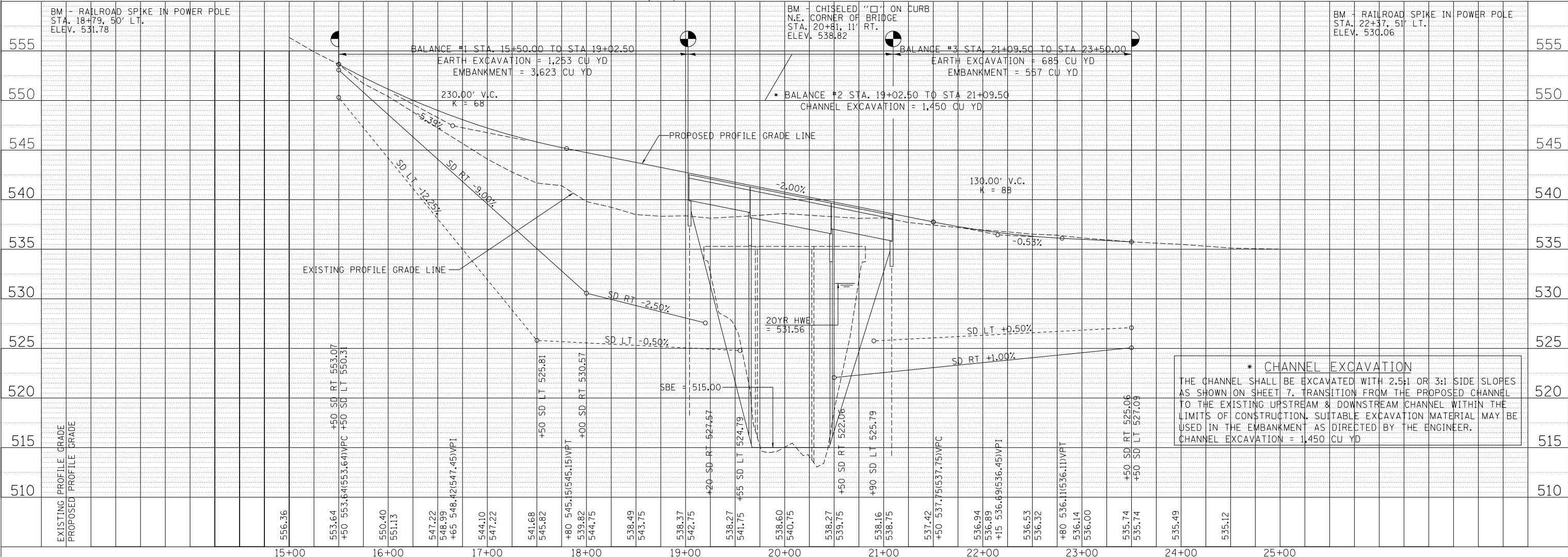
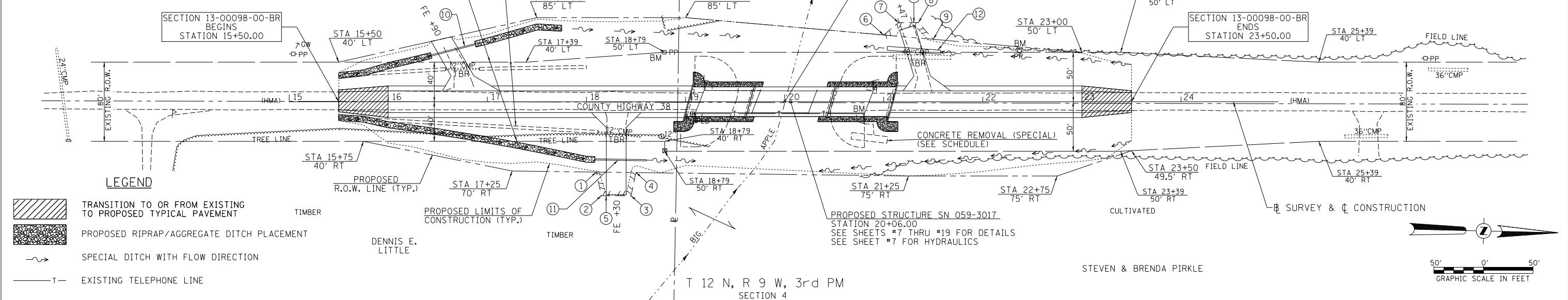
- ⑩ PROPOSED PIPE CULVERT,
CLASS D, TYPE 2, 15"x46"
USFL = 538.88, STA 16+43.31, 46.8' LT
DSFL = 533.42, STA 16+87.86, 58.2' LT
- ⑪ PROPOSED PIPE CULVERT,
CLASS D, TYPE 2, 15"x52"
USFL = 530.36, STA 18+08.40, 58.3' RT
DSFL = 529.06, STA 18+60.40, 59.0' RT
- ⑫ PROPOSED PIPE CULVERT,
CLASS D, TYPE 2, 48"x54"
USFL = 526.13, STA 21+57.47, 50.1' LT
DSFL = 525.86, STA 21+03.62, 54.0' LT

- ① STA 18+10
71.1' RT
- ② STA 18+15
95' RT
- ③ STA 18+45
95' RT
- ④ STA 18+50
71.6' RT
- ⑤ TEMPORARY EASEMENT FOR
PURPOSE OF RECONSTRUCTING
FIELD ENTRANCES
- ⑥ STA 21+00
67.5' LT
- ⑦ STA 21+15
80' LT
- ⑧ STA 21+35
80' LT
- ⑨ STA 21+50
63.1' LT



DATE	
BY	
PLAN	SURVEYED
	PLOTTED
	ALIGNED
	CHECKED
	DESIGNED
	NO. _____
	FILE NAME

DATE	
BY	
PROFILE	SURVEYED
	PLOTTED
	GRADES
	CHECKED
	STRUCTURE
	NOTATIONS
	CHPND
	NO. _____



*** CHANNEL EXCAVATION**
 THE CHANNEL SHALL BE EXCAVATED WITH 2.5:1 OR 3:1 SIDE SLOPES AS SHOWN ON SHEET 7. TRANSITION FROM THE PROPOSED CHANNEL TO THE EXISTING UPSTREAM & DOWNSTREAM CHANNEL WITHIN THE LIMITS OF CONSTRUCTION. SUITABLE EXCAVATION MATERIAL MAY BE USED IN THE EMBANKMENT AS DIRECTED BY THE ENGINEER.
 CHANNEL EXCAVATION = 1,450 CU YD

FILE NAME = V:\Bridge\3417-Macoupin\3417p001.dgn	USER NAME = JHutchison	DESIGNED -	REVISED -	MACOUPIN COUNTY COUNTY HIGHWAY 38 OVER BIG APPLE CREEK	PLAN AND PROFILE	SCALE: 1"=50'	SHEET NO. 1 OF 1 SHEETS	STA. 15+50.00 TO STA. 23+50.00	F.A.S. RTE. 616	SECTION 13-00098-00-BR	COUNTY MACOUPIN	TOTAL SHEETS 31	SHEET NO. 6
	PLOT SCALE = 100.0000' / in.	CHECKED -	REVISED -			FED. ROAD DIST. NO. 7 ILLINOIS	FED. AID PROJECT BXVI(265)						
	PLOT DATE = 9/22/2017	DATE -	REVISED -										

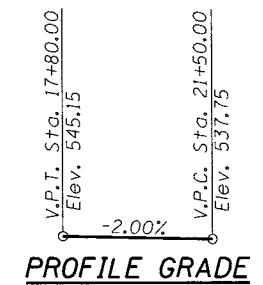
B.M.: RR Spike in Power Pole
Sta. 18+79, 50' Lt.
Elev. 531.78

RR Spike in Power Pole
Sta. 22+37, 51' Lt.
Elev. 530.06

**BIG APPLE CREEK
BUILT 201_ BY
MACOUPIN COUNTY
SEC. 13-00098-00-BR
C.H. 38 STATION 20+06.00
F.A. PROJ. BXVI(265)
STR. NO. 059-3017 LOADING HL-93**

NAME PLATE

Locate Name Plate at S.E. Wingwall
Corner of Bridge (See Std. 515001)

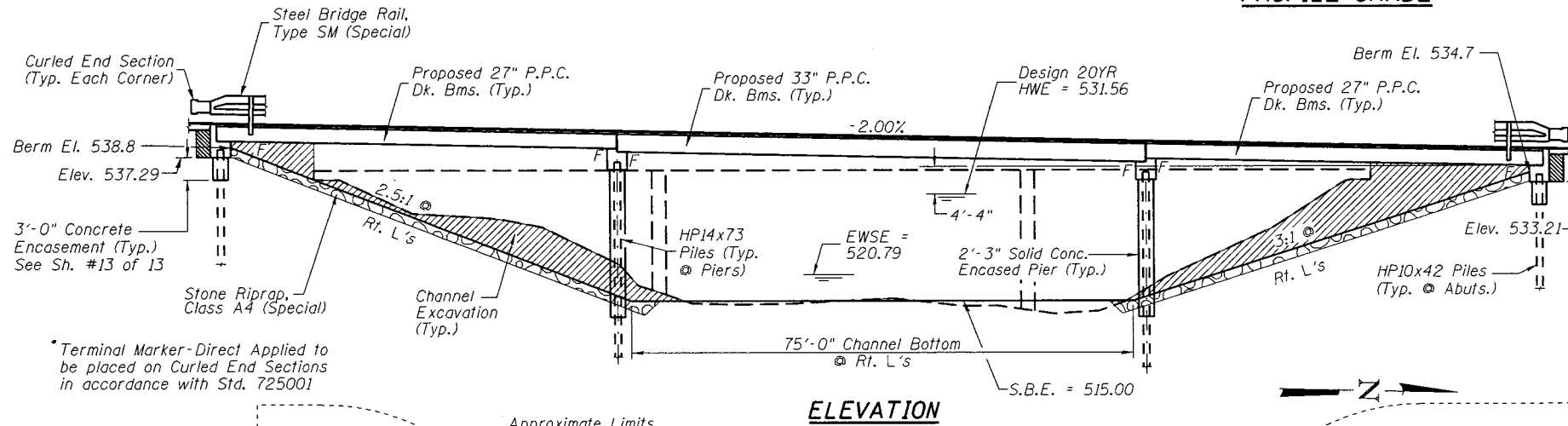


GENERAL NOTES

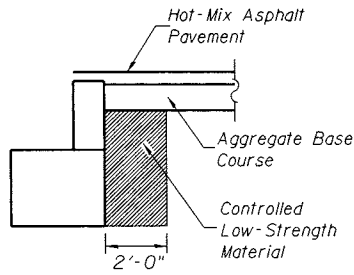
The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at the substructures specified or approved by the Engineer before ordering the remainder of the piles.
For Soil Boring Logs, See Special Provisions.
A Corrosion Inhibitor shall be used in the concrete for Precast Prestressed Concrete Deck Beams according to Article 1020.05(b)(10) of the Standard Specifications.
Reinforcement Bars shall conform to the requirements of ASTM A706 Grade 60. Reinforcement Bars designated (E) shall be epoxy coated.
Layout of the slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.
The top surface of the beams shall be finished according to the IDOT Manual for Fabrication of Precast Prestressed Concrete Products.

Existing Structure:
Three span PPC deck beam superstructure on solid stem concrete piers supported by concrete footings on timber piling, and cast in place metal shell pile bent abutments with concrete slopewalls. The structure is 171'-2" back to back of abutments, 24'-0" out to out deck with a 22'-0" driving surface, and is skewed 21° left ahead. Str. No. 059-3000

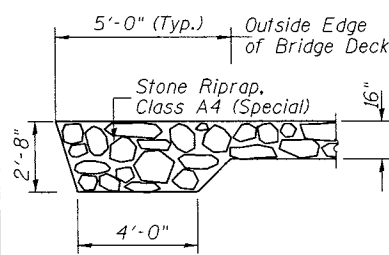
Salvage: See Special Provisions
Road to be closed to traffic during construction.



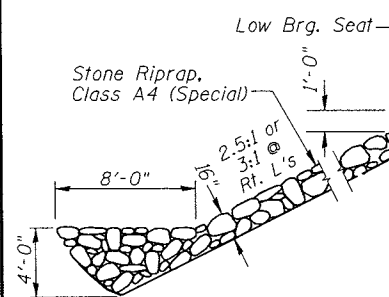
ELEVATION



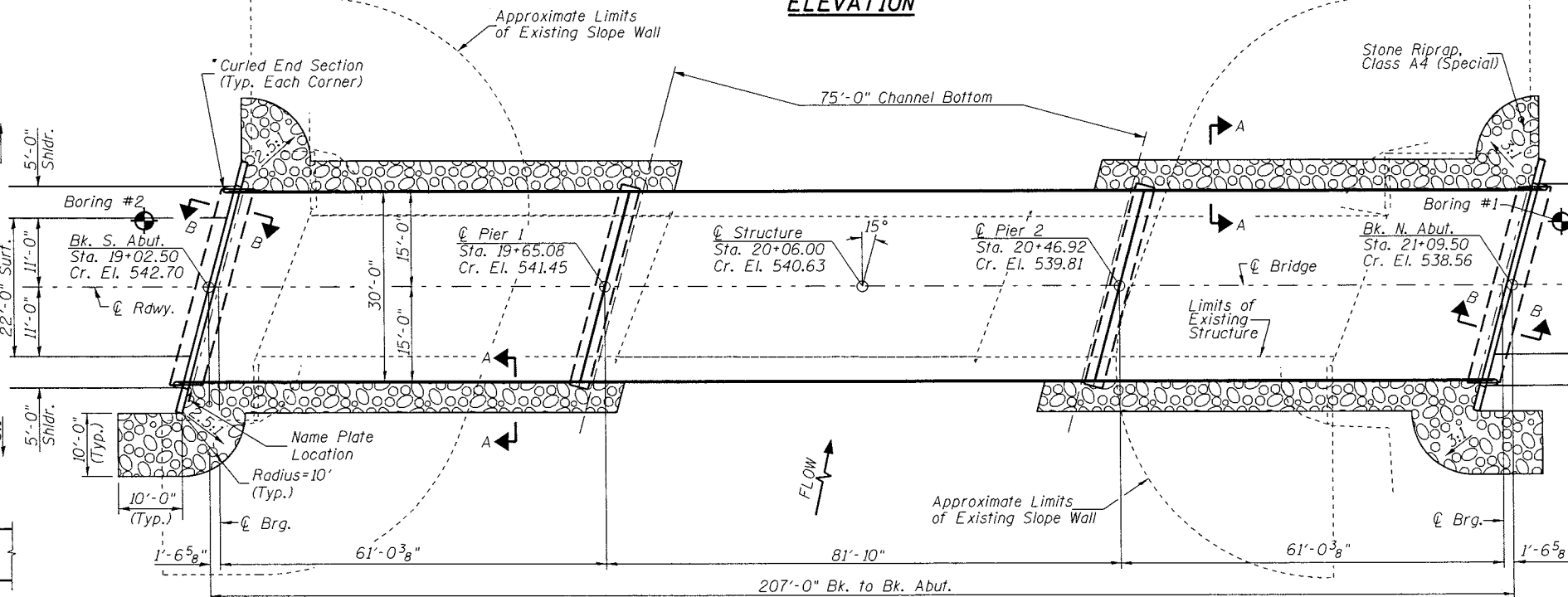
SECTION B-B



SECTION A-A



STONE RIPRAP DETAIL



PLAN

DESIGN SCOUR TABLE

Location	S. Abut	Pier 1	Pier 2	N. Abut
Design Scour Elevation	537.29	509.50	509.44	533.21

WATERWAY INFORMATION

Drainage Area = 74.16 Sq. Mi.		Low Grade Elev. = 534.35 @ Sta. 27+50.00					
Flood	Freq. Yr.	0 C.F.S.	Opening Sq. Ft.	Nat. H.W.E.	Head - Ft.	Headwater El.	
		Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	20	7,499	1,573	1,924	531.56	1.22	0.97
Base	100	10,900	1,689	2,065	532.42	2.05	1.48
						532.78	532.53
						534.47	533.90

DESIGNED	S.T.M.
CHECKED	C.T.M./J.E.H.
DRAWN	S.T.M.
CHECKED	C.T.M./J.E.H.

Construction of this project complies with IDNR,
Office of Water Resources Statewide Permit No. 2

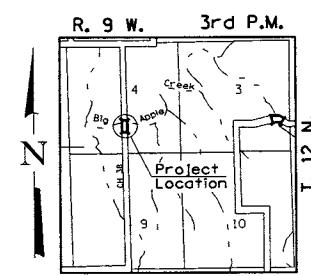
DESIGN SPECIFICATIONS
2014 AASHTO LRFD Bridge Design Specifications,
7th Edition with 2015 & 2016 Interims

DESIGN STRESSES

(FIELD UNITS) (PRECAST PRESTRESSED UNITS)
f'c = 3,500 p.s.i. f'c = 6,000 p.s.i.
f'ci = 5,000 p.s.i.
fy = 60,000 p.s.i. (Rein.) f's = 270,000 p.s.i. (1/2" Strands)
f'si = 201,960 p.s.i. (1/2" Strands)

LOADING HL-93

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



LOCATION SKETCH

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	CU YD	---	1,450	1,450
Stone Riprap, Class A4 (Special)	TON	---	620	620
Removal of Existing Structures	EACH	---	---	1
Slope Wall Removal	SO YD	---	930	930
Structure Excavation	CU YD	---	80	80
Cofferdam Excavation	CU YD	---	105	105
Concrete Structures	CU YD	---	167.2	167.2
Precast Prestressed Concrete Deck Beams (27" Depth)	SO FT	3,695	---	3,695
Precast Prestressed Concrete Deck Beams (33" Depth)	SO FT	2,453	---	2,453
Reinforcement Bars	POUND	---	12,610	12,610
Steel Bridge Rail, Type SM (Special)	FOOT	414	---	414
Furnishing Steel Piles HP10x42	FOOT	---	400	400
Furnishing Steel Piles HP14x73	FOOT	---	500	500
Driving Piles	FOOT	---	900	900
Test Pile Steel HP10x42	EACH	---	2	2
Test Pile Steel HP14x73	EACH	---	2	2
Concrete Encasement	CU YD	---	3.4	3.4
Name Plates	EACH	---	1	1
Bituminous Materials (Prime Coat)	POUND	310	---	310
Controlled Low-Strength Material	CU YD	---	19.6	19.6
Cofferdam (Type 1) (Location-1) (Pier #1)	EACH	---	1	1
Cofferdam (Type 1) (Location-2) (Pier #2)	EACH	---	1	1
Hot-Mix Asphalt Surface Course Mix "C", NSO	TON	88	---	88
Terminal Marker - Direct Applied	EACH	4	---	4

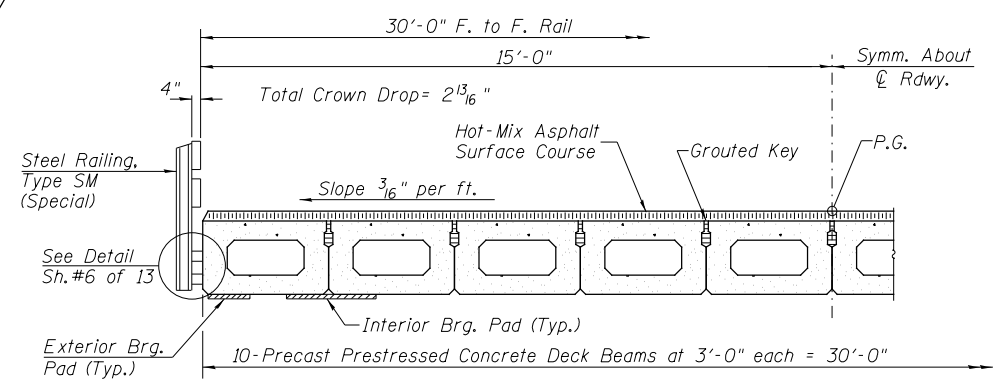
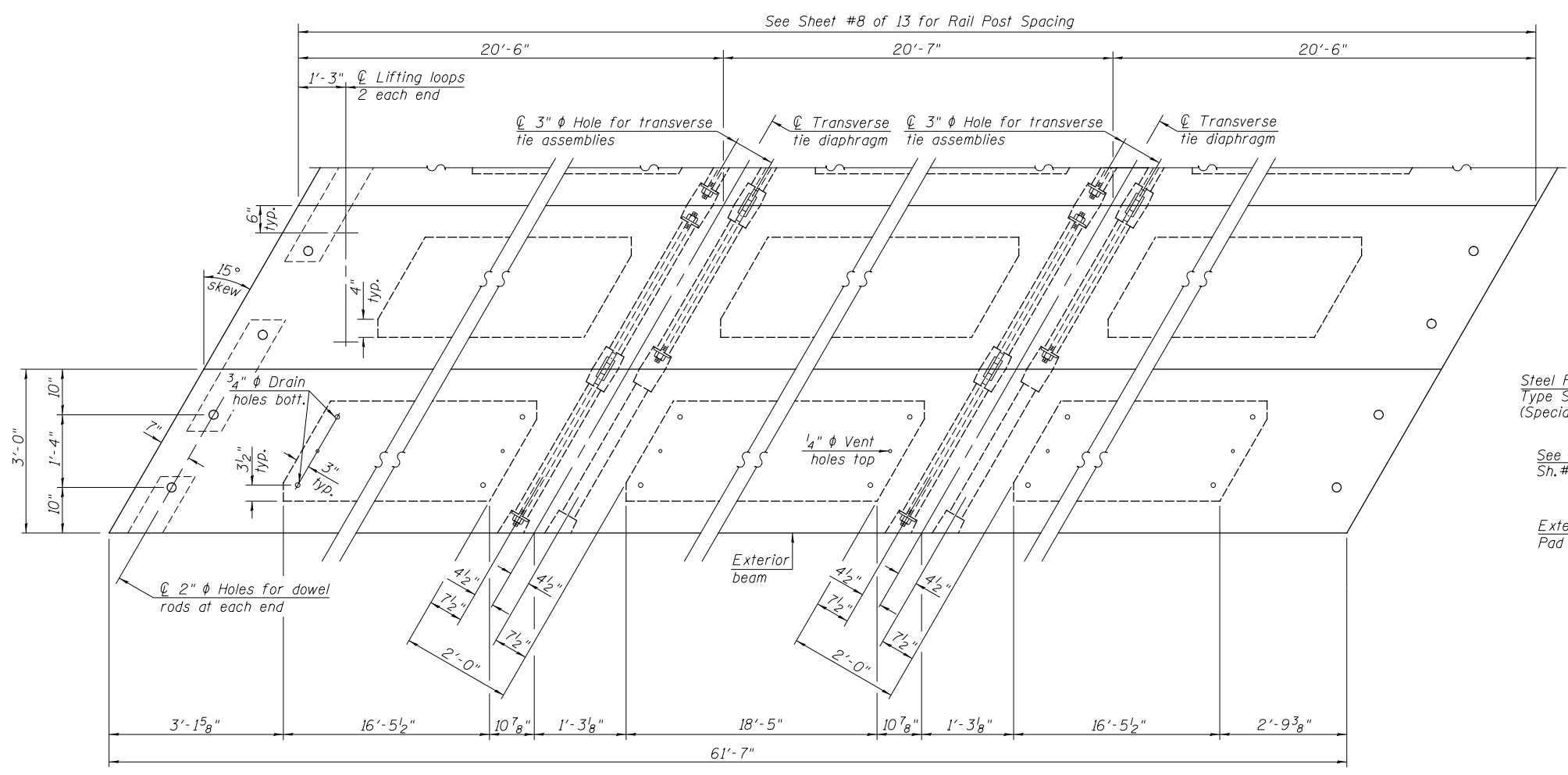
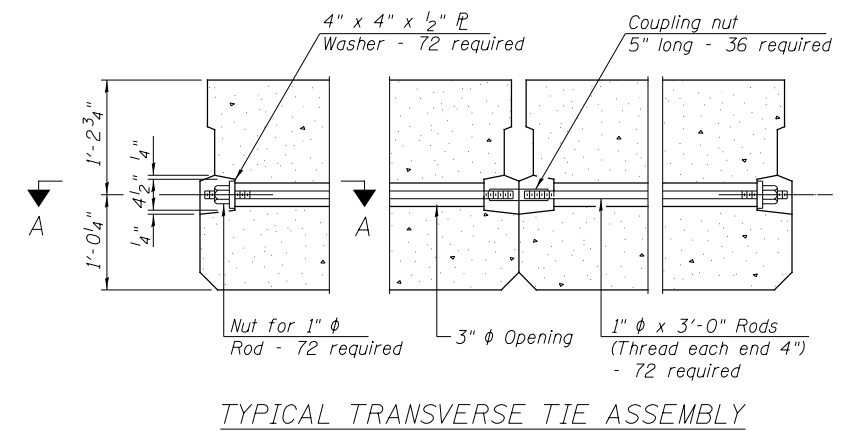
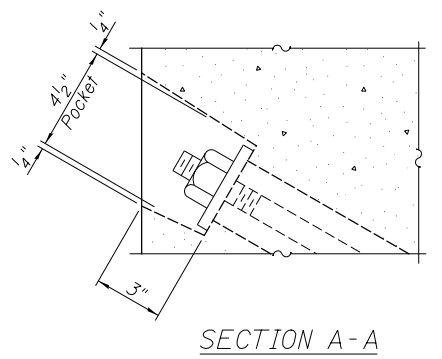
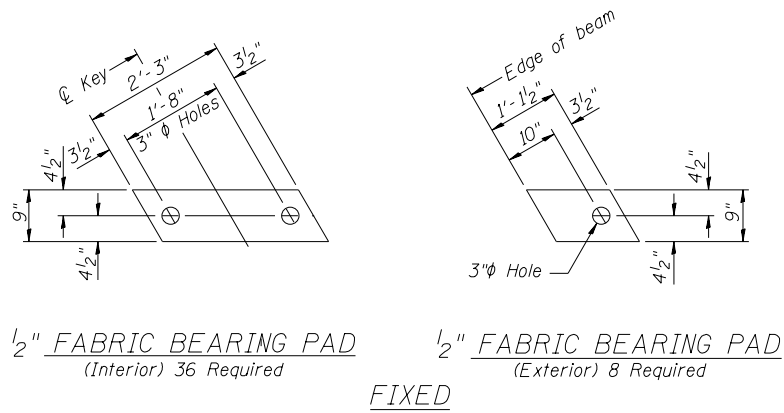
① See Special Provisions

