

COUNTY	ROUTE	SECTION	TOTAL SHEETS	SHEET NO.
ADAMS	FAS 1588	05-00189-00-BR	38	1

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
**PLANS FOR PROPOSED**  
**SURFACE TRANSPORTATION / RURAL PROGRAM**  
FAS ROUTE 1588 (CH #48) SECTION 05-00189-00-BR ADAMS COUNTY  
PROJECT NO. RS-1588(107)  
STRUCTURE NO. 001-3027  
STRUCTURE NO. 001-3028

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**HIGHWAY STANDARDS**

STANDARD 515001-02	NAME PLATE
STANDARD 630001-06	STEEL PLATE BEAM GUARD RAIL
STANDARD 631026-02	TRAFFIC TERMINAL BARRIER, TYPE 5 & 5A
STANDARD 701001-01	TRAFFIC CONTROL
STANDARD 701006-02	TRAFFIC CONTROL
STANDARD 701011-01	TRAFFIC CONTROL
STANDARD 702001-06	TRAFFIC CONTROL DEVICES
STANDARD BLR 21-6	TRAFFIC CONTROL
STANDARD BLR 23-1	TRAFFIC TERMINAL BARRIER, TYPE 1

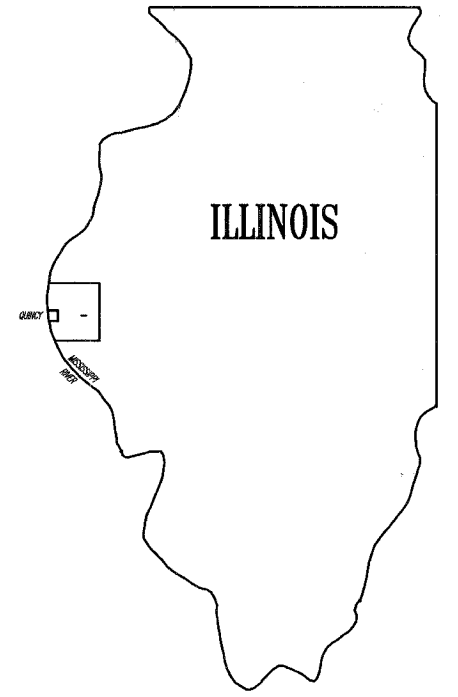
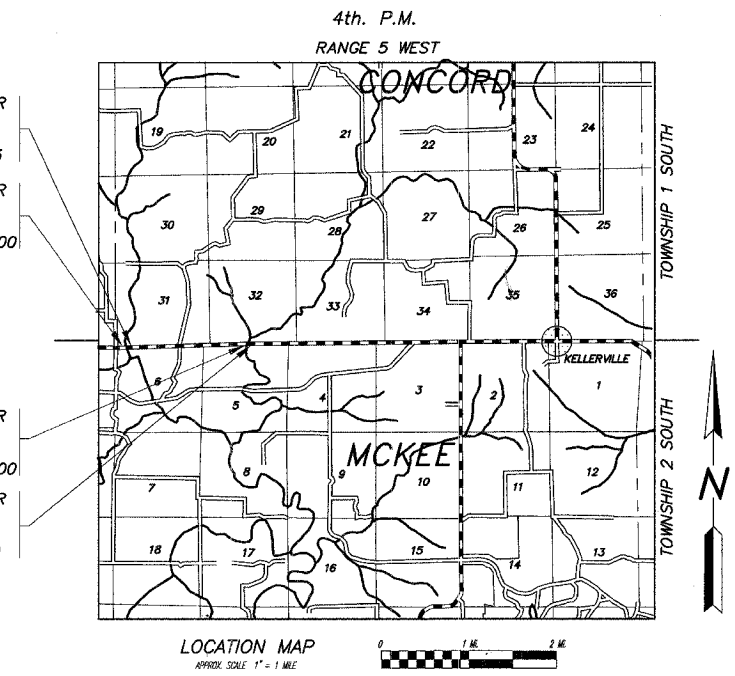
**SECTION 05-00189-00-BR CONSISTS OF:**

LOCATION #1 - STRUCTURE NO. 001-3027: THE REMOVAL OF THE EXISTING REINF. CONCRETE DECK; THE REPAIR AND MODIFICATION OF THE EXISTING SUBSTRUCTURE AND BEARINGS; THE REPLACEMENT OF THE REINFORCED CONCRETE DECK WITH ASSOCIATED TRAFFIC BARRIER TERMINALS AND GUARD RAIL; AND THE NECESSARY ROADWAY ADJUSTMENTS.

EXISTING STRUCTURE NO. 001-3027 IS A REINFORCED CONCRETE DECK ON STEEL BEAMS WITH SOLID CONCRETE PIERS AND ABUTMENT CAPS.

LOCATION #2 - STRUCTURE NO. 001-3028: THE REMOVAL OF THE EXISTING REINF. CONCRETE DECK; THE REPAIR AND MODIFICATION OF THE EXISTING SUBSTRUCTURE AND BEARINGS; THE REPLACEMENT OF THE REINFORCED CONCRETE DECK WITH ASSOCIATED TRAFFIC BARRIER TERMINALS AND GUARD RAIL; AND THE NECESSARY ROADWAY ADJUSTMENTS.

EXISTING STRUCTURE NO. 001-3028 IS A REINFORCED CONCRETE DECK ON STEEL BEAMS WITH SOLID CONCRETE PIERS AND ABUTMENT CAPS.



PROPOSED IMPROVEMENT MARKED THUS —

COLLECTOR - ADT 900

NET LENGTH OF IMPROVEMENT - LOCATION #1 = 425.00 FT. = 0.080 MI.  
STRUCTURE NO. 001-3027 LENGTH = 149.50' (BK.-BK. ABUTMENT)

NET LENGTH OF IMPROVEMENT - LOCATION #2 = 500.00 FT. = 0.095 MI.  
STRUCTURE NO. 001-3028 LENGTH = 139.75' (BK.-BK. ABUTMENT)

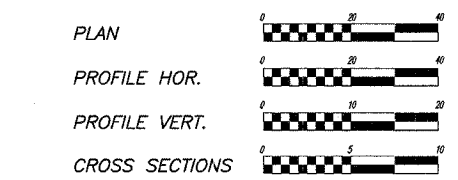
TOTAL LENGTH OF IMPROVEMENTS = 925.00 FT. = 0.175 MI.



SUBMITTED BY James R. Frankenhoff DATE 1/26/06  
JAMES R. FRANKENHOFF, P.E.  
LIC. NO. 062-044792  
LIC. EXPIRES 11/30/07

APPROVED	<u>January 26</u> 2006 <u>Rick C. Wenger</u> COUNTY ENGINEER
PASSED	<u>FEB 6</u> 2006 <u>Jim F.</u> DISTRICT SIX ENGINEER OF LOCAL ROADS & STREETS
PASSED	<u>FEB 7</u> 2006 <u>W.R. Fry</u> DISTRICT SIX ENGINEER OF CONSTRUCTION
RELEASING FOR BID BASED ON LIMITED REVIEW	<u>FEB 6</u> 2006 <u>Christina M. Reed</u> DEPUTY DIRECTOR OF HIGHWAYS, THE REGION FOUR ENGINEER

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



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.

**UTILITIES:**

J.U.L.I.E. .... 1-800-892-0123  
ABS WATER DISTRICT ..... CAMP POINT, IL.  
ADAMS ELECTRICAL CO-OP.....CAMP POINT, IL.

JOB NO. C-96-213-06  
CONTRACT NO. 93405

COUNTY	ROUTE	SECTION NO.	SHT. NO.
ADAMS	FAS 1588	05-00189-00-BR	2 OF 38
SUMMARY OF QUANTITIES			

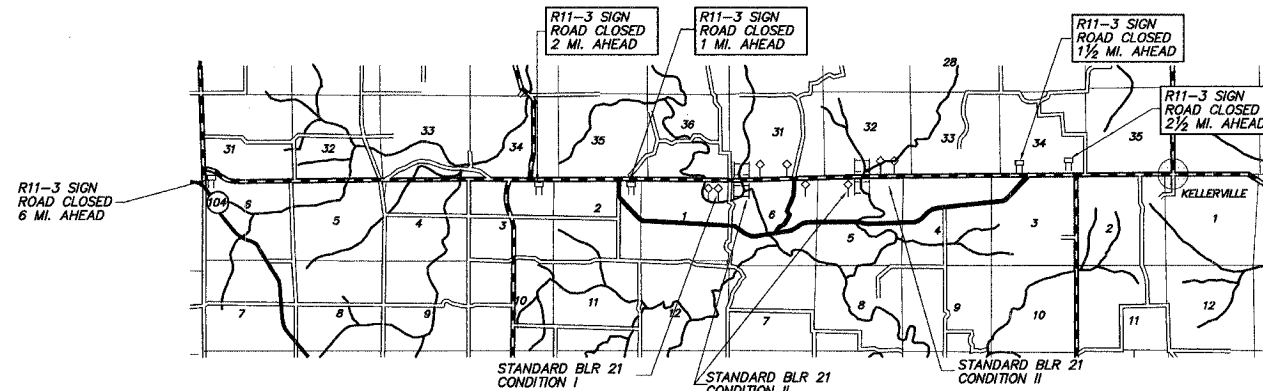
## SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	QUANTITIES STRUC. NO 001-3027	QUANTITIES STRUC. NO. 001-3028	TOTAL QUANTITY
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	60	80	140
* 42001400	BRIDGE APPROACH PAVEMENT (SPECIAL)	SQ. YD.	160	160	320
* 44000030	BITUMINOUS SURFACE REMOVAL (VARIABLE DEPTH)	SQ. YD.	527	573	1,100
50102400	CONCRETE REMOVAL	CU. YD.	3.1	3.1	6.2
* 50104720	REMOVAL OF EXISTING CONCRETE DECK	EACH	1	1	2
50300120	PREFORMED JOINT SEAL 2 1/2"	FOOT	31.5	32	63.5
50300130	PREFORMED JOINT SEAL 4"	FOOT	31.5	32	63.5
* 50300255	CONCRETE SUPERSTRUCTURE	CU. YD.	116.0	107.2	223.2
50300260	BRIDGE DECK GROOVING	SQ. YD.	458	421	879
50300300	PROTECTIVE COAT	SQ. YD.	512	471	983
* 50300310	ELASTOMERIC BEARING ASSEMBLY TYPE I	EACH	6	6	12
* 50300320	ELASTOMERIC BEARING ASSEMBLY TYPE II	EACH	6	6	12
50500505	STUD SHEAR CONNECTORS	EACH	2,172	2,016	4,188
* 50500715	JACK AND REMOVE EXISTING BEARINGS	EACH	12	12	24
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	26,880	24,940	51,820
* 50901002	STEEL BRIDGE RAIL (SPECIAL)	FOOT	299	276	575
* 51500100	NAME PLATES	EACH	1	1	2
63000000	STEEL PLATE BEAM GUARDRAIL, TYPE A	FOOT	100	100	200
63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	4	4	8
* 63200305	STEEL PLATE BEAM GUARD RAIL REMOVAL	FOOT	200	200	400
67100100	MOBILIZATION	L. SUM			1
* 70101800	TRAFFIC CONTROL AND PROTECTION (SPECIAL)	L. SUM			1
* 70300100	SHORT TERM PAVEMENT MARKING	FOOT	20	30	50
* X4066414	BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, MIX "C", N50	TON	65	95	160
LR631020	TRAFFIC BARRIER TERMINAL, TYPE 1	EACH	4	4	8

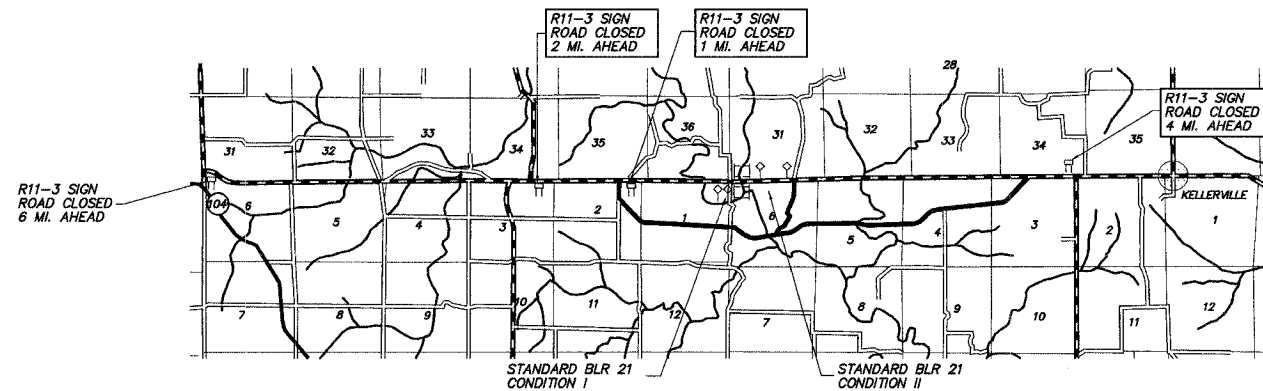
\* SPECIAL PROVISIONS  
CONSTRUCTION TYPE CODE: X071-2A

COUNTY	ROUTE	SECTION NO.	SHT. NO.
ADAMS	FAS 1588	05-00190-00-BR	3 OF 38
GENERAL NOTES, TYPICAL SECTIONS			
TRAFFIC CONTROL - ROAD CLOSURE			

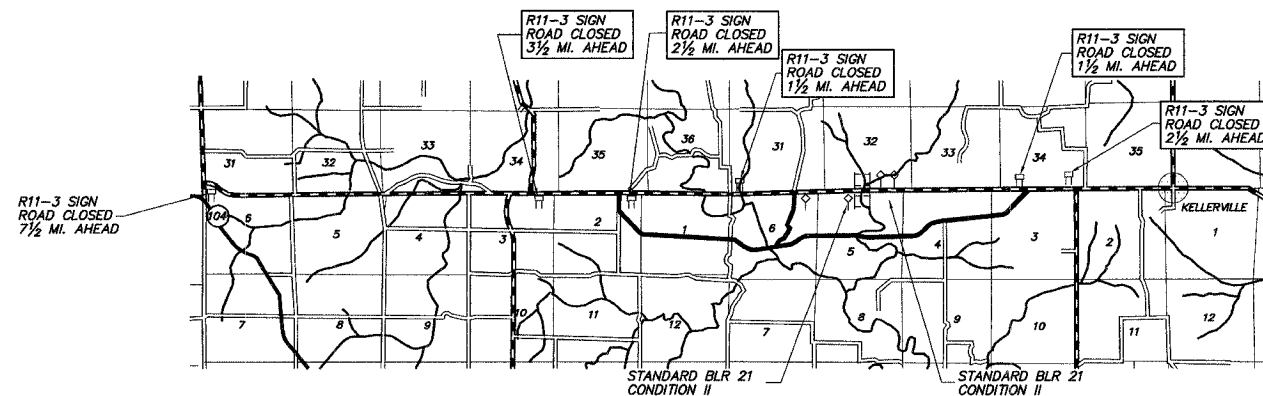
**SIGNING FOR ROAD CLOSURE (STRUC. NO. 001-3027 and 001-3028)**



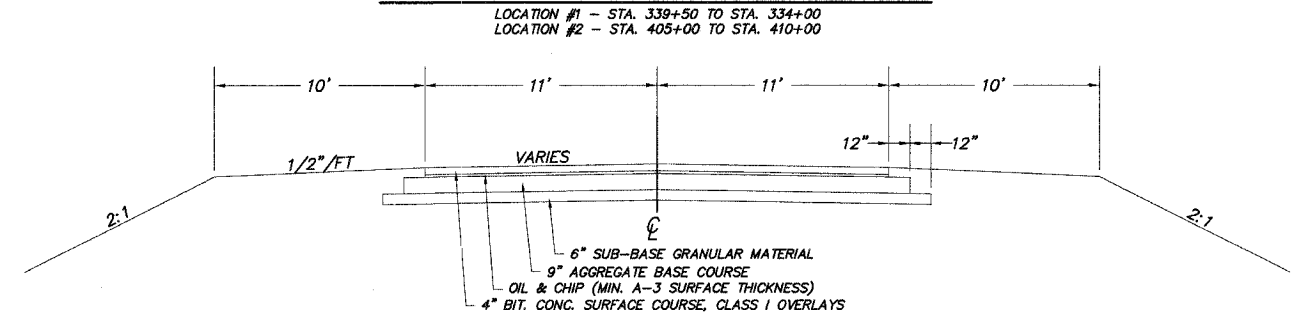
**SIGNING FOR ROAD CLOSURE (STRUC. NO. 001-3027 ONLY)**



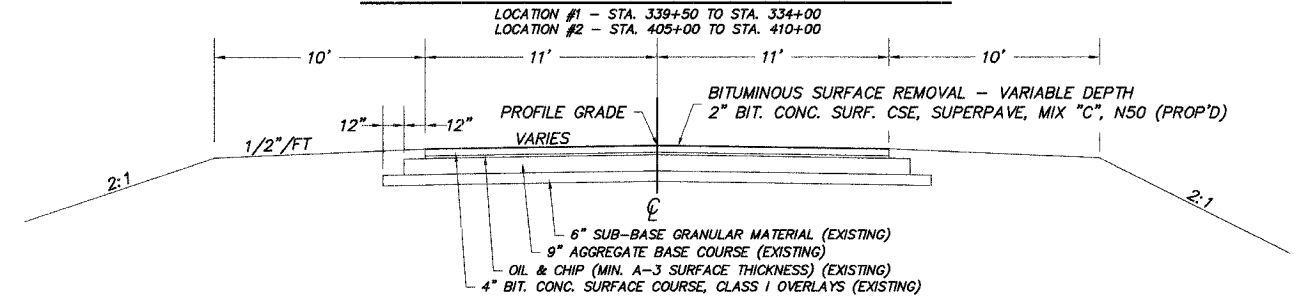
**SIGNING FOR ROAD CLOSURE (STRUC. NO. 001-3028 ONLY)**



**EXISTING TYPICAL CROSS SECTION**



**PROPOSED TYPICAL CROSS SECTION**



**GENERAL NOTES**

- WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE MOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKS AND MONUMENTS UNTIL THE OWNER OR AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.
- PAVEMENT MARKINGS SHALL BE DONE BY THE ADAMS COUNTY HIGHWAY DEPARTMENT UPON COMPLETION.
- THE UTILITY LOCATIONS NOTED ON THE PLANS ARE APPROXIMATE AND FOR REFERENCE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF THE UTILITY.
- THE SHOULDER AND SLOPE GRADING SHOWN ON THE CROSS SECTIONS IS FOR REFERENCE ONLY. FINAL GRADING AND SHAPING OF THE SHOULDERS AND SLOPES TO BE DONE BY THE ADAMS COUNTY HIGHWAY DEPARTMENT.

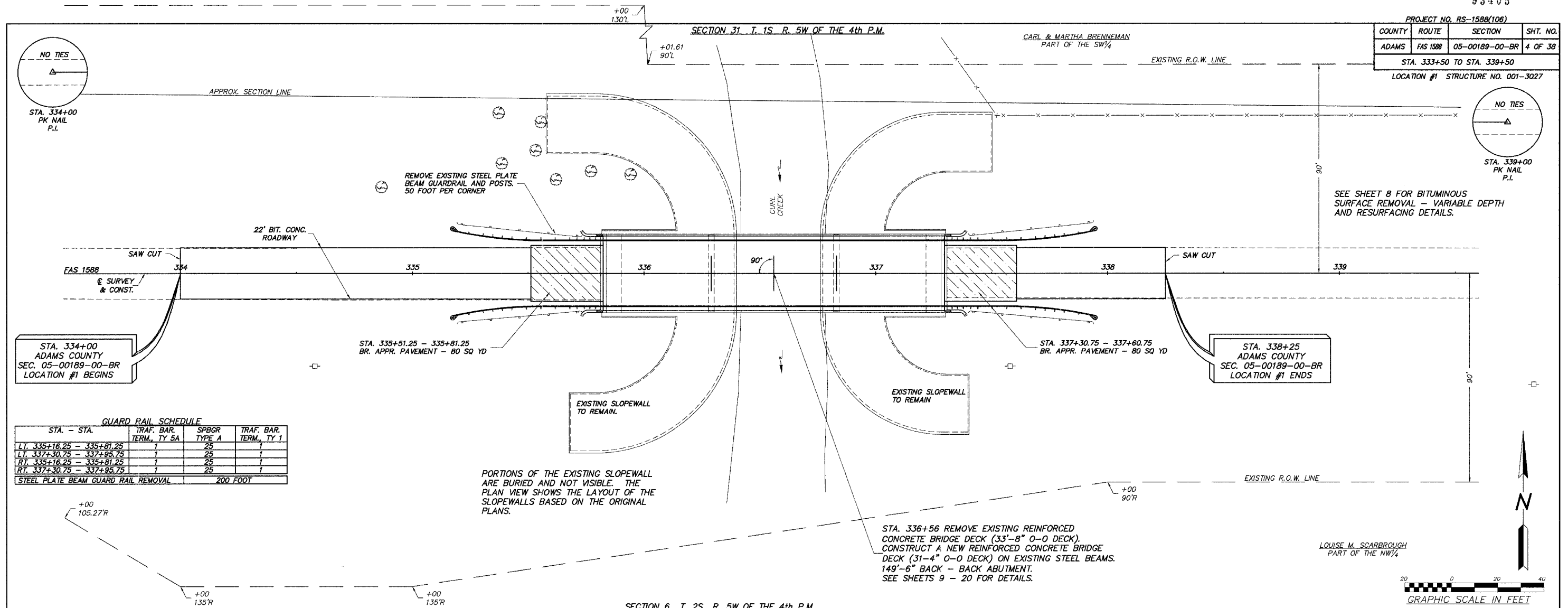
**BITUMINOUS CONCRETE MIXTURE REQUIREMENTS**

ITEM	AGGREGATE COMPOSITION	ASPHALT GRADE	ALLOWABLE RAP	VOIDS
SURFACE, SUPERPAVE	IL-9.5 MIX "C"	PG 64-22	15%	4.0% @ N50

**APPLICATION RATES**

BITUMINOUS MATERIALS (PRIME COAT)	0.05-0.25 GAL./SQ.YD.
BITUMINOUS CONCRETE MATERIALS	112#/SQ.YD. PER 1" THICK

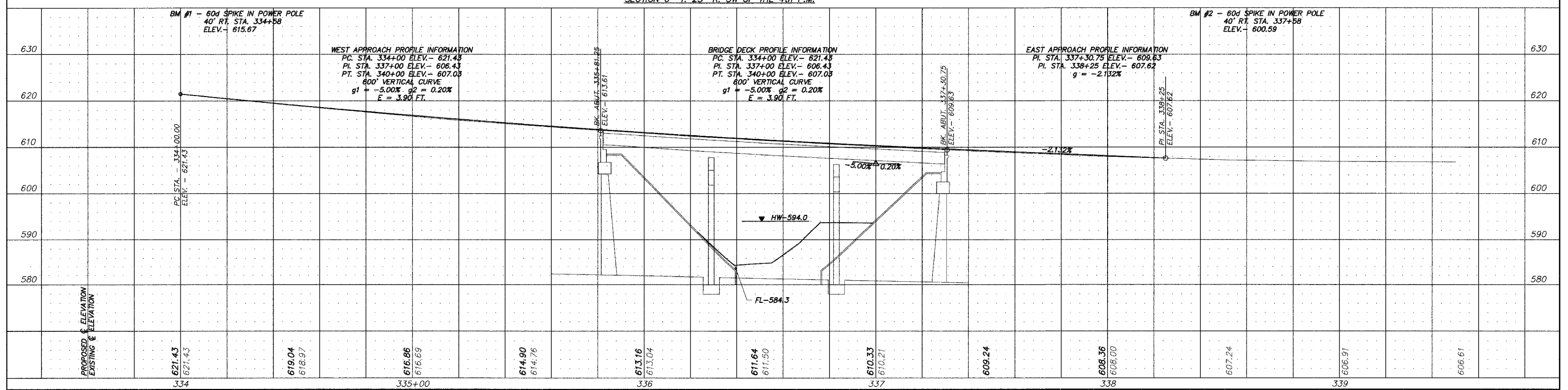
COUNTY	ROUTE	SECTION	SHT. NO.
ADAMS	FAS 1588	05-00189-00-BR	4 OF 38
STA. 333+50 TO STA. 339+50			
LOCATION #1 STRUCTURE NO. 001-3027			



**GUARD RAIL SCHEDULE**

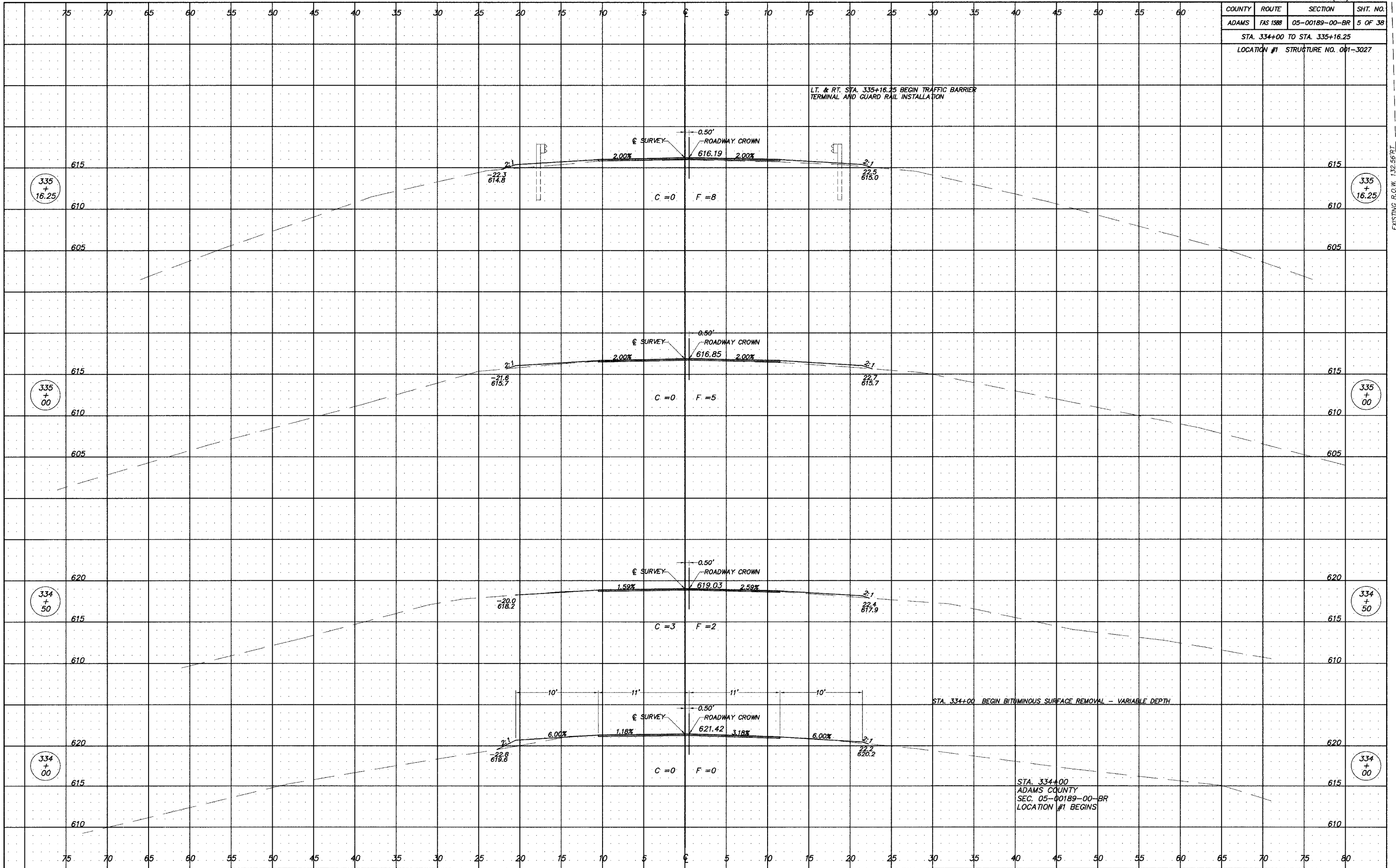
STA. - STA.	TRAF. BAR. TERM., TY SA	SPBGR TYPE A	TRAF. BAR. TERM., TY 1
LT. 335+16.25 - 335+81.25	1 25	25	1
LT. 337+30.75 - 337+95.75	1 25	25	1
RT. 335+16.25 - 335+81.25	1 25	25	1
RT. 337+30.75 - 337+95.75	1 25	25	1

STEEL PLATE BEAM GUARD RAIL REMOVAL 200 FOOT



COUNTY	ROUTE	SECTION	SHT. NO.
ADAMS	FAS 1388	05-00189-00-BR	5 OF 38
STA. 334+00 TO STA. 335+16.25			
LOCATION #1 STRUCTURE NO. 001-3027			

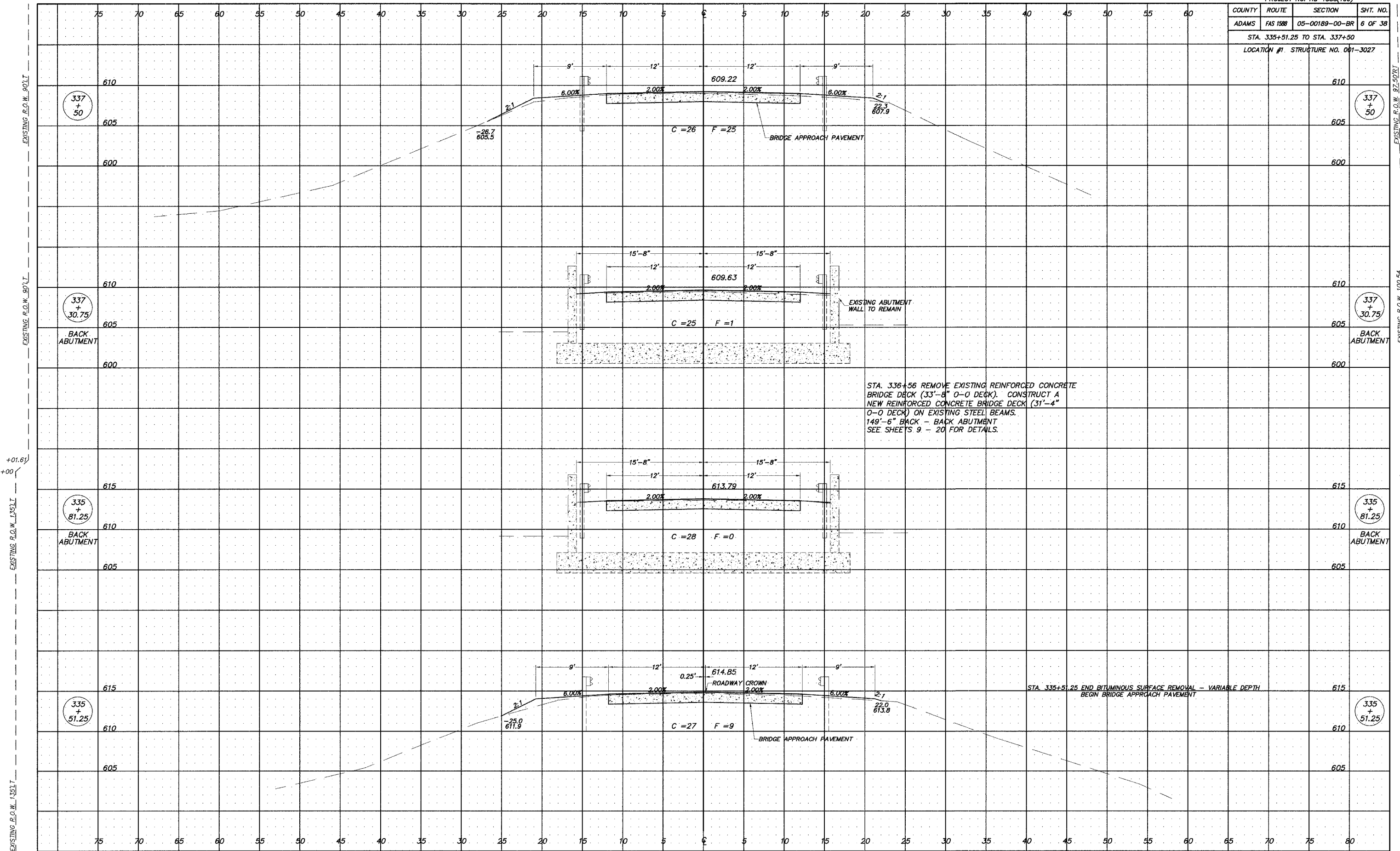
LT. & RT. STA. 335+16.25 BEGIN TRAFFIC BARRIER  
TERMINAL AND GUARD RAIL INSTALLATION



COUNTY	ROUTE	SECTION	SHT. NO.
ADAMS	FAS 1588	05-00189-00-BR	6 OF 38

STA. 335+51.25 TO STA. 337+50

LOCATION #1 STRUCTURE NO. 001-3027



STA. 336+56 REMOVE EXISTING REINFORCED CONCRETE BRIDGE DECK (33'-8" O-O DECK). CONSTRUCT A NEW REINFORCED CONCRETE BRIDGE DECK (31'-4" O-O DECK) ON EXISTING STEEL BEAMS. 149'-6" BACK - BACK ABUTMENT SEE SHEETS 9 - 20 FOR DETAILS.

