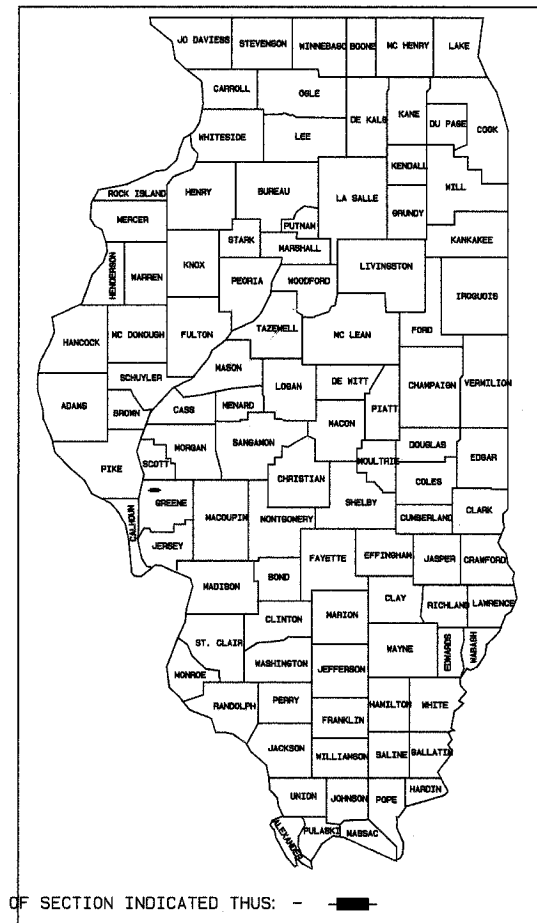


ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 738	01-00072-00-BR	GREENE	28	1

FEDERAL AID PROJECT

CONTRACT NO. 97249



LOCATION OF SECTION INDICATED THUS: - ■ -

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED FAS 738 OVER HURRICANE CREEK SECTION 01-00072-00-BR PROJ. NO. BRS-738(106) GREENE COUNTY

C-98-331-04

INDEX OF SHEETS

1. COVER SHEET
2. GENERAL NOTES, SUMMARY OF QUANTITIES, TYPICAL SECTIONS & DETAILS
3. DETOUR ROUTE DETAILS
4. PLAN AND PROFILE
5. GENERAL PLAN
- 6-8. BRIDGE ELEVATIONS
- 9-10. SUPERSTRUCTURE DETAILS
11. EXPANSION JOINT DETAILS
- 12-13. FRAMING PLANS
14. STEEL RAILING, TYPE S-1
- 15-17. BEARINGS
18. BEARING ANCHOR DETAILS
19. PIERS
20. CONCRETE REMOVAL
21. WEST ABUTMENT
22. EAST ABUTMENT
23. CANTILEVER FORMING BRACKET
24. ANCHOR BOLT DETAILS FOR BEARINGS
- 25-28. ROADWAY CROSS SECTIONS

LIST OF STANDARDS

- 000001 - 04
- 280001 - 02
- 482001
- 515001 - 02
- 630001-05
- 630301-03
- 631025-02
- 701001-01
- 701006-02
- 701301-02
- 701311-02
- 702001-05
- 781001-02
- B.L.R. 21 - 6

PLAN SCALE TYPICAL

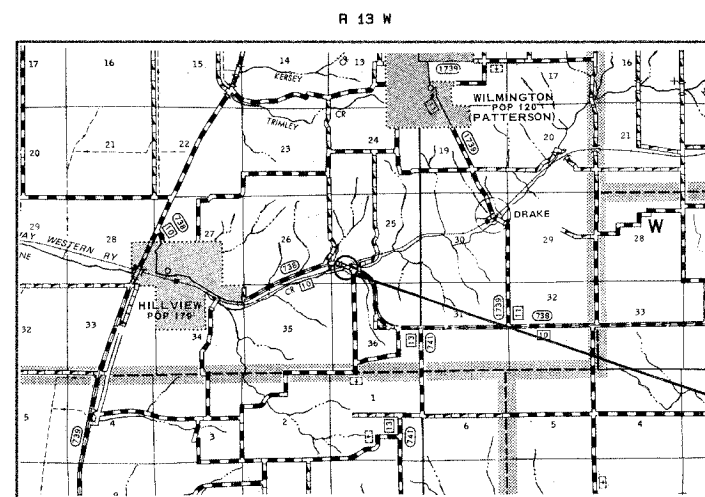


UTILITY COMPANIES

VERIZON (TELEPHONE)
AMEREN CIPS (NATURAL GAS & ELECTRIC)
CALL J.U.L.I.E. BEFORE YOU DIG
1-800-892-0123

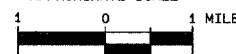
FUNCTIONAL CLASSIFICATION : MAJOR COLLECTOR

CURRENT ADT : 700 (1997)
DESIGN ADT : 770 (2024)
DESIGN SPEED : 50 mph
TRAFFIC SPEED : 55 mph



LOCATION MAP

APPROXIMATE SCALE



GROSS LENGTH = 825.00 FEET = 0.156 MILES
NET LENGTH = 817.17 FEET = 0.155 MILES
RAILROAD COMMISSION STA 143+14.64 TO STA. 143+22.47

EXISTING STRUCTURE:
STEEL TWO UNIT, SIX SPAN STEEL GIRDER W/ REINFORCED CONCRETE BRIDGE DECK.
THE OUT TO OUT DECK WIDTH IS 22'-0" THE TOTAL BRIDGE LENGTH BACK TO BACK ABUTMENT IS 249'-1"

PROPOSED STRUCTURE:
STEEL TWO UNIT, SIX SPAN STEEL GIRDER W/ REINFORCED CONCRETE BRIDGE DECK.
THE OUT TO OUT DECK WIDTH IS 22'-0" THE TOTAL BRIDGE LENGTH BACK TO BACK ABUTMENT IS 249'-1"

These Plans were prepared by me or by a full-time member of my staff working under my personal supervision.

Date: 3/28/2005
P.E. License #: 062-04688
Date of License Exp.: 11/2005

County Superintendent of Highways
IL Reg. Prof. Engr. # 062 04688

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROVED March 28 20 05
David M. Mathis
COUNTY ENGINEER

PASSED April 12 20 05
Denise Oberhaus
DISTRICT ENGINEER OF LOCAL ROADS & STREETS

APPROVED April 13 20 05
Mary C. Lamie
DEPUTY DIRECTOR OF HIGHWAYS
REGION FIVE ENGINEER

CONTRACT NO. 97249

DATE: 11/15/05
 REVISION: 1
 1 DMM
 2
 3
 4
 5

PROJECT NUMBER: DAVID M. MARTIN
 DRAWING NUMBER: DAVID M. MARTIN
 CHECKED BY: DAVID M. MARTIN
 DESIGNED BY: DAVID M. MARTIN
 SCALE: AS SHOWN
 DATE: 11/15/05

GREENE COUNTY
 HIGHWAY DEPARTMENT

ACCOUNT: BRPP BRIDGE
 DATE: JANUARY 31, 2005
 DESIGNED BY: DAVID M. MARTIN
 CHECKED BY: DAVID M. MARTIN
 SCALE: AS SHOWN
 DATE: 11/15/05

FAS 738 OVER
 HURRICANE CREEK

SECTION 01-00072-00-BR

DRAWING
 1
 SHEET
 OF

GENERAL NOTES

THE REMOVAL OF THE EXISTING OVERLAY, GRAVEL, OR CRUSHED STONE BASE COURSE WHICH MAY BE NECESSARY FOR THE CONSTRUCTION OF THE NEW BRIDGE SHALL BE REMOVED AS EARTH EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR ADDITIONAL LABOR OR EQUIPMENT REQUIRED.

ALL WASTE OR UNDESIRABLE MATERIAL AS IDENTIFIED BY THE ENGINEER SHALL BE DISPOSED OF OUTSIDE THE LIMITS OF THE RIGHT OF WAY AT THE CONTRACTOR'S EXPENSE. ALL WASTE SITES SHALL BE PRE-APPROVED BY THE ENGINEER PRIOR TO ANY DISPOSAL MATERIAL LEAVING THE JOBSITE.

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

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

THE LOCATION OF UNDERGROUND UTILITIES SHOWN ON THE PLANS REPRESENTS THE BEST KNOWLEDGE OF THE COUNTY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY AS DETAILED IN SECTION 563 OF THE STANDARD SPECIFICATIONS TO VERIFY LOCATIONS OF UNDERGROUND INSTALLATIONS BEFORE STARTING CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL INDEMNIFY THE COUNTY, ITS OFFICERS AND EMPLOYEES AGAINST ALL CLAIMS DUE TO DAMAGE TO CORPORATE OR PRIVATE PROPERTY RESULTING FROM HIS CONSTRUCTION OPERATIONS AS DESCRIBED IN ARTICLES 107.20 AND 107.26 OF THE STANDARD SPECIFICATIONS.

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

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

ALL ELEVATIONS SHOWN REFER TO AN ASSUMED DATUM.

EARTHWORK SCHEDULE

LOCATION	EARTH EXC.	EMBANKMENT	FURNISHED EXC.	EARTHWORK BALANCE WASTE (+) SHORTAGE (-)
STA 140+75 TO				
STA 143+47.92	268	6.1	0	261.9
BRIDGE	0	0	0	
STA 145+97 TO				
STA 149+00	283	12.5	0	270.4
TOTALS	551 CY	18.6 CY	0 CY	532.3

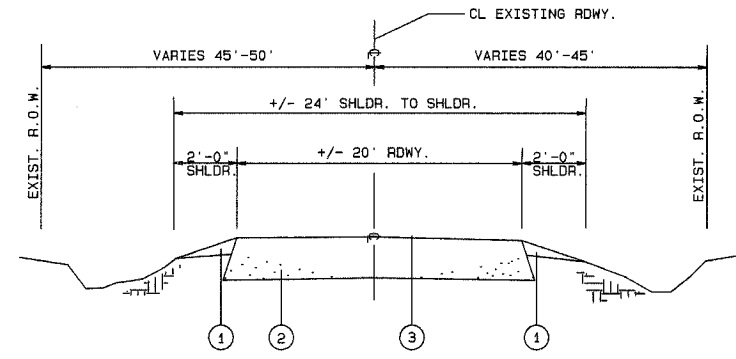
PAVEMENT MARKING SCHEDULE

LOCATION STATION TO STATION	TYPE & COLOR OF CENTERLINE	QUANTITY	COMMENTS
STA. 140+75 TO STA. 149+00	NO PASS E.B.&W.B.	1650 FT.	4" SOLID YELLOW
STA. 140+75 TO STA. 149+00	E.O.P.	1650 FT.	4" SOLID WHITE
STA. 140+00	RR XING	12.6 SQ FT	LETTERS & SYMBOLS
STA. 140+00	RR XING	22 FT	24" SOLID WHITE
STA. 140+00	RR XING	43 FT	16" SOLID WHITE "X"
STA. 142+70	RR XING	11 FT	24" SOLID WHITE STOP BAR
STA. 143+50	RR XING	11 FT	24" SOLID WHITE STOP BAR
STA. 146+15	RR XING	12.6 SQ FT	LETTERS & SYMBOLS
STA. 146+15	RR XING	22 FT	24" SOLID WHITE
STA. 146+15	RR XING	43 FT	16" SOLID WHITE "X"
TOTAL			

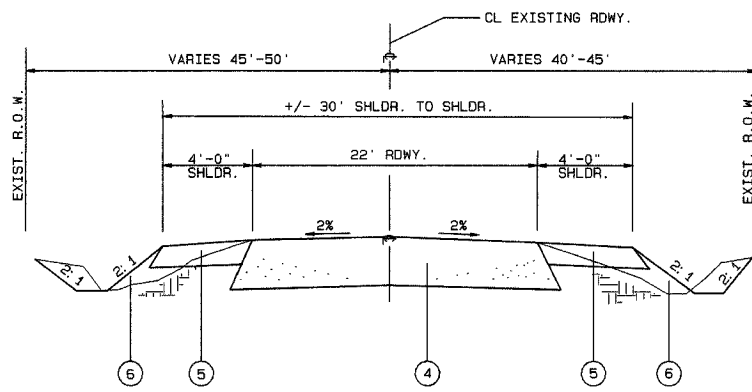
SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	UNIT	QUANTITY
			K031-2A
20200100	Earth Excavation	Cu. Yd.	551
25001000	Seeding Class 2 (Special)	Acre	0.2
40200800	Aggregate Surface Course, Type B	Ton	1800
40300200	Bituminous Materials (Prime Coat)	Ton	33
40300400	Bituminous Materials (Cover and Seal Coats)	Ton	208
40300600	Seal Coat Aggregate	Ton	2080
48202600	Bituminous Shoulders Superpave 8"	Sq. Yd.	505
50101500	Removal of Existing Superstructure	Each	1
50102400	Concrete Removal	Cu. Yd.	8.6
50200100	Structure Excavation	Cu. Yd.	48
50300150	Neoprene Expansion Joint 2"	Foot	78
50300155	Neoprene Expansion Joint 2 1/2"	Foot	39
50300225	Concrete Structures	Cu. Yd.	12.9
50300255	Concrete Superstructure	Cu. Yd.	198.4
50300260	Bridge Deck Grooving	Sq. Yd.	765
50300300	Protective Coat	Sq. Yd.	819
50300310	Elastomeric Bearing Assembly Type I	Each	20
50300320	Elastomeric Bearing Assembly Type II	Each	10
50500105	Furnishing and Erecting Structural Steel	L. Sum	1
50800205	Reinforcement Bars, Epoxy Coated	Pound	53660
50900205	Steel Railing, Type S1	Foot	492
51500100	Name Plates	Each	1
63000000	Steel Plate Beam Guard Rail, Type A	Foot	412.5
63100075	Traffic Barrier Terminal, Type 5A	Each	2
63100167	Traffic Barrier Terminal, Type 1 Special (Tangent)	Each	6
70101830	Traffic Control and Protection Standard BLR 21	L. Sum	1
70102550	Traffic Control and Protection for Temporary Detour	Each	1
78000100	Thermoplastic Pavement Marking Letters and Symbols	Sq. Ft.	25.2
78000200	Thermoplastic Pavement Marking Line 4"	Foot	2304
78000610	Thermoplastic Pavement Marking Line 16"	Foot	85
78000650	Thermoplastic Pavement Marking Line 24"	Foot	65
78008210	Polyurea Pavement Marking Type I - Line 4"	Foot	996
78201000	Terminal Marker Direct Applied	Each	6
X4073151	Bituminous Concrete Pavement (Full Depth), Superpave, 14"	Sq. Yd.	1389
Z0048665	Railroad Protective Liability Insurance	L. Sum	1

* See Special Provisions



EXISTING TYPICAL SECTION



PROPOSED TYPICAL SECTION

STA. 140+75.00 TO STA. 143+47.92
 STA. 143+47.92 TO STA. 145+97.00
 STA. 145+97.00 TO STA. 149+00.00

ROUTE	FAS 738
COUNTY	GREENE
SECTION	01-00072-00-BR
CONTRACT	97249

DESCRIPTION: FAS 738 OVER HURRICANE CREEK, 6 MILES WEST OF IL RTE 67 IN WHITE HALL, IL 20 YR. ESAL'S: LOW

MIXTURE USE	SURFACE	BINDER CSE.	SHOULDER
AC/PG	PG 64-22	PG 64-22	PG 58-22
RAP % (MAX)	15%	15%	30%
DESIGN AIR VOIDS	4.0% @ Ndes=50	4.0% @ Ndes=50	2.0% @ Ndes=30
MIX COMPOSITION	IL 9.5		
(GRADATION MIXTURE)			
FRICITION AGG	MIX C	BASE COURSE	SHOULDER

LEGEND

- ① EXISTING AGGREGATE SHOULDERS
- ② EXISTING AGGREGATE BASE COURSE
- ③ EXISTING A3 BITUMINOUS SURFACE TREATMENT
- ④ PROPOSED CONCRETE BITUMINOUS PAVEMENT (FULL DEPTH), SUPERPAVE 14"*
- ⑤ PROPOSED BITUMINOUS SHOULDER SUPERPAVE 8"
- ⑥ PROPOSED EARTHWORK

NOTE: **PROPOSED FULL DEPTH BITUMINOUS PAVEMENT SHALL BE CONSTRUCTED WITH THREE (3) 4" BINDER COURSE LIFTS AND ONE (1) 2" SURFACE COURSE LIFT. ALL EXCEPTIONS TO THIS CONSTRUCTION MUST BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.

GENERAL NOTES, SUMMARY OF QUANTITIES,
 TYPICAL SECTIONS & DETAILS
 FAS 738 OVER HURRICANE CREEK
 SECTION 01-00072-00-BR
 GREENE COUNTY

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 738	01-00072-00-BR	GREENE	28	3

FEDERAL AID PROJECT
CONTRACT NO. 97249

REVISION	DATE
1	
2	
3	
4	
5	

PROJECT MANAGER: DAVID M. MARTH
ENR. AT RECORD: DAVID M. MARTH
RES. NO. 012-248586
SUPERVISOR: MIKE SCHEMELTON
RES. NO.

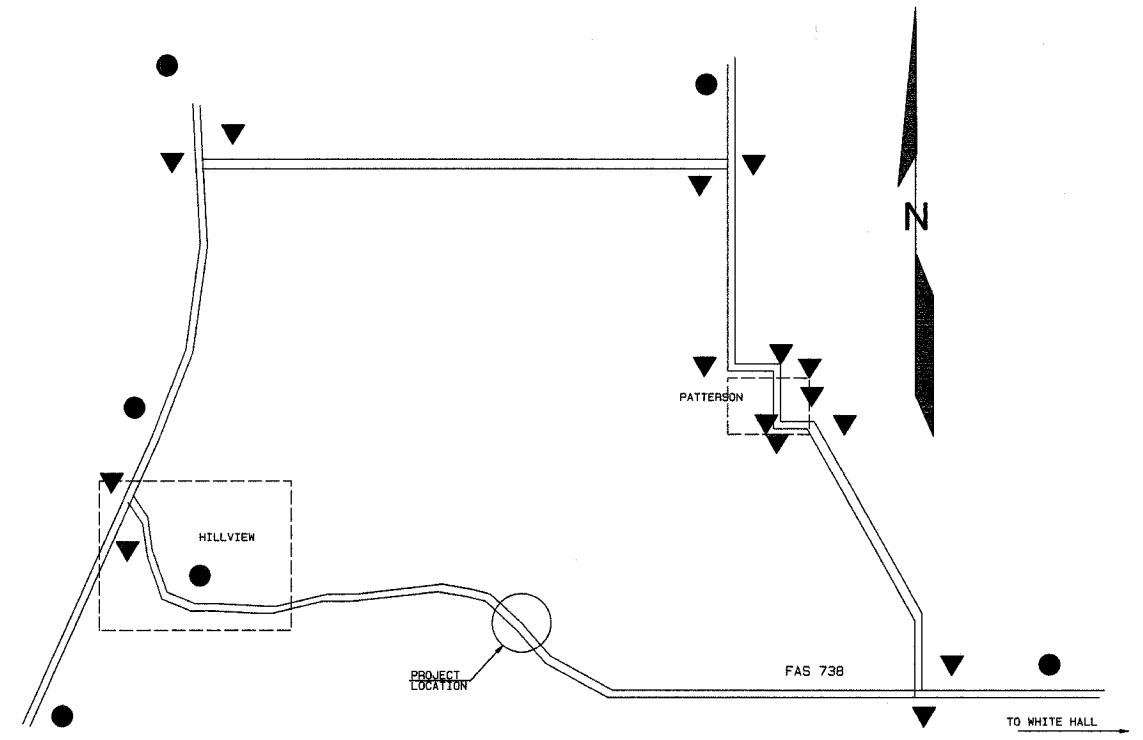
GREENE COUNTY
HIGHWAY DEPARTMENT

ACCOUNT: BRPP BRIDGE
DATE: JANUARY 31, 2005
DESIGNED BY: DAVID M. MARTH
CHECKED BY: DAVID M. MARTH
APPROVED BY: DAVID M. MARTH

FAS 738 OVER
HURRICANE CREEK

SECTION 01-00072-00-BR

DRAWING
SHEET
OF



DETOUR SIGNING DETAIL

LEGEND

- DETOUR AHEAD SIGNS
- DETOUR SIGNS W/ ARROWS

SCHEDULE OF QUANTITIES FOR DETOUR TRAFFIC CONTROL AND MAINTENANCE

ITEM NO.	ITEM	UNIT	QUANTITY
40200800	AGGREGATE SURF. CSE. TYPE B	TON	1800
40300200	BITUMINOUS MATERIALS (PRIME COAT)	TON	33
40300400	BITUMINOUS MATERIALS (COVER AND SEAL COAT)	TON	208
40300600	SEAL COAT AGGREGATE	TON	2080
70101830	TRAFFIC CONT. & PROT. STD. BLR 21	L. SUM	1
*70102550	TRAF. CONT. & PROT. FOR TEMP. DETOUR	EACH	1

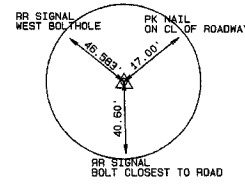
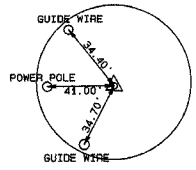
*See Special Provisions

NOTES

1. The Contractor shall maintain the roadway surface of the detour route throughout the duration of the contract as directed by the Engineer. This may include but is not limited to patching, aggregate surface/base repair and seal coating.
2. The Contractor shall repair all damaged areas and seal coat all local detour routes upon completion of construction and closure of detour route.
3. The contractor shall maintain all detour route signing as shown in the plans and specified in the special provisions.
4. The Aggregate Surface Course, Bituminous Materials (Prime Coat), Bituminous Materials (Cover and Seal Coats) and Seal Coat Aggregate quantities have been placed in the contract to repair and restore the temporary detour route during and after completion of construction of the bridge as directed by the Engineer.
5. No additional compensation will be given for frequency of repairs needed as directed by the Engineer.