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 Standard Specification for Highway Bridges.
This design complies with all requirements of the current AASHTO Guide Specifications for Seismic Design of highway bridges.

[Signature]
Illinois Structural No. 6440
Expires 11/30/2018

**GENERAL PLAN & ELEVATION
MACOUPIN COUNTY
SECTION 13-00098-00-BR
C.H. 38 OVER BIG APPLE CREEK**

SHEET NO. 1 13 SHEETS	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	616	13-00098-00-BR	MACOUPIN	31	7
	S.N. 059-3017		CONTRACT NO. 93662		
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT BXVI(265)			



BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Precast Prestressed Concrete Deck Beams (27" Depth)	SO FT	3,695

PLAN VIEW

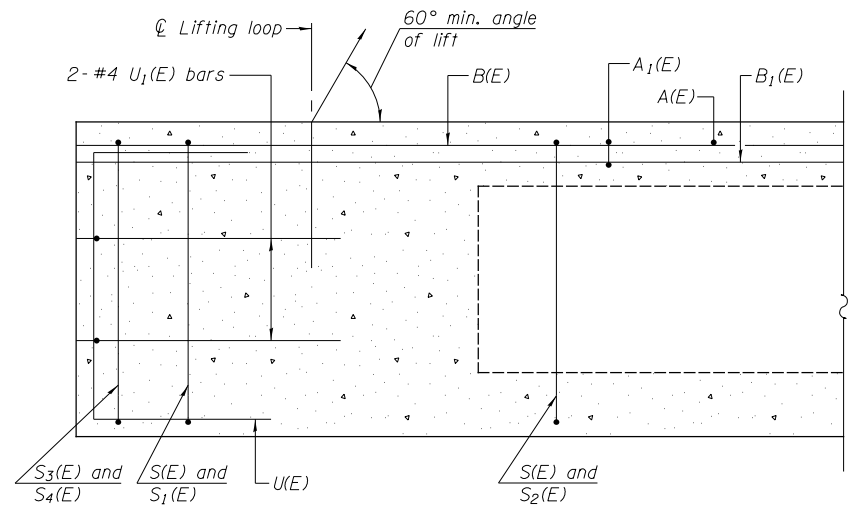
NOTES

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

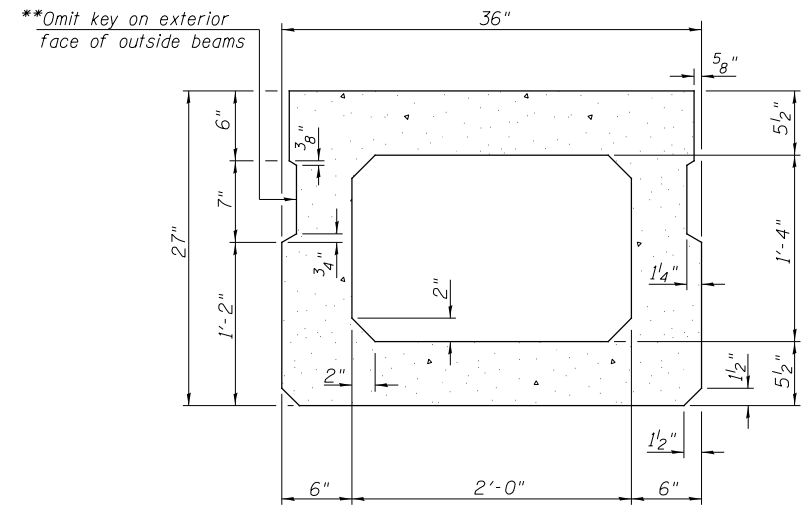
Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" ϕ rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.
 Reinforcement bars shall conform to ASTM A706, Grade 60.
 Two 3/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.
 A minimum 2 1/2" ϕ lifting pin shall be used to engage the lifting loops during handling.
 Corrosion Inhibitor, per Article 1020.05(b)(10) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.
 Compressive strength of prestressed concrete, $f'c$, shall be 6000 psi.
 Compressive strength of prestressed concrete at release, $f'ci$, shall be 5000 psi.

SUPERSTRUCTURE - SPANS 1 & 3
MACOUPIN COUNTY
SECTION 13-00098-00-BR
C.H. 38 OVER BIG APPLE CREEK

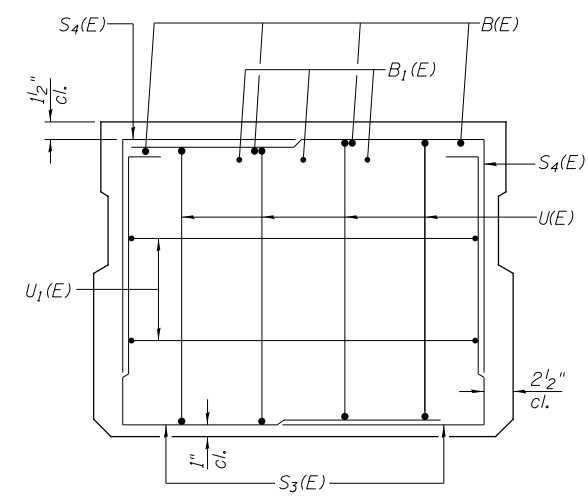
SHEET NO. 2	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
13 SHEETS	616	13-00098-00-BR	MACOUPIN	31	8
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 93662		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT BXV1(265)		



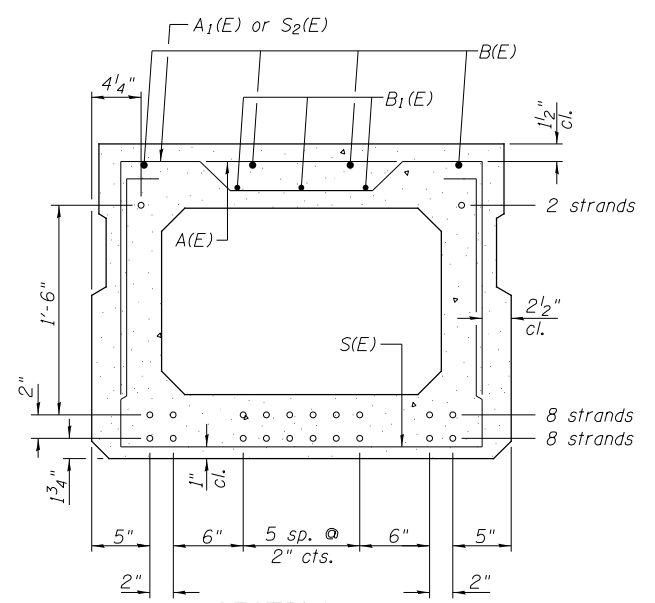
SECTION C-C



SECTION A-A (Showing Dimensions)



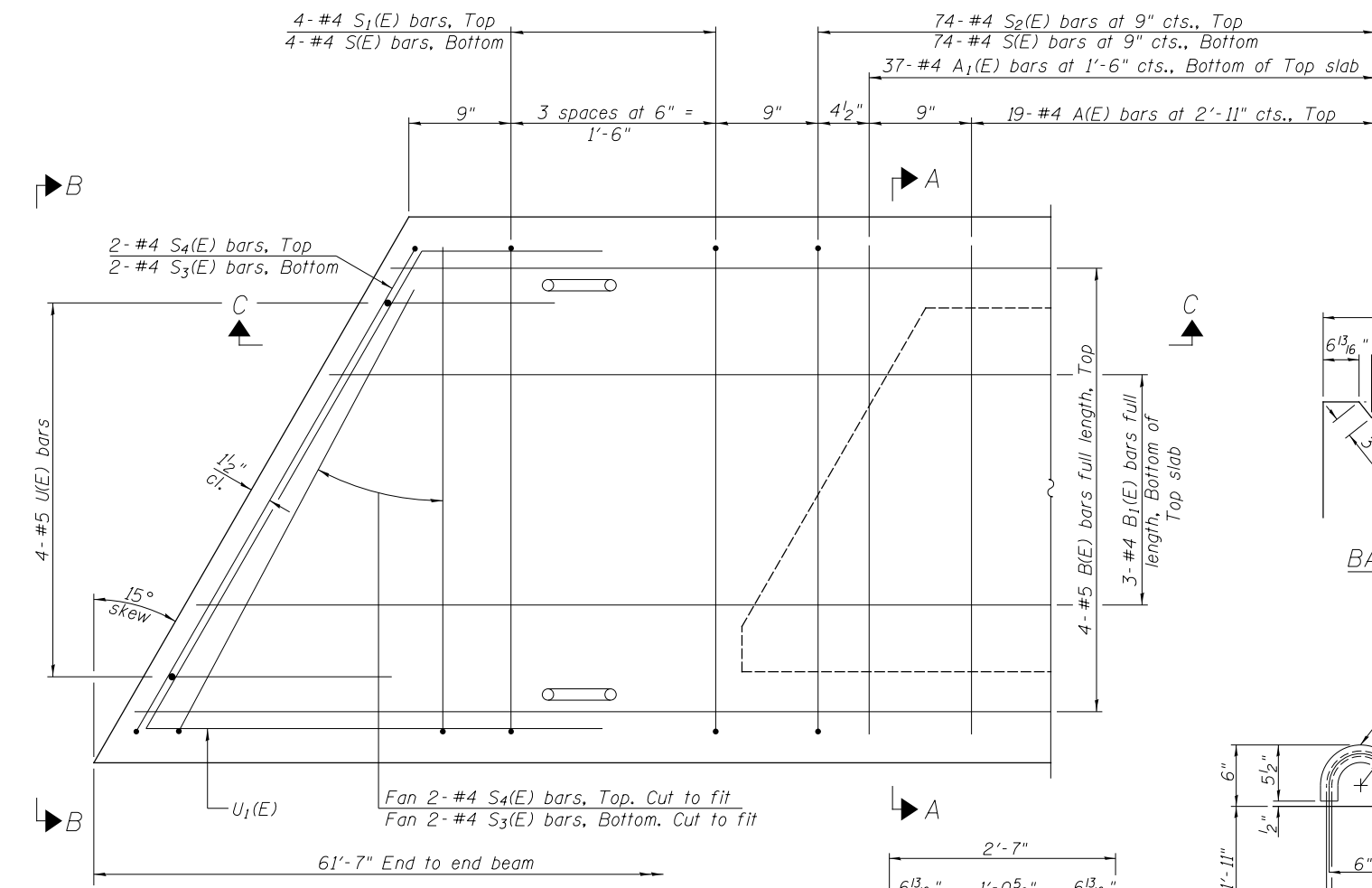
VIEW B-B



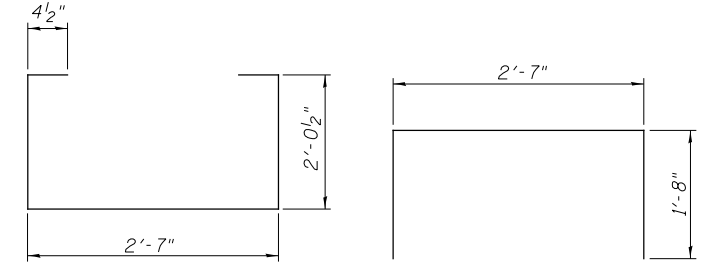
SECTION A-A

**Rail post anchor devices (Sheet 6 of 13) to be cast into exterior face of outside beams.

18-1/2" Strands Each Strand Stressed to 30,900 Lbs.
 8-Strands 1 3/4" up, 8-Strands 3 3/4" up, 2-Strands 1'-9 3/4" up
 Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

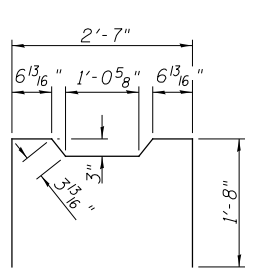


PLAN VIEW

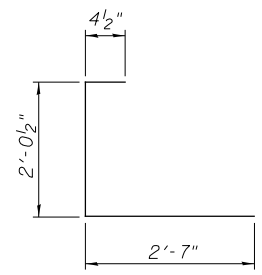


BAR S(E)

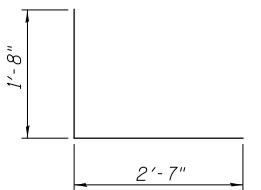
BAR S1(E)



BAR S2(E)



BAR S3(E)



BAR S4(E)

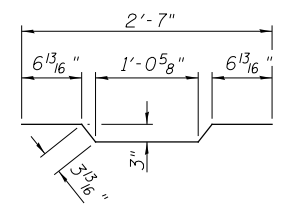
BAR LIST-ONE BEAM ONLY (For information only)

BAR	NO.	SIZE	LENGTH	SHAPE
A(E)	19	#4	2'-7"	—
A1(E)	37	#4	2'-10"	—
B(E)	4	#5	*61'-4"	—
B1(E)	3	#4	*61'-4"	—
S(E)	82	#4	7'-5"	□
S1(E)	8	#4	5'-11"	□
S2(E)	74	#4	6'-2"	□
S3(E)	8	#4	5'-0"	□
S4(E)	8	#4	4'-3"	□
U(E)	8	#5	4'-6"	□
U1(E)	4	#4	5'-9"	□

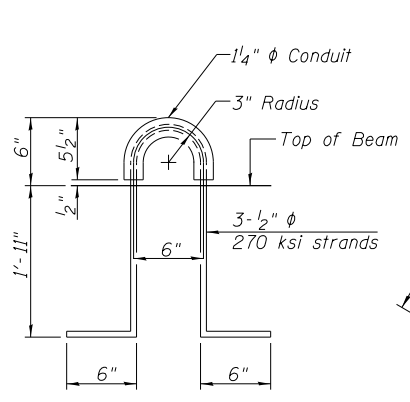
Note: See Sheet 2 of 13 for additional details and Bill of Material.

* Total Length, Lap as necessary

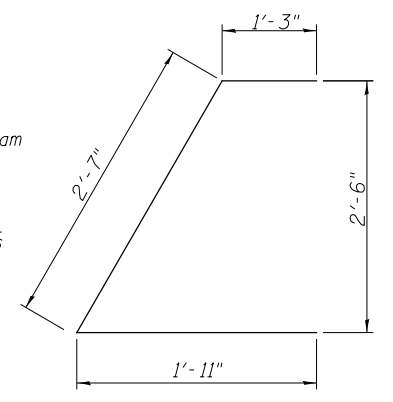
MINIMUM BAR LAP
 #4 bar = 1'-11"
 #5 bar = 2'-6"



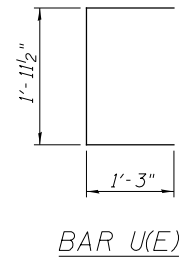
BAR A1(E)



LIFTING LOOP DETAIL



BAR U1(E)



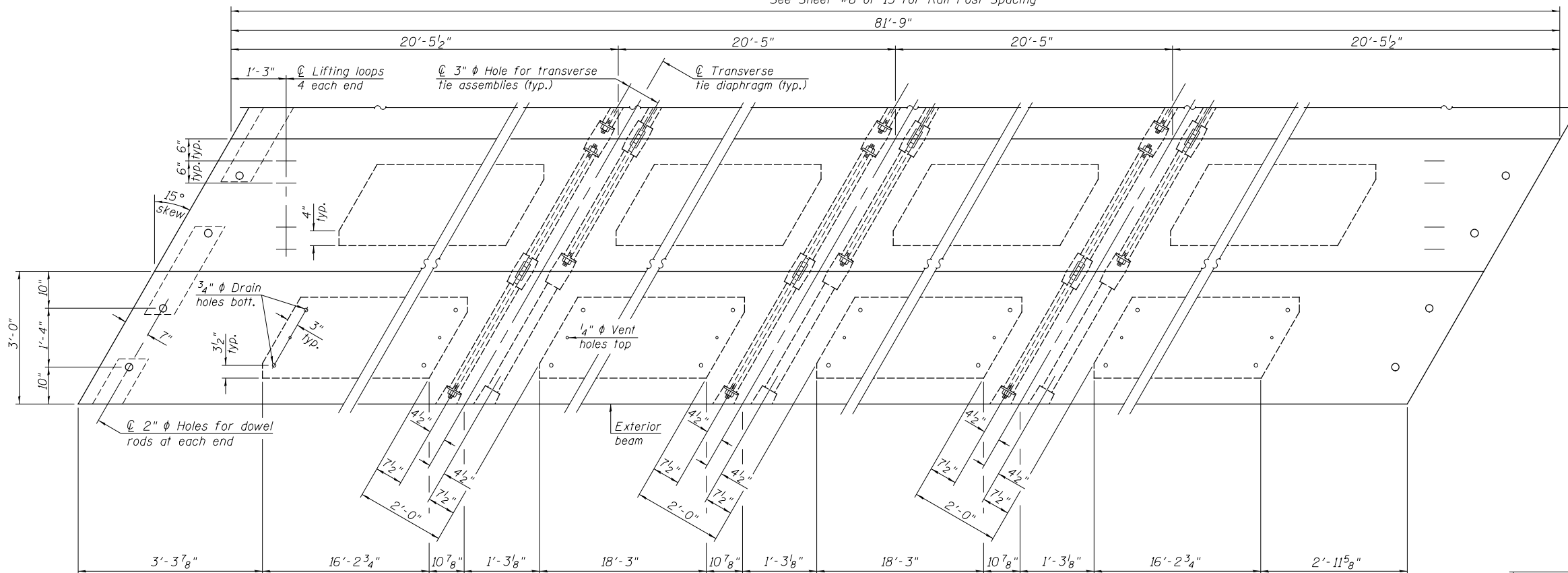
BAR U(E)

Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

SUPERSTRUCTURE DETAILS - SPANS 1 & 3
 MACOUPIN COUNTY
 SECTION 13-00098-00-BR
 C.H. 38 OVER BIG APPLE CREEK

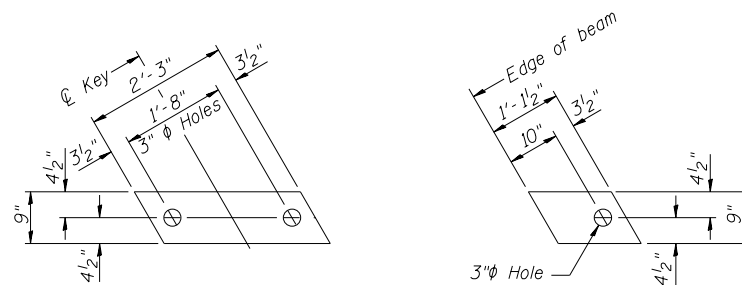
SHEET NO. 3 13 SHEETS	F.A.S. RTE. 616	SECTION 13-00098-00-BR	COUNTY MACOUPIN	TOTAL SHEETS 31	SHEET NO. 9
	S.N. 059-3017		CONTRACT NO. 93662		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT BXV1(265)		

See Sheet #8 of 13 for Rail Post Spacing



PLAN VIEW

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



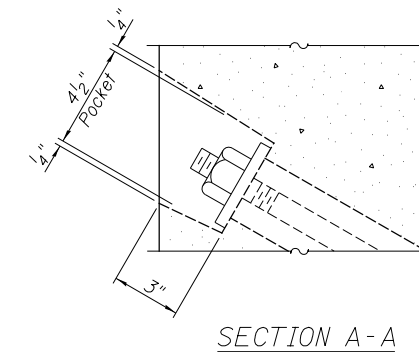
1/2" FABRIC BEARING PAD (Interior) 18 Required

1/2" FABRIC BEARING PAD (Exterior) 4 Required

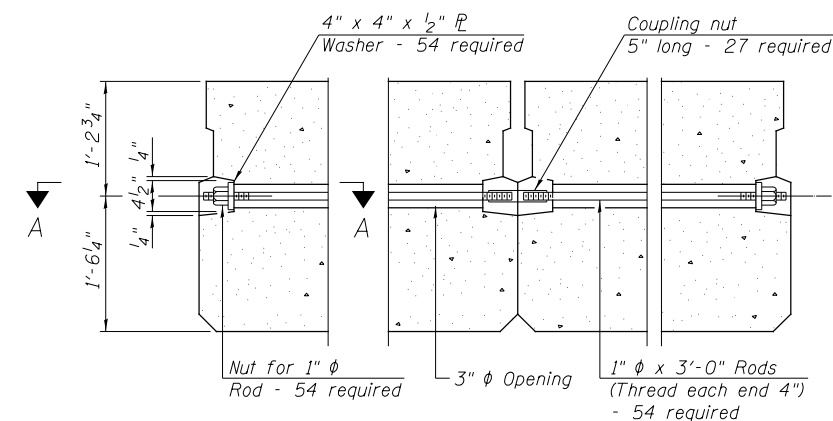
FIXED

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" ϕ 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 A706, Grade 60.
 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" ϕ lifting pin shall be used to engage the lifting loops during handling.
 Corrosion Inhibitor, per Article 1020.05(b)(10) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.
 Compressive strength of prestressed concrete, f'_c , shall be 6000 psi.
 Compressive strength of prestressed concrete at release, f'_{ci} , shall be 5000 psi.



