

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
776	102B-1	HAMILTON	53	1
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 78016		

D-99-039-07



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

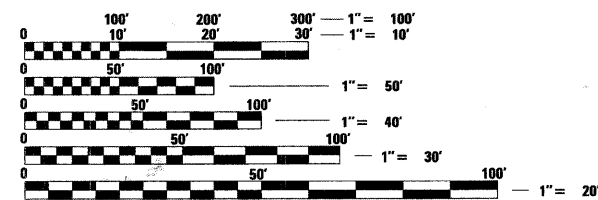
**PROPOSED
HIGHWAY PLANS**

FAP ROUTE 776 (IL ROUTE 242)
SECTION (102)B-1
PROJECT NO. BRF-0776(026)
HAMILTON COUNTY
C-99-041-07
STRUCTURE REPLACEMENT OVER
SHELTON CREEK

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

TRAFFIC DATA

2007 ADT = 1020
20% TRUCKS
POSTED SPEED 55 MPH



CROUCH TOWNSHIP

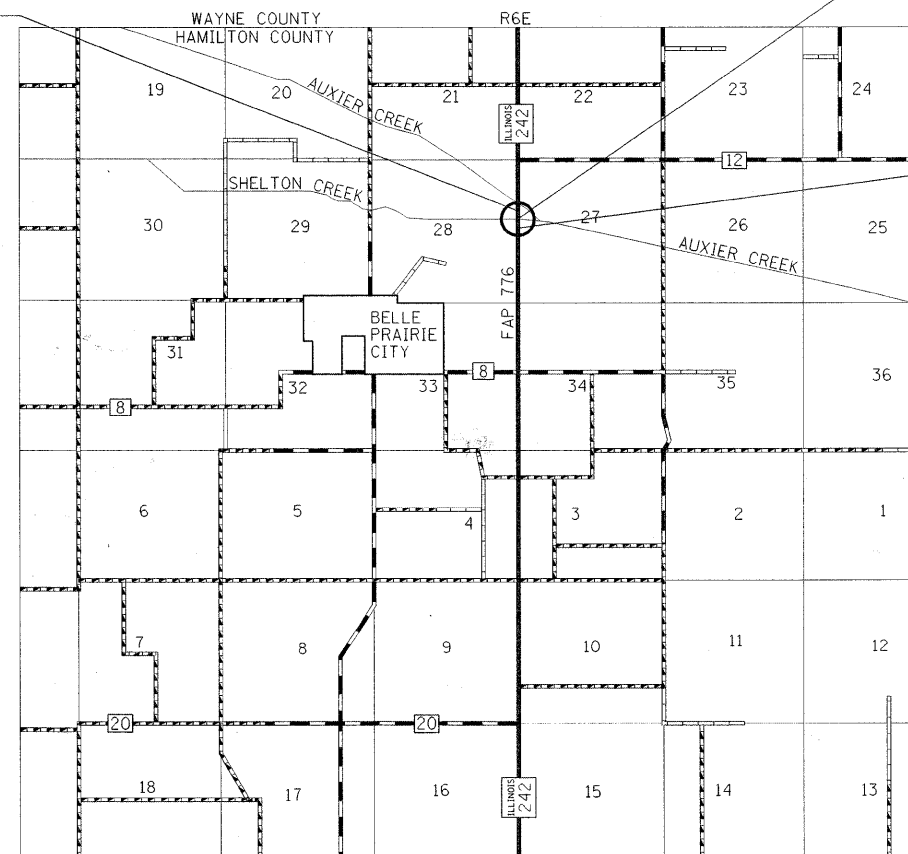
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

PROJECT ENGINEER DAVID PICHE, (618) 549-2171

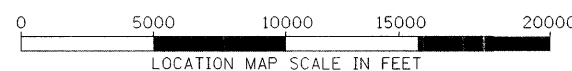
CONTRACT NO. 78016

PROJECT BEGINS
STA. 468 + 06



PROPOSED BRIDGE
OVER SHELTON CREEK
STRUCTURE NO. 033-0053
THREE SPAN STEEL WIDE
FLANGE BEAM BRIDGE
118' 0" BK TO BK ABUTMENTS
32' 0" CLEAR WIDTH
10 DEGREE LEFT AHEAD SKEW
CL STRUCTURE STA 470 + 76.00

PROJECT ENDS
STA. 474 + 18



ROADWAY LENGTH = 464 FT
BRIDGE LENGTH = 148 FT

NET LENGTH OF PROJECT = 612 FT
GROSS LENGTH OF PROJECT = 612 FT

PLANS PREPARED BY:
JACOBS ENGINEERING GROUP INC.
501 NORTH BROADWAY
ST. LOUIS, MISSOURI 63102

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Jan 27 20 09

Mary C. Romie
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

March 27, 20 09
Charles J. Ingersoll
ENGINEER OF DESIGN AND ENVIRONMENT

March 27, 20 09
Christine M. Reed
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER



Todd A. Welz
SIGNATURE DATE 11/15/09
LICENSE EXPIRES: 11/30/09

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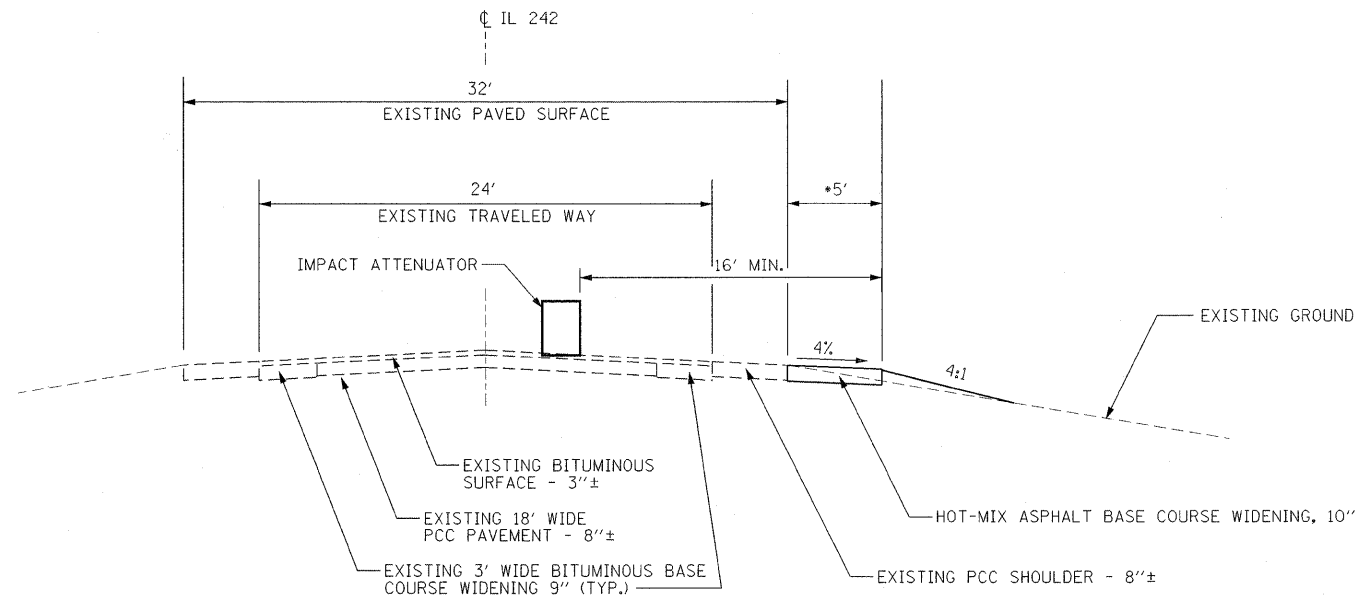
RURAL - HAMILTON COUNTY
HBP FUNDING
80% FEDERAL; 20% STATE
CONSTRUCTION TYPE CODE X071 - 2A
SN 033 - 0053

CODE NO.	ITEM DESCRIPTION	UNIT	QUANTITY
20200100	EARTH EXCAVATION	CU YD	512
20300100	CHANNEL EXCAVATION	CU YD	634
20400100	BORROW EXCAVATION	CU YD	267
20700400	POROUS GRANULAR EMBANKMENT, SPECIAL	CU YD	84
25000200	SEEDING, CLASS 2	ACRE	0.3
25000350	SEEDING, CLASS 7	ACRE	0.3
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	45
25000500	PHOSPHOROUS FERTILIZER NUTRIENT	POUND	23
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	23
25000700	AGRICULTURAL GROUND LIMESTONE	TON	0.5
25100115	MULCH, METHOD 2	ACRE	0.5
25100630	EROSION CONTROL BLANKET	SQ YD	1209
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	25
28000400	PERIMETER EROSION BARRIER	FOOT	674
28100107	STONE RIPRAP, CLASS A4	SQ YD	769
28200200	FILTER FABRIC	SQ YD	769
35600716	HOT-MIX ASPHALT BASE COURSE WIDENING, 10"	SQ YD	121
42001165	BRIDGE APPROACH PAVEMENT	SQ YD	222
42001420	BRIDGE APPROACH PAVEMENT CONNECTOR (PCC)	SQ YD	66
44000100	PAVEMENT REMOVAL	SQ YD	256
48203029	HOT-MIX ASPHALT SHOULDERS, 8"	SQ YD	265
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU YD	223
50300100	FLOOR DRAINS	EACH	14
50300225	CONCRETE STRUCTURES	CU YD	153.2
50300255	CONCRETE SUPERSTRUCTURE	CU YD	149.3
50300260	BRIDGE DECK GROOVING	SQ YD	420
50300280	CONCRETE ENCASEMENT	CU YD	10.7
50300300	PROTECTIVE COAT	SQ YD	518
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1
50500505	STUD SHEAR CONNECTORS	EACH	2478
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	48,030
50800515	BAR SPLICERS	EACH	521
50901125	STEEL RAILING (TEMPORARY)	FOOT	199
51201600	FURNISHING STEEL PILES HP 12x53	FOOT	560
51201900	FURNISHING STEEL PILES HP 14x89	FOOT	580
51202305	DRIVING PILES	FOOT	1140
51203600	TEST PILE STEEL HP 12x53	EACH	2

RURAL - HAMILTON COUNTY
HBP FUNDING
80% FEDERAL; 20% STATE
CONSTRUCTION TYPE CODE X071 - 2A
SN 033 - 0053

CODE NO.	ITEM DESCRIPTION	UNIT	QUANTITY
51203900	TEST PILE STEEL HP 14x89	EACH	2
51204650	PILE SHOES	EACH	24
51205200	TEMPORARY SHEET PILING	SQ FT	686
51500100	NAME PLATES	EACH	1
52100520	ANCHOR BOLTS, 1"	EACH	48
542D0223	PIPE CULVERTS, CLASS D, TYPE 1 18"	FOOT	6
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	61
60109580	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	140
* 63000000	STEEL PLATE BEAM GUARD RAIL, TYPE A	FOOT	250
* 63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	4
* 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4
63200710	STEEL PLATE BEAM GUARD RAIL REMOVAL, TYPE A	FOOT	252
63300455	REMOVAL AND REINSTALLATION OF EXISTING TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	1
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	10
67100100	MOBILIZATION	L SUM	1
70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	1
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1
70100500	TRAFFIC CONTROL AND PROTECTION, STANDARD 701326	L SUM	1
70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	2
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1
70106800	CHANGEABLE MESSAGE SIGN	CAL MO	2
70400100	TEMPORARY CONCRETE BARRIER	FOOT	417
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	242
70500690	TEMPORARY TRAFFIC BARRIER TERMINAL TYPE 11	EACH	1
* 78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	1106
* 78200420	GUARDRAIL MARKERS, TYPE B	EACH	6
* 78200520	BARRIER WALL MARKER, TYPE B	EACH	4
* 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
78300105	PAVEMENT MARKING REMOVAL	FOOT	826
86200300	UNINTERRUPTABLE POWER SUPPLY, EXTENDED	EACH	1
X0321781	MECHANICAL SPLICE	EACH	96
X5020501	UNDERWATER STRUCTURE EXCAVATION PROTECTION, LOCATION 1	EACH	1
X5020502	UNDERWATER STRUCTURE EXCAVATION PROTECTION, LOCATION 2	EACH	1
X0325864	BRIDGE APPROACH PAVEMENT REMOVAL	SQ YD	134
X6330103	REMOVE AND RE-ERECT TRAFFIC BARRIER TERMINAL, TYPE 1, SPECIAL, TANGENT	EACH	1
Z0001900	ASBESTOS BEARING PAD REMOVAL	EACH	16
Z0030260	IMPACT ATTENUATORS TEMPORARY (FULLY-REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	2
Z0030330	IMPACT ATTENUATORS RELOCATE (FULLY-REDIRECTIVE), TEST LEVEL 3	EACH	2

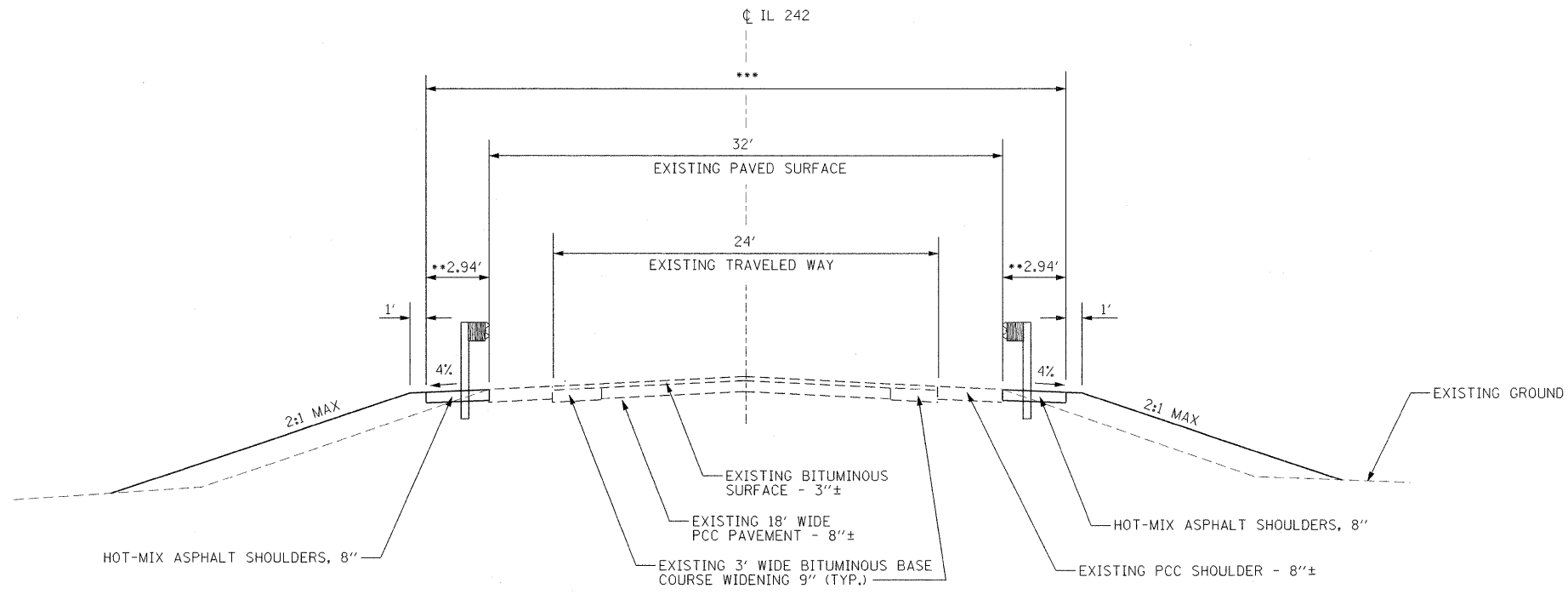
* Specialty Items



BASE COURSE WIDENING
468+06.00 TO 468+60.00 RT

HOT-MIX ASPHALT MIXTURE REQUIREMENTS

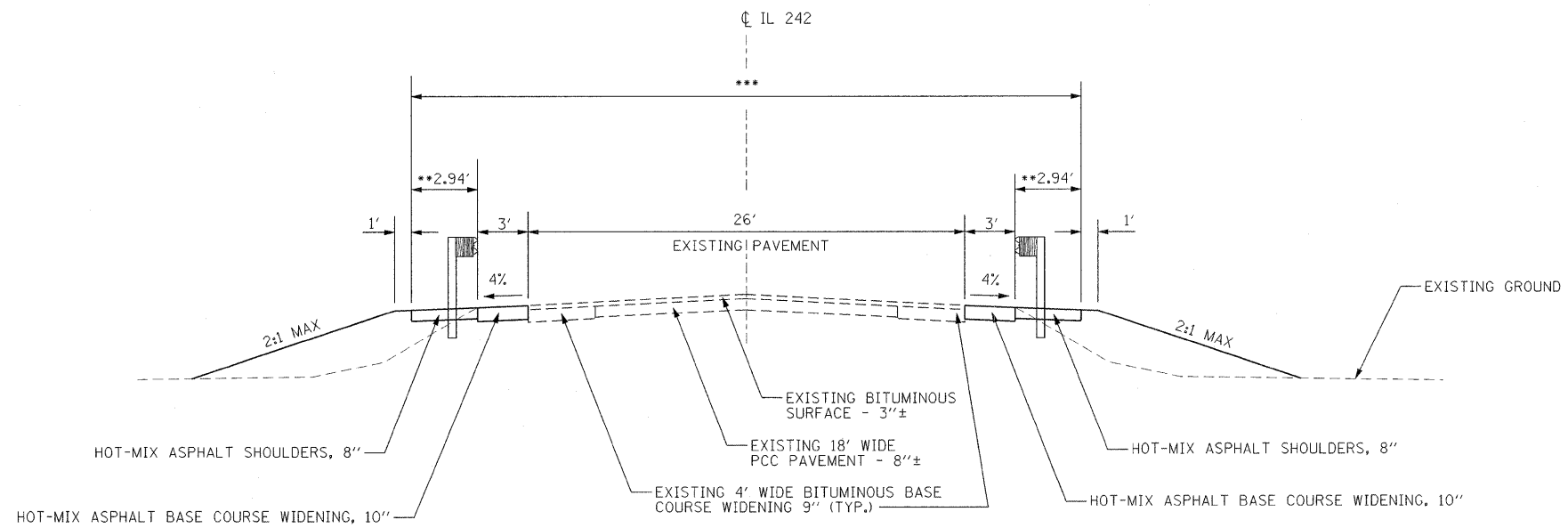
LOCATIONS:	HOT-MIX ASPHALT BASE COURSE WIDENING
MIXTURE USE (S):	HOT-MIX ASPHALT BASE COURSE WIDENING
AC/PG:	PG64-22
RAP % (max):	10
DESIGN AIR VOIDS:	4.0%, 90 GYRATION DESIGN
MIXTURE COMPOSITION:	IL - 19.0 MM
(GRADATION MIXTURE)	
FRICTION AGGREGATE:	NONE



SHOULDER WIDENING
469+17.40 TO 470+20.30 LT
469+10.80 TO 470+14.10 RT

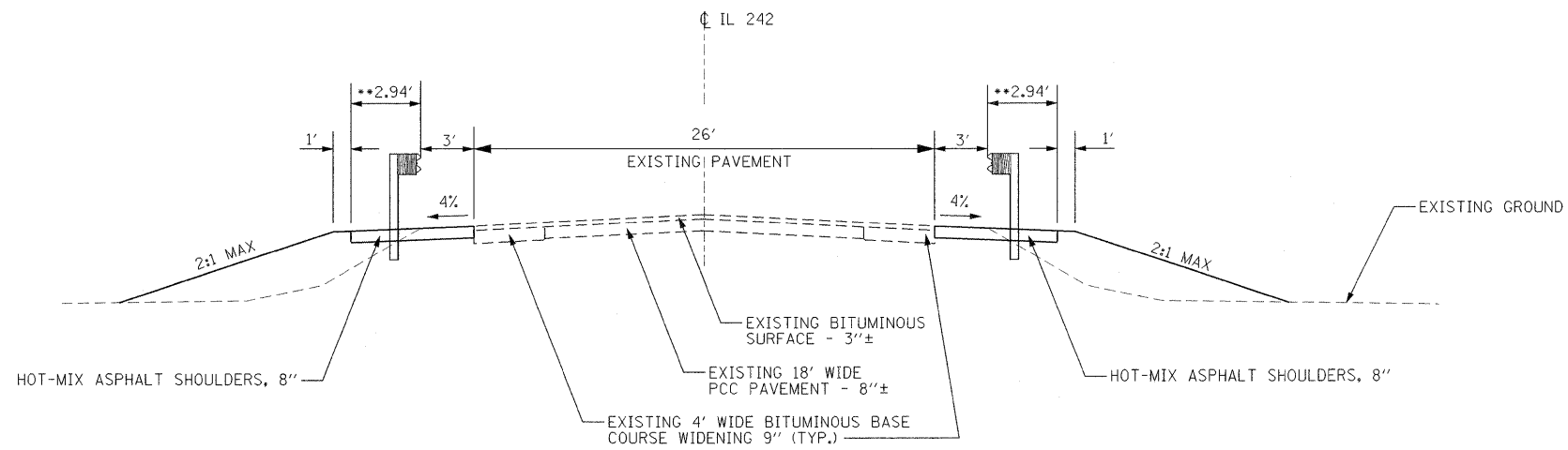
LOCATIONS:	HOT-MIX ASPHALT SHOULDERS
MIXTURE USE (S):	HOT-MIX ASPHALT SHOULDERS
AC/PG:	PG58-22
RAP % (max):	50
DESIGN AIR VOIDS:	2.0%, 30 GYRATION DESIGN
MIXTURE COMPOSITION:	HMA SHOULDERS
(GRADATION MIXTURE)	
FRICTION AGGREGATE:	NONE

* TAPER FROM 0' AT 468+06.00 TO 5' AT 468+21.00
 ** THIS DIMENSION VARIES FROM 2.94' TO 3.94' THROUGH 1' TAPERS OF FOUR TRAFFIC BARRIER TERMINALS, TYPE 1.
 *** 33'-2" THROUGH FULL WIDTH RECONSTRUCTION, 469+81.00 TO BEGIN BRIDGE. SET INSIDE FACE OF GUARDRAIL 16' LEFT AND RIGHT OF CENTERLINE THROUGHOUT FULL WIDTH RECONSTRUCTION.



BASE COURSE WIDENING AND SHOULDER WIDENING FOR GUARDRAIL

471+39.90 TO 473+00.00 LT
471+68.18 TO 473+00.00 RT



SHOULDER WIDENING

473+00.00 TO 474+18.00 LT
471+31.70 TO 471+68.18 RT
473+00.00 TO 473+13.10 RT

** VARIES FROM 2.94' TO 3.94' THROUGH 1' TAPERS OF FOUR TRAFFIC BARRIER TERMINALS, TYPE 1.
*** 33'-2" THROUGH FULL WIDTH RECONSTRUCTION, END BRIDGE TO 471+71.00. SET INSIDE FACE OF GUARDRAIL 16' LEFT AND RIGHT OF CENTERLINE THROUGHOUT FULL WIDTH RECONSTRUCTION.

FILE NAME = d978016-sht-typical02.dgn	USER NAME = keoverlg	DESIGNED - APF	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TYPICAL SECTION	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT DATE = 01/15/2009	CHECKED - RSB	REVISED -			776	(102)B-1	HAMILTON	53	5
						SHEET NO. 2 OF 2 SHEETS		CONTRACT NO. 78016		
						FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

HOT-MIX ASPHALT BASE COURSE WIDENING, 10"				
SHEET	STATION	STATION	LOCATION	SQ YD
10	468+06.00	468+60.00	IL ROUTE 242, RT.	26
11	471+39.90	473+00.00	IL ROUTE 242, LT.	53
11	471+68.18	473+00.00	IL ROUTE 242, RT.	42
TOTAL				121

BRIDGE APPROACH PAVEMENT				
SHEET	STATION	STATION	LOCATION	SQ YD
8	469+87.00	470+17.00	IL ROUTE 242	111
9	471+35.00	471+65.00	IL ROUTE 242	111
TOTAL				222

BRIDGE APPROACH PAVEMENT CONNECTOR (RIGID)				
SHEET	STATION	STATION	LOCATION	SQ YD
8	469+78.08	469+87.00	IL ROUTE 242	33
9	471+65.00	471+73.92	IL ROUTE 242	33
TOTAL				66

PAVEMENT REMOVAL				
SHEET	STATION	STATION	LOCATION	SQ YD
8	469+78	470+14	IL ROUTE 242	129
9	471+40	471+74	IL ROUTE 242	127
TOTAL				256

HOT-MIX ASPHALT SHOULDERS, 8"				
SHEET	STATION	STATION	LOCATION	SQ YD
8	469+17.40	470+20.30	IL ROUTE 242, LT.	35
8	469+10.80	470+14.10	IL ROUTE 242, RT.	35
9	471+39.90	474+18.00	IL ROUTE 242, LT.	131
9	471+31.70	473+13.10	IL ROUTE 242, RT.	64
TOTAL				265

BRIDGE APPROACH PAVEMENT REMOVAL				
SHEET	STATION	STATION	LOCATION	SQ YD
8	470+14	470+33	IL ROUTE 242	66
9	471+20	471+40	IL ROUTE 242	68
TOTAL				134

STEEL RAILING (TEMPORARY)				
SHEET	STATION	STATION	LOCATION	FOOT
10-11	469+77	471+76	IL ROUTE 242	199
TOTAL				199

PIPE CULVERT, CLASS D, TYPE1 18"				
SHEET	STATION	STATION	LOCATION	FOOT
8	470+32	470+38	IL ROUTE 242, RT	6
TOTAL				6

ENGINEER'S FIELD OFFICE, TYPE A		
TOTAL		CAL MO
	7	

MOBILIZATION		
TOTAL		L SUM
	1	

TRAFFIC BARRIER TERMINAL, TYPE 6				
SHEET	STATION	STATION	LOCATION	EACH
8	469+76.77	470+22.42	IL ROUTE 242, LT.	1
8	469+70.93	470+16.58	IL ROUTE 242, RT.	1
9	471+35.42	471+81.07	IL ROUTE 242, LT.	1
9	471+29.58	471+75.23	IL ROUTE 242, RT.	1
TOTAL				4

TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT				
SHEET	STATION	STATION	LOCATION	EACH
8	469+26.77	469+76.77	IL ROUTE 242, LT.	1
8	469+20.93	469+70.93	IL ROUTE 242, RT.	1
9	473+56.07	474+06.07	IL ROUTE 242, LT.	1
9	472+50.23	473+00.23	IL ROUTE 242, RT.	1
TOTAL				4

STEEL PLATE BEAM GUARD RAIL, TYPE A				
SHEET	STATION	STATION	LOCATION	FOOT
9	471+81.07	473+56.07	IL ROUTE 242, LT.	175
9	471+75.23	472+50.23	IL ROUTE 242, RT.	75
TOTAL				250

TERMINAL MARKER - DIRECT APPLIED				
SHEET	STATION	STATION	LOCATION	EACH
8	469+26.77		IL ROUTE 242, LT.	1
8	469+20.93		IL ROUTE 242, RT.	1
9	473+56.07		IL ROUTE 242, LT.	1
9	471+75.23		IL ROUTE 242, RT.	1
TOTAL				4

STEEL PLATE BEAM GUARD RAIL REMOVAL, TYPE A				
SHEET	STATION	STATION	LOCATION	FOOT
8	469+39	470+02	IL ROUTE 242, LT.	63
8	469+37	470+00	IL ROUTE 242, RT.	63
9	471+53	472+16	IL ROUTE 242, LT.	63
9	471+53	472+16	IL ROUTE 242, RT.	63
TOTAL				252