STA. 335+51.25 END BITUMINOUS SURFACE REMOVAL - VARIABLE DEPTH BEGIN BRIDGE APPROACH PAVEMENT

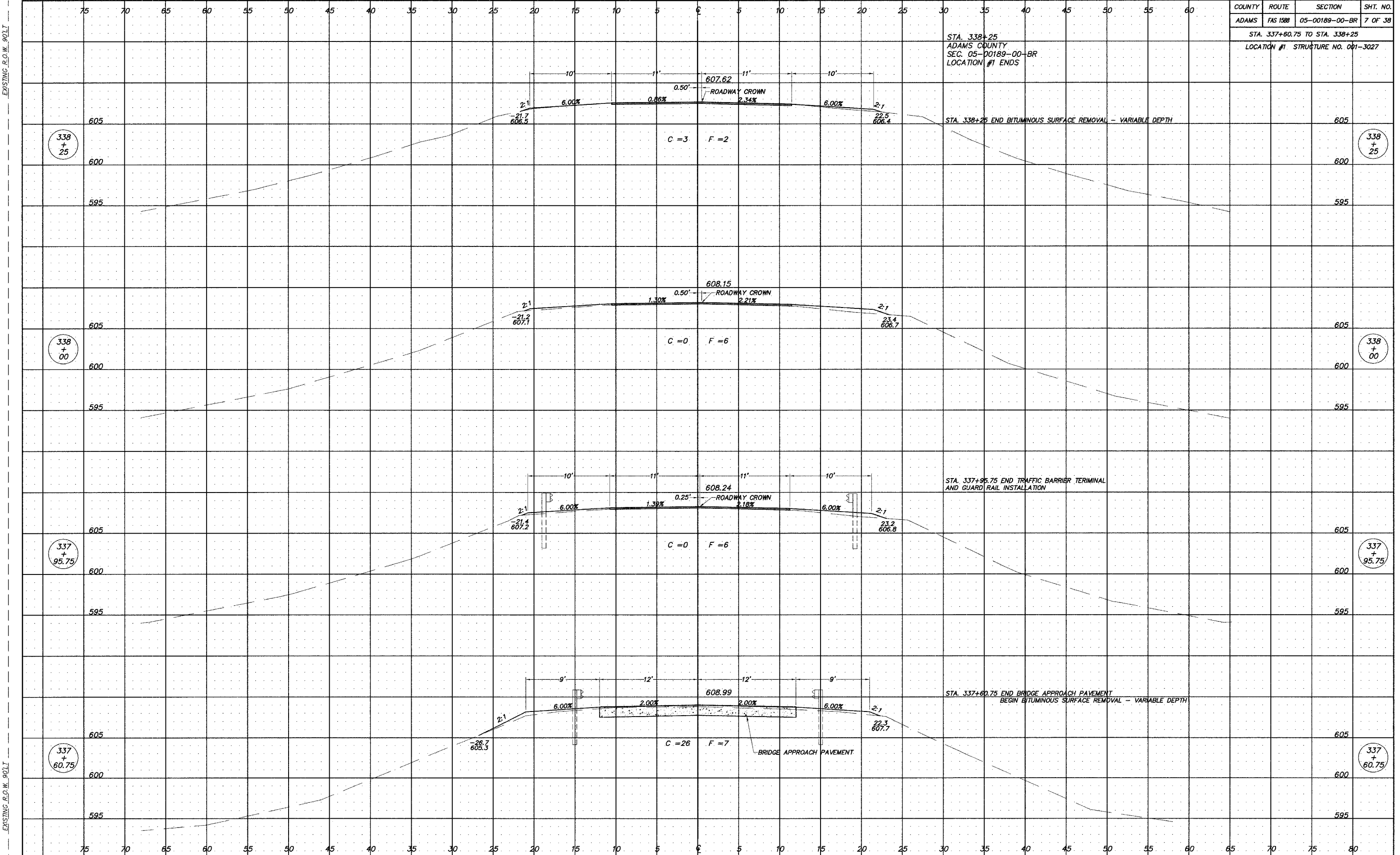
COUNTY	ROUTE	SECTION	SHT. NO.
ADAMS	FAS 1588	05-00189-00-BR	7 OF 38

STA. 337+60.75 TO STA. 338+25

LOCATION #1 STRUCTURE NO. 001-3027

EXISTING R.O.W. 90' LT

EXISTING R.O.W. 90' RT



STA. 338+25  
 ADAMS COUNTY  
 SEC. 05-00189-00-BR  
 LOCATION #1 ENDS

STA. 338+25 END BITUMINOUS SURFACE REMOVAL - VARIABLE DEPTH

STA. 337+95.75 END TRAFFIC BARRIER TERMINAL  
 AND GUARD RAIL INSTALLATION

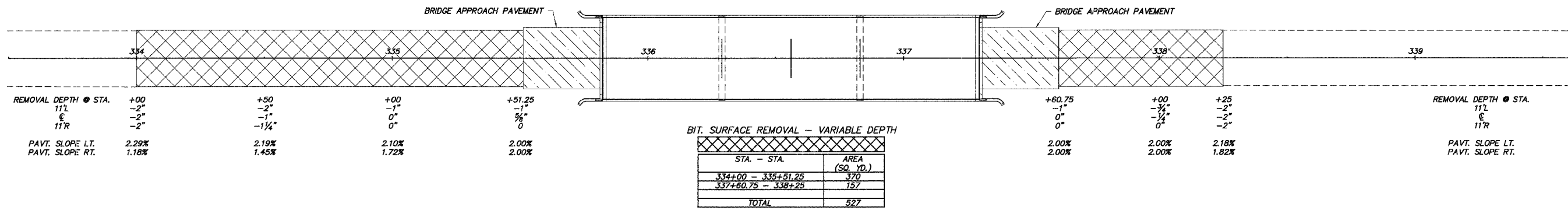
STA. 337+60.75 END BRIDGE APPROACH PAVEMENT  
 BEGIN BITUMINOUS SURFACE REMOVAL - VARIABLE DEPTH

EXISTING R.O.W. 90' LT

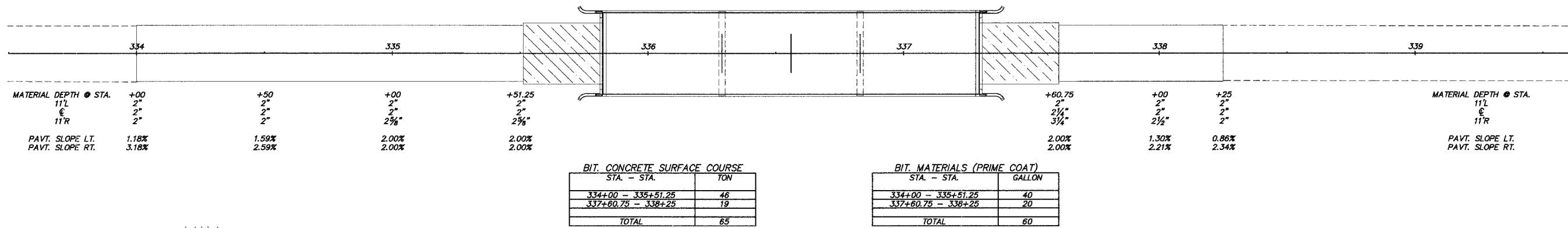
EXISTING R.O.W. 90' RT

COUNTY	ROUTE	SECTION NO.	SHT. NO.
ADAMS	FAS 1588	05-00189-00-BR	8 OF 38
BITUMINOUS SURFACE REMOVAL - VAR. DEPTH			
BITUMINOUS CONCRETE SURFACE COURSE			
END OF BRIDGE APPROACH PAVEMENT			
LOCATION #1 STRUCTURE NO. 001-3027			

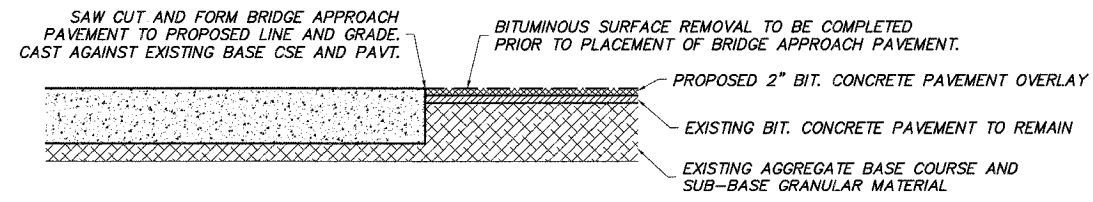
### BITUMINOUS SURFACE REMOVAL - VARIABLE DEPTH



### BITUMINOUS CONCRETE SURFACE COURSE



### END OF BRIDGE APPROACH PAVEMENT DETAIL





ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FAS RTE 1588	*	ADAMS	38	9
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT	

Location #1 Structure No. 001-3027  
\*05-00189-00-BR

Existing Structure - Single bridge built in 1958. Structure No. 001-3027 at Sta 336+56.  
The structure is a three span, wide flange steel beam bridge with open stub concrete abutments and solid concrete piers, 149'-6" back to back of abutments, 28'-0" roadway width and 0° skew.

Roadway will be closed during construction. Access to local properties shall be maintained during construction.  
No salvage.

BM #2 (Location #1)-  
60d Spike in Power Pole, 40' Rt. of Sta 337+58, Elevation = 600.59

**SCOPE OF WORK**

1. Remove deck, curbs, railing and top of abutment backwalls.
2. Remove existing rocker expansion bearings at abutments. Replace with elastomeric bearings.
3. Install shear connectors in positive moment areas of beam lines.
4. Construct 7 1/2" deck, top of abutment backwalls, preformed joint seals, steel bridge railing (special) and bridge approach pavements.

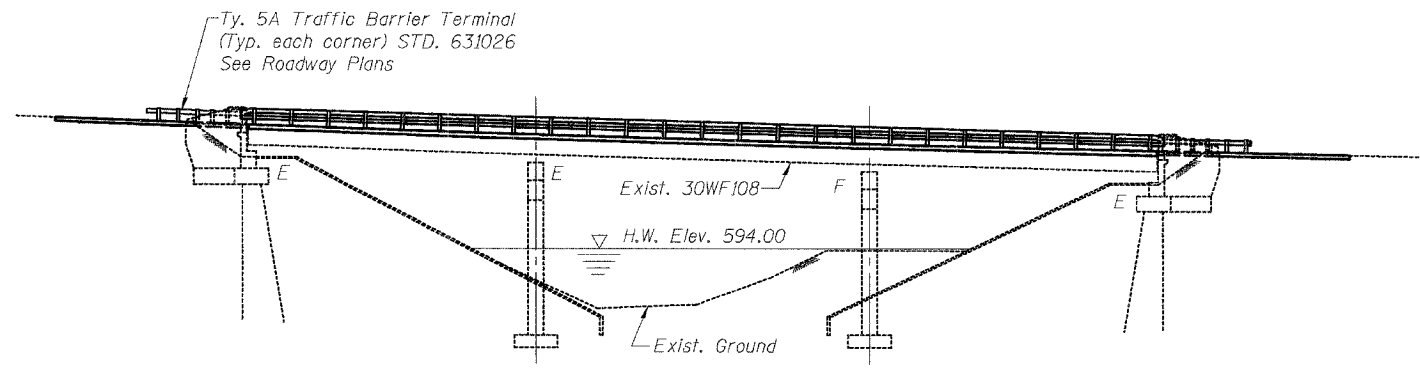
**GENERAL NOTES**

Painting of the existing structural steel will not be done under this contract.  
All new structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type 1. Final field painting will be required for the elastomeric bearing assemblies.  
Field welding of construction accessories will not be permitted to the bottom flange of beams nor to the top flange for a distance equal to one-fourth the span length each way from pier supports. Field welding in other areas will be permitted only when approved by the Engineer.  
Reinforcement bars shall conform to the requirements of AASHTO M31 or M322 Grade 60. Plan dimensions and details relative to existing structure have been taken from existing plans, and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variation shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.  
The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.  
All construction joints shall be bonded.  
Prior to pouring the new concrete deck, all loose rust, loose mill scale, and other loose potentially detrimental foreign material shall be removed from the surfaces of the beams or girders in contact with concrete. The cost of this work will be included in the pay item "Removal of Existing Concrete Deck". All heavy rust and other tightly adhered potentially detrimental foreign matter shall also be removed from the surfaces of the beams or girders in contact with concrete. Tightly adhered paint may remain unless otherwise noted. This removal shall be accomplished by methods that will not damage the steel. The cost of this work will be paid for according to Article 109.04.  
The structural steel bearing plates of the Elastomeric Bearing Assembly shall conform to the requirements of AASHTO M 270 Grade 50.

**INDEX OF SHEETS**

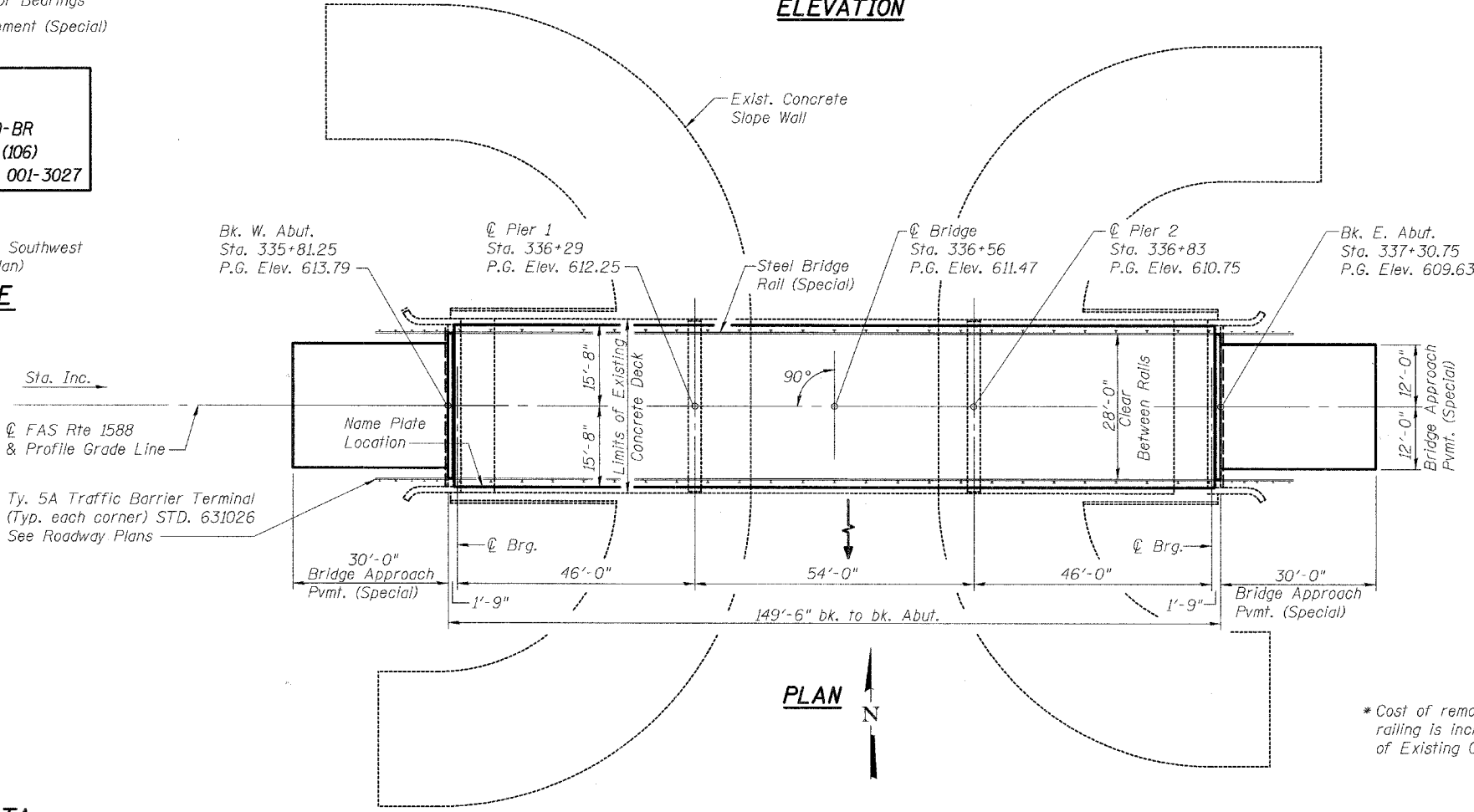
- 1 General Plan and Elevation
- 2-3 Top of Slab Elevations
- 4-5 Superstructure
- 6 Steel Bridge Rail (Special)
- 7 Structural Steel Details
- 8 Moment & Reaction Tables, Jack and Remove Existing Bearings
- 9 Type I Elastomeric Bearing
- 10 Type II Elastomeric Bearing
- 11 Anchor Bolt Details for Bearings
- 12 Bridge Approach Pavement (Special)

CURL CREEK  
REBUILT 200...  
SEC. 05-00189-00-BR  
PROJECT RS-1588 (106)  
LOADING HS20 STR. NO. 001-3027

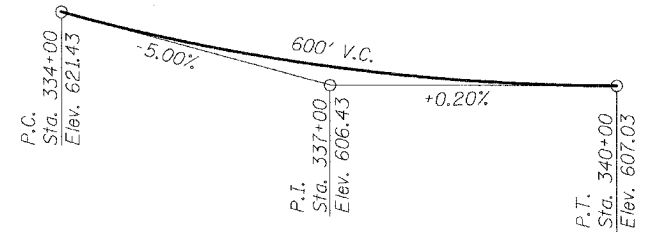


**ELEVATION**

Rail Mount Name Plate at Southwest Corner of Bridge (See Plan)  
**NAME PLATE**  
See Std. 515001 (1 Required)



**PLAN**



**PROFILE GRADE**  
(along E roadway)

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Name Plates	EACH	1		1
Removal of Existing Concrete Deck	EACH	1		1
Protective Coat	SQ YD	512		512
Elastomeric Bearing Assembly Type I	EACH	6		6
Elastomeric Bearing Assembly Type II	EACH	6		6
Concrete Superstructure	CU YD	116.0		116.0
Stud Shear Connectors	EACH	2,172		2,172
Reinforcement Bars, Epoxy Coated	POUND	26,880		26,880
Preformed Joint Seal 2 1/2"	FOOT	31.5		31.5
Preformed Joint Seal 4"	FOOT	31.5		31.5
Bridge Deck Grooving	SQ YD	458		458
Concrete Removal	CU YD	3.1		3.1
Jack and Remove Existing Bearings	Each	12		12
Steel Bridge Rail (Special)	FOOT	299		299
Bridge Approach Pavement (Special)	SQ YD	160		160

\*Cost of removing existing steel bridge railing is included in Pay Item "Removal of Existing Concrete Deck".

**SEISMIC DATA**

Seismic Performance Category (SPC) = A  
Bedrock Acceleration Coefficient (A) = 0.043  
Site Coefficient (S) = 1.0

**DESIGN SPECIFICATIONS**

17th Edition - 2002 AASHTO  
Load Factor Design  
**LOADING HS 20-44**  
Allow 50#/sq. ft. for future wearing surface.

**DESIGN STRESSES**

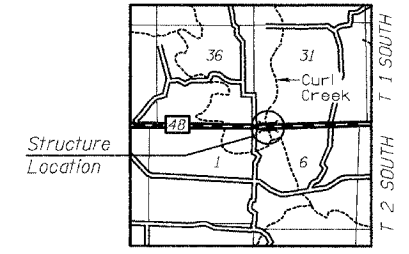
**FIELD UNITS**  
f'c = 2500 psi (existing)  
f'c = 3500 psi (new)  
fy = 60,000 psi (reinf.)  
fs = 18,000 psi (Existing Structure)

"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'."



Alan D. Lukens  
Licensed Structural Engineer  
State of Illinois No. 081-005167  
License Expires November 30, 2006  
Date: 01/25/06

4TH P.M.  
RANGE 6 WEST RANGE 5 WEST



**LOCATION SKETCH**

**KLINGNER & ASSOCIATES, P.C.**

Engineers / Architects  
616 North 24th Street (217) 223-3670  
Quincy, Illinois 62301 FAX: 223-3603  
Internet Address: www.klingner.com  
STATE OF ILLINOIS DESIGN FIRM # 1842738

REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
				F.A.S. RTE. 1588 OVER CURL CREEK SECTION 05-00189-00-BR Project RS-1588 (106) ADAMS COUNTY	12/05
<b>GENERAL PLAN AND ELEVATION STRUCTURE NUMBER 001-3027 STATION 336+56</b>					

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FAS RTE 1588	*	ADAMS	38	10
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT	
Location #1 Structure No. 001-3027				
* 05-00189-00-BR				
<b>SHEET NO. 2 OF 12</b>				

**BEAM 1**

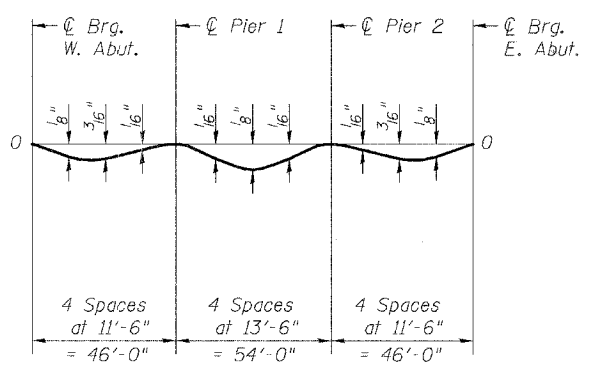
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	335+81.25	13.958' Lt.	613.500	613.500
⊕ Brg. W. Abut.	335+83.00	13.958' Lt.	613.440	613.440
A	335+93.00	13.958' Lt.	613.103	613.114
B	336+03.00	13.958' Lt.	612.775	612.791
C	336+13.00	13.958' Lt.	612.455	612.466
D	336+23.00	13.958' Lt.	612.144	612.147
⊕ Pier 1	336+29.00	13.958' Lt.	611.962	611.962
E	336+39.00	13.958' Lt.	611.664	611.668
F	336+49.00	13.958' Lt.	611.376	611.386
G	336+59.00	13.958' Lt.	611.096	611.107
H	336+69.00	13.958' Lt.	610.825	610.831
⊕ Pier 2	336+83.00	13.958' Lt.	610.460	610.460
I	336+93.00	13.958' Lt.	610.209	610.215
J	337+03.00	13.958' Lt.	609.968	609.982
K	337+13.00	13.958' Lt.	609.735	609.750
L	337+23.00	13.958' Lt.	609.510	609.517
⊕ Brg. E. Abut.	337+29.00	13.958' Lt.	609.380	609.380
Bk. E. Abut.	337+30.75	13.958' Lt.	609.342	609.342

**BEAM 2**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	335+81.25	8.375' Lt.	613.617	613.617
⊕ Brg. W. Abut.	335+83.00	8.375' Lt.	613.557	613.557
A	335+93.00	8.375' Lt.	613.220	613.231
B	336+03.00	8.375' Lt.	612.891	612.907
C	336+13.00	8.375' Lt.	612.572	612.583
D	336+23.00	8.375' Lt.	612.260	612.263
⊕ Pier 1	336+29.00	8.375' Lt.	612.078	612.078
E	336+39.00	8.375' Lt.	611.781	611.785
F	336+49.00	8.375' Lt.	611.492	611.502
G	336+59.00	8.375' Lt.	611.212	611.223
H	336+69.00	8.375' Lt.	610.941	610.947
⊕ Pier 2	336+83.00	8.375' Lt.	610.576	610.576
I	336+93.00	8.375' Lt.	610.326	610.332
J	337+03.00	8.375' Lt.	610.084	610.098
K	337+13.00	8.375' Lt.	609.851	609.866
L	337+23.00	8.375' Lt.	609.626	609.633
⊕ Brg. E. Abut.	337+29.00	8.375' Lt.	609.496	609.496
Bk. E. Abut.	337+30.75	8.375' Lt.	609.458	609.458

**BEAM 3**

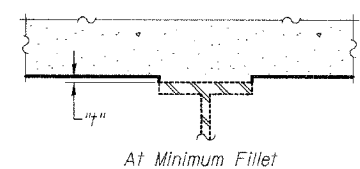
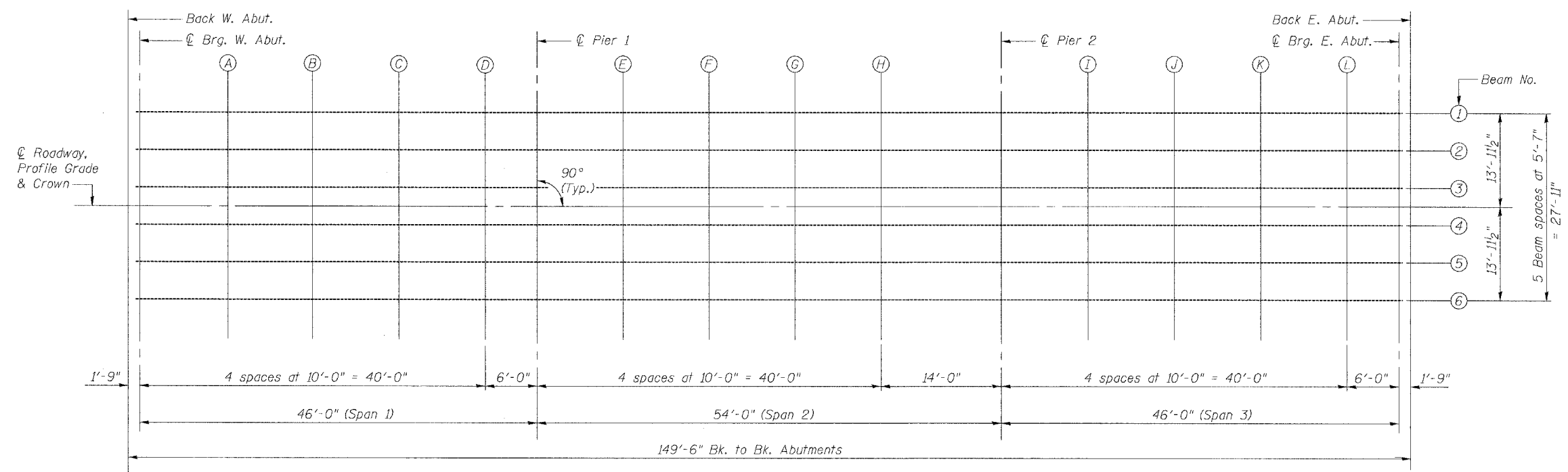
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	335+81.25	2.792' Lt.	613.733	613.733
⊕ Brg. W. Abut.	335+83.00	2.792' Lt.	613.673	613.673
A	335+93.00	2.792' Lt.	613.336	613.347
B	336+03.00	2.792' Lt.	613.008	613.024
C	336+13.00	2.792' Lt.	612.688	612.699
D	336+23.00	2.792' Lt.	612.377	612.380
⊕ Pier 1	336+29.00	2.792' Lt.	612.194	612.194
E	336+39.00	2.792' Lt.	611.897	611.901
F	336+49.00	2.792' Lt.	611.609	611.619
G	336+59.00	2.792' Lt.	611.329	611.340
H	336+69.00	2.792' Lt.	611.057	611.063
⊕ Pier 2	336+83.00	2.792' Lt.	610.692	610.692
I	336+93.00	2.792' Lt.	610.442	610.448
J	337+03.00	2.792' Lt.	610.200	610.214
K	337+13.00	2.792' Lt.	609.967	609.982
L	337+23.00	2.792' Lt.	609.743	609.750
⊕ Brg. E. Abut.	337+29.00	2.792' Lt.	609.612	609.612
Bk. E. Abut.	337+30.75	2.792' Lt.	609.575	609.575



**DEAD LOAD DEFLECTION DIAGRAM**

(Includes weight of concrete slab)

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 above and on Sheet #3 of 12.



**FILLET HEIGHTS**

To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at the stations shown on this sheet and on sheet #3 of 12. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown above and on Sheet #3 of 12, minus slab thickness, equals the fillet heights "t" above top flange of beams.

**PLAN**

Note: All dimensions in the plan are measured horizontally



Notes:  
All elevations are at top of concrete.

REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
	EAW				12/05
<b>F.A.S. RTE. 1588 OVER CURL CREEK</b> <b>SECTION 05-00189-00-BR</b> <b>Project RS-1588 (106)</b> <b>ADAMS COUNTY</b>					
<b>TOP OF SLAB ELEVATIONS</b> <b>STRUCTURE NUMBER 001-3027</b> <b>STATION 336+56</b>					

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ROUTE NO. FAS RTE 1588	SEC *	COUNTY ADAMS	TOTAL SHEETS 39	SHEET NO. 11
------------------------------	----------	-----------------	--------------------	-----------------

FED. ROAD DIST. NO. 7 ILLINOIS PROJECT  
Location #1 Structure No. 001-3027  
\* 05-00189-00-BR

**☉ ROADWAY, PROFILE GRADE, & CROWN**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	335+81.25	0.000	613.791	613.791
☉ Brg. W. Abut.	335+83.00	0.000	613.731	613.731
A	335+93.00	0.000	613.394	613.405
B	336+03.00	0.000	613.066	613.082
C	336+13.00	0.000	612.746	612.757
D	336+23.00	0.000	612.435	612.438
☉ Pier 1	336+29.00	0.000	612.252	612.252
E	336+39.00	0.000	611.955	611.959
F	336+49.00	0.000	611.667	611.677
G	336+59.00	0.000	611.387	611.398
H	336+69.00	0.000	611.116	611.122
☉ Pier 2	336+83.00	0.000	610.751	610.751
I	336+93.00	0.000	610.500	610.506
J	337+03.00	0.000	610.258	610.272
K	337+13.00	0.000	610.025	610.040
L	337+23.00	0.000	609.801	609.808
☉ Brg. E. Abut.	337+29.00	0.000	609.670	609.670
Bk. E. Abut.	337+30.75	0.000	609.633	609.633

**BEAM 4**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	335+81.25	2.792' Rt.	613.733	613.733
☉ Brg. W. Abut.	335+83.00	2.792' Rt.	613.673	613.673
A	335+93.00	2.792' Rt.	613.336	613.347
B	336+03.00	2.792' Rt.	613.008	613.024
C	336+13.00	2.792' Rt.	612.688	612.699
D	336+23.00	2.792' Rt.	612.377	612.380
☉ Pier 1	336+29.00	2.792' Rt.	612.194	612.194
E	336+39.00	2.792' Rt.	611.897	611.901
F	336+49.00	2.792' Rt.	611.609	611.619
G	336+59.00	2.792' Rt.	611.329	611.340
H	336+69.00	2.792' Rt.	611.057	611.063
☉ Pier 2	336+83.00	2.792' Rt.	610.692	610.692
I	336+93.00	2.792' Rt.	610.442	610.448
J	337+03.00	2.792' Rt.	610.200	610.214
K	337+13.00	2.792' Rt.	609.967	609.982
L	337+23.00	2.792' Rt.	609.743	609.750
☉ Brg. E. Abut.	337+29.00	2.792' Rt.	609.612	609.612
Bk. E. Abut.	337+30.75	2.792' Rt.	609.575	609.575

**BEAM 5**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	335+81.25	8.375' Rt.	613.617	613.617
☉ Brg. W. Abut.	335+83.00	8.375' Rt.	613.557	613.557
A	335+93.00	8.375' Rt.	613.220	613.231
B	336+03.00	8.375' Rt.	612.891	612.907
C	336+13.00	8.375' Rt.	612.572	612.583
D	336+23.00	8.375' Rt.	612.260	612.263
☉ Pier 1	336+29.00	8.375' Rt.	612.078	612.078
E	336+39.00	8.375' Rt.	611.781	611.785
F	336+49.00	8.375' Rt.	611.492	611.502
G	336+59.00	8.375' Rt.	611.212	611.223
H	336+69.00	8.375' Rt.	610.941	610.947
☉ Pier 2	336+83.00	8.375' Rt.	610.576	610.576
I	336+93.00	8.375' Rt.	610.326	610.332
J	337+03.00	8.375' Rt.	610.084	610.098
K	337+13.00	8.375' Rt.	609.851	609.866
L	337+23.00	8.375' Rt.	609.626	609.633
☉ Brg. E. Abut.	337+29.00	8.375' Rt.	609.496	609.496
Bk. E. Abut.	337+30.75	8.375' Rt.	609.458	609.458

**BEAM 6**

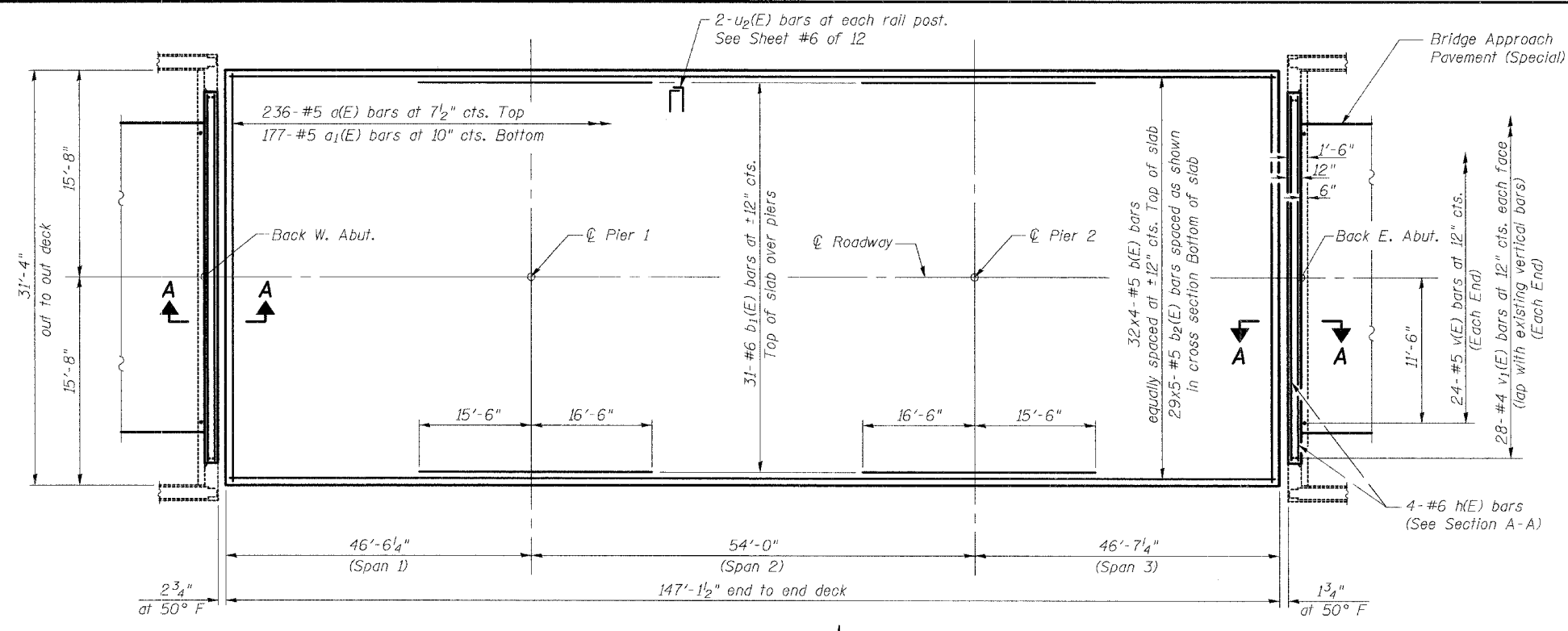
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	335+81.25	13.958' Rt.	613.500	613.500
☉ Brg. W. Abut.	335+83.00	13.958' Rt.	613.440	613.440
A	335+93.00	13.958' Rt.	613.103	613.114
B	336+03.00	13.958' Rt.	612.775	612.791
C	336+13.00	13.958' Rt.	612.455	612.466
D	336+23.00	13.958' Rt.	612.144	612.147
☉ Pier 1	336+29.00	13.958' Rt.	611.962	611.962
E	336+39.00	13.958' Rt.	611.664	611.668
F	336+49.00	13.958' Rt.	611.376	611.386
G	336+59.00	13.958' Rt.	611.096	611.107
H	336+69.00	13.958' Rt.	610.825	610.831
☉ Pier 2	336+83.00	13.958' Rt.	610.460	610.460
I	336+93.00	13.958' Rt.	610.209	610.215
J	337+03.00	13.958' Rt.	609.968	609.982
K	337+13.00	13.958' Rt.	609.735	609.750
L	337+23.00	13.958' Rt.	609.510	609.517
☉ Brg. E. Abut.	337+29.00	13.958' Rt.	609.380	609.380
Bk. E. Abut.	337+30.75	13.958' Rt.	609.342	609.342

Notes:  
Work this sheet with Sheet #2 of 12.

REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
				F.A.S. RTE. 1588 OVER CURL CREEK SECTION 05-00189-00-BR Project RS-1588 (106) ADAMS COUNTY	12/05
<b>TOP OF SLAB ELEVATIONS STRUCTURE NUMBER 001-3027 STATION 336+56</b>					

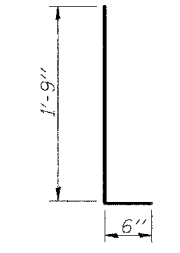
ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FAS RTE 1588	*	ADAMS	38	12

FED. ROAD DIST. NO. 7 ILLINOIS PROJECT  
 Location #1 Structure No. 001-3027  
 \* 05-00189-00-BR



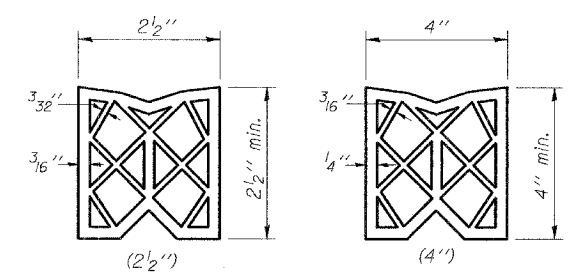
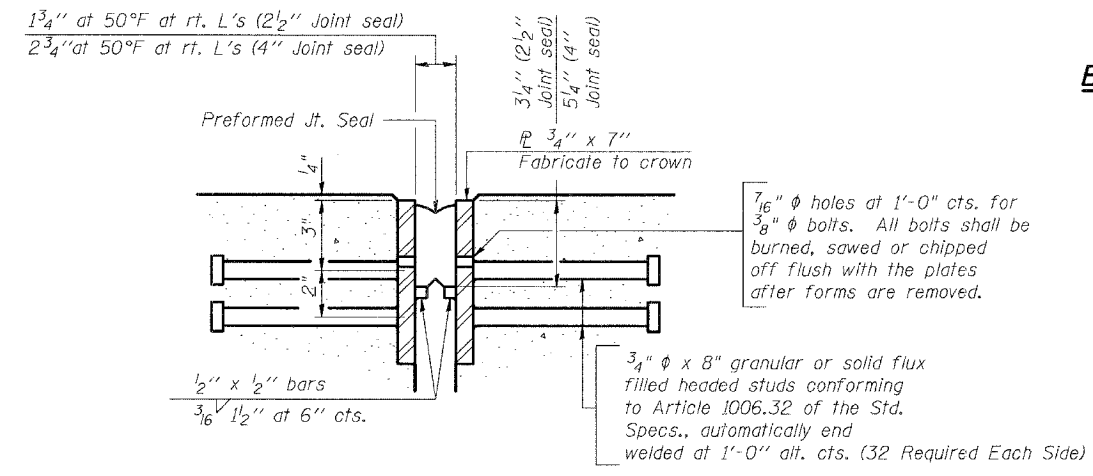
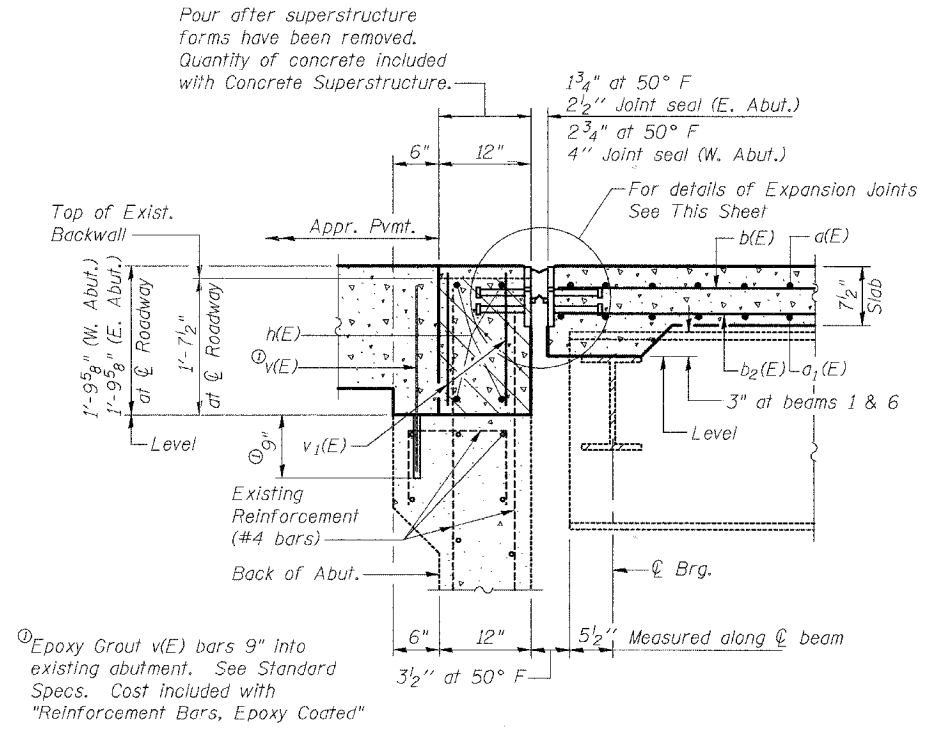
Notes:  
 Reinforcement bars designated (E) shall be epoxy coated.  
 Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.  
 Adjust location of reinforcement bar in deck to miss Steel Rail Posts.  
 Minimum bar lap of #5 bars = 2'-2".  
 See Sheet #5 of 12 for Cross Section, Top of Abutment Backwall Removal, and Abutment Backwall Elevation.  
 Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.  
 Hatched areas indicate Concrete Removal.

PLAN



SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	236	#5	31'-1"	—
a <sub>1</sub> (E)	177	#5	31'-1"	—
b(E)	128	#5	38'-5"	—
b <sub>1</sub> (E)	62	#6	32'-0"	—
b <sub>2</sub> (E)	145	#5	31'-2"	—
h(E)	8	#6	27'-10"	—
v(E)	48	#5	2'-0"	—
v <sub>1</sub> (E)	112	#4	1'-2"	—
u <sub>2</sub> (E)	100	#4	2'-3"	—
Reinforcement Bars, Epoxy Coated			POUND	26,880
Concrete Superstructure			CU. YD.	116.0
Concrete Removal			CU. YD.	3.1
Protective Coat			SQ. YD.	512
Bridge Deck Grooving			SQ. YD.	458



GENERAL NOTES

Furnish steel plates in segments of 20 feet maximum length. Maximum space between installed segments shall be 3/16". Seal space with silicone sealant suitable for structural steel.  
 Cost of Structural Steel Plates, studs and bars shall be included in the unit price for Preformed Joint Seal.

BILL OF MATERIAL

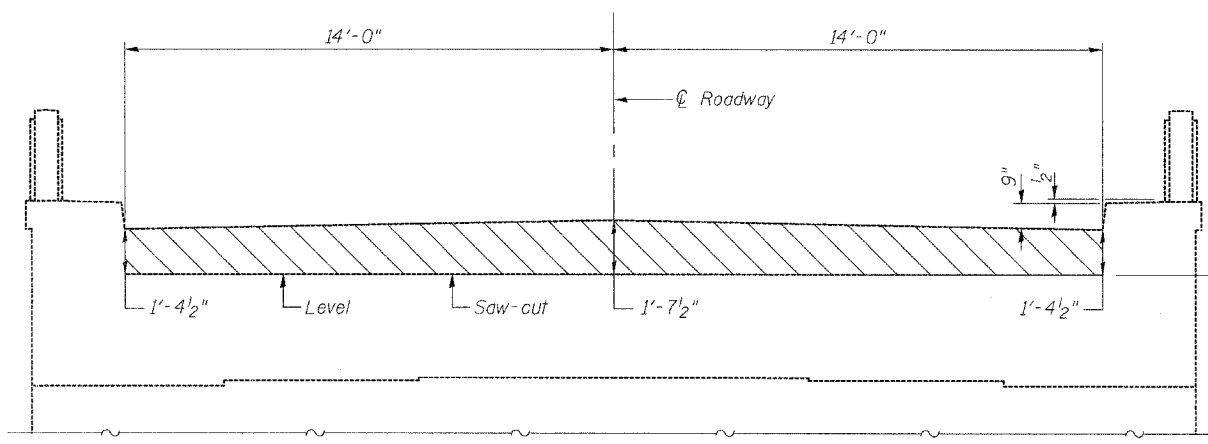
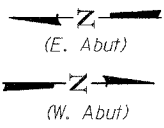
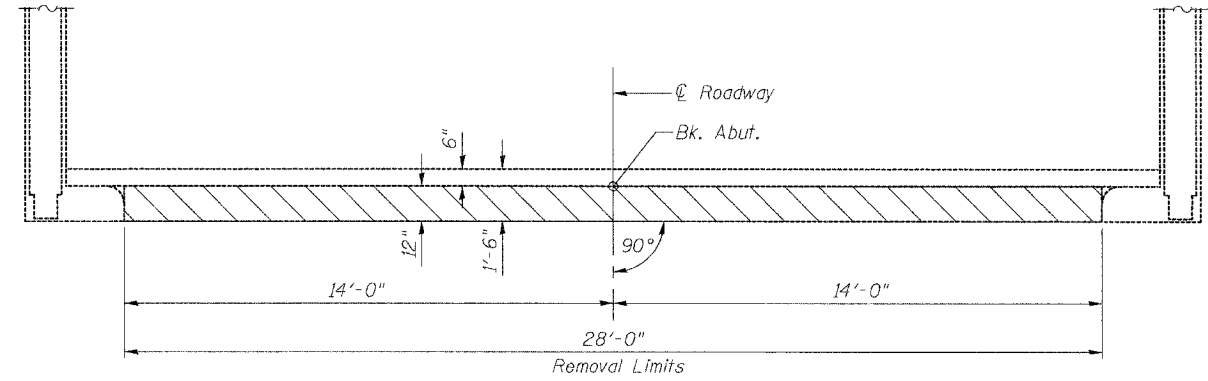
Item	Unit	Total
Preformed Joint Seal 2 1/2"	FOOT	31.5
Preformed Joint Seal 4"	FOOT	31.5

REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
	EAW				12/05
F.A.S. RTE. 1588 OVER CURL CREEK SECTION 05-00189-00-BR Project RS-1588 (106) ADAMS COUNTY SUPERSTRUCTURE STRUCTURE NUMBER 001-3027 STATION 336+56					

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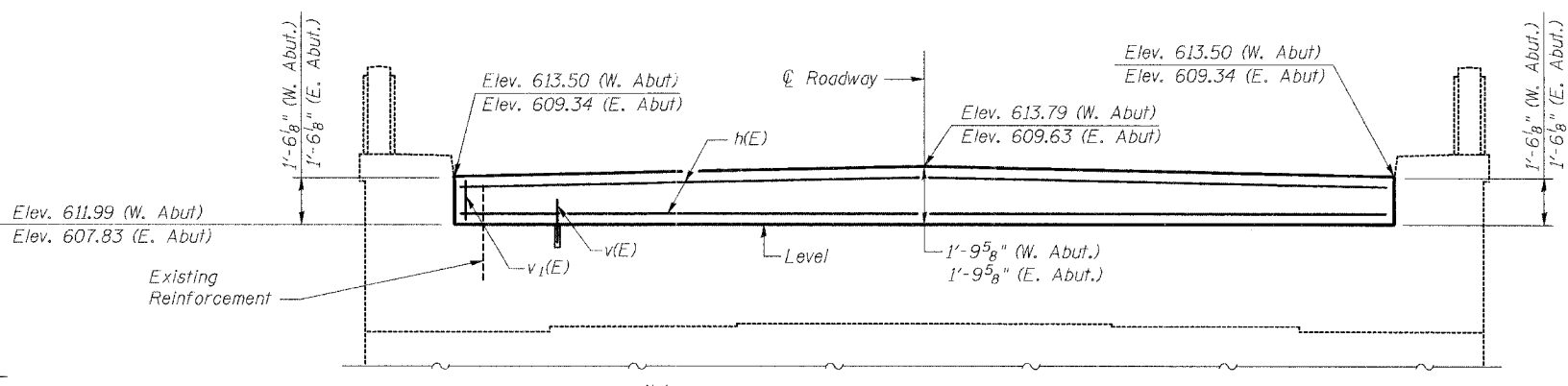
ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FAS RTE 1588	*	ADAMS	38	13

FED. ROAD DIST. NO. 7 ILLINOIS PROJECT  
 Location #1 Structure No. 001-3027  
 \* 05-00189-00-BR

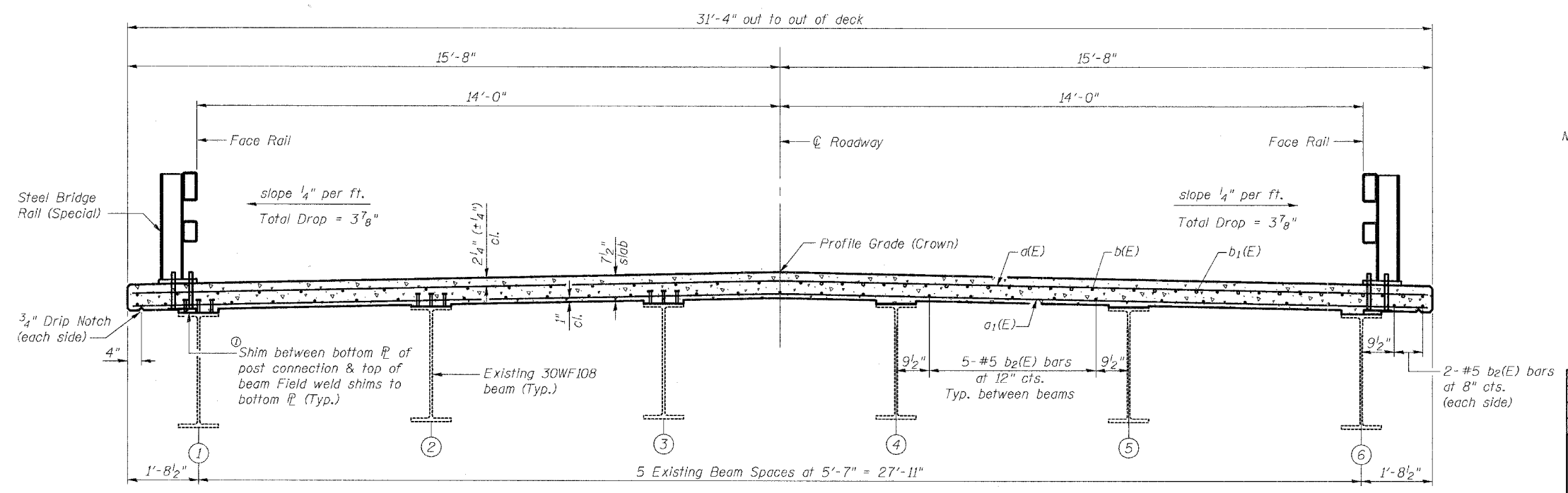


Note: Elevations and vertical dimensions are at back of abutment.

**TOP OF ABUTMENT BACKWALL REMOVAL**



Note: Elevations and vertical dimensions are at back of abutment.



Notes: Hatched areas indicate Concrete Removal. See Sheet #4 of 12 for Plan & Superstructure Bill of Material.

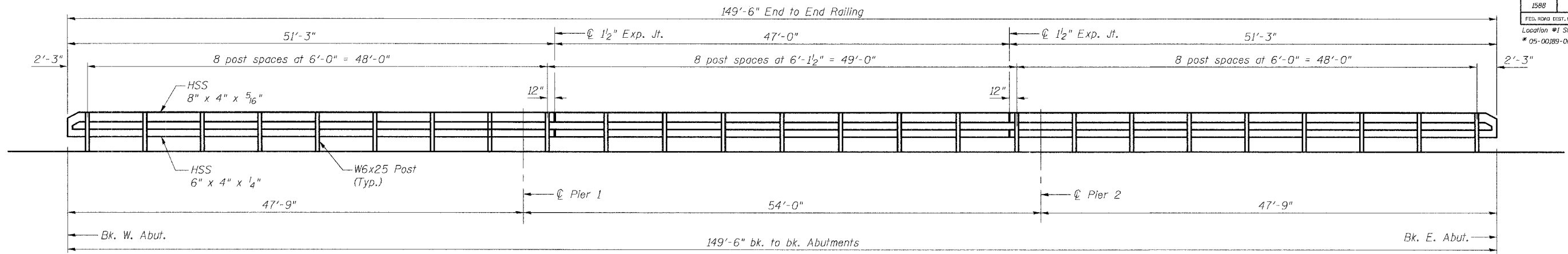
① Cost included with "Steel Bridge Rail (Special)"

REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
	BGJ				12/05
F.A.S. RTE. 1588 OVER CURL CREEK SECTION 05-00189-00-BR Project RS-1588 (106) ADAMS COUNTY SUPERSTRUCTURE STRUCTURE NUMBER 001-3027 STATION 336+56					

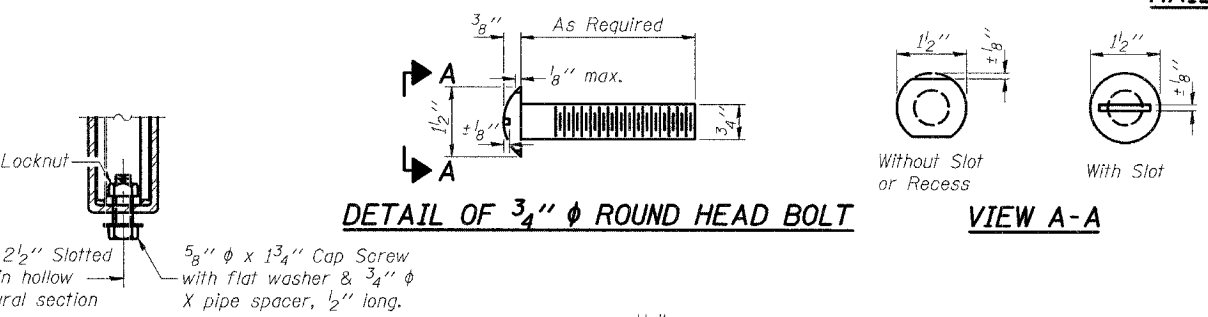
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ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FAS RTE 1588	*	ADAMS	38	14

FED. ROAD DIST. NO. 7 ILLINOIS PROJECT  
 Location #1 Structure No. 001-3027  
 \* 05-00189-00-BR



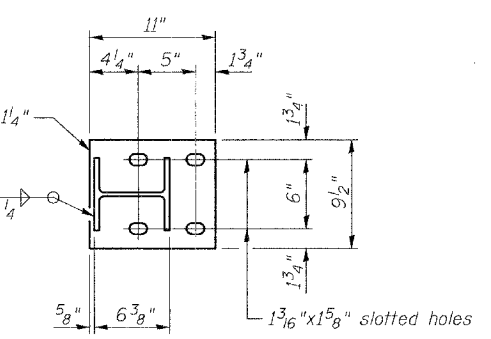
**RAILING ELEVATION**



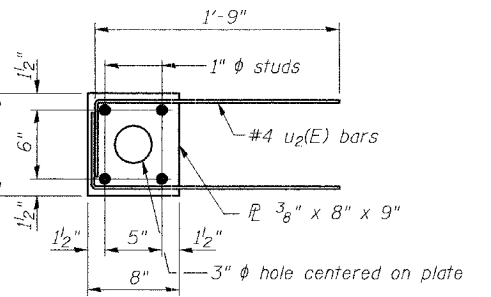
**DETAIL OF 3/4" phi ROUND HEAD BOLT**

**VIEW A-A**

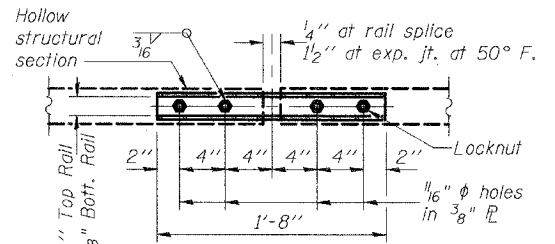
**RAIL SPLICE CONNECTION AT EXPANSION JT.**



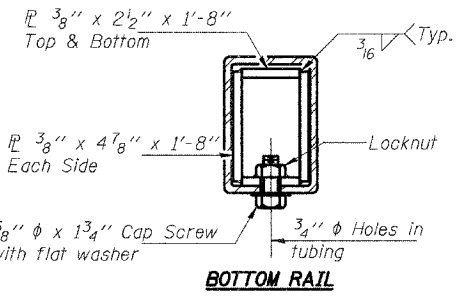
**SECTION B-B**



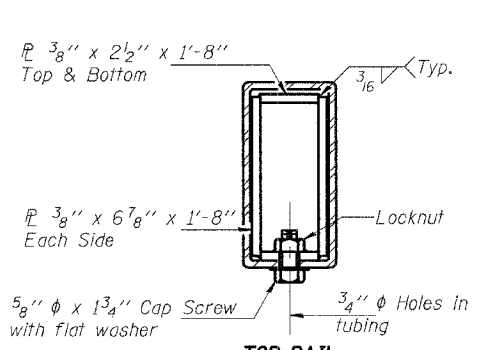
**SECTION C-C**



**PLAN-BOTT. SPLICE P TYPICAL**

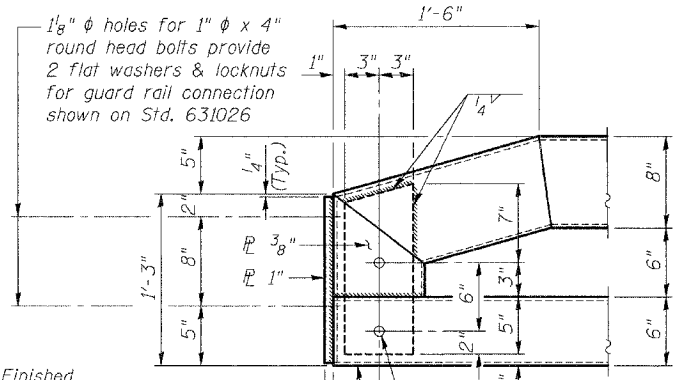


**BOTTOM RAIL**

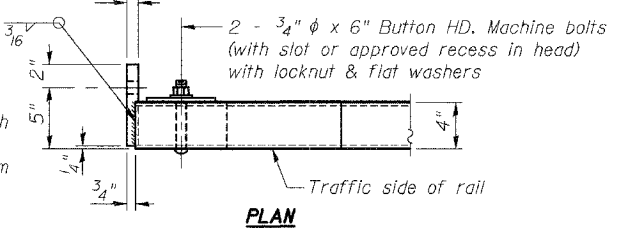


**TOP RAIL**

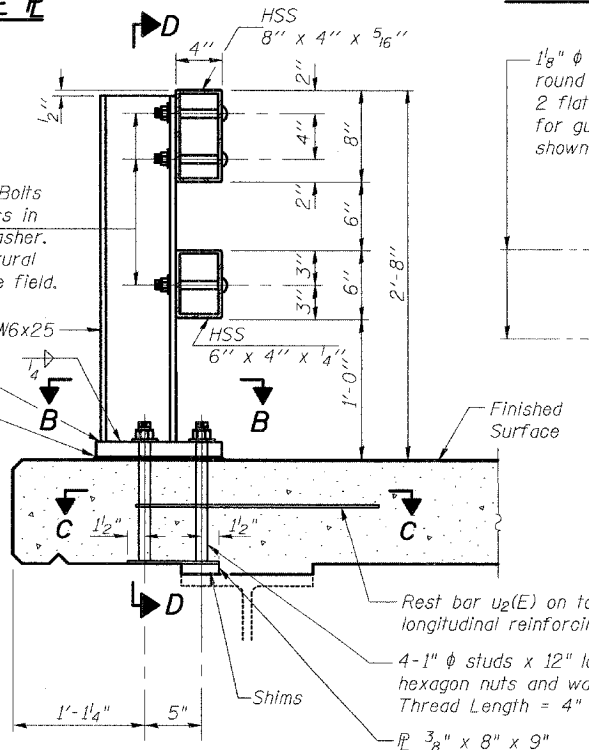
**SECTIONS AT RAIL SPLICE**



**ELEVATION**



**PLAN**



**SECTION AT RAIL POST**

**NOTES**

Hollow structural sections shall conform to the requirements of ASTM designation A 500 Grade B Structural Steel Tubing and shall meet the longitudinal CVN requirements of 15 ft-lbs at 0° F.  
 All other steel shapes and plates shall conform to the requirements of AASHTO M 270 Grade 36 except posts shall conform to AASHTO M 270, Grade 50.  
 Bolts, cap screws, and nuts shall conform to the requirements of ASTM designation A 307 except for high strength bolts, nuts and washers noted which shall conform to AASHTO M 164.  
 All bolts, nuts, cap screws, washers and lock washers shall be galvanized according to AASHTO M 232.  
 All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication according to AASHTO M 111 and ASTM A 385. Galvanized rail shall not be painted.  
 Railing shall be according to Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per foot for Steel Bridge Rail (Special).  
 All field drilled holes shall be coated with an approved zinc rich paint before erection.  
 For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Bridge Rail (Special).  
 All posts shall be cut on bottom to match deck slope. Posts shall be vertical.  
 The quantity of u<sub>2</sub>(E) bars are included in the superstructure bill of materials on sheet #4 of 12.  
 The 1" phi bolts connecting the post base to the concrete deck shall be drawn up tight and the threads burred at the face of the nut with a pointed tool.  
 The lower portion of the post base in contact with concrete shall have 1/8" fabric bearing pads of same dimensions as section B-B between the plates and the concrete.

**BILL OF MATERIAL**

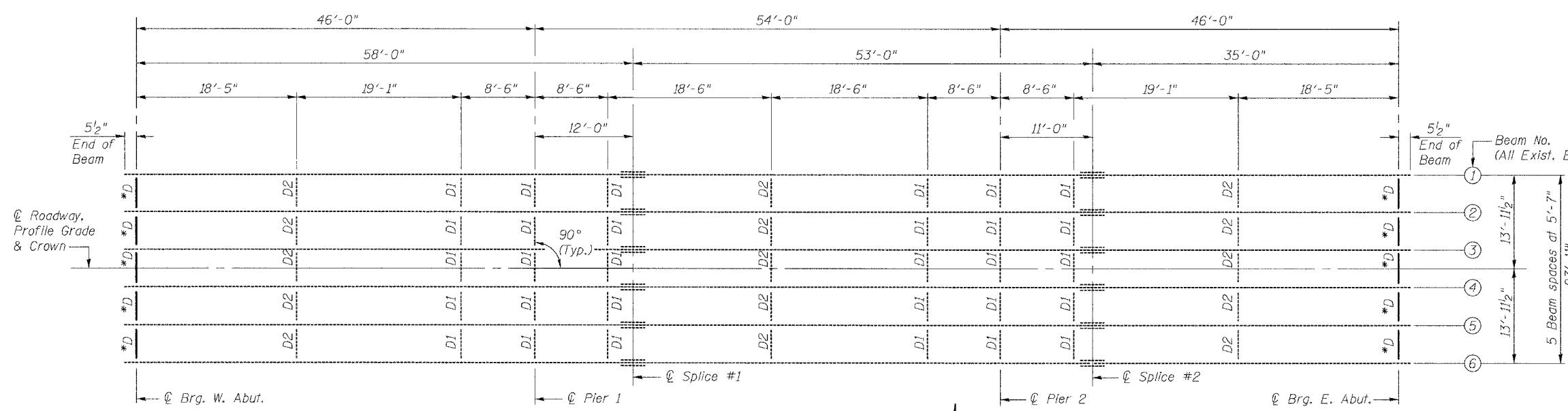
Item	Unit	Quantity
Steel Bridge Rail (Special)	FOOT	299

REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
	BGJ				12/05
<b>F.A.S. RTE. 1588 OVER CURL CREEK</b> <b>SECTION 05-00189-00-BR</b> <b>Project RS-1588 (106)</b> <b>ADAMS COUNTY</b>					
<b>STEEL BRIDGE RAIL (SPECIAL)</b> <b>STRUCTURE NUMBER 001-3027</b> <b>STATION 336+56</b>					

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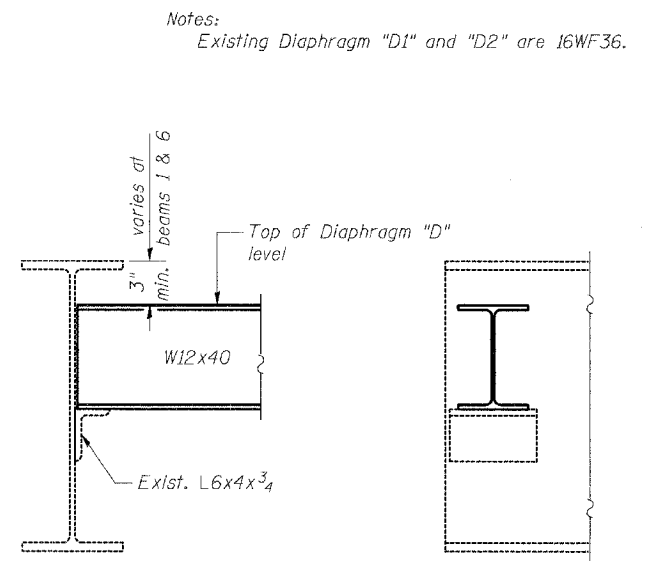
ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FAS RTE 1588	*	ADAMS	38	15

FED. ROAD DIST. NO. 7 ILLINOIS PROJECT  
 Location #1 Structure No. 001-3027  
 \* 05-00189-00-BR



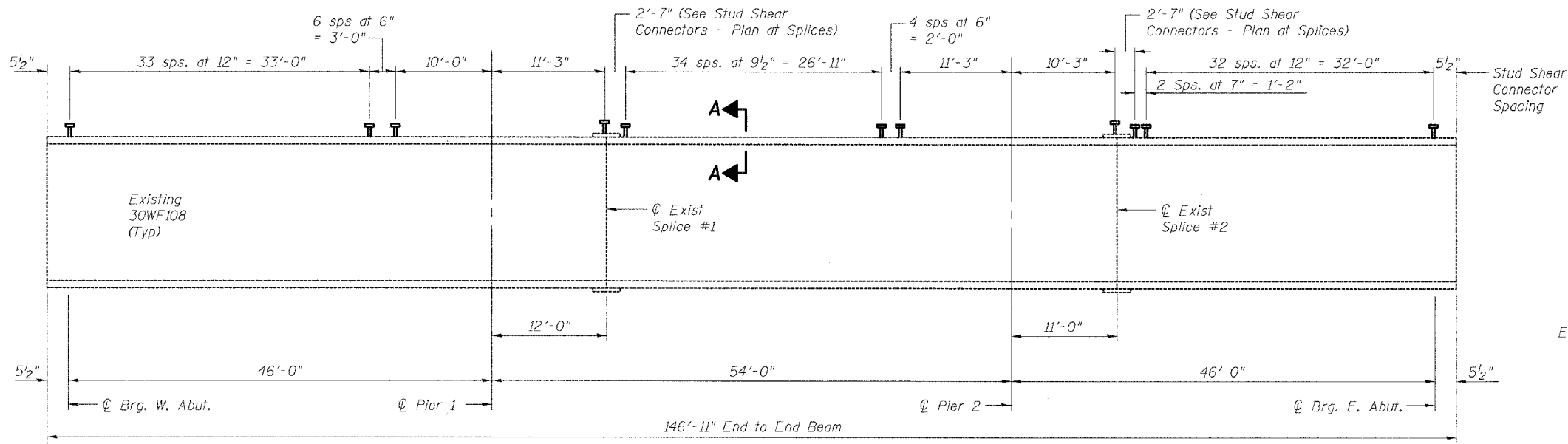
**FRAMING PLAN**

Note: All dimensions in the plan are measured horizontally



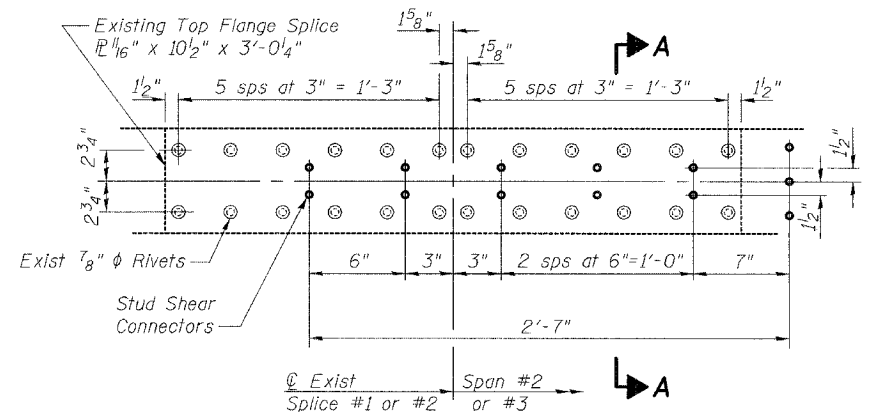
\* End Diaphragms, D, to be removed and replaced in accordance with Article 109.04 of the Standard Specifications. End Diaphragms, D, will be fabricated by Adam's County.

