98488

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	(11-1VB)-1	UNION	39	1

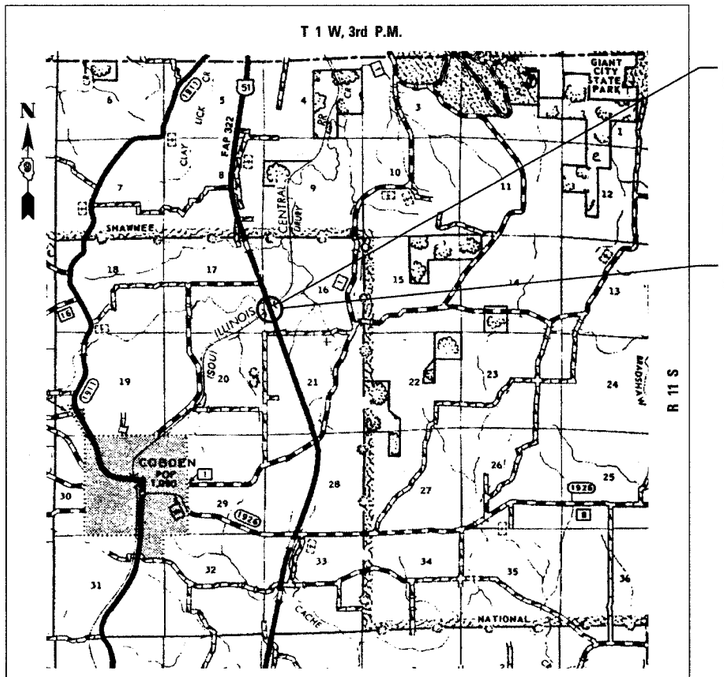
6-17-05 Letting, Item 221

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED
HIGHWAY PLANS

FAP ROUTE 322 (US ROUTE 51)
SECTION (11–1VB)–1
PROJECT: BRF-0322(075)
UNION COUNTY
C–99–063–01
BRIDGE REPLACEMENT OVER A TRIBUTARY TO DRURY CREEK AND CN / IC RAILROAD

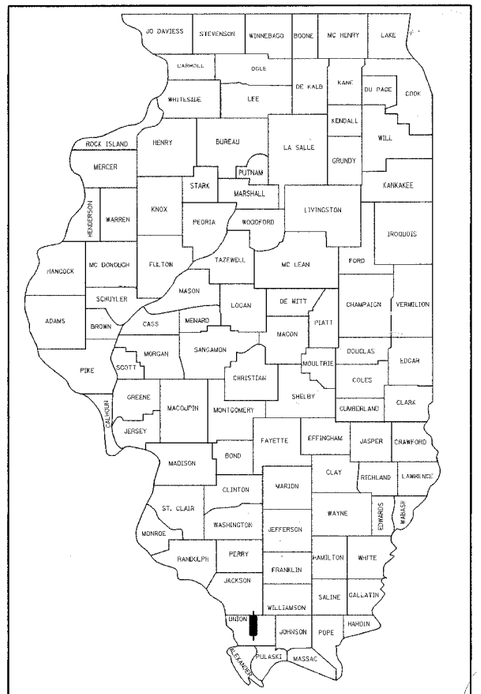
FOR INDEX OF SHEETS, SEE SHEET NO. 2
FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 3



LOCATION MAP

GROSS LENGTH = 475.00 FT. (0.090 MI.)
NET LENGTH = 475.00 FT. (0.090 MI.)

D–99–001–98



LOCATION OF SECTION INDICATED THUS: –

HIGHWAY CLASSIFICATION

F.A.P. RTE 322 – US RTE. 51
ADT = 6250 (2004) : 8400 (2024)
DHV : 690 (2020)
FUNCTIONAL CLASS : OTHER PRINCIPAL ARTERIAL
DESIGN SPEED : 55 MPH
POSTED SPEED : 55 MPH

0 100' 200' 300' — 1" = 100'
0 10' 20' 30' — 1" = 10'

0 50' 100' — 1" = 50'

0 50' 100' — 1" = 20'

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

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1–800–892–0123 Website: http://illinois1call.com/

CONTRACT NO. 98488

TRACY M. LAWLESS
62-47331
LICENSED PROFESSIONAL ENGINEER
STATE OF ILLINOIS

TRACY M. LAWLESS
FREEBURG, ILLINOIS
ILLINOIS LICENSED PROFESSIONAL
ENGINEER NO. 62–47331
EXPIRES NOV. 30, 2005

RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
CENTRALIA, ILLINOIS FREEBURG, ILLINOIS
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED March 29 20 05
Mary C Ramie
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
May 13, 20 05
Mike Hine
ENGINEER OF DESIGN AND ENVIRONMENT
May 13, 20 05
Victor Modeer
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

PROJECT ENGINEER: DAVID PICHE (618) 549–2171 CENTREX (217) 782–4554

COUNTY: UNION SECTION (11–1VB)–1 ROUTE: FAP 322 (US 51)

FAP ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
322	(11-1VB)-1	UNION	39	2
STA.		TO STA.		

CONTRACT NO. 98488

GENERAL NOTES

1.) THE THICKNESS OF BITUMINOUS MIXTURES SHOWN ON THE PLANS IS THE NOMINAL THICKNESS. DEVIATIONS FROM THE NOMINAL THICKNESS WILL BE PERMITTED WHEN SUCH DEVIATIONS OCCUR DUE TO IRREGULARITIES IN THE EXISTING SURFACE OR BASE ON WHICH THE BITUMINOUS MIXTURE IS PLACED.

2.) FACTORS USED FOR ESTIMATING PLAN QUANTITIES ARE AS FOLLOWS AND SHALL NOT BE USED FOR THE BASIS OF FINAL QUANTITIES:

ALL BITUMINOUS CONCRETE	2.016 TONS/CU. YD.
BITUMINOUS MATERIALS:	
ON PAVEMENT	0.09 GAL/SQ. YD.
ALL AGGREGATE AND RIPRAP BEDDING	2.05 TONS/CU. YD.
AGGREGATE (PRIME COAT)	0.0015 TONS/SQ. YD.
RIPRAP	1.5 TONS/CU. YD.

3.) AT ALL LOCATIONS WHERE BITUMINOUS OR CONCRETE PAVEMENT JOINS AN EXISTING BITUMINOUS OR CONCRETE PAVEMENT, A SAWED JOINT SHALL BE CONSTRUCTED. THE COST OF THIS JOINT SHALL BE INCLUDED IN THE TYPE OF PAVEMENT BEING CONSTRUCTED.

4.) THE DISTRICT BUREAU OF OPERATIONS SHALL BE NOTIFIED AT LEAST 10 DAYS PRIOR TO PLACEMENT OF THE FINAL PAVEMENT MARKINGS. THE BUREAU OF OPERATIONS WILL THEN DETERMINE THE ACTUAL LIMITS TO BE STRIPED AS "NO PASSING" ZONES.

5.) EXCEPT AS NOTED IN THE PLANS, PAVEMENT GRADES SHOWN ARE AT THE TOP OF PAVEMENT SURFACES.

6.) PLAN DIMENSIONS AND DETAILS RELATIVE TO THE 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 A CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN THE SCOPE OF THE WORK. THE CONTRACTOR, HOWEVER, WILL BE PAID FOR THE ACTUAL QUANTITY FURNISHED AT THE UNIT PRICE BID FOR THE WORK. EXISTING PLANS ARE AVAILABLE FOR REVIEW AT THE DISTRICT 9 OFFICE.

7.) VERTICAL PANELS SHOWN ON STANDARD 701321 WILL NOT BE REQUIRED ON THE STAGE II NEW BRIDGE PARAPET. THE BARRIER WALL REFLECTORS SHALL BE INSTALLED PRIOR TO OPENING TO TRAFFIC.

8.) ANY TIME THE CONCRETE BARRIER IS NOT IN THE PROPER POSITION, FLAGGERS SHALL BE IN PLACE TO CONTROL TRAFFIC. THE TEMPORARY TRAFFIC SIGNALS SHALL BE SET TO FLASH ALL RED.

9.) IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO REMOVE ANY DEBRIS OR DIRT CAUSED BY CONSTRUCTION ACTIVITY THAT COVERS THE NEW RIPRAP AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

10.) ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE LEFT IN PLACE UNTIL REMOVAL IS REQUIRED TO CONSTRUCT FINAL GRADE LINES.

11.) REMOVAL OF EXISTING BRIDGE APPROACH PAVEMENTS (VAR. 16½" AT EDGE TO 10½" AT CTR.) IS INCLUDED IN THE QUANTITY FOR PAVEMENT REMOVAL: ESTIMATED AT 236 SQ YD.

12.) TREES SHALL BE PRESERVED THROUGHOUT THIS SECTION AS DIRECTED BY THE ENGINEER. GENERALLY, TREES OUTSIDE THE CLEAR ZONE, AND WHICH DO NOT INTERFERE WITH CONSTRUCTION, SHALL NOT BE DISTURBED.

13.) THE QUANTITY OF SHORT TERM PAVEMENT MARKING SHOWN IN THE PLANS IS BASED ON ONE APPLICATION FOR THE SURFACE COURSE.

14.) IN ADDITION TO THE REQUIREMENTS OF ARTICLE 107.16 THE CONTRACTOR SHALL PROTECT THE SURFACE OF ALL BRIDGE DECK AND BRIDGE APPROACH PAVEMENTS IN A MANNER SATISFACTORY TO THE ENGINEER BEFORE ANY EQUIPMENT IS ALLOWED TO CROSS THE STRUCTURE. PROTECTION SHALL BE PROVIDED FOR ALL EQUIPMENT AS DEFINED IN ARTICLE 101.17 REGARDLESS IF TRACK MOUNTED OR WHEELED.

15.) THE ADVANCE DETECTOR LOOPS ARE TYPICALLY LOCATED 300 FEET IN ADVANCE OF THE STOP BAR. THE BUREAU OF OPERATIONS SHOULD APPROVE THE LOOP LOCATIONS PRIOR TO INSTALLATION.

16.) QUANTITIES SHOWN IN THE PLANS FOR BRIDGE DECK GROOVING AND PROTECTIVE COAT INCLUDE THE BRIDGE, THE BRIDGE APPROACH PAVEMENTS, AND THE BRIDGE APPROACH PAVEMENT CONNECTORS (PCC), SPECIAL.

17.) PROTECTIVE COAT SHALL BE APPLIED TO THE BRIDGE, THE BRIDGE APPROACH PAVEMENTS, AND THE BRIDGE APPROACH PAVEMENT CONNECTORS (PCC), SPECIAL IN ACCORDANCE WITH ARTICLE 503.19 OF THE STANDARD SPECIFICATION. THE SEASONAL EXCEPTION SHALL NOT APPLY. THE PROTECTIVE COAT SHALL BE APPLIED REGARDLESS OF THE CURING METHOD USED. THE RATE OF APPLICATION FOR EACH COAT ON SAW CUT GROOVED AREAS SHALL BE 25 SQUARE YARDS PER GALLON OF MIXTURE.

18.) "NARROW BRIDGE" SIGNS WITH ADVISORY TAGS "12 FT- 0 IN" SHALL BE ERECTED BETWEEN "ROAD CONSTRUCTION AHEAD" AND THE "SIGNAL AHEAD" SIGNS.

19.) THE CENTERLINE PAVEMENT MARKING SHOULD BE REMOVED FROM THE STOP BAR TO THE SAND ATTENUATORS OR DRUMS. EDGE LINE PAVEMENT MARKING SHOULD BE REMOVED IF A 10 FOOT LANE WIDTH CANNOT BE MAINTAINED. TEMPORARY EDGE LINES SHOULD BE INSTALLED WHEN THE EDGE LINES ARE REMOVED.

20.) COMMITMENTS: NONE AS OF APRIL 1, 2005. REFER TO COMMITMENT FILES FOR ANY COMMITMENTS AFTER THIS DATE.

21.) FOUR (4) MONTHS ARE INCLUDED FOR CHANGEABLE MESSAGE SIGNS. THIS TOTAL IS FOR TWO (2) SIGNS (ONE (1) AT EACH APPROACH END) FOR TWO (2) MONTHS EACH.

INDEX OF SHEETS

HIGHWAY STANDARDS INCLUDED IN THE PLANS

000001-04	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
280001-02	TEMPORARY EROSION CONTROL SYSTEMS
420001-05	PAVEMENT JOINTS
420401-05	BRIDGE APPROACH PAVEMENT
482001	BITUMINOUS SHOULDER ADJACENT TO FLEXIBLE PAVEMENT
515001-02	NAME PLATE FOR BRIDGES
542401	METAL END SECTION FOR PIPE CULVERTS
601101	CONCRETE HEADWALL FOR PIPE DRAIN
609006-02	BRIDGE APPROACH PAVEMENT (DRAIN DETAIL)
630001-05	STEEL PLATE BEAM GUARDRAIL
630201-03	PCC/BITUMINOUS STABILIZATION AT STEEL PLATE BEAM GUARDRAIL
630301-03	SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
631031-05	TRAFFIC BARRIER TERMINAL, TYPE 6
631051-01	TRAFFIC BARRIER TERMINAL TYPE 11
635011-01	REFLECTOR MARKER AND MOUNTING DETAILS
701001-01	OFF-RD OPERATIONS, 2L, 2W, MORE THAN 4.5 m (15') MIN. AWAY
701006-02	OFF-RD OPERATIONS, 2L, 2W, 4.5 m (15') TO 600mm (24") FROM PAVEMENT EDGE
701201-02	LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS >= 45 MPH
701301-02	LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS
701311-02	LANE CLOSURE 2L, 2W MOVING OPERATIONS - DAY ONLY
701321-08	LANE CLOSURE, 2L, 2W, BRIDGE REPAIR WITH BARRIER
702001-05	TRAFFIC CONTROL DEVICES
704001-02	TEMPORARY CONCRETE BARRIER
720006	SIGN PANEL ERECTION DETAILS
780001-01	TYPICAL PAVEMENT MARKINGS
635006-02	REFLECTOR AND TERMINAL MARKER PLACEMENT

PREPARED BY: Joe Nolan Reinier — DISTRICT STUDIES & PLANS ENGINEER

EXAMINED BY: James Travis Emery — DISTRICT LAND ACQUISITION ENGINEER

EXAMINED BY: Carrie Nelson — DISTRICT PROGRAM DEVELOPMENT ENGINEER

EXAMINED BY: [signature] — DISTRICT OPERATIONS ENGINEER

EXAMINED BY: Joseph Levin — DISTRICT CONSTRUCTION ENGINEER

EXAMINED BY: Bruce W. Peebles — DISTRICT MATERIALS ENGINEER

EXAMINED BY: — DISTRICT PROJECT IMPLEMENTATION ENGINEER

APPROVED BY: [signature] — DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

DATE 20

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS AND GENERAL NOTES

FAP ROUTE 322
SECTION (11-1VB)-1
UNION COUNTY

DRAWN BY: J. NIEDERHOFER

PLOT DATE: •DATE-TIME•

PLAN		BY	DATE
NOTE BOOK NO.	SURVEYED		
	PLOTTED		
	ALIGNMENT CHECKED		
	R.O.W. CHECKED		
	CADD FILE NAME		

•DATE-TIME• •DGN-SPEC• •REF- •REF-

FAP ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	(11-1VB)-1	UNION	39	3
STA.		TO STA.		

CONTRACT NO. 98488

80% FED.
20% STATE

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	RURAL - UNION COUNTY CONSTRUCTION TYPE CODE X371-2A BRIDGE TOTAL QUANTITY
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	578
20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	68
20200100	EARTH EXCAVATION	CU YD	32
20400100	BORROW EXCAVATION	CU YD	86
20700220	POROUS GRANULAR EMBANKMENT	CU YD	286
25000350	SEEDING, CLASS 7	ACRE	0.2
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	32
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	24
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	24
25000700	AGRICULTURAL GROUND LIMESTONE	TON	0.4
* 25001010	SEEDING, CLASS 2 (MODIFIED)	ACRE	0.2
25100115	MULCH, METHOD 2	ACRE	0.2
25100630	EROSION CONTROL BLANKET	SQ YD	862
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	54
28000400	PERIMETER EROSION BARRIER	FOOT	1446
28000900	FENCE (EROSION CONTROL)	FOOT	1446
28100107	STONE RIPRAP, CLASS A4	SQ YD	2352
28200100	FILTER FABRIC	SQ YD	2352
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	24
40600300	AGGREGATE (PRIME COAT)	TON	1
40600980	BITUMINOUS SURFACE REMOVAL - BUTT JOINT	SQ YD	134
40600990	TEMPORARY RAMP	SQ YD	79
42001165	BRIDGE APPROACH PAVEMENT	SQ YD	274
42001300	PROTECTIVE COAT	SQ YD	396
44000100	PAVEMENT REMOVAL	SQ YD	259
44004250	PAVED SHOULDER REMOVAL	SQ YD	598
* 48202000	BITUMINOUS SHOULDERS SUPERPAVE	TON	255
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50104650	SLOPE WALL REMOVAL	SQ YD	828
50200100	STRUCTURE EXCAVATION	CU YD	275
50300225	CONCRETE STRUCTURES	CU YD	299.6
50300255	CONCRETE SUPERSTRUCTURE	CU YD	409.2
50300260	BRIDGE DECK GROOVING	SQ YD	1404
50300300	PROTECTIVE COAT	SQ YD	1666
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1
50500505	STUD SHEAR CONNECTORS	EACH	5094
50800105	REINFORCEMENT BARS	POUND	19030
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	193540
51201800	FURNISHING STEEL PILES, HP14x73	FOOT	265
51202700	DRIVING STEEL PILES	FOOT	265
51203600	TEST PILE STEEL, HP14x73	EACH	2
51204600	METAL SHOES	EACH	10
* 51205200	TEMPORARY SHEET PILING	SQ FT	552
51401600	TEMPORARY BRIDGE RAIL	FOOT	302
51500100	NAME PLATES	EACH	1

* SEE SPECIAL PROVISIONS

80% FED.
20% STATE

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	RURAL - UNION COUNTY CONSTRUCTION TYPE CODE X371-2A BRIDGE TOTAL QUANTITY
54213447	END SECTIONS 12"	EACH	4
60100945	PIPE DRAINS 12"	FOOT	232
60900315	TYPE D INLET BOX, STANDARD 609006	EACH	4
60900515	CONCRETE THRUST BLOCKS	EACH	4
** 63000000	STEEL PLATE BEAM GUARDRAIL, TYPE A	FOOT	337.5
** 63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	4
63200310	GUARDRAIL REMOVAL	FOOT	464
67000400	ENGINEERS FIELD OFFICE, TYPE A	CAL MO	12
67100100	MOBILIZATION	L SUM	1
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1
70101205	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321 (SPECIAL)	EACH	1
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1
70300100	SHORT TERM PAVEMENT MARKING	FOOT	169
70300220	TEMPORARY PAVEMENT MARKING - LINE 4"	FOOT	3860
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	954
70400100	TEMPORARY CONCRETE BARRIER	FOOT	630
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	270
70500690	TEMPORARY TRAFFIC BARRIER TERMINAL, TYPE 11	EACH	2
** 78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	2164
** * 78200405	GUARDRAIL MARKERS	EACH	8
** * 78200500	BARRIER WALL MARKERS	EACH	8
78300100	PAVEMENT MARKING REMOVAL	SQ FT	548
78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	2
* X0300739	UNINTERRUPTIBLE POWER SUPPLY	EACH	2
* X0321430	BRIDGE APPROACH PAVEMENT CONNECTOR (PCC) SPECIAL	SQ YD	122
* X0322329	TIMBER CURB REMOVAL	FOOT	141
* X0322876	TIMBER CURB	FOOT	114
* X3560140	BITUMINOUS CONCRETE BASE COURSE WIDENING, SUPERPAVE 10"	SQ YD	117
* X4066428	BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, MIX "D", N90	TON	30
* X6330103	REMOVE AND RE-ERECT TRAFFIC BARIER TERMINAL, TYPE 1 SPECIAL, TANGENT	EACH	2
* X7015000	CHANGEABLE MESSAGE SIGN	EACH	4
* Z0002600	BAR SPLICERS	EACH	1459
** * Z0008236	DRILLED SHAFT IN SOIL 36 DIA	FOOT	157
** * Z0008330	DRILLED SHAFT IN ROCK 30 DIA	FOOT	126
Δ * Z0030250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2
Δ * Z0030350	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2
* Z0047300	PROTECTIVE SHIELD	SQ YD	220
Z0048665	RAILROAD PROTECTIVE LIABILITY INSURANCE	L SUM	1
X5020501	UNDERWATER STRUCTURE EXCAVATION PROTECTION - LOCATION 1	EACH	1
X5020502	UNDERWATER STRUCTURE EXCAVATION PROTECTION - LOCATION 2	EACH	1

* SEE SPECIAL PROVISIONS

** SPECIALTY ITEMS
Δ SFTY-3N

REVISIONS	
NAME	DATE

Rev.

ILLINOIS DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

FAP ROUTE 322
SECTION (11-1VB)-1
UNION COUNTY

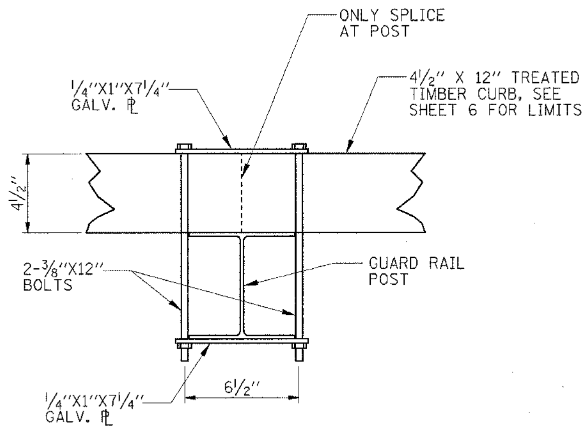
DRAWN BY: J. NIEDERHOFER

PLAN	SURVEYED	BY	DATE
NOTE BOOK NO.	PLOTTED		
	ALIGNMENT CHECKED		
	RT. OF WAY CHECKED		
	CADD FILE NAME		

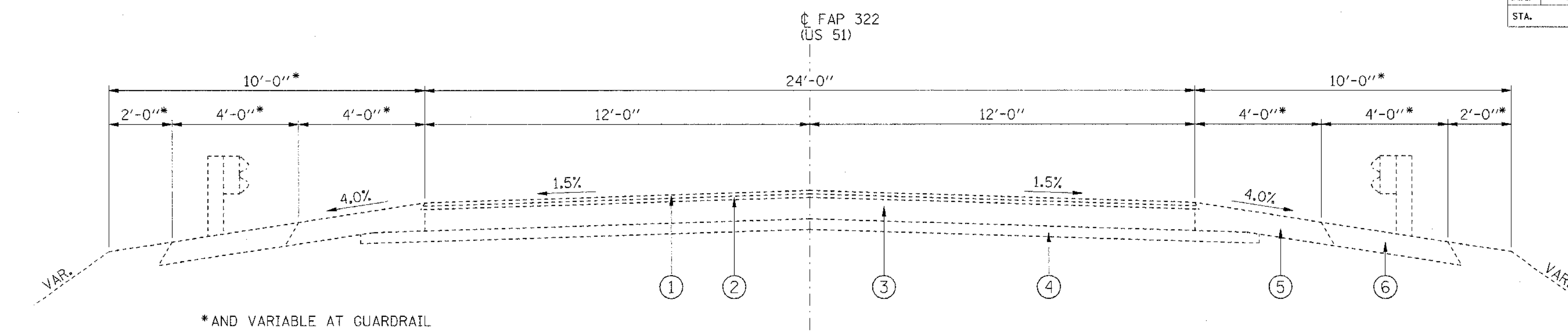
PLOT DATE = 3/29/2005
FILE NAME = c:\projects\d9001981\3 summary of quantities 091-0073.dgn
PLOT SCALE = 10.0000 ' / IN.
USER NAME = dickersonlm

FAP ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
322	(11-1VB)-1	UNION	39	4
STA.		TO STA.		

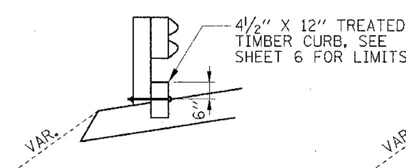
CONTRACT NO. 98488

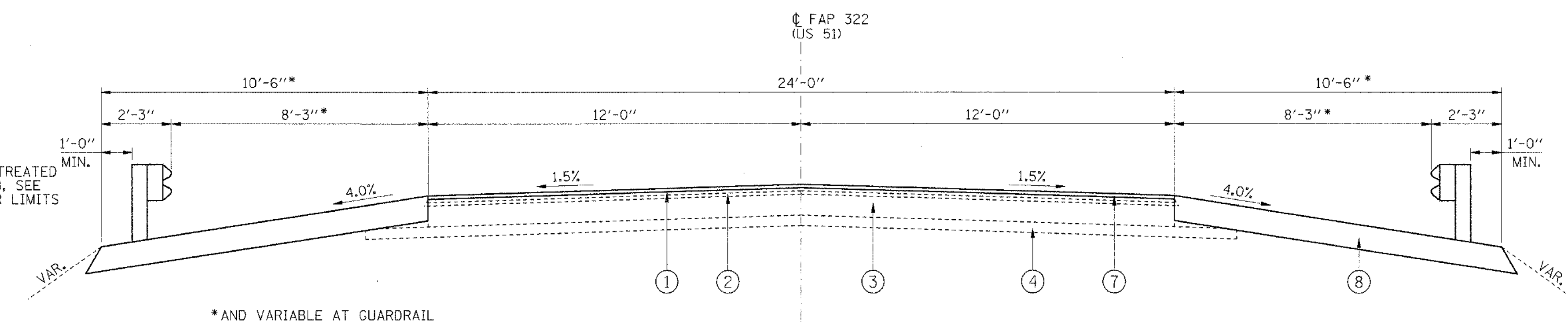


TIMBER CURB DETAIL



EXISTING TYPICAL SECTION





PROPOSED TYPICAL SECTION

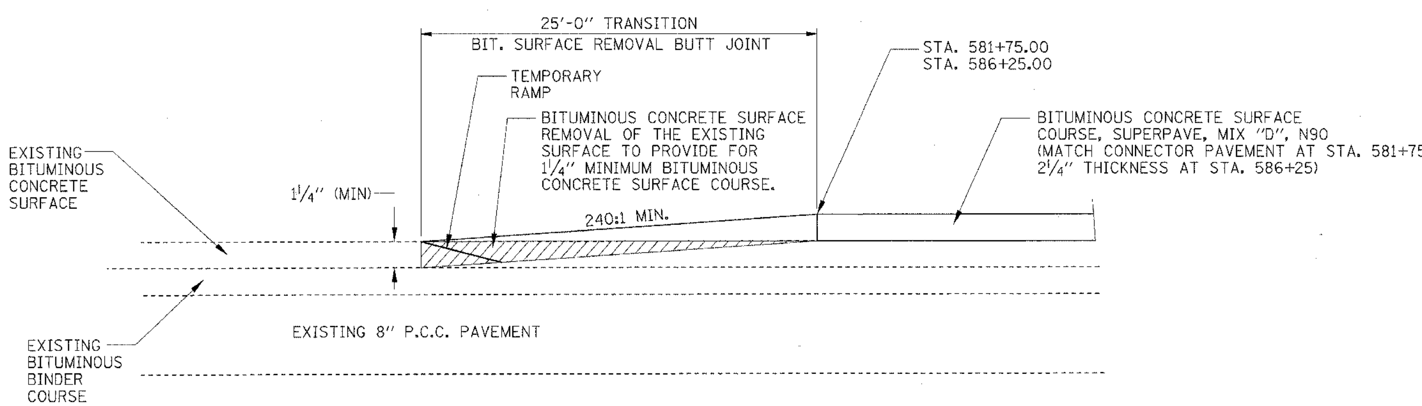
STA. 581+50.00 TO STA. 581+75.45
STA. 585+73.95 TO STA. 586+50.00

BRIDGE APPROACH AND CONNECTOR PAVEMENT
STD. 420401 (SPECIAL)
STA. 581+75.45 TO STA. 582+18.70
STA. 585+30.70 TO STA. 585+73.95

BRIDGE STATIONS
STA. 582+18.70 TO STA. 585+30.70

LEGEND

1. EXISTING BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, MIX D, CLASS I, TYPE 2, 1 1/4"
2. EXISTING BITUMINOUS CONCRETE BINDER COURSE, SUPERPAVE, MIX D, CLASS I, TYPE 2, 1 1/4"
3. EXISTING 8" P.C.C. PAVEMENT
4. EXISTING 4" AGGREGATE SUB-BASE
5. EXISTING BITUMINOUS SHOULDERS 8"
6. EXISTING AGGREGATE SHOULDERS 8"
7. PROPOSED BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, MIX "D", N90, 1 1/4" AND VARIABLE
8. PROPOSED BITUMINOUS SHOULDERS SUPERPAVE 8" OR 10"



NOTE:
SAW CUT AND TRIMMING NEAR VERTICAL FACE INCIDENTAL TO BITUMINOUS SURFACE REMOVAL - BUTT JOINT

DETAIL FOR BUTT JOINT

MIXTURE REQUIREMENTS

LOCATION	BITUMINOUS SURFACE COURSE
MIXTURE USE(S):	BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, MIX "D", N90
AC/PG:	PG64-22
RAP % (MAX.):	10
DESIGN AIR VOIDS:	4.0%, 90 GYRATION SUPERPAVE DESIGN
MIXTURE COMPOSITION: (GRADATION MIXTURE)	IL-9.5 mm OR IL 12.5 mm
FRICTION AGGREGATE:	D SURFACE

LOCATION	TEMPORARY BITUMINOUS CONCRETE BASE COURSE WIDENING
MIXTURE USE(S):	BITUMINOUS CONCRETE BINDER COURSE, SUPERPAVE, N90, IL-19.0
AC/PG:	PG64-22
RAP % (MAX.):	10
DESIGN AIR VOIDS:	4.0%, 90 GYRATION SUPERPAVE DESIGN
MIXTURE COMPOSITION: (GRADATION MIXTURE)	IL-19.0
FRICTION AGGREGATE:	NONE

LOCATION	BITUMINOUS SHOULDERS
MIXTURE USE(S):	BITUMINOUS SHOULDERS, SUPERPAVE
AC/PG:	PG58-22
RAP % (MAX.):	50
DESIGN AIR VOIDS:	2.0%, 30 GYRATION SUPERPAVE DESIGN
MIXTURE COMPOSITION: (GRADATION MIXTURE)	BITUMINOUS AGGREGATE MIXTURE, SUPERPAVE
FRICTION AGGREGATE:	NONE

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS

FAP ROUTE 322
SECTION (11-1VB)-1
UNION COUNTY

DRAWN BY: J. NIEDERHOFER

PLOT DATE: *DATE-TIME*

PLAN			
NOTE BOOK NO.	SURVEYED / PLOTTED / ALIGNMENT CHECKED / R.E. OF WAY CHECKED / CADD FILE NAME	BY	DATE

PLOT DATE = 3/29/2005
PLOT SCALE = 100.0000 '/ IN.

FAP ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
322	(11-1VVB)-1	UNION	39	5
STA.	TO STA.			

