

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9181	52BR	ST. CLAIR	41	1
ILLINOIS CONTRACT NO. 76120				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PROPOSED
HIGHWAY PLANS**

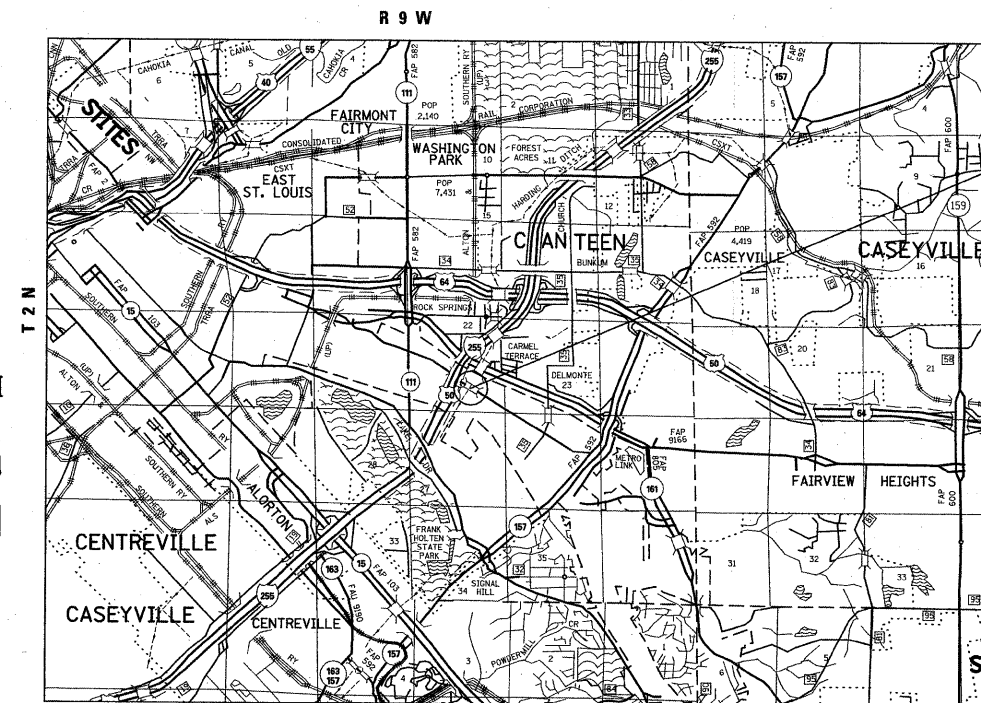
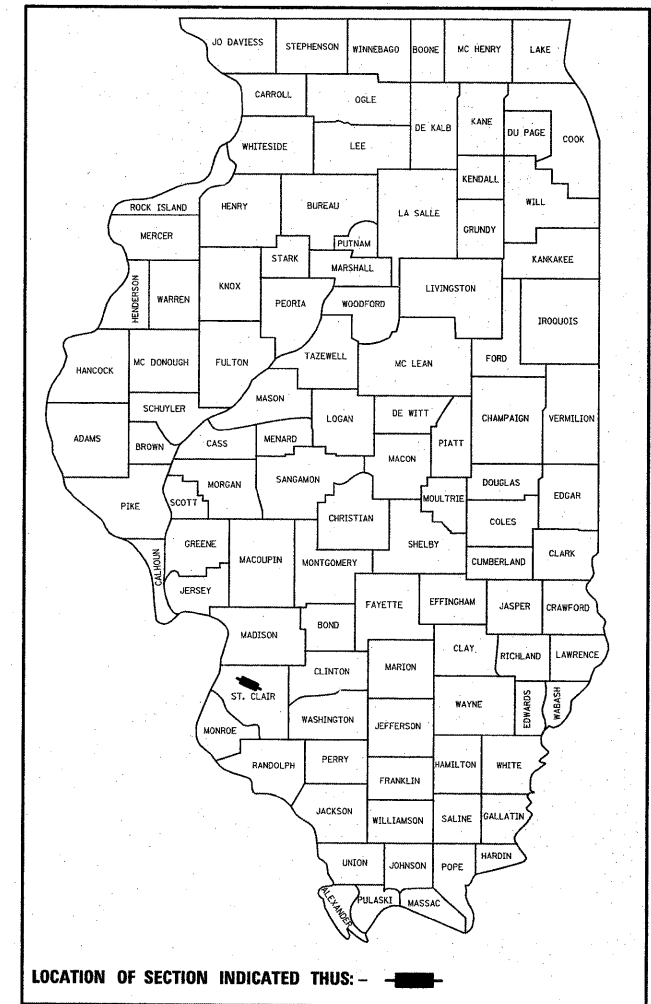
FAU ROUTE 9181 (SUMMIT AVENUE)
SECTION 52BR

BRIDGE DECK REPLACEMENT
ST. CLAIR COUNTY

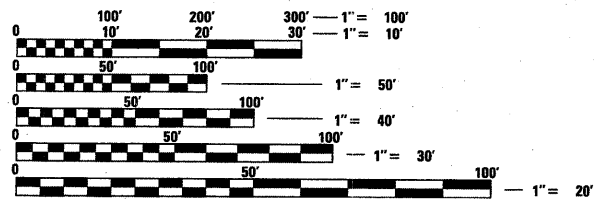
C-98-064-05

FOR INDEX OF SHEETS, SEE SHEET NO. 2

D-98-044-98



PROJECT LOCATION
STA 39+89.80
3 SPAN REINFORCED CONCRETE DECK ON
CONTINUOUS STEEL I-BEAM GIRDERS;
2 SPANS @ 31.75' AND 1 SPAN @ 44.00'
SUPPORTED ON REINFORCED CONCRETE PIERS
AND REINFORCED CONCRETE ABUTMENTS
SN 082-0136

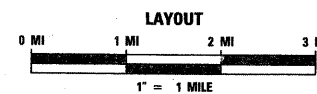


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD
ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT
CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS
ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

PROJECT ENGINEER: PATTI LEBEAU (618) 346-3179
SQUAD CONTACT: ART MUEHLFELD (618) 346-3209

CONTRACT NO. 76120



GROSS LENGTH = 107.5 FT. = .02 MILE
NET LENGTH = 107.5 FT. = .02 MILE
LONGITUDE - 90.08006
LATITUDE - 38.60484

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Oct 14 20 09
My C. Harris
DEPUTY DIRECTOR OF HIGHWAYS, REGION 5 ENGINEER

December 4 20 09
Charles G. Ingersoll
ENGINEER OF DESIGN AND ENVIRONMENT

December 4 20 09
Christine M. Reed
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

**PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS**

INDEX OF SHEETS

- 1 COVER PAGE
- 2 INDEX OF SHEETS/HGHY STAND./GEN. NOTES/MIX CHART/COMMITMENTS
- 3 SUMMARY OF QUANTITIES
- 4 TYPICAL SECTIONS
- 5 SCHEDULE OF QUANTITIES & DETAILS
- 6 TIE POINTS & BENCHMARKS
- 7-9 PLAN AND PROFILE SHEET
- 10-16 SUGGESTED STAGES OF CONSTRUCTION & TRAFFIC CONTROL
- 17-41 STRUCTURE PLANS

HIGHWAY STANDARDS

000001-05	635006-03	701311-03	781001-03
001001-02	635011-02	701321-10	720001-01
001006	701006-03	701901-01	720006-02
420401-08	701011-02	704001-06	729001-01
515001-03	701306-02	780001-02	
	701321-03	701401-05	

EROSION CONTROL PLAN

ALL EROSION CONTROL PRODUCTS FURNISHED SHALL BE SPECIFICALLY RECOMMENDED BY THE MANUFACTURER FOR THE USE SPECIFIED IN THE EROSION CONTROL PLAN. PRIOR TO THE APPROVAL AND USE OF THE PRODUCT THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A NOTARIZED CERTIFICATION BY THE PRODUCERS STATING THE INTENDED USE OF THE PRODUCT AND THAT THE PHYSICAL PROPERTIES REQUIRED FOR THIS APPLICATION ARE MET OR EXCEEDED. THE CONTRACTOR SHALL PROVIDE MANUFACTURER RECOMMENDED INSTALLATION PROCEDURES TO FACILITATE THE ENGINEER IN CONSTRUCTION INSPECTION.

TEMPORARY SEEDING AND MULCH SHALL BE COMPLETED ON A WEEKLY BASIS ON EXPOSED GROUND AND SHALL BE IN ACCORDANCE WITH SECTION 280 OF THE STANDARD SPECIFICATIONS. TEMPORARY EROSION CONTROL SEEDING SHALL BE APPLIED AT A RATE OF 100 LBS/ACRE.

ALL AREAS DISTURBED FOR ANY REASON SHALL BE PERMANENTLY SEEDED AS DIRECTED BY THE ENGINEER. ALL AREAS DISTURBED BY THE CONTRACTOR OUTSIDE THE PROPOSED CONSTRUCTION LIMITS SHALL BE SEEDED AT THE CONTRACTOR'S EXPENSE.

ALL SEEDING SHALL BE CONSIDERED AS INCLUDED IN THE COST OF THE CONTRACT.

GENERAL NOTES

1. THE STANDARDS AND REVISION NUMBERS STATED IN THE PLANS SHALL APPLY TO THIS CONTRACT.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO CONSTRUCTION AND THE ORDERING OF MATERIALS.
3. ILLINOIS STATE LAW REQUIRES A 48-HOUR NOTICE BE GIVEN TO ALL UTILITIES BEFORE DIGGING. FIELD MARKING OF FACILITIES MAY BE OBTAINED BY CONTACTING J.U.L.I.E. OR FOR NON-MEMBERS, THE UTILITY COMPANY DIRECTLY. AGENCIES KNOWN TO HAVE FACILITIES WITHIN THE PROJECT AREA ARE AS FOLLOWS:
 - *AMERENIP *AMERENUE * AT&T ILLINOIS *CENTERPOINT ENERGY *CHARTER COMMUNICATIONS, INC.
 - *CITY OF EAST ST. LOUIS *ILLINOIS AMERICAN WATER COMPANY
 MEMBERS OF J.U.L.I.E. (800) 892-0123 ARE INDICATED BY AN *. NON- J.U.L.I.E. MEMBERS MUST BE NOTIFIED INDIVIDUALLY.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SEEDING, FERTILIZING, AND MULCHING ANY AREAS DISTURBED OUTSIDE THE LIMITS OF CONSTRUCTION. THIS WORK WILL NOT BE MEASURED FOR PAYMENT. THE SEEDING SHALL BE CLASS 1. THE APPLICATION OF THE SEEDING, FERTILIZER AND MULCH SHALL BE TO THE SATISFACTION OF THE ENGINEER. FINAL SEEDING SHALL BE PERFORMED AS SOON AS POSSIBLE.
5. "ROAD CONSTRUCTION AHEAD" SIGNS SHALL BE PLACED AT EACH END OF THE PROJECT AND AT ANY SIDEROADS WITHIN THE PROJECT LIMITS. THIS WILL BE INCLUDED IN THE TRAFFIC CONTROL PAY ITEMS. ALL CONSTRUCTION SIGNS SHALL BE FLUORESCENT ORANGE.
6. NO TRENCHES OR OPEN PITS WILL BE PERMITTED ADJACENT TO A TRAFFIC LANE DURING NONE WORKING HOURS. ALL WIDENING TRENCHES SHALL BE BACK FILLED DURING THE SAME WORKING DAY IT WAS EXCAVATED.
7. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ADJACENT PAVEMENT IS NOT DAMAGED DURING ANY OPERATION.
8. ALL TEMPORARY PAVEMENT MARKING SHALL BE PLACED IN SUCH A MANNER AS NOT TO INTERFERE WITH THE PLACEMENT OF PERMANENT PAVEMENT MARKING.
9. EXCAVATIONS ADJACENT TO THE EDGE OF PAVEMENT SHALL BE PROTECTED WITH EXTENDED LEG BARRICADES AND APPROPRIATE FLASHING OR STEADY BURNING LIGHTS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
10. THE THICKNESS OF THE HMA MIXTURE SHOWN ON THE PLANS IS A NOMINAL THICKNESS. DEVIATIONS FROM THE NOMINAL THICKNESS WILL BE PERMITTED WHEN SUCH DEVIATIONS OCCUR DUE TO THE IRREGULARITY IN THE BASE ON WHICH THE MIXTURE IS PLACED.
11. THE BOTTOM 6" OF THE TEMPORARY CONCRETE BARRIER SHALL BE PAINTED WITH TEMPORARY PAVEMENT MARKING. THIS WILL NOT BE MEASURED FOR PAYMENT BUT SHALL BE CONSIDERED AS INCLUDED IN THE COST OF TEMPORARY CONCRETE BARRIER AND NO OTHER COMPENSATION SHALL BE ALLOWED.
12. THE BITUMINOUS MATERIAL (PRIME COAT) QUANTITIES HAVE BEEN DETERMINED USING AN APPLICATION RATE OF .0003129 TONS/SQUARE YARD AND THE AGGREGATE PRIME COAT QUANTITY HAS BEEN DETERMINED USING AN APPLICATION RATE OF .0015 TONS/SQUARE YARD.
13. THE RECLAIMED ASPHALT PAVEMENT FROM THIS PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
14. SHORT-TERM PAVEMENT MARKING SHALL BE APPLIED TO THE PRIMED AND FINAL SURFACE. AN AMOUNT OF TEMPORARY PAVEMENT MARKING WHICH EQUALS TWICE THE AMOUNT OF PERMANENT PAVEMENT MARKINGS HAS ALSO BEEN INCLUDED IN THE PLANS.
15. THE RESIDENT ENGINEER SHALL VERIFY THE EXISTENCE OF HIGHWAY LIGHTING AND/OR I.T.S. UTILITIES WITH THE PROJECT LIMITS. IF HIGHWAY LIGHTING AND/OR I.T.S. EXISTS WITH THE PROJECT LIMITS, AND IF THESE ITEMS REQUIRE LOCATING, THE CONTRACTOR SHALL BE DIRECTED TO DO SO ACCORDING TO SECTION 803 OF THE STANDARD SPECIFICATION. THIS WORK SHALL BE PAID FOR ACCORDING TO ARTICLE 109.04 OF THE STANDARD SPECIFICATIONS.
16. ALL SEEDING SHALL BE CONSIDERED AS INCLUDED IN THE COST OF THE CONTRACT.
17. ALL EXISTING AND PROPOSED RIGHT-OF-WAY LINES AND PROPERTY LINES SHOWN ON THE PLAN SHEETS ARE GRAPHICAL REPRESENTATIONS AND SHALL NOT BE USED AS A MEANS TO ESTABLISH OWNERSHIP. IN AL MATTERS RELATING TO RIGHT-OF-WAY, THE PLAT OF HIGHWAYS SHALL BE THE CONTROLLING DOCUMENT.
18. THE FLAGGATE IN THE NORTHWEST CORNER OF THE BRIDGE MUST REMAIN OPERATIONAL THROUGHOUT CONSTRUCTION AND WILL NOT BE BLOCKED WITH CONSTRUCTION DEBRIS OR RIPRAP.
19. THE REMOVAL OF THE EXISTING BRIDGE APPROACH PAVEMENT IS INCLUDED IN THE COST OF PAVEMENT REMOVAL.
20. THE FOLLOWING HMA REQUIREMENTS APPLY TO THIS PROJECT:

MIXTURE REQUIREMENT CHART

MIXTURE USE	SURFACE	BASE COURSE WIDENING
AC/PG	PG 64-22	PG 64-22
RAP % (MAX)	10%	15%
DESIGN AIR VOIDS	4.0% @ Ndes=70	4.0% @ Ndes=70
MIX COMPOSITION (GRADATION MIXTURE)		IL 19.0
FRICITION AGG	MIXTURE "C"	MIXTURE "B"

COMMITMENTS

NONE

FILE NAME =	USER NAME = manntm	DESIGNED - Designed By	REVISED - Revised By1	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	INDEX OF SHEETS, GENERAL NOTES STANDARDS, ETC.			F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
cr:\pw\work\PWIDOT\MANNM\dms71221\p1n04498a.dgn		DRAWN - Drawn By	REVISED - Revised By2					9181	52BR	ST. CLAIR	41	2
PLOT SCALE = 50.000 ' / IN.		CHECKED - Checked By	REVISED - Revised By3		SCALE: Scale SHEET NO. OF SHEETS STA. TO STA. Station To			ILLINOIS FED. AID PROJECT				
PLOT DATE = 10/7/2009		DATE - Checked Date	REVISED - Revised By4		CONTRACT NO. 76120							

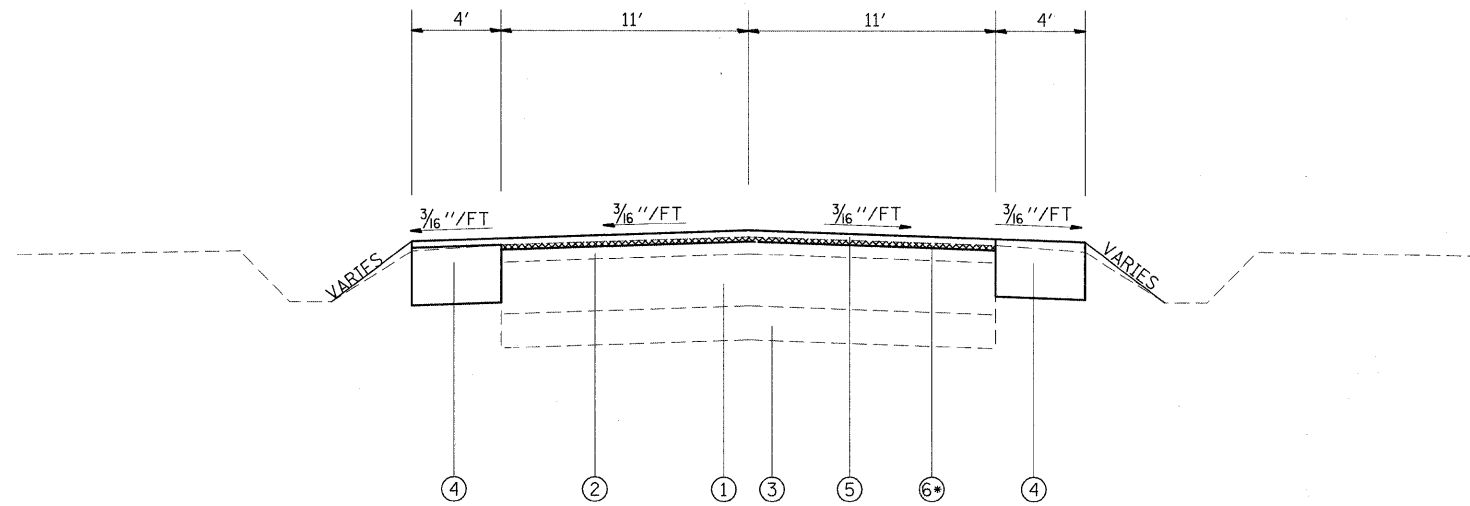
Long Section Number
Multiple County Names

SUMMARY OF QUANTITIES

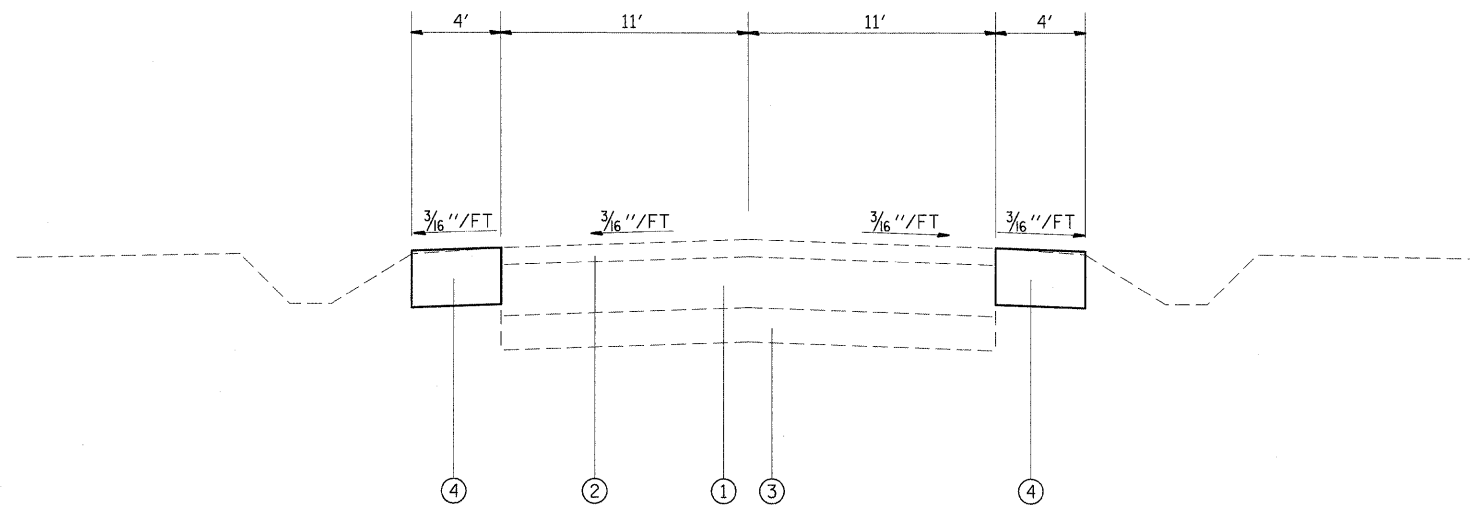
SUMMARY OF QUANTITIES			URBAN TOTAL QUANTITIES	CONSTRUCTION TYPE CODE			SUMMARY OF QUANTITIES			URBAN TOTAL QUANTITIES	CONSTRUCTION TYPE CODE		
CODE NO	ITEM	UNIT		X071-2A 100% STATE			CODE NO	ITEM	UNIT		X071-2A 100% STATE		
20200500	EARTH EXCAVATION (WIDENING)	CU YD	43	43			67100100	MOBILIZATION	L SUM	1	1		
20700400	POROUS GRANULAR EMBANKMENT, SPECIAL	CU YD	136.1	136.1			70100460	TRAFFIC CONTROL AND PROTECTION, STANDARD 701306	L SUM	1	1		
35600716	HOT-MIX ASPHALT BASE COURSE WIDENING, 10"	SQ YD	462	462			70100500	TRAFFIC CONTROL AND PROTECTION, STANDARD 701326	L SUM	1	1		
40600200	BITUMINOUS MATERIALS (PRIME COAT)	TON	0.2	0.2			70101205	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321 (SPECIAL)	EACH	1	1		
40600300	AGGREGATE (PRIME COAT)	TON	1	1			70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1	1		
40600982	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	SQ YD	147	147			70106700	TEMPORARY RUMBLE STRIP	EACH	12	12		
40600990	TEMPORARY RAMP	SQ YD	33	33			70300100	SHORT-TERM PAVEMENT MARKING	FOOT	199	199		
40603315	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N70	TON	54	54			70300220	TEMPORARY PAVEMENT MARKING - LINE 4"	FOOT	2984	2984		
42001430	BRIDGE APPROACH PAVEMENT CONNECTOR (FLEXIBLE)	SQ YD	112	112			70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	389	389		
44000100	PAVEMENT REMOVAL	SQ YD	176	176			70400100	TEMPORARY CONCRETE BARRIER	FOOT	637.5	637.5		
44000198	HOT-MIX ASPHALT SURFACE REMOVAL, VARIABLE DEPTH	SQ YD	245	245			70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	625	625		
50102400	CONCRETE REMOVAL	CU YD	18.8	18.8			*78000200	THERMOPLASTIC PAVEMENT MARKING - LINE 4"	FOOT	1088	1088		
50104720	REMOVAL OF EXISTING CONCRETE DECK	EACH	1	1			*78008210	POLYUREA PAVEMENT MARKING TYPE I - LINE 4"	FOOT	404	404		
50200100	STRUCTURE EXCAVATION	CU YD	171	171			*78100100	RAISED REFLECTIVE PAVEMENT MARKER	EACH	7	7		
50300100	FLOOR DRAINS	EACH	14	14			*78100105	RAISED REFLECTIVE PAVEMENT MARKER (BRIDGE)	EACH	2	2		
50300225	CONCRETE STRUCTURES	CU YD	45.6	45.6			*78200530	BARRIER WALL MARKERS, TYPE C	EACH	8	8		
50300255	CONCRETE SUPERSTRUCTURE	CU YD	360.7	360.7			78300100	PAVEMENT MARKING REMOVAL	SQ FT	332	332		
50300260	BRIDGE DECK GROOVING	SQ YD	920	920			78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	9	9		
50300300	PROTECTIVE COAT	SQ YD	1047	1047			Z0030250	IMPACT ATTENUATORS, TEMPORARY (NON- REDIRECTIVE), TEST LEVEL 3	EACH	2	2		
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	3230	3230			Z0030350	IMPACT ATTENUATORS, RELOCATE (NON- REDIRECTIVE), TEST LEVEL 3	EACH	2	2		
50500505	STUD SHEAR CONNECTORS	EACH	3310	3310			Z0031200	JACKING AND CRIBBING	EACH	10	10		
50500715	JACK AND REMOVE EXISTING BEARINGS	EACH	20	20									
50600300	CLEANING AND PAINTING STEEL BRIDGE	L SUM	1	1									
50606400	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES	L SUM	1	1									
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	86,850	86,850									
50800515	BAR SPLICERS	EACH	663	663									
51205200	TEMPORARY SHEET PILING	SQ FT	412.0	412.0									
51500100	NAME PLATES	EACH	1	1									
52100520	ANCHOR BOLTS, 1"	EACH	20	20									
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	90.8	90.8									
60109580	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	275	275									
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	6	6									

**Specialty Items*

FILE NAME =	USER NAME = manntm	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUMMARY OF QUANTITIES	DRAWN -	REVISED -	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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PLOT SCALE = 50.000' / IN.		DATE -				CONTRACT NO. 76120					
PLOT DATE = 10/7/2009						FED. ROAD DIST. NO. 8 ILLINOIS FED. AID PROJECT					



STATIONING
 STA. 38+00.00 TO STA. 39+00.05
 STA. 40+79.55 TO STA. 42+00.00



STATIONING
 STA. 36+79.00 TO STA. 38+00.00
 STA. 42+00.00 TO STA. 43+43.00

LEGEND

- ① EXISTING PORTLAND CEMENT CONCRETE PAVEMENT - 9"
- ② EXISTING HMA RESURFACING - 3"
- ③ EXISTING AGGREGATE BASE COURSE - 6"
- ④ PROPOSED HMA BASE COURSE WIDENING - 10"
- ⑤ PROPOSED HMA SURFACE CSE, MIX "C", N70 - 1 1/2 "
- ⑥ PROPOSED HMA SURFACE REMOVAL, VARIABLE DEPTH - 0 TO 1"

NOTES:

- 1. STA. 39+00.05 TO STA. 39+36.05 AND STA. 40+43.55 TO STA. 40+79.55 - (SEE BRIDGE APPROACH PAVEMENT DETAILS IN BRIDGE PLANS)
- 2. VARIABLE DEPTH MILLING - STA. 38+00 TO STA. 39+00.05 ONLY

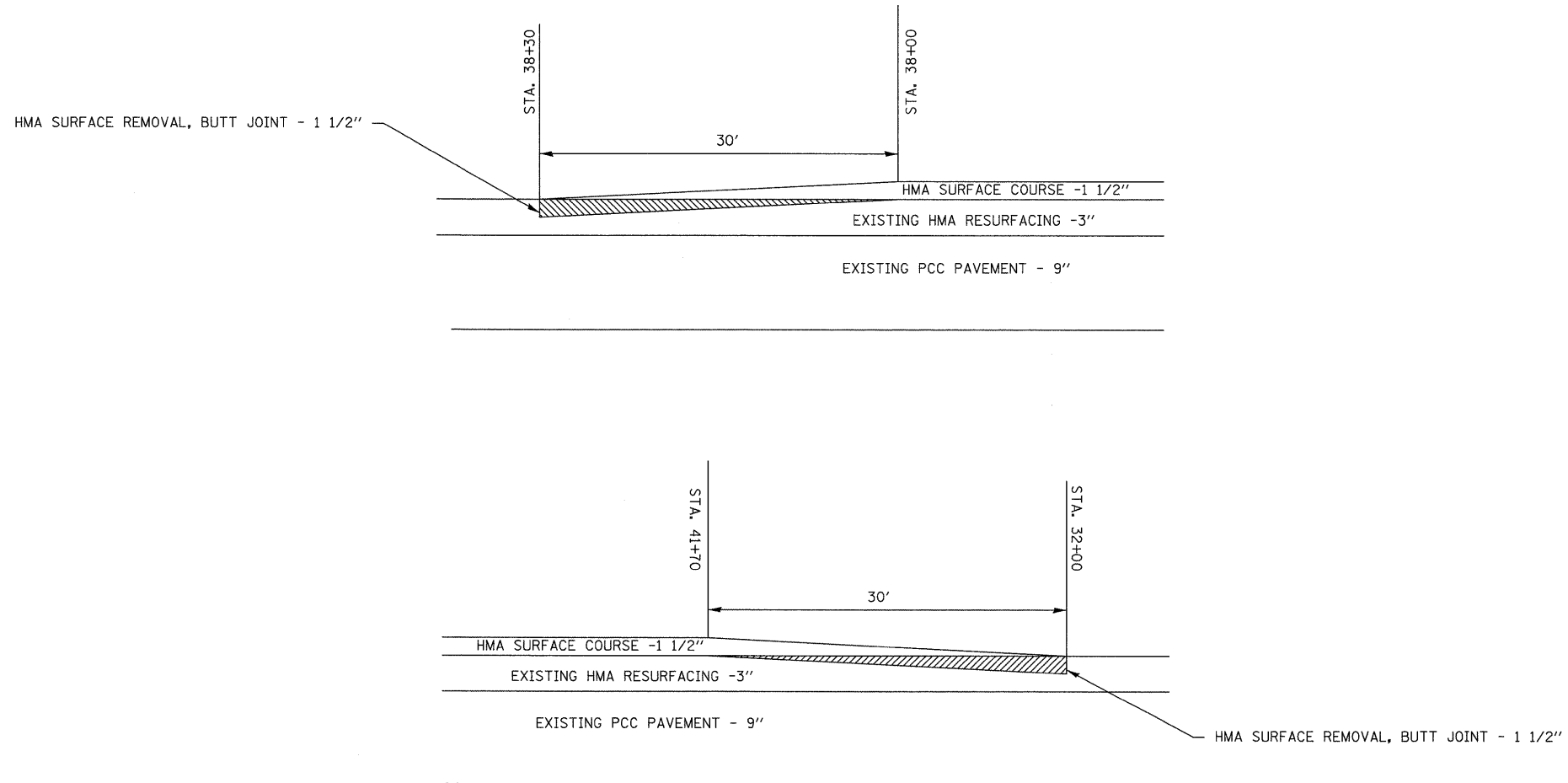
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ca\pw_work\PWIDOT\MANNM\dms71221\p1n24498a.dgn		DRAWN - Drawn By	REVISED - Revised By2		9181	52BR	ST. CLAIR	41	4			
PLOT SCALE = 50.000 ' / IN.		CHECKED - Checked By	REVISED - Revised By3		CONTRACT NO. 76120							
PLOT DATE = 10/7/2009		DATE - Checked Date	REVISED - Revised By4		ILLINOIS FED. AID PROJECT							
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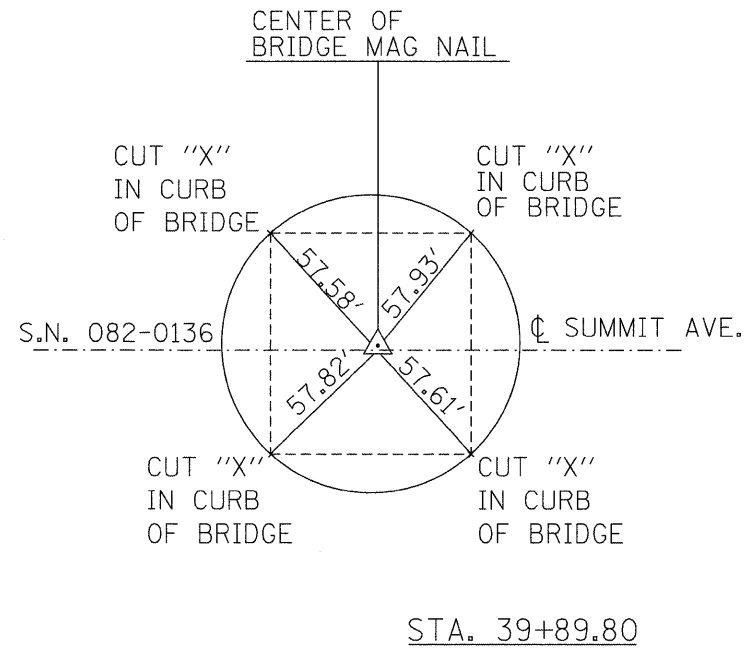
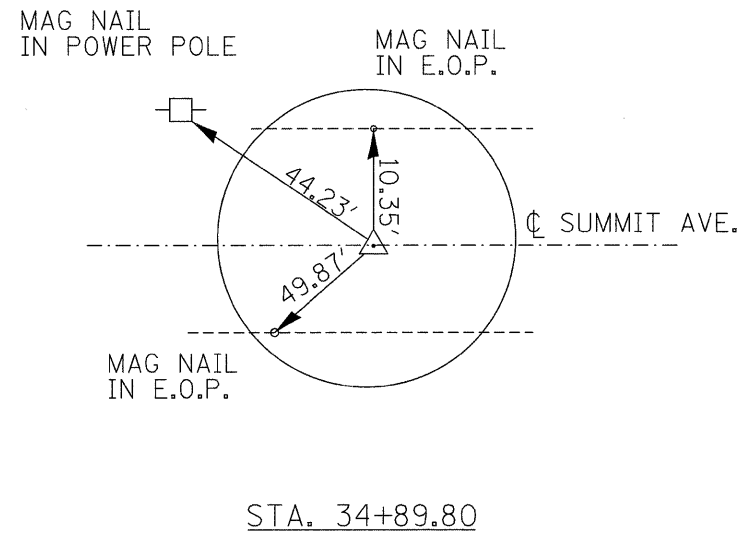
PAVEMENT MARKING SCHEDULE

