

06-13-14 LETTING ITEM 186

SEE SHEET 2 FOR INDEX OF SHEETS
AND LIST OF ILLINOIS DOT STANDARDS

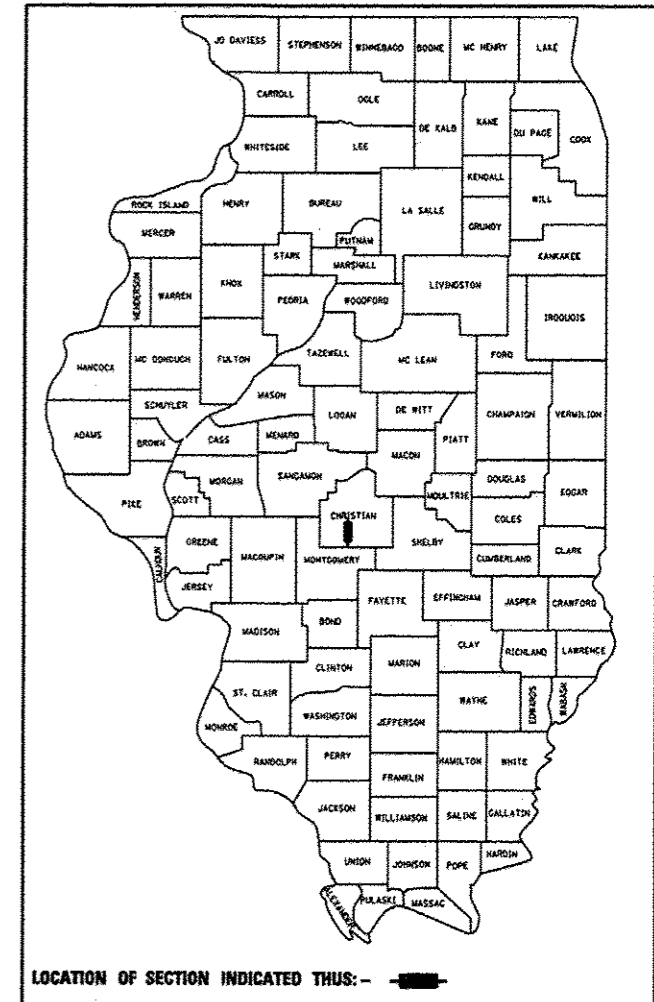
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED
HIGHWAY BRIDGE PROGRAM

FAS ROUTE 645 (CH 1)
SECTION 11-00089-00-BR
CHRISTIAN COUNTY
PROJECT BHS-0645 (151)
JOB NUMBER C-96-217-13
OVER S FORK SANGAMON RIVER
SUPERSTRUCTURE REPLACEMENT

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
645	11-00089-00-BR	CHRISTIAN	57	1
FED. ROAD DIST. NO.		ILLINOIS		

93620



UTILITY CONTACTS:

UTILITY TYPE:

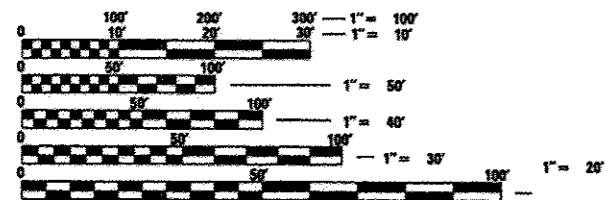
ELECTRIC
AMEREN CIPS (SOUTH)
(217) 234-0443
ATTN: D.J. KENNEDY

UTILITY TYPE:

ELECTRIC
SHELBY ELECTRIC CO-OP
(217) 744-3986
ATTN: JIM MATLOCK

UTILITY TYPE:

TELEPHONE
ILLINOIS CONSOLIDATED TELEPHONE
(217) 235-3326
ATTN: WES CHAMBERS



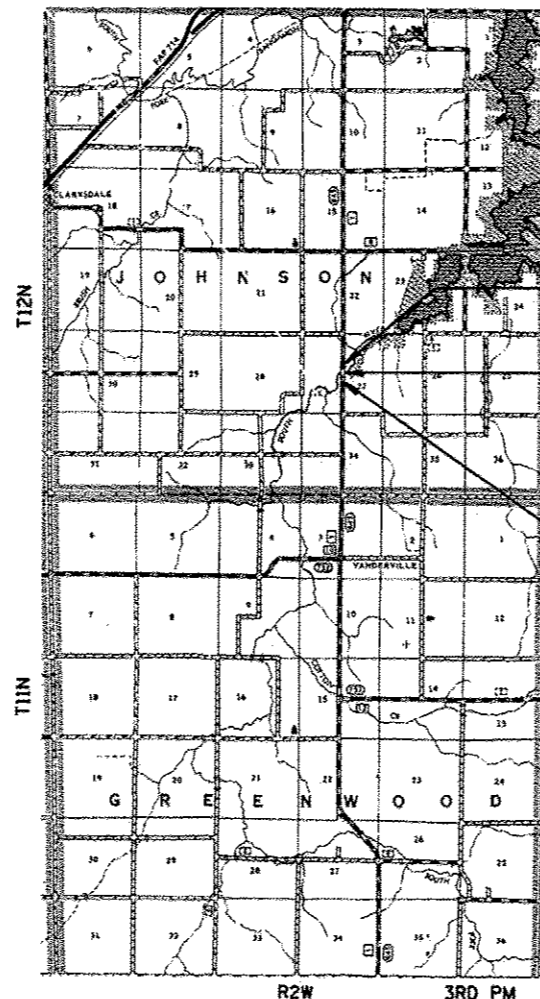
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD
ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT
CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS
ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

CONTRACT NO. 93620



DESIGN DESIGNATION
FUNCTIONAL CLASSIFICATION: RURAL - MAJOR COLLECTOR
DESIGN SPEED 50 MPH
3R GUIDELINES
CURRENT ADT: 2,300 (2012)



BEGIN SECTION
STA 329+33.00

STA 333+29.12
EXISTING SN 011-3024
3 SPAN STEEL BEAM BRIDGE
205' BK TO BK APPROACH BENTS
TO BE REHABILITATED

END SECTION
STA 337+62.00



SCALE IN MILES
NET LENGTH OF SECTION 829.00 FEET 0.157 MILES



Michael D. Cummins 3/27/14
ILLINOIS PROFESSIONAL NO. 43244
(Expires 11/30/15)

APPROVED 4/2 2014

Craig D. Frye
COUNTY ENGINEER

PASSED April 3, 2014

Terrence H. Fountain
DISTRICT SIX ENGINEER OF LOCAL ROADS AND STREETS

PASSED April 2, 2014

Kevin A. Chamberlain
DISTRICT ENGINEER OF CONSTRUCTION

RELEASED FOR
BID BASED ON
LIMITED REVIEW

April 3, 2014

Roger L. Driskell
DEPUTY DIRECTOR OF HIGHWAYS,
REGION FOUR ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

INDEX OF SHEETS

SHEET NO	TITLE
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LIST OF ILLINOIS DOT HIGHWAY STANDARDS

000001-06	Standard Symbols, Abbreviations and Patterns
001001-02	Area of Reinforcement Bars
280001-07	Temporary Erosion Control Systems
515001-03	Name Plate for Bridges
630001-10	Steel Plate Beam Guardrail
630301-06	Shoulder Widening for Type 1 (Special) Guardrail Terminals
631032-08	Traffic Barrier Terminal, Type 6A
635006-03	Reflector and Terminal Marker Placement
635011-02	Reflector Marker and Mounting Details
701201-04	Lane Closure, 2L, 2W, Day Only, for Speeds \geq 45 MPH
701311-03	Lane Closure, 2L, 2W, Moving Operations - Day Only
701321-13	Lane Closure, 2L, 2W, Bridge Repair with Barrier
701326-04	Lane Closure, 2L, 2W, Pavement Widening, for Speeds \geq 45 MPH
701901-03	Traffic Control Devices
704001-07	Temporary Concrete Barrier
780001-04	Typical Pavement Markings
781001-03	Typical Applications Raised Reflective Pavement Markers

GENERAL NOTES

- THIS SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS, THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ADOPTED JANUARY 1, 2012, THE SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS, AND THE SPECIAL PROVISIONS INCLUDED IN THESE PLANS.
- ANY REFERENCE TO THE STANDARDS THROUGHOUT THE PLANS SHALL BE INTERPRETED TO BE THE EDITION, AS INDICATED BY THE SUB-NUMBER, LISTED IN THE INDEX OF SHEETS, OR THE COPY OF THE STANDARD INCLUDED IN THESE PLANS.
- THE THICKNESS OF HOT-MIX ASPHALT MIXTURES SHOWN ON THE PLANS IS THE NOMINAL THICKNESS. DEVIATIONS FROM THE NOMINAL THICKNESS WILL BE PERMITTED WHEN SUCH DEVIATIONS OCCUR DUE TO IRREGULARITIES IN THE EXISTING SURFACE OR BASE ON WHICH THE HOT-MIX ASPHALT MIXTURE IS PLACED.
- THE LOCATION OF THOSE BURIED AND ABOVE GROUND UTILITIES SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITY PROPERTY FROM CONSTRUCTION OPERATIONS AS OUTLINED IN ARTICLE 107.26 OF THE STANDARD SPECIFICATIONS. THE J.U.L.I.E NUMBER IS 1 (800) 892-0123. A MINIMUM 48 HOURS ADVANCE NOTICE IS REQUIRED. SEE SPECIAL PROVISIONS FOR STATUS OF UTILITIES WITH UTILITY COMPANIES LISTED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRS TO ANY UTILITY LINES AND EXISTING IMPROVEMENTS TO REMAIN THAT ARE DAMAGED AS A RESULT OF THE WORK.
- WHERE PROPOSED CONSTRUCTION ABUTS EXISTING APPURTENANCES, A SAW CUT SHALL BE MADE TO ACHIEVE A NEAT BUTT JOINT. SAW CUTS WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED INCLUDED IN THE TYPE OF WORK ENCOUNTERED.
- EARTH EXCAVATION FOR WIDENING IS INCLUDED IN THE QUANTITY FOR EARTH EXCAVATION.

THE FOLLOWING MIXTURE REQUIREMENTS ARE APPLICABLE FOR THIS PROJECT:

LOCATION	CH 1	
	HOT-MIX ASPHALT SURFACE COURSE	HOT-MIX ASPHALT BASE COURSE
AC/PG:	PG 64-22	PG 64-22
DESIGN AIR VOIDS %	4.0 • NDESIGN = 70	4.0 • NDESIGN = 70
MIXTURE COMPOSITION (GRADATION MIXTURE)	IL - 9.5	IL 19.0
FRICTION AGGREGATE	MIX "C"	N/A

APPLICATION RATES USED IN QUANTITY CALCULATIONS

GRANULAR MATERIALS _____ 2.05 Tons/Cu. Yd.
 BITUMINOUS MATERIALS (PRIME COAT) _____ 0.10 Gallon/Sq.Yd. (Bt. Base)
 HOT-MIX ASPHALT _____ 112#/Sq.Yd./Inch

SUMMARY OF QUANTITIES				CONSTRUCTION CODE				
CODE NO.	ITEM	UNIT	TOTAL QUANTITY	SN 011-3024				
				0014				
20200100	EARTH EXCAVATION	CU YD	190	190				
20400800	FURNISHED EXCAVATION	CU YD	205	205				
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	40	40				
28000400	PERIMETER EROSION BARRIER	FOOT	770	770				
28100107	STONE RIPRAP, CLASS A4	SQ YD	160	160				
28200200	FILTER FABRIC	SQ YD	160	160				
35501336	HOT-MIX ASPHALT BASE COURSE, 13"	SQ YD	441	441				
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	14	14				
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	82	82				
40603315	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N70	TON	68	68				
44000100	PAVEMENT REMOVAL	SQ YD	423	423				
44000155	HOT-MIX ASPHALT SURFACE REMOVAL, 1 1/2"	SQ YD	337	337				
50102400	CONCRETE REMOVAL	CU YD	12.9	12.9				
50104720	REMOVAL OF EXISTING CONCRETE DECK	EACH	1	1				

* SEE SPECIAL PROVISION

Δ SPECIALTY ITEMS



JOB # 2234
 FILE NAME * 2234.scdgn
 PLOT SCALE * 28.8980 / IN.
 PLOT DATE * 3/27/2014

DESIGNED - NAK
 DRAWN - SJS
 CHECKED - NAK
 DATE - 1/14/2013

REVISED -
 REVISED -
 REVISED -
 REVISED -

**CHRISTIAN COUNTY
 CH 1 IMPROVEMENTS**

SUMMARY OF QUANTITIES

SCALE: SHEET NO. 1 OF 5 SHEETS STA. TO STA.

FAS RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
645	11-00089-00-BR	CHRISTIAN	57	3
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
CONTRACT NO.			93620	

SUMMARY OF QUANTITIES				CONSTRUCTION CODE					
CODE NO.	ITEM	UNIT	TOTAL QUANTITY	SN 011-3024					
				0014					
50200100	STRUCTURE EXCAVATION	CU YD	198	198					
50300225	CONCRETE STRUCTURES	CU YD	65.2	65.2					
50300255	CONCRETE SUPERSTRUCTURE	CU YD	243.9	243.9					
50300260	BRIDGE DECK GROOVING	SQ YD	529	529					
50300300	PROTECTIVE COAT	SQ YD	616	616					
50500505	STUD SHEAR CONNECTORS	EACH	3,006	3,006					
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	66,810	66,810					
50800515	BAR SPLICERS	EACH	786	786					
△ 50901050	STEEL RAILING, TYPE SM	FOOT	371	371					
△ 50901125	STEEL RAILING (TEMPORARY)	FOOT	202	202					
51500100	NAME PLATES	EACH	1	1					
52000110	PREFORMED JOINT STRIP SEAL	FOOT	70	70					
52100020	ELASTOMERIC BEARING ASSEMBLY, TYPE II	EACH	12	12					
52100505	ANCHOR BOLTS, 5/8"	EACH	24	24					

* SEE SPECIAL PROVISION

△ SPECIALTY ITEMS



JOB # 2234
 FILE NAME = 2234.soc.dgn
 PLOT SCALE = 20.0000' / IN.
 PLOT DATE = 3/27/2014

DESIGNED - NAK
 DRAWN - SJS
 CHECKED - NAK
 DATE - 1/14/2013

REVISED -
 REVISED -
 REVISED -
 REVISED -

**CHRISTIAN COUNTY
 CH 1 IMPROVEMENTS**

SUMMARY OF QUANTITIES

SCALE: SHEET NO. 2 OF 5 SHEETS STA. TO STA.

FAS. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
645	11-00089-00-BR	CHRISTIAN	57	4
FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT			CONTRACT NO.	

93620

SUMMARY OF QUANTITIES				CONSTRUCTION CODE					
CODE NO.	ITEM	UNIT	TOTAL QUANTITY	SN 011-3024					
				0014					
58700300	CONCRETE SEALER	SQ FT	271	271					
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	20	20					
△ 63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	275.0	275.0					
△ 63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	4	4					
△ 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4	4					
63200310	GUARDRAIL REMOVAL	FOOT	160	160					
67100100	MOBILIZATION	L SUM	1	1					
* 70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	1	1					
* 70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	1					
* 70100500	TRAFFIC CONTROL AND PROTECTION, STANDARD 701326	L SUM	1	1					
* 70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1	1					
70300100	SHORT TERM PAVEMENT MARKING	FOOT	100	100					
70300220	TEMPORARY PAVEMENT MARKING - LINE 4"	FOOT	3,823	3,823					
70300280	TEMPORARY PAVEMENT MARKING - LINE 24"	FOOT	26	26					

* SEE SPECIAL PROVISION

△ SPECIALTY ITEMS



JOB # 2234
 FILE NAME = 2234soq.dgn
 PLOT SCALE = 20.0000' / IN.
 PLOT DATE = 3/27/2014

DESIGNED - NAK
 DRAWN - SJS
 CHECKED - NAK
 DATE - 1/14/2013

REVISED -
 REVISED -
 REVISED -
 REVISED -

**CHRISTIAN COUNTY
 CH 1 IMPROVEMENTS**

SUMMARY OF QUANTITIES

SCALE: SHEET NO. 3 OF 5 SHEETS STA. TO STA.

FAS RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
645	11-00089-00-BR	CHRISTIAN	57	5
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO.	

93620

SUMMARY OF QUANTITIES				CONSTRUCTION CODE					
CODE NO.	ITEM	UNIT	TOTAL QUANTITY	SN 011-3024					
				0014					
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	1,608	1,608					
70400100	TEMPORARY CONCRETE BARRIER	FOOT	687.5	687.5					
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	687.5	687.5					
Δ 70500100	TEMPORARY STEEL PLATE BEAM GUARDRAIL, TYPE A	FOOT	150.0	150.0					
70600260	IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	2	2					
70600332	IMPACT ATTENUATORS, RELOCATE (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	2	2					
Δ 78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	3,952	3,952					
Δ 78100100	RAISED REFLECTIVE PAVEMENT MARKER	EACH	8	8					
Δ * 78200410	GUARDRAIL MARKERS, TYPE A	EACH	11	11					
Δ * 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	6	6					
78300100	PAVEMENT MARKING REMOVAL	SQ FT	515	515					
78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	12	12					
* X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.2	0.2					
* X5860110	GRANULAR BACKFILL FOR STRUCTURES	CU YD	140	140					

* SEE SPECIAL PROVISION

Δ SPECIALTY ITEMS



JOB # 2234
 FILE NAME # 2234sqdgr
 PLOT SCALE # 28.0000' / 1"
 PLOT DATE # 3/27/2014

DESIGNED - NAK
 DRAWN - SJS
 CHECKED - NAK
 DATE - 1/14/2013

REVISED -
 REVISED -
 REVISED -
 REVISED -

CHRISTIAN COUNTY
 CH 1 IMPROVEMENTS

SUMMARY OF QUANTITIES

SCALE: SHEET NO. 4 OF 5 SHEETS STA. TO STA.

FAS RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
645	11-00089-00-BR	CHRISTIAN	57	6
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

936200

CONTRACT NO.

SUMMARY OF QUANTITIES				CONSTRUCTION CODE					
CODE NO.	ITEM	UNIT	TOTAL QUANTITY	SN 011-3024					
				0014					
Δ *	X7050167	TEMPORARY TRAFFIC BARRIER TERMINAL, TYPE 1, SPECIAL (TANGENT)	EACH	2	2				
*	X7200201	WIDTH RESTRICTION SIGNING	L SUM	1	1				
*	Z0001899	JACK AND REMOVE EXISTING BEARINGS	EACH	12	12				
*	Z0004552	APPROACH SLAB REMOVAL	SQ YD	154	154				
*	Z0026407	TEMPORARY SHEET PILING	SQ FT	416	416				
*	Z0046304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	64	64				
Δ *	XX008947	TEMPORARY TRAFFIC BARRIER TERMINAL, TYPE 11 (MODIFIED)	EACH	2	2				
	35650530	BASE COURSE WIDENING 13"	SQ YD	35	35				
	35650544	BASE COURSE WIDENING 14 1/2"	SQ YD	248	248				

* SEE SPECIAL PROVISION

Δ SPECIALTY ITEMS

93620



JOB # 2234
 FILE NAME # 2234seq.dgn
 PLOT SCALE # 26.0000' / IN.
 PLOT DATE # 3/27/2014

DESIGNED - NAK
 DRAWN - SJS
 CHECKED - NAK
 DATE - 1/14/2013

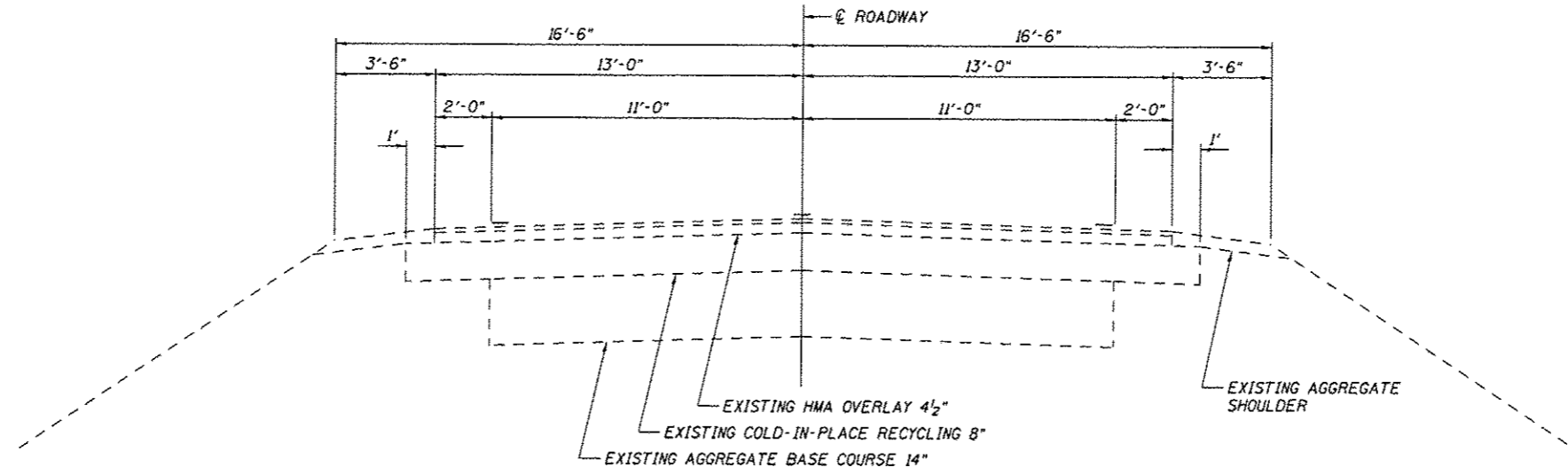
REVISED -
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**CHRISTIAN COUNTY
 CH 1 IMPROVEMENTS**

SUMMARY OF QUANTITIES
 SCALE: SHEET NO. 9 OF 5 SHEETS STA. TO STA.

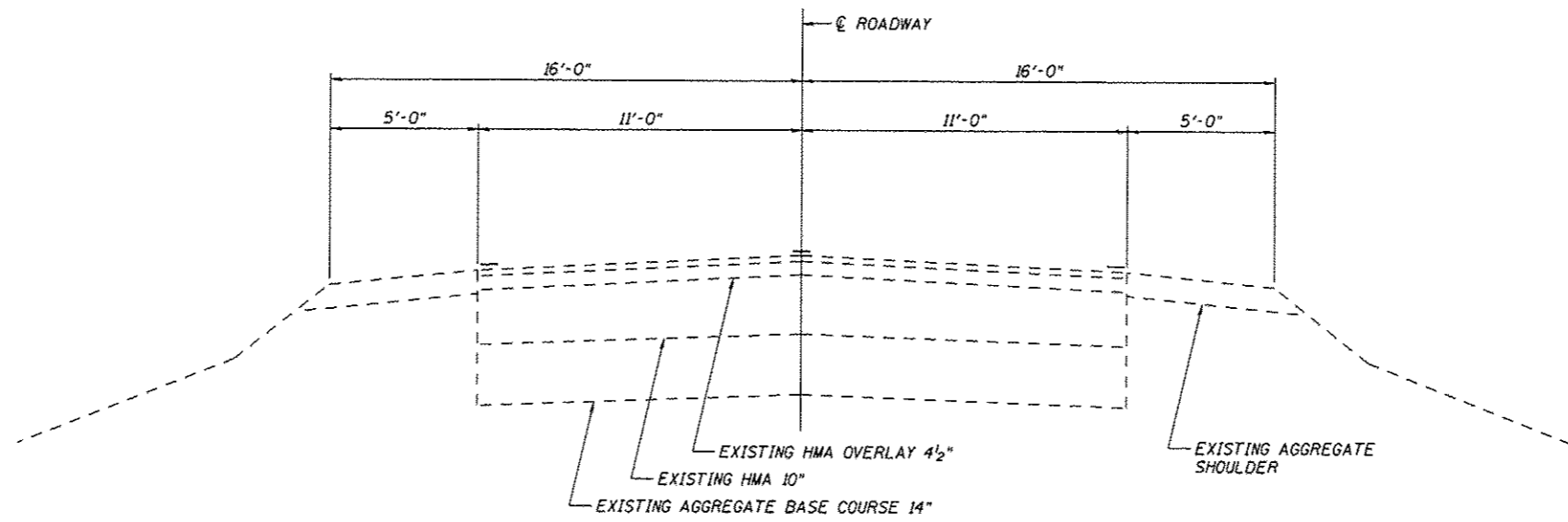
FAS RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
645	11-00089-00-BR	CHRISTIAN	57	7
CONTRACT NO.				

FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT



CH 1 EXISTING TYPICAL CROSS SECTION

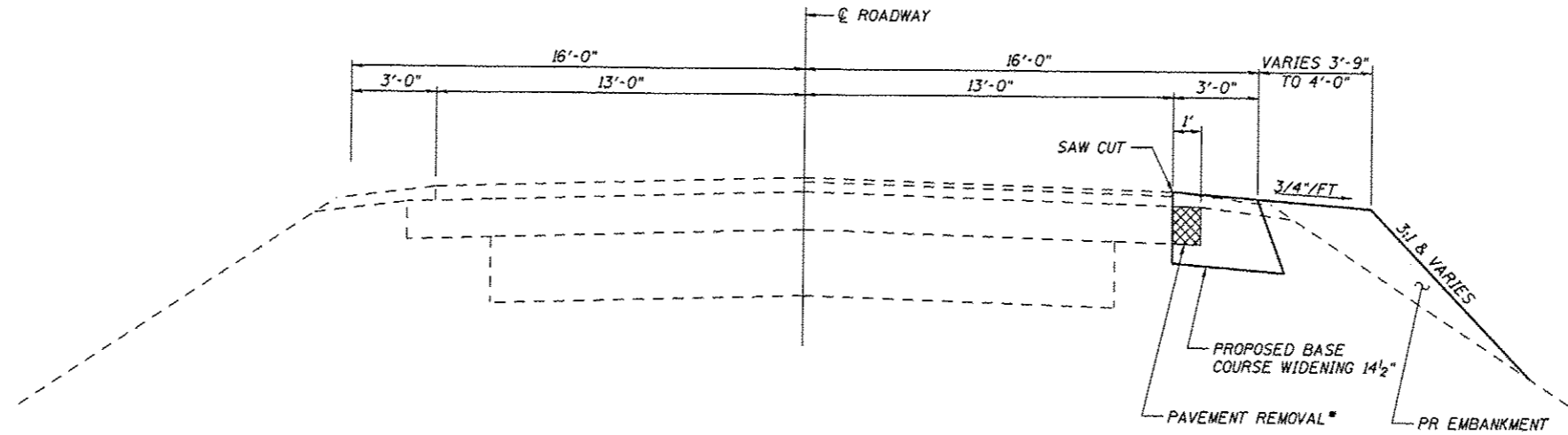
STA 329+33.00 TO STA 331+56.17
 STA 335+01.67 TO STA 337+62.00



CH 1 EXISTING TYPICAL CROSS SECTION

STA 331+56.17 TO STA 332+18.60
 STA 334+39.62 TO STA 335+01.67

93620

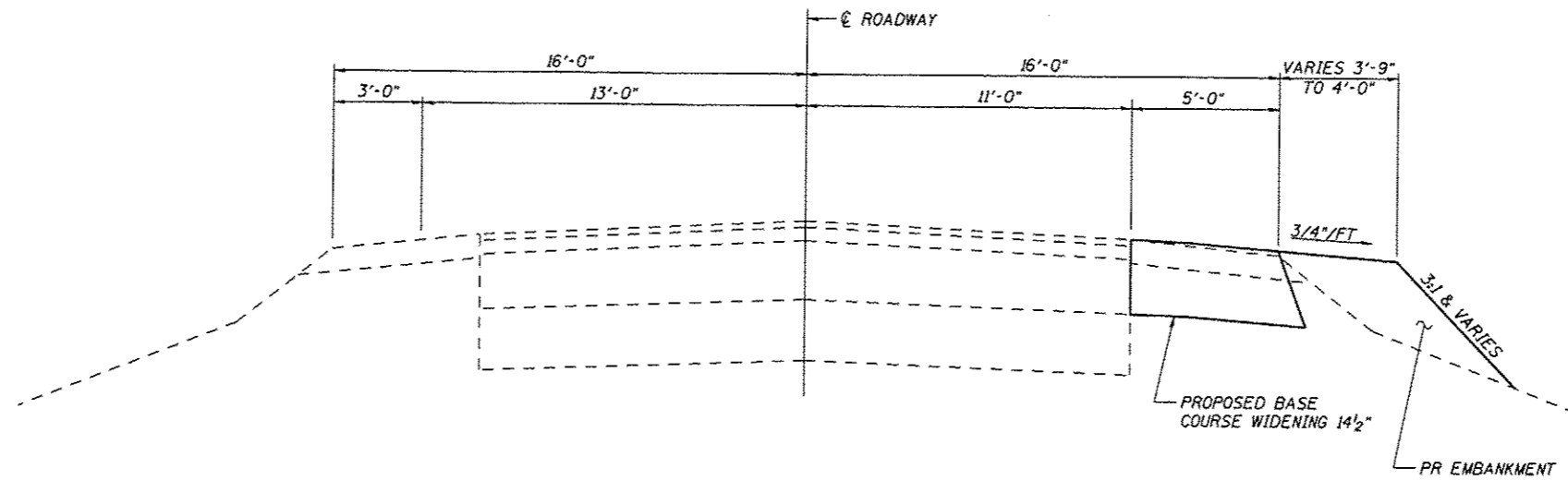


CH 1 PROPOSED TYPICAL CROSS SECTION - PRE-STAGE 1

STA 330+89.50 TO STA 331+56.17
 STA 335+01.67 TO STA 335+67.00

* COST OF PAVEMENT REMOVAL IN THE SHOULDER AREA INCLUDED IN THE COST FOR EARTH EXCAVATION.

EXISTING BRIDGE AND APPROACH PAVEMENT OMISSION STA 332+25.60 TO STA 334+30.60



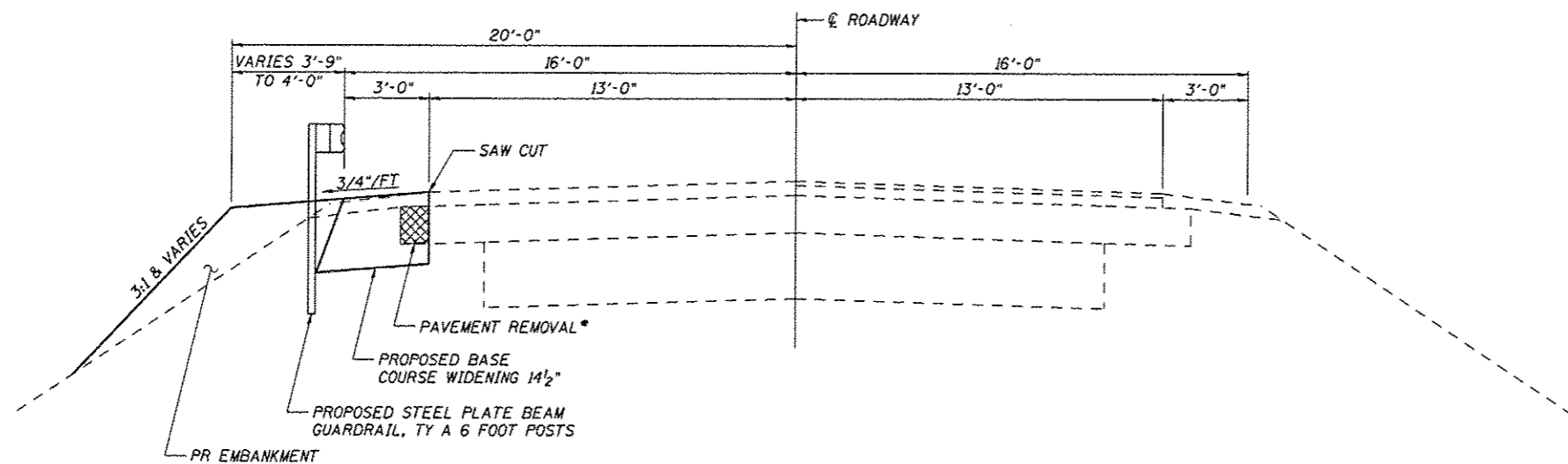
CH 1 PROPOSED TYPICAL CROSS SECTION - PRE-STAGE 1

STA 331+56.17 TO STA 332+25.60
 STA 334+30.60 TO STA 335+01.67

ERECT TEMPORARY GUARDRAIL, TERMINALS AND STEEL RAILING (TEMPORARY) RT STA 330+96.12 TO STA 335+60.20

CONSTRUCT EARTH SHOULDER RT STA 329+80.90 TO STA 332+36.45 AND STA 334+21.78 TO STA 335+99.90 AS SHOWN ON THE GUARDRAIL AND SHOULDER WIDENING DETAIL SHEET

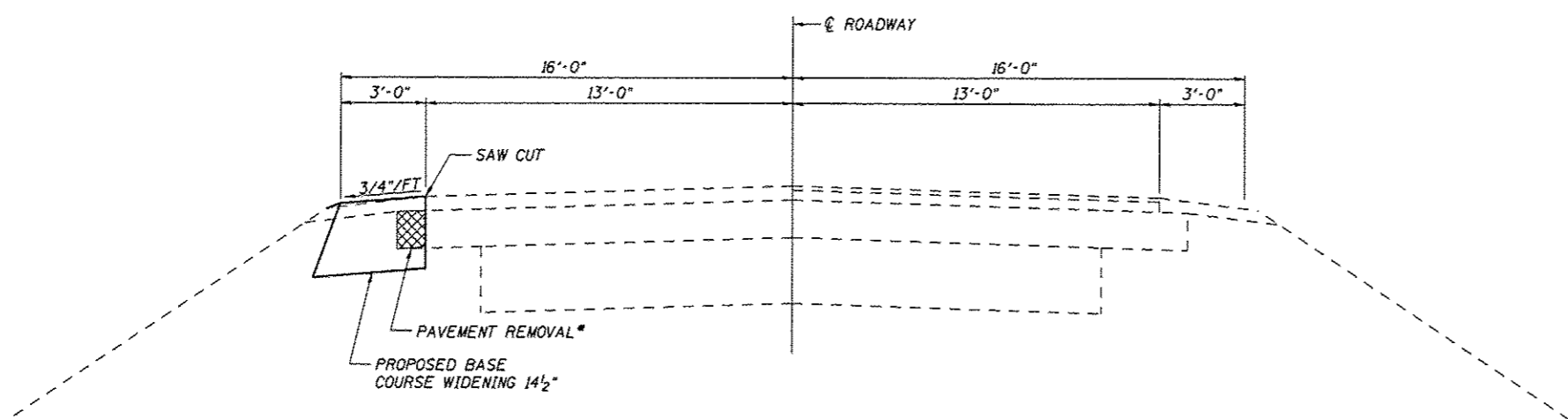
93620



CH 1 PROPOSED TYPICAL CROSS SECTION - STAGE 1

STA 330+65.82 TO STA 331+05.00
 STA 335+55.00 TO STA 335+74.18

BRIDGE AND APPROACH
 PAVEMENT OMISSION
 STA 332+18.37 TO STA 334+39.87



CH 1 PROPOSED TYPICAL CROSS SECTION - STAGE 1

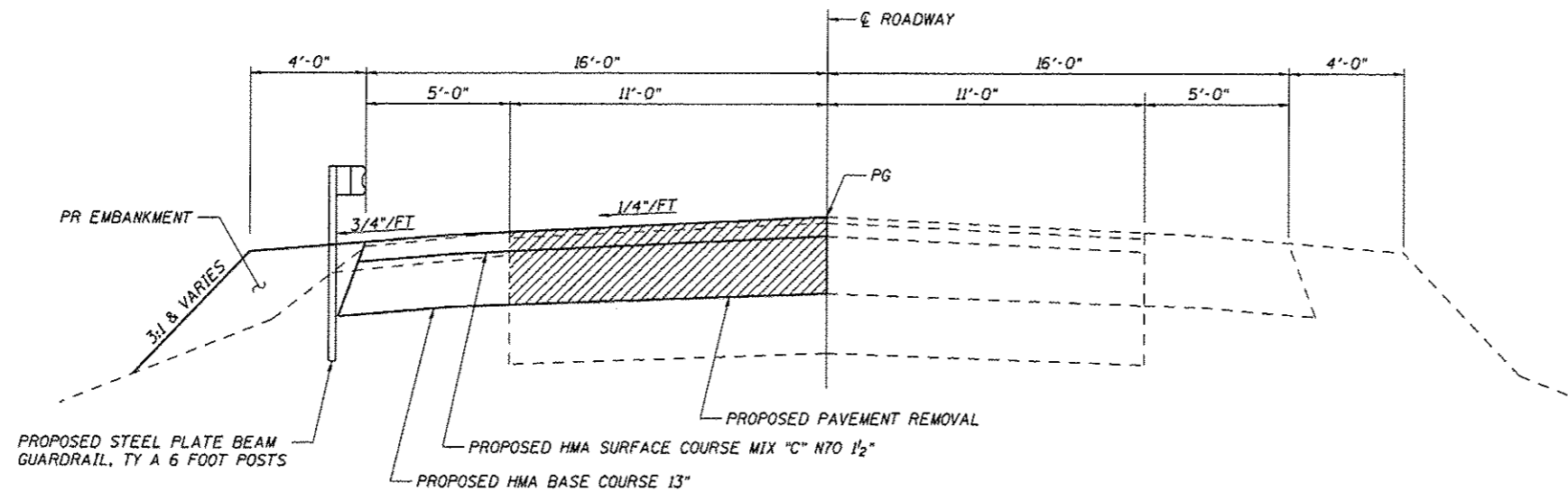
STA 329+33.00 TO STA 330+65.82
 STA 335+74.18 TO STA 337+62.00

CONSTRUCT EARTH SHOULDER LT STA 330+58.90 TO STA 332+56.45 AND
 STA 334+21.78 TO STA 335+74.00 AS SHOWN ON THE GUARDRAIL AND SHOULDER
 WIDENING DETAIL SHEET

* COST OF PAVEMENT REMOVAL IN THE SHOULDER AREA
 INCLUDED IN THE COST FOR EARTH EXCAVATION.

93620

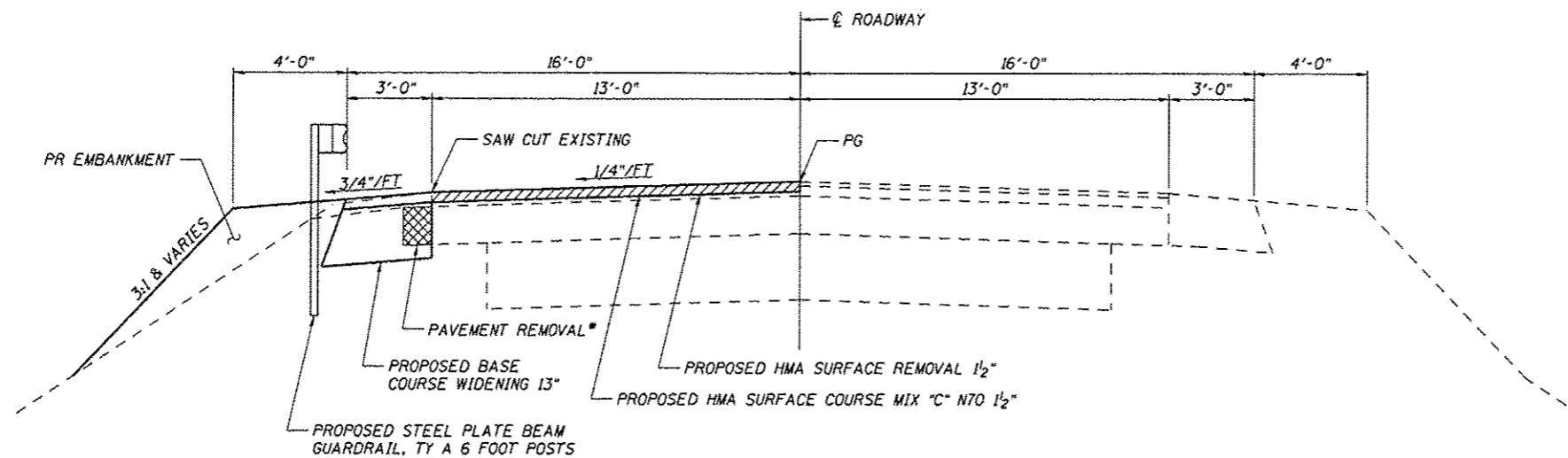
CEC Cummins Engineering Corporation <small>Civil and Structural Engineering</small>	JOB = 2234	DESIGNED - TSH	REVISED -	CHRISTIAN COUNTY CH 1 IMPROVEMENTS	TYPICAL CROSS SECTIONS STAGE 1		F.A.S. SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	FILE NAME = 2234typ.dgn	CHECKED - NAK	REVISED -		645	11-00089-00-BR	CHRISTIAN	57	10	
	PLOT SCALE = 1/2" = 10'-0"	DRAWN - SJS	REVISED -		SHEET NO. OF SHEETS		CONTRACT NO.		ILLINOIS FED. AID PROJECT	
	PLOT DATE = 2/26/2014	CHECKED - 3/28/2012	REVISED -							



CH 1 PROPOSED TYPICAL CROSS SECTION - STAGE 1

STA 331+56.17 TO STA 332+18.37
 STA 334+39.87 TO STA 335+01.67

BRIDGE AND APPROACH
 PAVEMENT OMISSION
 STA 332+18.37 TO STA 334+39.87

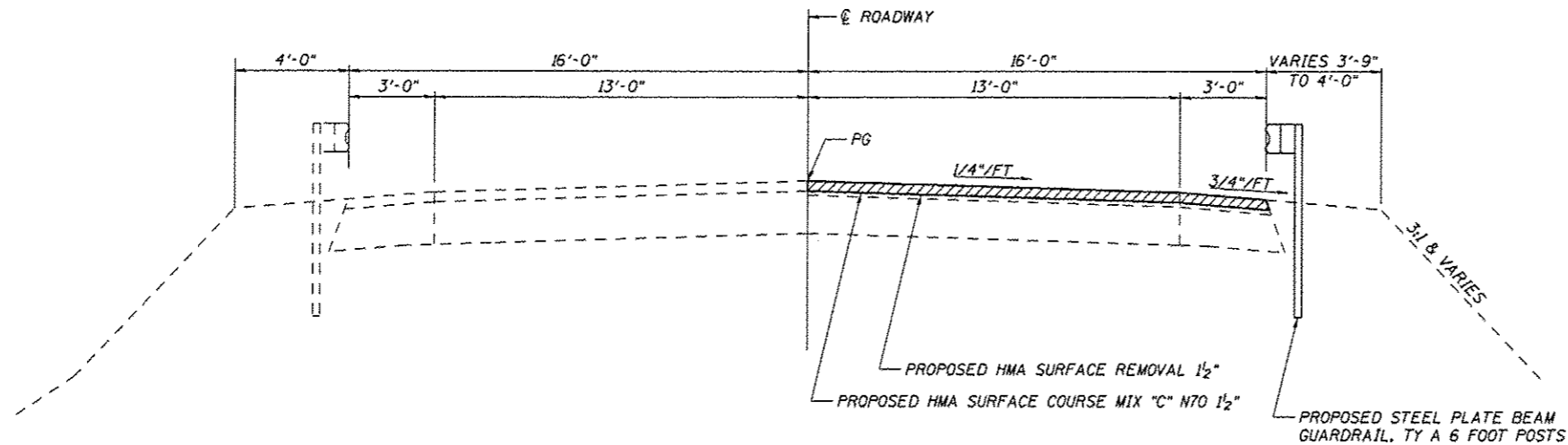


CH 1 PROPOSED TYPICAL CROSS SECTION - STAGE 1

STA 331+05.00 TO STA 331+56.17
 STA 335+01.67 TO STA 335+55.00

* COST OF PAVEMENT REMOVAL IN THE SHOULDER AREA
 INCLUDED IN THE COST FOR EARTH EXCAVATION.