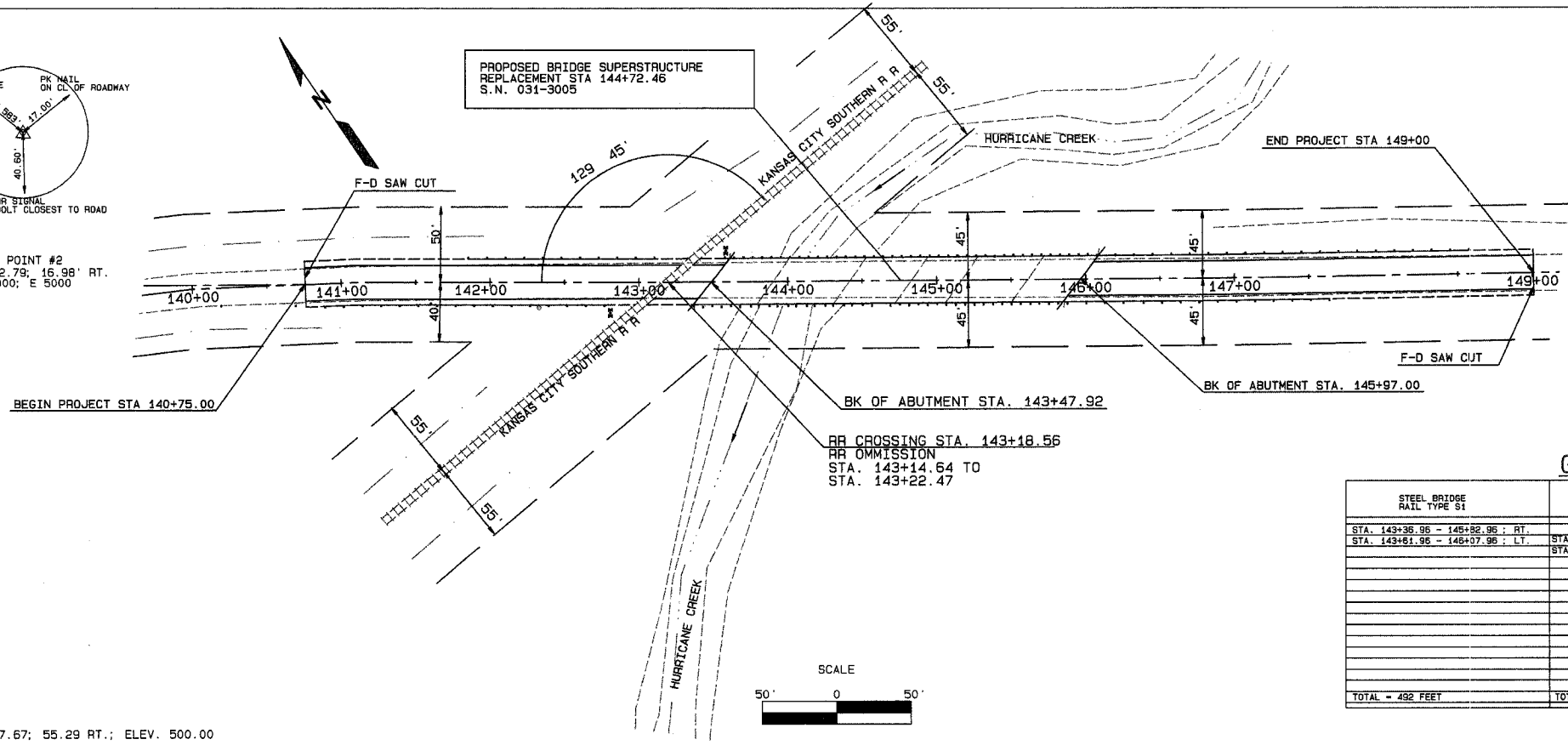
DETOUR ROUTE DETAILS, QUANTITIES AND REQUIREMENTS

DETOUR ROUTE DETAIL,
CONSTRUCTION DETAILS AND QUANTITY SCHEDULES
FAS 738 OVER HURRICANE CREEK
SECTION 01-00072-00-BR
GREENE COUNTY



TIE POINT #1
STA 138+85.65; 0.02' RT.
N 5342.05' E 4946.15

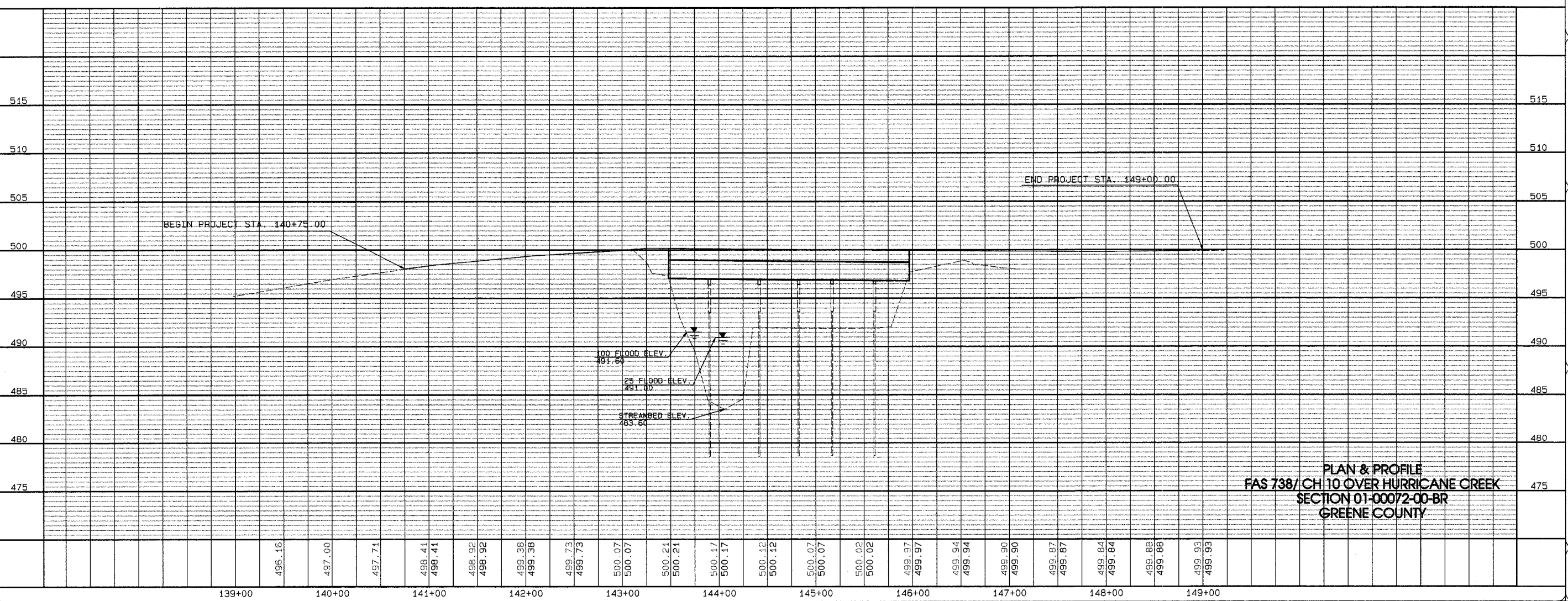
TIE POINT #2
STA 142+32.79; 16.98' RT.
N 5000' E 5000



GUARD RAIL SCHEDULE

STEEL BRIDGE RAIL TYPE S1	T.B.T. TYPE 5A	S.P.B. GUARDRAIL TYPE A	T.B.T. TYPE 1 SPECIAL (TANGENT)
STA. 143+36.96 - 145+82.96; RT.	STA. 145+82.96 - 145+96.21; RT.	STA. 141+38.85 - 142+26.35; RT.	
STA. 143+61.96 - 148+07.96; LT.	STA. 146+07.96 - 146+21.21; LT.	STA. 142+35.03 - 142+59.03; LT.	
		STA. 145+96.21 - 147+08.71; RT.	
		STA. 146+21.21 - 148+08.71; LT.	
			STA. 140+88.85 - 141+38.85; RT.
			STA. 141+85.03 - 142+35.03; LT.
			STA. 142+26.35 - 142+76.35; RT.
			STA. 142+60.03 - 143+10.03; LT.
			STA. 147+08.71 - 147+58.71; RT.
			STA. 148+08.71 - 148+58.71; LT.
TOTAL = 492 FEET	TOTAL = 2 EACH	TOTAL = 412.5 FEET	TOTAL = 6 EACH

B.M. #1 500 NAIL IN POWER POLE STA. 142+37.67; 55.29 RT.; ELEV. 500.00



REVISION
 PROJECT NUMBER: DAVID M. MARTH
 DESIGNED BY: DAVID M. MARTH
 CHECKED BY: DAVID M. MARTH
 DRAWN BY: DAVID M. MARTH
 APPROVED BY: DAVID M. MARTH
 GREENE COUNTY HIGHWAY DEPARTMENT
 ACCOUNT: BRPP BRIDGE
 DATE: JANUARY 31, 2005
 SECTION 01-00072-00-BR
 SHEET 04

B.M. - 60d Nail in Power Pole 18' Rt. Sta. 142+37.67, Elev. = 503.15

Existing Structure- Steel two unit, six span 24" WF beams with concrete deck 22'-0" o - o deck, 249'-1" Bk - Bk abutments. Spill thru abutments and concrete pile bent piers. Bridge to be closed during construction.

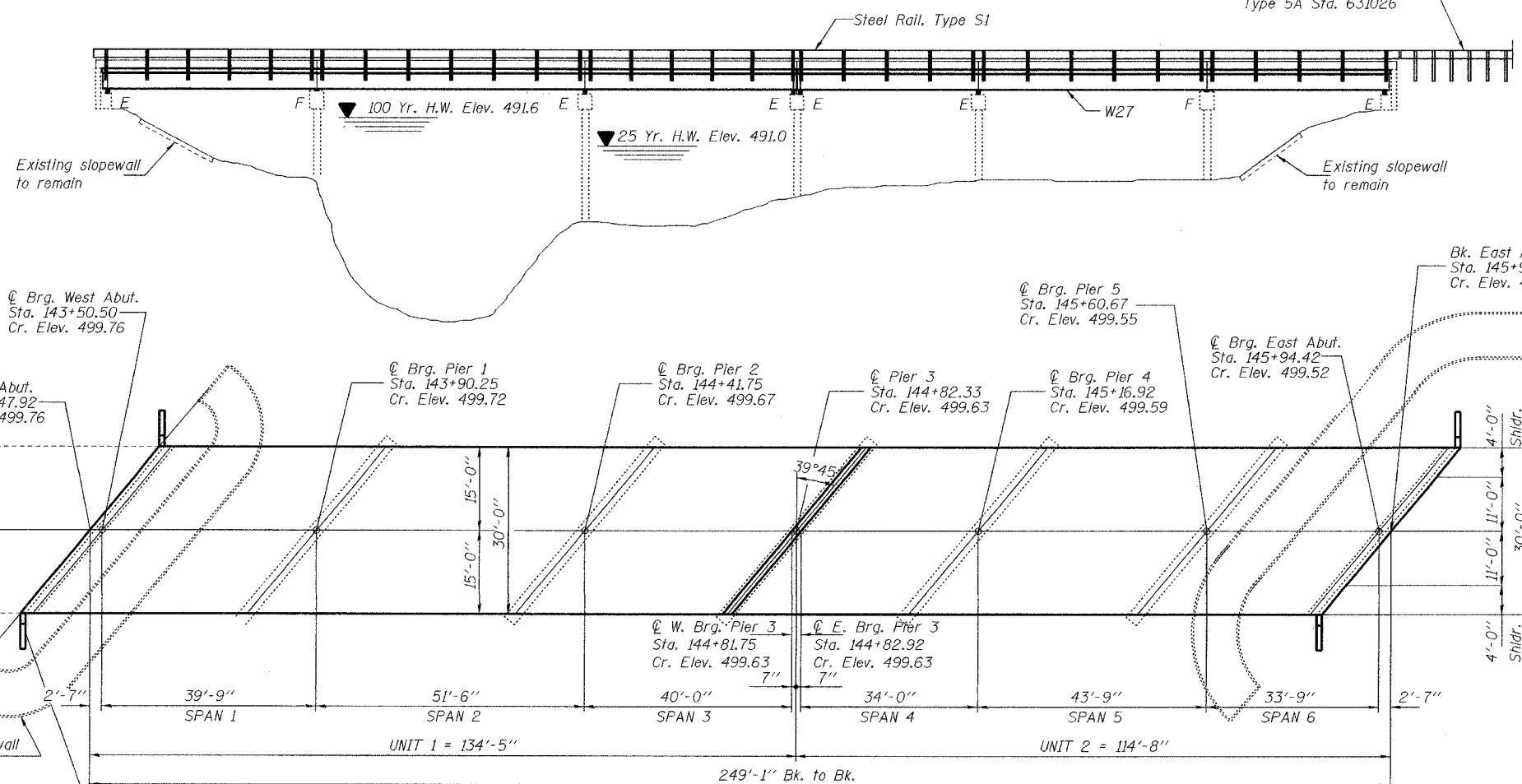
Salvage- None

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO. F.A.S. 738	SECTION *	COUNTY Greene	SHEETS 28	SHEET 5	SHEET NO. 1 20 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT - CONTRACT NO. 97249		

GENERAL NOTES

Fasteners shall be high strength bolts AASHTO M164, Type 3 in unpainted areas and mechanically galvanized AASHTO M164, Type 1 or Type 2 in painted areas. Bolts 3/4" ϕ open holes 13/16" ϕ , unless otherwise noted.
Calculated weight of Structural Steel = 135,540 Pounds
Anchor bolts shall be set before bolting diaphragms over supports.
The structural steel bearing plates of the Elastomeric Bearing Assembly shall conform to the requirements of AASHTO M 270 Grade 50W.
The main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are the wide flange beams and all splice plate material except fill plates.
Field welding of construction accessories will not be permitted to the beams.
Reinforcement bars shall conform to the requirements of AASHTO M31, 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 variations 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.
All structural steel shall be AASHTO M 270 Grade 50W.
AASHTO M 270 Grade 50W structural steel shall only be painted for a distance of three times the depth of the beams or girders (but not exceeding 10 feet) each way from the deck joints. All structural steel shall be cleaned as specified in the special provision for "Surface Preparation and Painting Requirements for Weathering Steel".
The Contractor shall take care during construction to protect the existing slopewall.
If the Contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06 of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations.

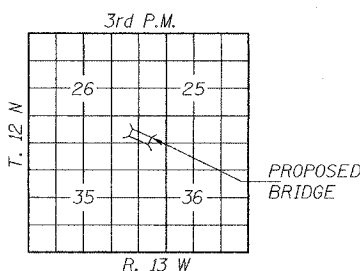
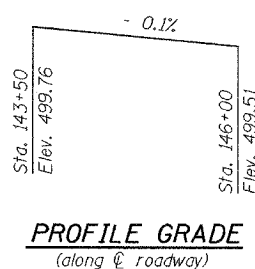


Locate Name Plate on outside face of Southwest Wingwall. See sheet 17 of 20 for location.

WATERWAY INFORMATION

Drainage Area = 22.35 Sq. Mi. Low Grade Elev. = 499.73 @ Sta. 149+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.		Head - Ft.		Headwater El.	
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	25	4245	458.9	458.9	491.0	1.4	1.4	492.3	492.3	
Base	100	5740	759.1	759.1	491.6	2.3	2.3	493.7	493.7	
Overtopping										
Max. Calc.	500	7521	968.8	968.8	493.0	1.7	1.7	494.7	494.7	



HURRICANE CREEK
REBUILT 200_ BY
GREENE COUNTY
SEC. 01-00072-00-BR
F.A.S. RT. 738 STA. 144+72.46
STR. NO. 031-3005 LOADING HS 20

LETTERING FOR NAME PLATE

See Std. 515001-02

LOADING HS20-44

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

DESIGN SPECIFICATIONS

2002 AASHTO with Interims

DESIGN STRESSES

FIELD UNITS

f_c = 3,500 psi
 f_y = 60,000 psi (reinforcement)
 f_y = 50,000 psi (structural steel) M270 Grade 50W

SEISMIC DATA

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = 0.055g
Site Coefficient (S) = I

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yd.		8.6	8.6
Removal of Existing Superstructure	Each	1		1
Structure Excavation	Cu. Yd.		48	48
Neoprene Expansion Joint 2"	Foot	78		78
Neoprene Expansion Joint 2 1/2"	Foot	39		39
Elastomeric Bearing Assembly Type I	Each	20		20
Elastomeric Bearing Assembly Type II	Each	10		10
Concrete Structures	Cu. Yd.		12.9	12.9
Furnishing and Erecting Structural Steel	L. Sum	1		1
Reinforcement Bars, Epoxy Coated	Pound	50360	3300	53660
Steel Bridge Rail, Type S-1	Foot	492		492
Name Plates	Each		1	1
Bridge Deck Grooving	Sq. Yd.	765		765
Protective Coating	Sq. Yd.	819		819
Concrete Superstructure	Cu. Yd.	198.4		198.4

GENERAL PLAN
F.A.S. 738 OVER
HURRICANE CREEK
SECTION 01-00072-00-BR
GREENE COUNTY
STA. 144+72.46
STR. NO. 031-3005

DESIGNED	ABG
CHECKED	ZBU
DRAWN	SMS
CHECKED	JFS

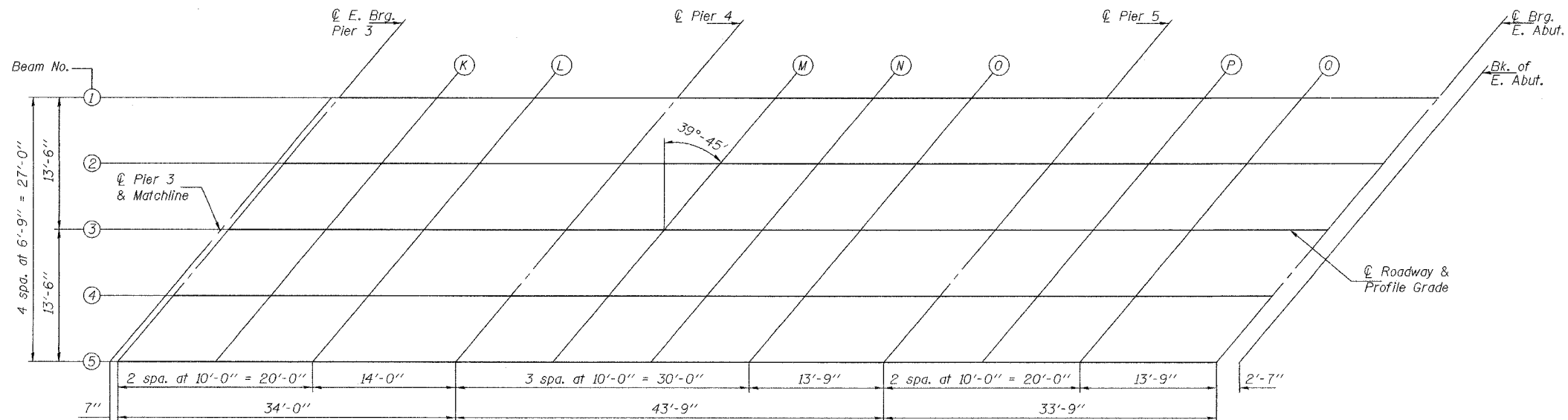
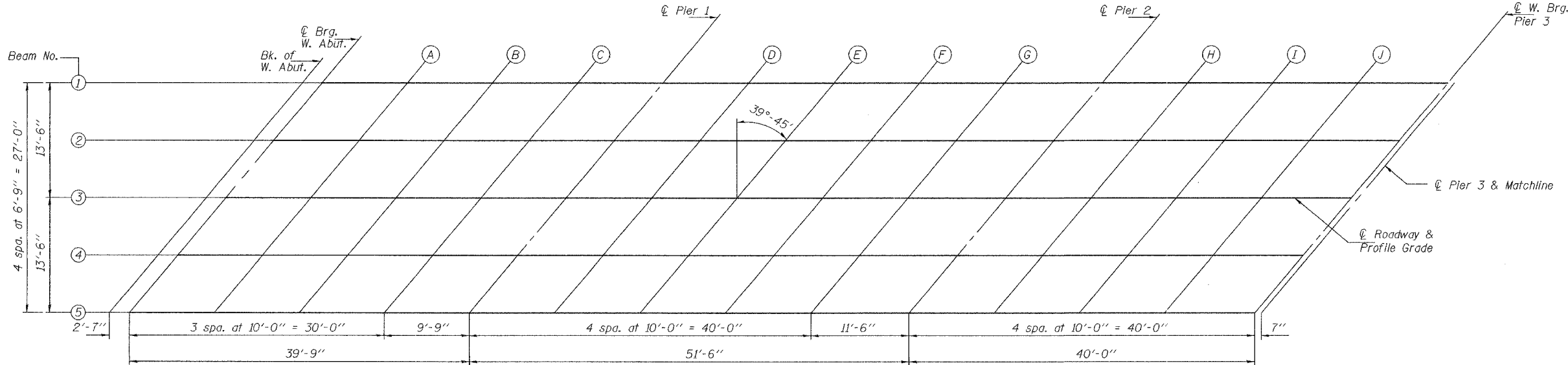
JANUARY 31, 2005
EXAMINED
PASSED
ENGINEER OF BRIDGE DESIGN
ENGINEER OF BRIDGES AND STRUCTURES



EXPIRES 11-30-2006

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO. F.A.S. 738	SECTION -	COUNTY Greene	THICKNESS 28	SHEET 6	SHEET NO. 2 20 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT CONTRACT NO. 97249		



Note: Work this sheet with sheets 3 and 4 of 20.

DESIGNED	ABG
CHECKED	ZBU
DRAWN	SMS
CHECKED	JFS

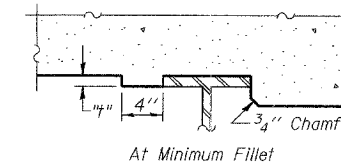
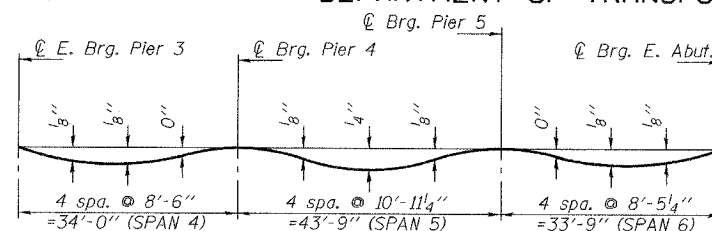
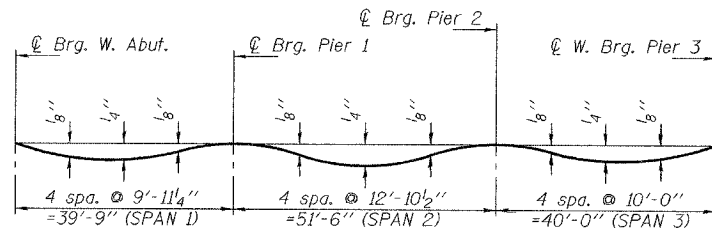
January 21, 2005
EXAMINED *Thomas J. Domagala*
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

E-S 4-30-97

TOP OF SLAB ELEVATIONS
F.A.S. 738 OVER
HURRICANE CREEK
SECTION 01-00072-00-BR
GREENE COUNTY
STA. 144+72.46
STR. NO. 031-3005

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO. F.A.S. 738	SECTION *	COUNTY Greene	TOTAL SHEETS 28	SHEET 7	SHEET NO. 3 20 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT CONTRACT NO. 97249		



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

FILLET HEIGHTS

DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only.)