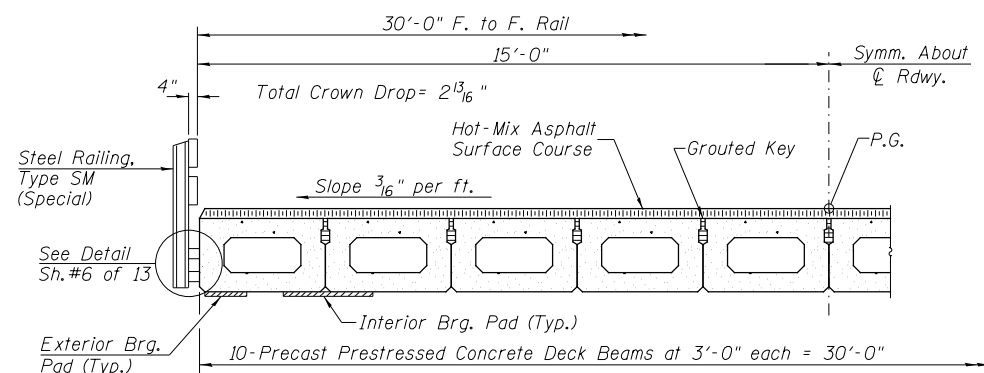
SECTION A-A



TYPICAL TRANSVERSE TIE ASSEMBLY

BILL OF MATERIAL

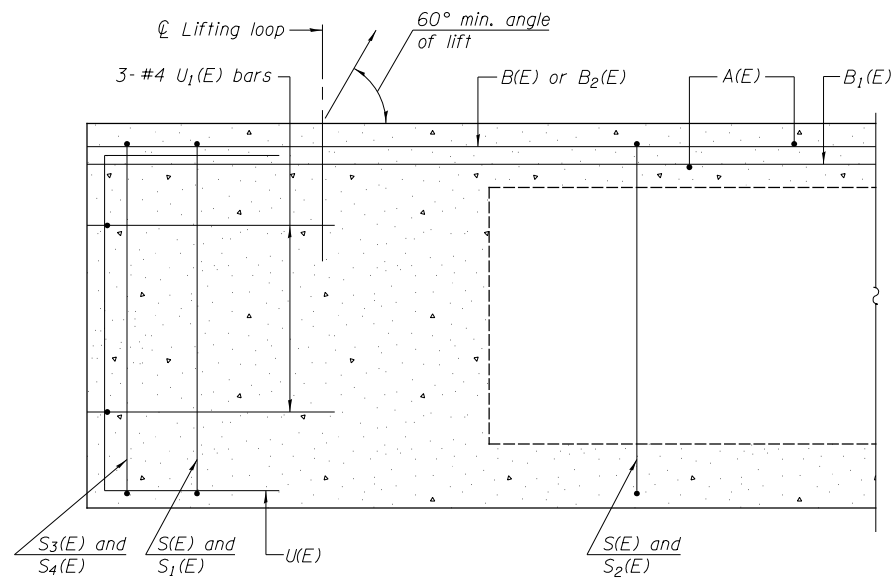
ITEM	UNIT	QUANTITY
Precast Prestressed Concrete Deck Beams (33" Depth)	SQ FT	2,453



HALF CROSS SECTION

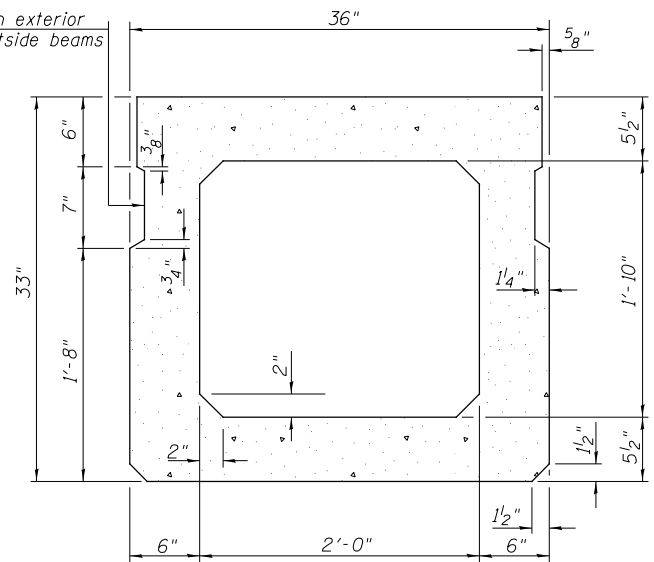
SUPERSTRUCTURE - SPAN 2
 MACOUPIN COUNTY
 SECTION 13-00098-00-BR
 C.H. 38 OVER BIG APPLE CREEK

SHEET NO.	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	616	13-00098-00-BR	MACOUPIN	31	10
13 SHEETS	S.N. 059-3017		CONTRACT NO. 93662		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT BXV1(265)		

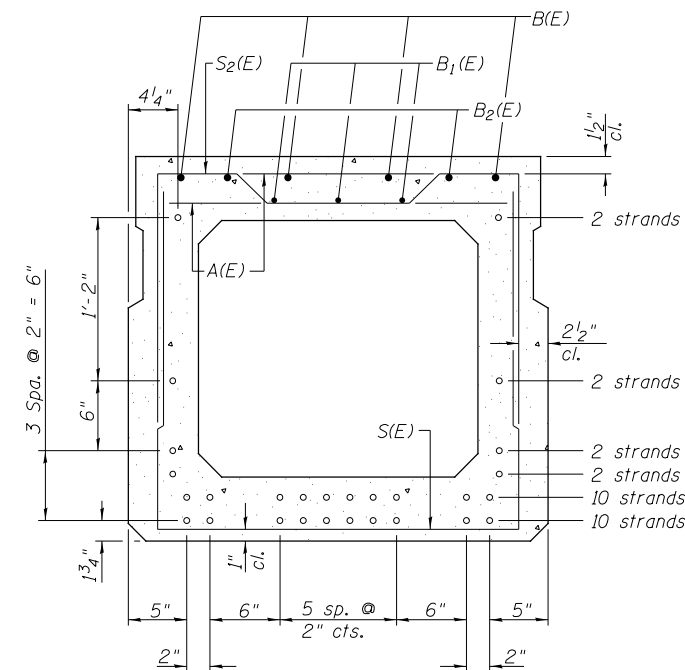


SECTION C-C

** Omit key on exterior face of outside beams



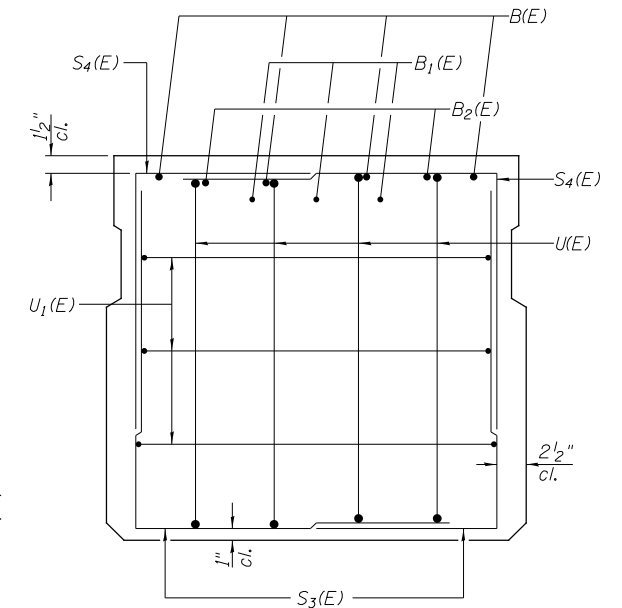
SECTION A-A
(Showing dimensions)



SECTION A-A

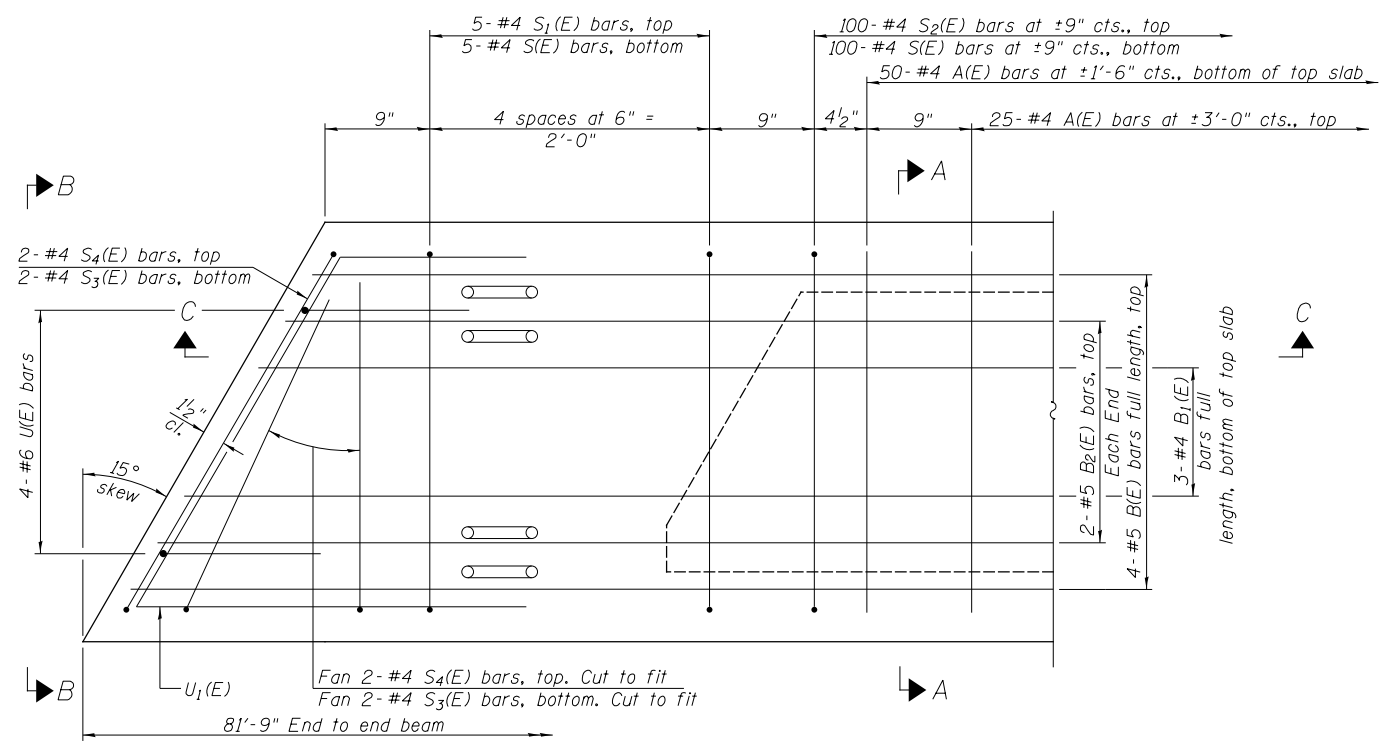
28- 1/2" φ Strands Each Strand Stressed to 30,900 Lbs.
10- Strands 1 3/4" up, 10- Strands 3 3/4" up, 2- Strands 5 3/4" up,
2- Strands 7 3/4" up, 2- Strands 1'-1 3/4" up, 2- Strands 2'-3 3/4" up

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



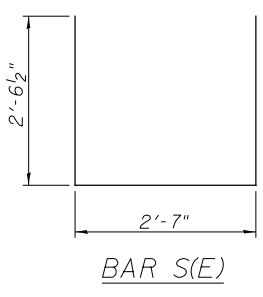
VIEW B-B

**Rail post anchor devices (Sheet 6 of 13) to be cast into exterior face of outside beams.

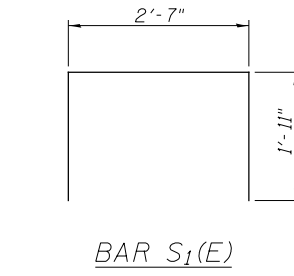


PLAN VIEW

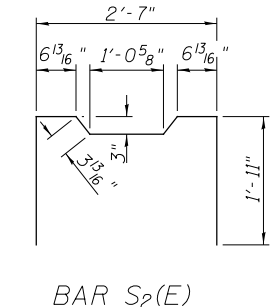
Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.



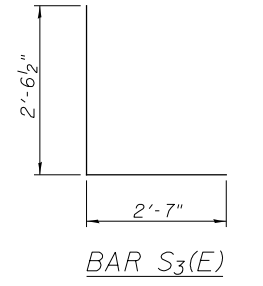
BAR S(E)



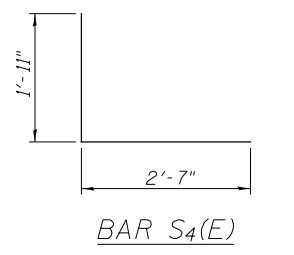
BAR S1(E)



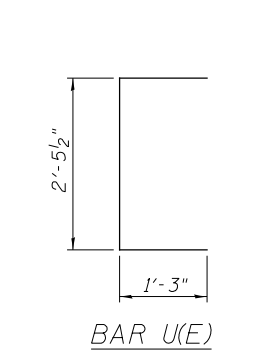
BAR S2(E)



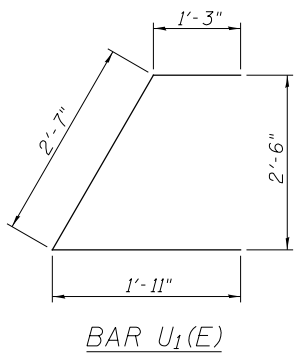
BAR S3(E)



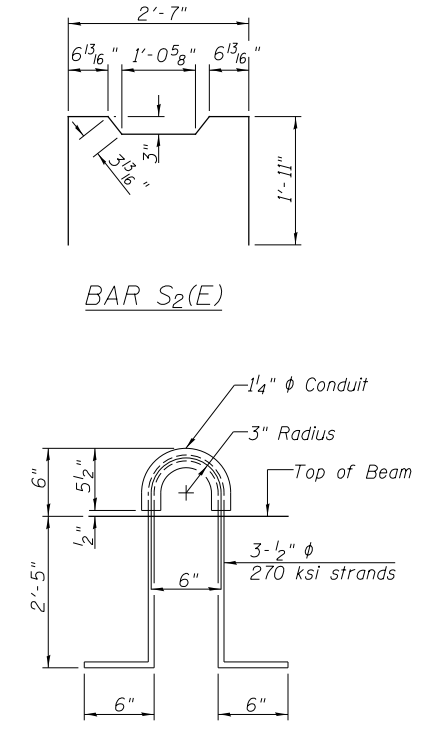
BAR S4(E)



BAR U(E)



BAR U1(E)



LIFTING LOOP DETAIL

BAR LIST - ONE BEAM ONLY
(For information only)

BAR	NO.	SIZE	LENGTH	SHAPE
A(E)	75	#4	2'-7"	—
B(E)	4	#5	*81'-6"	—
B1(E)	3	#4	*81'-6"	—
B2(E)	4	#5	10'-0"	—
S(E)	110	#4	7'-8"	—
S1(E)	10	#4	6'-5"	┌
S2(E)	100	#4	6'-8"	┌
S3(E)	8	#4	5'-2"	┌
S4(E)	8	#4	4'-6"	┌
U(E)	8	#6	5'-0"	┌
U1(E)	6	#4	5'-9"	┌

Note: See Sheet 4 of 13 for additional details and Bill of Material.

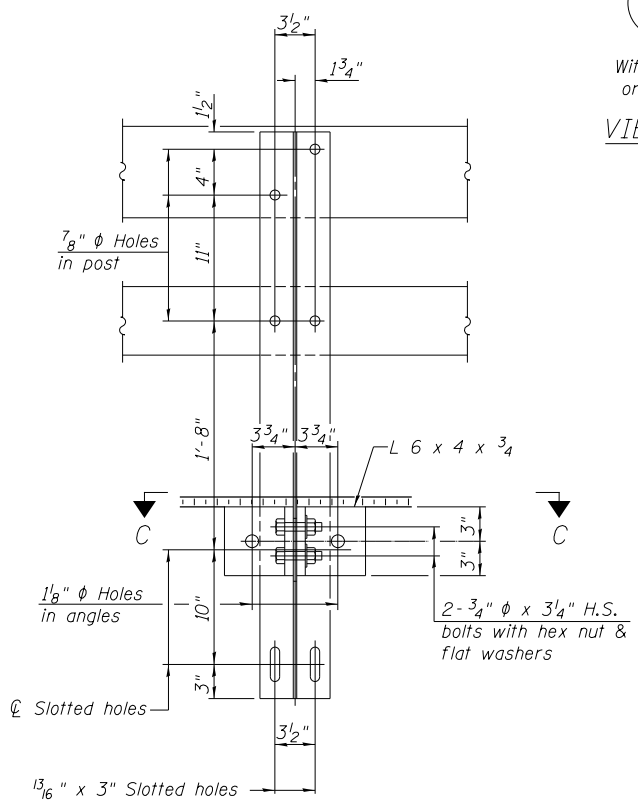
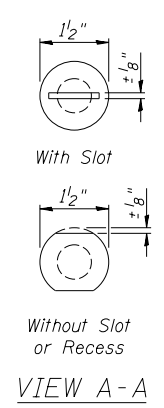
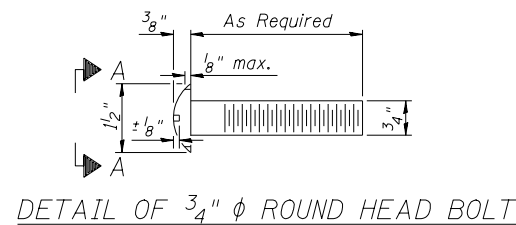
* Total Length, Lap as necessary

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

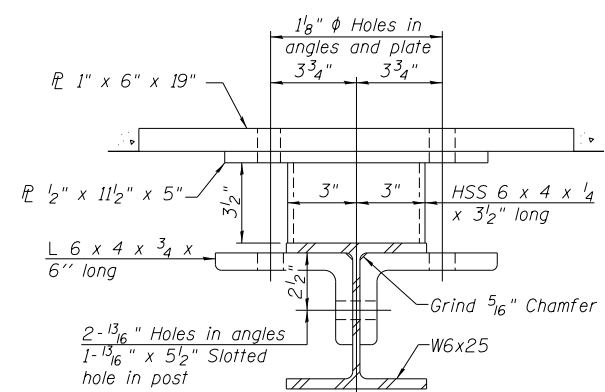
SUPERSTRUCTURE DETAILS - SPAN 2
MACOUPIN COUNTY
SECTION 13-00098-00-BR
C.H. 38 OVER BIG APPLE CREEK

SHEET NO. 5 13 SHEETS	F.A.S. RTE. 616	SECTION 13-00098-00-BR	COUNTY MACOUPIN	TOTAL SHEETS 31	SHEET NO. 11
	S.N. 059-3017		CONTRACT NO. 93662		
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT BXV1(265)			

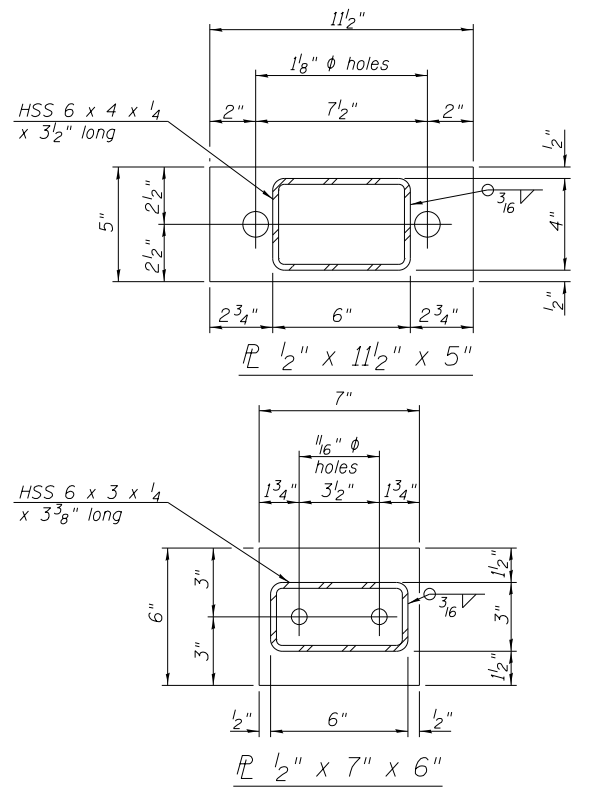
FOR RAIL POST SPACING SEE SH.#8 OF 13



SECTION B-B

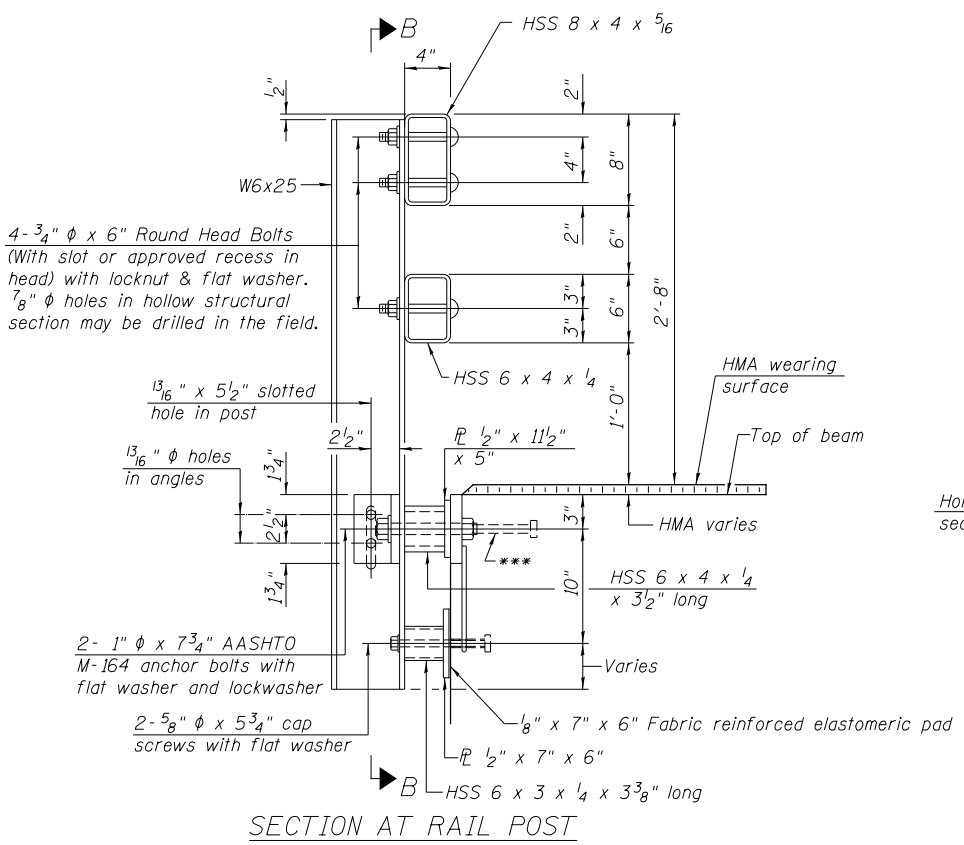


SECTION C-C

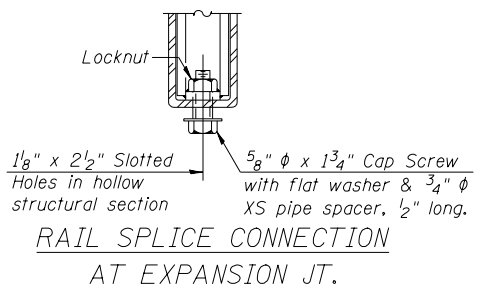


ANCHOR DEVICE

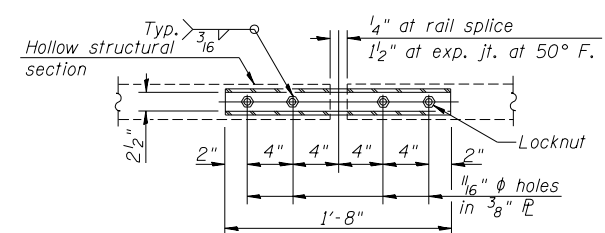
*Threaded areas shall be plugged or blocked off during casting of beam. Galvanized after fabrication.