REMOVAL AND REINSTALLATION OF EXISTING TRAFFIC BARRIER TERMINAL, TYPE 6				
SHEET	STATION	STATION	LOCATION	EACH
10	467+70 +/-	468+13 +/-	IL ROUTE 242, RT.	1
TOTAL				1

REMOVE AND RE-ERECT TRAFFIC BARRIER TERMINAL TYPE 1, SPECIAL, TANGENT				
SHEET	STATION	STATION	LOCATION	EACH
10	468+13 +/-	468+63 +/-	IL ROUTE 242, RT.	1
TOTAL				1

GUARDRAIL MARKERS, TYPE B				
SHEET	STATION	STATION	LOCATION	EACH
8	469+26.77	470+22.42	IL ROUTE 242, LT.	1
8	469+20.93	470+16.58	IL ROUTE 242, RT.	1
9	471+35.42	474+06.07	IL ROUTE 242, LT.	3
9	471+29.58	472+25.23	IL ROUTE 242, RT.	1
TOTAL				6

BARRIER WALL MARKER, TYPE B				
SHEET	STATION	STATION	LOCATION	EACH
8-9	470+22.42	471+35.42	IL ROUTE 242, LT.	2
8-9	470+16.58	471+29.58	IL ROUTE 242, RT.	2
TOTAL				4

IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW) TEST LEVEL 3		
TOTAL		EACH
	2	

IMPACT ATTENUATORS, RELOCATE (FULLY REDIRECTIVE, NARROW) TEST LEVEL 3		
TOTAL		EACH
	2	

TRAFFIC CONTROL AND PROTECTION, STANDARD 701326		
TOTAL		L SUM
	1	

TRAFFIC CONTROL AND PROTECTION, STANDARD 701321		
TOTAL		EACH
	1	

TRAFFIC CONTROL AND PROTECTION, STANDARD 701201		
TOTAL		L SUM
	1	

TEMPORARY BRIDGE TRAFFIC SIGNALS		
TOTAL		EACH
	1	

TEMPORARY CONCRETE BARRIER		
TOTAL		FOOT
	417	

RELOCATE TEMPORARY CONCRETE BARRIER		
TOTAL		FOOT
	242	

CHANGEABLE MESSAGE SIGN		
TOTAL		CAL MO
	14	

PAINT PAVEMENT MARKING - LINE 4"					
SHEET	STATION	STATION	LOCATION	SOLID WHITE	INTERMITTENT YELLOW
8-9	468+48	473+04	IL ROUTE 242, LT.	456	
8-9	466+86	474+60	IL ROUTE 242		194
8-9	468+48	473+04	IL ROUTE 242, RT.	456	
TOTAL				912	194

PAVEMENT MARKING REMOVAL					
SHEET	STATION	STATION	LOCATION	SOLID WHITE	INTERMITTENT YELLOW
10	468+48	471+00	IL ROUTE 242, LT.	252	
10	466+86	469+34	IL ROUTE 242		62
11	471+00	473+04	IL ROUTE 242, LT.	204	
11	472+96	474+22	IL ROUTE 242		32
12	468+48	469+79	IL ROUTE 242, RT.	131	
13	474+22	474+60	IL ROUTE 242		10
13	471+69	473+04	IL ROUTE 242, RT.	135	
TOTAL				722	104

EROSION CONTROL							
SHEET	STATION	STATION	LOCATION	EROSION CONTROL BLANKET	PERIMETER EROSION BARRIER	STONE RIPRAP, CLASS A4	FILTER FABRIC
				SQ YD	FOOT	SQ YD	SQ YD
15	469+17	470+21	IL ROUTE 242, LT.	56	112		
15	468+03	468+62	IL ROUTE 242, RT.	15	63		
15	469+09	470+09	IL ROUTE 242, RT.	60	118		
16	471+40	474+21	IL ROUTE 242, LT.	477	293		
15	470+00	470+66	IL ROUTE 242			418	418
15	470+52	471+00	IL ROUTE 242	49		74	74
16	471+00	471+52	IL ROUTE 242			277	277
16	471+00	473+05	IL ROUTE 242, RT.	552			
16	472+37	473+06	IL ROUTE 242, RT.		88		
			TOTAL	1209	674	769	769

SEEDING										
STATION	STATION	LOCATION	SEEDING, CLASS 2	SEEDING, CLASS 7	NITROGEN FERTILIZER NUTRIENT	PHOSPHOROUS FERTILIZER NUTRIENT	POTASSIUM FERTILIZER NUTRIENT	AGRICULTURAL GROUND LIMESTONE	MULCH, METHOD 2	TEMPORARY EROSION CONTROL SEEDING
			ACRE	ACRE	POUND	POUND	POUND	TON	ACRE	POUND
469+17	474+21	IL ROUTE 242, LT.	0.11	0.11	20	10	10	0.2	0.2	11
468+03	471+52	IL ROUTE 242, RT.	0.14	0.14	25	13	13	0.3	0.3	14
		TOTAL	0.3	0.3	45	23	23	0.5	0.5	25

EARTHWORK SCHEDULE								
LOCATION STATION TO STATION 18-25	CHANNEL EXCAVATION (UNSUITABLE)	* EARTH EXCAVATION	SHRINKAGE FACTOR FOR EARTH EXCAVATION	EARTH EXCAVATION TO BE USED IN EMBANKMENT, ADJUSTED FOR SHRINKAGE	** EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)	SHRINKAGE FACTOR FOR BORROW EXCAVATION	BORROW EXCAVATION
	CU YD	CU YD	%	CU YD	CU YD	CU YD	%	CU YD
470+17.00 TO 471+35.00	634				325	-325	25	-433
468+06.00 TO 474+18.00		512	25	384	260	124	25	166
TOTALS	634	512		384	625	-201		-267

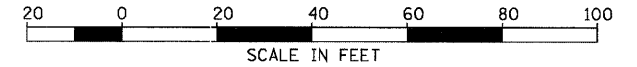
* CUTS FROM CROSS SECTIONS
 **FILLS FROM CROSS SECTIONS

EXISTING IL 242 CENTERLINE CONTROL POINT TABLE

POINT DESCRIPTION	STATION	BEARING	DISTANCE	NORTHING	EASTING
POB	455+00.00			572862.6466	925404.2616
POE	485+00.00	S 0° 10' 31.35" W	3000.00'	569862.6606	925395.0790

NOTES:

1. SEE STAGE 1 CONSTRUCTION PLANS FOR HOT-MIX ASPHALT BASE COURSE WIDENING, 10" CALLOUTS.



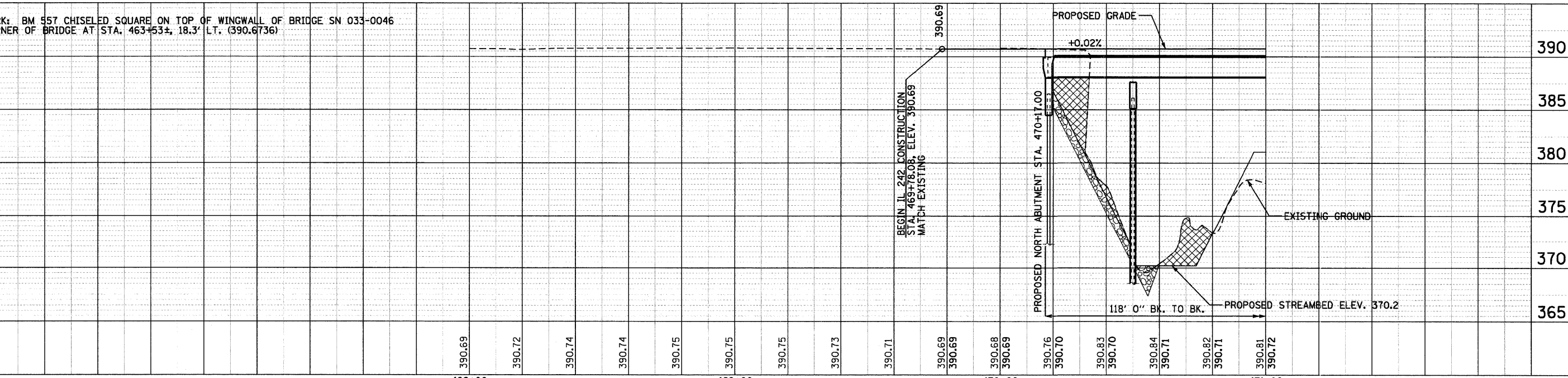
CONTROL POINTS				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	571260.73	925452.85	379.83	REBAR WITH CAP
2	571517.37	925473.49	394.56	REBAR WITH CAP
1006	571219.94	925378.8	390.15	REBAR WITH CAP
1007	571359.67	925420.3	389.74	REBAR WITH CAP

DATE	BY
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DATE	BY

DATE	BY
DATE	BY
DATE	BY
DATE	BY

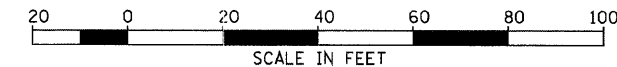
LEGEND

HOT-MIX ASPHALT BASE COURSE WIDENING, 10"	
LIMITS OF CHANNEL EXCAVATION	



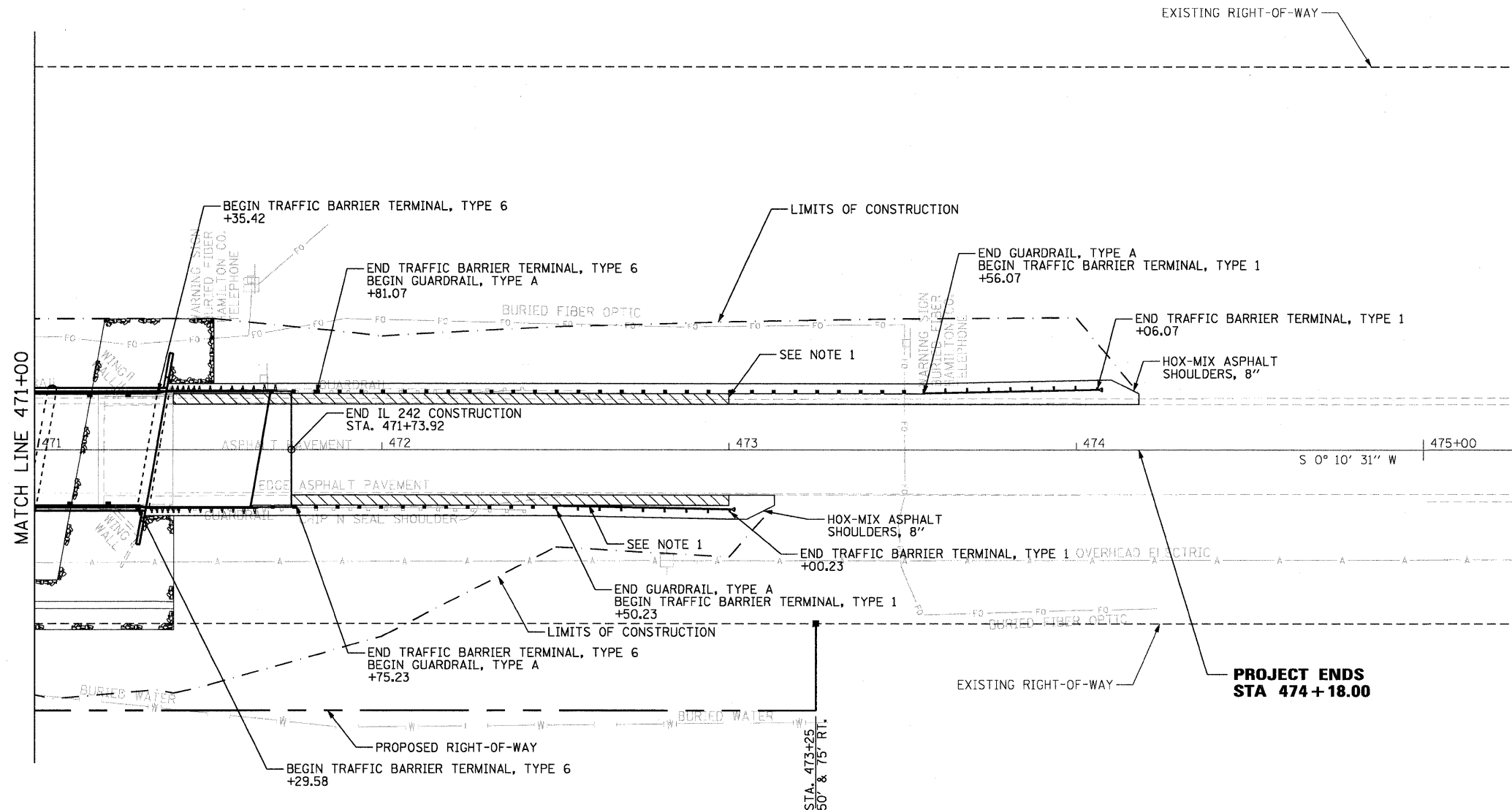
FILE NAME =	USER NAME = r088r1	DESIGNED - APF	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PLAN AND PROFILE	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
d978016-shr-plen01.dgn		DRAWN - APF	REVISED -			776	(102)B-1	HAMILTON	53	8	
		CHECKED - RSB	REVISED -			CONTRACT NO. 78016					
PLDT DATE = 01/26/2009		DATE - 1/15/2009	REVISED -			SHEET NO. 1 OF 2 SHEETS		STA. 466+70 TO STA. 471+00		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

NOTES:
 1. SEE STAGE 1 CONSTRUCTION PLANS FOR HOT-MIX ASPHALT BASE COURSE WIDENING, 10" CALLOUTS.



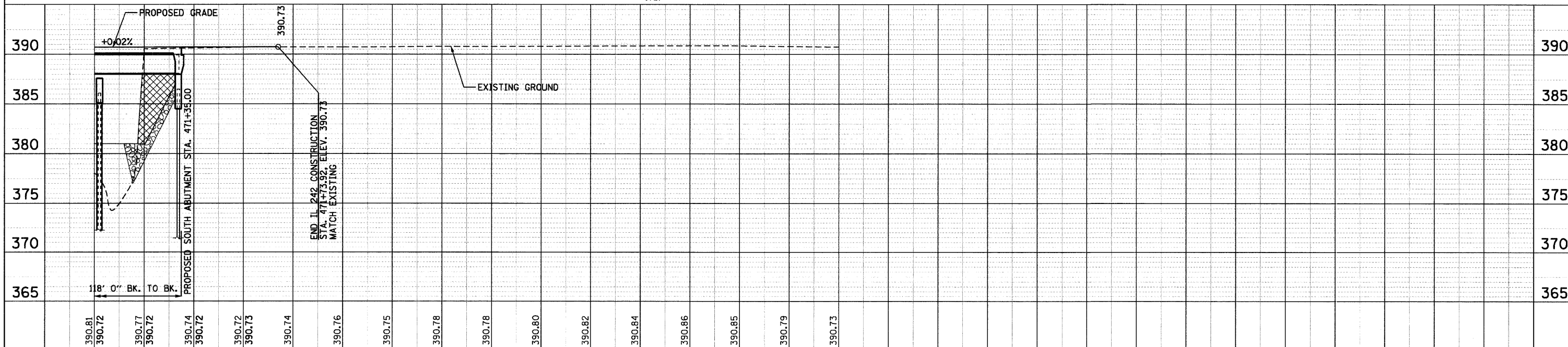
PLAN	SURVEYED	DATE
NOTE BOOK	ALIGNMENT CHECKED	
NO.	RT. OF WAY CHECKED	
	DRAWN FILE NAME	

PROFILE	SURVEYED	DATE
NOTE BOOK	GRADES CHECKED	
NO.	B.M. NOTED	
	STRUCTURE NOTATIONS CIRD	



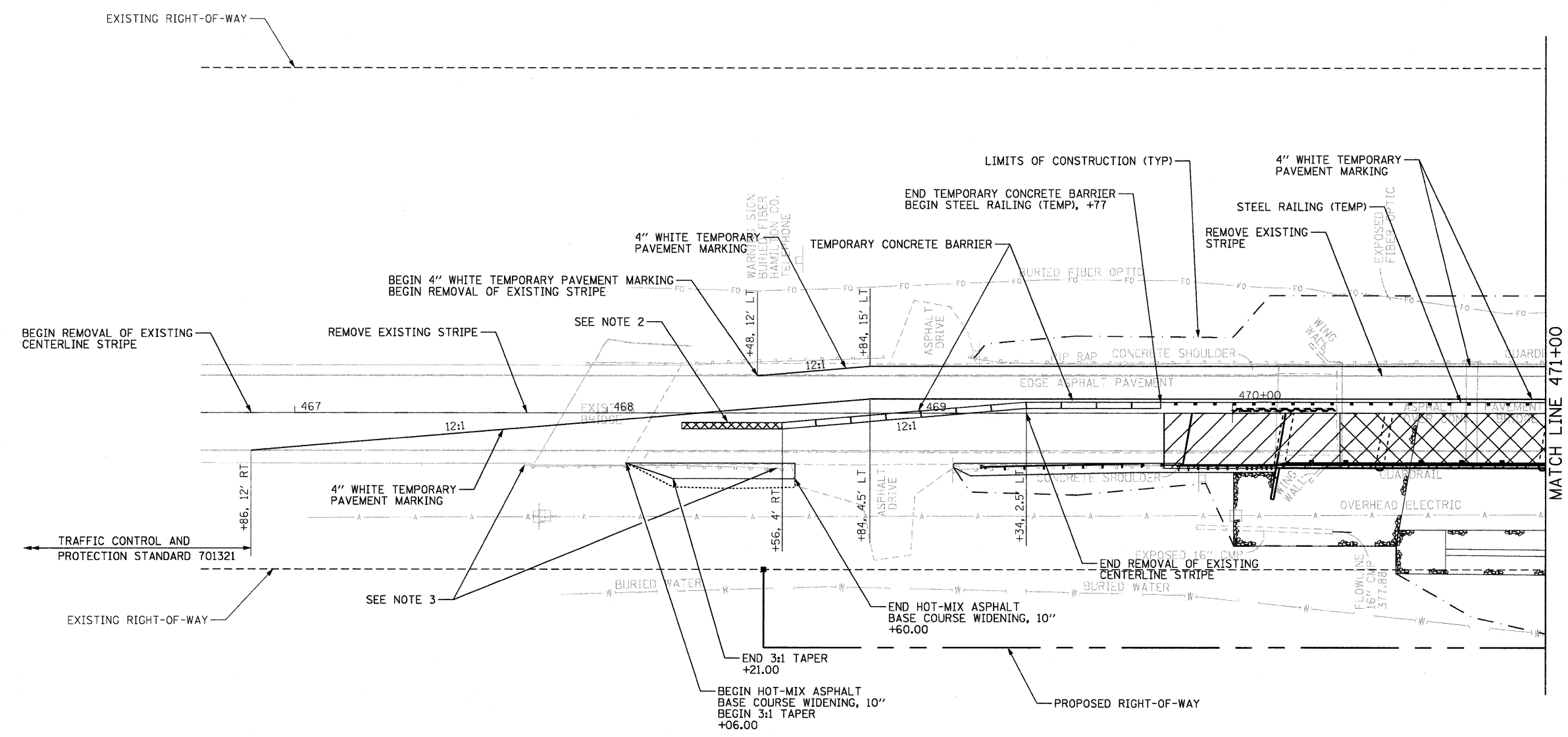
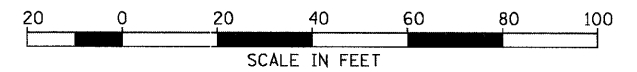
LEGEND

HOT-MIX ASPHALT BASE COURSE WIDENING, 10"	
LIMITS OF CHANNEL EXCAVATION	



FILE NAME = d978016-sht-plan@2.dgn	USER NAME = rossr1	DESIGNED - APF	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PLAN AND PROFILE	F.A. RTE. = 776	SECTION = (102)B-1	COUNTY = HAMILTON	TOTAL SHEETS = 53	SHEET NO. = 9	
		DRAWN - APF	REVISED -			SHEET NO. 2 OF 2 SHEETS		STA. 471+00 TO STA. 475+30		CONTRACT NO. 78016	
		CHECKED - RSB	REVISED -			FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			
		DATE - 1/15/2009	REVISED -								

- NOTES:
1. TEMPORARY CONCRETE BARRIER OFFSET CALLOUTS ARE TO CENTERLINE OF BARRIER.
 2. IMPACT ATTENUATORS TEMPORARY (FULLY REDIRECTIVE, NARROW) TEST LEVEL 3.
 3. REMOVE TRAFFIC BARRIER TERMINALS, TYPE 6 AND TYPE 1 IMMEDIATELY FOLLOWING PLACEMENT OF THE IMPACT ATTENUATOR. REINSTALL THE TERMINALS IMMEDIATELY PRIOR TO REMOVING THE ATTENUATOR AT THE END OF STAGE 1.



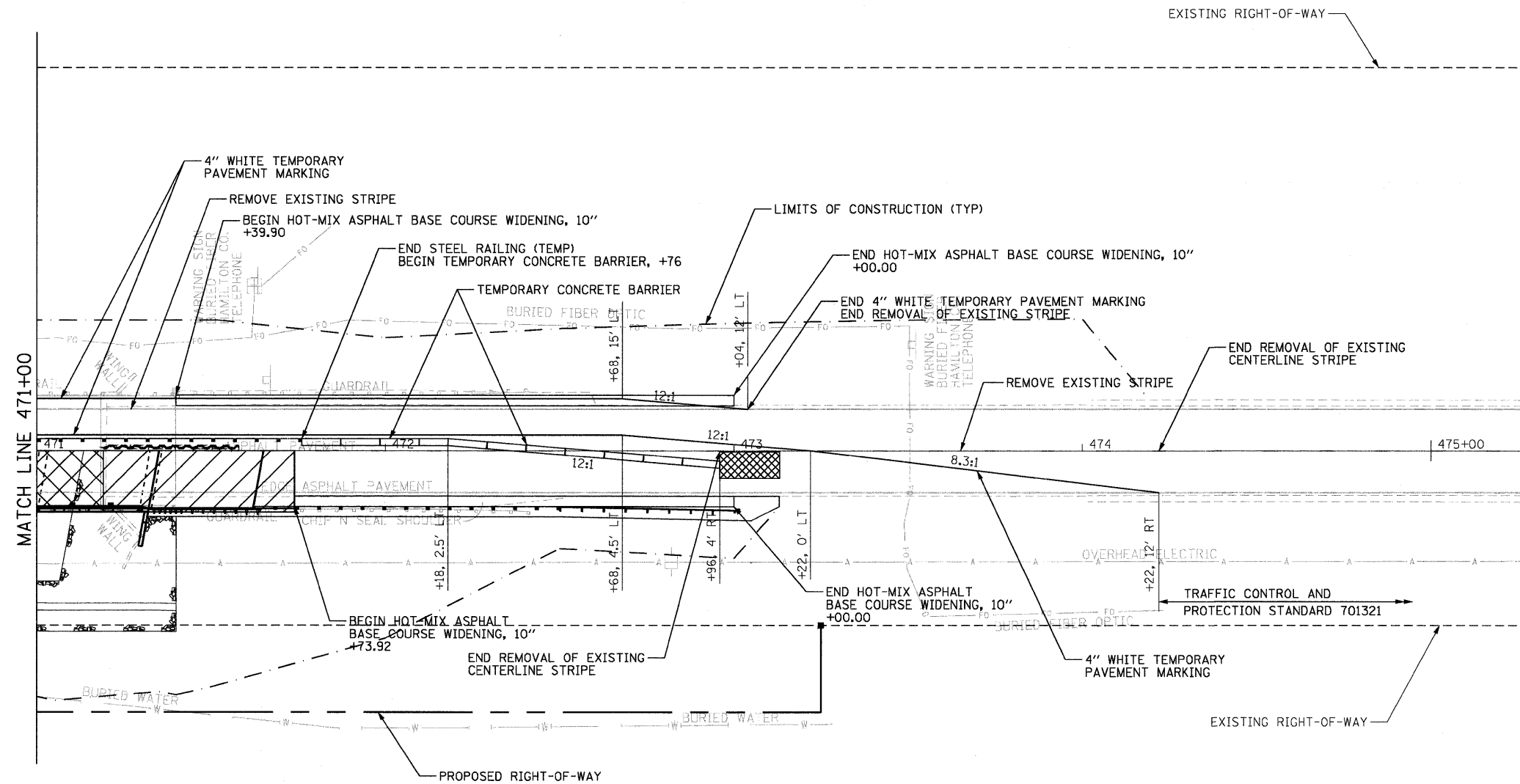
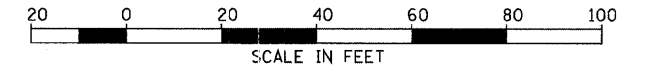
LEGEND

BRIDGE REMOVAL	
PAVEMENT REMOVAL	
IMPACT ATTENUATOR, TEMPORARY	
TEMPORARY CONCRETE BARRIER	
TEMPORARY STEEL RAILING	
TEMPORARY SHORING	

- STAGE 1 SEQUENCE OF CONSTRUCTION**
1. CONSTRUCT BASE COURSE WIDENING (LEFT SIDE).
 2. INSTALL TEMPORARY TRAFFIC SIGNALS.
 3. INSTALL TRAFFIC CONTROL STANDARD 701321.
 4. REMOVE THE EXISTING IL 242 SOUTHBOUND BRIDGE AND APPROACHES AS SPECIFIED IN THE STRUCTURAL PLANS.
 5. INSTALL TEMPORARY SHORING IN LOCATIONS SPECIFIED IN THE STRUCTURAL PLANS.
 6. CONSTRUCT THE IL 242 SOUTHBOUND BRIDGE AND APPROACHES AS SPECIFIED IN THE STRUCTURAL PLANS.
 7. INSTALL LEFT SIDE GUARDRAIL AS SPECIFIED IN THE ROADWAY PLANS.
 8. REMOVE TEMPORARY SHORING.
 9. CONSTRUCT BASE COURSE WIDENING (RIGHT SIDE).

FILE NAME = d978016-sh1-staging0101.dgn	USER NAME = r08sr1	DESIGNED - APF	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STAGE 1 CONSTRUCTION		F.A. RTE. 776	SECTION (102)B-1	COUNTY HAMILTON	TOTAL SHEETS 53	SHEET NO. 10	
		DRAWN - APF	REVISED -		SHEET NO. 1 OF 4 SHEETS		STA. 466+70 TO STA. 471+00		CONTRACT NO. 78016			
		CHECKED - RSB	REVISED -		DATE - 1/15/2009		ILLINOIS FED. AID PROJECT					
		DATE - 1/15/2009	REVISED -									

NOTES:
 1. TEMPORARY CONCRETE BARRIER OFFSET CALLOUTS ARE TO CENTERLINE OF BARRIER.