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

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. ABUT.	14359.148	-13.500	499.540	499.540
CL. BRG. W ABUT.	14361.731	-13.500	499.537	499.537
A	14371.731	-13.500	499.527	499.540
B	14381.731	-13.500	499.517	499.532
C	14391.731	-13.500	499.507	499.514
PIER 1	14401.481	-13.500	499.498	499.498
D	14411.481	-13.500	499.488	499.499
E	14421.481	-13.500	499.478	499.499
F	14431.481	-13.500	499.468	499.490
G	14441.481	-13.500	499.458	499.471
PIER 2	14452.981	-13.500	499.446	499.446
H	14462.981	-13.500	499.436	499.444
I	14472.981	-13.500	499.426	499.443
J	14482.981	-13.500	499.416	499.431
CL. W. BRG. PIER 3	14492.981	-13.500	499.406	499.406
CL. E. BRG. PIER 3	14494.148	-13.500	499.405	499.405
K	14504.148	-13.500	499.395	499.405
L	14514.148	-13.500	499.385	499.394
PIER 4	14528.148	-13.500	499.371	499.371
M	14538.148	-13.500	499.361	499.370
N	14548.148	-13.500	499.351	499.367
O	14558.148	-13.500	499.341	499.353
PIER 5	14571.898	-13.500	499.327	499.327
P	14581.898	-13.500	499.317	499.323
Q	14591.898	-13.500	499.307	499.317
CL. BRG. E. ABUT.	14605.648	-13.500	499.293	499.293
BK. E. ABUT.	14608.231	-13.500	499.291	499.291

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. ABUT.	14353.534	-6.750	499.651	499.651
CL. BRG. W ABUT.	14356.117	-6.750	499.648	499.648
A	14366.117	-6.750	499.638	499.652
B	14376.117	-6.750	499.628	499.643
C	14386.117	-6.750	499.618	499.625
PIER 1	14395.867	-6.750	499.609	499.609
D	14405.867	-6.750	499.599	499.610
E	14415.867	-6.750	499.589	499.610
F	14425.867	-6.750	499.579	499.601
G	14435.867	-6.750	499.569	499.582
PIER 2	14447.367	-6.750	499.557	499.557
H	14457.367	-6.750	499.547	499.555
I	14467.367	-6.750	499.537	499.554
J	14477.367	-6.750	499.527	499.542
CL. W. BRG. PIER 3	14487.367	-6.750	499.517	499.517
CL. E. BRG. PIER 3	14488.534	-6.750	499.516	499.516
K	14498.534	-6.750	499.506	499.516
L	14508.534	-6.750	499.496	499.505
PIER 4	14522.534	-6.750	499.482	499.482
M	14532.534	-6.750	499.472	499.481
N	14542.534	-6.750	499.462	499.478
O	14552.534	-6.750	499.452	499.464
PIER 5	14566.284	-6.750	499.438	499.438
P	14576.284	-6.750	499.428	499.434
Q	14586.284	-6.750	499.418	499.428
CL. BRG. E. ABUT.	14600.034	-6.750	499.404	499.404
BK. E. ABUT.	14602.617	-6.750	499.402	499.402

RDWY. & BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. ABUT.	14347.920	0.000	499.762	499.762
CL. BRG. W ABUT.	14350.503	0.000	499.759	499.759
A	14360.503	0.000	499.749	499.763
B	14370.503	0.000	499.739	499.755
C	14380.503	0.000	499.729	499.736
PIER 1	14390.253	0.000	499.720	499.720
D	14400.253	0.000	499.710	499.722
E	14410.253	0.000	499.700	499.721
F	14420.253	0.000	499.690	499.712
G	14430.253	0.000	499.680	499.693
PIER 2	14441.753	0.000	499.668	499.668
H	14451.753	0.000	499.658	499.666
I	14461.753	0.000	499.648	499.665
J	14471.753	0.000	499.638	499.653
CL. W. BRG. PIER 3	14481.753	0.000	499.628	499.628
CL. E. BRG. PIER 3	14482.920	0.000	499.627	499.627
K	14492.920	0.000	499.617	499.627
L	14502.920	0.000	499.607	499.616
PIER 4	14516.920	0.000	499.593	499.593
M	14526.920	0.000	499.583	499.593
N	14536.920	0.000	499.573	499.589
O	14546.920	0.000	499.563	499.575
PIER 5	14560.670	0.000	499.549	499.549
P	14570.670	0.000	499.539	499.545
Q	14580.670	0.000	499.529	499.539
CL. BRG. E. ABUT.	14594.420	0.000	499.516	499.516
BK. E. ABUT.	14597.003	0.000	499.513	499.513

Note: Work this sheet with sheets 2 and 4 of 20.

DESIGNED	ABG
CHECKED	ZBU
DRAWN	SMS
CHECKED	JFS

January 21, 2005
 EXAMINED *Thomas J. Domagalick*
 ENGINEER OF PUBLIC DESIGN
 PASSED *Ralph E. Anderson*
 ENGINEER OF BRIDGES AND STRUCTURES

E-S 4-30-97

TOP OF SLAB ELEVATIONS
 F.A.S. 738 OVER
 HURRICANE CREEK
 SECTION 01-00072-00-BR
 GREENE COUNTY
 STA. 144+72.46
 STR. NO. 031-3005

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO. F.A.S. 738	SECTION *	COUNTY Greene	TOTAL SHEETS 28	SHEET NO. 8	SHEET NO. 4 20 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT CONTRACT NO. 97249		

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. ABUT.	14342.306	6.750	499.662	499.662
CL. BRG. W ABUT.	14344.889	6.750	499.660	499.660
A	14354.889	6.750	499.650	499.663
B	14364.889	6.750	499.640	499.655
C	14374.889	6.750	499.630	499.636
D	14394.639	6.750	499.610	499.622
PIER 1	14384.639	6.750	499.620	499.620
E	14404.639	6.750	499.600	499.621
F	14414.639	6.750	499.590	499.612
G	14424.639	6.750	499.580	499.593
PIER 2	14436.139	6.750	499.568	499.568
H	14446.139	6.750	499.558	499.566
I	14456.139	6.750	499.548	499.565
J	14466.139	6.750	499.538	499.553
CL. W. BRG. PIER 3	14476.139	6.750	499.528	499.528
CL. E. BRG. PIER 3	14477.306	6.750	499.527	499.527
K	14487.306	6.750	499.517	499.527
L	14497.306	6.750	499.507	499.516
PIER 4	14511.306	6.750	499.493	499.493
M	14521.306	6.750	499.483	499.493
N	14531.306	6.750	499.473	499.489
O	14541.306	6.750	499.463	499.475
PIER 5	14555.056	6.750	499.449	499.449
P	14565.056	6.750	499.439	499.445
Q	14575.056	6.750	499.429	499.439
CL. BRG. E. ABUT.	14588.806	6.750	499.416	499.416
BK. E. ABUT.	14591.389	6.750	499.413	499.413

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. ABUT.	14336.692	13.500	499.562	499.562
CL. BRG. W ABUT.	14339.275	13.500	499.560	499.560
A	14349.275	13.500	499.550	499.563
B	14359.275	13.500	499.540	499.555
C	14369.275	13.500	499.530	499.536
PIER 1	14379.025	13.500	499.520	499.520
D	14389.025	13.500	499.510	499.522
E	14399.025	13.500	499.500	499.521
F	14409.025	13.500	499.490	499.512
G	14419.025	13.500	499.480	499.494
PIER 2	14430.525	13.500	499.469	499.469
H	14440.525	13.500	499.459	499.466
I	14450.525	13.500	499.449	499.465
J	14460.525	13.500	499.439	499.454
CL. W. BRG. PIER 3	14470.525	13.500	499.429	499.429
CL. E. BRG. PIER 3	14471.692	13.500	499.427	499.427
K	14481.692	13.500	499.417	499.427
L	14491.692	13.500	499.407	499.416
PIER 4	14505.692	13.500	499.393	499.393
M	14515.692	13.500	499.383	499.393
N	14525.692	13.500	499.373	499.390
O	14535.692	13.500	499.363	499.376
PIER 5	14549.442	13.500	499.350	499.350
P	14559.442	13.500	499.340	499.345
Q	14569.442	13.500	499.330	499.339
CL. BRG. E. ABUT.	14583.192	13.500	499.316	499.316
BK. E. ABUT.	14585.775	13.500	499.313	499.313

Note: Work this sheet with sheets 2 and 3 of 20.

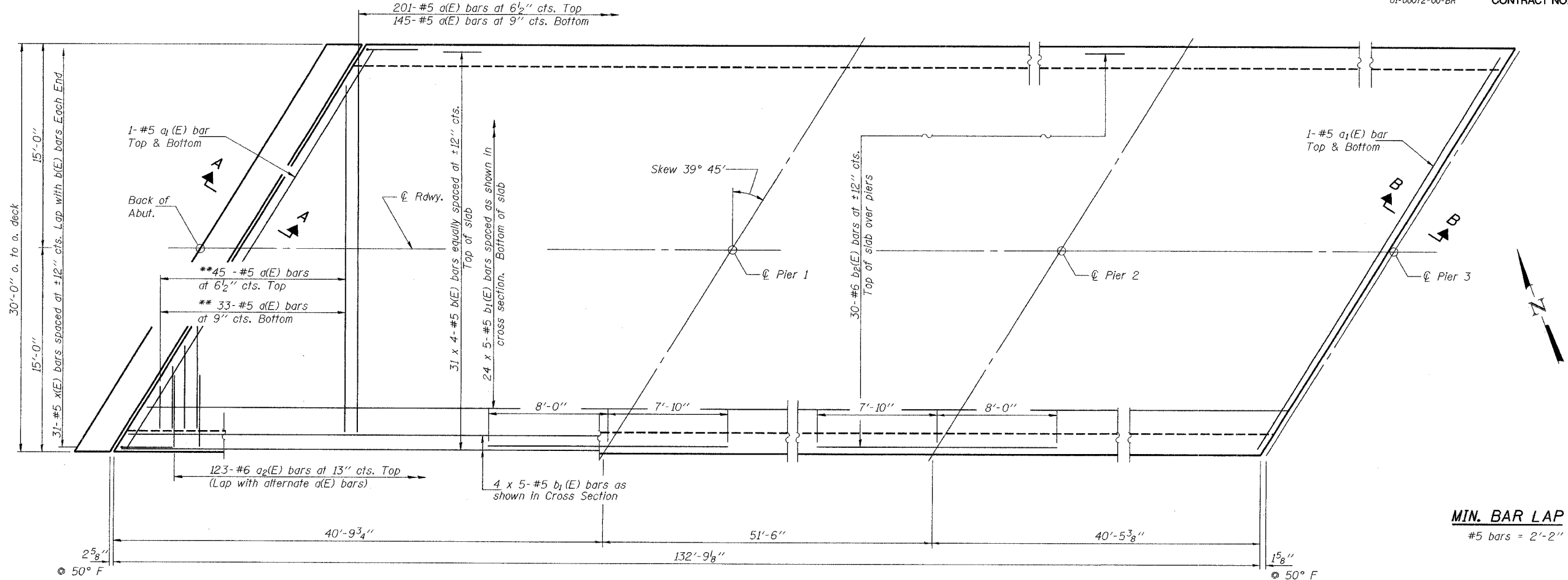
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CHECKED	ZBU
DRAWN	SMS
CHECKED	JFS

January 21, 2005
 EXAMINED *Thomas J. Demagalki*
 ENGINEER OF BRIDGE DESIGN
 PASSED *Ralph E. Anderson*
 ENGINEER OF BRIDGES AND STRUCTURES

TOP OF SLAB ELEVATIONS
F.A.S. 738 OVER
HURRICANE CREEK
SECTION 01-00072-00-BR
GREENE COUNTY
STA. 144+72.46
STR. NO. 031-3005

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

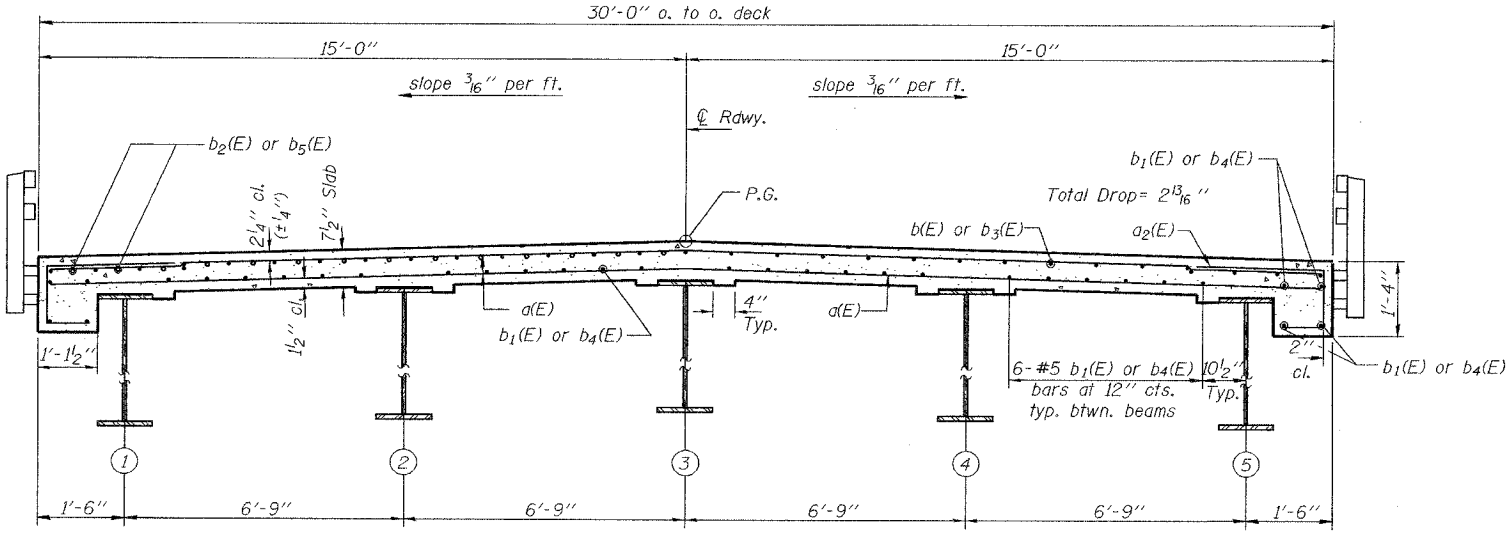
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FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT CONTRACT NO. 97249		



PLAN - UNIT 1

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

MIN. BAR LAP
#5 bars = 2'-2"



CROSS SECTION
(Looking East)

Notes:
See Sheet 6 of 20 for superstructure details
and Bill of Material.
Reinforcement bars designated (E) shall be
epoxy coated.
Bars indicated thus 31 x 4-#5 etc. indicates
31 lines of bars with 4 lengths per line.
See Sheet 6 of 20 for section A-A and B-B.

SUPERSTRUCTURE DETAILS
(UNIT 1)
F.A.S. 738 OVER
HURRICANE CREEK
SECTION 01-00072-00-BR
GREENE COUNTY
STA. 144+72.46
STR. NO. 031-3005

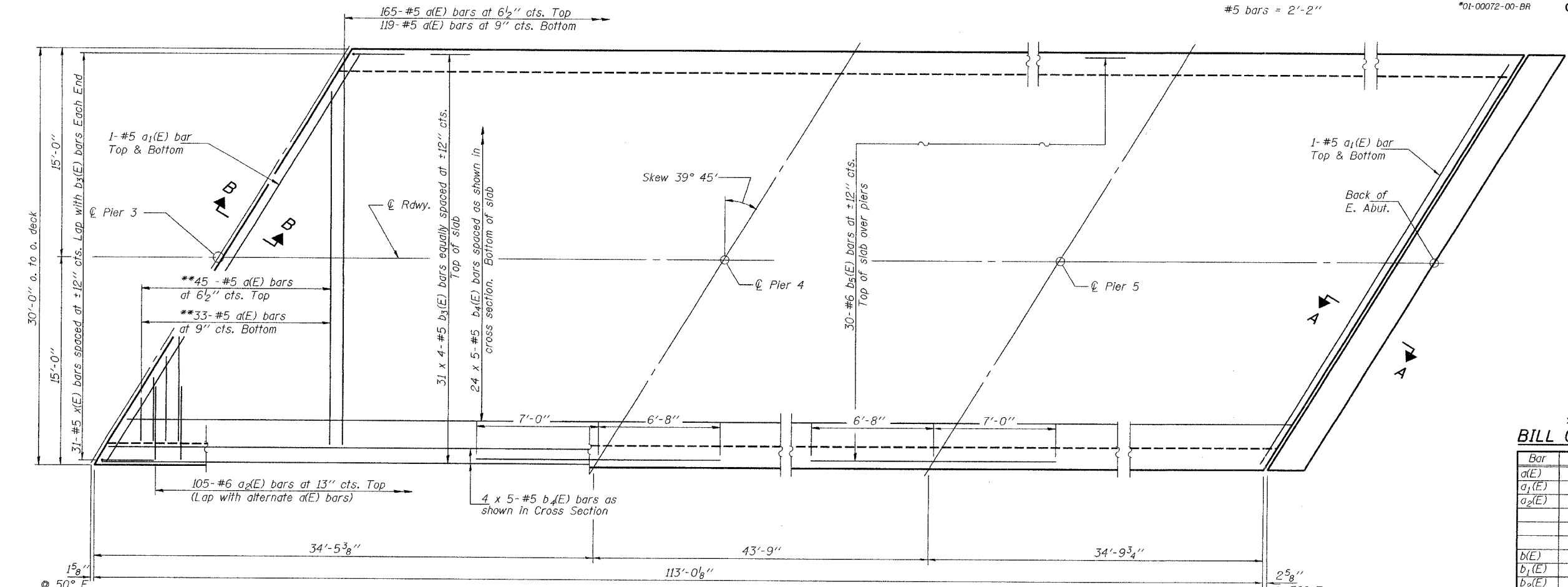
DESIGNED	ABG
CHECKED	ZBU
DRAWN	SMS
CHECKED	JFS

January 21, 2005
EXAMINED *Thomas J. Domagalaki*
ENGINEER OF BRIDGE DESIGN
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

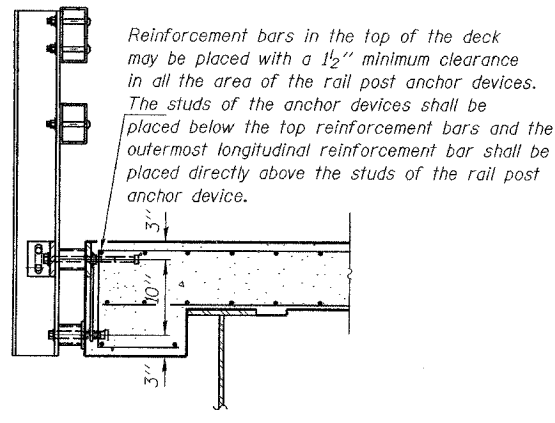
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MIN. BAR LAP
#5 bars = 2'-2"

ROUTE NO. F.A.S. 738	SECTION *	COUNTY Greene	DATE 28	SHEET NO. 10	SHEET NO. 6 20 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT CONTRACT NO. 97249	



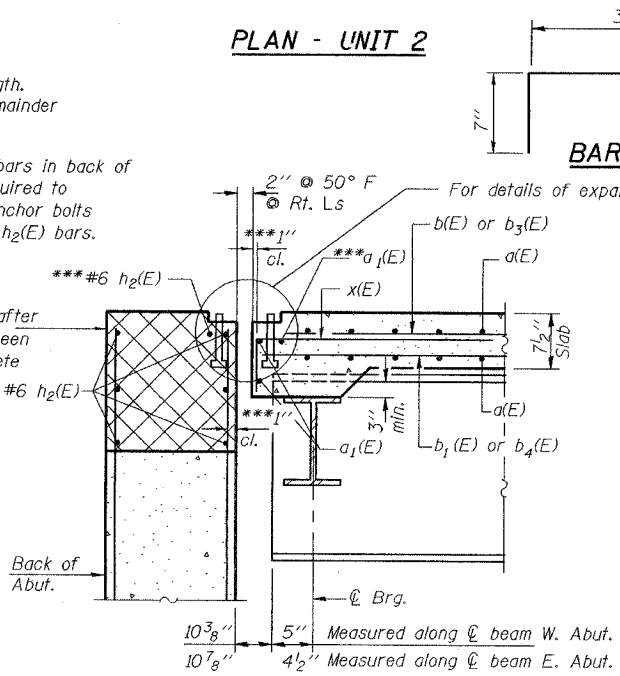
PLAN - UNIT 2



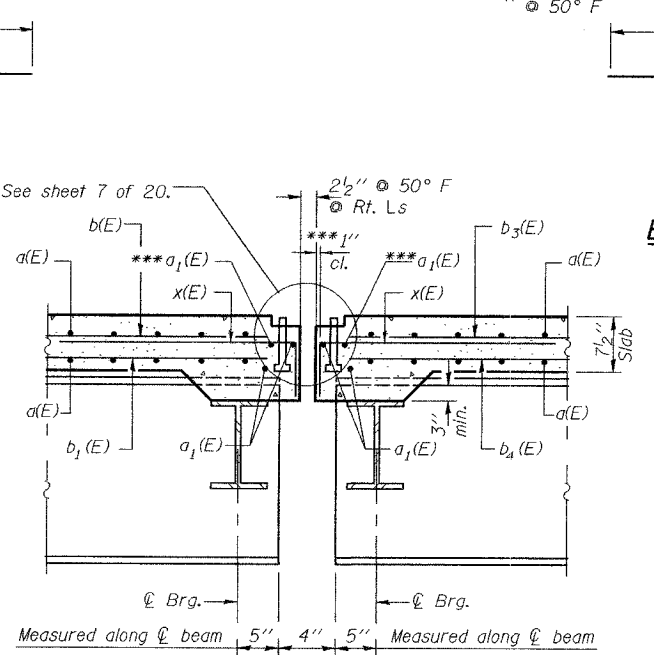
SECTION AT RAIL POST

** Order a(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.
*** Place a1(E) and h2(E) bars in back of anchor bolt as shown if required to maintain 1" cl. (+0-1/8"). Anchor bolts should be tied to a1(E) and h2(E) bars.

Hatched area to be formed after superstructure forms have been removed. Quantity of concrete included with Concrete Superstructure.



SECTION A-A
(Facing North)



SECTION B-B
(Facing North)

BARS x(E)

BARS a2(E)

SUPERSTRUCTURE
BILL OF MATERIAL (2 UNITS)

Bar	No.	Size	Length	Shape
a(E)	786	#5	29'-8"	—
a1(E)	8	#5	38'-8"	—
a2(E)	456	#6	7'-10"	—
b(E)	124	#5	34'-10"	—
b1(E)	160	#5	28'-4"	—
b2(E)	60	#6	15'-10"	—
b3(E)	124	#5	29'-11"	—
b4(E)	160	#5	24'-4"	—
b5(E)	60	#6	13'-8"	—
x(E)	124	#5	4'-1"	—
Reinforcement Bars, Epoxy Coated		Pound	50360	
Concrete Superstructure		Cu. Yds.	198.4	
Bridge Deck Grooving		Sq. Yd.	765	

Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 31 x 4-#5 etc. indicates 31 line of bars with 4 lengths per line.
Work this sheet with sheet 5 of 20.

SUPERSTRUCTURE DETAILS
(UNIT 2)

F.A.S. 738 OVER
HURRICANE CREEK
SECTION 01-00072-00-BR
GREENE COUNTY
STA. 144+72.46
STR. NO. 031-3005

DESIGNED	ABG
CHECKED	ZBU
DRAWN	SMS
CHECKED	JFS

January 21, 2005
EXAMINED *Thomas J. Domagalak*
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

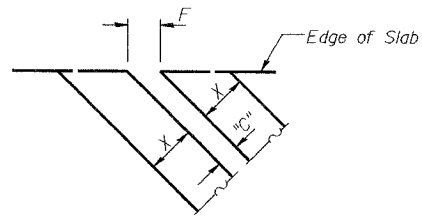
ROUTE NO. F.A.S. 738	SECTION *	COUNTY Greene	SHEETS 28	SHEET 11	SHEET NO. 7 20 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT CONTRACT NO. 97249		

Joint Size	"C" at 50°F	"D" at 50°F
2"	2"	1 1/2" Min.
2 1/2"	2 1/2"	1 3/4" Min.
4"	3"	2 1/2" Min.