STATION	THERMOPLASTIC PAVEMENT MARKING LINE-4" (FOOT)		POLYUREA PAVEMENT MARKING LINE-4" (FOOT)		SHORT TERM PAVEMENT MARKING (FOOT)	RAISED REFLECTIVE PAVEMENT MARKERS (EACH)	RAISED REFLECTIVE PAVT. MRKS. (BRIDGE) (EACH)	RAISED REFLECTIVE PAVT. MRK. REMOVAL (EACH)	PAVEMENT MARKING REMOVAL (SQ FT)	WORK ZONE PAVEMENT MRK. REM. (SQ FT)
	SOLID WHITE	SKIP-DASH YELLOW	SOLID WHITE	SKIP-DASH YELLOW						
36+79.00 TO 38+00.00	242	30			36.3	2		2	60.5	92.8
38+00.00 TO 39+00.05	200	25			30.0	1		1	50.0	76.7
39+00.05 TO 40+79.55			360	45	53.9		2	2	89.8	18.0
40+79.55 TO 42+00.00	240	30			36.1	2		2	60.2	92.3
42+00.00 TO 43+42.00	284	36			42.6	2		2	71.0	108.9
SUBTOTAL	968	121	360	45	198.9	7	2	9	331.5	388.6
TOTAL		1088		405	199.0	7	2	9	332.0	389.0

SUMMIT AVENUE PAVING SCHEDULE

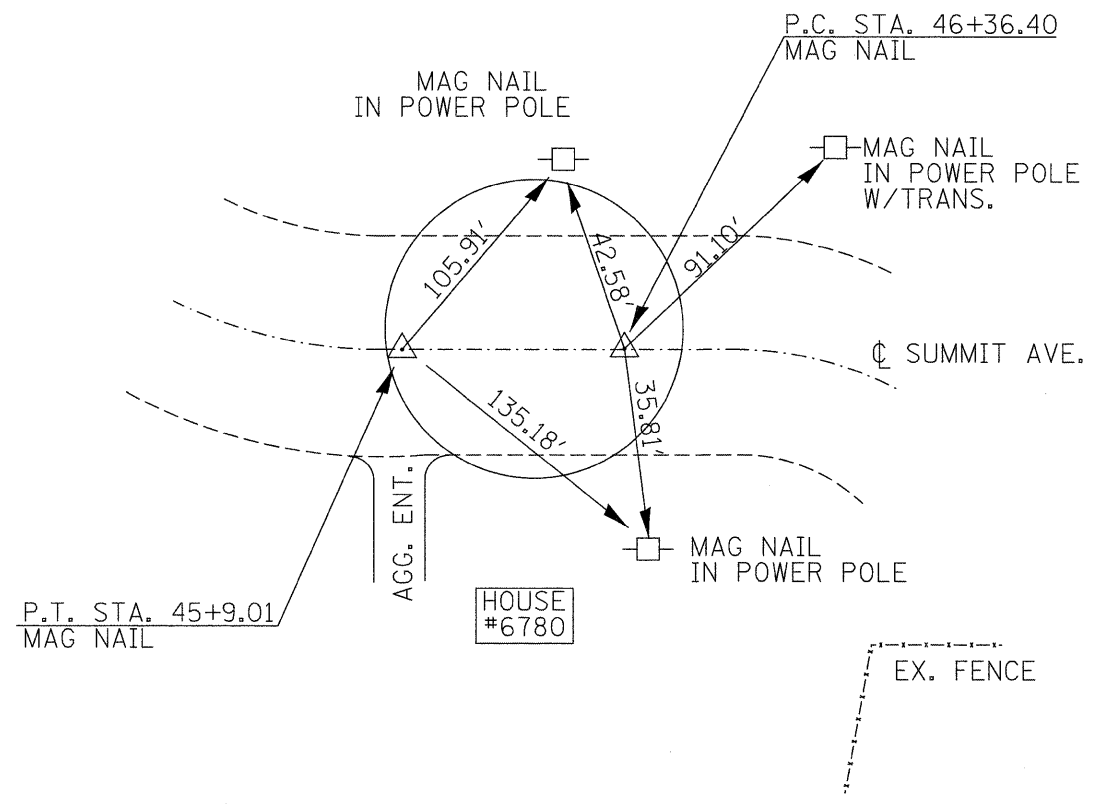
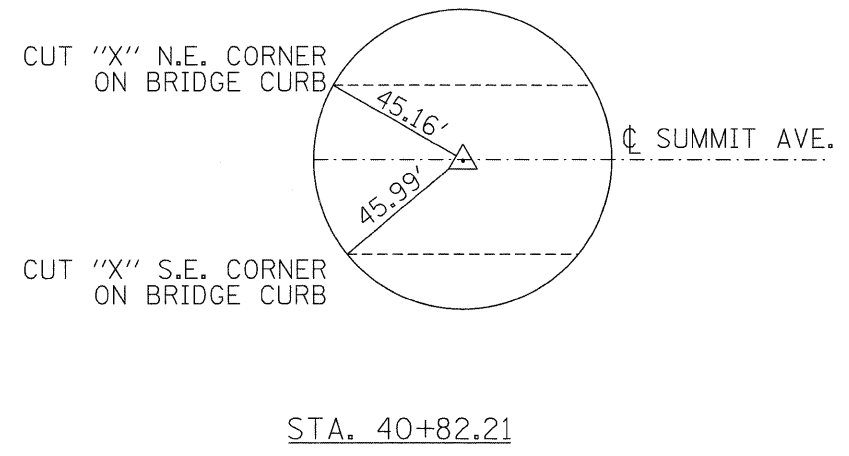
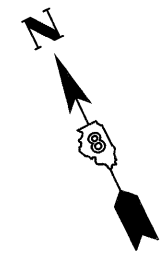
STATIONING	BIT. MATERIALS PRIME COAT (TON)	AGGREGATE PRIME COAT (TON)	HMA SURF. CSE MIX "C", N70 (TON)	HMA BASE COURSE WIDENING-10" (SQ YD)	PAVEMENT REMOVAL (SQ YD)	HMA SURF. REM. BUTT JOINT (SQ YD)	EARTH EXCAVATION WIDENING (CUY)
36+79.00 TO 38+00.00	0.00	0.00	0.0	107.6	0.0	0.0	10.0
38+00.00 TO 39+36.05	0.09	0.43	24.5	104.9	88.0	73.5	10.0
40+43.55 TO 42+00.00	0.11	0.52	29.5	123.3	88.0	73.5	11.0
42+00.00 TO 43+42.00	0.00	0.00	0.0	126.2	0.0	0.0	12.0
TOTAL	0.2	1.0	54.0	462.0	176.0	147.0	43.0





BENCH MARK

CUT SQUARE ON NW CORNER OF VALVE BOX LID @ NW CORNER OF SUMMIT AVE BRIDGE OVER HARDING DITCH (SN 082-0136) STATION 39+46 37' LEFT EL. 422.580

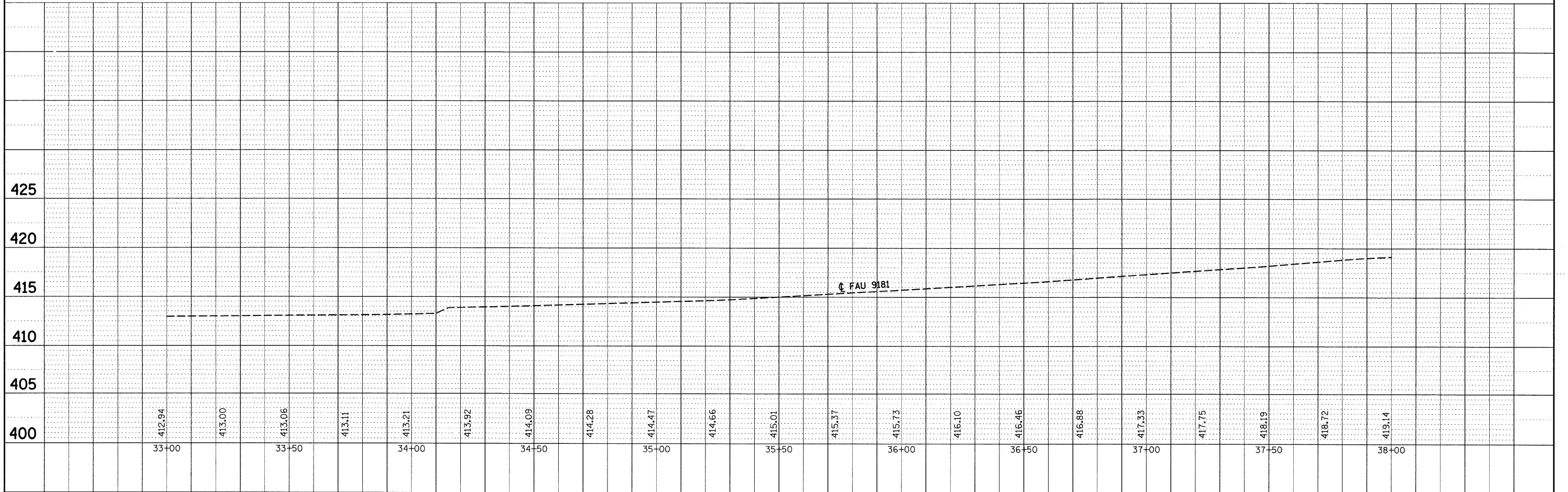
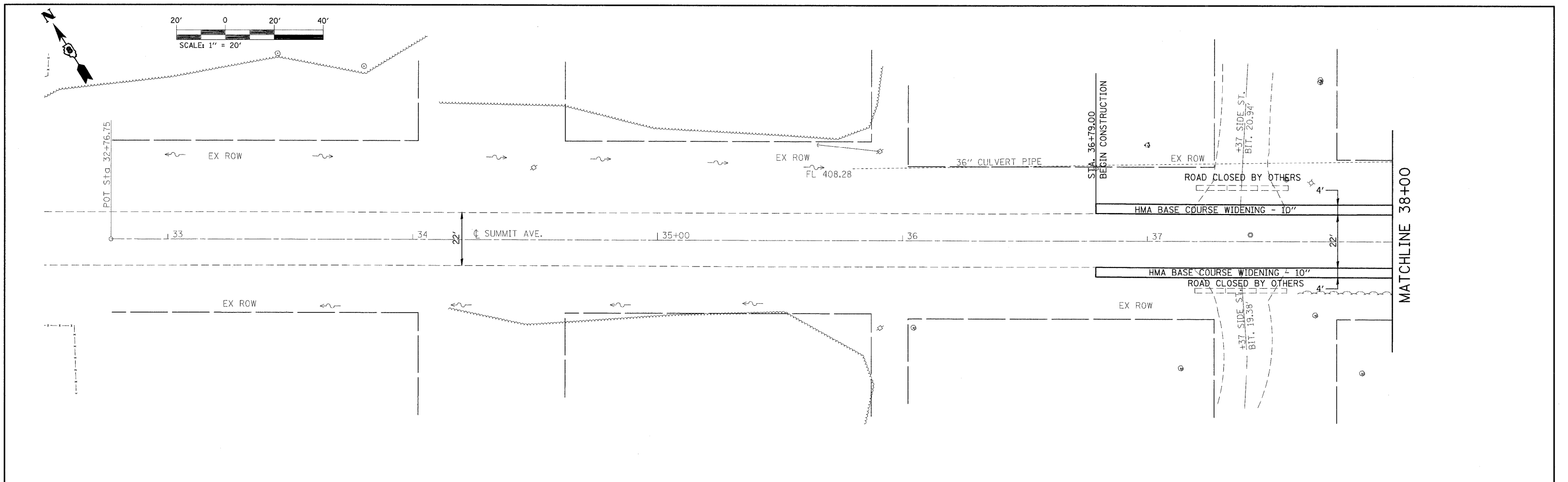


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FILE NAME =	USER NAME = maritm	DESIGNED - Designed By	REVISED - Revised By1	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TIE POINTS AND BENCHMARKS			F.A.J. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
ct:\pvt\work\PWIDOT\MANNITM\dms71221\p1n2498a.dgn		DRAWN - Drawn By	REVISED - Revised By2		SCALE: Scale	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.	9181	52BR	ST. CLAIR	41	6
		CHECKED - Checked By	REVISED - Revised By3		CONTRACT NO. 76120								
		DATE - Checked Date	REVISED - Revised By4		ILLINOIS FED. AID PROJECT								

PLAN	SURVEYED	BY	DATE
	PLOTTED		
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	RT. OF WAY CHECKED		
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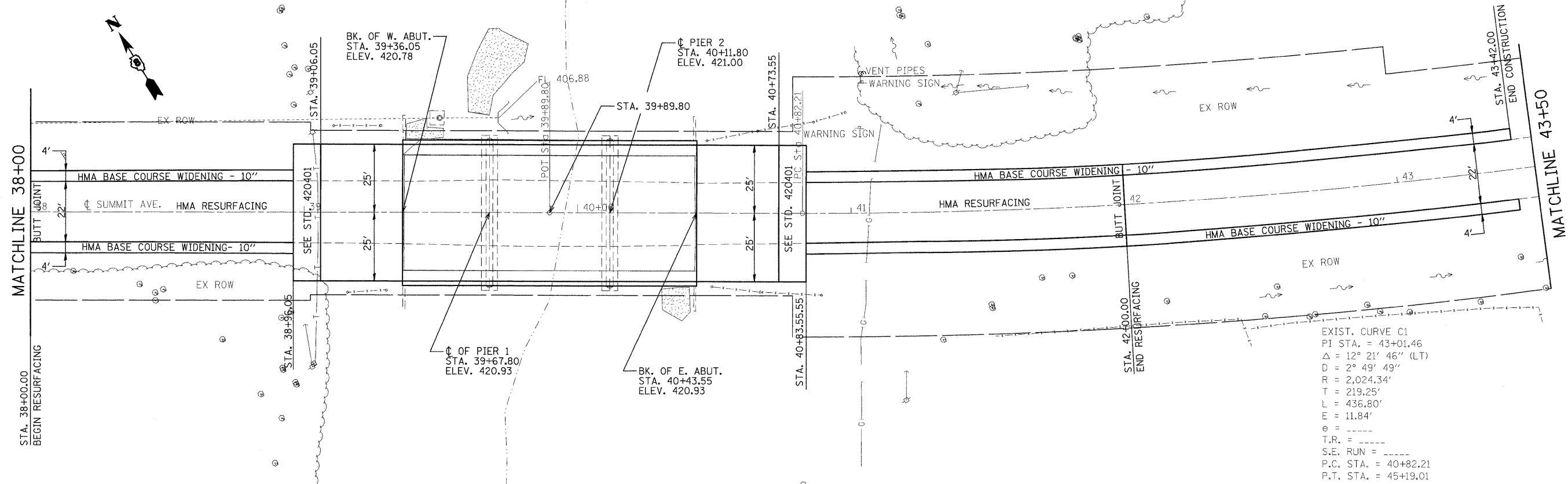
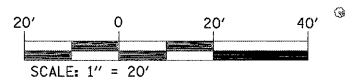
PROFILE	SURVEYED	BY	DATE
	PLOTTED		
	NOTED		
	STRUCTURE NOTATIONS GRND		
	NO.		



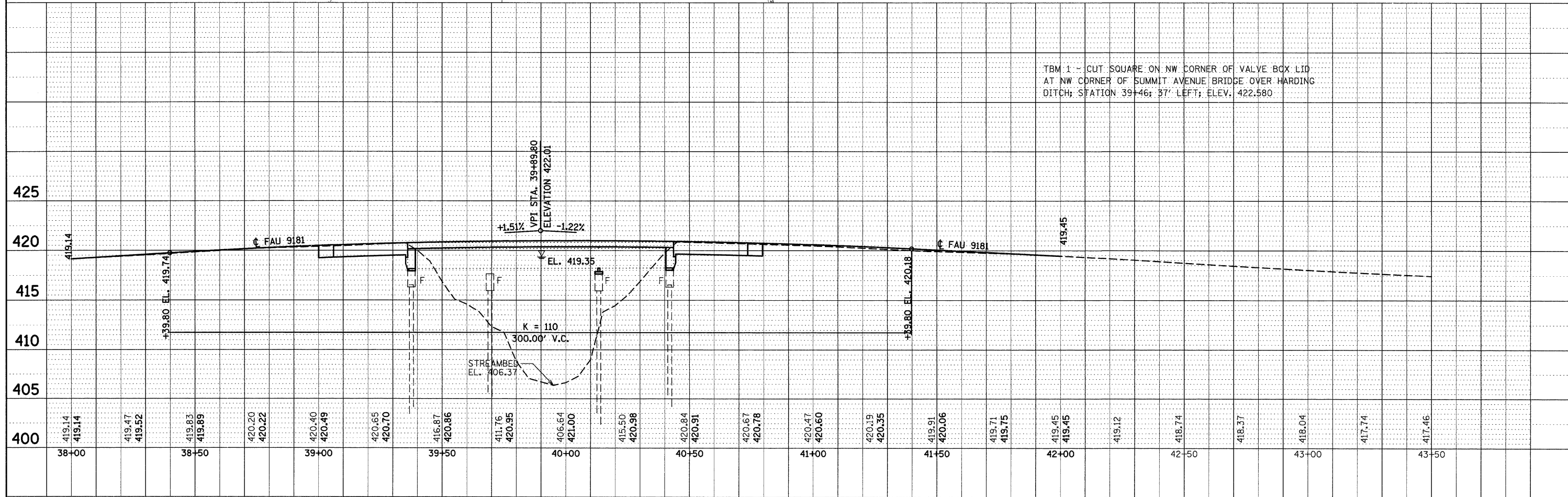
FILE NAME =	USER NAME = manrtn	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PLAN & PROFILE SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
et\pw_work\p\WIDOT\MANNM\dra71221\p\In0449	9a.dgn	DRAWN -	REVISED -			9181	52BR	ST. CLAIR	41	7	
		CHECKED -	REVISED -			CONTRACT NO. 76120					
		DATE -	REVISED -			ILLINOIS FED. AID PROJECT					
		PLOT SCALE = 20.000' / IN.		SCALE: 50:1	SHEET NO. 1 OF 3 SHEETS	STA. 32+50	TO STA. 38+00				

PLAN	SURVEYED	BY	DATE
	NOTED		
	CHECKED		
	FILED		
	NO.		
	PAID FILE NAME		

PROFILE	SURVEYED	BY	DATE
	NOTED		
	CHECKED		
	FILED		
	NO.		
	STRUCTURE NOTATION CHKD		



EXIST. CURVE C1
 PI STA. = 43+01.46
 $\Delta = 12^\circ 21' 46''$ (LT)
 $D = 2^\circ 49' 49''$
 $R = 2,024.34'$
 $T = 219.25'$
 $L = 436.80'$
 $E = 11.84'$
 $\theta =$ -----
 $T.R. =$ -----
 $S.E. RUN =$ -----
 $P.C. STA. = 40+82.21$
 $P.T. STA. = 45+19.01$



TBM 1 - CUT SQUARE ON NW CORNER OF VALVE BOX LID
 AT NW CORNER OF SUMMIT AVENUE BRIDGE OVER HARDING
 DITCH; STATION 39+46; 37' LEFT; ELEV. 422.580

FILE NAME = c:\pw_work\p\WIDOT\MANNM\dms71221\p\in844\Ba.dgn	USER NAME = mannntm	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PLAN & PROFILE SHEETS	F.A.U. RTE. 9181	SECTION 52BR	COUNTY ST. CLAIR	TOTAL SHEETS 41	SHEET NO. 8		
PLOT SCALE = 20,000' / IN.	DATE = 10/7/2009	DRAWN -	REVISED -			SCALE:	SHEET NO. 2 OF 3 SHEETS	STA. 38+00	TO STA. 43+50	CONTRACT NO. 76120		
		CHECKED -	REVISED -			ILLINOIS FED. AID PROJECT						
		DATE -	REVISED -									

PRESTAGE CONSTRUCTION

1. PRESTAGE CONSTRUCTION SHALL CONSIST OF CONSTRUCTING THE 4' WIDENING ON THE NORTH SIDE OF THE PAVEMENT FOR STAGE 1 TRAFFIC. TRAFFIC CONTROL FOR THIS WORK SHALL BE IN ACCORDANCE WITH THE APPLICABLE PORTIONS OF THE TRAFFIC CONTROL AND PROTECTION, STANDARD 701326.
2. ONE LANE OF TRAFFIC IN BOTH DIRECTIONS SHALL BE OPEN TO TRAFFIC AT ALL TIMES DURING THE PRESTAGE CONSTRUCTION
3. THE PROPOSED WIDENING SHALL INCLUDE PLACING EARTH EXCAVATION AGAINST WIDENING TO DRAIN. THE WIDENING SHALL CONSIST OF HOT-MIX ASPHALT BASE COURSE WIDENING-10".

STAGE I CONSTRUCTION

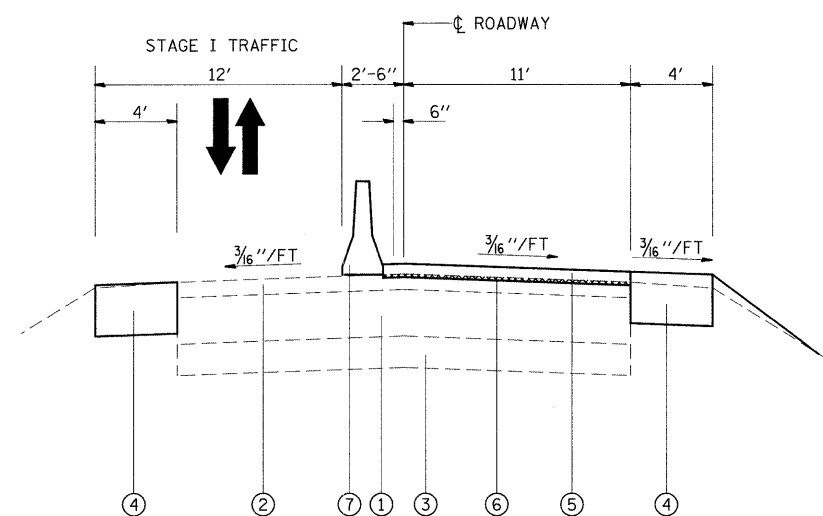
1. STAGE I CONSTRUCTION SHALL CONSIST OF PLACING THE 4' WIDENING FOR STAGE II CONSTRUCTION ON THE SOUTH SIDE OF THE PAVEMENT, STAGE I CONSTRUCTION OF THE BRIDGE, AND PLACING THE HMA RESURFACING.
2. THE PROPOSED WIDENING SHALL INCLUDE PLACING EARTH EXCAVATION AGAINST WIDENING TO DRAIN. THE WIDENING SHALL CONSIST OF HOT-MIX ASPHALT BASE COURSE WIDENING-10".
3. TRAFFIC CONTROL FOR STAGE I SHALL BE IN ACCORDANCE WITH THE APPLICABLE PORTIONS OF STANDARD 701321. ANY ADDITIONAL SIGNING OR TRAFFIC CONTROL DEVICES SHOWN IN THE STAGE CONSTRUCTION PLANS SHALL BE CONSIDERED AS INCLUDED IN THE COST OF TRAFFIC CONTROL AND PROTECTION, STANDARD 701321 (SPECIAL).

STAGE II CONSTRUCTION

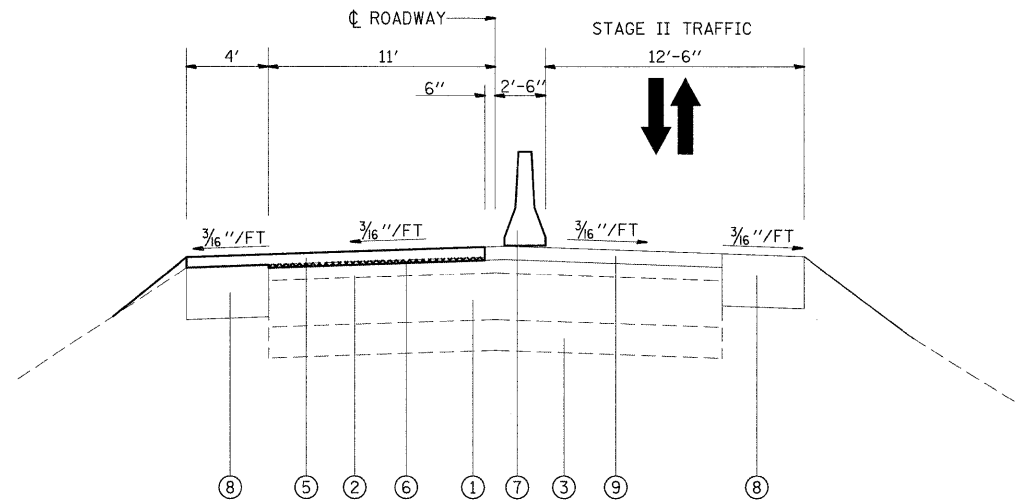
1. STAGE II CONSTRUCTION SHALL CONSIST OF STAGE II CONSTRUCTION OF THE BRIDGE AND PLACING THE HMA RESURFACING.
2. TRAFFIC CONTROL FOR STAGE II SHALL BE IN ACCORDANCE WITH THE APPLICABLE PORTIONS OF STANDARD 701321 ANY ADDITIONAL SIGNING OR TRAFFIC CONTROL DEVICES SHOWN IN THE STAGE CONSTRUCTION PLANS SHALL BE CONSIDERED AS INCLUDED IN THE COST OF TRAFFIC CONTROL AND PROTECTION 701321 (SPECIAL).

NOTES:

1. THE BOTTOM 6" OF THE TEMPORARY CONCRETE BARRIER SHALL BE PAINTED WITH TEMPORARY PAVEMENT MARKING "WHITE". THE COST FOR THIS SHALL BE CONSIDERED AS INCLUDED IN THE COST OF TEMPORARY CONCRETE BARRIER.
2. ALL CONFLICTING PAVEMENT MARKING SHALL BE REMOVED PRIOR TO PLACING PAVEMENT MARKING NECESSARY FOR STAGE CONSTRUCTION.
3. THE TEMPORARY BRIDGE SIGNALS SHALL BE CONSIDERED 1 EACH PER INSTALLATION.
4. IF THE CONTRACTOR CHOOSES THE OPTION OF SAND MODULE IMPACT ATTENUATORS THEN THE LAYOUT SHOWN BELOW SHOULD BE USED.
5. THIS PROJECT WILL REQUIRE TEMPORARY RUMBLE STRIP.