**END DIAPHRAGM, D**

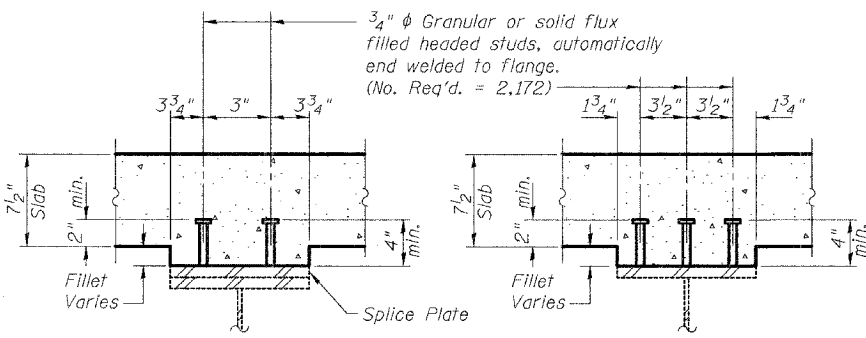


**BEAM ELEVATION**

Notes:  
 Adjust stud shear connector spacing in field to miss posts of the Steel Bridge Rail (Special). See sheet #6 of 12.



**STUD SHEAR CONNECTORS - PLAN AT SPLICES**



**SECTION A-A**  
 (OVER EXISTING SPLICE PLATES ONLY)

REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
	EAW				12/05
<b>F.A.S. RTE. 1588 OVER CURL CREEK</b> <b>SECTION 05-00189-00-BR</b> <b>Project RS-1588 (106)</b> <b>ADAMS COUNTY</b>					
<b>STRUCTURAL STEEL DETAILS</b> <b>STRUCTURE NUMBER 001-3027</b> <b>STATION 336+56</b>					

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 1/25/2006  
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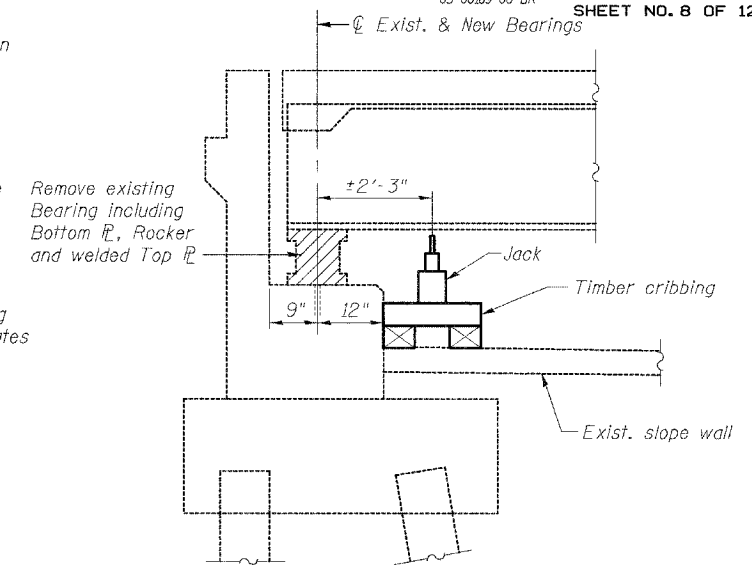
ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
FAS RTE 1588	*	ADAMS	38	16
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT	

Location #1 Structure No. 001-3027  
 \* 05-00189-00-BR

SHEET NO. 8 OF 12

**JACK AND REMOVE EXISTING BEARINGS PROCEDURES**

- Jacking and Cribbing shall be done after existing deck removal is completed.
- The Contractor shall submit for approval by the Engineer plans for jacking and cribbing, prior to commencing any work at the bearings. The maximum dead load reaction with the deck removed (per bearing) at the east and west abutments = 3 kips. The minimum jack capacity at each beam shall be 6 kips at the east and west abutments.
- Top of beam elevations shall be measured prior to jacking and shall remain the same after bearings are in place.
- There shall be at least one Jack per bearing and the jack shall be placed close to the bearing. The steel shall be raised a maximum of 1/4" and shall be blocked in position until after the completion of the installation of new bearings.
- Burn the existing anchor bolts flush with the concrete surface, grind smooth, and seal with epoxy. The rockers and top and bottom plates shall be removed. The top plate shall be removed using the air-arc method. Grind smooth all weld material remaining on the bottom flange. Cost of removing anchor bolts, rockers, top plates, and bottom plates shall be included with "Jack and Remove Existing Bearings."
- Anchor bolts shall be set before bolting diaphragms over supports.
- The new concrete abutment seats, elastomeric bearings, and end diaphragms shall be in place and the jacks lowered before the new concrete deck is poured.



**AT EAST AND WEST ABUTMENTS**  
 (Dimensions at Rt L's)  
**EXISTING BEARING REMOVAL DETAIL**

	0.4 Sp. 1 & 0.6 Sp. 3	Piers 1 & 2	0.5 Sp. 2
$I_s$ (in <sup>4</sup> )	4461	4461	4461
$I_c$ (n) (in <sup>4</sup> )	12156		12156
$I_c$ (3n) (in <sup>4</sup> )	8857		8857
$S_s$ (in <sup>3</sup> )	299	299	299
$S_c$ (n) (in <sup>3</sup> )	448		448
$S_c$ (3n) (in <sup>3</sup> )	403		403
$D$ (k/')	0.68	0.96	0.68
$M_D$ (k)	104	230	77
$s_D$ (k/')	0.28		0.28
$M_s D$ (k)	47		43
$M_L$ (k)	242	129	248
$M$ (Imp) (k)	71	37	69
$5/3[M_L + M(\text{Imp})]$ (k)	522	277	528
$M_a$ (k)	874	659	843
$f_s D$ non-comp (ksi)	4.2	9.2	3.1
$f_s D$ (comp) (ksi)	1.4		1.3
$f_s 5/3(L + \text{Imp})$ (ksi)	14.0	11.1	14.1
$f_s$ (Overload) (ksi)	19.5	20.3	18.5
$f_s$ (Total) (ksi)	25.4	26.4	24.1
VR (kips)	40.0		42.6

	W. & E. Abuts.	Piers 1 & 2
$R_D$ (kips)	17.1	53.0
$R_L$ (kips)	28.2	33.9
Imp. (kips)	8.2	7.6
$R$ (Total) (kips)	53.5	94.5

$I_s$  and  $S_s$  are the moment of inertia and section modulus of the steel section used in computing  $f_s$  (Total & Overload).

$I_c(n)$  and  $S_c(n)$  are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.

$I_c(3n)$  and  $S_c(3n)$  are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads. (see AASHTO 10.38)

VR is the maximum Live Load + Impact shear range in span.

$M_a$  (Applied Moment) =  $1.3[M_D + M_s D + 5/3(M_L + M_{\text{Imp}})]$ .

$f_s$  (Overload) is the sum of the stresses due to  $M_D + M_s D + 5/3(M_L + M_{\text{Imp}})$ .

$f_s$  (Total) is the sum of the stresses due to  $1.3[M_D + M_s D + 5/3(M_L + M_{\text{Imp}})]$ .

$M_D$  - Moment due to dead loads on non-composite section.

$M_s D$  - Moment due to dead loads on composite section.

$M_L$  - Moment due to live load on non-composite or composite section.

$M(\text{Imp})$  - Moment due to live load impact on non-composite or composite section.

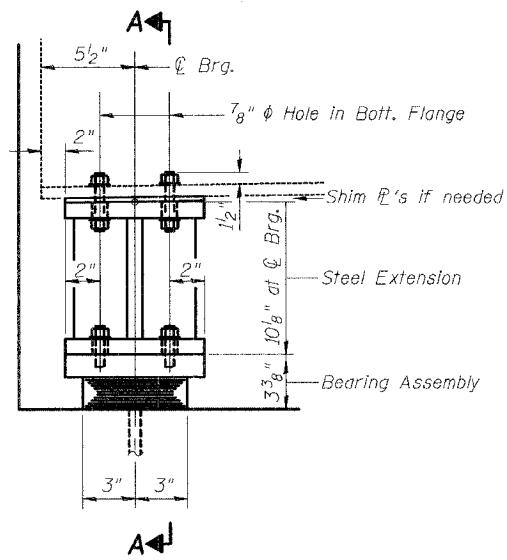
**BILL OF MATERIAL**

Item	Unit	Total
Jack and Remove Existing Bearings	Each	12

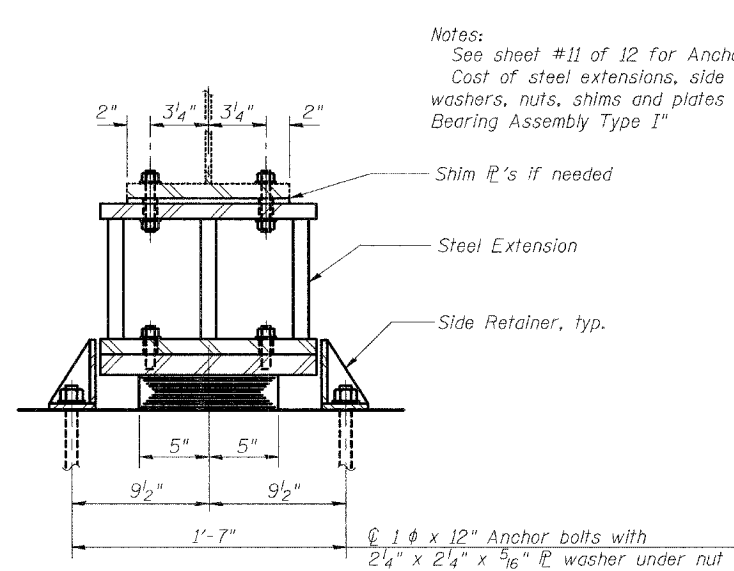
REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
	EAW				12/05
<b>F.A.S. RTE. 1588 OVER CURL CREEK</b> <b>SECTION 05-00189-00-BR</b> <b>Project RS-1588 (106)</b> <b>ADAMS COUNTY</b>					
<b>MOMENT &amp; REACTION TABLES,</b> <b>JACK AND REMOVE EXISTING BEARINGS</b> <b>STRUCTURE NUMBER 001-3027</b> <b>STATION 336+56</b>					



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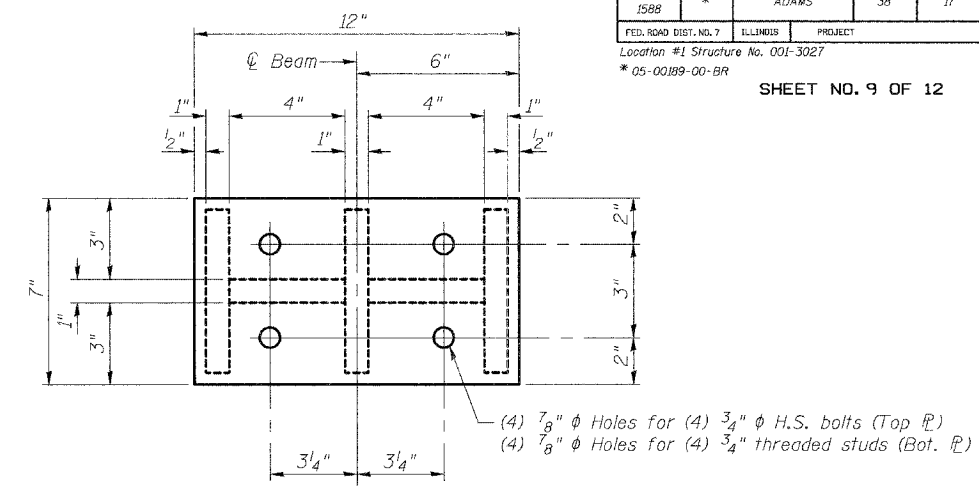


**ELEVATION AT EAST ABUTMENT**



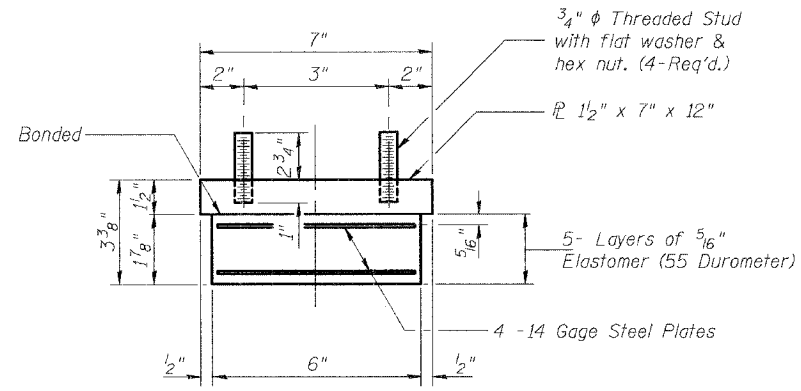
**SECTION A-A**

Notes:  
 See sheet #11 of 12 for Anchor Bolt Installation.  
 Cost of steel extensions, side retainers, anchor bolts, washers, nuts, shims and plates are included in "Elastomeric Bearing Assembly Type I"



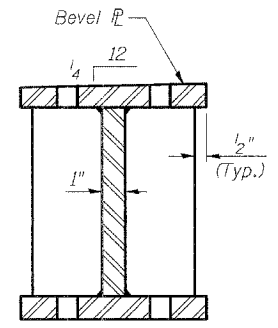
**PLAN STEEL EXTENSION**

**TYPE I ELASTOMERIC EXPANSION BEARING**

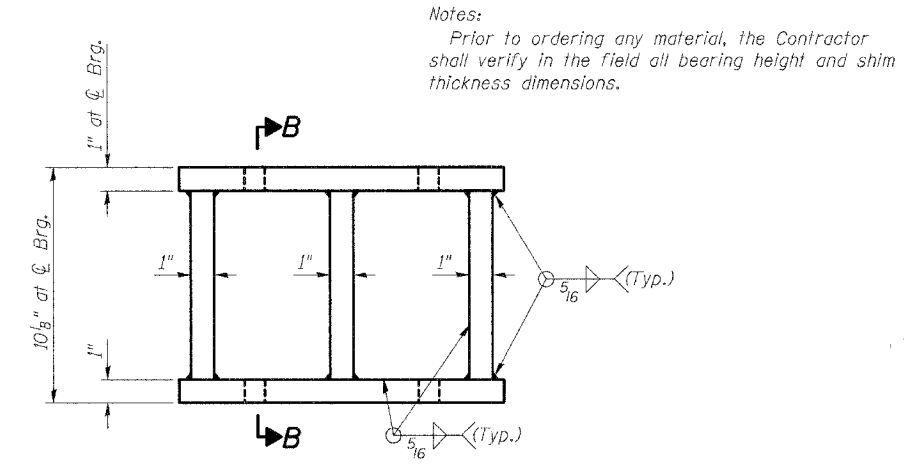


**BEARING ASSEMBLY**

Note: Shim plates shall not be placed under Bearing Assembly.

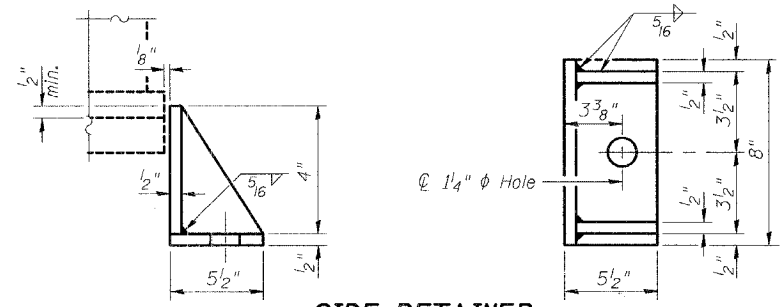


**SECTION B-B**



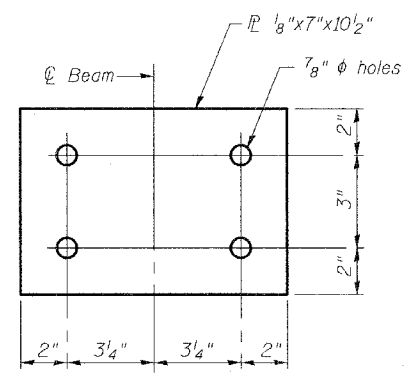
**ELEVATION STEEL EXTENSION**

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



**SIDE RETAINER**

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



**SHIM P**  
 (12 Required)

**BILL OF MATERIAL**

Item	Unit	Total
Elastomeric Bearing Assembly Type I	EACH	6

REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
	BGJ				12/05

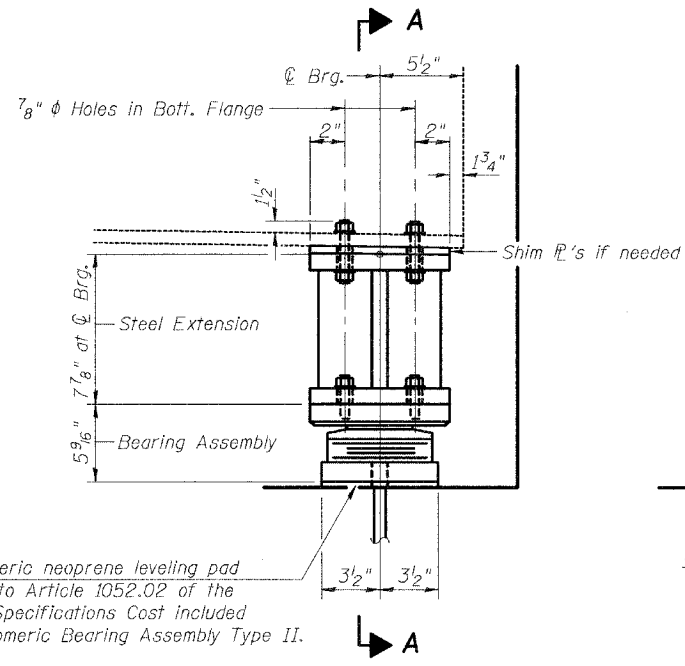
**CONTRACTOR IS RESPONSIBLE FOR INSTALLATION ONLY. MATERIAL WILL BE FABRICATED AND FURNISHED BY ADAMS COUNTY.**

**F.A.S. RTE. 1588 OVER CURL CREEK**  
**SECTION 05-00189-00-BR**  
**Project RS-1588 (106)**  
**ADAMS COUNTY**  
**TYPE I ELASTOMERIC BEARING**  
**STRUCTURE NUMBER 001-3027**  
**STATION 336+56**

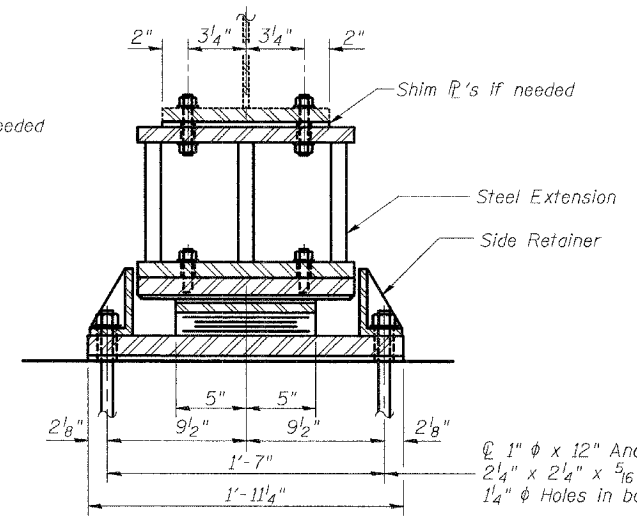
ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FAS RTE 1588	*	ADAMS	38	19
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT	

Location #1 Structure No. 001-3027  
\*05-00189-00-BR

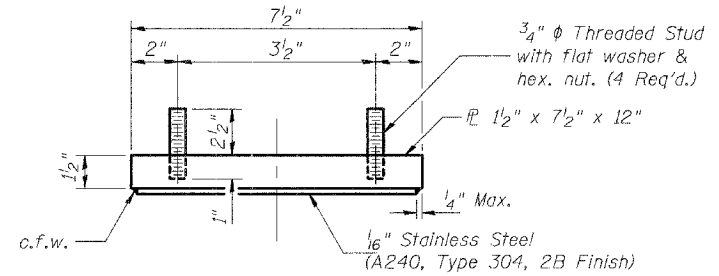
Notes:  
See sheet #11 of 12 for Anchor Bolt installation.  
Cost of steel extensions, side retainers, anchor bolts, washers, nuts, shims and plates are included in "Elastomeric Bearing Assembly Type II"



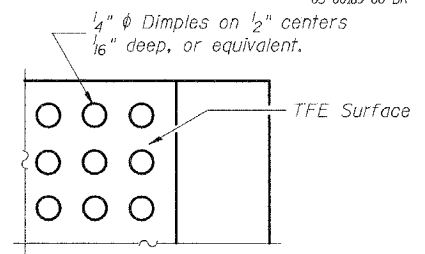
ELEVATION AT WEST ABUTMENT



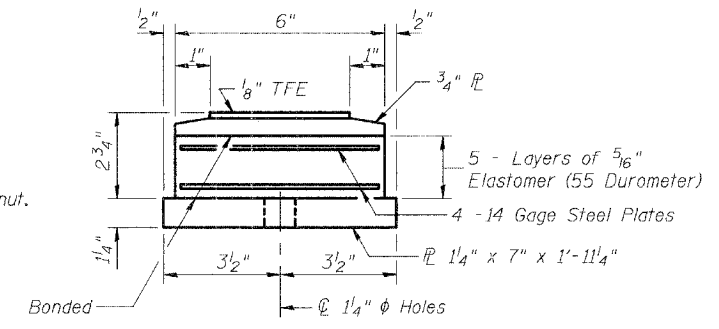
SECTION A-A



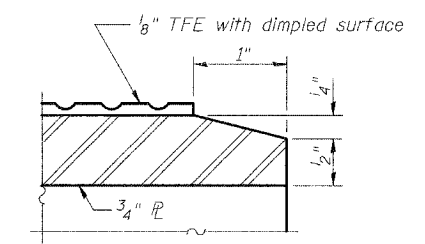
TOP BEARING ASSEMBLY



PLAN-TFE SURFACE



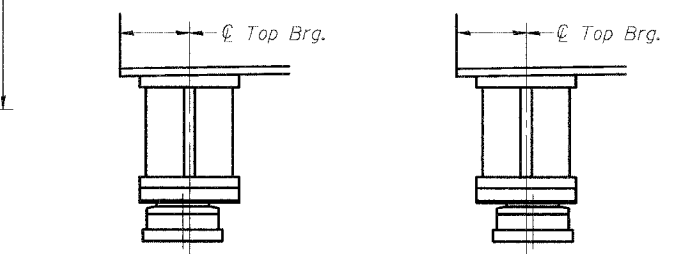
BOTTOM BEARING ASSEMBLY



SECTION THRU TFE

Note: The 1/8" TFE 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.

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



BELOW 50°F. (Move bott. brg. away from fixed brg.)  
ABOVE 50°F. (Move bott. brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXPANSION BEARING

D=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	6

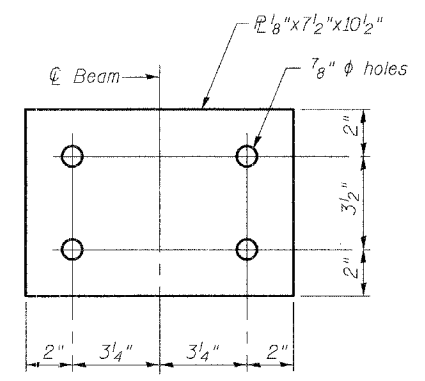
REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
	BGJ				12/05

F.A.S. RTE. 1588 OVER CURL CREEK  
SECTION 05-00189-00-BR  
Project RS-1588 (106)  
ADAMS COUNTY

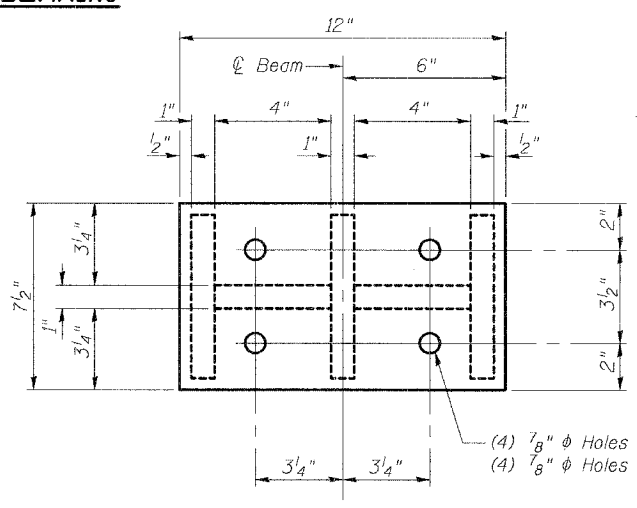
TYPE II ELASTOMERIC BEARING  
STRUCTURE NUMBER 001-3027  
STATION 336+56

1/8" elastomeric neoprene leveling pad according to Article 1052.02 of the Standard Specifications Cost included with Elastomeric Bearing Assembly Type II.

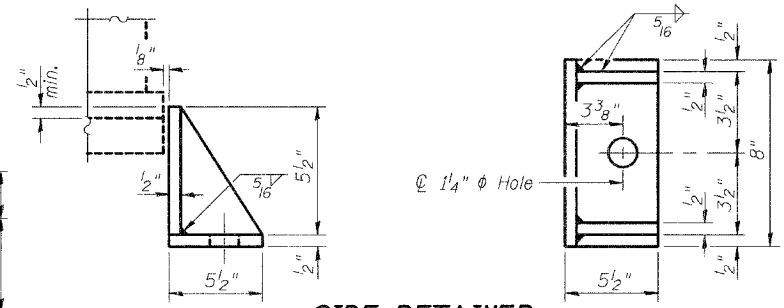
TYPE II ELASTOMERIC EXPANSION BEARING



SHIM P  
(12 Required)

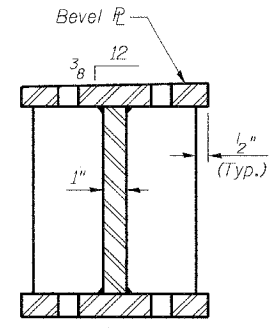


PLAN STEEL EXTENSION

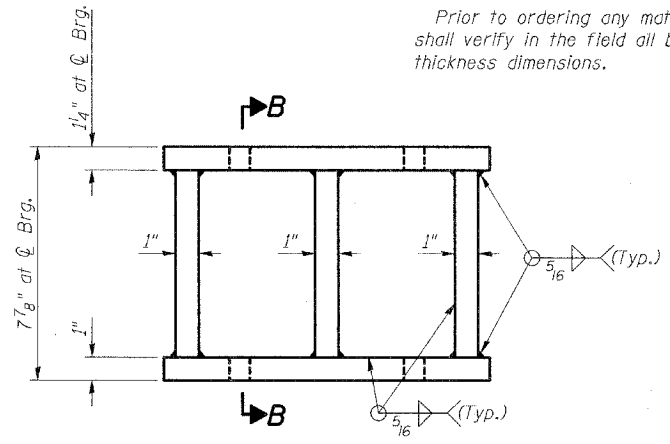


SIDE RETAINER  
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

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



SECTION B-B



ELEVATION STEEL EXTENSION

CONTRACTOR IS RESPONSIBLE FOR INSTALLATION ONLY.  
MATERIAL WILL BE FABRICATED AND FURNISHED BY ADAMS COUNTY.

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ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FAS RTE 1588	*	ADAMS	39	19
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT	

Location #1 Structure No. 001-3027  
\* 05-00189-00-BR

The Illinois Coil-Lock Anchor Bolt is a proprietary item which is the property of the Illinois Department of Transportation. Use, reproduction or disclosure without express written permission is prohibited and protected under Federal copyright laws. The production and the fabrication of this bolt for use on highway projects in the State of Illinois shall be permitted and there shall be no incurred charges or fees to the manufacturer or the fabricator for producing or fabricating this bolt.

### MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A 519, Grade 1026, CW and supplied with hexagonal nuts and cut washers.

The coil wire shall be made of any suitable soft steel wire.

The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.

The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C 881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

### GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or according to the manufacturer's recommendation after beams or girders have been erected and adjusted.

Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.

The anchor bolts, furnished and installed including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for Furnishing and Erecting Structural Steel.

### INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

- With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
- Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

### ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures.

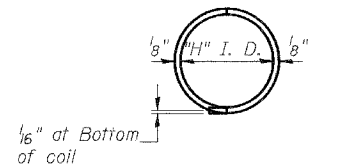
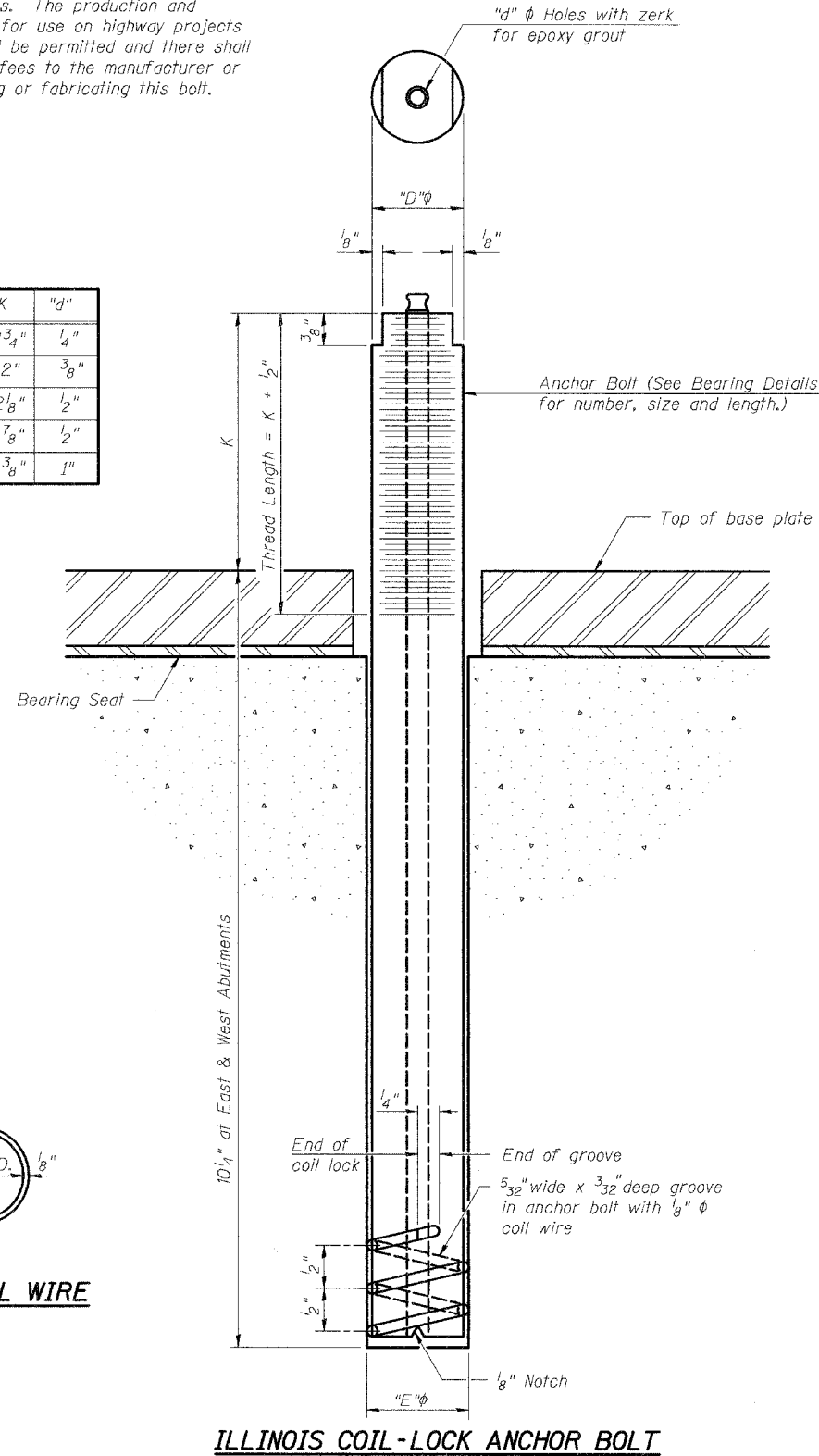
The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:

- A threaded rod stud with nut and washer of the type specified.
- A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

Location	Type
W. Abut.	A307
E. Abut.	A307

ASTM F 1554 Grade 105, ASTM A 449 and AASHTO M 314 Grade 105 anchor bolts may be substituted for the anchor bolts shown above.