LEGEND

BRIDGE REMOVAL	
PAVEMENT REMOVAL	
IMPACT ATTENUATOR, TEMPORARY	
TEMPORARY CONCRETE BARRIER	
TEMPORARY STEEL RAILING	
TEMPORARY SHORING	

FILE NAME = d:\978016-sh1-staging\0102.dgn

USER NAME = rosar1

DESIGNED - APF
 DRAWN - APF
 CHECKED - RSB
 DATE - 1/15/2009

REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

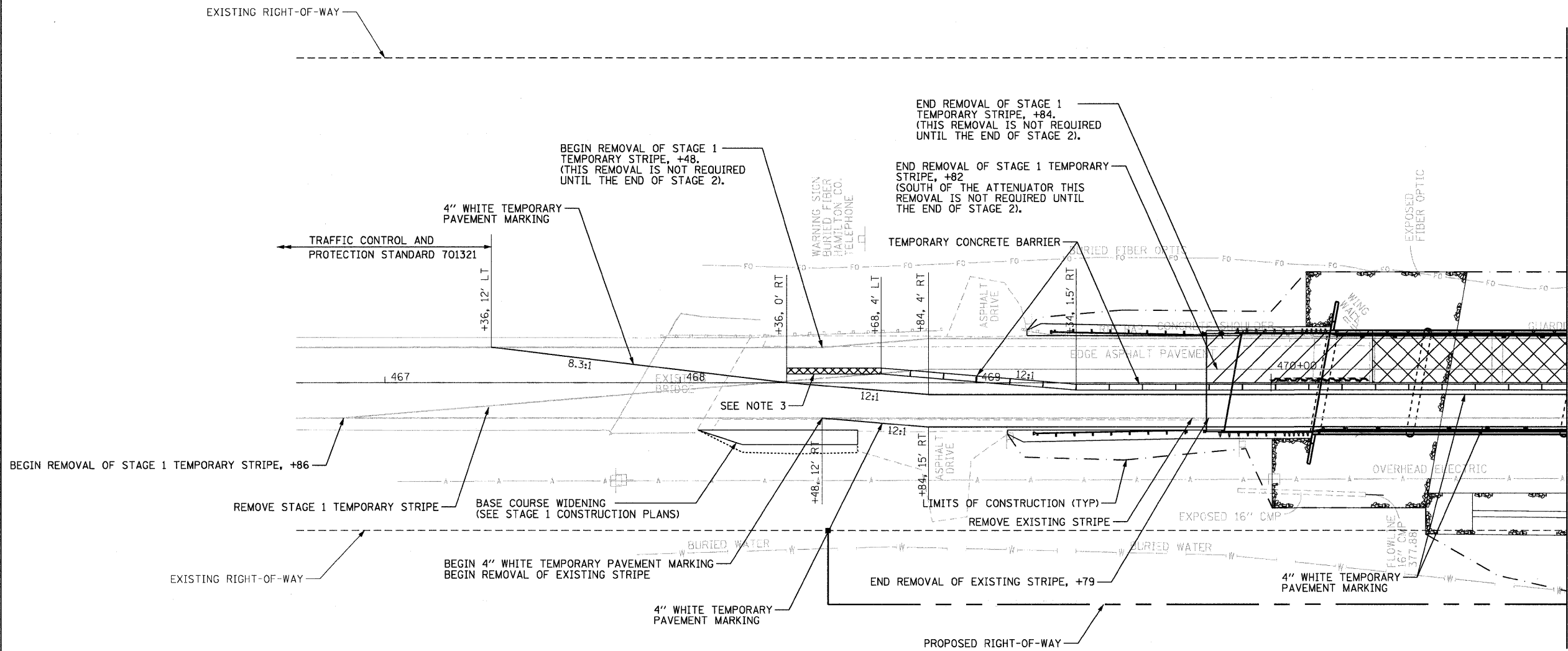
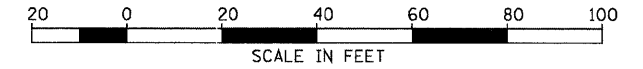
STAGE 1 CONSTRUCTION

SHEET NO. 2 OF 4 SHEETS STA. 471+00 TO STA. 475+30

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
776	(102)B-1	HAMILTON	53	11
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 78016	

NOTES:

1. TEMPORARY CONCRETE BARRIER OFFSET CALLOUTS ARE TO CENTERLINE OF BARRIER.
2. STRIPING REMOVAL WITHIN THE LIMITS OF THE NEW BRIDGE AND APPROACH PAVEMENT WILL NOT BE PAID FOR IN LOCATIONS WHERE STRIPING IS BEING REMOVED CONCURRENT WITH BRIDGE DEMOLITION.
3. IMPACT ATTENUATORS TEMPORARY (FULLY REDIRECTIVE, NARROW) TEST LEVEL 3



LEGEND

BRIDGE REMOVAL	
PAVEMENT REMOVAL	
IMPACT ATTENUATOR, TEMPORARY	
TEMPORARY CONCRETE BARRIER	
TEMPORARY STEEL RAILING	
TEMPORARY SHORING	

STAGE 2 SEQUENCE OF CONSTRUCTION

1. RELOCATE BARRIER, ADD BARRIER, AND RESTRIPE AS SPECIFIED IN THESE STAGE 2 CONSTRUCTION PLANS.
2. REMOVE THE EXISTING IL 242 NORTHBOUND BRIDGE AND APPROACHES AS SPECIFIED IN THE STRUCTURAL PLANS.
3. CONSTRUCT THE IL 242 NORTHBOUND BRIDGE AND APPROACHES AS SPECIFIED IN THE STRUCTURAL PLANS.
4. INSTALL RIGHT SIDE GUARDRAIL AS SPECIFIED IN THE ROADWAY PLANS.
5. REMOVE TEMPORARY STRIPING.
6. INSTALL FINAL PAVEMENT MARKING.

FILE NAME = d:\978016-sh2-staging\0221.dgn

USER NAME = r058p1

DESIGNED - APF

REVISED -

DRAWN - APF

REVISED -

CHECKED - RSB

REVISED -

PLOT DATE = 01/26/2009

DATE - 1/15/2009

REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

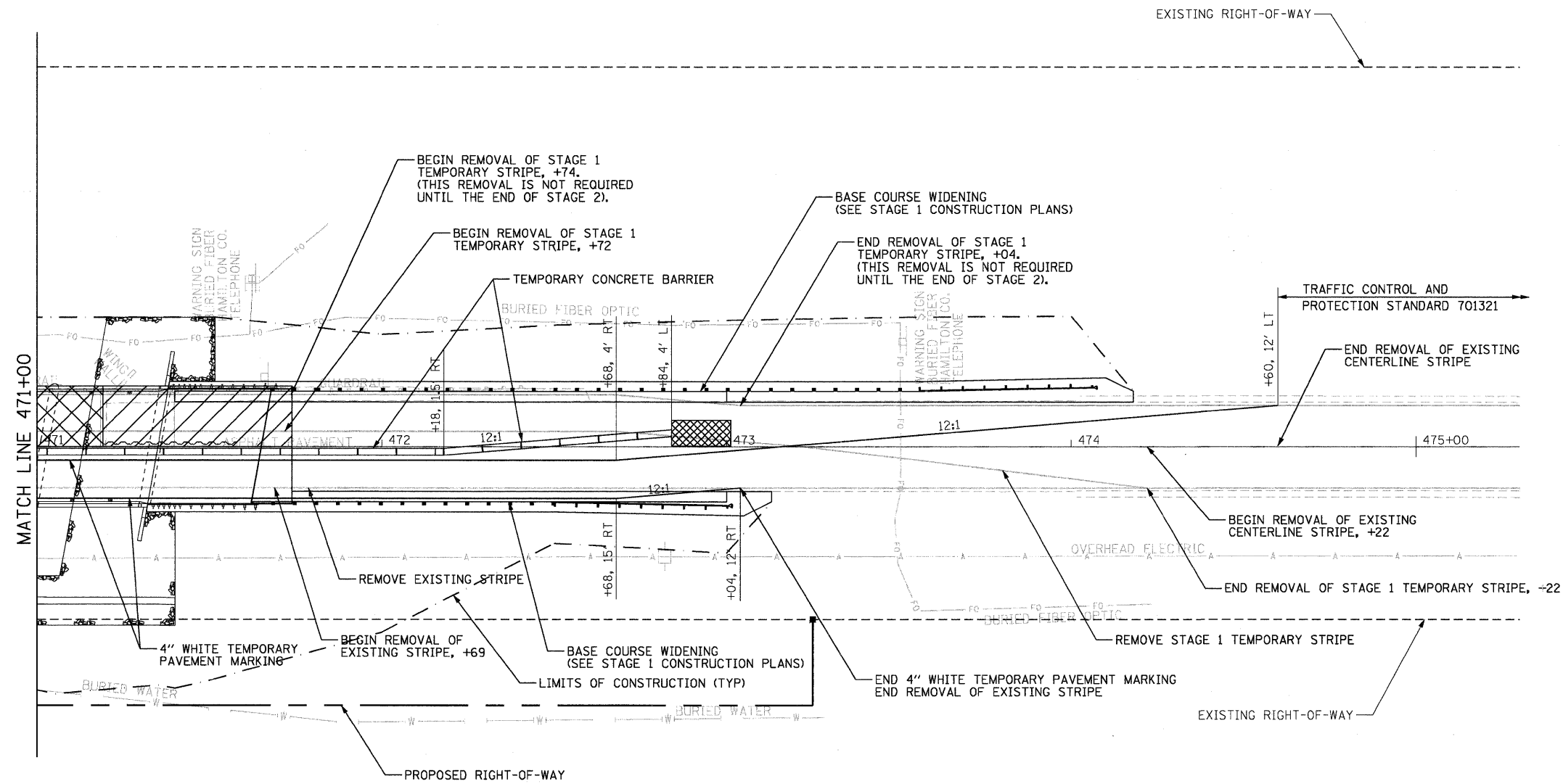
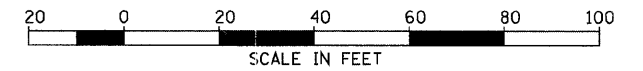
STAGE 2 CONSTRUCTION

SHEET NO. 3 OF 4 SHEETS STA. 466+70 TO STA. 471+00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
776	(102)B-1	HAMILTON	53	12
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 78016	

NOTES:

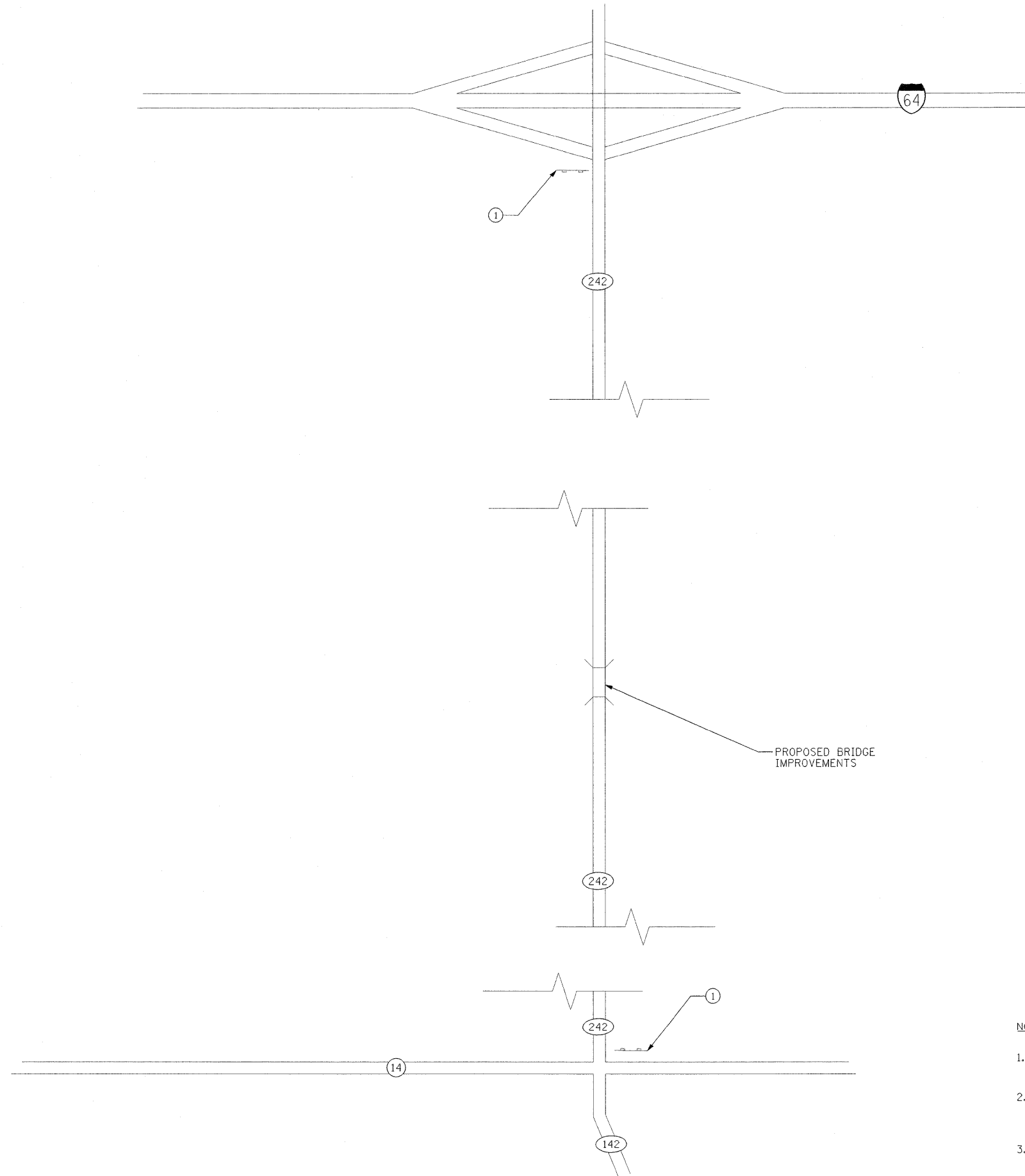
1. TEMPORARY CONCRETE BARRIER OFFSET CALLOUTS ARE TO CENTERLINE OF BARRIER.
2. STRIPING REMOVAL WITHIN THE LIMITS OF THE NEW BRIDGE AND APPROACH PAVEMENT WILL NOT BE PAID FOR IN LOCATIONS WHERE STRIPING IS BEING REMOVED CONCURRENT WITH BRIDGE DEMOLITION.



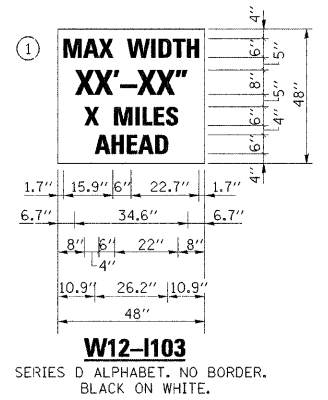
LEGEND

BRIDGE REMOVAL	
PAVEMENT REMOVAL	
IMPACT ATTENUATOR, TEMPORARY	
TEMPORARY CONCRETE BARRIER	
TEMPORARY STEEL RAILING	
TEMPORARY SHORING	

FILE NAME = d978016-shr-staging0202.dgn	USER NAME = rosr1	DESIGNED - APF	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STAGE 2 CONSTRUCTION	F.A. RTE. 776	SECTION (102)B-1	COUNTY HAMILTON	TOTAL SHEETS 53	SHEET NO. 13	
		DRAWN - APF	REVISED -			SHEET NO. 4 OF 4 SHEETS		STA. 471+00 TO STA. 475+30		CONTRACT NO. 78016	
		CHECKED - RSB	REVISED -			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					
		DATE - 1/15/2009	REVISED -								



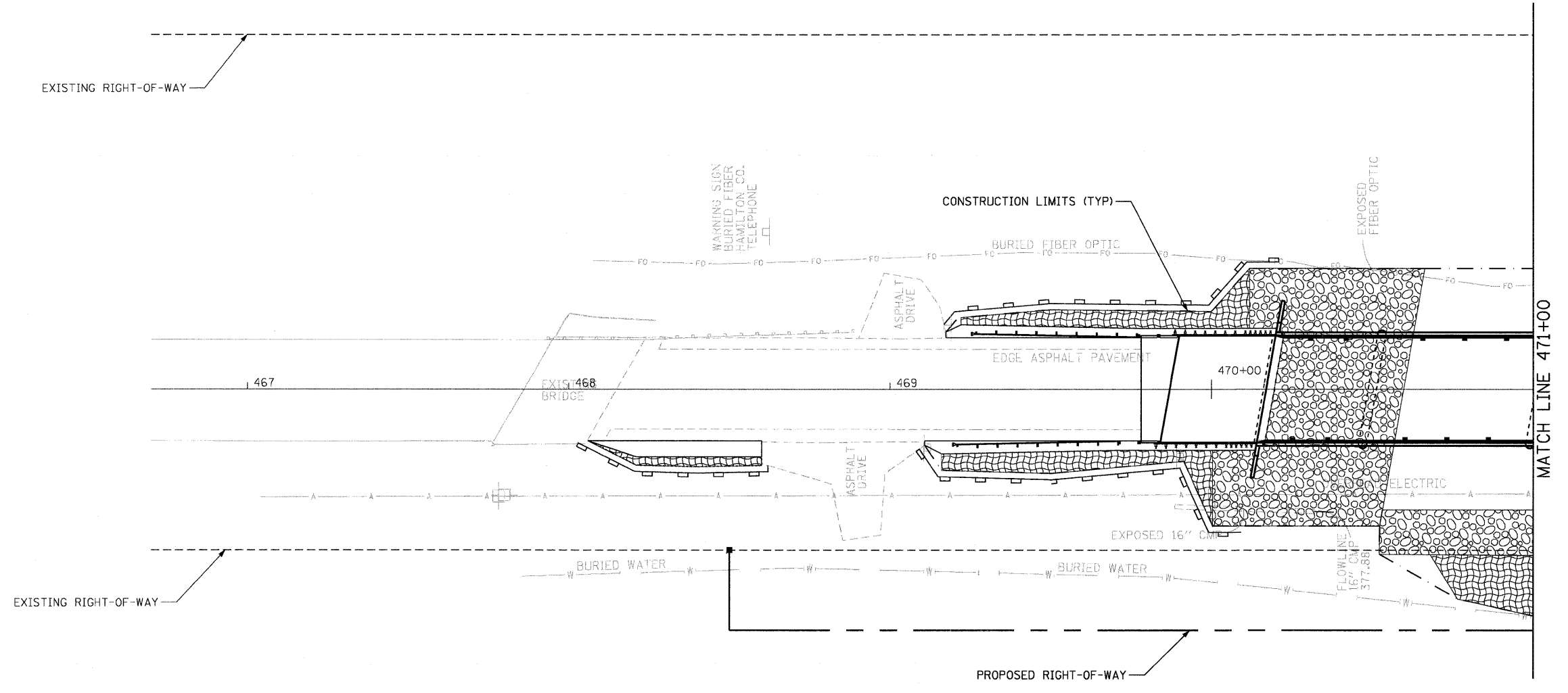
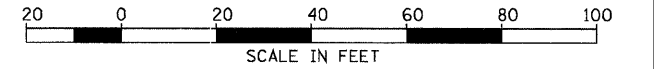
SIGN LEGEND



NOTES

1. THE CONTRACTOR SHALL FURNISH THE POSTS AND ERECT THE SIGNS AT THE LOCATIONS DIRECTED BY THE ENGINEER. ALL SIGNS SHALL BE POST MOUNTED.
2. THE ABOVE NOTED WORK, INCLUDING SIGNS, POSTS, HARDWARE, AND LABOR SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE, EACH, FOR TRAFFIC CONTROL AND PROTECTION, STD 701321 AND NO OTHER COMPENSATION WILL BE ALLOWED.
3. THE WIDTH SHOWN ON THE W12-1103 SIGN SHALL BE 11'-0" OR AS DIRECTED BY THE ENGINEER. THE 'X' MILES AHEAD WILL BE DETERMINED BY THE ENGINEER.

FILE NAME = d978016-sht-detour.dgn	USER NAME = weaverlg	DESIGNED - APF	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	WIDE LOAD DETOUR	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT DATE = 01/15/2009	CHECKED - RSB	REVISED -			776	(102)B-1	HAMILTON	53	14
						SHEET NO. 1 OF 1 SHEETS		CONTRACT NO. 78016		
						FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		



LEGEND

STONE RIPRAP CLASS A4	
EROSION CONTROL BLANKET	
PERIMETER EROSION BARRIER	

FILE NAME =
d978016-sht-eros01.dgn

USER NAME = ross1
PLOT DATE = 01/26/2009

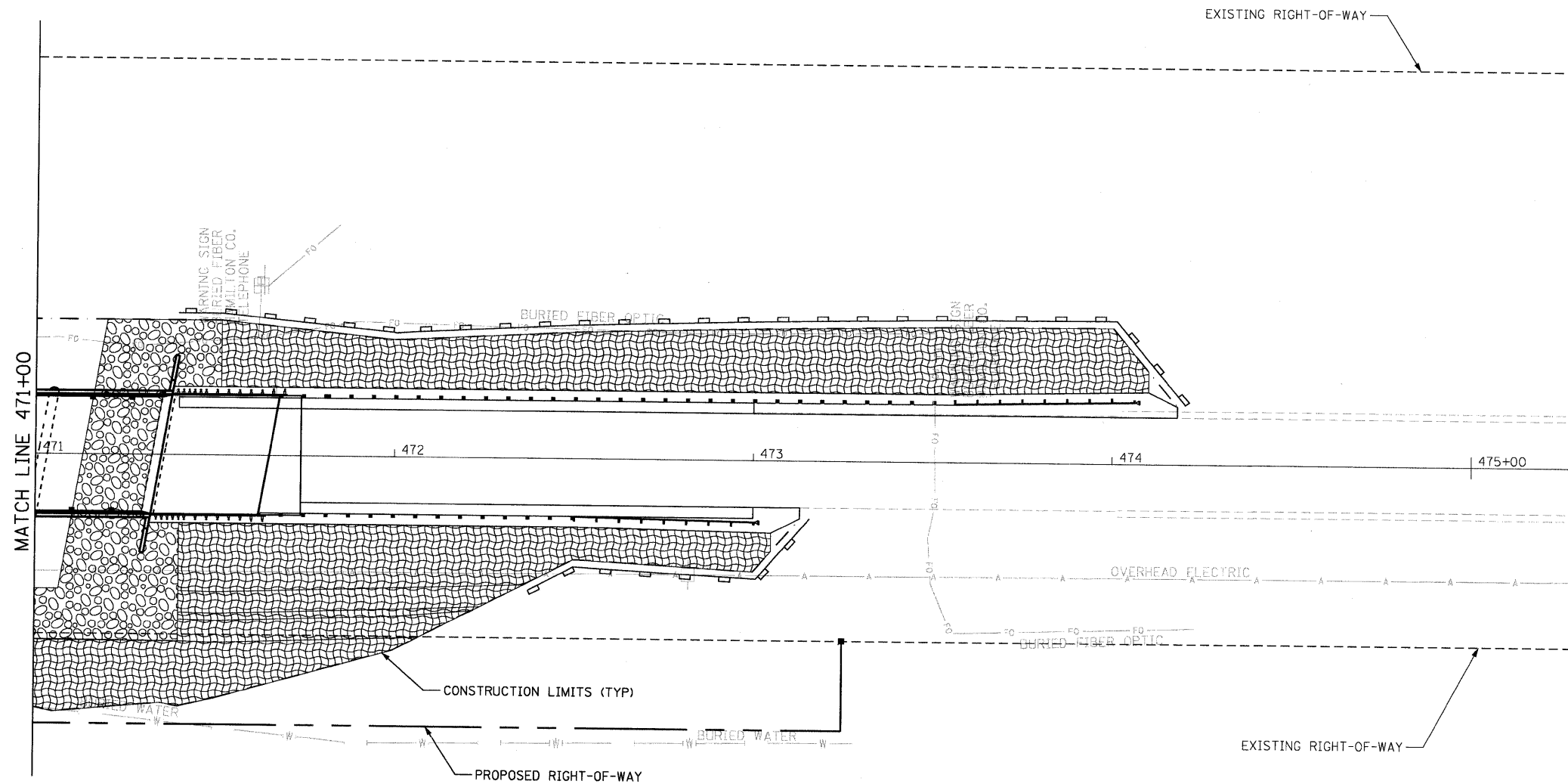
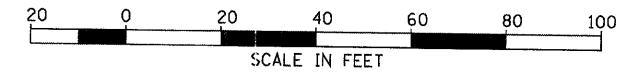
DESIGNED - APF
DRAWN - APF
CHECKED - RSB
DATE - 1/15/2009

REVISED -
REVISED -
REVISED -
REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

EROSION CONTROL PLAN
SHEET NO. 1 OF 2 SHEETS STA. 466+70 TO STA. 471+00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
776	(102)B-1	HAMILTON	53	15
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 78016	



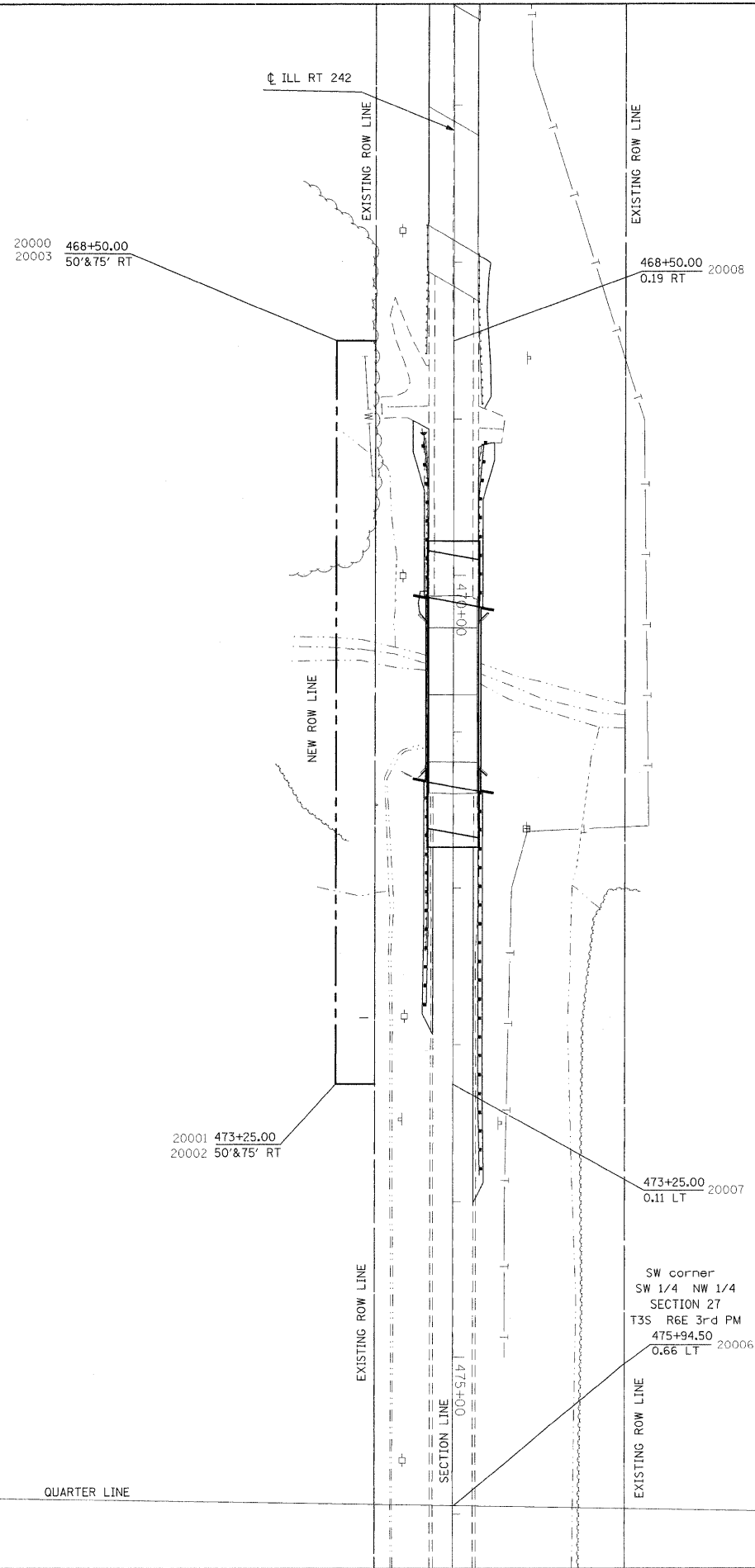
LEGEND

STONE RIPRAP CLASS A4	
EROSION CONTROL BLANKET	
PERIMETER EROSION BARRIER	

FILE NAME = d978016-sht-eros02.dgn	USER NAME = rosar1	DESIGNED - APF	REVISIONS -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EROSION CONTROL PLAN	F.A. RTE. 776	SECTION 1021B-1	COUNTY HAMILTON	TOTAL SHEETS 53	SHEET NO. 16	
	PLOT DATE = 01/26/2009	DRAWN - APF	REVISIONS -			SHEET NO. 2 OF 2 SHEETS STA. 471+00 TO STA. 475+30		CONTRACT NO. 78016			
		CHECKED - RSB	REVISIONS -			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					
		DATE - 1/15/2009	REVISIONS -								