STAGE I TRAFFIC
 STA. 38+00.00 TO STA. 39+36.05
 STA. 40+43.55 TO STA. 42+00.00

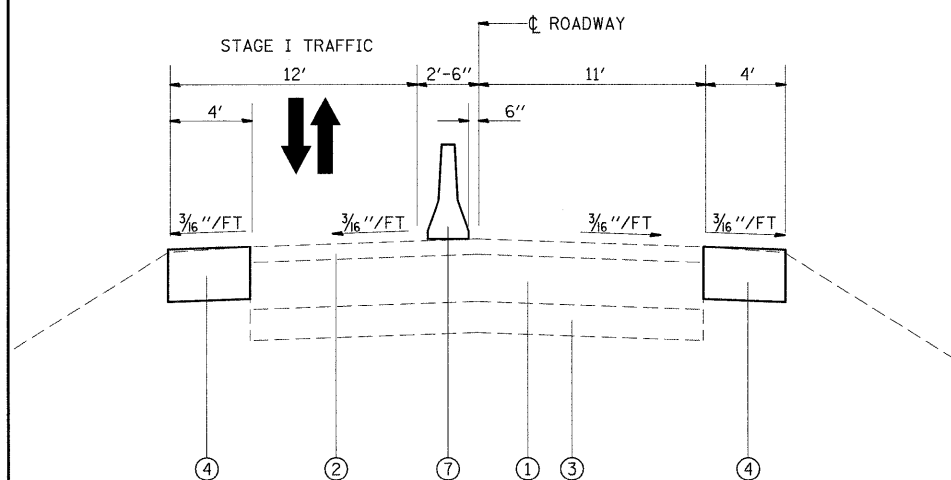


STAGE II TRAFFIC
 STA. 38+00.00 TO STA. 39+36.05
 STA. 40+43.55 TO STA. 42+00.00

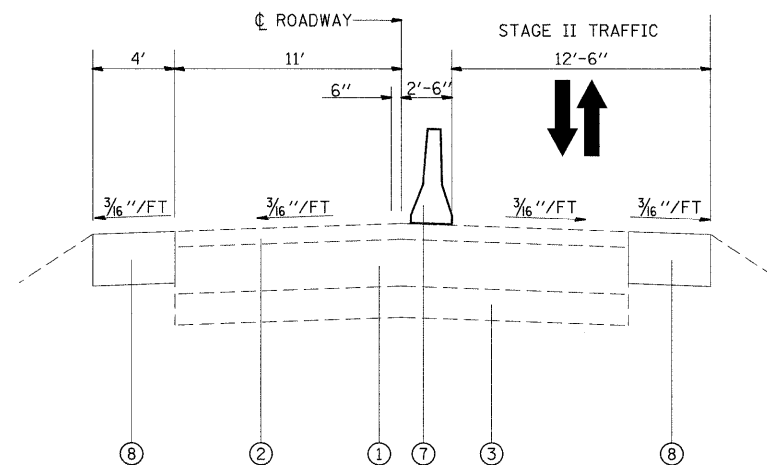
LEGEND

- ① EXISTING PORTLAND CEMENT CONCRETE PAVEMENT - 9"
- ② EXISTING HMA RESURFACING - 3"
- ③ EXISTING AGGREGATE BASE COURSE - 6"
- ④ PROPOSED HMA BASE COURSE WIDENING - 10"
- ⑤ PROPOSED HMA SURFACE CSE, MIX "C", N70 - 1 1/2 "
- ⑥ PROPOSED HMA SURFACE COURSE REMOVAL - VARIABLE DEPTH
- ⑦ TEMPORARY CONCRETE BARRIER
- ⑧ HMA BASE CSE WIDENING PLACED IN EARLIER STAGE
- ⑨ HMA SURFACE COURSE PLACED IN EARLIER STAGE

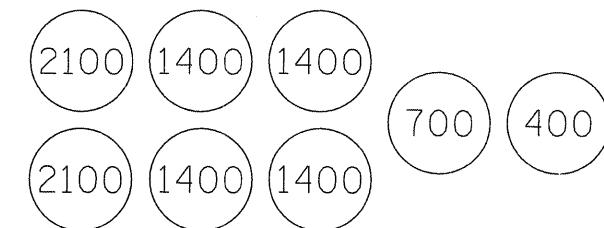
NOTE: SEE BRIDGE APPROACH STANDARD FOR DETAILS REGARDING PAVEMENT BETWEEN STATION 39+00.05 TO STATION 39+36.05 AND BETWEEN STATION 40+43.55 TO STATION 40+79.55.



STAGE I TRAFFIC
 STA. 36+79.00 TO STA. 38+00.00
 STA. 42+00.00 TO STA. 43+43.00

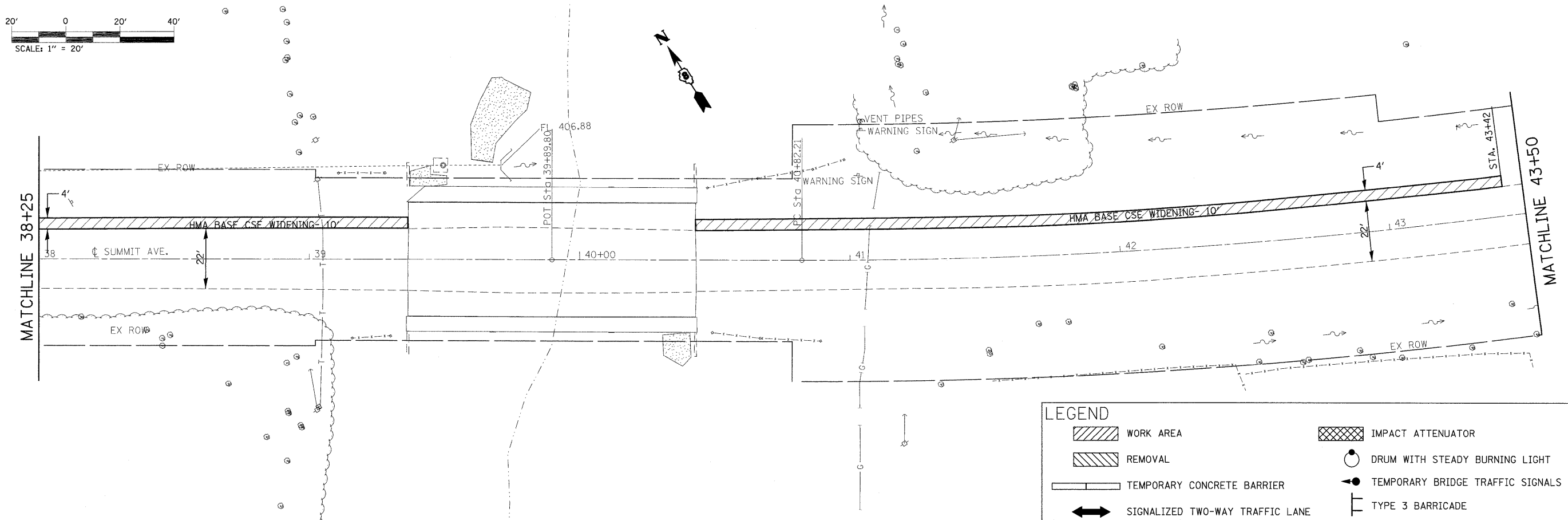
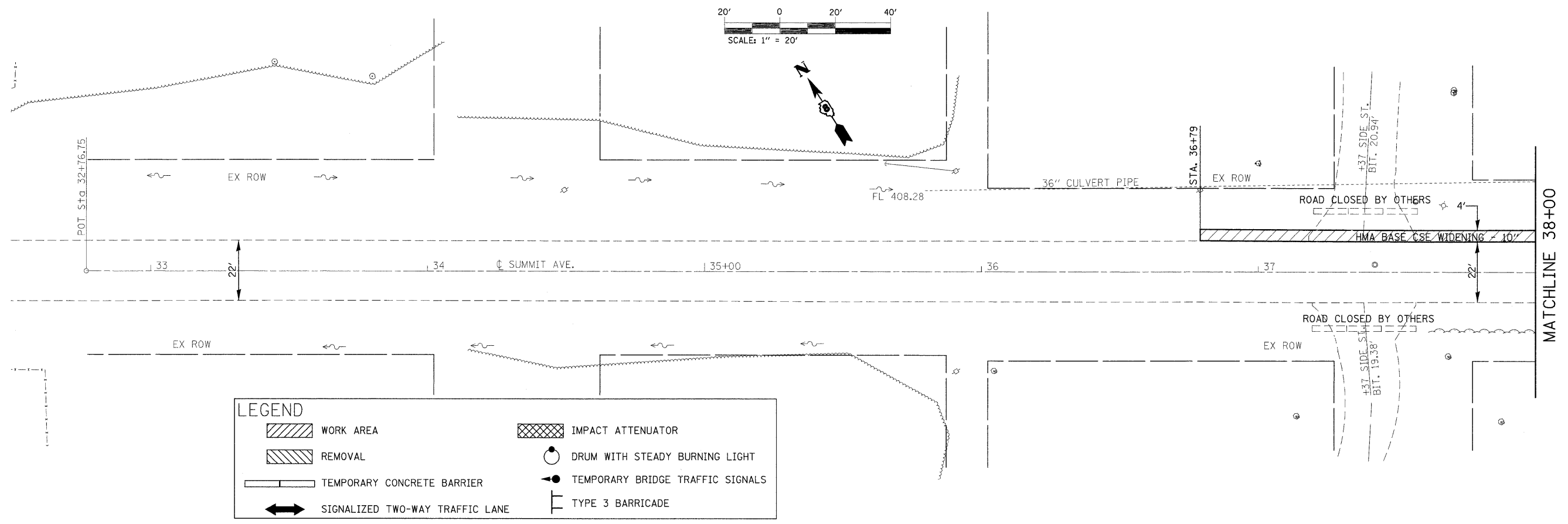


STAGE II TRAFFIC
 STA. 36+79.00 TO STA. 38+00.00
 STA. 42+00.00 TO STA. 43+43.00



SAND MODULE IMPACT ATTENUATOR

FILE NAME =	USER NAME = manrstm	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STAGE CONSTRUCTION			F.A.U. RTE. 9181	SECTION 52BR	COUNTY ST. CLAIR	TOTAL SHEETS 41	SHEET NO. 10
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	PLOT DATE = 10/7/2009	CHECKED -	REVISED -		ILLINOIS FED. AID PROJECT							
		DATE -	REVISED -									



FILE NAME =	USER NAME = manrtn	DESIGNED -	REVISED -
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PLOT SCALE = 20,000 / IN.		CHECKED -	REVISED -
PLOT DATE = 10/7/2009		DATE -	REVISED -

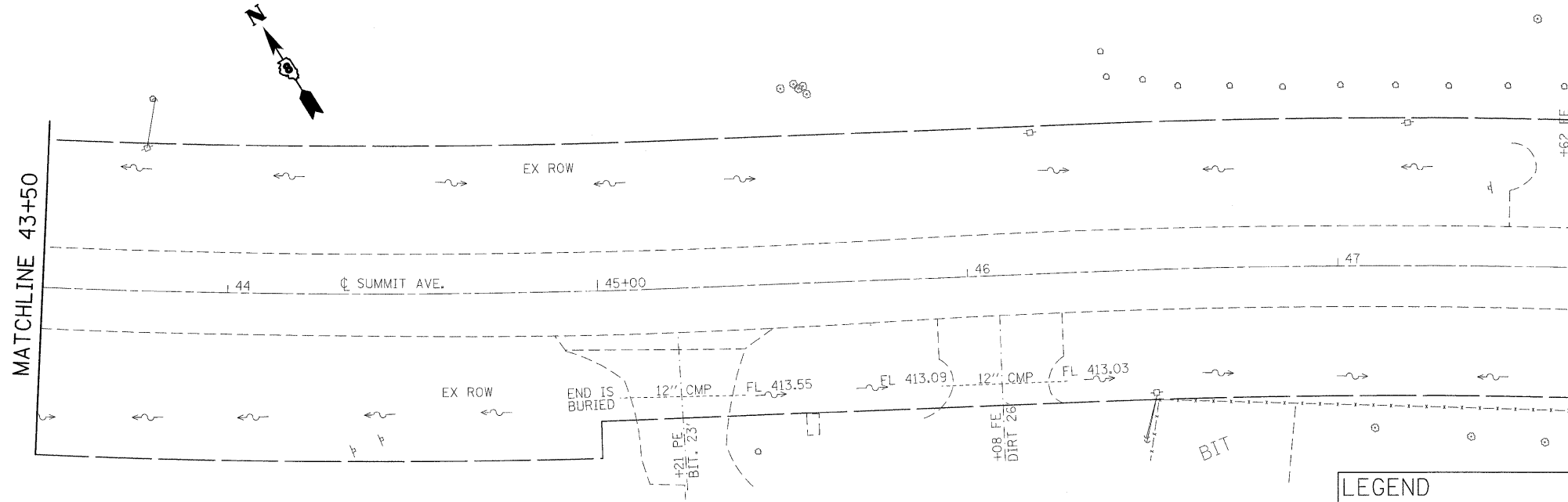
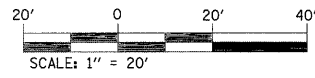
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

STAGE 1A CONSTRUCTION

SCALE: SHEET NO. 2 OF 7 SHEETS STA. TO STA.

F.A.U. RTE. 9181	SECTION 52BR	COUNTY ST. CLAIR	TOTAL SHEETS 41	SHEET NO. 11
CONTRACT NO. 76120				

ILLINOIS FED. AID PROJECT



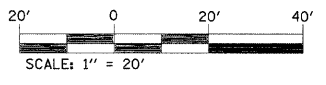
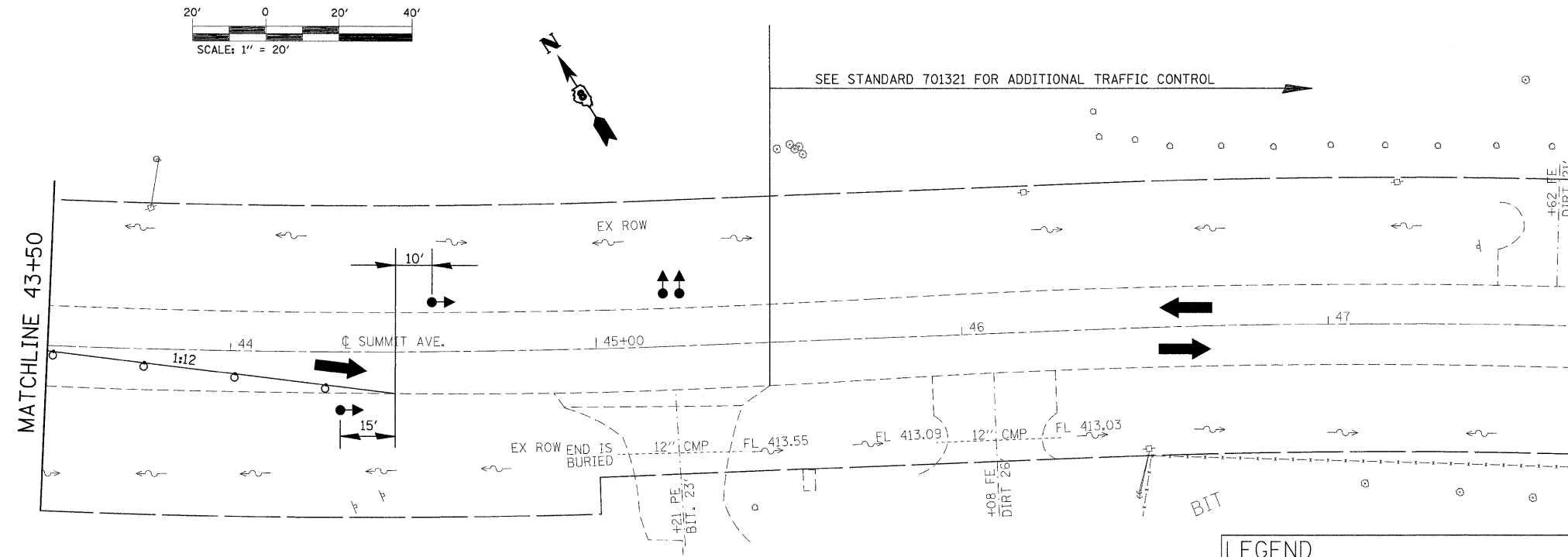
LEGEND	
	WORK AREA
	IMPACT ATTENUATOR
	REMOVAL
	DRUM WITH STEADY BURNING LIGHT
	TEMPORARY CONCRETE BARRIER
	SIGNALIZED TWO-WAY TRAFFIC LANE
	TEMPORARY BRIDGE TRAFFIC SIGNALS
	TYPE 3 BARRICADE

FILE NAME =	USER NAME = manntm	DESIGNED -	REVISED -
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	PLOT SCALE = 20.000' / IN.	CHECKED -	REVISED -
	PLOT DATE = 10/7/2009	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SCALE:	SHEET NO. 3 OF 7 SHEETS	STA.	TO STA.
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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9181	52BR	ST. CLAIR	41	12
CONTRACT NO. 76120				
ILLINOIS FED. AID PROJECT				

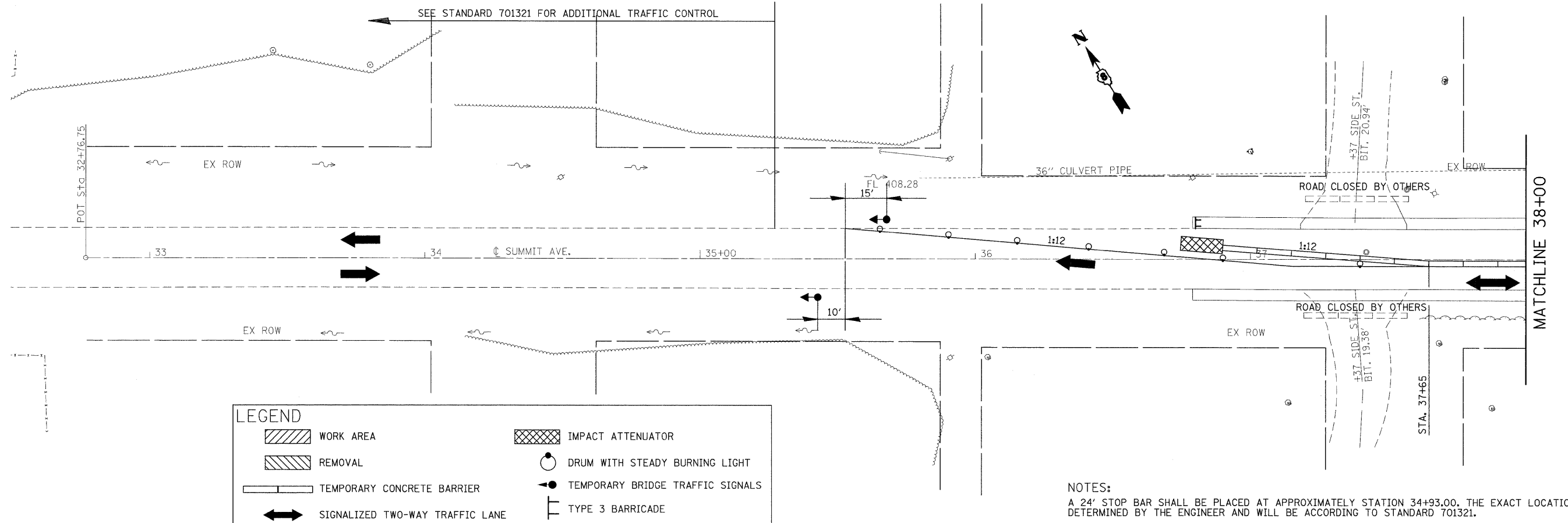


SEE STANDARD 701321 FOR ADDITIONAL TRAFFIC CONTROL

LEGEND	
	WORK AREA
	IMPACT ATTENUATOR
	REMOVAL
	DRUM WITH STEADY BURNING LIGHT
	TEMPORARY CONCRETE BARRIER
	SIGNALIZED TWO-WAY TRAFFIC LANE
	TEMPORARY BRIDGE TRAFFIC SIGNALS
	TYPE 3 BARRICADE

NOTES:
 A 24' STOP BAR SHALL BE PLACED AT APPROXIMATELY STATION 45+05.000. THE EXACT LOCATION WILL BE DETERMINED BY THE ENGINEER AND WILL BE IN ACCORDANCE WITH STANDARD 701321.

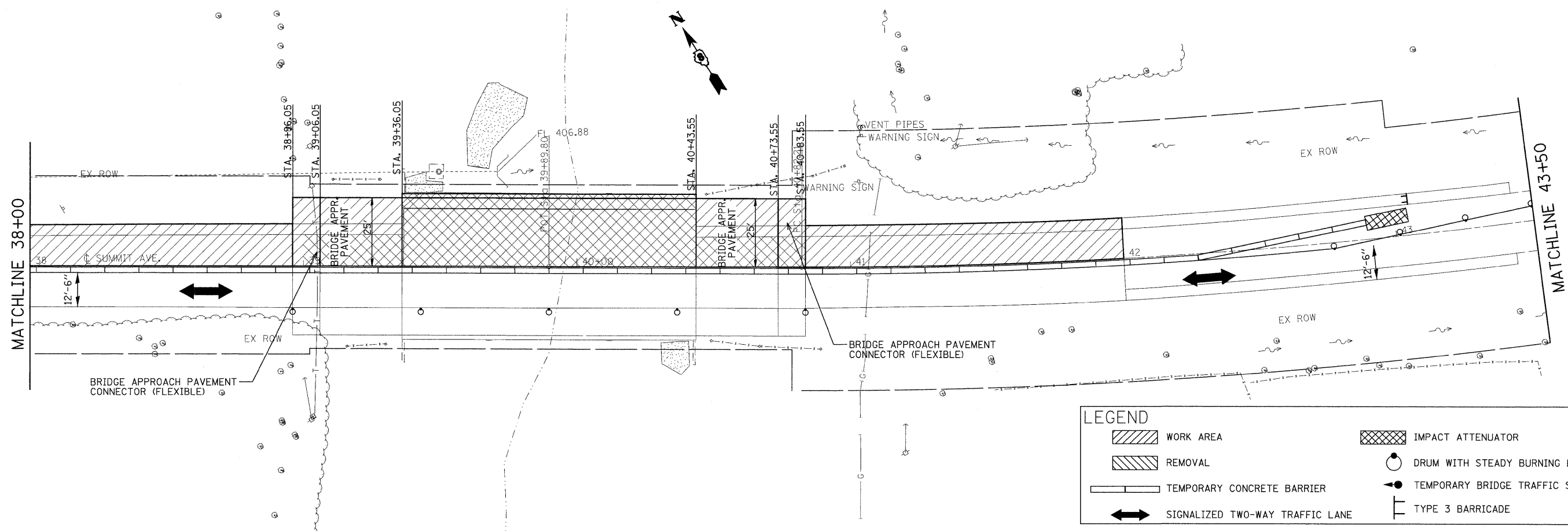
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	PLOT DATE = 10/7/2009	CHECKED -	REVISED -		SCALE: SHEET NO. 5 OF 7 SHEETS STA. TO STA.			CONTRACT NO. 76120				
		DATE -	REVISED -		ILLINOIS FED. AID PROJECT							



LEGEND

WORK AREA	IMPACT ATTENUATOR
REMOVAL	DRUM WITH STEADY BURNING LIGHT
TEMPORARY CONCRETE BARRIER	TEMPORARY BRIDGE TRAFFIC SIGNALS
SIGNALIZED TWO-WAY TRAFFIC LANE	TYPE 3 BARRICADE

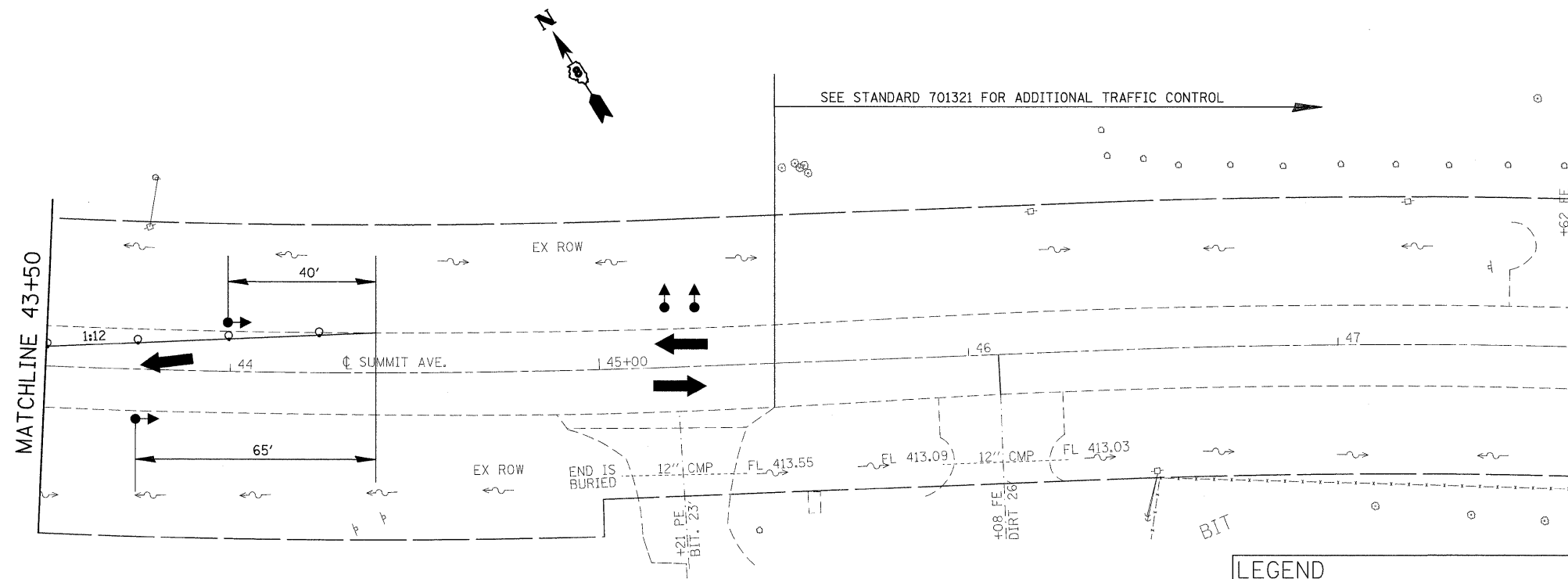
NOTES:
 A 24' STOP BAR SHALL BE PLACED AT APPROXIMATELY STATION 34+93.00. THE EXACT LOCATION WILL BE DETERMINED BY THE ENGINEER AND WILL BE ACCORDING TO STANDARD 701321.



LEGEND

WORK AREA	IMPACT ATTENUATOR
REMOVAL	DRUM WITH STEADY BURNING LIGHT
TEMPORARY CONCRETE BARRIER	TEMPORARY BRIDGE TRAFFIC SIGNALS
SIGNALIZED TWO-WAY TRAFFIC LANE	TYPE 3 BARRICADE

FILE NAME =	USER NAME = manrtm	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STAGE 2 CONSTRUCTION		F.A.U. RTE. =	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
ct:\pw\work\PWIDOT\MANNITM\dms71221\p1n0498a.dgn		DRAWN -	REVISED -		SCALE:	SHEET NO. 6 OF 7 SHEETS	STA.	9181	52BR	ST. CLAIR	41	15
		CHECKED -	REVISED -				TO STA.					
		DATE -	REVISED -									
										CONTRACT NO. 76120		
										ILLINOIS FED. AID PROJECT		



NOTES:
 A 24' STOP BAR SHALL BE PLACED AT APPROXIMATELY STATION 45+50.00. THE EXACT LOCATION WILL BE DETERMINED BY THE ENGINEER AND WILL BE IN ACCORDANCE WITH STANDARD 701321.

LEGEND	
	WORK AREA
	REMOVAL
	TEMPORARY CONCRETE BARRIER
	SIGNALIZED TWO-WAY TRAFFIC LANE
	IMPACT ATTENUATOR
	DRUM WITH STEADY BURNING LIGHT
	TEMPORARY BRIDGE TRAFFIC SIGNALS
	TYPE 3 BARRICADE

FILE NAME =	USER NAME = menrtm	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STAGE 2 CONSTRUCTION			F.A.J. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
ca\pwwork\PWIDOT\MANNTM\dms71221\p1n04498a.dgn		DRAWN -	REVISED -					9181	52BR	ST. CLAIR	41	16
PLOT SCALE = 20,000' / IN.		CHECKED -	REVISED -		CONTRACT NO. 76120							
PLOT DATE = 10/7/2009		DATE -	REVISED -		SCALE:	SHEET NO. 7 OF 7 SHEETS	STA.	TO STA.	ILLINOIS FED. AID PROJECT			

Bench Mark: Chiseled "□" on NW corner of Lid and Valve Box at West End and North Side of Summit Avenue Bridge
Marked and painted TB #1 Elev. 422.58.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 9181	52BR	ST. CLAIR	41	17
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

Contract #76120

Existing Structure: S.N. 082-0136, 3-span reinforced concrete deck on non-composite steel wide flange beams.
Built 1957 under SA 69, Section 52-B-CS at Station 39+89. Open pile bent abutments and piers, supported on concrete piles. The existing concrete deck to be removed and replaced with a composite concrete deck.
Traffic to be maintained utilizing stage construction.

No salvage

GENERAL NOTES

All new structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M 300, type 1. Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts. Bolts 7/8 in. ϕ , holes 15/16 in. ϕ , unless otherwise noted.
No field welding is permitted except as specified in the contract documents.
All construction joints shall be bonded.
Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
Reinforcement bars designated (E) shall be epoxy coated.
Calculated weight of structural steel = 2030 lbs. (AASHTO M270, Grade 36)
= 1200 lbs. (AASHTO M270, Grade 50)

The SSPC-QP1 and SSPC-QP2 Painting Contractor Certifications will be required for this bridge.

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

The existing structural steel contains lead. The contractor should take appropriate precautions to deal with the presence of lead on this project.

Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.
As directed by the Engineer, existing construction accessories welded to the top flange of beams shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding 1/4 inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

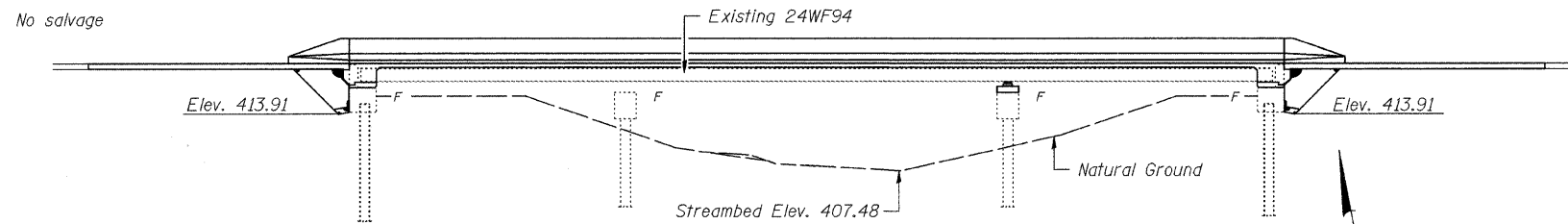
Bearing seat surfaces shall be constructed or adjusted to their designated elevations within a tolerance of 1/8 inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.

Cleaning and Painting of the existing structural steel shall be as specified in the special provision for "Cleaning and Painting Existing Steel Structures". All existing steel shall be cleaned per Near White Blast Cleaning - SSPC-SP10. All existing steel shall be painted according to the requirements of Paint System 1 - 0Z/E/U. The color of the final finish coat shall be Gray, Munsell No. 5B 7/1.