D	E	H	K	"d"
1"	1 1/8"	1 3/16"	1 3/4"	1/4"
1 1/4"	1 3/8"	1 1/16"	2"	3/8"
1 1/2"	1 5/8"	1 5/16"	2 1/8"	1/2"
2"	2 1/8"	1 3/16"	2 7/8"	1/2"
2 1/2"	2 5/8"	2 5/16"	3 3/8"	1"



PLAN-COIL WIRE

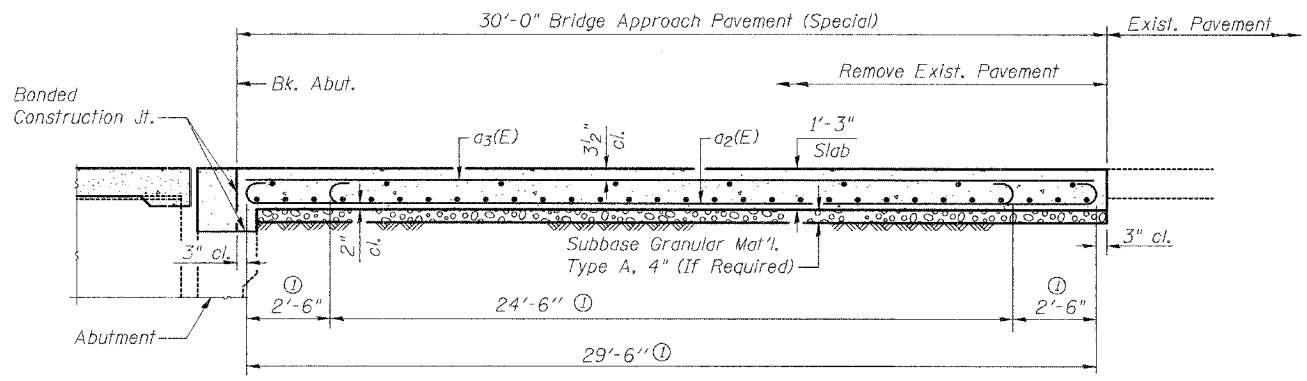
ILLINOIS COIL-LOCK ANCHOR BOLT

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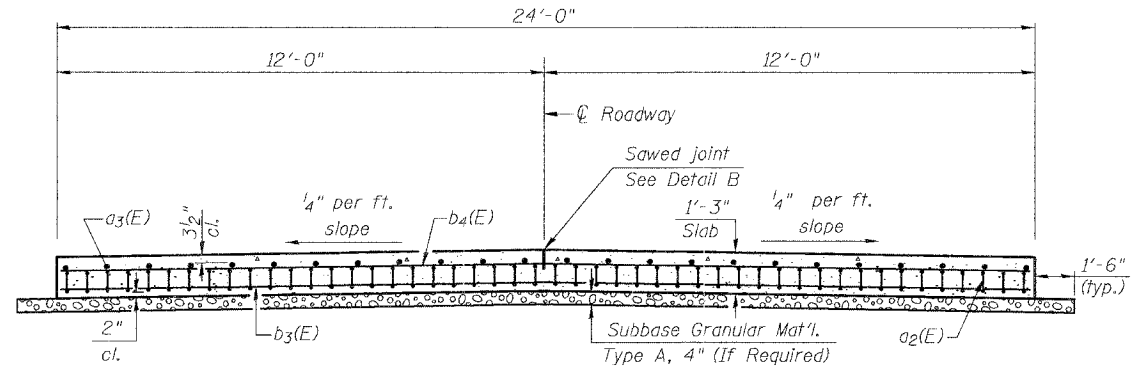
REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
	BGJ				12/05
<b>F.A.S. RTE. 1588 OVER CURL CREEK SECTION 05-00189-00-BR Project RS-1588 (106) ADAMS COUNTY</b>					
<b>ANCHOR BOLT DETAILS FOR BEARINGS STRUCTURE NUMBER 001-3027 STATION 336+56</b>					

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FAS RTE 1588	*	ADAMS	38	20

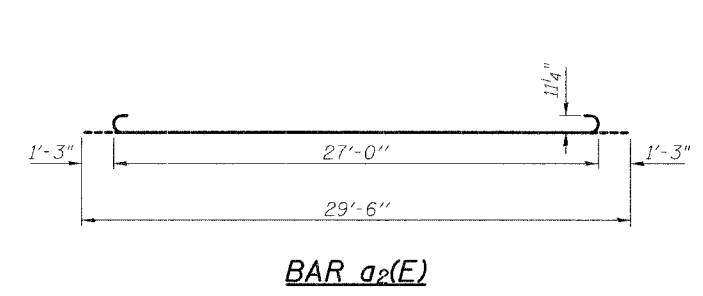
FED. ROAD DIST. NO. 7 ILLINOIS PROJECT  
 Location #1 Structure No. 001-3027  
 \* 05-00189-00-BR



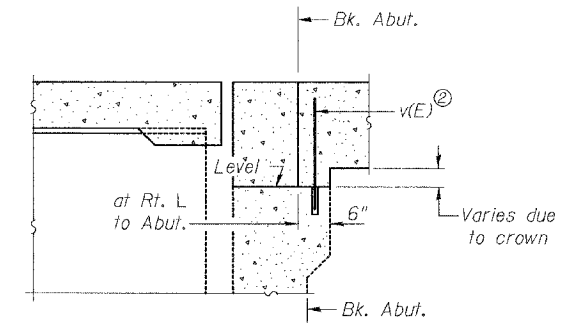
**SECTION C-C**  
 ① Stagger a<sub>2</sub>(E) bars as shown on plan - full width



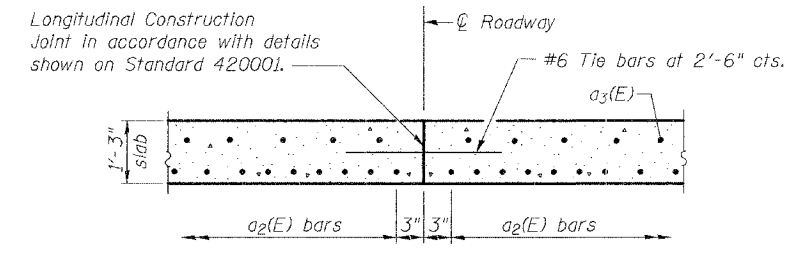
**SECTION D-D**  
 (See Plan for Dimensions not shown)



**BAR a<sub>2</sub>(E)**



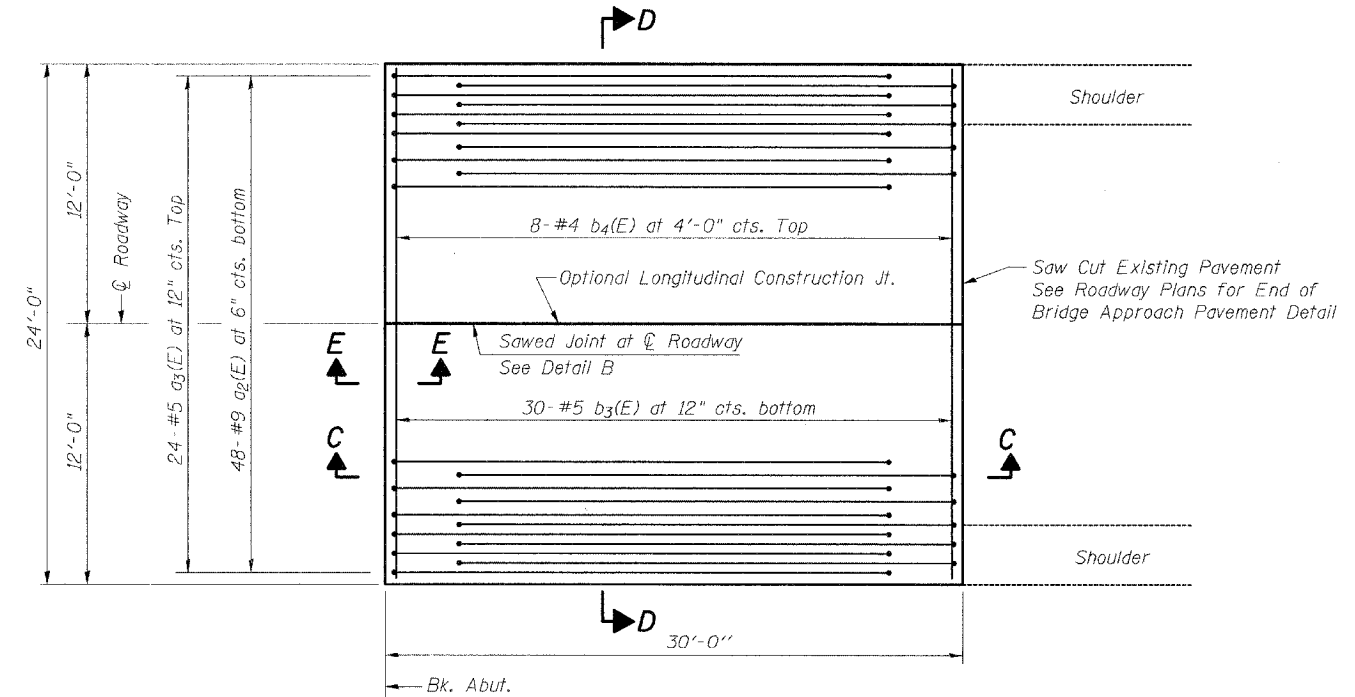
**SECTION E-E**  
 ② v(E) bars are billed with the superstructure See Sheets #4 and #5 of 12.



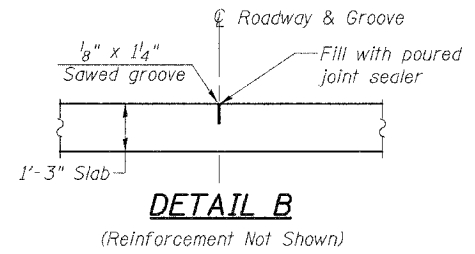
**OPTIONAL LONGITUDINAL CONSTRUCTION JOINT**

As approved by the Engineer, the Contractor may elect to reduce the width of pour by use of the Optional Longitudinal Construction Joint shown. Joints shall be located at centerline roadway.

Notes:  
 Reinforcement bars designated (E) shall be epoxy coated.  
 Cost of reinforcement bars, epoxy coated, concrete, sub-base granular material Type A, pavement removal, excavation to bottom of sub-base and optional longitudinal construction joint are included in the cost of "Bridge Approach Pavement (Special)".  
 Provisions of Section 420 of Std. Specification shall apply.



**PLAN**  
 (East Bridge Approach Pavement shown, West Bridge Approach Pavement the same, except opposite hand)



**DETAIL B**  
 (Reinforcement Not Shown)

**BRIDGE APPROACH PAVEMENT (SPECIAL)**  
**BILL OF MATERIAL**  
 (For one approach)

Bar	No.	Size	Length	Shape
a <sub>2</sub> (E)	48	#9	29'-6"	
a <sub>3</sub> (E)	24	#5	29'-6"	
b <sub>3</sub> (E)	30	#5	23'-6"	
b <sub>4</sub> (E)	8	#4	23'-6"	
Reinforcement Bars, Epoxy Coated			POUND	6,410

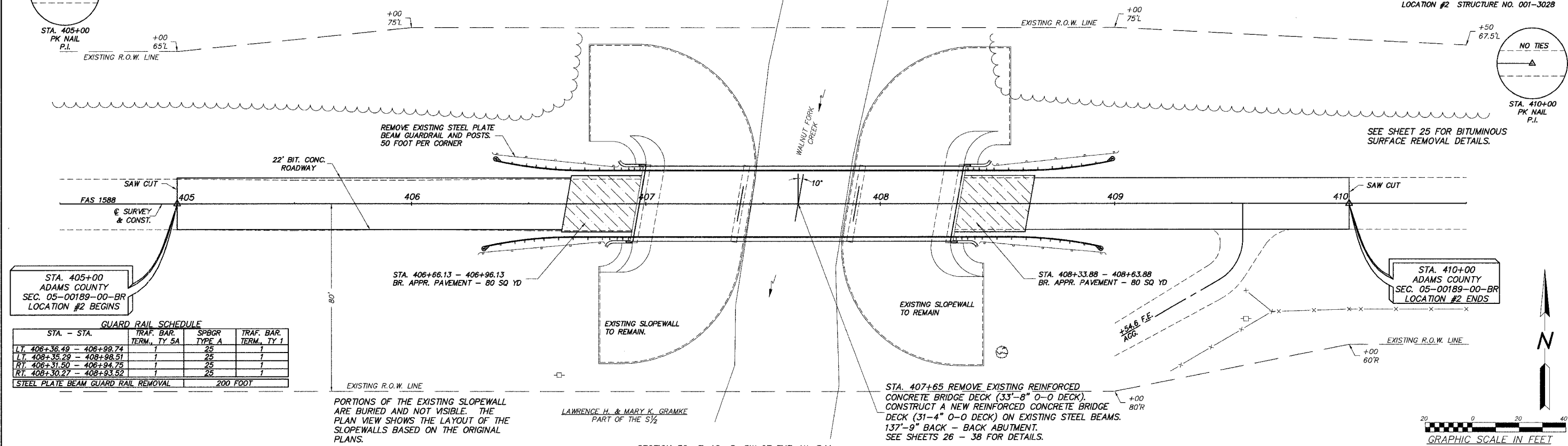
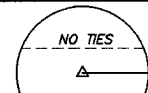
**DESIGN STRESSES**  
 f<sub>y</sub> = 60,000 p.s.i.  
 f'c = 3,500 p.s.i.

REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
<b>F.A.S. RTE. 1588 OVER CURL CREEK</b> <b>SECTION 05-00189-00-BR</b> <b>Project RS-1588 (106)</b> <b>ADAMS COUNTY</b>					
<b>BRIDGE APPROACH PAVEMENT (SPECIAL)</b> <b>STRUCTURE NUMBER 001-3027</b> <b>STATION 336+56</b>					

COUNTY	ROUTE	SECTION	SHT. NO.
ADAMS	FAS 1588	05-00189-00-BR	21 OF 38
STA. 405+00 TO STA. 410+00			
LOCATION #2 STRUCTURE NO. 001-3028			

SECTION 32 T. 1S R. 5W OF THE 4th P.M.

LAWRENCE H. & MARY K. GRAMKE  
PART OF THE S 1/2



**GUARD RAIL SCHEDULE**

STA. - STA.	TRAF. BAR. TERM., TY SA	SPBOR TYPE A	TRAF. BAR. TERM., TY 1
LT. 406+36.49 - 406+98.74	1	25	1
LT. 408+35.29 - 408+98.51	1	25	1
RT. 406+31.50 - 406+94.75	1	25	1
RT. 408+30.27 - 408+93.52	1	25	1

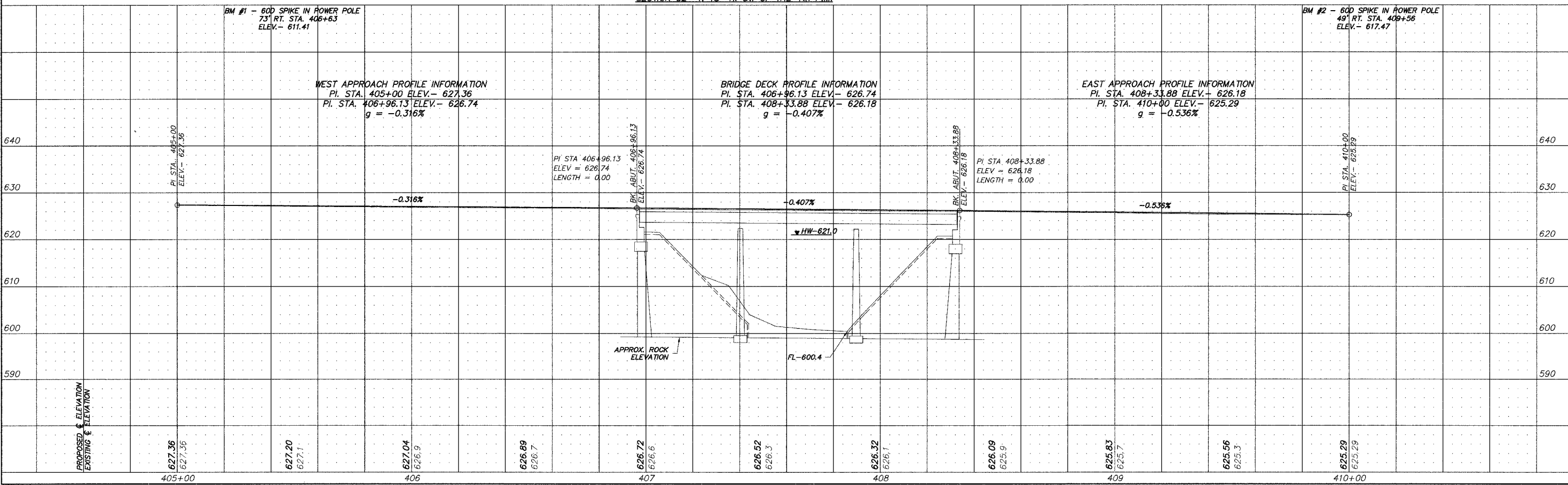
STEEL PLATE BEAM GUARD RAIL REMOVAL 200 FOOT

PORTIONS OF THE EXISTING SLOPEWALL ARE BURIED AND NOT VISIBLE. THE PLAN VIEW SHOWS THE LAYOUT OF THE SLOPEWALLS BASED ON THE ORIGINAL PLANS.

LAWRENCE H. & MARY K. GRAMKE  
PART OF THE S 1/2



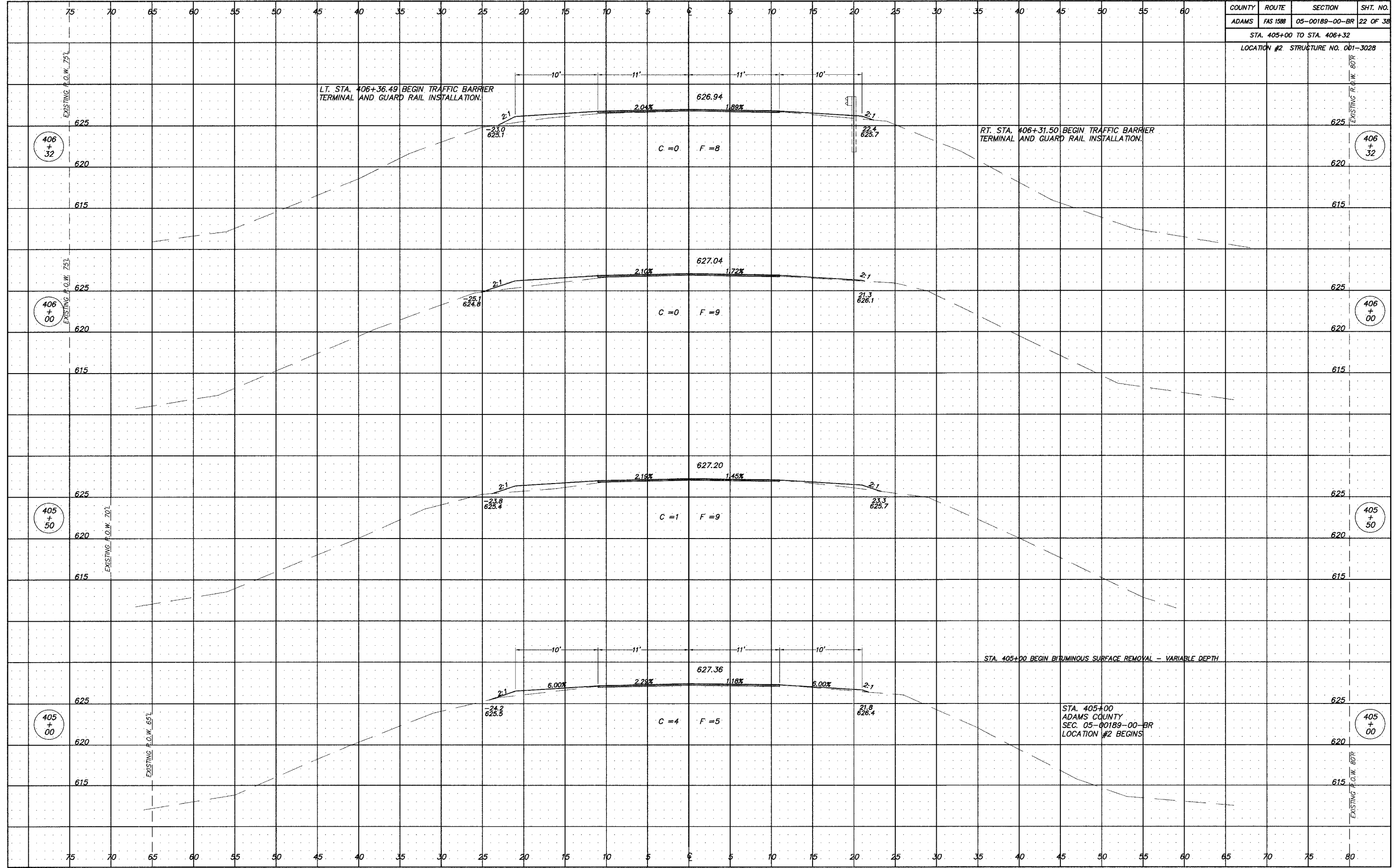
SECTION 32 T. 1S R. 5W OF THE 4th P.M.



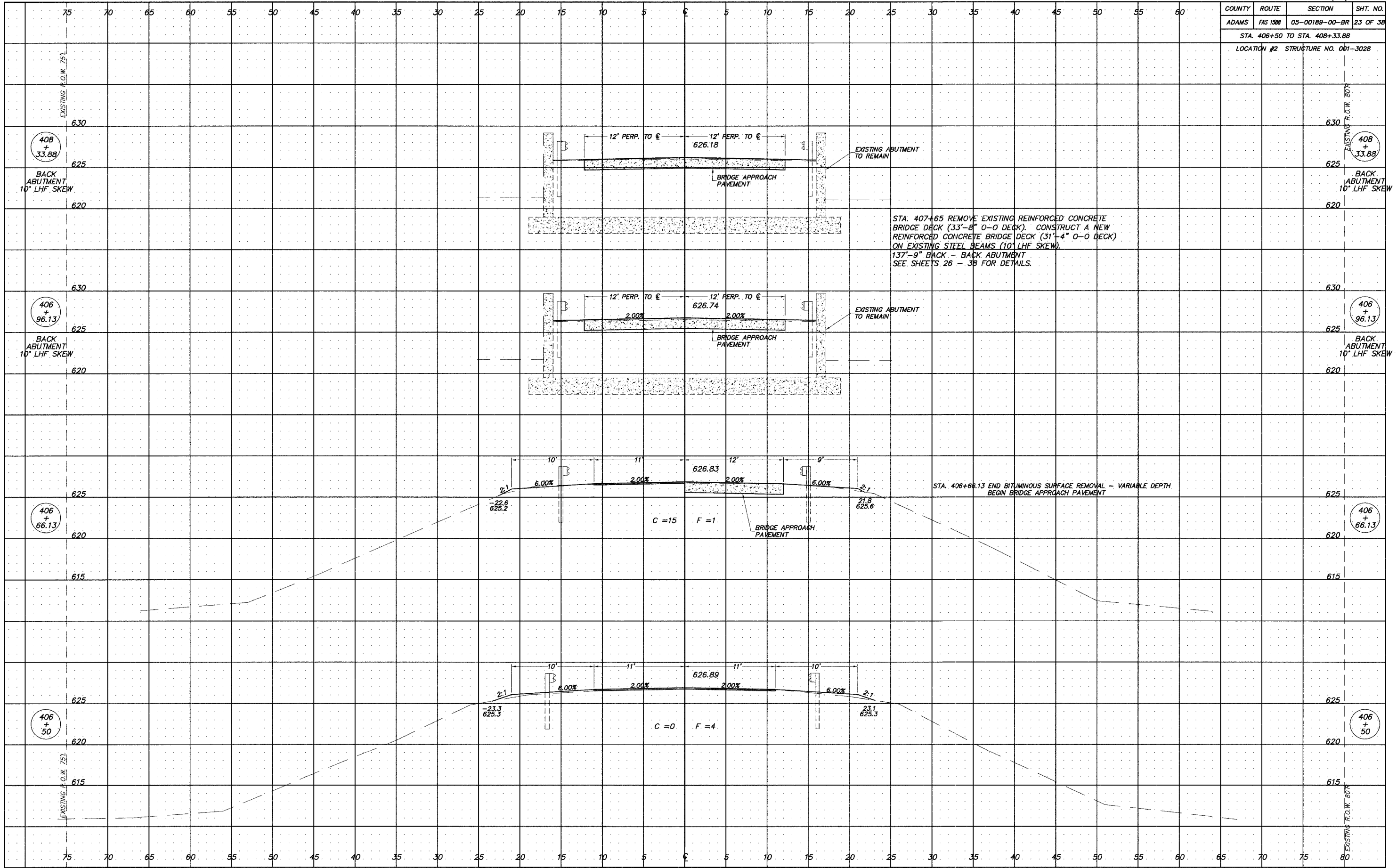
COUNTY	ROUTE	SECTION	SHT. NO.
ADAMS	FAS 1588	05-00189-00-BR	22 OF 38

STA. 405+00 TO STA. 406+32

LOCATION #2 STRUCTURE NO. 001-3028



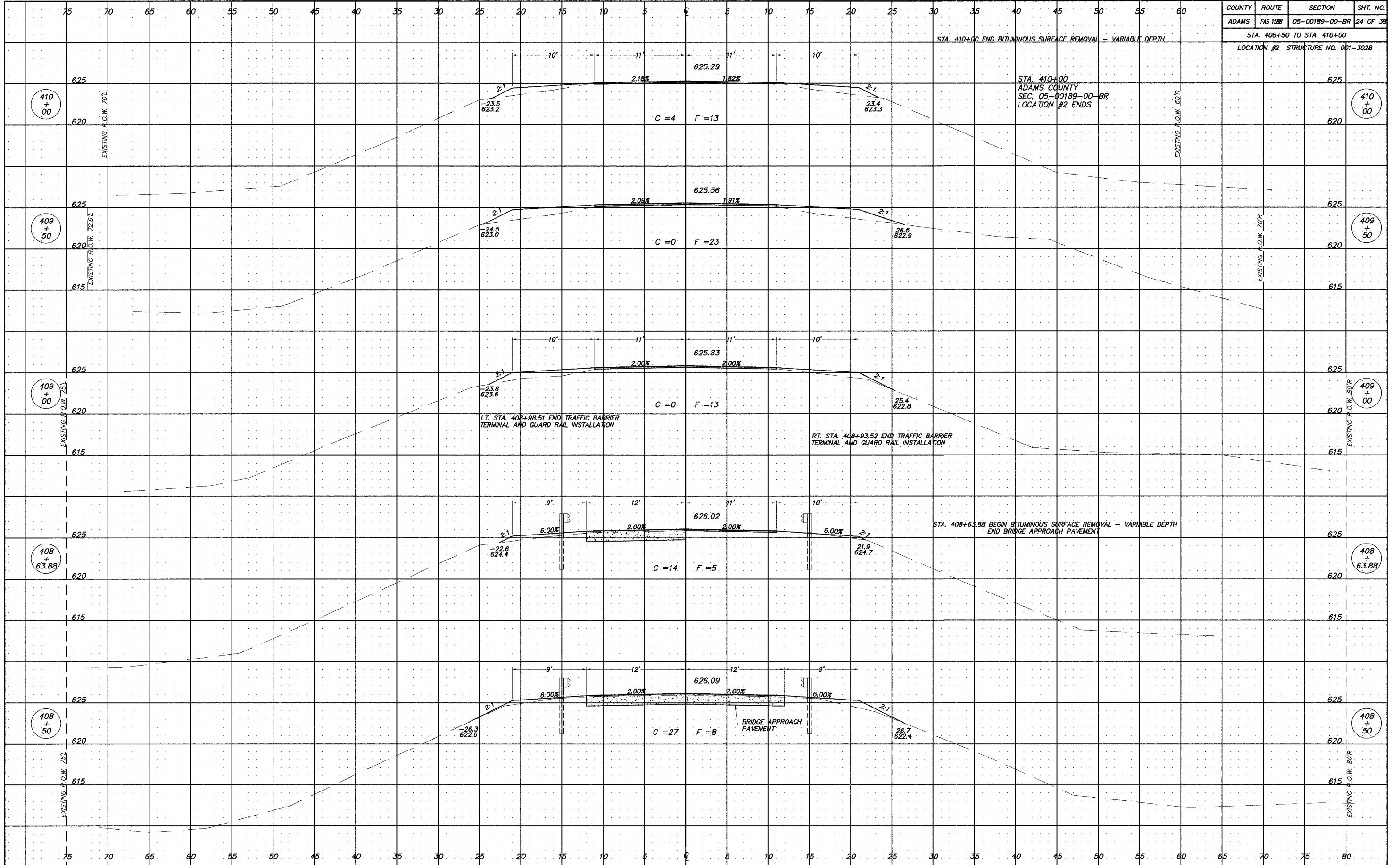
COUNTY	ROUTE	SECTION	SHT. NO.
ADAMS	FAS 1588	05-00189-00-BR	23 OF 38
STA. 406+50 TO STA. 408+33.88			
LOCATION #2 STRUCTURE NO. 001-3028			



COUNTY	ROUTE	SECTION	SHT. NO.
ADAMS	FAS 1588	05-00189-00-BR	24 OF 38

STA. 408+50 TO STA. 410+00

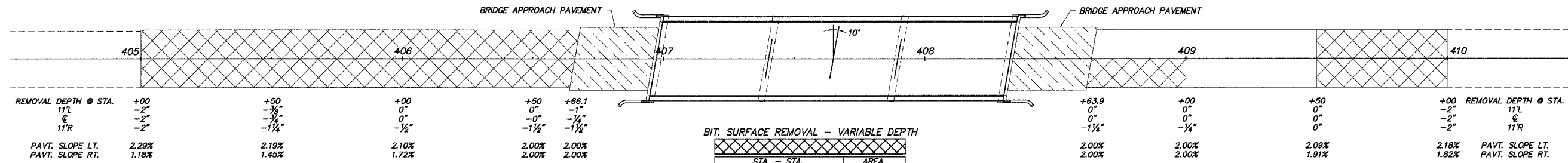
LOCATION #2 STRUCTURE NO. 001-3028





COUNTY	ROUTE	SECTION NO.	SHT. NO.
ADAMS	FAS 1588	05-00189-00-BR	25 OF 38
BITUMINOUS SURFACE REMOVAL - VAR. DEPTH			
BITUMINOUS CONCRETE SURFACE COURSE			
END OF BRIDGE APPROACH PAVEMENT			
LOCATION #2 STRUCTURE NO. 001-3028			

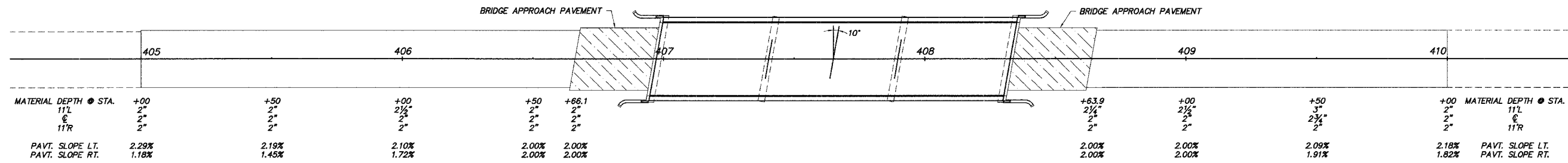
### BITUMINOUS SURFACE REMOVAL - VARIABLE DEPTH



BIT. SURFACE REMOVAL - VARIABLE DEPTH

STA. - STA.	AREA (SQ. YD.)
405+00 - 406+66.1	406
RT. 408+63.9 - 408+00	45
409+50 - 410+00	122
TOTAL	573

### BITUMINOUS CONCRETE SURFACE COURSE



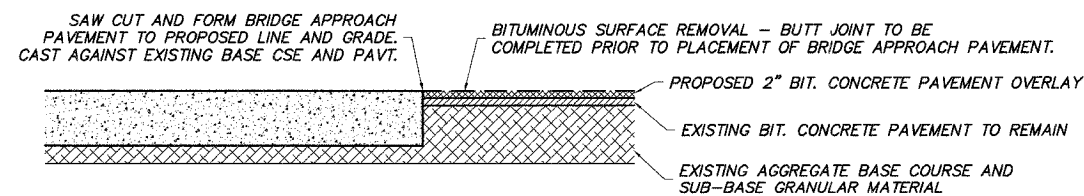
BIT. CONCRETE SURFACE COURSE

STA. - STA.	TON
405+00 - 406+66.1	49
408+63.9 - 410+00	46
TOTAL	95

BIT. MATERIALS (PRIME COAT)

STA. - STA.	GALLON
405+00 - 406+66.1	45
408+63.9 - 410+00	35
TOTAL	80

### END OF BRIDGE APPROACH PAVEMENT DETAIL



ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FAS RTE 1588	*	ADAMS	38	26
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT	
Location #2 Structure No. 001-3028			* 05-00189-00-BR	

Existing Structure - Single bridge built in 1959. Structure No. 001-3028 at Sta 407+65.  
The structure is a three span, wide flange steel beam bridge with open stub concrete abutments and solid concrete piers, 137'-9" back to back of abutments, 28'-0" roadway width and 10° skew Lt. AH.

Roadway will be closed during construction. Access to local properties shall be maintained during construction.

No salvage.

BM #2 (Location #2) -  
60d Spike in Power Pole, 49' Rt.  
of Sta 409+56, Elevation = 617.47

**SCOPE OF WORK**

1. Remove deck, curbs, railing and top of abutment backwalls.
2. Remove existing rocker expansion bearings at abutments. Replace with elastomeric bearings.
3. Install shear connectors in positive moment areas of beam lines.
4. Construct 7 1/2" deck, top of abutment backwalls, preformed joint seals, steel bridge railing (special) and bridge approach pavements.

**GENERAL NOTES**

Painting of the existing structural steel will not be done under this contract.  
All new structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type 1. Final field painting will be required for the elastomeric bearing assemblies.

Field welding of construction accessories will not be permitted to the bottom flange of beams nor to the top flange for a distance equal to one-fourth the span length each way from pier supports. Field welding in other areas will be permitted only when approved by the Engineer.

Reinforcement bars shall conform to the requirements of AASHTO M31 or M322 Grade 60.

Plan dimensions and details relative to existing structure have been taken from existing plans, and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variation shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

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

All construction joints shall be bonded.