CONTRACT NO. 98488

REMOVAL SCHEDULE

LOCATION	BIT SURF REMOVAL-BUTT JOINT (SQ YD)	PAVEMENT REMOVAL (SQ YD)	TEMP RAMP (SQ YD)	PAVEMENT MARKING REMOVAL (SQ FT)	WORK ZONE PVMT MRK REMOVAL (SQ FT)	GUARDRAIL REMOVAL (FOOT)	TIMBER CURB REMOVAL (FOOT)	PAVED SHOULDER REMOVAL (SQ YD)
PRE STAGE I								
RT, STA 581+16.02 TO STA 582+31.63								64
RT, STA 585+27.91 TO STA 586+23.66								53
STAGE I								
LT, STA 581+50.00 TO STA 581+75.00	28							
LT, STA 586+25.00 TO STA 586+50.00	28							
LT, STA 581+50.00 TO STA 581+54.17			5					
LT, STA 586+45.83 TO STA 586+50.00			5					
LT, STA 581+73.05 TO STA 581+75.45			5					
LT, STA 585+73.95 TO STA 585+83.95			21					
LT, STA 581+75.45 TO STA 582+23.21		52						
LT, STA 585+21.43 TO STA 585+73.95		57						
LT, STA 580+93.63 TO STA 582+13.62						120		
LT, STA 585+24.27 TO STA 586+66.93						143		
LT, STA 585+26.00 TO STA 586+66.93							141	
STA 579+01.77 TO STA 588+37.91				312				
STA 579+01.77 TO STA 581+32.27				19				
STA 586+07.41 TO STA 588+37.91				19				
LT, STA 580+43.63 TO STA 582+21.53								154
LT, STA 585+17.75 TO STA 586+66.93								110
STAGE II								
RT, STA 581+50.00 TO STA 581+75.00	39							
RT, STA 586+25.00 TO STA 586+50.00	39							
RT, STA 581+50.00 TO STA 581+54.17			6					
RT, STA 586+45.83 TO STA 586+50.00			6					
RT, STA 581+73.05 TO STA 581+75.45			6					
RT, STA 585+73.95 TO STA 585+83.95			25					
RT, STA 581+75.45 TO STA 582+27.98		78						
RT, STA 585+24.88 TO STA 585+73.95		72						
RT, STA 580+94.97 TO STA 582+25.58						131		
RT, STA 585+36.03 TO STA 586+05.77						70		
STA 578+77.70 TO STA 581+75.45				99				
STA 585+73.95 TO STA 588+71.98				99				
STA 579+01.77 TO STA 581.50.00					166			
STA 586+50.00 TO STA 588+37.91					126			
RT, STA 580+94.97 TO STA 582+31.90								104
RT, STA 585+30.05 TO STA 586+55.77								113
POST STAGE II								
STA 578+77.70 TO STA 588+71.98					662			
TOTAL	134	259	79	548	954	464	141	598

SEEDING SCHEDULE

LOCATION	SEEDING CLASS 2 MODIFIED (AC)	SEEDING CLASS 7 (AC)	FERTILIZER NUTRIENTS			AGRICULTURAL GROUND LIMESTONE (TON)	MULCH METH 2 (AC)
			NITROGEN (LB)	PHOSPHORUS (LB)	POTASSIUM (LB)		
RT, STA 580+94.97 TO STA 583+32	0.05	0.05	8	6	6	0.1	0.05
LT, STA 581+31.13 TO STA 583+24	0.05	0.05	8	6	6	0.1	0.05
LT, STA 584+42 TO STA 586+66.93	0.05	0.05	8	6	6	0.1	0.05
RT, STA 584+51 TO STA 586+55.77	0.05	0.05	8	6	6	0.1	0.05
TOTAL	0.2	0.2	32	24	24	0.4	0.2

PAVING SCHEDULE

LOCATION	BIT CONC BASE CSE WIDE SUPER 10" (SQ YD)	BITUMINOUS SHOULDER SUPERPAVE (TON)
PRE STAGE I		
RT, STA 581+16.02 TO STA 582+31.63	64	
RT, STA 585+27.91 TO STA 586+23.66	53	
STAGE I		
LT, STA 580+43.63 TO STA 580+88.85		26 (8")
LT, STA 580+88.85 TO STA 581+75.45		60 (10")
LT, STA 581+75.45 TO STA 582+11.86		4 (8")
LT, STA 585+22.84 TO STA 585+73.95		5 (8")
LT, STA 585+73.95 TO STA 586+66.93		63 (10")
STAGE II		
RT, STA 580+94.97 TO STA 582+26.77		47 (8")
RT, STA 585+38.16 TO STA 586+55.77		50 (8")
TOTAL	117	255

GUARDRAIL SCHEDULE

LOCATION	TRF BARR TERM TY 6 (EACH)	STEEL PLATE BEAM GUARD RAIL, TYPE A (FOOT)	REM & RE-ERECT TRF BARR TERM TY 1 (EACH)	TIMBER CURB (FOOT)
STAGE I				
LT, STA 581+18.13 TO STA 582+14.28	1			
LT, STA 585+21.28 TO STA 585+54.43	1			
LT, STA 580+93.63 TO STA 581+81.13		87.5		
LT, STA 585+54.43 TO STA 586+66.93		112.5		
LT, STA 580+43.63 TO STA 580+93.63			1	
LT, STA 585+53.69 TO STA 586+66.93				114
STAGE II				
RT, STA 581+94.97 TO STA 582+28.12	1			
RT, STA 585+35.12 TO STA 585+68.27	1			
RT, STA 580+94.97 TO STA 581+94.97		100		
RT, STA 585+68.27 TO STA 586+05.77		37.5		
RT, STA 586+05.77 TO STA 586+55.77			1	
TOTAL	4	337.5	2	114

TRAFFIC CONTROL SCHEDULE

LOCATION	TEMP CONC BARRIER (FOOT)	RELOCATE TEMP CONC BARRIER (FOOT)	IMPACT ATTENUATORS (NON-REDIRECTIVE) TEST LEVEL 3	
			TEMPORARY (EACH)	RELOCATE (EACH)
STAGE I				
STA 580+61.77 TO STA 580+82.27			1	
STA 580+84.27 TO STA 582+24.01	140			
STA 585+25.67 TO STA 586+55.41	130			
STA 586+57.41 TO STA 586+77.91			1	
STAGE II				
STA 580+37.70 TO STA 580+58.20				1
STA 580+60.20 TO STA 586+89.48	360	270		
STA 586+91.48 TO STA 587+11.98				1
TOTAL	630	270	2	2

DRAINAGE STRUCTURES

LOCATION	END SECTIONS (EACH)	PIPE DRAINS (FOOT)	THRUST BLOCKS (EACH)	TY D INLET BOX (EACH)
LT, STA 581+98.28	1	54	1	1
RT, STA 582+12.12	1	72	1	1
LT, STA 585+37.28	1	55	1	1
RT, STA 585+51.12	1	51	1	1
TOTAL	4	232	4	4

MARKING SCHEDULE

LOCATION	TEMP PVT MK LINE 4"		PAINT PVT MK LINE 4"		SHORT TERM PVT MK
	WHITE	YELLOW	WHITE	YELLOW	
STAGE I					
STA 579+01.77 TO STA 588+37.91	936	936			
STAGE II					
STA 578+77.70 TO STA 588+71.98	994	994			
POST STAGE II					
STA 579+01.77 TO STA 588+37.91			936	234	169
STA 578+77.70 TO STA 588+71.98			994		
TOTAL	1930	1930	1930	234	169
	3860		2164		

EARTHWORK

LOCATION	*EARTH EXCAVATION (CU YD)	**EMBANKMENT (CU YD)	BORROW EXCAVATION (CU YD)
STA 580+94.97 TO STA 582+18.70	18	79	61
STA 585+25.00 TO STA 586+66.93	14	39	25
TOTAL	32	118	86

*CUTS FROM CROSS SECTIONS
**FILLS FROM CROSS SECTIONS

EROSION CONTROL

LOCATION	EROSION CONTROL BLANKET (SQ YD)	TEMP EROS CONTR SEED (LB)	PERIMETER EROSION BARRIER (FOOT)	FENCE EROSION CONTROL (FOOT)
RT, STA 580+94.97 TO STA 583+32	250	16	326	326
LT, STA 580+43.63 TO STA 583+24	374	23	385	385
LT, STA 584+42 TO STA 586+66.93	122	8	380	380
RT, STA 584+51 TO STA 586+55.77	116	7	355	355
TOTAL	862	54	1446	1446

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

SCHEDULE OF QUANTITIES

FAP ROUTE 322
SECTION (11-1VB)-1
UNION COUNTY

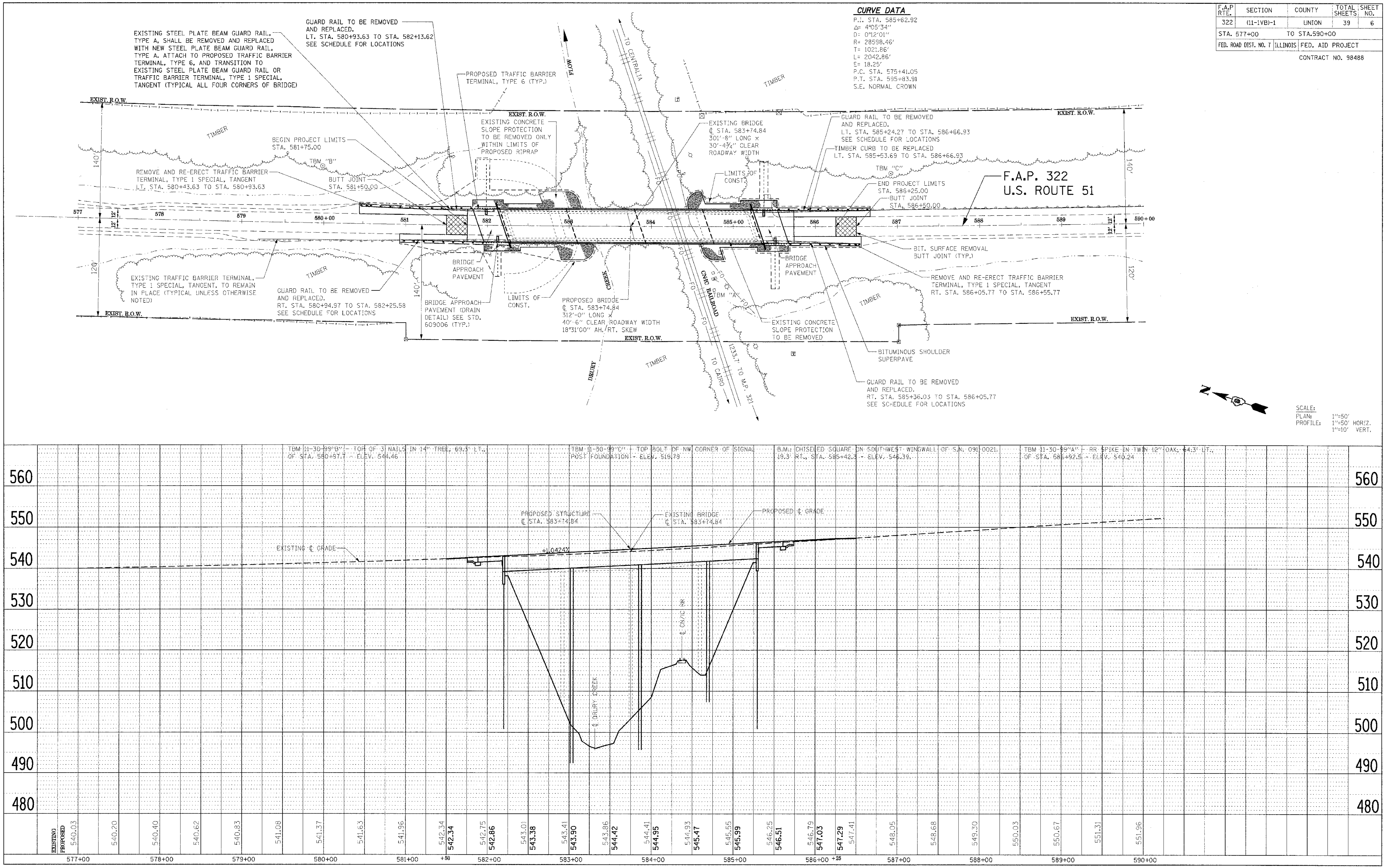
DRAWN BY: J. NIEDERHOFER

PLAN SURVEYED / PLOTTED / ALIGNMENT CHECKED / NOTE BOOK NO. / CADD FILE NAME / BY / DATE

PLOT DATE = 3/23/2005
FILE NAME = c:\projects\d9807gb\5 schedule of quantities d91-2073.dgn
PLOT SCALE = 10.0000 ' / IN.
USER NAME = duckenschln

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	(11-1VB)-1	UNION	39	6
STA. 577+00	TO STA.590+00			
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 98488



CURVE DATA
P.I. STA. 585+62.92
Δ= 4°05'34"
D= 0°12'01"
R= 28598.46'
T= 1021.86'
L= 2042.86'
E= 18.25'
P.C. STA. 575+41.05
P.T. STA. 595+83.91
S.E. NORMAL CROWN
F.A.P. 322
U.S. ROUTE 51
EXISTING STEEL PLATE BEAM GUARD RAIL, TYPE A, SHALL BE REMOVED AND REPLACED WITH NEW STEEL PLATE BEAM GUARD RAIL, TYPE A. ATTACH TO PROPOSED TRAFFIC BARRIER TERMINAL, TYPE 6, AND TRANSITION TO EXISTING STEEL PLATE BEAM GUARD RAIL OR TRAFFIC BARRIER TERMINAL, TYPE 1 SPECIAL, TANGENT (TYPICAL ALL FOUR CORNERS OF BRIDGE)
GUARD RAIL TO BE REMOVED AND REPLACED. LT. STA. 580+93.63 TO STA. 582+13.62 SEE SCHEDULE FOR LOCATIONS
PROPOSED TRAFFIC BARRIER TERMINAL, TYPE 6 (TYP.)
EXIST. R.O.W.
EXISTING CONCRETE SLOPE PROTECTION TO BE REMOVED ONLY WITHIN LIMITS OF PROPOSED RIPRAP
BEGIN PROJECT LIMITS STA. 581+75.00
TBM "B"
BUTT JOINT STA. 581+50.00
REMOVE AND RE-ERECT TRAFFIC BARRIER TERMINAL, TYPE 1 SPECIAL, TANGENT LT. STA. 580+43.63 TO STA. 580+93.63
TIMBER
FLOW
TO CENTRALIA
EXISTING BRIDGE ℄ STA. 583+74.84 301'-8" LONG × 30'-4¾" CLEAR ROADWAY WIDTH
LIMITS OF CONST.
GUARD RAIL TO BE REMOVED AND REPLACED. LT. STA. 585+24.27 TO STA. 586+66.93 SEE SCHEDULE FOR LOCATIONS
TIMBER CURB TO BE REPLACED LT. STA. 585+53.69 TO STA. 586+66.93
TBM "C"
END PROJECT LIMITS STA. 586+25.00
BUTT JOINT STA. 586+50.00
EXISTING TRAFFIC BARRIER TERMINAL, TYPE 1 SPECIAL, TANGENT, TO REMAIN IN PLACE (TYPICAL UNLESS OTHERWISE NOTED)
GUARD RAIL TO BE REMOVED AND REPLACED. RT. STA. 580+94.97 TO STA. 582+25.58 SEE SCHEDULE FOR LOCATIONS
BRIDGE APPROACH PAVEMENT
BRIDGE APPROACH PAVEMENT (DRAIN DETAIL) SEE STD. 609006 (TYP.)
LIMITS OF CONST.
PROPOSED BRIDGE ℄ STA. 583+74.84 312'-0" LONG × 40'-6" CLEAR ROADWAY WIDTH 18°31'00" AH./RT. SKEW
DRURY CREEK
CN/IC RAILROAD
TBM "A"
TO CAIRO
1233.7' TO M.P. 321
EXISTING CONCRETE SLOPE PROTECTION TO BE REMOVED
BIT. SURFACE REMOVAL BUTT JOINT (TYP.)
REMOVE AND RE-ERECT TRAFFIC BARRIER TERMINAL, TYPE 1 SPECIAL, TANGENT RT. STA. 586+05.77 TO STA. 586+55.77
BITUMINOUS SHOULDER SUPERPAVE
GUARD RAIL TO BE REMOVED AND REPLACED. RT. STA. 585+36.03 TO STA. 586+05.77 SEE SCHEDULE FOR LOCATIONS
SCALE: PLAN: 1"=50' PROFILE: 1"=50' HORIZ. 1"=10' VERT.
TBM 11-30-99"B" - TOP OF 3 NAILS IN 14" TREE, 63.3' LT., OF STA. 580+87.7 - ELEV. 544.46
TBM 11-30-99"C" - TOP BOLT OF NW CORNER OF SIGNAL POST FOUNDATION - ELEV. 519.78
B.M.: CHISELED SQUARE ON SOUTHWEST WINGWALL OF S.N. 091-0021, 19.3' RT., STA. 585+42.3 - ELEV. 546.39.
TBM 11-30-99"A" - RR SPIKE IN TWIN 12" OAK, 64.3' LT., OF STA. 585+92.5 - ELEV. 540.24
PROPOSED STRUCTURE ℄ STA. 583+74.84
EXISTING BRIDGE ℄ STA. 583+74.84
PROPOSED ℄ GRADE
EXISTING ℄ GRADE
+1.0424%
℄ CN/IC RR
℄ DRURY CREEK
560 550 540 530 520 510 500 490 480
EXISTING PROPOSED
540.03 540.20 540.40 540.62 540.83 541.08 541.37 541.63 541.96 542.34 542.34 542.75 542.86 543.01 543.38 543.41 543.90 543.86 544.42 544.41 544.95 544.93 545.47 545.55 545.99 546.25 546.51 546.79 547.03 547.29 547.41 548.05 548.68 549.30 550.03 550.67 551.31 551.96
577+00 578+00 579+00 580+00 581+00 +50 582+00 583+00 584+00 585+00 586+00 +25 587+00 588+00 589+00 590+00

PLAN AND PROFILE OF ROADWAY PROPOSED U.S. ROUTE 51 BRIDGE OVER DRURY CREEK AND CN/IC RAILROAD

FAP 322 SECTION (11-1VB)-1 UNION COUNTY, ILLINOIS

FAP ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	(11-1VVB)-1	UNION	39	7
STA.		TO STA.		

CONTRACT NO. 98488

SUGGESTED SEQUENCE OF OPERATIONS

PRE STAGE I

INSTALL WIDE LOAD SIGNING AND ERECT SIGNALS AND SIGNING AS REQUIRED FOR STAGE I AND STAGE II CONDITIONS IN ACCORDANCE WITH THE SPECIAL PROVISION FOR TRAFFIC CONTROL AND PROTECTION STANDARD 701201 AND COVER UNTIL BARRIER PLACEMENT BEGINS.

REMOVE PARTIAL EXISTING SHOULDER FOR STAGE I TRAFFIC AND PLACE BITUMINOUS CONCRETE BASE COURSE WIDENING, SUPERPAVE 10".

PLACE TEMPORARY PAVEMENT MARKINGS ON THE WEST SIDE FOR STAGE I TRAFFIC USING TRAFFIC CONTROL AND PROTECTION STANDARD 701321 AND REMOVE EXISTING PAVEMENT MARKINGS BETWEEN TEMPORARY STOP BARS.

STAGE I

SAW CUT EXISTING BRIDGE DECK ALONG THE STAGE REMOVAL LINE AND DRIVE TEMPORARY SHEET PILING.

IMPLEMENT STAGE I TRAFFIC CONTROL BY PLACING TEMPORARY BRIDGE RAIL, TEMPORARY CONCRETE BARRIERS, IMPACT ATTENUATORS AND BARRELS TO ROUTE TRAFFIC OVER THE WEST LANE OF THE EXISTING BRIDGE.

REMOVE EAST PORTION OF THE EXISTING BRIDGE DECK, EXISTING PIERS, ABUTMENT BACK WALLS, UPPER PORTION OF WINGWALLS AND GUARDRAIL.

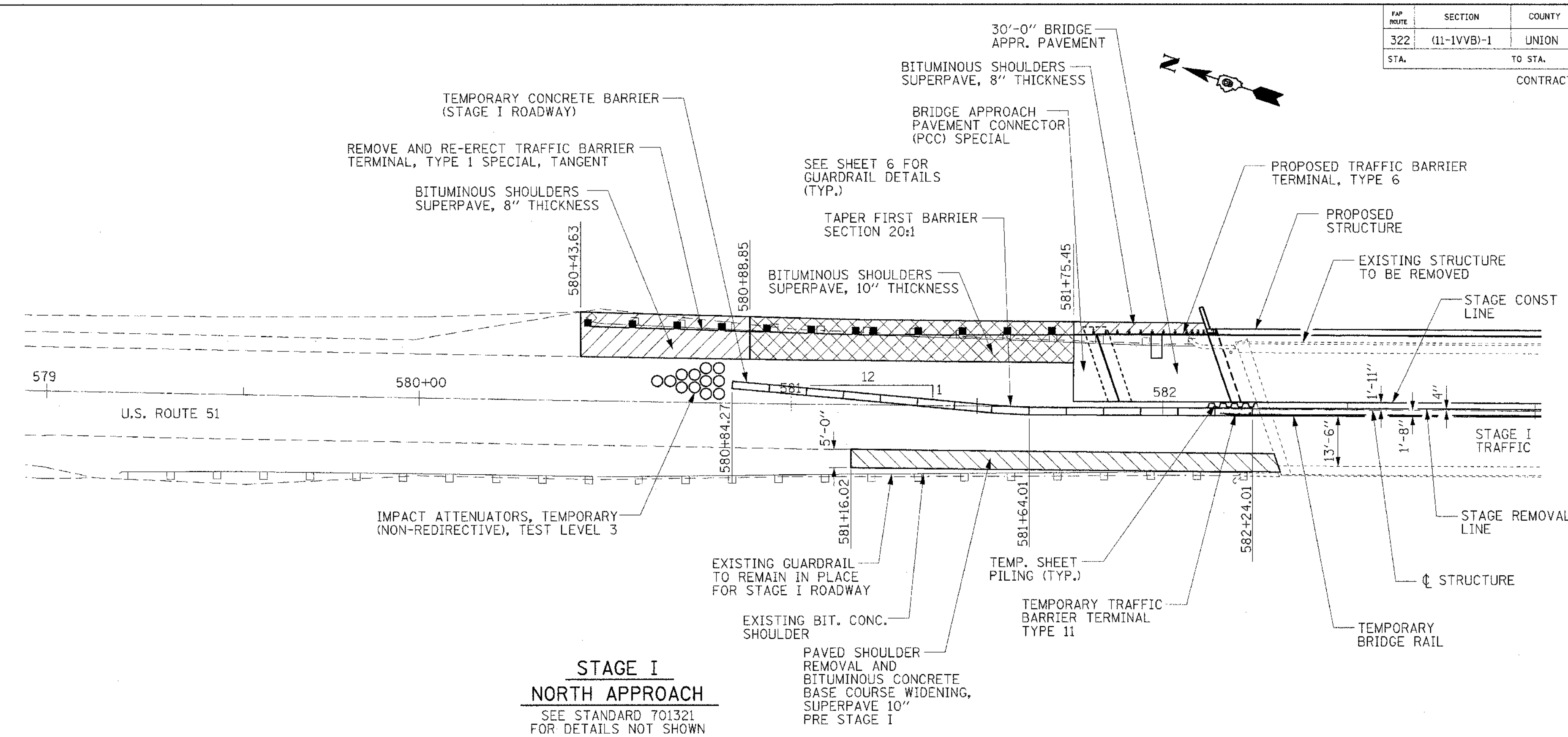
CONSTRUCT THE EAST (STAGE I) PORTION OF THE BRIDGE ABUTMENTS, WINGWALLS, PIERS, DECK, GRANULAR BACKFILL, BRIDGE APPROACH PAVEMENTS, TRAFFIC BARRIER TERMINALS, AND GUARD RAIL. REMOVE EXISTING SHOULDERS AND PLACE BITUMINOUS SHOULDERS SUPERPAVE FOR STAGE II TRAFFIC.

INSTALL TEMPORARY PAVEMENT MARKINGS ON THE WEST SIDE

BITUMINOUS CONCRETE BASE COURSE WIDENING, SUPERPAVE 10"

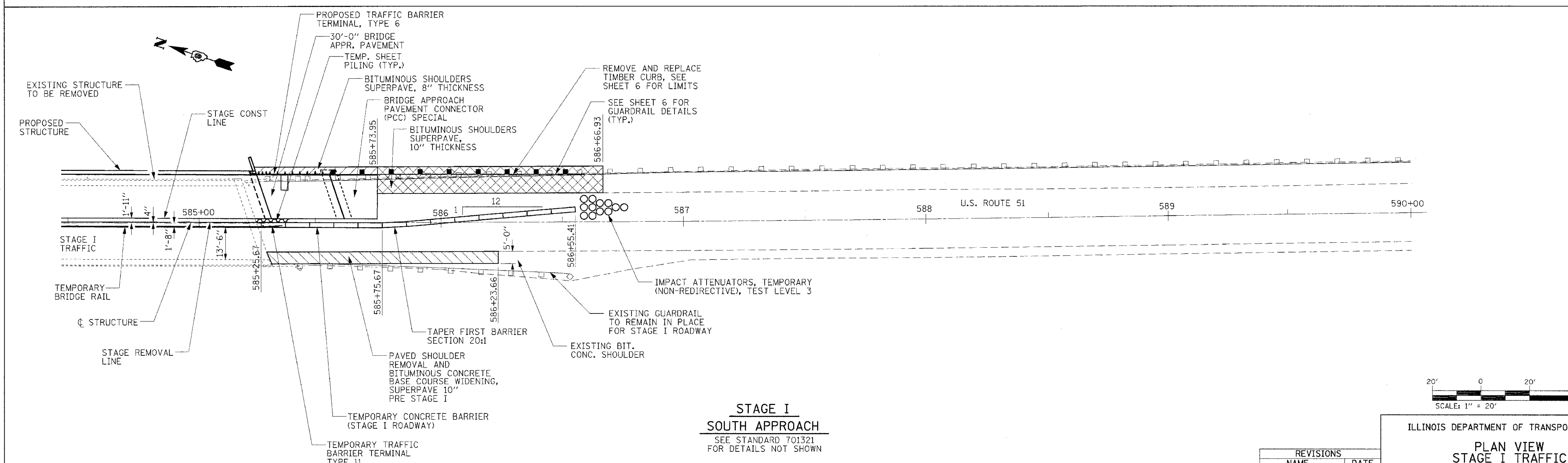
BITUMINOUS SHOULDERS SUPERPAVE, 8" THICKNESS

BITUMINOUS SHOULDERS SUPERPAVE, 10" THICKNESS



STAGE I
NORTH APPROACH

SEE STANDARD 701321 FOR DETAILS NOT SHOWN



STAGE I
SOUTH APPROACH

SEE STANDARD 701321 FOR DETAILS NOT SHOWN

20' 0 20' 40'
SCALE: 1" = 20'

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

PLAN VIEW
STAGE I TRAFFIC

FAP ROUTE 322
SECTION (11-1VB)-1
UNION COUNTY

DRAWN BY: J. NIEDERHOFER

PLOT DATE = 3/29/2005
FILE NAME = c:\projects\d9019\7-8 roadway staging 091-0073.dgn
PLOT SCALE = 20.000 '/IN.
USER NAME = dickersonhm

FAP ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
322	(11-1VB)-1	UNION	39	8
STA.		TO STA.		

CONTRACT NO. 98488

SUGGESTED SEQUENCE OF OPERATIONS

STAGE II

PLACE TEMPORARY CONCRETE BARRIERS, IMPACT ATTENUATORS, AND OTHER TRAFFIC CONTROL ITEMS, AND RE-ROUTE TRAFFIC OVER THE EAST LANE.

REMOVE REMAINING WEST (STAGE II) PORTION OF THE EXISTING BRIDGE DECK, EXISTING PIERS, ABUTMENT BACK WALLS, UPPER PORTION OF WINGWALLS AND GUARDRAILS AS SHOWN ON THE PLANS.

CONSTRUCT THE REMAINING WEST (STAGE II) PORTION OF THE BRIDGE ABUTMENTS, POUR DECK, AND PLACE POROUS GRANULAR BACKFILL.

CLOSE ROADWAY TO ALL TRAFFIC DURING DECK POURING OPERATIONS AND ROADWAY SHALL REMAIN CLOSED FOR ONE (1) DAY FOLLOWING THE COMPLETION OF THE POUR (SEE SHEET 9 OF 39 FOR SIGNING DETAILS).

REMOVE SHEET PILING.

CONSTRUCT BRIDGE APPROACH PAVEMENTS, REMOVE BITUMINOUS CONCRETE BASE COURSE WIDENING, SUPERPAVE 10", AND PLACE BITUMINOUS SHOULDERS SUPERPAVE, AND INSTALL TRAFFIC BARRIER TERMINALS AND GUARD RAIL.

POST STAGE II

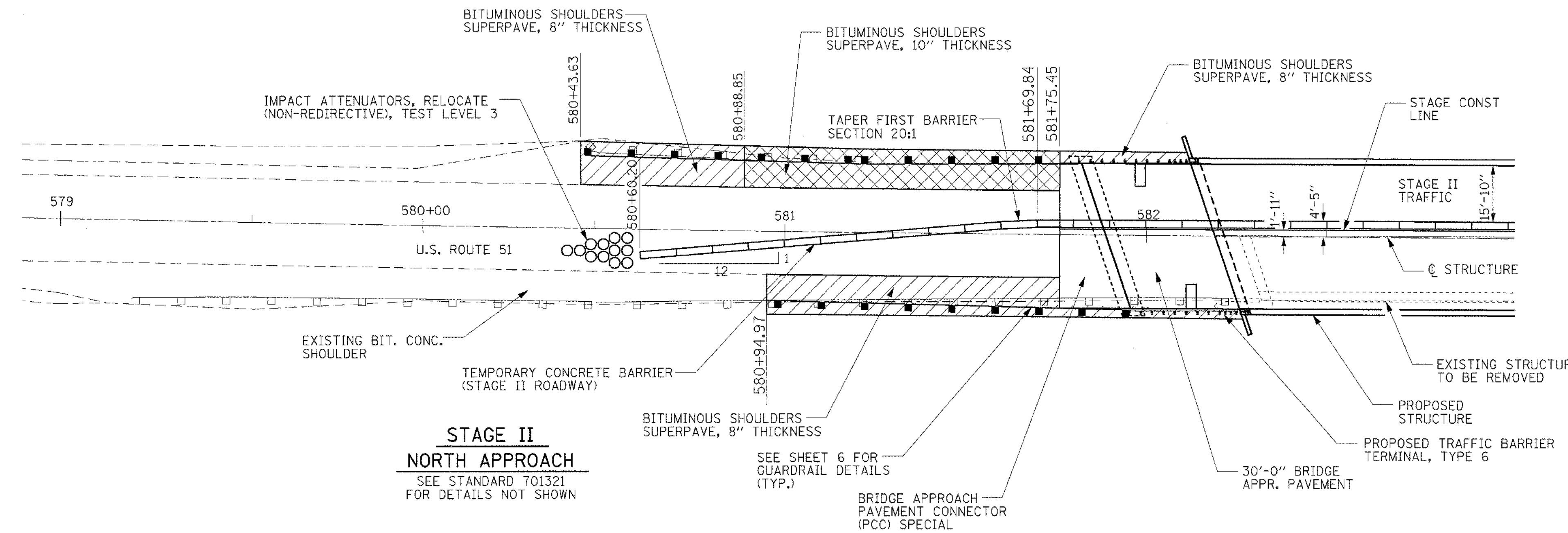
REMOVE TEMPORARY CONCRETE BARRIERS, IMPACT ATTENUATORS, TEMPORARY PAVEMENT MARKINGS, STOP BARS, TRAFFIC SIGNALS, AND OTHER TRAFFIC CONTROL ITEMS.

IMPLEMENT TRAFFIC CONTROL AND PROTECTION STANDARD 701201.

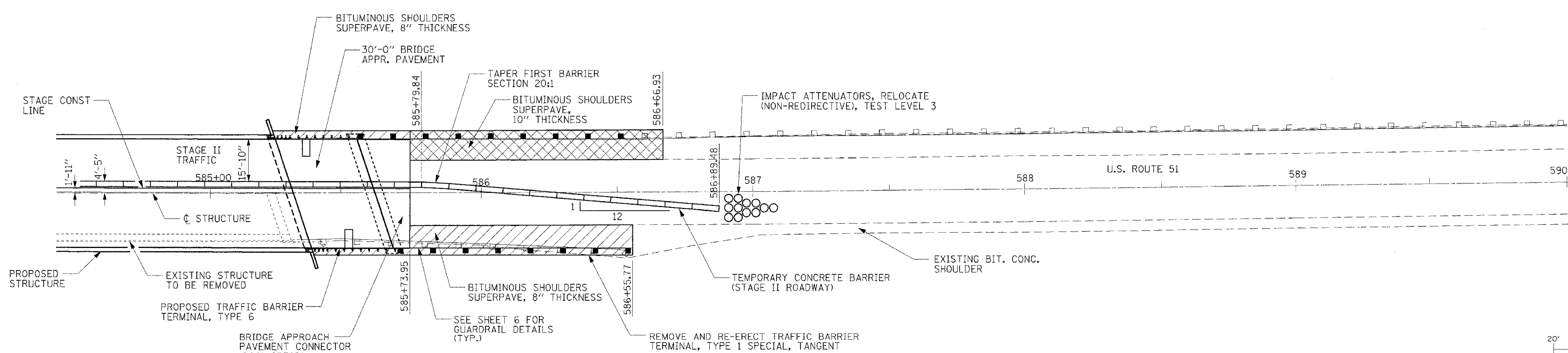
COMPLETE EARTHWORK, RIPRAP, SEEDING, AND PAVEMENT MARKING.