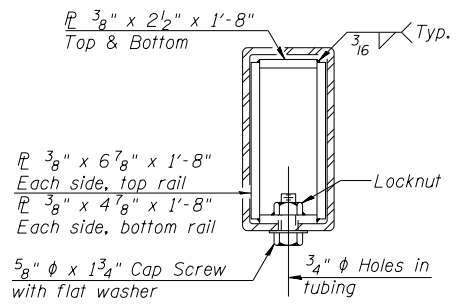
SECTION AT RAIL POST



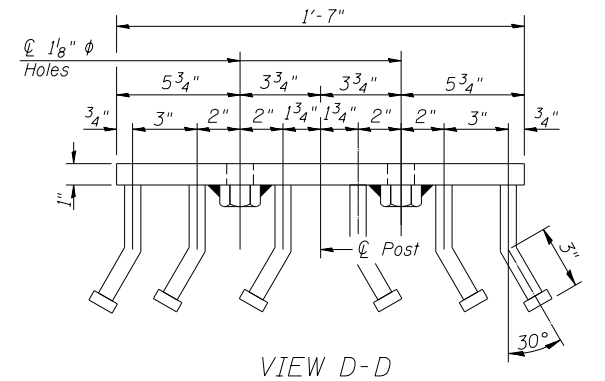
RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN-BOTT. SPLICE RAIL TYPICAL



SECTION AT RAIL SPLICE



VIEW D-D

Notes:
 All field drilled holes shall be coated with an approved zinc rich paint before erection.
 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 Bridge Rail, Type SM (Special).
 All steel rail members 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.

BILL OF MATERIAL

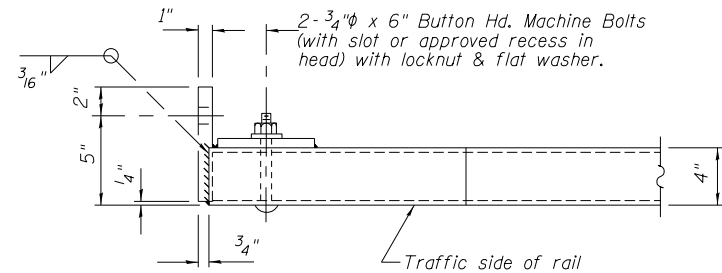
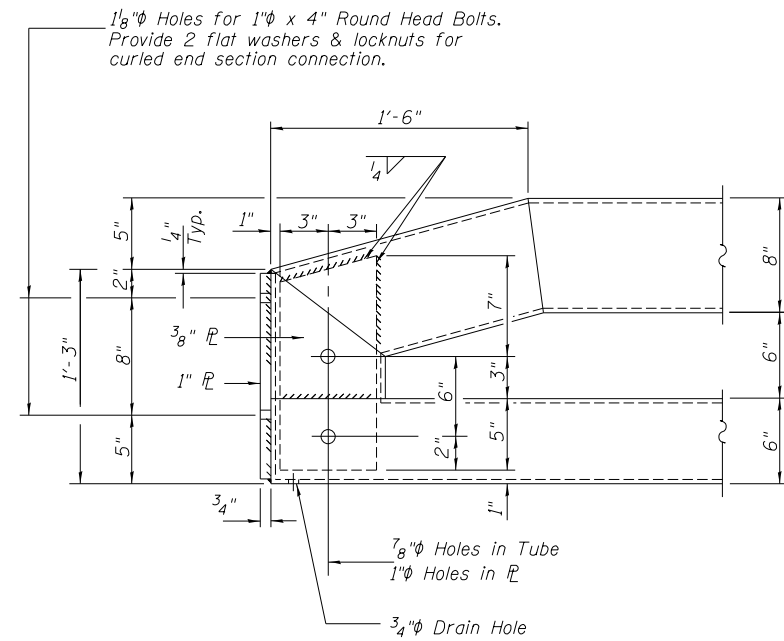
ITEM	UNIT	QUANTITY
Steel Bridge Rail, Type SM (Special)	FOOT	414

STEEL BRIDGE RAIL, TYPE SM (SPECIAL)
 MACOUPIN COUNTY
 SECTION 13-00098-00-BR
 C.H. 38 OVER BIG APPLE CREEK

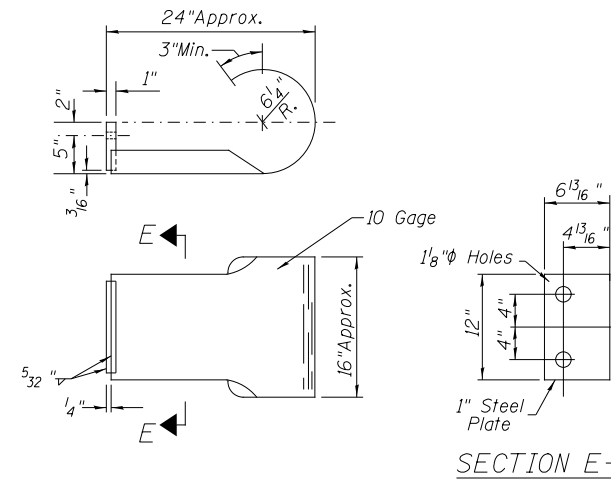
SHEET NO. 6	F.A.S. RTE. 616	SECTION 13-00098-00-BR	COUNTY MACOUPIN	TOTAL SHEETS 31	SHEET NO. 12
13 SHEETS	S.N. 059-3017		CONTRACT NO. 93662		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT BXV1(265)		

(Sheet 1 of 2)

FOR RAIL POST SPACING SEE SH.#8 OF 13



END OF RAIL DETAILS



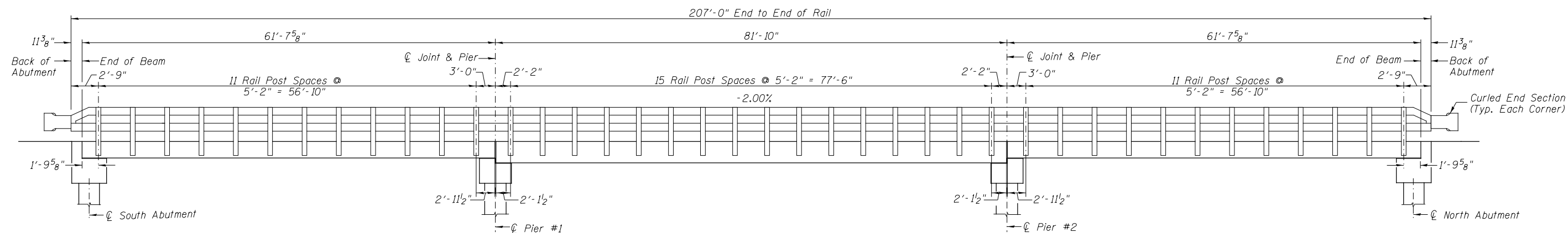
CURLED END SECTION

(4 Req'd) Cost Included with Steel Bridge Rail, Type SM (Special).
Terminal Markers - Direct Applied shall be placed on end of each Curled End Section. (Typ. Each Corner)

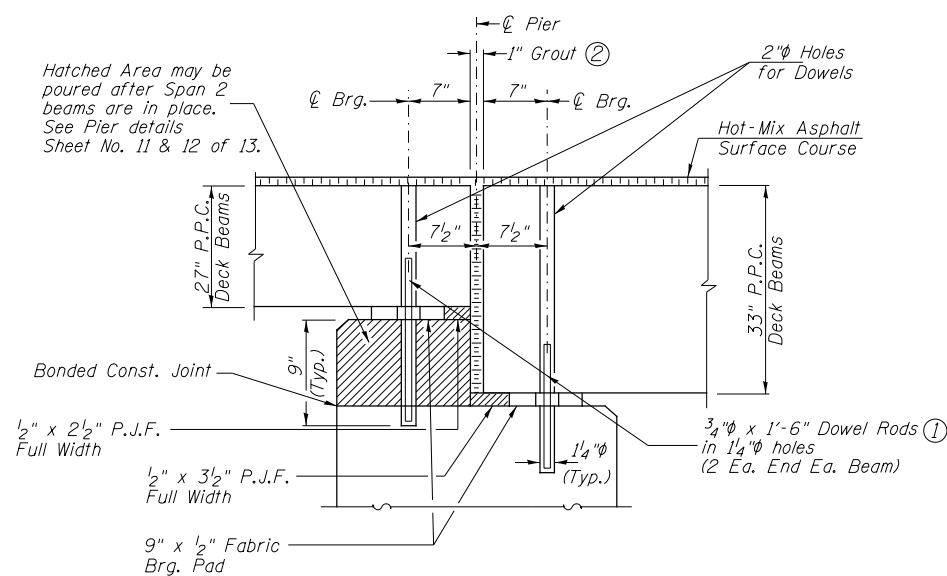
STEEL BRIDGE RAIL, TYPE SM (SPECIAL)
MACOUPIN COUNTY
SECTION 13-00098-00-BR
C.H. 38 OVER BIG APPLE CREEK

(Sheet 2 of 2)

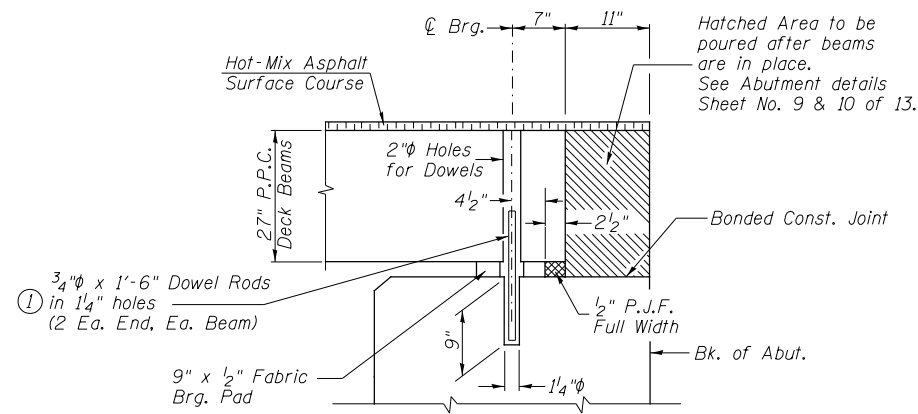
SHEET NO. 7 13 SHEETS	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	616	13-00098-00-BR	MACOUPIN	31	13
	S.N. 059-3017		CONTRACT NO. 93662		
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT BXV1(265)			



RAIL POST SPACING



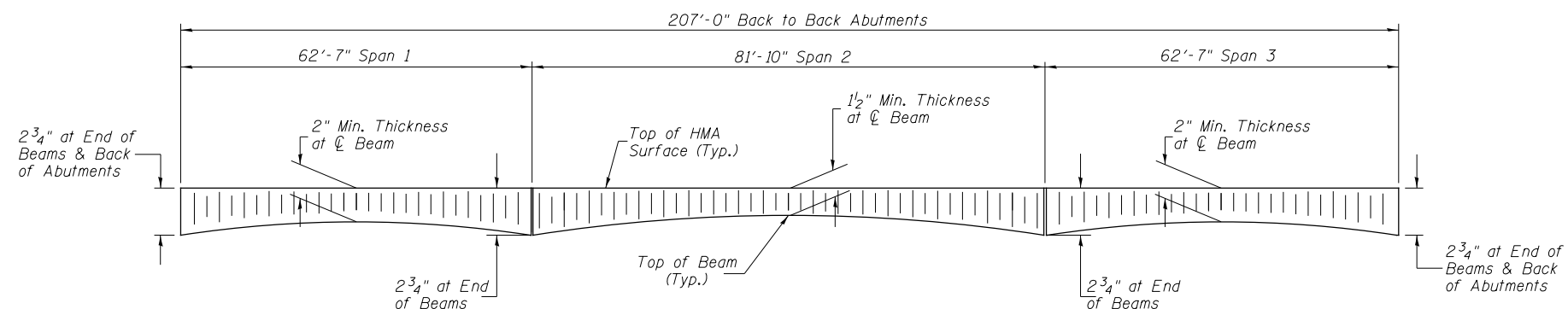
SECTION THRU PIERS
(At Right Angles)



SECTION THRU ABUTMENTS
(At Right Angles)

① Dowel Rods to be grouted after beams are in place and allowed to cure (Min. 24 hr.) prior to grouting the shear keys.

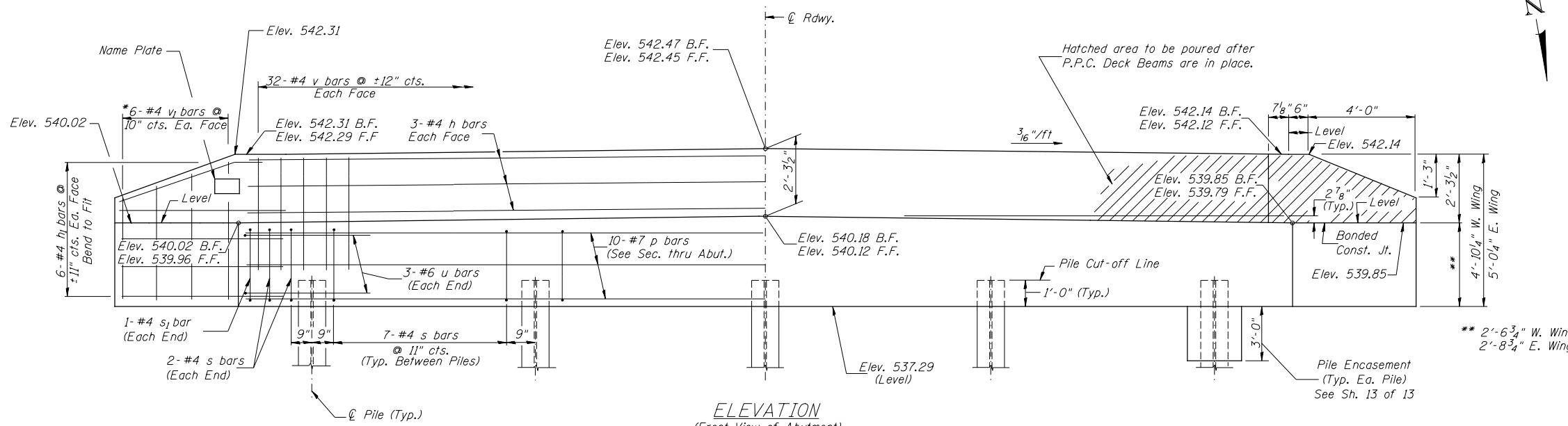
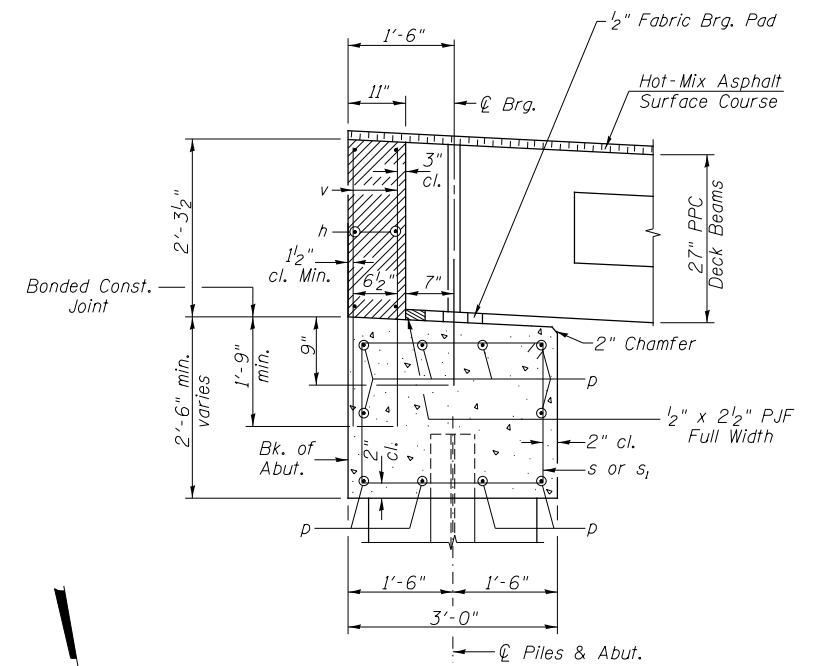
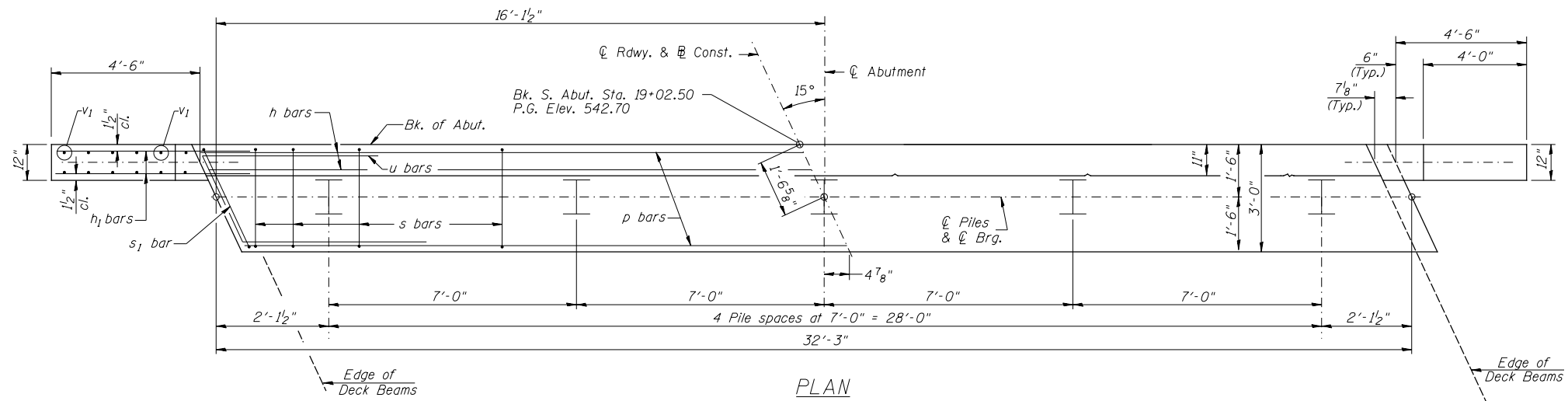
② 1" Joint shall be packed with nonshrink grout in accordance with Standard Specifications. 1" Dimension may vary plus or minus to accommodate tolerance in beam lengths.



HOT-MIX ASPHALT SURFACE PROFILE

RAIL POST SPACING AND
SUPERSTRUCTURE DETAILS
MACOUPIN COUNTY
SECTION 13-00098-00-BR
C.H. 38 OVER BIG APPLE CREEK

SHEET NO. 8 13 SHEETS	F.A.S. RTE. 616	SECTION 13-00098-00-BR	COUNTY MACOUPIN	TOTAL SHEETS 31	SHEET NO. 14
	S.N. 059-3017		CONTRACT NO. 93662		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT BXV1(265)		



SOUTH ABUTMENT BILL OF MATERIAL

BAR NO.	SIZE	LENGTH	SHAPE
h	#4	32'-0"	—
h1	#4	6'-6"	—
p	#7	32'-0"	—
s	#4	10'-5"	□
s1	#4	10'-7"	□
u	#6	11'-8"	□
v	#4	4'-0"	—
v1	#4	7'-9"	—
Concrete Structures			CU YD 13.7
Reinforcement Bars			POUND 1,460
Structure Excavation			CU YD 40
Name Plates			EACH 1
Furnishing Steel Piles HP10x42			FOOT 200
Driving Piles			FOOT 200
Test Pile Steel HP10x42			EACH 1
Concrete Encasement			CU YD 1.7

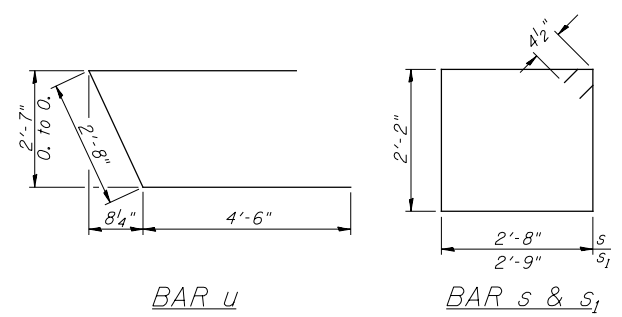
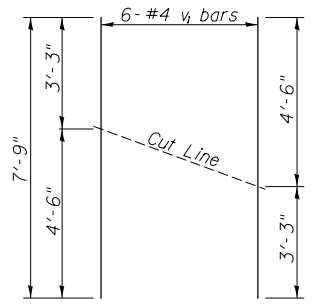
DESIGN STRESSES
 f'c = 3,500 p.s.i.
 fy = 60,000 p.s.i.