Prior to pouring the new concrete deck, all loose rust, loose mill scale, and other loose potentially detrimental foreign material shall be removed from the surfaces of the beams or girders in contact with concrete. The cost of this work will be included in the pay item "Removal of Existing Concrete Deck". All heavy rust and other tightly adhered potentially detrimental foreign matter shall also be removed from the surfaces of the beams or girders in contact with concrete. Tightly adhered paint may remain unless otherwise noted. This removal shall be accomplished by methods that will not damage the steel. The cost of this work will be paid for according to Article 109.04.

The structural steel bearing plates of the Elastomeric Bearing Assembly shall conform to the requirements of AASHTO M 270 Grade 50.

**INDEX OF SHEETS**

- 1 General Plan and Elevation
- 2-3 Top of Slab Elevations
- 4-5 Superstructure
- 6 Steel Bridge Rail (Special)
- 7 Structural Steel Details
- 8 Moment & Reaction Tables, Jack and Remove Existing Bearings
- 9 Type I Elastomeric Bearing
- 10 Type II Elastomeric Bearing
- 11 Anchor Bolt Details for Bearings
- 12 Bridge Approach Pavement (Special)
- 13 Cantilever Forming Brackets For Superstructures with W27 Beams and Smaller

**WALNUT FORK CREEK  
REBUILT 200\_**  
SEC. 05-00189-00-BR  
PROJECT RS-1588 (106)  
LOADING HS20 STR. NO. 001-3028

Rail Mount Name Plate at Southwest Corner of Bridge (See Plan)

**NAME PLATE**

See Std. 515001  
(1 Required)

© FAS Rte 1588  
& Profile Grade Line

Ty. 5A Traffic Barrier Terminal  
(Typ. each corner) STD. 631026  
See Roadway Plans

**SEISMIC DATA**

Seismic Performance Category (SPC) = A  
Bedrock Acceleration Coefficient (A) = 0.043  
Site Coefficient (S) = 1.0

**KLINGNER  
& ASSOCIATES, P.C.**

Engineers / Architects  
616 North 24th Street (217) 223-3670  
Quincy, Illinois 62301 FAX: 223-3603  
Internet Address: www.klingner.com  
STATE OF ILLINOIS DESIGN FIRM # 1842738

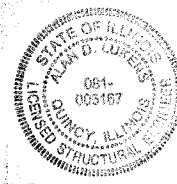
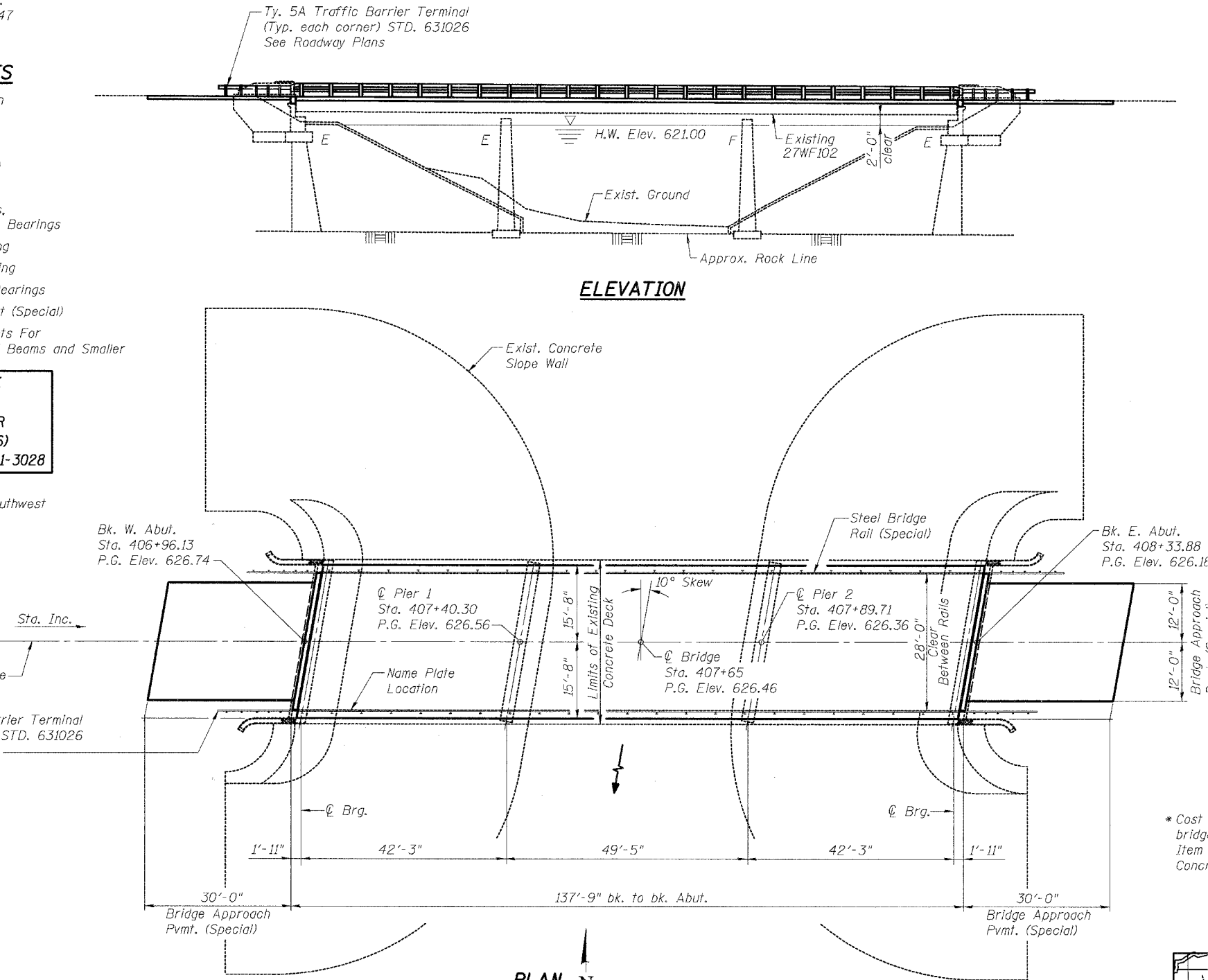
**DESIGN SPECIFICATIONS**

17th Edition - 2002 AASHTO  
Load Factor Design  
**LOADING HS 20-44**  
Allow 50#/sq. ft. for future wearing surface.

**DESIGN STRESSES**

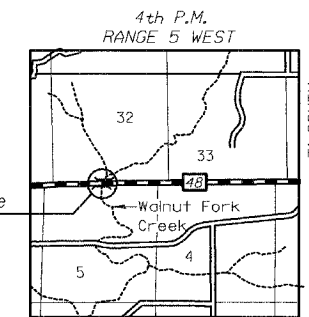
FIELD UNITS  
f'c = 2500 psi (existing)  
f'c = 3500 psi (new)  
fy = 60,000 psi (reinf.)  
fs = 18,000 psi (Existing Structure)

**PLAN**

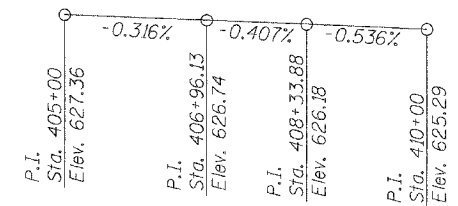


"I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current 'AASHTO Standard Specifications for Highway Bridges'."

Alan D. Lukens  
Licensed Structural Engineer  
State of Illinois No. 081-005167  
License Expires November 30, 2006



**LOCATION SKETCH**



**PROFILE GRADE**  
(along © roadway)

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Name Plates	EACH	1		1
Removal of Existing Concrete Deck	EACH	1		1
Protective Coat	SQ YD	471		471
Elastomeric Bearing Assembly Type I	EACH	6		6
Elastomeric Bearing Assembly Type II	EACH	6		6
Concrete Superstructure	CU YD	107.2		107.2
Stud Shear Connectors	EACH	2,016		2,016
Reinforcement Bars, Epoxy Coated	POUND	24,940		24,940
Preformed Joint Seal 2 1/2"	FOOT	32.0		32.0
Preformed Joint Seal 4"	FOOT	32.0		32.0
Bridge Deck Grooving	SQ YD	421		421
Concrete Removal	CU YD	3.1		3.1
Jack and Remove Existing Bearings	Each	12		12
Steel Bridge Rail (Special)	FOOT	276		276
Bridge Approach Pavement (Special)	SQ YD	160		160

\* Cost of removing existing steel bridge railing is included in Pay Item "Removal of Existing Concrete Deck".

REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
					12/05

**F.A.S. RTE. 1588 OVER WALNUT FORK CREEK  
SECTION 05-00189-00-BR  
Project RS-1588 (106)  
ADAMS COUNTY**

**GENERAL PLAN AND ELEVATION  
STRUCTURE NUMBER 001-3028  
STATION 407+65**

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FAS RTE 1588	*	ADAMS	38	27

FED. ROAD DIST. NO. 7 ILLINOIS PROJECT  
 Location #2 Structure No. 001-3028  
 \* 05-00189-00-BR

SHEET NO. 2 OF 13

**BEAM 1**

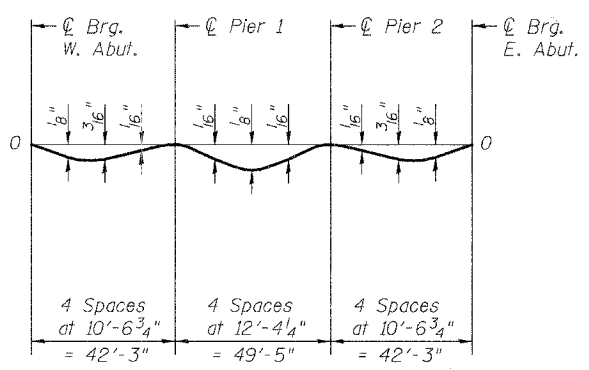
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	406+98.59	13.958' Lt.	626.439	626.439
⊕ Brg. W. Abut.	407+00.51	13.958' Lt.	626.431	626.431
A	407+10.51	13.958' Lt.	626.391	626.402
B	407+20.51	13.958' Lt.	626.350	626.364
C	407+30.51	13.958' Lt.	626.309	626.317
⊕ Pier 1	407+42.76	13.958' Lt.	626.260	626.260
D	407+52.76	13.958' Lt.	626.219	626.223
E	407+62.76	13.958' Lt.	626.178	626.187
F	407+72.76	13.958' Lt.	626.138	626.147
G	407+82.76	13.958' Lt.	626.097	626.100
⊕ Pier 2	407+92.17	13.958' Lt.	626.059	626.059
H	408+02.17	13.958' Lt.	626.018	626.024
I	408+12.17	13.958' Lt.	625.977	625.990
J	408+22.17	13.958' Lt.	625.937	625.949
⊕ Brg. E. Abut.	408+34.42	13.958' Lt.	625.886	625.886
Bk. E. Abut.	408+36.34	13.958' Lt.	625.876	625.876

**BEAM 2**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	406+97.61	8.375' Lt.	626.560	626.560
⊕ Brg. W. Abut.	406+99.52	8.375' Lt.	626.552	626.552
A	407+09.52	8.375' Lt.	626.511	626.522
B	407+19.52	8.375' Lt.	626.470	626.484
C	407+29.52	8.375' Lt.	626.430	626.438
⊕ Pier 1	407+41.77	8.375' Lt.	626.380	626.380
D	407+51.77	8.375' Lt.	626.339	626.343
E	407+61.77	8.375' Lt.	626.299	626.308
F	407+71.77	8.375' Lt.	626.258	626.267
G	407+81.77	8.375' Lt.	626.217	626.220
⊕ Pier 2	407+91.19	8.375' Lt.	626.179	626.179
H	408+01.19	8.375' Lt.	626.138	626.144
I	408+11.19	8.375' Lt.	626.098	626.111
J	408+21.19	8.375' Lt.	626.057	626.069
⊕ Brg. E. Abut.	408+33.44	8.375' Lt.	626.007	626.007
Bk. E. Abut.	408+35.36	8.375' Lt.	625.998	625.998

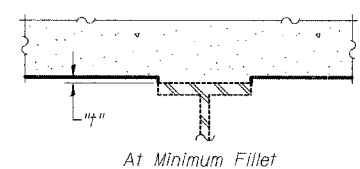
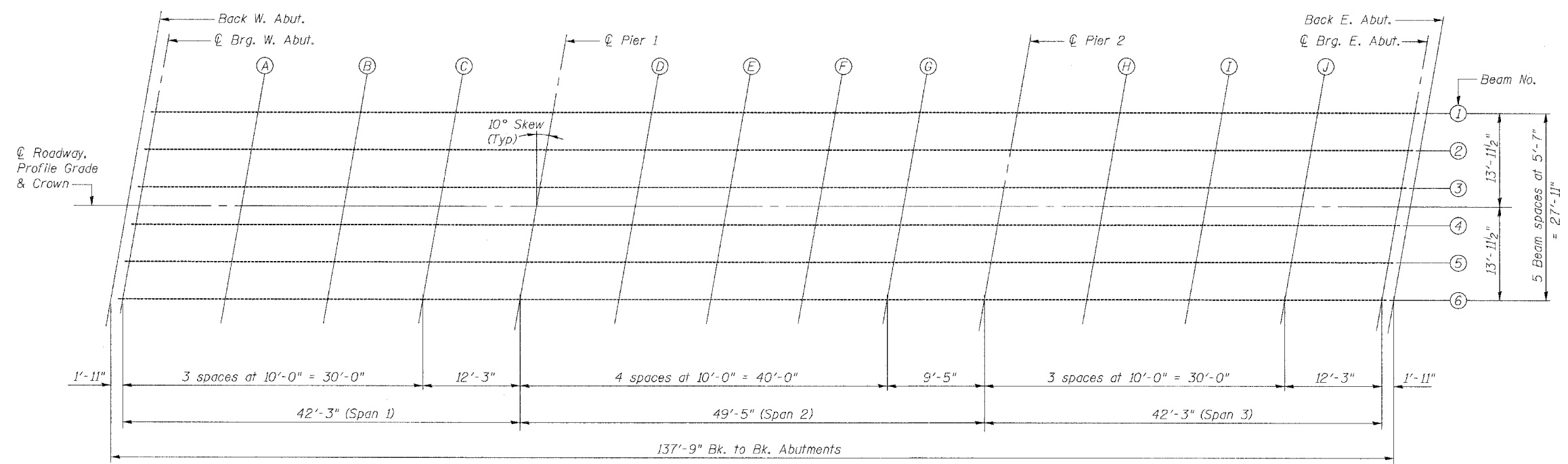
**BEAM 3**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	406+96.62	2.792' Lt.	626.680	626.680
⊕ Brg. W. Abut.	406+98.54	2.792' Lt.	626.672	626.672
A	407+08.54	2.792' Lt.	626.631	626.642
B	407+18.54	2.792' Lt.	626.591	626.605
C	407+28.54	2.792' Lt.	626.550	626.558
⊕ Pier 1	407+40.79	2.792' Lt.	626.500	626.500
D	407+50.79	2.792' Lt.	626.460	626.464
E	407+60.79	2.792' Lt.	626.419	626.428
F	407+70.79	2.792' Lt.	626.378	626.387
G	407+80.79	2.792' Lt.	626.338	626.341
⊕ Pier 2	407+90.21	2.792' Lt.	626.299	626.299
H	408+00.21	2.792' Lt.	626.259	626.265
I	408+10.21	2.792' Lt.	626.218	626.231
J	408+20.21	2.792' Lt.	626.177	626.189
⊕ Brg. E. Abut.	408+32.46	2.792' Lt.	626.128	626.128
Bk. E. Abut.	408+34.37	2.792' Lt.	626.119	626.119



**DEAD LOAD DEFLECTION DIAGRAM**  
 (Includes weight of concrete slab)

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 above and on Sheet #3 of 13.



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at the stations shown on this sheet and on sheet #3 of 13. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown above and on Sheet #3 of 13, minus slab thickness, equals the fillet heights "t" above top flange of beams.

**FILLET HEIGHTS**

**PLAN**

Note: All dimensions in the plan are measured horizontally



Notes:  
 All elevations are at top of concrete.

REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
	BGJ				12/05
<b>F.A.S. RTE. 1588 OVER WALNUT CREEK</b> <b>SECTION 05-00189-00-BR</b> <b>Project RS-1588 (106)</b> <b>ADAMS COUNTY</b>					
<b>TOP OF SLAB ELEVATIONS</b> <b>STRUCTURE NUMBER 001-3028</b> <b>STATION 407+65</b>					

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ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
FAS RTE 1588	*	ADAMS	38	28
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT	
Location #2 Structure No. 001-3028				
* 05-00189-00-BR				

**☉ ROADWAY, PROFILE GRADE, & CROWN**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	406+96.13	0.000	626.740	626.740
☉ Brg. W. Abut.	406+98.05	0.000	626.732	626.732
A	407+08.05	0.000	626.692	626.703
B	407+18.05	0.000	626.651	626.665
C	407+28.05	0.000	626.610	626.618
☉ Pier 1	407+40.30	0.000	626.560	626.560
D	407+50.30	0.000	626.520	626.524
E	407+60.30	0.000	626.479	626.488
F	407+70.30	0.000	626.438	626.447
G	407+80.30	0.000	626.398	626.401
☉ Pier 2	407+89.71	0.000	626.360	626.360
H	407+99.71	0.000	626.319	626.325
I	408+09.71	0.000	626.278	626.291
J	408+19.71	0.000	626.238	626.250
☉ Brg. E. Abut.	408+31.96	0.000	626.188	626.188
Bk. E. Abut.	408+33.88	0.000	626.180	626.180

**BEAM 4**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	406+95.64	2.792' Rt.	626.683	626.683
☉ Brg. W. Abut.	406+97.55	2.792' Rt.	626.676	626.676
A	407+07.55	2.792' Rt.	626.635	626.646
B	407+17.55	2.792' Rt.	626.595	626.609
C	407+27.55	2.792' Rt.	626.554	626.562
☉ Pier 1	407+39.80	2.792' Rt.	626.504	626.504
D	407+49.80	2.792' Rt.	626.464	626.468
E	407+59.80	2.792' Rt.	626.423	626.432
F	407+69.80	2.792' Rt.	626.382	626.391
G	407+79.80	2.792' Rt.	626.342	626.345
☉ Pier 2	407+89.22	2.792' Rt.	626.303	626.303
H	407+99.22	2.792' Rt.	626.263	626.269
I	408+09.22	2.792' Rt.	626.222	626.235
J	408+19.22	2.792' Rt.	626.181	626.193
☉ Brg. E. Abut.	408+31.47	2.792' Rt.	626.132	626.132
Bk. E. Abut.	408+33.39	2.792' Rt.	626.124	626.124

**BEAM 5**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	406+94.65	8.375' Rt.	626.570	626.570
☉ Brg. W. Abut.	406+96.57	8.375' Rt.	626.564	626.564
A	407+06.57	8.375' Rt.	626.523	626.534
B	407+16.57	8.375' Rt.	626.482	626.496
C	407+26.57	8.375' Rt.	626.442	626.450
☉ Pier 1	407+38.82	8.375' Rt.	626.392	626.392
D	407+48.82	8.375' Rt.	626.351	626.355
E	407+58.82	8.375' Rt.	626.311	626.320
F	407+68.82	8.375' Rt.	626.270	626.279
G	407+78.82	8.375' Rt.	626.229	626.232
☉ Pier 2	407+88.24	8.375' Rt.	626.191	626.191
H	407+98.24	8.375' Rt.	626.150	626.156
I	408+08.24	8.375' Rt.	626.110	626.123
J	408+18.24	8.375' Rt.	626.069	626.081
☉ Brg. E. Abut.	408+30.49	8.375' Rt.	626.019	626.019
Bk. E. Abut.	408+32.40	8.375' Rt.	626.012	626.012

**BEAM 6**

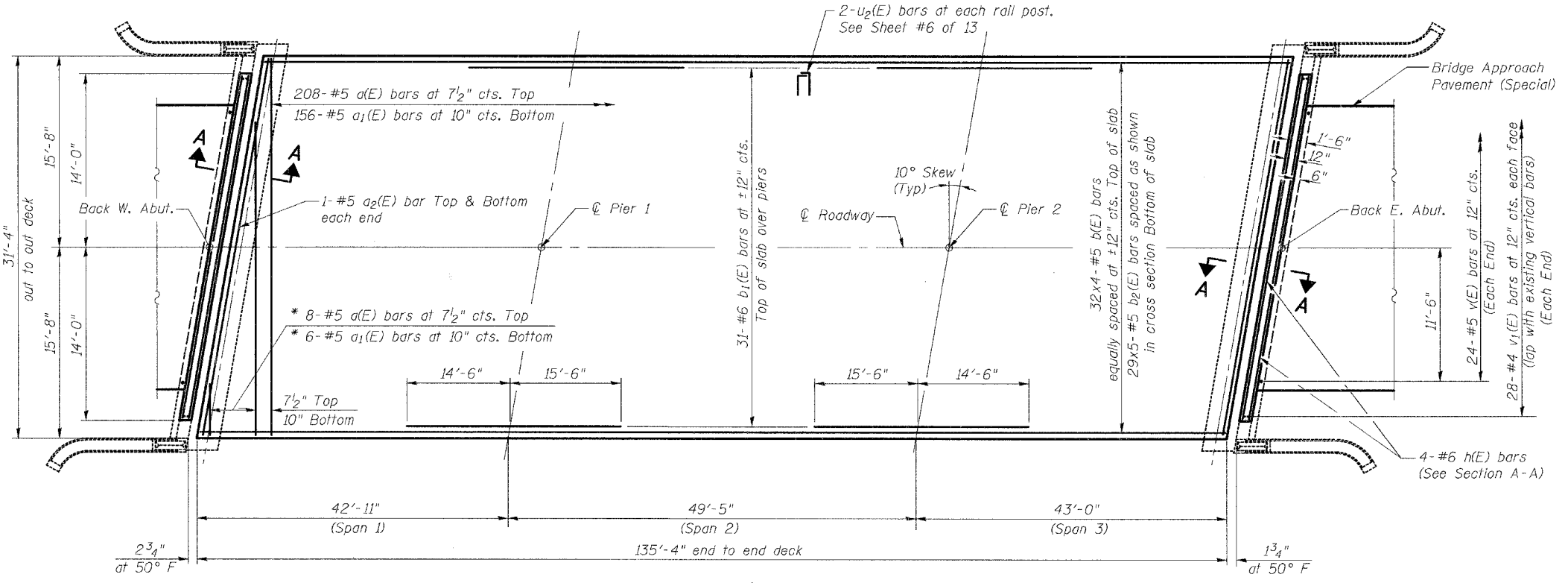
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	406+93.67	13.958' Rt.	626.457	626.457
☉ Brg. W. Abut.	406+95.59	13.958' Rt.	626.451	626.451
A	407+05.59	13.958' Rt.	626.411	626.422
B	407+15.59	13.958' Rt.	626.370	626.384
C	407+25.59	13.958' Rt.	626.329	626.337
☉ Pier 1	407+37.84	13.958' Rt.	626.280	626.280
D	407+47.84	13.958' Rt.	626.239	626.243
E	407+57.84	13.958' Rt.	626.198	626.207
F	407+67.84	13.958' Rt.	626.158	626.167
G	407+77.84	13.958' Rt.	626.117	626.120
☉ Pier 2	407+87.25	13.958' Rt.	626.079	626.079
H	407+97.25	13.958' Rt.	626.038	626.044
I	408+07.25	13.958' Rt.	625.997	626.010
J	408+17.25	13.958' Rt.	625.957	625.969
☉ Brg. E. Abut.	408+29.50	13.958' Rt.	625.907	625.907
Bk. E. Abut.	408+31.42	13.958' Rt.	625.899	625.899

Notes:  
Work this sheet with Sheet #2 of 13.

REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
	BGJ				12/05
<b>F.A.S. RTE. 1588 OVER WALNUT CREEK</b> <b>SECTION 05-00189-00-BR</b> <b>Project RS-1588 (106)</b> <b>ADAMS COUNTY</b>					
<b>TOP OF SLAB ELEVATIONS</b> <b>STRUCTURE NUMBER 001-3028</b> <b>STATION 407+65</b>					

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ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FAS RTE 1588	*	ADAMS	38	29
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT	
Location #2 Structure No. 001-3028				
* 05-00189-00-BR				



Notes:  
 Reinforcement bars designated (E) shall be epoxy coated.  
 Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.  
 Adjust location of reinforcement bar in deck to miss Steel Rail Posts.  
 Minimum bar lap of #5 bars = 2'-2".  
 See Sheet #5 of 13 for Cross Section, Top of Abutment Backwall Removal, and Abutment Backwall Elevation.  
 Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.  
 Hatched areas indicate Concrete Removal.

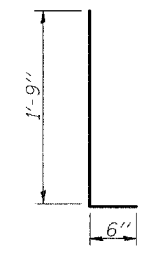
\* Order a(E) & a1(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.

PLAN

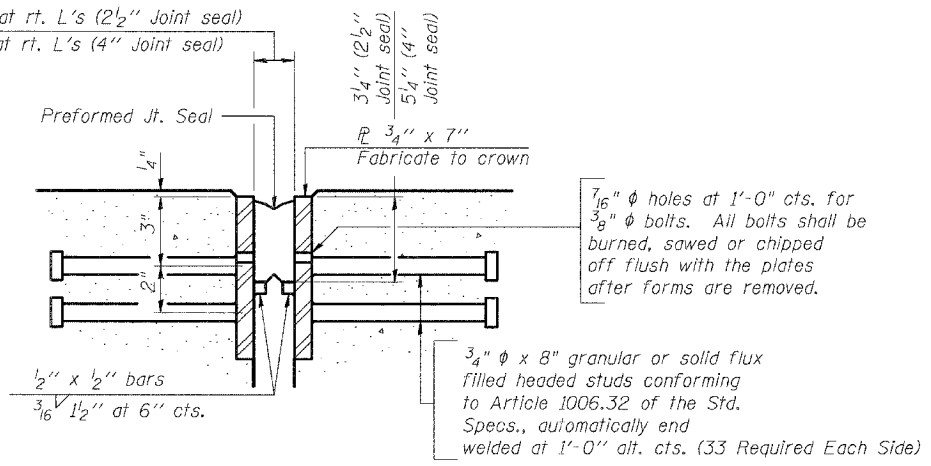
SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	216	#5	31'-1"	—
a1(E)	162	#5	31'-1"	—
a2(E)	4	#5	31'-6"	—
b(E)	128	#5	35'-6"	—
b1(E)	62	#6	30'-0"	—
b2(E)	145	#5	28'-10"	—
h(E)	8	#6	28'-2"	—
v(E)	48	#5	2'-0"	—
v1(E)	112	#4	1'-2"	—
u2(E)	92	#4	2'-3"	—
Reinforcement Bars, Epoxy Coated			POUND	24,940
Concrete Superstructure			CU. YD.	107.2
Concrete Removal			CU. YD.	3.1
Protective Coat			SQ. YD.	471
Bridge Deck Grooving			SQ. YD.	421

BARS u2(E)



1 3/4" at 50°F at rt. L's (2 1/2" joint seal)  
 2 3/4" at 50°F at rt. L's (4" joint seal)



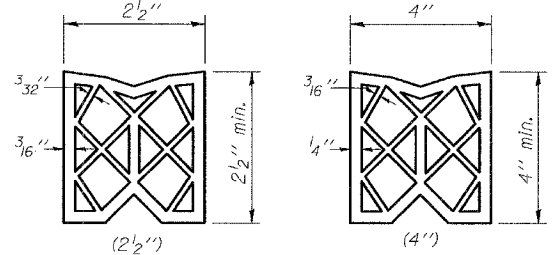
SECTION THRU EXPANSION JOINT (2 1/2" and 4" joint seals)

GENERAL NOTES

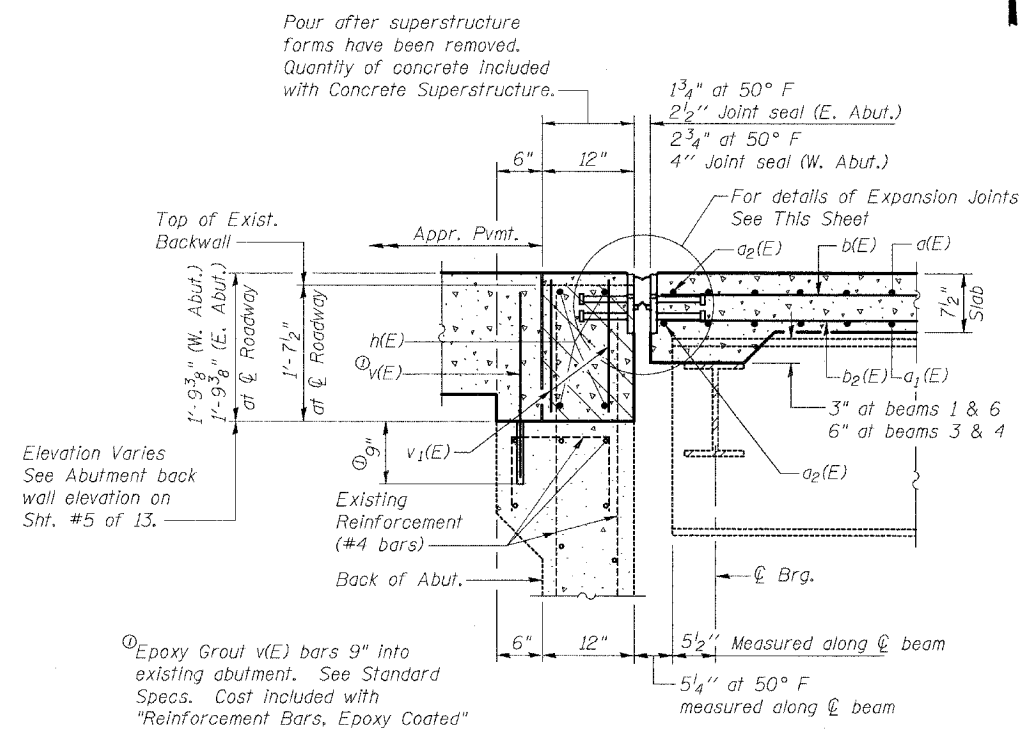
Furnish steel plates in segments of 20 feet maximum length. Maximum space between installed segments shall be 3/16". Seal space with silicone sealant suitable for structural steel.  
 Cost of Structural Steel Plates, studs and bars shall be included in the unit price for Preformed Joint Seal.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Seal 2 1/2"	FOOT	32.0
Preformed Joint Seal 4"	FOOT	32.0



PREFORMED JOINT SEAL

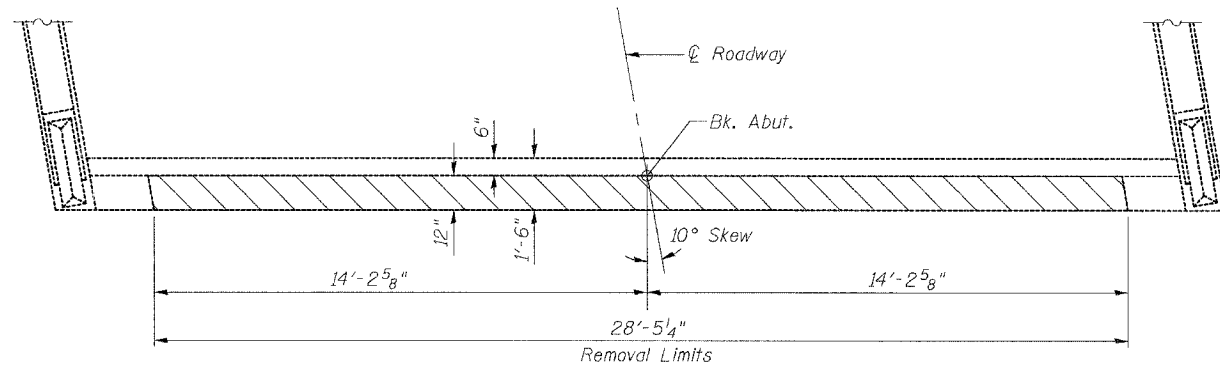


SECTION A-A at Rt. L's to Abutment

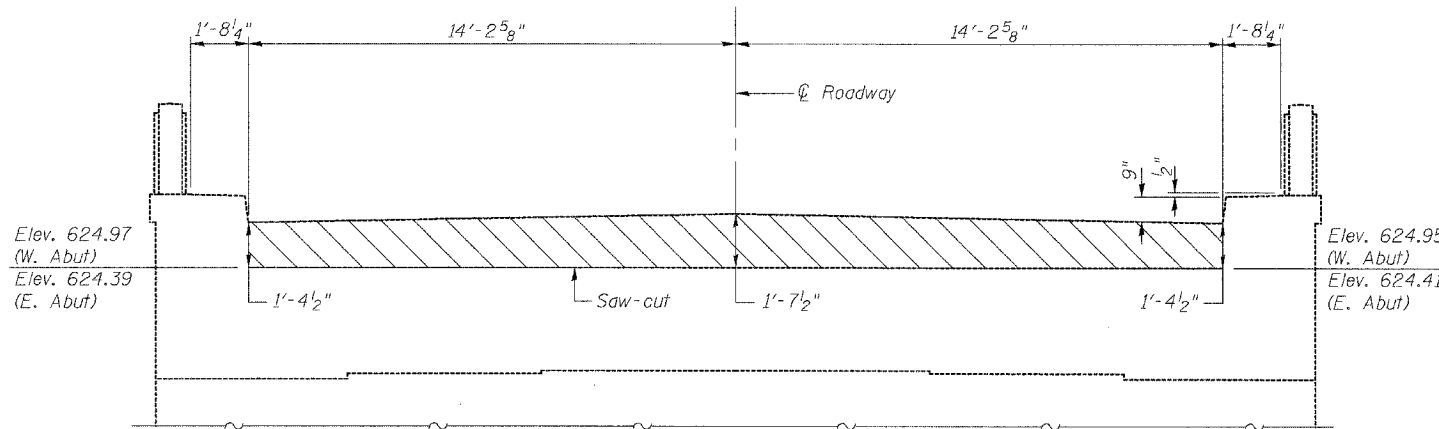
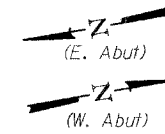
Epoxy Grout v(E) bars 9" into existing abutment. See Standard Specs. Cost included with "Reinforcement Bars, Epoxy Coated"

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ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FAS RTE 1588	#	ADAMS	38	30
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT	
Location #2 Structure No. 001-3028				
* 05-00189-00-BR				



**PLAN**

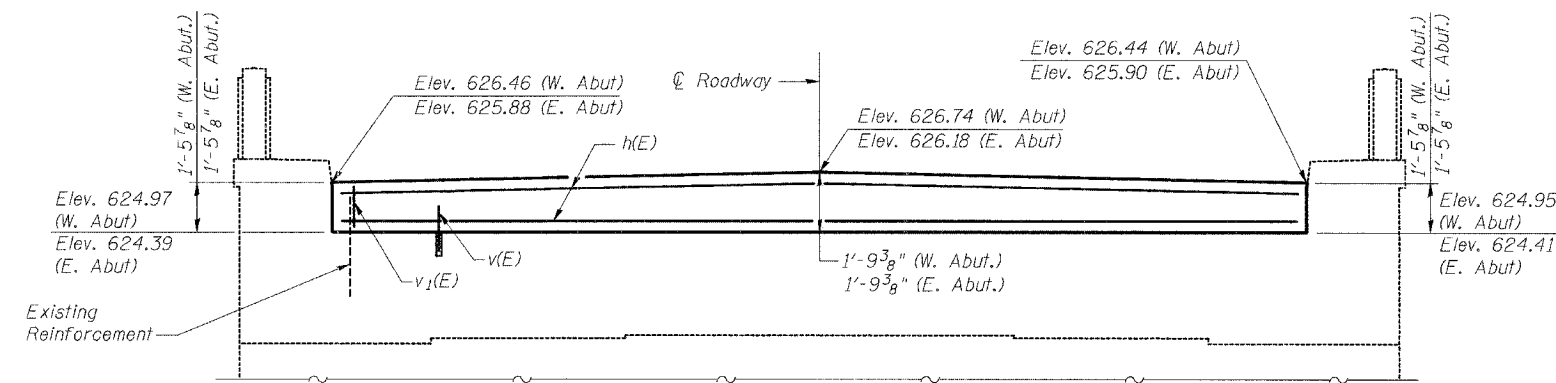


**ELEVATION**

(Looking West at W. Abut.)  
(Looking East at E. Abut.)