INSTALLATION NOTES

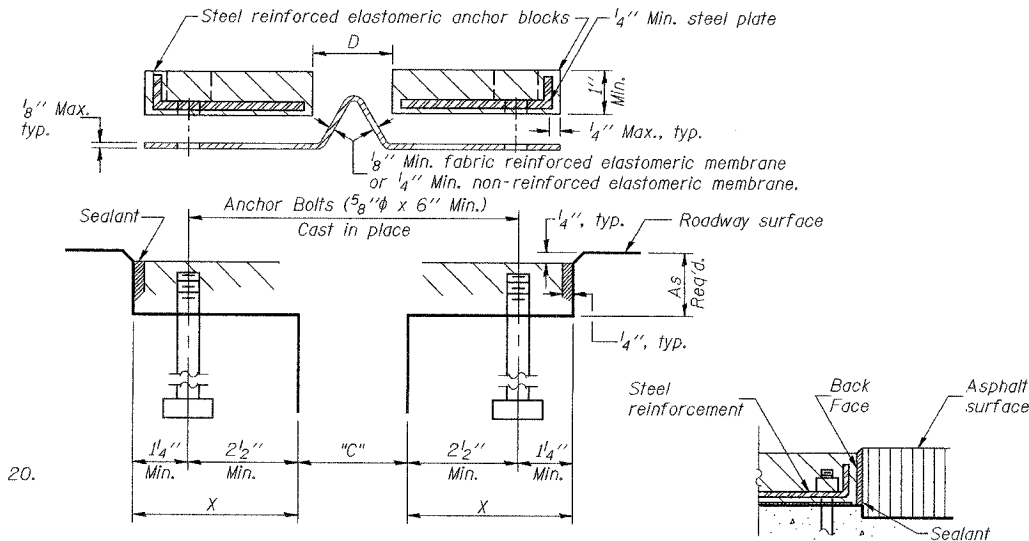
- ① Install continuous seal in roadway.
- ② Install anchor blocks as indicated.

NOTE A: Maximum spacing of anchor bolts shall be 12" centers.



For dimension "F" see sheets 5 and 6 of 20.

FORMING BLOCKOUT SKETCH



CROSS SECTION

ANCHOR BLOCK WITH ASPHALT SURFACE

GENERAL NOTES

Continuous Seal Neoprene Expansion Joint shall consist of molded anchor blocks of elastomer and steel, field assembled over continuous lengths of elastomeric membrane.

The elastomeric membrane shall be preformed with a single or a double upward convolution that will have a "memory" to return to its molded position upon joint closure.

The convolution length shall be such that the extended length will not be greater than the manufactured length when the joint is fully expanded in its design range and will not protrude above the anchor blocks when the joint is fully compressed.

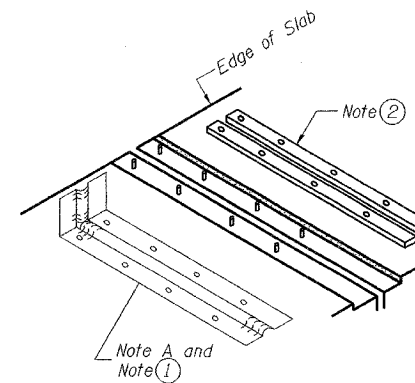
Joint openings shall be adjusted according to Article 503.10(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 50° F.

The roadway membrane shall be made continuous by an approved vulcanizing process. Lapping will not be permitted.

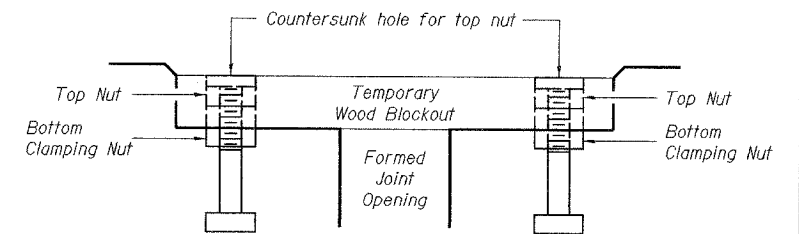
SKEW LIMITATIONS

The details of the anchor blocks and the elastomeric membrane in the parapet, as shown, are for up to 50° skews.

For skews greater than 50°, the anchor blocks and the elastomeric membrane, installed according to dimension "D", might require modifications to insure a minimum clearance of 1/2" from centerline of anchor studs to edge of parapet opening. The anchor blocks and the elastomeric membrane shall also be installed to the top of the parapet with the anchor studs spaced at ±12" cts.



AT WALL



Note: Stud needs to be threaded lower to allow for use of clamping nut.

Anchor studs should be stainless
RECOMMENDED BLOCKOUT DETAIL

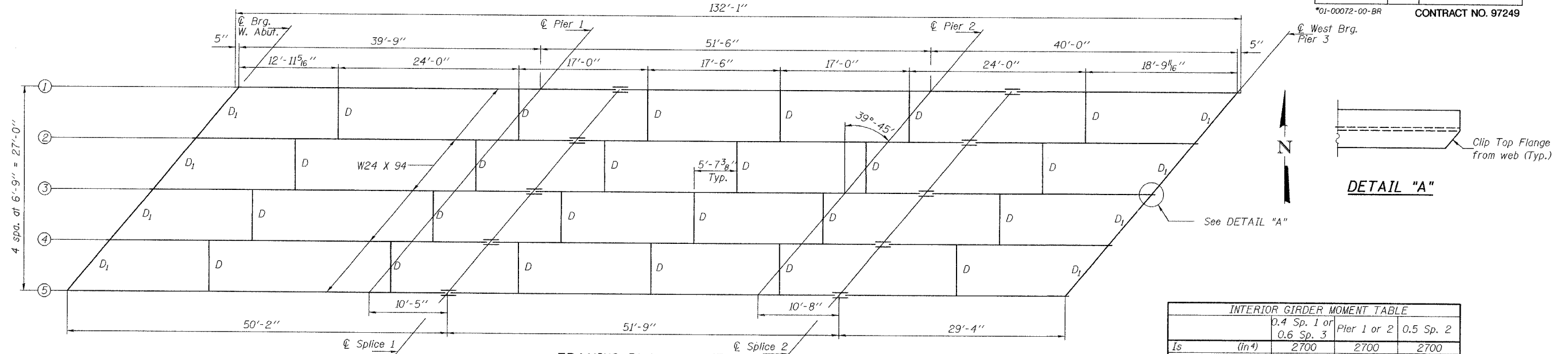
DESIGNED	ABG
CHECKED	ZBU
DRAWN	SMS
CHECKED	JFS

**CONTINUOUS SEAL TYPE
NEOPRENE EXPANSION JOINTS**
F.A.S. 738 OVER
HURRICANE CREEK
SECTION 01-00072-00-BR
GREENE COUNTY
STA. 144+72.46
STR. NO. 031-3005

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO. F.A.S. 738	SECTION #	COUNTY Greene	SHEET NO. 28	"SET" 12	SHEET NO. 8 20 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-		

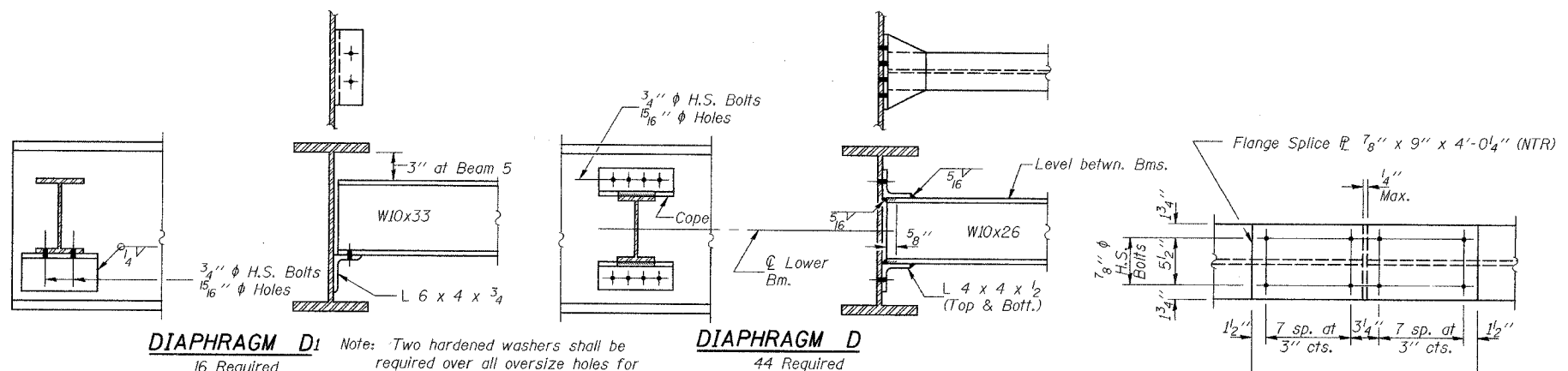
*01-00072-00-BR
CONTRACT NO. 97249



	0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 or 2	0.5 Sp. 2
I_s (in ⁴)	2700	2700	2700
S_s (in ³)	222	222	222
ϕ (K/ft.)	1.15	1.15	1.15
$M\phi$ (K)	122.4	244.4	133.9
$M\psi$ (K)	222.6	185.2	241.0
M (Imp) (K)	66.8	54.2	68.2
$S_3(M\psi+I)$ (K)	482.5	399.0	515.3
M_a (K)	786.4	836.4	844.0
$f_s\phi$ non-comp(k.s.i.)	6.6	13.2	7.2
$f_s S_3(M\psi+I)$ (k.s.i.)	26.1	21.6	27.9
f_s (Overload) (k.s.i.)	32.7	34.8	35.1
f_s (Total) (k.s.i.)	42.5	45.2	45.6

	Abut.	Pier 1 or 2
$R\phi$ (K)	16.8	58.5
$R\psi$ (K)	32.0	41.3
Imp. (K)	9.6	12.4
R (Total) (K)	58.4	112.2

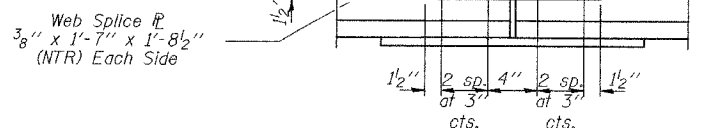
I_s and S_s are the moment of inertia and section modulus of the steel section used in computing f_s (Total & Overload).
 M_a (Applied Moment) = $1.3EM\phi + S_3(M\psi+I)$.
 f_s (Overload) is the sum of the stresses due to $M\phi + S_3(M\psi+I)$.
 f_s (Total) is the sum of the stresses due to $1.3EM\phi + S_3(M\psi+I)$.



*TOP OF BEAM ELEVATIONS

Loc.	Bm. #1	Bm. #2	Bm. #3	Bm. #4	Bm. #5
W. Abut.	498.87	498.98	499.09	498.99	498.89
Pier 1	498.77	498.88	498.99	498.89	498.79
Splice 1	498.75	498.86	498.97	498.87	498.77
Pier 2	498.71	498.82	498.93	498.83	498.73
Splice 2	498.70	498.81	498.92	498.82	498.72
W. brg. Pier 3	498.74	498.85	498.96	498.86	498.76

* For Fabrication Only.



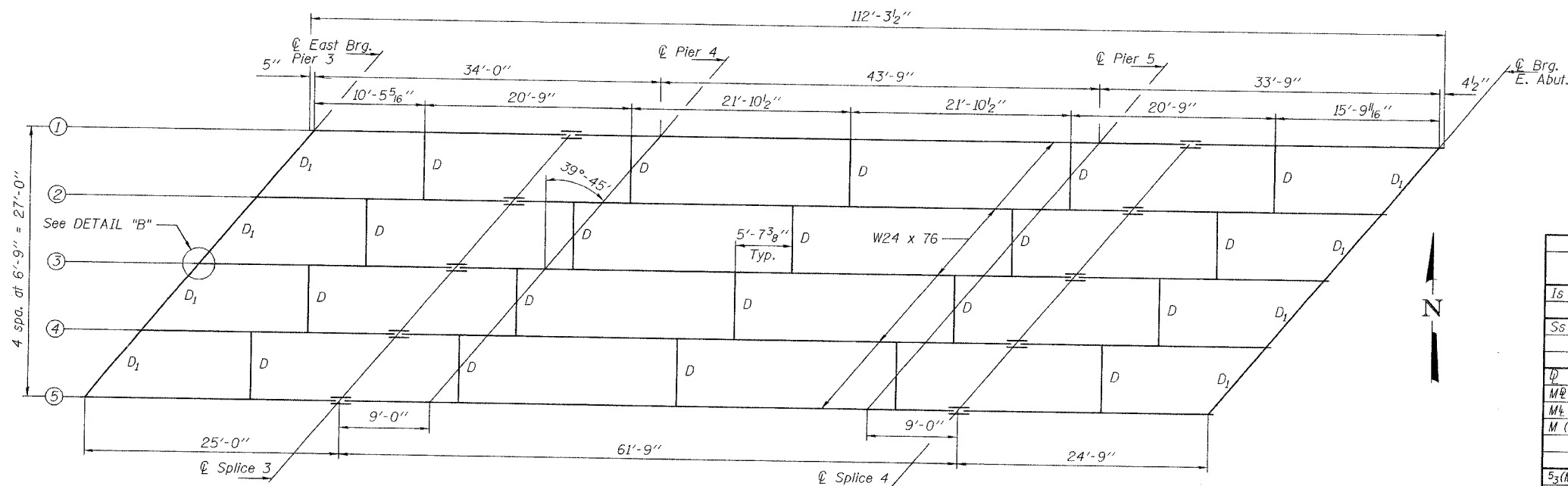
NOTES: "NTR" denotes members to which Notch Toughness Requirements are applicable.
 All splice plates shall be AASHTO M270 Grade 50W.

FRAMING PLAN - UNIT 1
 F.A.S. 738 OVER
 HURRICANE CREEK
 SECTION 01-00072-00-BR
 GREENE COUNTY
 STA. 144+72.46
 STR. NO. 031-3005

DESIGNED	ABG	January 21, 2005
CHECKED	ZBU	EXAMINED <i>Thomas J. Domagala</i>
DRAWN	SMS	PASSED <i>Ralph E. Anderson</i>
CHECKED	JFS	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO. F.A.S. 738	SECTION #	COUNTY Greene	SHEETS 28	SHEET NO. 13	SHEET NO. 9 20 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT		
*01-00072-00-BR		CONTRACT NO. 97249			



FRAMING PLAN - UNIT 2

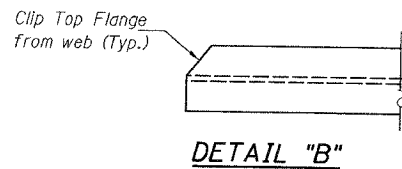
All beams shall be W24x76 AASHTO M270 Grade 50W (NTR).

***TOP OF BEAM ELEVATIONS**

Loc.	Bm. #1	Bm. #2	Bm. #3	Bm. #4	Bm. #5
∅ E. brg. Pier 3	498.74	498.85	498.96	498.86	498.76
∅ Splice 3	498.64	498.75	498.86	498.76	498.66
∅ Pier 4	498.63	498.74	498.85	498.75	498.65
∅ Pier 5	498.59	498.70	498.81	498.71	498.61
∅ Splice 4	498.58	498.69	498.80	498.70	498.60
∅ E. Abut.	498.62	498.73	498.85	498.75	498.65

* For Fabrication Only.

Note: For diaphragm and splice information see sht. 8 of 20.



	0.4 Sp. 4 or 0.6 Sp. 6	Pier 4 or 5	0.5 Sp. 5
I_s (in ⁴)	2100	2100	2100
S_s (in ³)	176	176	176
ϕ (K/ft.)	1.13	1.13	1.13
$M\phi$ (K)	91.0	176.3	94.5
$M\ddagger$ (K)	175.8	150.2	189.0
M (Imp) (K)	52.7	45.1	56.0
$S_3(M\ddagger+I)$ (K)	380.8	325.4	408.3
M_a (K)	613.4	652.3	653.6
$f_s\phi$ non-comp (k.s.i.)	6.2	12.0	6.4
$f_s S_3(4+I)$ (k.s.i.)	26.0	22.2	27.8
f_s (Overload) (k.s.i.)	32.2	34.2	34.3
f_s (Total) (k.s.i.)	41.8	44.5	44.6

	Abut.	Pier 4 or 5
$R\phi$ (K)	14.4	49.3
$R\ddagger$ (K)	30.4	40.3
Imp. (K)	9.1	12.1
R (Total) (K)	53.9	101.7

I_s and S_s are the moment of inertia and section modulus of the steel section used in computing f_s (Total & Overload).
 M_a (Applied Moment) = $1.3[M\phi + S_3(M\ddagger + I)]$.
 f_s (Overload) is the sum of the stresses due to $M\phi + S_3(M\ddagger + I)$.
 f_s (Total) is the sum of the stresses due to $1.3[M\phi + S_3(M\ddagger + I)]$.

DESIGNED	ABG
CHECKED	ZBU
DRAWN	SMS
CHECKED	JFS

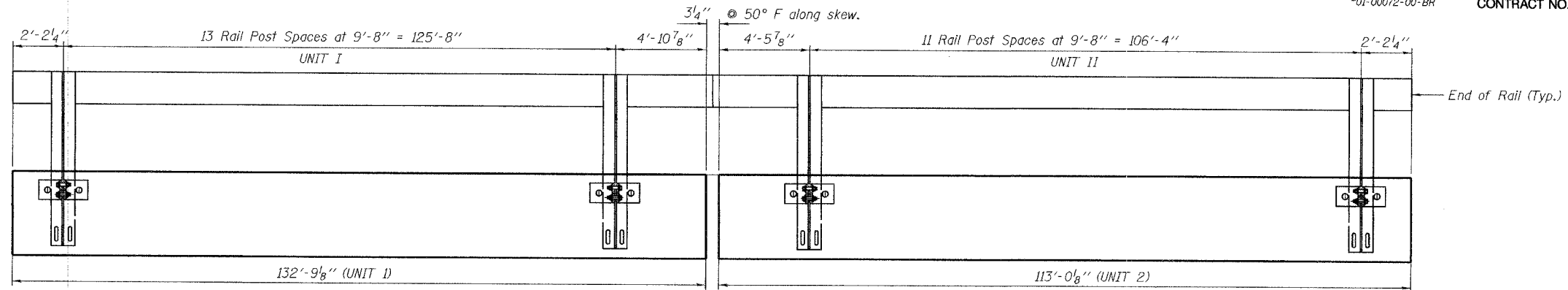
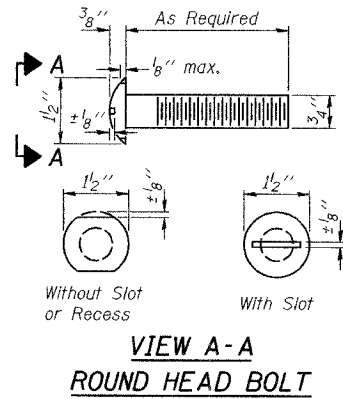
January 21, 2005
 EXAMINED *Thomas J. Demagalaki*
 ENGINEER OF BRIDGES AND STRUCTURES
 PASSED *Ralph E. Anderson*
 ENGINEER OF BRIDGES AND STRUCTURES

NOTES: "NTR" denotes members to which Notch Toughness Requirements are applicable.
 All splice plates shall be AASHTO M270 Grade 50W.

FRAMING PLAN - UNIT 2
F.A.S. 738 OVER
HURRICANE CREEK
SECTION 01-00072-00-BR
GREENE COUNTY
STA. 144+72.46
STR. NO. 031-3005

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET	SHEET NO. 10 20 SHEETS
F.A.S.	#	Greene	28	14	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			
*01-00072-00-BR		CONTRACT NO. 97249			



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 and angles 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.