NOTES

- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- Reinforcement bars shall conform to ASTM A706 Grade 60.

PILE DATA

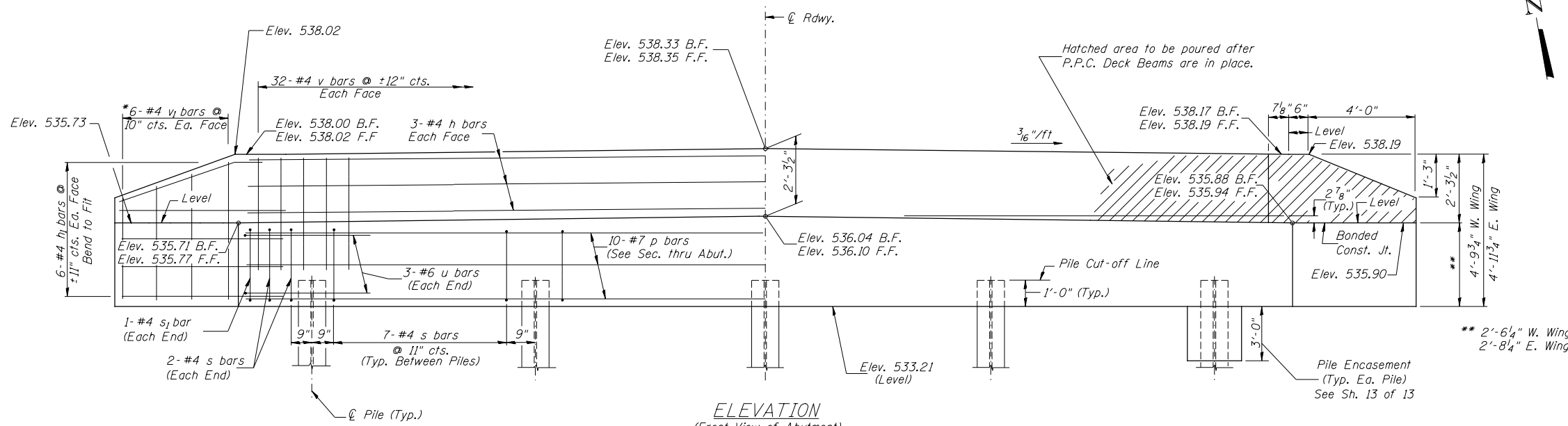
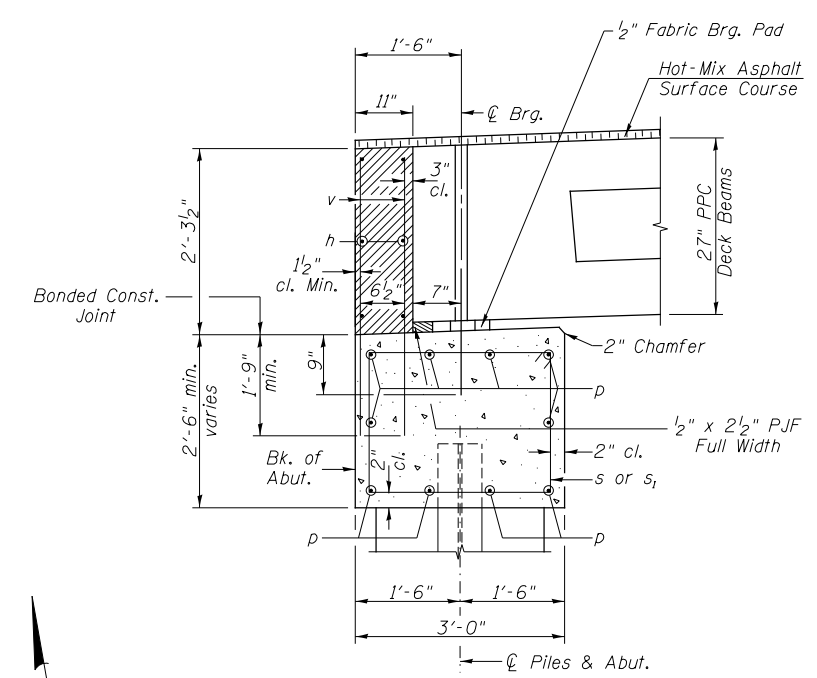
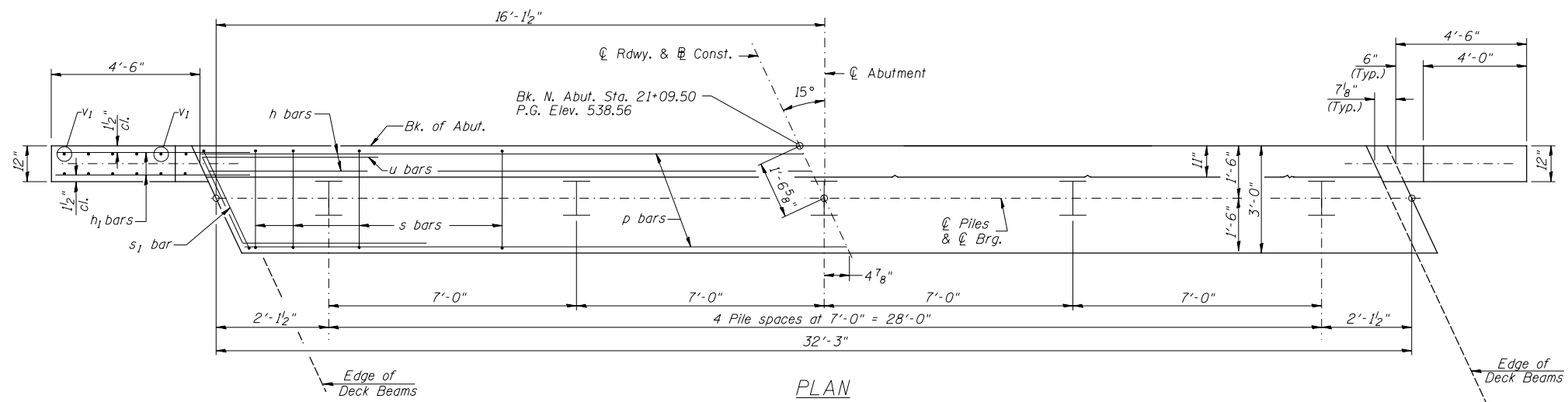
Type & Size: Steel HP10x42
 Nominal Required Bearing: 335 kips
 Factored Resistance Available: 184 kips
 Est. Length: 50'
 No. Req'd.: 5 (Includes 1 Test Pile)



*Order v1 bars full length. Cut as shown and use remainder of bars in opposite face.

SOUTH ABUTMENT MACOUPIN COUNTY SECTION 13-00098-00-BR C.H. 38 OVER BIG APPLE CREEK

SHEET NO. 9 13 SHEETS	F.A.S. RTE. 616	SECTION 13-00098-00-BR	COUNTY MACOUPIN	TOTAL SHEETS 31	SHEET NO. 15
	S.N. 059-3017		CONTRACT NO. 93662		
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT BXV1(265)			



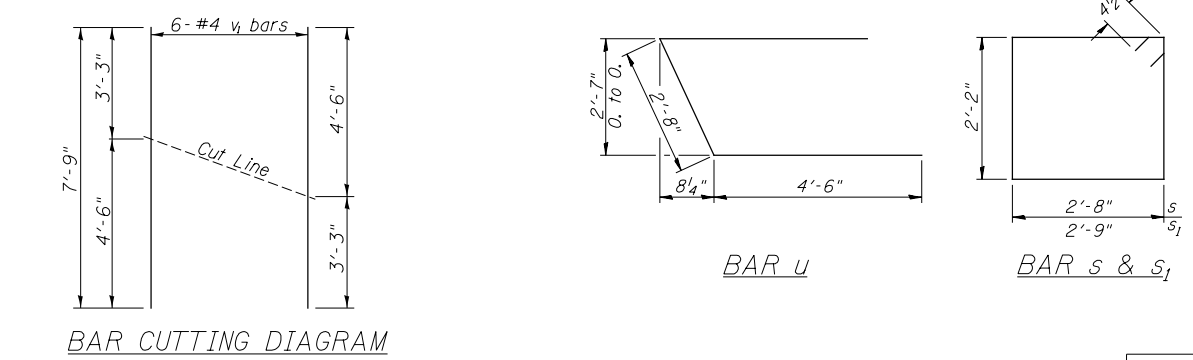
NORTH ABUTMENT BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
h	6	#4	32'-0"	—
h1	24	#4	6'-6"	—
p	10	#7	32'-0"	—
s	32	#4	10'-5"	□
s1	2	#4	10'-7"	□
u	6	#6	11'-8"	□
v	64	#4	4'-0"	—
v1	12	#4	7'-9"	—
Concrete Structures		CU YD	13.6	
Reinforcement Bars		POUND	1,460	
Structure Excavation		CU YD	40	
Furnishing Steel Piles		FOOT	200	
HP10x42				
Driving Piles		FOOT	200	
Test Pile Steel HP10x42		EACH	1	
Concrete Encasement		CU YD	1.7	

DESIGN STRESSES
 f'c = 3,500 p.s.i.
 fy = 60,000 p.s.i.

- NOTES**
- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
 - Reinforcement bars shall conform to ASTM A706 Grade 60.

PILE DATA
 Type & Size: Steel HP10x42
 Nominal Required Bearing: 335 kips
 Factored Resistance Available: 184 kips
 Est. Length: 50'
 No. Req'd.: 5 (Includes 1 Test Pile)



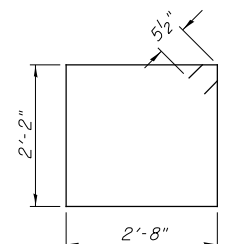
*Order v1 bars full length. Cut as shown and use remainder of bars in opposite face.

SHEET NO. 10 13 SHEETS	F.A.S. RTE. 616	SECTION 13-00098-00-BR	COUNTY MACOUPIN	TOTAL SHEETS 31	SHEET NO. 16
	S.N. 059-3017		CONTRACT NO. 93662		
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT BXV1(265)			

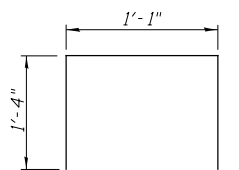
TABLE OF ELEVATIONS

LOCATION	DESCRIPTION	ELEVATION
1	Top of Cap	538.30
2	Top of Cap	538.27
3	Top of Cap	538.23
4	Top of Cap	538.46
5	Top of Cap	538.43
6	Top of Cap	538.40
7	Top of Cap	538.12
8	Top of Cap	538.10
9	Top of Cap	538.07
10	Top of Step	538.80
11	Top of Step	538.77
12	Top of Step	538.96
13	Top of Step	538.93
14	Top of Step	538.62
15	Top of Step	538.60

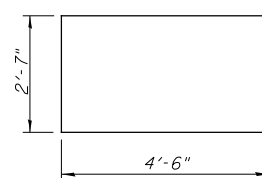
NOTES:
All edges shall have standard 3/4" chamfer.



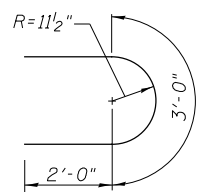
BAR S₂



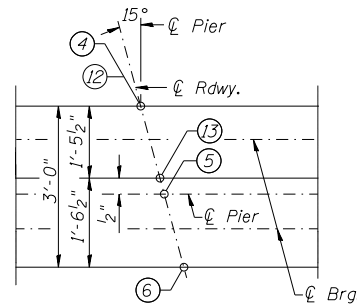
BAR U₁



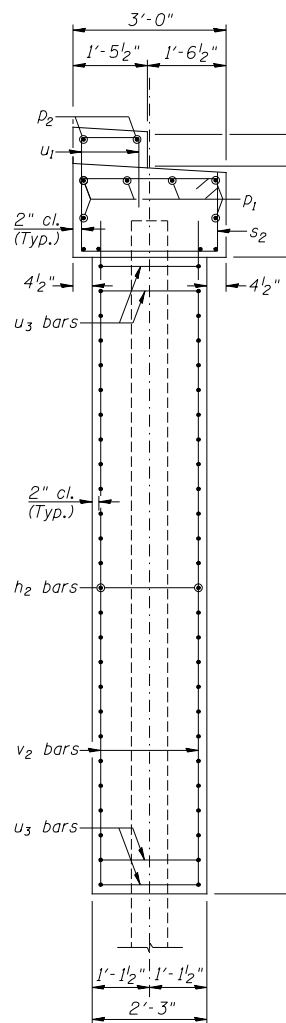
BAR U₂



BAR U₃

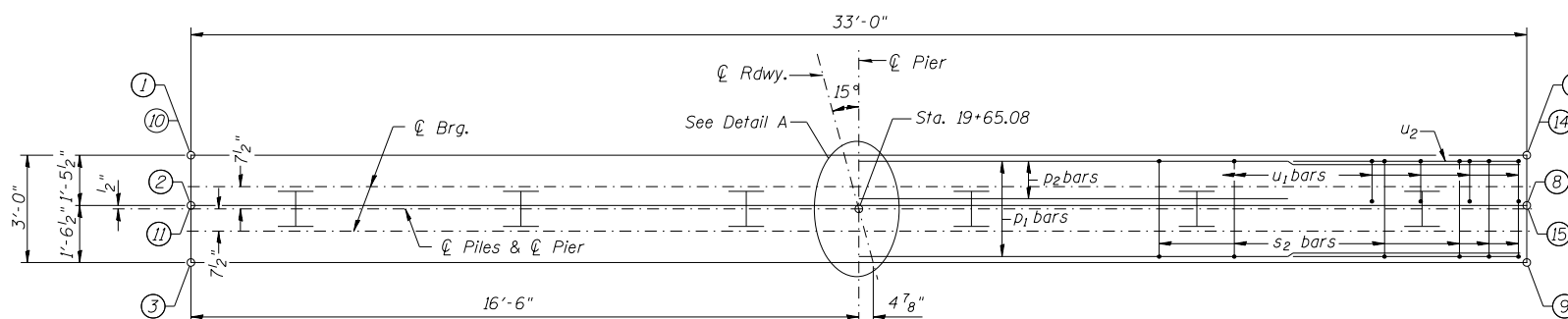


DETAIL A

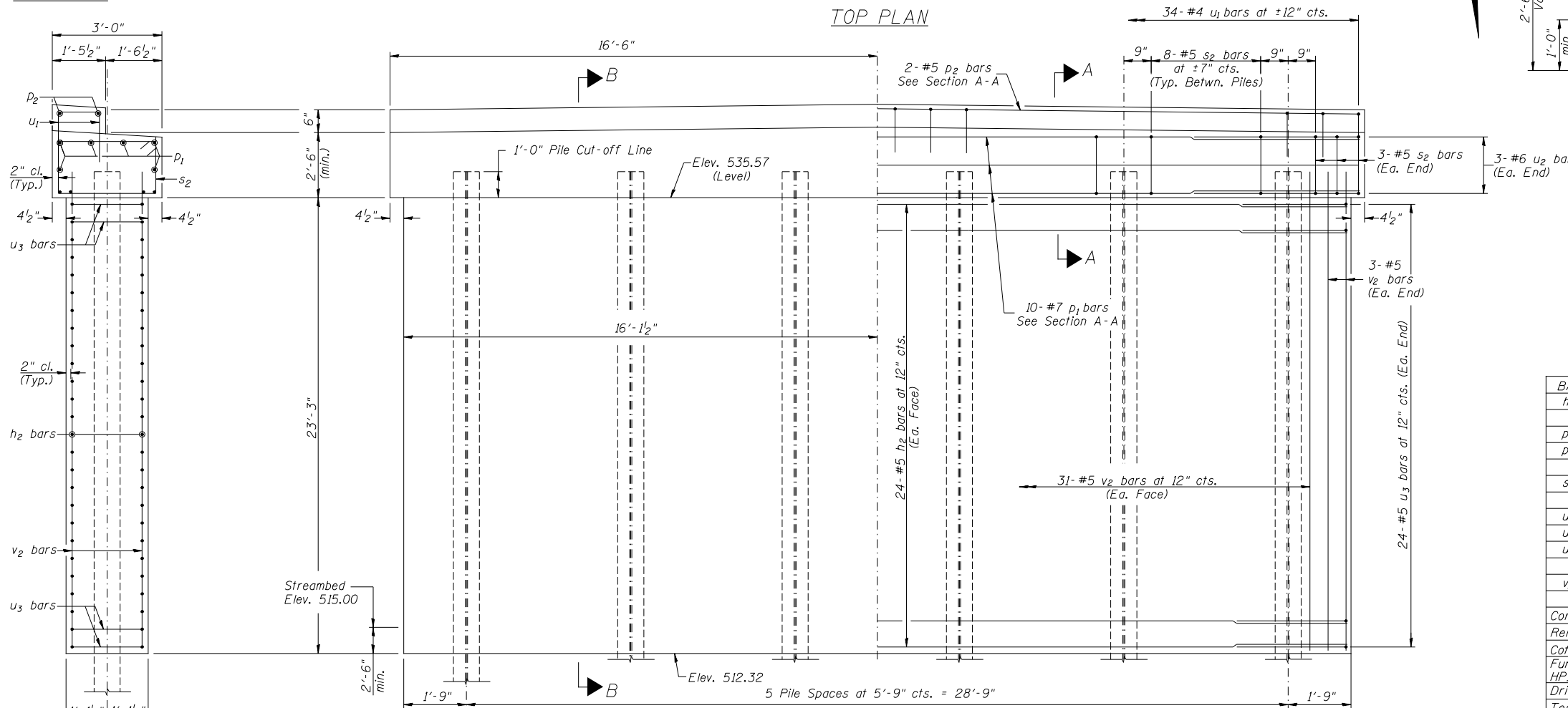


SECTION B-B

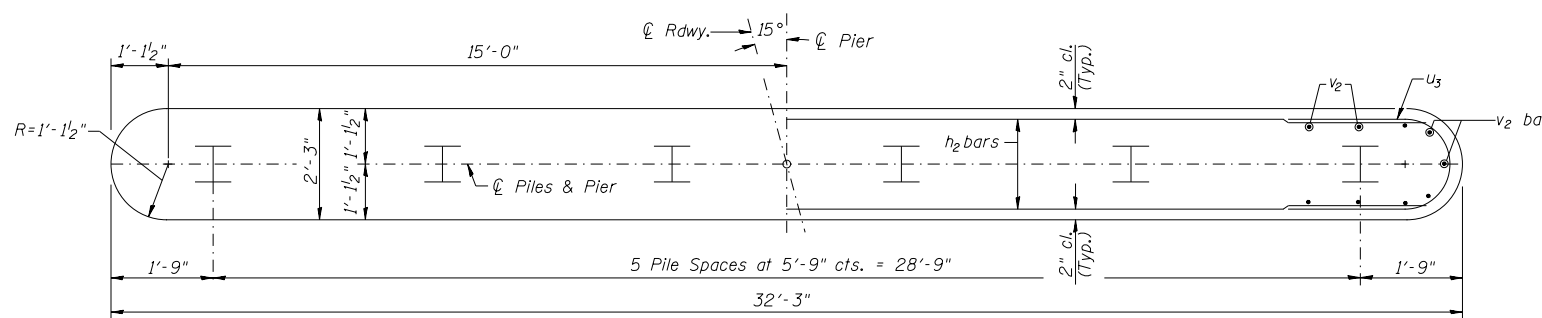
PILE DATA
Type & Size: Steel HP14x73
Nominal Required Bearing: 578 kips
Factored Resistance Available: 318 kips
Est. Length: 49'
No. Req'd.: 6 (Includes 1 Test Pile)



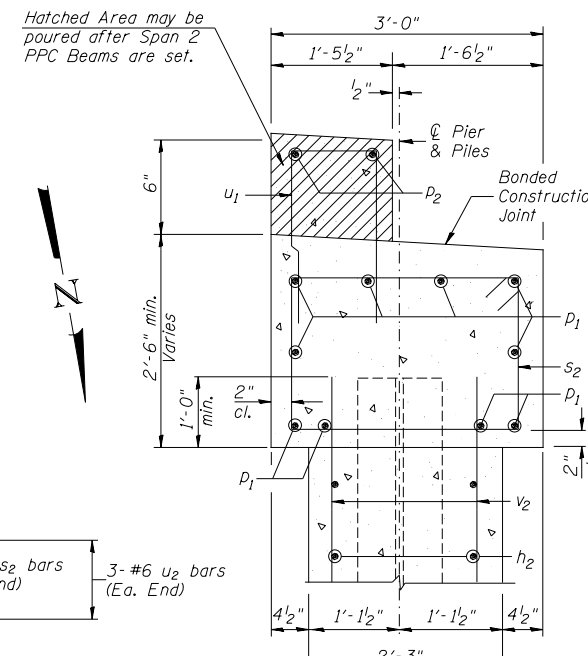
TOP PLAN



ELEVATION
(Looking South)



FOOTING PLAN



SECTION A-A

**PIER #1
BILL OF MATERIAL**

BAR	NO.	SIZE	LENGTH	SHAPE	
h ₂	48	#5	29'-9"	—	
p ₁	10	#7	32'-9"	—	
p ₂	2	#5	32'-9"	—	
s ₂	46	#5	10'-7"	□	
u ₁	34	#4	3'-9"	□	
u ₂	6	#6	11'-7"	□	
u ₃	48	#5	7'-0"	□	
v ₂	68	#5	24'-1"	—	
Concrete Structures				CU YD	72.2
Reinforcement Bars				POUND	4,980
Cofferdam Excavation				CU YD	55
Furnishing Steel Piles HP14x73				FOOT	245
Driving Piles				FOOT	245
Test Pile Steel HP14x73				EACH	1
Cofferdam (Type 1) (Location-1)				EACH	1

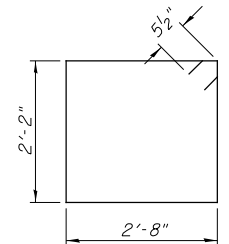
PIER #1
MACOUPIN COUNTY
SECTION 13-00098-00-BR
C.H. 38 OVER BIG APPLE CREEK

SHEET NO. 11 13 SHEETS	F.A.S. RTE. 616	SECTION 13-00098-00-BR	COUNTY MACOUPIN	TOTAL SHEETS 31	SHEET NO. 17
	S.N. 059-3017		CONTRACT NO. 93662		
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT BXV1(265)			

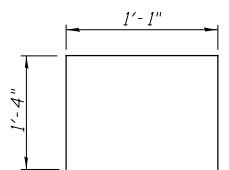
TABLE OF ELEVATIONS

LOCATION	DESCRIPTION	ELEVATION
1	Top of Cap	536.43
2	Top of Cap	536.45
3	Top of Cap	536.48
4	Top of Cap	536.76
5	Top of Cap	536.79
6	Top of Cap	536.82
7	Top of Cap	536.59
8	Top of Cap	536.63
9	Top of Cap	536.66
10	Top of Step	536.93
11	Top of Step	536.95
12	Top of Step	537.26
13	Top of Step	537.29
14	Top of Step	537.09
15	Top of Step	537.13

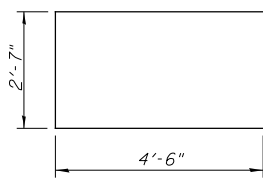
NOTES:
All edges shall have standard 3/4" chamfer.