Note:  
Elevations and vertical dimensions are at back of abutment.

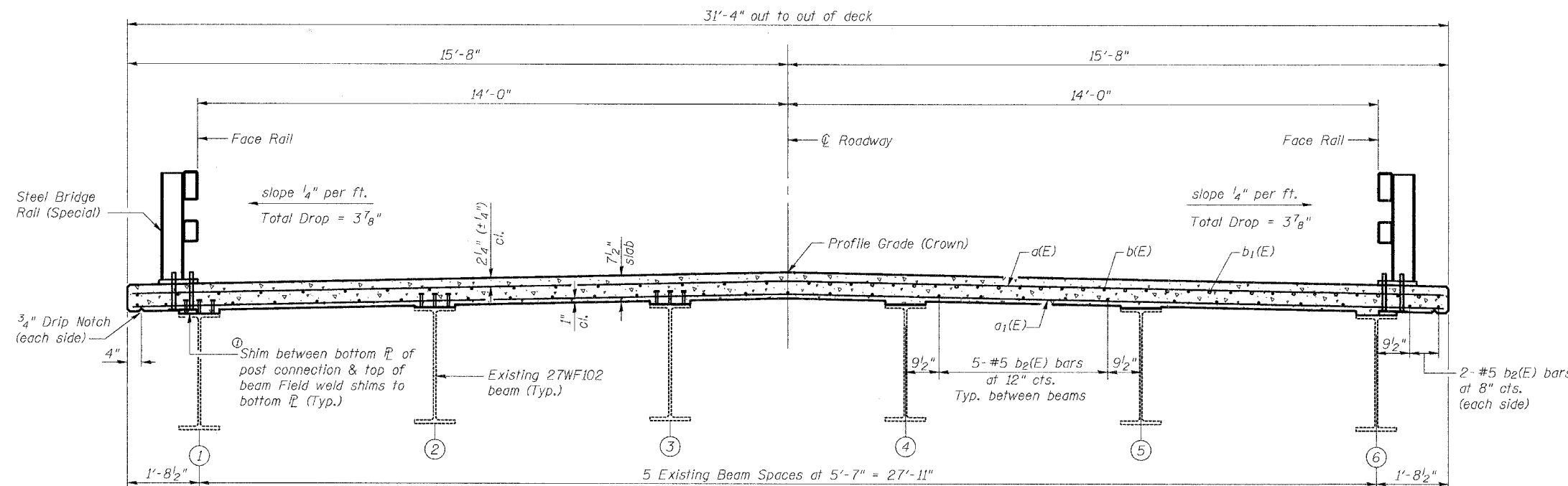
**TOP OF ABUTMENT BACKWALL REMOVAL**



Note:  
Elevations and vertical dimensions are at back of abutment.

**ABUTMENT BACKWALL ELEVATION**

(Looking West at W. Abut.)  
(Looking East at E. Abut.)



**NEAR MIDSPAN**

**CROSS SECTION**  
(Looking East)

**OVER PIERS**

Notes:  
Hatched areas indicate Concrete Removal.  
See Sheet #4 of 13 for Plan & Superstructure Bill of Material.

REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
	BCJ				12/05

**F.A.S. RTE. 1588 OVER WALNUT CREEK**  
**SECTION 05-00189-00-BR**  
**Project RS-1588 (106)**  
**ADAMS COUNTY**

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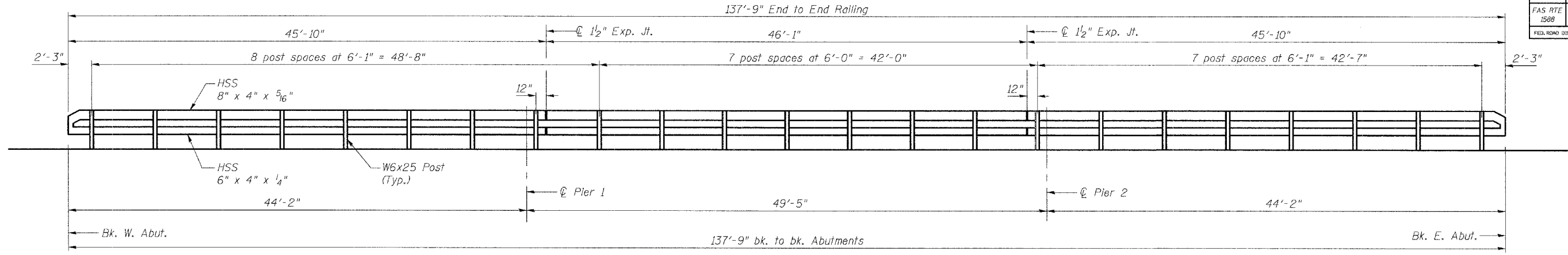
**SUPERSTRUCTURE**  
**STRUCTURE NUMBER 001-3028**  
**STATION 407+65**

① Cost Included with "Steel Bridge Rail (Special)"

ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
FAS RTE 1588	*	ADAMS	36	31
FED. ROAD DIST. NO. 7		ILLINOIS		PROJECT

Location #2 Structure No. 001-3028  
\*05-00189-00-BR

SHEET NO. 6 OF 13



**RAILING ELEVATION**

**NOTES**

Hollow structural sections shall conform to the requirements of ASTM designation A 500 Grade B Structural Steel Tubing and shall meet the longitudinal CVN requirements of 15 ft-lbs at 0° F.

All other steel shapes and plates shall conform to the requirements of AASHTO M 270 Grade 36 except posts shall conform to AASHTO M 270, Grade 50.

Bolts, cap screws, and nuts shall conform to the requirements of ASTM designation A 307 except for high strength bolts, nuts and washers noted which shall conform to AASHTO M 164.

All bolts, nuts, cap screws, washers and lock washers shall be galvanized according to AASHTO M 232.

All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication according to AASHTO M 111 and ASTM A 385. Galvanized rail shall not be painted.

Railing shall be according to Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per foot for Steel Bridge Rail (Special).

All field drilled holes shall be coated with an approved zinc rich paint before erection.

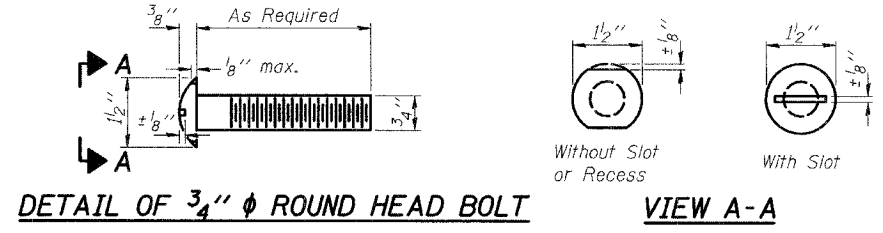
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Bridge Rail (Special).

All posts shall be cut on bottom to match deck slope. Posts shall be vertical.

The quantity of u<sub>2</sub>(E) bars are included in the superstructure bill of materials on sheet #4 of 13.

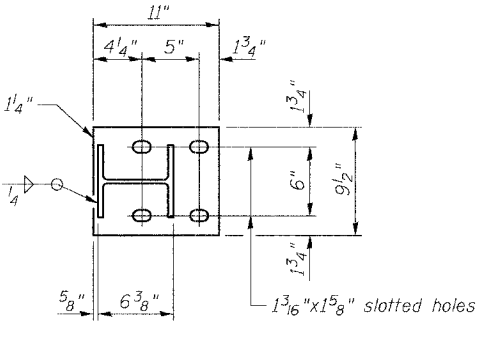
The 1" φ bolts connecting the post base to the concrete deck shall be drawn up tight and the threads burred at the face of the nut with a pointed tool.

The lower portion of the post base in contact with concrete shall have 1/8" fabric bearing pads of same dimensions as section B-B between the plates and the concrete.

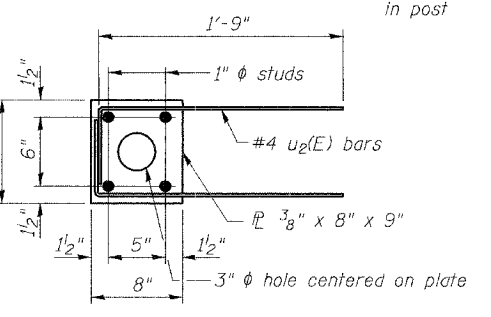


**DETAIL OF 3/4" φ ROUND HEAD BOLT**  
**VIEW A-A**

**RAIL SPLICE CONNECTION AT EXPANSION JT.**



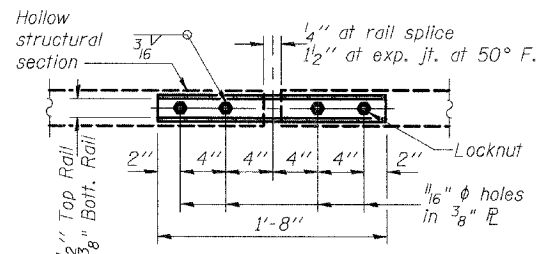
**SECTION B-B**



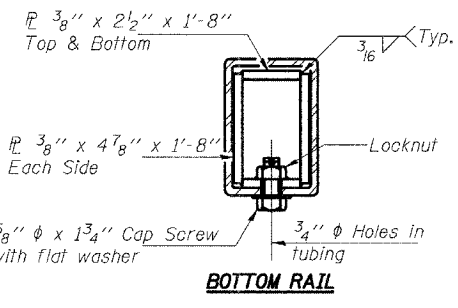
**SECTION C-C**



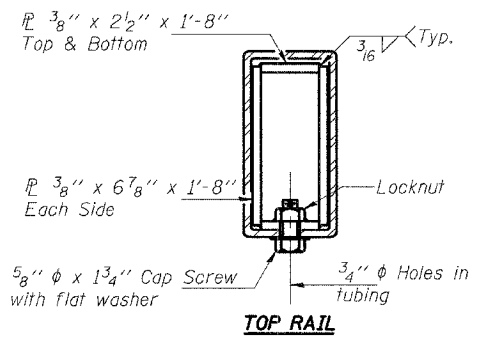
**SECTION D-D**



**PLAN-BOTT. SPLICE AT TYPICAL**

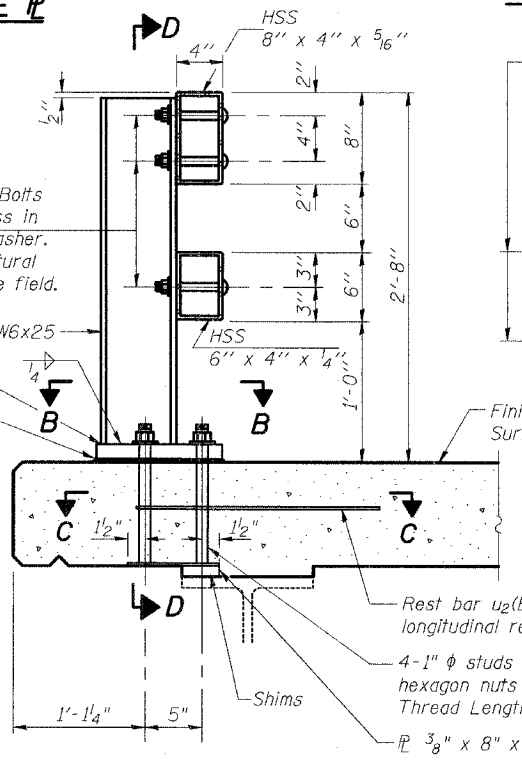
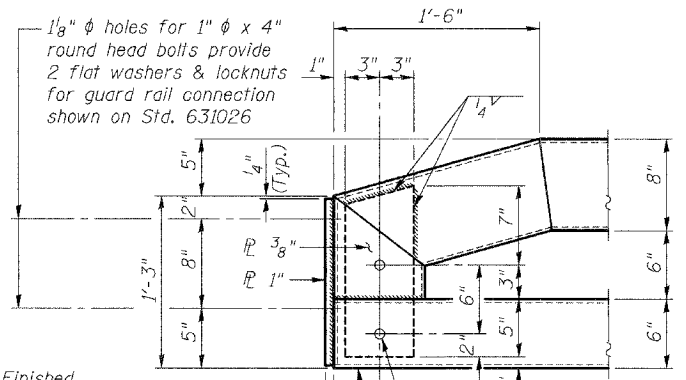


**BOTTOM RAIL**

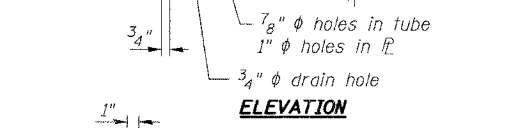


**TOP RAIL**

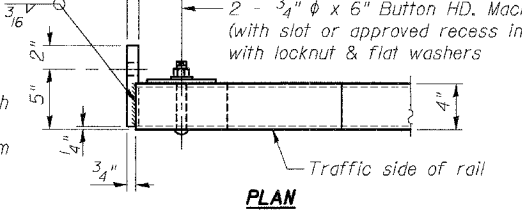
**SECTIONS AT RAIL SPLICE**



**SECTION AT RAIL POST**



**ELEVATION**



**PLAN**  
**END OF RAIL DETAILS**

**BILL OF MATERIAL**

Item	Unit	Quantity
Steel Bridge Rail (Special)	FOOT	276

REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
	BGJ			F.A.S. RTE. 1588 OVER WALNUT CREEK SECTION 05-00189-00-BR Project RS-1588 (106) ADAMS COUNTY	12/05
<b>STEEL BRIDGE RAIL (SPECIAL) STRUCTURE NUMBER 001-3028 STATION 407+65</b>					

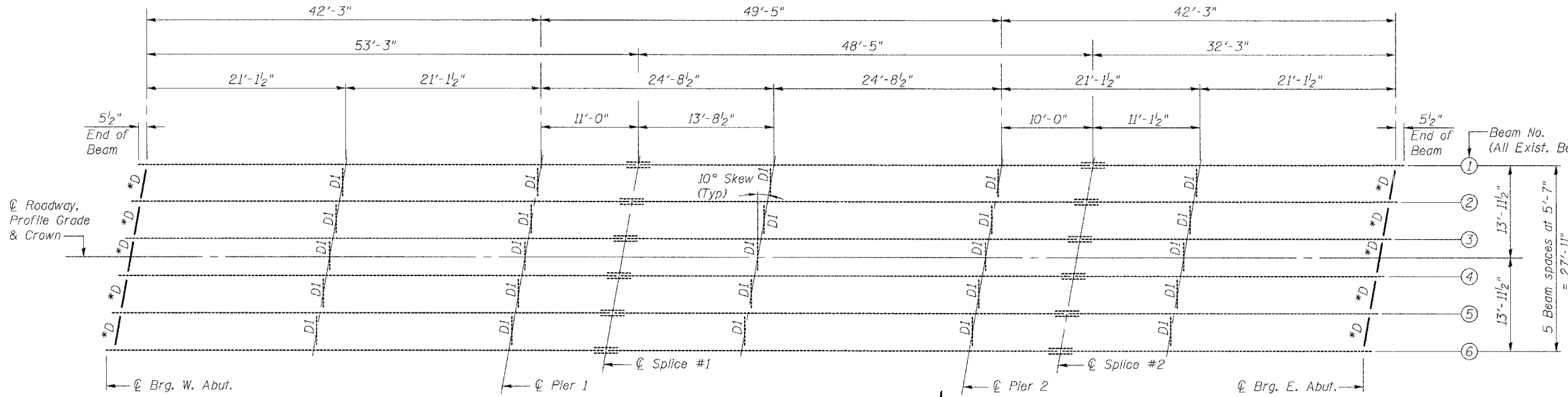
9/17/07 AM 1/25/2006 P:\05\files\050014\Final\Bridge Plans\001-3028-bridgedgn

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FAS RTE 1588	*	ADAMS	36	32

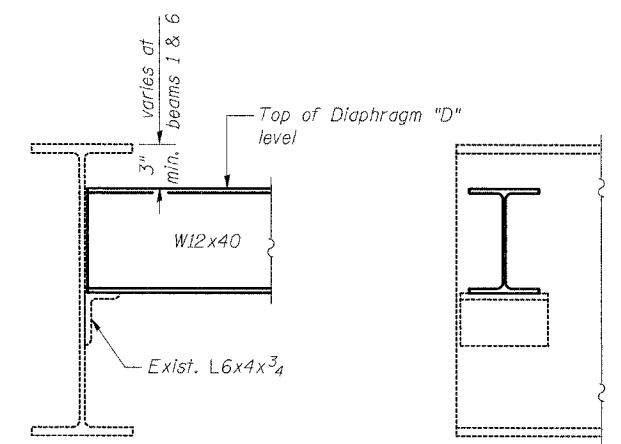
FED. ROAD DIST. NO. 7 ILLINOIS PROJECT

Location #2 Structure No. 001-3028

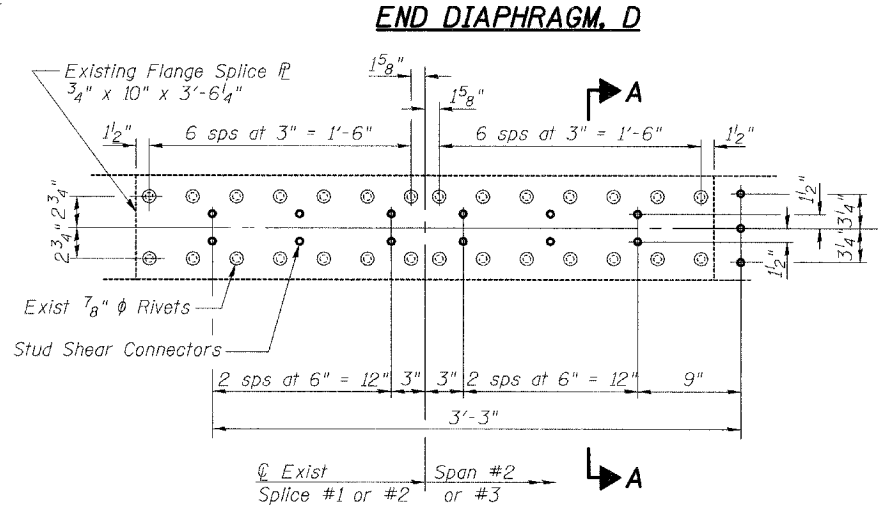
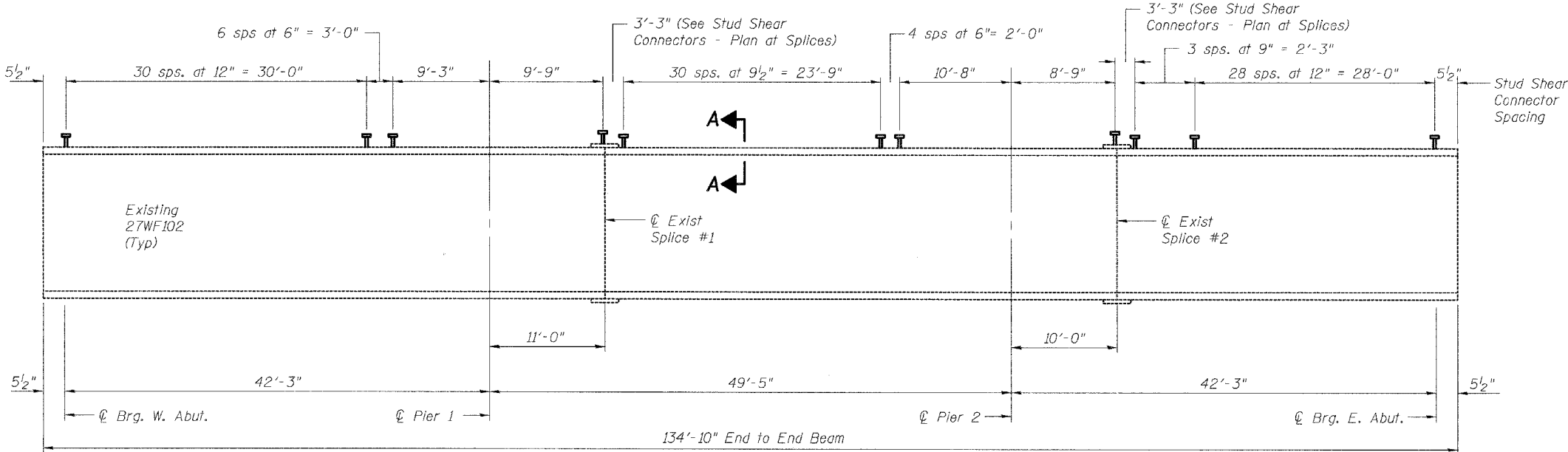
\*05-00189-00-BR



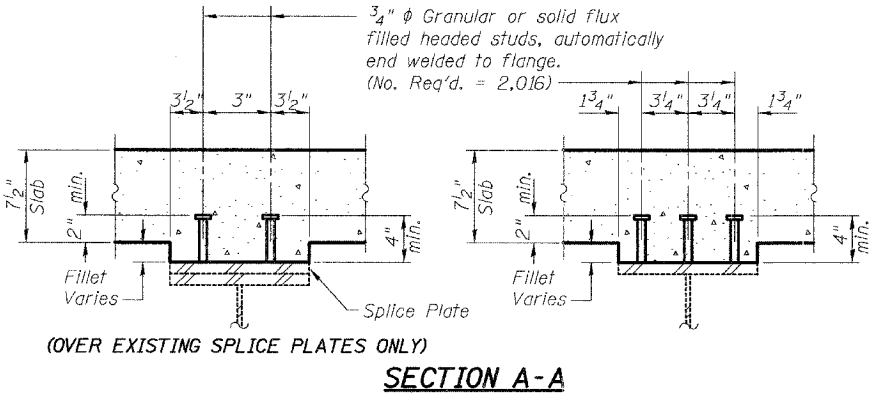
Notes:  
Existing Diaphragm "D1" are 12WF36.



\* End Diaphragms, D, to be removed and replaced in accordance with Article 109.04 of the Standard Specifications. End Diaphragms, D, will be fabricated by Adam's County.



STUD SHEAR CONNECTORS - PLAN AT SPLICES



REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
	BGJ				12/05
F.A.S. RTE. 1588 OVER WALNUT CREEK SECTION 05-00189-00-BR Project RS-1588 (106) ADAMS COUNTY STRUCTURAL STEEL DETAILS STRUCTURE NUMBER 001-3028 STATION 407+65					

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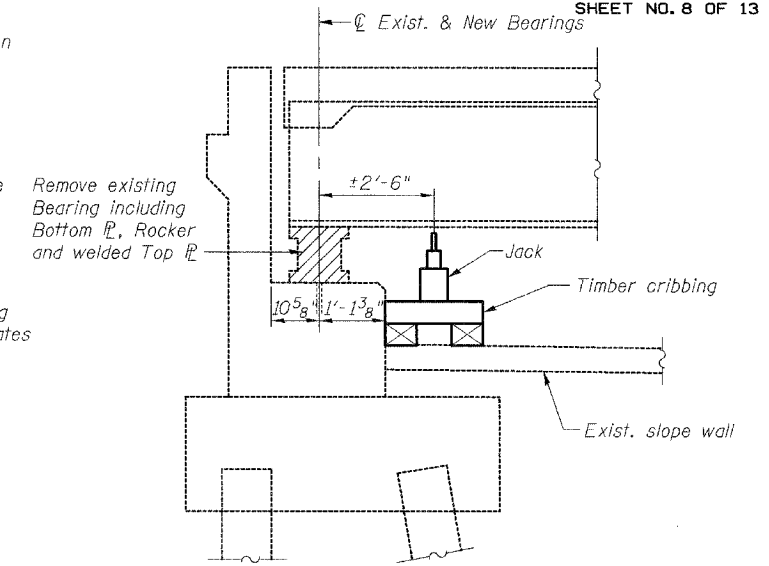
ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FAS RTE 1588	*	ADAMS	38	33
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT	

Location #2 Structure No. 001-3028  
#05-00189-00-BR

SHEET NO. 8 OF 13

### JACK AND REMOVE EXISTING BEARINGS PROCEDURES

- Jacking and Cribbing shall be done after existing deck removal is completed.
- The Contractor shall submit for approval by the Engineer plans for jacking and cribbing, prior to commencing any work at the bearings. The maximum dead load reaction with the deck removed (per bearing) at the east and west abutments = 3 kips. The minimum jack capacity at each beam shall be 6 kips at the east and west abutments.
- Top of beam elevations shall be measured prior to jacking and shall remain the same after bearings are in place.
- There shall be at least one jack per bearing and the jack shall be placed close to the bearing. The steel shall be raised a maximum of 1/4" and shall be blocked in position until after the completion of the installation of new bearings.
- Burn the existing anchor bolts flush with the concrete surface, grind smooth, and seal with epoxy. The rockers and top and bottom plates shall be removed. The top plate shall be removed using the air-arc method. Grind smooth all weld material remaining on the bottom flange. Cost of removing anchor bolts, rockers, top plates, and bottom plates shall be included with "Jack and Remove Existing Bearings."
- Anchor bolts shall be set before bolting diaphragms over supports.
- The new concrete abutment seats, elastomeric bearings, and end diaphragms shall be in place and the jacks lowered before the new concrete deck is poured.



**AT EAST AND WEST ABUTMENTS**  
(Dimensions at Rt L's)  
**EXISTING BEARING REMOVAL DETAIL**

		0.4 Sp. 1 & 0.6 Sp. 3	Piers 1 & 2	0.5 Sp. 2
$I_s$	(in <sup>4</sup> )	3,604	3,604	3,604
$I_c$ (n)	(in <sup>4</sup> )	10,040		10,040
$I_c$ (3n)	(in <sup>4</sup> )	7,325		7,325
$S_s$	(in <sup>3</sup> )	266	266	
$S_c$ (n)	(in <sup>3</sup> )	400		400
$S_c$ (3n)	(in <sup>3</sup> )	360		360
$D$	(k/')	0.68	0.96	0.68
$M_D$	(k)	88	193	64
$s_D$	(k/')	0.28		0.28
$M_s D$	(k)	40		36
$M_L$	(k)	213	112	218
$M$ (Imp)	(k)	64	33	63
$5/3[M_L + M(Imp)]$	(k)	462	242	468
$M_a$	(k)	767	565	739
$f_s D$ non-comp	(ksi)	4.0	8.7	2.9
$f_s D$ (comp)	(ksi)	1.3		1.2
$f_s 5/3(L + Imp)$	(ksi)	13.9	10.9	14.1
$f_s$ (Overload)	(ksi)	19.2	19.6	18.1
$f_s$ (Total)	(ksi)	24.9	25.5	23.6
$VR$	(kips)	39.1		41.7

	W. & E. Abuts.	Piers 1 & 2
$R_D$	(kips) 15.7	48.6
$R_L$	(kips) 27.5	33.5
Imp.	(kips) 8.2	7.7
$R$ (Total)	(kips) 51.4	89.8

$I_s$  and  $S_s$  are the moment of inertia and section modulus of the steel section used in computing  $f_s$  (Total & Overload).

$I_c(n)$  and  $S_c(n)$  are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.

$I_c(3n)$  and  $S_c(3n)$  are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads. (see AASHTO 10.38)

$VR$  is the maximum Live Load + Impact shear range in span.  
 $M_a$  (Applied Moment) =  $1.3[M_D + M_s D + 5/3(M_L + M_{Imp})]$ .

$f_s$  (Overload) is the sum of the stresses due to  $M_D + M_s D + 5/3(M_L + M_{Imp})$ .

$f_s$  (Total) is the sum of the stresses due to  $1.3[M_D + M_s D + 5/3(M_L + M_{Imp})]$ .

$M_D$  - Moment due to dead loads on non-composite section.

$M_s D$  - Moment due to dead loads on composite section.

$M_L$  - Moment due to live load on non-composite or composite section.

$M_{Imp}$  - Moment due to live load impact on non-composite or composite section.

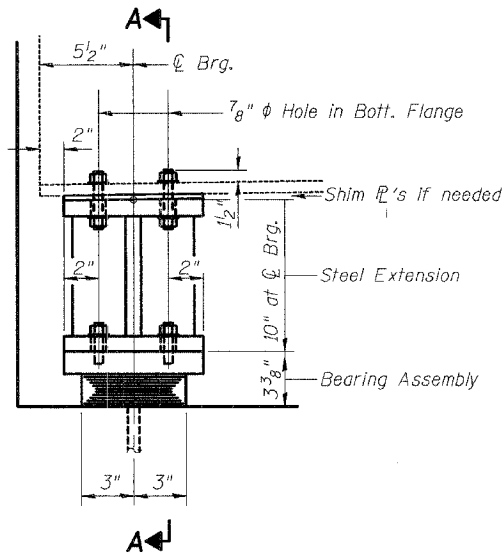
### BILL OF MATERIAL

Item	Unit	Total
Jack and Remove Existing Bearings	Each	12

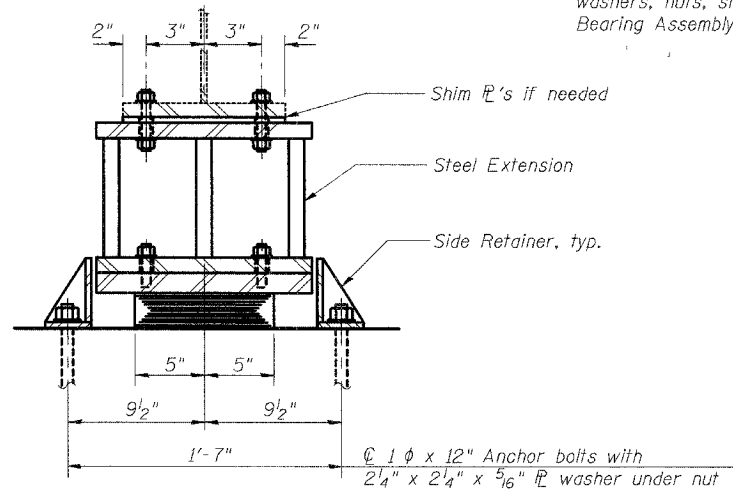
REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
	BGJ				12/05
<b>F.A.S. RTE. 1588 OVER WALNUT CREEK SECTION 05-00189-00-BR Project RS-1588 (106) ADAMS COUNTY</b>					
<b>MOMENT &amp; REACTION TABLES, JACK AND REMOVE EXISTING BEARINGS STRUCTURE NUMBER 001-3028 STATION 407+65</b>					

ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
FAS RTE 1588	*	ADAMS	38	34
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT	
Location #2 Structure No. 001-3028				
* 05-00189-00-BR				

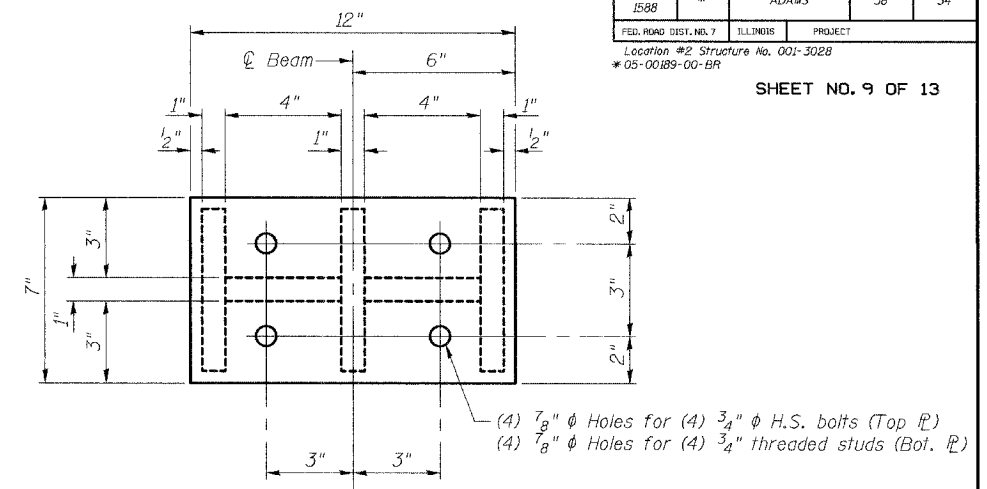
Notes:  
See sheet #11 of 13 for Anchor Bolt installation.  
Cost of steel extensions, side retainers, anchor bolts, washers, nuts, shims and plates are included in "Elastomeric Bearing Assembly Type I"



ELEVATION AT EAST ABUTMENT

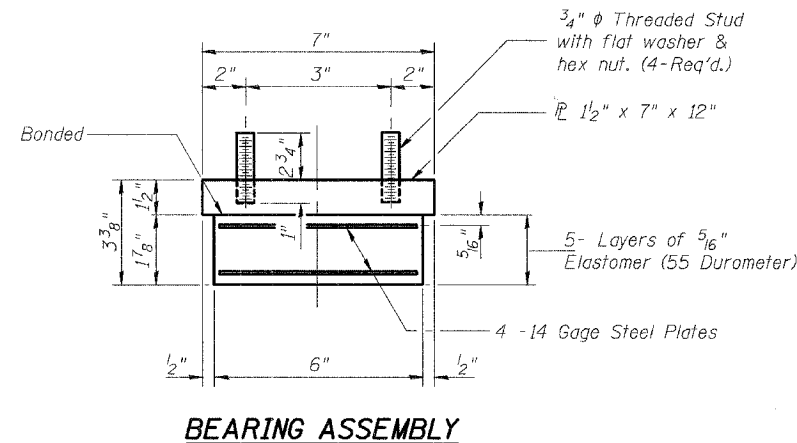


SECTION A-A



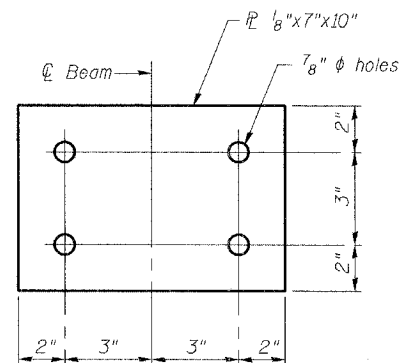
PLAN STEEL EXTENSION

TYPE I ELASTOMERIC EXPANSION BEARING

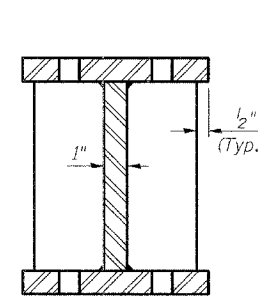


BEARING ASSEMBLY

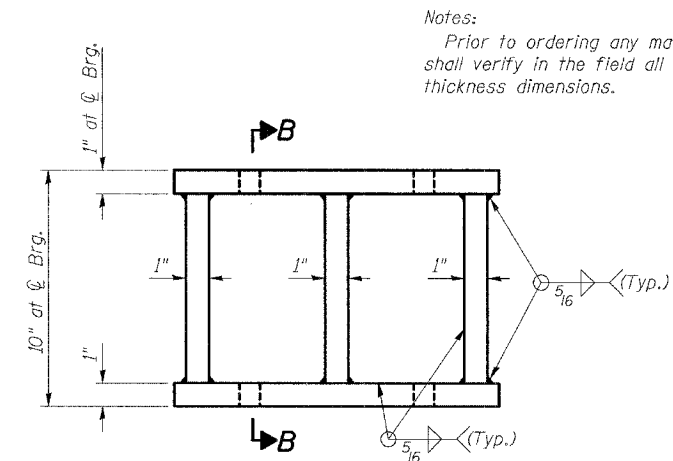
Note: Shim plates shall not be placed under Bearing Assembly.