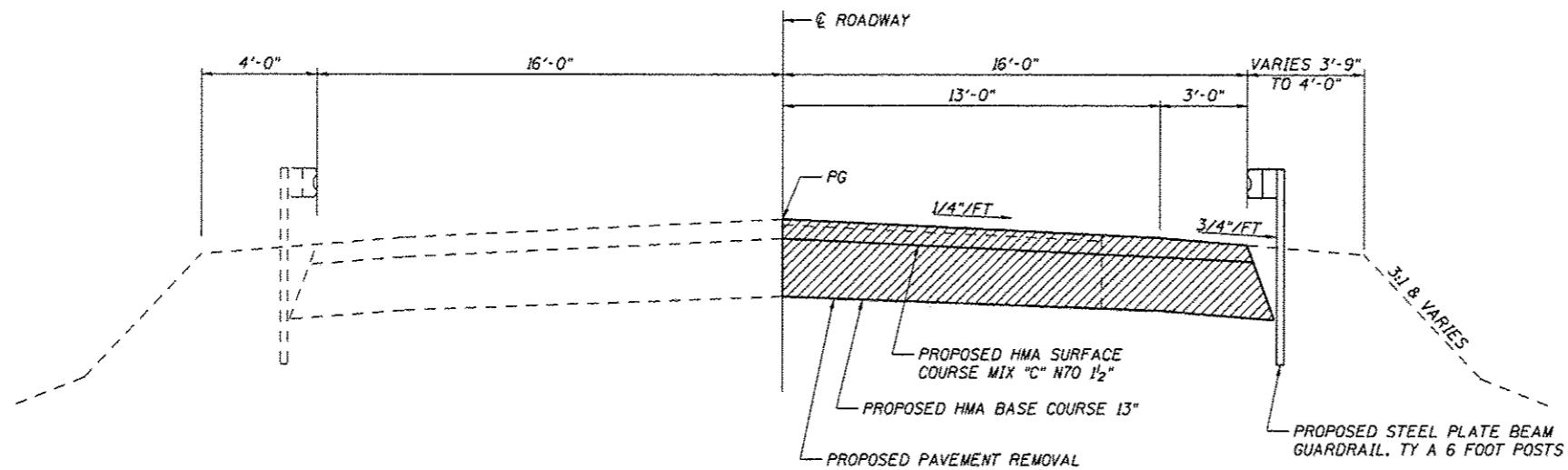
93620



CH 1 PROPOSED TYPICAL CROSS SECTION - STAGE 2

STA 331+05.00 TO STA 331+56.17
 STA 335+01.67 TO STA 335+55.00

BRIDGE AND APPROACH
 PAVEMENT OMISSION
 STA 332+18.37 TO STA 334+39.87



CH 1 PROPOSED TYPICAL CROSS SECTION - STAGE 2

STA 331+56.17 TO STA 332+18.37
 STA 334+39.87 TO STA 335+01.67

93620

CEC Cummins
 Engineering
 Corporation
 Civil and Structural Engineering

JOB # 2234
 FILE NAME * 2234.txdgn
 PLOT SCALE * 12.0000' / IN.
 PLOT DATE * 1/24/2014

DESIGNED - TSH
 CHECKED - NAK
 DRAWN - SJS
 CHECKED - 3/28/2012

REVISED -
 REVISED -
 REVISED -
 REVISED -

CHRISTIAN COUNTY
 CH 1 IMPROVEMENTS

TYPICAL CROSS SECTIONS
 STAGE 2

SHEET NO. OF SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
645	11-00089-00-BR	CHRISTIAN	57	12
CONTRACT NO.				
[ILLINOIS] FED. AID PROJECT				

EARTHWORK

LOCATION	EXCAVATION	EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE
	CU YD	CU YD	CU YD	CU YD
				WASTE (+) OR SHORTAGE (-)
CH 1 - PRE-STAGE 1				
STA 329+90 TO STA 335+93	60	45	120	-75
CH 1 - STAGE 1				
STA 329+33 TO STA 337+62	115	90	185	-95
CH 1 - STAGE 2				
STA 331+05 TO STA 335+55	15	10	45	-35
TOTAL	190	145	350	-205

NOTE: SHRINKAGE FACTOR = 25%

BASE COURSE & WIDENING

LOCATION	HOT-MIX ASPHALT BASE COURSE, 13"		BASE COURSE WIDENING, 14 1/2"		BASE COURSE WIDENING, 13"	
	WIDTH	SQ YD	WIDTH	SQ YD	WIDTH	SQ YD
STAGE 1						
LT STA 329+33.00 TO STA 331+05.00			3'	57.33		
LT STA 331+05.00 TO STA 331+56.17					3'	17.06
LT STA 331+56.17 TO STA 332+18.37	16'	110.58				
LT STA 334+39.87 TO STA 335+01.67	16'	109.87				
LT STA 335+01.67 TO STA 335+55.00					3'	17.78
LT STA 335+55.00 TO STA 337+62.00			3'	69.00		
PRE-STAGE 1						
RT STA 330+89.50 TO STA 331+56.17			3'	22.22		
RT STA 331+56.17 TO STA 332+25.60			5'	38.57		
RT STA 334+30.60 TO STA 335+01.67			5'	39.48		
RT STA 335+01.67 TO STA 335+67.00			3'	21.78		
STAGE 2						
RT STA 331+56.17 TO STA 332+18.37	16'	110.58				
RT STA 334+39.87 TO STA 335+01.67	16'	109.87				
TOTAL		440.90		248.38		34.84

APPROACH SLAB REMOVAL

LOCATION	WIDTH	QTY
	FOOT	SQ YD
STAGE 1		
LT STA 332+26.62 TO STA 332+49.49	15.67	39.81
LT STA 334+08.75 TO STA 334+31.62	15.67	39.81
STAGE 2		
RT STA 332+26.62 TO STA 332+49.49	14.67	37.27
RT STA 334+08.75 TO STA 334+31.62	14.67	37.27
TOTAL		154.16

PAVEMENT REMOVAL

LOCATION	WIDTH	QTY
	FOOT	SQ YD
STAGE 1		
LT STA 331+56.17 TO STA 332+26.83	11.5	90.29
LT STA 334+31.66 TO STA 335+01.67	11.5	89.46
STAGE 2		
RT STA 331+56.17 TO STA 332+26.16	15.5	120.54
RT STA 334+30.60 TO STA 335+01.67	15.5	122.40
TOTAL		422.69

HOT-MIX ASPHALT SURFACE REMOVAL 1 1/2"

LOCATION	WIDTH	QTY
	FOOT	SQ YD
STAGE 1		
LT STA 331+05.00 TO STA 331+56.17	13.5	76.75
LT STA 335+01.67 TO STA 335+55.00	13.5	80.00
STAGE 2		
RT STA 331+05.00 TO STA 331+56.17	12.5	71.07
RT STA 335+01.67 TO STA 335+55.00	12.5	74.07
RT SHOULDER		
RT STA 331+05.00 TO STA 331+56.17	3.0	17.06
RT STA 335+01.67 TO STA 335+55.00	3.0	17.78
TOTAL		336.73

93620



JOB # 2234
 FILE NAME = 2234QUANTITIES.dgn
 PLOT SCALE = 1/8" = 1' / IN.
 PLOT DATE = 3/27/2014

DESIGNED - NAK
 DRAWN - AJH
 CHECKED - NAK
 DATE - 9/15/2009

REVISED -
 REVISED -
 REVISED -
 REVISED -

CHRISTIAN COUNTY
 CH 1 IMPROVEMENTS

SCHEDULE OF QUANTITIES

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.S. RTE. 645	SECTION 11-02089-00-BR	COUNTY CHRISTIAN	TOTAL SHEETS 57	SHEET NO. 13
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3

LOCATION	EACH
LT STA 329+91.43	1
LT STA 336+78.62	1
TOTAL	2

IMPACT ATTENUATORS, RELOCATE (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3

LOCATION	EACH
RT STA 329+91.45	1
RT STA 336+78.60	1
TOTAL	2

TEMPORARY CONCRETE BARRIER

LOCATION	FOOT
LT STA 329+91.43 TO STA 336+78.62	687.5
TOTAL	687.5

RELOCATE TEMPORARY CONCRETE BARRIER

LOCATION	FOOT
LT STA 329+91.45 TO STA 336+78.60	687.5
TOTAL	687.5

TEMPORARY TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT

LOCATION	EACH
RT STA 330+96.12 TO STA 331+46.12	1
RT STA 335+10.20 TO STA 335+60.20	1
TOTAL	2

TEMPORARY STEEL PLATE BEAM GUARD RAIL, TYPE A

LOCATION	FOOT
RT STA 331+46.12 TO STA 332+20.88	75.0
RT STA 334+35.37 TO STA 335+10.20	75.0
TOTAL	150.0

TEMPORARY TRAFFIC BARRIER TERMINAL, TYPE 11 (MODIFIED)

LOCATION	EACH
RT STA 332+20.88 TO STA 332+27.13	1
RT STA 334+29.13 TO STA 334+35.37	1
TOTAL	2

TEMPORARY STEEL RAILING

LOCATION	FOOT
RT STA 332+27.13 TO STA 334+29.13	202
TOTAL	202

PERIMETER EROSION BARRIER

LOCATION	FOOT
LT STA 330+60.00 TO STA 332+40.00	180
LT STA 334+20.00 TO STA 335+80.00	160
RT STA 329+90.00 TO STA 332+40.00	250
RT STA 334+20.00 TO STA 336+00.00	180
TOTAL	770

SEEDING, CLASS 2 (SPECIAL)

LOCATION	ACRE
LT STA 330+60.00 TO STA 332+40.00	0.05
LT STA 334+20.00 TO STA 335+80.00	0.08
RT STA 329+90.00 TO STA 332+40.00	0.05
RT STA 334+20.00 TO STA 336+00.00	0.05
TOTAL	0.23

TEMPORARY EROSION CONTROL SEEDING

LOCATION	LBS
LT STA 330+60.00 TO STA 332+40.00	9
LT STA 334+20.00 TO STA 335+80.00	13
RT STA 329+90.00 TO STA 332+40.00	9
RT STA 334+20.00 TO STA 336+00.00	9
TOTAL	40

FINAL PAVEMENT SURFACE

LOCATION	BITUMINOUS MATERIALS (PRIME COAT)			HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N70 1 1/2"	
	RATE	WIDTH	GALLON	WIDTH	TON
STAGE 1					
LT STA 331+05.00 TO STA 332+18.37	0.1	16'	20.15	16'	16.93
LT STA 334+39.87 TO STA 335+55.00	0.1	16'	20.47	16'	17.19
STAGE 2					
RT STA 331+05.00 TO STA 332+18.37	0.1	16'	20.15	16'	16.93
RT STA 334+39.87 TO STA 335+55.00	0.1	16'	20.47	16'	17.19
TOTAL			81.24		68.24

AGGREGATE SURFACE COURSE, TYPE B

LOCATION	THICKNESS	QTY
	INCH	TON
LT STA 335+90.00	6	14
TOTAL		14

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PAVEMENT MARKING REMOVAL

LOCATION	SQ FT
PRE-STAGE 1 REMOVAL	
RT SOLID WHITE EDGE LINE	
RT STA 328+38.00 TO RT STA 338+26.00	329.33
STAGE 1 REMOVAL	
CENTERLINE YELLOW SKIP-DASH	
STA 328+38.00 TO STA 330+78.80	9.33
STA 335+91.33 TO STA 338+26.00	8.00
LT SOLID WHITE EDGE LINE	
LT STA 329+33.00 TO LT STA 331+56.17	74.67
LT STA 335+01.67 TO LT STA 337+62.00	87.00
STAGE 2 REMOVAL	
CENTERLINE YELLOW SKIP-DASH	
STA 330+78.80 TO STA 331+56.17	2.67
STA 335+01.67 TO STA 335+91.30	4.00
TOTAL	515.00

TEMPORARY PAVEMENT MARKING - LINE 4"

LOCATION	FOOT
STAGE 1	
LT SOLID WHITE EDGE LINE	
LT STA 328+98.00 TO RT STA 330+28.80	131.74
RT STA 330+28.80 TO STA 336+41.33	612.53
RT STA 336+41.33 TO STA 338+26.00	175.23
RT SOLID WHITE EDGE LINE	
RT STA 328+38.00 TO STA 338+26.00	988.00
STAGE 2	
LT SOLID WHITE EDGE LINE	
LT STA 328+38.00 TO STA 329+53.80	115.80
LT STA 329+53.80 TO STA 330+28.80	75.00
LT STA 330+28.80 TO STA 336+41.30	612.50
LT STA 336+41.30 TO STA 337+41.30	100.00
LT STA 337+41.30 TO STA 338+26.00	84.70
RT SOLID WHITE EDGE LINE	
RT STA 328+38.00 TO STA 328+52.50	14.50
RT STA 328+52.50 TO LT STA 330+28.80	176.90
LT STA 330+28.80 TO STA 336+41.30	612.50
LT STA 336+41.30 TO RT STA 337+65.30	123.37
TOTAL	3,822.77

PAINT PAVEMENT MARKING - LINE 4"

LOCATION	FOOT
SOLID WHITE EDGE LINE	
LT STA 328+38.00 TO STA 338+26.00	988.00
RT STA 328+38.00 TO STA 338+26.00	988.00
DOUBLE YELLOW CENTERLINE	
STA 328+38.00 TO STA 338+26.00	1,976.00
TOTAL	3,952.00

TEMPORARY PAVEMENT MARKING - LINE 24"

LOCATION	FOOT
STAGE 1	
WHITE STOP BARS	
RT STA 328+38.00	13
LT STA 338+26.00	13
TOTAL	26.00

RAISED REFLECTIVE PAVEMENT MARKER REMOVAL

LOCATION	EACH
STA 328+38.00 TO STA 338+26.00	12
TOTAL	12

RAISED REFLECTIVE PAVEMENT MARKER

LOCATION	EACH
STA 328+38.00 TO STA 331+88.37	4
STA 334+69.87 TO STA 338+26.00	4
TOTAL	8

SHORT-TERM PAVEMENT MARKING

LOCATION	FOOT
STA 328+38.00 TO STA 338+26.00	100
TOTAL	100

WORK ZONE PAVEMENT MARKING REMOVAL

LOCATION	SQ FT
STAGE 1 TRAFFIC REMOVAL	
LT SOLID WHITE EDGE LINE	
LT STA 328+98.00 TO RT STA 330+28.80	43.67
RT STA 330+28.80 TO RT STA 336+41.33	204.33
RT STA 336+41.33 TO LT STA 338+26.00	61.67
RT SOLID WHITE EDGE LINE	
RT STA 328+38.00 TO STA 338+26.00	329.33
STAGE 2 TRAFFIC REMOVAL	
LT SOLID WHITE EDGE LINE	
LT STA 328+38.00 TO STA 329+53.80	38.67
LT STA 329+53.80 TO STA 330+28.80	25.00
LT STA 330+28.80 TO STA 336+41.30	204.33
LT STA 336+41.30 TO STA 337+41.30	33.33
LT STA 337+41.30 TO STA 338+26.00	28.33
RT SOLID WHITE EDGE LINE	
RT STA 328+38.00 TO STA 328+52.50	5.00
RT STA 328+52.50 TO LT STA 330+28.80	59.00
LT STA 330+28.80 TO LT STA 336+41.30	204.33
LT STA 336+41.30 TO RT STA 337+65.30	41.33
SHORT-TERM REMOVAL	
STA 328+38.00 TO STA 338+26.00	329.33
TOTAL	1607.65

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JOB # 2234
 FILE NAME = 2234QUANTITIES.dgn
 PLOT SCALE = 1/8" = 1' / IN.
 PLOT DATE = 3/27/2014

DESIGNED - NAK
 DRAWN - AJH
 CHECKED - NAK
 DATE - 9/15/2009

REVISED -
 REVISED -
 REVISED -
 REVISED -

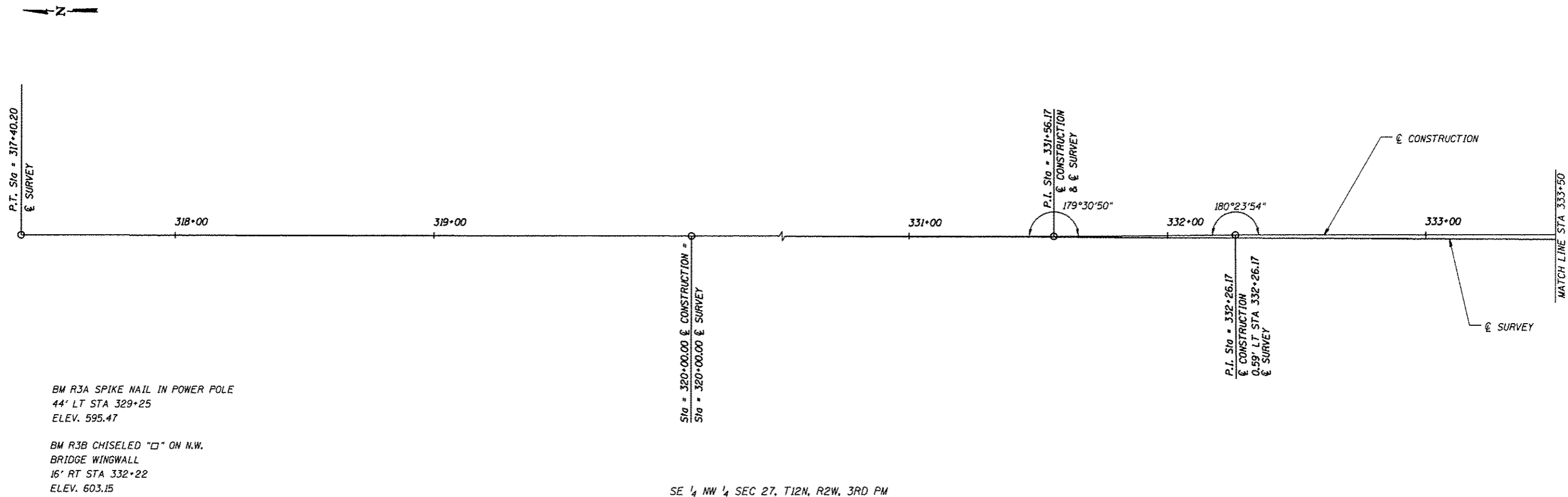
CHRISTIAN COUNTY
 CH 1 IMPROVEMENTS

SCHEDULE OF QUANTITIES

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
645	11-00089-00-8R	CHRISTIAN	57	15
CONTRACT NO.				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

SW 1/4 NE 1/4 SEC 27, T12N, R2W, 3RD PM

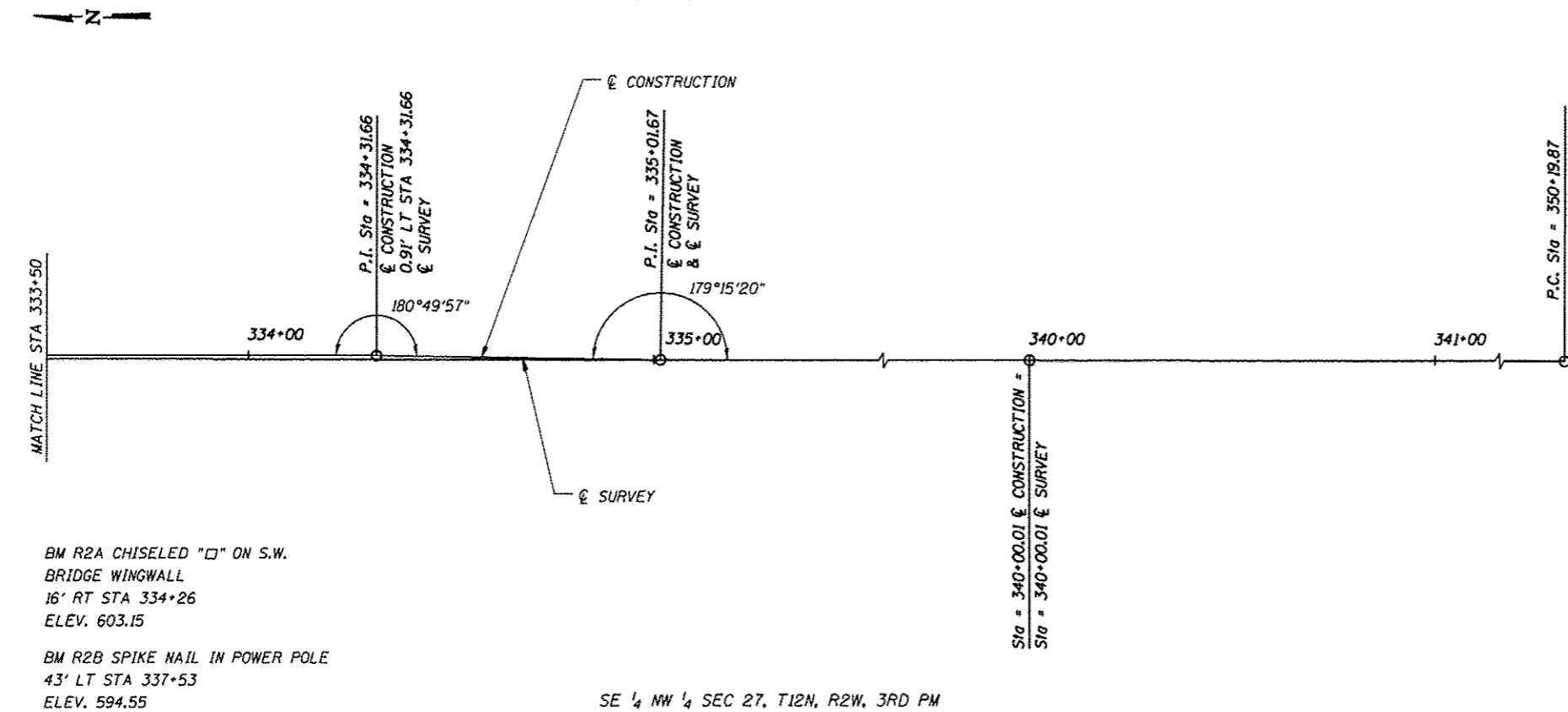


BM R3A SPIKE NAIL IN POWER POLE
44' LT STA 329+25
ELEV. 595.47

BM R3B CHISELED "□" ON N.W.
BRIDGE WINGWALL
16' RT STA 332+22
ELEV. 603.15

SE 1/4 NW 1/4 SEC 27, T12N, R2W, 3RD PM

SW 1/4 NE 1/4 SEC 27, T12N, R2W, 3RD PM



BM R2A CHISELED "□" ON S.W.
BRIDGE WINGWALL
16' RT STA 334+26
ELEV. 603.15

BM R2B SPIKE NAIL IN POWER POLE
43' LT STA 337+53
ELEV. 594.55

SE 1/4 NW 1/4 SEC 27, T12N, R2W, 3RD PM

SURVEY			
CONTROL POINT	STATION	COORDINATES	
		NORTHING	EASTING
P.I.	314+40.21	1019774.40	2542088.85
P.T.	317+40.20	1019474.40	2542088.39
P.C.	350+19.87	1018194.74	2542081.36
P.I.	353+19.87	1015894.74	2542080.90

CONSTRUCTION			
CONTROL POINT	STATION	COORDINATES	
		NORTHING	EASTING
P.O.T.	320+00.00	1019214.60	2542085.99
P.I.	331+56.17	1018058.43	2542084.22
P.I.	332+28.17	1017988.43	2542084.70
P.I.	334+31.66	1017782.94	2542084.70
P.I.	335+01.67	1017712.94	2542083.89
P.O.T.	340+00.01	1017214.60	2542082.92

93620



JOB # 2234	DESIGNED - TSH	REVISED -
FILE NAME = 2234align.dgn	DRAWN - SJS	REVISED -
PLOT SCALE = 200.0000 x / IN.	CHECKED - NAK	REVISED -
PLOT DATE = 2/27/2014	DATE - 4/23/2012	REVISED -

CHRISTIAN COUNTY
CH 1 IMPROVEMENTS

ALIGNMENT

SCALE: SHEET NO. OF SHEETS STA. TO STA.

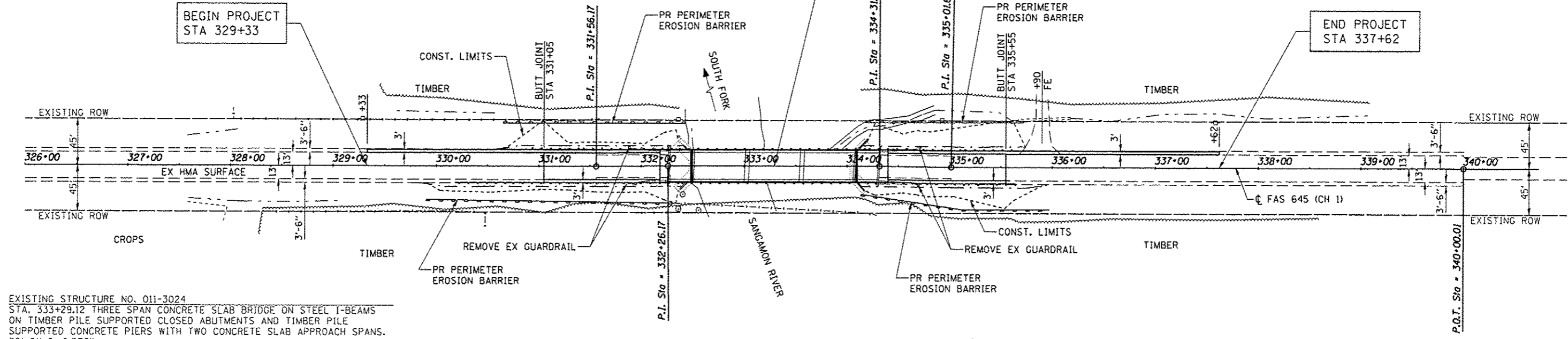
F.A.S. RTE. 645	SECTION 11-00089-00-BR	COUNTY CHRISTIAN	TOTAL SHEETS 57	SHEET NO. 16
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

SW 1/4, NE 1/4 SEC 27, T12N, R2W, 3RD PM
MICENHEIMER BROS

STA. 333+29.12
EXISTING STRUCTURE NO. 011-3024
REMOVE AND REPLACE CONCRETE DECK, APPROACH
PAVEMENTS AND ERECT NEW GUARDRAIL
32'-0" DECK; NO SKEW

BEGIN PROJECT
STA 329+33

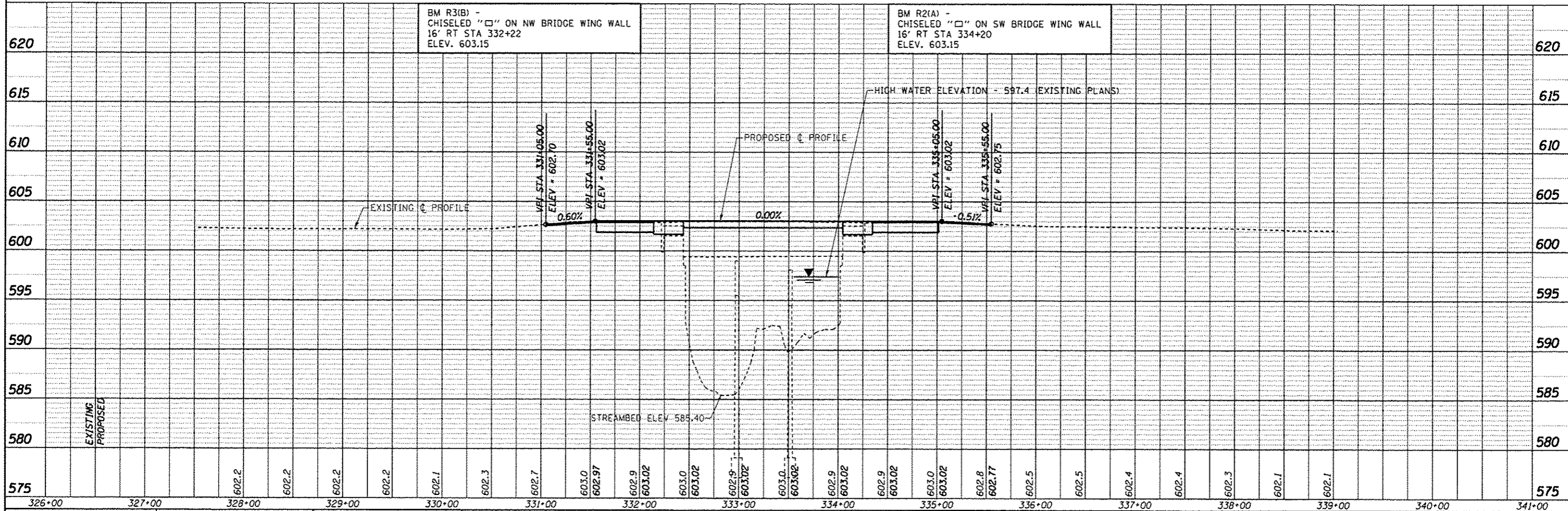
END PROJECT
STA 337+62



EXISTING STRUCTURE NO. 011-3024
STA. 333+29.12 THREE SPAN CONCRETE SLAB BRIDGE ON STEEL I-BEAMS
ON TIMBER PILE SUPPORTED CLOSED ABUTMENTS AND TIMBER PILE
SUPPORTED CONCRETE PIERS WITH TWO CONCRETE SLAB APPROACH SPANS.
30'-0" O.-O. DECK
26'-0" FC-FC CURBS
28'-0" FC-FC CONC HANDRAILS
205' BK-BK APPROACH BENTS
SKEW = 0°
REMOVAL OF EXISTING CONCRETE DECK = 1 EACH

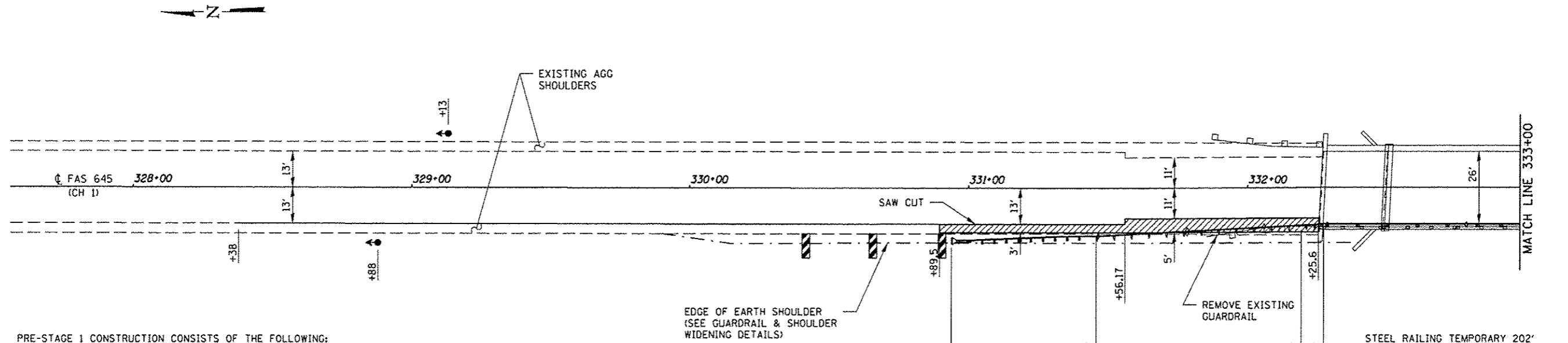
EROSION CONTROL
PERIMETER EROSION BARRIER = 770FT

CITY OF TAYLORVILLE
SE 1/4, NW 1/4 SEC 27, T12N, R2W, 3RD PM



CEC Cummins Engineering Corporation Civil and Structural Engineering	JOB # 2234	DESIGNED - TSH	REVISED -	CHRISTIAN COUNTY CH 1 IMPROVEMENTS	PLAN & PROFILE	F.A.S. RTE. 645	SECTION 11-00089-00-BR	COUNTY CHRISTIAN	TOTAL SHEETS 57	SHEET NO. 17
	FILE NAME = 2234pp.dgn	DRAWN - SJS	REVISED -			SCALE: _____	SHEET NO. _____ OF _____ SHEETS	SYA. 326+00 TO STA. 341+00	FED. ROAD DIST. NO. _____	ILLINOIS FED. AID PROJECT
	PLOT SCALE = 100.0000 Ft / IN.	CHECKED - NAK	REVISED -							
	PLOT DATE = 2/26/2014	DATE - 8/23/2012	REVISED -							

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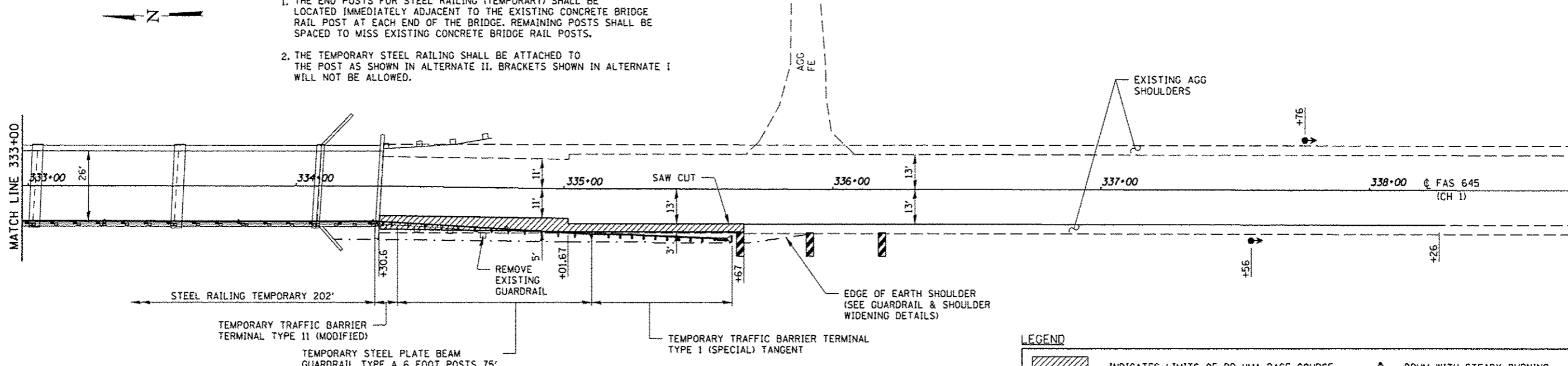


PRE-STAGE 1 CONSTRUCTION CONSISTS OF THE FOLLOWING:

- 1 CONSTRUCT HMA BASE COURSE
RT STA 330+89.50 TO STA 332+25.60
- 2 CONSTRUCT HMA BASE COURSE
RT STA 334+30.60 TO STA 335+67.00
- 3 REMOVE EXISTING RIGHT SIDE GUARDRAIL AND INSTALL
TEMPORARY GUARDRAIL, TERMINALS AND TEMPORARY STEEL RAILING
- 4 INSTALL HAZARD PANELS
- 5 INSTALL TEMPORARY BRIDGE TRAFFIC SIGNALS

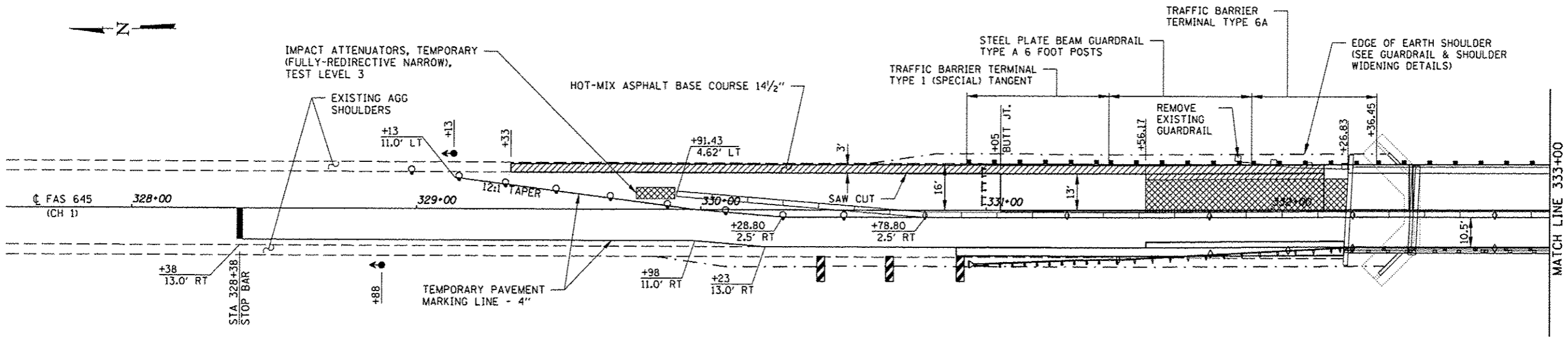
TRAFFIC CONTROL AND PROTECTION SHALL BE ACCORDING
TO STANDARDS 701201 AND STANDARD 701326

- NOTES:
1. THE END POSTS FOR STEEL RAILING (TEMPORARY) SHALL BE LOCATED IMMEDIATELY ADJACENT TO THE EXISTING CONCRETE BRIDGE RAIL POST AT EACH END OF THE BRIDGE. REMAINING POSTS SHALL BE SPACED TO MISS EXISTING CONCRETE BRIDGE RAIL POSTS.
 2. THE TEMPORARY STEEL RAILING SHALL BE ATTACHED TO THE POST AS SHOWN IN ALTERNATE II. BRACKETS SHOWN IN ALTERNATE I WILL NOT BE ALLOWED.

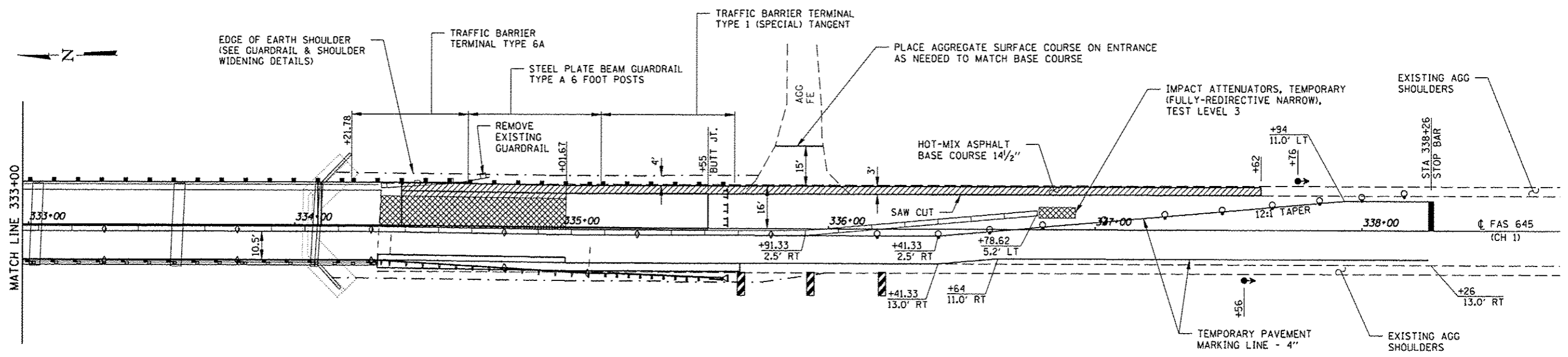


LEGEND

	- INDICATES LIMITS OF PR HMA BASE COURSE		- DRUM WITH STEADY BURNING BI-DIRECTIONAL LIGHT
	- TYPE III BARRICADE		- TEMPORARY CONCRETE BARRIER
	- TRAFFIC SIGNAL		- DOUBLE VERTICAL PANEL
			- CRYSTAL, BI-DIRECTIONAL BARRIER WALL/GUARDRAIL MARKER



- STAGE 1 CONSTRUCTION CONSISTS OF THE FOLLOWING:
- 1 INSTALL TRAFFIC CONTROL DEVICES, ACTIVATE TEMPORARY BRIDGE TRAFFIC SIGNALS AND PLACE ALL TRAFFIC IN THE STAGE 1 LANE.
 - 2 REMOVE STAGE 1 PORTION OF BRIDGE, APPROACH PAVEMENT AND APPROACH ROADWAY.
 - 3 CONSTRUCT STAGE 1 PORTION OF BRIDGE AND APPROACH PAVEMENT.
 - 4 CONSTRUCT HMA BASE COURSE.
 - 5 MILL EXISTING PAVEMENT AND PLACE HMA SURFACE COURSE.
 - 6 REMOVE EXISTING GUARDRAIL AND INSTALL PROPOSED GUARDRAIL AND TERMINALS.