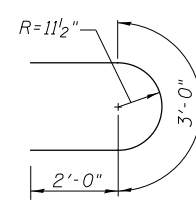
BAR S₂



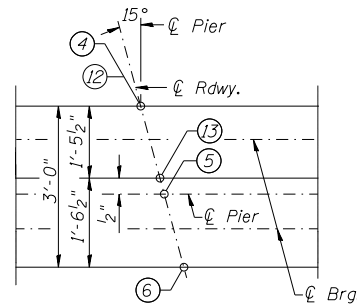
BAR U₁



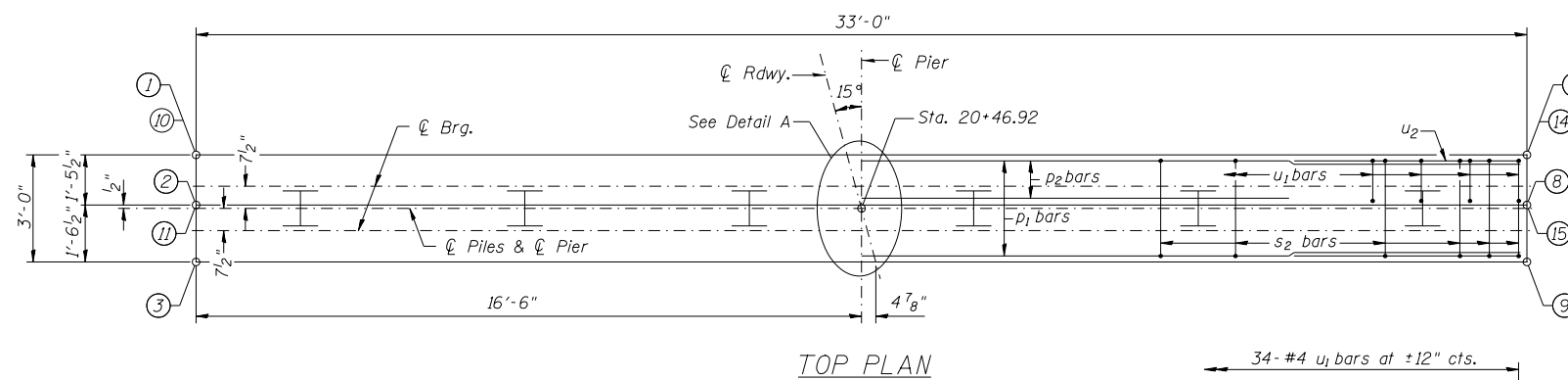
BAR U₂



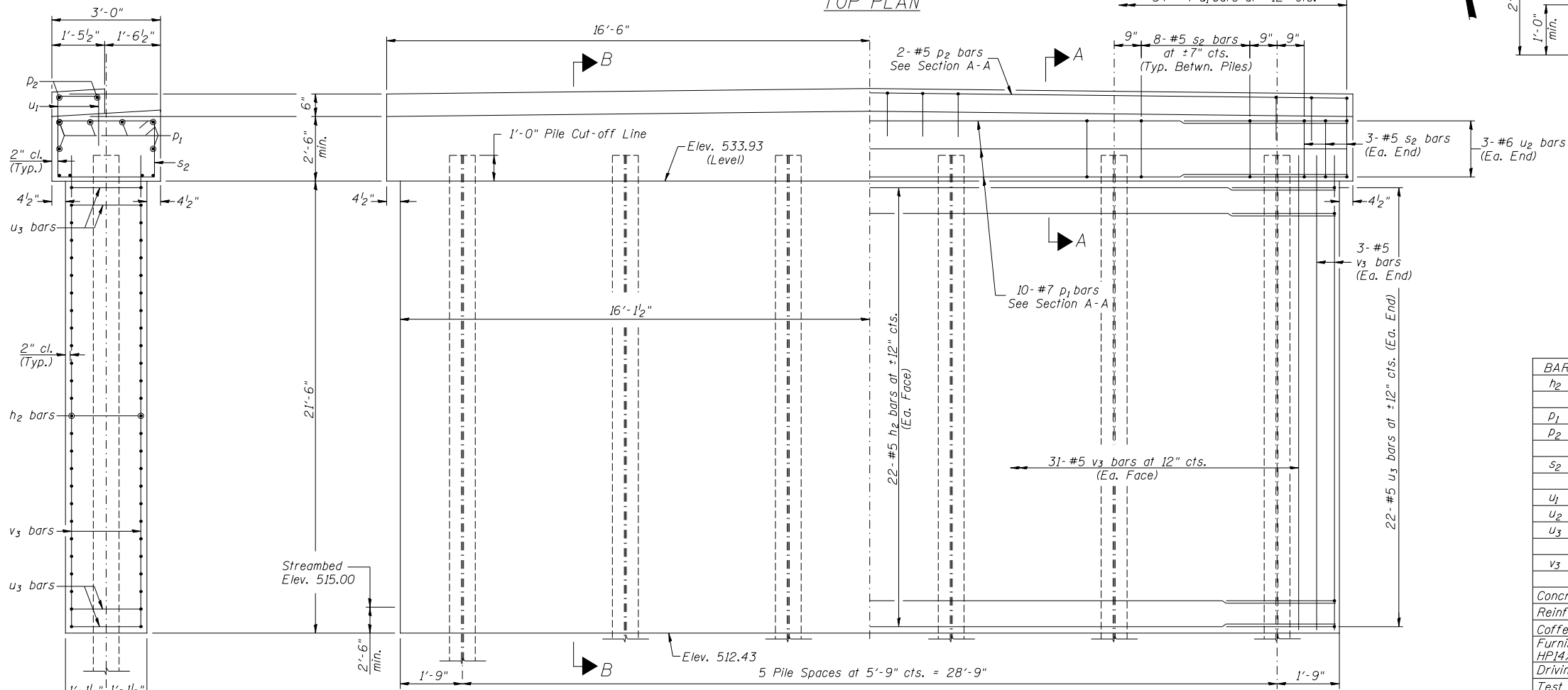
BAR U₃



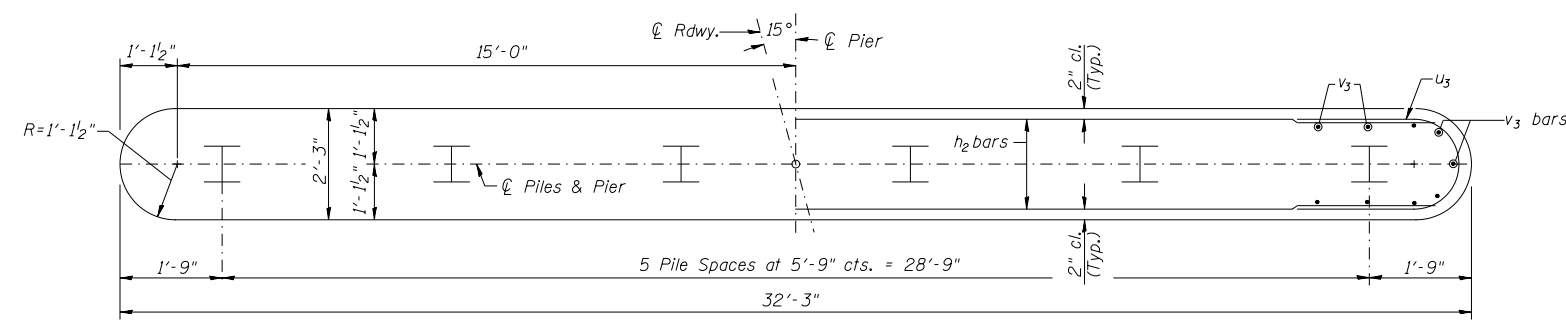
DETAIL A



TOP PLAN

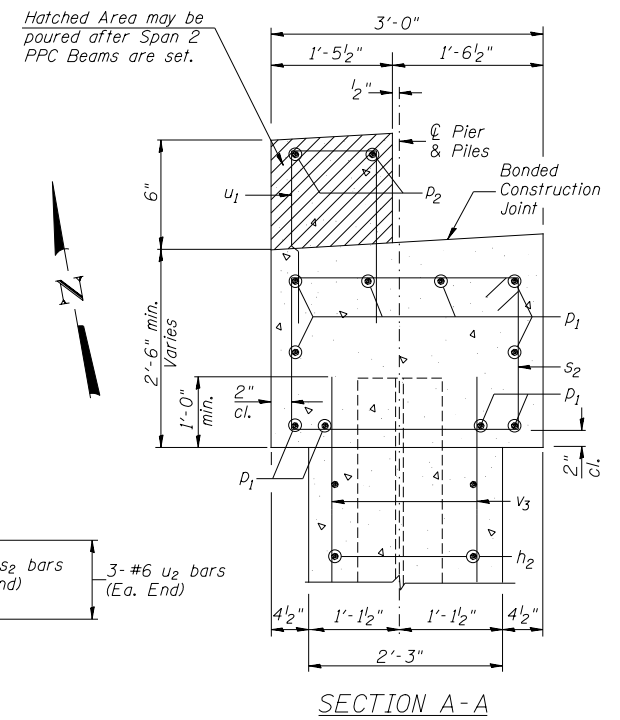


ELEVATION
(Looking North)



FOOTING PLAN

PILE DATA
Type & Size: Steel HP14x73
Nominal Required Bearing: 578 kips
Factored Resistance Available: 318 kips
Est. Length: 51'
No. Req'd.: 6 (Includes 1 Test Pile)



SECTION A-A

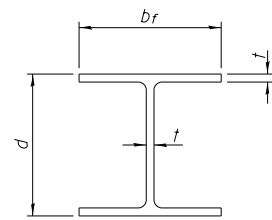
**PIER #2
BILL OF MATERIAL**

BAR	NO.	SIZE	LENGTH	SHAPE
h ₂	44	#5	29'-9"	—
p ₁	10	#7	32'-9"	—
p ₂	2	#5	32'-9"	—
s ₂	46	#5	10'-7"	□
u ₁	34	#4	3'-9"	□
u ₂	6	#6	11'-7"	□
u ₃	44	#5	7'-0"	□
v ₃	68	#5	22'-4"	—

Concrete Structures	CU YD	67.7
Reinforcement Bars	POUND	4,710
Cofferdam Excavation	CU YD	50
Furnishing Steel Piles HP14x73	FOOT	255
Driving Piles	FOOT	255
Test Pile Steel HP14x73	EACH	1
Cofferdam (Type 1) (Location-2)	EACH	1

PIER #2
MACOUPIN COUNTY
SECTION 13-00098-00-BR
C.H. 38 OVER BIG APPLE CREEK

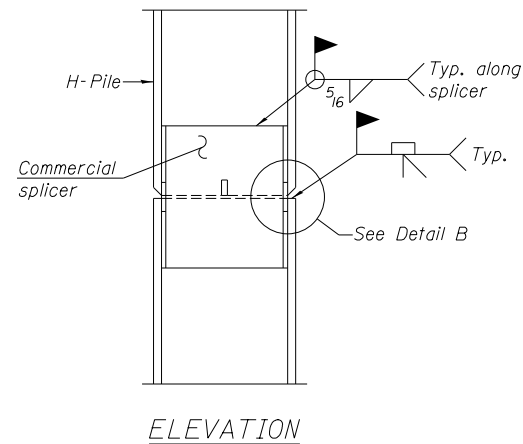
SHEET NO. 12 13 SHEETS	F.A.S. RTE. 616	SECTION 13-00098-00-BR	COUNTY MACOUPIN	TOTAL SHEETS 31	SHEET NO. 18
	S.N. 059-3017		CONTRACT NO. 93662		
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT BXV1(265)			



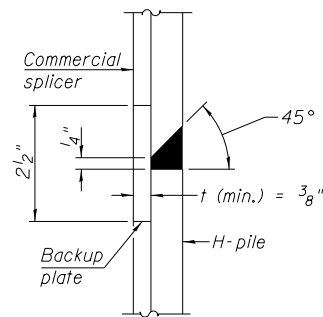
STEEL PILE TABLE

Designation	Depth d	Flange width b _f	Web and Flange thickness t	Encasement diameter
HP 14x117	14 1/4"	14 7/8"	13/16"	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"

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

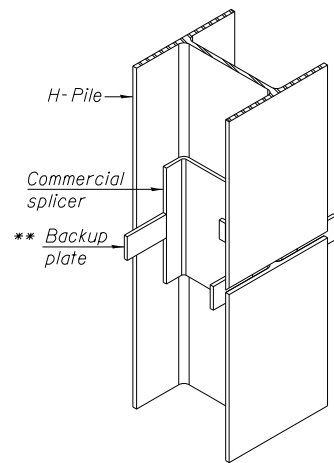


ELEVATION

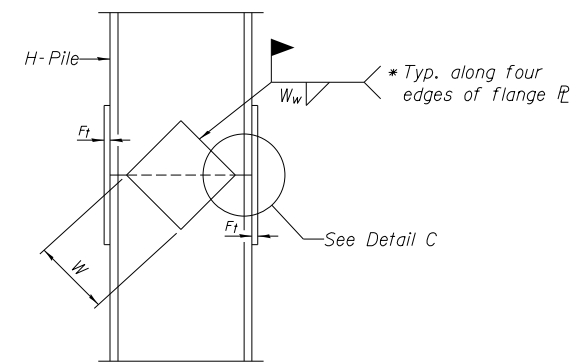


DETAIL "B"

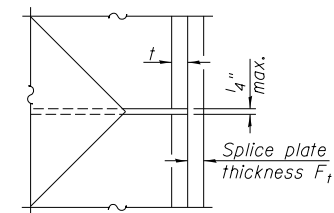
WELDED COMMERCIAL SPLICE



ISOMETRIC VIEW

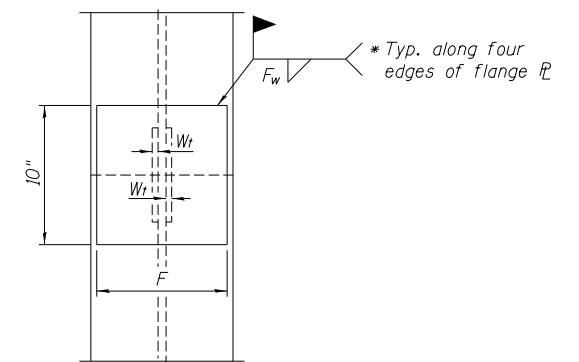


ELEVATION



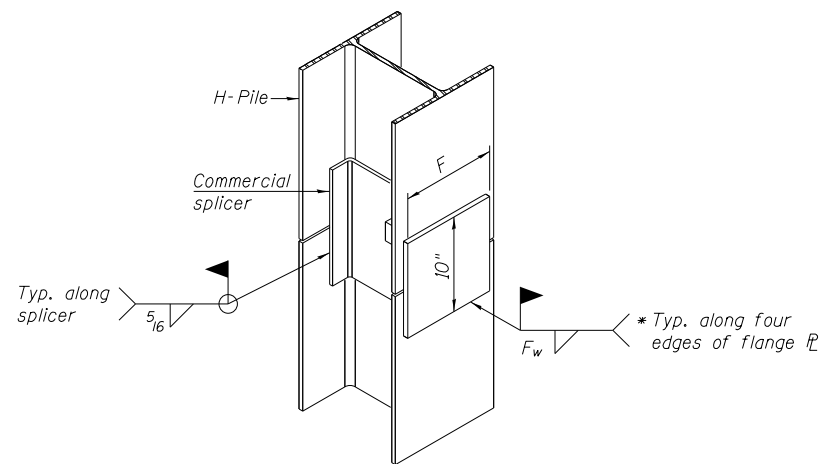
DETAIL C

WELDED PLATE FIELD SPLICE



END VIEW

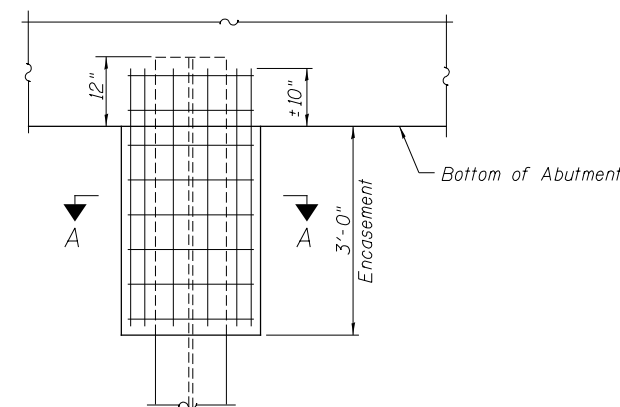
Designation	F	F _t	F _w	W	W _t	W _w
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	1/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	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"



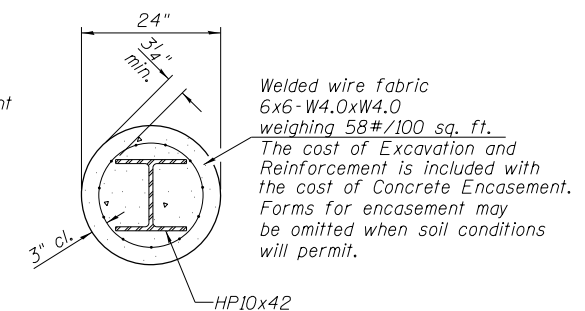
ISOMETRIC VIEW

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.



ABUTMENT ELEVATION



SECTION A-A

PILE ENCASEMENT

PILE DETAILS

MACOUPIN COUNTY

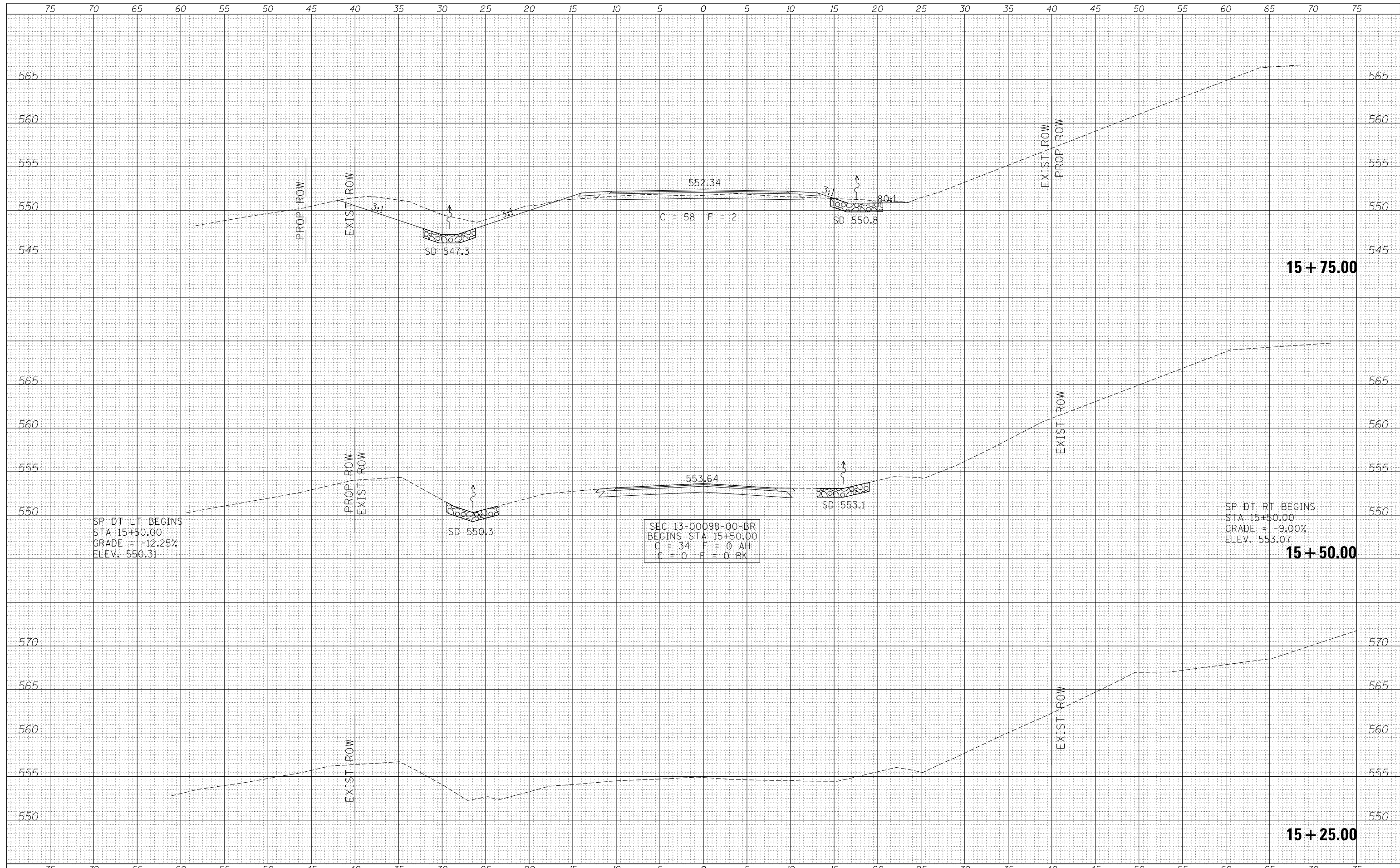
SECTION 13-00098-00-BR

C.H. 38 OVER BIG APPLE CREEK

SHEET NO. 13	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
13 SHEETS	616	13-00098-00-BR	MACOUPIN	31	19
S.N. 059-3017			CONTRACT NO. 93662		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT BXV1(265)		

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 = V:\Bridge\3417-Macoupin\3417xshs.dgn