SE 1/4 NE 1/4
SECTION 28
T3S R6E 3rd PM



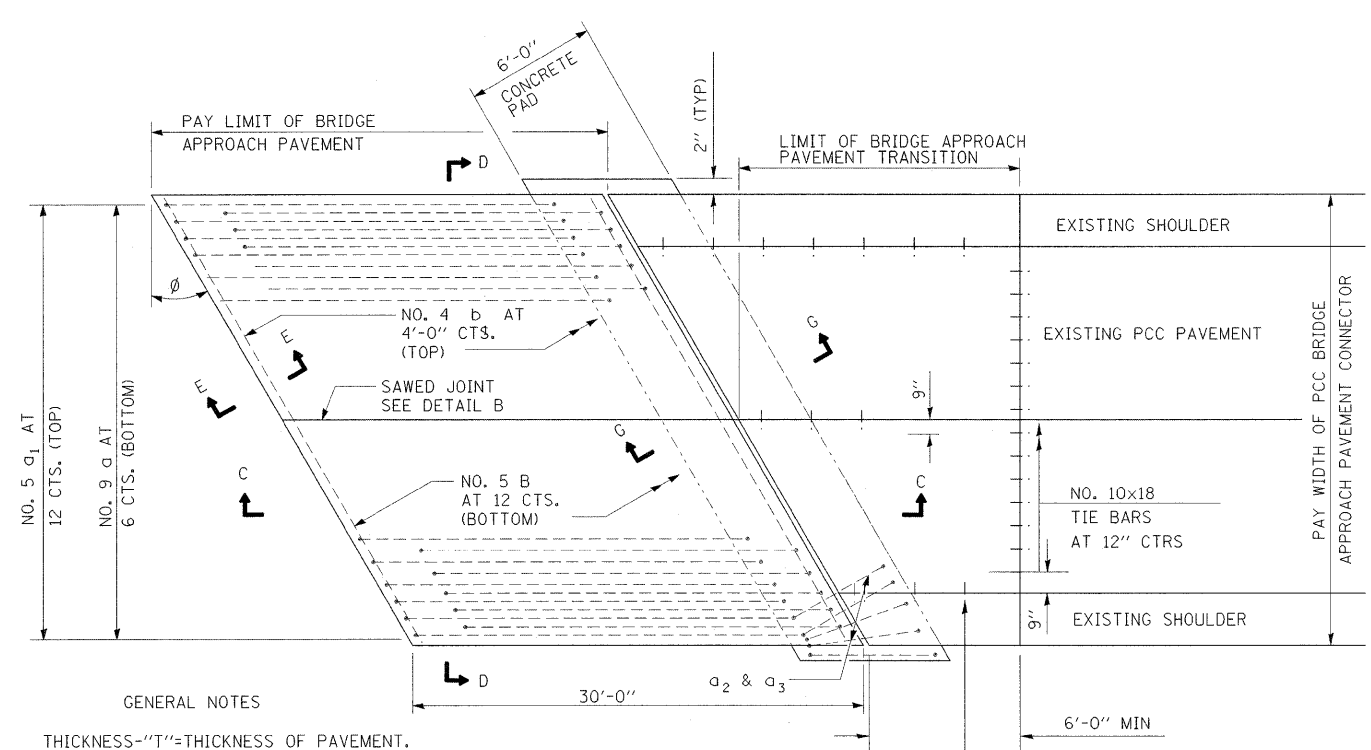
PARCEL NO.	NAME	PURPOSE	ACREAGE
32	ALVIN AND MARY STITCH	ROW	0.273

COORDINATE LIST

Pt 20000	N	571512.8835E	925325.1308
Pt 20001	N	571037.8857E	925323.6769
Pt 20002	N	571037.8092E	925348.6767
Pt 20003	N	571512.8069E	925350.1307
Pt 20006	N	570768.1596E	925398.5164
Pt 20007	N	571037.6558E	925398.7875
Pt 20008	N	571512.6545E	925399.9450

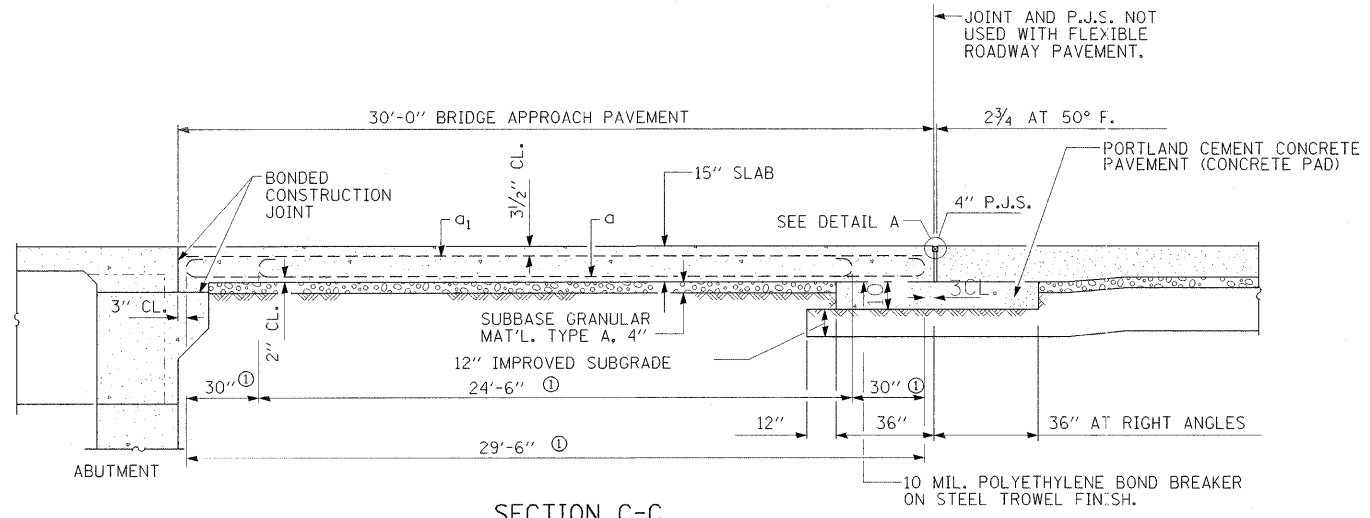
SW 1/4 NW 1/4
SECTION 27
T3S R6E 3rd PM

FILE NAME c:\pwork\FWID01\THOMPSONJA\lms48352\983907-shvt-row.dgn	USER NAME = thompsonja	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	RIGHT OF WAY PLANS			F.A.P. RTE. 776	SECTION (102)B-1	COUNTY HAMILTON	TOTAL SHEETS 53	SHEET NO. 17
PLOT SCALE = 50,0000 "/ IN.	CHECKED -	REVISED -	REVISED -		PROJECT	JOB NO. R99-003-07	CONTRACT NO. 78016		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			
PLOT DATE = 2/10/2009	DATE -	REVISED -	REVISED -		SCALE: 1"=50 ft	SHEET NO. 1 OF 1 SHEETS	STA. 467+00	TO STA. 476+00				



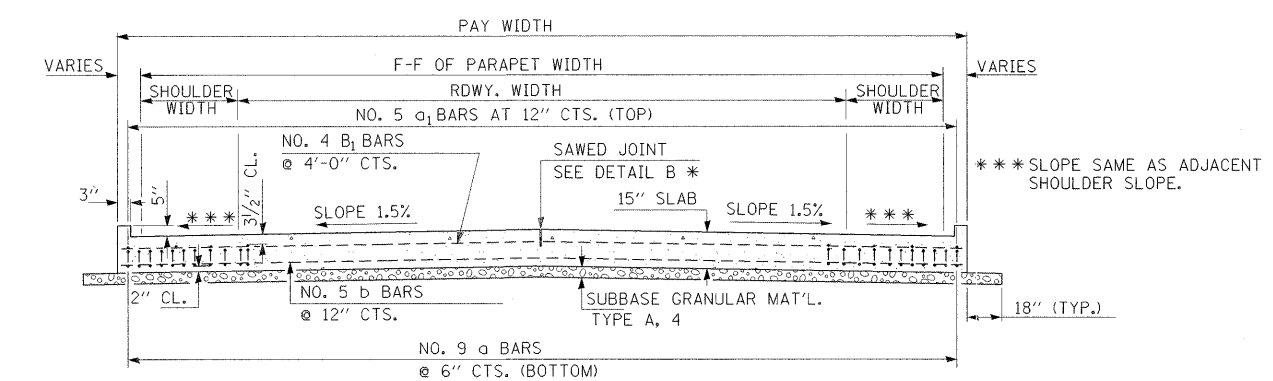
GENERAL NOTES

THICKNESS-T=THICKNESS OF PAVEMENT.
 SEE STANDARD 421001 FOR REINFORCEMENT DETAILS NOT SHOWN.
 SEE STANDARD 420001 FOR JOINT DETAILS NOT SHOWN.
 ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SHOWN.



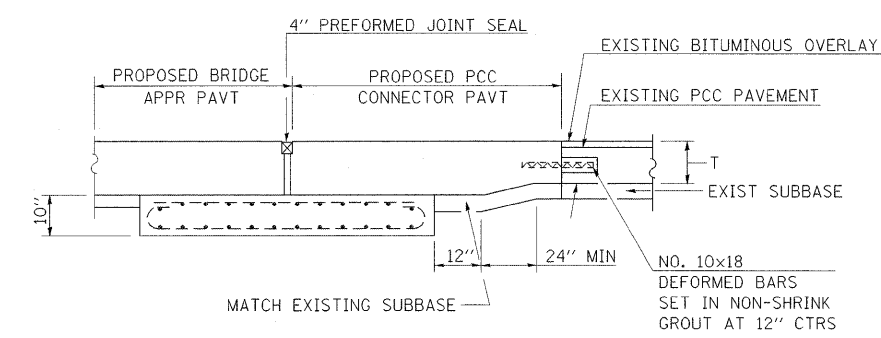
SECTION C-C

① STAGGER NO. 9 A BARS AS SHOWN ON PLAN - FULL WIDTH

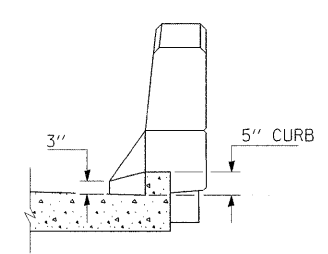


SECTION D-D

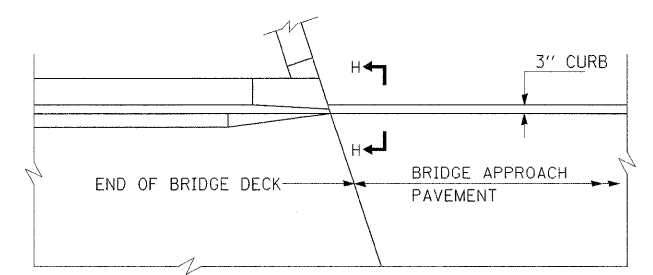
(SEE PLAN FOR DIMENSIONS NOT SHOWN)



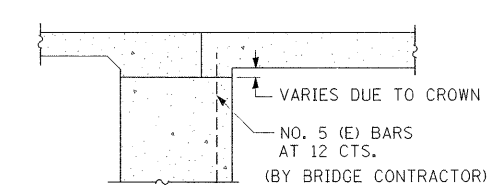
SECTION G-G - RIGID PAVEMENT



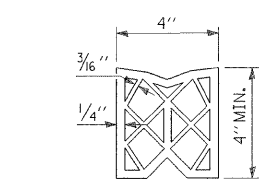
SECTION H - H



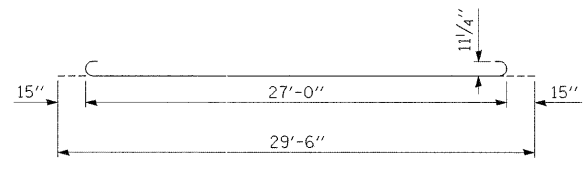
PARAPET TO CURB TRANSITION INTEGRAL ABUTMENT



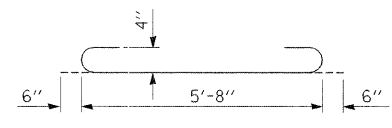
SECTION E-E (INTEGRAL ABUTMENTS)



PREFORMED JOINT SEAL



BAR a



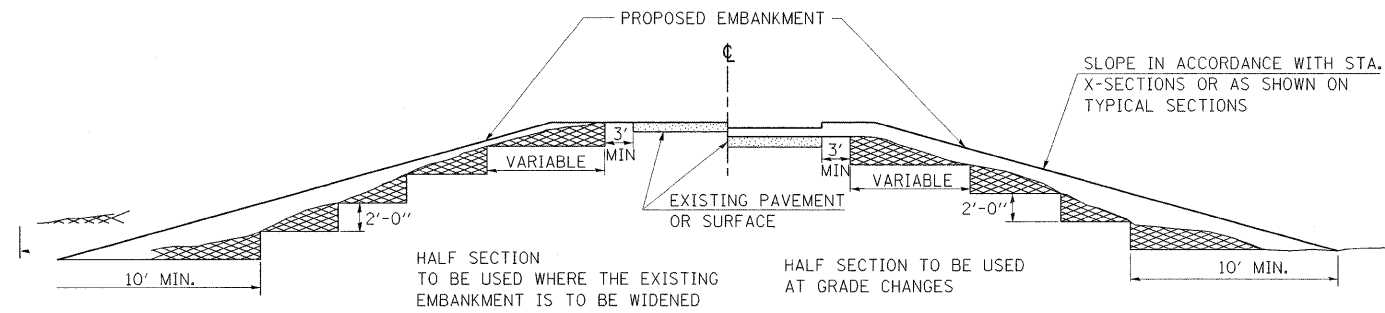
BAR a2

DESIGN STRESSES

FY = 60,000 P.S.I.
 F'C = 3,500 P.S.I.
 N = 8.5

FILE NAME = d978016-shr-details01.dgn	USER NAME = weaverlg	DESIGNED - APF	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DETAILS - BRIDGE APPROACH SLAB	F.A. RTE. 776	SECTION (102)B-1	COUNTY HAMILTON	TOTAL SHEETS 53	SHEET NO. 18	
		DRAWN - APF	REVISED -			CONTRACT NO. 78016					
		CHECKED - RSB	REVISED -			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					
		DATE - 1/15/2009	REVISED -			SHEET NO. 1 OF 1 SHEETS					

TYPICAL CROSS SECTION SHOWING STEP CONSTRUCTION ON EXISTING FILL

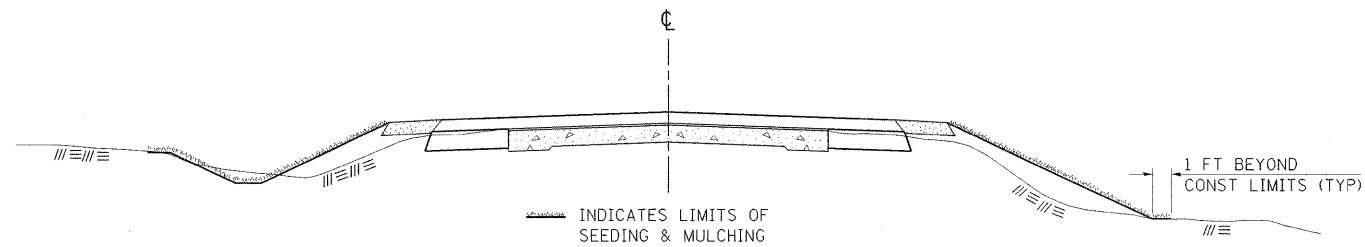


MATERIAL TO BE REMOVED AND REPLACED IN THE EMBANKMENT IN ACCORDANCE WITH ART. 205.04 OF THE STANDARD SPECIFICATION. COST TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED BECAUSE OF THIS WORK.

STD. 9-16

REVISIONS	
REDRAWN	2-15-89
REVISED	8-15-94
CHECKED	6-3-99
REVISED	

SEEDING & MULCHING



GENERAL NOTES

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

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

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

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

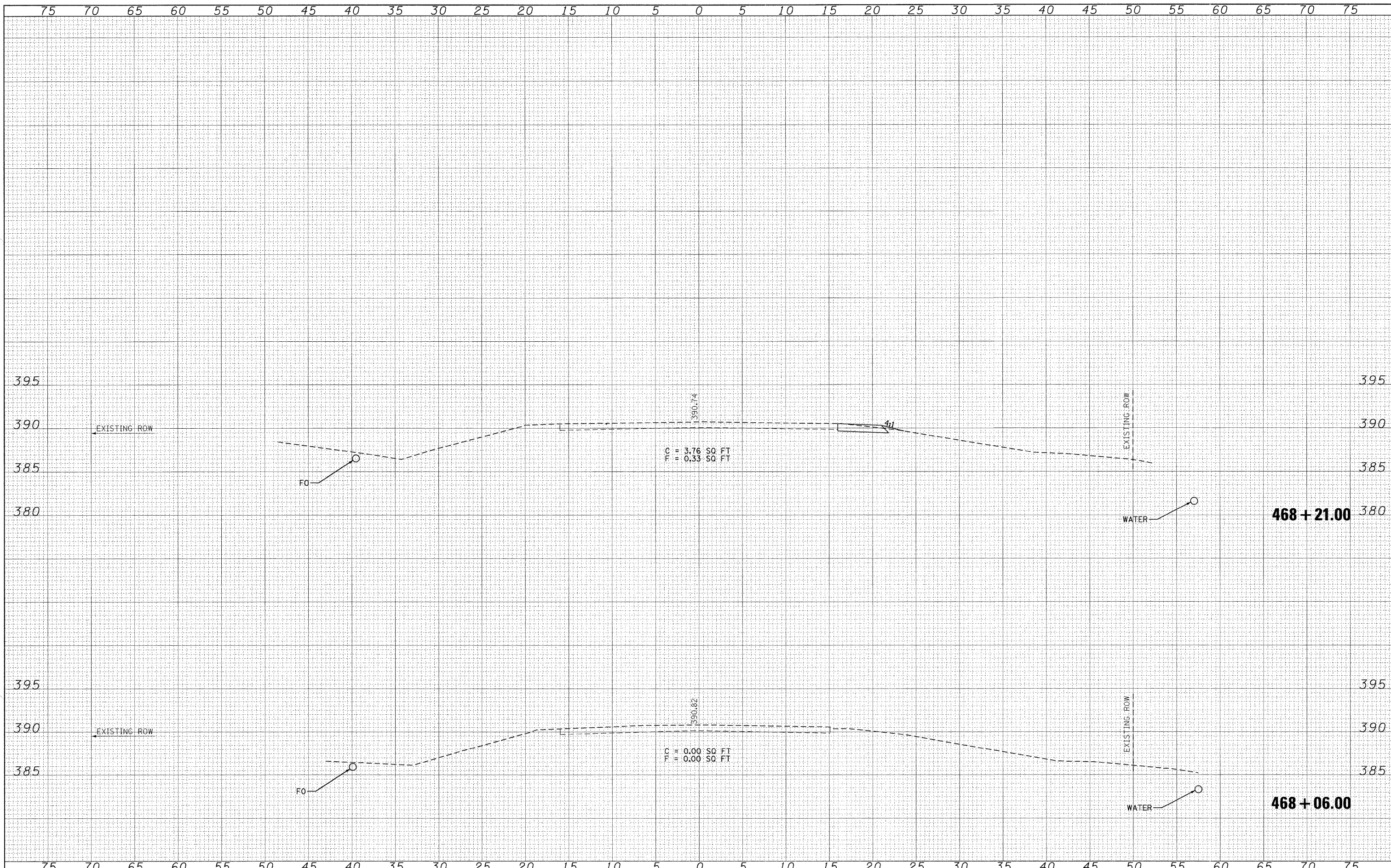
STD. 9-12

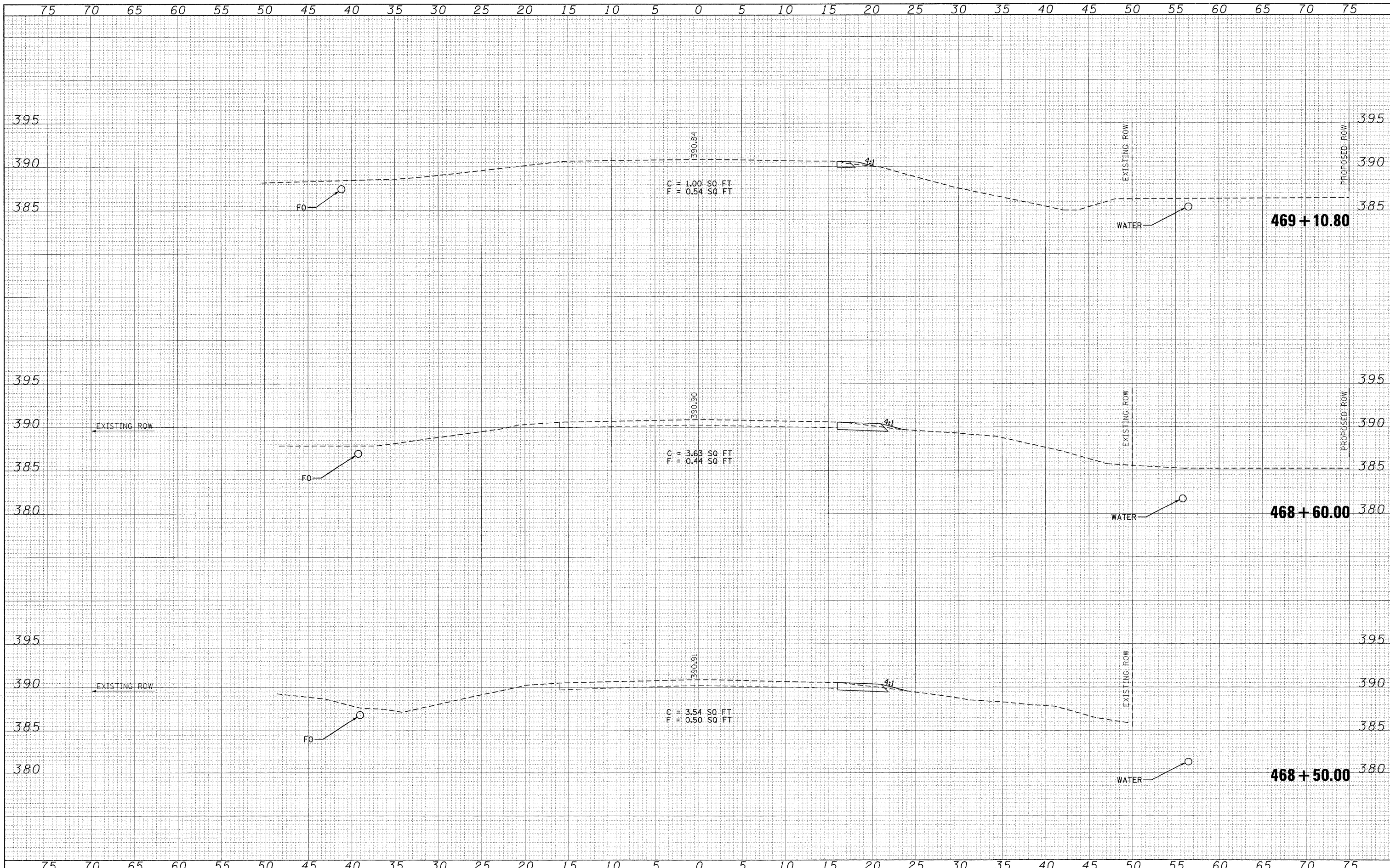
REVISIONS	
REDRAWN	2-15-89
REVISED	8-15-94
REVISED	6-3-99
REVISED	

FILE NAME = d978016-sht-details02.dgn	USER NAME = weaverlg	DESIGNED - APF	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DETAILS - STEP CONSTRUCTION ON EXISTING FILL & SEEDING AND MULCHING	F.A. RTE. 776	SECTION (102)B-1	COUNTY HAMILTON	TOTAL SHEETS 53	SHEET NO. 19
		DRAWN - APF	REVISED -							
		CHECKED - RSB	REVISED -							
		DATE - 1/15/2009	REVISED -							
SHEET NO. 1 OF 1 SHEETS						CONTRACT NO. 78016 FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

DATE	
BY	
SURVEYED	
NOTE BOOK	
NO.	
TEMPLATE	
AREAS CHECKED	

DATE	
BY	
SURVEYED	
NOTE BOOK	
NO.	
TEMPLATE	
AREAS CHECKED	





DATE	
BY	
FINAL SURVEY	
REVISION	
NOTE BOOK	
AREAS CHECKED	
NO.	

DATE	
BY	
ORIGINAL SURVEY	
REVISION	
NOTE BOOK	
AREAS CHECKED	
NO.	