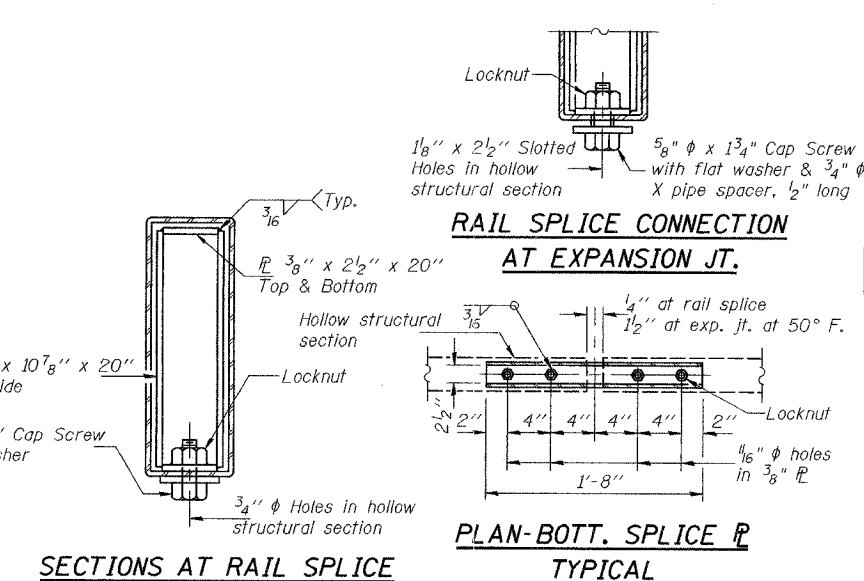
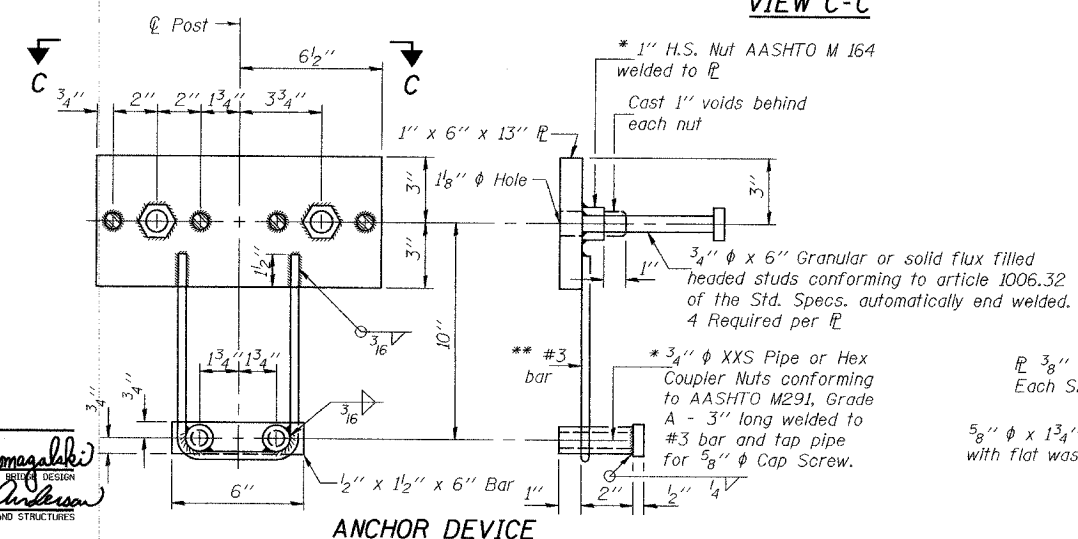
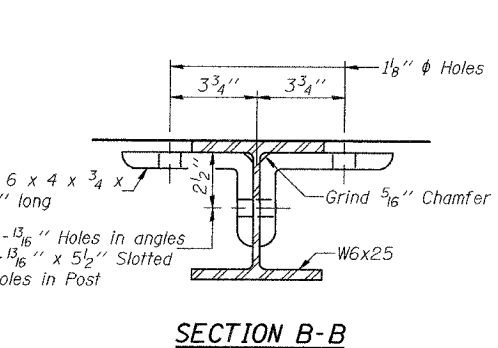
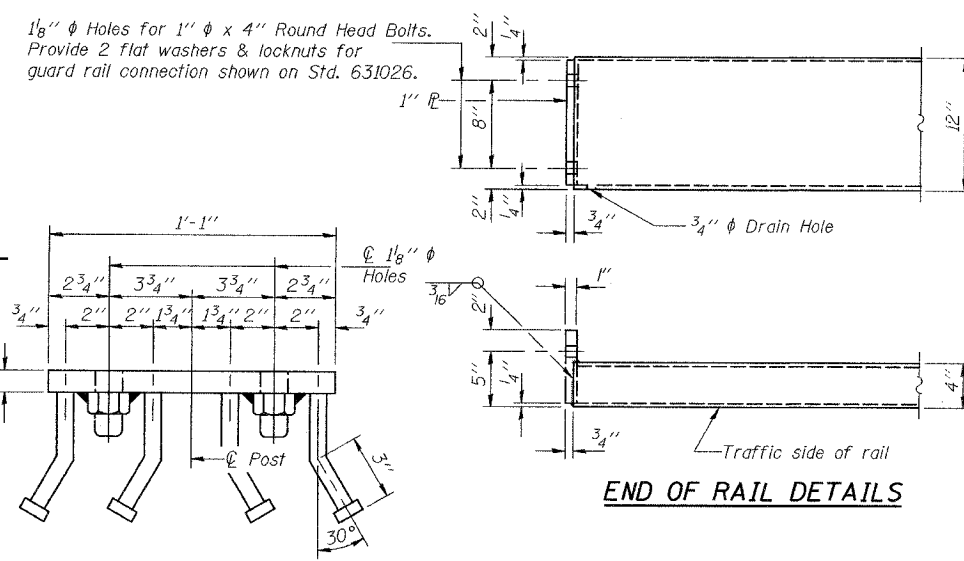
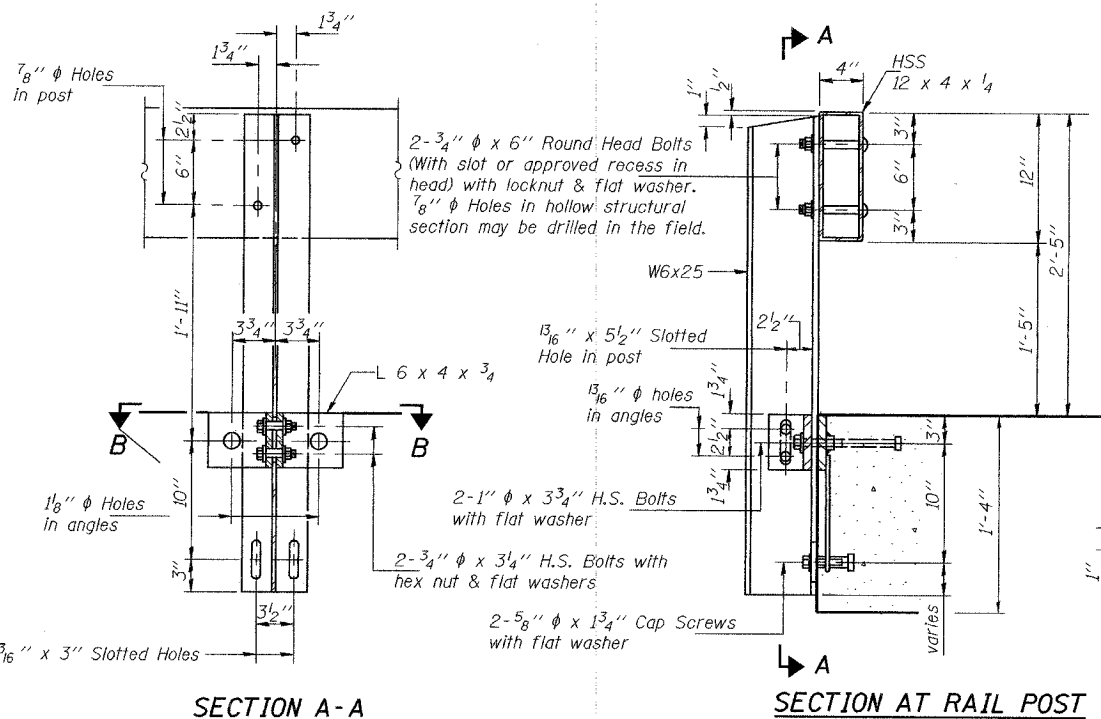
Railing shall be according to Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per foot for STEEL RAILING, TYPE S-1.

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

The lower portion of the post flange in contact with concrete shall receive two coats of asphalt paint conforming to Section 1060.07 Type II or place 1/2" fabric bearing pad between the post and concrete.

The 3/4" high strength bolts used to connect the 6 x 4 x 3/4 angles to the post shall be tightened according to Article 505.04(F)(2) of the Standard Specifications. The 1" high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/8 turn. The 5/8" cap screws in bottom of posts shall be tightened to a snug fit only.

For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with STEEL RAILING, TYPE S-1.



BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing Type S-1	Foot	492

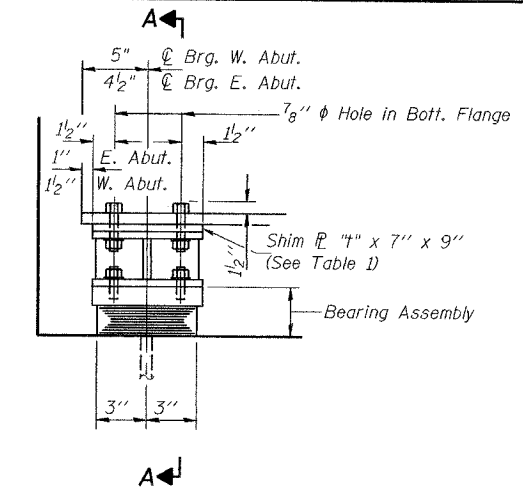
**TYPE S-1
STEEL RAILING
F.A.S. 738 OVER
HURRICANE CREEK
SECTION 01-00072-00-BR
GREENE COUNTY
STA. 144+72.46
STR. NO. 031-3005**

DESIGNED	ABG	DATE	January 21, 2005
CHECKED	ZBU	EXAMINED	Thomas J. Domagala
DRAWN	SMS	PASSED	Ralph E. Anderson
CHECKED	JFS		

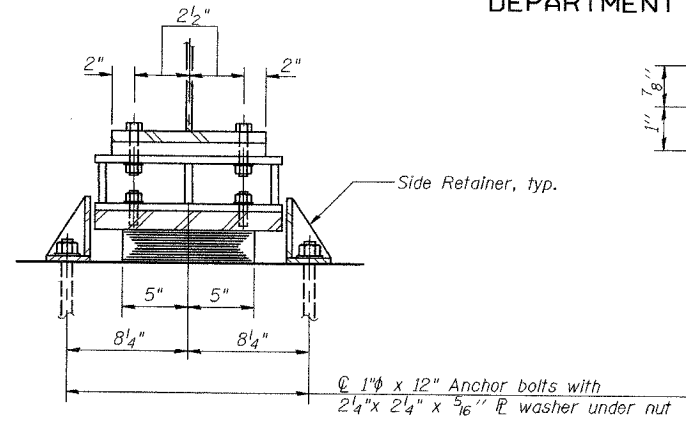
* Threaded areas shall be plugged or blocked off during pouring of the deck.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

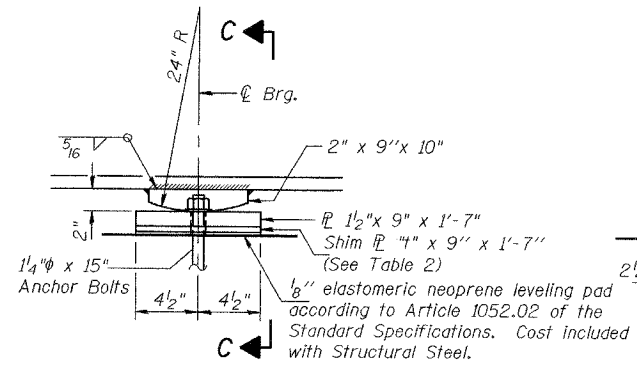
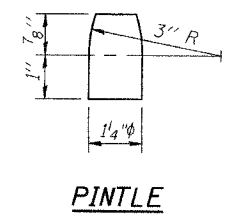
ROUTE NO.	SECTION	COUNTY	SHEET	SHEET NO. 11
F.A.S. 738	*	Greene	28 15	20 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT	CONTRACT NO. 97249	
*01-00072-00-BR				



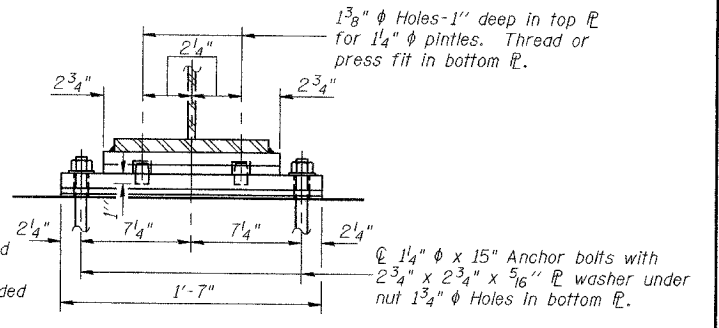
ELEVATION AT ABUTMENTS



SECTION A-A



ELEVATION AT PIERS 1 & 5



SECTION C-C

TYPE I ELASTOMERIC EXP. BRG.
(10 Required)

TABLE 1
SHIM PLATE THICKNESS "4"

Beam No.	W. Abutment	E. Abutment
1	-	-
2	1/8"	1/8"
3	1"	1"
4	1 1/4"	3/8"
5	1 1/4"	3/8"

Notes:
New steel extensions, side retainers, shim plates, connection bolts, and anchor bolts are included with Furnishing and Erecting Structural Steel.
See Sheet 20 of 20 for Anchor Bolt Installation.
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.

FIXED BEARING
(10 Required)

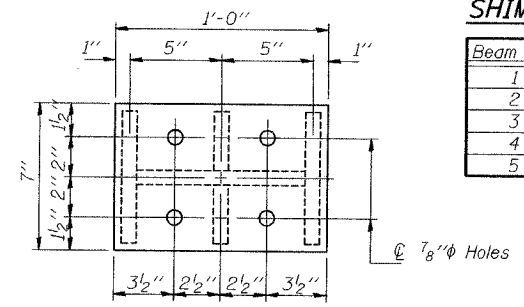
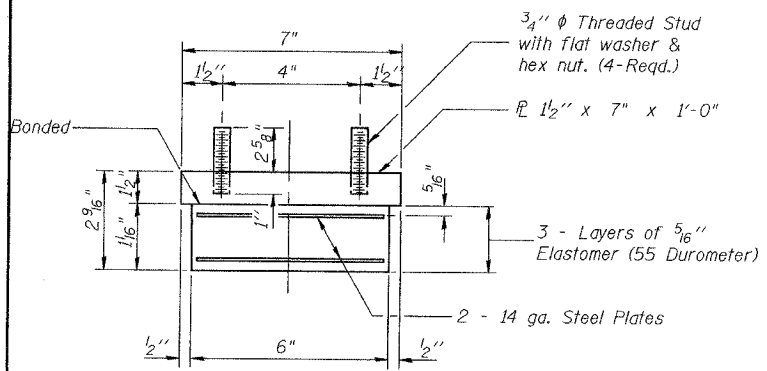


TABLE 2
SHIM PLATE THICKNESS "4"

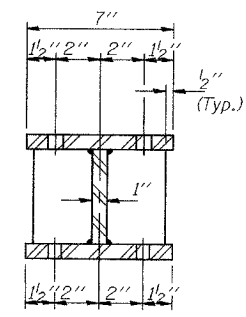
Beam No.	Pier 1	Pier 5
1	2 1/2"	-
2	2 5/8"	1 1/8"
3	3 1/2"	1"
4	2 3/4"	1 1/4"
5	2 3/4"	1 1/4"



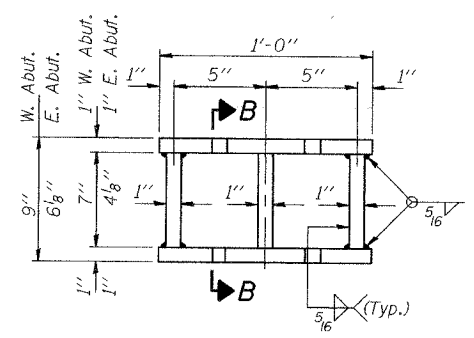
BEARING ASSEMBLY

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

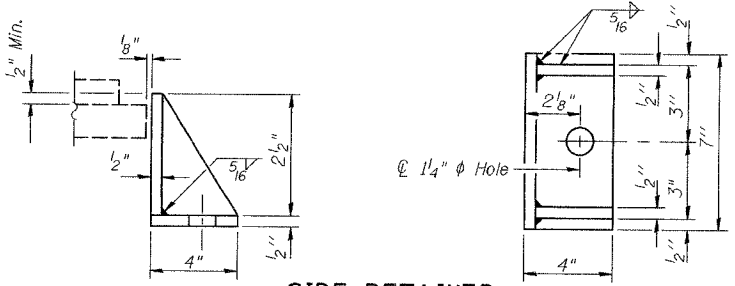
PLAN TOP AND BOTTOM PLATE



SECTION B-B



STEEL EXTENSION DETAIL



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.

DESIGNED	JFS
CHECKED	JKK
DRAWN	SMS
CHECKED	JFS

January 21, 2005
EXAMINED *Thomas J. Domagalick*
ENGINEER OF BRIDGE DESIGN
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

I-2-E2 10-31-02

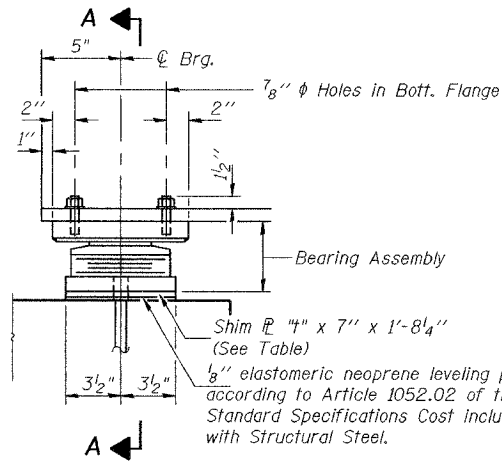
BILL OF MATERIAL

ITEM	UNIT	TOTAL
Elastomeric Bearing Assembly Type I	Each	10

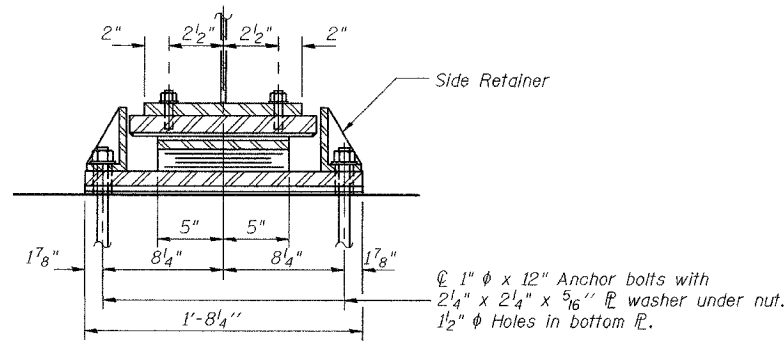
BEARINGS
F.A.S. 738 OVER
HURRICANE CREEK
SECTION 01-00072-00-BR
GREENE COUNTY
STA. 144+72.46
STR. NO. 031-3005

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO. F.A.S. 738	SECTION #	COUNTY Greene	SHEETS 28	SHEET 16	SHEET NO. 12 20 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT CONTRACT NO. 97249		



ELEVATION AT PIER 3, W. Brg. and E. Brg.

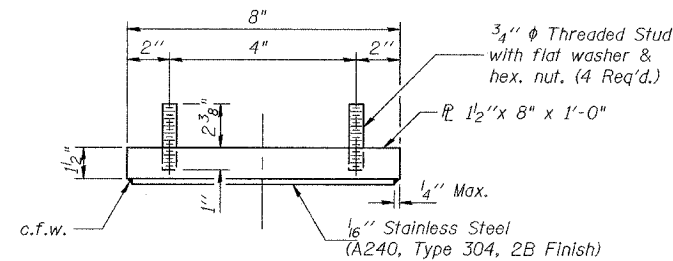


SECTION A-A

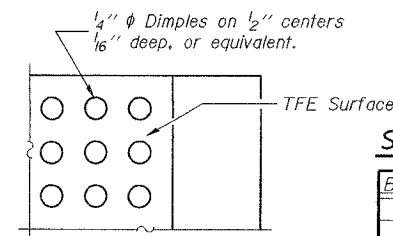
TYPE II ELASTOMERIC EXP. BRG.

(10 Required)

Pier 3 W. Brg. and Pier 3 E. Brg.



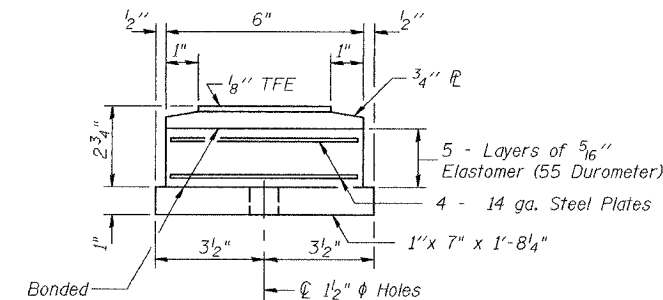
TOP BEARING ASSEMBLY



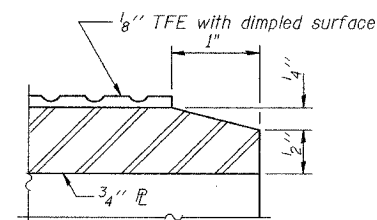
PLAN-TFE SURFACE

SHIM PLATE THICKNESS "t"

Beam No.	Pier 3 W. Brg.	Pier 3 E. Brg.
1	1 3/4"	2 1/8"
2	1 7/8"	2 1/4"
3	2 5/8"	3 1/8"
4	2"	2 3/8"
5	2"	2 3/8"



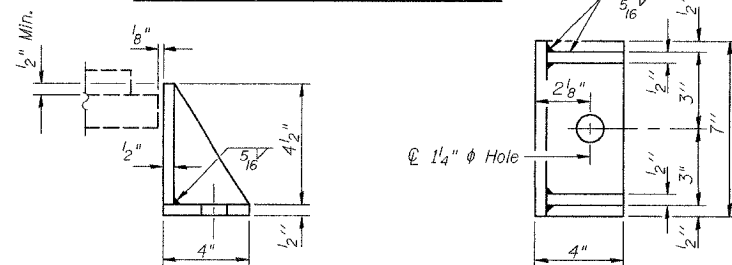
BOTTOM BEARING ASSEMBLY



SECTION THRU TFE

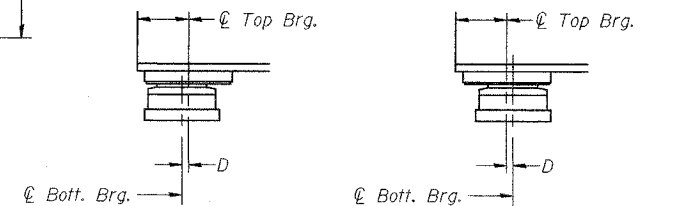
Note: The 1/8" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

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.



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.



SETTING ANCHOR BOLTS AT EXP. BRG.

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	10

BEARINGS
F.A.S. 738 OVER
HURRICANE CREEK
SECTION 01-00072-00-BR
GREENE COUNTY
STA. 144+72.46
STR. NO. 031-3005

DESIGNED	JFS
CHECKED	JKK
DRAWN	SMS
CHECKED	JFS

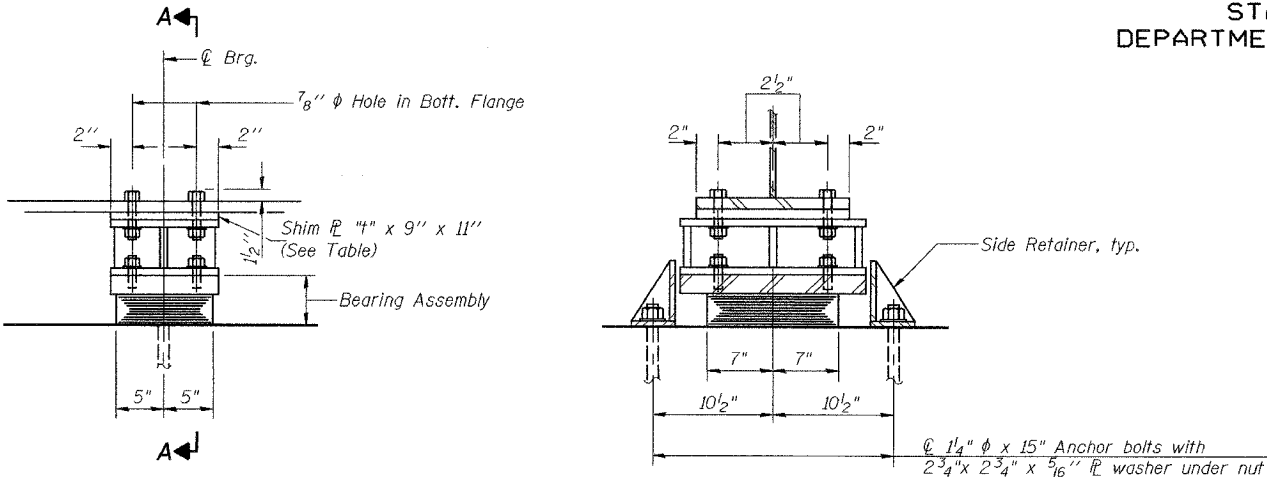
January 21, 2005
EXAMINED *Thomas J. Demagala*
ENGINEER OF BRIDGE DESIGN
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

I-2-E2 10-31-02

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

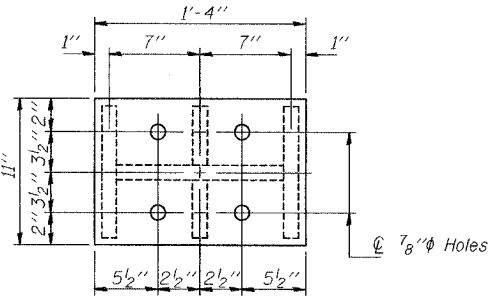
ROUTE NO. F.A.S. 738	SECTION *	COUNTY Greene	SHEET NO. 28	SHEET 17	SHEET NO. 13 20 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT		

*01-00072-00-BR
CONTRACT NO. 97249



ELEVATION AT PIERS 2 & 4
TYPE I ELASTOMERIC EXP. BRG.
(10 Required)
Piers 2 & 4

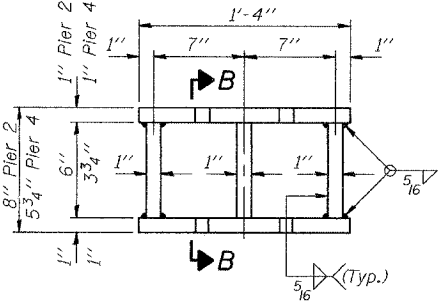
Notes:
New steel extensions, side retainers, shim plates, connection bolts, and anchor bolts are included with Furnishing and Erecting Structural Steel.
See Sheet 20 of 20 for Anchor Bolt installation.
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.