BITUMINOUS SHOULDERS SUPERPAVE, 8" THICKNESS

BITUMINOUS SHOULDERS SUPERPAVE, 10" THICKNESS



STAGE II
NORTH APPROACH
SEE STANDARD 701321 FOR DETAILS NOT SHOWN



STAGE II
SOUTH APPROACH
SEE STANDARD 701321 FOR DETAILS NOT SHOWN

20' 0 20' 40'
SCALE: 1" = 20'

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
PLAN VIEW
STAGE II TRAFFIC

FAP ROUTE 322
SECTION (11-1VB)-1
UNION COUNTY

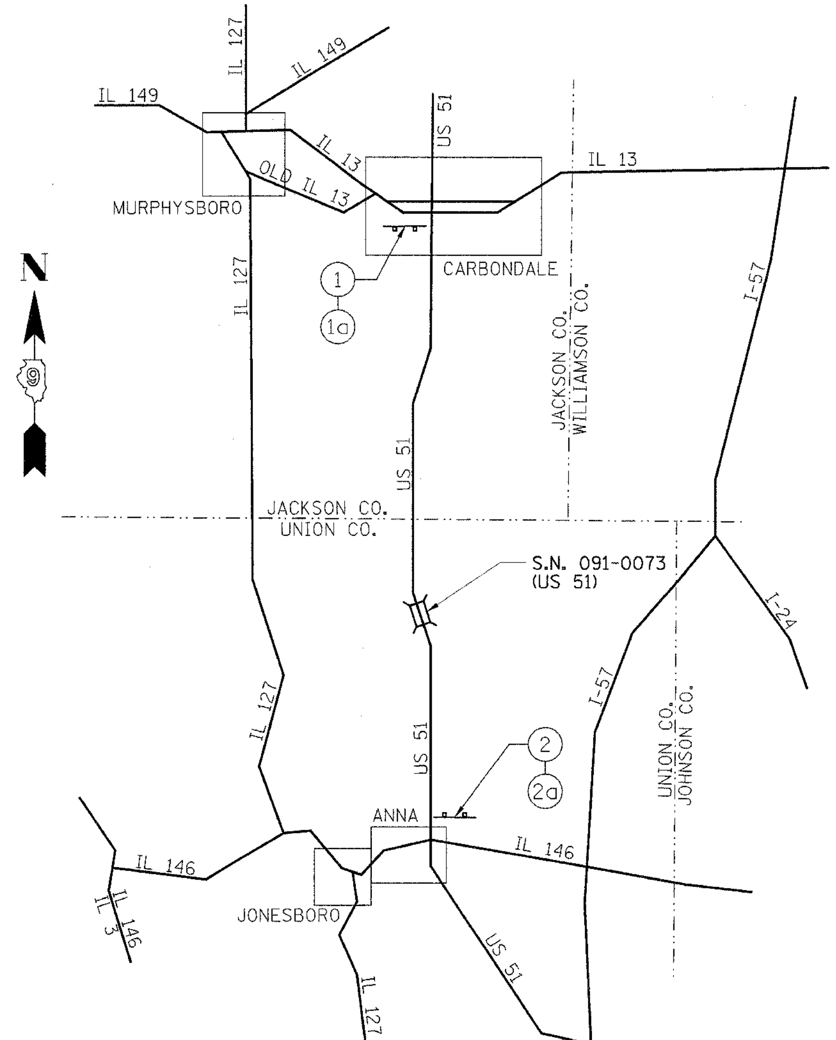
DRAWN BY: J. NIEDERHOFER

PLAN | NOTE BOOK NO. | SURVEYED | PLOTTED | ALIGNMENT CHECKED | R.O. WAY CHECKED | CADD FILE NAME | BY | DATE

PLOT DATE = 3/29/2005
PLOT SCALE = 20.0000 ' / IN.
USER NAME = dickersonlm

FAP ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
322	(11-1VB)-1	UNION	39	9
STA.		TO STA.		

CONTRACT NO. 98488



DETOUR SIGNING FOR LANE WIDTH RESTRICTION AND ROAD CLOSURE

(1)

WIDE LOADS OVER 12'-0"

DETOUR VIA

EAST ILLINOIS 13 — SOUTH INTERSTATE 57 — WEST ILLINOIS 146

60" X 60"
1 EACH

TO BE USED FOR STAGE I ONLY

(1a)

ROAD CLOSED
12 MILES AHEAD
LOCAL TRAFFIC ONLY

R11-3
60" X 30"
1 EACH

TO BE USED FOR STAGE II
1 DAY ROAD CLOSURE
THIS SIGN TO REPLACE WIDE LOAD PORTION OF SIGN (1)

(2)

WIDE LOADS OVER 12'-0"

DETOUR VIA

EAST ILLINOIS 146 — NORTH INTERSTATE 57 — WEST ILLINOIS 13

60" X 60"
1 EACH

TO BE USED FOR STAGE I ONLY

(2a)

ROAD CLOSED
7 MILES AHEAD
LOCAL TRAFFIC ONLY

R11-3
60" X 30"
1 EACH

TO BE USED FOR STAGE II
1 DAY ROAD CLOSURE
THIS SIGN TO REPLACE WIDE LOAD PORTION OF SIGN (2)

NOTES:

1. THE CONTRACTOR WILL FURNISH, ERECT, MAINTAIN, AND REMOVE THE POSTS AND SIGNS AT THE LOCATIONS SHOWN AND AS DIRECTED BY THE RESIDENT ENGR./TECH. ALL SIGNS SHALL BE POST MOUNTED.
2. THE CONTRACTOR SHALL GIVE I.D.O.T. BUREAU OF OPERATIONS, PERMITS SECTION, TWO WEEKS NOTICE BEFORE IMPLEMENTING ANY LANE WIDTH RESTRICTIONS.
3. THE ABOVE NOTED WORK, INCLUDING SIGNS, POSTS, HARDWARE, AND LABOR SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE, EACH, FOR TRAFFIC CONTROL AND PROTECTION, STD 701321 (SPECIAL) AND NO OTHER COMPENSATION WILL BE ALLOWED.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

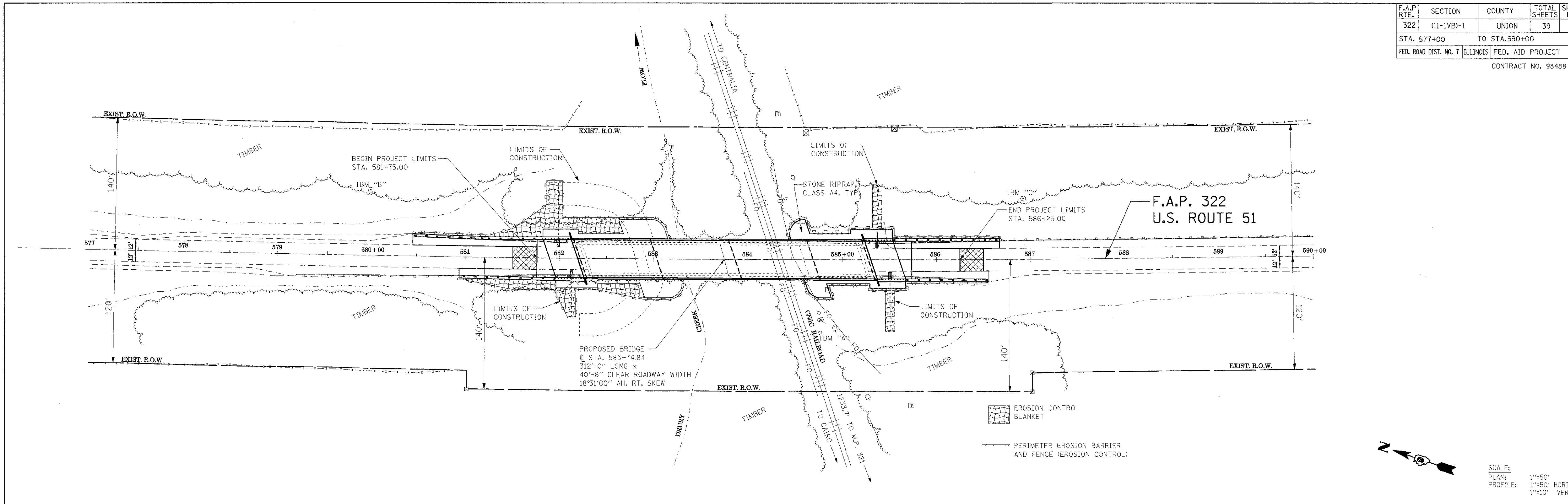
CONSTRUCTION DETAILS

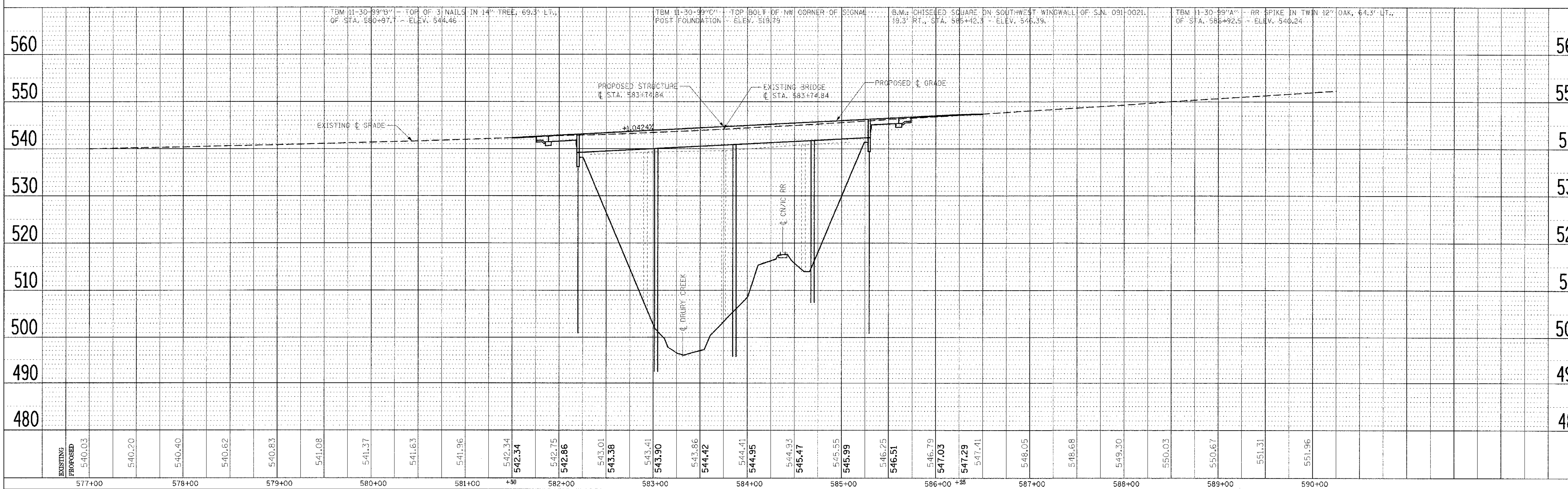
FAP ROUTE 322
SECTION (11-1VB)-1
UNION COUNTY

DRAWN BY: J. NIEDERHOFER

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	(11-1VB)-1	UNION	39	10
STA. 577+00	TO STA.590+00			
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 98488





PLAN: NOTE BOOK NO. — SURVEYED, PLOTTED, ALIGNMENT CHECKED, R.O.W. CHECKED, CADD FILE NAME — BY — DATE

PROFILE: NOTE BOOK NO. — SURVEYED, PLOTTED, GRADES CHECKED, B.M. NOTED, STRUCTURE NOTATIONS CHKD — BY — DATE

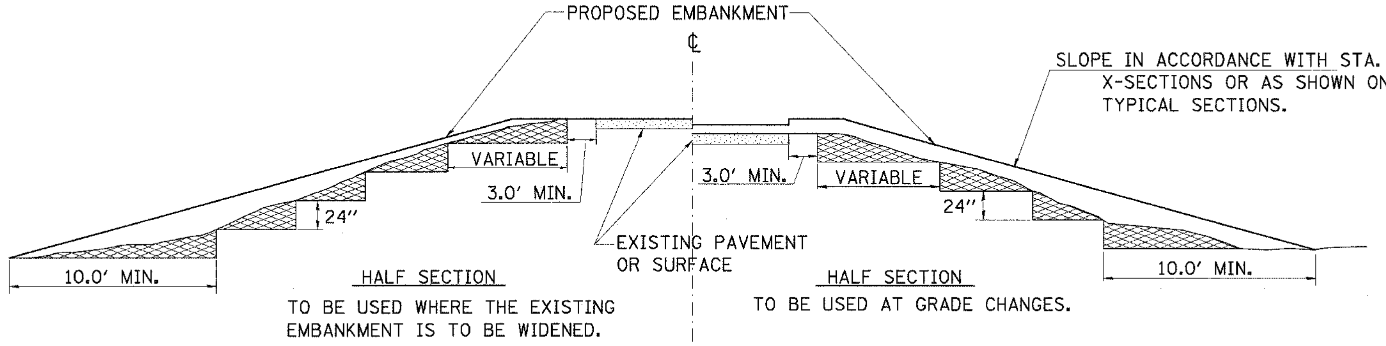
PLOT DATE = 3/29/2005
FILE NAME = e:\projects\d9001981\10 erosion control 091-0073.dgn
PLOT SCALE = 50.0000 ' / IN.
USER NAME = dickersonlm

EROSION CONTROL PLAN — PROPOSED U.S. ROUTE 51 BRIDGE OVER DRURY CREEK AND CN/IC RAILROAD

FAP 322 — SECTION (11-1VB)-1 — UNION COUNTY, ILLINOIS

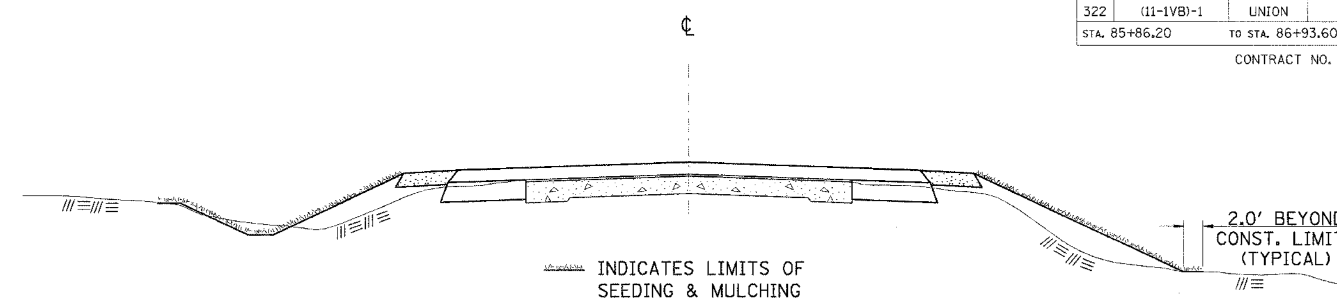
FAP ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
322	(11-1VB)-1	UNION	39	11
STA. 85+86.20	TO STA. 86+93.60			

CONTRACT NO. 98488



MATERIAL TO BE REMOVED AND REPLACED IN THE EMBANKMENT IN ACCORDANCE WITH ART. 205.04 OF THE STANDARD SPECIFICATION. COST TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED BECAUSE OF THIS WORK.

TYPICAL CROSS SECTION SHOWING STEP CONSTRUCTION ON EXISTING FILL



INDICATES LIMITS OF SEEDING & MULCHING

GENERAL NOTES

IN GENERAL, ALL EARTH SURFACES DISTURBED DURING CONSTRUCTION OPERATIONS SHALL BE SEEDED AND MULCHED UPON COMPLETION OF ALL GRADING OPERATIONS.

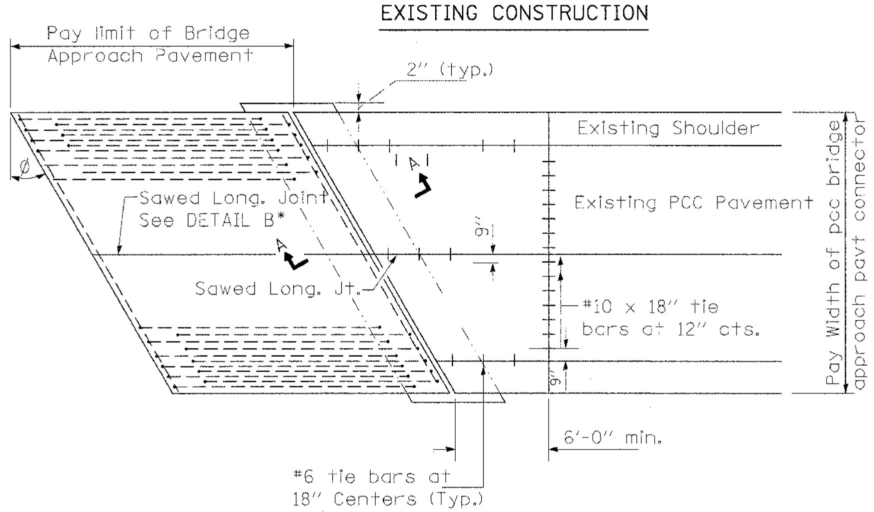
FERTILIZER NUTRIENTS AND LIMESTONE SHALL BE APPLIED TO ALL SEEDED AREAS.

THE RATES OF APPLICATION OF FERTILIZER, MULCH AND LIMESTONE SHALL BE AS SPECIFIED IN THE SPECIAL PROVISIONS.

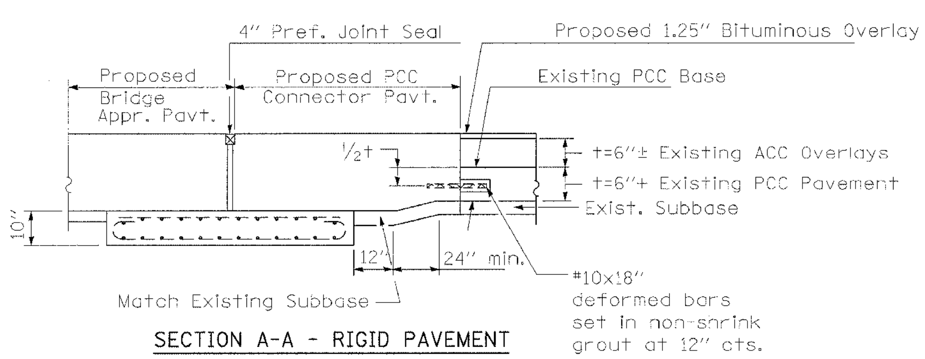
SECTIONS 250 AND 251 OF THE STANDARD SPECIFICATIONS SHALL GOVERN THIS WORK EXCEPT AS SPECIFIED HEREIN OR AS NOTED IN THE SPECIAL PROVISIONS.

SEEDING & MULCHING

EXISTING CONSTRUCTION



BRIDGE APPROACH PAVEMENT CONNECTOR (PCC) SPECIAL
(MODIFICATION TO STD 420401)



SECTION A-A - RIGID PAVEMENT

PCC PAVEMENT CONNECTOR

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

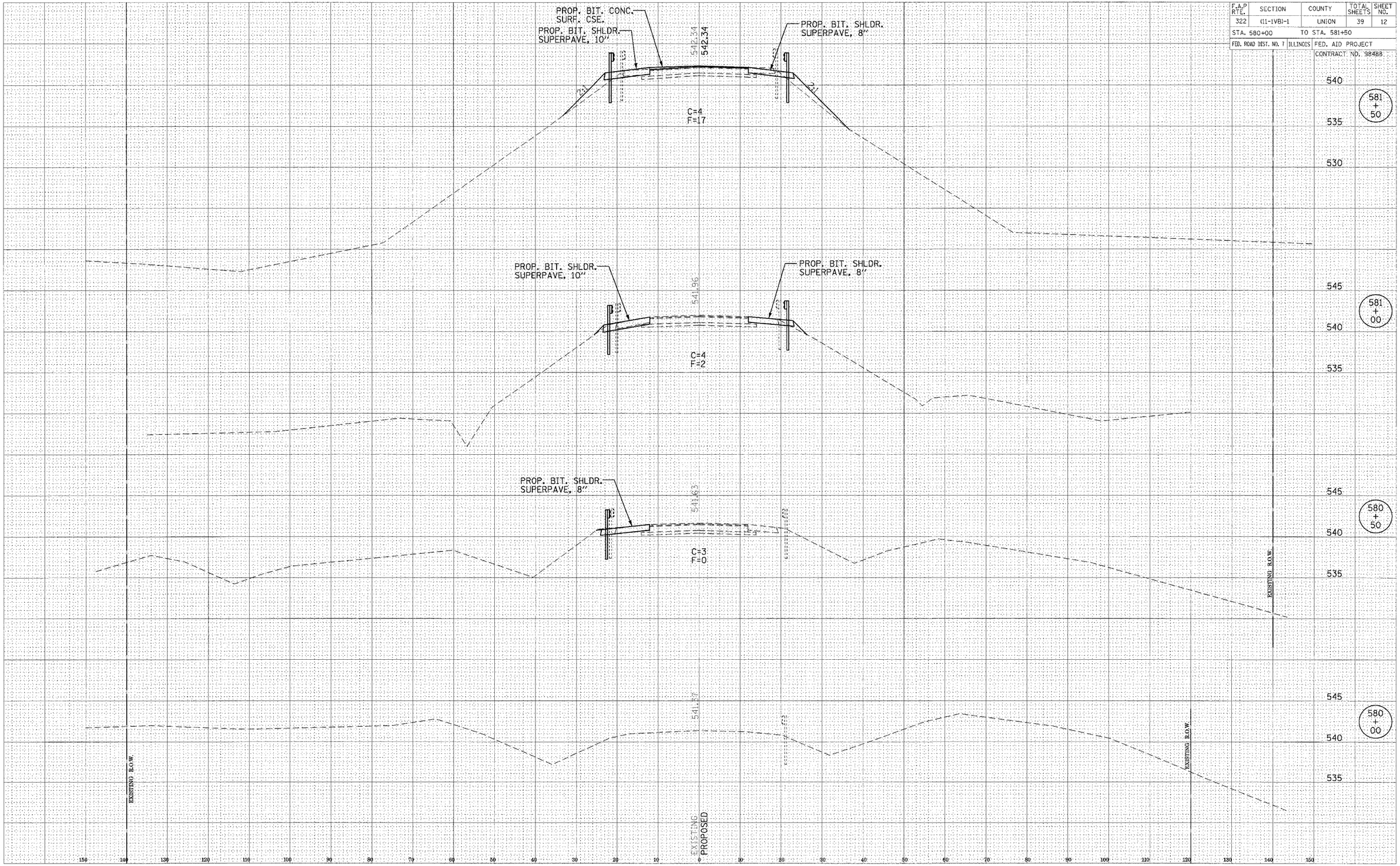
DISTRICT STANDARDS

FAP ROUTE 322
SECTION (11-1VB)-1
UNION COUNTY

DRAWN BY: J. NIEDERHOFER

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	(11-1VB)-1	UNION	39	12
STA. 580+00		TO STA. 581+50		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 98488



CROSS SECTIONS OF ROADWAY PROPOSED U.S. ROUTE 51 BRIDGE OVER DRURY CREEK AND CN/IC RAILROAD

FAP 322 SECTION (11-1VB)-1 UNION COUNTY, ILLINOIS

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

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

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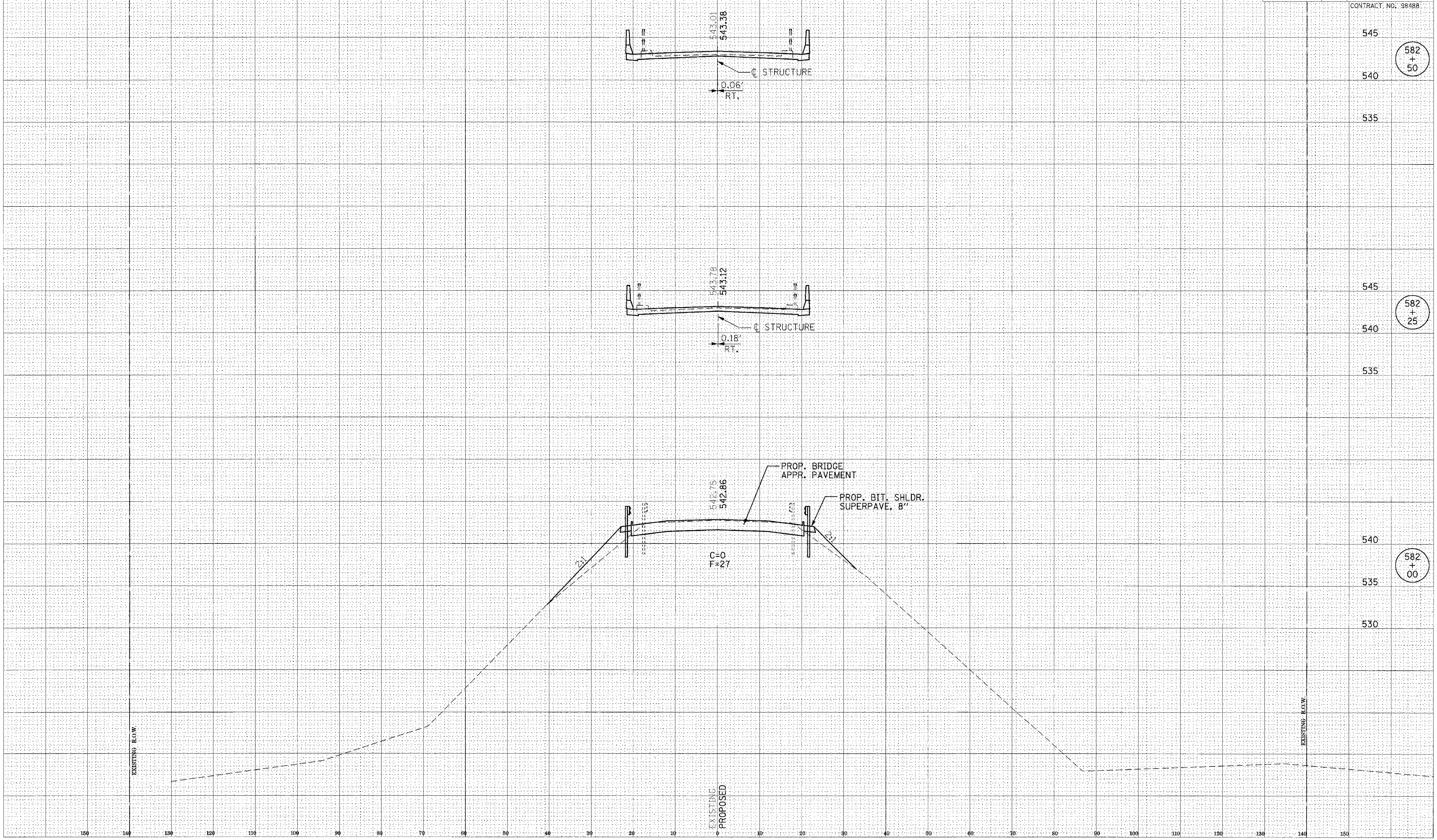
F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	(11-1VB)-1	UNION	39	13

STA. 582+00 TO STA. 582+50

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

CONTRACT NO. 98488



CROSS SECTIONS OF ROADWAY PROPOSED U.S. ROUTE 51 BRIDGE OVER DRURY CREEK AND CN/IC RAILROAD

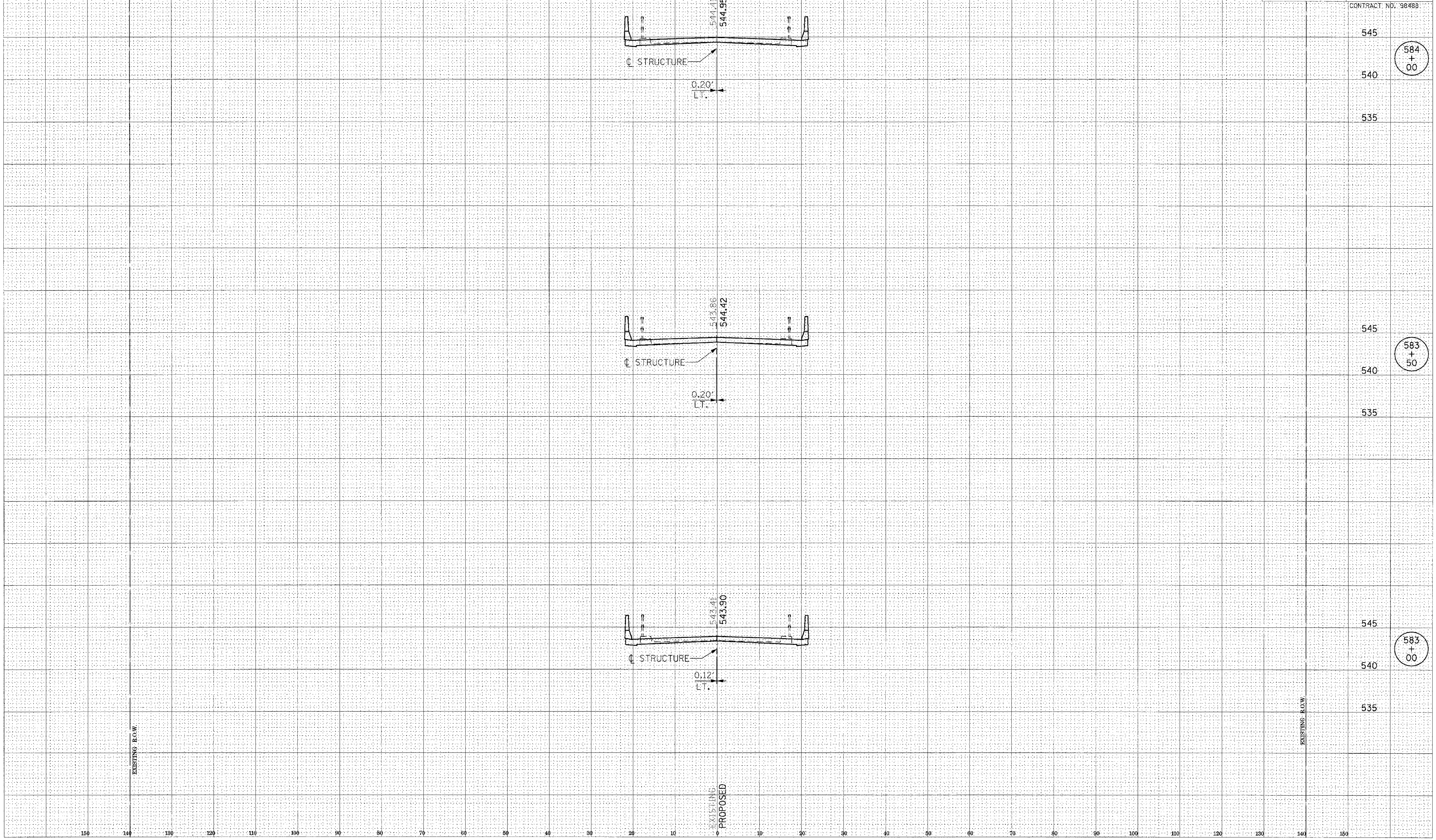
FAP 322 SECTION (11-1VB)-1 UNION COUNTY, ILLINOIS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	(11-1VB)-1	UNION	39	14