FILE NAME -
d978016-shr-xssht.dgn

USER NAME = wawer1g
DESIGNED - APF
DRAWN - APF
CHECKED - RSB
DATE - 1/15/2009

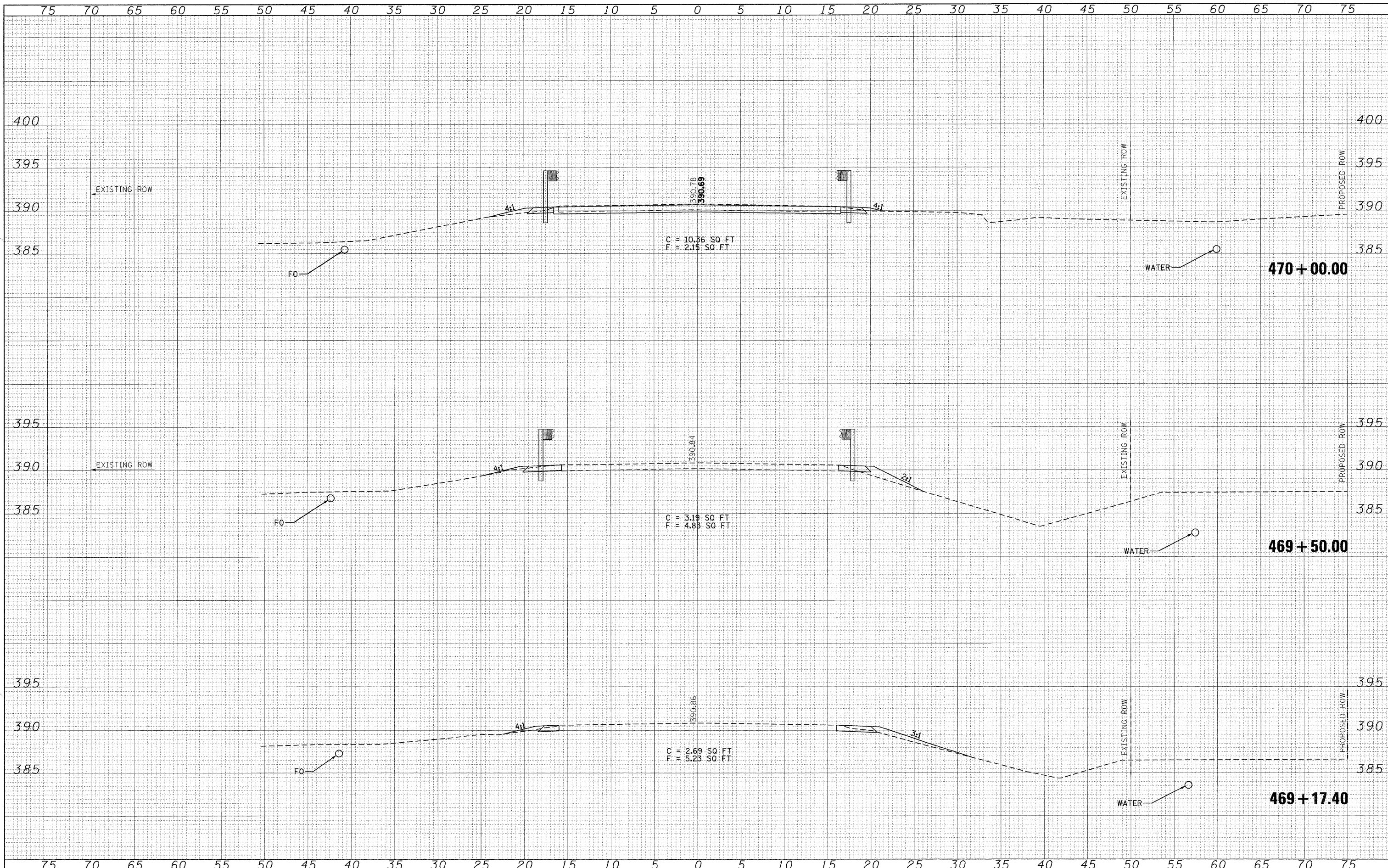
REVISED -
REVISED -
REVISED -
REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

IL 242 CROSS SECTIONS

SHEET NO. 2 OF 8 SHEETS STA. 468+40 TO STA. 469+10.80

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
776	(102)B-1	HAMILTON	53	21
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
		CONTRACT NO. 78016		



DATE	
BY	
SURVEYED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	

DATE	
BY	
SURVEYED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	

FILE NAME = d975016-shr-xssht.dgn

USER NAME = waverlg

DESIGNED - APF
 DRAWN - APF
 CHECKED - RSB
 DATE - 1/15/2009

REVISED -
 REVISED -
 REVISED -
 REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

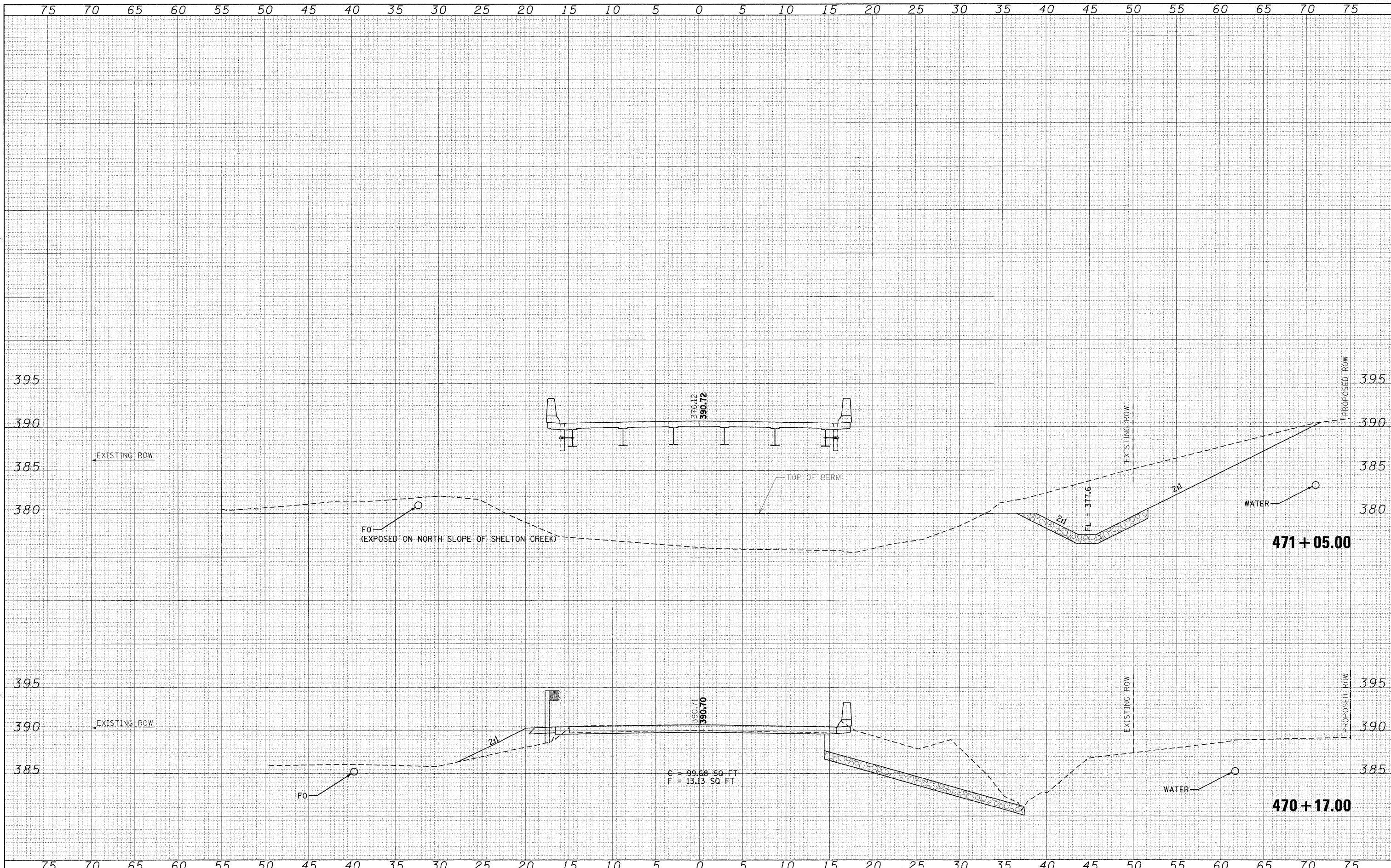
IL 242 CROSS SECTIONS

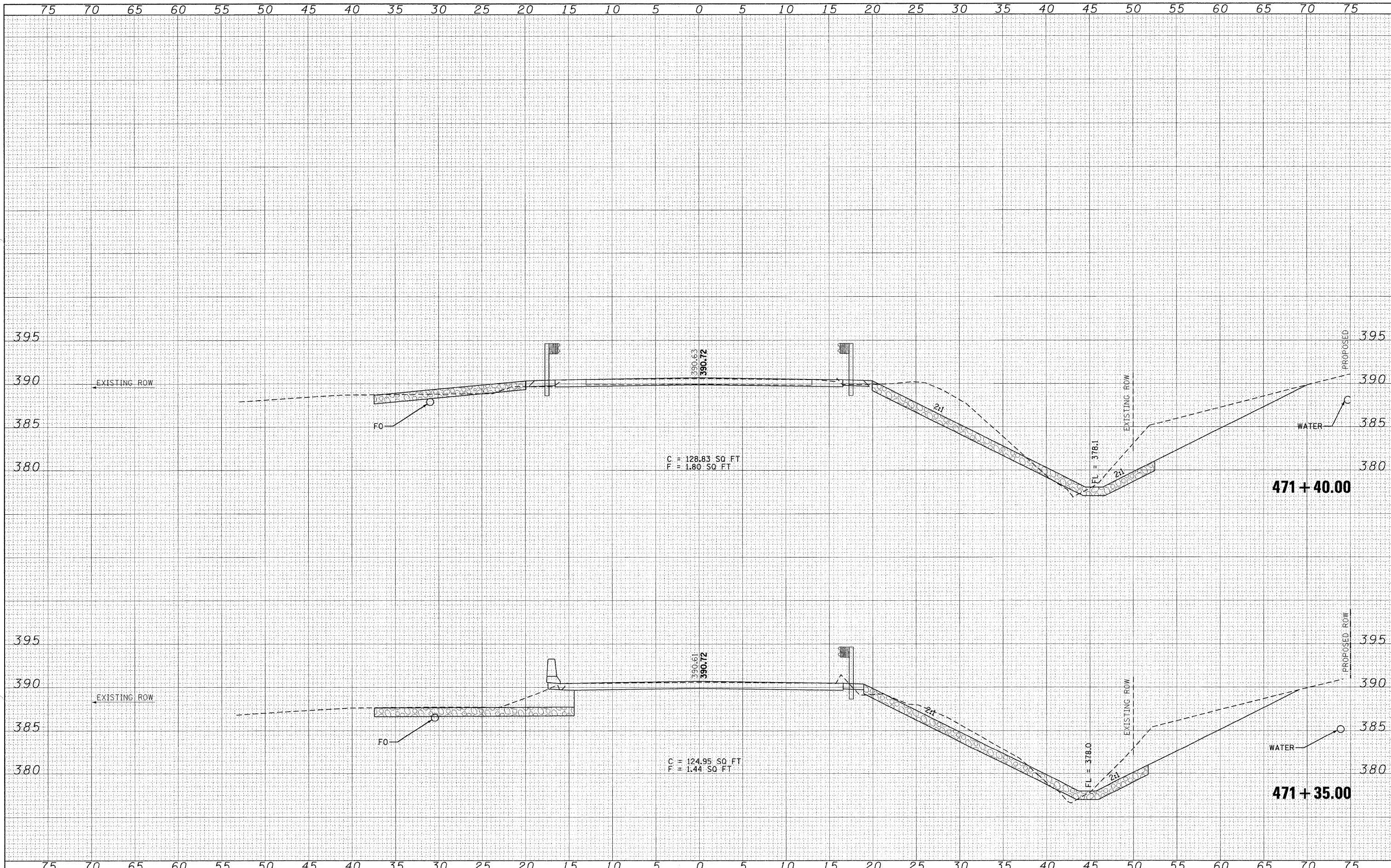
SHEET NO. 3 OF 8 SHEETS STA. 469+17.40 TO STA. 470+00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
776	(102)B-1	HAMILTON	53	22
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
		CONTRACT NO. 78016		

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SURVEYED	
NOTE BOOK	
NO.	
AREAS CHECKED	
AREAS CHECKED	

DATE	
BY	
SURVEYED	
NOTE BOOK	
NO.	
AREAS CHECKED	
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BY	
FINAL SURVEY	
TEMP. DATE	
NOTE BOOK	
AREAS CHECKED	
NO.	

DATE	
BY	
ORIGINAL SURVEY	
TEMP. DATE	
NOTE BOOK	
AREAS CHECKED	
NO.	

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USER NAME = weaverlg

DESIGNED - APF
DRAWN - APF
CHECKED - RSB
DATE - 1/15/2009

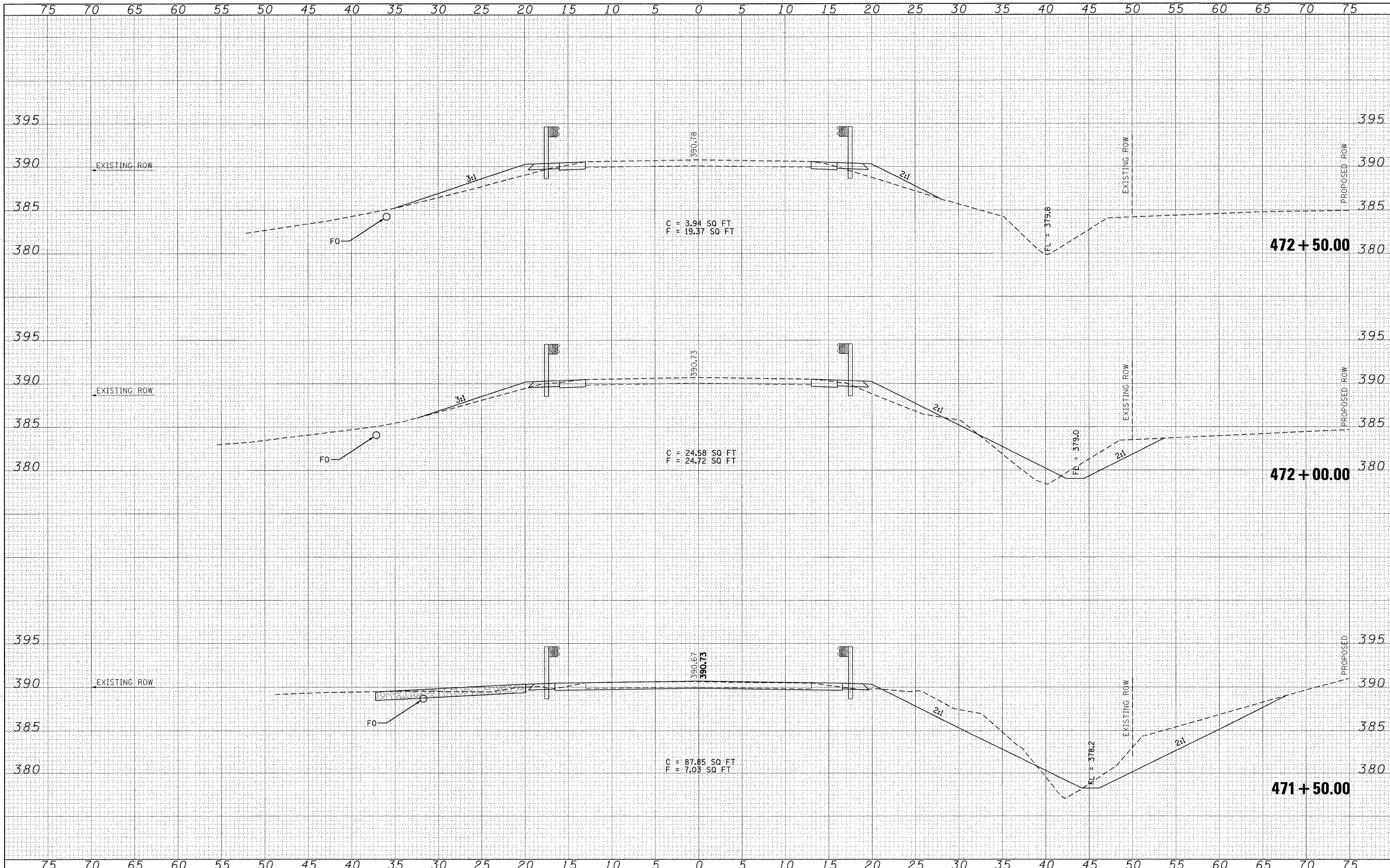
REVISED -
REVISED -
REVISED -
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

IL 242 CROSS SECTIONS

SHEET NO. 5 OF 8 SHEETS STA. 471+35 TO STA. 471+40

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
776	(102)B-1	HAMILTON	53	24
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
		CONTRACT NO. 78016		



DATE	
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SURVEYED	
PLANNED	
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DATE	
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DESIGNED	
TEMPLATE	
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CHECKED	
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FILE NAME =
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USER NAME = weaverlg
DESIGNED - APF
DRAWN - APF
CHECKED - RSB
DATE - 1/15/2009

REVISED -
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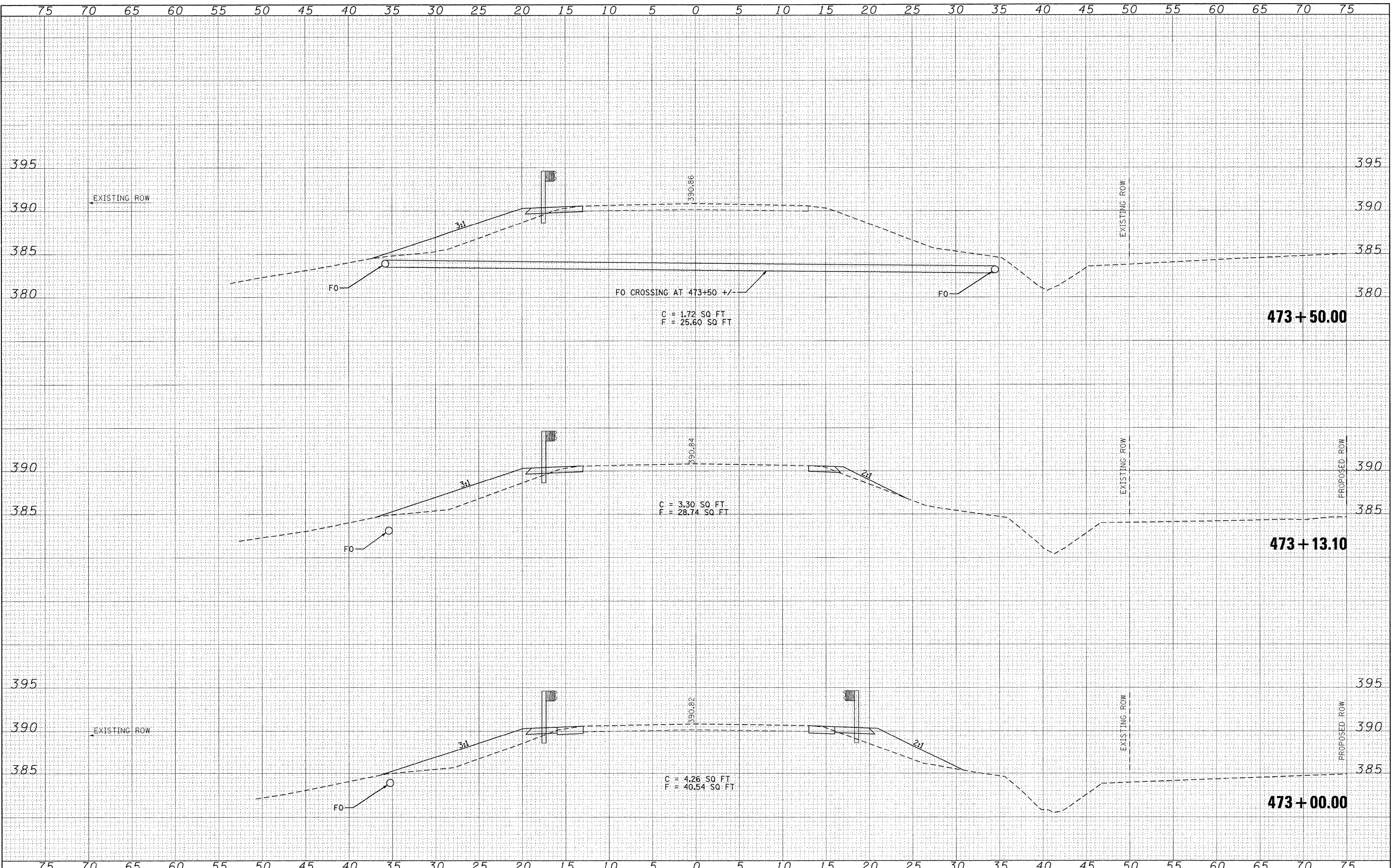
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

IL 242 CROSS SECTIONS

SHEET NO. 6 OF 8 SHEETS STA. 471+50 TO STA. 472+50

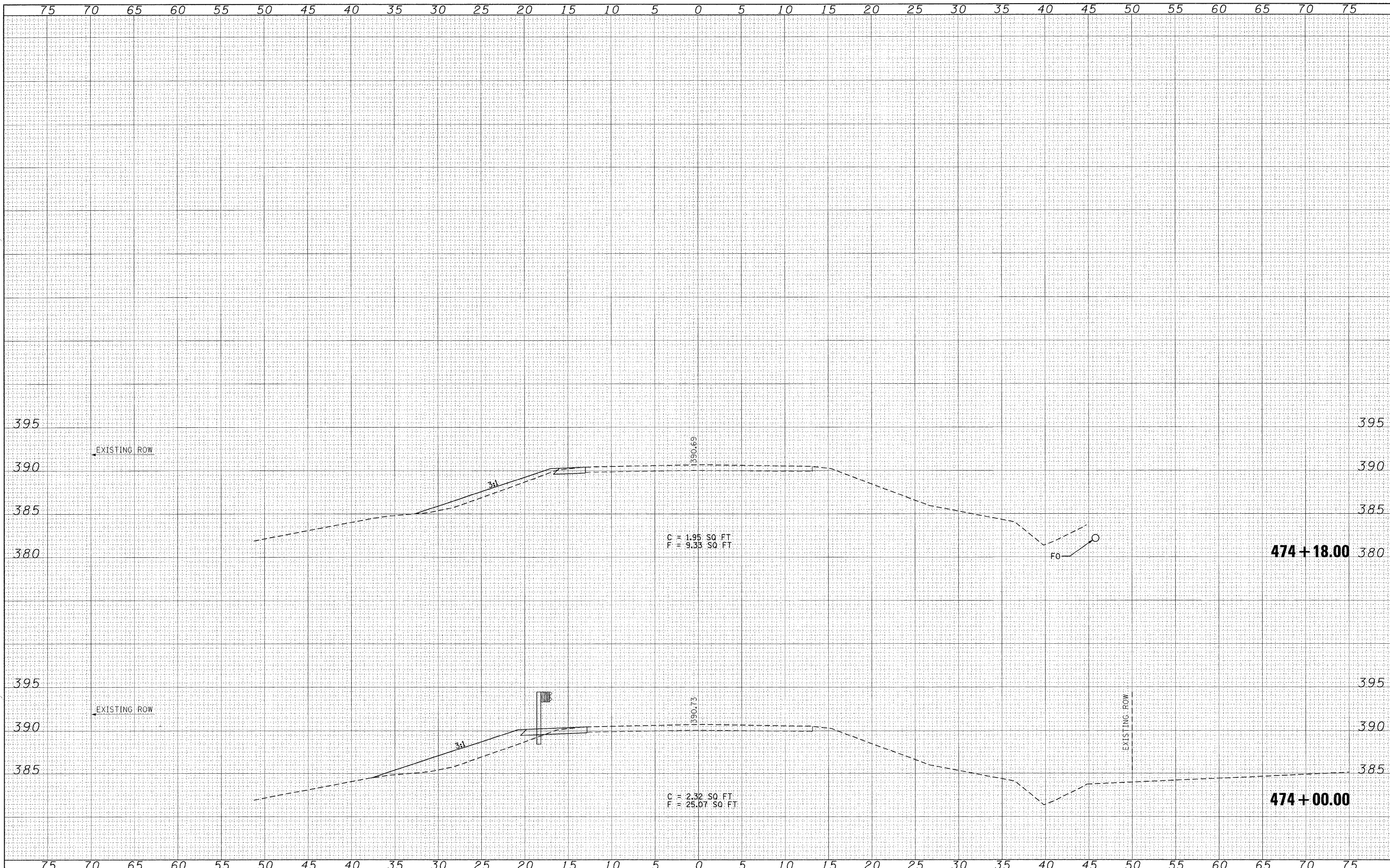
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
776	(102)B-1	HAMILTON	53	25
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
		CONTRACT NO. 78016		

DATE	
BY	
FINAL SURVEY	
REVISION	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	



DATE	
BY	
ORIGINAL SURVEY	
REVISION	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	

FILE NAME =	USER NAME = weaverlg	DESIGNED - APF	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IL 242 CROSS SECTIONS				F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
d978016-shr-xash.tdgn		DRAWN - APF	REVISED -		776	(102)B-1	HAMILTON	53	26				
		CHECKED - RSB	REVISED -		SHEET NO. 7 OF 8 SHEETS				FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
		DATE - 1/15/2009	REVISED -		STA. 473+00 TO STA. 473+50				CONTRACT NO. 78016				



FINAL SURVEY	DATE
SURVEYED	
NOTE BOOK	
NO.	
TEMPLATE	
AREAS CHECKED	

ORIGINAL SURVEY	DATE
SURVEYED	
NOTE BOOK	
NO.	
TEMPLATE	
AREAS CHECKED	

FILE NAME = d976016-sht-xsshtdgr
 USER NAME = weaverlg
 PLOT DATE = 01/15/2009

DESIGNED - APF	REVISED -
DRAWN - APF	REVISED -
CHECKED - RSB	REVISED -
DATE - 1/15/2009	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

IL 242 CROSS SECTIONS

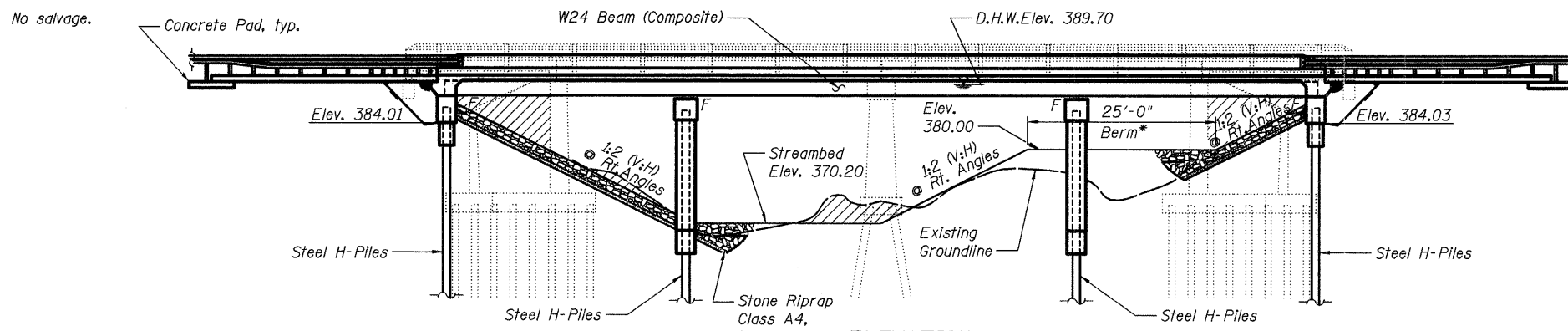
SHEET NO. 8 OF 8 SHEETS STA. 474+00 TO STA. 474+18

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
776	(102)B-1	HAMILTON	53	27
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
		CONTRACT NO. 78016		

Bench Mark: BM 557 Chiseled square on top of wingwall of bridge SN 033-0046 on NE corner of bridge at Sta. +/- 463+53 Lt. 18.3'. (390.6736)

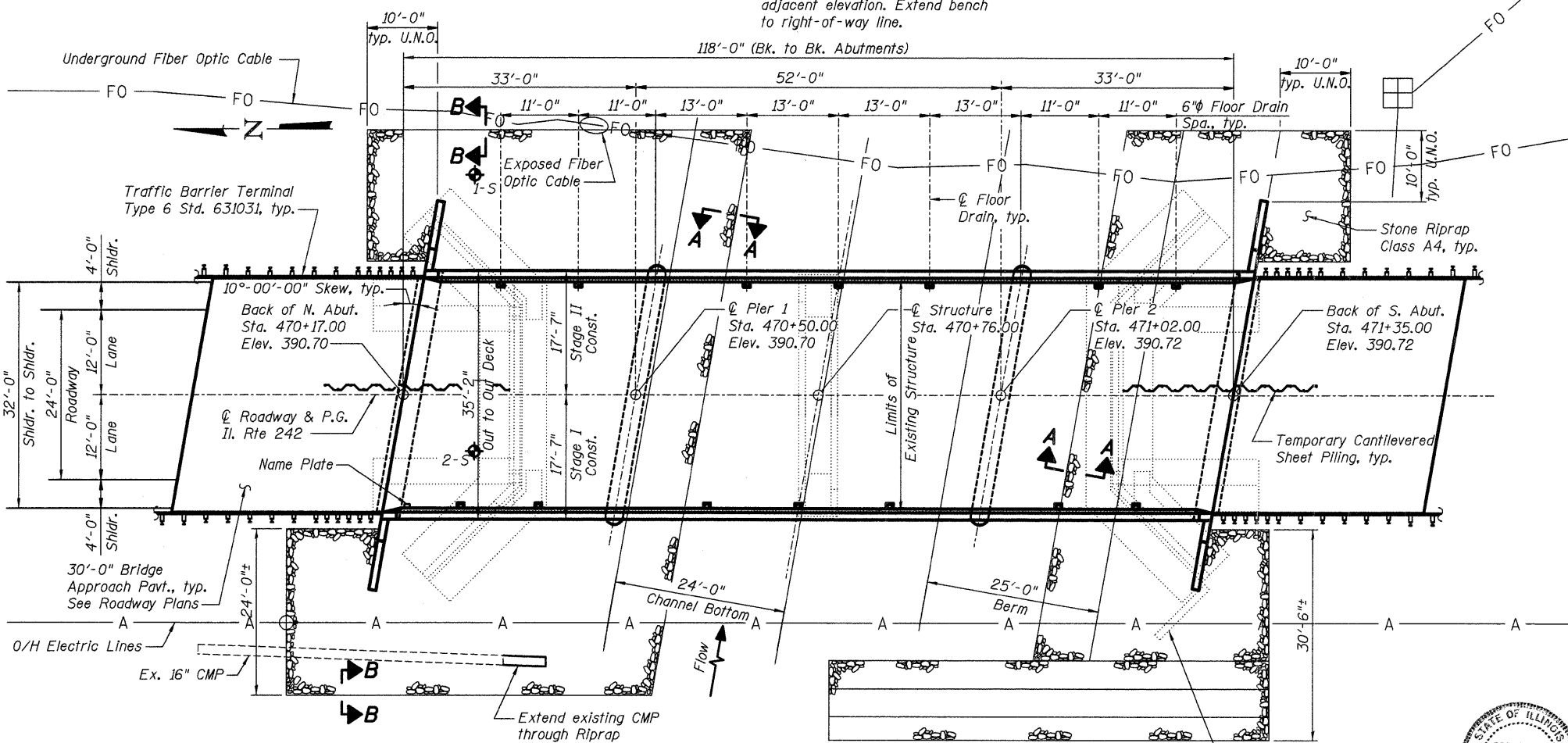
Existing Structure: SN 033-0026 was originally built in 1929. The superstructure and the substructure were widened in 1975. The structure consists of two simple span reinforced concrete T-beams widened with four PPC deck beams on closed abutments. The original abutments and intermediate pier rest on timber pile-supported spread footings. The widened pier elements are on concrete pile-supported spread footings. The structure is approximately 86' back to back abutments and 32'-8" out to out deck width. Existing structure is to be removed and replaced. One lane of traffic will be maintained utilizing stage construction.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION

* Flare bench to match top of adjacent elevation. Extend bench to right-of-way line.