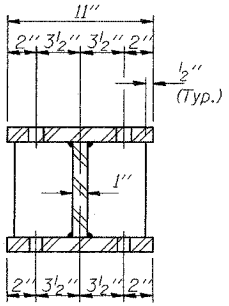
PLAN TOP AND BOTTOM PLATE

1/4 inch diameter x 15 inch Anchor bolts with 2 3/4 inch x 2 3/4 inch x 5/16 inch washer under nut

SECTION A-A



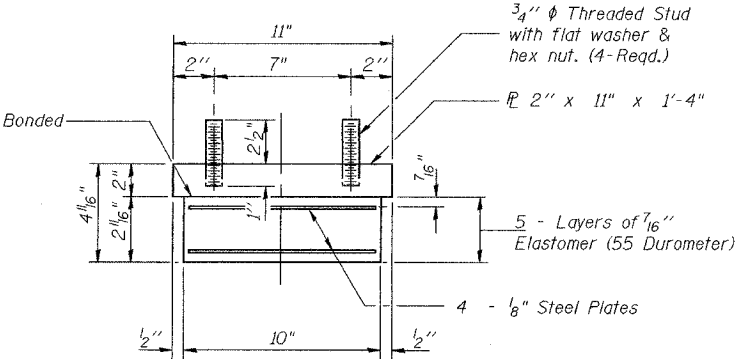
STEEL EXTENSION DETAIL



SECTION B-B

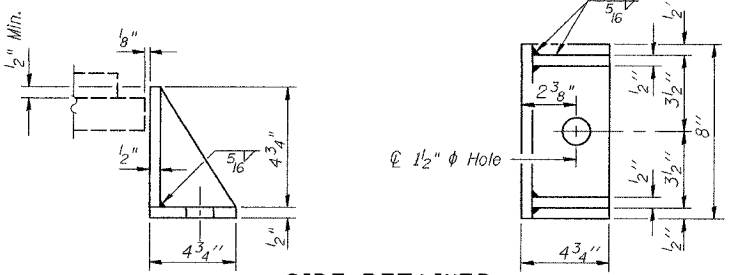
SHIM PLATE THICKNESS "4"

Beam No.	Pier 2	Pier 4
1	-	-
2	1/8"	1/8"
3	1"	1/8"
4	1/4"	1/4"
5	1/4"	1/4"



BEARING ASSEMBLY

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



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.

DESIGNED	JFS
CHECKED	JKK
DRAWN	SMS
CHECKED	JFS

January 21, 2005
EXAMINED *Thomas J. Domagalaki*
ENGINEER OF BRIDGES DESIGN
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

I-2-E2 10-31-02

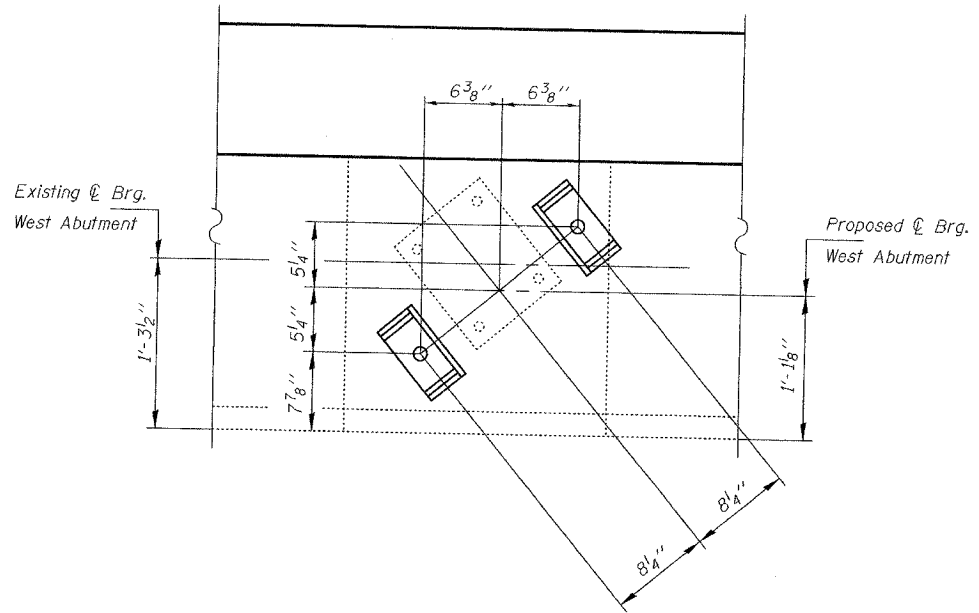
BILL OF MATERIAL

ITEM	UNIT	TOTAL
Elastomeric Bearing Assembly Type I	Each	10

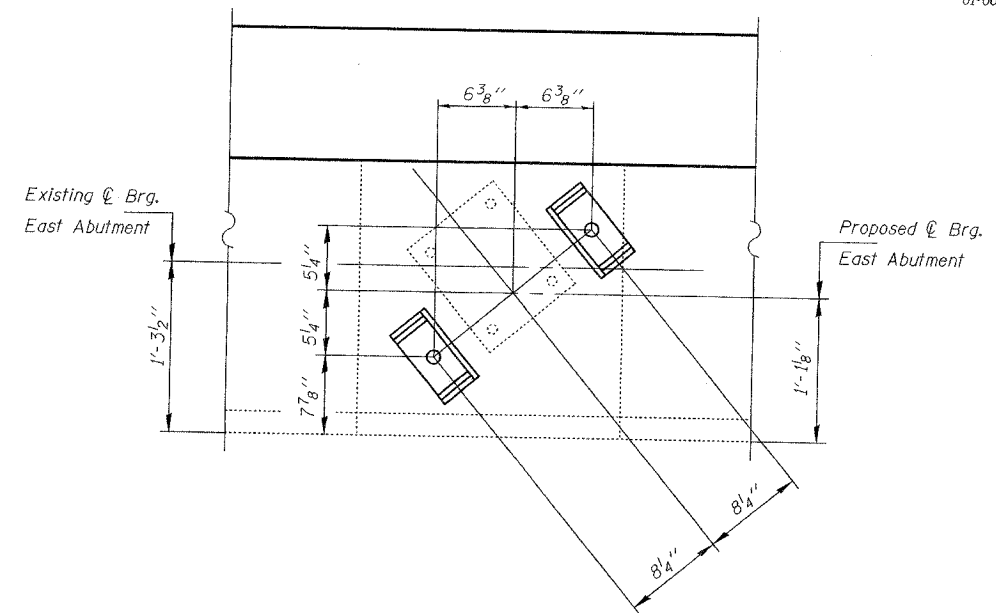
BEARINGS
F.A.S. 738 OVER
HURRICANE CREEK
SECTION 01-00072-00-BR
GREENE COUNTY
STA. 144+72.46
STR. NO. 031-3005

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

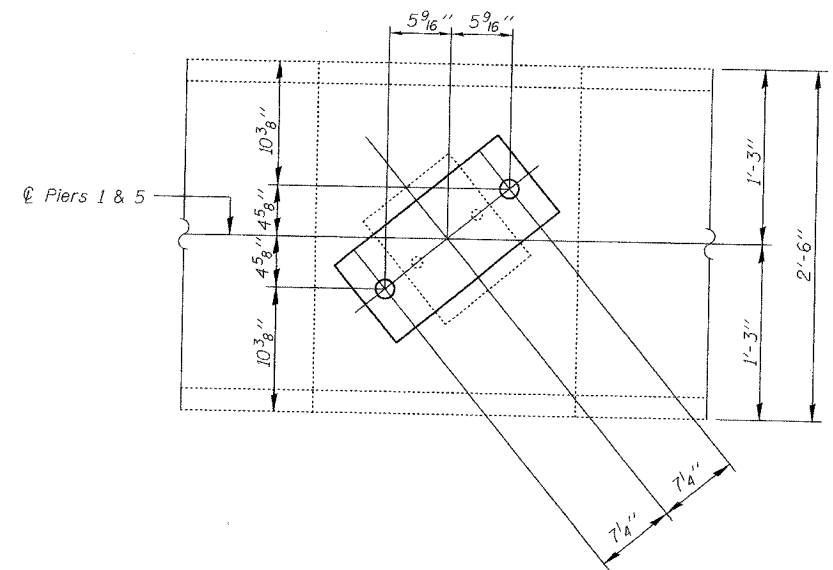
ROUTE NO. 738	SECTION *	COUNTY Greene	SHEET NO. 28	SHEET NO. 18	SHEET NO. 14 20 SHEETS
FED. ROAD DIST. NO. 7		S.D. NO. 8		FED. AID PROJECT NO.	
*01-00072-00-BR			CONTRACT NO. 97249		



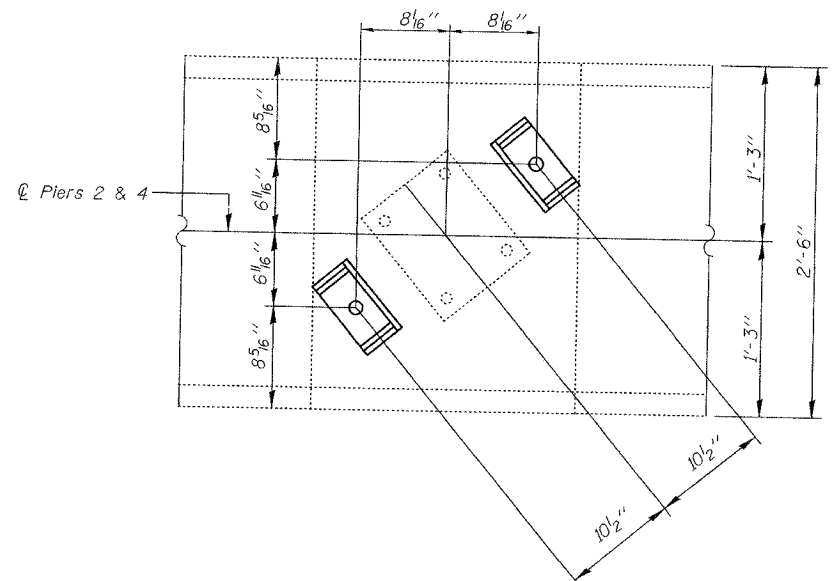
DETAIL "A"
West Abutment



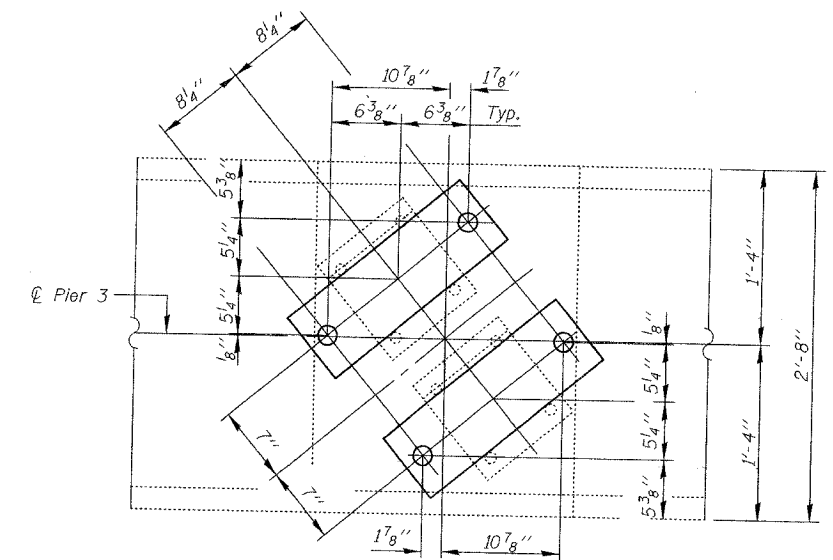
DETAIL "B"
East Abutment



DETAIL "C"
Piers 1 & 5



DETAIL "D"
Piers 2 & 4



DETAIL "E"
Pier 3

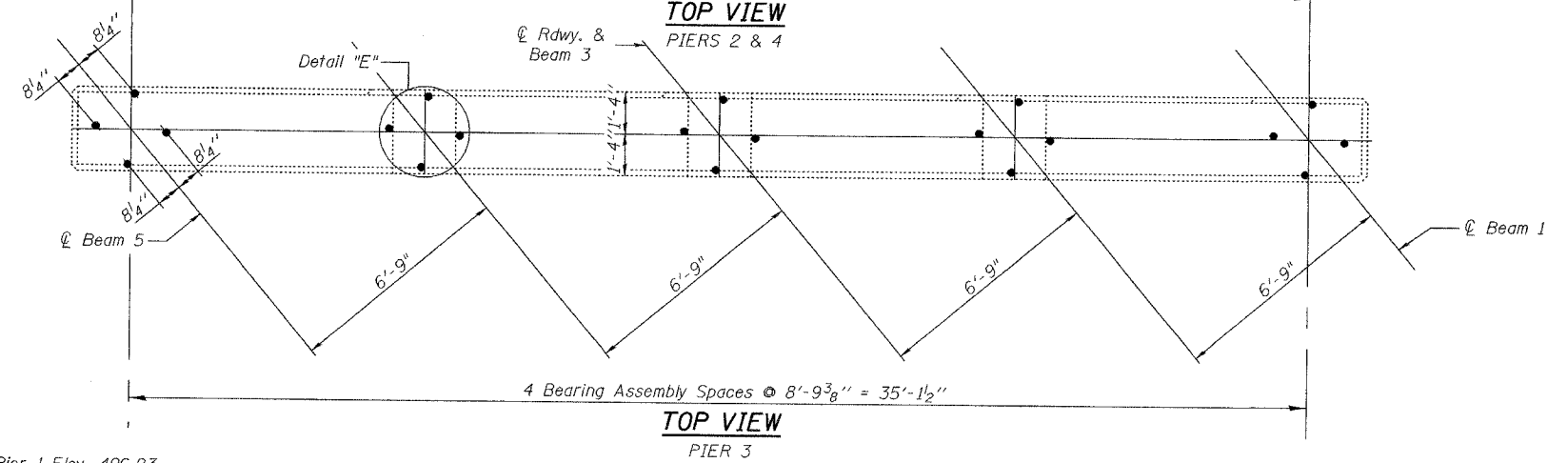
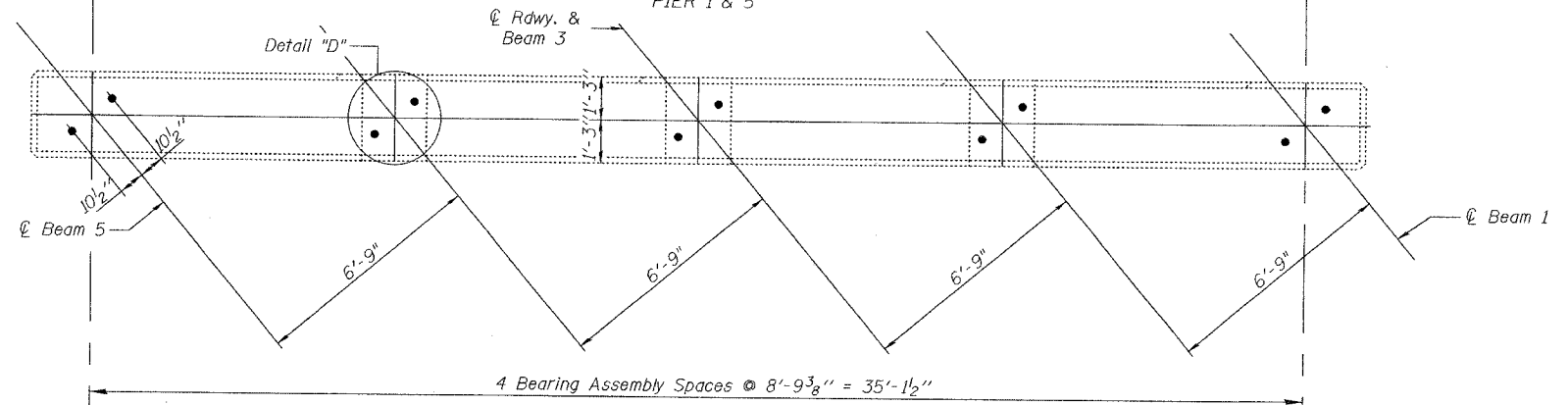
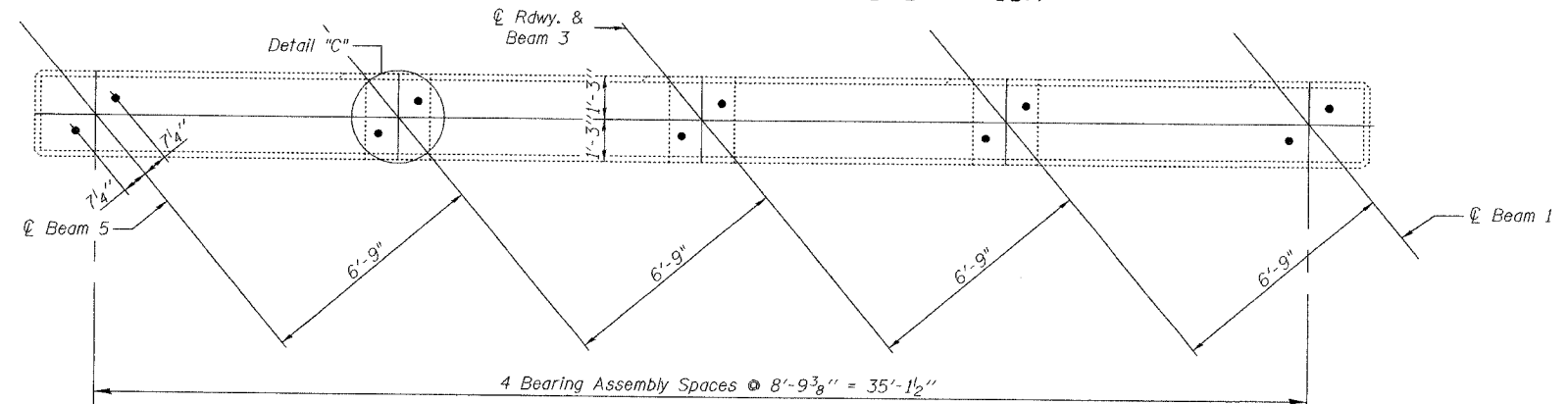
DESIGNED	ABG
CHECKED	ZBU
DRAWN	SMS
CHECKED	JFS

January 21, 2005
EXAMINED *Thomas J. Domagalaki*
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGE DESIGN
ENGINEER OF BRIDGES AND STRUCTURES

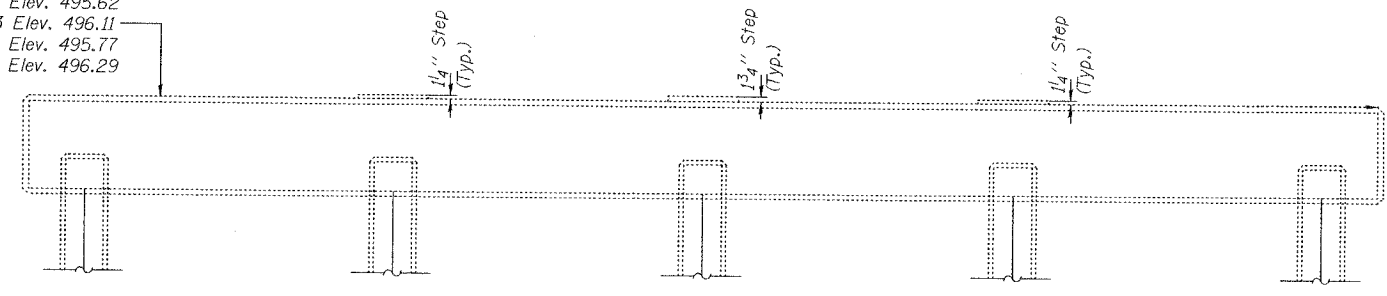
BEARING ANCHOR DETAILS
F.A.S. 738 OVER
HURRICANE CREEK
SECTION 01-00072-00-BR
GREENE COUNTY
STA. 144+72.46
STR. NO. 031-3005

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

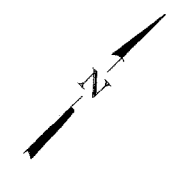
ROUTE NO. F.A.S. 738	SECTION *	COUNTY Greene	SHEET 28	SHEET 19	SHEET NO. 15 20 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT		
*01-00072-00-BR		CONTRACT NO. 97249			



Pier 1 Elev. 496.23
Pier 2 Elev. 495.62
Pier 3 Elev. 496.11
Pier 4 Elev. 495.77
Pier 5 Elev. 496.29



ELEVATION



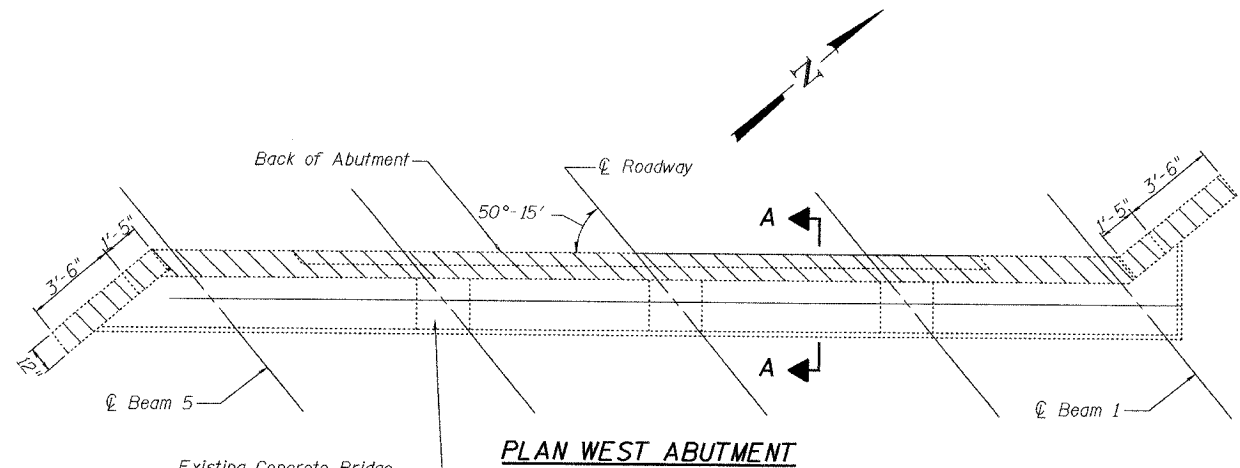
DESIGNED	ABG
CHECKED	ZBU
DRAWN	SMS
CHECKED	JFS