EXCAVATION FOR HMA BASE COURSE SHALL BE PROTECTED WITH BARRICADES AS SHOWN ON STANDARD 701326
SEE STANDARD 701321 FOR DETAILS NOT SHOWN

LEGEND

	- INDICATES LIMITS OF PR HMA BASE COURSE		- DRUM WITH STEADY BURNING BI-DIRECTIONAL LIGHT
	- TYPE III BARRICADE		- TEMPORARY CONCRETE BARRIER
	- TRAFFIC SIGNAL		- DOUBLE VERTICAL PANEL
	- PAVEMENT REMOVAL		- CRYSTAL, BI-DIRECTIONAL BARRIER WALL/GUARDRAIL MARKER



JOB # 2234
FILE NAME = 2234a.tagel.dgn
PLOT SCALE = 40,0000 F4 / IN.
PLOT DATE = 2/26/2014

DESIGNED - TSH
DRAWN - SJS
CHECKED - NAK
DATE - 5/2/2012

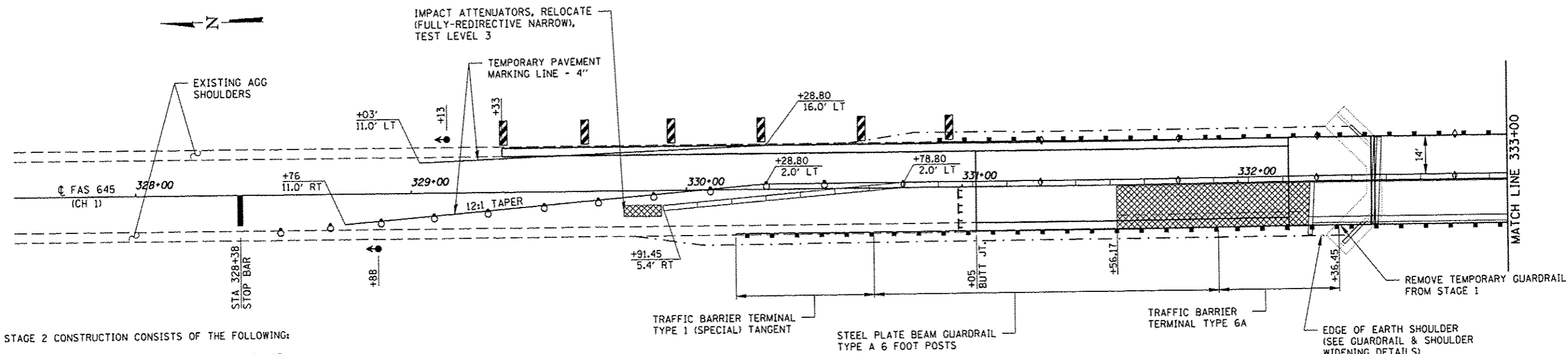
REVISED -
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REVISED -
REVISED -

**CHRISTIAN COUNTY
CH 1 IMPROVEMENTS**

**TRAFFIC CONTROL & PROTECTION
STAGE 1**

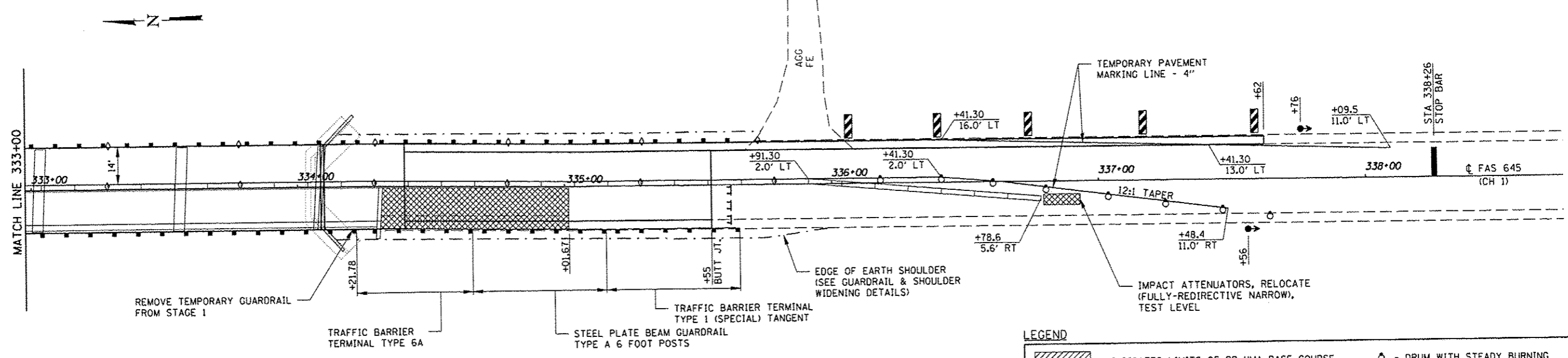
SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
645	11-00089-00-BR	CHRISTIAN	57	19
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO.	



STAGE 2 CONSTRUCTION CONSISTS OF THE FOLLOWING:

- 1 RELOCATE TEMPORARY CONCRETE BARRIER AND PLACE TRAFFIC IN STAGE 2 LANE
- 2 REMOVE TEMPORARY GUARDRAIL AND STAGE 2 PORTION OF BRIDGE, APPROACH PAVEMENT AND APPROACH ROADWAY INCLUDING HMA BASE COURSE CONSTRUCTED ON PRE-STAGE 1 FROM STA 332+18.60 TO STA 332+25.60 AND FROM STA 334+30.60 TO STA 334+39.62.
- 3 REMOVE TEMPORARY GUARDRAIL AND TERMINALS.
- 4 CONSTRUCT STAGE 2 PORTION OF BRIDGE AND APPROACH PAVEMENT.
- 5 MILL EXISTING PAVEMENT AND PLACE HMA SURFACE COURSE
- 6 INSTALL PROPOSED GUARDRAIL AND TERMINALS
- 7 REMOVE TRAFFIC CONTROL DEVICES AND PLACE TRAFFIC IN PERMANENT LANES.



LEGEND

- INDICATES LIMITS OF PR HMA BASE COURSE	- DRUM WITH STEADY BURNING BI-DIRECTIONAL LIGHT
- TYPE III BARRICADE	- TEMPORARY CONCRETE BARRIER
- TRAFFIC SIGNAL	- DOUBLE VERTICAL PANEL
- PAVEMENT REMOVAL	- CRYSTAL, BI-DIRECTIONAL BARRIER WALL/GUARDRAIL MARKER

SEE STANDARD 701321 FOR DETAILS NOT SHOWN



JOB = 2234
 FILE NAME = 2234stage2.dgn
 PLOT SCALE = 40.0000 ft / IN.
 PLOT DATE = 2/26/2014

DESIGNED - TSH
 DRAWN - SJS
 CHECKED - NAK
 DATE - 5/2/2012

REVISED -
 REVISED -
 REVISED -
 REVISED -

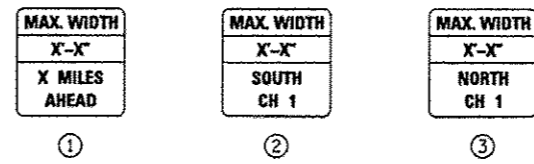
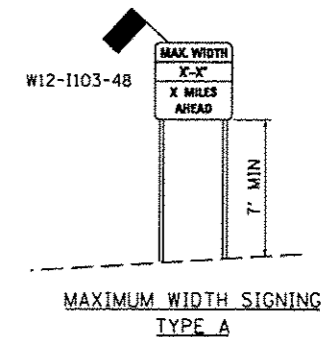
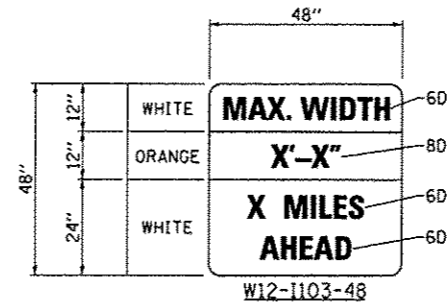
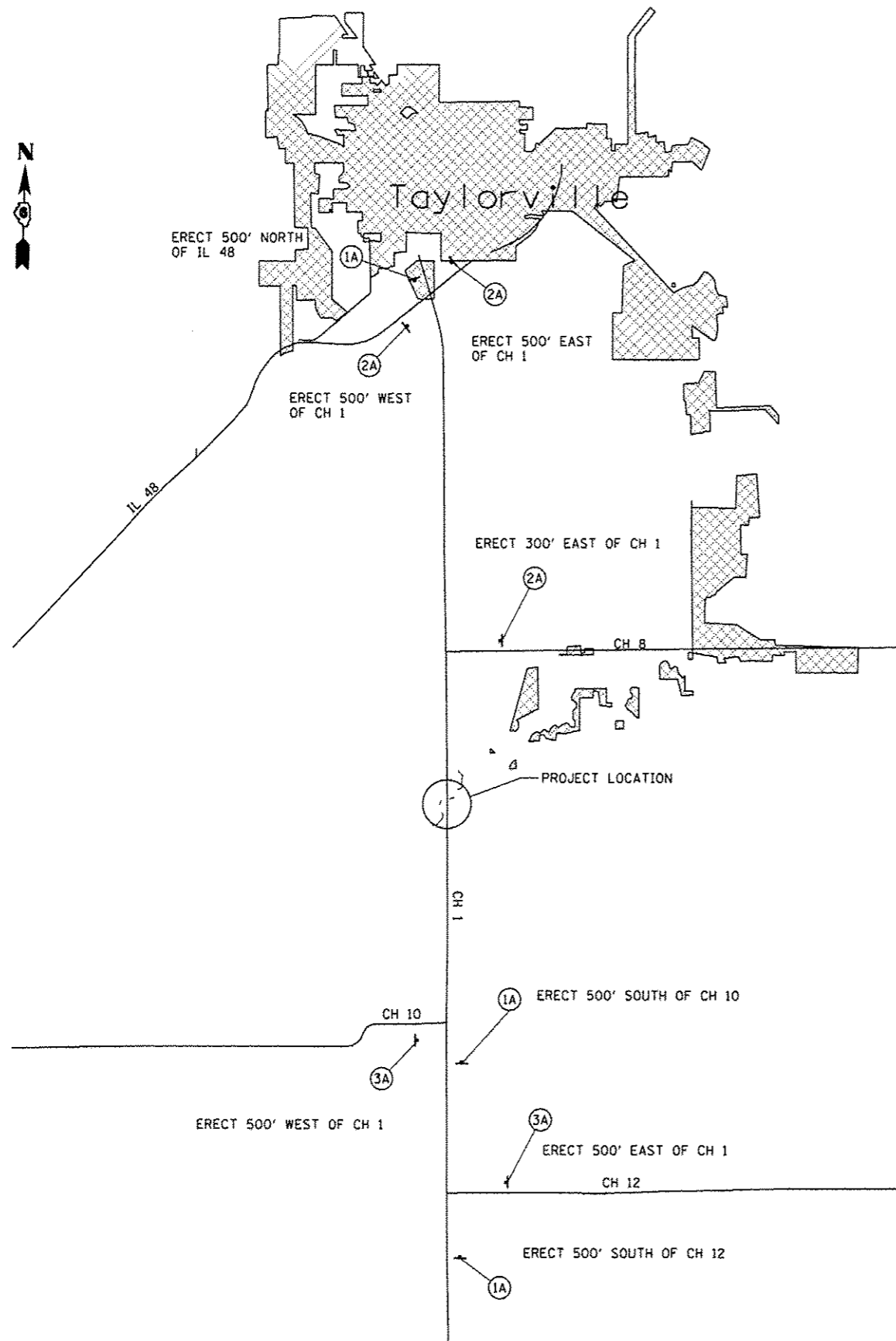
**CHRISTIAN COUNTY
 CH 1 IMPROVEMENTS**

**TRAFFIC CONTROL & PROTECTION
 STAGE 2**

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
645	11-00089-00-BR	CHRISTIAN	57	20
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO.	

93620



SIGN PANELS

GENERAL NOTES

1. ALL TRAFFIC CONTROL DEVICES SHALL BE FURNISHED, ERECTED AND MAINTAINED BY THE CONTRACTOR.
2. THE LOCATION OF TRAFFIC CONTROL DEVICES MAY BE ADJUSTED BY THE ENGINEER.
3. ALL TRAFFIC CONTROL DEVICES SHOWN ON THIS SHEET WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR WIDTH RESTRICTION SIGNING.
4. THE WIDTH SHOWN ON THE SIGN SHALL BE ONE FOOT LESS THAN THE ACTUAL WIDTH SHOWN ON THE PLANS. (SEE SHEET 27)

93620

CEC Cummins Engineering Corporation
Civil and Structural Engineering

JOB # 2234
FILE NAME # 2234-ahc-WRS.dgn
PLOT SCALE # 400.0000 "/ IN.
PLOT DATE # 2/27/2014

DESIGNED - NAK
DRAWN - TJD
CHECKED - NAK
DATE - 6/29/2012

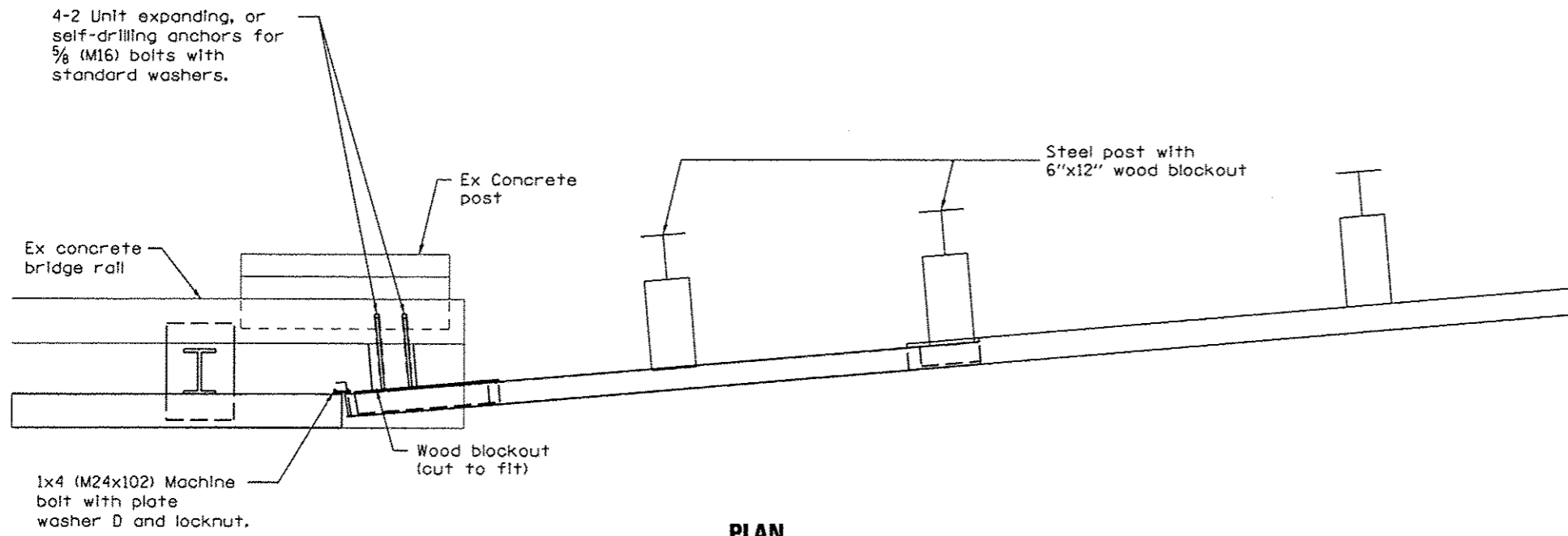
REVISED -
REVISED -
REVISED -
REVISED -

CHRISTIAN COUNTY
CH 1 IMPROVEMENTS

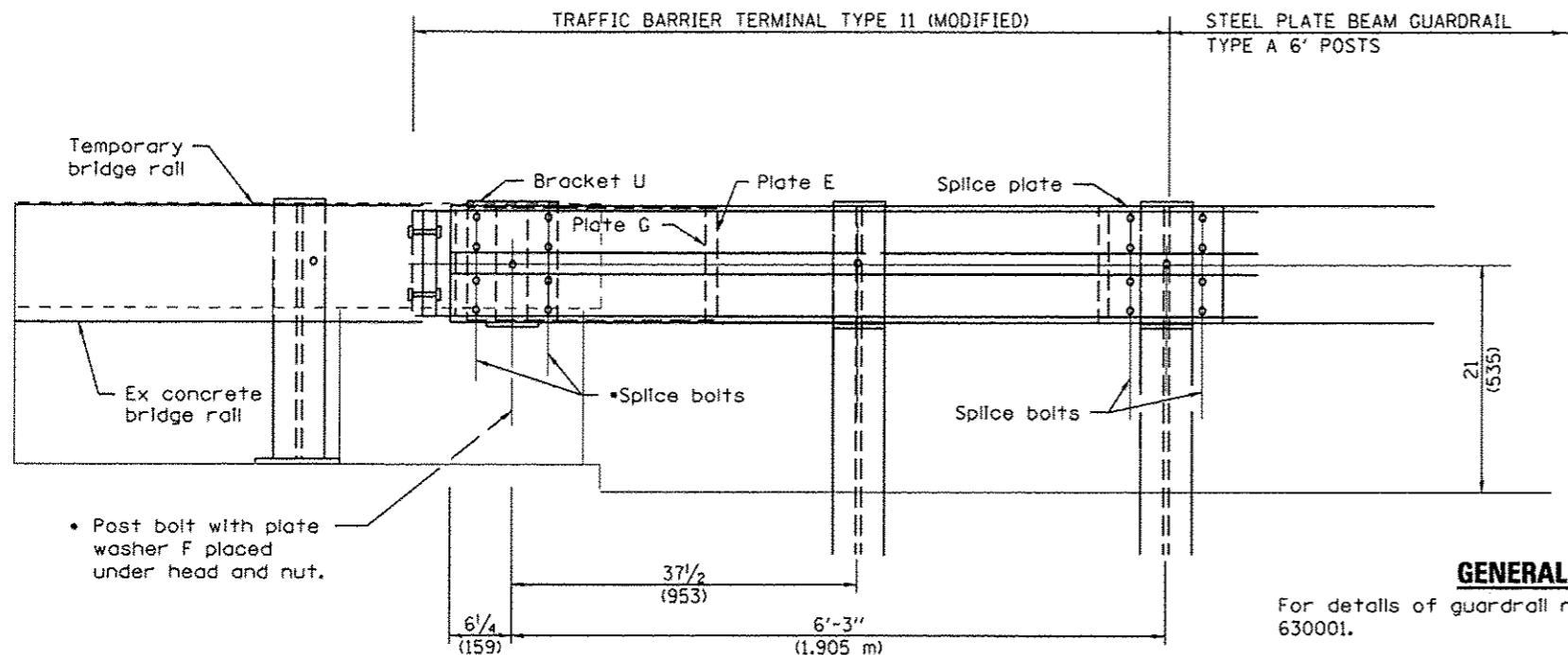
CH 1 ADVANCED WARNING & MAINTENANCE OF TRAFFIC

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
645	11-00089-00-BR	CHRISTIAN	57	21
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT CONTRACT NO.				



PLAN



ELEVATION

GENERAL NOTES

For details of guardrail not shown, see Standard 630001.

Install the face of the guardrail flush with the face of the temporary bridge rail. Install plate washer D so that the 1 (25) projection fills the remainder of the slotted holes in the 1 (25) end plate on plate G after the 1 (M24) diameter bolts are in place.

- Bolts shall be provided with a lock nut or double nut and shall be tightened only to a point that will allow plate G to be free to move.

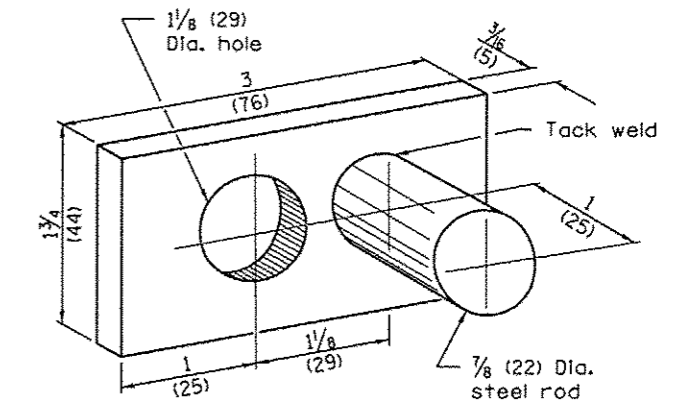


PLATE WASHER D

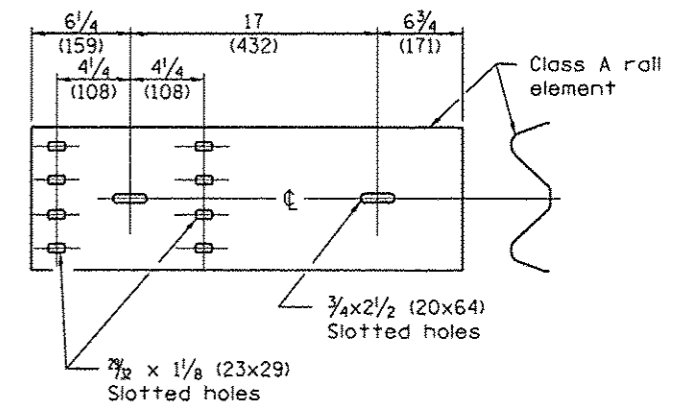


PLATE E

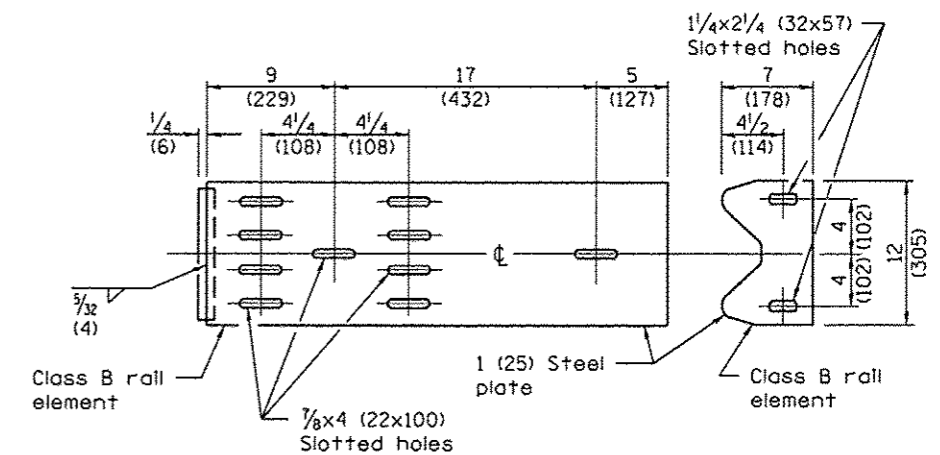
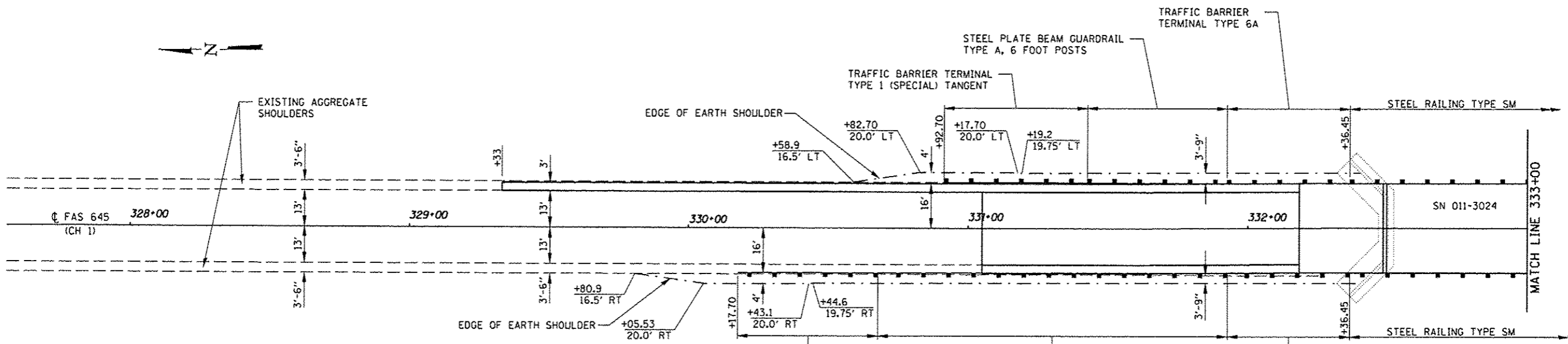


PLATE G

(Place between the roll element and Plate E)



STEEL PLATE BEAM GUARD RAIL, TYPE A 6 FOOT POSTS

LOCATION	FOOT
LT STA 331+42.70 TO STA 331+92.70	50.0
LT STA 334+65.53 TO STA 335+15.53	50.0
RT STA 330+67.70 TO STA 331+92.70	125.0
RT STA 334+65.53 TO STA 335+15.53	50.0
TOTAL	275.0

TRAFFIC BARRIER TERMINAL, TYPE 6A

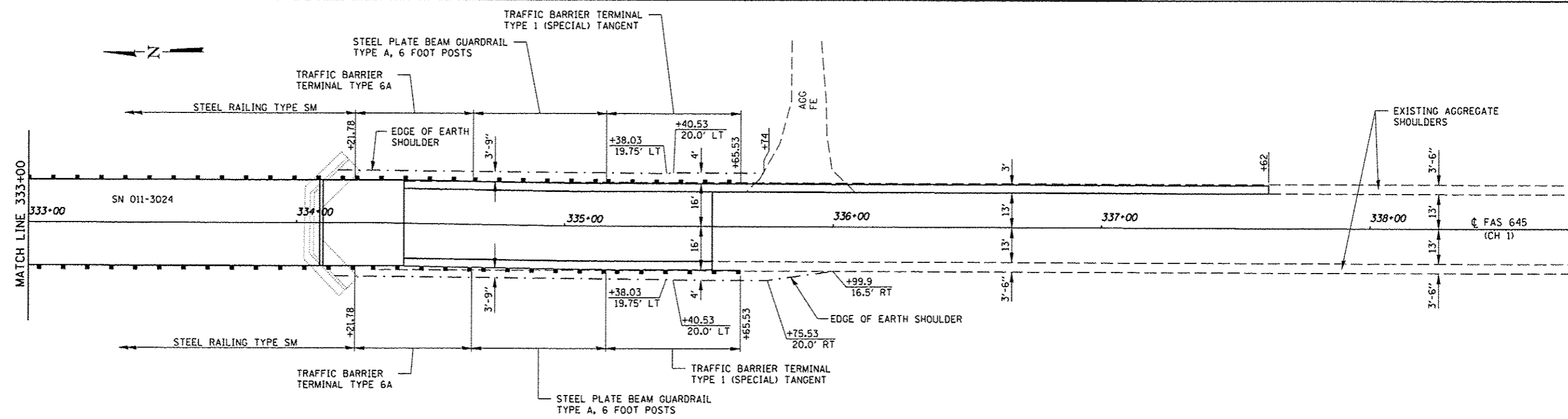
LOCATION	EACH
LT STA 331+92.70 TO STA 332+36.45	1
LT STA 334+21.78 TO STA 334+65.53	1
RT STA 331+92.70 TO STA 332+36.45	1
RT STA 334+21.78 TO STA 334+65.53	1
TOTAL	4

TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT

LOCATION	EACH
LT STA 330+92.70 TO STA 331+42.70	1
LT STA 335+15.53 TO STA 335+65.53	1
RT STA 330+17.70 TO STA 330+67.70	1
RT STA 335+15.53 TO STA 335+65.53	1
TOTAL	4

TERMINAL MARKER - DIRECT APPLIED

LOCATION	EACH
PRE-STAGE 1	
RT STA 330+96.12	1
RT STA 335+60.20	1
STAGE 1	
LT STA 330+92.70	1
LT STA 335+65.53	1
STAGE 2	
RT STA 330+17.70	1
RT STA 335+65.53	1
TOTAL	6



GUARDRAIL MARKERS, TYPE A

LOCATION	EACH
LT STA 331+42.70 TO STA 335+15.53	5
RT STA 330+67.70 TO STA 335+15.53	6
TOTAL	11

GUARDRAIL REMOVAL

LOCATION	FOOT
LT STA 331+87.40 TO STA 332+27.40	40
LT STA 334+32.40 TO STA 334+72.40	40
RT STA 331+85.60 TO STA 332+25.60	40
RT STA 334+30.60 TO STA 334+70.60	40
TOTAL	160



JOB # 2234
 FILE NAME = 2234gral.dgn
 PLOT SCALE = 1/8" = 1'-0"
 PLOT DATE = 2/26/2014

DESIGNED - TSH
 DRAWN - SJS
 CHECKED - NAK
 DATE - 5/11/2012

REVISED -
 REVISED -
 REVISED -
 REVISED -

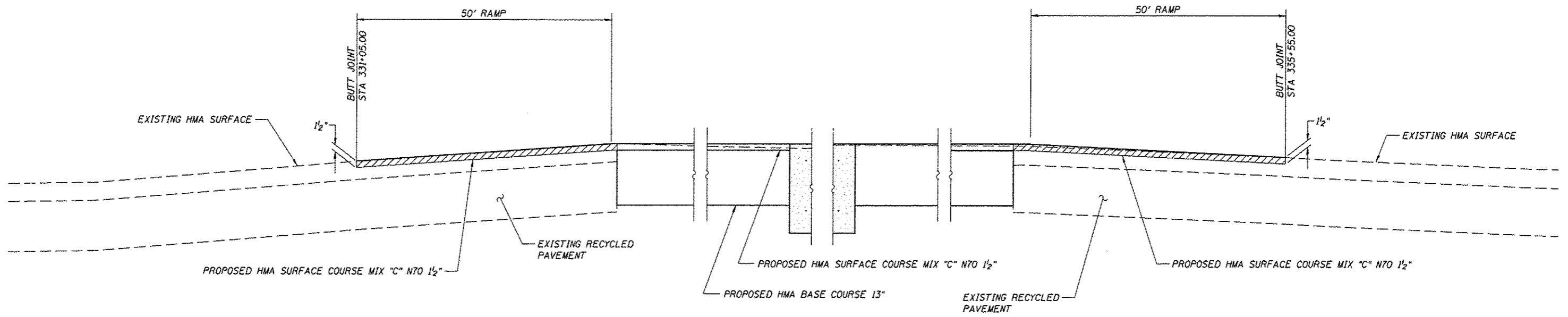
CHRISTIAN COUNTY
 CH 1 IMPROVEMENTS

GUARDRAIL & SHOULDER WIDENING DETAILS

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
645	11-00089-00-BR	CHRISTIAN	57	23
CONTRACT NO.				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

93620



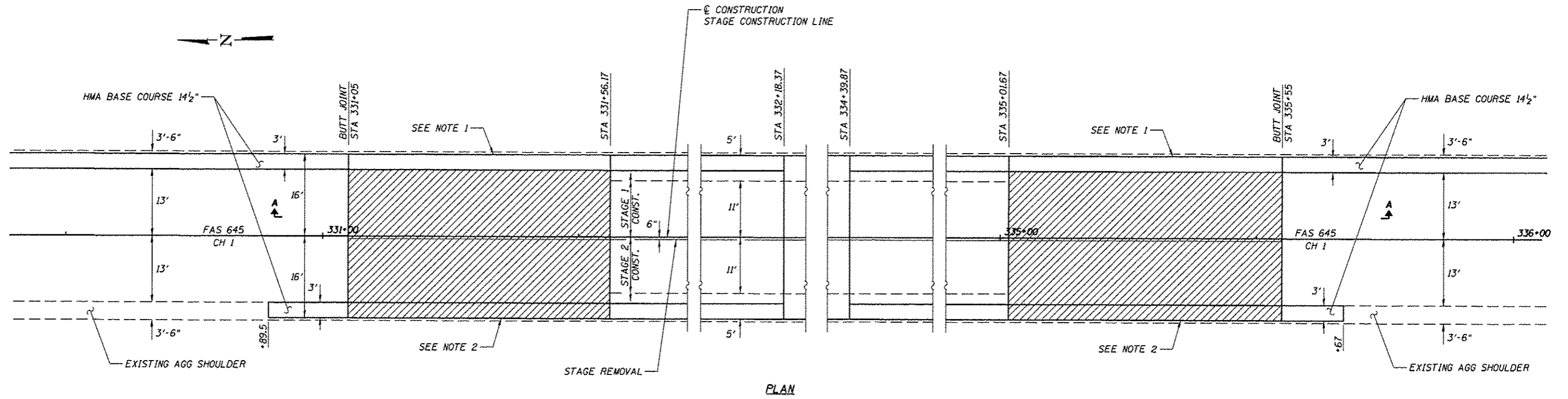
SECTION A-A

INDICATES PROPOSED HMA SURFACE REMOVAL 1/2"

BRIDGE AND BRIDGE APPROACH PAVEMENT OMISSION
STA 332+18.37 TO STA 334+39.87

SHOULDER MILLING AND RESURFACING NOTES

- NOTE 1:
SHOULDER FROM LT STA 331+05.00 TO LT STA 331+56.17
SHOULDER FROM LT STA 335+01.67 TO LT STA 335+55.00
- SHOULDER SHALL BE CONSTRUCTED WITH HMA BASE COURSE 13"
AND HMA SURFACE COURSE 1 1/2" DURING STAGE 1 CONSTRUCTION.
- NOTE 2:
SHOULDER FROM RT STA 331+05.00 TO RT STA 331+56.17
SHOULDER FROM RT STA 335+01.67 TO RT STA 335+55.00
- SHOULDER SHALL BE CONSTRUCTED WITH HMA BASE COURSE 14 1/2"
DURING PRE-STAGE 1 CONSTRUCTION. DURING STAGE 2 CONSTRUCTION,
THE HMA BASE COURSE SHALL BE MILLED 1 1/2" AND SHALL BE RESURFACED
WITH HMA SURFACE COURSE 1 1/2". COST OF THE SHOULDER MILLING
SHALL BE INCLUDED IN THE QUANTITY FOR HMA SURFACE REMOVAL 1 1/2".



PLAN

93620

CEC Cummins Engineering Corporation Civil and Structural Engineering	JOB = 2234	DESIGNED - TSH	REVISED -	CHRISTIAN COUNTY CH 1 IMPROVEMENTS	BUTT JOINT DETAILS			F.A.S. RTE. 645	SECTION 11-00089-00-BR	COUNTY CHRISTIAN	TOTAL SHEETS 57	SHEET NO. 24
	FILE NAME = 2234buttj.dgn	DRAWN - SJS	REVISED -					FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	CONTRACT NO.		
	PLOT SCALE = 20.0000 x / IN.	CHECKED - NAK	REVISED -					SCALE:	SHEET NO. OF SHEETS	STA. TO STA.		
	PLOT DATE = 1/24/2014	DATE - 5/11/2012	REVISED -									

B.M. R3(B): Chiseled Square on N.W. bridge wing wall, 16.0' Rt. Sta 332+22, Elev. 603.15
 B.M. R2(A): Chiseled Square on S.W. bridge wing wall, 16.0' Rt. Sta 334+20, Elev. 603.15

Existing Structure: SN 011-3024, originally built 1920 as a RC Thru girder superstructure on solid wall reinforced concrete piers and closed abutments on timber pile support footings. In 1957 the superstructure was replaced with wide flange beams and a reinforced concrete deck. Pier/Abutment caps were modified and approach spans were added to both ends of the structure. Existing bridge deck, abutment bearings, backwalls and approach spans to be replaced under stage construction. Removal of Existing Concrete Bridge Deck will include the removal of the entire bridge deck and approach spans, including the existing wearing surface.

SOUTH FORK SANGAMON RIVER
 RE-BUILT 20__ BY
 CHRISTIAN COUNTY
 SEC. 11-00089-00-BR
 FAS RTE 645 STA 333+29.12
 STRUCTURE NO. 011-3024 LOADING HS-20

LETTERING FOR NAME PLATE

See Std. 515001
 Existing Name Plate shall be cleaned and relocated next to new Name Plate. Cost included with Name Plates.

INDEX OF SHEETS

1. General Plan
2. General Data
3. Stage Construction Details
4. Temporary Concrete Barrier
5. Steel Railing (Temporary)
- 6.-7. Top of Slab Elevations
- 8.-9. Top of Approach Slab Elevations
10. Superstructure
11. Superstructure Details
- 12.-13. Bridge Approach Slab Details
14. Steel Railing, Type SM
15. Modified Preformed Joint Strip Seal
16. Structural Steel
- 17.-18. Bearing Details
19. Abutment Concrete Removal
- 20.-21. Abutments
22. Bar Splicer Details

DESIGN STRESSES

FIELD UNITS (New Construction)
 $f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)
 $f_y = 36,000$ psi (M270 Grade 36)

FIELD UNITS (Existing Construction)
 $f_c = 1,400$ psi (Deck Slab)
 $f_c = 800$ psi (Substructure)
 $f_s = 20,000$ psi (Reinforcement)
 $f_s = 18,000$ psi (Structural Steel)

DESIGN SPECIFICATIONS

1995 FHWA Seismic Retrofit Manual
 2002 AASHTO Standard Specifications for Highway Bridges (New Construction)
 2012 AASHTO LRFD Bridge Design Specification w/ 2013 Interims (New Deck)

SEISMIC DATA

Seismic Performance Category (SPC) = A
 Bedrock Acceleration Coefficient (A) = 0.057g
 Site Coefficient (S) = 1.0

LOADING HS-20

No future wearing surface allowed.

GENERAL PLAN

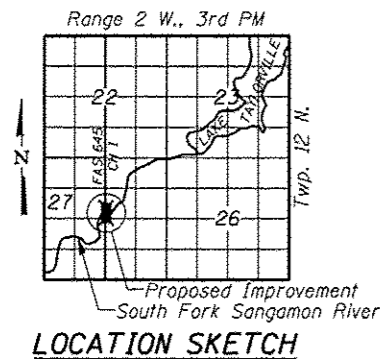
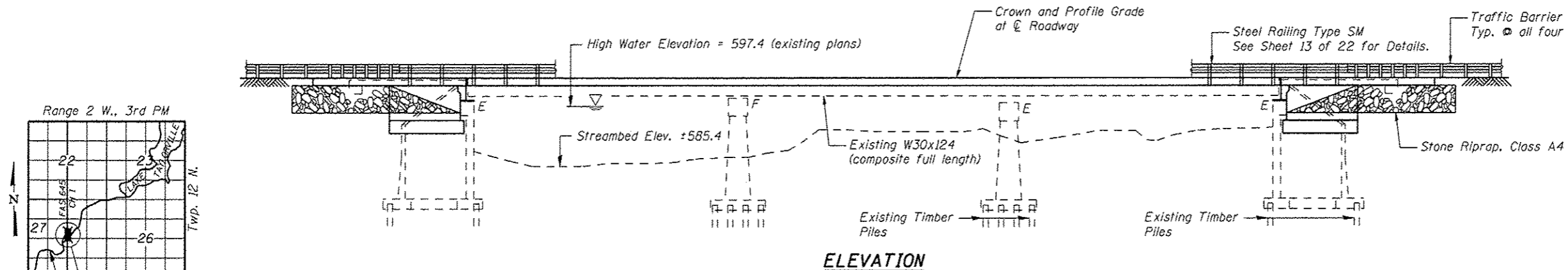
C.H. 1 OVER SOUTH FORK SANGAMON RIVER

SECTION 11-00089-00-BR

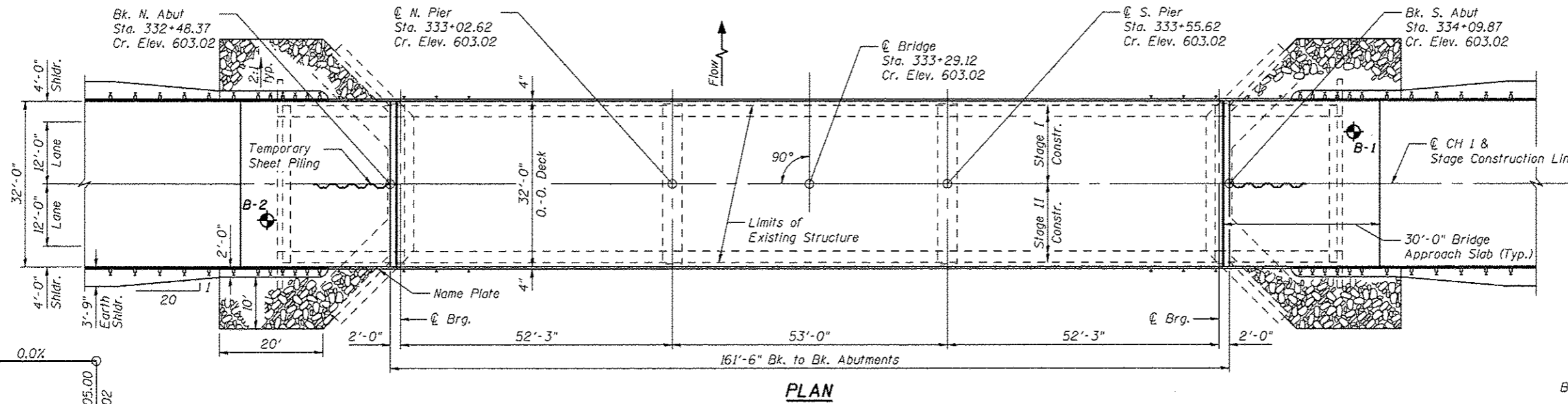
CHRISTIAN COUNTY

STATION 333+29.12

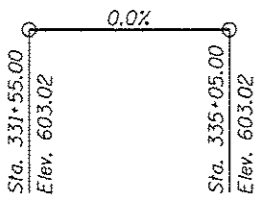
STRUCTURE NO. 011-3024



LOCATION SKETCH



PLAN



PROFILE GRADE
 (along \hat{C} Construction)

WATERWAY INFORMATION

Drainage Area	67.1 Sq. Mi.
Existing Opening (100 Yr.)	1460 Sq. Ft.
Proposed Opening (100 Yr.)	1460 Sq. Ft.
Design Discharge (20 Yr.)	5700 C.F.S.
100 Year Discharge	7420 C.F.S.

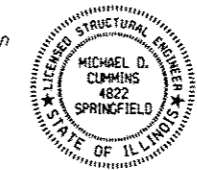
Construction Permits: This project has been approved for construction under statewide permit No. 12, as issued by the Department of Natural Resources / Office of Water Resources.

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	N. Abut.	Pier 1	Pier 2	S. Abut.
	577.35	577.10	577.10	577.35

"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 Specifications for Highway Bridges'."

Michael D. C. 3/27/14
 ILLINOIS STRUCTURAL NO. 4822 (Expires 11/30/14)



**CHRISTIAN COUNTY
 CH 1 IMPROVEMENTS**

**GENERAL PLAN & ELEVATION
 STRUCTURE NO. 011-3024**

SHEET NO. 1 OF 22 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
645	11-00089-00-BR	CHRISTIAN	57	25
CONTRACT NO.				



JOB	2234	DESIGNED	AAN	REVISED	-
FILE	2234qpe.dgn	CHECKED	MDC	REVISED	-
DATE	3/27/2014	DRAWN	SJS	REVISED	-
		CHECKED	MDC	REVISED	-

GENERAL NOTES

No field welding is permitted except as specified in the contract documents. Reinforcement bars designated (E) shall be epoxy coated.

Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.