STA. 583+00 TO STA. 584+00

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

CONTRACT NO. 98488



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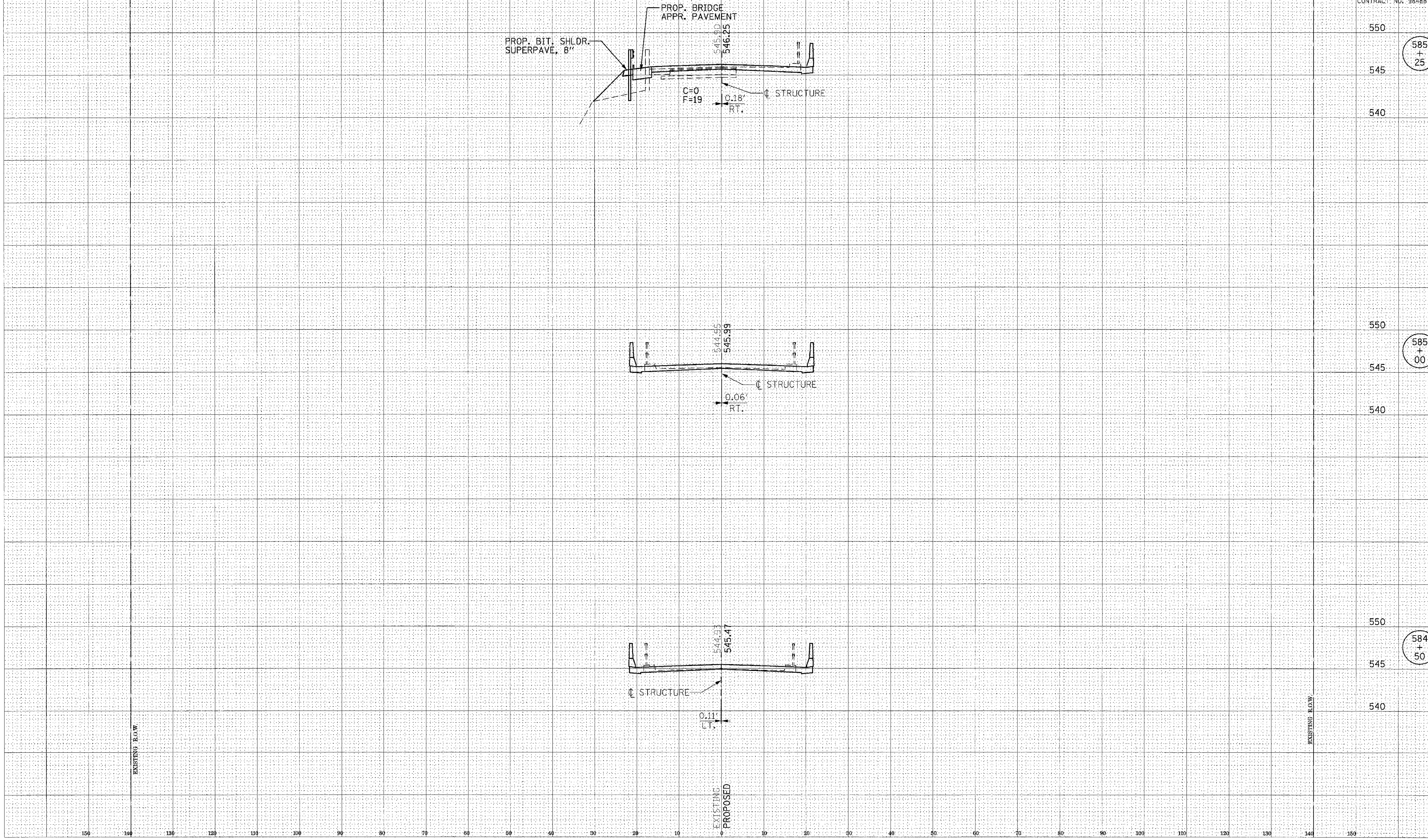
CROSS SECTIONS OF ROADWAY PROPOSED U.S. ROUTE 51 BRIDGE OVER DRURY CREEK AND CN/IC RAILROAD

FAP 322 SECTION (11-1VB)-1 UNION COUNTY, ILLINOIS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	(11-1VB)-1	UNION	39	15
STA. 584+50	TO STA. 585+25			
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		
		CONTRACT NO. 98488		



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

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

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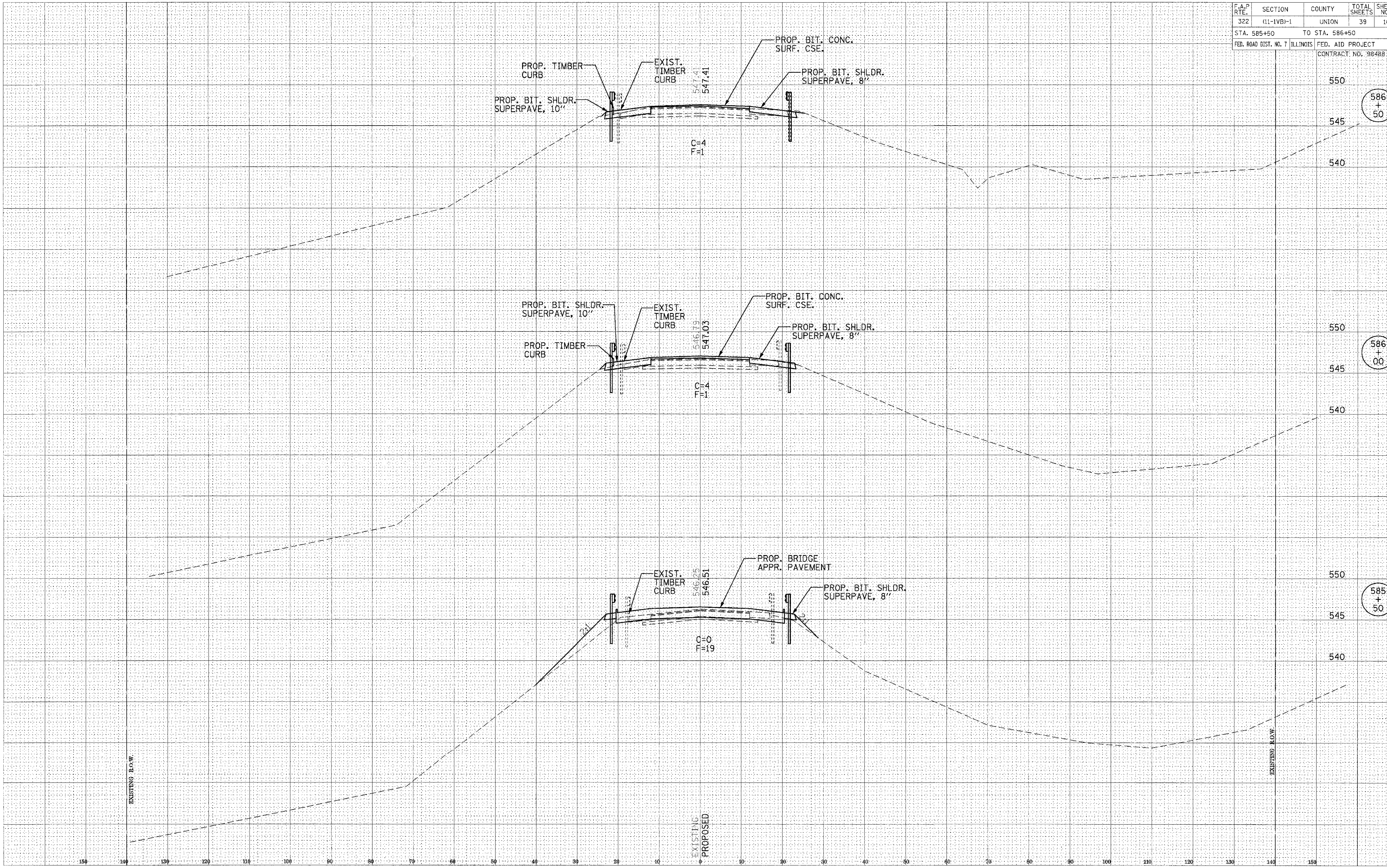
CROSS SECTIONS OF ROADWAY PROPOSED U.S. ROUTE 51 BRIDGE OVER DRURY CREEK AND CN/IC RAILROAD

FAP 322 SECTION (11-1VB)-1 UNION COUNTY, ILLINOIS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	(11-1VB)-1	UNION	39	16
STA. 585+50	TO STA. 586+50			
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 98488



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

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

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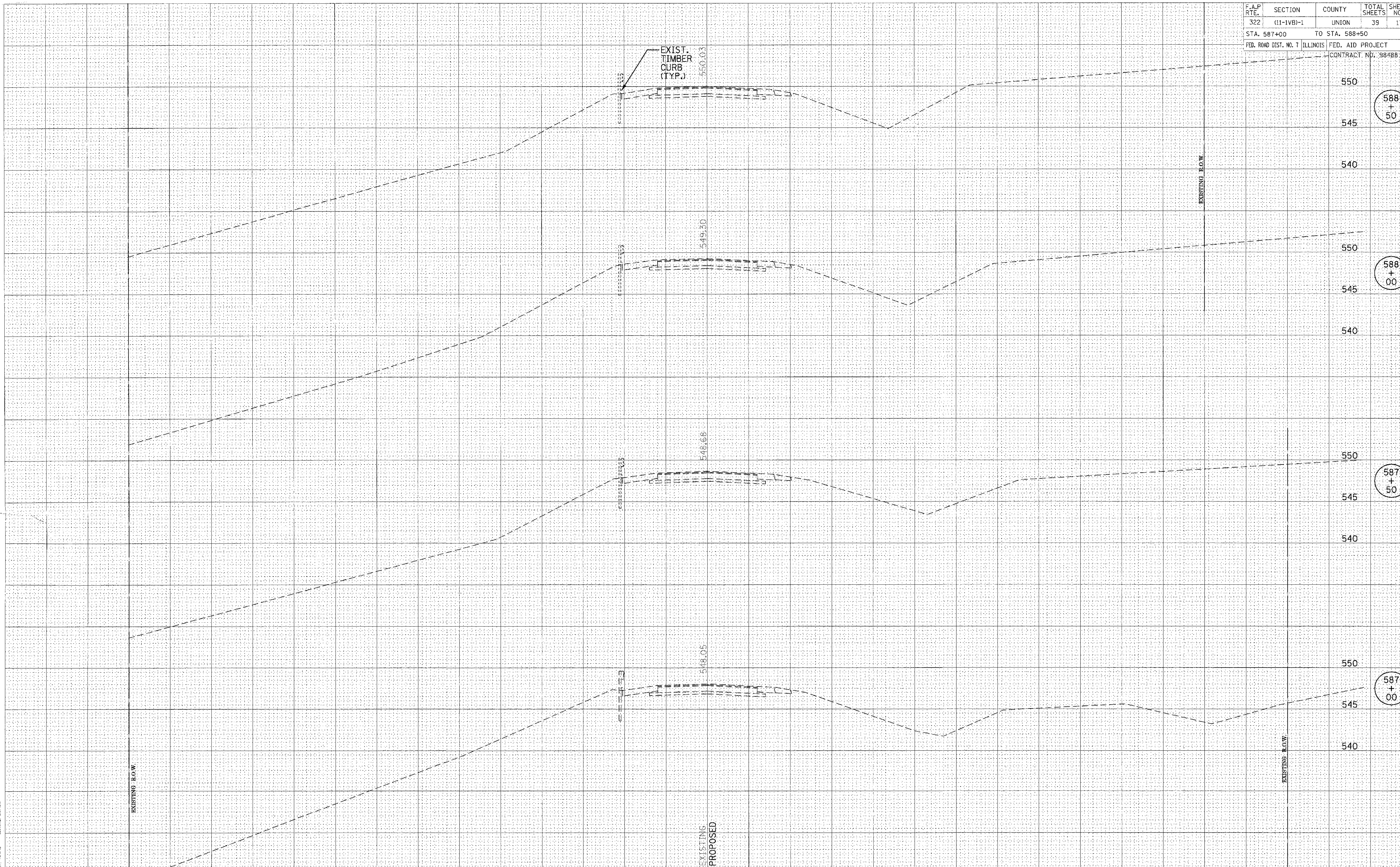
CROSS SECTIONS OF ROADWAY PROPOSED U.S. ROUTE 51 BRIDGE OVER DRURY CREEK AND CN/IC RAILROAD

FAP 322 SECTION (11-1VB)-1 UNION COUNTY, ILLINOIS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	(11-1VB)-1	UNION	39	17
STA. 587+00	TO STA. 588+50			
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 98488



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CROSS SECTIONS OF ROADWAY PROPOSED U.S. ROUTE 51 BRIDGE OVER DRURY CREEK AND CN/IC RAILROAD

FAP 322 SECTION (11-1VB)-1 UNION COUNTY, ILLINOIS

B.M.: Chiseled square on southwest wingwall of S.N. 091-0021.
19.3' Rt., Sta. 585+42.3 - Elev. 546.39.

Existing Structure: S.N. 091-0021 built in 1959 as a four span cast-in-place deck on steel wide flange beams with open abutments and solid hammerhead piers founded on rock. 301.67' Bk.-Bk. abutments x 36.06' wide.

Traffic to be maintained utilizing stage construction.

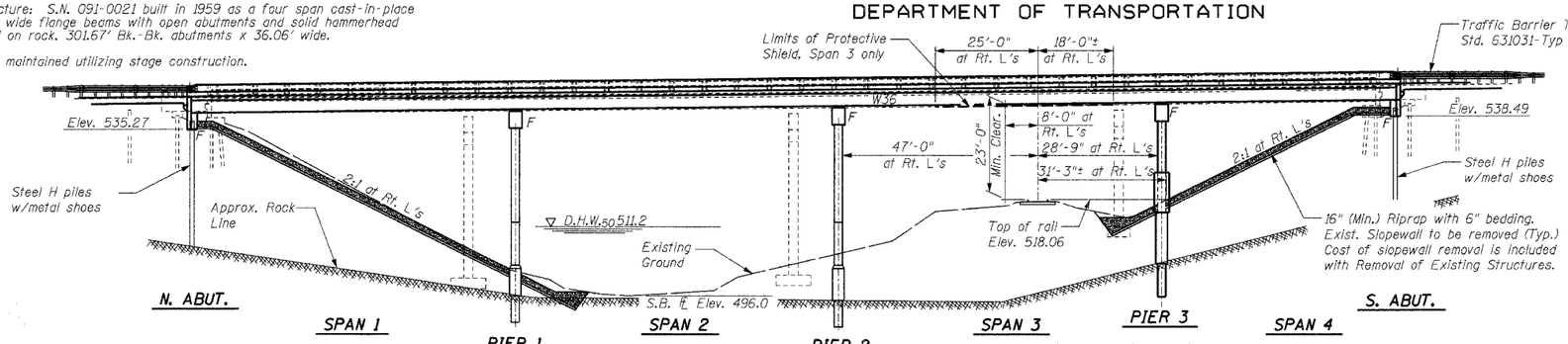
No salvage.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 322	*	UNION	39	18
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

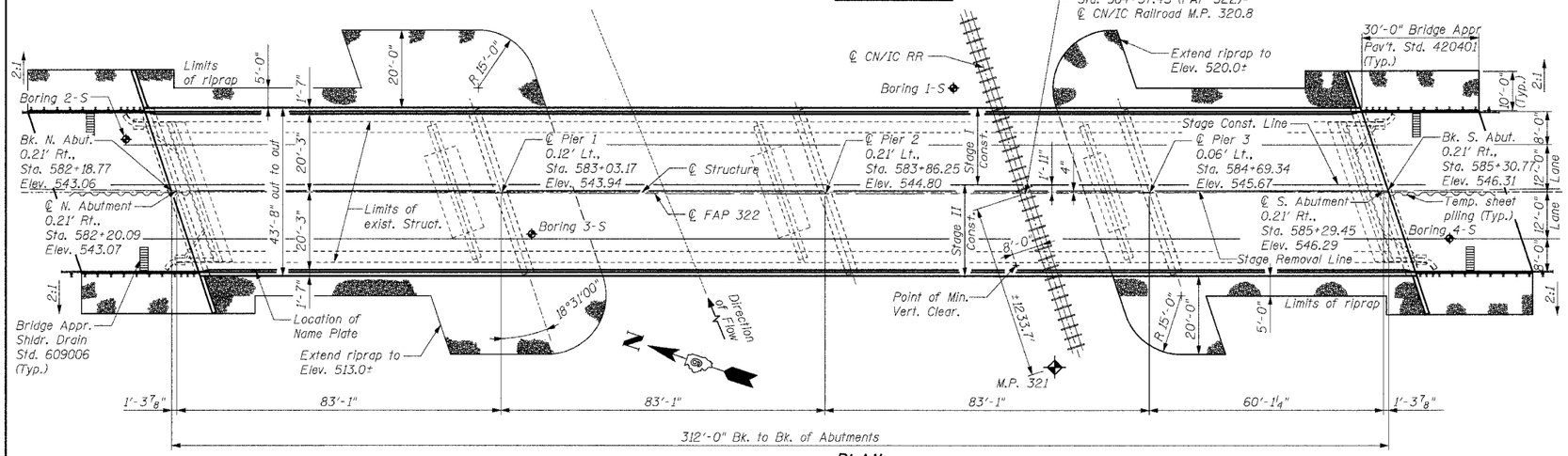
SHEET NO. 1
22 SHEETS

* (11-IVB)-1 CONTRACT NO. 98488

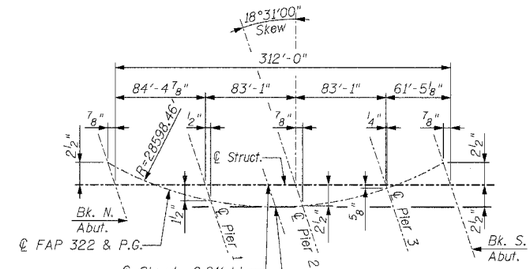


ELEVATION

Final ditch grades to be established in the field by CN/IC Railroad Engineers.



PLAN



OFFSET SKETCH

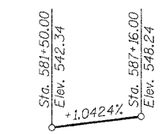
CURVE DATA

P.I. Sta. 585+62.92
Δ= 4°05'34"
D= 0°12'01"
R= 28598.46'
T= 1021.86'
L= 2042.86'
E= 18.25'
P.C. Sta. 575+41.05
P.T. Sta. 595+83.91
S.E. Normal Crown

STATION 583+74.84
BUILT 200 BY
STATE OF ILLINOIS
FAP 322 - SEC. (11-IVB)-1
LOADING HS20
STR. NO. 091-0073

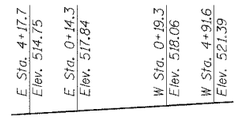
NAME PLATE

See Std. 515001



PROFILE GRADE

Along ℄ Roadway

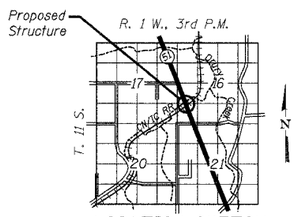


TOP OF RAIL ELEVATIONS CN/IC RR

NOTES

The width between the guardrails shall be the width between the bridge parapets, which will require approach shoulder widening.

The Contractor shall avoid undermining or otherwise disturbing the existing pier foundations during construction of the new piers.



LOCATION SKETCH

WATERWAY INFORMATION

Drainage Area = 5.35 mi² Low Grade Elev. 540.0 ft. @ Sta. 577+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Natural H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	50	3683	1097.6	1097.6	511.2	0.2	0.2	511.4	511.4
Base	100	4246	1145.6	1145.6	511.5	0.2	0.2	511.7	511.7
Overtopping	-	-	-	-	-	-	-	-	-
Max. Calc.	500	5594	1231.0	1231.0	512.3	0.3	0.3	512.6	512.6

DESIGNED	GLH
CHECKED	TML
DRAWN	RJN
CHECKED	TML

02/21/2005

DESIGN STRESSES

FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (reinforcement)
fy = 50,000 psi (Structural Steel) (AASHTO M270 Grade 50)
fy = 36,000 psi (AASHTO M270 Grade 36)

SEISMIC DATA

Seismic Performance Category (SPC)= B
Bedrock Acceleration Coefficient (A)= 14.5%g
Site Coefficient(S)= 1.2

DESIGN SPECIFICATIONS

AASHTO-2002, 17th Edition

LOADING HS20-44

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

GARY L. HAHN 81-4853 LICENSED STRUCTURAL ENGINEER STATE OF ILLINOIS

Gary L. Hahn 03-24-05

Gary L. Hahn
Centralia, Illinois
Illinois Licensed Structural
Engineer No. 81-4853
Expires Nov. 30, 2006

APPROVED
FOR STRUCTURAL ADEQUACY ONLY

Ralph E. Anderson (TJO)
ENGINEER OF BRIDGES AND STRUCTURES

RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
201 SOUTH LOCUST STREET, CENTRALIA, ILLINOIS, 618-532-1992
4 INDUSTRIAL DRIVE, FREEBURG, ILLINOIS, 618-539-3178
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

GENERAL PLAN

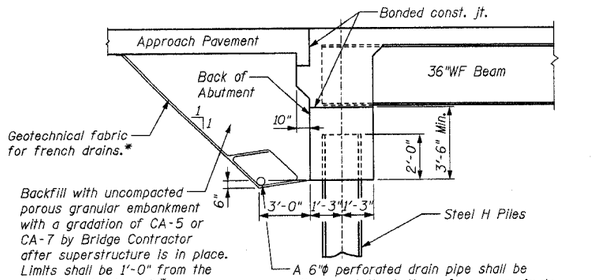
U.S. ROUTE 51 OVER TRIBUTARY TO DRURY CREEK AND CN/IC RAILROAD
FAP 322 - SECTION (11-IVB)-1
UNION COUNTY
STATION 583+74.84
STRUCTURE NO. 091-0073

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. P. 322	*	UNION	39	19
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 2
22 SHEETS

* (11-IVB)-1 CONTRACT NO. 98488

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

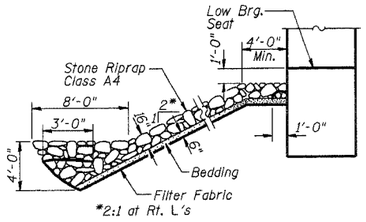


*Included in the cost of "Porous Granular Embankment".

Excavation for placing Porous Granular Embankment is paid for as "Structure Excavation"

SECTION THRU INTEGRAL ABUTMENT

(Dimensions at right angles)



STONE RIPRAP ANCHOR DETAIL

Fasteners shall be high strength bolts. Bolts $\frac{7}{8}$"ϕ, open holes $\frac{15}{16}$"ϕ, unless otherwise noted.

Calculated weight of Structural Steel = 441,960 pound. (AASHTO M270, Grade 50)
Calculated weight of Structural Steel = 4150 pound. (AASHTO M270, Grade 36)

Field welding of construction accessories will not be permitted to beams or girders.

Anchor bolts shall be set before bolting diaphragms over supports.

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.

Reinforcement bars shall conform to the requirements of AASHTO M 31 or M 322 Grade 60.

All construction joints shall be bonded.

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

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of $\frac{1}{8}$ inch. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two $\frac{1}{8}$" adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims.

The contractor shall drive two (2) test piles in a permanent location, one (1) at each abutment as directed by the Engineer before ordering the remainder of piles.

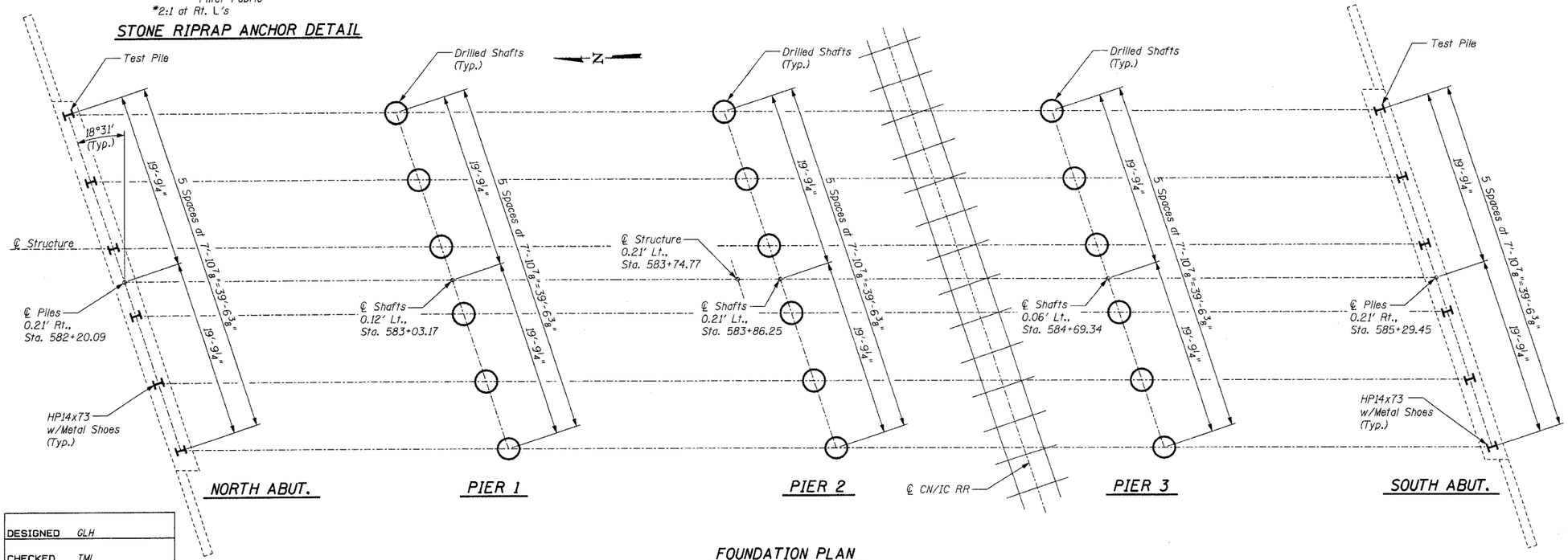
In addition to all other requirements of section 512 of the Standard Specifications, splices for Steel H-piles shall develop the full capacity of the steel's cross sectional area of the pile for tension, shear and bending forces. One approved method of achieving this requirement is full penetration butt welding of the entire cross section. Other types of splices meeting the full capacity requirement may be allowed subject to the approval of the Engineer. Any proposal by the Contractor to use an alternate splice method must include adequate documentation demonstrating that the full tension, shear and bending capacities will be met. Appropriate welder qualifications will be required for the positions and processes used in splicing all piles. Nondestructive testing of completed welds will be limited to visual inspection.

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

The Inorganic zinc rich primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat for all interior steel surfaces shall be gray, Munsell No. 5B 7/1. The Color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Interstate Green, Munsell No. 7.5G 4/8. See special provision for "Cleaning and Painting New Metal Structures."

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment	Cu. Yd.	-	286	286
Stone Riprap, Class A4	Sq. Yd.	-	2352	2352
Filter Fabric for use with Riprap	Sq. Yd.	-	2352	2352
Removal of Existing Structures	Each	-	-	1
Structure Excavation	Cu. Yd.	-	275	275
Concrete Structures	Cu. Yd.	-	299.6	299.6
Concrete Superstructure	Cu. Yd.	409.2	-	409.2
Bridge Deck Grooving	Sq. Yd.	1404	-	1404
Protective Coat	Sq. Yd.	1666	-	1666
Furnishing and Erecting Structural Steel	L Sum	1	-	1
Stud Shear Connectors	Each	5094	-	5094
Reinforcement Bars	Pound	-	19030	19030
Reinforcement Bars, Epoxy Coated	Pound	105070	88470	193540
Furnishing Steel Piles, HP14x73	Foot	-	265	265
Driving Steel Piles	Foot	-	265	265
Test Pile Steel, HP14x73	Each	-	2	2
Metal Shoes	Each	-	10	10
Temporary Sheet Piling	Sq. Ft.	-	552	552
Temporary Bridge Rail	Foot	302	-	302
Name Plates	Each	1	-	1
Underwater Structure Excavation Protection - Location 1	Each	-	1	1
Underwater Structure Excavation Protection - Location 2	Each	-	1	1
Bar Splicers	Each	1161	398	1459
Drilled Shaft in Soil 36 Dia	Foot	-	157	157
Drilled Shaft in Rock 30 Dia	Foot	-	126	126
Protective Shield	Sq. Yd.	-	220	220



FOUNDATION PLAN

(Not to scale)

DESIGNED	GLH
CHECKED	TML
DRAWN	RJN
CHECKED	TML

04/27/2005

GENERAL DATA

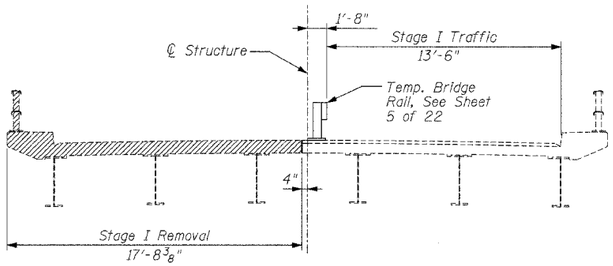
U.S. ROUTE 51 OVER TRIBUTARY TO DRURY CREEK AND CN/IC RAILROAD
FAP 322 -SECTION (11-IVB)-1
UNION COUNTY
STATION 583+74.84
STRUCTURE NO. 091-0073

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

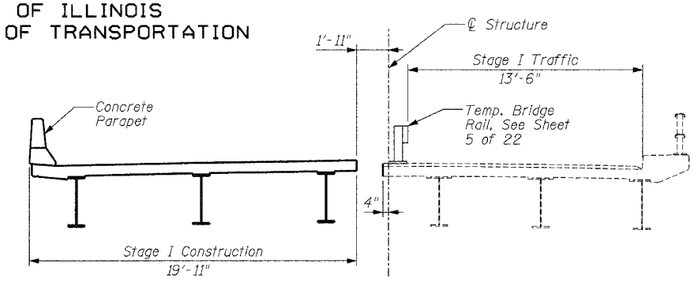
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 322	*	UNION	39	20
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 3
22 SHEETS

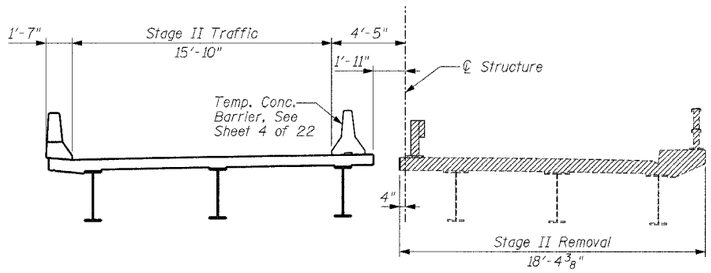
* (11-IVB)-1 CONTRACT NO. 98488



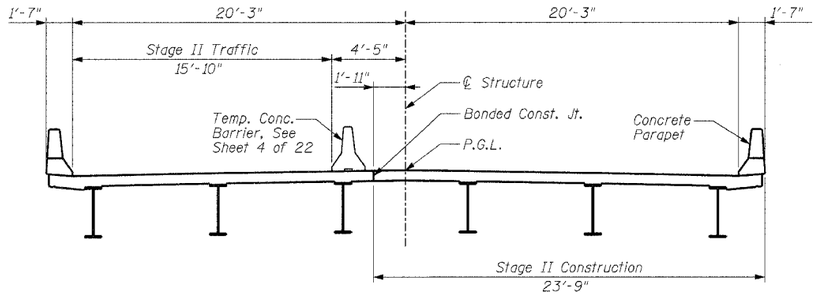
CROSS SECTION - STAGE I REMOVAL
Looking Southerly



CROSS SECTION - STAGE I CONSTRUCTION
Looking Southerly



CROSS SECTION - STAGE II REMOVAL
Looking Southerly

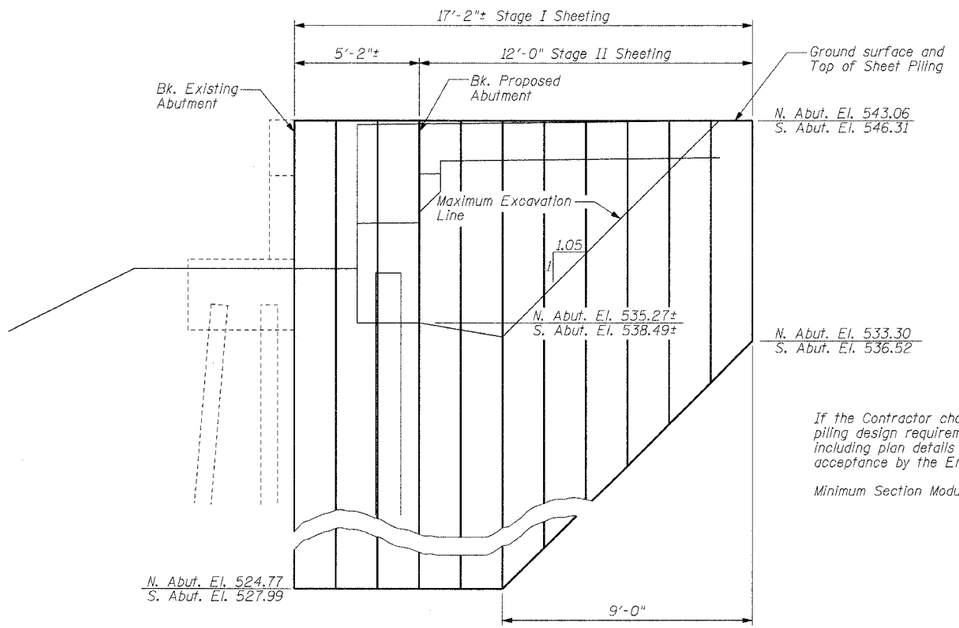


CROSS SECTION - STAGE II CONSTRUCTION
Looking Southerly

NOTES

For Quantity of Temporary Concrete Barrier, see Roadway plans.