January 21, 2005
EXAMINED *Thomas J. Domagala*
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

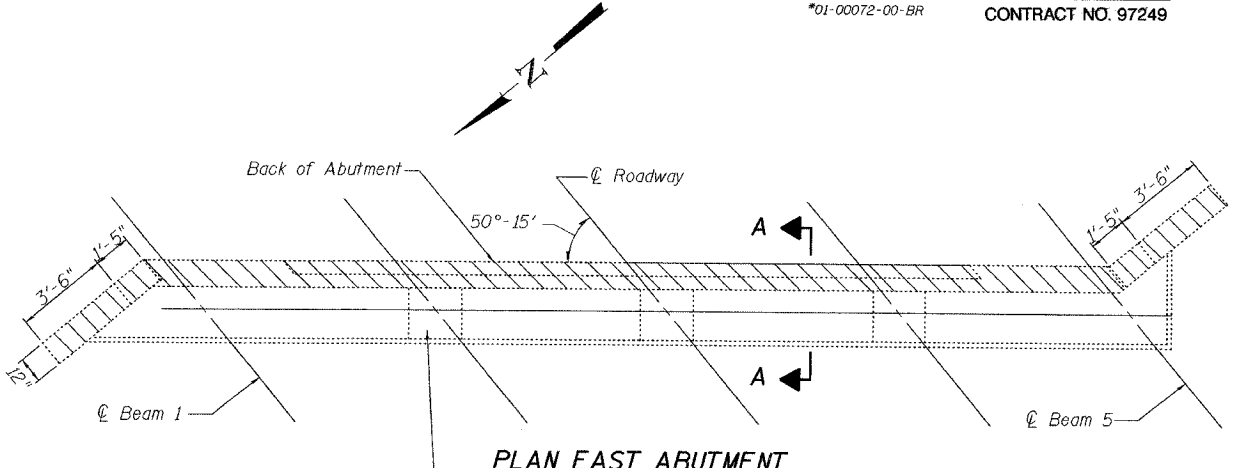
PIERS
F.A.S. 738 OVER
HURRICANE CREEK
SECTION 01-00072-00-BR
GREENE COUNTY
STA. 144+72.46
STR. NO. 031-3005

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

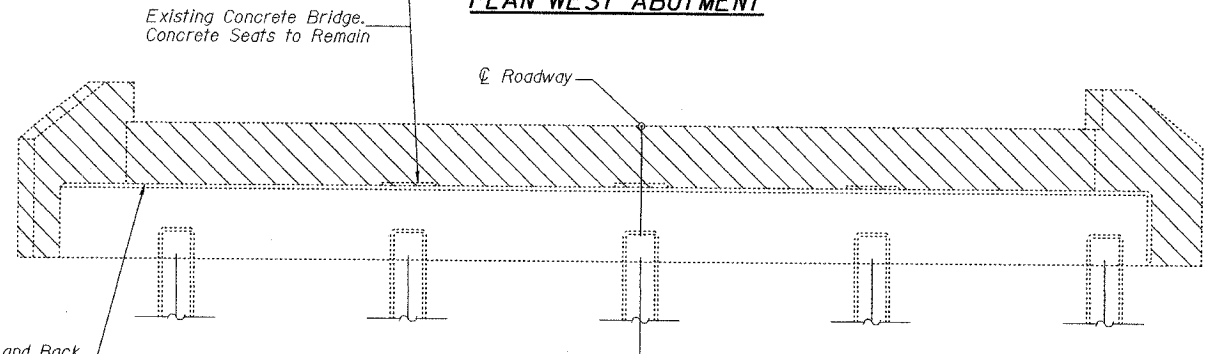
ROUTE NO. F.A.S. 738	SECTION *	COUNTY Greene	SHEET NO. 26	TOTAL SHEETS 20	SHEET NO. 16 20 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT CONTRACT NO. 97249		
*01-00072-00-BR					



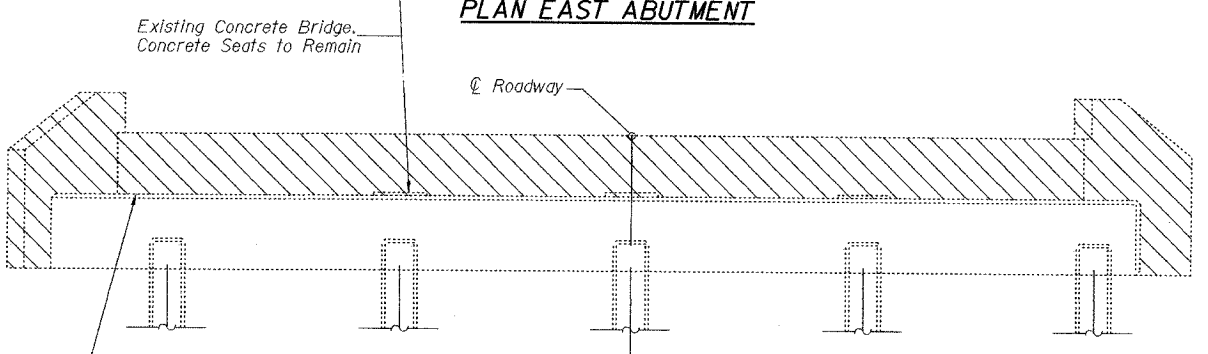
PLAN WEST ABUTMENT



PLAN EAST ABUTMENT



ELEVATION WEST ABUTMENT
(Looking West)



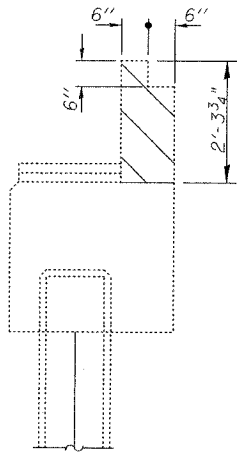
ELEVATION EAST ABUTMENT
(Looking East)

Sawcut Front and Back Faces $\frac{3}{4}$ " deep before removing concrete

Sawcut Front and Back Faces $\frac{3}{4}$ " deep before removing concrete

BILL OF MATERIAL

Item	Unit	Total
Concrete Removal	Cu. Yd.	8.6



SECTION A-A

Notes: Hatched areas indicate "Concrete Removal". Existing reinforcement extending into the new backwall shall be cleaned, straightened and incorporated into new construction. Cost included with "Concrete Removal."

**CONCRETE REMOVAL
(EAST AND WEST ABUTMENTS)**
F.A.S. 738 OVER
HURRICANE CREEK
SECTION 01-00072-00-BR
GREENE COUNTY
STA. 144+72.46
STR. NO. 031-3005

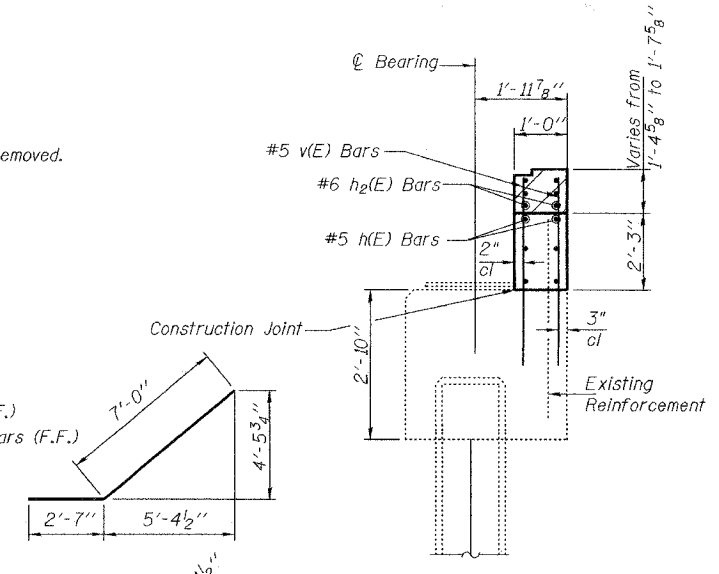
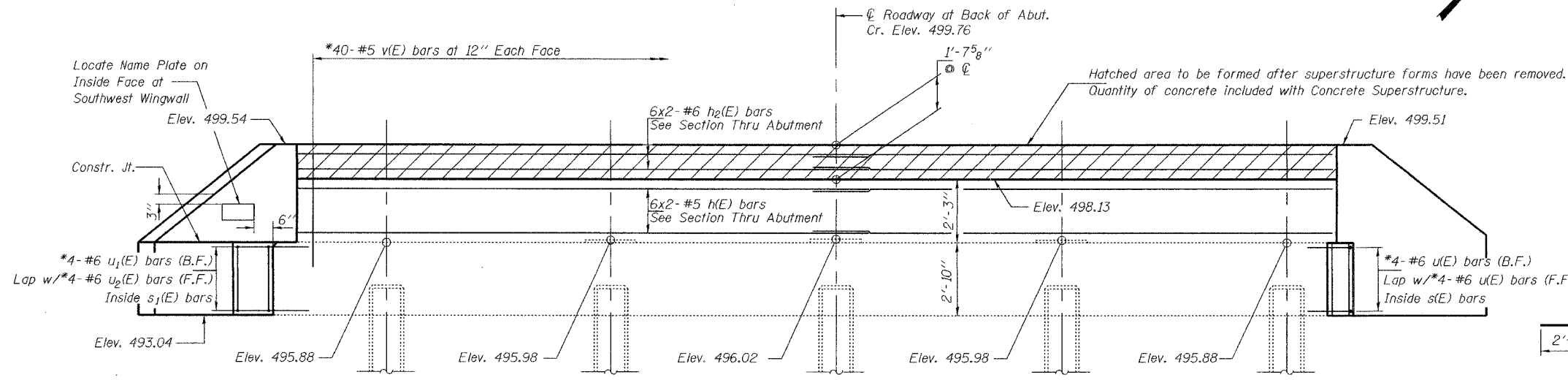
DESIGNED	ABG
CHECKED	ZBU
DRAWN	SMS
CHECKED	JFS

January 21, 2005
EXAMINED *Thomas J. Demagalicki*
ENGINEER OF STRUCTURE DESIGN
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

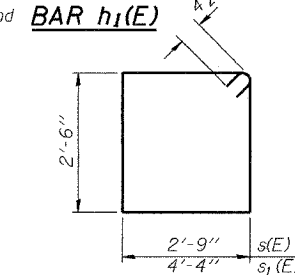
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO. F.A.S. 738	SECTION *	COUNTY Greene	TOTAL SHEETS 26	SHEET NOS. 21	SHEET NO. 17 20 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT		

*01-00072-00-BR CONTRACT NO. 97249



* Epoxy grout u(E), u₁(E), u₂(E) and v(E) bars in 9" min. drilled holes according to Article 584 of the Standard Specifications.

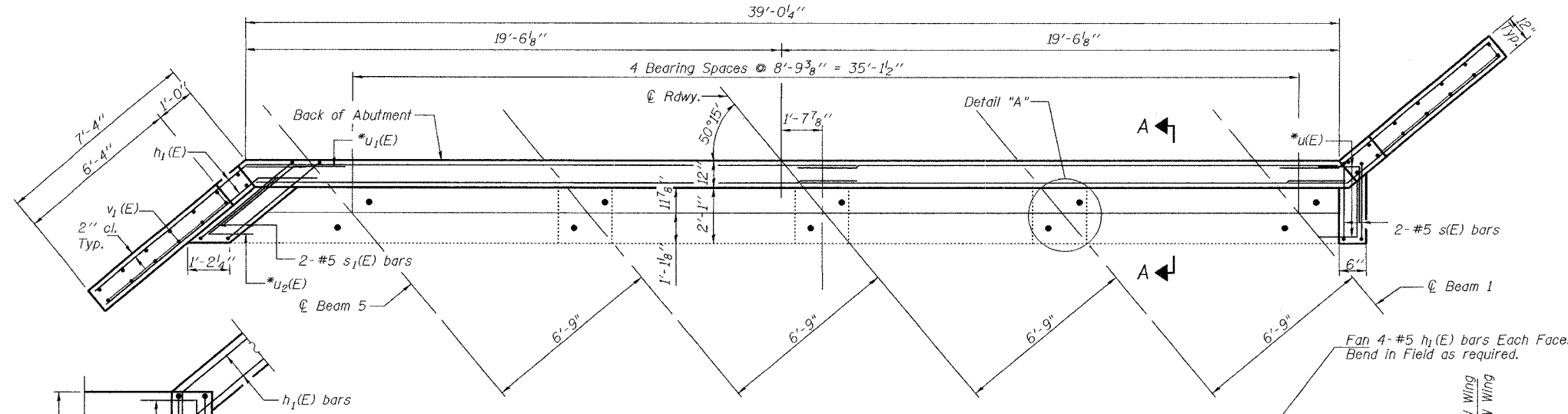


MIN. BAR LAP
#5 bars = 1'-8"
#6 bars = 2'-0"

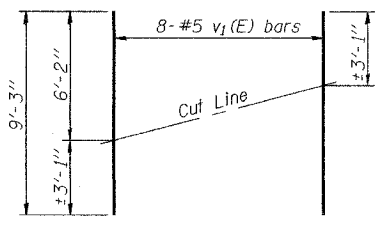
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	12	#5	20'-3"	—
h ₁ (E)	36	#5	9'-7"	—
h ₂ (E)	12	#6	20'-6"	—
s(E)	2	#5	11'-3"	⊠
s ₁ (E)	2	#5	14'-5"	⊠
u(E)	8	#6	3'-4"	⌋
u ₁ (E)	4	#6	5'-0"	⌋
u ₂ (E)	4	#6	5'-0"	⌋
v(E)	80	#5	4'-4"	—
v ₁ (E)	16	#5	9'-3"	—
Concrete Structures		Cu. Yd.	6.7	
Reinforcement Bars, Epoxy Coated		Pound	1650	
Structure Excavation		Cu. Yd.	24	

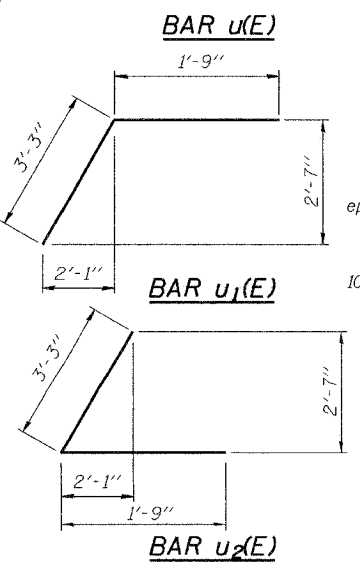
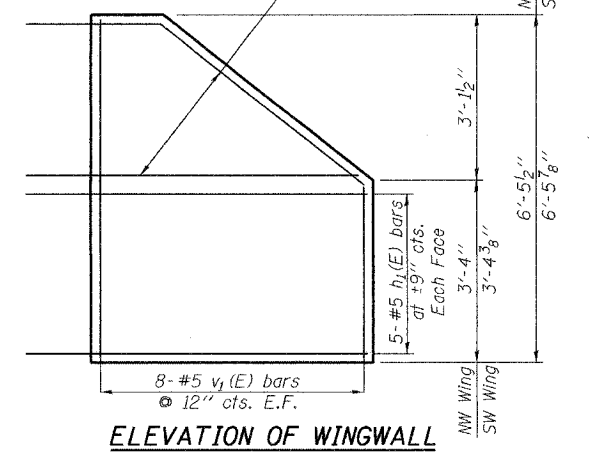
Reinforcement bars designated (E) shall be epoxy coated.
For Detail "A" see sheet 14 of 20.
Bars indicated thus 10 x 2-#5 etc. indicates 10 line of bars with 2 lengths per line.



NORTH CORNER DETAIL
h₁(E) bars above the cap shall extend into the backwall as shown on PLAN VIEW.



Order v₁(E) full length. Cut as shown and use remainder of bars in opposite face. Before cutting as shown verify field elevations and height of wall.



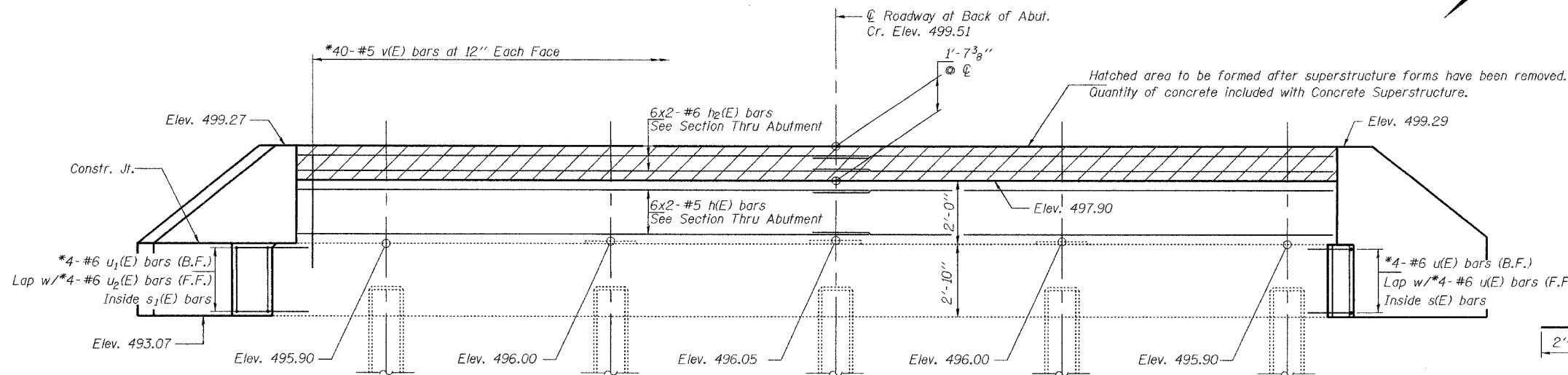
WEST ABUTMENT
F.A.S. 738 OVER
HURRICANE CREEK
SECTION 01-00072-00-BR
GREENE COUNTY
STA. 144+72.46
STR. NO. 031-3005

DESIGNED	ABG	January 21, 2005
CHECKED	ZBU	EXAMINED <i>Thomas J. Domagalaki</i> ENGINEER OF BRIDGE DESIGN
DRAWN	SMS	PASSED <i>Ralph E. Anderson</i> ENGINEER OF BRIDGES AND STRUCTURES
CHECKED	JFS	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

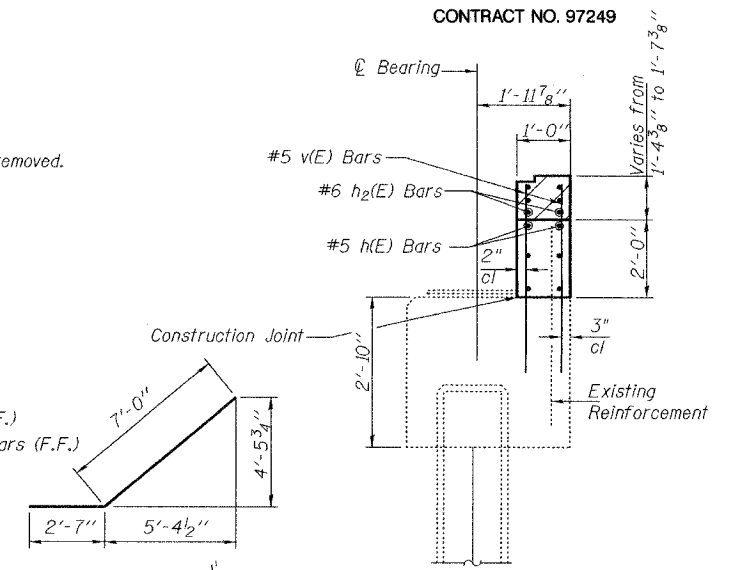
ROUTE NO. F.A.S. 738	SECTION *	COUNTY Greene	SHEETS 20	SHEET NO. 22	SHEET NO. 18 20 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT	

*01-00072-00-BR CONTRACT NO. 97249



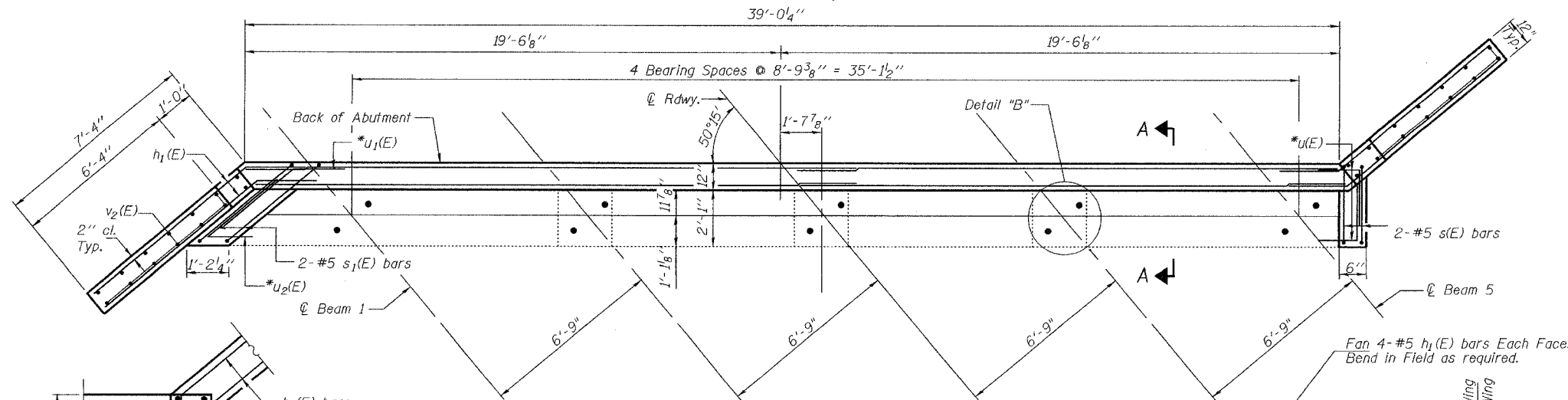
ELEVATION
(Looking East)

* Epoxy grout u(E), u₁(E), u₂(E) and v(E) bars in 9" min. drilled holes according to Article 584 of the Standard Specifications.