USER NAME = JHutchison	DESIGNED -	REVISIED -
	DRAWN -	REVISIED -
PLOT SCALE = 10.0000' / in.	CHECKED -	REVISIED -
PLOT DATE = 9/22/2017	DATE -	REVISIED -

**MACOUPIN COUNTY
COUNTY HIGHWAY 38
OVER BIG APPLE CREEK**

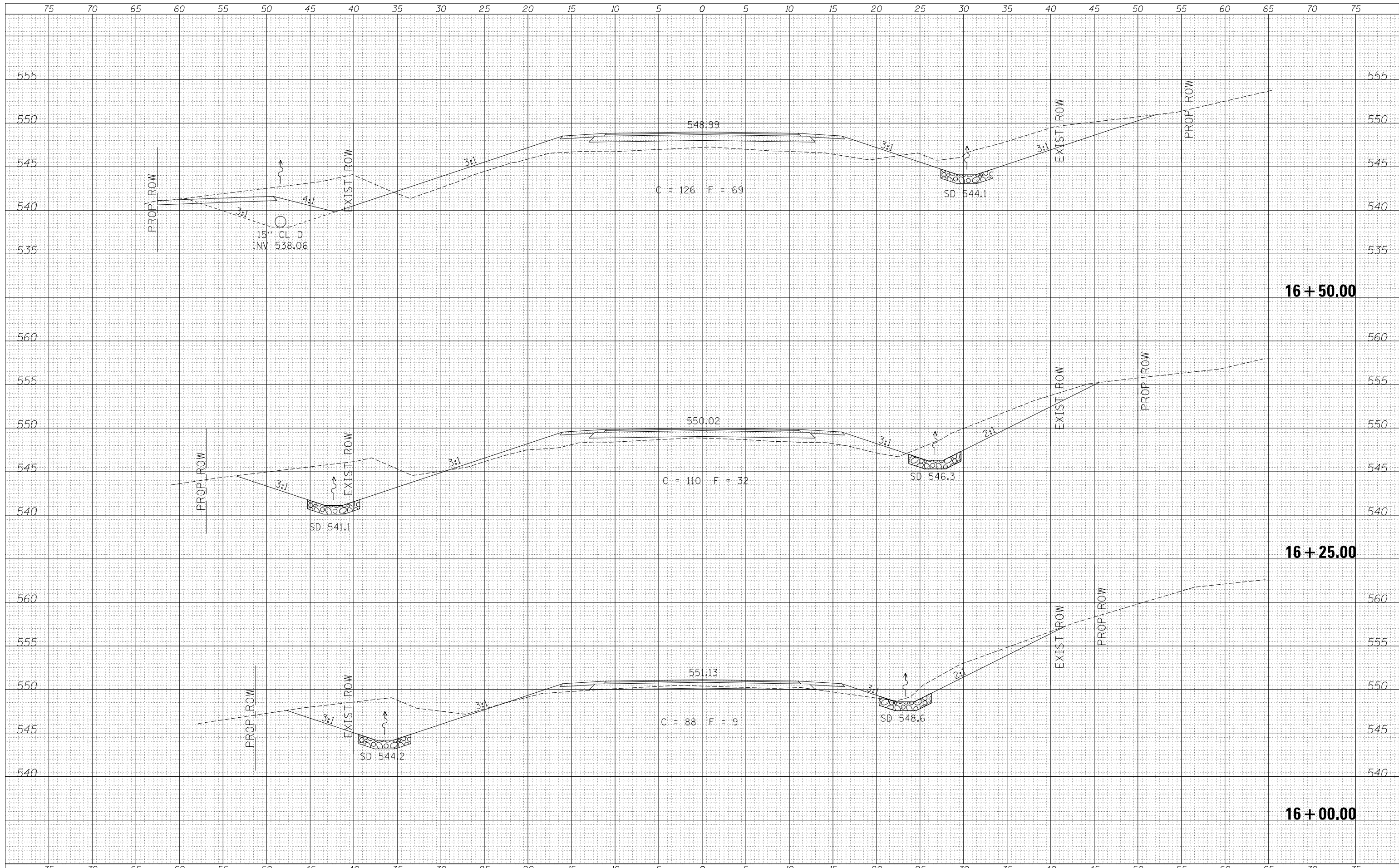
SCALE: 1"=5' SHEET 1 OF 12 SHEETS STA. 15+25.00 TO STA. 15+75.00

CROSS SECTIONS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
616	13-00098-00-BR	MACOUPIN	31	20
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 93662	
FED. AID PROJECT BKVI(265)				

DATE	
BY	
FINISHED SURVEY	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	

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



FILE NAME = V:\Bridge\3417-Macoupin\3417xshs.dgn
 #MODELNAME#

USER NAME = JHutchison	DESIGNED -	REVISD -
	DRAWN -	REVISD -
PLOT SCALE = 10.0000' / in.	CHECKED -	REVISD -
PLOT DATE = 9/22/2017	DATE -	REVISD -

**MACOUPIN COUNTY
 COUNTY HIGHWAY 38
 OVER BIG APPLE CREEK**

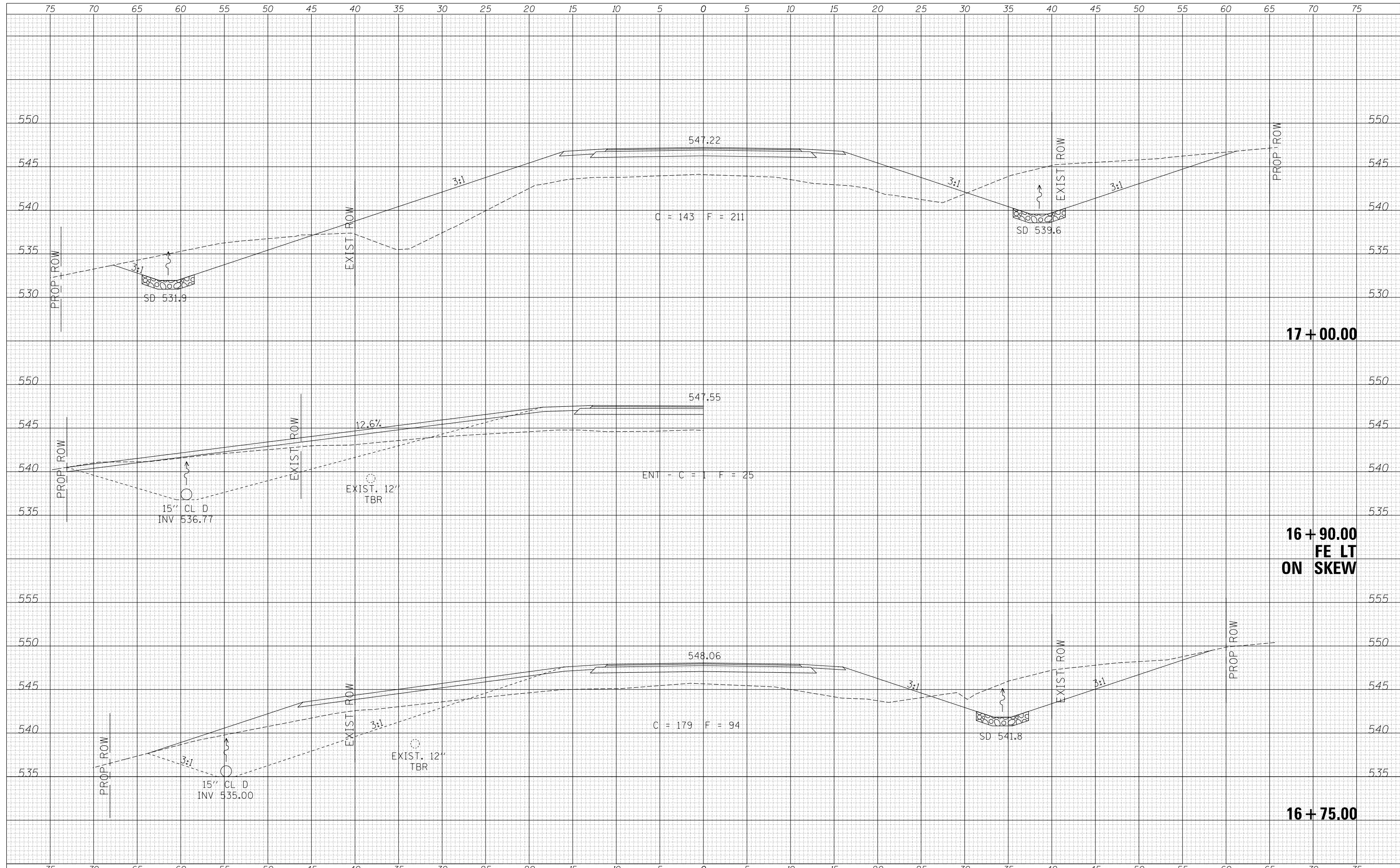
CROSS SECTIONS

SCALE: 1"=5' SHEET 2 OF 12 SHEETS STA. 16+00.00 TO STA. 16+50.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
616	13-00098-00-BR	MACOUPIN	31	21
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 93662	
FED. AID PROJECT BKVI(265)				

DATE	
BY	
ORIGINAL SURVEY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	

DATE	
BY	
ORIGINAL SURVEY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	



17 + 00.00

**16 + 90.00
FE LT
ON SKEW**

16 + 75.00

FILE NAME = V:\Bridge\3417-Macoupin\3417xshs.dgn
 MODELNAME

USER NAME = JHutchison	DESIGNED -	REVISD -
	DRAWN -	REVISD -
PLOT SCALE = 10.0000' / in.	CHECKED -	REVISD -
PLOT DATE = 9/22/2017	DATE -	REVISD -

**MACOUPIN COUNTY
 COUNTY HIGHWAY 38
 OVER BIG APPLE CREEK**

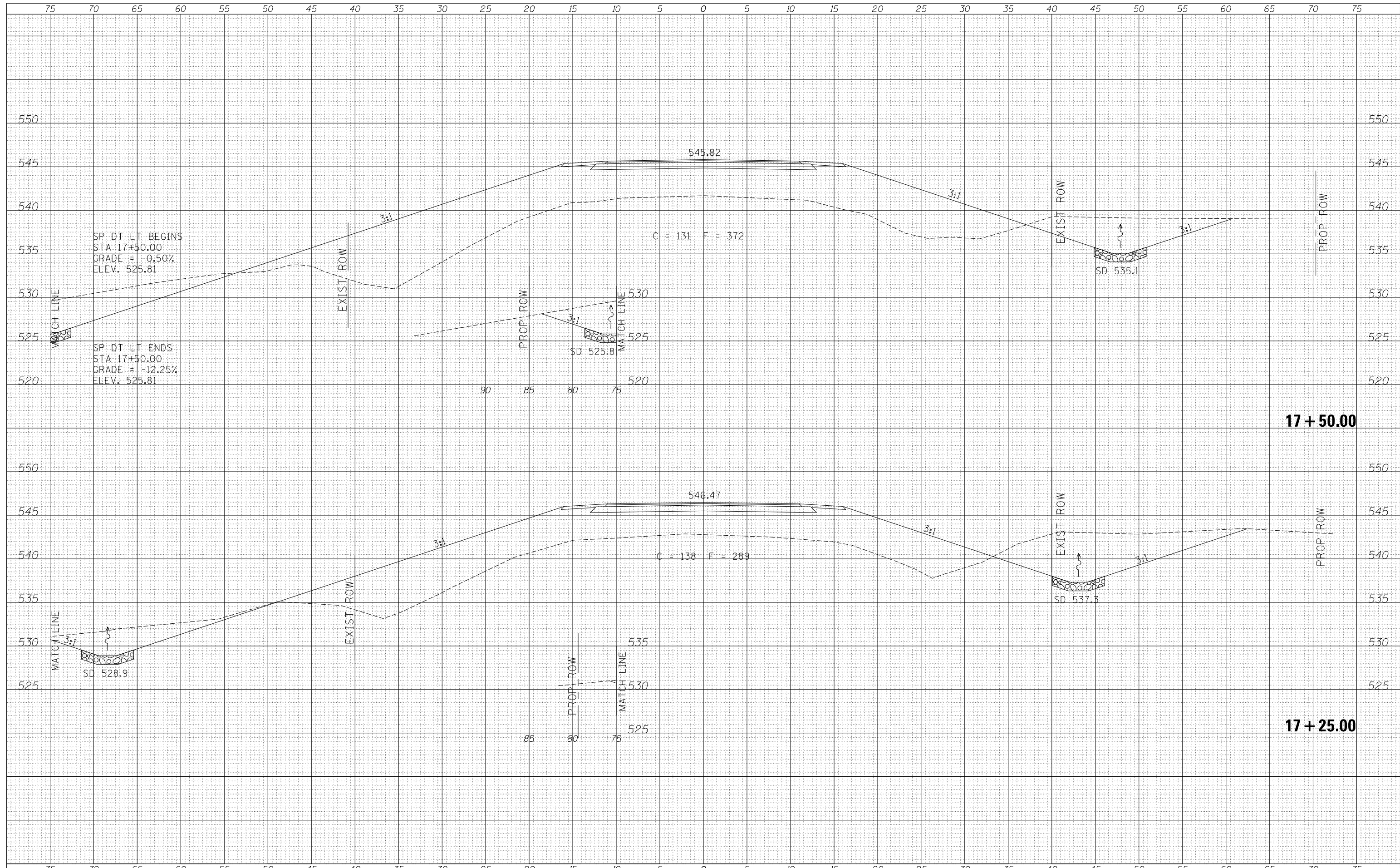
CROSS SECTIONS

SCALE: 1"=5' SHEET 3 OF 12 SHEETS STA. 16+75.00 TO STA. 17+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
616	13-00098-00-BR	MACOUPIN	31	22
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 93662	
FED. AID PROJECT BKVI(265)				

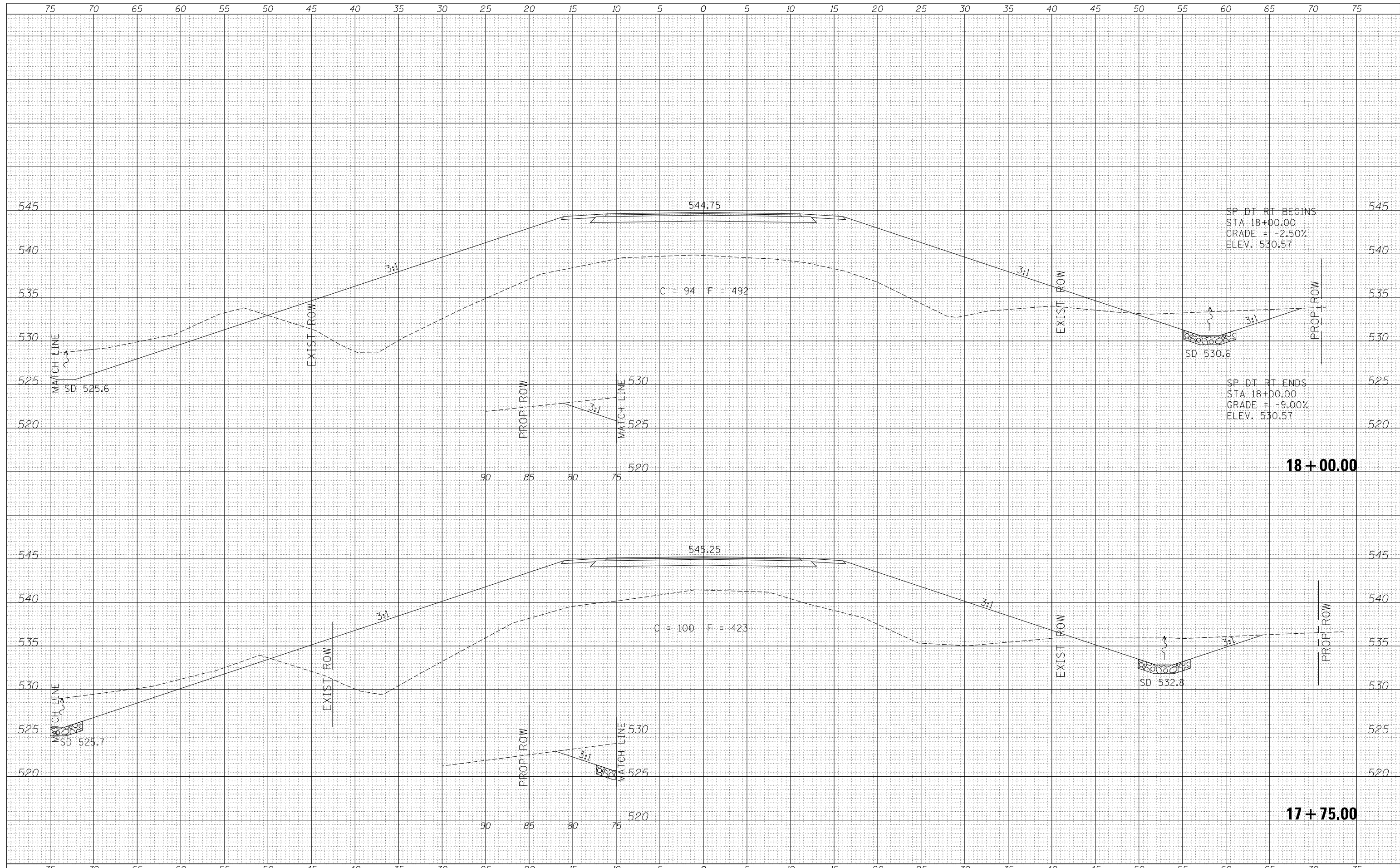
DATE	
BY	
FINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS CHECKED
	AREAS CHECKED

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



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 = V:\Bridge\3417-Macoupin\3417xshs.dgn
 MODELNAME

USER NAME = JHutchison	DESIGNED -	REVISIED -
	DRAWN -	REVISIED -
PLOT SCALE = 10.0000' / in.	CHECKED -	REVISIED -
PLOT DATE = 9/22/2017	DATE -	REVISIED -

**MACOUPIN COUNTY
 COUNTY HIGHWAY 38
 OVER BIG APPLE CREEK**

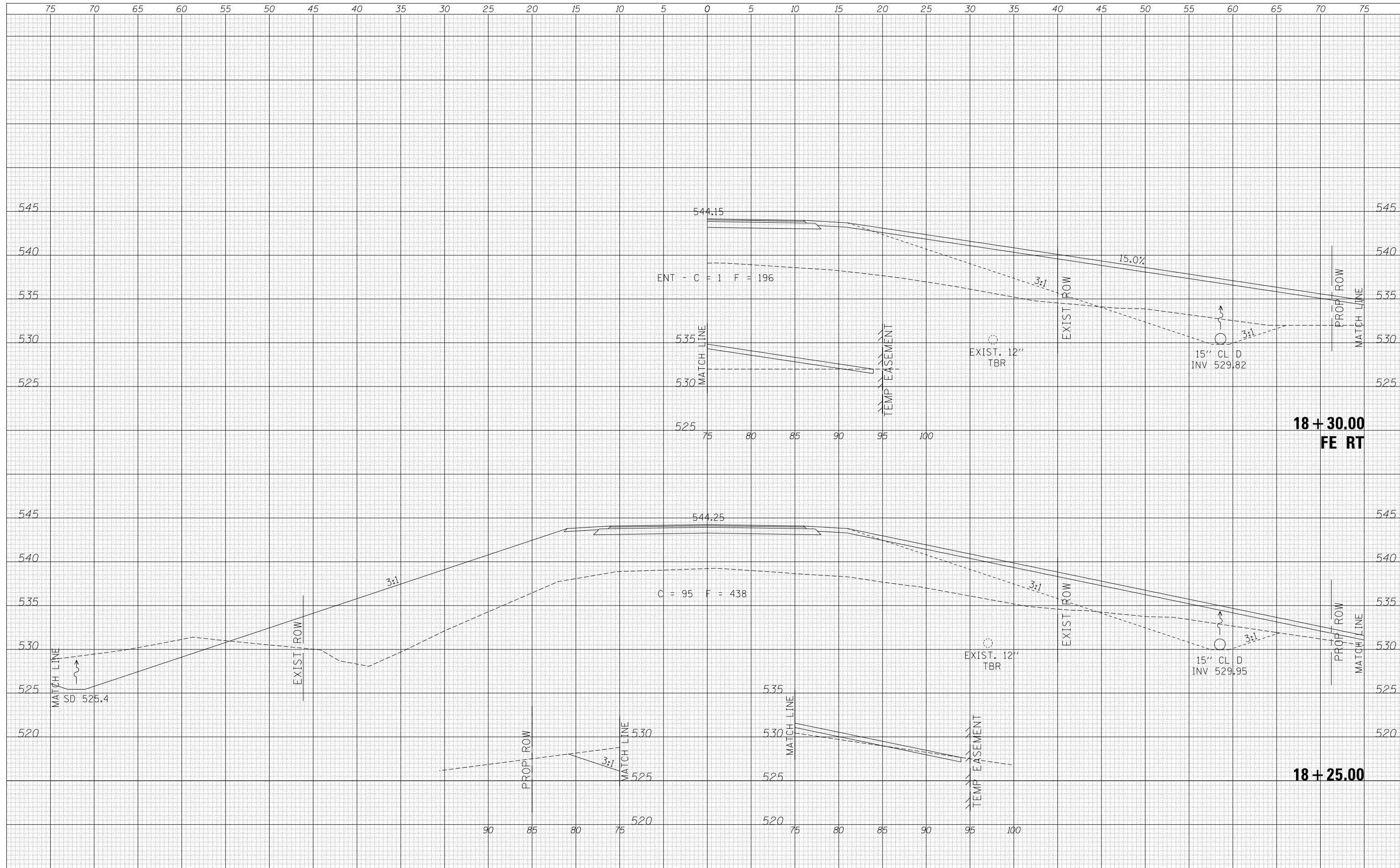
CROSS SECTIONS

SCALE: 1"=5' SHEET 5 OF 12 SHEETS STA. 17+75.00 TO STA. 18+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
616	13-00098-00-BR	MACOUPIN	31	24
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 93662	
FED. AID PROJECT BXVI(265)				

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 = V:\Bridge\3417-Macoupin\3417xshs.dgn

USER NAME = JHutchison	DESIGNED -	REVISIED -
PLOT SCALE = 10.0000' / in.	DRAWN -	REVISIED -
PLOT DATE = 9/22/2017	CHECKED -	REVISIED -
	DATE -	REVISIED -