As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding 1/4 inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

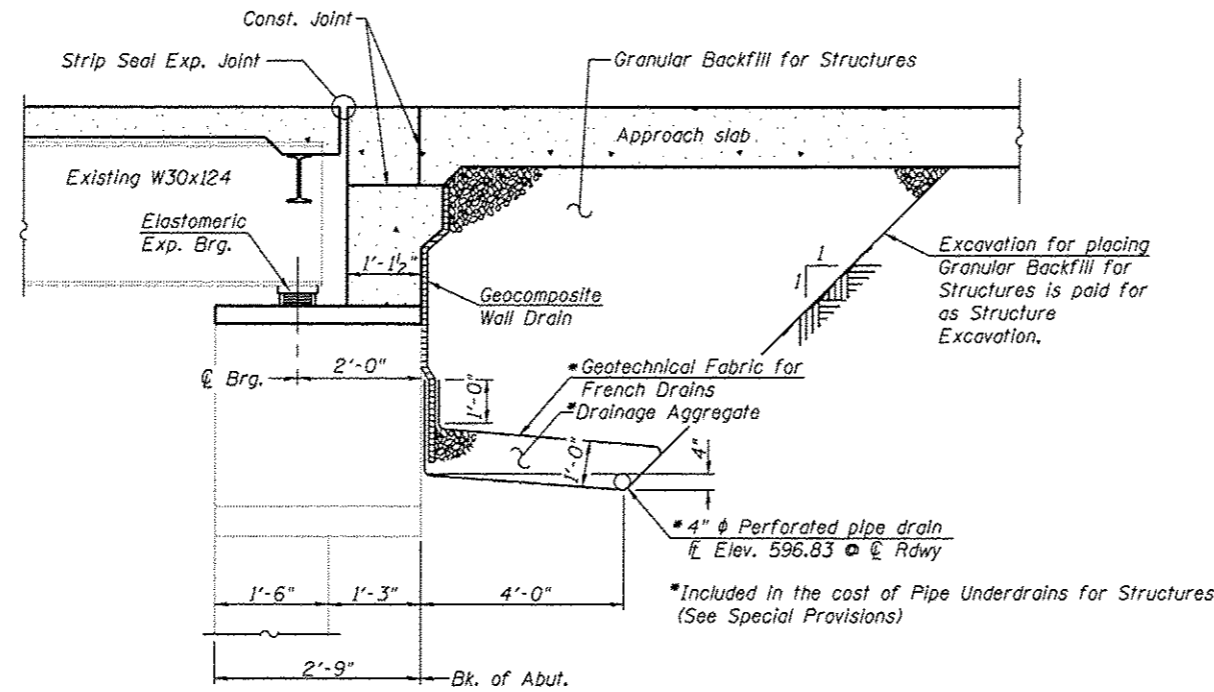
Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.

The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

Concrete Sealer shall be applied to the designated areas of the abutments.

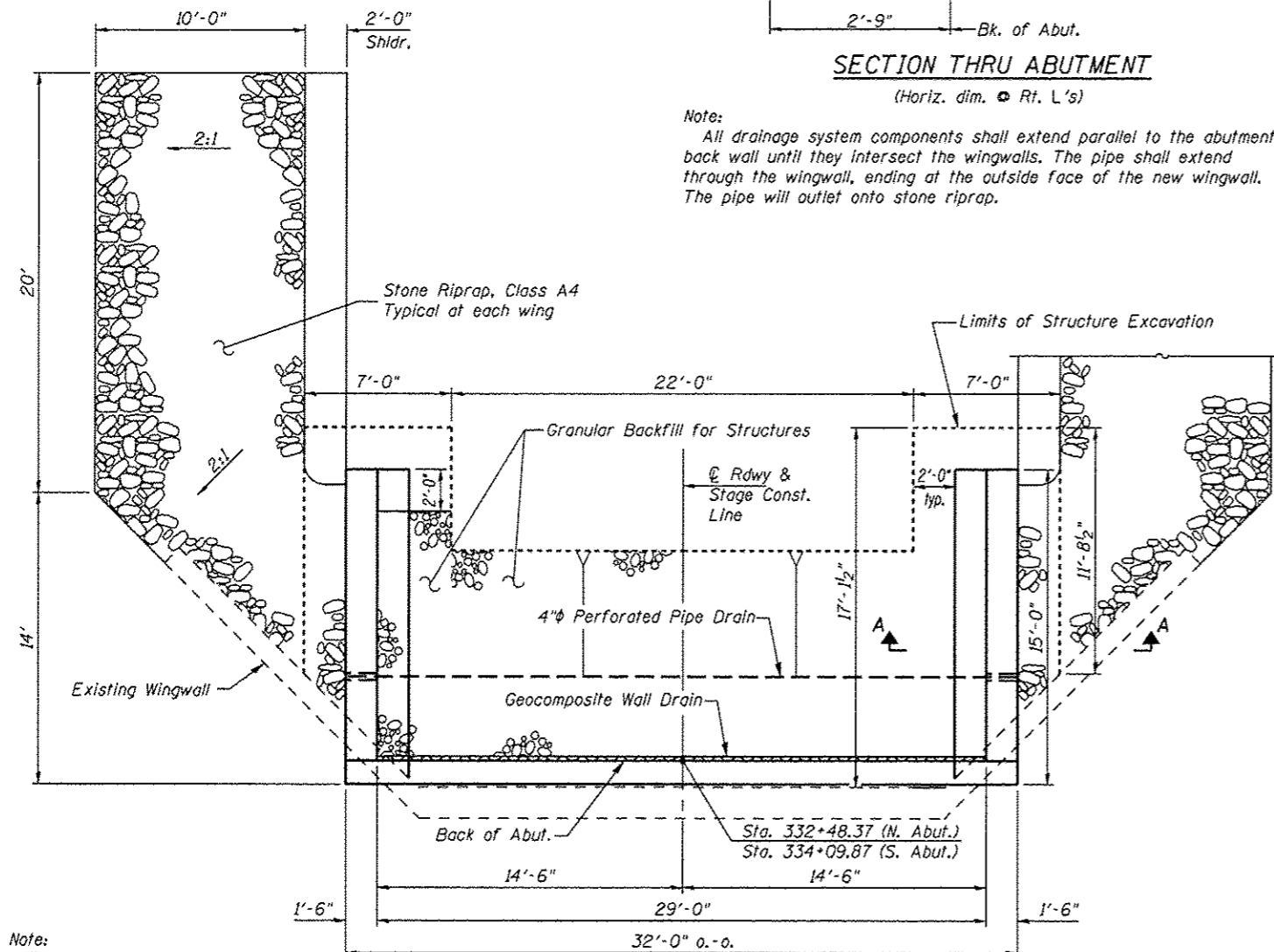
Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.



SECTION THRU ABUTMENT

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

Note:
All drainage system components shall extend parallel to the abutment back wall until they intersect the wingwalls. The pipe shall extend through the wingwall, ending at the outside face of the new wingwall. The pipe will outlet onto stone riprap.

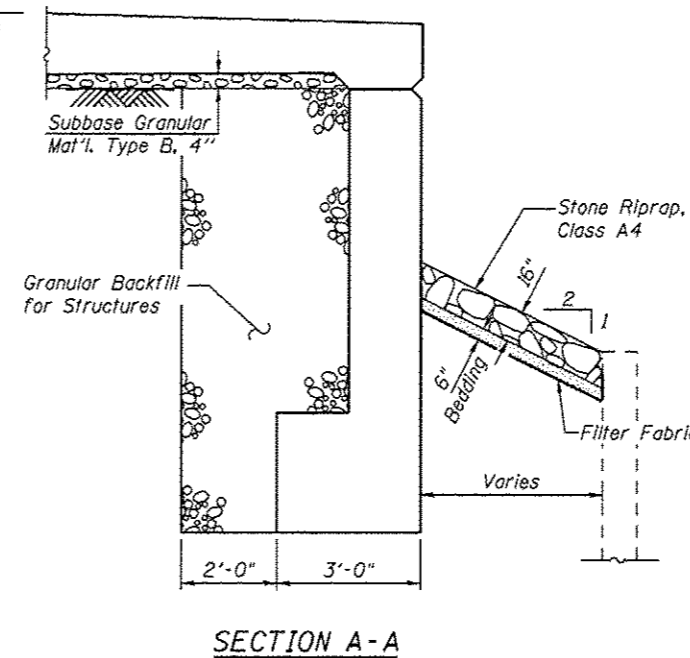


STONE RIPRAP AND BACKFILL DETAIL

Note:
There shall be no in-stream work. Stone Riprap, Class A4 will be placed by hand from the top of the existing wall to the edge of the new wingwall or approach pavement shoulder.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yd.		12.9	12.9
Removal of Existing Concrete Deck	Each	1		1
Structure Excavation	Cu. Yd.		198	198
Concrete Structures	Cu. Yd.		65.2	65.2
Concrete Superstructure	Cu. Yd.	243.9		243.9
Bridge Deck Grooving	Sq. Yd.	529		529
Protective Coat	Sq. Yd.	616		616
Stud Shear Connectors	Each	3,006		3,006
Reinforcement Bars, Epoxy Coated	Pound	60,550	6260	66810
Bar Splicers	Each	616	170	786
Steel Railing, Type SM	Foot	371		371
Name Plates	Each	1		1
Prefomed Joint Strip Seal	Foot	70		70
Elastomeric Bearing Assembly, Type II	Each	12		12
Anchor Bolts, 3/8"	Each	24		24
Concrete Sealer	Sq. Ft.		271	271
Geocomposite Wall Drain	Sq. Yd.		20	20
Granular Backfill for Structures	Cu. Yd.		140	140
Jack and Remove Existing Bearings	Each	12		12
Temporary Sheet Piling	Sq. Ft.		416	416
Pipe Underdrains for Structures 4"	Foot		64	64
Steel Railing (Temporary)	Foot	202		202
Stone Riprap, Class A4	Sq. Yd.		160	160
Filter Fabric	Sq. Yd.		160	160



SECTION A-A



Cummins Engineering Corporation
 JOB # 2234
 FILE # 2234_CerData.dgn
 DATE # 3/27/2014

DESIGNED - AAN
 CHECKED - MDC
 DRAWN - SJS
 CHECKED - MDC

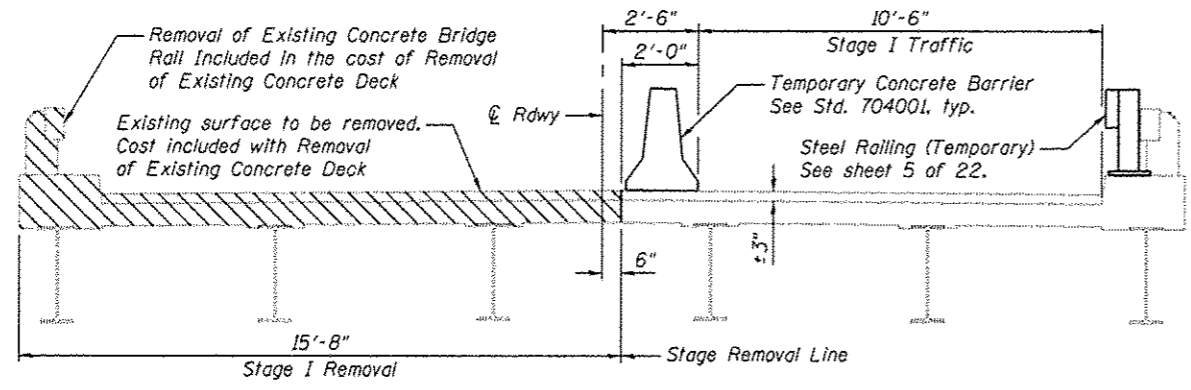
REVISED -
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 REVISED -

**CHRISTIAN COUNTY
 CH 1 IMPROVEMENTS**

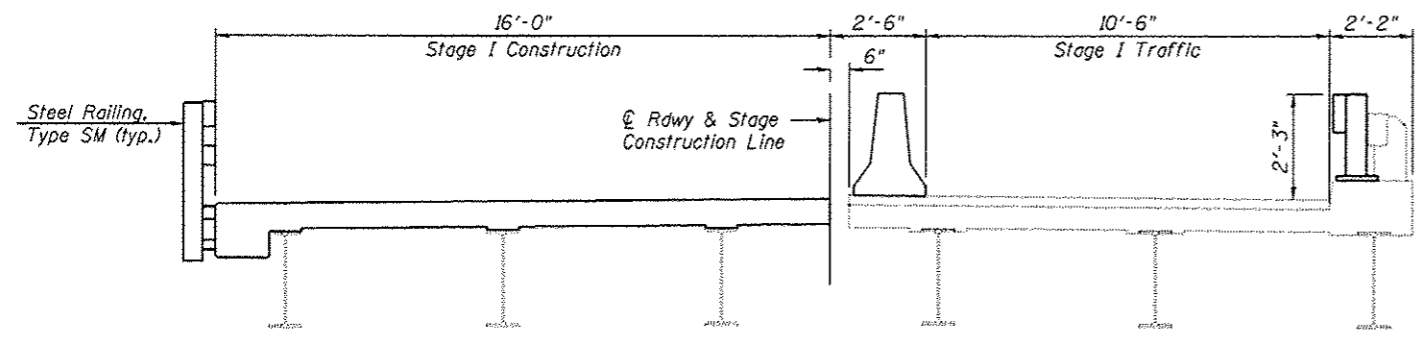
GENERAL DATA
STRUCTURE NO. 011-3024
 SHEET NO. 2 OF 22 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
645	11-00089-00-BR	CHRISTIAN	57	26

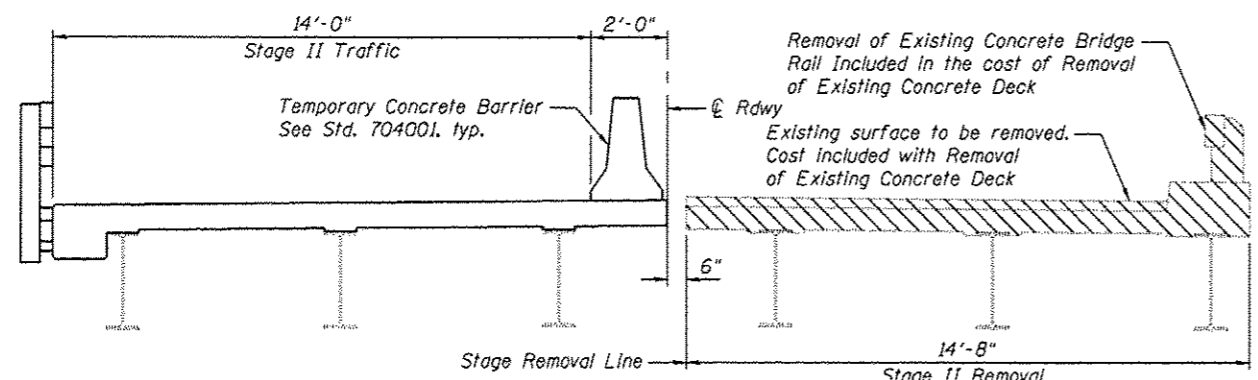
ILLINOIS FED. AID PROJECT



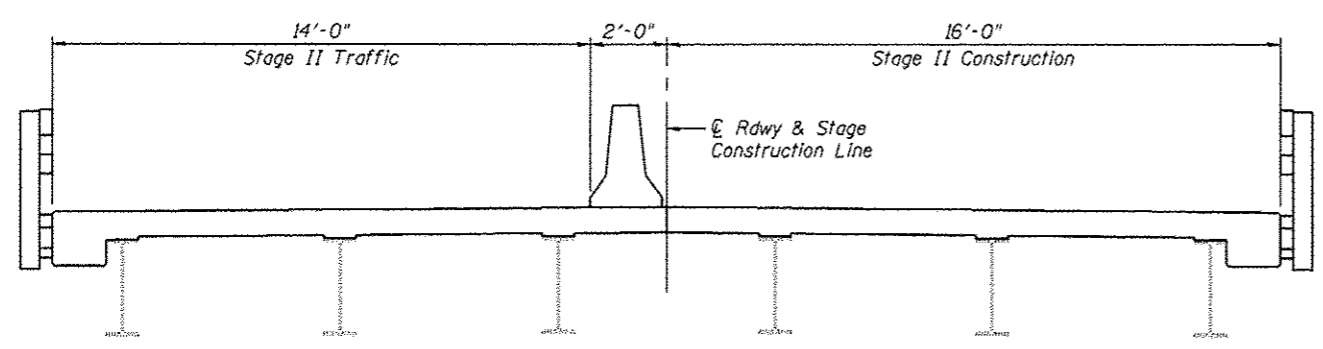
STAGE I REMOVAL
(Looking South)



STAGE I CONSTRUCTION
(Looking South)

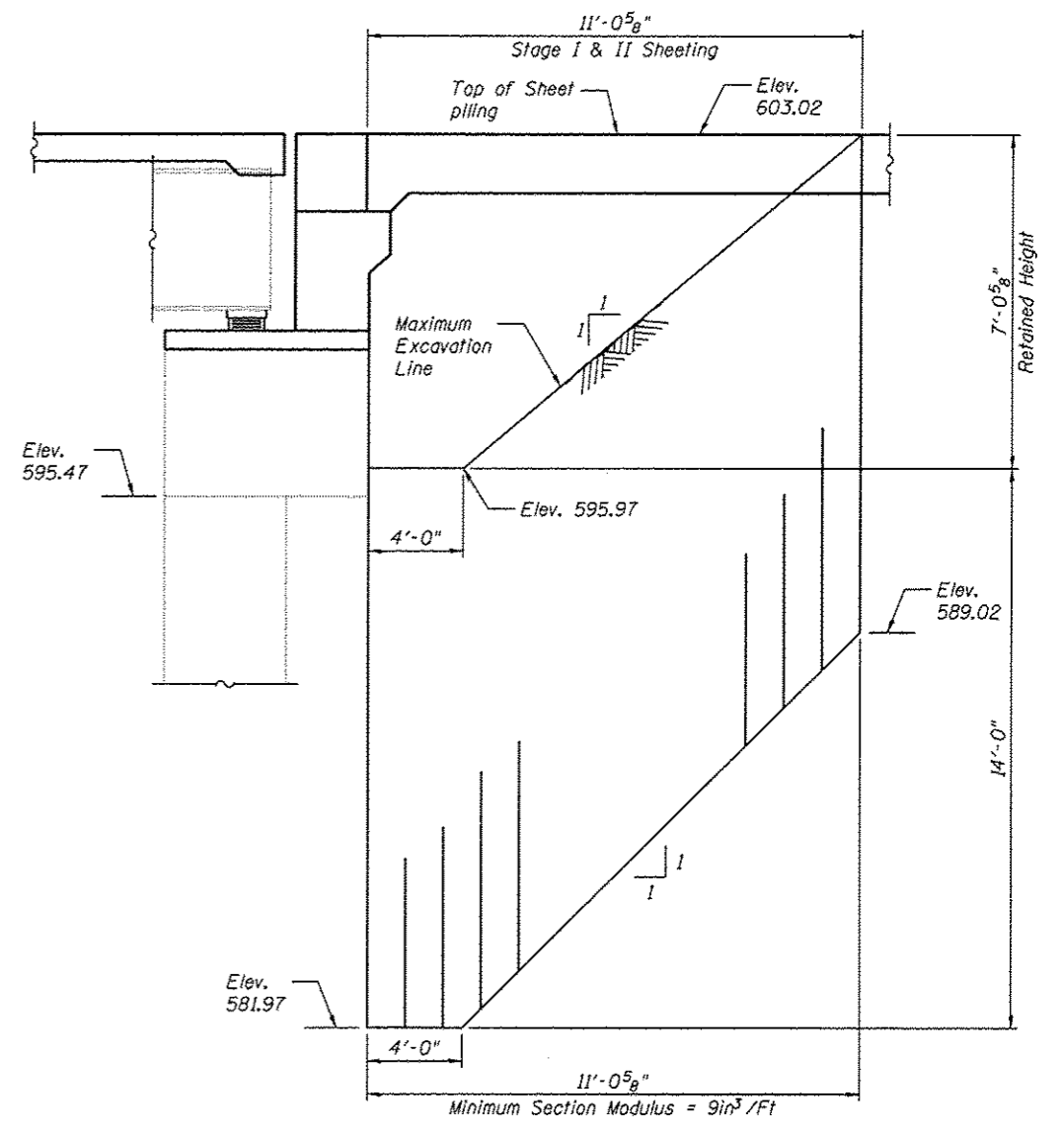


STAGE II REMOVAL
(Looking South)



STAGE II CONSTRUCTION
(Looking South)

Staging Notes:
Hatched areas indicate Removal of Existing Concrete Deck.
For quantity and location of Temporary Concrete Barrier, see Roadway Plans. See sheet 4 of 22 for anchorage of Temporary Concrete Barrier to bridge deck.



TEMPORARY SHEET PILING

If the Contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.
The Contractor shall connect the first sheet to the existing abutment wall to ensure stability of sheets driven to the top of the existing footing. This connection shall be reviewed and accepted by the Engineer and included in the cost for Temporary Sheet Piling.



JOB	• 2234	DESIGNED	- AAN	REVISED	-
FILE	• 2234_Stage.dgn	CHECKED	- TSH	REVISED	-
DATE	• 3/27/2014	DRAWN	- SJS	REVISED	-
		CHECKED	- MDC	REVISED	-

**CHRISTIAN COUNTY
CH 1 IMPROVEMENTS**

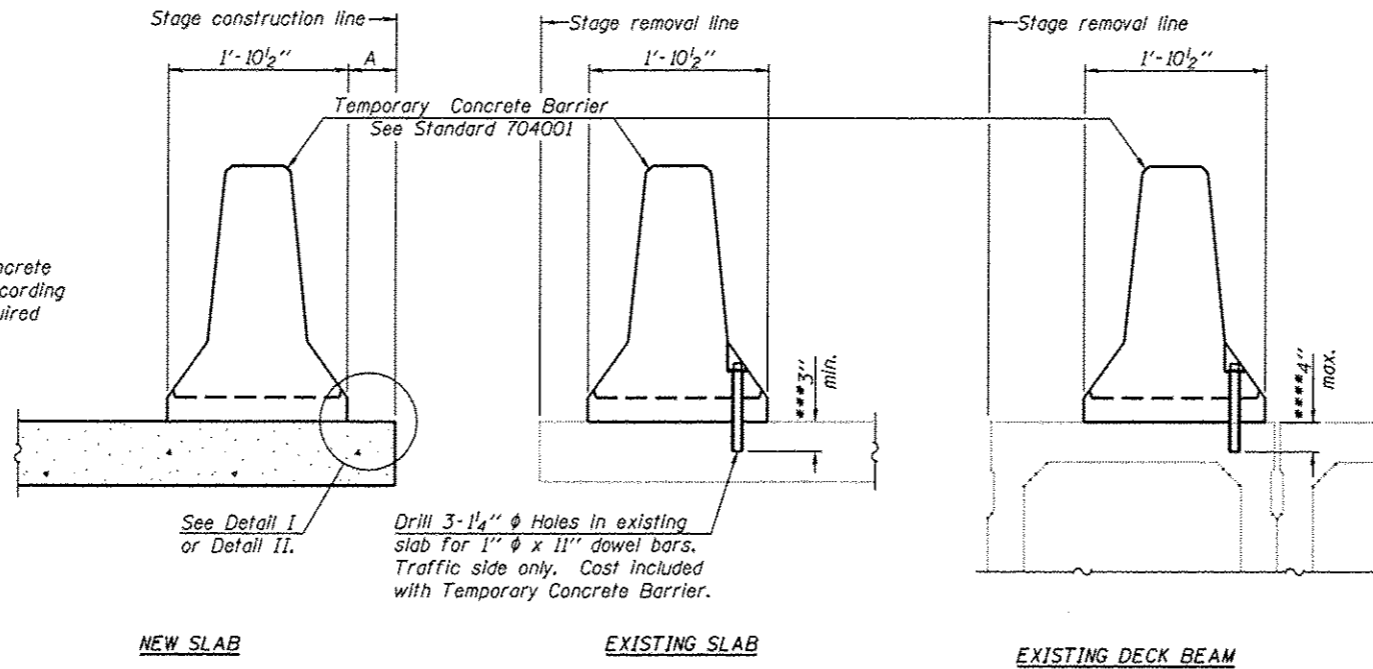
**STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 011-3024**

SHEET NO. 3 OF 22 SHEETS

P.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
645	11-00083-00-BR	CHRISTIAN	57	27
CONTRACT NO.			93620	

ILLINOIS FED. AID PROJECT

When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".



SECTIONS THRU SLAB OR DECK BEAM

NOTES

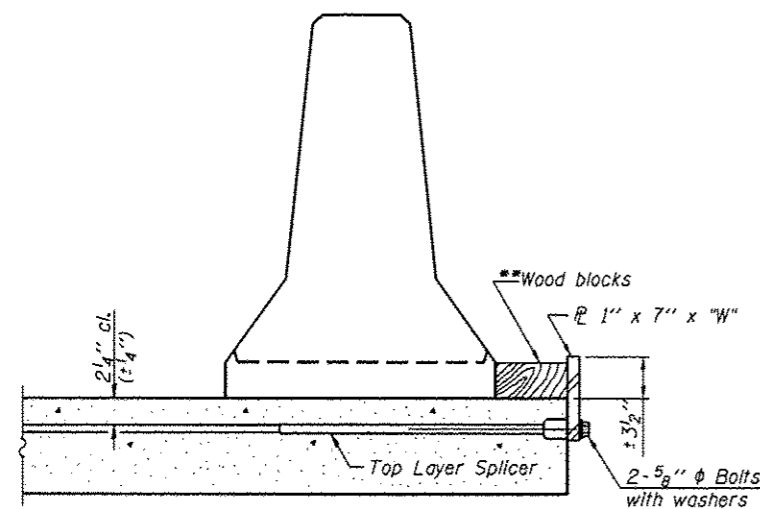
Detail I - With Bar Splicer or Couplers:
Connect one (1) 1" x 7" x "W" steel \bar{r} to the top layer of couplers with 2- $\frac{5}{8}$ " ϕ bolts screwed to coupler at approximate \bar{c} of each barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 1" x 7" x "W" steel \bar{r} to the concrete slab or concrete wearing surface with 2- $\frac{5}{8}$ " ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate \bar{c} of each barrier panel.

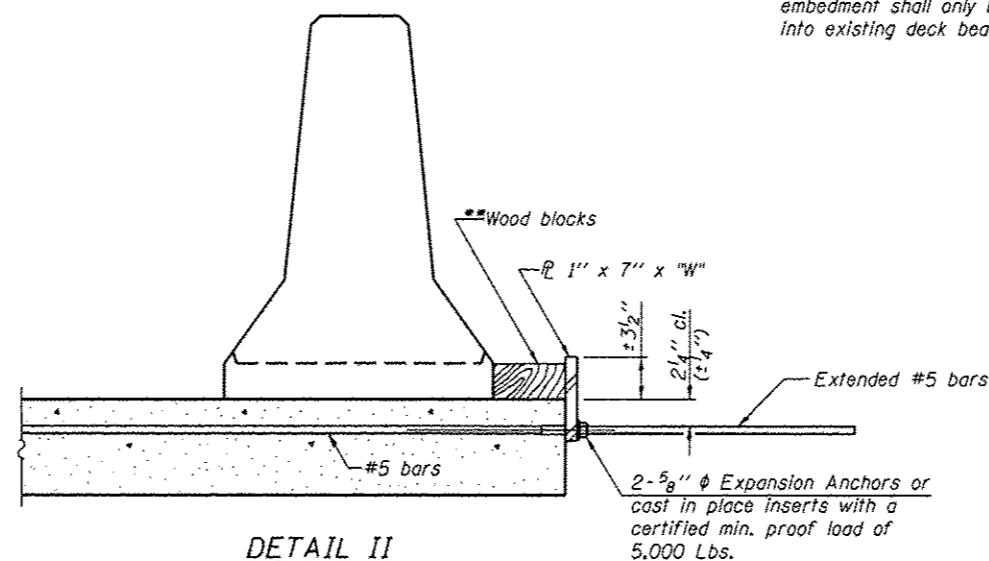
Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x "W" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

*** Dimension shown is minimum required embedment into concrete. If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.

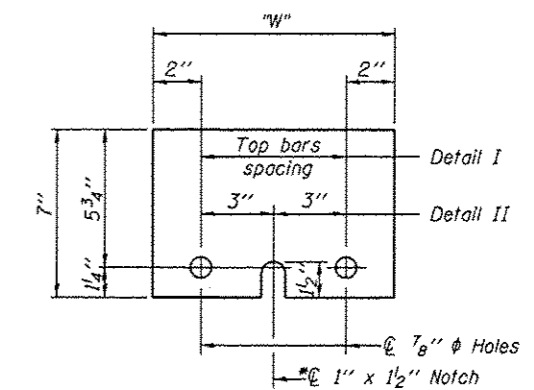
**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



DETAIL I



DETAIL II



STEEL RETAINER \bar{r} 1" x 7" x "W"

* Required only with Detail II

** Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.

"W" = Top bars spacing + 4"

R-27

7-1-10

CEC Cummins Engineering Corporation
Civil and Structural Engineering

JOB # 2234
FILE # 2234_TempBarrier.dgn
DATE # 3/27/2014

DESIGNED - AAN
CHECKED - TSM
DRAWN - SJS
CHECKED - MDC

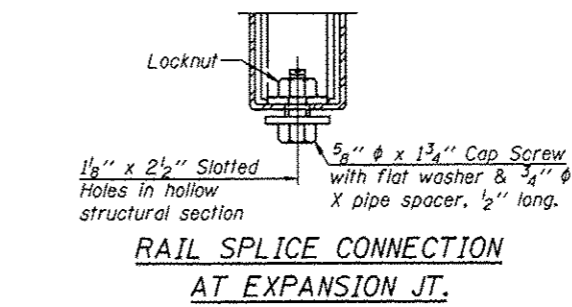
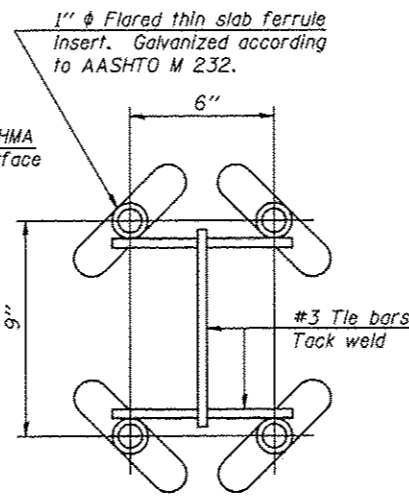
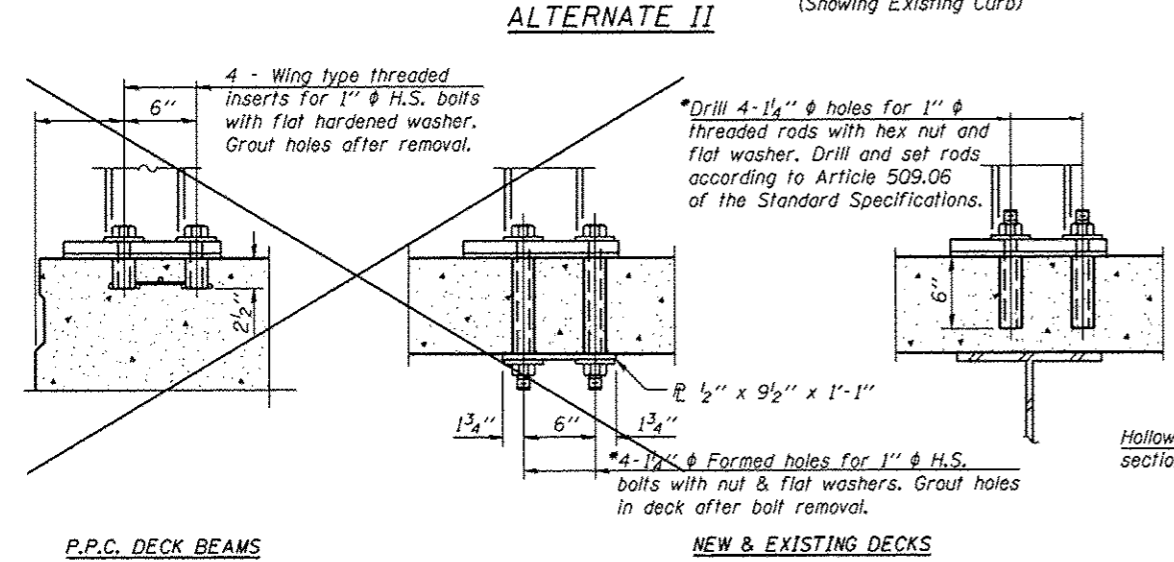
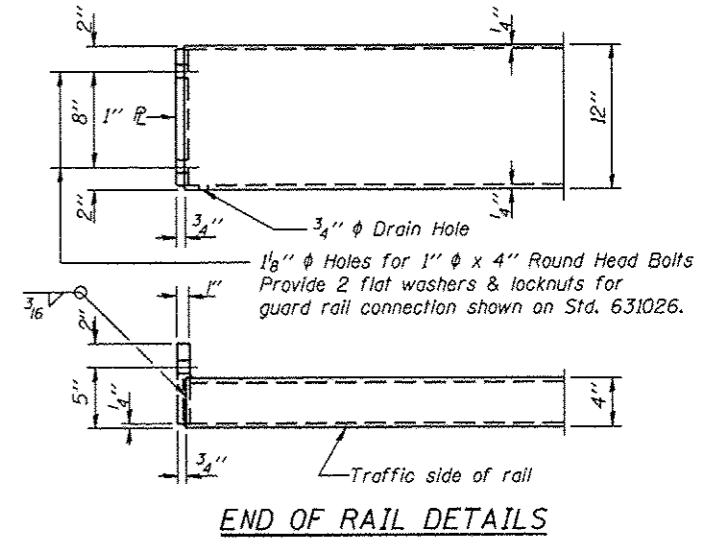
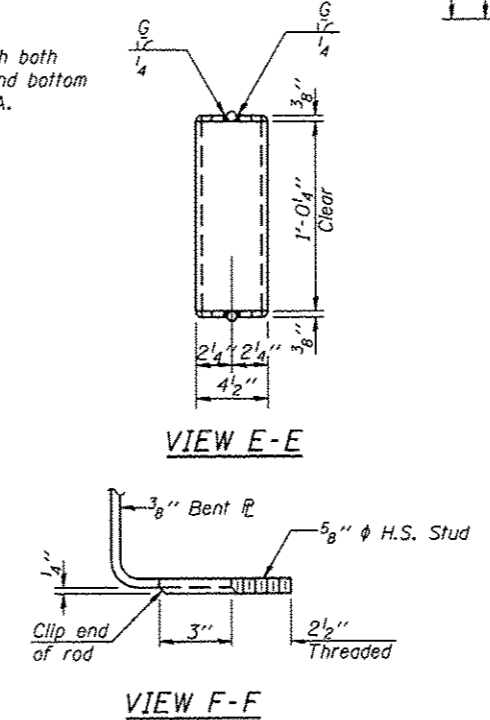
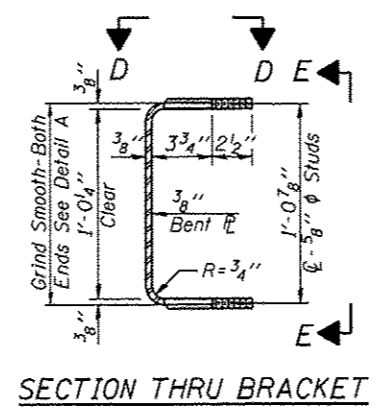
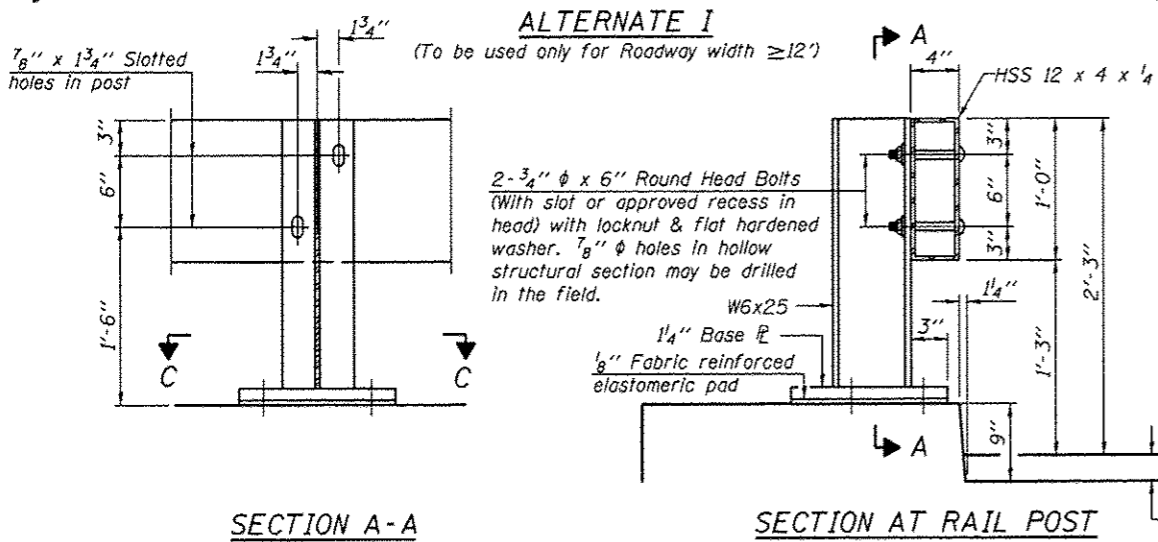
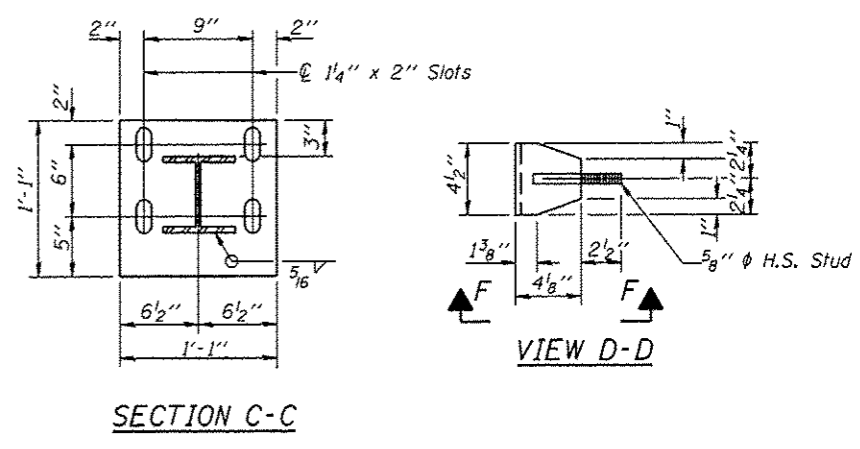
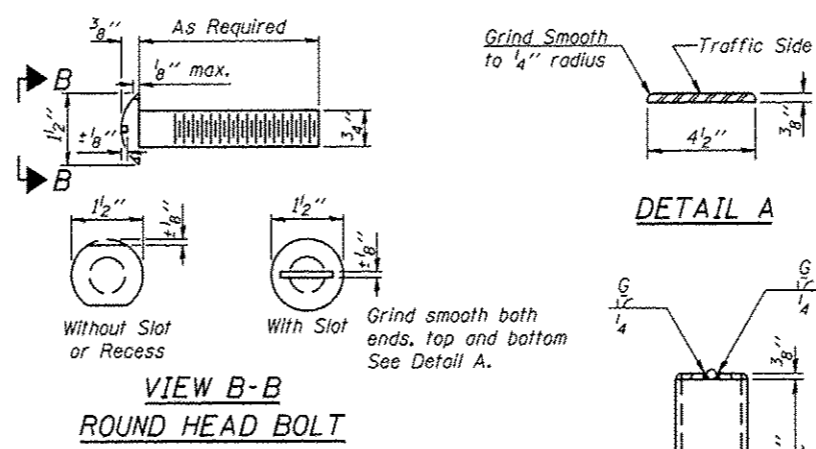
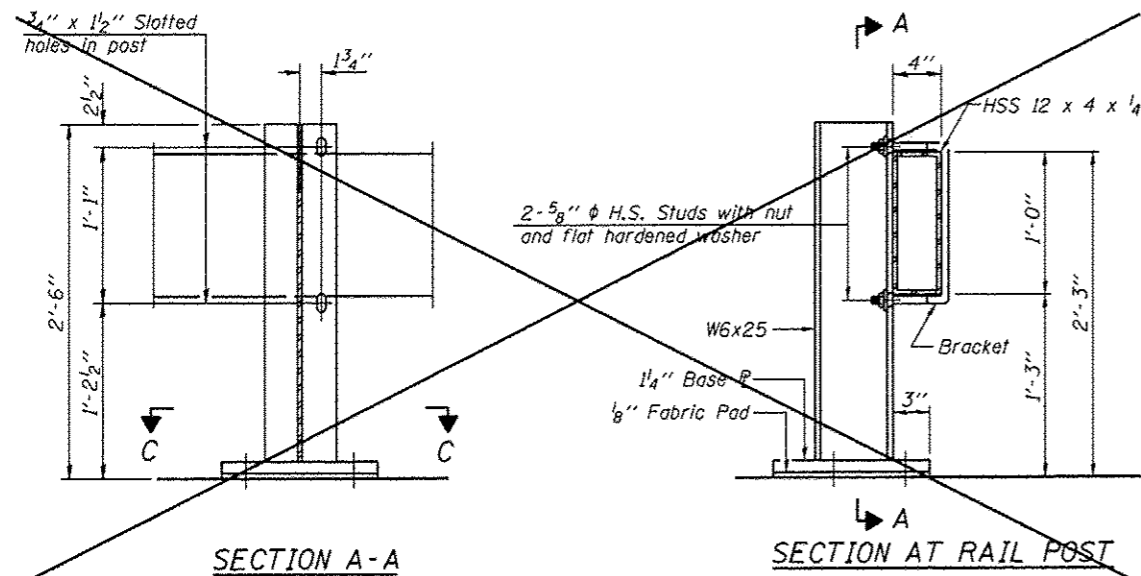
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**CHRISTIAN COUNTY
CH 1 IMPROVEMENTS**

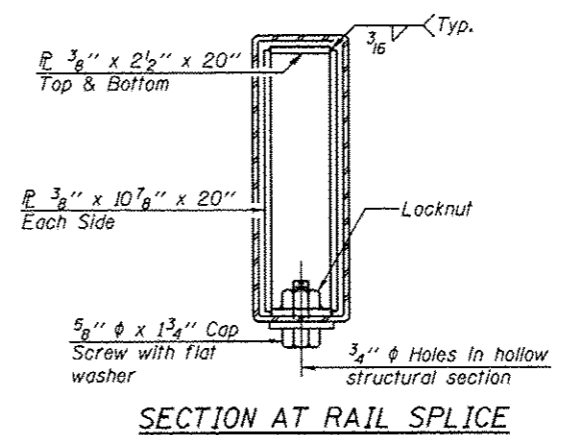
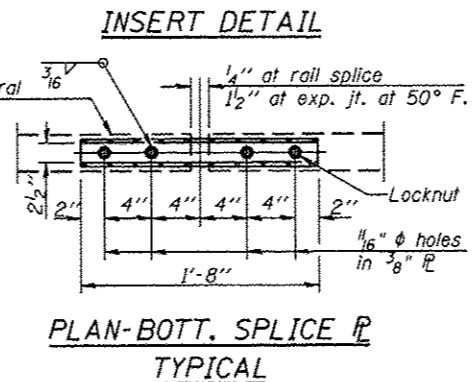
**TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
STRUCTURE NO. 011-3024**

SHEET NO. 4 OF 22 SHEETS

F.A.S. RTE. 645	SECTION 11-00089-00-BR	COUNTY CHRISTIAN	TOTAL SHEETS 57	SHEET NO. 28
CONTRACT NO.			ILLINOIS FED. AID PROJECT 93620	



Notes:
 The contact surfaces between post flange, rail and inside face of bracket for Alternate I shall be free of all lubricants. The nut for 5/8" ϕ high strength studs used in Alternate I to connect bracket to post shall be tightened to a snug fit and given an additional one half turn.



BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing (Temporary)	Foot	202

R-25 1-27-12 (10'-9" Maximum Post Spacing)

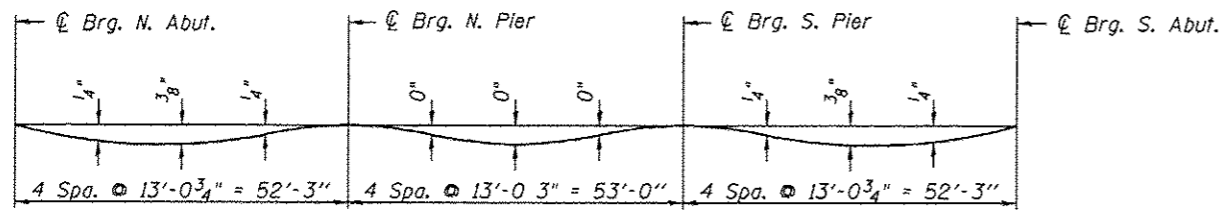
CEC Cummins Engineering Corporation Civil and Structural Engineering	JOB • 2234	DESIGNED - AAN	REVISED -
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	DATE • 3/27/2014	DRAWN - SJS	REVISED -
		CHECKED - MDC	REVISED -

**CHRISTIAN COUNTY
CH 1 IMPROVEMENTS**

**STEEL RAILING (TEMPORARY)
STRUCTURE NO. 011-3024**

F.A.S. RTE. 645	SECTION 11-00089-00-BR	COUNTY CHRISTIAN	TOTAL SHEETS 57	SHEET NO. 29
CONTRACT NO. 98620			ILLINOIS FED. AID PROJECT	

SHEET NO. 5 OF 22 SHEETS

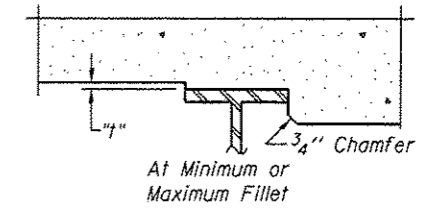


DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only.)

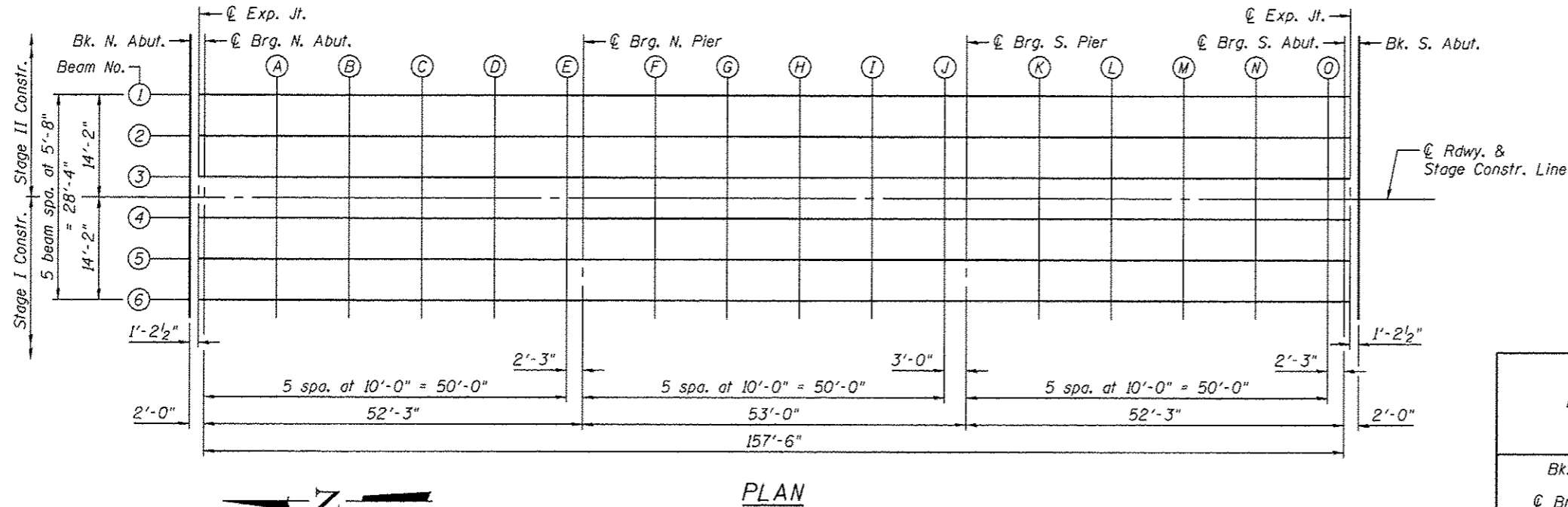
Note:

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 below.



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

FILLET HEIGHTS



PLAN

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	332+48.37	-14.17	602.73	602.73
☉ Brg. N. Abut.	332+50.37	-14.17	602.73	602.73
A	332+60.37	-14.17	602.73	602.74
B	332+70.37	-14.17	602.73	602.75
C	332+80.37	-14.17	602.73	602.75
D	332+90.37	-14.17	602.73	602.74
E	333+00.37	-14.17	602.73	602.73
☉ N. Pier	333+02.62	-14.17	602.73	602.73
F	333+12.62	-14.17	602.73	602.73
G	333+22.62	-14.17	602.73	602.73
H	333+32.62	-14.17	602.73	602.73
I	333+42.62	-14.17	602.73	602.73
J	333+52.62	-14.17	602.73	602.73
☉ S. Pier	333+55.62	-14.17	602.73	602.73
K	333+65.62	-14.17	602.73	602.74
L	333+75.62	-14.17	602.73	602.75
M	333+85.62	-14.17	602.73	602.75
N	333+95.62	-14.17	602.73	602.74
O	334+05.62	-14.17	602.73	602.73
☉ Brg. S. Abut.	334+07.87	-14.17	602.73	602.73
Bk. S. Abut.	334+09.87	-14.17	602.73	602.73

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	332+48.37	-8.50	602.84	602.84
☉ Brg. N. Abut.	332+50.37	-8.50	602.84	602.84
A	332+60.37	-8.50	602.84	602.86
B	332+70.37	-8.50	602.84	602.87
C	332+80.37	-8.50	602.84	602.87
D	332+90.37	-8.50	602.84	602.86
E	333+00.37	-8.50	602.84	602.85
☉ N. Pier	333+02.62	-8.50	602.84	602.84
F	333+12.62	-8.50	602.84	602.84
G	333+22.62	-8.50	602.84	602.84
H	333+32.62	-8.50	602.84	602.84
I	333+42.62	-8.50	602.84	602.84
J	333+52.62	-8.50	602.84	602.84
☉ S. Pier	333+55.62	-8.50	602.84	602.84
K	333+65.62	-8.50	602.84	602.86
L	333+75.62	-8.50	602.84	602.87
M	333+85.62	-8.50	602.84	602.87
N	333+95.62	-8.50	602.84	602.86
O	334+05.62	-8.50	602.84	602.85
☉ Brg. S. Abut.	334+07.87	-8.50	602.84	602.84
Bk. S. Abut.	334+09.87	-8.50	602.84	602.84

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	332+48.37	-2.83	602.96	602.96
☉ Brg. N. Abut.	332+50.37	-2.83	602.96	602.96
A	332+60.37	-2.83	602.96	602.98
B	332+70.37	-2.83	602.96	602.99
C	332+80.37	-2.83	602.96	602.99
D	332+90.37	-2.83	602.96	602.98
E	333+00.37	-2.83	602.96	602.97
☉ N. Pier	333+02.62	-2.83	602.96	602.96
F	333+12.62	-2.83	602.96	602.96
G	333+22.62	-2.83	602.96	602.96
H	333+32.62	-2.83	602.96	602.96
I	333+42.62	-2.83	602.96	602.96
J	333+52.62	-2.83	602.96	602.96
☉ S. Pier	333+55.62	-2.83	602.96	602.96
K	333+65.62	-2.83	602.96	602.98
L	333+75.62	-2.83	602.96	602.99
M	333+85.62	-2.83	602.96	602.99
N	333+95.62	-2.83	602.96	602.98
O	334+05.62	-2.83	602.96	602.97
☉ Brg. S. Abut.	334+07.87	-2.83	602.96	602.96
Bk. S. Abut.	334+09.87	-2.83	602.96	602.96

☉ PROFILE GRADE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	332+48.37	0.00	603.02	603.02
☉ Brg. N. Abut.	332+50.37	0.00	603.02	603.02
A	332+60.37	0.00	603.02	603.04
B	332+70.37	0.00	603.02	603.05
C	332+80.37	0.00	603.02	603.05
D	332+90.37	0.00	603.02	603.04
E	333+00.37	0.00	603.02	603.02
☉ N. Pier	333+02.62	0.00	603.02	603.02
F	333+12.62	0.00	603.02	603.02
G	333+22.62	0.00	603.02	603.02
H	333+32.62	0.00	603.02	603.02
I	333+42.62	0.00	603.02	603.02
J	333+52.62	0.00	603.02	603.02
☉ S. Pier	333+55.62	0.00	603.02	603.02
K	333+65.62	0.00	603.02	603.04
L	333+75.62	0.00	603.02	603.05
M	333+85.62	0.00	603.02	603.05
N	333+95.62	0.00	603.02	603.04
O	334+05.62	0.00	603.02	603.02
☉ Brg. S. Abut.	334+07.87	0.00	603.02	603.02
Bk. S. Abut.	334+09.87	0.00	603.02	603.02

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	332+48.37	2.83	602.96	602.96
☉ Brg. N. Abut.	332+50.37	2.83	602.96	602.96
A	332+60.37	2.83	602.96	602.98
B	332+70.37	2.83	602.96	602.99
C	332+80.37	2.83	602.96	602.99
D	332+90.37	2.83	602.96	602.98
E	333+00.37	2.83	602.96	602.97
☉ N. Pier	333+02.62	2.83	602.96	602.96
F	333+12.62	2.83	602.96	602.96
G	333+22.62	2.83	602.96	602.96
H	333+32.62	2.83	602.96	602.96
I	333+42.62	2.83	602.96	602.96
J	333+52.62	2.83	602.96	602.96
☉ S. Pier	333+55.62	2.83	602.96	602.96
K	333+65.62	2.83	602.96	602.98
L	333+75.62	2.83	602.96	602.99
M	333+85.62	2.83	602.96	602.99
N	333+95.62	2.83	602.96	602.98
O	334+05.62	2.83	602.96	602.97
☉ Brg. S. Abut.	334+07.87	2.83	602.96	602.96
Bk. S. Abut.	334+09.87	2.83	602.96	602.96

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	332+48.37	8.50	602.84	602.84
☉ Brg. N. Abut.	332+50.37	8.50	602.84	602.84
A	332+60.37	8.50	602.84	602.86
B	332+70.37	8.50	602.84	602.87
C	332+80.37	8.50	602.84	602.87
D	332+90.37	8.50	602.84	602.86
E	333+00.37	8.50	602.84	602.85
☉ N. Pier	333+02.62	8.50	602.84	602.84
F	333+12.62	8.50	602.84	602.84
G	333+22.62	8.50	602.84	602.84
H	333+32.62	8.50	602.84	602.84
I	333+42.62	8.50	602.84	602.84
J	333+52.62	8.50	602.84	602.84
☉ S. Pier	333+55.62	8.50	602.84	602.84
K	333+65.62	8.50	602.84	602.86
L	333+75.62	8.50	602.84	602.87
M	333+85.62	8.50	602.84	602.87
N	333+95.62	8.50	602.84	602.86
O	334+05.62	8.50	602.84	602.85
☉ Brg. S. Abut.	334+07.87	8.50	602.84	602.84
Bk. S. Abut.	334+09.87	8.50	602.84	602.84

BEAM 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	332+48.37	14.17	602.73	602.73
☉ Brg. N. Abut.	332+50.37	14.17	602.73	602.73
A	332+60.37	14.17	602.73	602.74
B	332+70.37	14.17	602.73	602.75
C	332+80.37	14.17	602.73	602.75
D	332+90.37	14.17	602.73	602.74
E	333+00.37	14.17	602.73	602.73
☉ N. Pier	333+02.62	14.17	602.73	602.73
F	333+12.62	14.17	602.73	602.73
G	333+22.62	14.17	602.73	602.73
H	333+32.62	14.17	602.73	602.73
I	333+42.62	14.17	602.73	602.73
J	333+52.62	14.17	602.73	602.73
☉ S. Pier	333+55.62	14.17	602.73	602.73
K	333+65.62	14.17	602.73	602.74
L	333+75.62	14.17	602.73	602.75
M	333+85.62	14.17	602.73	602.75
N	333+95.62	14.17	602.73	602.74
O	334+05.62	14.17	602.73	602.73
☉ Brg. S. Abut.	334+07.87	14.17	602.73	602.73
Bk. S. Abut.	334+09.87	14.17	602.73	602.73



JOB # 2234
 FILE # 2234_TopofSlab.dgn
 DATE # 3/27/2014

DESIGNED - AAN
 CHECKED - MDC
 DRAWN - SJS
 CHECKED - MDC

REVISED -
 REVISED -
 REVISED -
 REVISED -

**CHRISTIAN COUNTY
 CH 1 IMPROVEMENTS**

**TOP OF SLAB ELEVATIONS
 STRUCTURE NO. 011-3024**

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 1	11-00089-00-BR	CHRISTIAN	57	31
CONTRACT NO.				

EAST EDGE OF SHOULDER

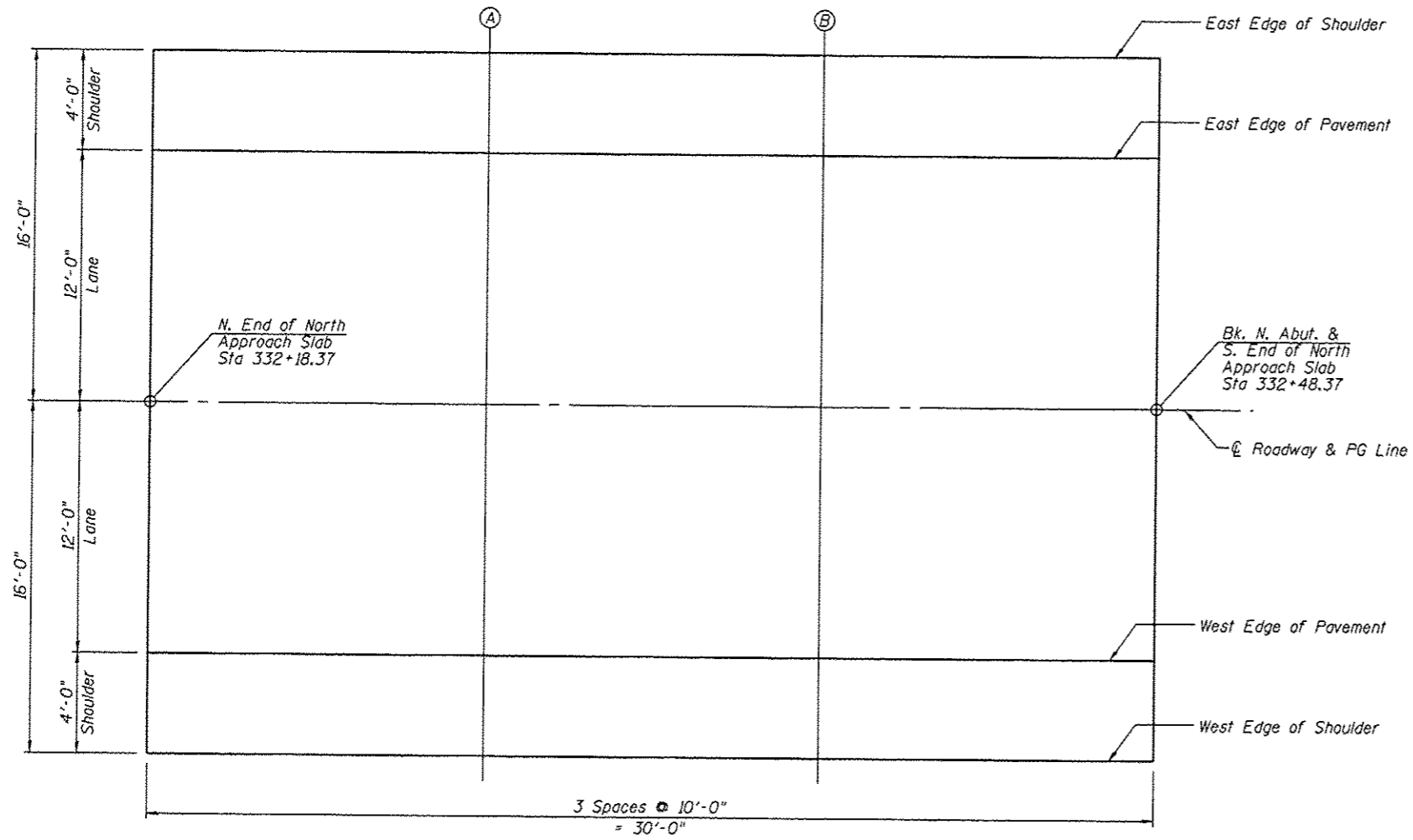
Location	Station	Offset	Theoretical Grade Elevations
N. End North Appr. Slab	332+18.37	-16.00	602.69
A	332+28.37	-16.00	602.69
B	332+38.37	-16.00	602.69
S. End North Appr. Slab	332+48.37	-16.00	602.69

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
N. End North Appr. Slab	332+18.37	-12.00	602.77
A	332+28.37	-12.00	602.77
B	332+38.37	-12.00	602.77
S. End North Appr. Slab	332+48.37	-12.00	602.77

☉ ROADWAY & PROFILE GRADE

Location	Station	Offset	Theoretical Grade Elevations
N. End North Appr. Slab	332+18.37	0.00	603.02
A	332+28.37	0.00	603.02
B	332+38.37	0.00	603.02
S. End North Appr. Slab	332+48.37	0.00	603.02



PLAN



WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
N. End North Appr. Slab	332+18.37	12.00	602.77
A	332+28.37	12.00	602.77
B	332+38.37	12.00	602.77
S. End North Appr. Slab	332+48.37	12.00	602.77

WEST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
N. End North Appr. Slab	332+18.37	16.00	602.69
A	332+28.37	16.00	602.69
B	332+38.37	16.00	602.69
S. End North Appr. Slab	332+48.37	16.00	602.69

E-AS

7-1-10

CEC Cummins Engineering Corporation
Civil and Structural Engineering

JOB • 2234
FILE • 2234_TopofApproach.dgn
DATE • 3/27/2014

DESIGNED - AAN
CHECKED - MDC
DRAWN - SJS
CHECKED - MDC

REVISED -
REVISED -
REVISED -
REVISED -

**CHRISTIAN COUNTY
CH 1 IMPROVEMENTS**

**TOP OF NORTH APPROACH SLAB ELEVATIONS
STRUCTURE NO. 011-3024**

SHEET NO. 8 OF 22 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 1	11-00089-00-BR	CHRISTIAN	57	32
CONTRACT NO.				

ILLINOIS FED. AID PROJECT **93620**

EAST EDGE OF SHOULDER

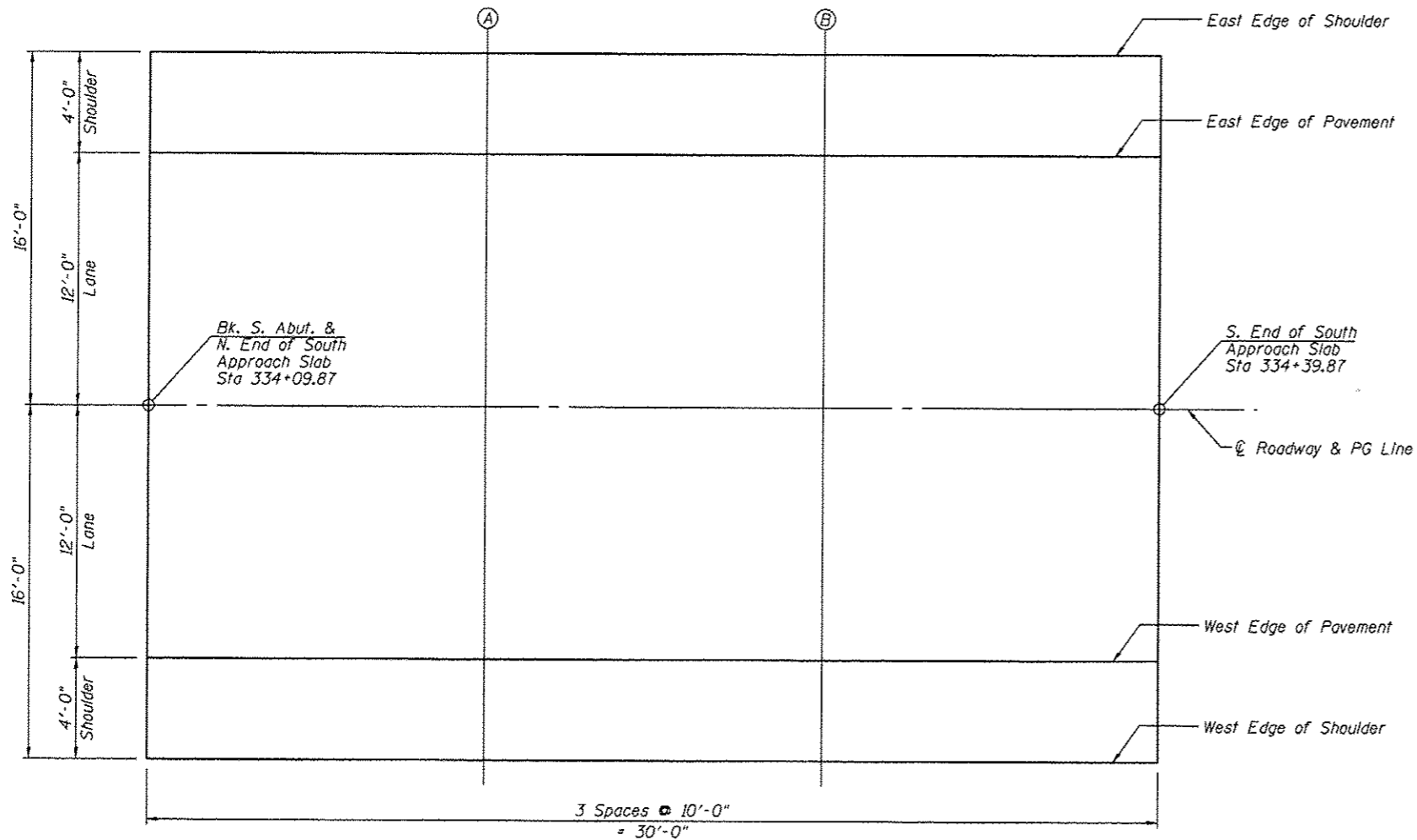
Location	Station	Offset	Theoretical Grade Elevations
N. End South Appr. Slab	334+09.87	-16.00	602.69
A	334+19.87	-16.00	602.69
B	334+29.87	-16.00	602.69
S. End South Appr. Slab	334+39.87	-16.00	602.69

EAST EDGE OF PAVEMENT

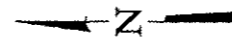
Location	Station	Offset	Theoretical Grade Elevations
N. End South Appr. Slab	334+09.87	-12.00	602.77
A	334+19.87	-12.00	602.77
B	334+29.87	-12.00	602.77
S. End South Appr. Slab	334+39.87	-12.00	602.77

☉ ROADWAY & PROFILE GRADE

Location	Station	Offset	Theoretical Grade Elevations
N. End South Appr. Slab	334+09.87	0.00	603.02
A	334+19.87	0.00	603.02
B	334+29.87	0.00	603.02
S. End South Appr. Slab	334+39.87	0.00	603.02



PLAN



WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
N. End South Appr. Slab	334+09.87	12.00	602.77
A	334+19.87	12.00	602.77
B	334+29.87	12.00	602.77
S. End South Appr. Slab	334+39.87	12.00	602.77

WEST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
N. End South Appr. Slab	334+09.87	16.00	602.69
A	334+19.87	16.00	602.69
B	334+29.87	16.00	602.69
S. End South Appr. Slab	334+39.87	16.00	602.69

E-AS

7-1-10

CEC Cummins Engineering Corporation
Civil and Structural Engineering

JOB • 2234
FILE • 2234_TopofApproach.dgn
DATE • 3/27/2014

DESIGNED - AAN
CHECKED - MDC
DRAWN - SJS
CHECKED - MDC

REVISED -
REVISED -
REVISED -
REVISED -

**CHRISTIAN COUNTY
CH 1 IMPROVEMENTS**

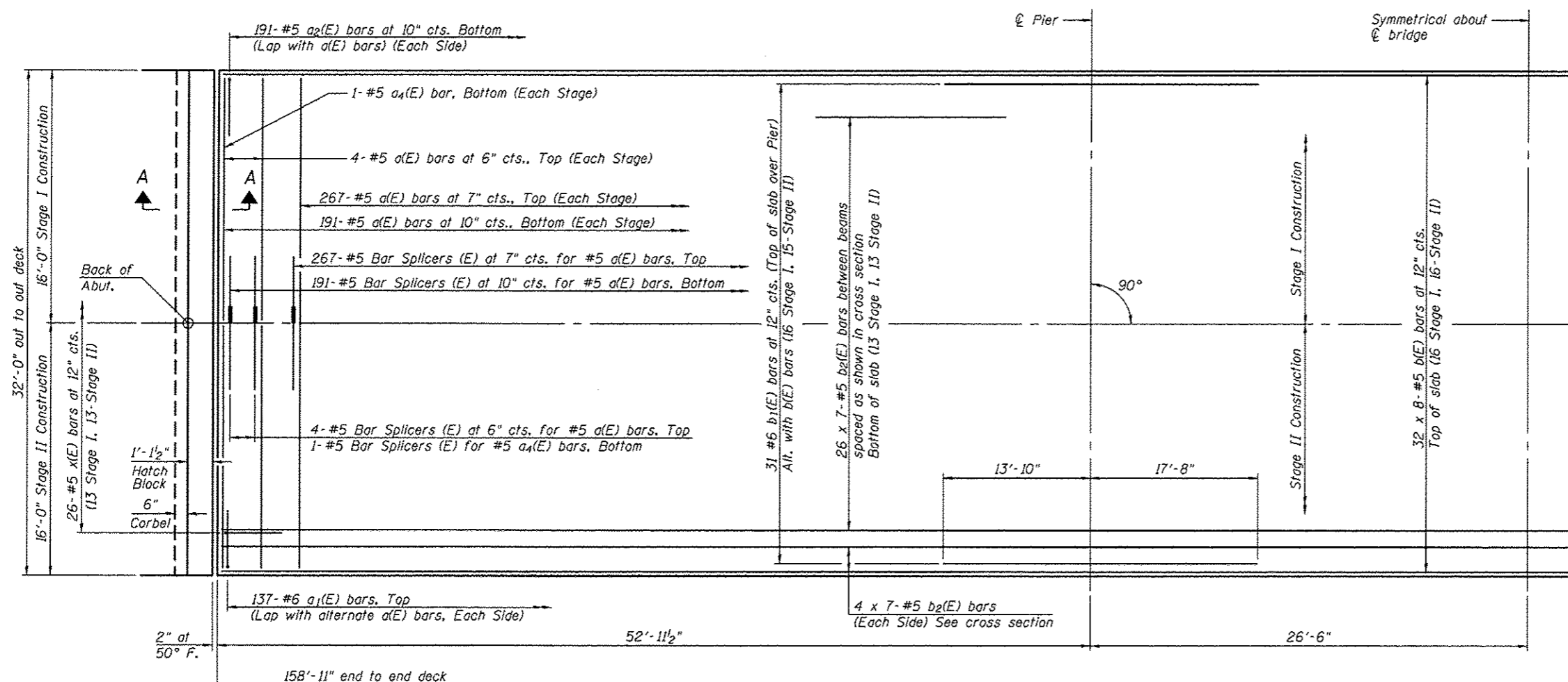
**TOP OF SOUTH APPROACH SLAB ELEVATIONS
STRUCTURE NO. 011-3024**

SHEET NO. 9 OF 22 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 1	11-00089-00-BR	CHRISTIAN	57	33
CONTRACT NO.				

ILLINOIS FED. AID PROJECT

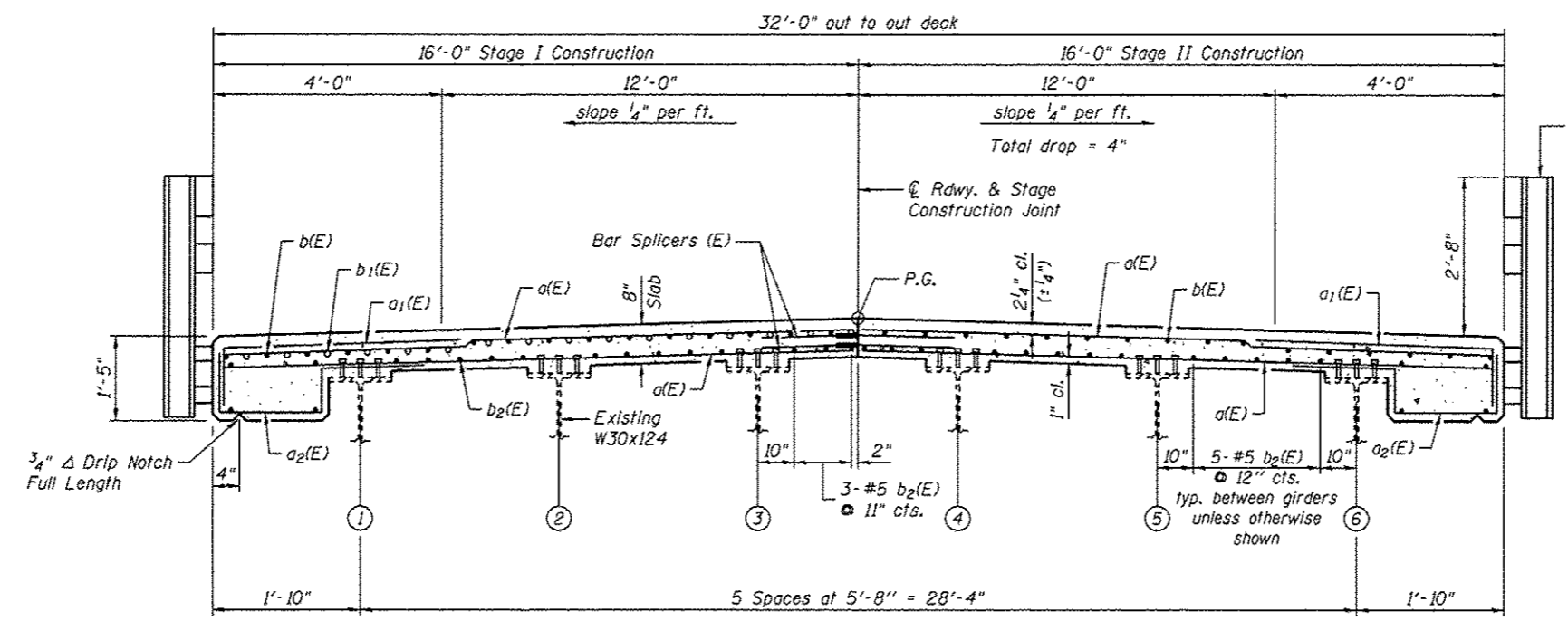
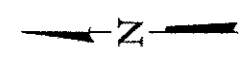
93620



Notes:
 See Sheet 11 of 22 for superstructure details and Bill of Material.
 Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.

MIN. BAR LAPS
 #5 Bar = 2'-6"

PARTIAL PLAN



CROSS SECTION
 (Looking South)

Steel Bridge Rail, Type SM
 See sheet 14 of 22 for details.



JOB • 2234
 FILE • 2234_Super.dgn
 DATE • 3/27/2014

DESIGNED - AAN
 CHECKED - TSH
 DRAWN - SJS
 CHECKED - MDC

REVISED -
 REVISED -
 REVISED -
 REVISED -

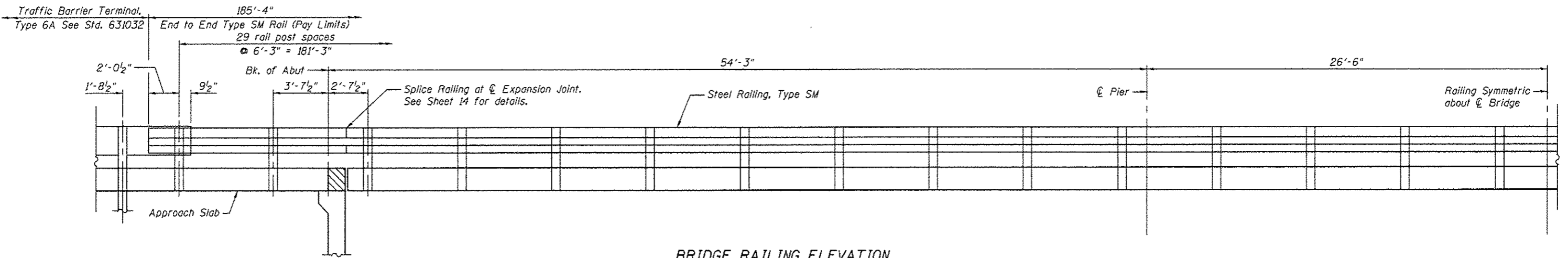
**CHRISTIAN COUNTY
 CH 1 IMPROVEMENTS**

**SUPERSTRUCTURE
 STRUCTURE NO. 011-3024**

SHEET NO. 10 OF 22 SHEETS

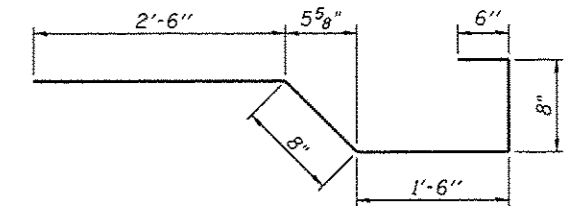
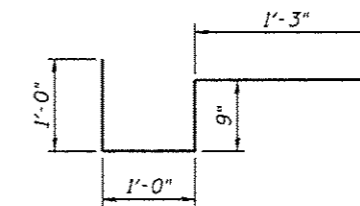
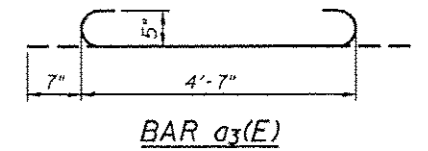
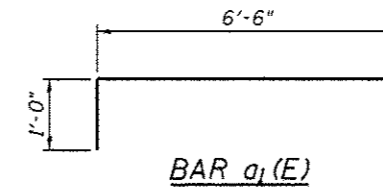
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
645	11-00089-00-BR	CHRISTIAN	57	34
CONTRACT NO.			93620	

ILLINOIS FED. AID PROJECT



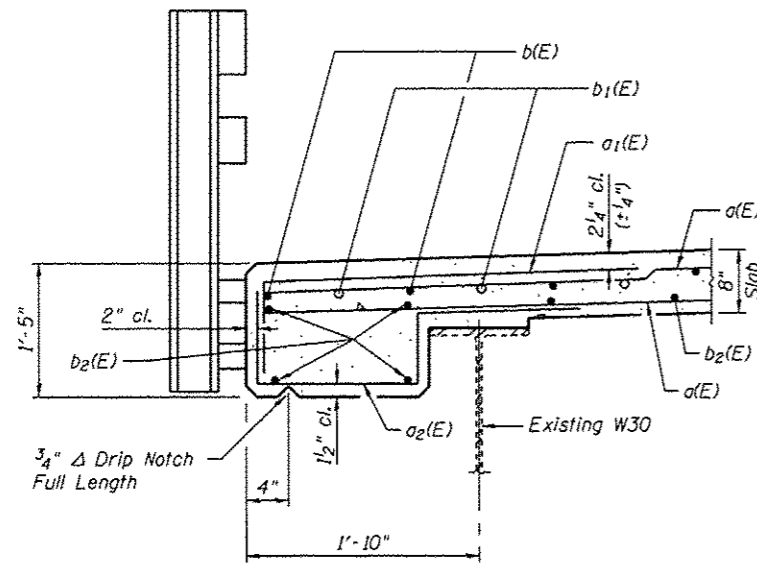
BRIDGE RAILING ELEVATION

Note:
Dimensions shown are along edge of bridge deck.
See Sheet 14 of 22 for railing details.

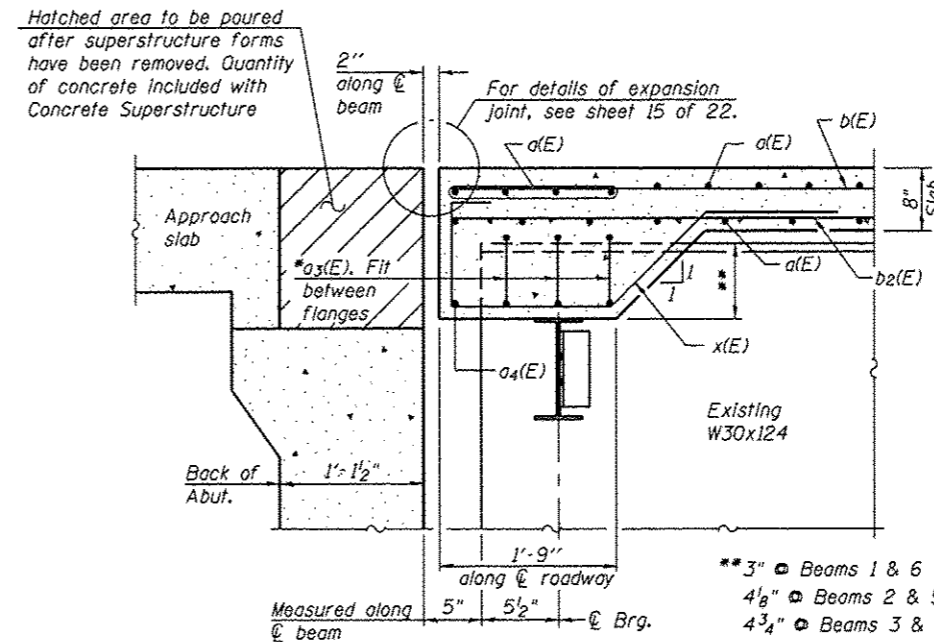


BAR a2(E)

BAR x(E)



SECTION THRU EDGE OF DECK



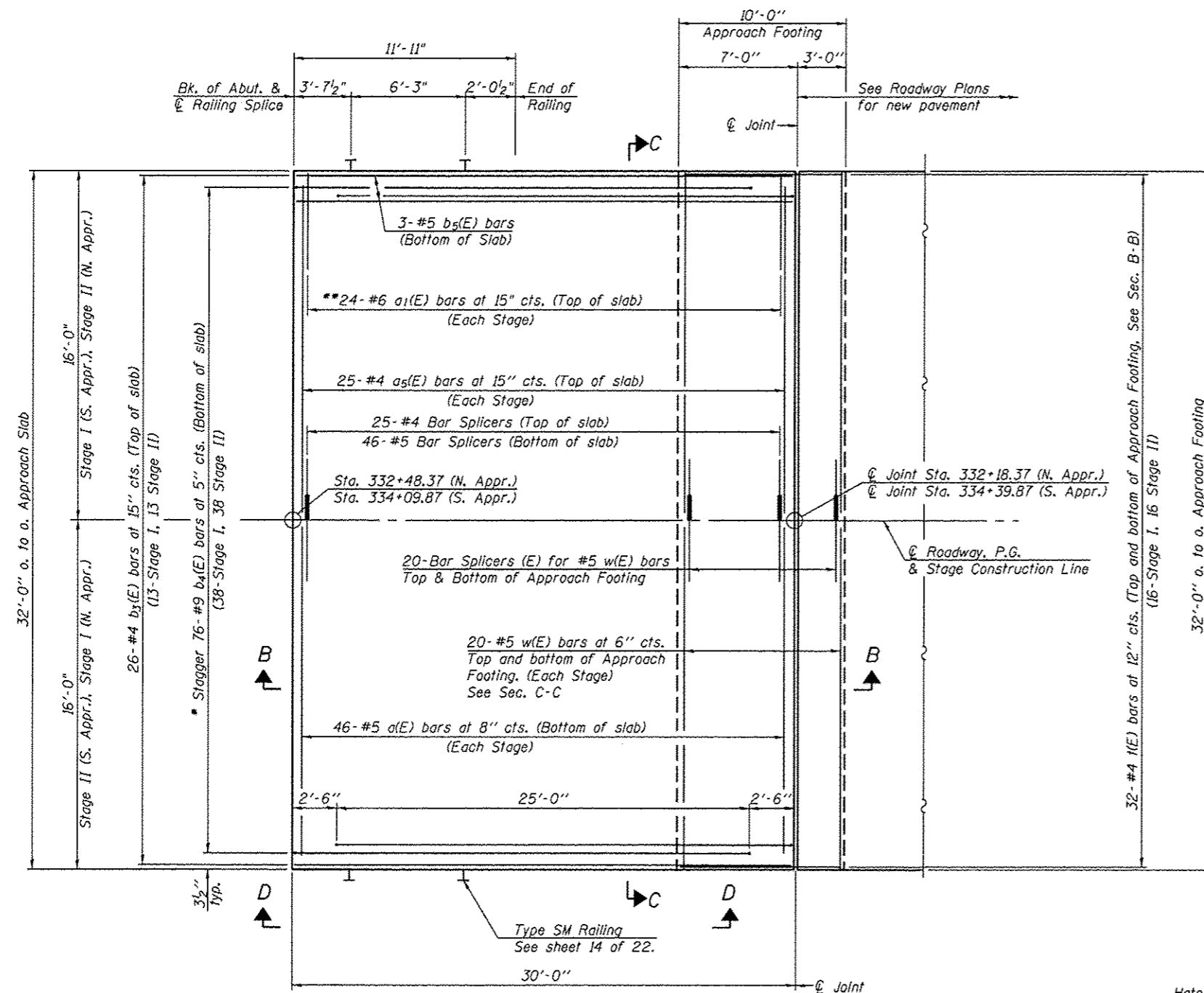
SECTION A-A

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape	
a1(E)	932	#5	15'-8"	—	
a2(E)	274	#6	7'-6"	—	
a3(E)	382	#5	4'-0"	—	
a4(E)	24	#5	5'-9"	—	
a4(E)	4	#5	13'-10"	—	
b(E)	256	#5	22'-0"	—	
b1(E)	62	#6	31'-6"	—	
b2(E)	238	#5	24'-10"	—	
x(E)	52	#5	5'-10"	—	
Concrete Superstructure				Cu. Yd.	149.7
Reinforcement Bars, Epoxy Coated				Pound	35,400
Bar Splicers				Each	474

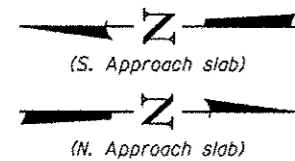
* 3-5# a3(E) bars @ 6" cts., typ. between beams except at stage construction joint.
See sheet 22 of 22 for bar splicers at stage construction joint.