Hatched areas ▨ indicates Removal of Existing Structures.



TEMPORARY SHEET PILING DETAIL

If the Contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.

Minimum Section Modulus = 4.7 $in^3/ft.$

DESIGNED	GLH
CHECKED	TML
DRAWN	RJN
CHECKED	TML

02/21/2005

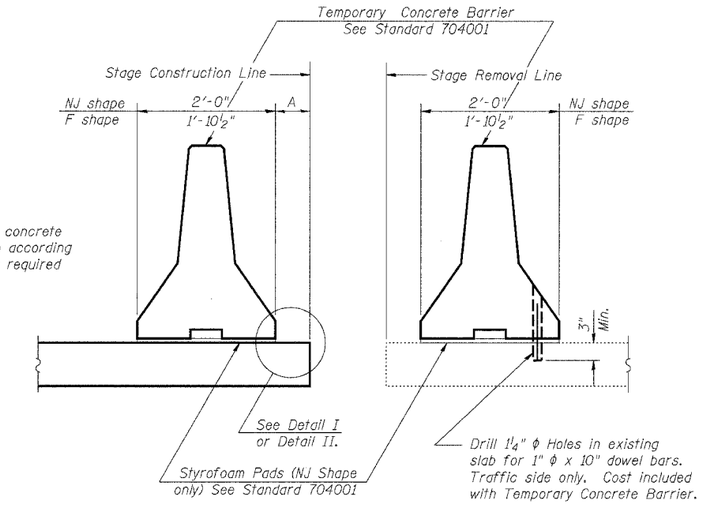
STAGE CONSTRUCTION DETAILS
U.S. ROUTE 51 OVER TRIBUTARY TO DRURY CREEK AND CN/IC RAILROAD
FAP 322 -SECTION (11-IVB)-1
UNION COUNTY
STATION 583+74.84
STRUCTURE NO. 091-0073

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 322	*	UNION	39	21
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 4
22 SHEETS

* (11-1VB)-1 CONTRACT NO. 98488



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

NEW SLAB EXISTING SLAB

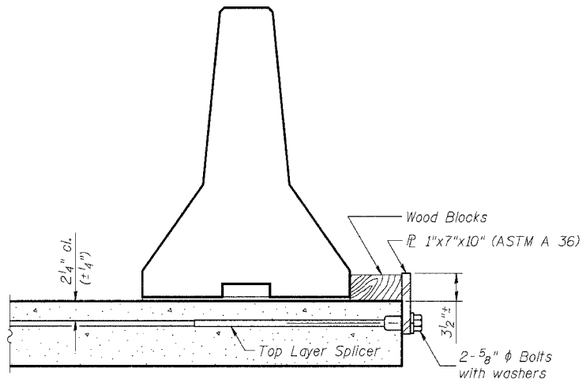
SECTIONS THRU SLAB

NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel ℙ to the top layer of couplers with 2-⅝" ϕ bolts screwed to coupler at approximate ℄ of each barrier panel.

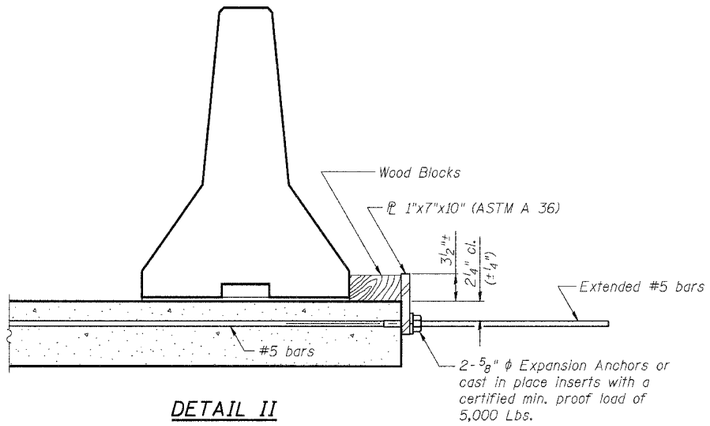
Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" steel ℙ to the concrete slab with 2-⅝" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate ℄ of each barrier panel.

Cost of anchorage is included with Temporary Concrete Barrier.



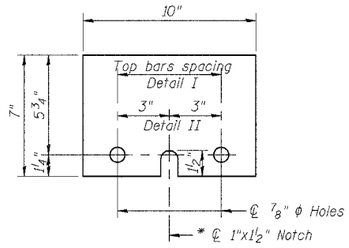
DETAIL I

The 1"x7"x10" Plate shall not be removed until Stage II Construction forms and reinforcement bars are in place.



DETAIL II

The 1"x7"x10" Plate shall not be removed until Stage II Construction forms and all reinforcement bars are in place and the concrete is ready to be placed.



ℙ 1"x7"x10"

* Required only with Detail II

DESIGNED	GLH
CHECKED	TML
DRAWN	RJN
CHECKED	GLH

02/15/2005

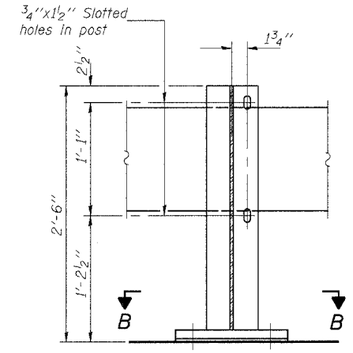
R-27 9-01-03

TEMPORARY CONCRETE BARRIER
FOR STAGE CONSTRUCTION
U.S. ROUTE 51 OVER TRIBUTARY TO
DRURY CREEK AND CN/IC RAILROAD
FAP 322 - SECTION (11-1VB)-1
UNION COUNTY
STATION 583+74.84
STRUCTURE NO. 091-0073

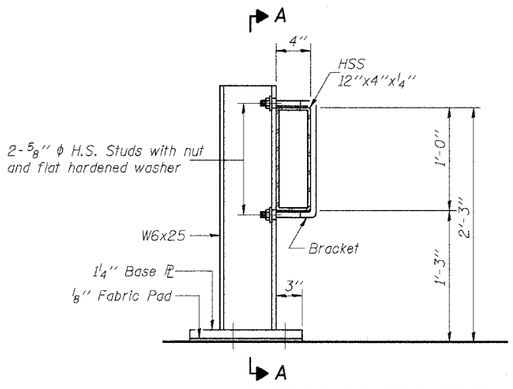
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 322	*	UNION	39	22
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

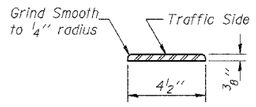
SHEET NO. 5
22 SHEETS
* (11-IVB)-1
CONTRACT NO. 98488



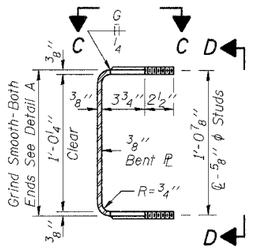
SECTION A-A



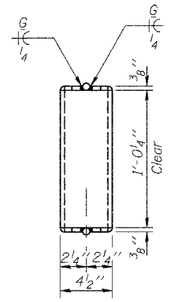
SECTION AT RAIL POST



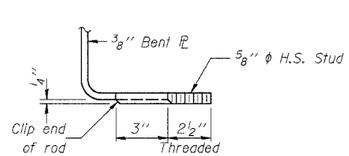
DETAIL A



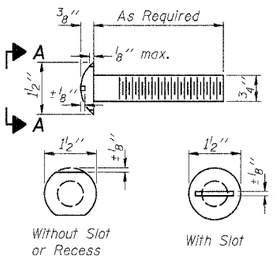
SECTION THRU BRACKET



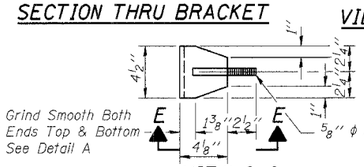
VIEW D-D



VIEW E-E

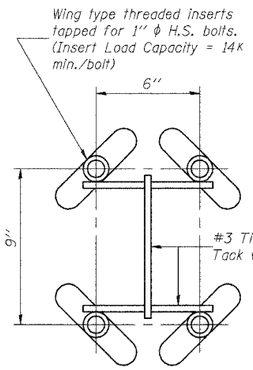


VIEW A-A

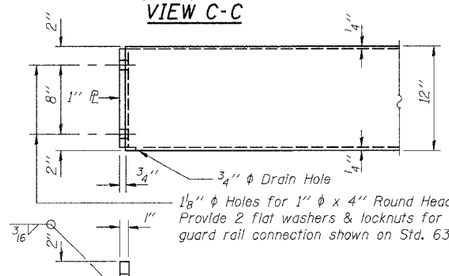


VIEW C-C

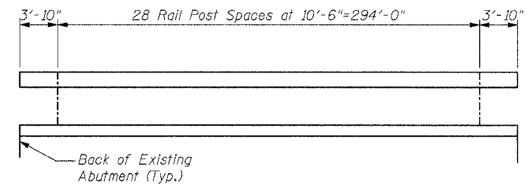
ROUND HEAD BOLT



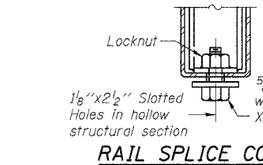
INSERT DETAIL



END OF RAIL DETAILS



TEMPORARY BRIDGE RAIL POST SPACING



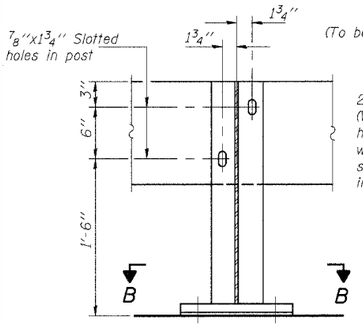
RAIL SPLICE CONNECTION AT EXPANSION JT.

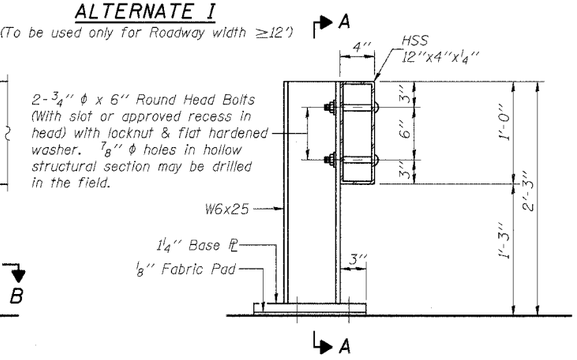
BILL OF MATERIAL

Item	Unit	Quantity
Temporary Bridge Rail	Foot	302

ALTERNATE I

(To be used only for Roadway width ≥12')

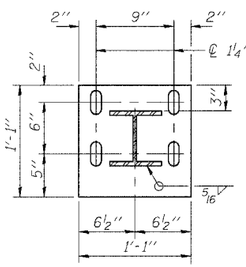




SECTION A-A

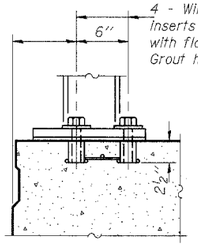
SECTION AT RAIL POST

ALTERNATE II



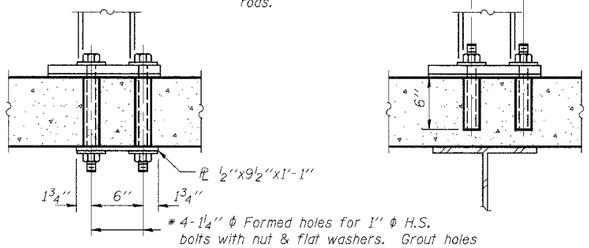
* Drilled holes for existing deck.

SECTION B-B



P.P.C. DECK BEAMS

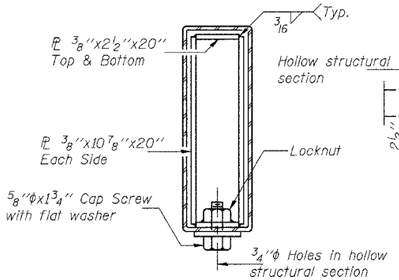
* Drill 4-1 1/4" ϕ holes for 1" ϕ threaded rods with hex nut & flat washer. Epoxy grout rods.



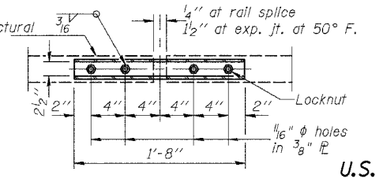
* 4-1 1/4" ϕ Formed holes for 1" ϕ H.S. bolts with nut & flat washers. Grout holes in deck after bolt removal.

NEW & EXISTING DECKS

ANCHORAGE DETAILS



SECTION AT RAIL SPLICE



PLAN-BOTT. SPLICE PL TYPICAL

TEMPORARY BRIDGE RAIL
U.S. ROUTE 51 OVER TRIBUTARY TO DRURY CREEK AND CN/IC RAILROAD
FAP 322 -SECTION (11-IVB)-1
UNION COUNTY
STATION 583+74.84
STRUCTURE NO. 091-0073

NOTES

Hollow structural sections shall conform to the requirements of ASTM designation A 500 Grade B Structural Steel Tubing.

All other steel shapes and plates shall conform to the requirements of AASHTO M 270 Grade 36 except posts and brackets 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, threaded rods, studs, nuts and washers noted which shall conform to AASHTO M 164.

The bridge rail shall receive one shop coat of a steel prime paint.

The 1" ϕ high strength bolts or threaded rods used to connect the railposts shall be tightened according to Article 505.04(f)(2) of the Standard Specifications.

Temporary Bridge Rail shall be according to Section 514 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per foot for Temporary Bridge Rail.

The contact surfaces between post flange, rail and inside face of bracket for Alternate I shall be free of all lubricants.

The nut for 5/8" ϕ high strength studs used in Alternate I to connect bracket to post shall be tightened to a snug fit and given an additional one half turn.

DESIGNED	GLH
CHECKED	TML
DRAWN	RJN
CHECKED	TML

02/15/2005

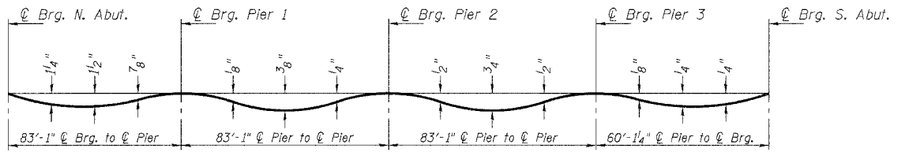
R-25 10-31-02 (10'-9" Maximum Post Spacing)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 322	*	UNION	39	23
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 6
22 SHEETS

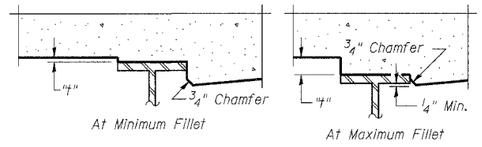
* (11-IVB)-1 CONTRACT NO. 98488



DEAD LOAD DEFLECTION DIAGRAM

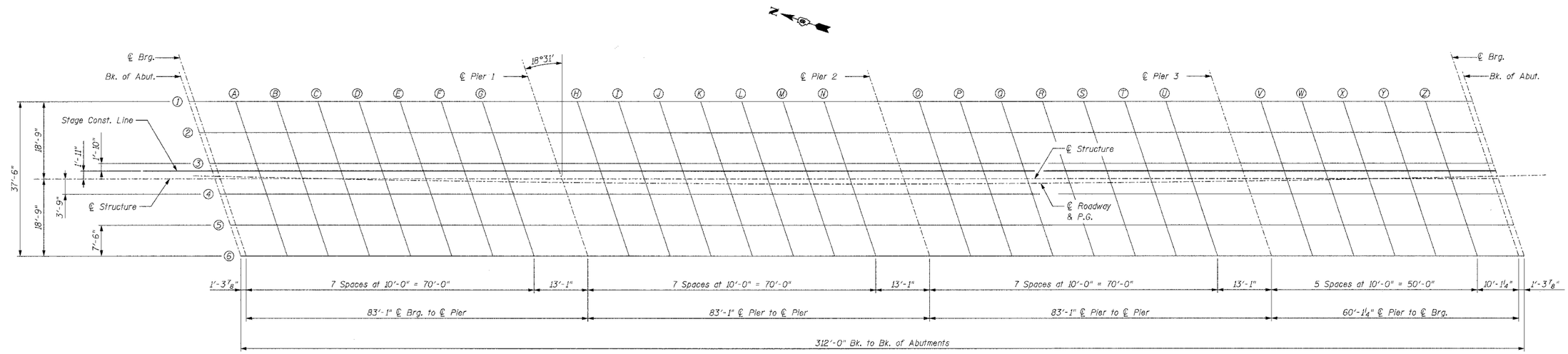
(Includes weight of concrete only.)

Note: The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on sheets 7 & 8 of 22.



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 on Sheets 7 & 8 of 22, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS



DECK ELEVATION LOCATIONS
PLAN

DESIGNED	GLH
CHECKED	TML
DRAWN	RJN
CHECKED	TML

02/15/2005

E-S 4-30-97

DECK ELEVATIONS
U.S. ROUTE 51 OVER TRIBUTARY TO DRURY CREEK AND CN/IC RAILROAD
FAP 322 -SECTION (11-IVB)-1
UNION COUNTY
STATION 583+74.84
STRUCTURE NO. 091-0073

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. P. 322	*	UNION	39	24
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 7
22 SHEETS

* (11-IVB)-1 CONTRACT NO. 98488

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	582+12.383	-18.502	542.667	542.667
℄ N. Abut.	582+13.702	-18.509	542.681	542.681
A	582+23.708	-18.564	542.784	542.839
B	582+33.715	-18.615	542.887	542.986
C	582+43.721	-18.663	542.991	543.114
D	582+53.728	-18.707	543.094	543.222
E	582+63.734	-18.747	543.198	543.308
F	582+73.741	-18.784	543.301	543.379
G	582+83.747	-18.818	543.405	543.443
℄ Pier 1	582+96.839	-18.857	543.540	543.540
H	583+06.846	-18.882	543.644	543.648
I	583+16.852	-18.904	543.748	543.755
J	583+26.859	-18.923	543.852	543.872
K	583+36.865	-18.938	543.956	543.984
L	583+46.872	-18.949	544.060	544.088
M	583+56.879	-18.957	544.164	544.183
N	583+66.885	-18.962	544.268	544.275
℄ Pier 2	583+79.977	-18.963	544.405	544.405
O	583+89.984	-18.959	544.509	544.523
P	583+99.991	-18.952	544.614	544.650
Q	584+09.997	-18.941	544.718	544.773
R	584+20.004	-18.927	544.823	544.886
S	584+30.010	-18.910	544.927	544.986
T	584+40.017	-18.889	545.032	545.075
U	584+50.024	-18.864	545.137	545.158
℄ Pier 3	584+63.115	-18.827	545.274	545.274
V	584+73.122	-18.794	545.379	545.381
W	584+83.128	-18.758	545.484	545.496
X	584+93.135	-18.719	545.589	545.610
Y	585+03.141	-18.675	545.695	545.716
Z	585+13.148	-18.629	545.800	545.814
℄ S. Abut.	585+23.268	-18.578	545.906	545.906
Bk. S. Abut.	585+24.587	-18.571	545.920	545.920

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	582+14.938	-11.016	542.845	542.845
℄ N. Abut.	582+16.257	-11.023	542.858	542.858
A	582+26.261	-11.077	542.962	543.017
B	582+36.265	-11.127	543.065	543.164
C	582+46.268	-11.174	543.169	543.293
D	582+56.272	-11.217	543.273	543.400
E	582+66.276	-11.257	543.376	543.487
F	582+76.280	-11.293	543.480	543.558
G	582+86.284	-11.326	543.584	543.622
℄ Pier 1	582+99.372	-11.363	543.720	543.720
H	583+09.376	-11.388	543.823	543.827
I	583+19.380	-11.409	543.927	543.935
J	583+29.384	-11.427	544.031	544.052
K	583+39.388	-11.441	544.135	544.164
L	583+49.392	-11.452	544.240	544.267
M	583+59.396	-11.459	544.344	544.363
N	583+69.400	-11.462	544.448	544.454
℄ Pier 2	583+82.489	-11.462	544.584	544.584
O	583+92.493	-11.458	544.689	544.703
P	584+02.497	-11.450	544.793	544.829
Q	584+12.501	-11.438	544.898	544.952
R	584+22.505	-11.423	545.002	545.065
S	584+32.509	-11.405	545.107	545.166
T	584+42.513	-11.383	545.211	545.255
U	584+52.517	-11.358	545.316	545.337
℄ Pier 3	584+65.605	-11.319	545.453	545.453
V	584+75.609	-11.286	545.558	545.560
W	584+85.613	-11.249	545.663	545.675
X	584+95.617	-11.208	545.768	545.788
Y	585+05.621	-11.164	545.873	545.894
Z	585+15.624	-11.117	545.978	545.992
℄ S. Abut.	585+25.742	-11.065	546.084	546.084
Bk. S. Abut.	585+27.060	-11.058	546.098	546.098

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	582+17.493	-3.530	542.988	542.988
℄ N. Abut.	582+18.811	-3.537	543.002	543.002
A	582+28.812	-3.590	543.105	543.160
B	582+38.813	-3.640	543.209	543.307
C	582+48.814	-3.685	543.312	543.436
D	582+58.816	-3.728	543.416	543.544
E	582+68.817	-3.766	543.520	543.630
F	582+78.818	-3.802	543.623	543.701
G	582+88.819	-3.834	543.727	543.766
℄ Pier 1	583+01.904	-3.870	543.863	543.863
H	583+11.906	-3.894	543.967	543.970
I	583+21.907	-3.914	544.071	544.078
J	583+31.908	-3.931	544.175	544.195
K	583+41.910	-3.944	544.279	544.307
L	583+51.911	-3.954	544.383	544.411
M	583+61.913	-3.960	544.487	544.506
N	583+71.914	-3.963	544.591	544.598
℄ Pier 2	583+84.999	-3.961	544.728	544.728
O	583+95.000	-3.956	544.832	544.846
P	584+05.002	-3.947	544.936	544.972
Q	584+15.003	-3.935	545.041	545.096
R	584+25.005	-3.919	545.145	545.209
S	584+35.006	-3.900	545.250	545.309
T	584+45.007	-3.877	545.355	545.398
U	584+55.009	-3.851	545.459	545.481
℄ Pier 3	584+68.094	-3.811	545.596	545.596
V	584+78.095	-3.777	545.701	545.703
W	584+88.096	-3.739	545.806	545.818
X	584+98.097	-3.697	545.911	545.931
Y	585+08.098	-3.653	546.016	546.037
Z	585+18.100	-3.604	546.121	546.135
℄ S. Abut.	585+28.214	-3.552	546.227	546.227
Bk. S. Abut.	585+29.533	-3.545	546.241	546.241

STAGE CONSTRUCTION LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	582+18.117	-1.700	543.023	543.023
℄ N. Abut.	582+19.435	-1.707	543.037	543.037
A	582+29.435	-1.760	543.141	543.195
B	582+39.436	-1.809	543.244	543.342
C	582+49.436	-1.855	543.348	543.471
D	582+59.437	-1.897	543.451	543.579
E	582+69.438	-1.935	543.555	543.665
F	582+79.438	-1.971	543.658	543.736
G	582+89.439	-2.002	543.762	543.801
℄ Pier 1	583+02.523	-2.038	543.898	543.898
H	583+12.524	-2.062	544.002	544.005
I	583+22.524	-2.082	544.106	544.113
J	583+32.525	-2.098	544.210	544.230
K	583+42.526	-2.111	544.314	544.342
L	583+52.527	-2.121	544.418	544.446
M	583+62.527	-2.127	544.522	544.541
N	583+72.528	-2.130	544.626	544.633
℄ Pier 2	583+85.612	-2.128	544.763	544.763
O	583+95.613	-2.122	544.867	544.881
P	584+05.614	-2.113	544.972	545.008
Q	584+15.615	-2.101	545.076	545.131
R	584+25.615	-2.085	545.180	545.244
S	584+35.616	-2.065	545.285	545.344
T	584+45.617	-2.042	545.390	545.433
U	584+55.617	-2.016	545.494	545.516
℄ Pier 3	584+68.702	-1.976	545.631	545.631
V	584+78.702	-1.941	545.736	545.738
W	584+88.703	-1.903	545.841	545.853
X	584+98.703	-1.861	545.946	545.966
Y	585+08.704	-1.816	546.051	546.073
Z	585+18.704	-1.768	546.156	546.170
℄ S. Abut.	585+28.818	-1.715	546.262	546.262
Bk. S. Abut.	585+30.137	-1.708	546.276	546.276

02/15/2005

DESIGNED	GLH
CHECKED	TML
DRAWN	RJN
CHECKED	TML

E-S 4-30-97

DECK ELEVATIONS
U.S. ROUTE 51 OVER TRIBUTARY TO
DRURY CREEK AND CN/IC RAILROAD
FAP 322 -SECTION (11-IVB)-1
UNION COUNTY
STATION 583+74.84
STRUCTURE NO. 091-0073

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. P. 322	*	UNION	39	25
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT=	

SHEET NO. 8
22 SHEETS

* (11-IVB)-1 CONTRACT NO. 98488

℄ STRUCTURE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	582+18.769	0.213	543.054	543.054
℄ N. Abut.	582+20.087	0.206	543.067	543.067
A	582+30.087	0.153	543.172	543.227
B	582+40.087	0.104	543.277	543.376
C	582+50.087	0.059	543.382	543.506
D	582+60.087	0.017	543.487	543.615
E	582+70.087	-0.021	543.591	543.702
F	582+80.087	-0.056	543.695	543.773
G	582+90.087	-0.087	543.799	543.838
℄ Pier 1	583+03.170	-0.123	543.935	543.935
H	583+13.170	-0.147	544.039	544.042
I	583+23.170	-0.166	544.143	544.150
J	583+33.170	-0.183	544.247	544.267
K	583+43.170	-0.195	544.351	544.379
L	583+53.170	-0.205	544.455	544.482
M	583+63.170	-0.211	544.559	544.578
N	583+73.170	-0.213	544.663	544.669
℄ Pier 2	583+86.254	-0.211	544.799	544.799
O	583+96.254	-0.205	544.904	544.918
P	584+06.254	-0.196	545.008	545.044
Q	584+16.254	-0.183	545.113	545.167
R	584+26.254	-0.167	545.217	545.280
S	584+36.254	-0.147	545.322	545.381
T	584+46.254	-0.124	545.426	545.469
U	584+56.254	-0.097	545.531	545.552
℄ Pier 3	584+69.337	-0.057	545.668	545.668
V	584+79.337	-0.022	545.773	545.774
W	584+89.337	0.016	545.877	545.889
X	584+99.337	0.058	545.981	546.001
Y	585+09.337	0.103	546.084	546.106
Z	585+19.337	0.152	546.188	546.202
℄ S. Abut.	585+29.450	0.205	546.292	546.292
Bk. S. Abut.	585+30.768	0.212	546.306	546.306

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	582+20.045	3.956	543.008	543.008
℄ N. Abut.	582+21.363	3.949	543.022	543.022
A	582+31.362	3.897	543.127	543.182
B	582+41.360	3.849	543.232	543.331
C	582+51.359	3.804	543.337	543.461
D	582+61.357	3.762	543.442	543.570
E	582+71.356	3.724	543.547	543.657
F	582+81.355	3.690	543.652	543.729
G	582+91.353	3.659	543.756	543.795
℄ Pier 1	583+04.435	3.624	543.893	543.893
H	583+14.434	3.601	543.998	544.001
I	583+24.432	3.581	544.102	544.110
J	583+34.431	3.566	544.207	544.227
K	583+44.430	3.553	544.311	544.340
L	583+54.429	3.544	544.416	544.443
M	583+64.427	3.539	544.520	544.539
N	583+74.426	3.537	544.624	544.631
℄ Pier 2	583+87.508	3.540	544.760	544.760
O	583+97.507	3.546	544.865	544.879
P	584+07.505	3.556	544.969	545.005
Q	584+17.504	3.569	545.073	545.127
R	584+27.503	3.585	545.177	545.240
S	584+37.502	3.606	545.281	545.340
T	584+47.500	3.629	545.384	545.428
U	584+57.499	3.656	545.488	545.510
℄ Pier 3	584+70.581	3.697	545.624	545.624
V	584+80.579	3.733	545.728	545.729
W	584+90.578	3.771	545.831	545.843
X	585+00.576	3.813	545.935	545.955
Y	585+10.575	3.859	546.038	546.060
Z	585+20.574	3.908	546.142	546.156
℄ S. Abut.	585+30.686	3.962	546.246	546.246
Bk. S. Abut.	585+32.004	3.969	546.260	546.260

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	582+22.597	11.442	542.918	542.918
℄ N. Abut.	582+23.914	11.435	542.932	542.932
A	582+33.910	11.384	543.037	543.092
B	582+43.906	11.337	543.142	543.240
C	582+53.902	11.293	543.247	543.370
D	582+63.898	11.252	543.351	543.479
E	582+73.894	11.215	543.456	543.567
F	582+83.890	11.182	543.561	543.639
G	582+93.886	11.152	543.666	543.704
℄ Pier 1	583+06.964	11.118	543.802	543.802
H	583+16.960	11.096	543.907	543.911
I	583+26.957	11.077	544.012	544.019
J	583+36.953	11.062	544.116	544.136
K	583+46.949	11.051	544.220	544.249
L	583+56.945	11.043	544.325	544.352
M	583+66.941	11.038	544.429	544.448
N	583+76.937	11.037	544.533	544.540
℄ Pier 2	583+90.016	11.041	544.669	544.669
O	584+00.012	11.048	544.774	544.788
P	584+10.008	11.059	544.878	544.914
Q	584+20.004	11.073	544.982	545.036
R	584+30.000	11.090	545.085	545.149
S	584+39.996	11.111	545.189	545.248
T	584+49.992	11.136	545.293	545.336
U	584+59.988	11.164	545.397	545.418
℄ Pier 3	584+73.066	11.206	545.533	545.533
V	584+83.062	11.242	545.636	545.638
W	584+93.058	11.281	545.740	545.752
X	585+03.054	11.325	545.843	545.864
Y	585+13.050	11.371	545.947	545.969
Z	585+23.046	11.421	546.050	546.064
℄ S. Abut.	585+33.156	11.475	546.155	546.155
Bk. S. Abut.	585+34.473	11.483	546.168	546.168

BEAM 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	582+25.147	18.929	542.791	542.791
℄ N. Abut.	582+26.464	18.922	542.805	542.805
A	582+36.457	18.872	542.911	542.965
B	582+46.451	18.825	543.016	543.114
C	582+56.444	18.782	543.121	543.245
D	582+66.437	18.743	543.226	543.353
E	582+76.431	18.706	543.331	543.441
F	582+86.424	18.674	543.436	543.513
G	582+96.418	18.645	543.540	543.579
℄ Pier 1	583+09.492	18.612	543.677	543.677
H	583+19.486	18.591	543.782	543.785
I	583+29.479	18.573	543.886	543.894
J	583+39.473	18.559	543.991	544.011
K	583+49.466	18.548	544.095	544.124
L	583+59.460	18.541	544.200	544.227
M	583+69.453	18.538	544.304	544.323
N	583+79.447	18.537	544.408	544.415
℄ Pier 2	583+92.522	18.542	544.544	544.544
O	584+02.515	18.550	544.648	544.662
P	584+12.509	18.562	544.752	544.788
Q	584+22.502	18.577	544.856	544.911
R	584+32.496	18.595	544.960	545.023
S	584+42.489	18.617	545.064	545.123
T	584+52.483	18.642	545.167	545.210
U	584+62.476	18.671	545.271	545.292
℄ Pier 3	584+75.551	18.714	545.406	545.406
V	584+85.544	18.751	545.510	545.511
W	584+95.538	18.792	545.613	545.625
X	585+05.531	18.836	545.716	545.737
Y	585+15.524	18.883	545.819	545.841
Z	585+25.518	18.934	545.922	545.937
℄ S. Abut.	585+35.624	18.989	546.027	546.027
Bk. S. Abut.	585+36.942	18.997	546.040	546.040