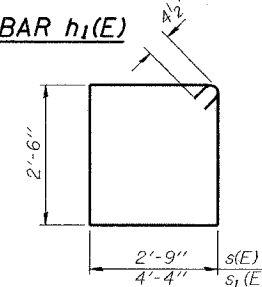


SECTION A-A
at Rt. angles

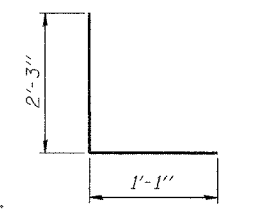
MIN. BAR LAP
#5 bars = 1'-8"
#6 bars = 2'-0"



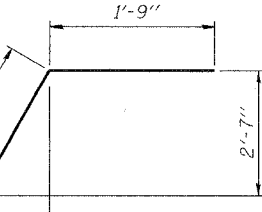
PLAN VIEW



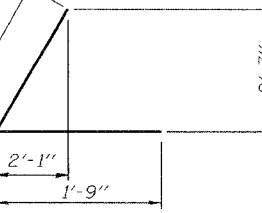
BARS s(E) & s1(E)



BAR u(E)



BAR u1(E)



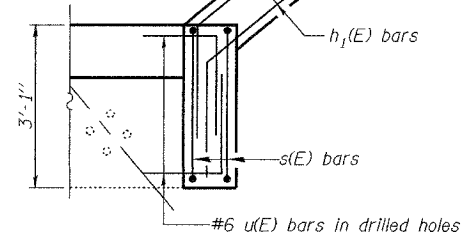
BAR u2(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	12	#5	20'-3"	
h ₁ (E)	36	#5	9'-7"	
h ₂ (E)	12	#6	20'-6"	
s(E)	2	#5	11'-3"	□
s ₁ (E)	2	#5	14'-5"	□
u(E)	8	#6	3'-4"	┌
u ₁ (E)	4	#6	5'-0"	└
u ₂ (E)	4	#6	5'-0"	└
v(E)	80	#5	4'-4"	—
v ₂ (E)	16	#5	8'-10"	—
Concrete Structures		Cu. Yd.	6.2	
Reinforcement Bars, Epoxy Coated		Pound	1650	
Structure Excavation		Cu. Yd.	24	

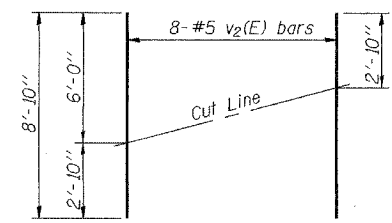
Reinforcement bars designated (E) shall be epoxy coated.
For Detail "B" see sheet 14 of 20.
Bars indicated thus 10 x 2-#5 etc. indicates 10 line of bars with 2 lengths per line.

EAST ABUTMENT
F.A.S. 738 OVER
HURRICANE CREEK
SECTION 01-00072-00-BR
GREENE COUNTY
STA. 144+72.46
STR. NO. 031-3005



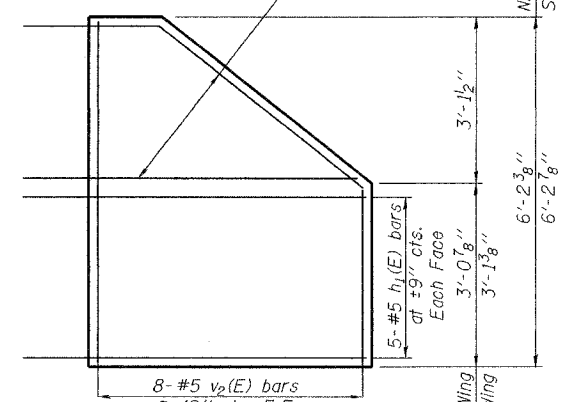
NORTH CORNER DETAIL

h₁(E) bars above the cap shall extend into the backwall as shown on PLAN VIEW.



FIELD CUTTING DIAGRAM

Order v₂(E) full length. Cut as shown and use remainder of bars in opposite face. Before cutting as shown verify field elevations and height of wall.



ELEVATION OF WINGWALL

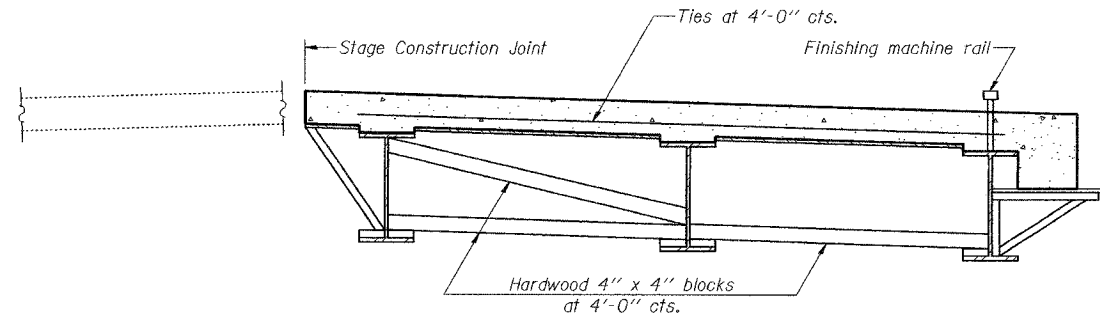
DESIGNED	ABG
CHECKED	ZBU
DRAWN	SMS
CHECKED	JFS

January 21, 2005
EXAMINED *Thomas J. Demagalaki*
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGE DESIGN
ENGINEER OF BRIDGES AND STRUCTURES

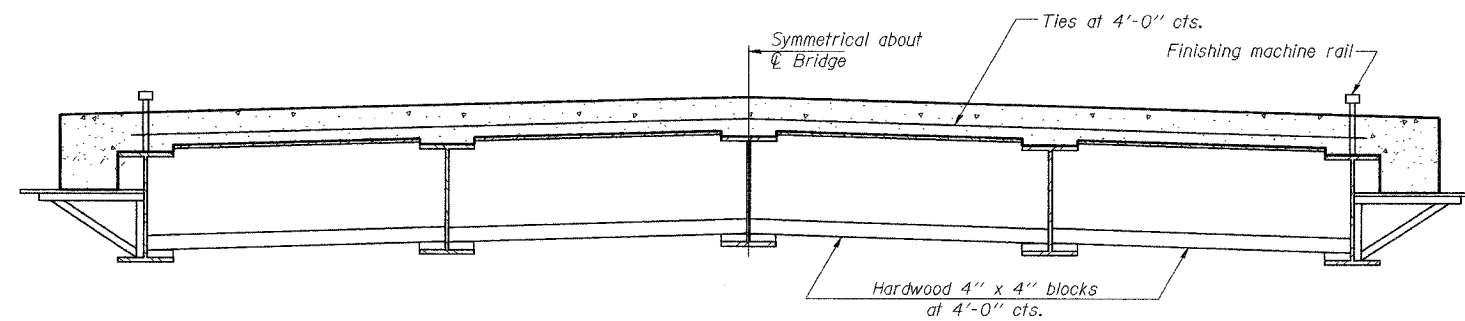
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO. F.A.S. 738	SECTION *	COUNTY Greene	SHEET NO. 28	SHEET TOTAL 23	SHEET NO. 19 20 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-		
*01-00072-00-BR		CONTRACT NO. 97249			

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, or Stage Construction the Hardwood bracing materials shall be placed as shown between webs of beams in each bay.



**FORM BRACES FOR
STAGE CONSTRUCTION**



**FORM BRACES FOR
STANDARD CONSTRUCTION**

CANTILEVER FORMING BRACKET
F.A.S. 738 OVER
HURRICANE CREEK
SECTION 01-00072-00-BR
GREENE COUNTY
STA. 144+72.46
STR. NO. 031-3005

DESIGNED	ABG
CHECKED	ZBU
DRAWN	SMS
CHECKED	JFS

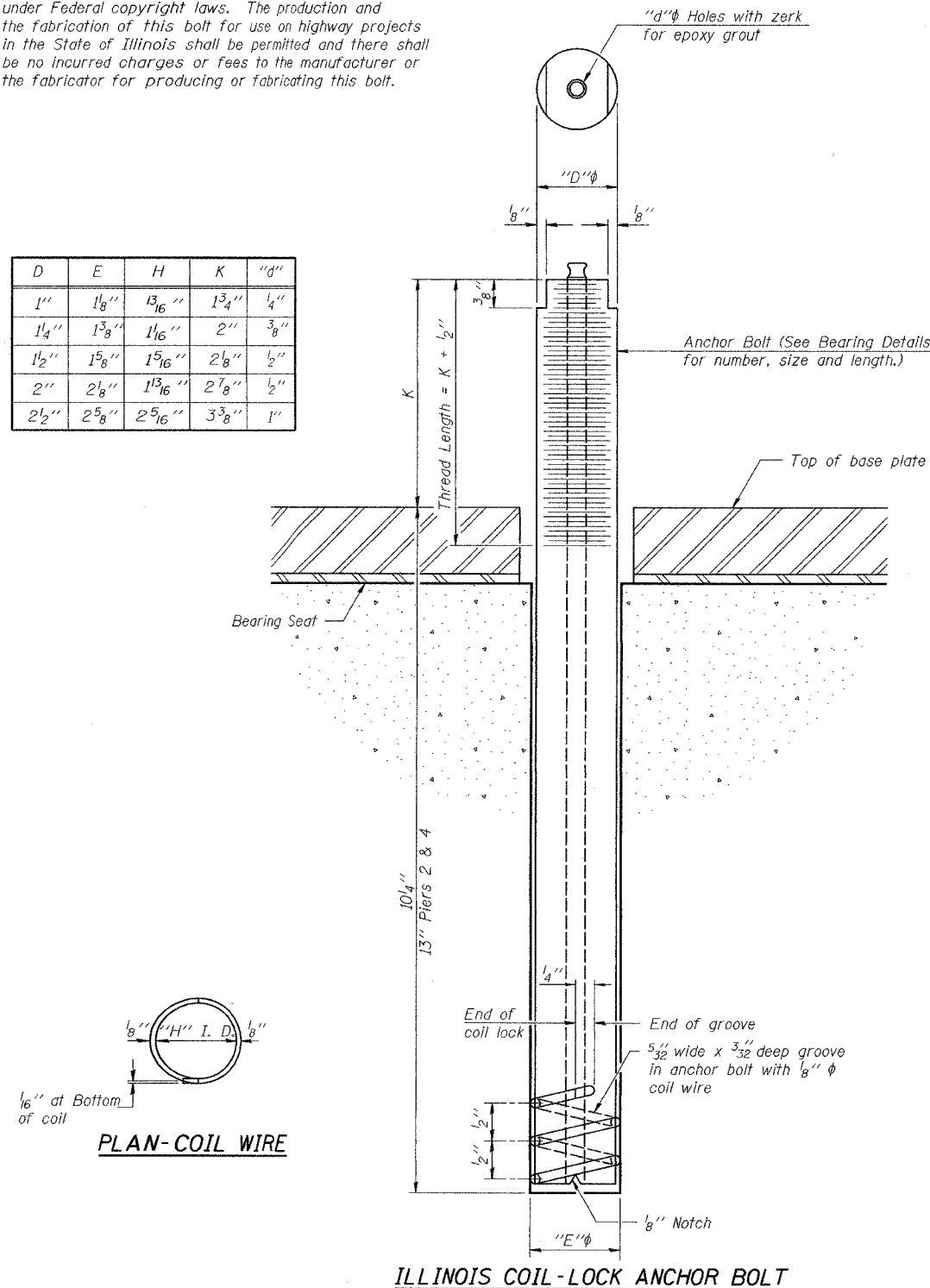
January 21, 2005
EXAMINED *Thomas J. Domagalick*
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

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.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 20 20 SHEETS
F.A.S. 738	*	Greene	28	24	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT	CONTRACT NO. 97249		

D	E	H	K	"d"
1"	1 1/8"	1 3/16"	1 3/4"	1/4"
1 1/4"	1 3/8"	1 1/4"	2"	3/8"
1 1/2"	1 5/8"	1 5/16"	2 1/8"	1/2"
2"	2 1/8"	1 13/16"	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
Abuts.	A307
Piers	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.

DESIGNED	ABG
CHECKED	ZBU
DRAWN	SMS
CHECKED	JFS

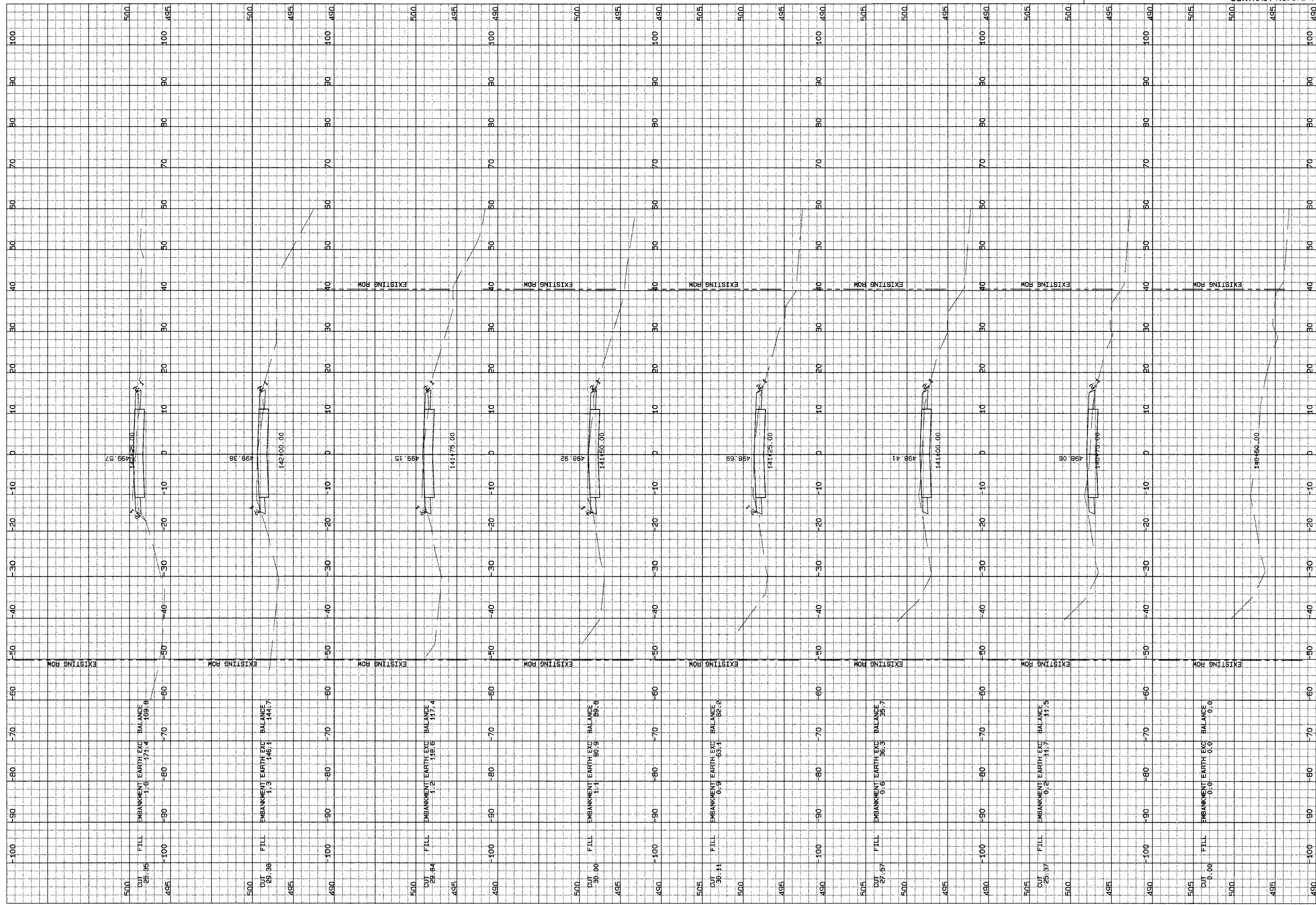
January 21, 2005
EXAMINED *Thomas J. Domagalaki*
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGE DESIGN
ENGINEER OF BRIDGES AND STRUCTURES

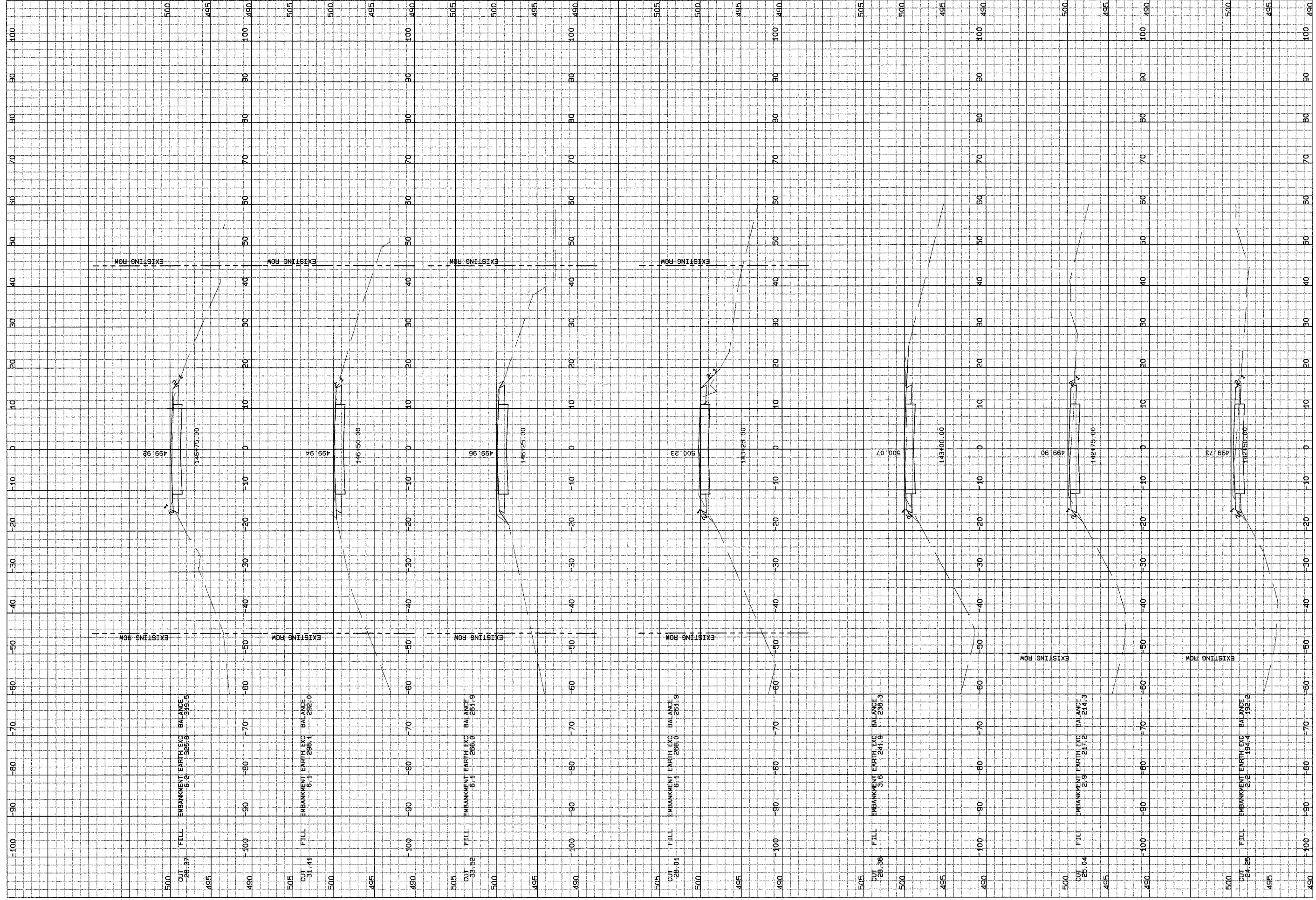
ABB-1 4-30-99

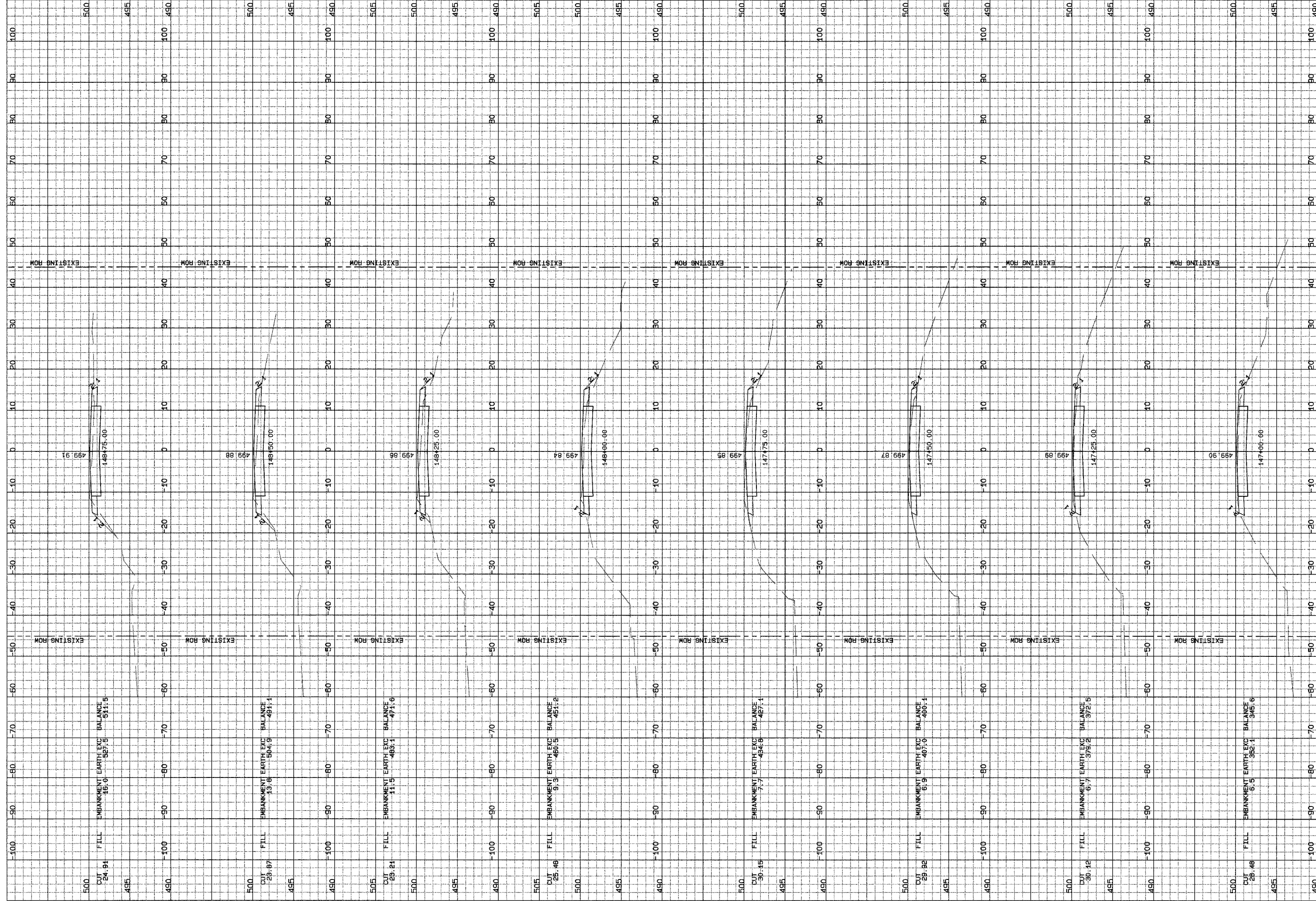
ANCHOR BOLT DETAILS FOR BEARINGS

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 73B	01-00072-00-BR	GREENE	28	25

CONTRACT NO. 97249







ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 738	01-00072-00-BR	GREENE	28	28

CONTRACT NO. 97249