PLAN

WATERWAY INFORMATION

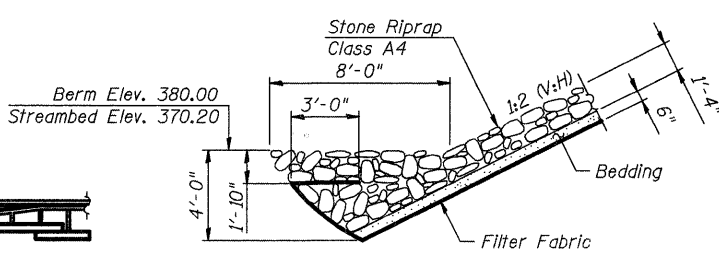
Drainage Area = 21.41 Sq Mi		Ex. Low Grade Elev. 389.86 @ Sta. 458+00		Pr. Low Grade Elev. 389.86 @ Sta. 458+00		
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist. Prop.	Nat. H.W.E. Exist. Prop.	Head - Ft. Exist. Prop.	Headwater El. Exist. Prop.
Design	10	2415	982.0 1142.0	387.8 389.7	0.2 0.4	388.0 390.1
Overtopping Ex.	50	3750	982.0 1147.0	390.0 390.4	0.5 0.2	390.5 390.6
Overtopping Pr.		4250				

10 Year Velocity through Existing Bridge = 2.5 fps. 10 Year Velocity through Proposed Bridge = 2.1 fps.

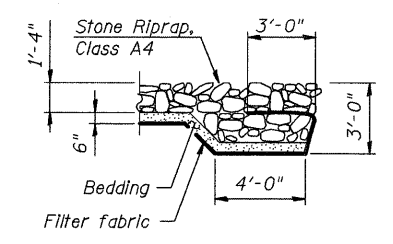
DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	N. Abut.	Pier 1	Pier 2	S. Abut.
	384.05	370.20	374.00	384.07

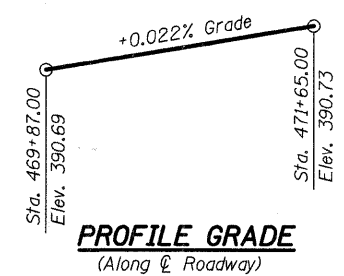
DESIGNED - CJW
CHECKED - DRS
DRAWN - JLR
CHECKED - CJW



SECTION A-A



SECTION B-B



PROFILE GRADE

LOADING HL-93

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

DESIGN SPECIFICATIONS

2007 AASHTO LRFD Bridge Design Specifications with 2008 Interims

DESIGN STRESSES

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50 structural steel)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 2
Design Spectral Acc. at 1.0 sec (SD1) = 0.23g
Design Spectral Acc. at 0.2 sec (SD5) = 0.63g
Bedrock Acceleration Coefficient (A) = 0.28g
Soil Site Class C

APPROVED

FOR STRUCTURAL ADEQUACY ONLY

Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES



ROBERT D. NIEMIETZ
COLUMBIA, ILLINOIS
ILLINOIS LICENSED STRUCTURAL
ENGINEER NO. 081-004527
EXPIRES NOV. 30, 2010



LOCATION SKETCH

INDEX OF SHEETS

- 1 General Plan and Elevation
- 2 General Structure Data
- 3 Foundation Layout
- 4 Stage Construction Details
- 5 Temporary Concrete Barrier For Stage Construction
- 6 Steel Railing (Temporary)
- 7-10 Top of Slab Elevations
- 11 Top of N. Approach Slab Elevations
- 12 Top of S. Approach Slab Elevations
- 13 Superstructure
- 14 Superstructure Details
- 15 Diaphragm Details
- 16 Framing Plan and Design Data
- 17 Beam Details
- 18 Bearing Details
- 19 North Abutment Details
- 20 South Abutment Details
- 21 Pier 1 Details
- 22 Pier 2 Details
- 23 Steel H-Pile Details
- 24 Bar Splicer Assembly Details
- 25-26 Boring Logs

STATION 470+76
BUILT 200_ BY _____
STATE OF ILLINOIS
F.A.P. ROUTE 776
SEC. (102) B-1
LOADING HL-93
STRUCTURE NO. 033-0053

NAME PLATE

See Std. 515001

LIMITS OF EXIST. BRIDGE REMOVAL

- Entire Superstructure
- Entire Intermediate Pier to 5' below finished streambed elevation
- Stems of abutment backwalls and wingwalls (footings and piles to remain)

GENERAL PLAN AND ELEVATION

**IL ROUTE 242 OVER
SHELTON CREEK
STATION 470+76**

SHEET NO. 1	F.A.P. RTE. 776	SECTION (102)B-1	COUNTY HAMILTON	TOTAL SHEETS 53	SHEET NO. 28
26 SHEETS	S.N. 033-0053		CONTRACT NO. 78016		
FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts.
Bolts $\frac{7}{8}$ in. ϕ , holes $\frac{15}{16}$ in. ϕ unless otherwise noted.
Calculated weight of Structural Steel = 57,100 lbs. of Grade 50 and 8,130 lbs. of Grade 36.

No field welding is permitted except as specified in the contract documents.
Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.

Reinforcement bars designated (E) shall be epoxy coated.
Bearing seat surfaces shall be constructed or adjusted to their designated elevations within a tolerance of $\frac{1}{8}$ inch (0.01 ft). Adjustment shall be made either by grinding the surface or by shimming the bearings.

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

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

The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at substructures specified or approved by the Engineer before ordering the remainder of piles.

The Contractor is advised that the existing superstructure is in a deteriorated condition with reduced load carrying capacity. It is the Contractor's responsibility to account for the condition of the superstructure when developing construction procedures for removal and replacement of the superstructure.

In lieu of the hammer selection criteria and use of the FHWA Modified Gates formula specified in Section 512 of the Standard Specifications, the Contractor shall conduct a wave equation analysis to establish the driving criteria at all pile foundations which specify a nominal required bearing above 600 kips. The analysis and calculations shall be submitted to the Engineer for approval.

Slipforming of parapets is not allowed.

If a portion of the pier wall or concrete encasement is under water, reinforcement may be placed underwater into forms. Concrete shall be tremied according to Article 503.08 of the Standard Specifications to an elevation of 1'-0" above the water line at the time of construction.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment, Special	Cu. Yd.		84	84
Removal of Existing Structures	Each			1
Structure Excavation	Cu. Yd.		223	223
Floor Drains	Each	14		14
Concrete Structures	Cu. Yd.		153.2	153.2
Concrete Superstructure	Cu. Yd.	149.3		149.3
Bridge Deck Grooving	Sq. Yd.	420		420
Concrete Encasement	Cu. Yd.		10.7	10.7
Protective Coat	Sq. Yd.	518		518
Furnishing and Erecting Structural Steel	L. Sum	1		1
Stud Shear Connectors	Each	2286	192	2478
Reinforcement Bars, Epoxy Coated	Pound	34,510	13,520	48,030
Bar Splicers	Each	429	92	521
Furnishing Steel Piles HP 12x53	Foot		560	560
Furnishing Steel Piles HP 14x89	Foot		580	580
Driving Piles	Foot		1140	1140
Test Pile Steel HP 12x53	Each		2	2
Test Pile Steel HP 14x89	Each		2	2
Pile Shoes	Each		24	24
Temporary Sheet Piling	Sq. Ft.		686	686
Name Plates	Each	1		1
Anchor Bolts, 1"	Each		48	48
Geocomposite Wall Drain	Sq. Yd.		61	61
Pipe Underdrains for Structures 4"	Foot		140	140
Underwater Structure Excavation Protection, Location 1	Each		1	1
Underwater Structure Excavation Protection, Location 2	Each		1	1
Asbestos Bearing Pad Removal	Each	16		16
Mechanical Splice	Each		96	96
Stone Riprap, Class A4	Sq. Yd.		126	126
Filter Fabric	Sq. Yd.		126	126
Steel Railing (Temporary)	Foot	126		126

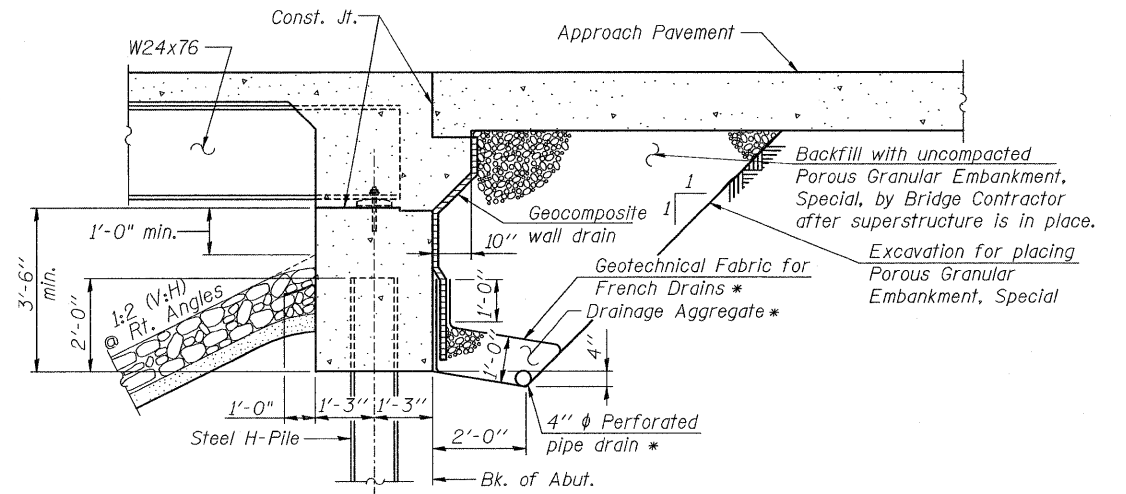
DESIGNED - CJW
CHECKED - CLS
DRAWN - JLR
CHECKED - CJW

GENERAL STRUCTURE DATA
IL ROUTE 242 OVER
SHELTON CREEK
STATION 470+76

SHEET NO. 2	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	776	(102)B-1	HAMILTON	53	29
26 SHEETS	S.N. 033-0053		CONTRACT NO. 78016		
FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT					

JACOBS

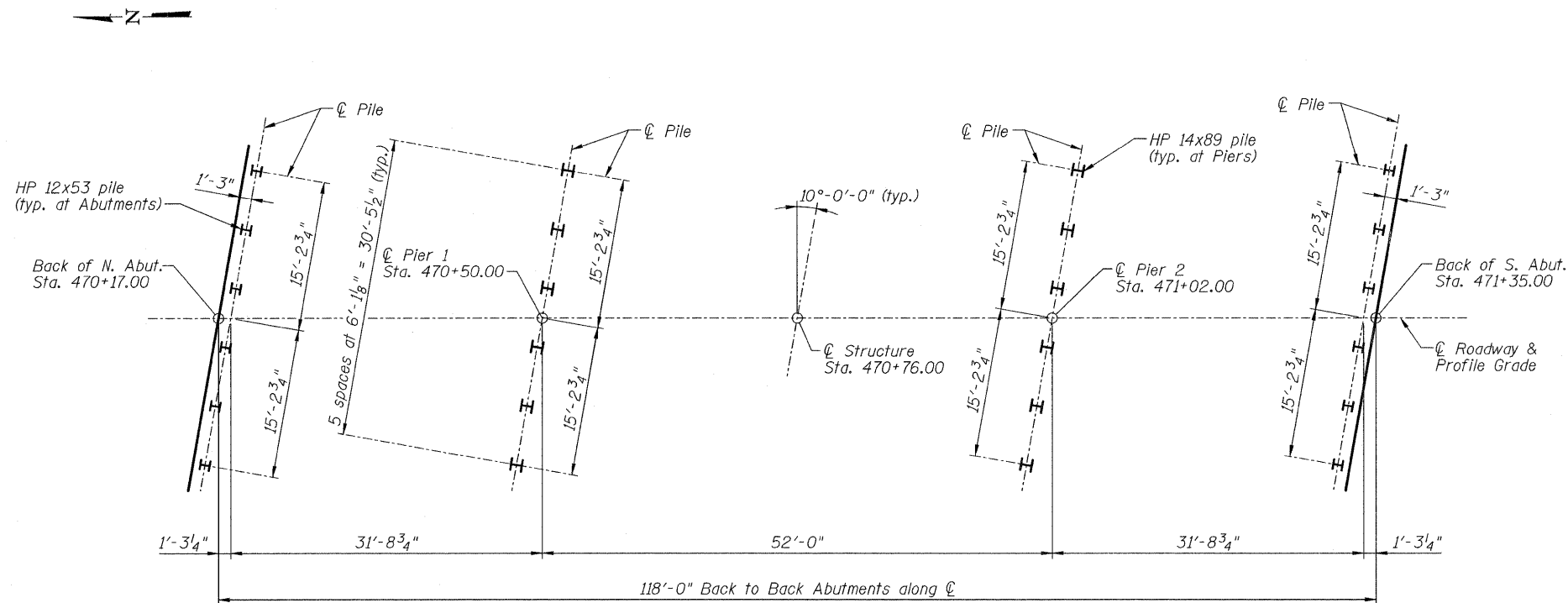
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SECTION THRU INTEGRAL ABUTMENT

*Included in the cost of Pipe Underdrains for Structures
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. The pipes shall drain into conc. headwalls (See Article 601.05 of the Std. Spec's and Hwy. Std. 601101).
Pile encasement not shown for clarity.



FOUNDATION LAYOUT

Note:
Pile encasement not shown for clarity.

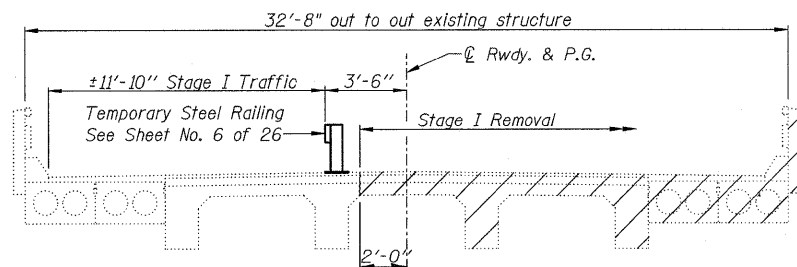
DESIGNED - NK
CHECKED - CJW
DRAWN - JLR
CHECKED - CJW

**FOUNDATION LAYOUT
IL ROUTE 242 OVER
SHELTON CREEK
STATION 470+76**

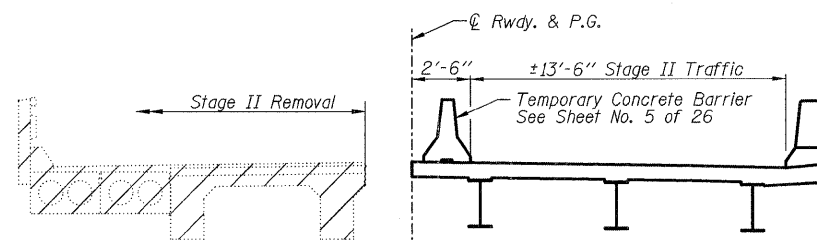
SHEET NO. 3 26 SHEETS	F.A.P. RTE. 776	SECTION (102)B-1	COUNTY HAMILTON	TOTAL SHEETS 53	SHEET NO. 30
	S.N. 033-0053		CONTRACT NO. 78016		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

JACOBS

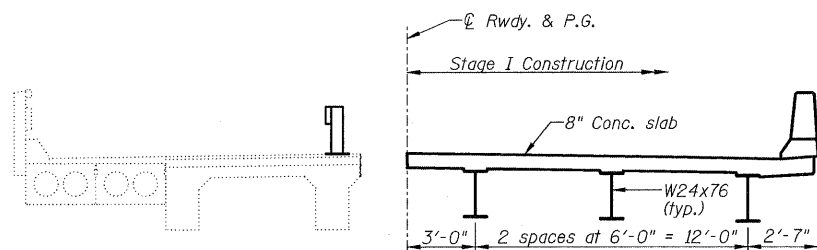
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



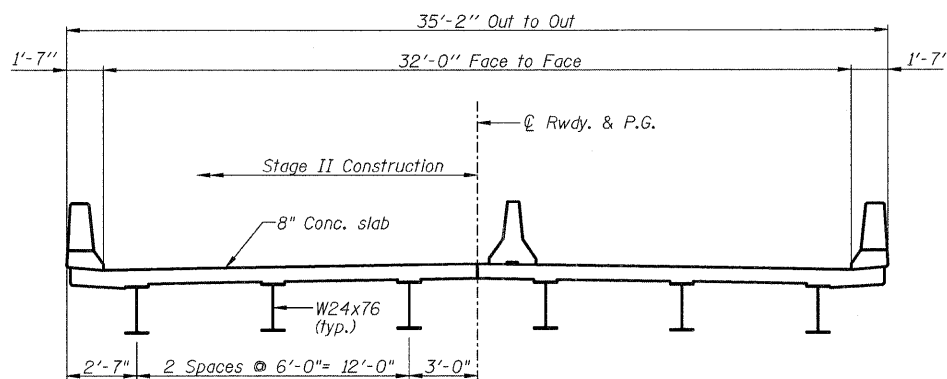
STAGE I REMOVAL



STAGE II REMOVAL



STAGE I CONSTRUCTION



STAGE II CONSTRUCTION

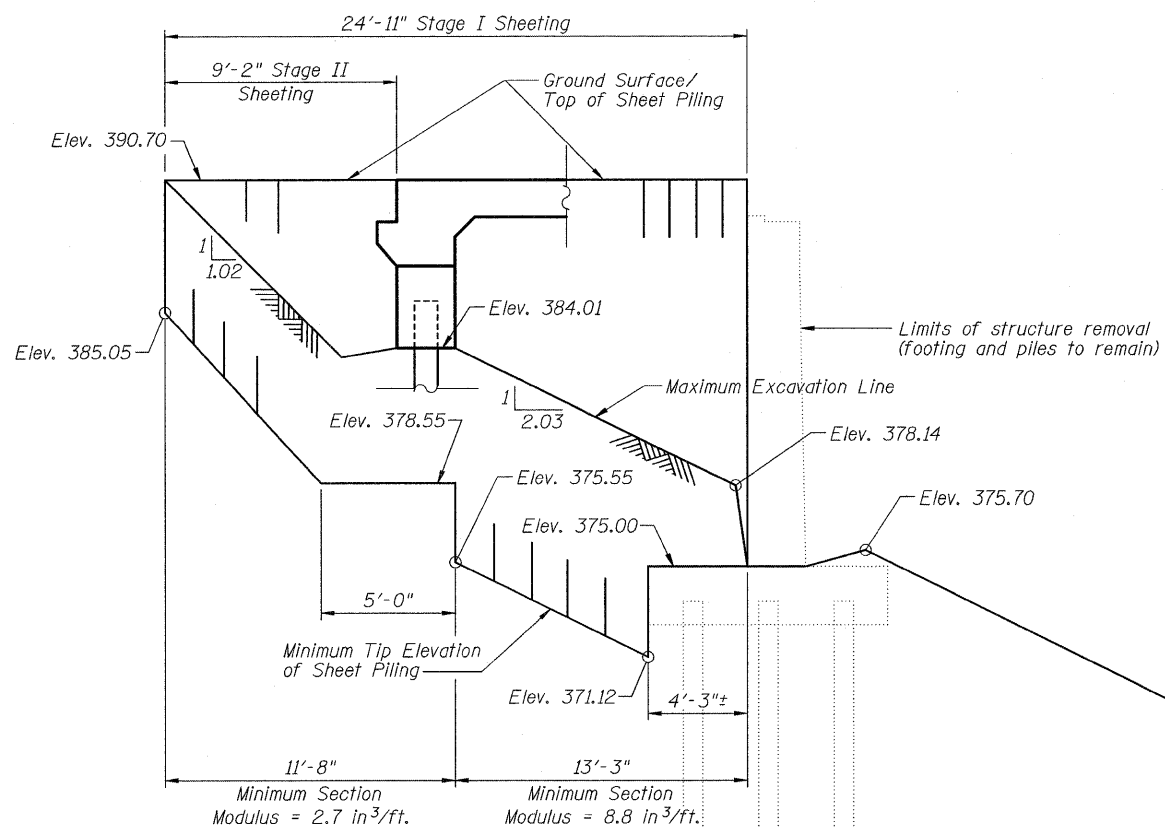
Notes:

Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure. The Contractor shall sawcut the upper portion of the existing abutment at the stage removal line before Stage I removal to ensure the remaining portion will not be prematurely damaged.

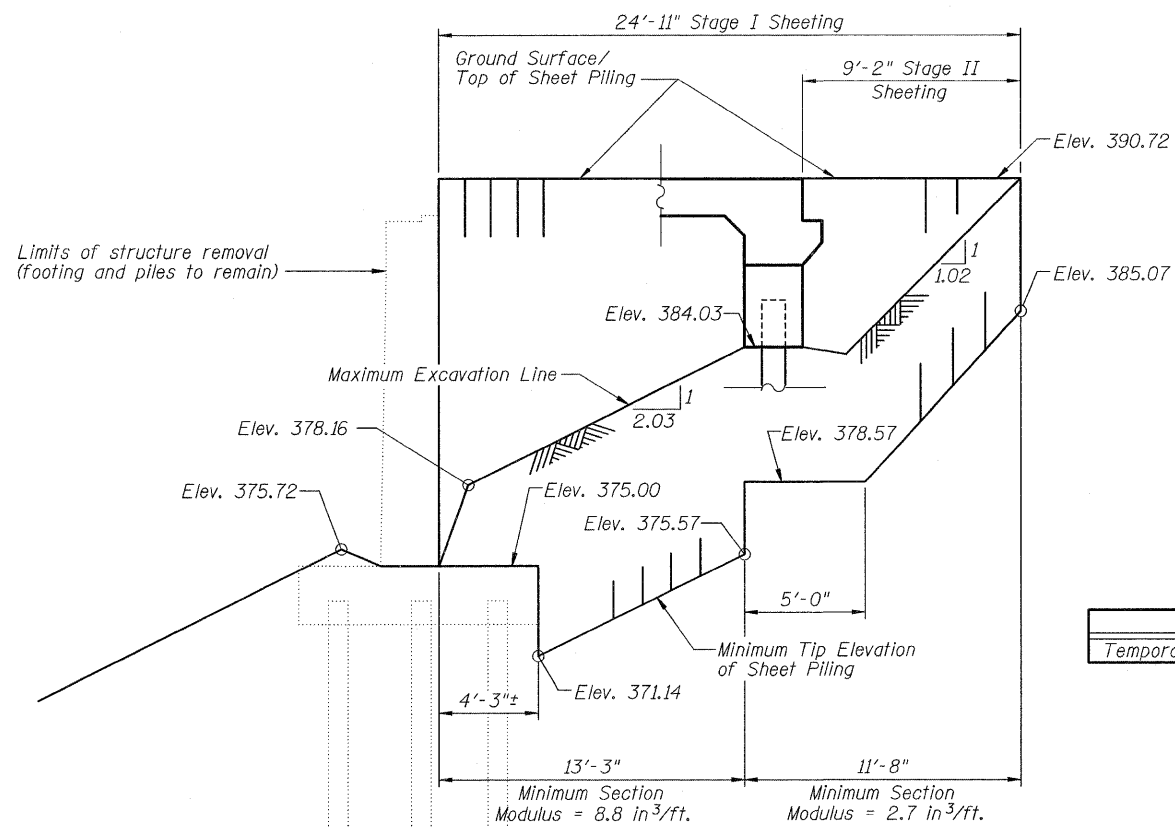
If the Contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.

The Contractor shall connect the first sheet to the existing abutment wall to ensure stability of sheets driven to the top of the existing footing. This connection shall be reviewed and accepted by the Engineer and included in the cost for Temporary Sheet Piling.

Stage Construction Sections are shown Looking South.