02/15/2005

DESIGNED	GLH
CHECKED	TML
DRAWN	RJN
CHECKED	TML

E-S 4-30-97

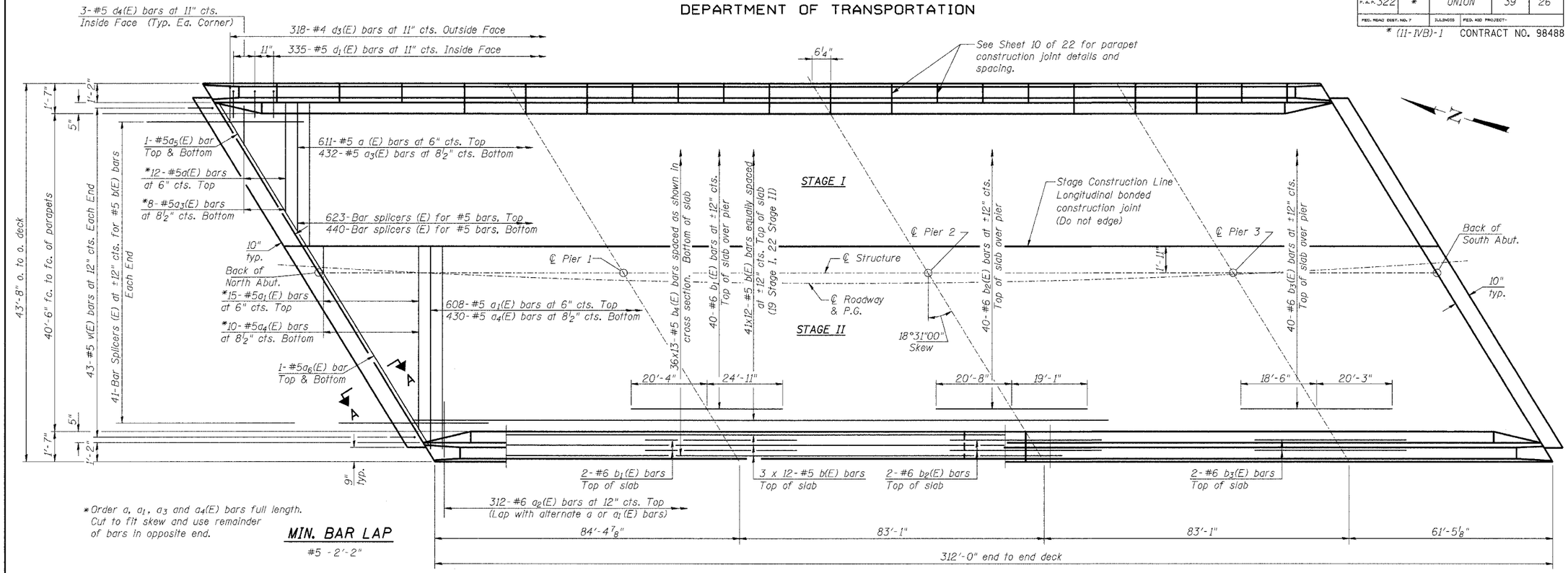
DECK ELEVATIONS
U.S. ROUTE 51 OVER TRIBUTARY TO
DRURY CREEK AND CN/IC RAILROAD
FAP 322 - SECTION (11-IVB)-1
UNION COUNTY
STATION 583+74.84
STRUCTURE NO. 091-0073

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 322	*	UNION	39	26
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 9
22 SHEETS

* (11-1VB)-1 CONTRACT NO. 98488

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

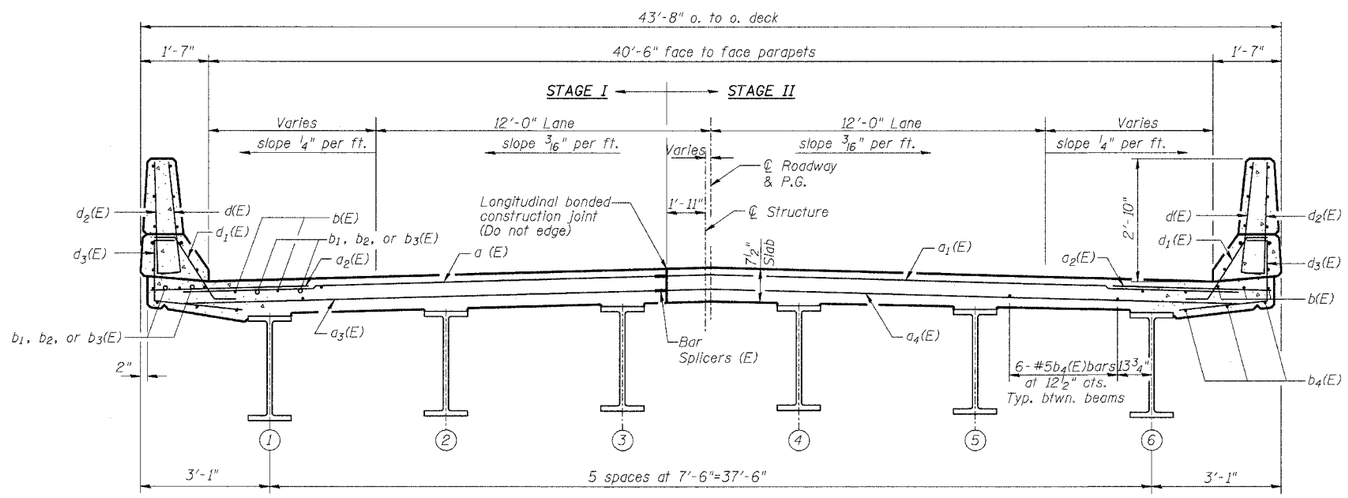


*Order a, a_1, a_3 and a_4(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.

MIN. BAR LAP

#5 - 2'-2"

PLAN



NEAR PIER NEAR MIDSPAN

CROSS SECTION

(Looking South)

Notes:
See Sheet 10 of 22 for superstructure details and Bill of Material.
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.
See Sheet 10 of 22 for parapet reinforcement.

DESIGNED	GLH
CHECKED	TML
DRAWN	RJN
CHECKED	TML

02/15/2005

SI-2-R 4-30-99

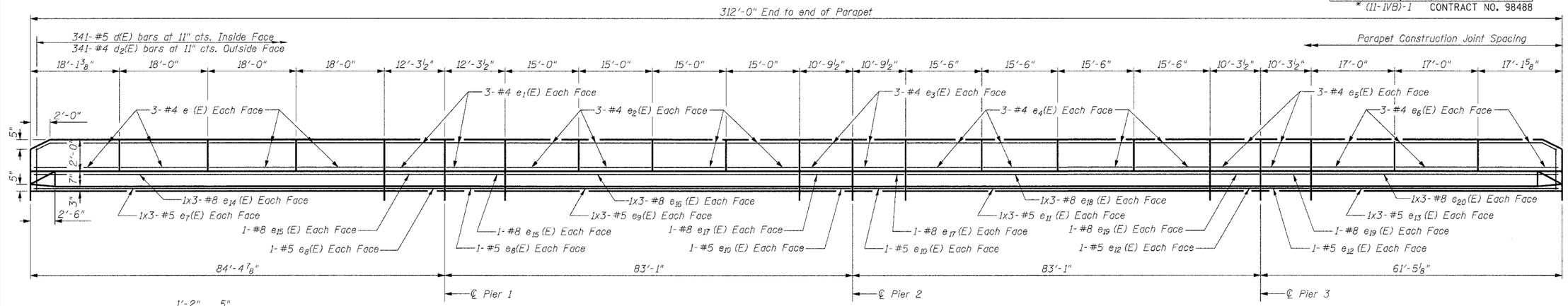
SUPERSTRUCTURE
U.S. ROUTE 51 OVER TRIBUTARY TO DRURY CREEK AND CN/IC RAILROAD
FAP 322 - SECTION (11-1VB)-1
UNION COUNTY
STATION 583+74.84
STRUCTURE NO. 091-0073

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

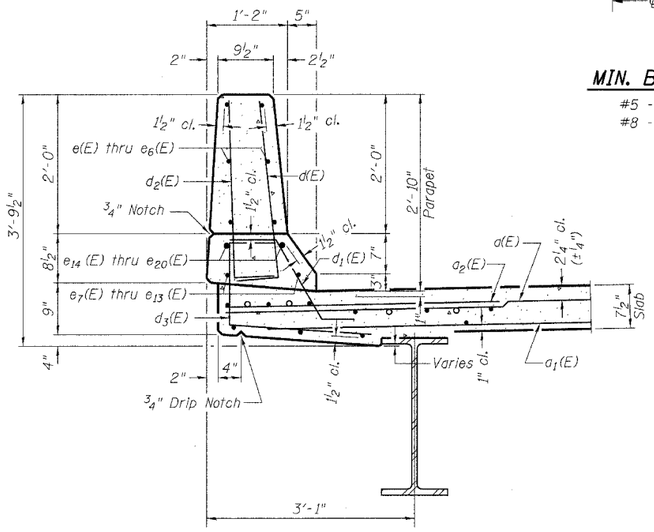
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 322	*	UNION	39	27
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 10
22 SHEETS

* (11-IVB)-1 CONTRACT NO. 98488

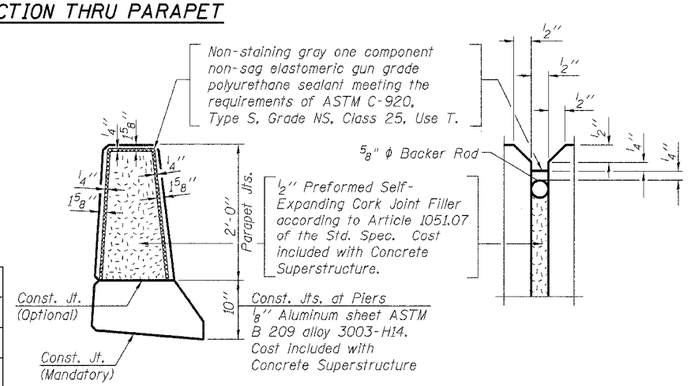


PARAPET ELEVATION
(Looking East at Inside Face)



SECTION THRU PARAPET

MIN. BAR LAP
#5 - 2'-2"
#8 - 4'-6"



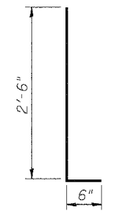
PARAPET JOINT DETAILS

SUPERSTRUCTURE BILL OF MATERIAL

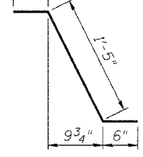
Bar	No.	Size	Length	Shape
a (E)	623	#5	19'-7"	
a1(E)	623	#5	23'-5"	
a2(E)	624	#6	4'-0"	
a3(E)	440	#5	19'-0"	
a4(E)	440	#5	22'-0"	
a5(E)	4	#5	19'-0"	
a6(E)	4	#5	23'-0"	
b(E)	564	#5	28'-0"	
b1(E)	44	#6	45'-3"	
b2(E)	44	#6	39'-9"	
b3(E)	44	#6	38'-9"	
b4(E)	468	#5	26'-11"	
d(E)	682	#5	3'-0"	⌟
d1(E)	670	#5	2'-5"	⌜
d2(E)	682	#4	3'-0"	⌟
d3(E)	624	#4	3'-9"	⌜
d4(E)	12	#5	2'-2"	⌜
e(E)	48	#4	25'-2"	
e1(E)	24	#4	11'-8"	
e2(E)	48	#4	21'-3"	
e3(E)	24	#4	10'-2"	
e4(E)	48	#4	21'-11"	
e5(E)	24	#4	9'-8"	
e6(E)	36	#4	18'-2"	
e7(E)	12	#5	25'-6"	
e8(E)	8	#5	11'-8"	
e9(E)	12	#5	21'-8"	
e10(E)	8	#5	10'-2"	
e11(E)	12	#5	22'-4"	

Bar	No.	Size	Length	Shape
e12(E)	8	#5	9'-8"	
e13(E)	12	#5	18'-6"	
e14(E)	12	#8	27'-0"	
e15(E)	8	#8	11'-8"	
e16(E)	12	#8	23'-1"	
e17(E)	8	#8	10'-2"	
e18(E)	12	#8	23'-9"	
e19(E)	8	#8	9'-8"	
e20(E)	12	#8	20'-0"	
m (E)	4	#6	19'-0"	
m1(E)	6	#6	19'-9"	
m2(E)	8	#6	11'-3"	
m3(E)	8	#6	7'-6"	
m4(E)	4	#6	3'-0"	
m5(E)	2	#6	1'-6"	
m6(E)	4	#6	24'-0"	
m7(E)	6	#6	24'-9"	
m8(E)	8	#6	14'-0"	
m9(E)	2	#6	5'-10"	
s (E)	92	#4	6'-0"	⊐
s1(E)	84	#4	9'-8"	⊓
v (E)	86	#5	3'-6"	⌐
Reinforcement Bars, Epoxy Coated			Pound	105070
Concrete Superstructure			Cu. Yds.	409.2
Bar Splicers			Each	1161

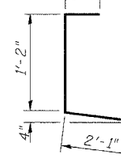
Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 1x3 - #5 etc. indicates 1 line of bars with 3 lengths per line.



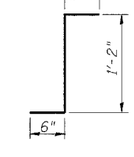
BARS d(E) & d2(E)



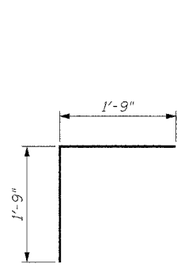
BAR d1(E)



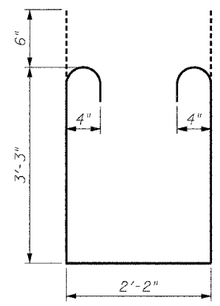
BAR d3(E)



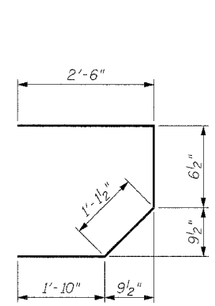
BAR d4(E)



BAR v (E)



BAR s1 (E)



BAR s (E)

DESIGNED	GLH
CHECKED	TML
DRAWN	RJN
CHECKED	TML

02/15/2005

S-1-D 9-01-03

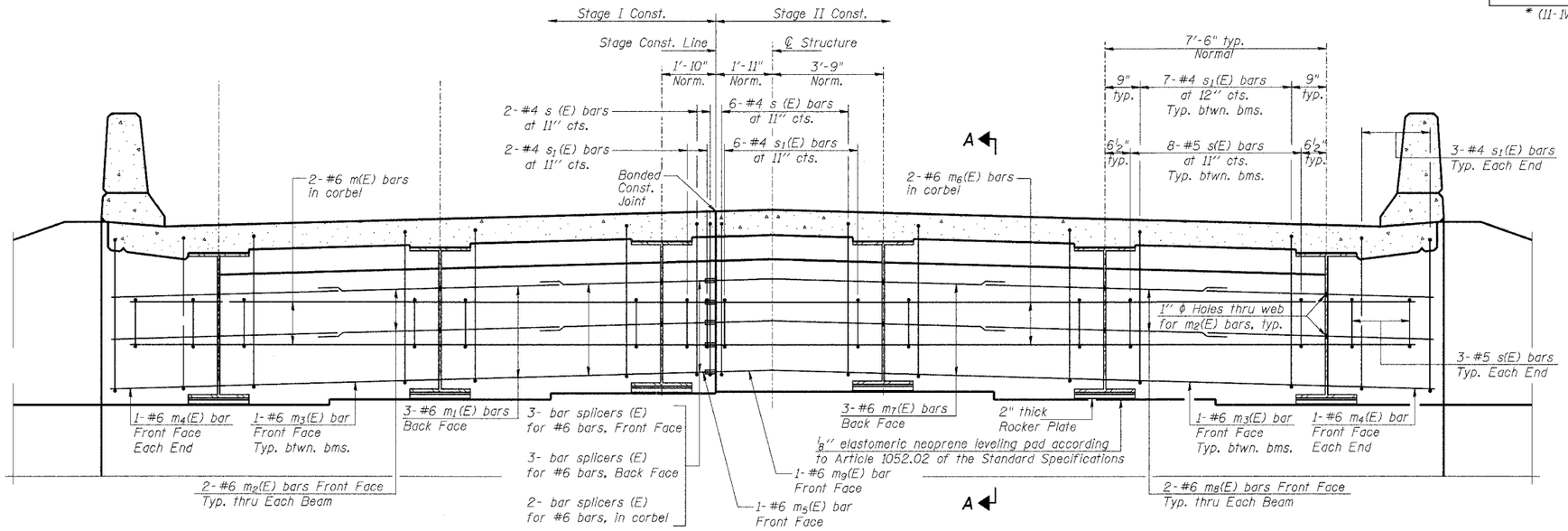
SUPERSTRUCTURE DETAILS
U.S. ROUTE 51 OVER TRIBUTARY TO
DRURY CREEK AND CN/IC RAILROAD
FAP 322 - SECTION (11-IVB)-1
UNION COUNTY
STATION 583+74.84
STRUCTURE NO. 091-0073

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 322	*	UNION	39	28
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 11
22 SHEETS

* (11-1VB)-1 CONTRACT NO. 98488

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

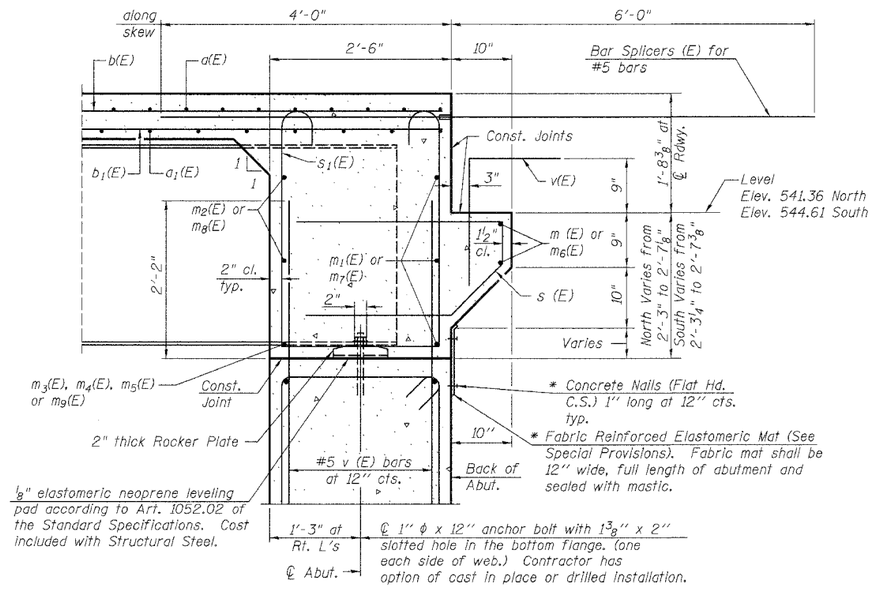


DIAPHRAGM ELEVATION AT ABUTMENT

Notes:
Reinforcement bars in diaphragm are billed with superstructure on sheet 10 of 22.
Concrete in diaphragm is included with Concrete Superstructure on sheet 10 of 22.
For details of bars s(E) & s_1(E) see sheet 10 of 22.
The s(E) and s_1(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.
For anchor bolt details see sheet 14 of 22.

MIN. BAR LAP

#6 bar = 2'-9"



SECTION A-A

Dimensions at right angles to abutment, except as shown.
* Cost included with Concrete Superstructure.

DESIGNED	GLH
CHECKED	TML
DRAWN	RJN
CHECKED	TML

02/15/2005

SI-DSI 9-01-03

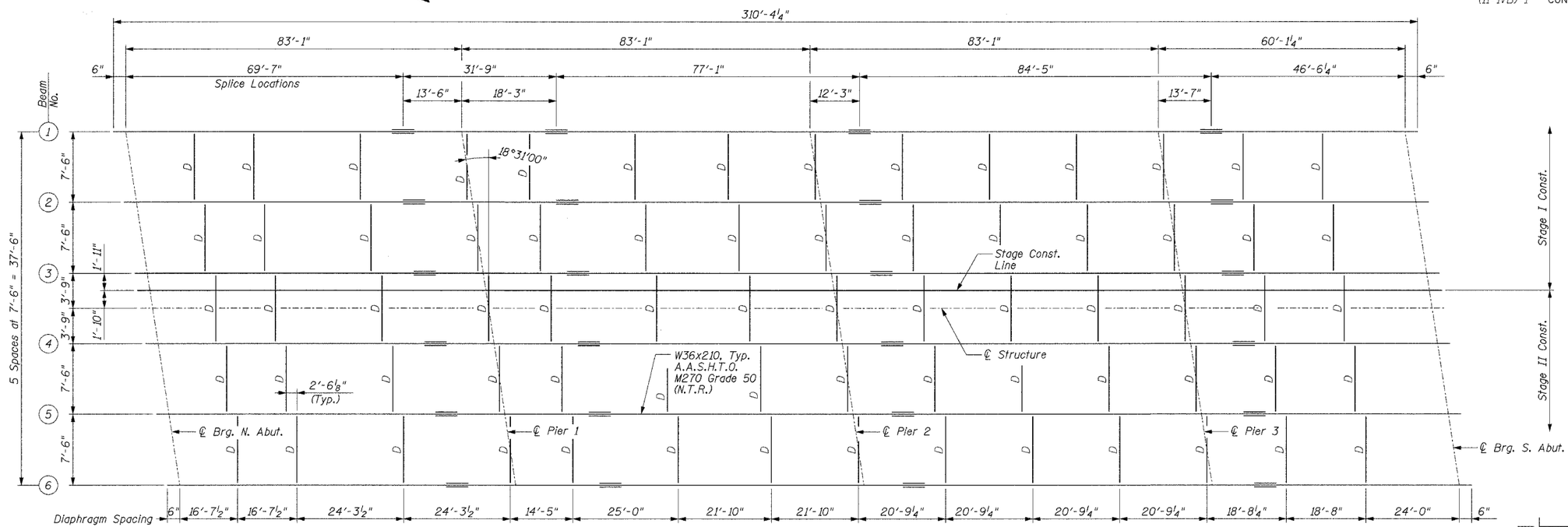
ABUTMENT DETAILS
U.S. ROUTE 51 OVER TRIBUTARY TO DRURY CREEK AND CN/IC RAILROAD
FAP 322 - SECTION (11-1VB)-1
UNION COUNTY
STATION 583+74.84
STRUCTURE NO. 091-0073

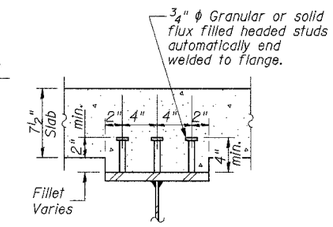
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 322	*	UNION	39	29
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 12
22 SHEETS

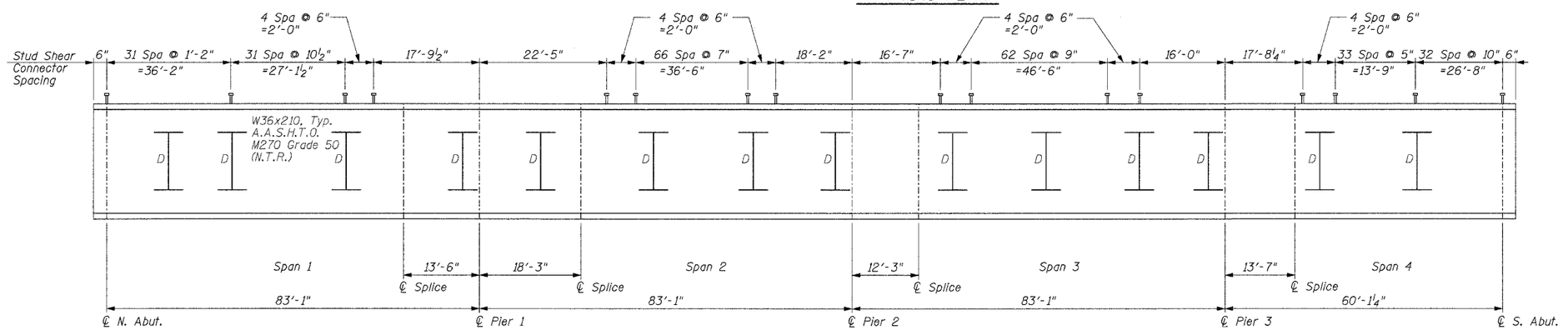
* (11-IVB)-1 CONTRACT NO. 98488





SECTION A-A
(No. Req'd.=5094)

FRAMING PLAN



BEAM ELEVATION
Not to scale

NOTES

All beams shall be A.A.S.H.T.O. M270, Grade 50 steel (N.T.R.).

"N.T.R." Denotes notch toughness requirements. Structural steel designated with (N.T.R.) shall conform to the supplemental requirements for notch toughness (Zone 2). These components are the W36x210 beams and all splice plate material of the steel beams.

DESIGNED	GLH
CHECKED	TML
DRAWN	RJN
CHECKED	TML

03/22/2005

FRAMING PLAN
U.S. ROUTE 51 OVER TRIBUTARY TO DRURY CREEK AND CN/IC RAILROAD
FAP 322 - SECTION (11-IVB)-1
UNION COUNTY
STATION 583+74.84
STRUCTURE NO. 091-0073

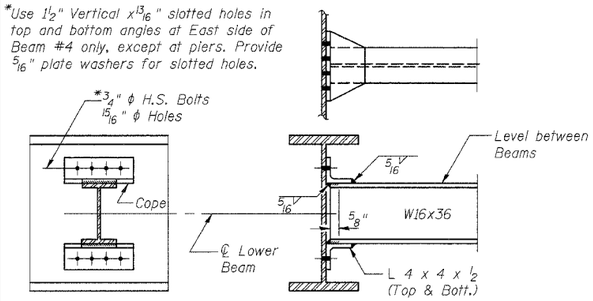
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 322	*	UNION	39	30
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 13
22 SHEETS

* (11-IVB)-1 CONTRACT NO. 98488

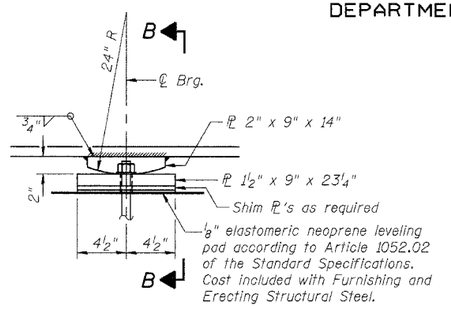
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

*Use $1\frac{1}{2}$" Vertical x $^{13}/_{16}$" slotted holes in top and bottom angles at East side of Beam #4 only, except at piers. Provide $^{5}/_{16}$" plate washers for slotted holes.

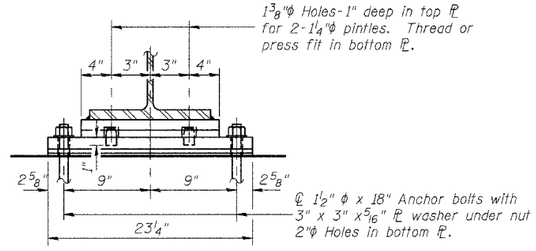


DIAPHRAGM D
85 Required

Note:
The bolts for the slotted holes in angles of Beam #4 shall only be finger tightened prior to the deck slab pouring for Stage II Construction and then be fully tightened after completion of the pouring. Two hardened washers shall be required over all oversize holes.



ELEVATION AT PIER
Bearings for Beam 4 will require $^{3}/_{8}$" shims in addition to construction tolerance shims.



SECTION B-B

INTERIOR BEAM MOMENT TABLE

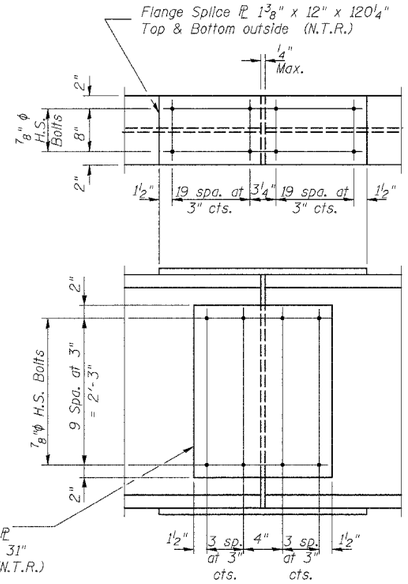
		0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.5 Sp. 3	Pier 3	0.4 Sp. 4
Is	(in^4)	13200	13200	13200	13200	13200	13200	13200
Ic(n)	(in^4)	32093		32093		32093		32093
Ic(3n)	(in^4)	23103		23103		23103		23103
Ss	(in^3)	719	719	719	719	719	719	719
Sc(n)	(in^3)	1028		1028		1028		1028
Sc(3n)	(in^3)	919		919		919		919
D	(K/ft.)	0.954	1.445	0.954	1.445	0.954	1.445	0.954
MD	('K)	513	1049	217	793	308	767	215
sD	(K/ft.)	0.491		0.491		0.491		0.491
MsD	('K)	264		112		159		110
ML	('K)	613	508	495	461	479	412	419
M (Imp)	('K)	147	122	119	111	115	103	113
5/3(ML+M(Imp))	('K)	1267	1050	1023	953	990	858	887
Ma	('K)	2657	2729	1758	2270	1894	2112	1576
* Mu	('K)	5005		5005		5005		5005
fsD non-comp	(k.s.i.)	8.6	17.5	3.6	13.2	5.1	12.8	3.6
fsD (comp)	(k.s.i.)	3.4		1.5		2.1		1.4
fs5/3(L+M(Imp))	(k.s.i.)	14.8	17.5	11.9	15.9	11.6	14.3	10.4
fs (Overload)	(k.s.i.)	26.8	35.0	17.0	29.1	18.8	27.1	15.4
** fs (Total)	(k.s.i.)		45.5		37.8		35.2	
VR	(K)	54.6		45.2		50.6		54.6

* Compact, Braced section
** Non-compact section

INTERIOR BEAM REACTION TABLE

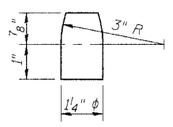
		N. Abut.	Pier 1	Pier 2	Pier 3	S. Abut.
RD	(K)	47.4	135.8	117.3	115.9	30.7
RL	(K)	39.6	57.4	54.8	52.2	37.5
Imp.	(K)	9.5	13.8	13.2	13.0	10.1
R (Total)	(K)	96.5	207.0	185.3	181.1	78.3

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total & Overload).
Ic and Sc are the moment of inertia and section modulus of the composite section used in computing fs (Total & Overload).
VR is the maximum live Load + Impact shear range in span.
Z is the plastic section modulus used to determine the Fully Plastic Moments in the non-composite areas.
Ma (Applied Moment)=1.3[MD + MsD + 5/3(ML + I)].
Mu is the Full Plastic Moment Capacity for Compact, Braced section.
fs (Overload) is the sum of the stresses due to MD + MsD + 5/3(ML + I).
fs (Total) is the sum of the stresses due to 1.3[MD + MsD + 5/3(ML + I)].

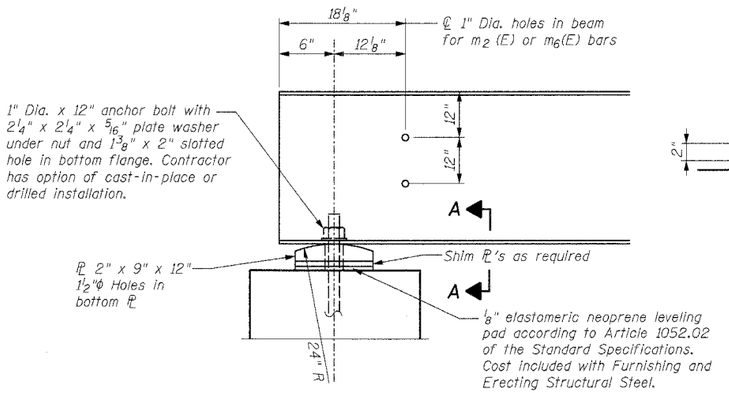


SPLICE

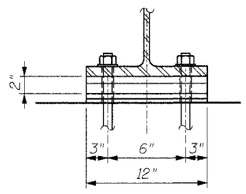
"N.T.R." Denotes notch toughness requirements. Structural steel designated with (N.T.R.) shall conform to the supplemental requirements for notch toughness (Zone 2). These components are the W36x210 beams and all splice plate material of the steel beams.



PINTLE



END OF BEAM ELEVATION
Bearings for Beam 4 will require $^{1}/_{4}$" shims in addition to construction tolerance shims.