SHIM P  
(12 Required)

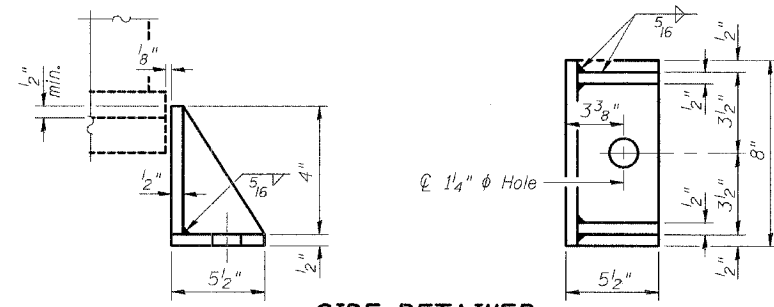


SECTION B-B



ELEVATION STEEL EXTENSION

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



SIDE RETAINER

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

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	EACH	6

CONTRACTOR IS RESPONSIBLE FOR INSTALLATION ONLY.  
MATERIAL WILL BE FABRICATED AND FURNISHED BY ADAMS COUNTY.

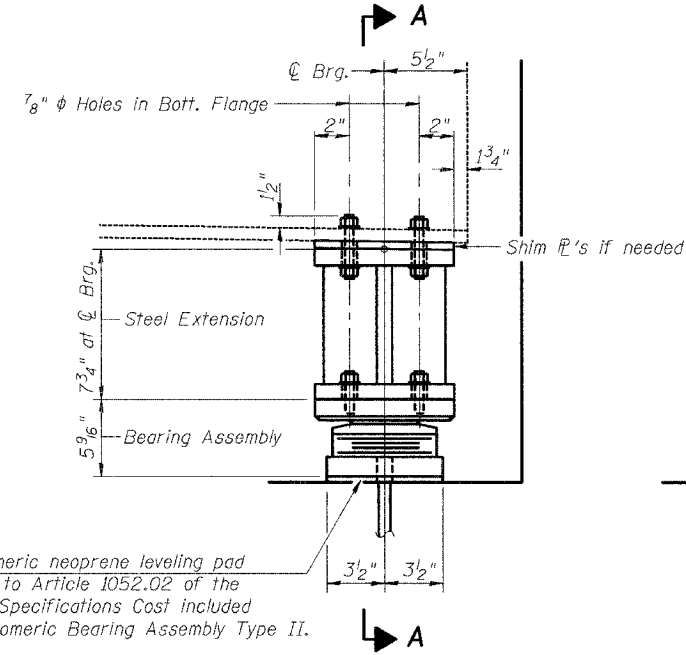
REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
	BGJ				12/05
F.A.S. RTE. 1588 OVER WALNUT CREEK SECTION 05-00189-00-BR Project RS-1588 (106) ADAMS COUNTY					
TYPE I ELASTOMERIC BEARING STRUCTURE NUMBER 001-3028 STATION 407+65					

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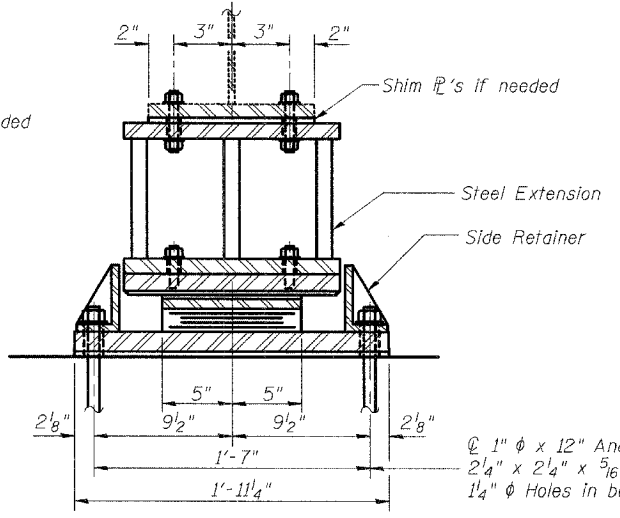
ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FAS RTE 1588	*	ADAMS	38	35

FED. ROAD DIST. NO. 7 ILLINOIS PROJECT  
 Location #2 Structure No. 001-3028  
 \*05-00189-00-BR

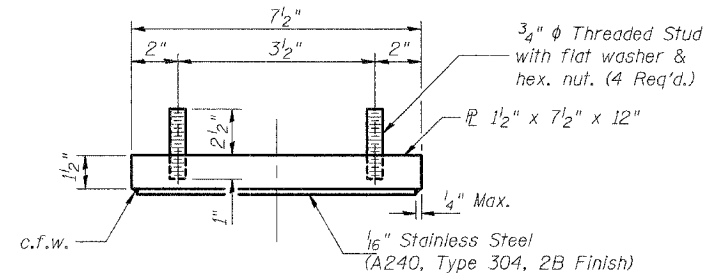
Notes:  
 See sheet #11 of 13 for Anchor Bolt installation.  
 Cost of steel extensions, side retainers, anchor bolts, washers, nuts, shims and plates are included in "Elastomeric Bearing Assembly Type II"



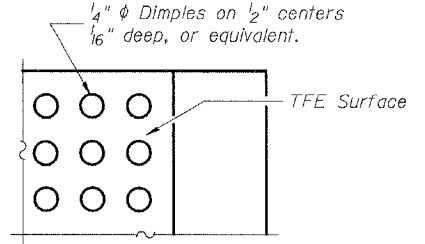
ELEVATION AT WEST ABUTMENT



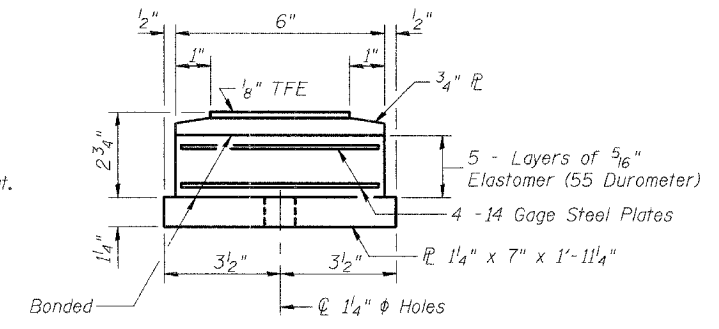
SECTION A-A



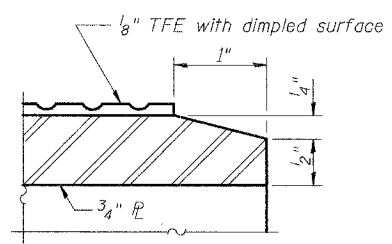
TOP BEARING ASSEMBLY



PLAN-TFE SURFACE



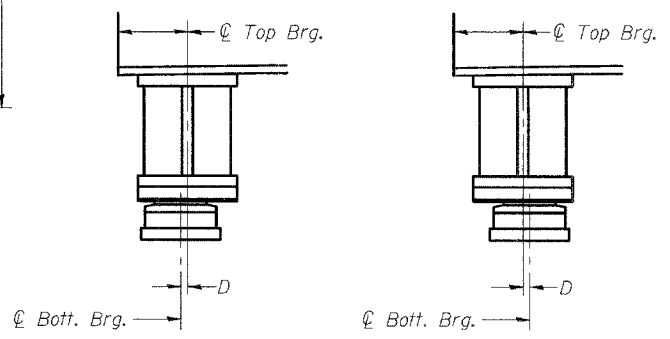
BOTTOM BEARING ASSEMBLY



SECTION THRU TFE

Note: The 1/8" TFE 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.

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



SETTING ANCHOR BOLTS AT EXPANSION BEARING

D = 1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

BILL OF MATERIAL

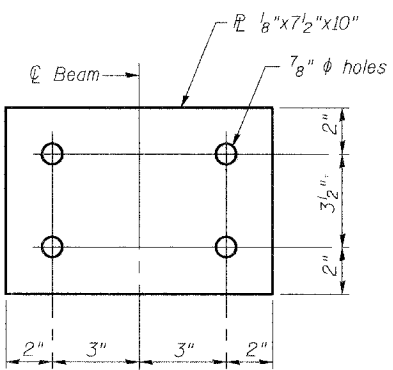
Item	Unit	Total
Elastomeric Bearing Assembly Type II	EACH	6

REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
	BGJ				12/05

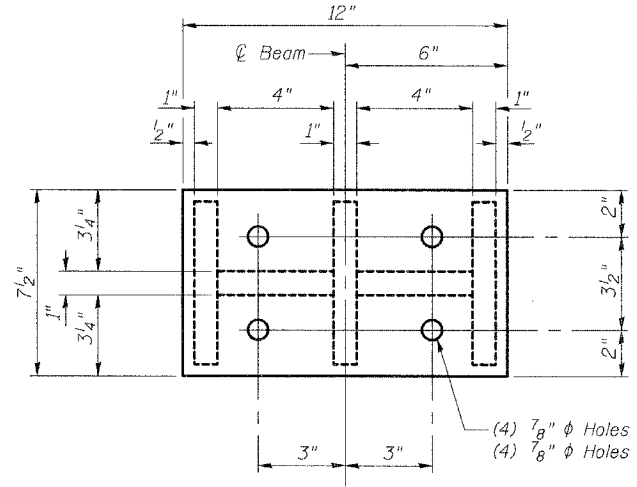
F.A.S. RTE. 1588 OVER WALNUT CREEK  
 SECTION 05-00189-00-BR  
 Project RS-1588 (106)  
 ADAMS COUNTY

TYPE II ELASTOMERIC BEARING  
 STRUCTURE NUMBER 001-3028  
 STATION 407+65

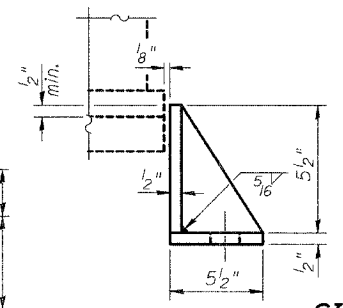
CONTRACTOR IS RESPONSIBLE FOR INSTALLATION ONLY.  
 MATERIAL WILL BE FABRICATED AND FURNISHED BY ADAMS COUNTY.



SHIM PLATE (12 Required)



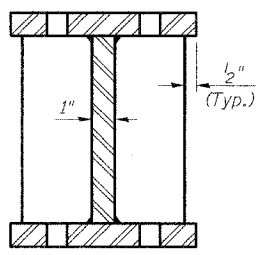
PLAN STEEL EXTENSION



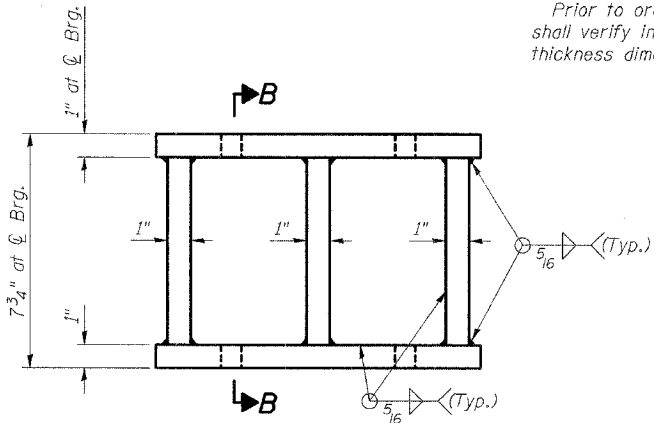
SIDE RETAINER

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

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



SECTION B-B



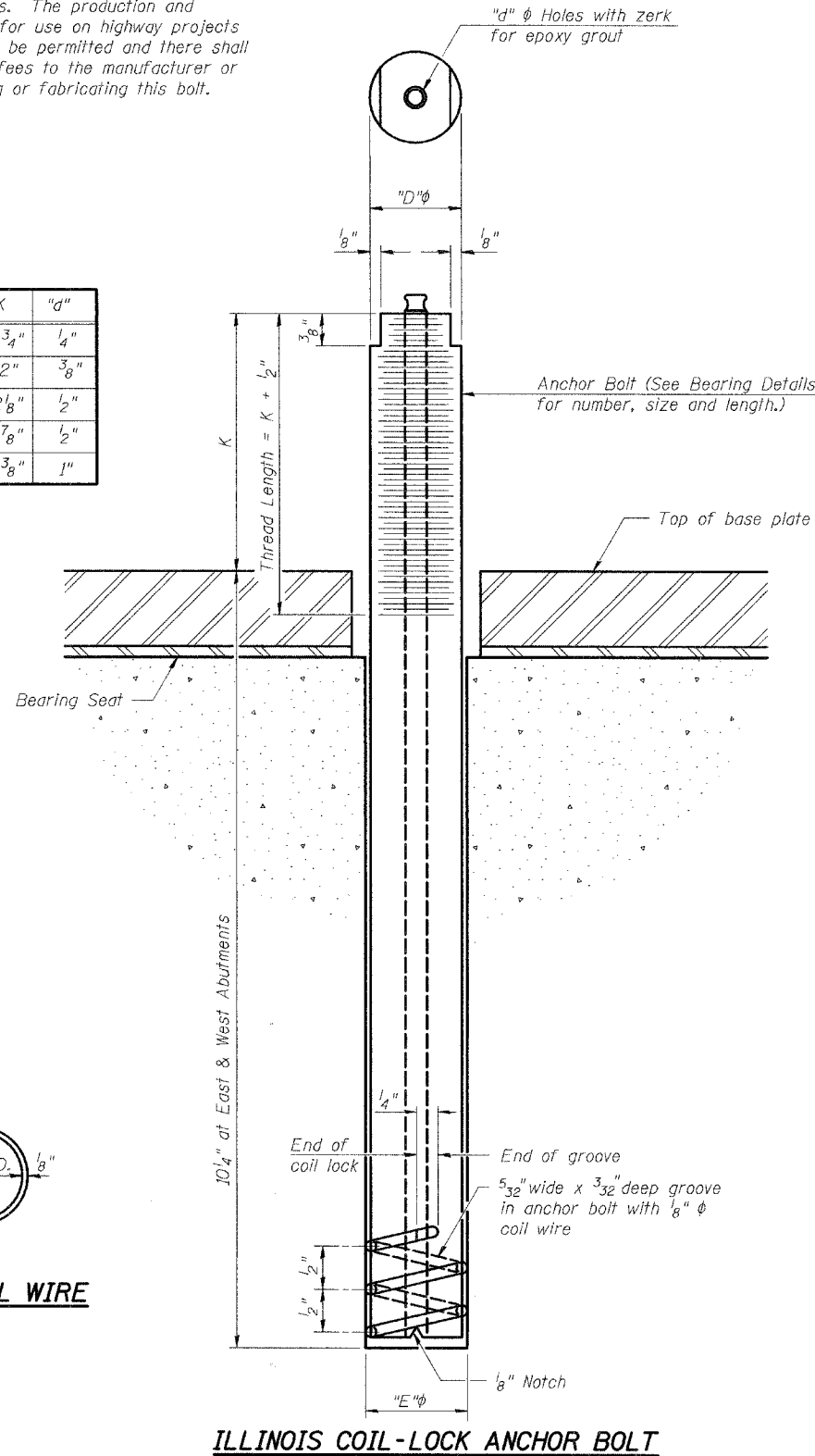
ELEVATION STEEL EXTENSION

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ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FAS RTE 1588	*	ADAMS	36	36
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		
Location #2 Structure No. 001-3028 * 05-00189-00-BR				

The Illinois Coil-Lock Anchor Bolt is a proprietary item which is the property of the Illinois Department of Transportation. Use, reproduction or disclosure without express written permission is prohibited and protected under Federal copyright laws. The production and the fabrication of this bolt for use on highway projects in the State of Illinois shall be permitted and there shall be no incurred charges or fees to the manufacturer or the fabricator for producing or fabricating this bolt.

D	E	H	K	"d"
1"	1 1/8"	1 3/16"	1 3/4"	1/4"
1 1/4"	1 3/8"	1 1/16"	2"	3/8"
1 1/2"	1 5/8"	1 5/16"	2 1/8"	1/2"
2"	2 1/8"	1 3/16"	2 7/8"	1/2"
2 1/2"	2 5/8"	2 5/16"	3 3/8"	1"



**MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT**

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A 519, Grade 1026, CW and supplied with hexagonal nuts and cut washers.  
 The coil wire shall be made of any suitable soft steel wire.  
 The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.  
 The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C 881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

**INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT**

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

**ALTERNATE ANCHOR BOLTS**

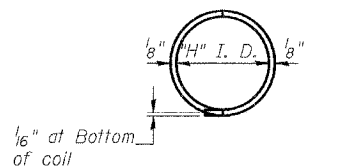
The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures.  
 The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:  
 1. A threaded rod stud with nut and washer of the type specified.  
 2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

Location	Type
W. Abut.	A307
E. Abut.	A307

ASTM F 1554 Grade 105, ASTM A 449 and AASHTO M 314 Grade 105 anchor bolts may be substituted for the anchor bolts shown above.

**GENERAL NOTES**

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or according to the manufacturer's recommendation after beams or girders have been erected and adjusted.  
 Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.  
 The anchor bolts, furnished and installed including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for Furnishing and Erecting Structural Steel.



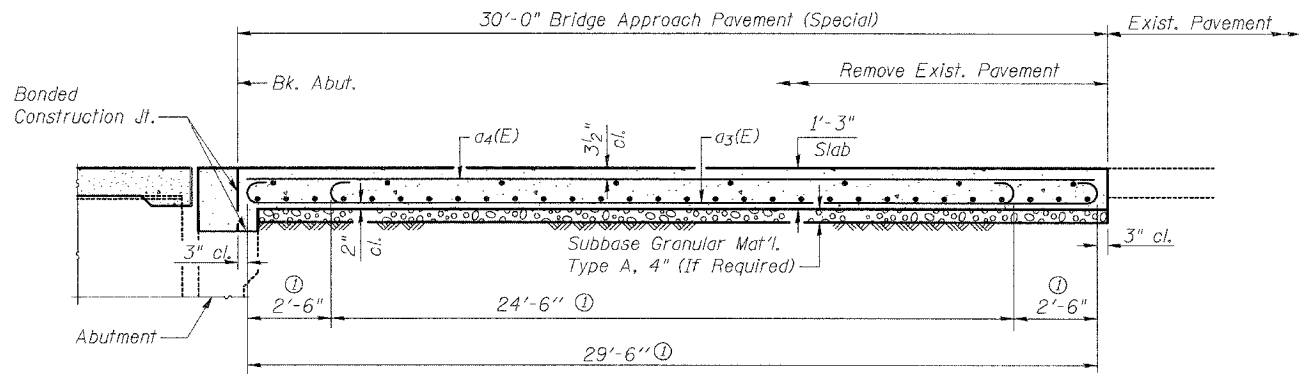
**PLAN-COIL WIRE**

REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
	BGJ				12/05
<b>F.A.S. RTE. 1588 OVER WALNUT CREEK                  SECTION 05-00189-00-BR                  Project RS-1588 (106)                  ADAMS COUNTY</b>					
<b>ANCHOR BOLT DETAILS FOR BEARINGS                  STRUCTURE NUMBER 001-3028                  STATION 407+65</b>					

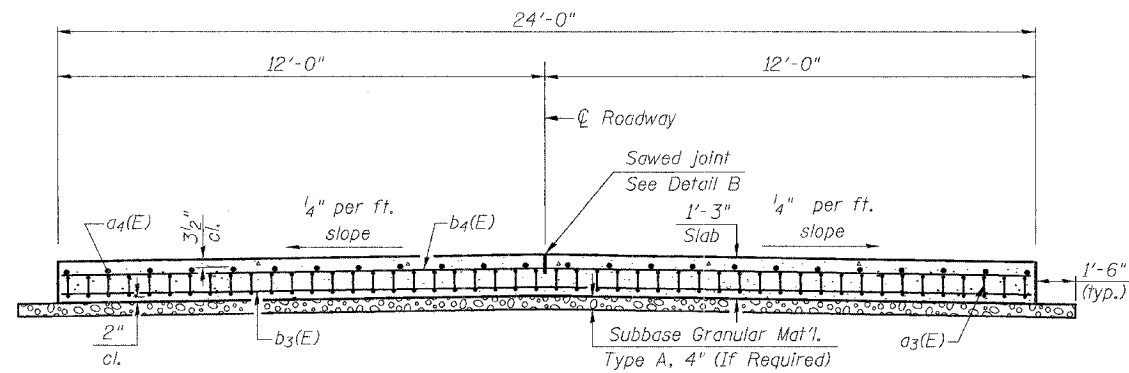
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 1/25/2006  
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ROUTE NO. FAS RTE 1588	SEC *	COUNTY ADAMS	TOTAL SHEETS 38	SHEET NO. 37
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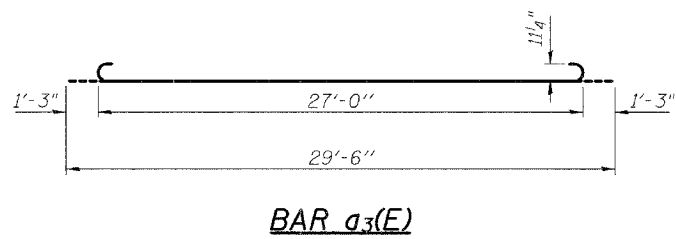
FED. ROAD DIST. NO. 7 ILLINOIS PROJECT  
Location #2 Structure No. 001-3028  
\*05-00189-00-BR



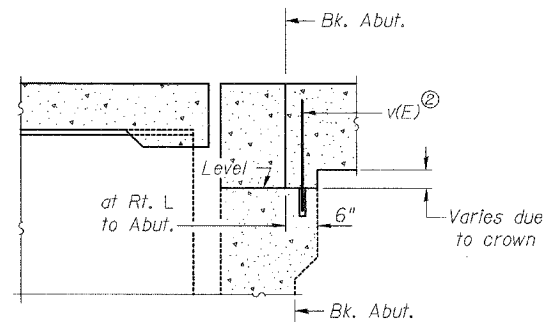
**SECTION C-C**  
① Stagger  $a_3(E)$  bars as shown on plan - full width



**SECTION D-D**  
(See Plan for Dimensions not shown)

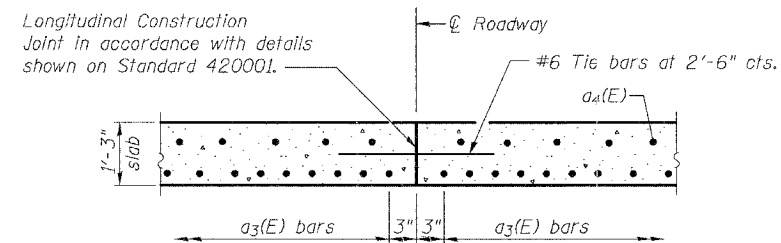


**BAR  $a_3(E)$**



**SECTION E-E**

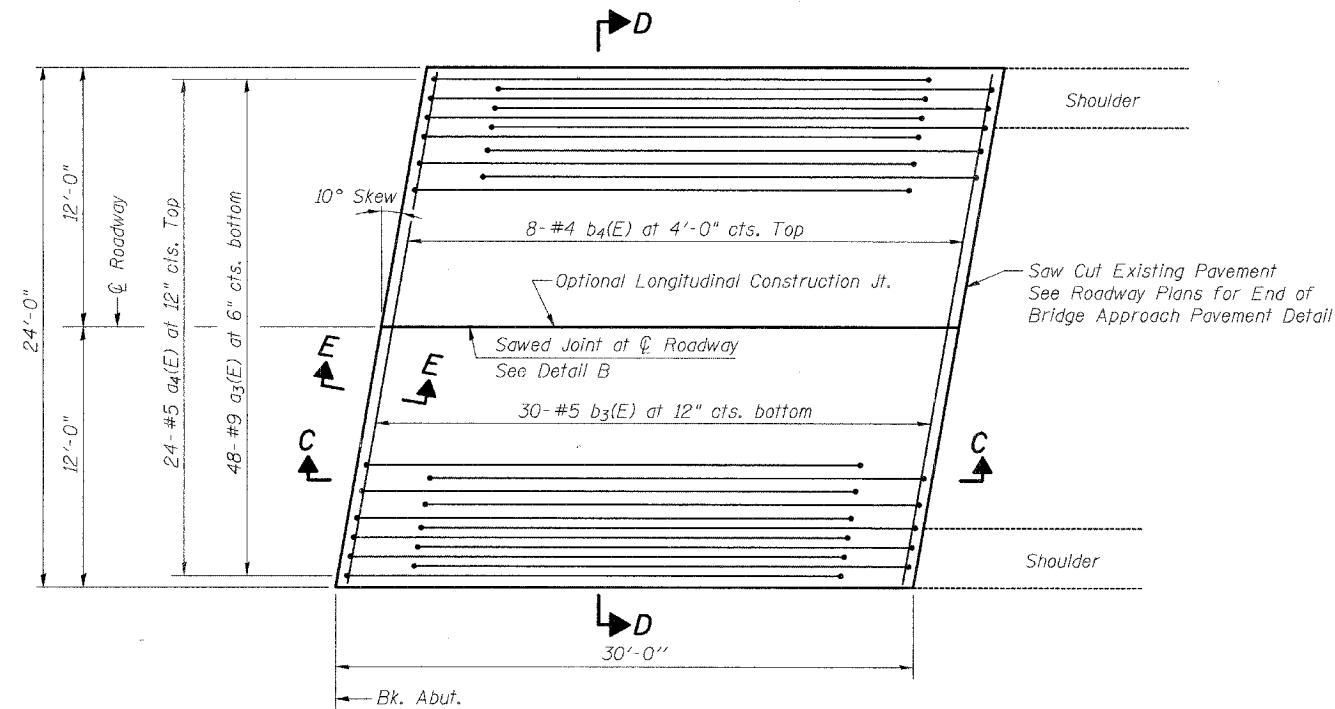
②  $v(E)$  bars are billed with the superstructure  
See Sheets #4 and #5 of 13.



**OPTIONAL LONGITUDINAL CONSTRUCTION JOINT**

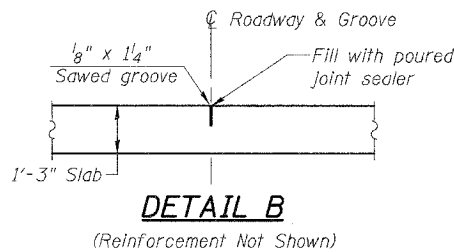
As approved by the Engineer, the Contractor may elect to reduce the width of pour by use of the Optional Longitudinal Construction Joint shown. Joints shall be located at  $\phi$  roadway.

Notes:  
Reinforcement bars designated (E) shall be epoxy coated.  
Cost of reinforcement bars, epoxy coated, concrete, sub-base granular material Type A, pavement removal, excavation to bottom of sub-base and optional longitudinal construction joint are included in the cost of "Bridge Approach Pavement (Special)".  
Provisions of Section 420 of Std. Specification shall apply.



**PLAN**

(East Bridge Approach Pavement shown,  
West Bridge Approach Pavement the same, except opposite hand)



**DETAIL B**

(Reinforcement Not Shown)

**BRIDGE APPROACH PAVEMENT (SPECIAL)**

**BILL OF MATERIAL**

(For one approach)

Bar	No.	Size	Length	Shape
$a_3(E)$	48	#9	29'-6"	
$a_4(E)$	24	#5	29'-6"	
$b_3(E)$	30	#5	23'-10"	
$b_4(E)$	8	#4	23'-10"	
Reinforcement Bars, Epoxy Coated			POUND	6,430

**DESIGN STRESSES**

$f_y = 60,000$  p.s.i.  
 $f'_c = 3,500$  p.s.i.

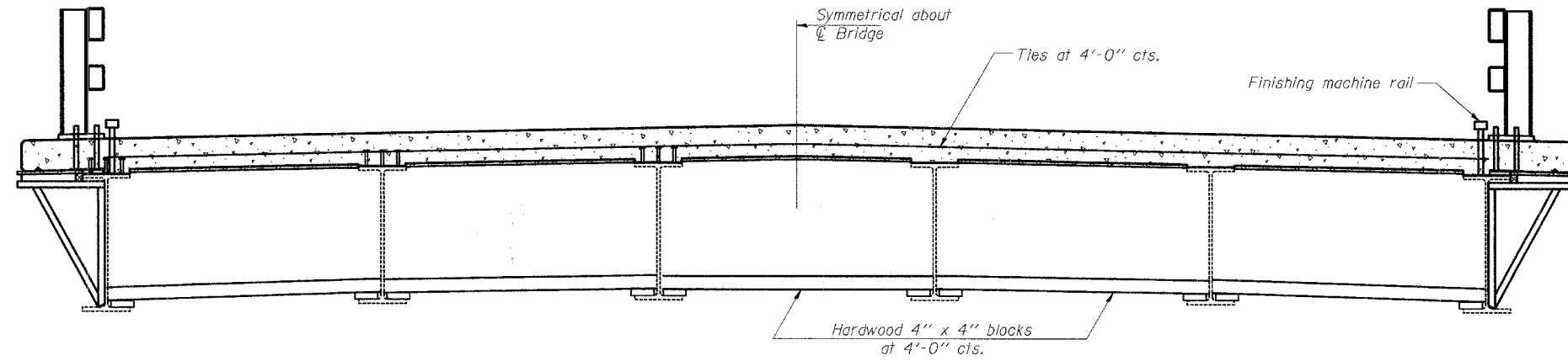
REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
	BGJ				12/05

F.A.S. RTE. 1588 OVER WALNUT CREEK  
SECTION 05-00189-00-BR  
Project RS-1588 (106)  
ADAMS COUNTY

**BRIDGE APPROACH PAVEMENT (SPECIAL)**  
**STRUCTURE NUMBER 001-3028**  
**STATION 407+65**

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FAS RTE 1588	*	ADAMS	38	38
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT	

Location #2, Structure No. 001-3028  
 \* 05-00189-00-BR



**FORM BRACES FOR  
STANDARD CONSTRUCTION**

When cantilever forming brackets are used, the work shall be done according to Article 503.06, except as modified below and in the details shown on this sheet.

The finishing machine rails shall be placed on the top flange of the exterior beams.

The beams or girders, supporting cantilever forming brackets, shall be tied together at 4 foot intervals.

For Standard construction the Hardwood bracing materials shall be placed as shown between webs of beams in each bay.

REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
	BGJ				12/05
<p>F.A.S. RTE. 1588 OVER WALNUT CREEK                  SECTION 05-00189-00-BR                  Project RS-1588 (106)                  ADAMS COUNTY</p>					
<p>CANTILEVER FORMING BRACKETS                  (W27 BEAMS &amp; SMALLER)                  STRUCTURE NUMBER 001-3028                  STATION 407+65</p>					