Notes:
 See sheet 13 of 22 for Sections B-B & C-C.
 See sheet 13 of 22 for Railing, Railing Connection.

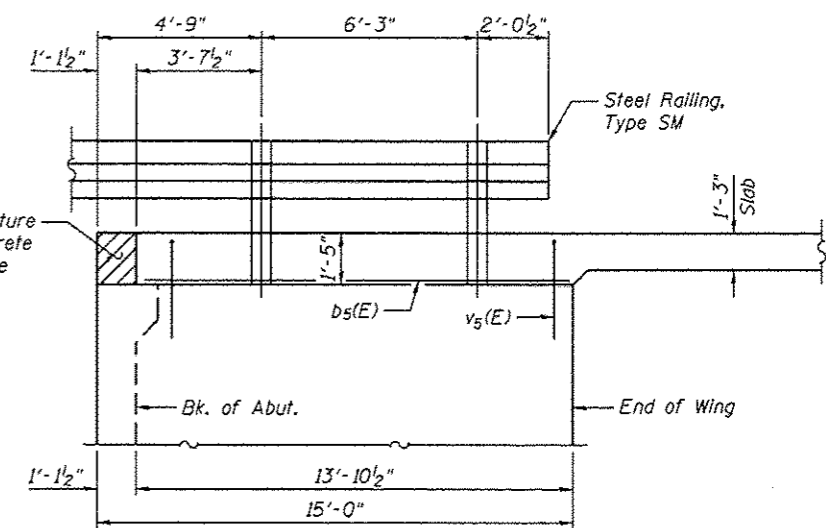


PLAN

* Tilt #9 b4(E) bars as required to maintain clearance.
 ** Space between a5(E) bars.



Hatched area to be poured after superstructure forms have been removed. Hatch black concrete shall be paid for as Concrete Superstructure



VIEW D-D

(Sheet 1 of 2)

CEC
 Cummins
 Engineering
 Corporation
 Civil and Structural Engineering

JOB • 2234
 FILE • 2234_Approach.dgn
 DATE • 3/27/2014

DESIGNED - AAN
 CHECKED - MDC
 DRAWN - SJS
 CHECKED - MDC

REVISED -
 REVISED -
 REVISED -
 REVISED -

**CHRISTIAN COUNTY
 CH 1 IMPROVEMENTS**

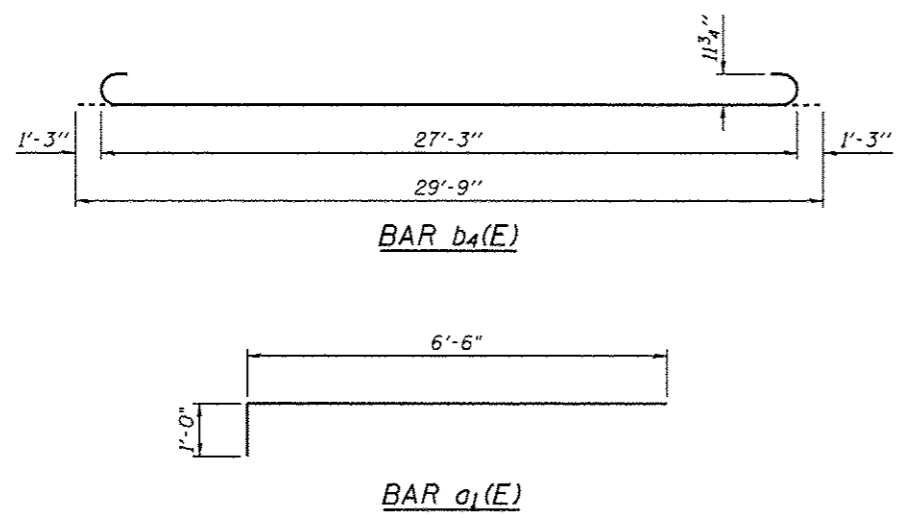
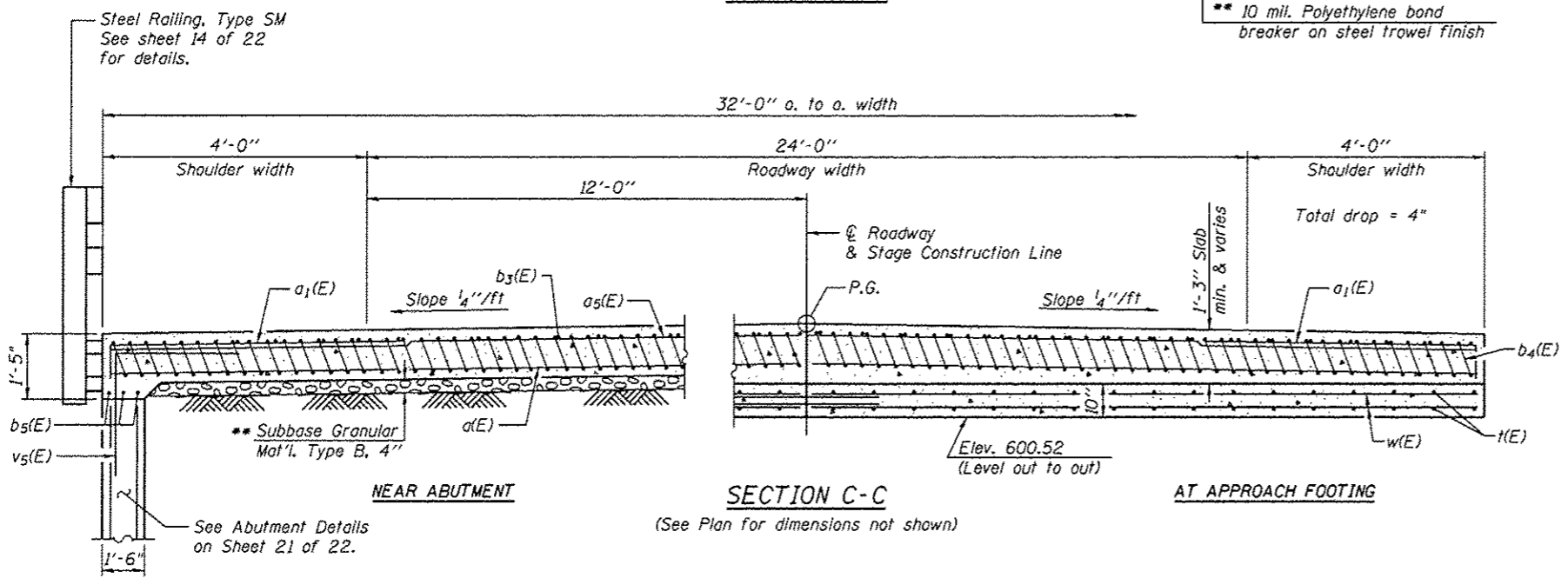
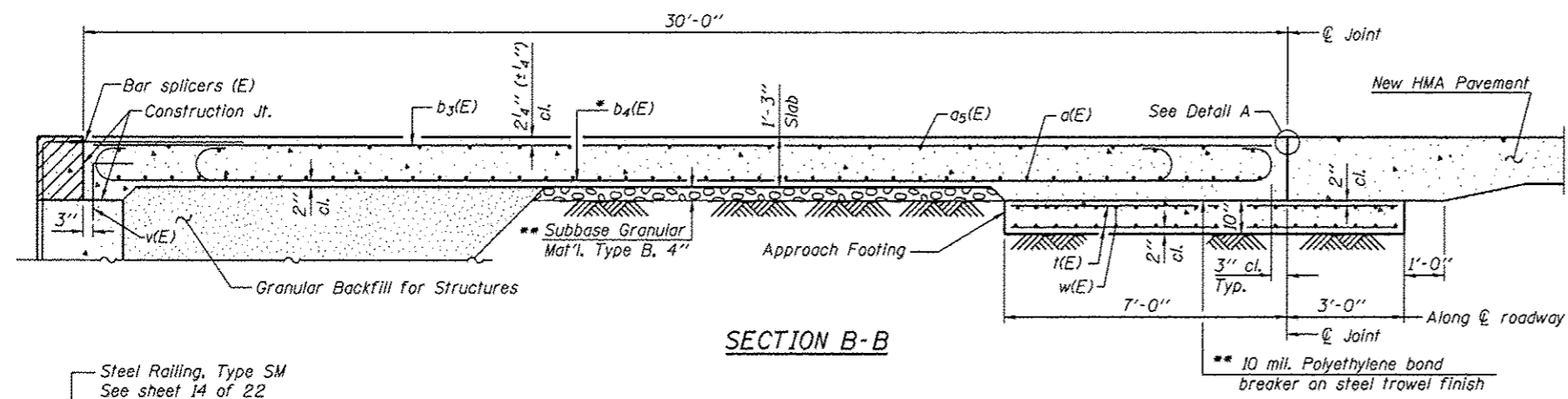
**BRIDGE APPROACH SLAB DETAILS
 STRUCTURE NO. 011-3024**

SHEET NO. 12 OF 22 SHEETS

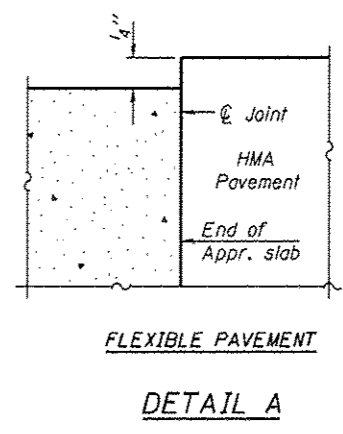
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
645	11-00089-00-BR	CHRISTIAN	57	36
CONTRACT NO.				

ILLINOIS FED. AID PROJECT

93620



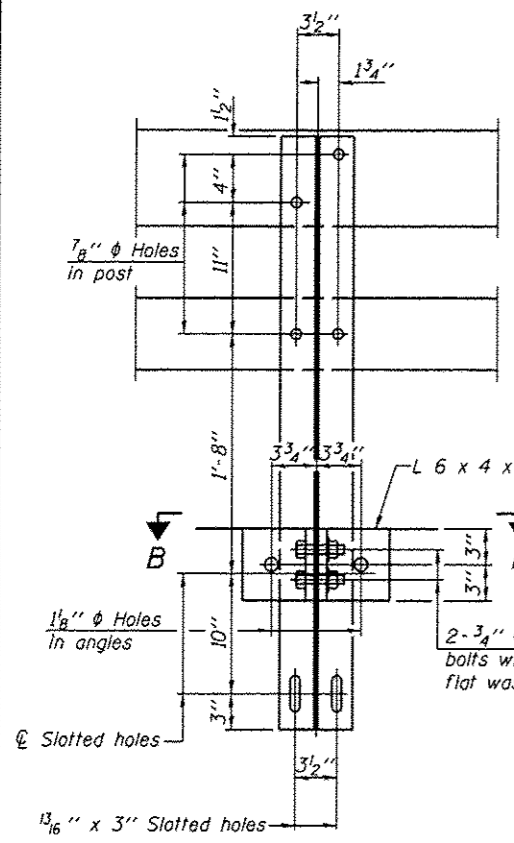
Notes:
 Approach slab concrete shall be paid for as Concrete Superstructure.
 Approach footing concrete shall be paid for as Concrete Structures.
 Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
 For v(E) bar details, see sheet 20 of 22.
 The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
 For bar splicer details, see sheet 22 of 22.
 Cost of excavation for approach footing included with Concrete Structures.
 For Granular Backfill for Structures and drainage treatment details, see sheet 2 of 22.
 For v5(E) bar details, see sheet 21 of 22.



* Tilt #9 b4(E) bars as required to maintain clearance.
 ** Cost included with Concrete Superstructure.

**TWO APPROACHES
 BILL OF MATERIAL**

Bar	No.	Size	Length	Shape	
a(E)	184	#5	15'-8"	—	
a1(E)	96	#6	7'-6"	┌	
a5(E)	100	#4	15'-8"	—	
b3(E)	52	#4	29'-8"	—	
b4(E)	152	#9	29'-9"	┌	
b5(E)	12	#5	13'-6"	—	
k(E)	128	#4	9'-8"	—	
w(E)	160	#5	15'-8"	—	
Concrete Superstructure				Cu. Yd.	94.2
Concrete Structures				Cu. Yd.	19.8
Reinforcement Bars, Epoxy Coated				Pound	25,150
Bar Splicers				Each	222

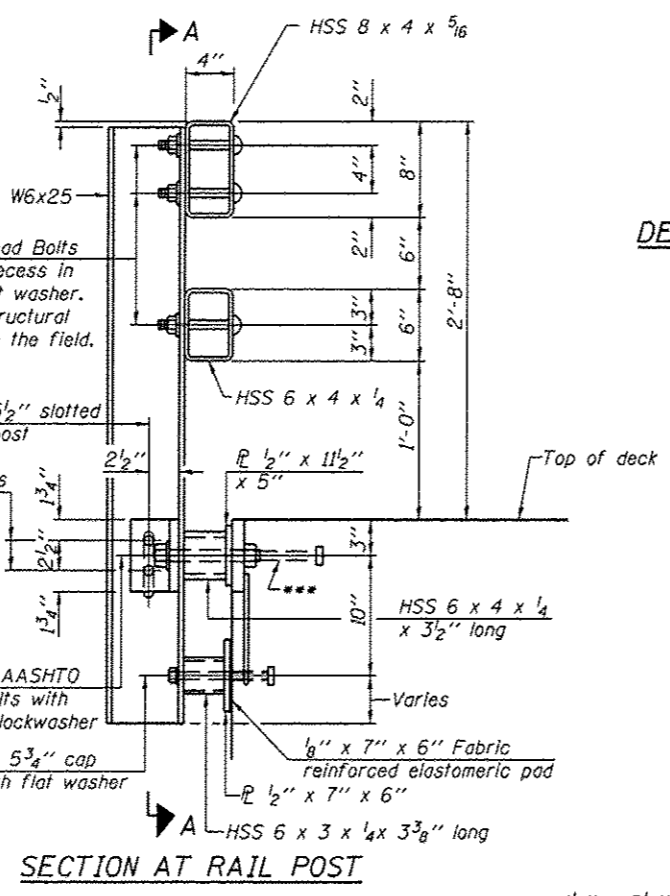


4-3/4" φ x 6" Round Head Bolts (With slot or approved recess in head) with locknut & flat washer. 7/8" φ holes in hollow structural section may be drilled in the field.

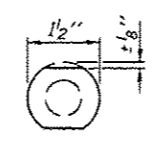
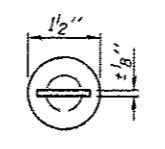
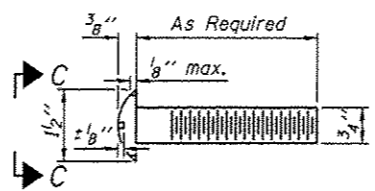
2-3/4" φ x 3 1/4" H.S. bolts with hex nut & flat washers

2-1" φ x 7 3/4" AASHTO M-164 anchor bolts with flat washer and lockwasher

2-5/8" φ x 5 3/4" cap screws with flat washer

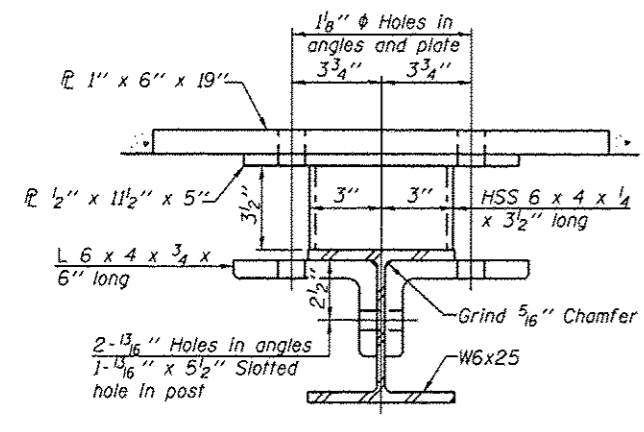
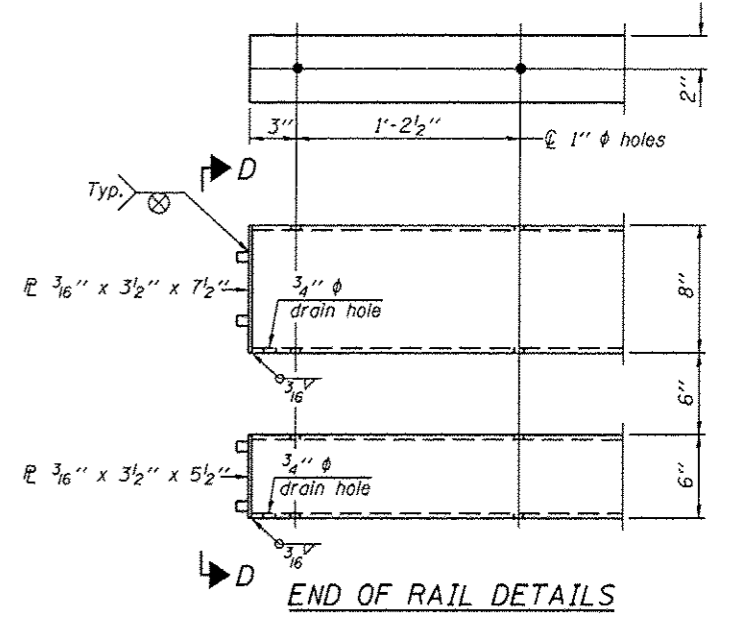
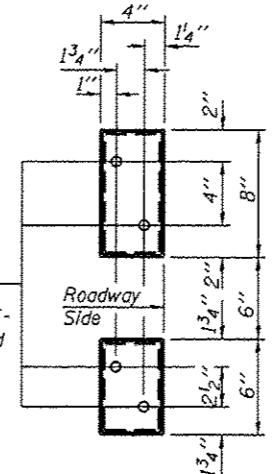


DETAIL OF 3/4" φ ROUND HEAD BOLT

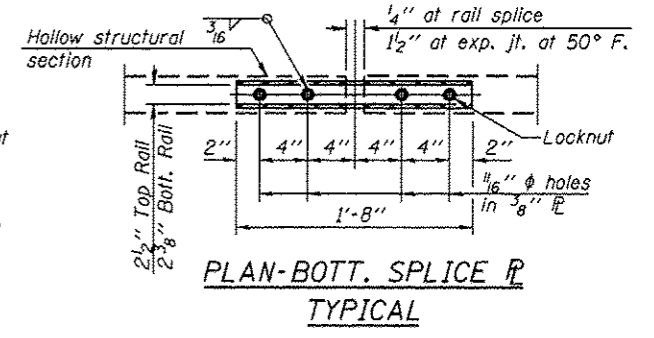
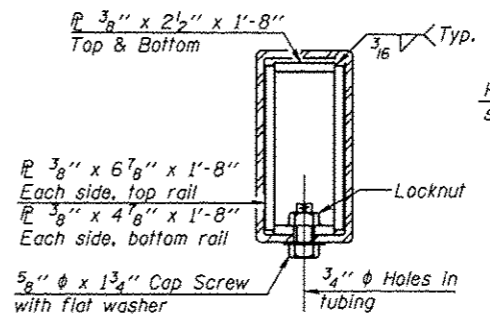
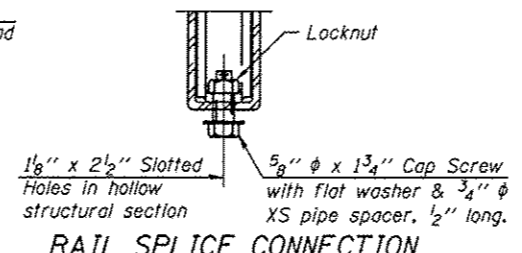


4-5/8" reduced base welded studs. Provide 4-5/8" washers and self-locking nuts or nuts and jam nuts for guardrail connection shown on Std. 631032.

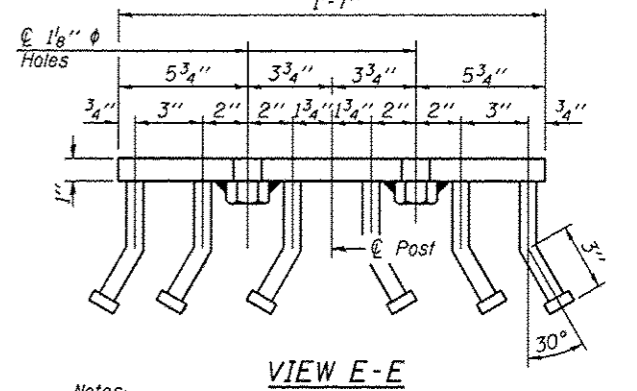
VIEW D-D



RAIL SPLICE CONNECTION AT EXPANSION JT.



SECTION AT RAIL SPLICE



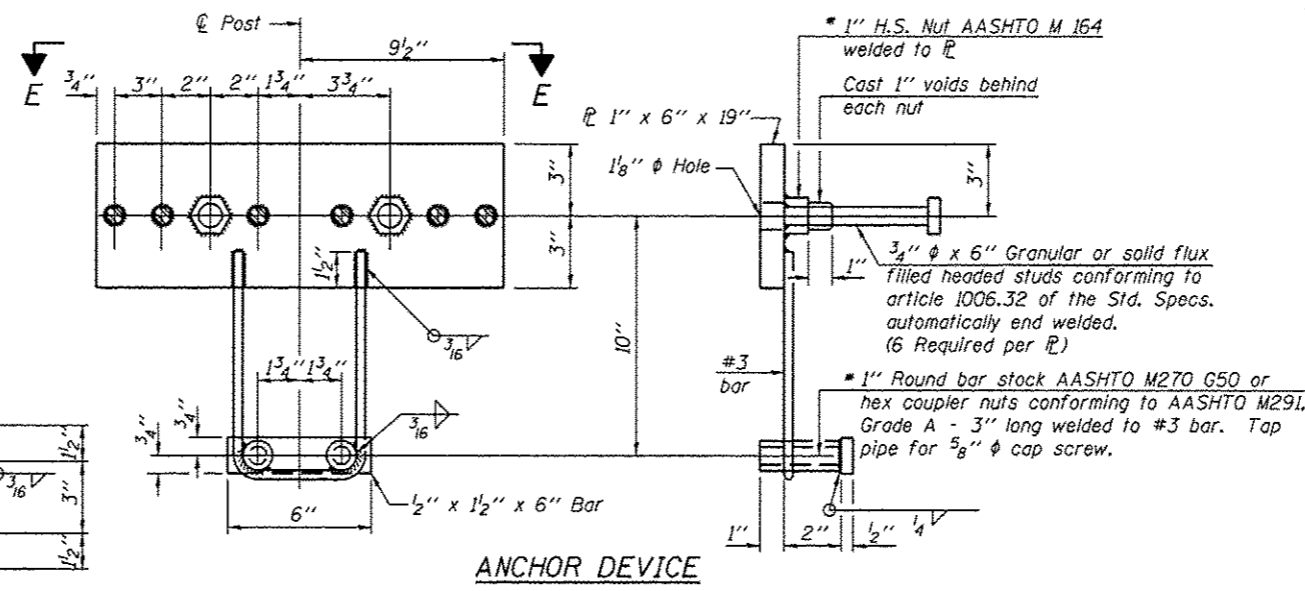
Notes:

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 Rolling, Type SM.

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.

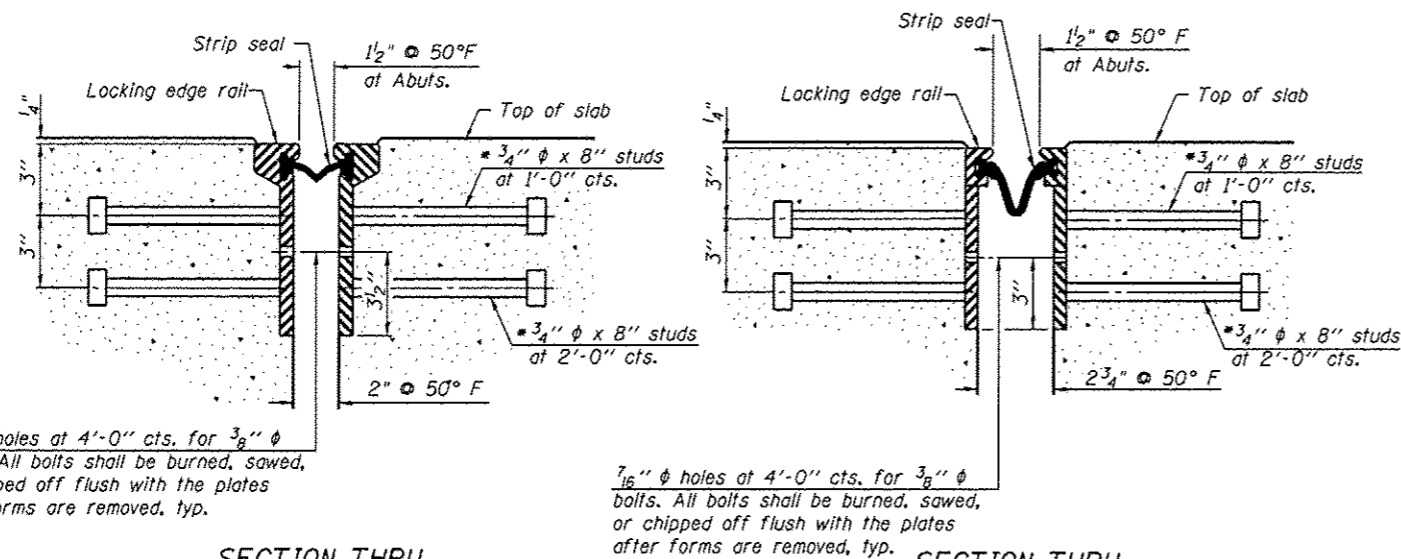


See sheet 11 of 22 for Bridge Railing Elevation.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type SM	Foot	371

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



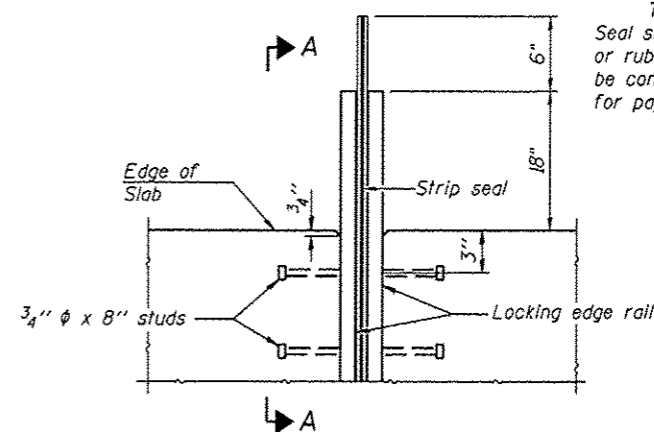
7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU ROLLED RAIL JOINT

SECTION THRU WELDED RAIL JOINT

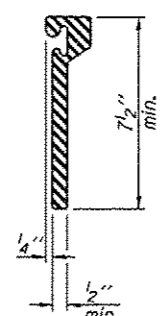
* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



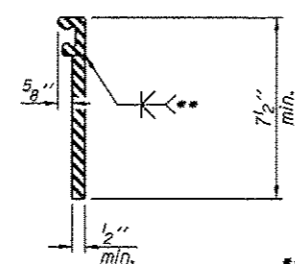
END TREATMENT - PLAN

The pay limits for Preformed Joint Strip Seal shall be to the end of the steel plate. The 6" or rubber extending past the end of the steel shall be considered incidental and shall not be measured for payment.

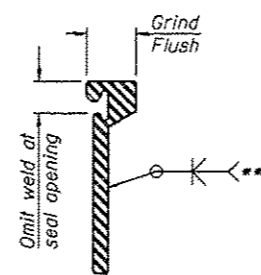
Notes:
 The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.
 The Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities.
 The manufacturer's recommended installation methods shall be followed.
 The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the Department.
 All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.
 Maximum space between rail segments at stage lines shall be 3/16", sealed with a suitable sealant.



ROLLED EXTRUDED RAIL



WELDED RAIL

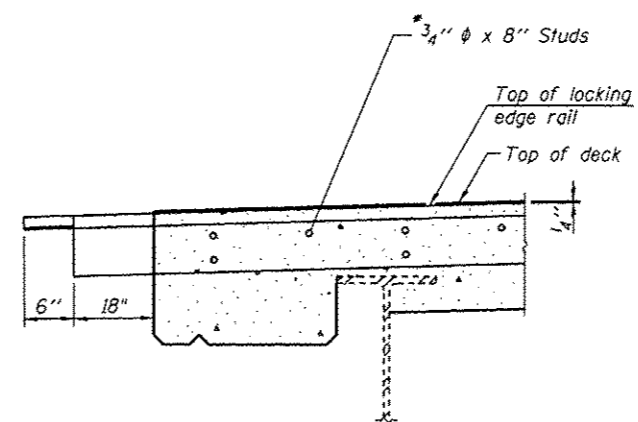


** Back gouge not required if complete joint penetration is verified by mock-up.

LOCKING EDGE RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.
 Rolled rail shown, welded rail similar.

LOCKING EDGE RAILS



SECTION A-A

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	70



JOB	* 2234	DESIGNED	- AAN	REVISED	-
FILE	* 2234_ExpJudgn	CHECKED	- MDC	REVISED	-
DATE	* 3/27/2014	DRAWN	- AAN	REVISED	-
		CHECKED	- MDC	REVISED	-

CHRISTIAN COUNTY CH 1 IMPROVEMENTS

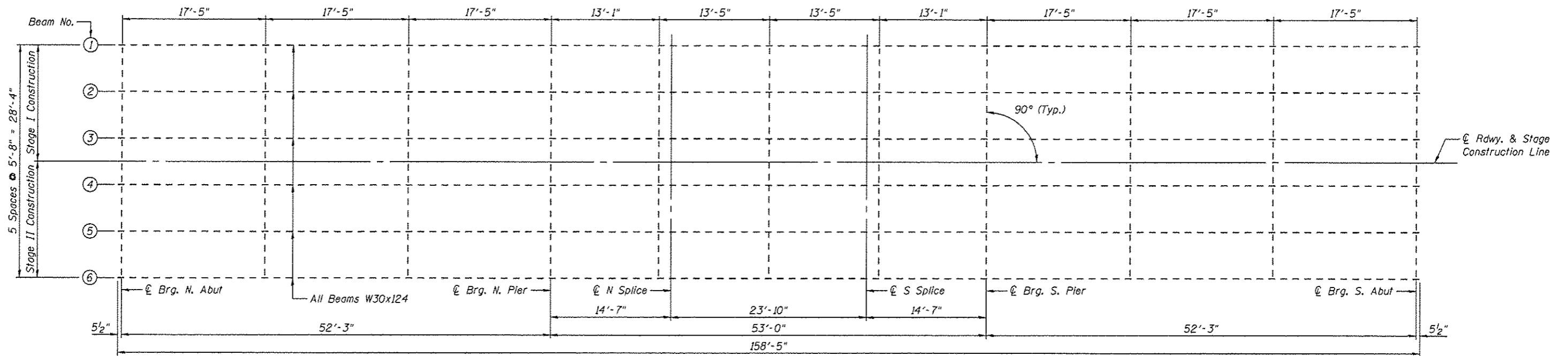
MODIFIED PREFORMED JOINT STRIP SEAL STRUCTURE NO. 011-3024

SHEET NO. 15 of 22 SHEETS

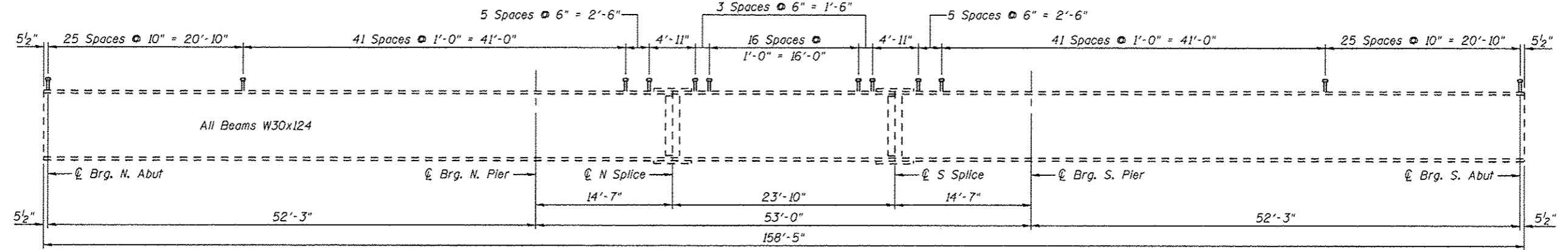
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
645	11-00089-00-BR	CHRISTIAN	57	39
CONTRACT NO.				

ILLINOIS FED. AID PROJECT

93620



PLAN



ELEVATION

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) 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 and Overload) 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 and Overload) due to long-term composite (superimposed) dead loads (in.⁴ and in.³).

Q : Un-factored non-composite dead load (kips/ft.).
 Q : Un-factored long-term composite (superimposed) dead load (kips/ft.).

sQ : Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).

M_sQ : Un-factored live load moment (kip-ft.).
 M_t : Un-factored moment due to impact (kip-ft.).

M_t : Factored design moment (kip-ft.).
 M_1 : $1.3 [M_t + M_sQ + \frac{2}{3} (M_t + M_1)]$

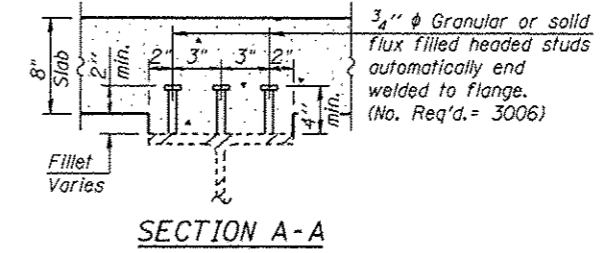
M_o : Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).

Sum of stresses as computed from the moments below (ksi).
 $M_t + M_sQ + \frac{2}{3} (M_t + M_1)$

f_s (Overload): Sum of stresses as computed from the moments below on non-compact section (ksi).
 f_s (Total): $1.3 [M_t + M_sQ + \frac{2}{3} (M_t + M_1)]$

VR: Maximum $\frac{1}{4}$ impact shear range within the composite portion of the span for stud shear connector design (kips).

	0.4 Sp. 1 or 0.6 Sp. 3	Pier	0.5 Span 2
I_s (in⁴)	5360	5360	5360
$I_c(n)$ (in⁴)	14,425	7296	14,425
$I_c(3n)$ (in⁴)	10,455	-	10,455
S_s (in³)	355	355	355
$S_c(n)$ (in³)	528	582	582
$S_c(3n)$ (in³)	474	-	434
Q (k/ft)	0.721	0.721	0.721
M_t (k)	158	198	56
sQ (k/ft)	0.025	0.025	0.025
M_sQ (k)	6	7	2
M_t (k)	272	195	223
M_{1M} (k)	76	54	63
$\frac{2}{3} [M_t + M_1]$ (k)	580	415	477
M_o (k)	968	806	696
M_u (k)	1238	-	1275
f_s non-comp (ksi)	5.3	6.7	1.9
f_s comp (ksi)	0.2	0.2	0.1
$f_s \frac{2}{3} [M_t + M_1]$ (ksi)	13.2	12.1	10.8
f_s (Overload) (ksi)	18.7	19.0	12.8
f_s (Total) (ksi)	24.3	24.7	16.6
VR (k)	67.2	74.7	51.5



SECTION A-A

	Abut.	Pier
R_t (k)	15.6	43.1
R_l (k)	28.8	35.3
R_i (k)	8.1	9.9
R_{Total} (k)	52.5	88.3

* Compact section
 ** Braced non-compact and partially braced section

NOTES
 Plan elevations relative to the existing structure have been taken from existing plans and increased by 0.35 feet to match benchmark datum.

TOP OF BEAM ELEVATIONS
 (For Information Only)

Beam	Abutment	Pier	Splice
1 & 6	601.86	601.90	601.91
2 & 5	601.96	602.00	602.01
3 & 4	602.01	602.05	602.06

Elevations shown at splice do not include the 7/8" flange splice plate.

Notes:
 For bearing details, see sheets 17 of 22.



JOB: 2234
 FILE: 2234_Steel.dgn
 DATE: 3/27/2014

DESIGNED: AAN
 CHECKED: MDC
 DRAWN: SJS
 CHECKED: MDC

REVISED: -
 REVISED: -
 REVISED: -
 REVISED: -

CHRISTIAN COUNTY
 CH 1 IMPROVEMENTS

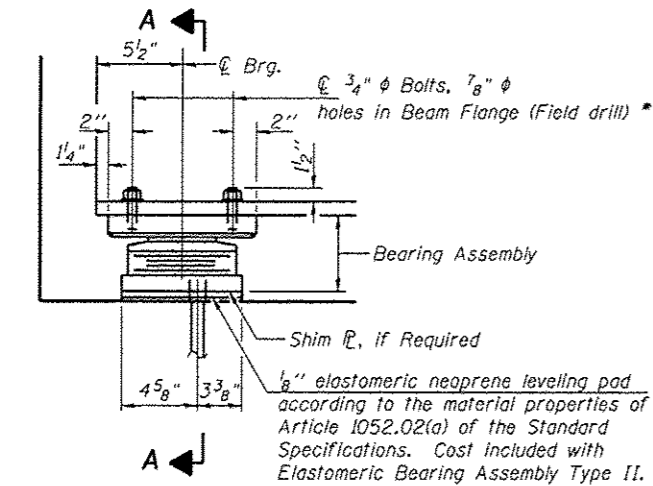
STRUCTURAL STEEL
 STRUCTURE NO. 011-3024

SHEET NO. 16 OF 22 SHEETS

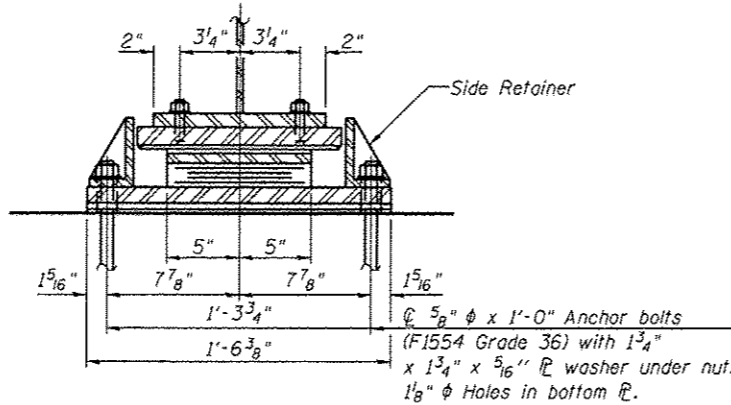
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
645	11-00089-00-BR	CHRISTIAN	57	40

CONTRACT NO. 93620
 [ILLINOIS] FED. AID PROJECT

* The cost of field drilling holes in bottom flange of existing beams is included in Elastomeric Bearing Assembly, Type II.



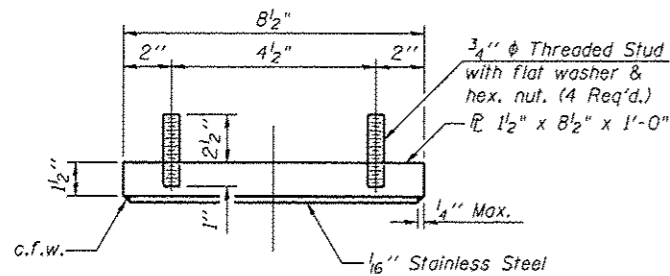
ELEVATION AT ABUTMENTS



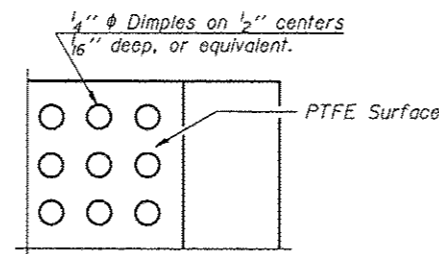
SECTION A-A

Note:
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.

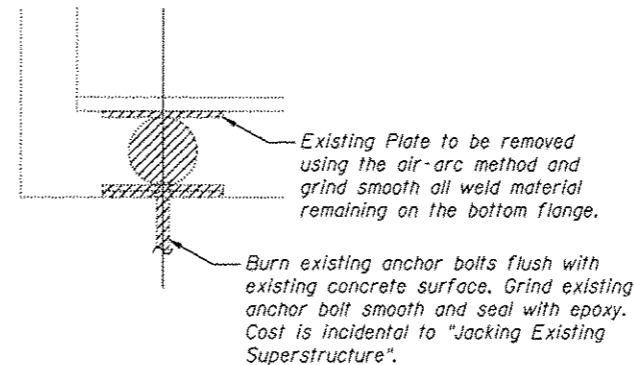
TYPE II ELASTOMERIC EXP. BRG.



TOP BEARING ASSEMBLY



PLAN-PTFE SURFACE



EXISTING BEARING REMOVAL DETAIL

Notes:
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Anchor bolts for Type II bearings shall be placed in holes drilled in the concrete through holes in the bottom bearing plate after members are in place. Side retainers shall be placed after bolts are installed.

Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

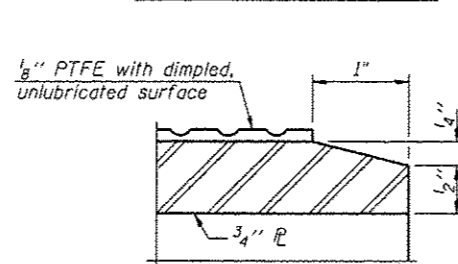
Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type II.

The 1/8" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Banding of 1/8" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

The anchor bolt sizes and grades shown constitute a calculated seismic structural fuse. Substitution of higher diameter and/or grade anchor bolts will not be allowed.

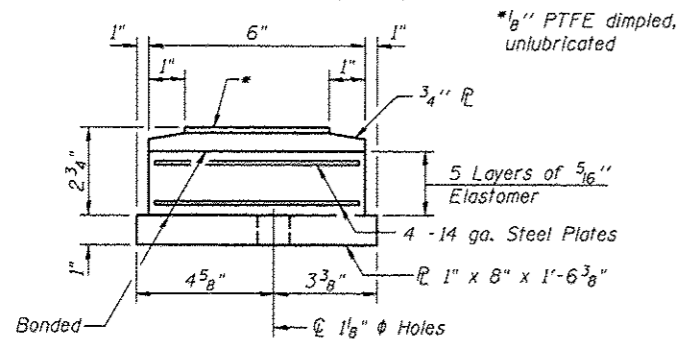


SECTION THRU PTFE

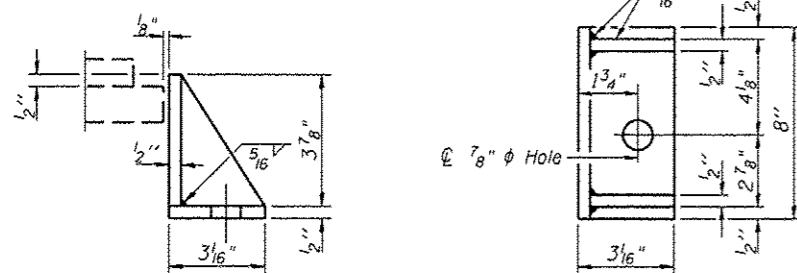
INTERIOR BEAM REACTION TABLE

Location	Abutments
R _D (K) (steel only)	3.0
R _L (K)	28.8
R _{IMP} (K)	8.1
R _{TOTAL} (K)	39.9
Min. Jack Capacity (T)	17

Min. Jack Capacity = $R_D + \frac{1}{2}(R_L + R_{IMP})$

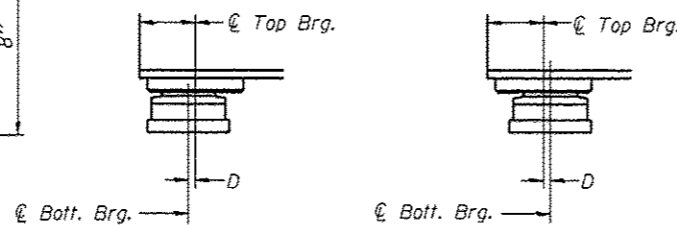


BOTTOM BEARING ASSEMBLY



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



BELOW 50°F.

ABOVE 50°F.

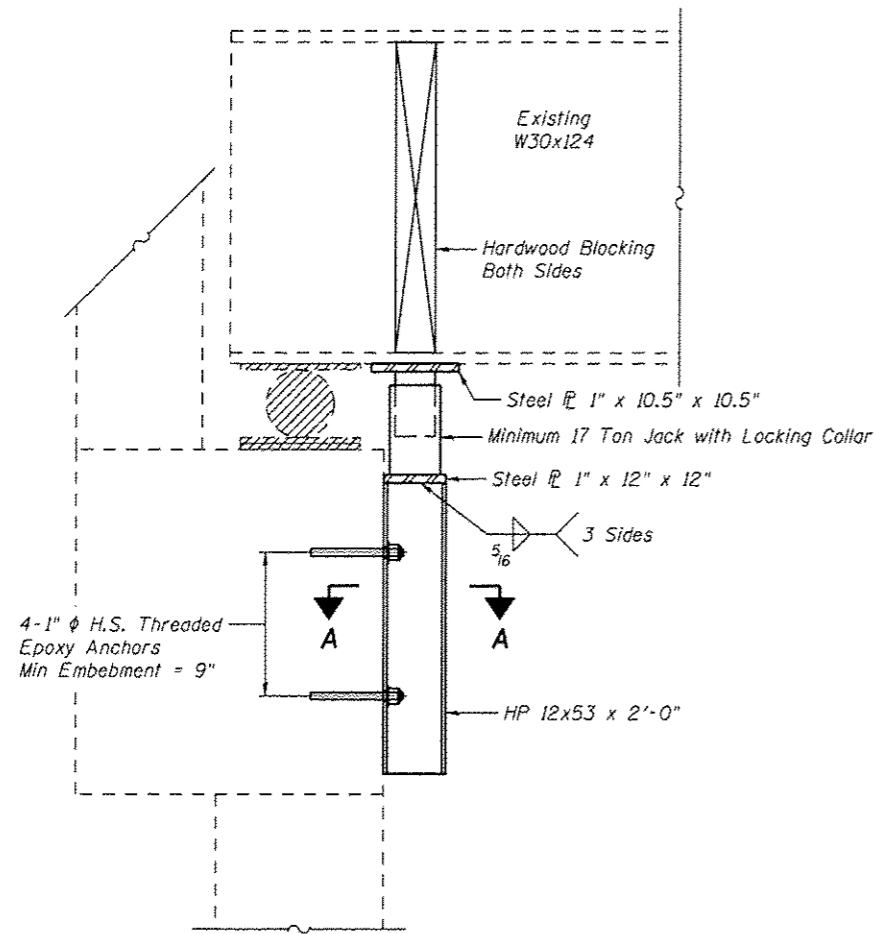
(Move bott. brg. away from fixed brg.) (Move bott. brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.

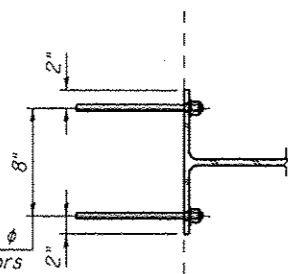
$D = \frac{1}{8}$ " per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	12
Anchor Bolts, 5/8"	Each	24
Jack and Remove Existing Bearings	Each	12



SECTION AT ABUTMENTS



2 - 1 1/16" ϕ Holes for 1" ϕ H.S. Threaded Epoxy Anchors with hex nut and washer.

SECTION A-A

GENERAL NOTES

1. Use Minimum 17 Ton Jacks with locking collar
2. Jack is to be supported on steel temporary support at each bearing location.
3. Lifting shall be done by jacking. Measures shall be taken to prevent lateral or longitudinal displacement or distortion of beams during lifting operation. Any sway of the steel during raising operations shall be immediately corrected. Jacks shall be placed on the centerline of the existing beam.
4. Verify all bearing height and shim thickness dimensions prior to jacking.
5. Stage construction shall be utilized. Simultaneous jacking of all bearings in each stage shall be limited to 1/8 inch maximum. Jacking of individual bearings shall be limited to 1/8 inch maximum.
6. Traffic shall be removed from the portion of the structure to be jacked prior to commencing jacking operations. Traffic shall be kept off that portion of the structure during the entire bearing replacement operation.

Note:

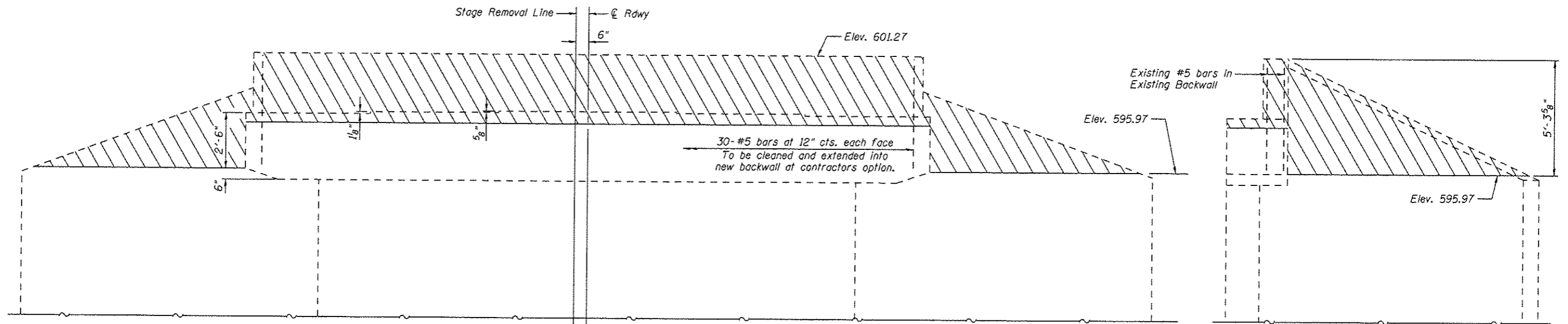
The details shown on this sheet may be used to jack and remove the existing bearings for this Contract. If Contractor chooses to use these details, as shown, then no submittal will be required. If Contractor elects to use an alternate detail, then the Contractor's jacking plans and procedures shall be designed and sealed by an Illinois Licensed Structural Engineer.

STAGE I CONSTRUCTION

1. Remove traffic from Stage I construction.
2. Install Temporary Support at Each Beam Location in Stage I.
3. Jack Stage I beams simultaneously or individually at North and South Abutments.
4. Lock Jacks in position.
5. Remove existing bearings as shown in plans.
6. Pour new concrete bearing seat.
7. Install new Elastomeric Bearing Assemblies.
8. Lower beams onto the new bearings.

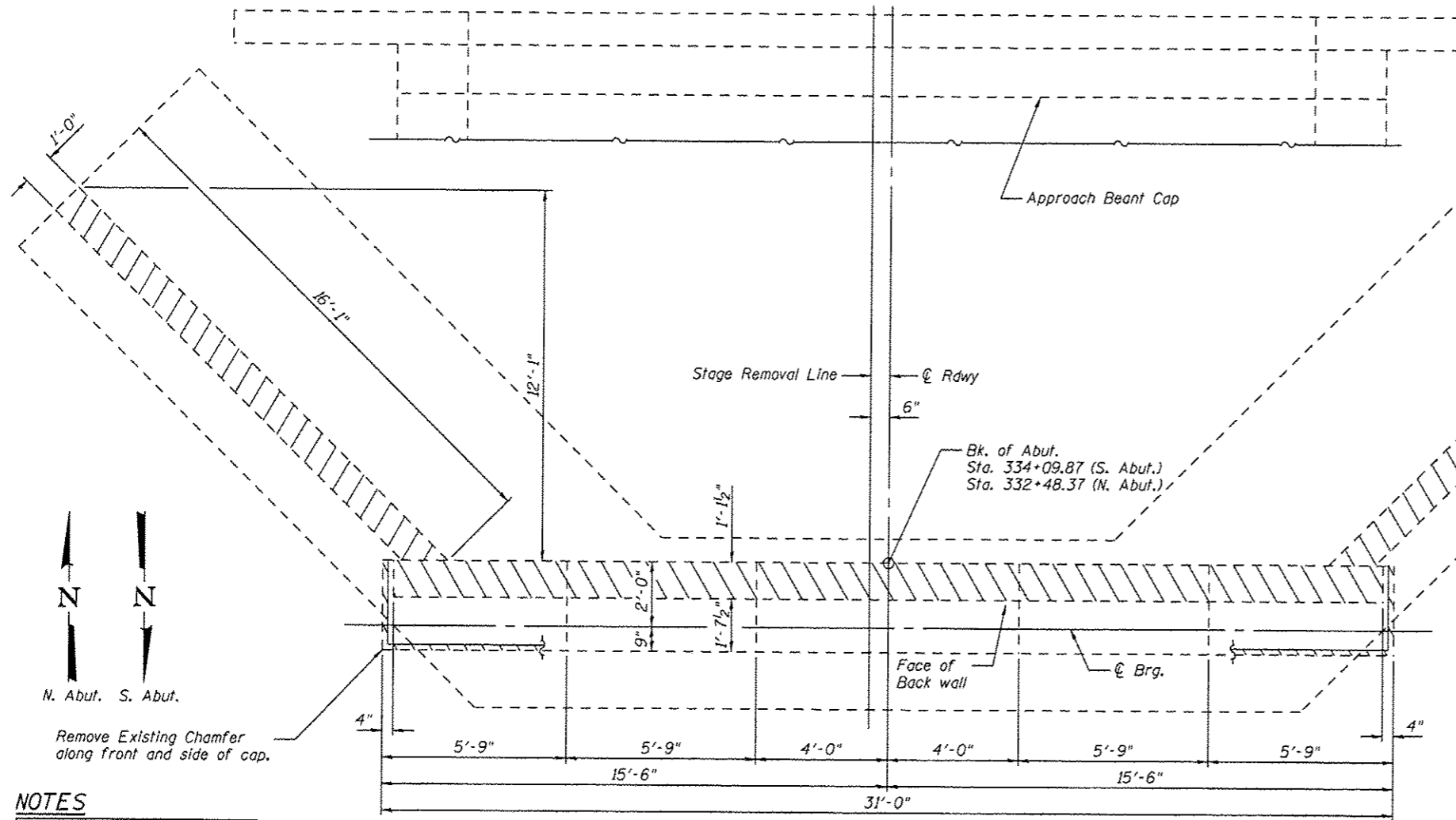
STAGE II CONSTRUCTION

1. Remove traffic from Stage II construction.
2. Install Temporary Support at Each Beam Location in Stage II.
3. Jack Stage II beams simultaneously or individually at North and South Abutments.
4. Lock Jacks in position.
5. Remove existing bearings as shown in plans.
6. Pour new concrete bearing seat.
7. Install new Elastomeric Bearing Assemblies.
8. Lower beams onto the new bearings.

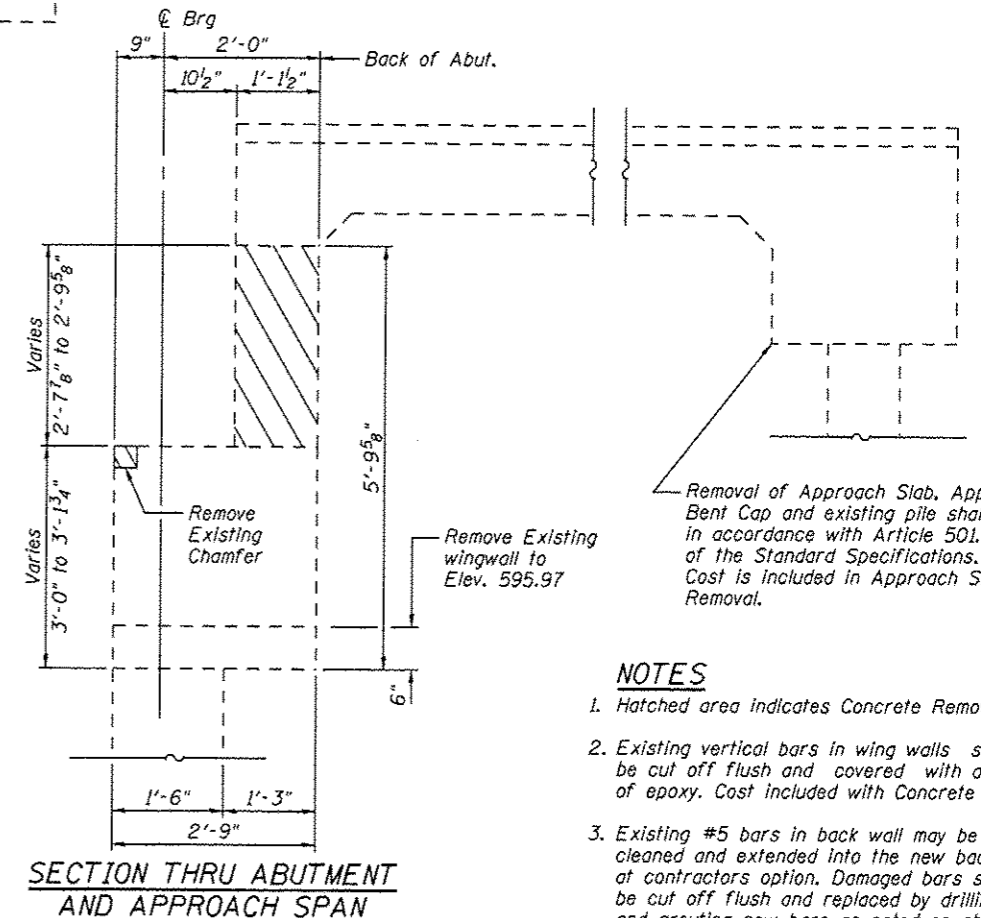


ELEVATION
(S. Abut. shown - N. Abut. similar)

END VIEW



PLAN
(S. Abut. shown - N. Abut. similar)



SECTION THRU ABUTMENT AND APPROACH SPAN

Removal of Approach Slab, Approach Bent Cap and existing pile shall be in accordance with Article 501.04 of the Standard Specifications. Cost is included in Approach Slab Removal.

- NOTES**
- Hatched area indicates Concrete Removal.
 - Existing vertical bars in wing walls shall be cut off flush and covered with a layer of epoxy. Cost included with Concrete Removal.
 - Existing #5 bars in back wall may be cleaned and extended into the new backwall at contractors option. Damaged bars shall be cut off flush and replaced by drilling and grouting new bars as noted on sheets 20 and 21 of 22.

**TWO (2) ABUTMENTS
BILL OF MATERIAL**

Item	Unit	Total
Concrete Removal	Cu Yd	12.9

NOTES
Plan elevations relative to the existing structure have been taken from existing plans and increased by 0.35 feet to match benchmark datum.



JOB # 2234	DESIGNED - AAN	REVISED -
FILE # 2234_AbuRem.dgn	CHECKED - MDC	REVISED -
DATE # 3/27/2014	DRAWN - SJS	REVISED -
	CHECKED - MDC	REVISED -

**CHRISTIAN COUNTY
CH 1 IMPROVEMENTS**

**EXISTING APPROACH SPAN AND CONCRETE REMOVAL AT ABUTMENTS
STRUCTURE NO. 011-3024**

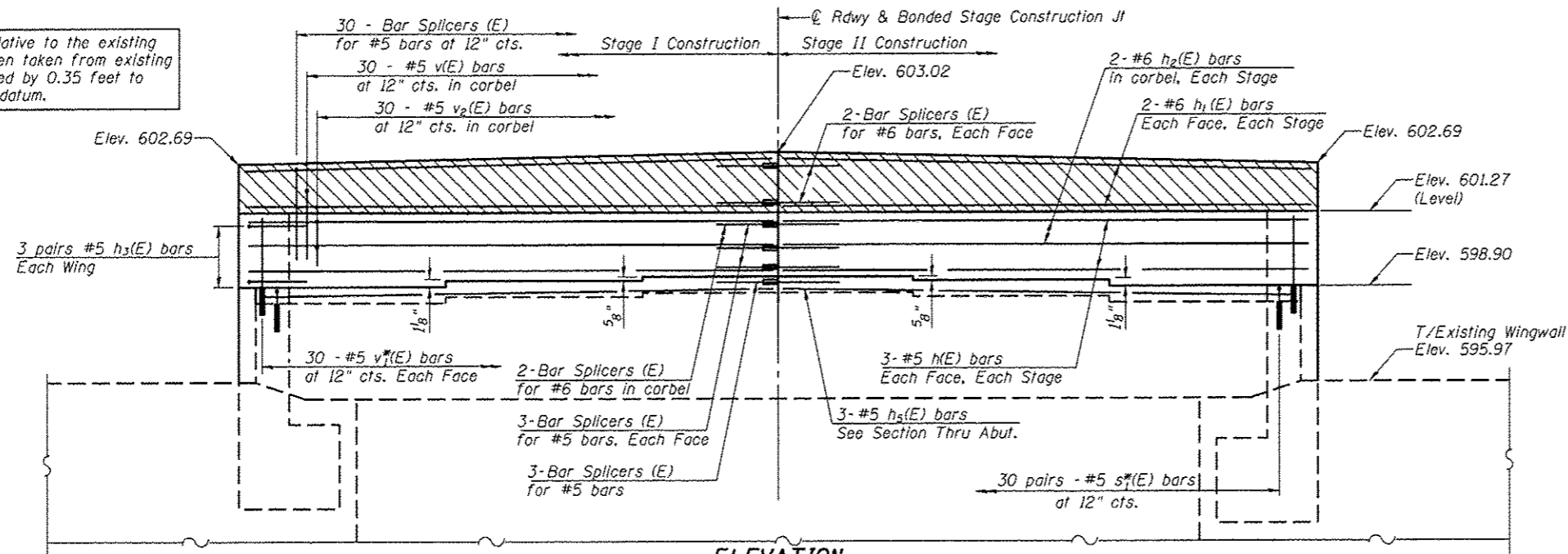
SHEET NO. 19 OF 22 SHEETS

F.A.S. RTE. 645	SECTION 11-00089-00-BR	COUNTY CHRISTIAN	TOTAL SHEETS 57	SHEET NO. 43
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ILLINOIS FED. AID PROJECT 93620

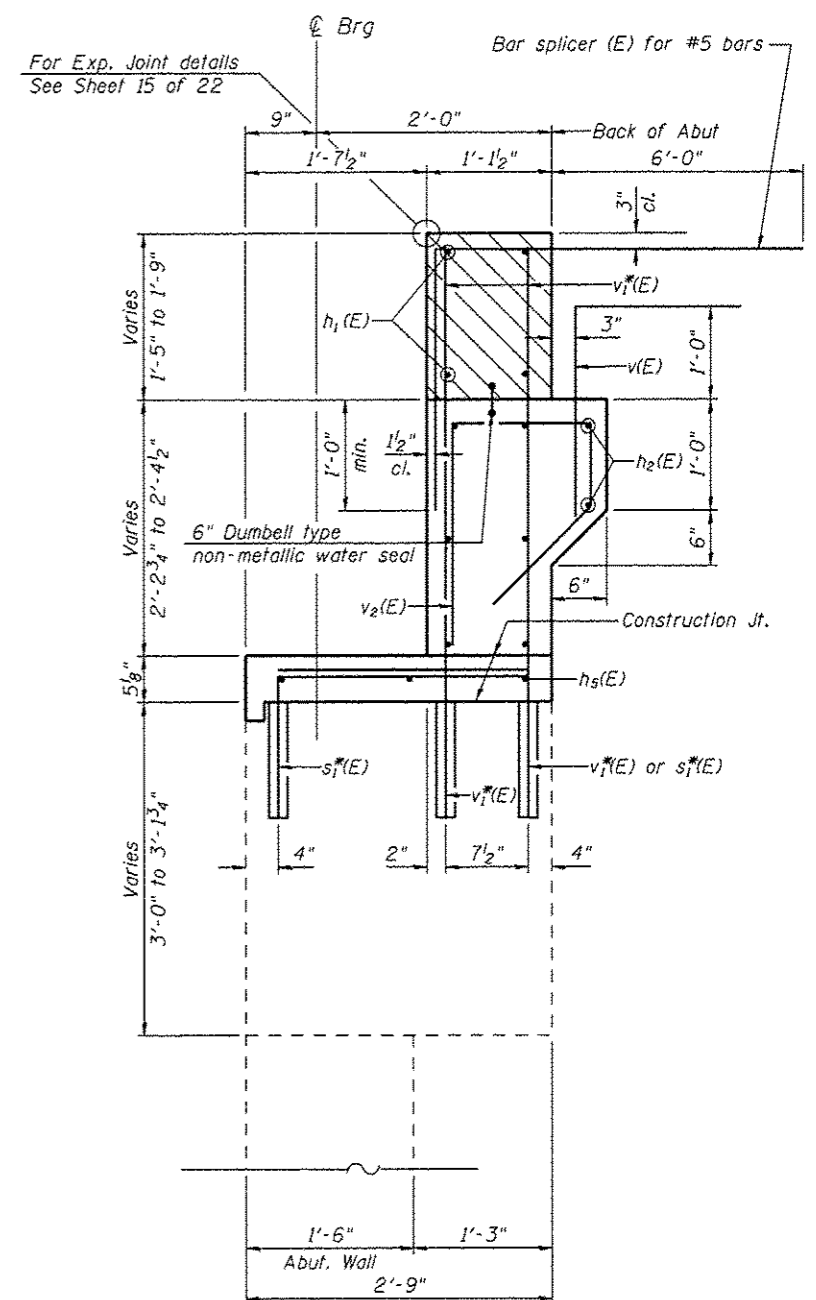
NOTE

Plan elevations relative to the existing structure have been taken from existing plans and increased by 0.35 feet to match benchmark datum.

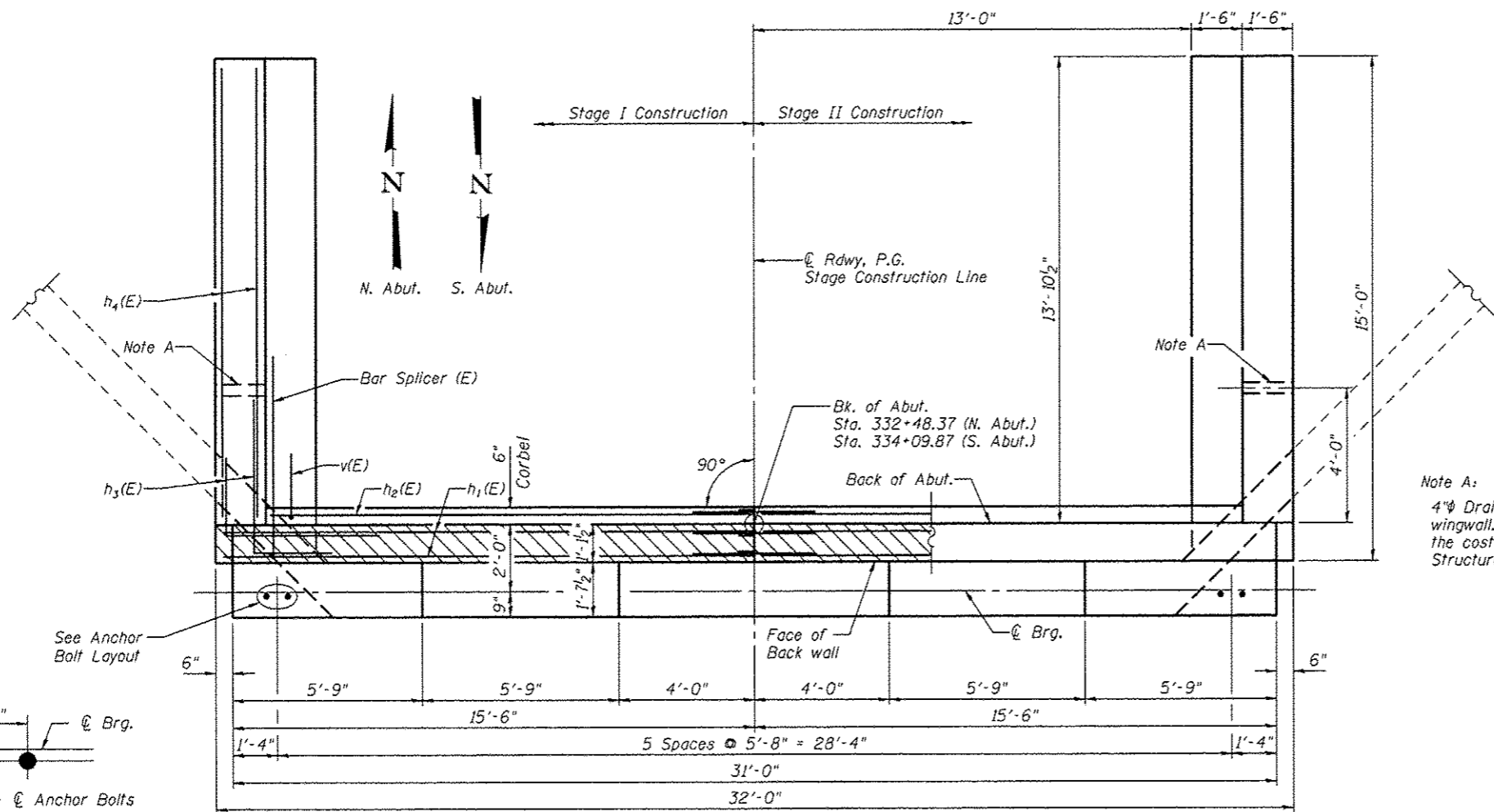


ELEVATION

(South Abutment Shown - Looking South, North Abutment Similar)



SECTION THRU ABUT.



PLAN

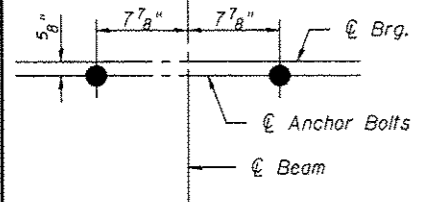
(South Abutment Shown, North Abutment Similar)

Note A:
4" Drain shall be installed thru proposed wingwall. This work shall be included in the cost for Pipe Underdrains for Structures 4".

NOTES

1. See note regarding bars $s_1^*(E)$ and $v_1^*(E)$ on sheet 21 of 22. At contractor's option, the existing #5 bars at 12" cts. each face of existing abutment backwall, may be cleaned and extended into the new wall and new $v_1(E)$ bars shall then be cut to lap with existing bars. Contractor shall exercise care in removing existing backwall. Damaged bars shall be replaced with new $v_1^*(E)$ bars as noted.
2. Hatched area to be poured after superstructure false work has been removed. Quantity included with Concrete Superstructure.
3. Concrete Sealer shall be applied to the front face of the backwall and new bearing seats.
4. For details of Splicers see sheet 22 of 22.

ANCHOR BOLT LAYOUT



CEC Cummins Engineering Corporation
Civil and Structural Engineering

JOB	• 2234
FILE	• 2234_Abutments.dgn
DATE	• 3/27/2014

DESIGNED	- AAN
CHECKED	- MDC
DRAWN	- SJS
CHECKED	- MDC

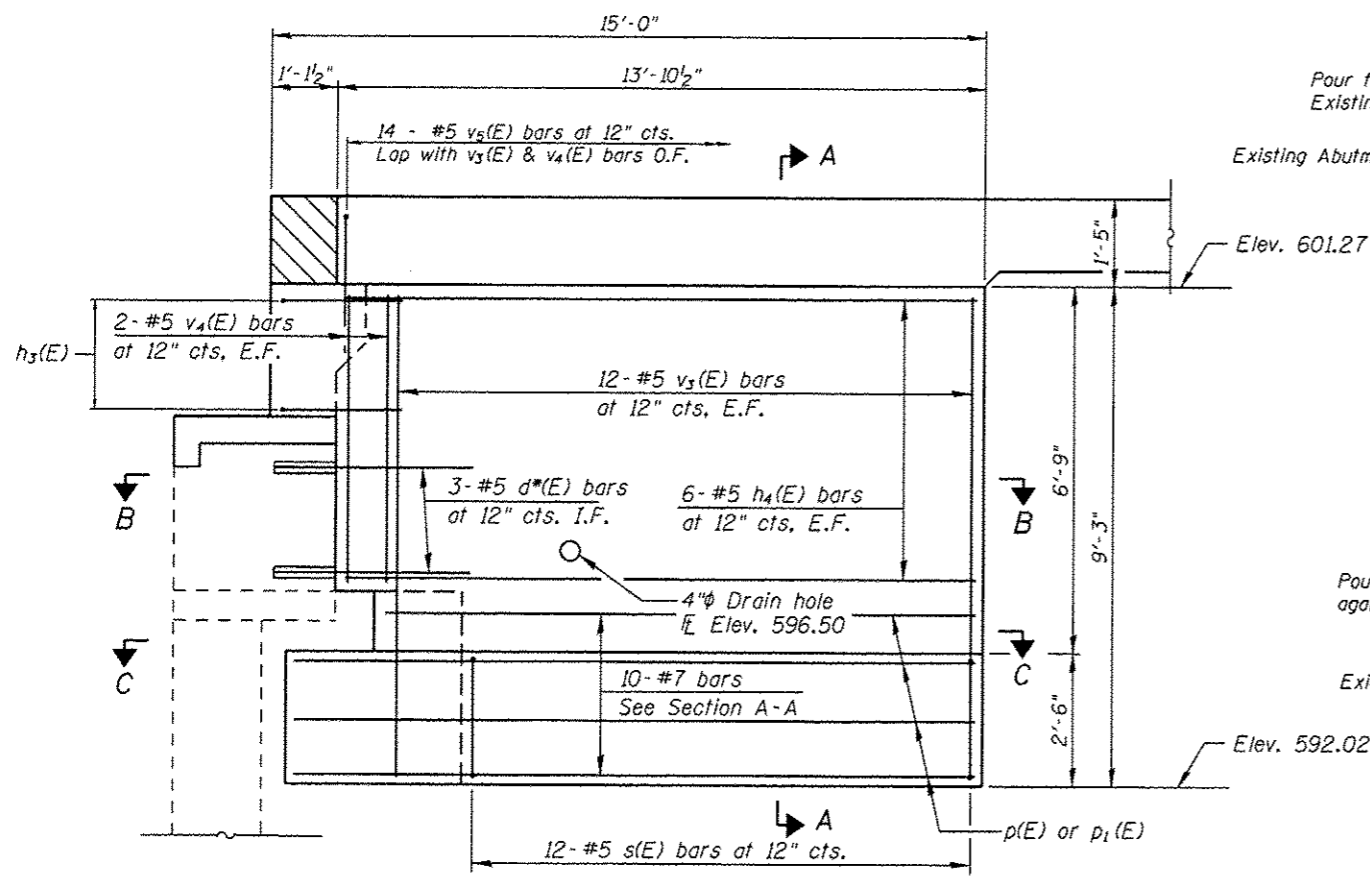
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REVISED	-
REVISED	-

**CHRISTIAN COUNTY
CH 1 IMPROVEMENTS**

**ABUTMENTS
STRUCTURE NO. 011-3024**

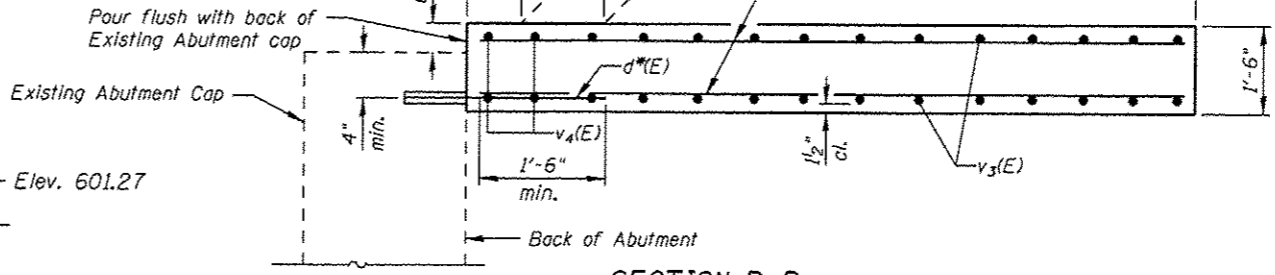
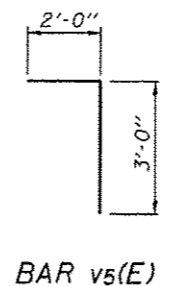
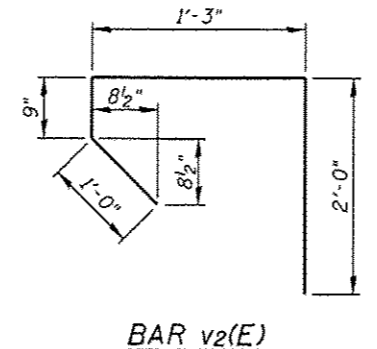
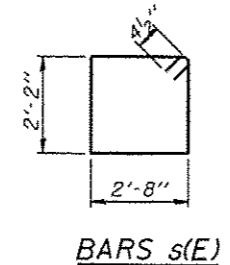
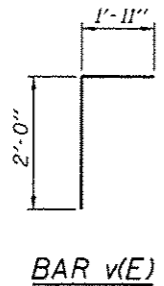
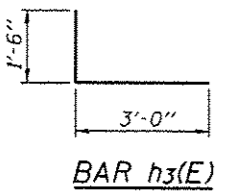
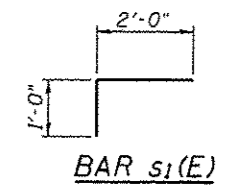
SHEET NO. 20 OF 22 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO.			93620	
ILLINOIS FED. AID PROJECT				

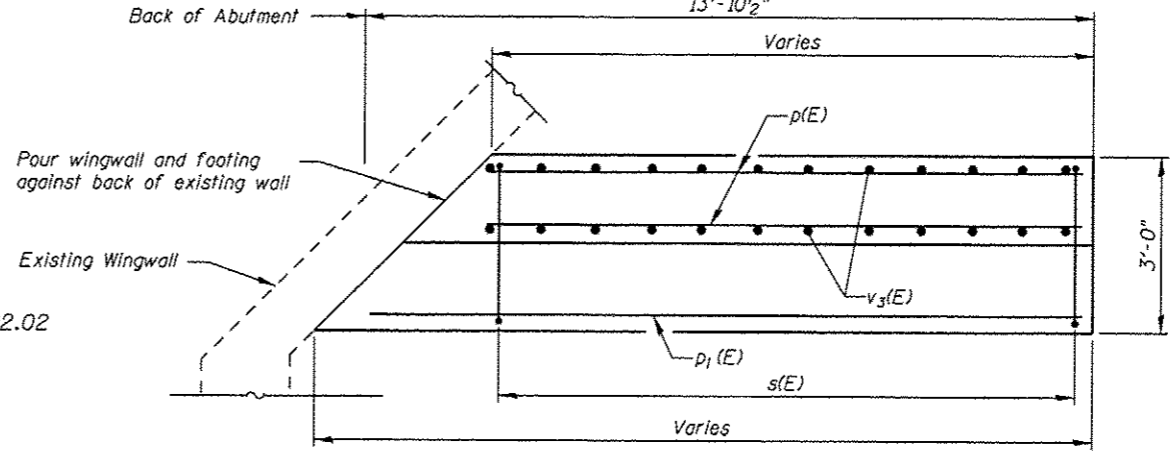


INSIDE WING WALL ELEVATION

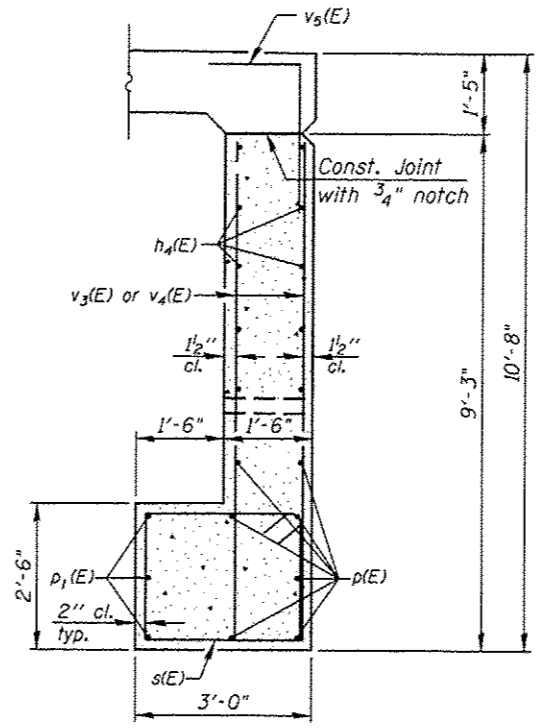
I.F. - Inside Face
O.F. - Outside Face
E.F. - Each Face



SECTION B-B
(Showing new wingwall at Existing Abut. Cap)



SECTION C-C
(Showing new wingwall & footing below existing Abutment cap.)



SECTION A-A

**TWO (2) ABUTMENTS
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
d*(E)	12	#5	2'-6"	—
h(E)	24	#5	15'-8"	—
h1(E)	16	#6	15'-8"	—
h2(E)	8	#6	14'-2"	—
h3(E)	24	#5	4'-6"	┘
h4(E)	48	#5	13'-6"	—
h5(E)	12	#5	15'-2"	—
p(E)	28	#7	11'-2"	—
p1(E)	12	#7	14'-2"	—
s(E)	48	#5	10'-5"	□
s*(E)	120	#5	3'-0"	┘
v(E)	60	#5	3'-11"	┘
v*(E)	120	#5	4'-10"	—
v2(E)	60	#5	5'-0"	┘
v3(E)	96	#5	8'-11"	—
v4(E)	16	#5	4'-11"	—
v5(E)	56	#5	5'-0"	┘
Structure Excavation			Cu. Yd.	198
Concrete Sealer			Sq. Ft.	271
Concrete Structures			Cu. Yd.	45.4
Reinforcement Bars, Epoxy Coated			Pound	6,260
Bar Splicers			Each	90
Geocomposite Wall Drain			Sq. Yd.	20
Granular Backfill for Structures			Cu. Yd.	140

Notes:
All Bars designated with an asterisk (ex: v*(E)) shall be epoxy grouted in accordance with section 584 of the Standard Specifications Minimum embedment = 9". Locate bars to miss existing reinforcement.