TEMPORARY SHEET PILING
(at North Abutment)



TEMPORARY SHEET PILING
(at South Abutment)

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Temporary Sheet Piling	Sq. Ft.	686

STAGE CONSTRUCTION DETAILS
IL ROUTE 242 OVER
SHELTON CREEK
STATION 470+76

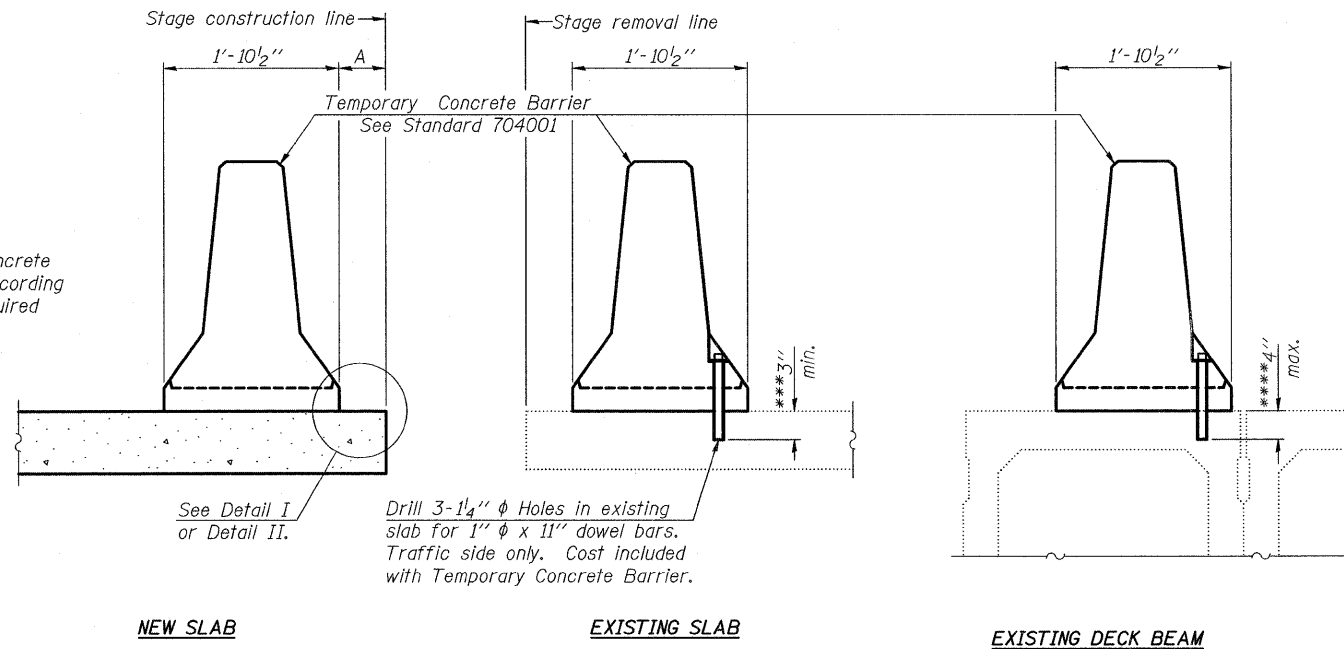
DESIGNED - C.J.W.
CHECKED - FRK
DRAWN - J.L.R.
CHECKED - C.J.W.

SHEET NO. 4	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	776	(102)B-1	HAMILTON	53	31
26 SHEETS	S.N. 033-0053		CONTRACT NO. 78016		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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.

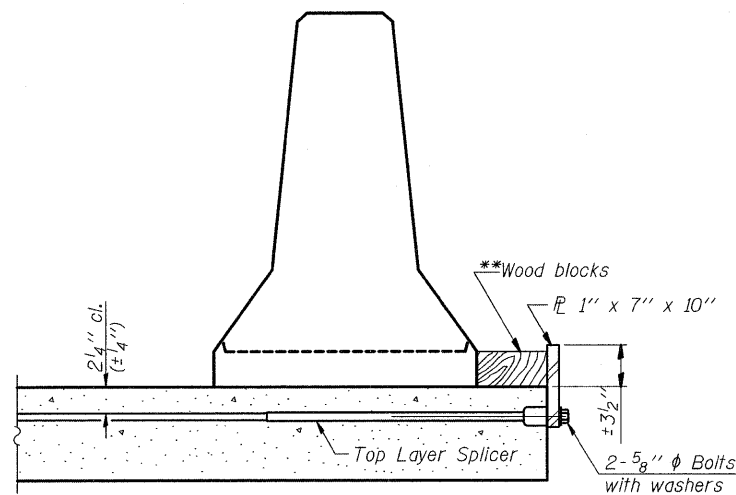
Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" steel \bar{P} to the concrete slab or concrete wearing surface with 2-5/8" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate \bar{C} of each barrier panel.

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.

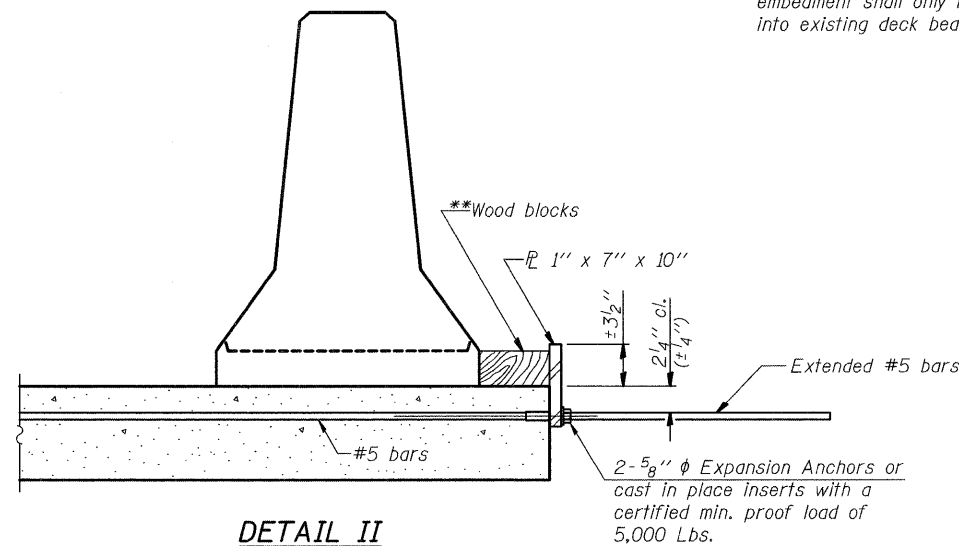
SECTIONS THRU SLAB OR DECK BEAM

*** 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.

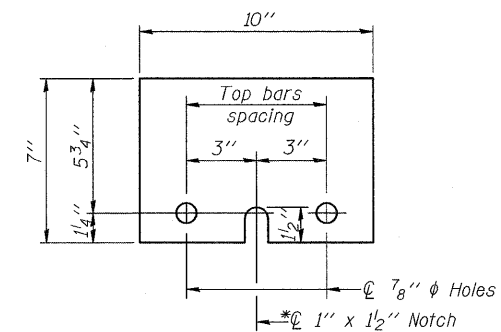


DETAIL I



DETAIL II

**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.



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

* Required only with Detail II

**TEMPORARY CONCRETE BARRIER
FOR STAGE CONSTRUCTION
IL ROUTE 242 OVER
SHELTON CREEK
STATION 470+76**

DESIGNED - CJW
CHECKED - CLS
DRAWN - JLR
CHECKED - CJW

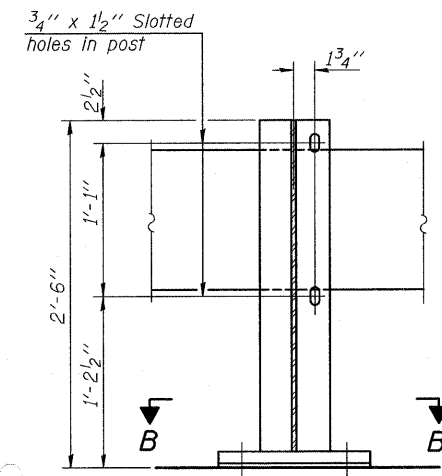
R-27

10-1-08

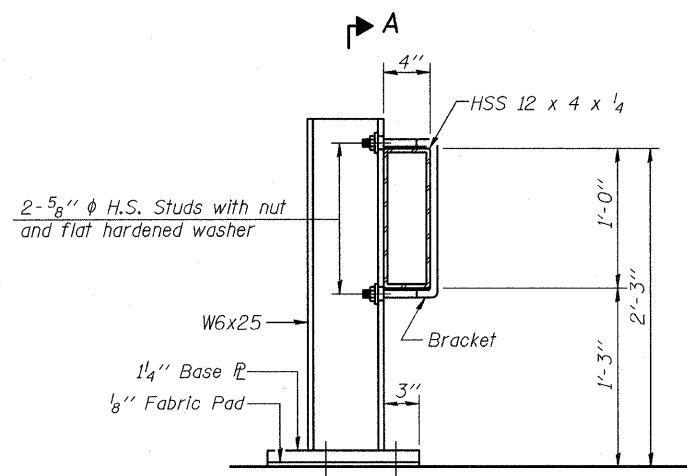
JACOBS

SHEET NO. 5 26 SHEETS	F.A.P. RTE. 776	SECTION (102)B-1	COUNTY HAMILTON	TOTAL SHEETS 53	SHEET NO. 32
	S.N. 033-0053		CONTRACT NO. 78016		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

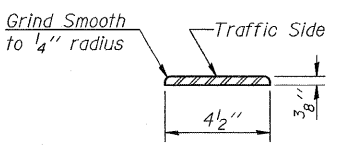
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



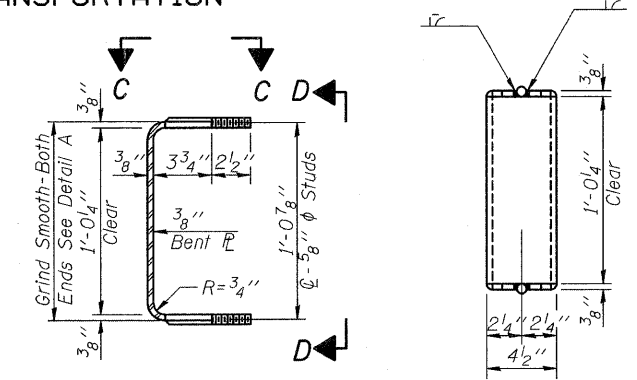
SECTION A-A



SECTION AT RAIL POST

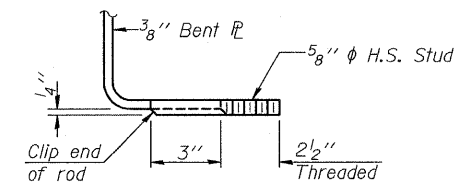


DETAIL A

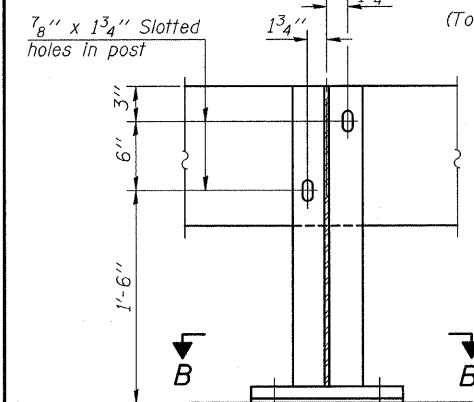


SECTION THRU BRACKET

VIEW D-D



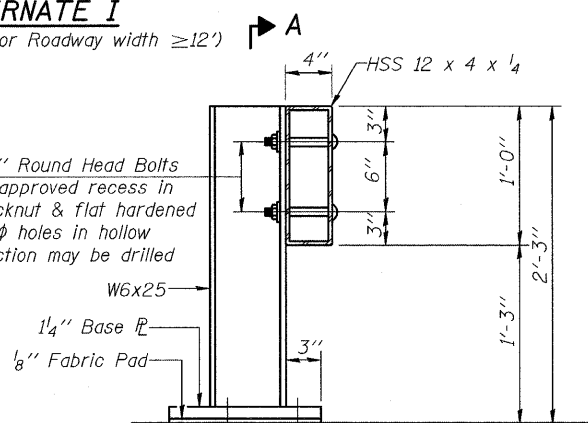
VIEW E-E



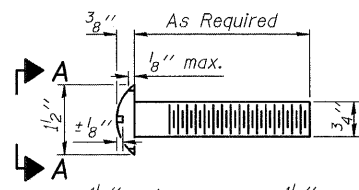
SECTION A-A

ALTERNATE I
(To be used only for Roadway width $\geq 12'$)

2-3/4" ϕ x 6" Round Head Bolts (With slot or approved recess in head) with locknut & flat hardened washer. 7/8" ϕ holes in hollow structural section may be drilled in the field.

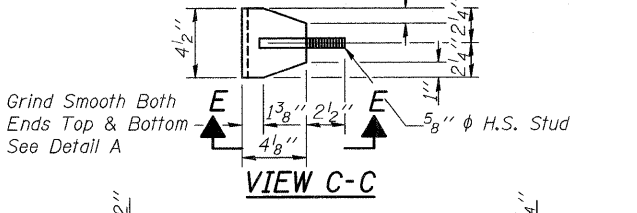


SECTION AT RAIL POST

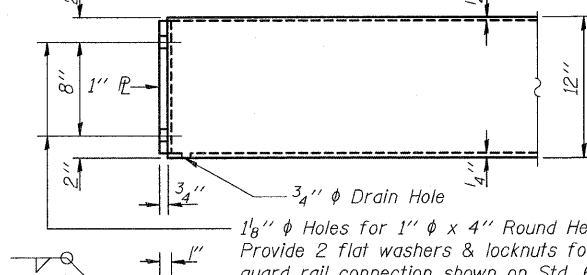


VIEW A-A
ROUND HEAD BOLT

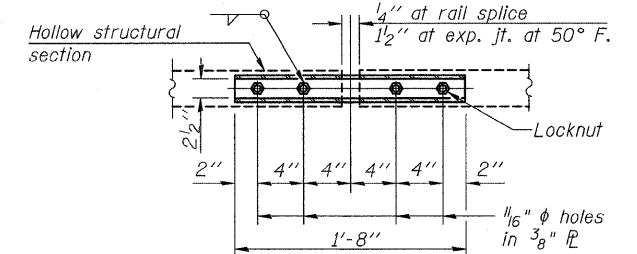
1" ϕ Flared thin slab ferrule insert. Electroplated according to ASTM B 633 Service Condition 4.



VIEW C-C

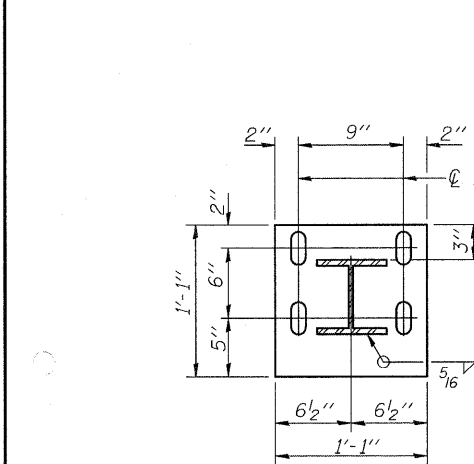


END OF RAIL DETAILS



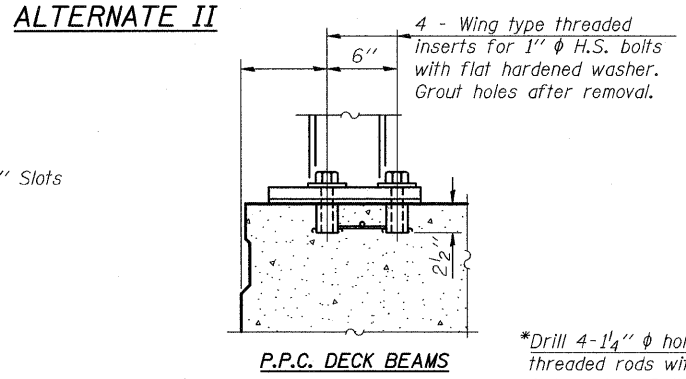
PLAN-BOTT. SPLICE PL
TYPICAL

Notes:
Nominal Rail Post spacing shall be 6'-3" o.c.
The contact surfaces between post flange, rail and inside face of bracket for Alternate I shall be free of all lubricants.
The nut for 5/8" ϕ high strength studs used in Alternate I to connect bracket to post shall be tightened to a snug fit and given an additional one half turn.



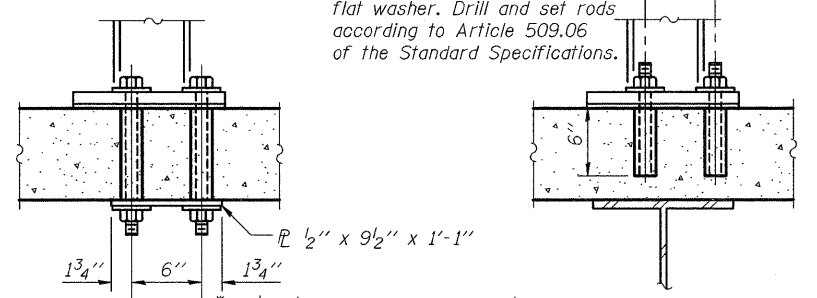
SECTION B-B

*Drilled holes for existing deck.

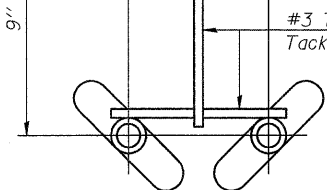


P.P.C. DECK BEAMS

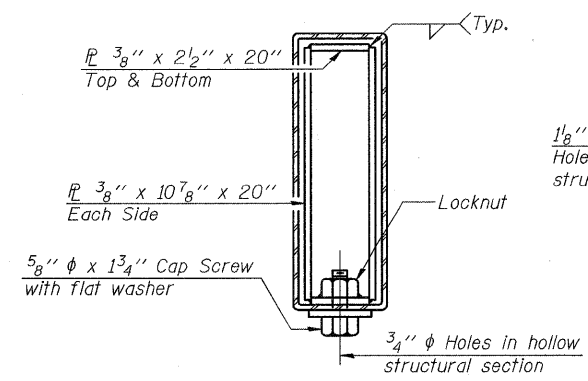
*Drill 4-1 1/4" ϕ holes for 1" ϕ threaded rods with hex nut and flat washer. Drill and set rods according to Article 509.06 of the Standard Specifications.



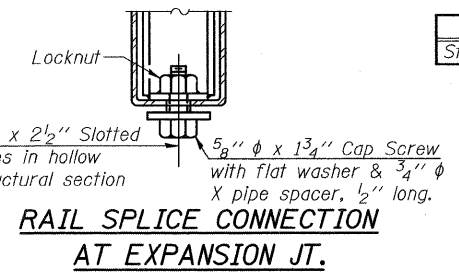
NEW & EXISTING DECKS
ANCHORAGE DETAILS



INSERT DETAIL



SECTION AT RAIL SPLICE



RAIL SPLICE CONNECTION
AT EXPANSION JT.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing (Temporary)	Foot	126

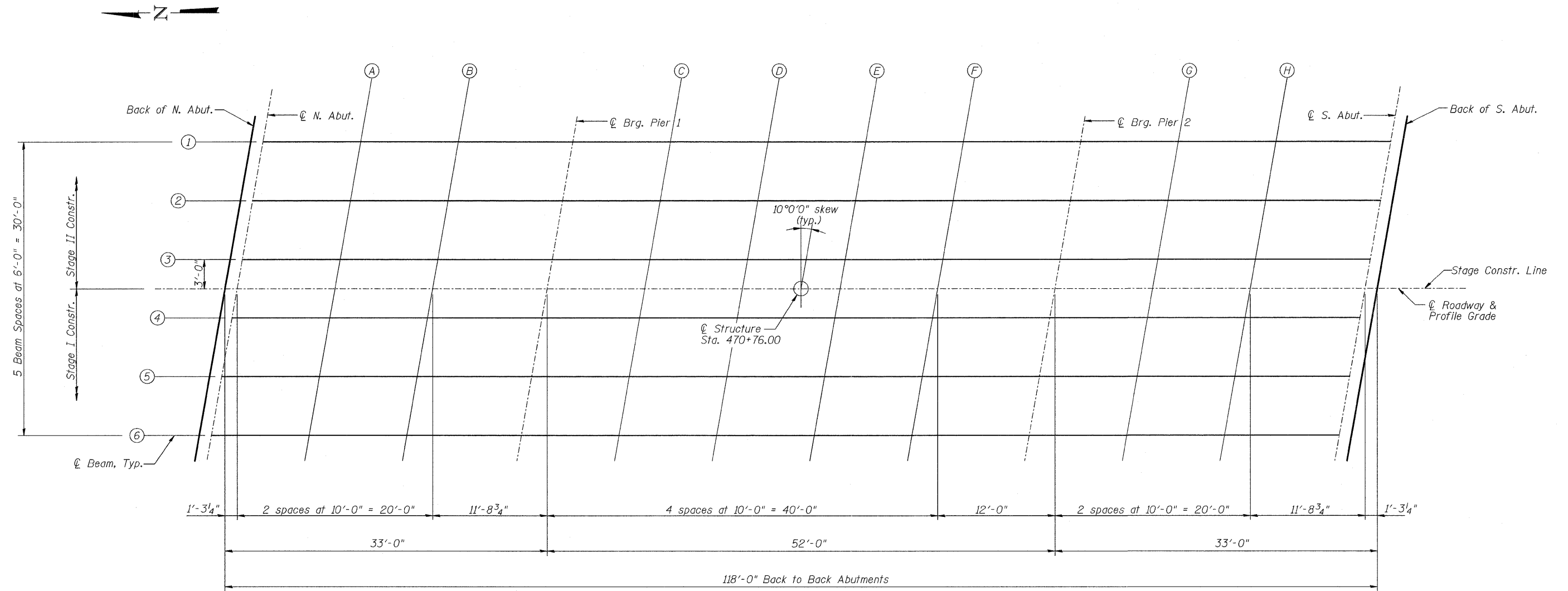
STEEL RAILING (TEMPORARY)
IL ROUTE 242 OVER
SHELTON CREEK
STATION 470+76

DESIGNED - C.J.W.
CHECKED - C.L.S.
DRAWN - J.L.R.
CHECKED - C.J.W.

SHEET NO. 6 26 SHEETS	F.A.P. RTE. 776	SECTION (102)B-1	COUNTY HAMILTON	TOTAL SHEETS 53	SHEET NO. 33
	S.N. 033-0053		CONTRACT NO. 78016		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN

TOP OF SLAB ELEVATIONS
IL ROUTE 242 OVER
SHELTON CREEK
STATION 470+76

DESIGNED - CJW
CHECKED - VDP
DRAWN - JLR
CHECKED - CJW

SHEET NO. 7 26 SHEETS	F.A.P. RTE. 776	SECTION (102)B-1	COUNTY HAMILTON	TOTAL SHEETS 53	SHEET NO. 34
	S.N. 033-0053		CONTRACT NO. 78016		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

JACOBS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. North Abut.	470+19.64	-15.00	390.45	390.45
☉ North Abut.	470+20.91	-15.00	390.45	390.45
A	470+30.91	-15.00	390.45	390.45
B	470+40.91	-15.00	390.45	390.45
☉ Brg. Pier 1	470+52.64	-15.00	390.45	390.45
C	470+62.64	-15.00	390.46	390.48
D	470+72.64	-15.00	390.46	390.50
E	470+82.64	-15.00	390.46	390.51
F	470+92.64	-15.00	390.46	390.49
☉ Brg. Pier 2	471+04.64	-15.00	390.47	390.47
G	471+14.64	-15.00	390.47	390.47
H	471+24.64	-15.00	390.47	390.47
☉ South Abut.	471+36.38	-15.00	390.47	390.47
Bk. South Abut.	471+37.64	-15.00	390.47	390.47

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. North Abut.	470+18.59	-9.00	390.56	390.56
☉ North Abut.	470+19.86	-9.00	390.56	390.56
A	470+29.86	-9.00	390.56	390.56
B	470+39.86	-9.00	390.56	390.56
☉ Brg. Pier 1	470+51.59	-9.00	390.56	390.56
C	470+61.59	-9.00	390.57	390.59
D	470+71.59	-9.00	390.57	390.61
E	470+81.59	-9.00	390.57	390.62
F	470+91.59	-9.00	390.57	390.60
☉ Brg. Pier 2	471+03.59	-9.00	390.58	390.58
G	471+13.59	-9.00	390.58	390.57
H	471+23.59	-9.00	390.58	390.58
☉ South Abut.	471+35.32	-9.00	390.58	390.58
Bk. South Abut.	471+36.59	-9.00	390.58	390.58

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. North Abut.	470+17.53	-3.00	390.65	390.65
☉ North Abut.	470+18.80	-3.00	390.65	390.65
A	470+28.80	-3.00	390.65	390.65
B	470+38.80	-3.00	390.65	390.65
☉ Brg. Pier 1	470+50.53	-3.00	390.66	390.66
C	470+60.53	-3.00	390.66	390.68
D	470+70.53	-3.00	390.66	390.70
E	470+80.53	-3.00	390.66	390.71
F	470+90.53	-3.00	390.67	390.69
☉ Brg. Pier 2	471+02.53	-3.00	390.67	390.67
G	471+12.53	-3.00	390.67	390.67
H	471+22.53	-3.00	390.67	390.67
☉ South Abut.	471+34.26	-3.00	390.68	390.68
Bk. South Abut.	471+35.53	-3.00	390.68	390.68

DESIGNED - CJW
CHECKED - VDP
DRAWN - JLR
CHECKED - CJW

**TOP OF SLAB ELEVATIONS
IL ROUTE 242 OVER
SHELTON CREEK
STATION 470+76**

SHEET NO. 8 26 SHEETS	F.A.P. RTE. 776	SECTION (102)B-1	COUNTY HAMILTON	TOTAL SHEETS 53	SHEET NO. 35
	S.N. 033-0053		CONTRACT NO. 78016		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

☉ ROADWAY, P.G. &
STAGE CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. North Abut.	470+17.00	0.00	390.70	390.70
☉ North Abut.	470+18.27	0.00	390.70	390.70
A	470+28.27	0.00	390.70	390.70
B	470+38.27	0.00	390.70	390.70
☉ Brg. Pier 1	470+50.00	0.00	390.70	390.70
C	470+60.00	0.00	390.71	390.73
D	470+70.00	0.00	390.71	390.75
E	470+80.00	0.00	390.71	390.76
F	470+90.00	0.00	390.71	390.74
☉ Brg. Pier 2	471+02.00	0.00	390.72	390.72
G	471+12.00	0.00	390.72	390.71
H	471+22.00	0.00	390.72	390.72
☉ South Abut.	471+33.73	0.00	390.72	390.72
Bk. South Abut.	471+35.00	0.00	390.72	390.72

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. North Abut.	470+16.47	3.00	390.65	390.65
☉ North Abut.	470+17.74	3.00	390.65	390.65
A	470+27.74	3.00	390.65	390.65
B	470+37.74	3.00	390.65	390.65
☉ Brg. Pier 1	470+49.47	3.00	390.66	390.66
C	470+59.47	3.00	390.66	390.68
D	470+69.47	3.00	390.66	390.70
E	470+79.47	3.00	390.66	390.71
F	470+89.47	3.00	390.67	390.69
☉ Brg. Pier 2	471+01.47	3.00	390.67	390.67
G	471+11.47	3.00	390.67	390.67
H	471+21.47	3.00	390.67	390.67
☉ South Abut.	471+33.20	3.00	390.68	390.68
Bk. South Abut.	471+34.47	3.00	390.68	390.68

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. North Abut.	470+15.41	9.00	390.56	390.56
☉ North Abut.	470+16.68	9.00	390.56	390.56
A	470+26.68	9.00	390.56	390.56
B	470+36.68	9.00	390.56	390.56
☉ Brg. Pier 1	470+48.41	9.00	390.56	390.56
C	470+58.41	9.00	390.57	390.59
D	470+68.41	9.00	390.57	390.61
E	470+78.41	9.00	390.57	390.62
F	470+88.41	9.00	390.57	390.60
☉ Brg. Pier 2	471+00.41	9.00	390.57	390.57
G	471+10.41	9.00	390.58	390.57
H	471+20.41	9.00	390.58	390.58
☉ South Abut.	471+32.14	9.00	390.58	390.58
Bk. South Abut.	471+33.41	9.00	390.58	390.58

DESIGNED - CJW
CHECKED - VDP
DRAWN - JLR
CHECKED - CJW

TOP OF SLAB ELEVATIONS
IL ROUTE 242 OVER
SHELTON CREEK
STATION 470+76

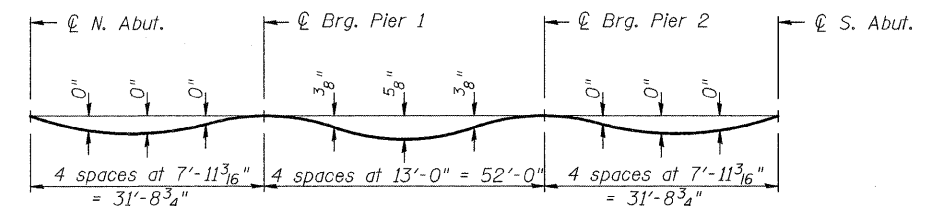
SHEET NO. 9 26 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	776	(102)B-1	HAMILTON	53	36
S.N. 033-0053			CONTRACT NO. 78016		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEAM 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. North Abut.	470+14.36	15.00	390.45	390.45
☉ North Abut.	470+15.62	15.00	390.45	390.45
A	470+25.62	15.00	390.45	390.45
B	470+35.62	15.00	390.45	390.45
☉ Brg. Pier 1	470+47.36	15.00	390.45	390.45
C	470+57.36	15.00	390.46	390.48
D	470+67.36	15.00	390.46	390.50
E	470+77.36	15.00	390.46	390.51
F	470+87.36	15.00	390.46	390.49
☉ Brg. Pier 2	470+99.36	15.00	390.47	390.47
G	471+09.36	15.00	390.47	390.46
H	471+19.36	15.00	390.47	390.47
☉ South Abut.	471+31.09	15.00	390.47	390.47
Bk. South Abut.	471+32.36	15.00	390.47	390.47

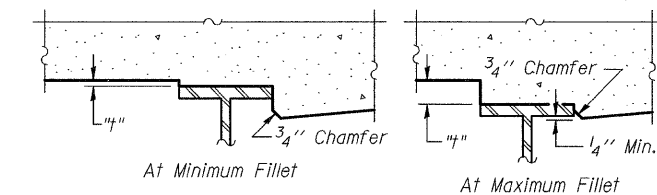


DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only.)