SECTION A-A

TOP OF BEAM ELEVATIONS BEFORE DEFLECTIONS
(For Fabrication Only)

LOCATION	BEAM 1	BEAM 2	BEAM 3	BEAM 4	BEAM 5	BEAM 6
℄ Brg. N. Abut.	542.004	542.183	542.327	542.347	542.257	542.128
℄ Splice	542.660	542.841	542.984	543.013	542.923	542.795
℄ Pier 1	542.785	542.966	543.110	543.140	543.050	542.921
℄ Splice	542.954	543.135	543.279	543.310	543.220	543.092
℄ Pier 2	543.641	543.822	543.965	543.998	543.907	543.779
℄ Splice	543.770	543.952	544.095	544.128	544.037	543.908
℄ Pier 3	544.501	544.682	544.825	544.852	544.761	544.632
℄ Splice	544.641	544.822	544.965	544.991	544.899	544.771
℄ Brg. S. Abut.	545.229	545.409	545.552	545.571	545.480	545.350

DESIGNED	GLH
CHECKED	TML
DRAWN	RJN
CHECKED	TML

02/15/2005

BEARING DETAILS
U.S. ROUTE 51 OVER TRIBUTARY TO DRURY CREEK AND CN/IC RAILROAD
FAP 322 - SECTION (11-IVB)-1
UNION COUNTY
STATION 583+74.84
STRUCTURE NO. 091-0073

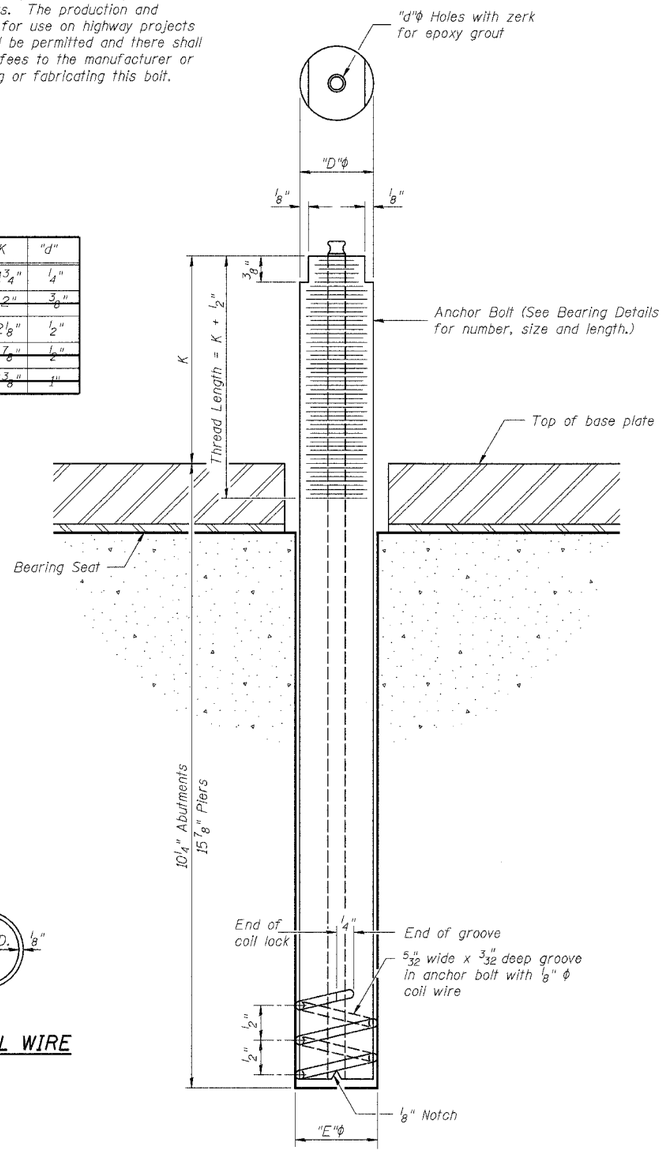
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 322	*	UNION	39	31
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

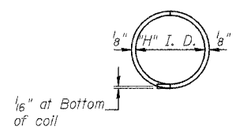
SHEET NO. 14
22 SHEETS

* (11-IVB)-1 CONTRACT NO. 98488

D	E	H	K	"d"
1"	1 1/8"	13/16"	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 13/16"~~	~~2 7/8"~~	~~1/2"~~
~~2 1/2"~~	~~2 5/8"~~	~~2 5/16"~~	~~3 3/8"~~	~~1"~~



ILLINOIS COIL-LOCK ANCHOR BOLT



PLAN-COIL WIRE

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
N. Abut.	A307
Pier No. 1	A307
Pier No. 2	A307
Pier No. 3	A307
S. 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 and 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.

DESIGNED	GLH
CHECKED	TML
DRAWN	RJN
CHECKED	TML

02/15/2005

ABB-1 4-30-99

ANCHOR BOLT DETAILS
U.S. ROUTE 51 OVER TRIBUTARY TO DRURY CREEK AND CN/IC RAILROAD
FAP 322 - SECTION (11-IVB)-1
UNION COUNTY
STATION 583+74.84
STRUCTURE NO. 091-0073

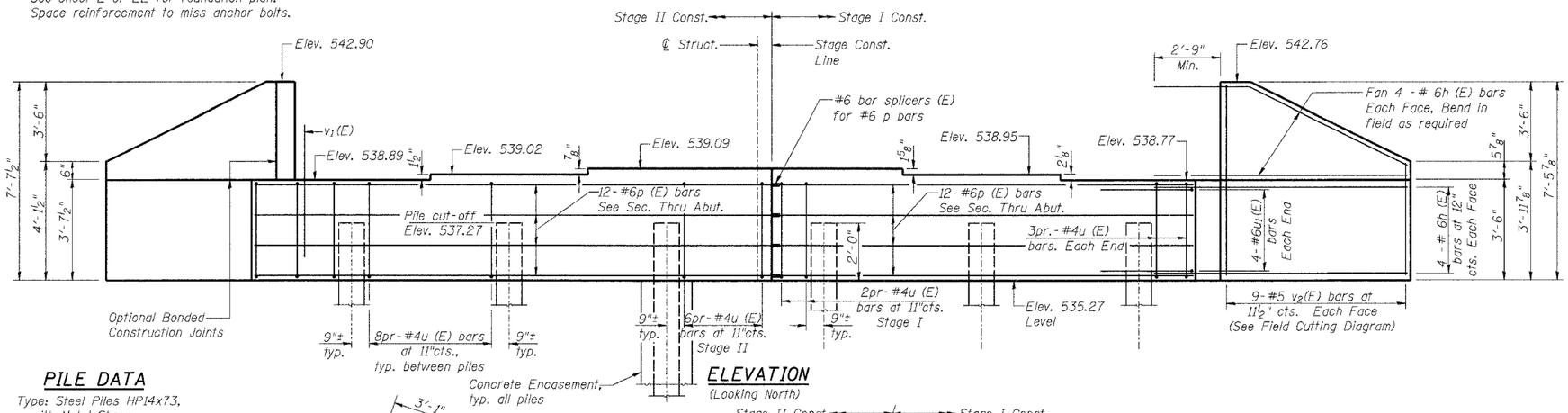
Notes: Pour steps monolithically with cap.
Reinforcement bars designated (E) shall be epoxy coated.
See sheet 2 of 22 for foundation plan.
Space reinforcement to miss anchor bolts.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

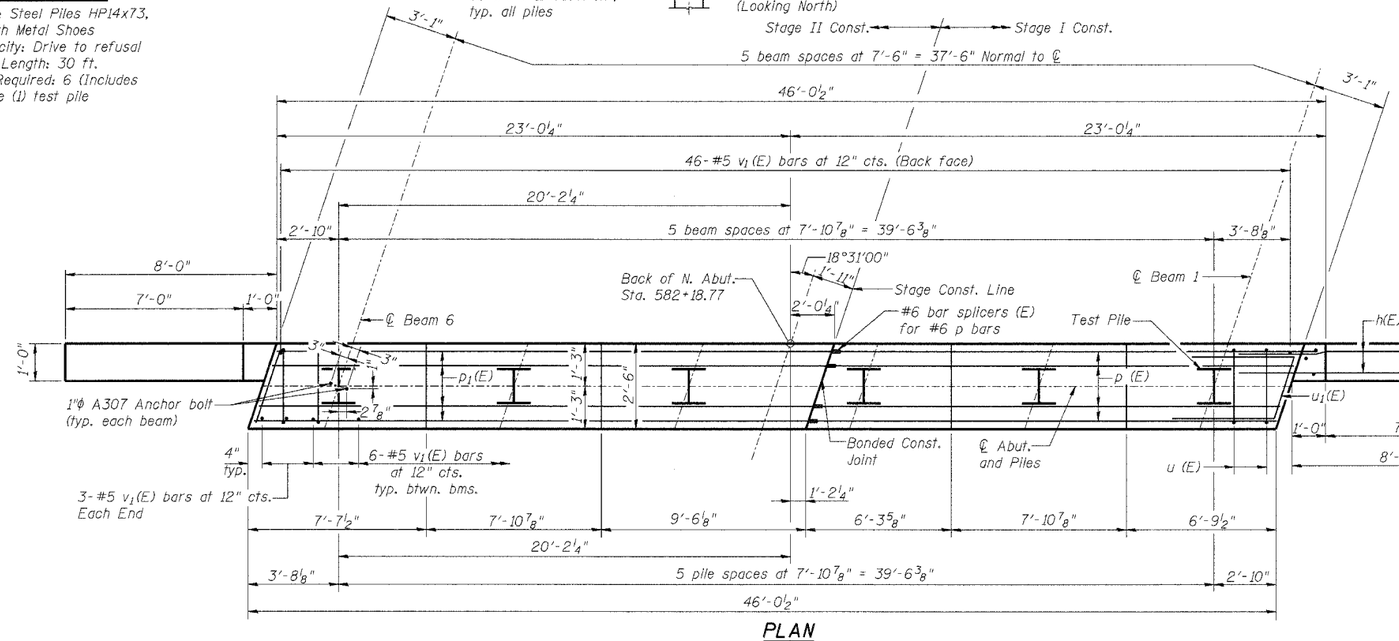
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 322	*	UNION	39	32
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 15
22 SHEETS

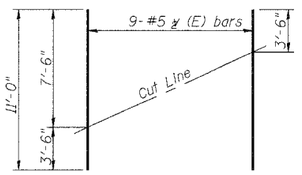
* (11-IVB)-1 CONTRACT NO. 98488



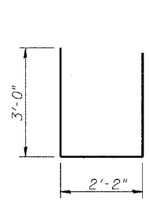
ELEVATION
(Looking North)



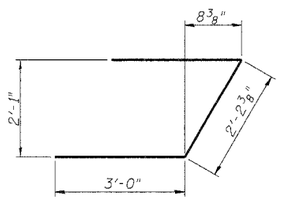
PLAN



FIELD CUTTING DIAGRAM
Order $v_2(E)$ full length. Cut as shown and use remainder of bars in opposite face.

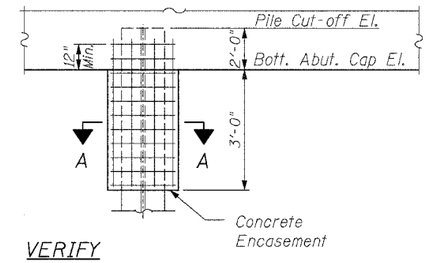


BARS u (E)

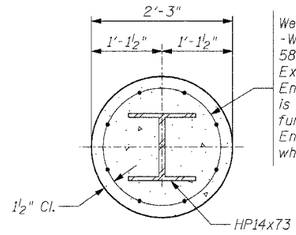


BAR $u_1(E)$

PILE DATA
Type: Steel Piles HP14x73, with Metal Shoes
Capacity: Drive to refusal
Est. Length: 30 ft.
No. Required: 6 (Includes one (1) test pile



VERIFY



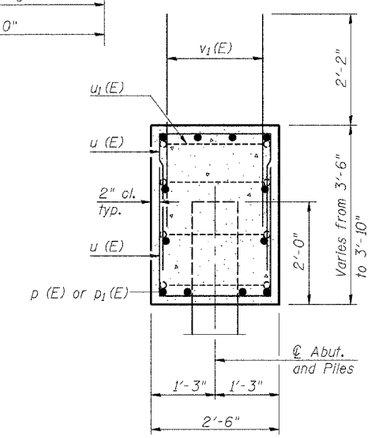
Welded wire fabric 6 x 6 -W4.0 x W4.0 weighing 58#/100 sq. ft. The cost of Excavation, Concrete Encasement & Reinforcement is included with the cost of furnishing piles. Forms for Encasement may be omitted when soil conditions permit.

SECTION A-A

PILE ENCASEMENT DETAIL

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	32	#6	11'-6"	
p(E)	12	#6	20'-9"	
p_1(E)	12	#6	24'-9"	
u(E)	92	#4	8'-2"	
u_1(E)	8	#6	8'-3"	
v_1(E)	32	#5	4'-4"	
v_2(E)	18	#5	11'-0"	
Concrete Structures		Cu. Yd.	19.8	
Reinforcement Bars, Epoxy Coated		Pound	2330	
Structure Excavation		Cu. Yd.	101	
Bar Splicers		Each	12	
Furnishing Steel Piles		Foot	150	
Driving Steel Piles		Foot	150	
Test Pile		Each	1	
Metal Shoes		Each	5	



SEC. THRU ABUT.

NORTH ABUTMENT
U.S. ROUTE 51 OVER TRIBUTARY TO DRURY CREEK AND CN/IC RAILROAD
FAP 322 - SECTION (11-IVB)-1
UNION COUNTY
STATION 583+74.84
STRUCTURE NO. 091-0073

DESIGNED	GLH
CHECKED	TML
DRAWN	RJN
CHECKED	TML

02/15/2005

AI-R 9-01-03

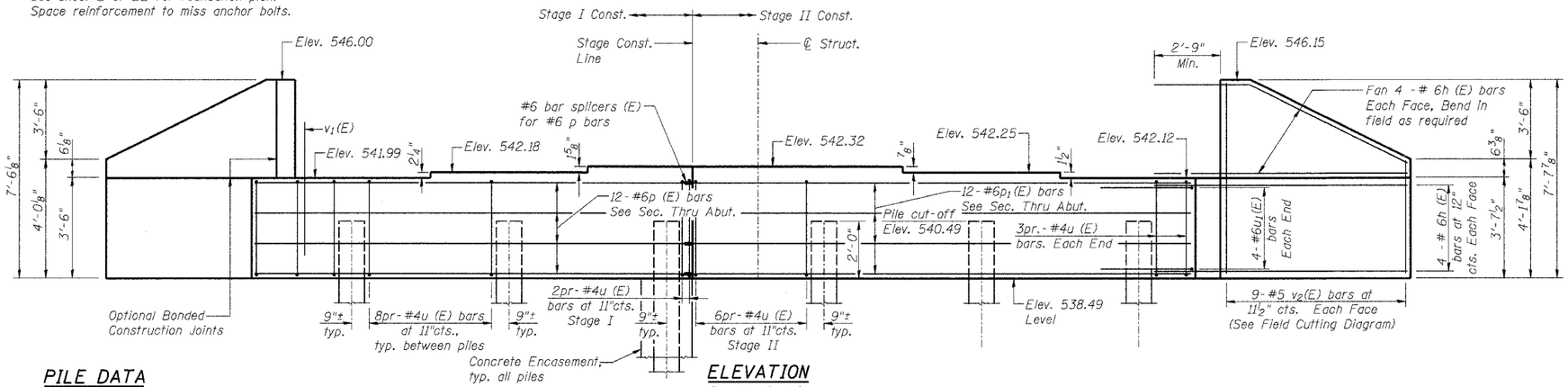
Notes: Pour steps monolithically with cap.
Reinforcement bars designated (E) shall be epoxy coated.
See sheet 2 of 22 for foundation plan.
Space reinforcement to miss anchor bolts.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

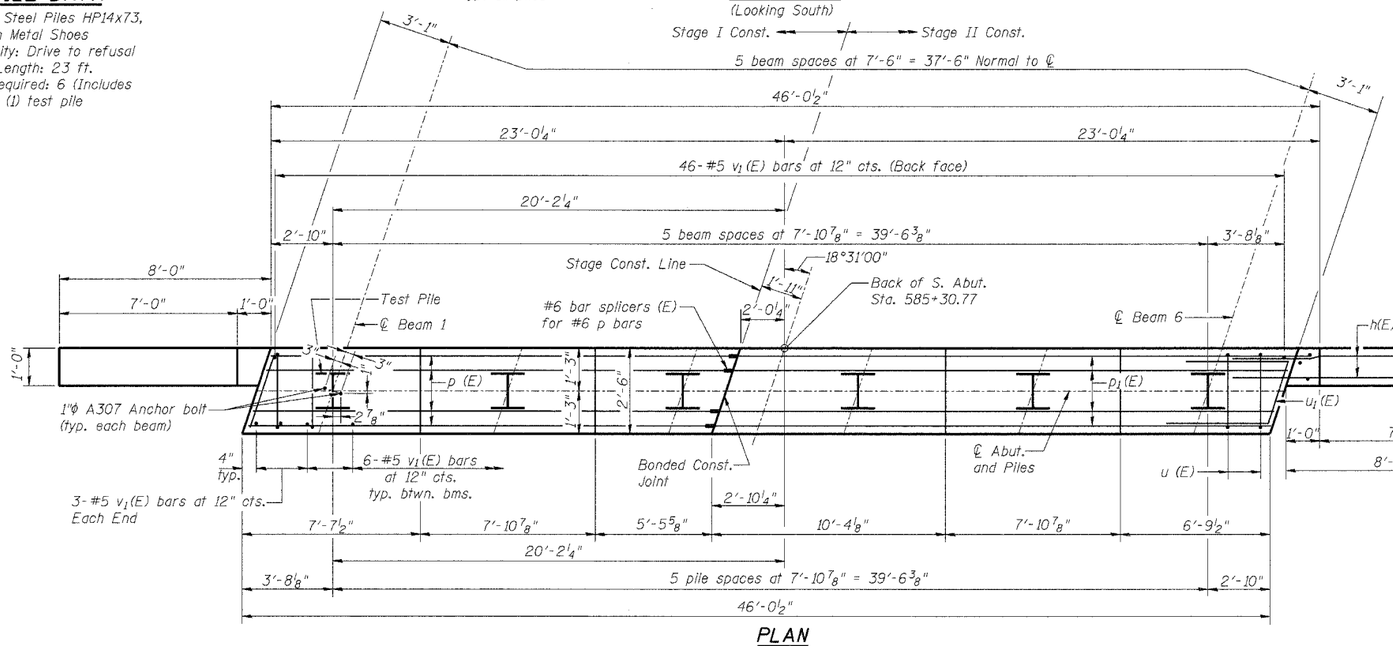
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 322	*	UNION	39	33
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 16
22 SHEETS

* (11-IVB)-1 CONTRACT NO. 98488



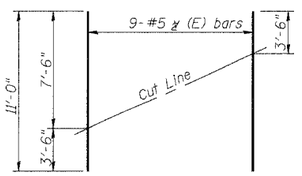
ELEVATION
(Looking South)



PLAN

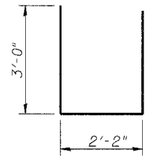
PILE DATA

Type: Steel Piles HP14x73, with Metal Shoes
Capacity: Drive to refusal
Est. Length: 23 ft.
No. Required: 6 (Includes one (1) test pile

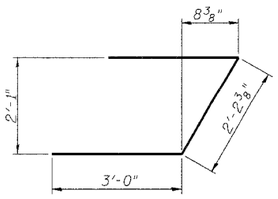


FIELD CUTTING DIAGRAM

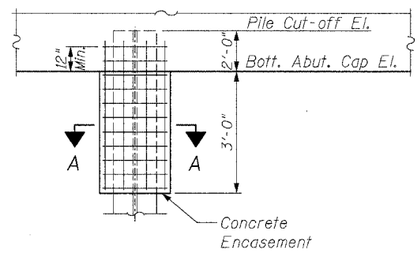
Order v2(E) full length. Cut as shown and use remainder of bars in opposite face.

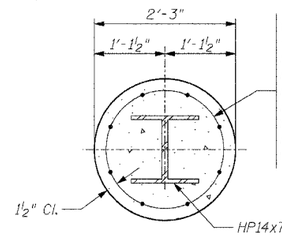


BARS u (E)



BAR u1(E)

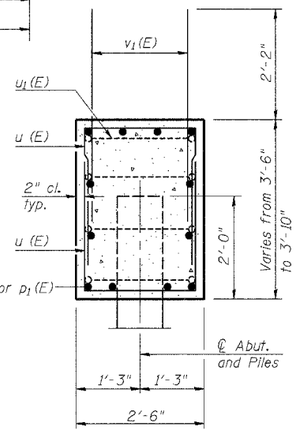




Welded wire fabric 6 x 6 -W4.0 x W4.0 weighing 58#/100 sq. ft. The cost of Excavation, Concrete Encasement & Reinforcement is included with the cost of furnishing piles. Forms for Encasement may be omitted when soil conditions permit.

SECTION A-A

PILE ENCASEMENT DETAIL



SEC. THRU ABUT.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	32	#6	11'-6"	
p(E)	12	#6	20'-9"	
p1(E)	12	#6	24'-9"	
u(E)	92	#4	8'-2"	
u1(E)	8	#6	8'-3"	
v1(E)	32	#5	4'-4"	
v2(E)	18	#5	11'-0"	
Concrete Structures		Cu. Yd.	19.8	
Reinforcement Bars, Epoxy Coated		Pound	2330	
Structure Excavation		Cu. Yd.	101	
Bar Splicers		Each	12	
Furnishing Steel Piles		Foot	115	
Driving Steel Piles		Foot	115	
Test Pile		Each	1	
Metal Shoes		Each	5	

SOUTH ABUTMENT
U.S. ROUTE 51 OVER TRIBUTARY TO DRURY CREEK AND CN/IC RAILROAD
FAP 322 - SECTION (11-1VB)-1
UNION COUNTY
STATION 583+74.84
STRUCTURE NO. 091-0073

DESIGNED	GLH
CHECKED	TML
DRAWN	RJN
CHECKED	TML

02/15/2005

AI-R 9-01-03

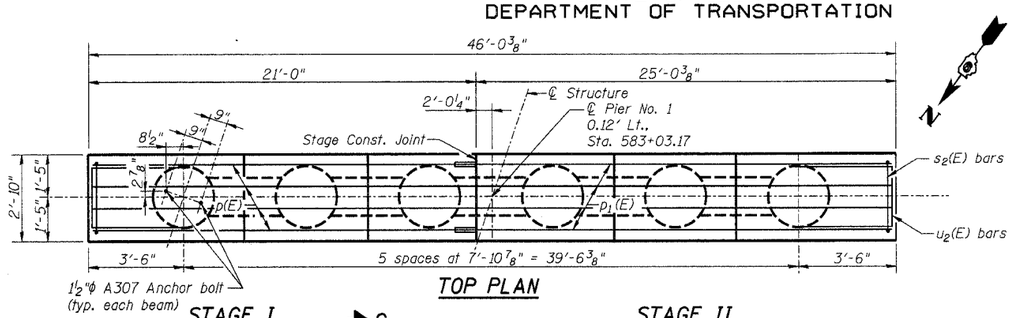
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 322	*	UNION	39	34
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 17
22 SHEETS

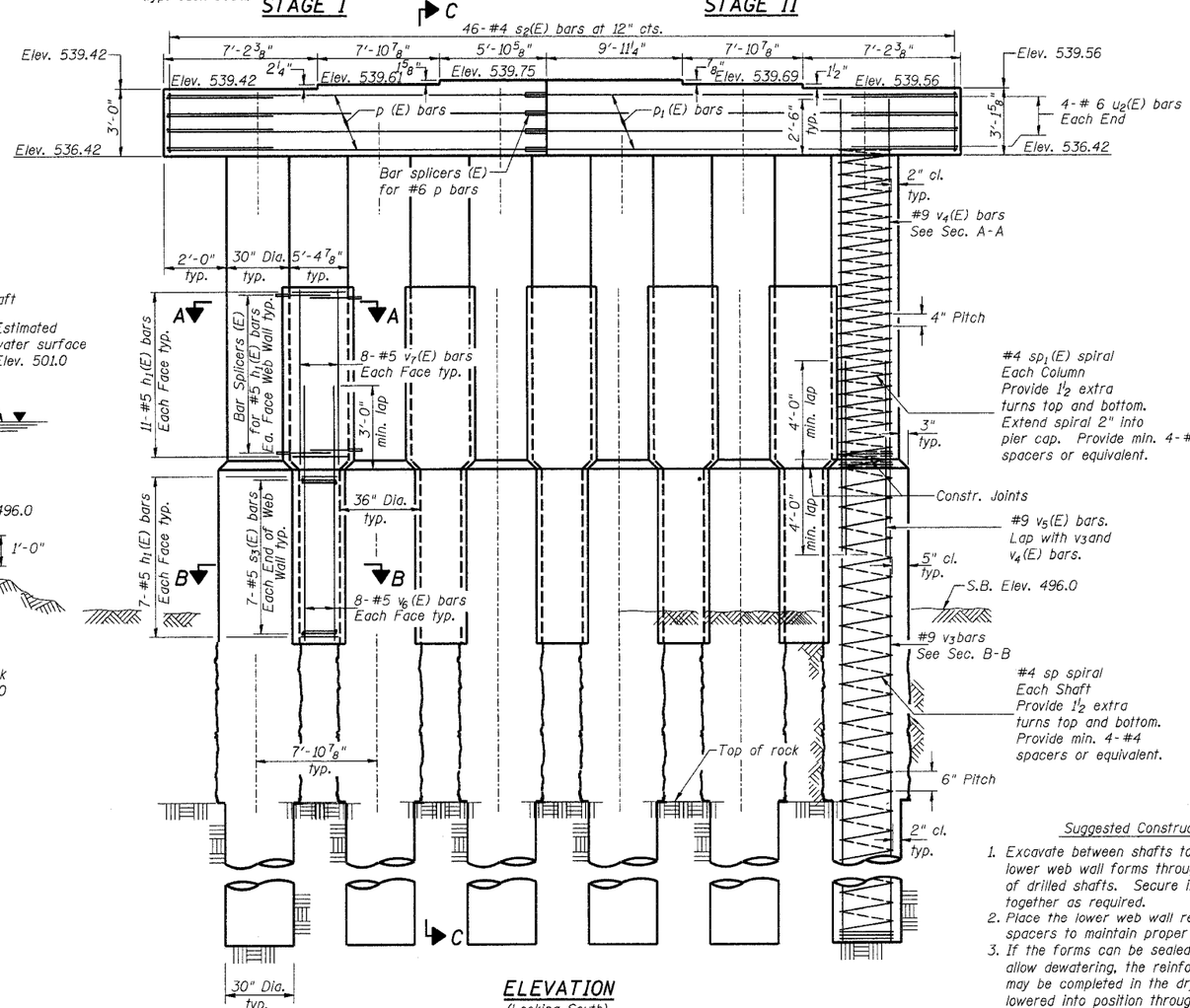
* (11-IVB)-1 CONTRACT NO. 98488

* If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the Contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

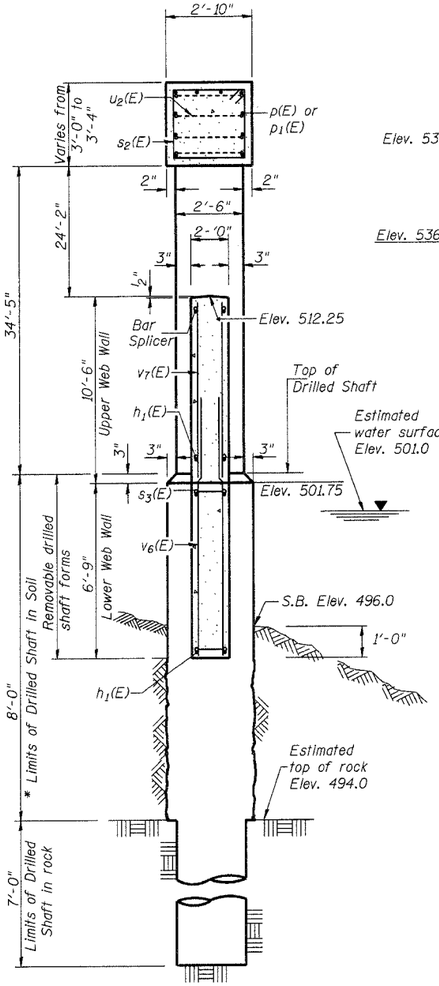


TOP PLAN

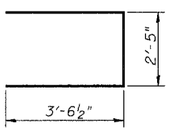
STAGE I STAGE II



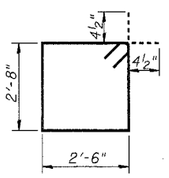
ELEVATION
(Looking South)



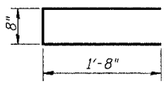
SECTION C-C



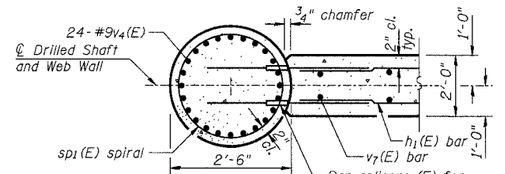
BAR u2(E)



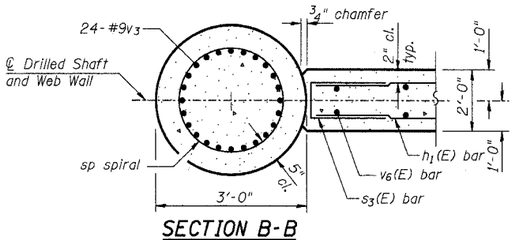
BAR s2(E)



BAR s3(E)



SECTION A-A



SECTION B-B

BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h1(E)	180	#5	4'-9"	——
	p(E)	10	#6	20'-9"	——
	p1(E)	10	#6	24'-9"	——
	s2(E)	46	#4	11'-1"	⌐¬
	s3(E)	70	#5	4'-0"	⊐
**	sp	6	#4	15'-2"	∿∿
**	sp1(E)	6	#4	34'-7"	∿∿
	u2(E)	8	#6	9'-6"	⊐
	v3	144	#9	15'-0"	——
	v4(E)	144	#9	37'-6"	——
	v5(E)	144	#9	8'-0"	——
	v6(E)	80	#6	9'-9"	——
	v7(E)	80	#6	10'-3"	——

Drilled Shaft in Soil 36" Dia.	Foot	48
Drilled Shaft in Rock 30" Dia.	Foot	42
Concrete Structures	Cu. Yd.	86.4
Reinforcement Bars, Epoxy Coated	Pound	29750
Reinforcement Bars	Pound	8300
Bar Splicers	Each	120
Underwater Structure Excavation Protection - Location 1	Each	1

Reinforcement Bars designated (E) shall be epoxy coated.
Cast steps monolithically with cap.
Space cap reinforcement to miss anchor bolts.
Splices in spiral reinforcement shall be lap splices of 48 bar or wire diameters but not less than 12 inches, or shall be welded.
**Length is height of spiral.

Suggested Construction Sequence for Web Wall:

1. Excavate between shafts to elevation of web wall base and set lower web wall forms through water to bear on the circular edge of drilled shafts. Secure in place with fill, struts or tie forms together as required.
2. Place the lower web wall reinforcement cage into the forms using spacers to maintain proper clearances.
3. If the forms can be sealed against the shafts and streambed to allow dewatering, the reinforcement and the concrete placement may be completed in the dry. Alternatively, the rebar cage can be lowered into position through water and the concrete discharged at the base of the excavation through a tremie pipe or pump hose, displacing water, sediment, and tainted concrete out the top of the forms.
4. Construct Columns.
5. Construct upper web walls.