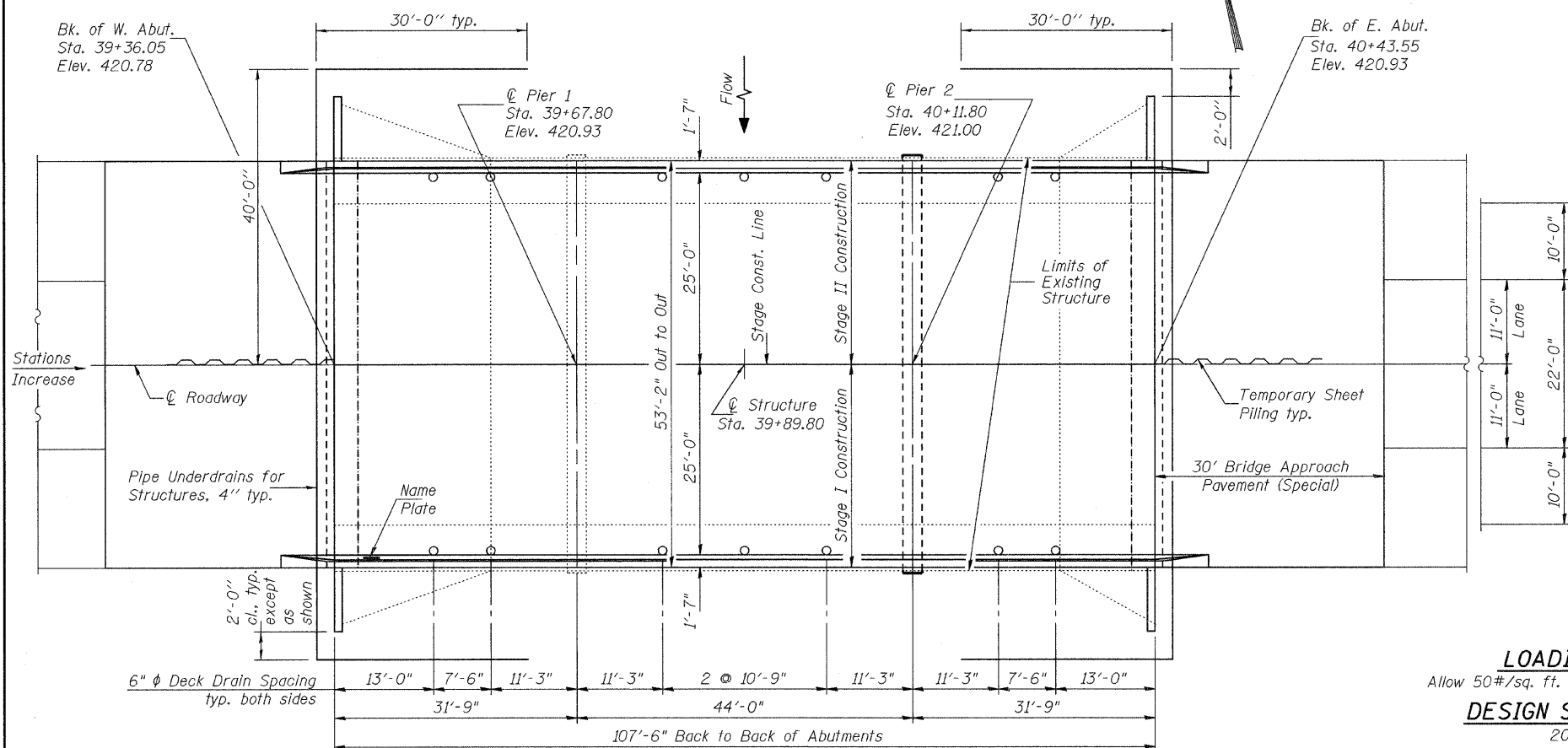
A minimum of 1 (one) air monitor will be required to monitor abrasive blasting operations at this site, see special provision for "Containment and Disposal of Lead Paint Cleaning Residues".

TOTAL BILL OF MATERIAL

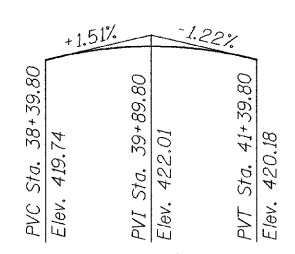
ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Concrete Deck	Each	1		1
Concrete Removal	Cu. Yd.		18.8	18.8
Structure Excavation	Cu. Yd.		171.0	171.0
Concrete Superstructure	Cu. Yd.	360.7		360.7
Protective Coat	Sq. Yd.	1047		1047
Jack and Remove Existing Bearings	Each	20		20
Concrete Structures	Cu. Yd.		45.6	45.6
Stud Shear Connectors	Each	3310		3310
Reinforcement Bars, Epoxy Coated	Pound	77600	9250	86850
Bar Splicers	Each	601	62	663
Bridge Deck Grooving	Sq. Yd.	920		920
Floor Drains	Each	14		14
Furnishing and Erecting Structural Steel	Pound	3230		3230
Porous Granular Embankment (Special)	Cu. Yd.		136.1	136.1
Temporary Sheet Piling	Sq. Ft.		412.0	412.0
Name Plates	Each	1		1
Cleaning and Painting Steel Bridge	L. Sum	1		1
Containment and Disposal of Lead Paint Cleaning Residues	L. Sum	1		1
Pipe Underdrains for Structures, 4"	Foot		275	275
Geocomposite Wall Drain	Sq. Yd.		90.8	90.8
Anchor Bolts 1"	Each	20		20
Jacking and Cribbing	Each	10		10



ELEVATION



PLAN



PROFILE GRADE
(along ϕ roadway)

STATION 39+89.80
REBUILT 20 BY
STATE OF ILLINOIS
F.A.U. RT. 9181 SECTION 52BR
LOADING HS20
STR. NO. 082-0136

NAME PLATE

See Std. 515001

Note:
Existing Name Plate to be cleaned and relocated next to the new Name Plate.
Cost included with Name Plates.

DESIGNED	W.A. BEISNER
CHECKED	D.F. ZERUEN
BML	FOSSELA TEKELAIMAR
DRAWN	PAUL W. SWEET
CHECKED	SMR/FT

EXAMINED
PASSED
ENGINEER OF BRIDGE DESIGN
ENGINEER OF BRIDGES AND STRUCTURES



EXPIRES 11-30-2010

WATERWAY INFORMATION

Drainage Area = 42.1 sq. mi. Low Grade Elev. 420.42* @ Sta. 39+14

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	50	2,550	592	592	420.46	0.26	0.26	420.72	420.72
Base	100	2,550	592	592	420.46	0.26	0.26	420.72	420.72
Overtopping	5	2,550	592	592	420.46	0.26	0.26	420.72	420.72
Max. Calc.	500								

*Existing and proposed low grade between levees.

LOADING HS20-44
Allow 50#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS

2002 AASHTO
1995 Seismic Retrofitting Manual for Highway Bridges
FHWA RD-94-052

DESIGN STRESSES

FIELD UNITS (Substructure)

$f_c = 800$ psi
 $f_s = 20,000$ psi (reinforcement)

FIELD UNITS (Superstructure)

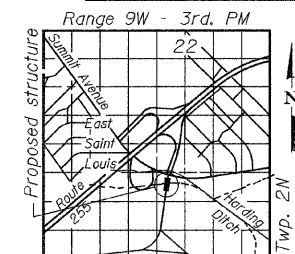
$f_y = 33,000$ psi (Structural Steel)

FIELD UNITS (New Construction)

$f_c = 3,500$ psi
 $f_y = 60,000$ psi (reinforcement)
 $f_y = 36,000$ psi (Structural Steel, AASHTO M270 Gr. 36)
 $f_y = 50,000$ psi (Structural Steel, AASHTO M270 Gr. 50)

SEISMIC DATA

Seismic Performance Category (SPC) = B
Bedrock Acceleration Coefficient (A) = 11.2 %
Site Coefficient (S) = 1.3



LOCATION SKETCH

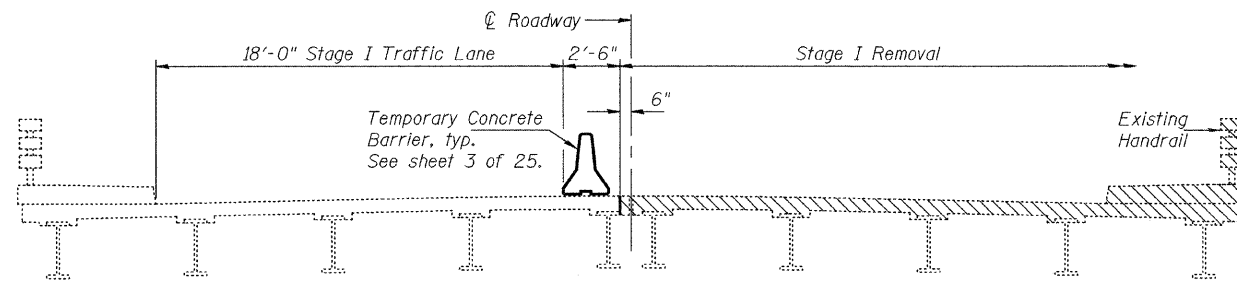
GENERAL PLAN & ELEVATION
SUMMIT AVENUE OVER

HARDING DITCH
F.A.U. ROUTE 9181 - SECTION 52BR
ST. CLAIR COUNTY
STATION 39+89.80
STRUCTURE NO. 082-0136

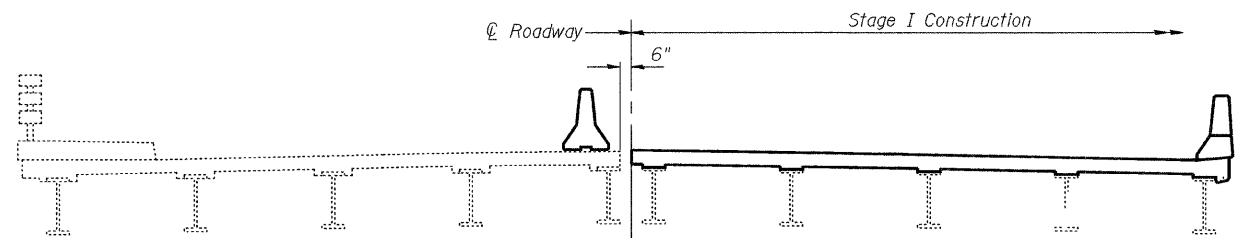
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 2
F.A.U. 9181	52BR	ST. CLAIR	41	18	25 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			

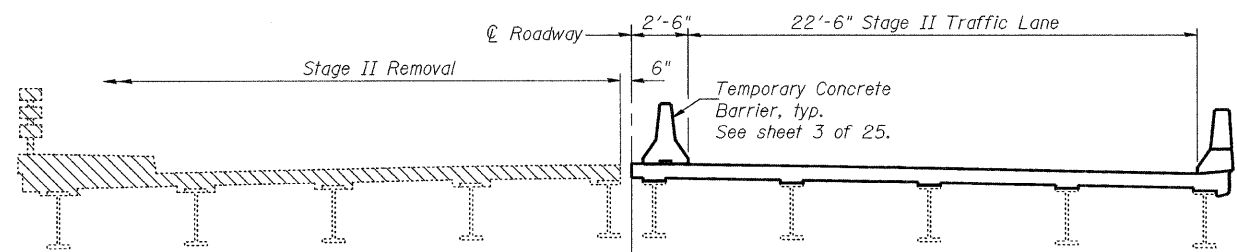
Contract #76120



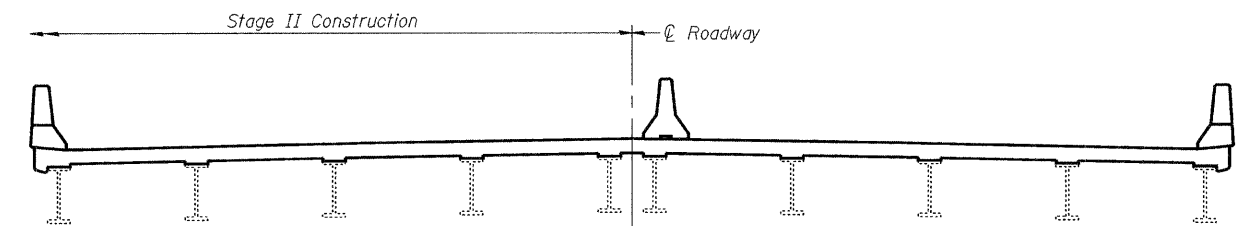
STAGE I REMOVAL



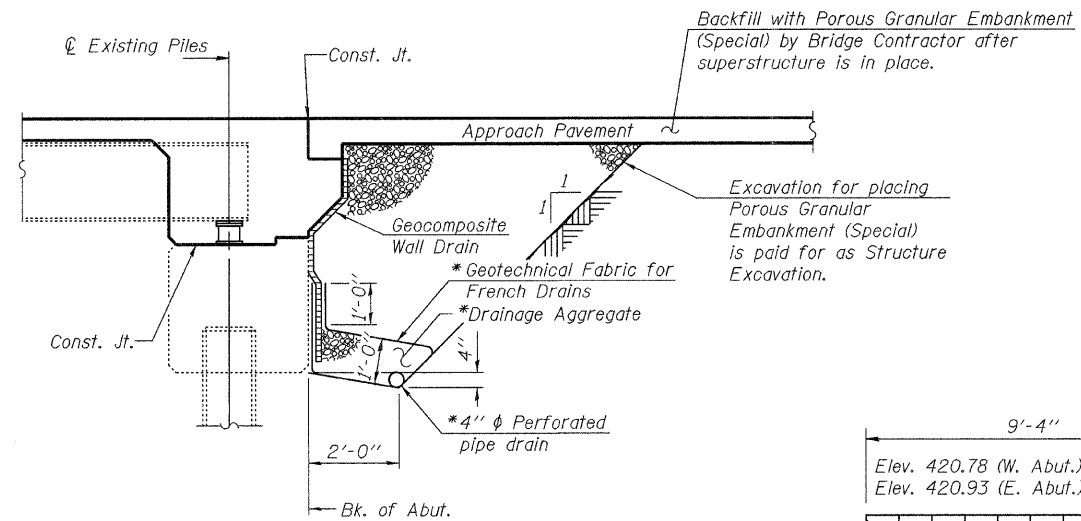
STAGE I CONSTRUCTION



STAGE II REMOVAL



STAGE II CONSTRUCTION



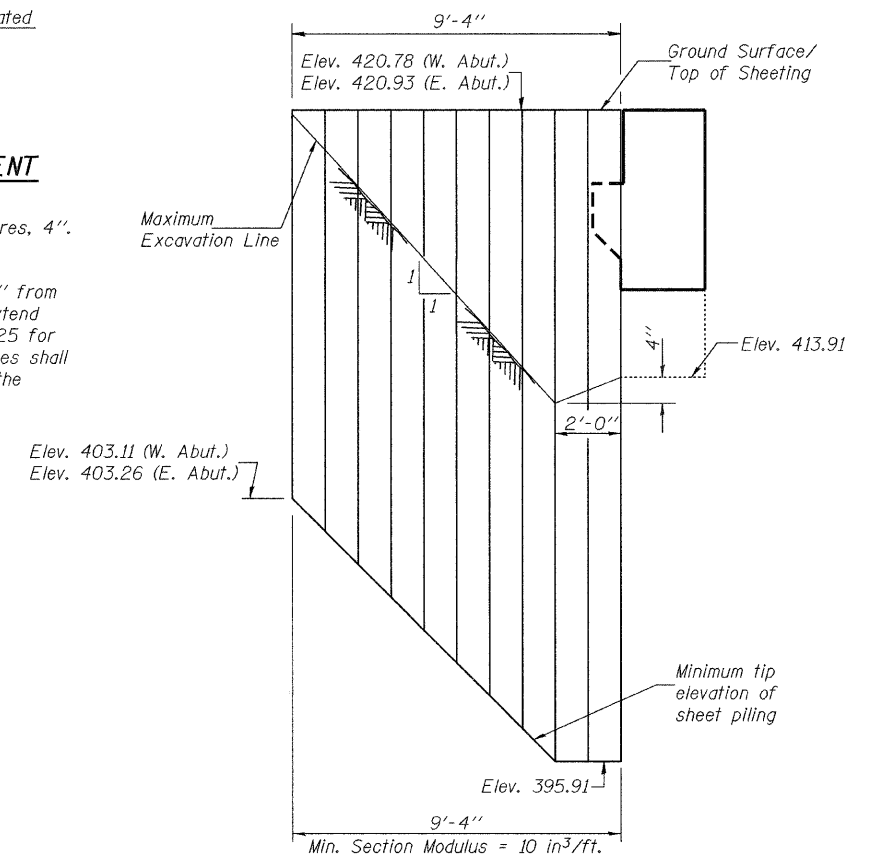
SECTION THRU INTEGRAL ABUTMENT
(Horiz. dim. @ Rt. L's)

*Included in the cost of Pipe Underdrains for Structures, 4".

Note:
All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. See sheet 1 of 25 for length of Pipe Underdrains for Structures, 4". The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

INDEX OF SHEETS

1. General Plan & Elevation
2. Stage Construction & Temporary Sheet Piling
3. Temporary Concrete Barrier
- 4.-6. Top of Slab Elevations
7. Top of West Approach Slab Elevations
8. Top of East Approach Slab Elevations
9. Superstructure
10. Superstructure Details
- 11.-12. Integral Abutment Diaphragm Details
- 13.-14. Bridge Approach Slab Details
- 15.-16. Structural Steel Details
17. Bearing Details at Abutments
18. Bearing Details at Pier 2
19. Concrete Removal at Abutments
20. Abutments
21. Abutment Details
22. Pier 2
23. Bar Splicer Assembly Details
24. Parapet Silpforming Details
25. Cantilever Forming Brackets



TEMPORARY SHEET PILING

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

**STAGE CONSTRUCTION &
TEMPORARY SHEET PILING**
F.A.U. RTE. 9181 - SECTION 52BR
ST. CLAIR COUNTY
STATION 39+89.80
STRUCTURE NO. 082-0136

DESIGNED	WAB/SMR
CHECKED	DFZ/FT
DRAWN	PAUL W. SWEET
CHECKED	DFZ/SMR/FT

November 23, 2009
EXAMINED *Thomas J. Demagalaki*
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

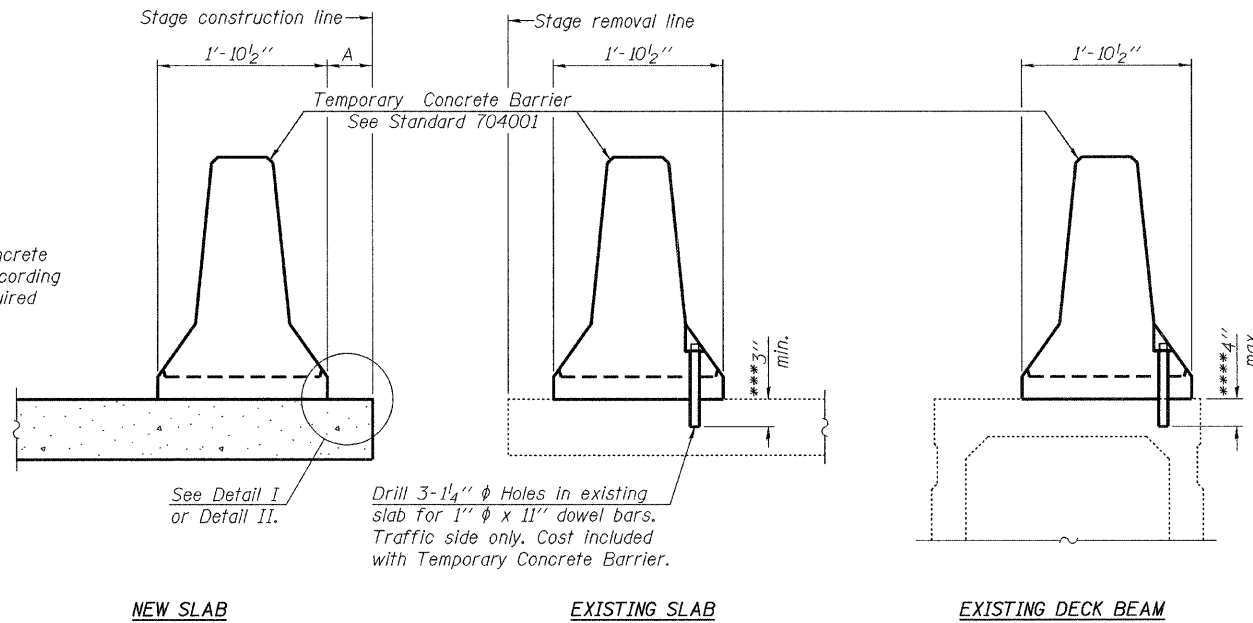
Notes:
All cross sections are looking East.
Hatched area indicates Removal of Existing Concrete Deck.
For quantity of Temporary Concrete Barrier, see roadway plans.
Removal of Existing Handrail is Included with Removal of Existing Concrete Deck.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 9181	52BR	ST. CLAIR	41	19
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 3
25 SHEETS
Contract #76120

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".



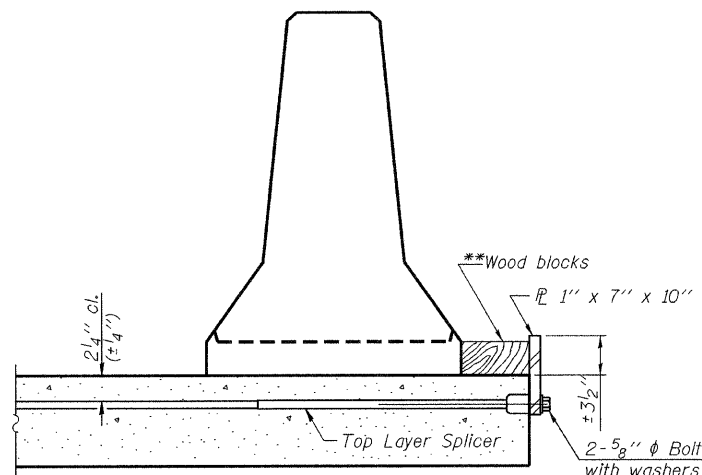
Drill 3-1/4" ϕ Holes in existing slab for 1" ϕ x 11" dowel bars. Traffic side only. Cost included with Temporary Concrete Barrier.

NOTES

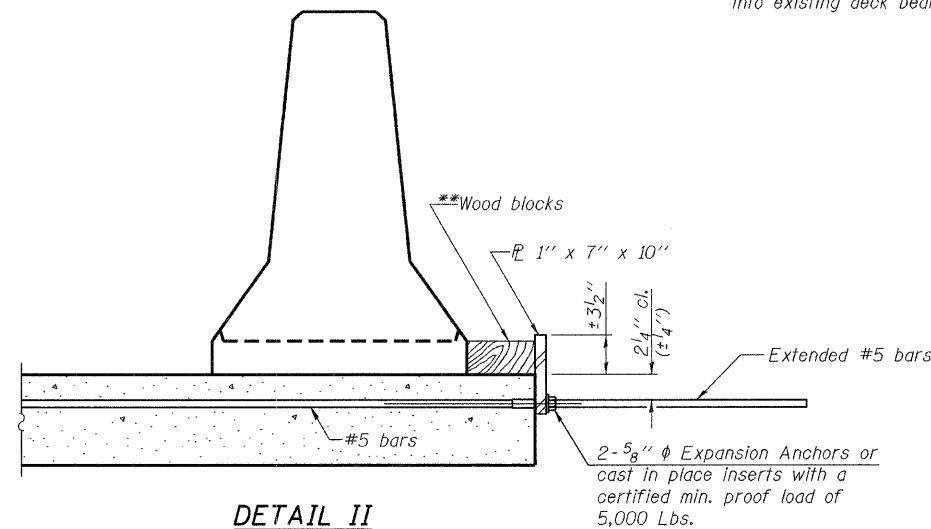
- Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel \bar{P} to the top layer of couplers with 2-5/8" ϕ bolts screwed to coupler at approximate \bar{C} of each barrier panel.
 - Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" steel \bar{P} to the concrete slab or concrete wearing surface with 2-5/8" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate \bar{C} of each barrier panel.
- Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x 10" 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.

SECTIONS THRU SLAB OR DECK BEAM

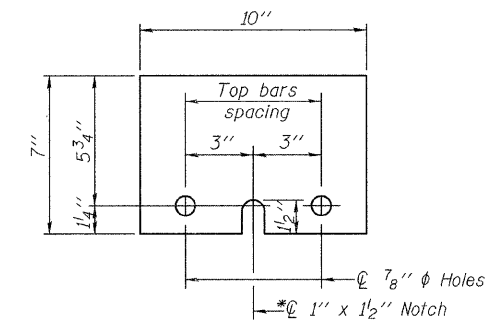
- ***Dimension shown is minimum required embedment into concrete. If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.
- ***If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



DETAIL I



DETAIL II



STEEL RETAINER \bar{P} 1' x 7' x 10"

* Required only with Detail II

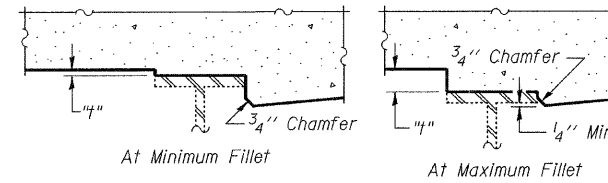
**Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.

DESIGNED	WAB/SMR
CHECKED	DFZ/FT
DRAWN	PAUL W. SWEET
CHECKED	DFZ/SMR/FT

November 23, 2009
 EXAMINED *Thomas J. Demagala*
 PASSED *Ralph E. Anderson*

**TEMPORARY CONCRETE BARRIER
FOR STAGE CONSTRUCTION
F.A.U. RTE. 9181 - SECTION 52BR
ST. CLAIR COUNTY
STATION 39+89.80
STRUCTURE NO. 082-0136**

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

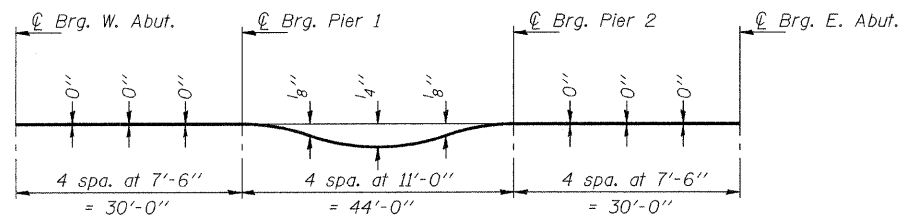


To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheets 5 and 6 of 25, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

ROUTE NO. F.A.U. 9181	SECTION 52BR	COUNTY ST. CLAIR	TOTAL SHEETS 41	SHEET NO. 20	SHEET NO. 4 25 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT-	

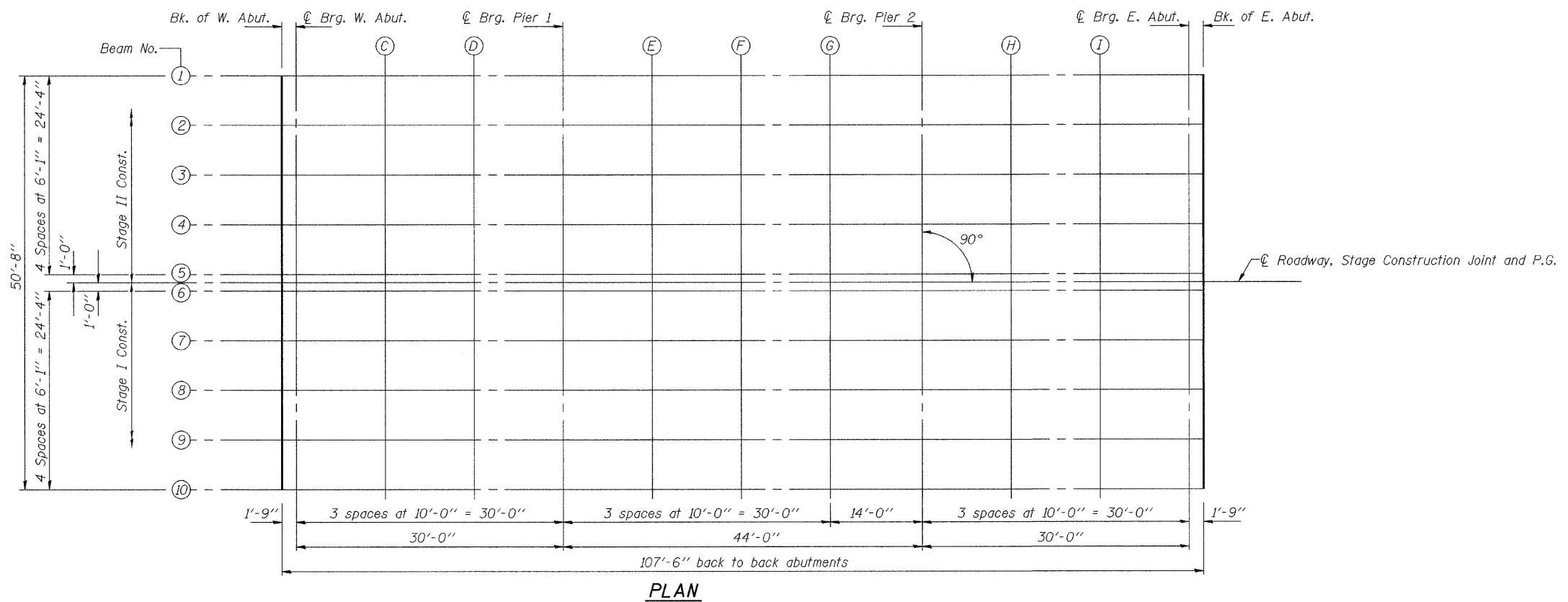
Contract #76120



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 5 and 6 of 25.



PLAN

Note:
The top of slab elevations shown for Beams 1 through 10 are for a theoretical top of slab which would be the projection of the roadway slab template to the centerline of the beam.