**MACOUPIN COUNTY
COUNTY HIGHWAY 38
OVER BIG APPLE CREEK**

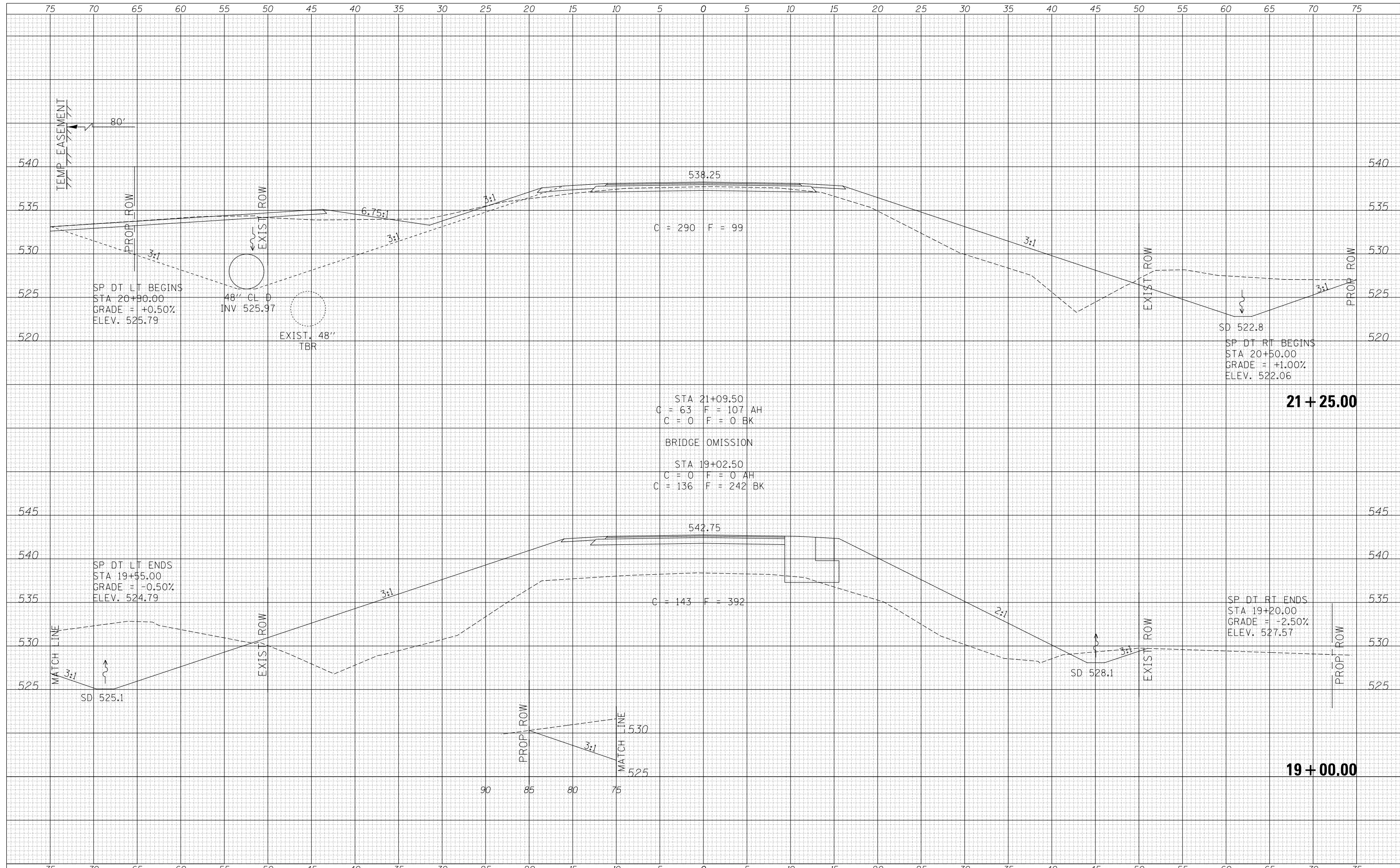
CROSS SECTIONS

SCALE: 1"=5' SHEET 6 OF 12 SHEETS STA. 18+25.00 TO STA. 18+30.00

F.A.S. RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
616	13-00098-00-BR	MACOUPIN	31	25
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 93662	
FED. AID PROJECT BKVI(265)				

DATE	
BY	
FINISHED SURVEY	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	

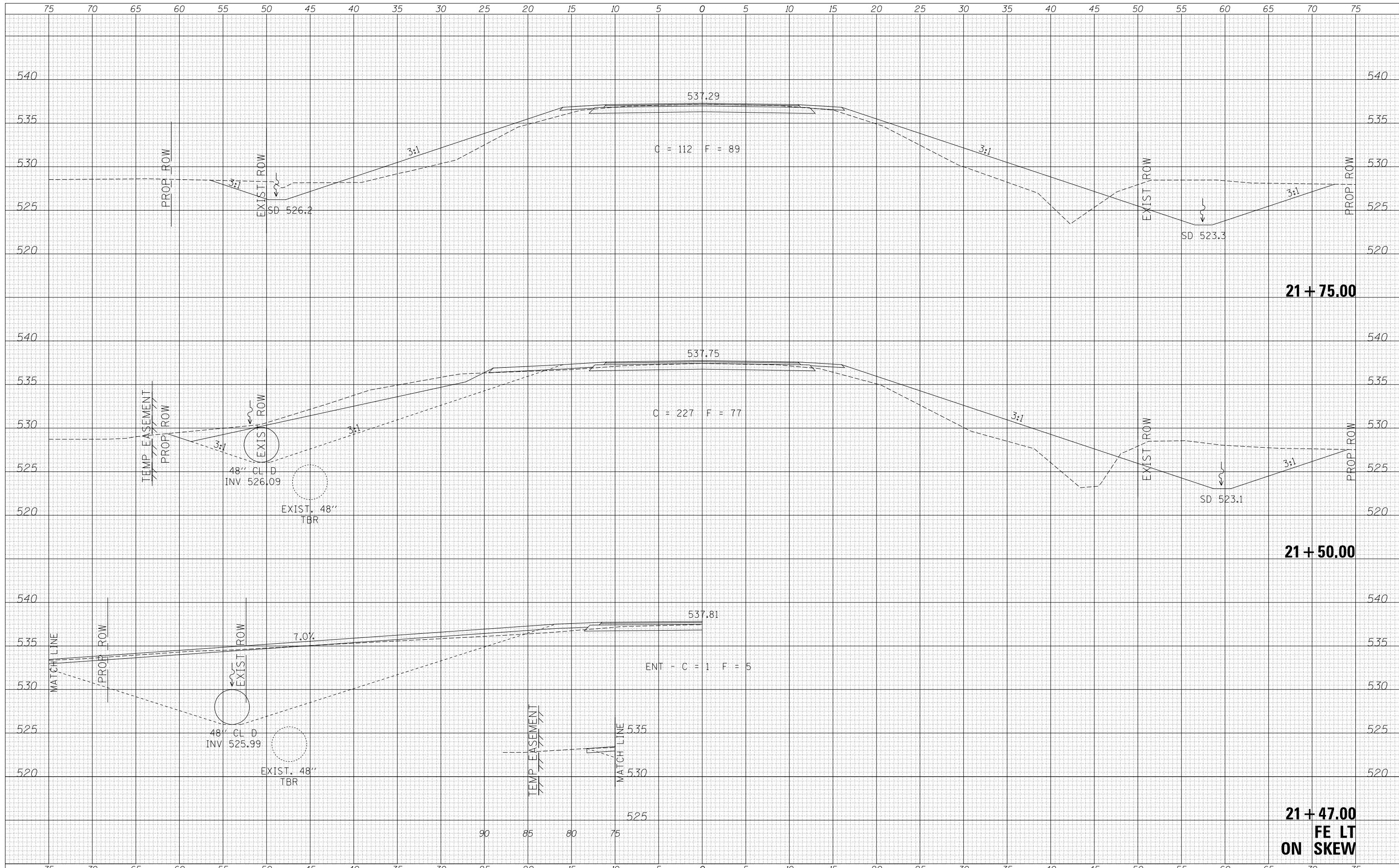
DATE	
BY	
ORIGINAL SURVEY	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	



FILE NAME -	USER NAME - JHutchison	DESIGNED -	REVISED -	MACOUPIN COUNTY COUNTY HIGHWAY 38 OVER BIG APPLE CREEK	CROSS SECTIONS SCALE: 1"=5' SHEET 8 OF 12 SHEETS STA. 19+00.00 TO STA. 21+25.00	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
V:\Bridge\3417-Macoupin\3417xshs.dgn	PLOT SCALE = 10.0000' / in.	DRAWN -	REVISED -			616	13-00098-00-BR	MACOUPIN	31	27	
MODELNAME	PLOT DATE = 9/22/2017	CHECKED -	REVISED -			CONTRACT NO. 93662					
		DATE -	REVISED -			FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT BKVI(265)					

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

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



21 + 75.00

21 + 50.00

21 + 47.00
FE LT
ON SKEW

FILE NAME = V:\Bridge\3417-Macoupin\3417xshs.dgn

USER NAME = JHutchison	DESIGNED -	REVISIED -
PLOT SCALE = 10.0000' / in.	DRAWN -	REVISIED -
PLOT DATE = 9/22/2017	CHECKED -	REVISIED -
	DATE -	REVISIED -

**MACOUPIN COUNTY
COUNTY HIGHWAY 38
OVER BIG APPLE CREEK**

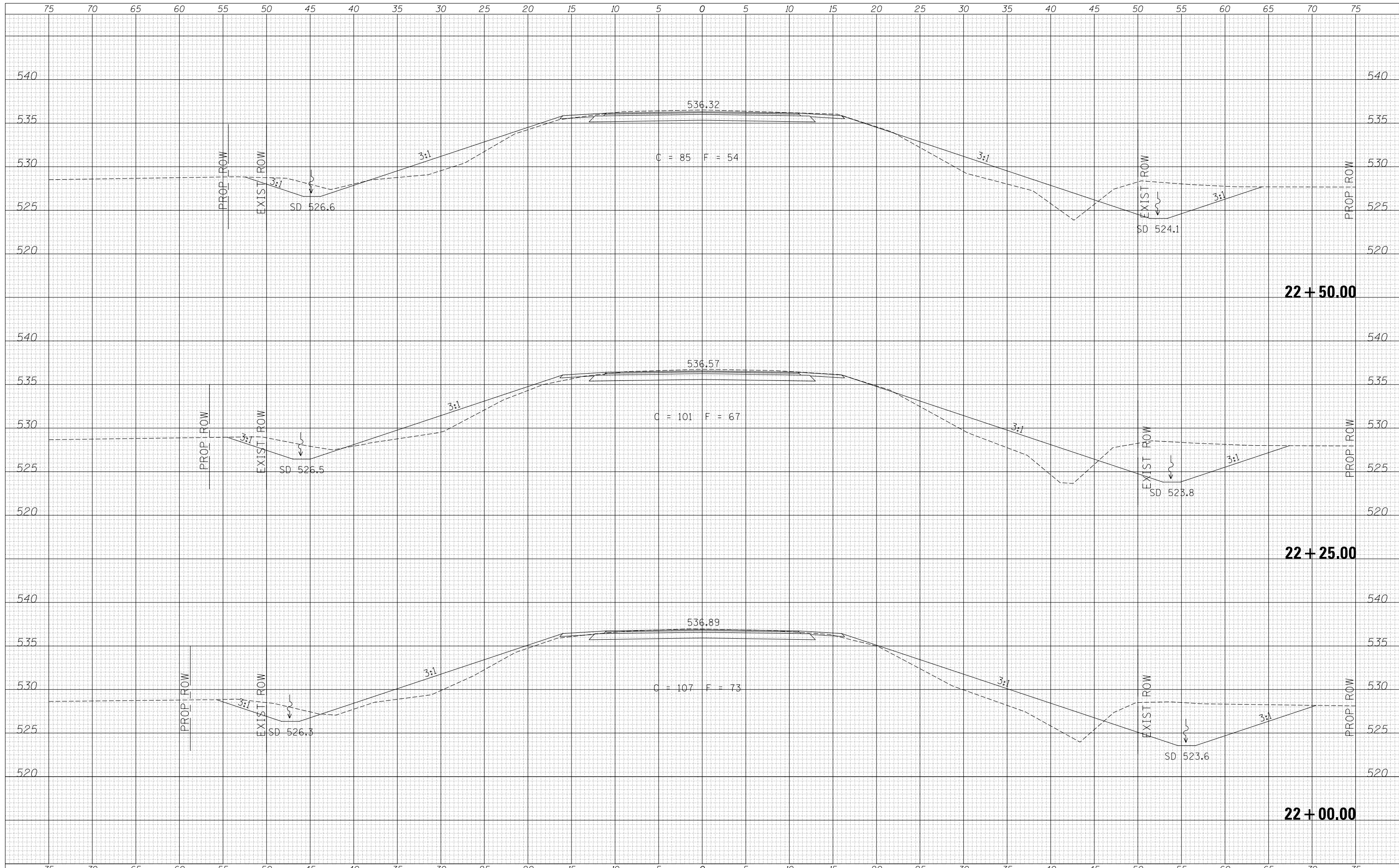
CROSS SECTIONS

SCALE: 1"=5' SHEET 9 OF 12 SHEETS STA. 21+47.00 TO STA. 21+75.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
616	13-00098-00-BR	MACOUPIN	31	28
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 93662	
FED. AID PROJECT BKVI(265)				

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

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



FILE NAME = V:\Bridge\3417-Macoupin\3417xshs.dgn
 MODELNAME

USER NAME = JHutchison	DESIGNED -	REVISIED -
	DRAWN -	REVISIED -
PLOT SCALE = 10.0000' / 1"	CHECKED -	REVISIED -
PLOT DATE = 9/22/2017	DATE -	REVISIED -

**MACOUPIN COUNTY
 COUNTY HIGHWAY 38
 OVER BIG APPLE CREEK**

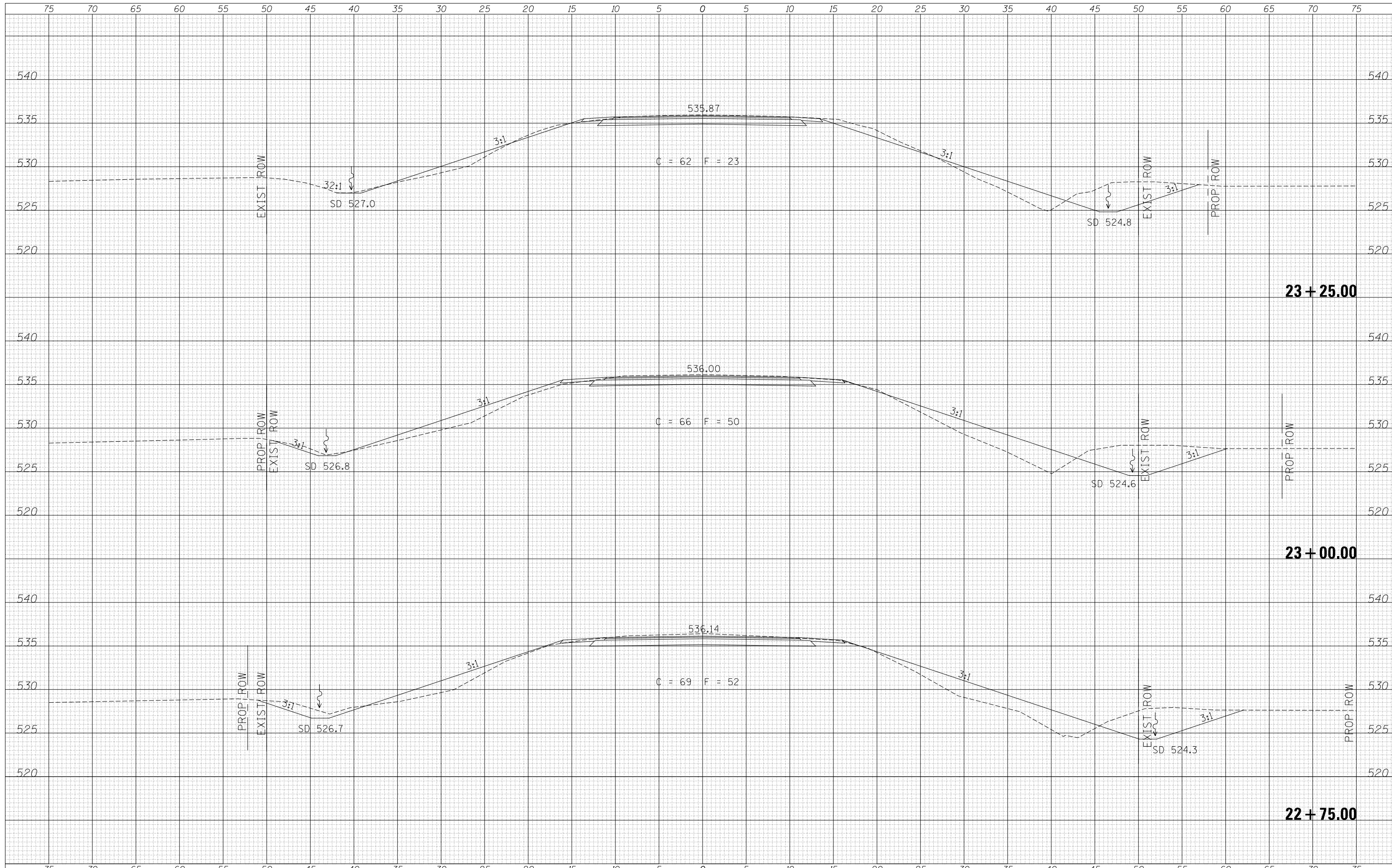
CROSS SECTIONS

SCALE: 1"=5' SHEET 10 OF 12 SHEETS STA. 22+00.00 TO STA. 22+50.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
616	13-00098-00-BR	MACOUPIN	31	29
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 93662	
FED. AID PROJECT BKVI(265)				

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

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



FILE NAME = V:\Bridge\3417-Macoupin\3417xshs.dgn
 MODELNAME

USER NAME = JHutchison	DESIGNED -	REVISIED -
	DRAWN -	REVISIED -
PLOT SCALE = 10.0000' / in.	CHECKED -	REVISIED -
PLOT DATE = 9/22/2017	DATE -	REVISIED -

**MACOUPIN COUNTY
 COUNTY HIGHWAY 38
 OVER BIG APPLE CREEK**

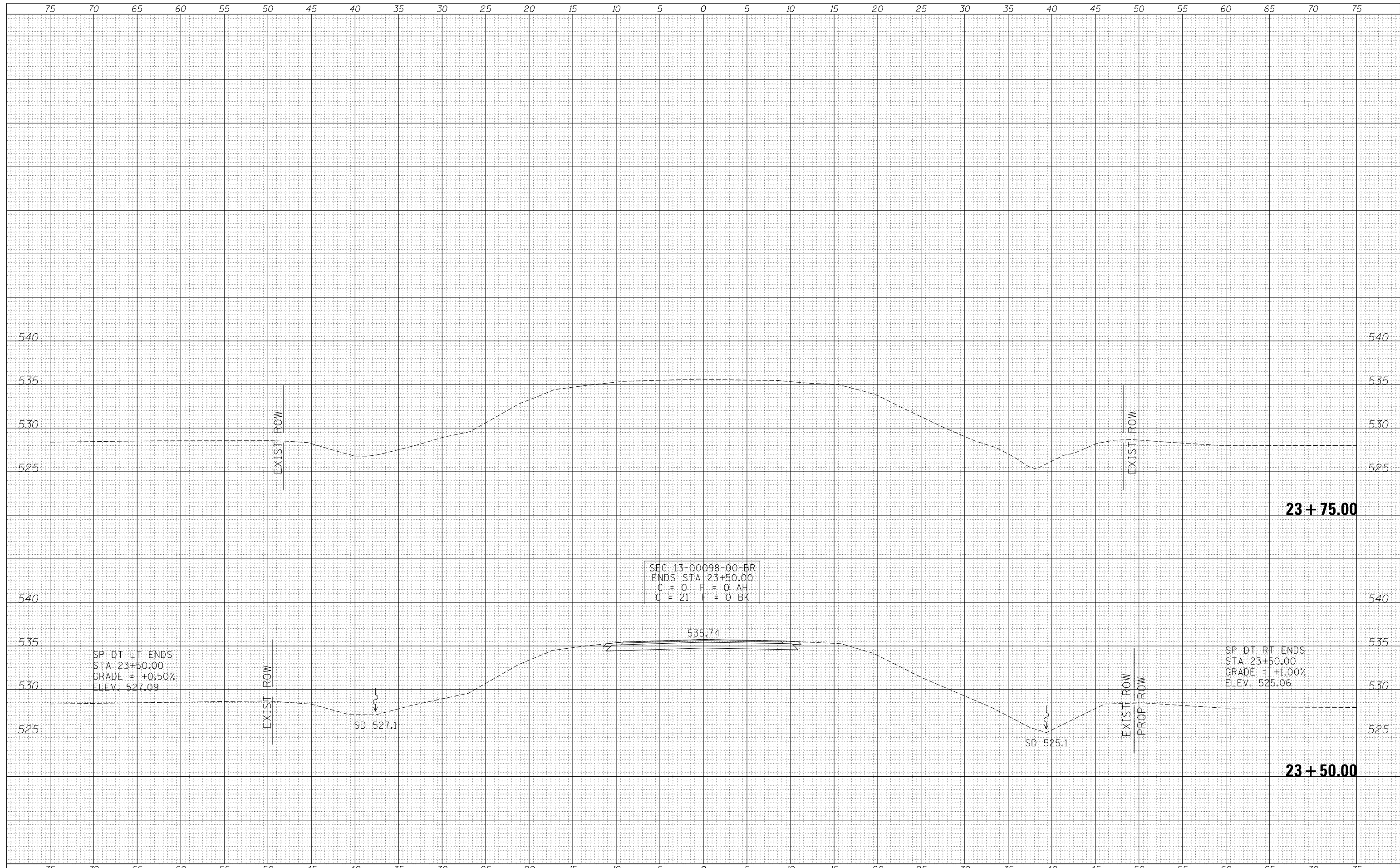
CROSS SECTIONS

SCALE: 1"=5' SHEET 11 OF 12 SHEETS STA. 22+75.00 TO STA. 23+25.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
616	13-00098-00-BR	MACOUPIN	31	30
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 93662	
FED. AID PROJECT BKVI(265)				

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

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



SEC 13-00098-00-BR
 ENDS STA 23+50.00
 C = 0 F = 0 AH
 C = 21 F = 0 BK

SP DT LT ENDS
 STA 23+50.00
 GRADE = +0.50%
 ELEV. 527.09

SP DT RT ENDS
 STA 23+50.00
 GRADE = +1.00%
 ELEV. 525.06

SD 527.1

SD 525.1

535.74

FILE NAME = V:\Bridge\3417-Macoupin\3417xshs.dgn

USER NAME = JHutchison	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 10.0000' / in.	CHECKED -	REVISED -
PLOT DATE = 9/22/2017	DATE -	REVISED -

**MACOUPIN COUNTY
 COUNTY HIGHWAY 38
 OVER BIG APPLE CREEK**

CROSS SECTIONS

SCALE: 1"=5' SHEET 12 OF 12 SHEETS STA. 23+50.00 TO STA. 23+75.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
616	13-00098-00-BR	MACOUPIN	31	31
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 93662	
FED. AID PROJECT BKVI(265)				