DESIGNED	GLH
CHECKED	TML
DRAWN	RJN
CHECKED	TML

04/27/2005

P-DSWW 9-01-03

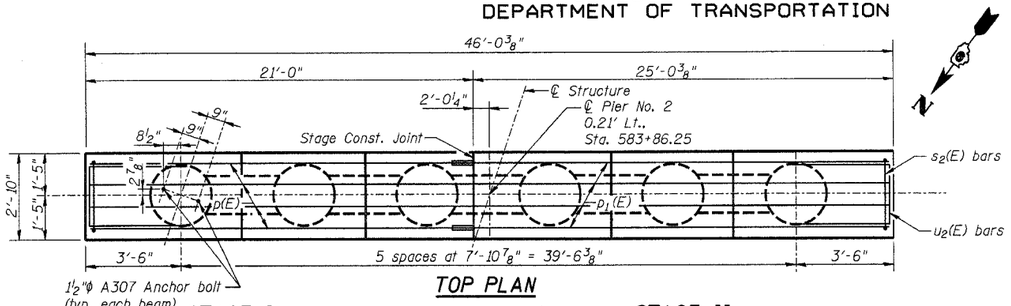
PIER 1
U.S. ROUTE 51 OVER TRIBUTARY TO DRURY CREEK AND CN/IC RAILROAD
FAP 322 - SECTION (11-IVB)-1
UNION COUNTY
STATION 583+74.84
STRUCTURE NO. 091-0073

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 322	*	UNION	39	35
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 18
22 SHEETS
* (11-IVB)-1
CONTRACT NO. 98488

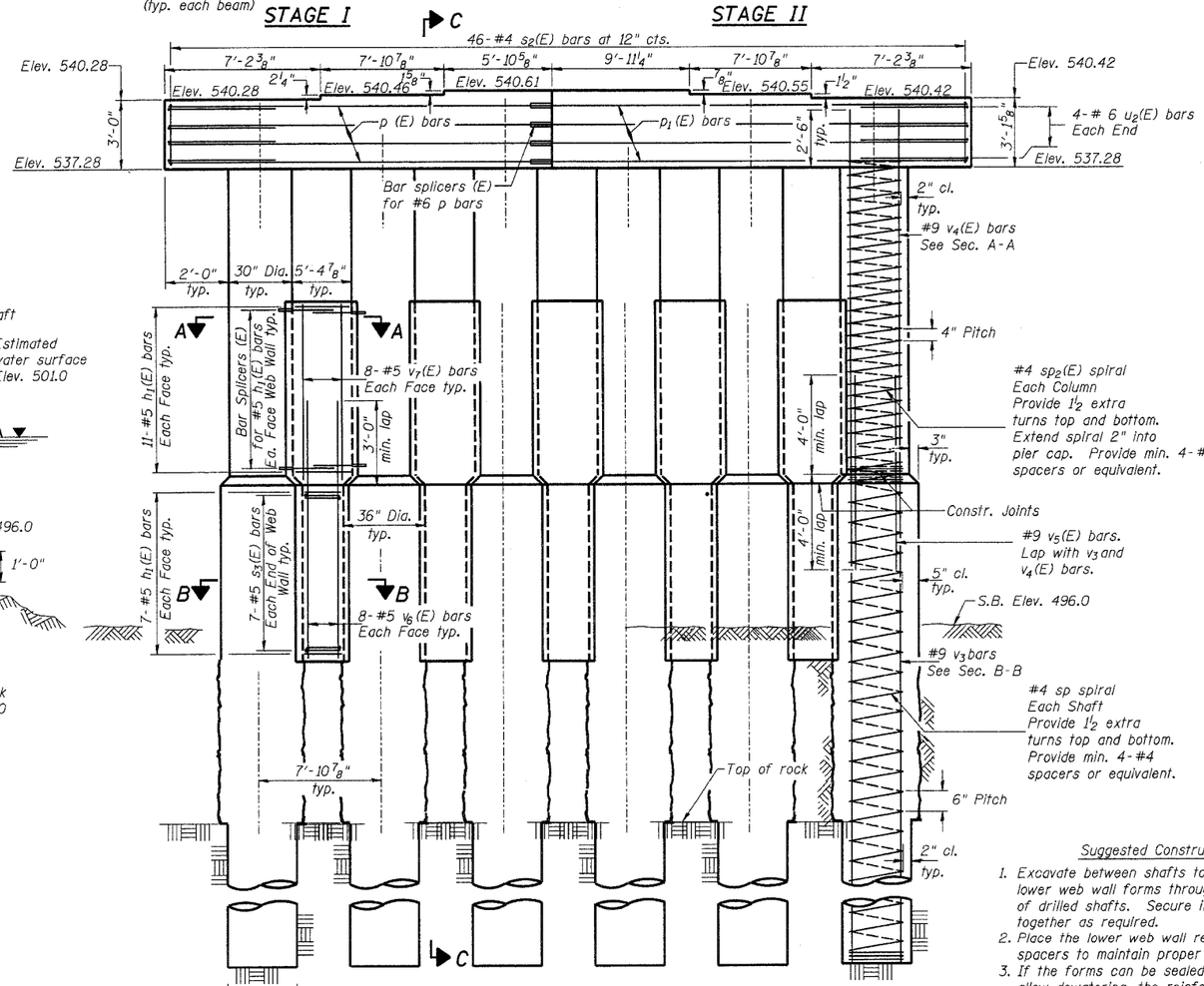
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

* If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the Contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

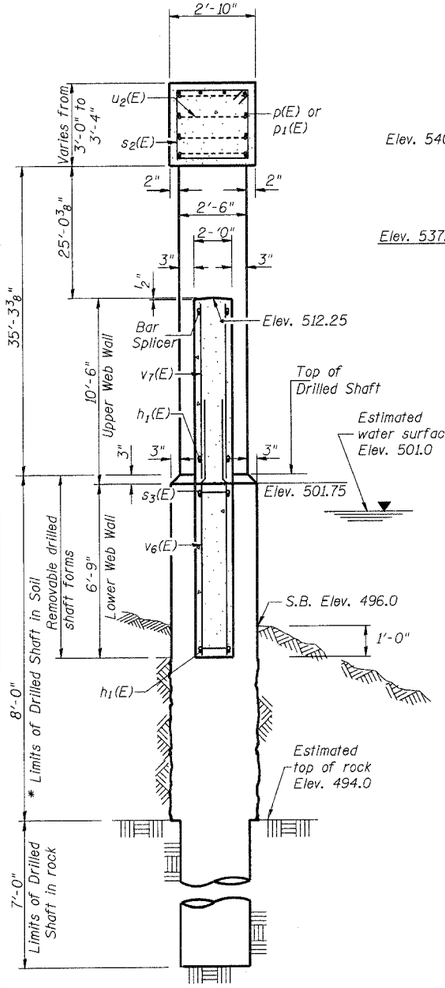


TOP PLAN

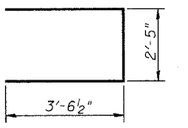
STAGE I STAGE II



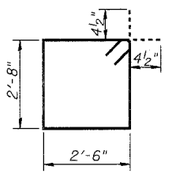
ELEVATION
(Looking South)



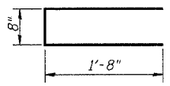
SECTION C-C



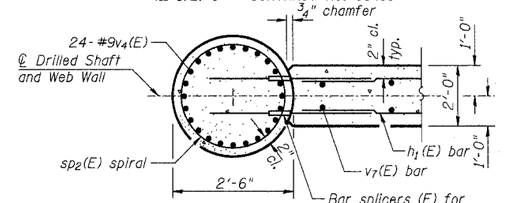
BAR u2(E)



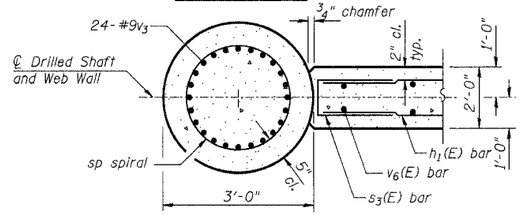
BAR s2(E)



BAR s3(E)



SECTION A-A



SECTION B-B

BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h1(E)	180	#5	4'-9"	
	p(E)	10	#6	20'-9"	
	p1(E)	10	#6	24'-9"	
	s2(E)	46	#4	11'-1"	
	s3(E)	70	#5	4'-0"	
**	sp	6	#4	15'-2"	
**	sp2(E)	6	#4	35'-6"	
	u2(E)	8	#6	9'-6"	
	v3	144	#9	15'-0"	
	v4(E)	144	#9	37'-6"	
	v5(E)	144	#9	8'-0"	
	v6(E)	80	#6	9'-9"	
	v7(E)	80	#6	10'-3"	

Drilled Shaft in Soil 36" Dia.	Foot	48
Drilled Shaft in Rock 30" Dia.	Foot	42
Concrete Structures	Cu. Yd.	87.3
Reinforcement Bars, Epoxy Coated	Pound	29990
Reinforcement Bars	Pound	8300
Bar Splicers	Each	120
Underwater Structure Excavation Protection - Location 2	Each	1

Reinforcement Bars designated (E) shall be epoxy coated.
Cast steps monolithically with cap.
Space cap reinforcement to miss anchor bolts.
Splices in spiral reinforcement shall be lap splices of 48 bar or wire diameters but not less than 12 inches, or shall be welded.
**Length is height of spiral.

Suggested Construction Sequence for Web Wall:

1. Excavate between shafts to elevation of web wall base and set lower web wall forms through water to bear on the circular edge of drilled shafts. Secure in place with fill, struts or tie forms together as required.
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4. Construct Columns.
5. Construct upper web walls.

DESIGNED	GLH
CHECKED	TML
DRAWN	RJN
CHECKED	TML

04/27/2005

P-DSWW 9-01-03

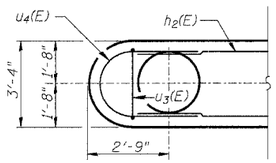
PIER 2
U.S. ROUTE 51 OVER TRIBUTARY TO DRURY CREEK AND CN/IC RAILROAD
FAP 322 - SECTION (11-IVB)-1
UNION COUNTY
STATION 583+74.84
STRUCTURE NO. 091-0073

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

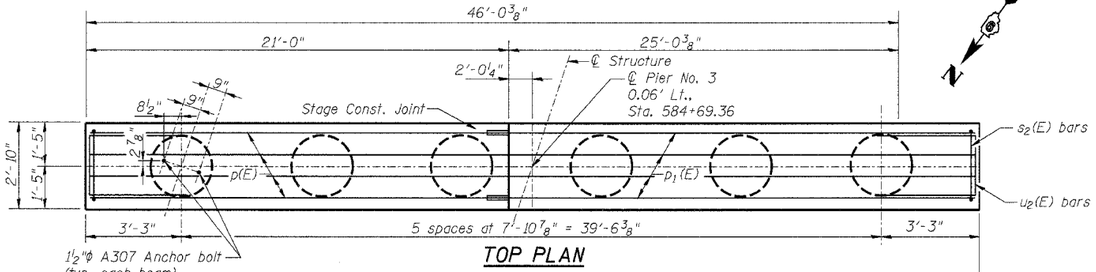
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 322	*	UNION	39	36
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 19
22 SHEETS

* (11-IVB)-1 CONTRACT NO. 98488

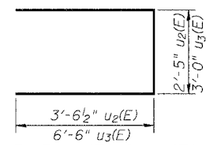


SECTION D-D

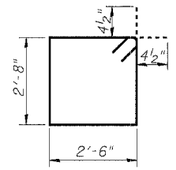


TOP PLAN

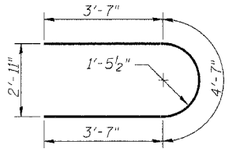
STAGE I STAGE II



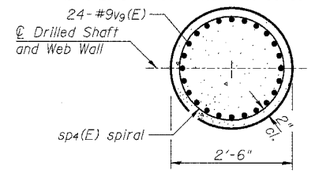
BAR u_2(E) & u_3(E)



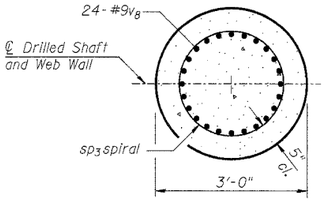
BAR s_2(E)



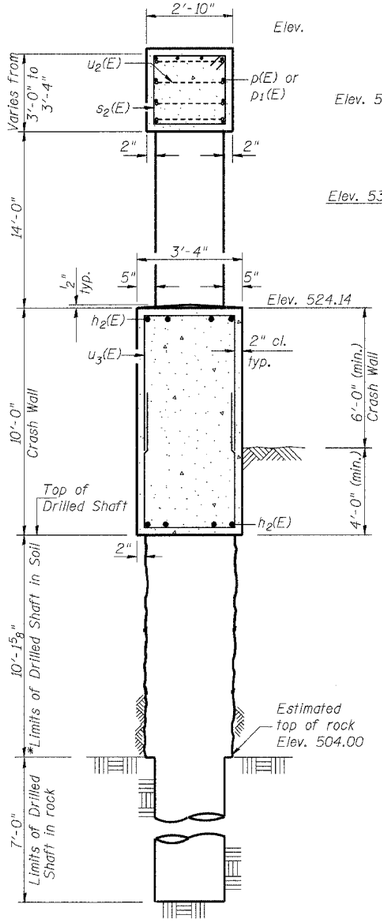
BAR u_4(E)



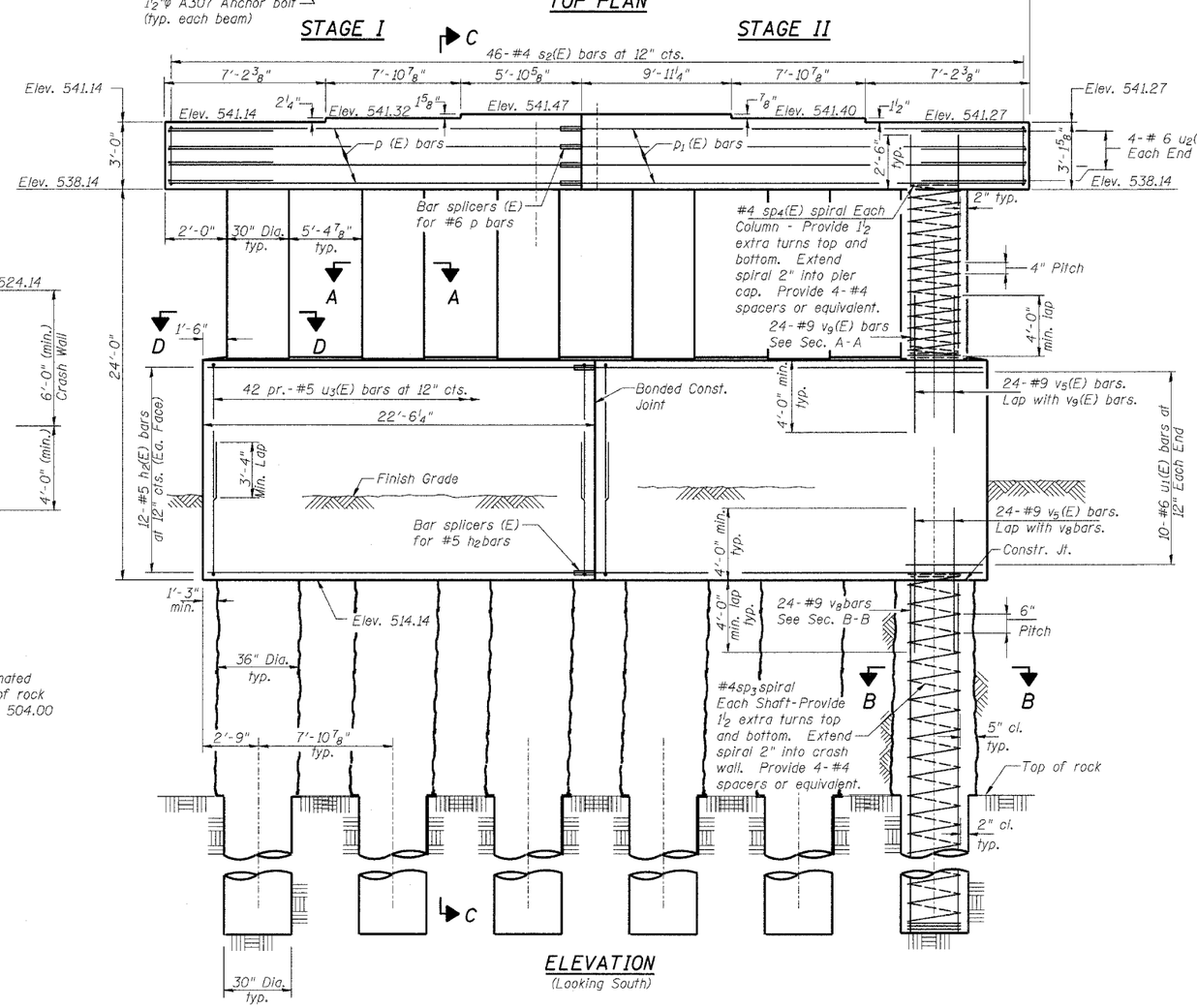
SECTION A-A



SECTION B-B



SECTION C-C



ELEVATION
(Looking South)

* The quantities and reinforcement detailing are based on the top of shaft and the estimated top of rock elevations shown and may change based on the actual top of rock encountered at each shaft and the final top of shaft elevation.

BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h_2(E)	48	#5	20'-3"	——
	p(E)	10	#6	20'-9"	——
	p_1(E)	10	#6	24'-9"	——
	s_2(E)	46	#4	11'-1"	☐
**	sp_3	6	#4	17'-4"	∿∿∿
**	sp_4(E)	6	#4	14'-3"	∿∿∿
	u_2(E)	8	#6	9'-6"	⊐
	u_3(E)	20	#6	11'-9"	⊐
	u_4(E)	84	#5	16'-0"	⊃
	v_8	144	#9	17'-0"	——
	v_5(E)	144	#9	8'-0"	——
	v_9(E)	144	#9	16'-6"	——
	Drilled Shaft in Soil 36" Dia.		Foot	61	
	Drilled Shaft in Rock 30" Dia.		Foot	42	
	Concrete Structures		Cu. Yd.	86.3	
	Reinforcement Bars, Epoxy Coated		Pound	24070	
	Reinforcement Bars		Pound	2430	
	Bar Splicers		Each	34	

Reinforcement Bars designated (E) shall be epoxy coated.
Cast steps monolithically with cap.
Space cap reinforcement to miss anchor bolts.
Spices in spiral reinforcement shall be lap splices of 48 bar or wire diameters but not less than 12 inches, or shall be welded.
**Length is height of spiral.

DESIGNED	GLH
CHECKED	TML
DRAWN	RJN
CHECKED	TML

P-DSCW 9-01-03

02/15/2005

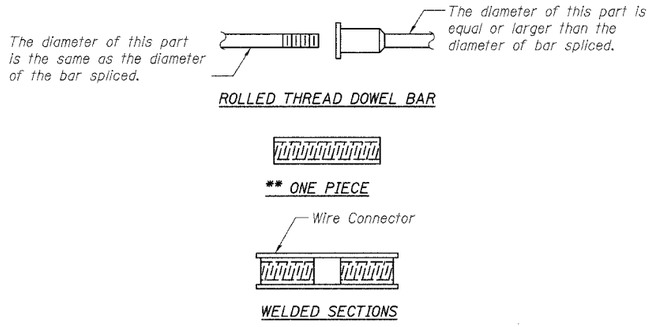
PIER 3
U.S. ROUTE 51 OVER TRIBUTARY TO DRURY CREEK AND CN/IC RAILROAD
FAP 322 -SECTION (11-IVB)-1
UNION COUNTY
STATION 583+74.84
STRUCTURE NO. 091-0073

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 322	*	UNION	39	37
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

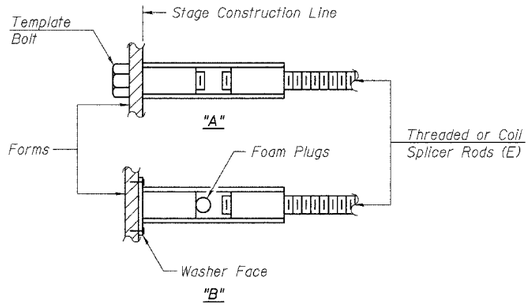
SHEET NO. 20
22 SHEETS

* (11-IVB)-1 CONTRACT NO. 98488



BAR SPLICER ASSEMBLY ALTERNATIVES

** Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



INSTALLATION AND SETTING METHODS

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

NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.

Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.

All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.

Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

① Minimum Capacity (Tension in kips) = $1.25 \times fy \times A_t$

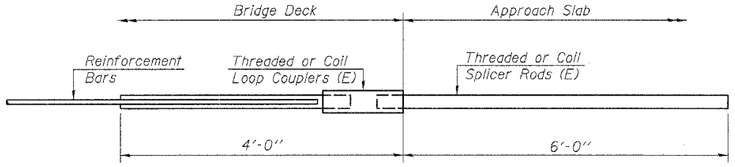
② Minimum *Pull-out Strength (Tension in kips) = $1.25 \times fs_{allow} \times A_t$

Where fy = Yield strength of lapped reinforcement bars in ksi.
fs_{allow} = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)
A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

BAR SPLICER ASSEMBLIES

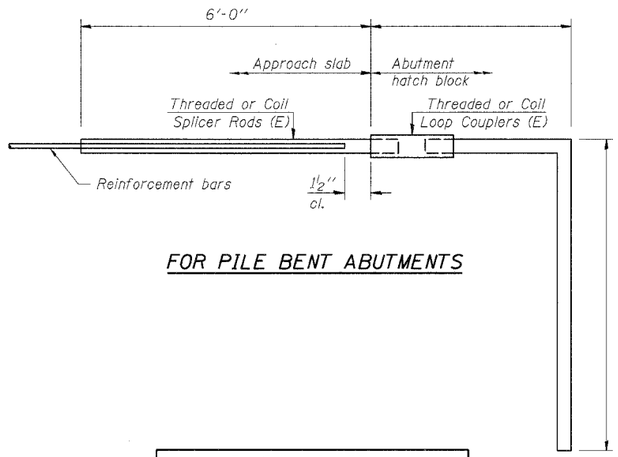
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	5.9
#5	2'-0"	23.0	9.2
#6	2'-7"	33.1	13.3
#7	3'-5"	45.1	18.0
#8	4'-6"	58.9	23.6
#9	5'-9"	75.0	30.0
#10	7'-3"	95.0	38.0
#11	9'-0"	117.4	46.8

Bar splicer assemblies shall be according to Section 508 of the Standard Specifications, except as noted. The furnishing and installation of bar splicer assemblies will be measured and paid for at the contract unit price each for "BAR SPLICERS."



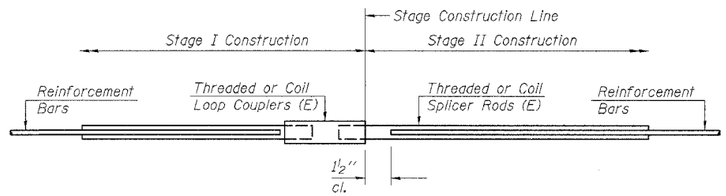
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension



FOR PILE BENT ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required =



STANDARD

Bar Size	No. Assemblies Required	Location
#5	1063	Deck
#6	16	Diaphragms
#6	24	Abutments
#6	274	Piers
#5	82	Integral Abutments
Total	1459	

DESIGNED	GLH
CHECKED	TML
DRAWN	RJN
CHECKED	TML

02/15/2005

BSD-1 9-01-03

BAR SPLICER ASSEMBLY DETAILS
U.S. ROUTE 51 OVER TRIBUTARY TO DRURY CREEK AND CN/IC RAILROAD
FAP 322 - SECTION (11-1VB)-1
UNION COUNTY
STATION 583+74.84
STRUCTURE NO. 091-0073

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 322	*	UNION	39	38
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 21
22 SHEETS

* (11-1VB)-1 CONTRACT NO. 98488

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials
Bridge Foundation Boring Log
Sheet 1 of 1

FAP Rte 332 (US 51) Over Drury Creek & ICRR
Route: FAP Route 332 Structure Number: 091-0021 Date: 09/06/2000
Section (11-1VB) DR Bored By: Bryan Keller
County: Union Location: 2.7 Mi S of Jackson/Union Co line Checked By: Rob Graeff

Boring No 1-S
Station 584+19
Offset 27' Lt CL
Ground Surface 516.1 Ft

Surf Wat Elev: 497.6
Ground Water Elevation
when Drilling
At Completion
At: Hrs:

DEPTH	BLOW	Qu tsf	W%	DEPTH	BLOW	Qu tsf	W%
ICRR Ballast Rock				Hard, dry, brown, Sandstone Cored from 22.5 to 27.5 feet 62% Recovery 33% RQD			
508.6				488.6			
Medium, very moist, grey mottled brown, Silty Clay A-6	WH			Hard, dry, grey, Sandstone			
	1 3	0.6B	25				
504.1	WH WH WH	0.6B	26	Cored from 32.5 to 37.5 feet 100% Recovery 92% RQD			
Soft to medium, very moist, brown, Silty Clay A-6	1 1 1	0.5B	26	478.6			
501.6				Hard, dry, grey, Sandstone			
Soft, very moist, grey, Silt Loam A-4 with Sand Loam seams	WH 1 1	0.4S	23	Cored from 37.5 to 42.5 feet 100% Recovery 85% RQD			
499.1				473.6			
Loose to medium, moist, brown to gray, broken Sandstone gravel	4 5 5						
494.6	4 6 6			Bottom of hole = 42.5 feet No free water observed. Elevation referenced to plans To convert "N" values to "N60" values multiply by 1.25			
Hard, dry, brown, Sandstone	100/1"						
493.6							
Hard, dry, brown, Sandstone Cored from 22.5 to 27.5 feet 62% Recovery 33% RQD							
25.0				50.0			

N-Std Pentr Test: 2" OD Sampler,
140# Hammer, 30" Fall (Type Fail, B-Bulge S-Shear E-Estimated P-Penetrometer)

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials
Bridge Foundation Boring Log
Sheet 1 of 1

FAP Rte 332 (US 51) Over Drury Creek & ICRR
Route: FAP Route 332 Structure Number: 091-0021 Date: 09/07/2000
Section (11-1VB) DR Bored By: Bryan Keller
County: Union Location: 2.7 Mi S of Jackson/Union Co line Checked By: Rob Graeff

Boring No 2-S
Station 582+04
Offset 13' Lt CL
Ground Surface 542.4 Ft

Surf Wat Elev: 497.6
Ground Water Elevation
when Drilling
At Completion
At: Hrs:

DEPTH	BLOW	Qu tsf	W%	DEPTH	BLOW	Qu tsf	W%
Bituminous Shoulder				Stiff, moist, brown, Silty Clay A-6	2 4	1.4B	24
541.4				515.4			
Very stiff, moist, grey, Clay to Silty Clay A7-6	1			Very stiff, moist, brown, Silty Clay A-6	1		
	2 4	3.1S	20		3 4	2.4B	23
537.9				512.4			
Medium, moist, brown mottled grey, Silty Clay A-6	5.0 1 2 2	0.6S	24	Medium, moist, grey, Silty Clay to Silty Clay Loam A-6 with some Rotten Wood	30.0 1 3 4	0.9S	27
535.4				509.9			
Very stiff, moist, brown, Silty Clay A-6	1 1 2	2.3B	23	Hard, dry, grey to brown Sandstone	1 100/8"		
532.9				508.9			
Stiff, moist, brown mottled grey, Clay to Silty Clay A7-6	10.0 1 1 2	1.4B	24	Hard, dry, grey, Sandstone with Clay seams Cored from 33.5 to 38.5 feet 92% Recovery 85% RQD	35.0		
	2 2 2	1.2S	27	503.9			
527.9				Hard, dry, grey, Sandstone			
Stiff, moist, brown, Silty Clay A-6	15.0 2 2 2	1.6B	25	Cored from 38.5 to 43.5 feet 92% Recovery 85% RQD	40.0		
525.4				498.9			
Stiff, moist, brown, Silty Clay A-6	1 2 4	2.1B	26				
	20.0 1 2 3	1.9B	23	Bottom of hole = 43.5 feet. No free water observed. Elevation referenced to plans To convert "N" values to "N60" values multiply by 1.25	45.0		
520.4							
Stiff, moist, brown mottled grey, Silty Clay to Silty Clay Loam A-6	1 2 4	1.4S	23				
517.9							
	25.0 1				50.0		

N-Std Pentr Test: 2" OD Sampler,
140# Hammer, 30" Fall (Type Fail, B-Bulge S-Shear E-Estimated P-Penetrometer)

DESIGNED	GLH
CHECKED	TML
DRAWN	RJN
CHECKED	TML

02/15/2005

BORING LOGS
U.S. ROUTE 51 OVER TRIBUTARY TO
DRURY CREEK AND CN/IC RAILROAD
FAP 322 -SECTION (11-1VB)-1
UNION COUNTY
STATION 583+74.84
STRUCTURE NO. 091-0073

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 322	*	UNION	39	39
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 22
22 SHEETS

* (11-IVB)-1 CONTRACT NO. 98488

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials
Bridge Foundation Boring Log
Sheet 1 of 2

FAP Rte 332 (US 51) Over Drury Creek & ICRR
Route: FAP Route 332 Structure Number: 091-0021 Date: 09/11/2000
Section (11-1VB) DR Bored By: Bryan Keller
County: Union Location: 2.7 Mi S of Jackson/Union Co line Checked By: Rob Graeff

Boring No 3-S
Station 583+11
Offset 10.5' Rt CL
Ground Surface 544.2 Ft

Surf Wat Elev: 497.6
Ground Water Elevation
when Drilling
At Completion
At: Hrs:

DEPTH	BLOW	Qu tsf	W%
Auger suspended through deck			
5.0			
10.0			
15.0			
20.0			
25.0			
30.0			
35.0			
40.0			
502.7 Soft, moist, brown, Silt Loam A-4			
45.0	1 WH	0.4S	18
	1		
497.2 Soft, very moist, brown to grey, Silty Clay to Clay A7-6	1		
	1	0.5P	29
	1		
494.7 Hard, dr, gr, Sandstone	50.0 100/3"		

N-Std Pentr Test: 2" OD Sampler,
140# Hammer, 30" Fall (Type Fail. B-Bulge S-Shear E-Estimated P-Penetrometer)

Route: FAP Route 332
Section: (11-1VB) DR
County: Union

Sheet 2 of 2
Date: 09/11/2000

Boring No: 3-S
Station: 583+11
Offset: 10.5' Rt CL
Ground Surface: 544.2 Ft

DEPTH	BLOW	Qu tsf	W%
493.2 Hard, dry, grey, Sandstone			
Cored from 51.0 to 56.0 feet 90% Recovery 55% RQD			
55.0			
488.2 Hard, dry, grey, Sandstone			
Cored from 56.0 to 61.0 feet 78% Recovery 20% RQD			
60.0			
483.2 Cored from 61.0 to 62.5 feet 100% Recovery 67% RQD			
481.7 Hard, dry, grey, Sandstone.			
Cored from 62.5 to 67.5 feet 100% Recovery 87% RQD			
65.0			
476.7 Hard, dry, grey, Sandstone.			
Cored from 67.5 to 71.0 feet 100% Recovery 76% RQD			
70.0			
473.2			
75.0			

DEPTH	BLOW	Qu tsf	W%
80.0			
85.0			
90.0			
Bottom of hole = 71.0 feet No free water observed. Elevation referenced to plans To convert "N"values to "N60" values multiply by 1.25			
95.0			
100.0			

N-Std Pentr Test: 2" OD Sampler,
140# Hammer, 30" Fall (Type Fail. B-Bulge S-Shear E-Estimated P-Penetrometer)

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials
Bridge Foundation Boring Log
Sheet 1 of 1

FAP Rte 332 (US 51) Over Drury Creek & ICRR
Route: FAP Route 332 Structure Number: 091-0021 Date: 09/12/2000
Section (11-1VB) DR Bored By: Bryan Keller
County: Union Location: 2.7 Mi S of Jackson/Union Co line Checked By: Rob Graeff

Boring No 4-S
Station 585+56
Offset 12.5' Rt CL
Ground Surface 546.6 Ft

Surf Wat Elev: 497.6
Ground Water Elevation
when Drilling
At Completion 522.1
At: Hrs:

DEPTH	BLOW	Qu tsf	W%
Bituminous Shoulder 545.6			
Hard, moist, brown, Silty Clay A-6 with some Gravel	2 4 6	5.0B	17
542.1 Very stiff, moist, brown, Silty Clay A-6 with some Gravel 5.0	3 4 4	2.5S	17
539.6 Stiff to very stiff, moist, brown to grey, Silty Clay A-6	1 3 4	2.0B	22
537.1 Stiff, moist, brown mottled grey, Silty Clay A-6 10.0	1 2 2	1.4S	21
	2 3 3	1.4B	22
15.0	1 3 3	1.4S	25
529.6 Stiff, moist, brown, Silty Clay Loam A-6	3 5 6	1.5S	23
527.1 Stiff, moist, brown, Silty Clay to Silty Clay Loam A-6 20.0	2 3 3	1.1S	22
523.6 Hard, dry, grey, Sandstone	1 9 100/5"		
25.0	100/2"		

DEPTH	BLOW	Qu tsf	W%
Hard, dry, grey, Sandstone			
Auger refusal at 26.5 feet 520.1			
Bottom of hole = 26.5 feet No free water observed. Elevation referencd to plans To convert "N" values to "N60" values multiply by 1.25			
30.0			
35.0			
40.0			
45.0			
50.0			

N-Std Pentr Test: 2" OD Sampler,
140# Hammer, 30" Fall (Type Fail. B-Bulge S-Shear E-Estimated P-Penetrometer)

DESIGNED	GLH
CHECKED	TML
DRAWN	RJN
CHECKED	TML

02/15/2005

BORING LOGS
U.S. ROUTE 51 OVER TRIBUTARY TO
DRURY CREEK AND CN/IC RAILROAD
FAP 322 -SECTION (11-IVB)-1
UNION COUNTY
STATION 583+74.84
STRUCTURE NO. 091-0073