DESIGNED	W.A.B.
CHECKED	D.F.Z.
BML DRAWN	PAUL W. SWEET
CHECKED	DFZ/SMR/DPN

EXAMINED	November 23, 2009 Thomas J. Domagalaki ENGINEER OF BRIDGE DESIGN
PASSED	Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES

TOP OF SLAB ELEVATIONS
F.A.U. RTE. 9181 - SECTION 52BR
ST. CLAIR COUNTY
STATION 39+89.80
STRUCTURE NO. 082-0136

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO. F.A.U. 9181	SECTION 52BR	COUNTY ST. CLAIR	TOTAL SHEETS 41	SHEET NO. 21	SHEET NO. 5 25 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT-	

Contract #76120

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	3936.05	-25.33	420.31	420.31
⊕ Brg. W. Abut.	3937.80	-25.33	420.32	420.32
C	3947.80	-25.33	420.38	420.38
D	3957.80	-25.33	420.43	420.43
⊕ Brg. Pier 1	3967.80	-25.33	420.47	420.47
E	3977.80	-25.33	420.50	420.51
F	3987.80	-25.33	420.52	420.54
G	3997.80	-25.33	420.53	420.54
⊕ Brg. Pier 2	4011.80	-25.33	420.53	420.53
H	4021.80	-25.33	420.52	420.52
I	4031.80	-25.33	420.50	420.51
⊕ Brg. E. Abut.	4041.80	-25.33	420.47	420.47
Bk. of E. Abut.	4043.55	-25.33	420.47	420.47

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	3936.05	-19.25	420.44	420.44
⊕ Brg. W. Abut.	3937.80	-19.25	420.45	420.45
C	3947.80	-19.25	420.51	420.51
D	3957.80	-19.25	420.56	420.56
⊕ Brg. Pier 1	3967.80	-19.25	420.59	420.59
E	3977.80	-19.25	420.62	420.63
F	3987.80	-19.25	420.65	420.66
G	3997.80	-19.25	420.66	420.67
⊕ Brg. Pier 2	4011.80	-19.25	420.66	420.66
H	4021.80	-19.25	420.65	420.65
I	4031.80	-19.25	420.63	420.63
⊕ Brg. E. Abut.	4041.80	-19.25	420.60	420.60
Bk. of E. Abut.	4043.55	-19.25	420.59	420.59

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	3936.05	-13.17	420.57	420.57
⊕ Brg. W. Abut.	3937.80	-13.17	420.58	420.58
C	3947.80	-13.17	420.63	420.64
D	3957.80	-13.17	420.68	420.68
⊕ Brg. Pier 1	3967.80	-13.17	420.72	420.72
E	3977.80	-13.17	420.75	420.76
F	3987.80	-13.17	420.77	420.79
G	3997.80	-13.17	420.78	420.80
⊕ Brg. Pier 2	4011.80	-13.17	420.78	420.78
H	4021.80	-13.17	420.77	420.78
I	4031.80	-13.17	420.76	420.76
⊕ Brg. E. Abut.	4041.80	-13.17	420.73	420.73
Bk. of E. Abut.	4043.55	-13.17	420.72	420.72

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	3936.05	-7.08	420.67	420.67
⊕ Brg. W. Abut.	3937.80	-7.08	420.68	420.68
C	3947.80	-7.08	420.73	420.74
D	3957.80	-7.08	420.78	420.78
⊕ Brg. Pier 1	3967.80	-7.08	420.82	420.82
E	3977.80	-7.08	420.85	420.86
F	3987.80	-7.08	420.87	420.89
G	3997.80	-7.08	420.88	420.90
⊕ Brg. Pier 2	4011.80	-7.08	420.89	420.89
H	4021.80	-7.08	420.88	420.88
I	4031.80	-7.08	420.86	420.86
⊕ Brg. E. Abut.	4041.80	-7.08	420.83	420.83
Bk. of E. Abut.	4043.55	-7.08	420.82	420.82

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	3936.05	-1.00	420.76	420.76
⊕ Brg. W. Abut.	3937.80	-1.00	420.77	420.77
C	3947.80	-1.00	420.83	420.83
D	3957.80	-1.00	420.88	420.88
⊕ Brg. Pier 1	3967.80	-1.00	420.92	420.92
E	3977.80	-1.00	420.95	420.96
F	3987.80	-1.00	420.97	420.98
G	3997.80	-1.00	420.98	420.99
⊕ Brg. Pier 2	4011.80	-1.00	420.98	420.98
H	4021.80	-1.00	420.97	420.97
I	4031.80	-1.00	420.95	420.95
⊕ Brg. E. Abut.	4041.80	-1.00	420.92	420.92
Bk. of E. Abut.	4043.55	-1.00	420.92	420.92

⊕ ROADWAY, P.G., & STAGE CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	3936.05	0.00	420.78	420.78
⊕ Brg. W. Abut.	3937.80	0.00	420.79	420.79
C	3947.80	0.00	420.85	420.85
D	3957.80	0.00	420.89	420.89
⊕ Brg. Pier 1	3967.80	0.00	420.93	420.93
E	3977.80	0.00	420.96	420.97
F	3987.80	0.00	420.98	421.00
G	3997.80	0.00	420.99	421.01
⊕ Brg. Pier 2	4011.80	0.00	421.00	421.00
H	4021.80	0.00	420.99	420.99
I	4031.80	0.00	420.97	420.97
⊕ Brg. E. Abut.	4041.80	0.00	420.94	420.94
Bk. of E. Abut.	4043.55	0.00	420.93	420.93

DESIGNED	W.A.B.
CHECKED	D.F.Z.
DRAWN	PAUL W. SWEET
CHECKED	DFZ/SMR/DPN

November 23, 2009
EXAMINED <i>Thomas J. Demagali</i>
PASSED <i>Ralph E. Anderson</i>

TOP OF SLAB ELEVATIONS
F.A.U. RTE. 9181 - SECTION 52BR
ST. CLAIR COUNTY
STATION 39+89.80
STRUCTURE NO. 082-0136

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO. F.A.U. 9181	SECTION 52BR	COUNTY ST. CLAIR	TOTAL SHEETS 41	SHEET NO. 22	SHEET NO. 6 25 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT-			

Contract #76120

BEAM 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	3936.05	1.00	420.76	420.76
⊕ Brg. W. Abut.	3937.80	1.00	420.77	420.77
C	3947.80	1.00	420.83	420.83
D	3957.80	1.00	420.88	420.88
⊕ Brg. Pier 1	3967.80	1.00	420.92	420.92
E	3977.80	1.00	420.95	420.96
F	3987.80	1.00	420.97	420.98
G	3997.80	1.00	420.98	420.99
⊕ Brg. Pier 2	4011.80	1.00	420.98	420.98
H	4021.80	1.00	420.97	420.97
I	4031.80	1.00	420.95	420.95
⊕ Brg. E. Abut.	4041.80	1.00	420.92	420.92
Bk. of E. Abut.	4043.55	1.00	420.92	420.92

BEAM 7

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	3936.05	7.08	420.67	420.67
⊕ Brg. W. Abut.	3937.80	7.08	420.68	420.68
C	3947.80	7.08	420.73	420.74
D	3957.80	7.08	420.78	420.78
⊕ Brg. Pier 1	3967.80	7.08	420.82	420.82
E	3977.80	7.08	420.85	420.86
F	3987.80	7.08	420.87	420.89
G	3997.80	7.08	420.88	420.90
⊕ Brg. Pier 2	4011.80	7.08	420.89	420.89
H	4021.80	7.08	420.88	420.88
I	4031.80	7.08	420.86	420.86
⊕ Brg. E. Abut.	4041.80	7.08	420.83	420.83
Bk. of E. Abut.	4043.55	7.08	420.82	420.82

BEAM 8

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	3936.05	13.17	420.57	420.57
⊕ Brg. W. Abut.	3937.80	13.17	420.58	420.58
C	3947.80	13.17	420.63	420.64
D	3957.80	13.17	420.68	420.68
⊕ Brg. Pier 1	3967.80	13.17	420.72	420.72
E	3977.80	13.17	420.75	420.76
F	3987.80	13.17	420.77	420.79
G	3997.80	13.17	420.78	420.80
⊕ Brg. Pier 2	4011.80	13.17	420.78	420.78
H	4021.80	13.17	420.77	420.78
I	4031.80	13.17	420.76	420.76
⊕ Brg. E. Abut.	4041.80	13.17	420.73	420.73
Bk. of E. Abut.	4043.55	13.17	420.72	420.72

BEAM 9

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	3936.05	19.25	420.44	420.44
⊕ Brg. W. Abut.	3937.80	19.25	420.45	420.45
C	3947.80	19.25	420.51	420.51
D	3957.80	19.25	420.56	420.56
⊕ Brg. Pier 1	3967.80	19.25	420.59	420.59
E	3977.80	19.25	420.62	420.63
F	3987.80	19.25	420.65	420.66
G	3997.80	19.25	420.66	420.67
⊕ Brg. Pier 2	4011.80	19.25	420.66	420.66
H	4021.80	19.25	420.65	420.65
I	4031.80	19.25	420.63	420.63
⊕ Brg. E. Abut.	4041.80	19.25	420.60	420.60
Bk. of E. Abut.	4043.55	19.25	420.59	420.59

BEAM 10

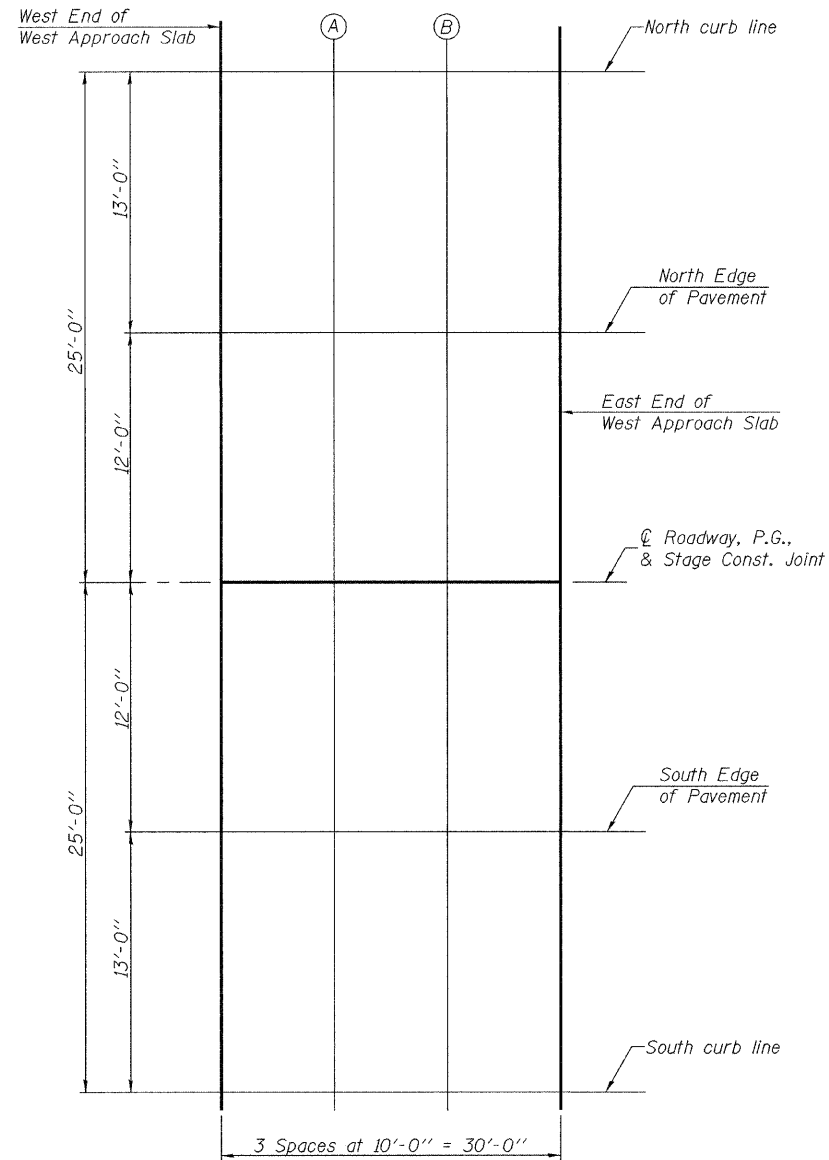
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	3936.05	25.33	420.31	420.31
⊕ Brg. W. Abut.	3937.80	25.33	420.32	420.32
C	3947.80	25.33	420.38	420.38
D	3957.80	25.33	420.43	420.43
⊕ Brg. Pier 1	3967.80	25.33	420.47	420.47
E	3977.80	25.33	420.50	420.51
F	3987.80	25.33	420.52	420.54
G	3997.80	25.33	420.53	420.54
⊕ Brg. Pier 2	4011.80	25.33	420.53	420.53
H	4021.80	25.33	420.52	420.52
I	4031.80	25.33	420.50	420.51
⊕ Brg. E. Abut.	4041.80	25.33	420.47	420.47
Bk. of E. Abut.	4043.55	25.33	420.47	420.47

DESIGNED	W.A.B.
CHECKED	D.F.Z.
DRAWN	PAUL W. SWEET
CHECKED	DFZ/SMR/DPN

November 23, 2009
 EXAMINED *Thomas J. Demagala*
 ENGINEER OF BRIDGE DESIGN
 PASSED *Ralph E. Anderson*
 ENGINEER OF BRIDGES AND STRUCTURES

TOP OF SLAB ELEVATIONS
F.A.U. RTE. 9181 - SECTION 52BR
ST. CLAIR COUNTY
STATION 39+89.80
STRUCTURE NO. 082-0136

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN

NORTH CURB LINE

Location	Station	Offset	Theoretical Grade Elevations
W End of W Appr Slab	3906.05	-25.00	420.09
A	3916.05	-25.00	420.17
B	3926.05	-25.00	420.25
E End of W Appr Slab	3936.05	-25.00	420.32

NORTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W End of W Appr Slab	3906.05	-12.00	420.36
A	3916.05	-12.00	420.44
B	3926.05	-12.00	420.52
E End of W Appr Slab	3936.05	-12.00	420.59

☉ ROADWAY, P.G. & STAGE CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations
W End of W Appr Slab	3906.05	0.00	420.55
A	3916.05	0.00	420.63
B	3926.05	0.00	420.71
E End of W Appr Slab	3936.05	0.00	420.78

SOUTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W End of W Appr Slab	3906.05	12.00	420.36
A	3916.05	12.00	420.44
B	3926.05	12.00	420.52
E End of W Appr Slab	3936.05	12.00	420.59

SOUTH CURB LINE

Location	Station	Offset	Theoretical Grade Elevations
W End of W Appr Slab	3906.05	25.00	420.09
A	3916.05	25.00	420.17
B	3926.05	25.00	420.25
E End of W Appr Slab	3936.05	25.00	420.32

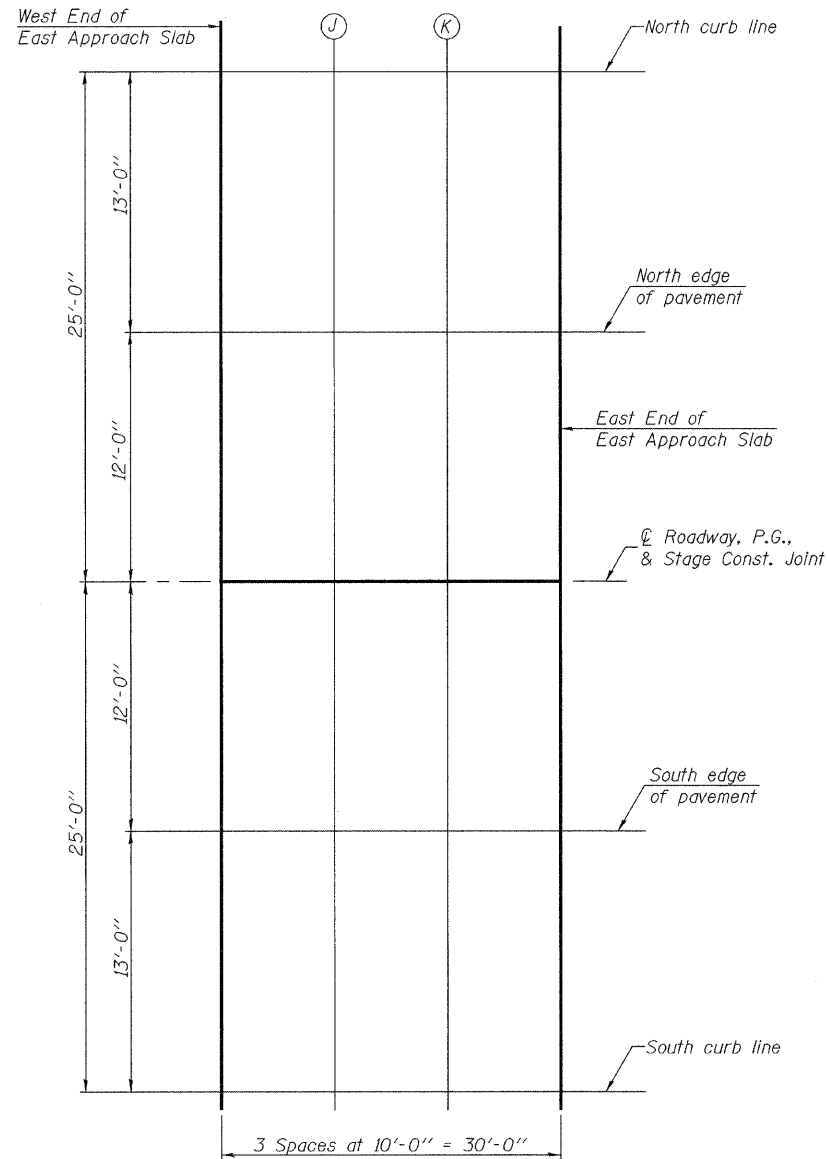
TOP OF WEST APPROACH
SLAB ELEVATIONS
F.A.U. RTE. 9181 - SECTION 52BR
ST. CLAIR COUNTY
STATION 39+89.80
STRUCTURE NO. 082-0136

DESIGNED	SMR
CHECKED	FT
DRAWN	BML
CHECKED	SMR/FT

November 23, 2009
EXAMINED *Thomas J. Demagali*
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

E-AS 9-3-07

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN

NORTH CURB LINE

Location	Station	Offset	Theoretical Grade Elevations
W End of E Appr Slab	4043.55	-25.00	420.48
J	4053.55	-25.00	420.44
K	4063.55	-25.00	420.39
E End of E Appr Slab	4073.55	-25.00	420.33

NORTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W End of E Appr Slab	4043.55	-12.00	420.75
J	4053.55	-12.00	421.71
K	4063.55	-12.00	420.66
E End of E Appr Slab	4073.55	-12.00	420.60

☉ ROADWAY, P.G. & STAGE CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations
W End of E Appr Slab	4043.55	0.00	420.93
J	4053.55	0.00	420.89
K	4063.55	0.00	420.85
E End of E Appr Slab	4073.55	0.00	420.79

SOUTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W End of E Appr Slab	4043.55	12.00	420.75
J	4053.55	12.00	421.71
K	4063.55	12.00	420.66
E End of E Appr Slab	4073.55	12.00	420.60

SOUTH CURB LINE

Location	Station	Offset	Theoretical Grade Elevations
W End of E Appr Slab	4043.55	25.00	420.48
J	4053.55	25.00	420.44
K	4063.55	25.00	420.39
E End of E Appr Slab	4073.55	25.00	420.33

DESIGNED	SMR
CHECKED	FT
DRAWN	BML
CHECKED	SMR/FT

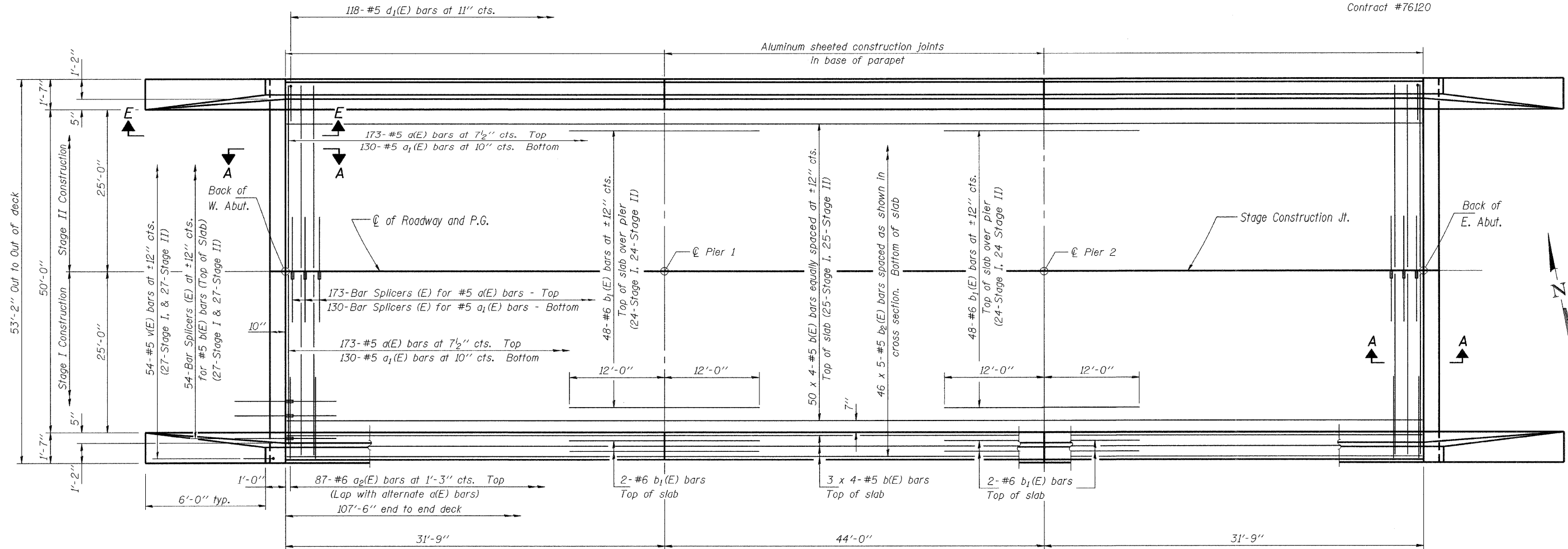
November 23, 2009
 EXAMINED *Thomas J. Demagalaki*
 ENGINEER OF BRIDGE DESIGN
 PASSED *Ralph E. Anderson*
 ENGINEER OF BRIDGES AND STRUCTURES

**TOP OF EAST APPROACH
SLAB ELEVATIONS**
 F.A.U. RTE. 9181 - SECTION 52BR
 ST. CLAIR COUNTY
 STATION 39+89.80
 STRUCTURE NO. 082-0136

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO. F.A.U. 9181	SECTION 52BR	COUNTY ST. CLAIR	TOTAL SHEETS 41	SHEET NO. 25	SHEET NO. 9 25 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT-	

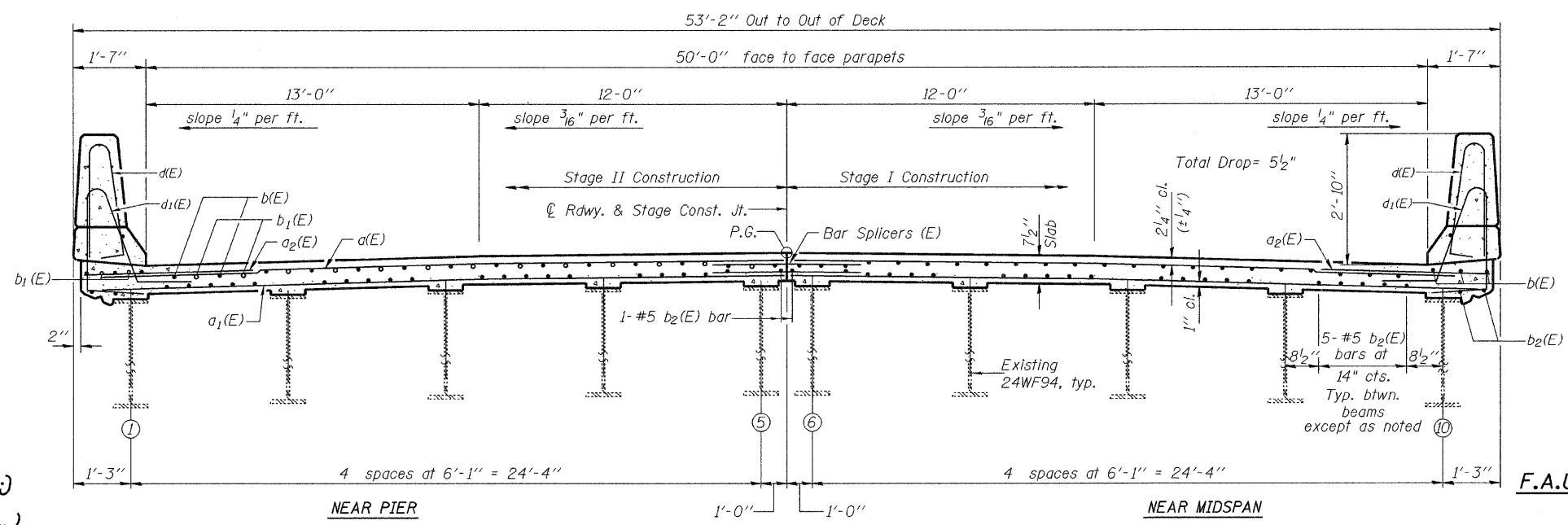
Contract #76120



PLAN

Notes: See Sheet 10 of 25 for superstructure details, parapet details and Bill of Material.
Bars indicated thus 46 x 5-#6 etc. indicates 46 lines of bars with 5 lengths per line.
See Sheet 23 of 25 for Bar Splicer Details.
For Section A-A, see sheet 12 of 25.
For location of floor drains see sheet 1 of 25.
For View E-E, see sheet 14 of 25.

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



CROSS SECTION
(Looking East)

DESIGNED	WAB/SMR
CHECKED	DFZ/FT
BML	PAUL W. SWEET
DRAWN	PAUL W. SWEET
CHECKED	DFZ/SMR/FT

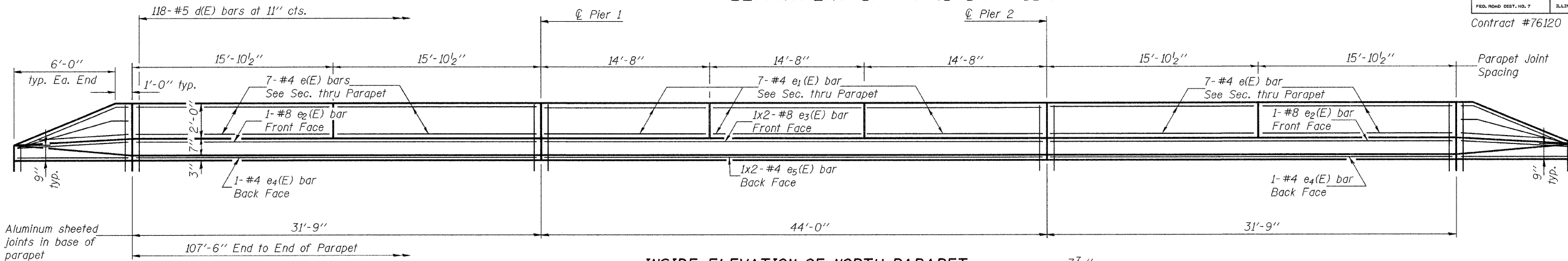
November 23, 2009
EXAMINED *Thomas J. Demagalaki*
ENGINEER OF BRIDGE DESIGN
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

SUPERSTRUCTURE
F.A.U. RTE. 9181 - SECTION 52BR
ST. CLAIR COUNTY
STATION 39+89.80
STRUCTURE NO. 082-0136

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

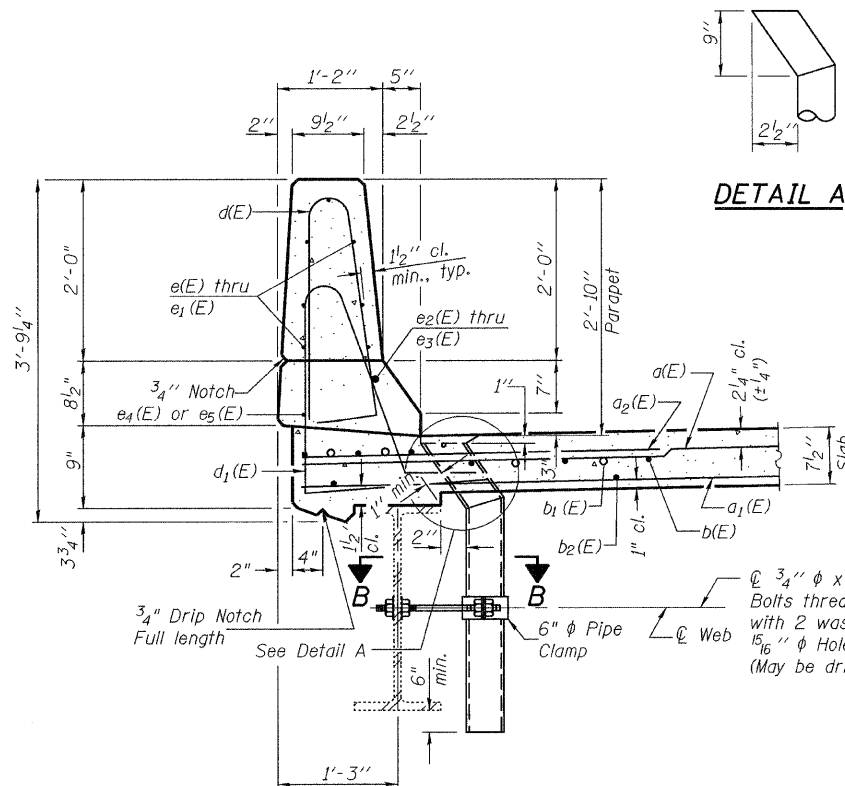
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FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT	

Contract #76120

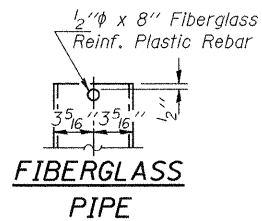


MIN. BAR LAPS
(Parapet)
#4 bars = 1'-4"
#8 bars = 3'-5"

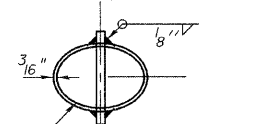
INSIDE ELEVATION OF NORTH PARAPET
(Looking North, South Parapet Similar)



DETAIL A

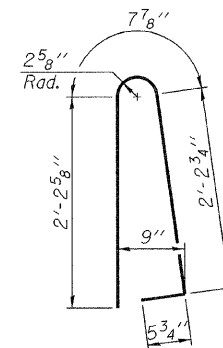


FIBERGLASS PIPE

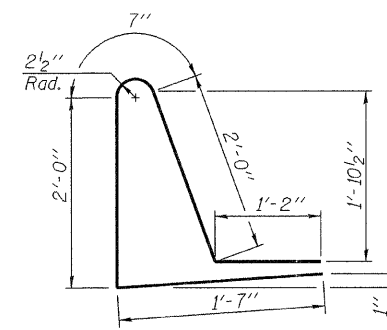


ALUMINUM TUBE

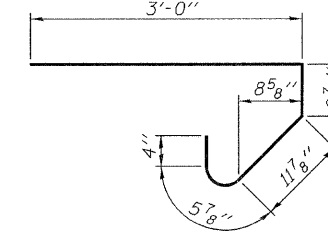
TOP PLAN
(Showing Aluminum Tube)



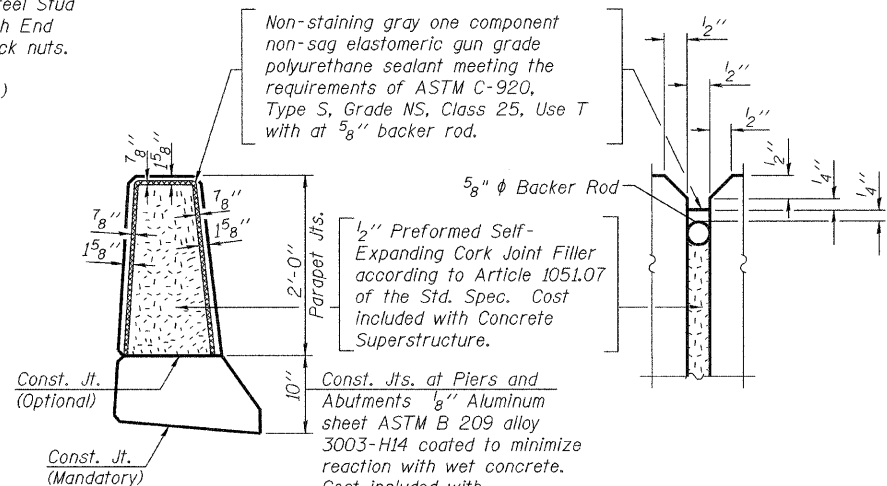
BAR d(E)



BAR d1(E)



BAR s(E)



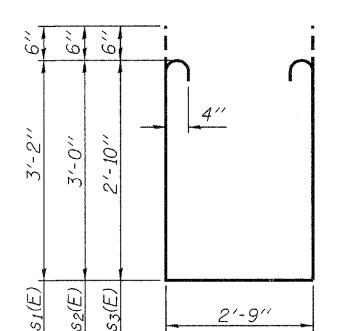
PARAPET JOINT DETAILS

Notes:
Drains shall be located clear of all diaphragms.
The exterior surfaces of the floor drains shall be painted with the finish coat as specified in the special provisions for Cleaning and Painting New Metal Structures. The exterior surfaces of the drains shall be cleaned according to Society of Protective Coatings Spec. SSPC-SP1 prior to painting.
Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	346	#5	26'-1"	—
a1(E)	260	#5	25'-5"	—
a2(E)	174	#6	6'-0"	—
b(E)	224	#5	28'-1"	—
b1(E)	104	#6	24'-0"	—
b2(E)	230	#5	22'-10"	—
d(E)	236	#5	5'-7"	⌋
d1(E)	236	#5	7'-4"	⌋
e(E)	56	#4	15'-7"	—
e1(E)	42	#4	14'-5"	—
e2(E)	4	#8	31'-5"	—
e3(E)	4	#8	23'-7"	—
e4(E)	4	#4	31'-5"	—
e5(E)	4	#4	22'-7"	—
m(E)	8	#6	26'-3"	—
m1(E)	20	#6	26'-4"	—
m2(E)	40	#6	8'-10"	—
m3(E)	18	#6	5'-9"	—
m4(E)	4	#6	10'-6"	—
s(E)	104	#5	5'-5"	⌋
s1(E)	28	#4	10'-1"	⌋
s2(E)	24	#4	9'-9"	⌋
s3(E)	52	#4	9'-5"	⌋
v(E)	108	#5	3'-4"	⌋
Reinforcement Bars, Epoxy Coated		Pound	42,050	
Concrete Superstructure		Cu. Yds.	193.3	

Bars indicated thus 1 x 2 - #8 etc. indicates 1 line of bars with 2 lengths per line.