** See Sheet 2 of 22.



JOB # 2234
FILE # 2234_Abuments.dgn
DATE # 3/27/2014

DESIGNED - AAN
CHECKED - MDC
DRAWN - SJS
CHECKED - MDC

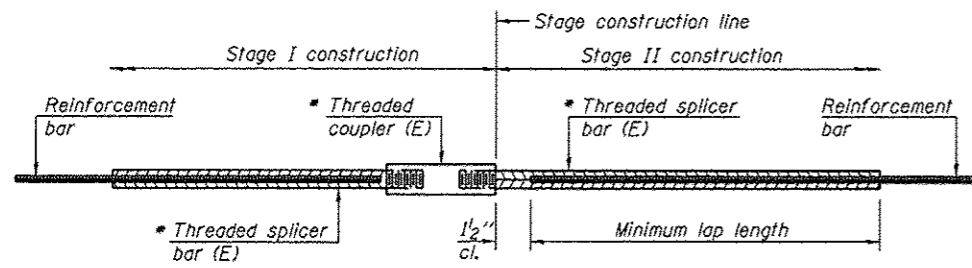
REVISED -
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REVISED -

**CHRISTIAN COUNTY
CH 1 IMPROVEMENTS**

**ABUTMENT DETAILS
STRUCTURE NO. 011-3024**

SHEET NO. 21 OF 22 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
645	11-00089-00-BR	CHRISTIAN	57	45



STANDARD BAR SPLICER ASSEMBLY

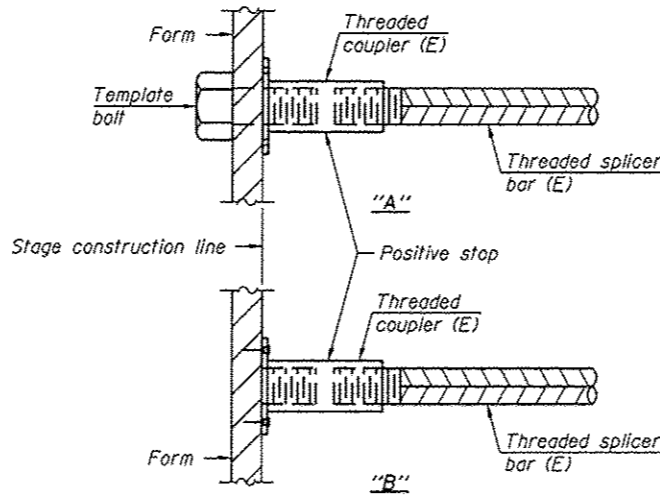
Minimum Lap Lengths					
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-3"
5	1'-9"	2'-5"	2'-7"	2'-11"	2'-10"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-4"
7	2'-9"	3'-10"	4'-2"	4'-8"	4'-6"
8	3'-8"	5'-1"	5'-5"	6'-2"	5'-10"
9	4'-7"	6'-5"	6'-10"	7'-9"	7'-5"

- Table 1: Black bar, 0.8 Class C
- Table 2: Black bar, Top bar lap, 0.8 Class C
- Table 3: Epoxy bar, 0.8 Class C
- Table 4: Epoxy bar, Top bar lap, 0.8 Class C
- Table 5: Epoxy bar, Top bar lap, Class B

Threaded splicer bar length = min. lap length + 1/2" + thread length

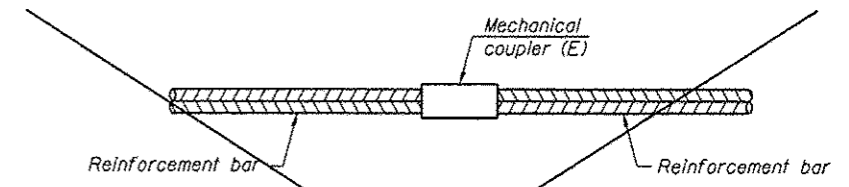
Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Deck	#5	468	3
Appr. Slab Bottom	#5	92	3
Appr. Slab Top	#4	50	3
Appr. Footing	#5	80	3
Abutment	#5	18	3
Abutment	#6	12	3



INSTALLATION AND SETTING METHODS

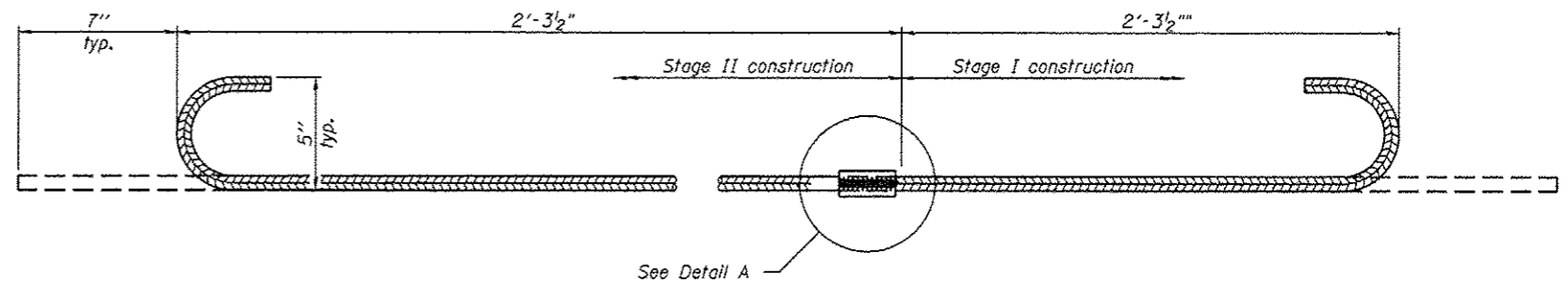
"A": Set bar splicer assembly by means of a template bolt.
 "B": Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
 (E) : Indicates epoxy coating.



STANDARD MECHANICAL SPLICER

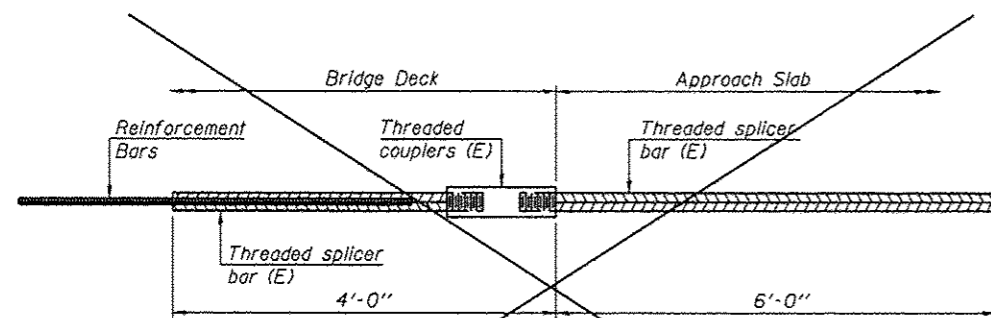
Location	Bar size	No. assemblies required

The bar splicer assembly shall allow completion of the splice without turning of the hook bars. The stage II splice bar shall be threaded such that the entire coupler can be threaded onto the splice bar.



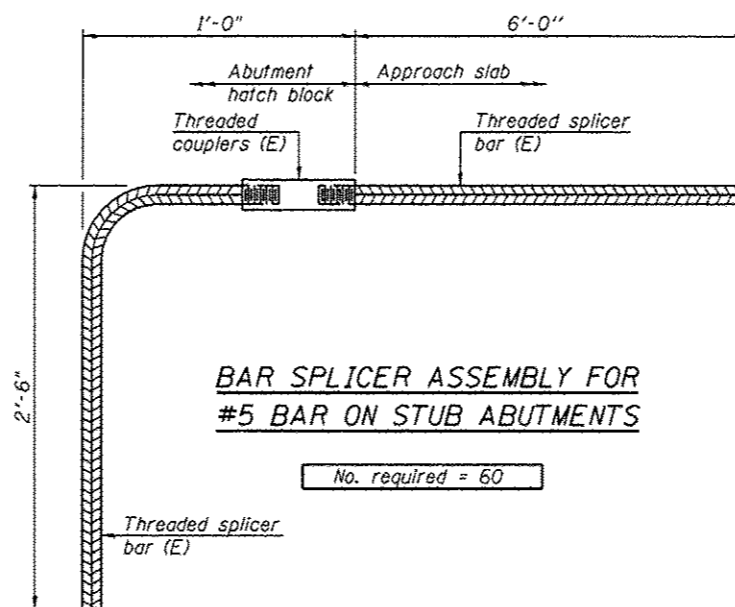
#5 #3(E) BAR SPLICER ASSEMBLY FOR EDGE BEAMS AT STAGE CONSTRUCTION JOINT

No. required = 6



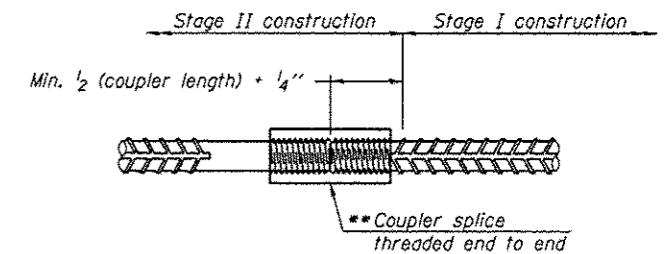
BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

No. required =



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required = 60



DETAIL A

NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
 All reinforcement shall be lapped and tied to the splicer bars.
 Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.
 See special provision for Mechanical Splicers.
 See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BSD-1

7-1-10



Cummins Engineering Corporation
 JOB # 2234
 FILE # 2234_Splicer.dgn
 DATE # 3/27/2014

DESIGNED - AAN
 CHECKED - TSH
 DRAWN - SJS
 CHECKED - MDC

REVISED -
 REVISED -
 REVISED -
 REVISED -

**CHRISTIAN COUNTY
 CH 1 IMPROVEMENTS**

**BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
 STRUCTURE NO. 011-3024**

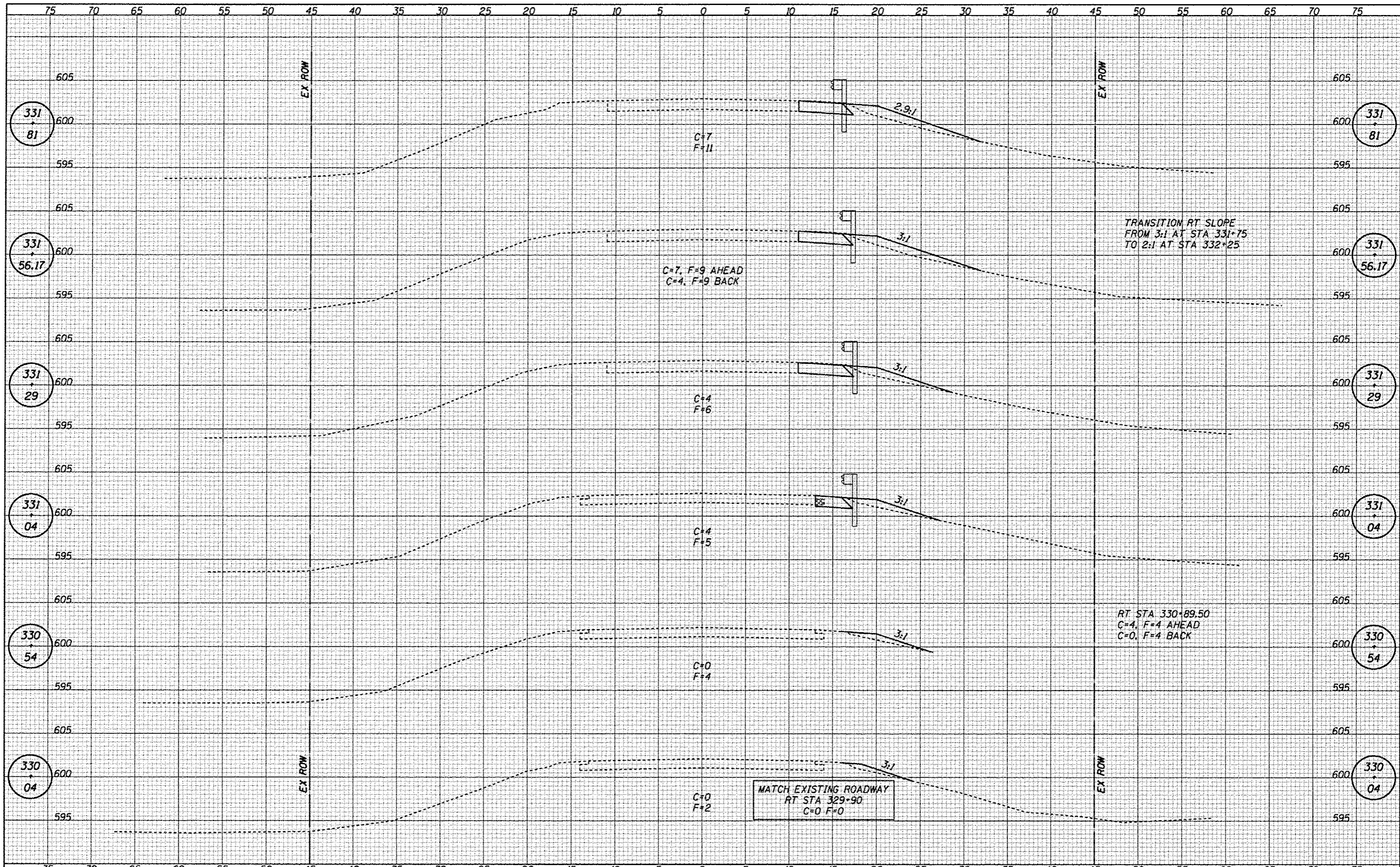
SHEET NO. 22 OF 22 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
645	11-00089-00-BR	CHRISTIAN	57	46

CONTRACT NO. 93620

DATE
BY
SUPERVISOR
FINAL SURVEY
NOTE BOOK
NO.

DATE
BY
CHECKED
ORIGINAL SURVEY
NOTE BOOK
NO.



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JOB # 2234
FILE NAME = 2234xss.dgn
PLOT SCALE = 1/8" = 1' / IN.
PLOT DATE = 1/24/2014

DESIGNED - NAK
DRAWN - SJS
CHECKED - TSH
DATE - 4/26/2012

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REVISED -
REVISED -
REVISED -

**CHRISTIAN COUNTY
CH 1 IMPROVEMENTS**

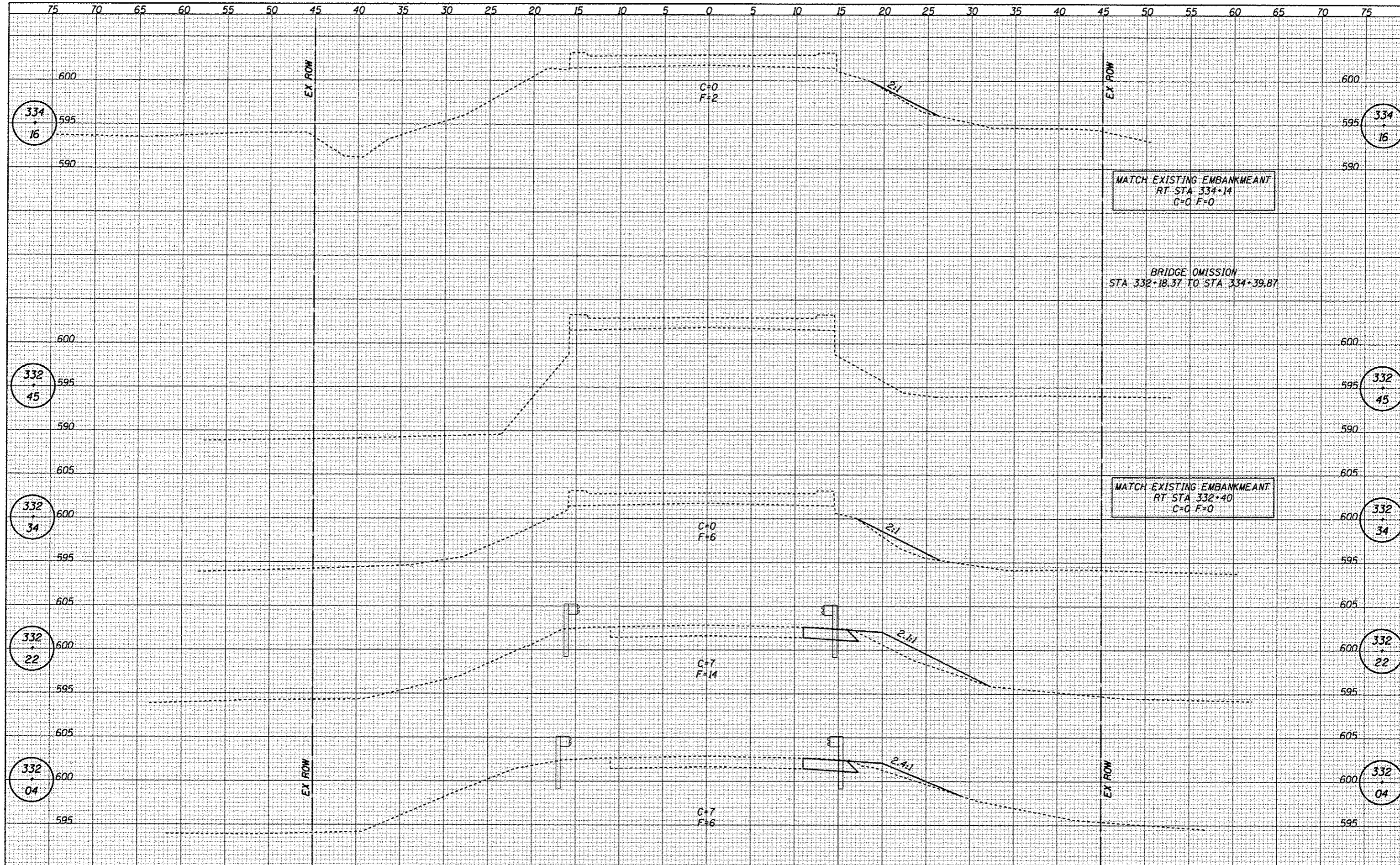
PRE-STAGE 1 CROSS SECTIONS

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.S. RTE. 645	SECTION 11-00089-00-BR	COUNTY CHRISTIAN	TOTAL SHEETS 57	SHEET NO. 47
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		93620

DATE	
BT	
NO.	
AREAS CHECKED	
TEMPLATES	
PLOTTED	
SURVEY	
FINAL	

DATE	
BT	
NO.	
AREAS CHECKED	
TEMPLATES	
PLOTTED	
SURVEY	
ORIGINAL	



MATCH EXISTING EMBANKMENT
RT STA 334+14
C=0 F=0

BRIDGE OMISSION
STA 332+18.37 TO STA 334+39.87

MATCH EXISTING EMBANKMENT
RT STA 332+40
C=0 F=0

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Engineering
Corporation
Civil and Structural Engineering

JOB # 2234
FILE NAME = 2234.vss.dgn
PLOT SCALE = 10,0000' / IN.
PLOT DATE = 1/24/2014

DESIGNED - NAK
DRAWN - SJS
CHECKED - TSH
DATE - 4/26/2012

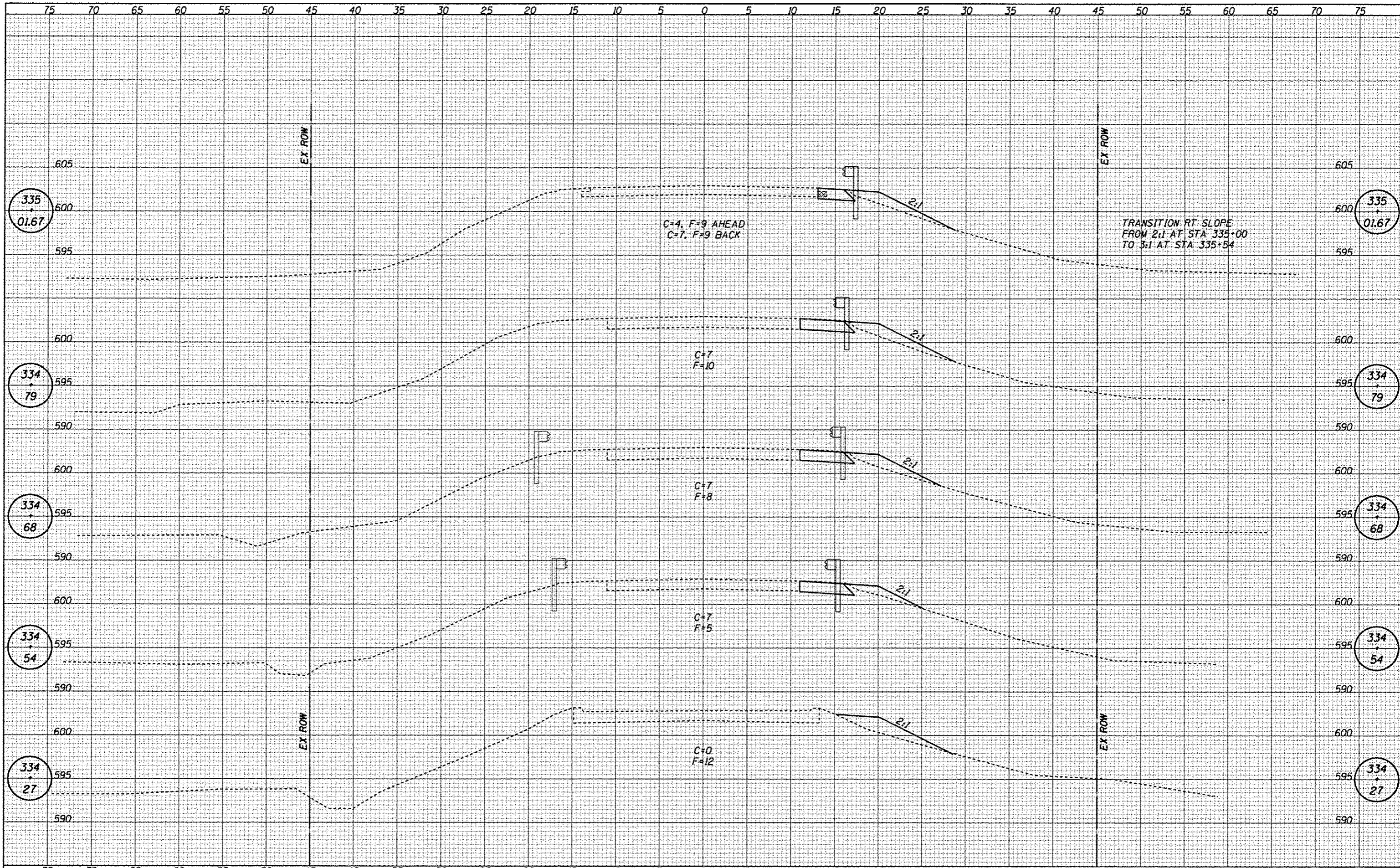
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**CHRISTIAN COUNTY
CH 1 IMPROVEMENTS**

PRE-STAGE 1 CROSS SECTIONS

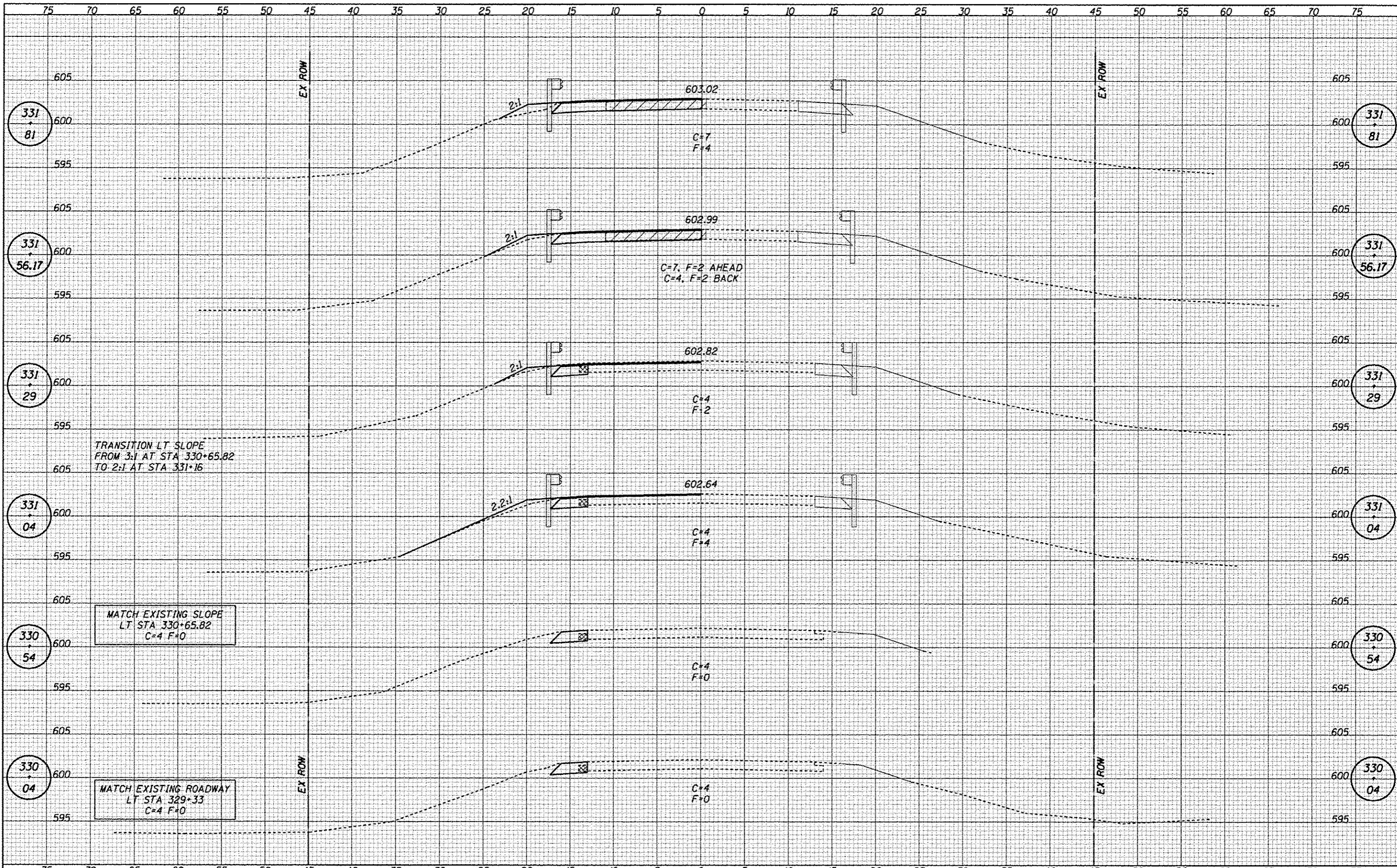
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F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO.			93620	
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		



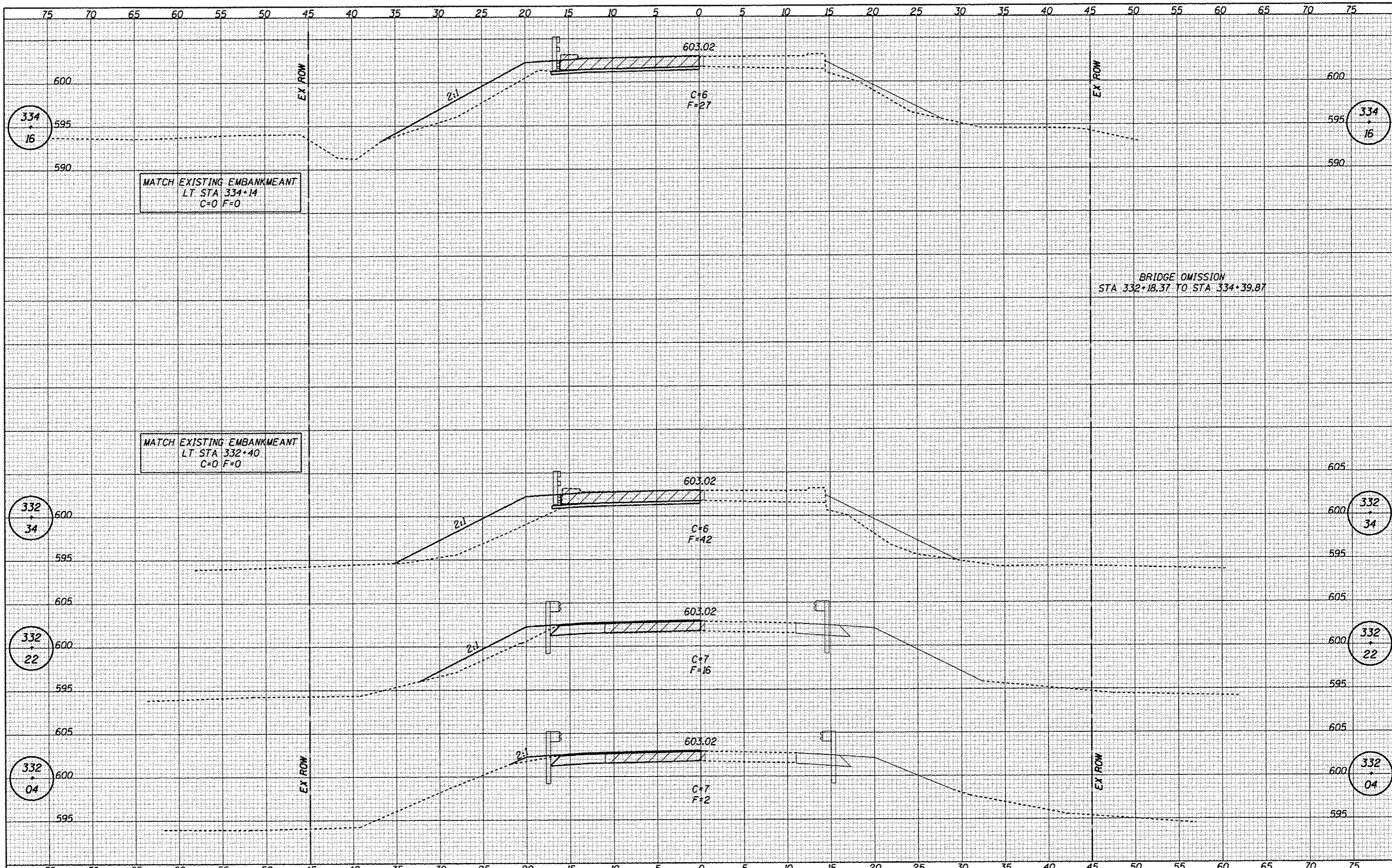
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MATCH EXISTING EMBANKMENT
LT STA 334+14
C=0 F=0

MATCH EXISTING EMBANKMENT
LT STA 332+40
C=0 F=0

BRIDGE OMISSION
STA 332+18.37 TO STA 334+39.87

334
16

334
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34

332
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22

332
22

332
04

332
04

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Corporation
Civil and Structural Engineering

JOB # 2234
FILE NAME = 2234x.sno.dgn
PLOT SCALE = 10.0000' / 1" =
PLOT DATE = 2/26/2014

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DRAWN - SJS
CHECKED - TSH
DATE - 4/26/2012

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REVISED -

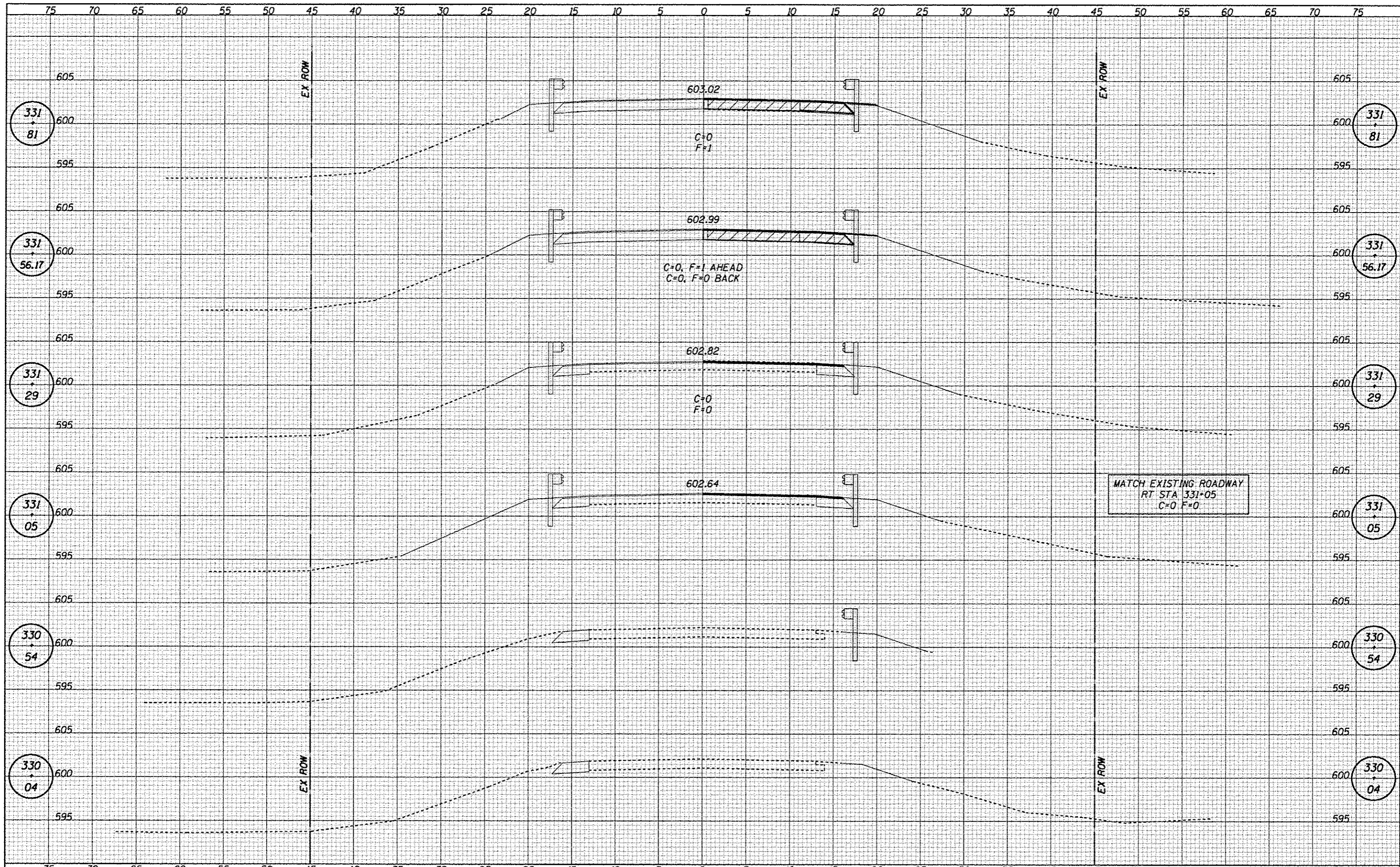
**CHRISTIAN COUNTY
CH 1 IMPROVEMENTS**

STAGE 1 CROSS SECTIONS

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.S. RTE. 645	SECTION 11-00089-00-BR	COUNTY CHRISTIAN	TOTAL SHEETS 57	SHEET NO. 51
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO.	

93620



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

DATE	
BY	
ORIGINAL SURVEY	
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NOTE BOOK	
NO.	
AREAS CHECKED	

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JOB # 2234
FILE NAME = 2234.dwg
PLDT SCALE = 10,000' / IN.
PLOT DATE = 2/26/2014

DESIGNED - NAK
DRAWN - SJS
CHECKED - TSH
DATE - 4/26/2012

REVISED -
REVISED -
REVISED -
REVISED -

**CHRISTIAN COUNTY
CH 1 IMPROVEMENTS**

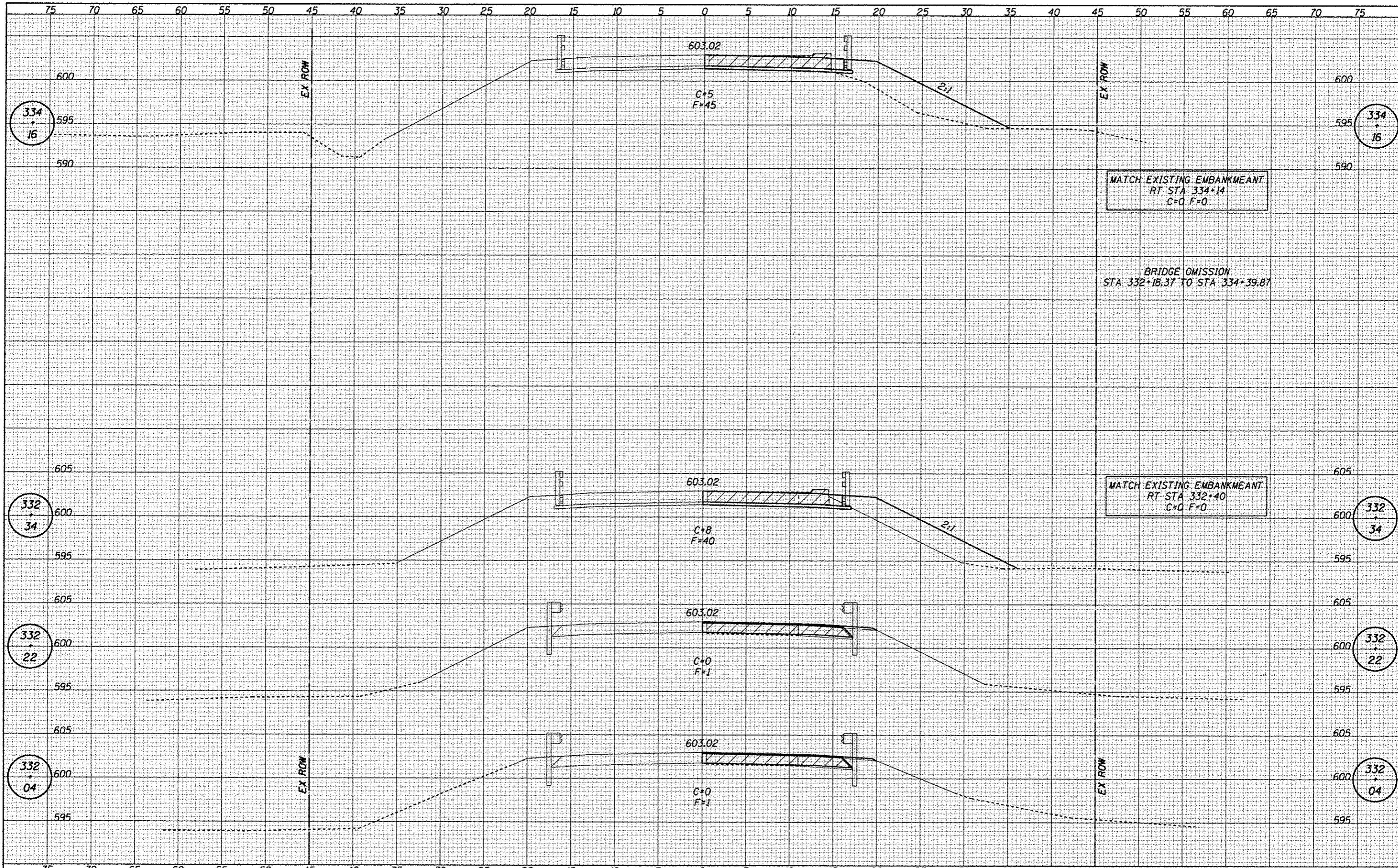
STAGE 2 CROSS SECTIONS

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
645	11-00089-00-BR	CHRISTIAN	57	54
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO.	
			93620	

DATE	
BY	
FINAL SURVEY	
NOTE BOOK	
AREAS CHECKED	

DATE	
BY	
ORIGINAL SURVEY	
NOTE BOOK	
AREAS CHECKED	



MATCH EXISTING EMBANKMENT
RT STA 334+14
C=0 F=0

BRIDGE OMISSION
STA 332+18.37 TO STA 334+39.87

MATCH EXISTING EMBANKMENT
RT STA 332+40
C=0 F=0

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Civil and Structural Engineering

JOB # 2234
FILE NAME = 2234.dwg
PLOT SCALE = 1/8" = 1'-0"
PLOT DATE = 2/26/2014

DESIGNED -	NAK	REVISED -	
DRAWN -	SJS	REVISED -	
CHECKED -	TSH	REVISED -	
DATE -	4/26/2012	REVISED -	

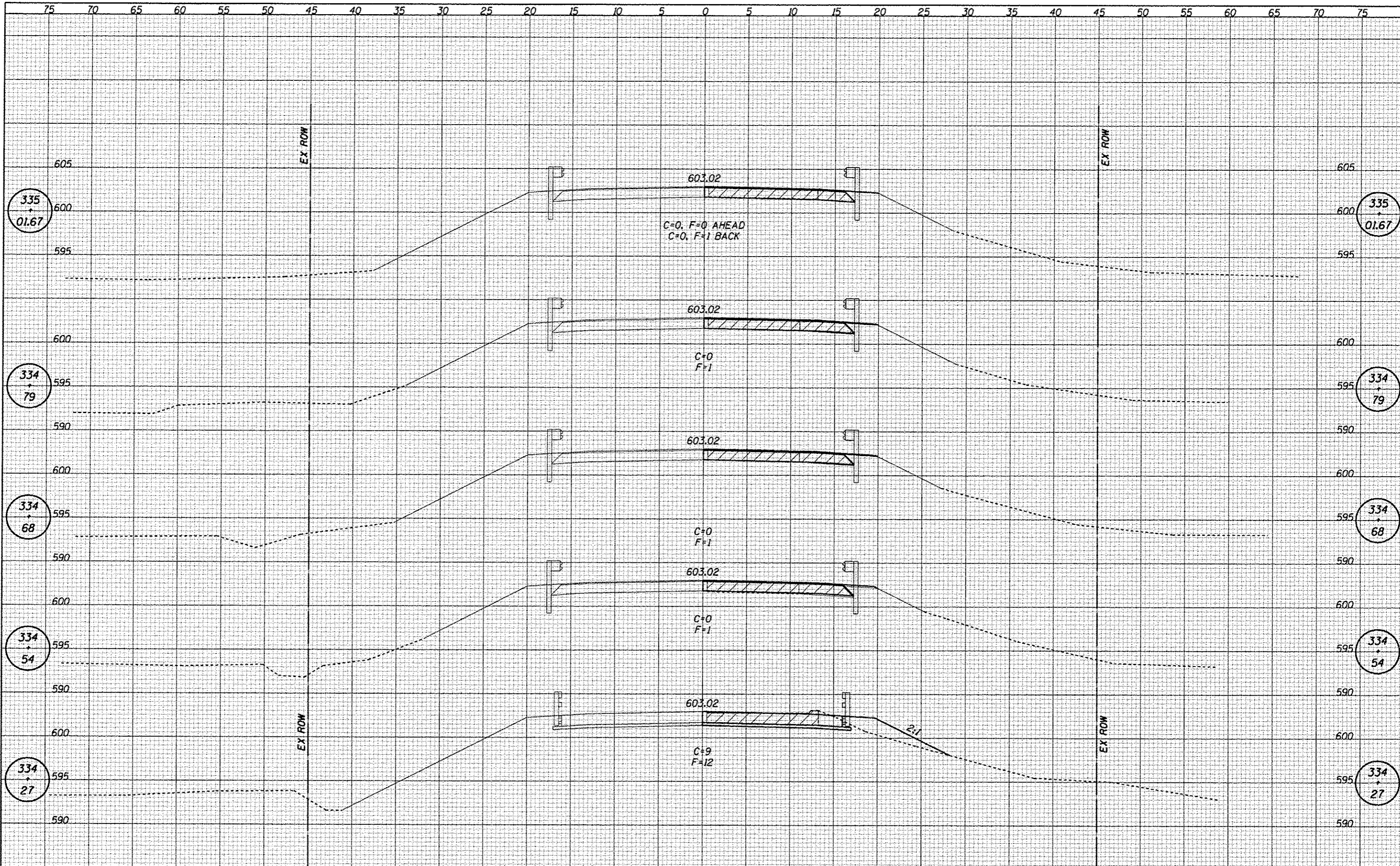
**CHRISTIAN COUNTY
CH 1 IMPROVEMENTS**

STAGE 2 CROSS SECTIONS

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
645	11-00089-00-BR	CHRISTIAN	57	55
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		CONTRACT NO.

93620



DATE	
BY	
FINAL SURVEY	
NOTED	
NOTE BOOK	
AREAS CHECKED	

DATE	
BY	
ORIGINAL SURVEY	
NOTED	
NOTE BOOK	
AREAS CHECKED	