BAR s1(E), s2(E) & s3(E)

SUPERSTRUCTURE DETAILS
F.A.U. RTE. 9181 - SECTION 52BR
ST. CLAIR COUNTY
STATION 39+89.80
STRUCTURE NO. 082-0136

DESIGNED	WAB/SMR
CHECKED	DFZ/FT
BML	
DRAWN	PAUL W. SWEET
CHECKED	DFZ/SMR/DPN/FT

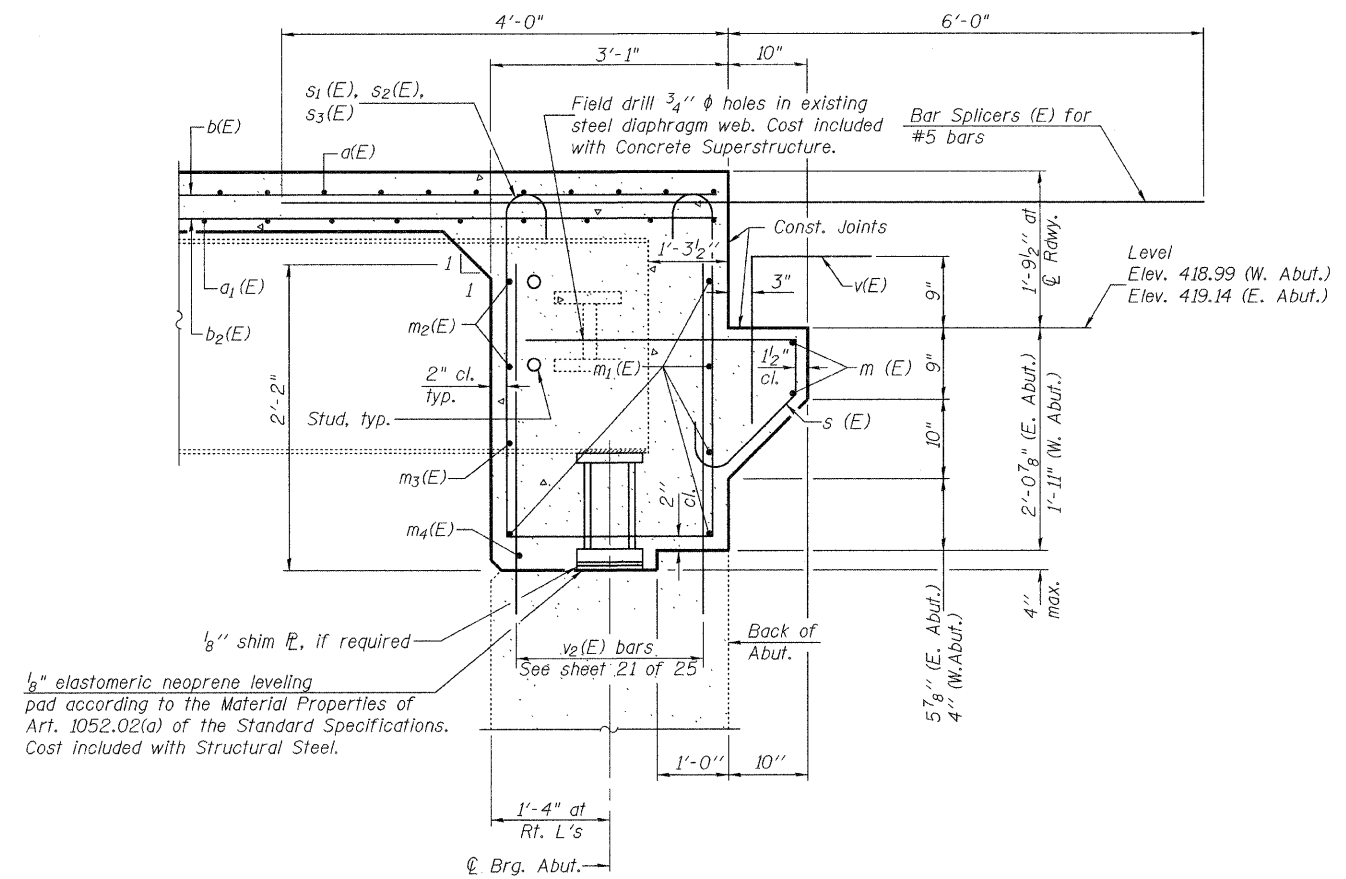
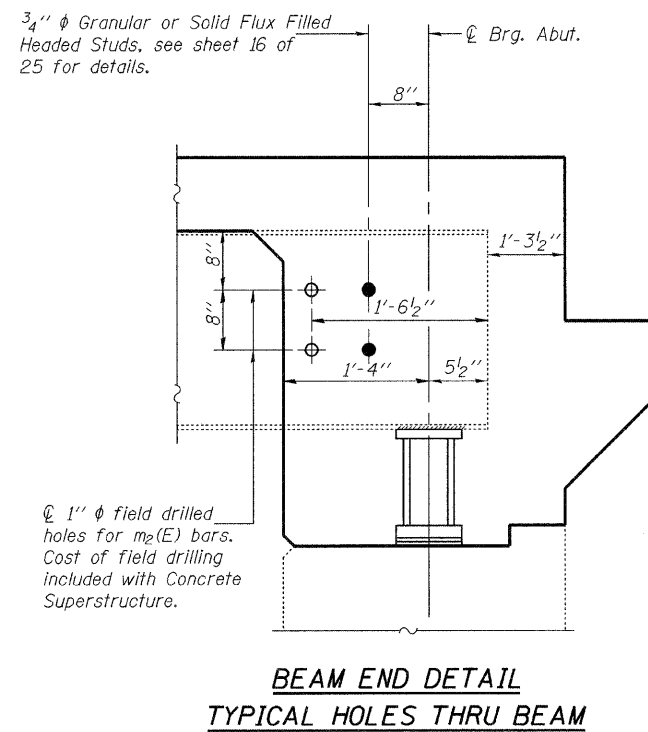
November 23, 2009
EXAMINED *Thomas J. Demagalaki*
ENGINEER OF BRIDGE DESIGN
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 12
F.A.U. 9181	52BR	ST. CLAIR	41	28	25 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT		

Contract #76120

MIN. BAR LAPS
#6 bars = 2'-9"



SECTION A-A

DESIGNED	WAB/SMR
CHECKED	DFZ/FT
DRAWN	PAUL W. SWEET
CHECKED	DFZ/SMR/DPN/FT

November 23, 2009

EXAMINED *Thomas J. Demagalaki*
ENGINEER OF BRIDGE DESIGN

PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

INTEGRAL ABUTMENT DIAPHRAGM DETAILS
F.A.U. RTE. 9181 - SECTION 52BR
ST. CLAIR COUNTY
STATION 39+89.80
STRUCTURE NO. 082-0136

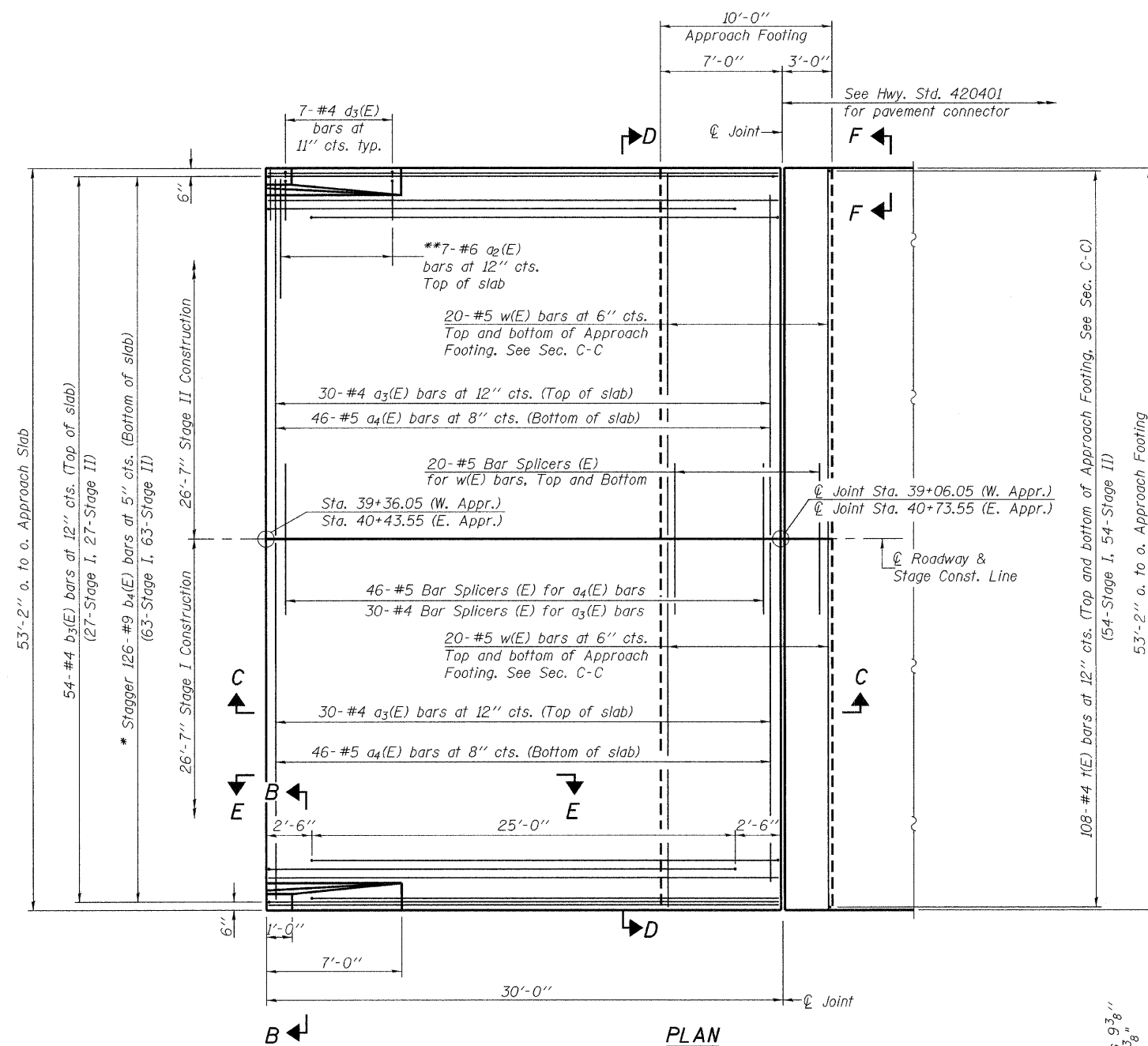
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO. F.A.U. 9181	SECTION 52BR	COUNTY ST. CLAIR	TOTAL SHEETS 41	SHEET NO. 29	SHEET NO. 13 25 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT-	

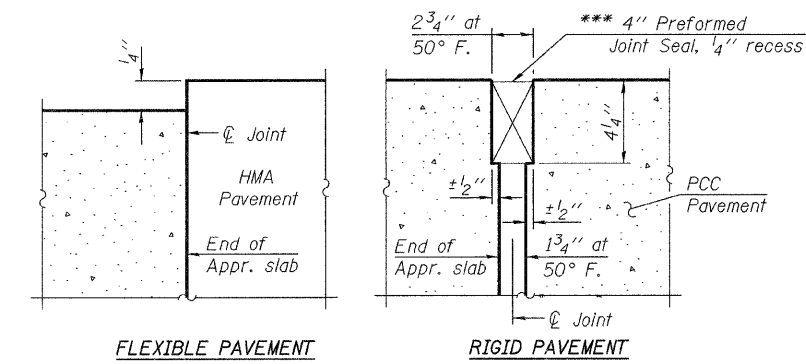
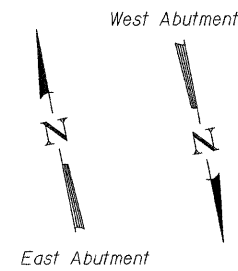
Contract #76120

Notes:
See sheet 14 of 25 for Sections C-C & D-D and View E-E.
 $a_3(E)$, $a_4(E)$, and $w(E)$ bar spacings measured perpendicular to $\text{C} \perp \text{Rdwy.}$

*** Cost included with Concrete Superstructure.

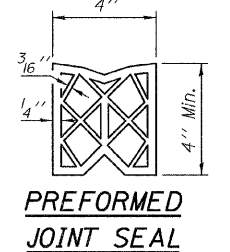


* Tilt #9 $b_4(E)$ bars as required to maintain clearance.
** Alternate with $a_3(E)$ bars, typ. ea. parapet.

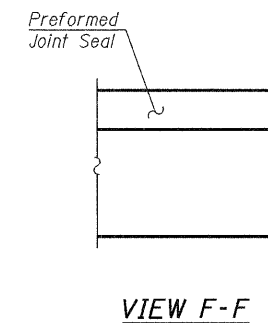


DETAIL A

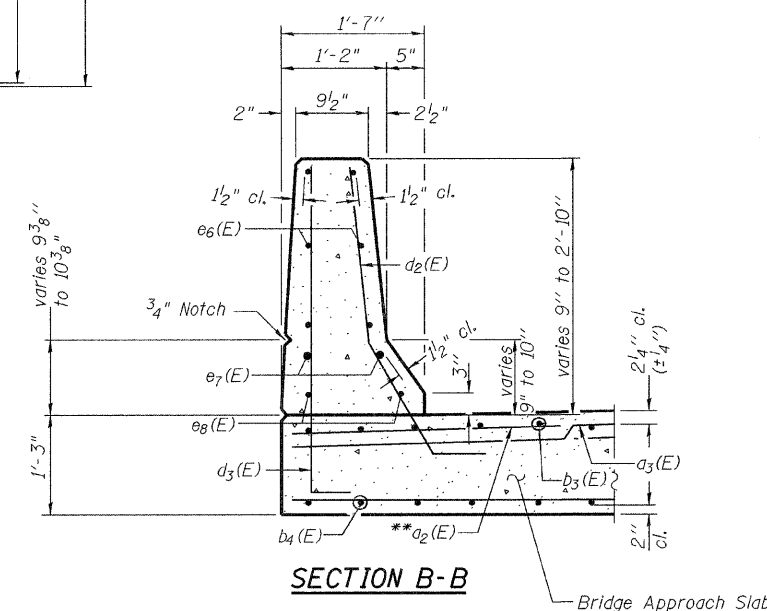
See Section C-C on sheet 14 of 25 for location of Detail A.



PREFORMED
JOINT SEAL



VIEW F-F



SECTION B-B

Bridge Approach Slab

DESIGNED	SMR
CHECKED	FT
DRAWN	BML
CHECKED	SMR/FT

November 23, 2009
EXAMINED *Thomas J. Donagahki*
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

BRIDGE APPROACH SLAB DETAILS
F.A.U. RTE. 9181 - SECTION 52BR
ST. CLAIR COUNTY
STATION 39+89.80
STRUCTURE NO. 082-0136

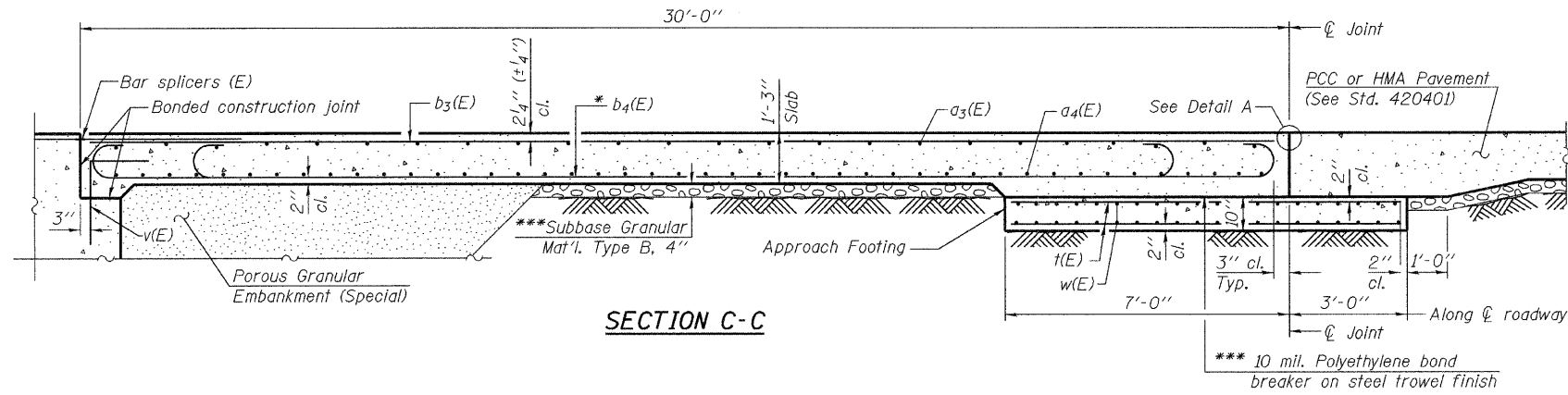
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 14 25 SHEETS
F.A.U. 9181	52BR	ST. CLAIR	41	30	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			

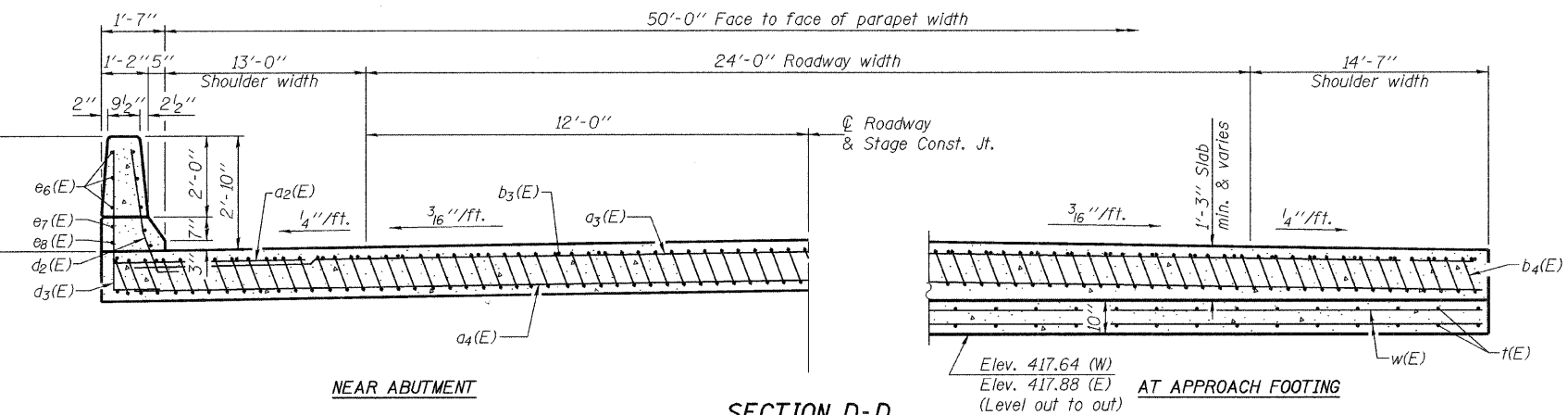
Contract #76120

Notes:

See sheet 13 of 25 for Detail A.
Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
Approach footing concrete shall be paid for as Concrete Structures.
Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
For v(E) bar details, see sheets 9 and 12 of 25.
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
For bar splicer details, see sheet 23 of 25.
Cost of excavation for approach footing included with Concrete Structures.
For Porous Granular Embankment (Special) and drainage treatment details, see sheet 2 of 25.



SECTION C-C

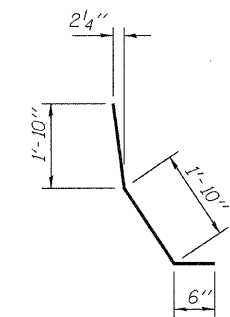


NEAR ABUTMENT

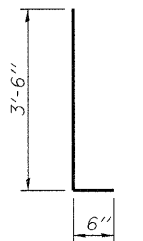
SECTION D-D

(See Plan for dimensions not shown)

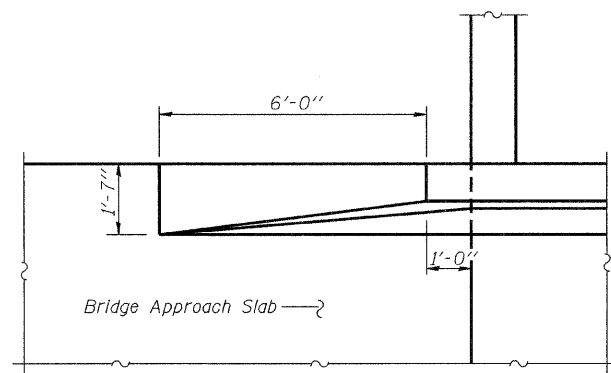
AT APPROACH FOOTING



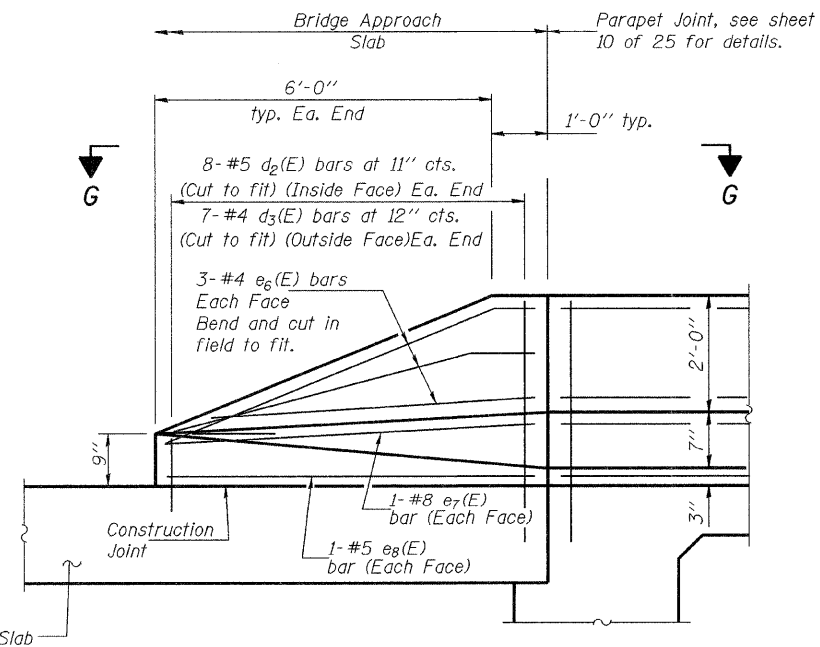
BAR d2(E)



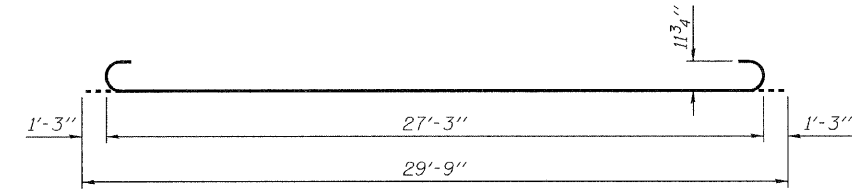
BAR d3(E)



VIEW G-G



VIEW E-E



BAR b4(E)

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

*** Cost included with Concrete Superstructure.

TWO APPROACHES
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a2(E)	28	#6	6'-0"	—
a3(E)	120	#4	26'-3"	—
a4(E)	184	#5	26'-3"	—
b3(E)	108	#4	29'-8"	—
b4(E)	252	#9	29'-9"	—
d2(E)	32	#5	4'-2"	┌
d3(E)	28	#4	4'-0"	┌
e6(E)	24	#4	7'-1"	—
e7(E)	8	#8	6'-8"	—
e8(E)	8	#5	6'-8"	—
t(E)	216	#4	9'-8"	—
w(E)	160	#5	26'-3"	—
Concrete Superstructure		Cu. Yd.	167.4	
Concrete Structures		Cu. Yd.	32.2	
Reinforcement Bars, Epoxy Coated		Pound	41,330	

BRIDGE APPROACH SLAB DETAILS
F.A.U. RTE. 9181 - SECTION 52BR
ST. CLAIR COUNTY
STATION 39+89.80
STRUCTURE NO. 082-0136

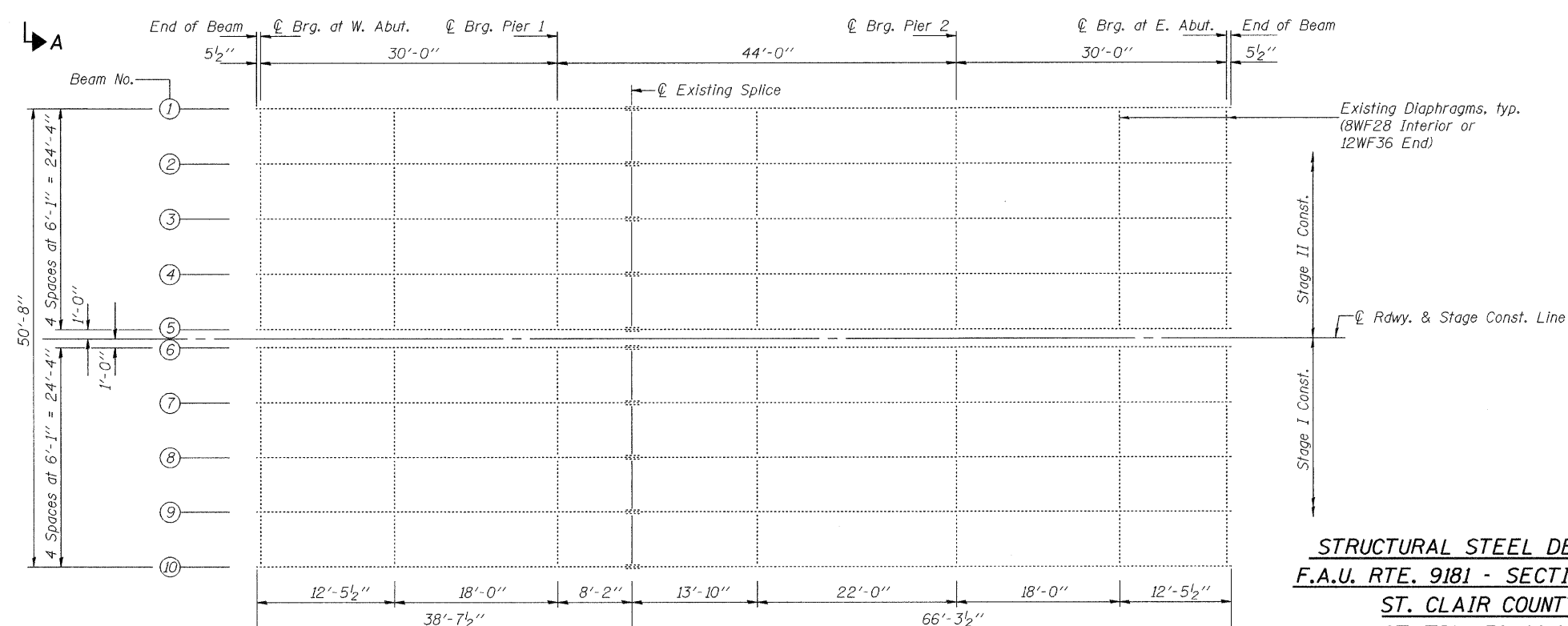
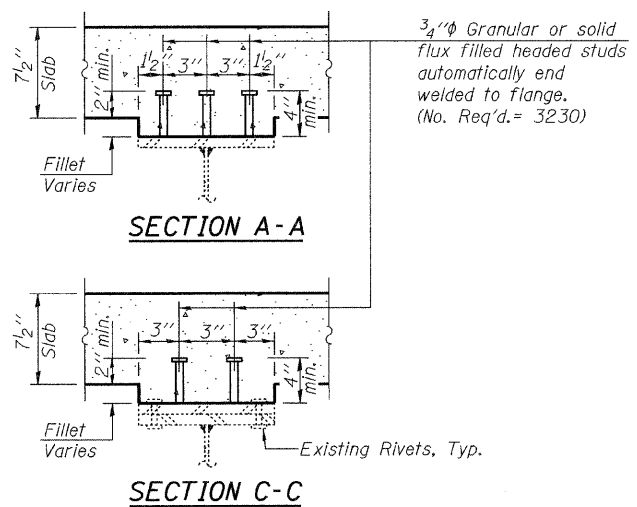
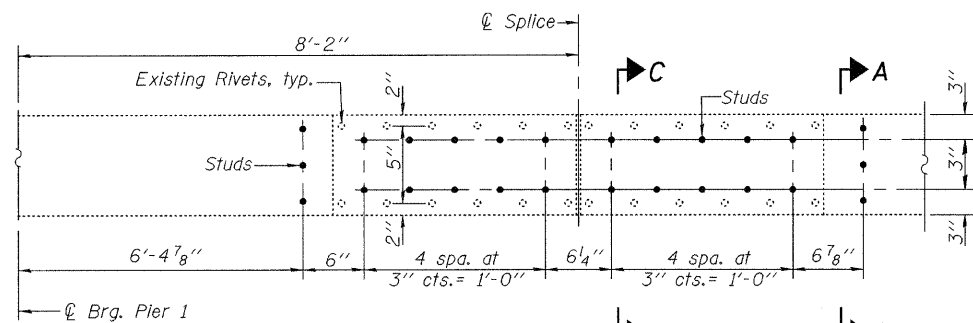
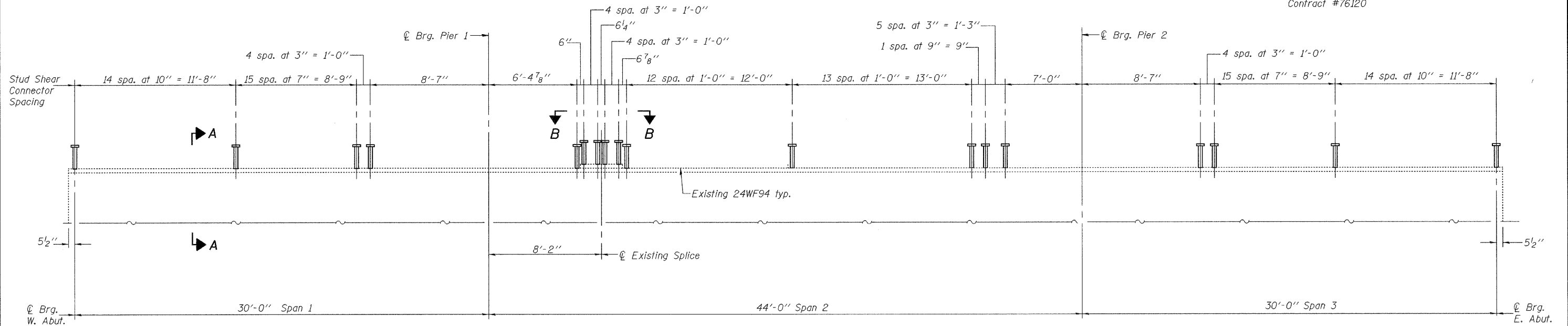
DESIGNED	SMR
CHECKED	FT
DRAWN	BML
CHECKED	SMR/FT

November 23, 2009
EXAMINED *Thomas J. Demagala*
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO. F.A.U. 9181	SECTION 52BR	COUNTY ST. CLAIR	SHEETS 41	SHEET 31	SHEET NO. 15 25 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT-	

Contract #76120



DESIGNED	W.A.B.	EXAMINED	Thomas J. Donagabaki November 23, 2009 ENGINEER OF BRIDGE DESIGN
CHECKED	DFZ/SMR	PASSED	Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES
DRAWN	PAUL W. SWEET		
CHECKED	DFZ/SMR/DPN		

STRUCTURAL STEEL DETAILS
F.A.U. RTE. 9181 - SECTION 52BR
ST. CLAIR COUNTY
STATION 39+89.80
STRUCTURE NO. 082-0136

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

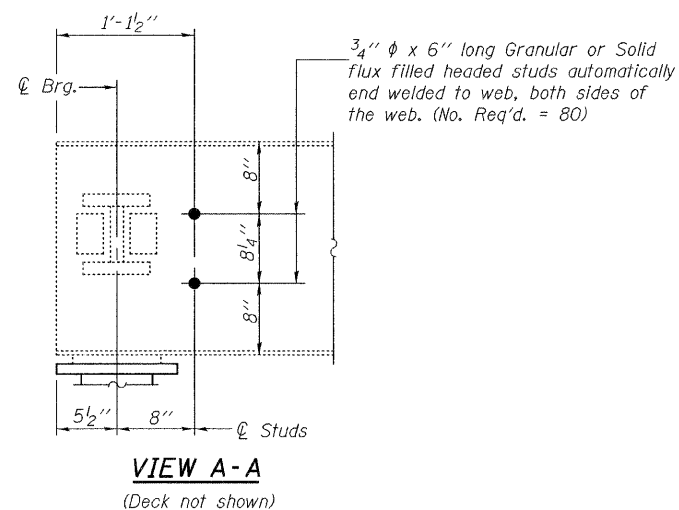
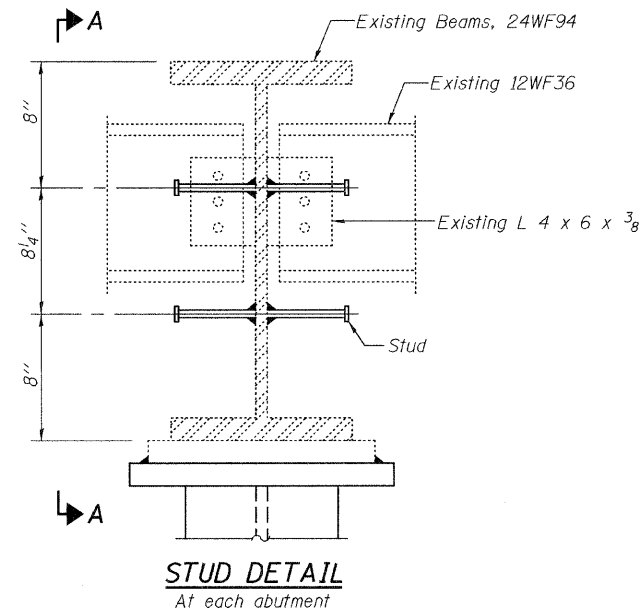
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F.A.U. 9181	52BR	ST. CLAIR	41	32	25 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			

Contract #76120

		0.4 Sp. 1 0.6 Sp. 3	Pier 1 Pier 2	0.5 Span 2
I_s	(in ⁴)	2700	2700	2700
$I_s(n)$	(in ⁴)	8104	-	8104
$I_c(3n)$	(in ⁴)	5944	-	5944
S_s	(in ³)	222	222	222
$S_c(n)$	(in ³)	346	-	346
$S_c(3n)$	(in ³)	311	-	311
q	(k/ft)	0.69	1.09	0.69
Mq	(k)	34.2	148.4	66.2
sq	(k/ft)	0.4	-	0.4
Msq	(k)	24.2	-	49.2
M_L	(k)	134.3	94.4	201.6
M_I	(k)	40.3	28.3	60.5
$S_3(M_L+I)$	(k)	291	204.5	436.8
M_o	(k)	454.2	458.8	717.9
M_u	(k)	1030	-	1115
$f_{s\ell}$ non-comp	(ksi)	1.9	8.0	3.6
$f_{s\ell}$ comp	(ksi)	0.9	-	1.9
$f_{s\ell} S_3(M_L+M_I)$	(ksi)	10.1	11.1	15.2
f_s (Overload)	(ksi)	12.9	19.1	20.7
f_s (Total)	(ksi)	-	24.8	-
VR	(k)	38.0	-	34.8

	Abut.	Piers	
Rq	(k)	11.4	45.3
R_L	(k)	26.3	35.2
$Imp.$	(k)	7.9	10.6
R (Total)	(k)	45.6	91.1

- I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) due to non-composite dead loads (in⁴ and in³).
- $I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total and Overload) due to short-term composite live loads (in⁴ and in³).
- $I_c(3n), S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total and Overload) due to long-term composite (superimposed) dead loads (in⁴ and in³).
- q : Un-factored non-composite dead load (kips/ft.).
 Mq : Un-factored moment due to non-composite dead load (kip-ft.).
 sq : Un-factored long-term composite (superimposed) dead load (kips/ft.).
 Msq : Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).
 M_L : Un-factored live load moment (kip-ft.).
 M_I : Un-factored moment due to impact (kip-ft.).
 M_o : Factored design moment (kip-ft.).
 $1.3 [Mq + Msq + \frac{5}{3} (M_L + M_I)]$
 M_u : Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).
- f_s (Overload): Sum of stresses as computed from the moments below (ksi).
 $Mq + Msq + \frac{5}{3} (M_L + M_I)$
- f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
 $1.3 [Mq + Msq + \frac{5}{3} (M_L + M_I)]$
- VR: Maximum $\frac{1}{2}$ + impact horizontal shear range within the composite portion of the span for stud shear connector design (kips).



DESIGNED	WAB/SMR
CHECKED	DFZ/FT
BML DRAWN	PAUL W. SWEET
CHECKED	DFZ/SMR/DPN/FT

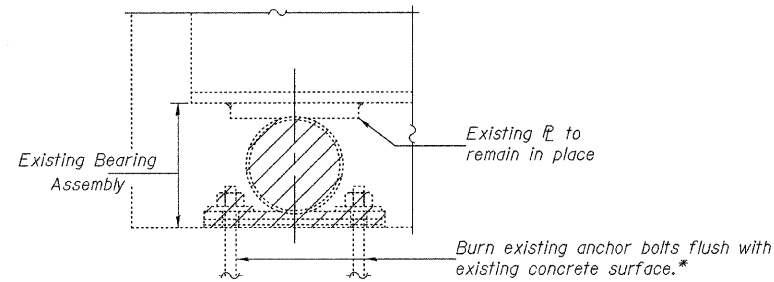
November 23, 2009
 EXAMINED *Thomas J. Demagala*
 ENGINEER OF BRIDGE DESIGN
 PASSED *Ralph E. Anderson*
 ENGINEER OF BRIDGES AND STRUCTURES

STRUCTURAL STEEL DETAILS
 F.A.U. RTE. 9181 - SECTION 52BR
 ST. CLAIR COUNTY
 STATION 39+89.80
 STRUCTURE NO. 082-0136

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO. F.A.U. 9181	SECTION 52BR	COUNTY ST. CLAIR	TOTAL SHEETS 41	SHEET NO. 33	SHEET NO. 17 25 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT-	

Contract #76120



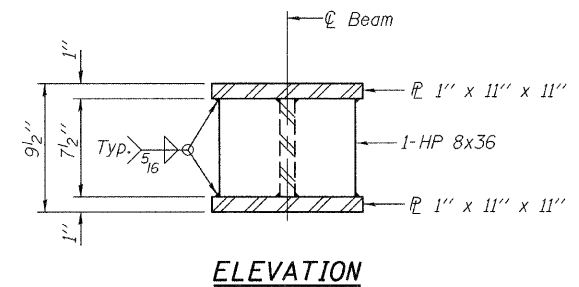
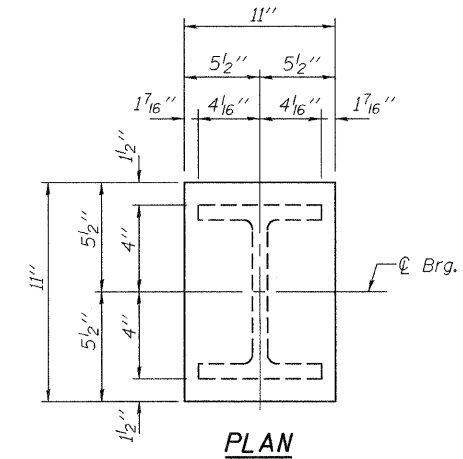
EXISTING BEARING REMOVAL DETAIL

Hatched areas indicate removal of existing bearings.

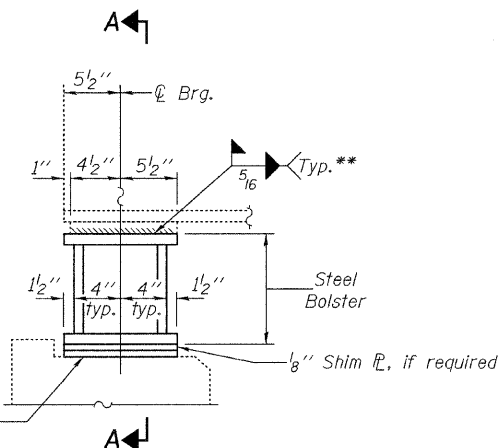
*Cost included with Jack and Remove Existing Bearings at the abutments.

JACK AND REMOVE EXISTING BEARING PROCEDURE

1. The Contractor shall submit plans for jacking to the Engineer for approval prior to commencing any work at the bearings.
2. Jacking and removing existing bearings shall be done after existing deck removal is completed and before the new deck is poured.
3. Prior to ordering any material, the Contractor shall verify steel extension height and shim plate thickness required at each bearing so that total height of new bearing, steel extension, and fill matches height of existing bearing and shim.
4. All beams at all supports shall be lifted simultaneously such that the relative elevation between adjacent beams shall not exceed $\frac{1}{4}$ " from their original relative elevations, and such that the relative elevations between adjacent substructure units shall not exceed $\frac{3}{4}$ " during or after jacking operations.
5. The steel beams shall be raised a maximum of $\frac{1}{4}$ ". The maximum dead load reaction with deck removed (per bearing) at each abutment is 2.5 Kips.
6. The minimum jack capacity shall be 4 Kips at abutments.
7. The new bearings shall be in place and the jacks shall be lowered before the new concrete deck is poured.
8. Jacking against diaphragms is prohibited.

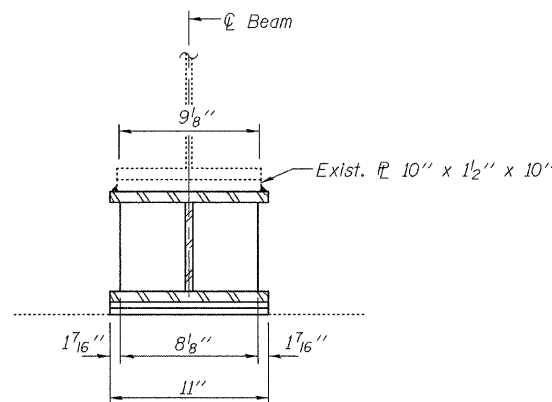


STEEL BOLSTER AT ABUTMENT
(20 required)



$\frac{1}{8}$ " elastomeric neoprene leveling pad according to the material properties of Article 1052.02(a) of the Standard Specifications. Cost included with Structural Steel.

ELEVATION AT ABUTMENT



FIXED BEARINGS

(20 required)

BILL OF MATERIAL

Item	Unit	Total
Jack and Remove Existing Bearings	Each	20

*Cost of field welding is included with Furnishing and Erecting Structural Steel. Top of bolster to be painted after field welding.

DESIGNED	WAB/SMR
CHECKED	DFZ/FT
DRAWN	PAUL W. SWEET
CHECKED	DFZ/SMR/DPN/FT

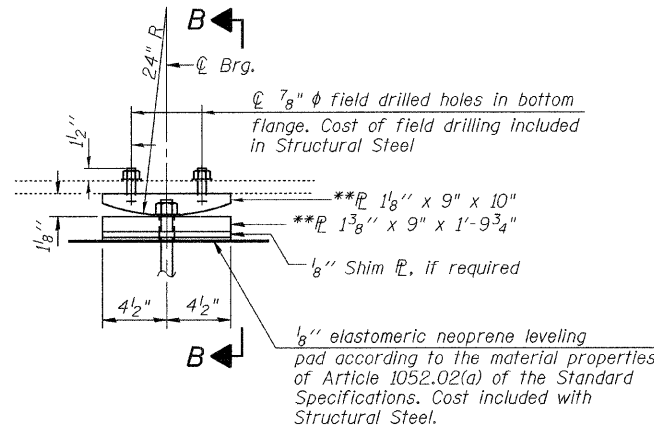
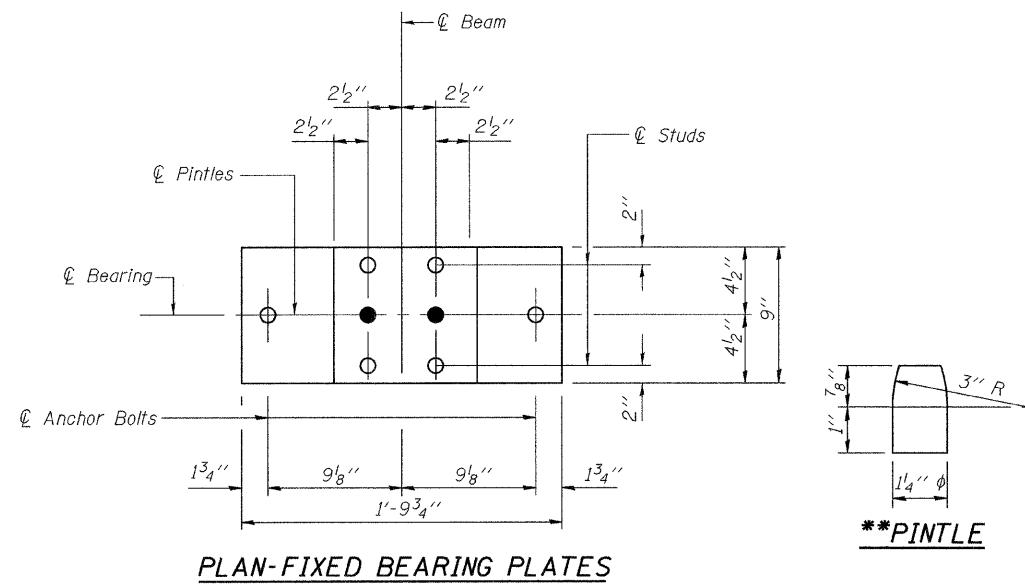
November 23, 2009
 EXAMINED *Thomas J. Domagalaki*
 ENGINEER OF BRIDGE DESIGN
 PASSED *Ralph E. Anderson*
 ENGINEER OF BRIDGES AND STRUCTURES

BEARING DETAILS AT ABUTMENTS
F.A.U. RTE. 9181 - SECTION 52BR
ST. CLAIR COUNTY
STATION 39+89.80
STRUCTURE NO. 082-0136

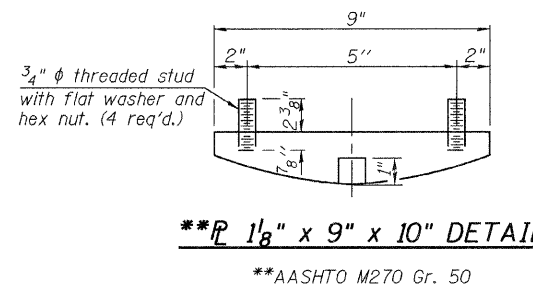
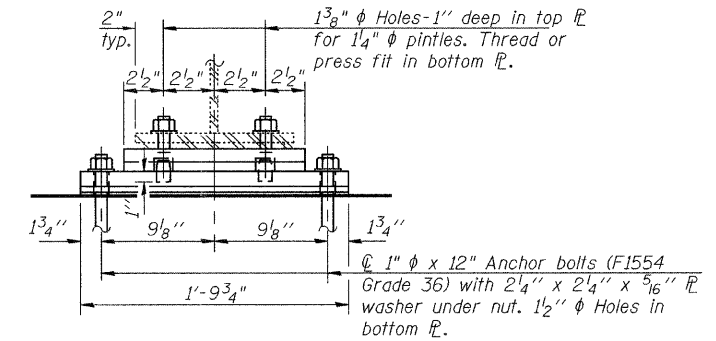
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO. F.A.U. 9181	SECTION 52BR	COUNTY ST. CLAIR	SHEETS 41	SHEET 34	SHEET NO. 18 25 SHEETS
FED. ROAD DIST. NO. 7		BLINDERS	FUEL AND PROJECT		

Contract #76120



FIXED BEARING PIER 2
(10 Req'd.)



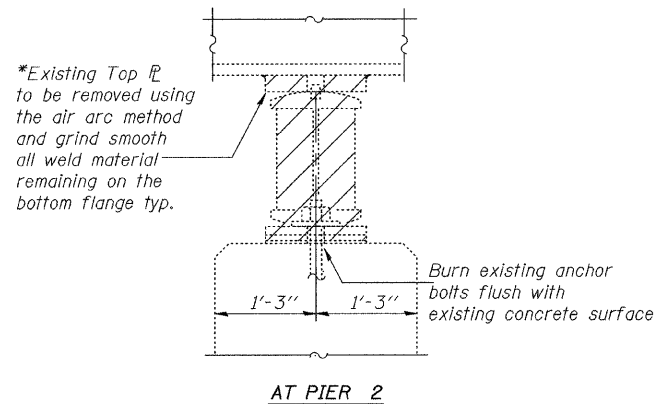
JACKING AND CRIBBING PROCEDURE

- The Contractor shall submit details and plans for approval in accordance with the Special Provision prior to commencing any work at the bearings.
- Jacking and Cribbing shall be done in each stage after the removal of the existing bridge deck in that stage is complete.
- Jacking shall be limited to the maximum dimensions shown in the Special Provision.
- The maximum dead load reaction with deck removed per bearing at the piers is 10 Kips. The minimum jack capacity per bearing at the piers is 15 Kips.
- The new bearings shall be in place and the jacks shall be lowered before the new concrete deck is poured.

Notes:
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

BILL OF MATERIAL

Item	Unit	Total
Jacking and Cribbing	Each	10



JACK AND CRIB EXISTING BEARING

Hatched areas indicate removal of existing bearings.
*Cost included with Jacking and Cribbing of Existing Bearings at Pier 2.

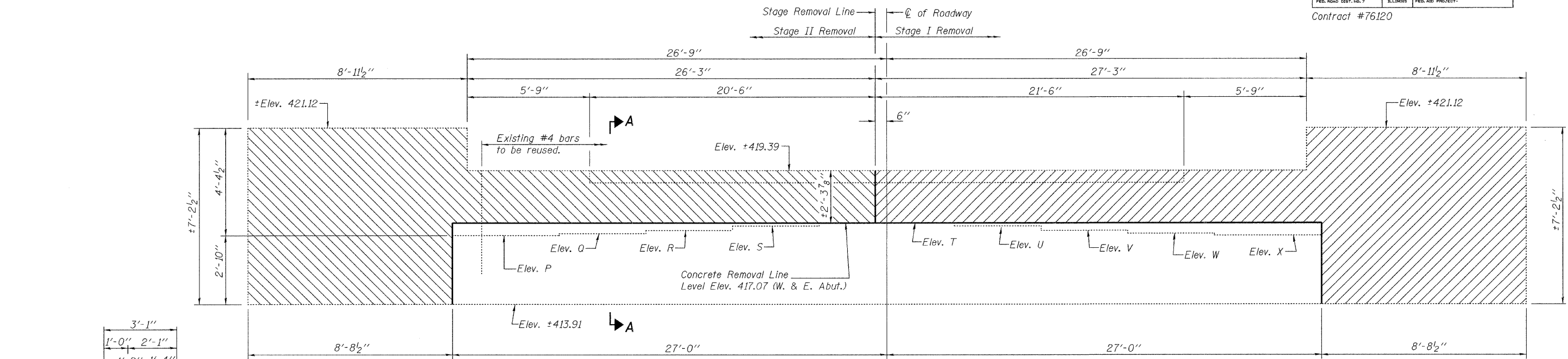
DESIGNED	WAB/SMR
CHECKED	DFZ/FT
DRAWN	PAUL W. SWEET
CHECKED	DFZ/SMR/DPN/FT

November 23, 2009
EXAMINED *Thomas J. Demagala*
PASSED *Ralph E. Anderson*

BEARING DETAILS AT PIER 2
F.A.U. RTE. 9181 - SECTION 52BR
ST. CLAIR COUNTY
STATION 39+89.80
STRUCTURE NO. 082-0136

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 19
F.A.U. 9181	52BR	ST. CLAIR	41	35	25 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT	Contract #76120		

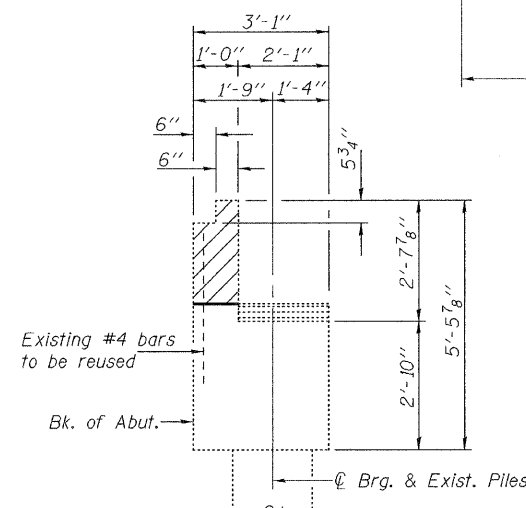


ELEVATION

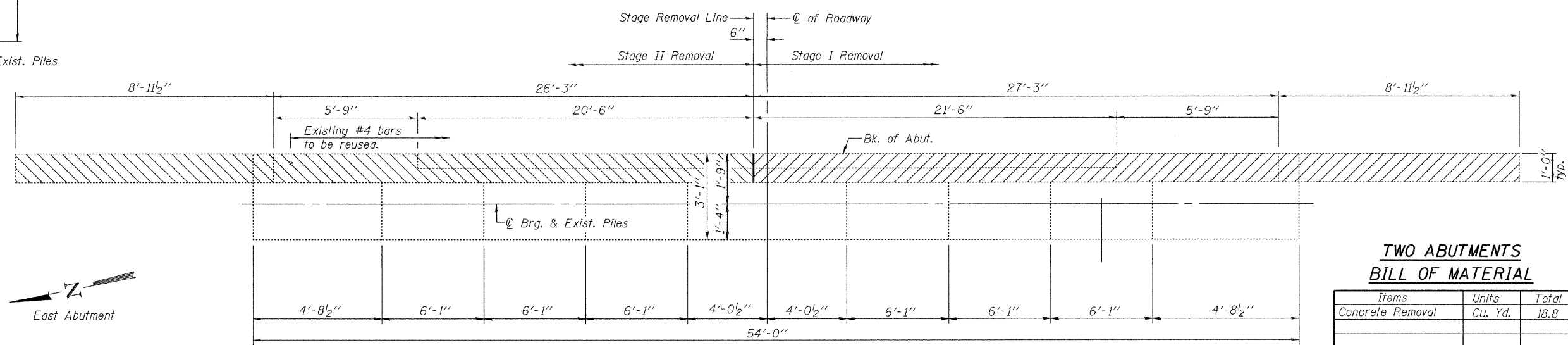
(Looking East for East Abutment
West Abutment similar)

Notes:

- Hatched area indicates Concrete Removal.
- Existing reinforcement extending into removed areas shall be cleaned, straightened and incorporated into the new construction. Cost included with Concrete Removal.
- Existing reinforcement not extending into new construction shall be cut off flush. Cost included with Concrete Removal.
- Elevations P and X are under beams 10 and 1 respectively for the West Abutment and beams 1 and 10 respectively for the East Abutment.



SECTION A-A



PLAN

(East Abutment shown, West Abutment Similar)

**TWO ABUTMENTS
BILL OF MATERIAL**

Items	Units	Total
Concrete Removal	Cu. Yd.	18.8

	X	W	V	U	T	S	R	Q	P
West Abutment	416.74	416.82	416.92	417.01	417.07	417.01	416.93	416.81	416.74
East Abutment	416.74	416.81	416.93	417.01	417.07	417.01	416.92	416.82	416.74

**CONCRETE REMOVAL
WEST AND EAST ABUTMENTS
F.A.U. RTE. 9181 - SECTION 52BR
ST. CLAIR COUNTY
STATION 39+89.80
STRUCTURE NO. 082-0136**

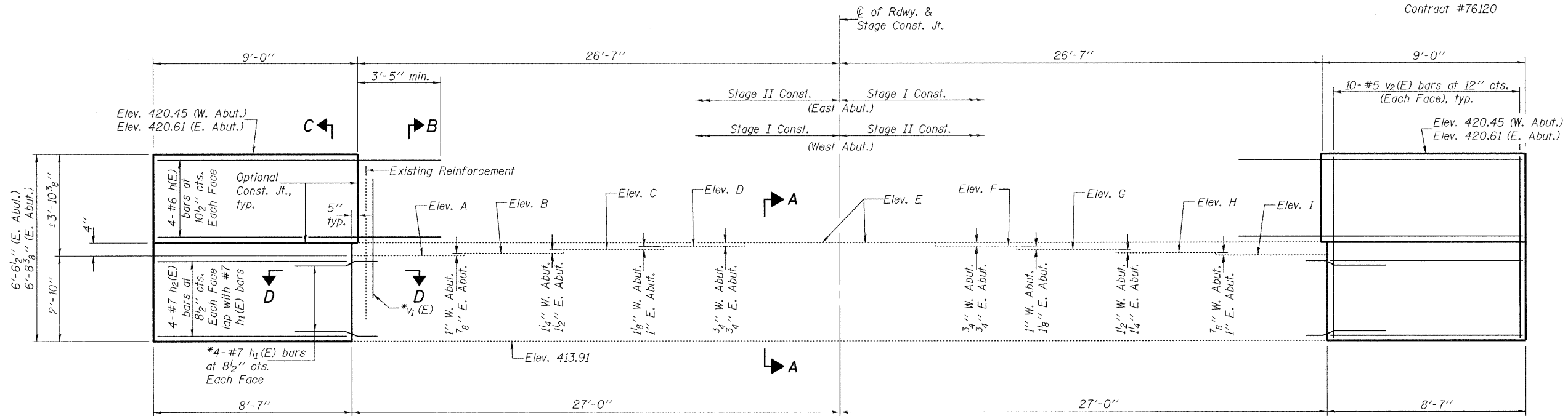
DESIGNED	WAB/SMR
CHECKED	DFZ/FT
DRAWN	PAUL W. SWEET
CHECKED	DFZ/SMR/DPN/FT

November 23, 2009
 EXAMINED *Thomas J. Demagali*
 ENGINEER OF BRIDGE DESIGN
 PASSED *Ralph E. Anderson*
 ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO. F.A.U. 9181	SECTION 52BR	COUNTY ST. CLAIR	SHEETS 41	SHEET NO. 36	SHEET NO. 20 25 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-		

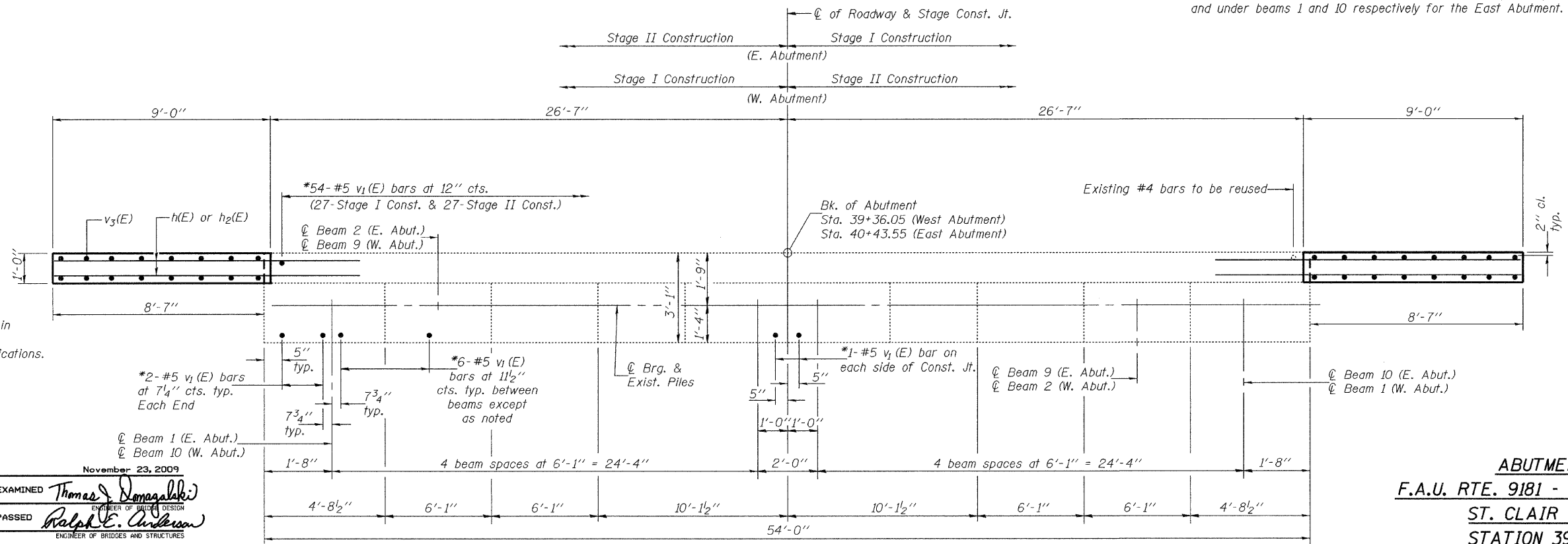
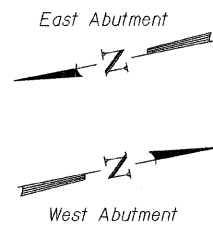
Contract #76120



ELEVATION
(Looking East at East Abutment
West Abutment similar except as noted)

Existing Bearing Seat Elevations							
	I	H	G	F	E	D	C
West Abutment	416.74	416.82	416.92	417.01	417.07	417.01	416.93
East Abutment	416.74	416.81	416.93	417.01	417.07	417.01	416.92

Notes:
For Section A-A, B-B, C-C & D-D and Bill of Material see sheet 21 of 25.
For concrete removal details see sheet 19 of 25.
Existing reinforcement extending into removed areas shall be cleaned, straightened, and incorporated into the new construction. Cost included with Concrete Removal.
Elevation A and I are under beams 10 and 1 respectively for the West Abutment and under beams 1 and 10 respectively for the East Abutment.



*Epoxy grout $h_1(E)$ and $v_1(E)$ bars in 9" min. drilled holes according to Article 584 of the Standard Specifications.

DESIGNED	WAB/SMR
CHECKED	DFZ/FT
BML	PAUL W. SWEET
DRAWN	
CHECKED	DFZ/SMR/DPN/FT

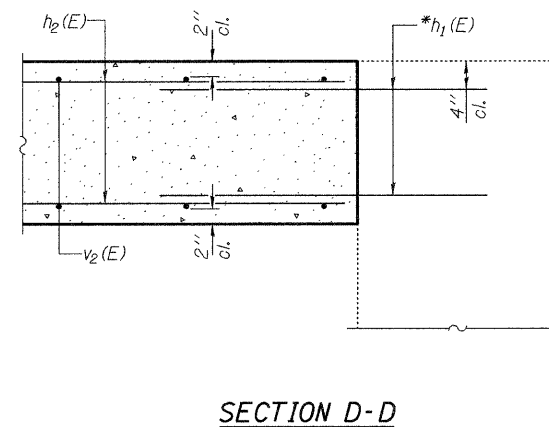
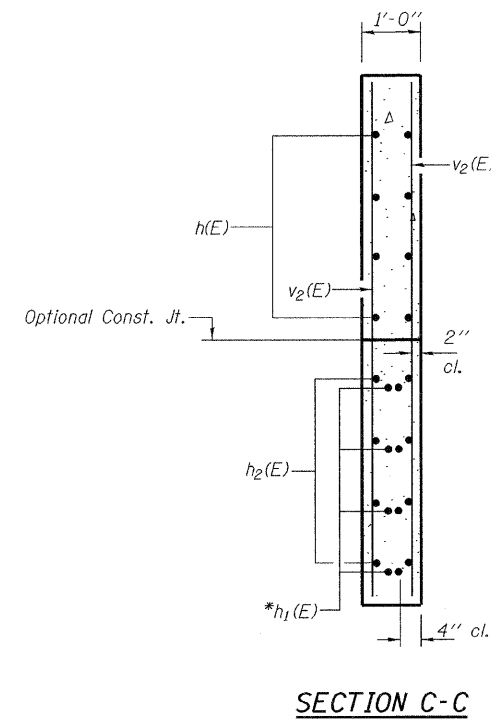
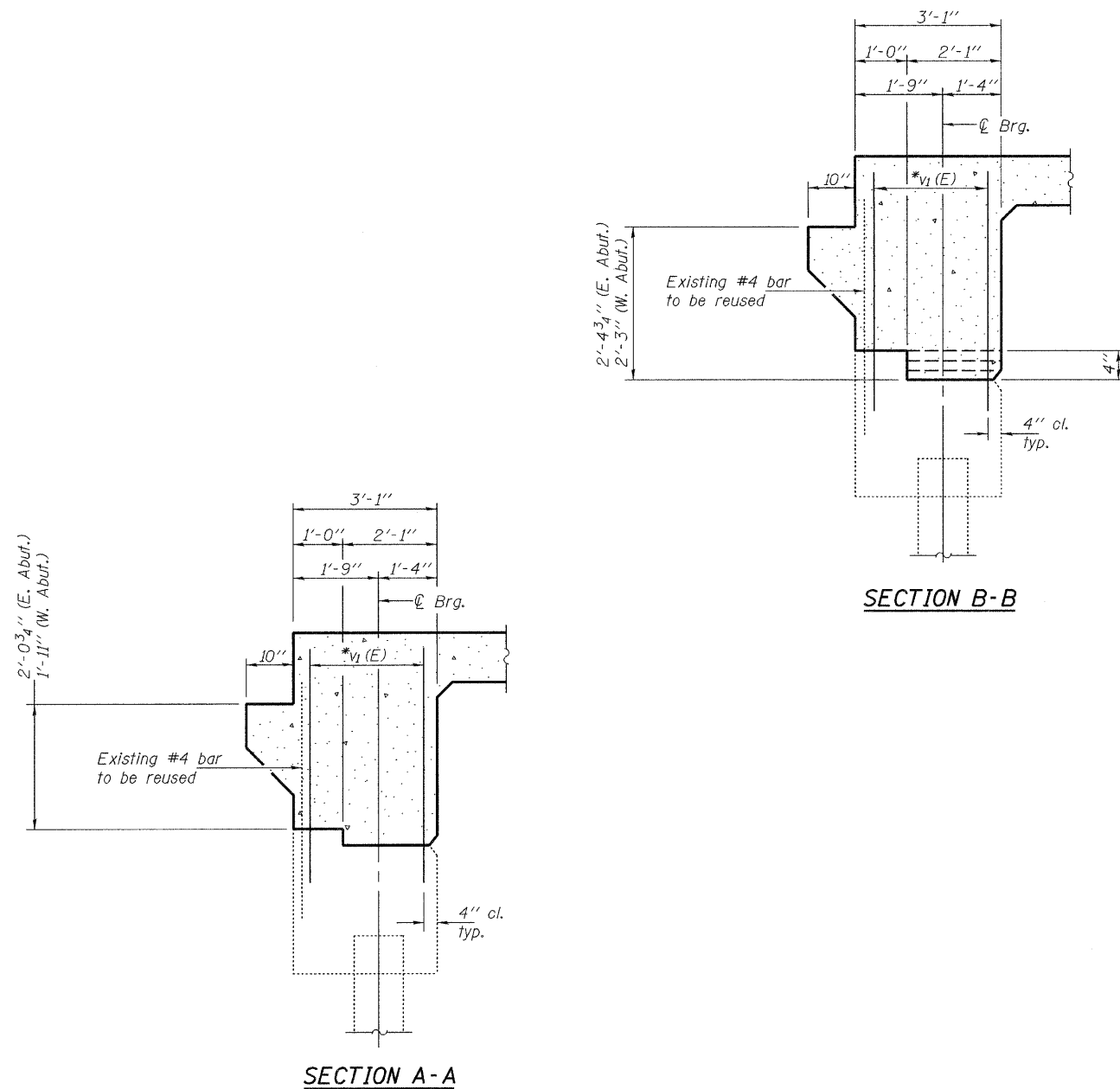
November 23, 2009
EXAMINED *Thomas J. Damagalki*
ENGINEER OF BRIDGE DESIGN
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

ABUTMENTS
F.A.U. RTE. 9181 - SECTION 52BR
ST. CLAIR COUNTY
STATION 39+89.80
STRUCTURE NO. 082-0136

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO. F.A.U. 9181	SECTION 52BR	COUNTY ST. CLAIR	TOTAL SHEETS 41	SHEET NO. 37	SHEET NO. 21 25 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT-			

Contract #76120



*Epoxy grout h₁(E) and v₁(E) bars in 9" min. drilled holes according to Article 584 of the Standard Specifications.

BILL OF MATERIAL FOR BOTH ABUTMENTS

Bar	No.	Size	Length	Shape
h(E)	32	#6	12'-3"	—
h ₁ (E)	32	#7	4'-4"	—
h ₂ (E)	32	#7	8'-4"	—
v ₁ (E)	216	#5	4'-3"	—
v ₂ (E)	80	#5	6'-4"	—
Concrete Structures			Cu. Yd.	8.9
Reinforcement Bars, Epoxy Coated			Pound	2900
Structure Excavation			Cu. Yd.	171.0

DESIGNED	WAB/SMR
CHECKED	DFZ/FT
DRAWN	BML PAUL W. SWEET
CHECKED	DFZ/SMR/DPN/FT

November 23, 2009
 EXAMINED *Thomas J. Demagalki*
 ENGINEER OF BRIDGE DESIGN
 PASSED *Ralph E. Anderson*
 ENGINEER OF BRIDGES AND STRUCTURES

Notes:
 Existing reinforcement extending into removed areas shall be cleaned, straightened, and incorporated into the new construction. Cost included with Concrete Removal.
 Place v₁(E) bars in between existing #4 vertical bars at the back of abutment.

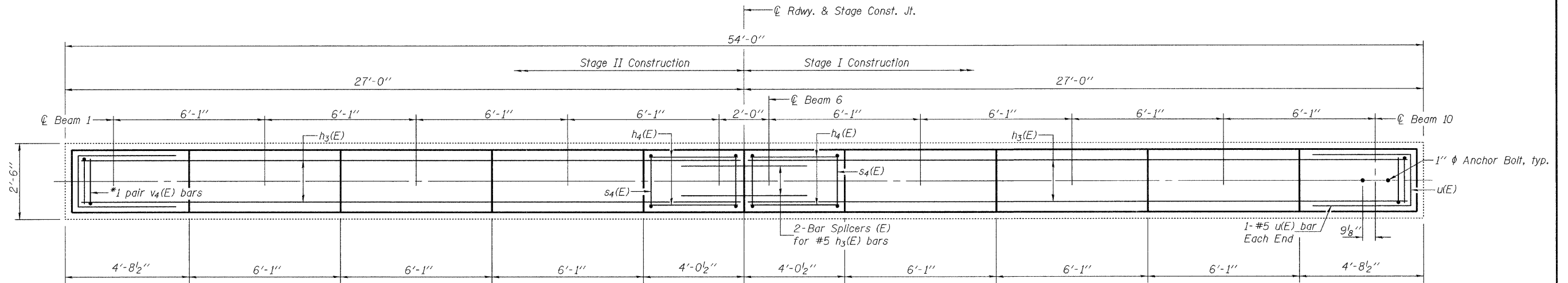
ABUTMENT DETAILS
F.A.U. RTE. 9181 - SECTION 52BR
ST. CLAIR COUNTY
STATION 39+89.80
STRUCTURE NO. 082-0136

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

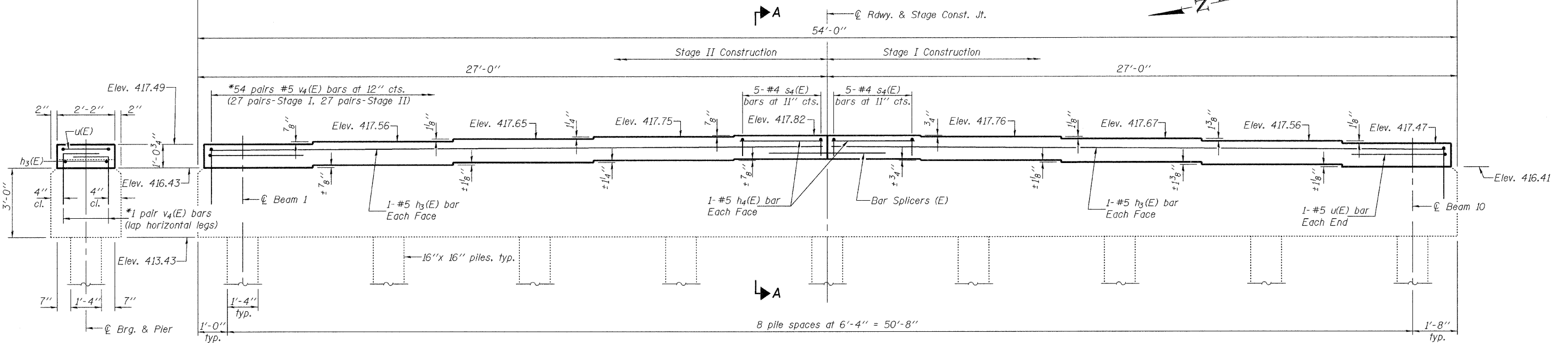
ROUTE NO. F.A.U. 9181	SECTION 52BR	COUNTY ST. CLAIR	SHEETS 41	SHEET NO. 38	SHEET NO. 22 25 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT-	

Contract #76120

Notes:
Space reinforcement bars in cap to miss anchor bolts.
Pour steps monolithically with existing cap.
For bar splicers details see sheet 23 of 25.



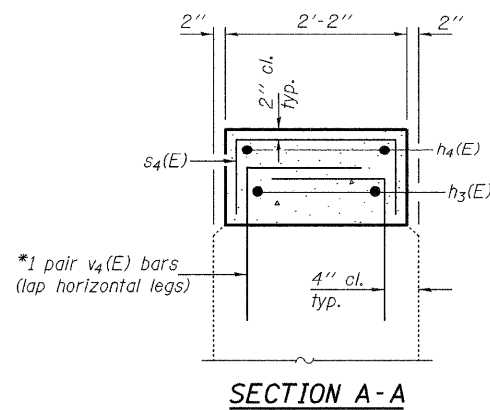
TOP PLAN



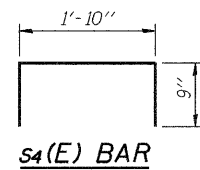
ELEVATION
(Looking East)

END VIEW

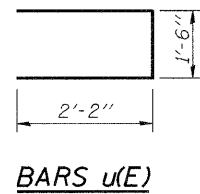
*Epoxy grout v₄(E) bars in 9" min. drilled holes according to Section 584 of the Standard Specifications.



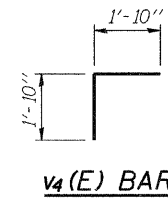
SECTION A-A



s₄(E) BAR



BARS u(E)



v₄(E) BAR

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h ₃ (E)	4	#5	26'-6"	—
h ₄ (E)	4	#5	3'-8"	—
s ₄ (E)	10	#4	3'-4"	┌
u(E)	2	#5	5'-10"	▮
v ₄ (E)	108	#5	3'-8"	┌
Concrete Structures			Cu. Yd.	4.5
Reinforcement Bars, Epoxy Coated			Pound	570

DESIGNED	WAB/SMR
CHECKED	DFZ/FT
BML DRAWN	PAUL W. SWEET
CHECKED	DFZ/SMR/DPN/FT

November 23, 2009
EXAMINED *Thomas J. Demagalahi*
ENGINEER OF BRIDGE DESIGN
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

PIER 2
F.A.U. RTE. 9181 - SECTION 52BR
ST. CLAIR COUNTY
STATION 39+89.80
STRUCTURE NO. 082-0136

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 9181	52BR	ST. CLAIR	41	39
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

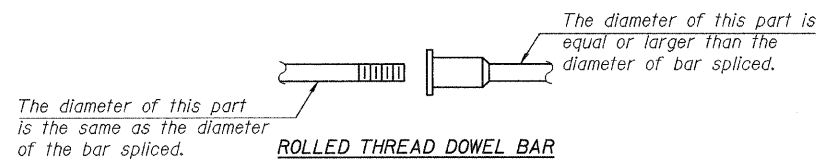
Contract #76120

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) = $1.25 \times f_y \times A_t$
 - ② Minimum *Pull-out Strength (Tension in kips) = $0.66 \times f_y \times A_t$
- Where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

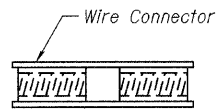
BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	7.9
#5	2'-2"	23.0	12.3
#6	2'-7"	33.1	17.4
#7	3'-5"	45.1	23.8
#8	4'-6"	58.9	31.3
#9	5'-9"	75.0	39.6
#10	7'-3"	95.0	50.3
#11	9'-0"	117.4	61.8



ROLLED THREAD DOWEL BAR



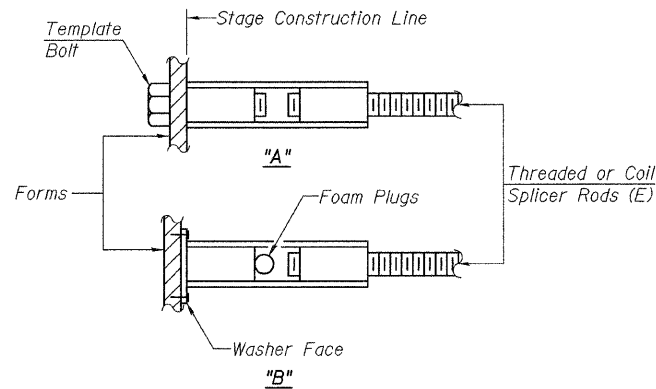
** ONE PIECE



WELDED SECTIONS

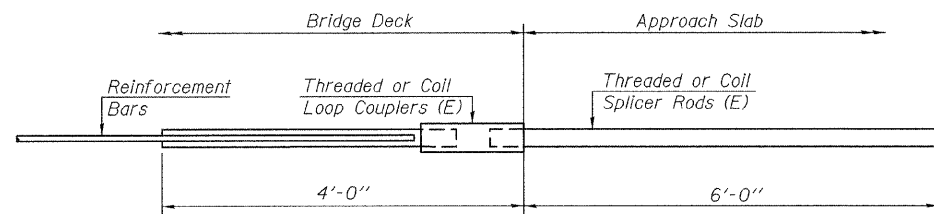
BAR SPLICER ASSEMBLY ALTERNATIVES

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



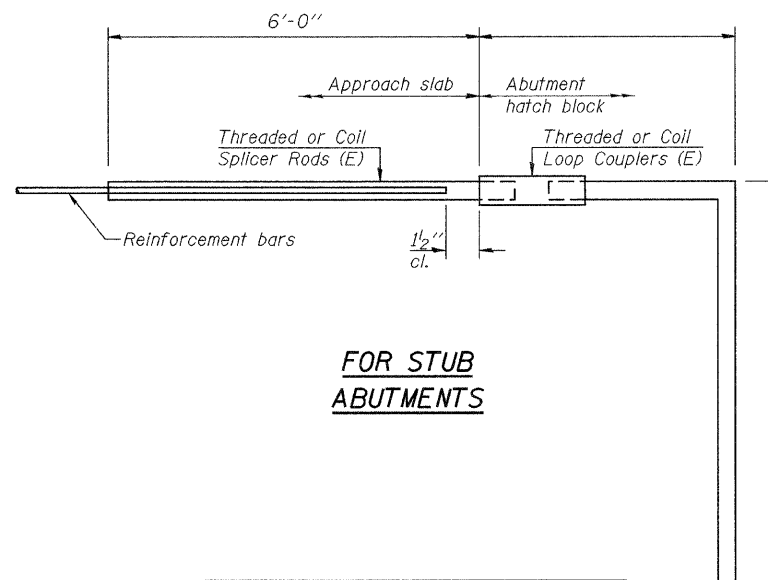
INSTALLATION AND SETTING METHODS

"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.



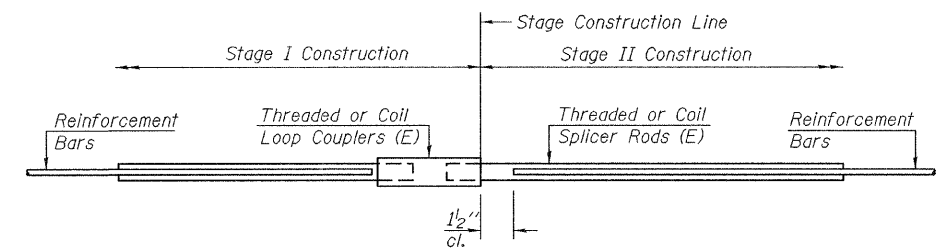
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required = 108



FOR STUB ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required =



STANDARD

Bar Size	No. Assemblies Required	Location
#4	60	Appr. Slab
#5	303	Slab
#5	172	Appr. Slab
#5	2	Pier 2
#6	18	Diaphragms

BAR SPLICER ASSEMBLY DETAILS
F.A.U. RTE. 9181 - SECTION 52BR
ST. CLAIR COUNTY
STATION 39+89.80
STRUCTURE NO. 082-0136

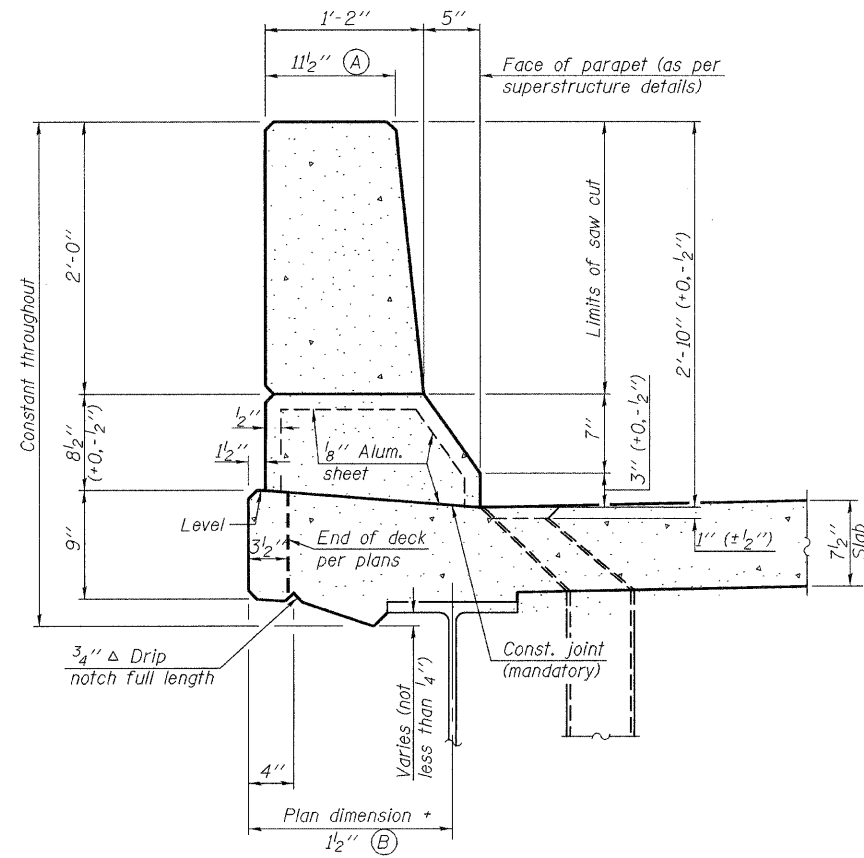
DESIGNED	WAB/SMR
CHECKED	DFZ/FT
BML DRAWN	PAUL W. SWEET
CHECKED	DFZ/SMR/DPN/FT

EXAMINED	November 23, 2009 Thomas J. Demagala ENGINEER OF BRIDGE DESIGN
PASSED	Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES

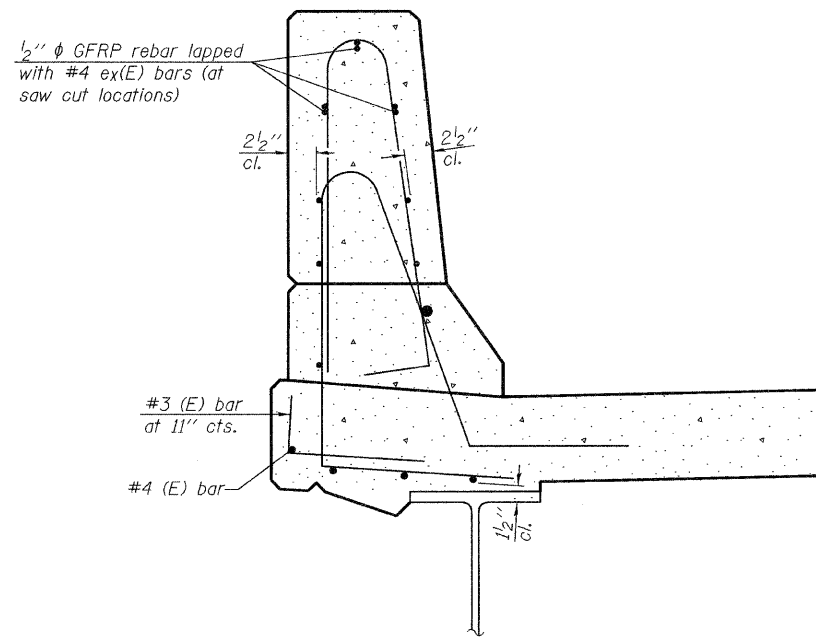
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO. F.A.U. 9181	SECTION 52BR	COUNTY ST. CLAIR	TOTAL SHEETS 41	SHEET NO. 40	SHEET NO. 24 25 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT-			

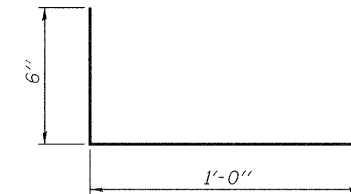
Contract #76120



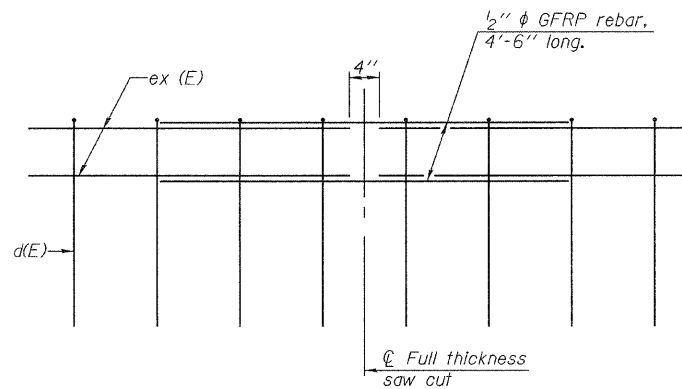
SECTION
(Showing dimensions)



SECTION
(Showing reinforcement clearances for slip forming and additional reinforcement bars)



#3 (E) BAR



GFRP REBAR STIFFENING DETAIL

(Place as shown in parapet section at each parapet joint location.)

DESIGNED	SMR
CHECKED	FT
DRAWN	PAUL W. SWEET
CHECKED	SMR/FT

November 23, 2009
EXAMINED *Thomas J. Demagali*
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

**CONCRETE PARAPET
SLIPFORMING OPTION
F.A.U. RTE. 9181 - SECTION 52BR
ST. CLAIR COUNTY
STATION 39+89.80
STRUCTURE NO. 082-0136**

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO.
F.A.U. 9181	52BR	ST. CLAIR	41	41	25 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			

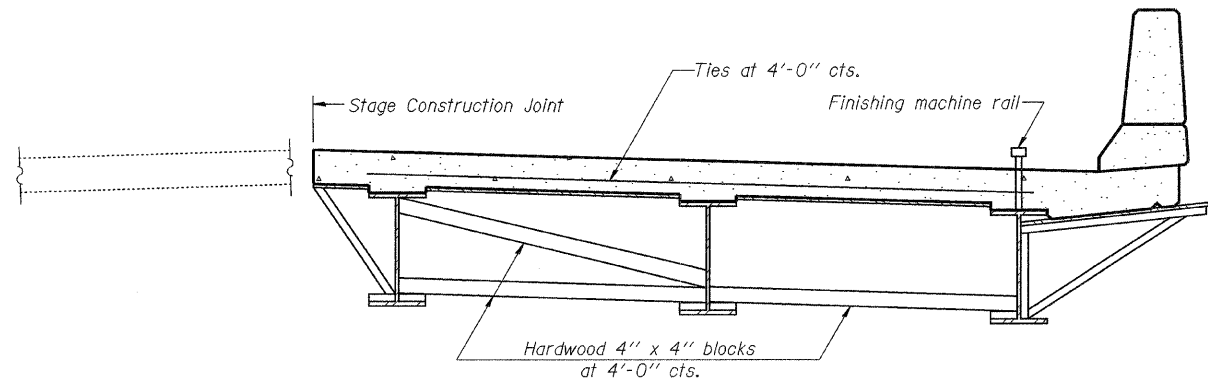
Contract #76120

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

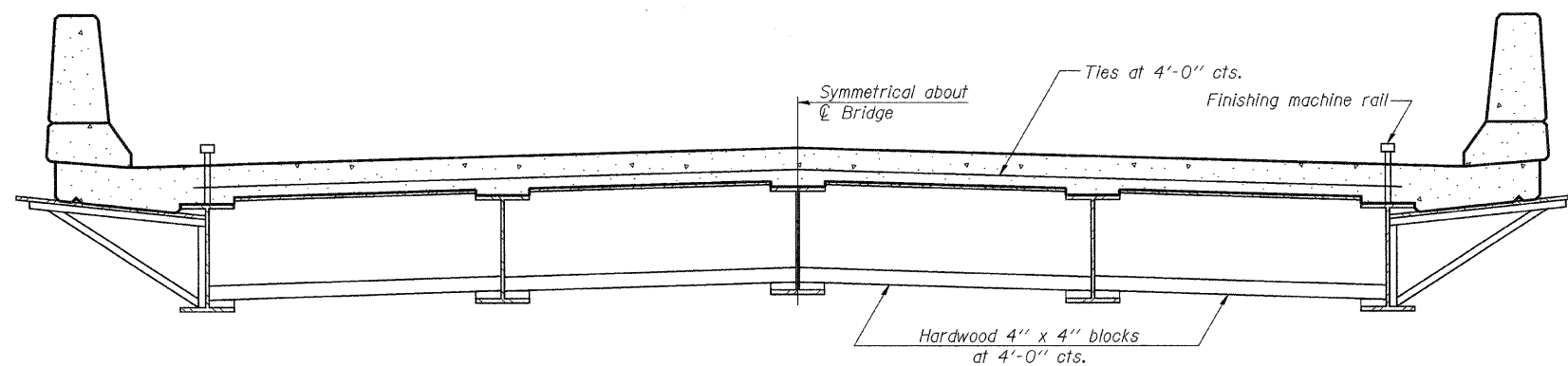
The finishing machine rails shall be placed on the top flange of the exterior beams.

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

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



**FORM BRACES FOR
STAGE CONSTRUCTION**



**FORM BRACES FOR
STANDARD CONSTRUCTION**

DESIGNED	WAB/SMR
CHECKED	DFZ/FT
DRAWN	PAUL W. SWEET
CHECKED	DFZ/SMR/DPN/FT

November 23, 2009
EXAMINED *Thomas J. Demagali*
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

**CANTILEVER FORMING BRACKETS
FOR SUPERSTRUCTURES WITH
W27 BEAMS AND SMALLER
F.A.U. RTE. 9181 - SECTION 52BR
ST. CLAIR COUNTY
STATION 39+89.80
STRUCTURE NO. 082-0136**