Note:

The above deflections are not for use in the field if the engineer is working from the "Theoretical Grade Elevations Adjusted For Dead Load Deflection" as shown on sheets 8, 9 and 10 of 26.



To determine "t": After all structural steel has been erected for a designated stage, elevations of the top flanges of the beams shall be taken at intervals shown on sheet 7 of 26. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheet numbers 8, 9 and 10 of 26, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

**TOP OF SLAB ELEVATIONS
IL ROUTE 242 OVER
SHELTON CREEK
STATION 470+76**

DESIGNED - CJW
CHECKED - VDP
DRAWN - JLR
CHECKED - CJW



SHEET NO. 10 26 SHEETS	F.A.P. RTE. 776	SECTION (102)B-1	COUNTY HAMILTON	TOTAL SHEETS 53	SHEET NO. 37
	S.N. 033-0053		CONTRACT NO. 78016		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
N. End of North Appr. P.v't.	469+89.82	-16.00	390.42
A3	469+99.82	-16.00	390.42
A4	470+09.82	-16.00	390.42
S. End of North Appr. P.v't.	470+19.82	-16.00	390.43

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
N. End of North Appr. P.v't.	469+89.12	-12.00	390.50
A3	469+99.12	-12.00	390.51
A4	470+09.12	-12.00	390.51
S. End of North Appr. P.v't.	470+19.12	-12.00	390.51

CL ROADWAY, P.G. & STAGE CONSTRUCTION JOINT

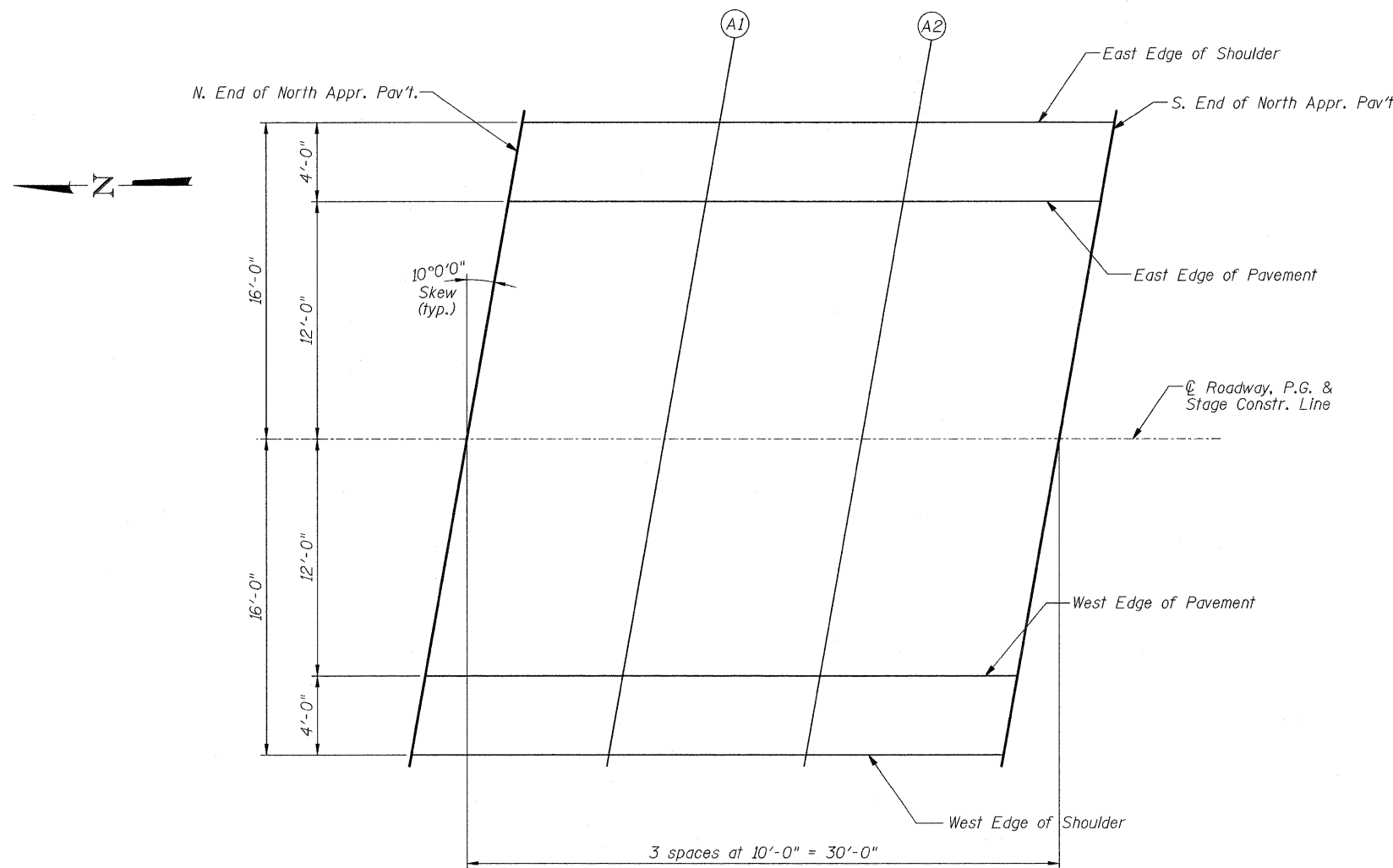
Location	Station	Offset	Theoretical Grade Elevations
N. End of North Appr. P.v't.	469+87.00	0.00	390.69
A3	469+97.00	0.00	390.69
A4	470+07.00	0.00	390.69
S. End of North Appr. P.v't.	470+17.00	0.00	390.70

WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
N. End of North Appr. P.v't.	469+84.88	12.00	390.50
A3	469+94.88	12.00	390.50
A4	470+04.88	12.00	390.51
S. End of North Appr. P.v't.	470+14.88	12.00	390.51

WEST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
N. End of North Appr. P.v't.	469+84.18	16.00	390.42
A3	469+94.18	16.00	390.42
A4	470+04.18	16.00	390.42
S. End of North Appr. P.v't.	470+14.18	16.00	390.43



TOP OF NORTH APPROACH
SLAB ELEVATIONS
IL ROUTE 242 OVER
SHELTON CREEK
STATION 470+76

DESIGNED - CJW
CHECKED - VDP
DRAWN - JLR
CHECKED - CJW

SHEET NO. 11 26 SHEETS	F.A.P. RTE. 776	SECTION (102)B-1	COUNTY HAMILTON	TOTAL SHEETS 53	SHEET NO. 38
	S.N. 033-0053		CONTRACT NO. 78016		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

JACOBS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
N. End of South Appr. Pv't.	471+37.82	-16.00	390.45
A3	471+47.82	-16.00	390.46
A4	471+57.82	-16.00	390.46
S. End of South Appr. Pv't.	471+67.82	-16.00	390.46

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
N. End of South Appr. Pv't.	471+37.12	-12.00	390.54
A3	471+47.12	-12.00	390.54
A4	471+57.12	-12.00	390.54
S. End of South Appr. Pv't.	471+67.12	-12.00	390.54

☉ ROADWAY, P.G. & STAGE CONSTRUCTION JOINT

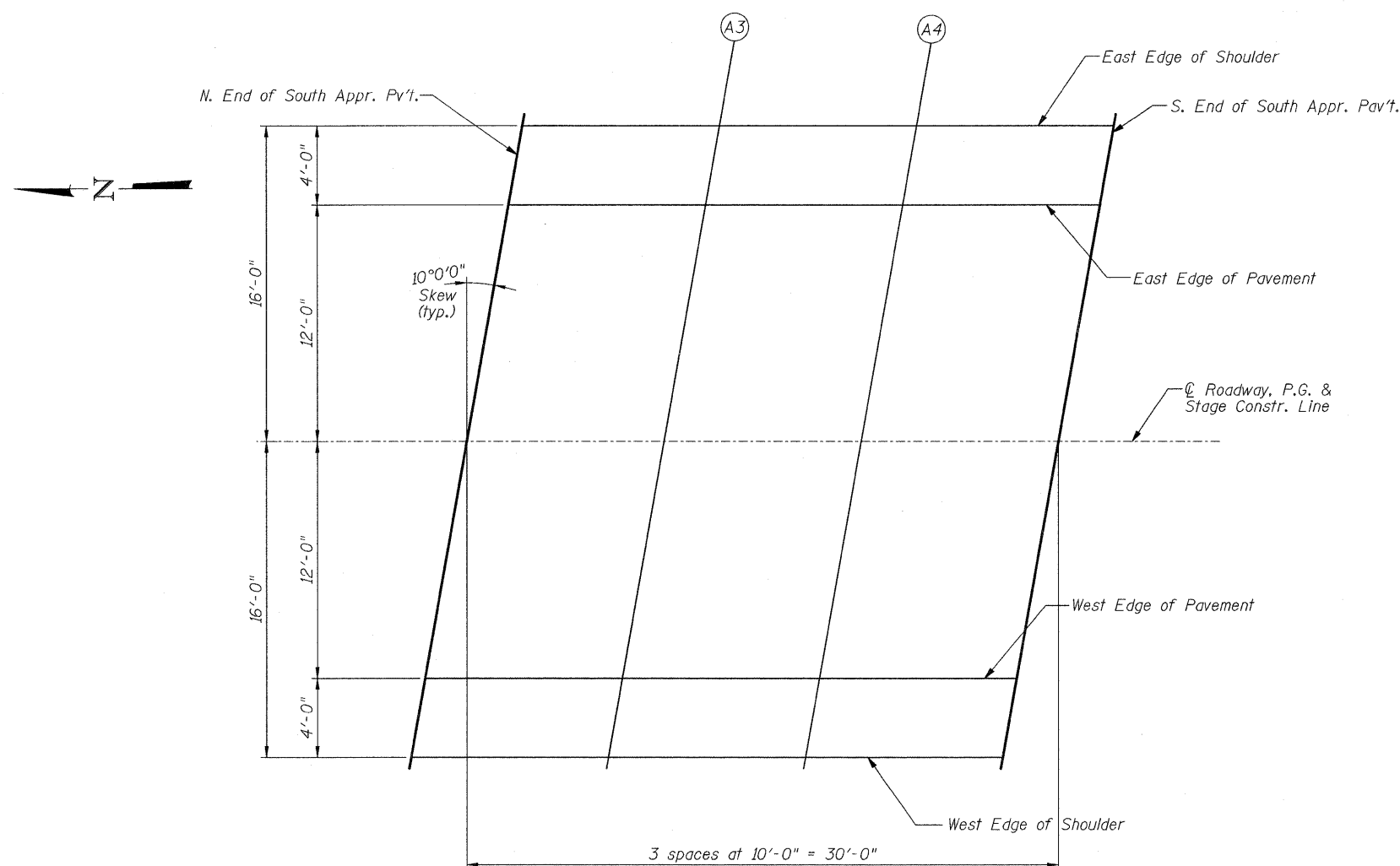
Location	Station	Offset	Theoretical Grade Elevations
N. End of South Appr. Pv't.	471+35.00	0.00	390.72
A3	471+45.00	0.00	390.73
A4	471+55.00	0.00	390.73
S. End of South Appr. Pv't.	471+65.00	0.00	390.73

WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
N. End of South Appr. Pv't.	471+32.88	12.00	390.54
A3	471+42.88	12.00	390.54
A4	471+52.88	12.00	390.54
S. End of South Appr. Pv't.	471+62.88	12.00	390.54

WEST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
N. End of South Appr. Pv't.	471+32.18	16.00	390.45
A3	471+42.18	16.00	390.45
A4	471+52.18	16.00	390.46
S. End of South Appr. Pv't.	471+62.18	16.00	390.46



PLAN

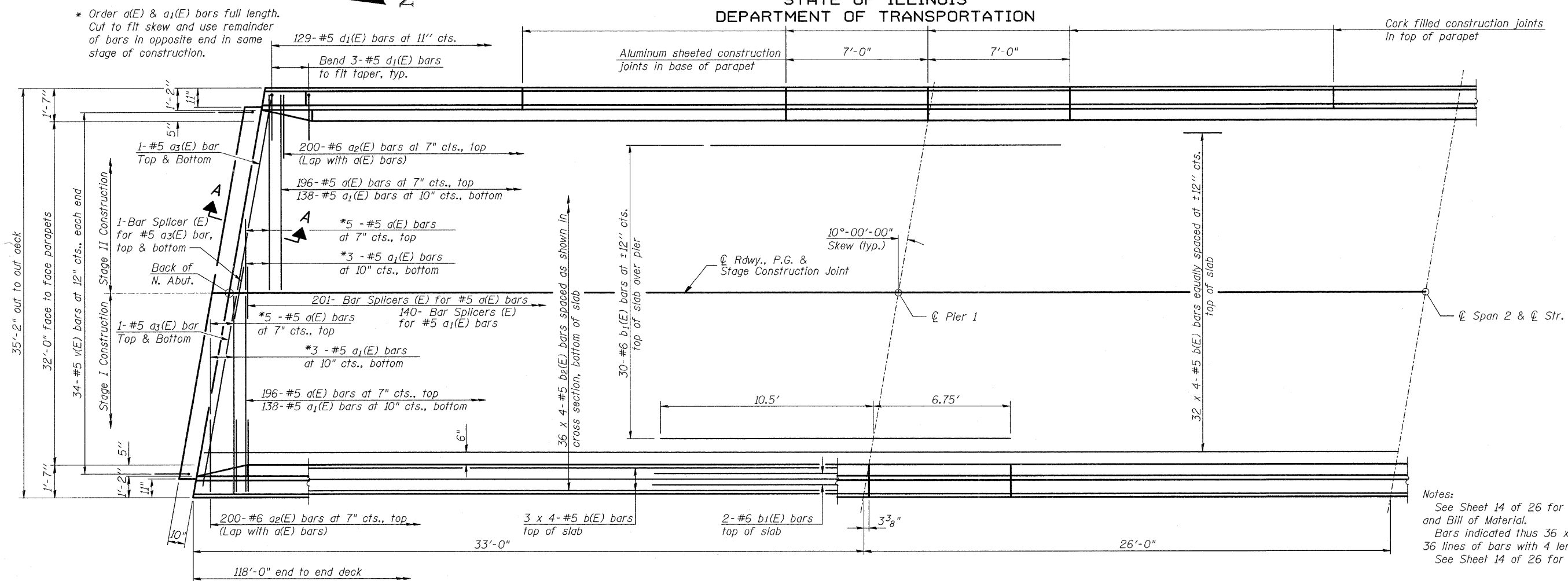
TOP OF SOUTH APPROACH
SLAB ELEVATIONS
IL ROUTE 242 OVER
SHELTON CREEK
STATION 470+76

DESIGNED - CJW
CHECKED - VDP
DRAWN - JLR
CHECKED - CJW

SHEET NO. 12	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	776	(102)B-1	HAMILTON	53	39
26 SHEETS	S.N. 033-0053		CONTRACT NO. 78016		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			



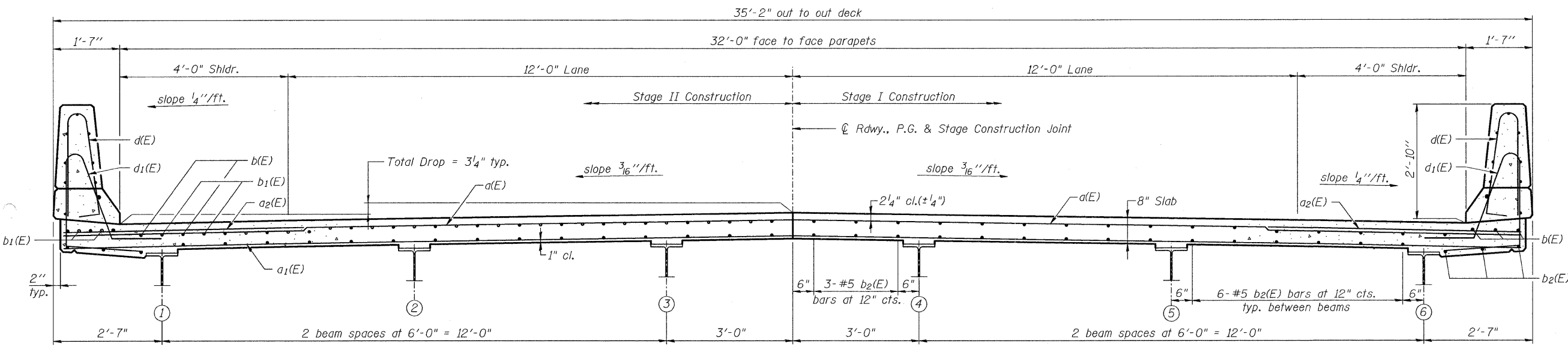
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PARTIAL PLAN

Notes:
See Sheet 14 of 26 for superstructure details and Bill of Material.
Bars indicated thus 36 x 4-#5 etc. indicates 36 lines of bars with 4 lengths per line.
See Sheet 14 of 26 for parapet reinforcement.

MINIMUM BAR LAP
(Slab)
#5 bar = 1'-8"



NEAR PIER

CROSS SECTION
(Looking South/Ahead Station)

NEAR MIDSPAN

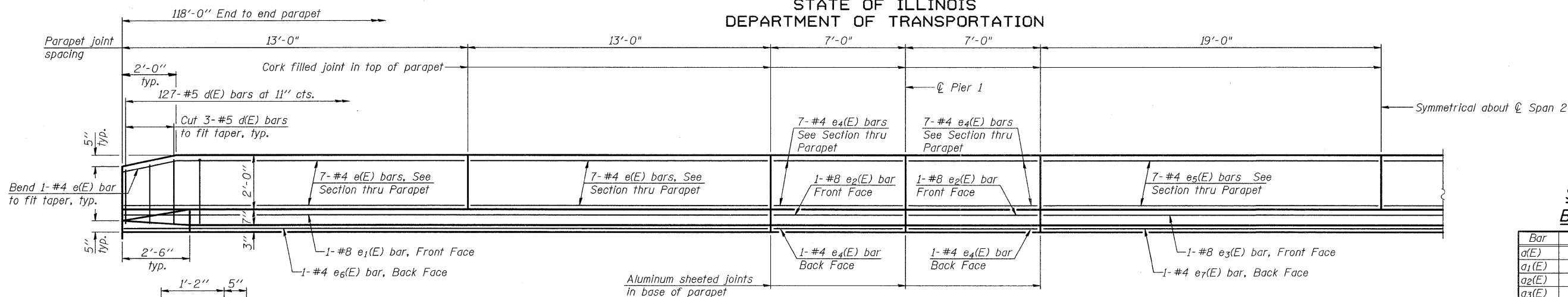
SUPERSTRUCTURE
IL ROUTE 242 OVER
SHELTON CREEK
STATION 470+76

DESIGNED - CJW
CHECKED - VDP
DRAWN - JLR
CHECKED - CJW

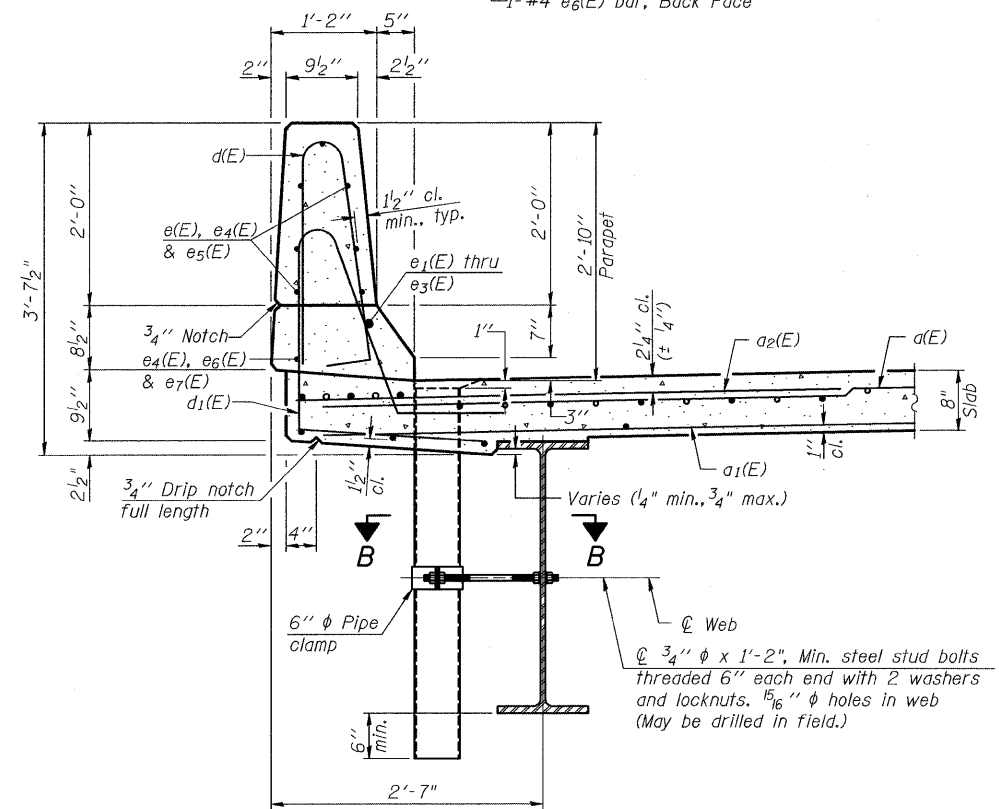
SHEET NO. 13	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	776	(102)B-1	HAMILTON	53	40
26 SHEETS	S.N. 033-0053		CONTRACT NO. 78016		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		



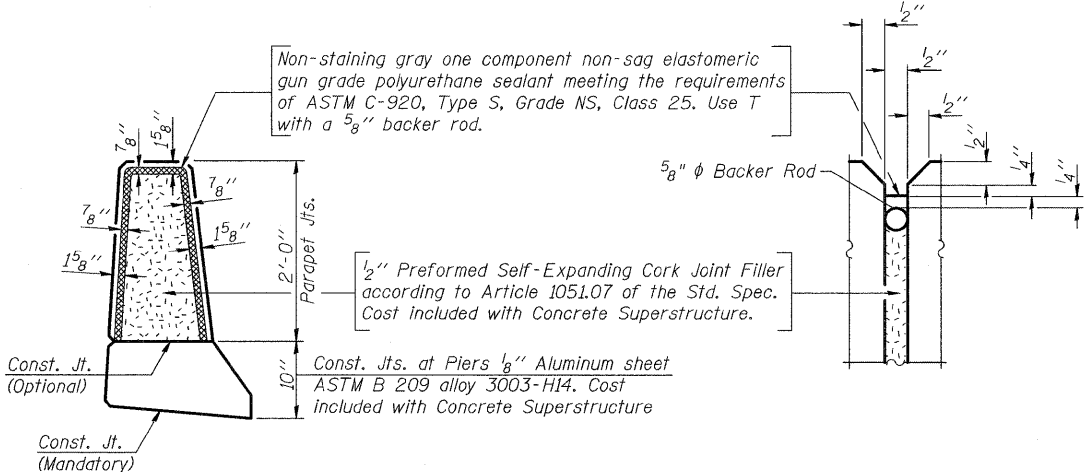
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



INSIDE ELEVATION OF PARAPET



SECTION THRU PARAPET



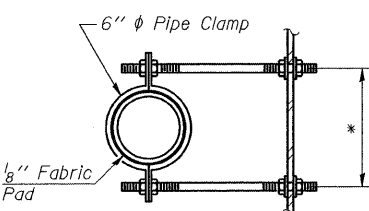
PARAPET JOINT DETAILS

Notes:
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 Steel Structures Painting Council's 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. Drains shall be located clear of all diaphragms.

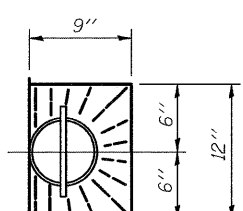
SUPERSTRUCTURE
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	402	#5	17'-3"	—
a1(E)	282	#5	17'-3"	—
a2(E)	400	#6	6'-0"	—
a3(E)	8	#5	17'-6"	—
b(E)	152	#5	30'-9"	—
b1(E)	68	#6	17'-3"	—
b2(E)	144	#5	30'-9"	—
d(E)	254	#5	5'-7"	⌒
d1(E)	258	#5	7'-5"	⌒
e(E)	56	#4	12'-8"	—
e1(E)	4	#8	25'-8"	—
e2(E)	8	#8	6'-8"	—
e3(E)	2	#8	37'-8"	—
e4(E)	64	#4	6'-8"	—
e5(E)	28	#4	18'-8"	—
e6(E)	4	#4	25'-8"	—
e7(E)	2	#4	37'-8"	—
m(E)	8	#6	16'-7"	—
m1(E)	12	#6	17'-3"	—
m2(E)	24	#6	7'-7"	—
m3(E)	4	#6	2'-3"	—
m4(E)	8	#6	5'-9"	—
m5(E)	4	#6	2'-8"	—
s(E)	72	#5	5'-3"	⌒
s1(E)	72	#4	7'-8"	⌒
v(E)	68	#5	3'-4"	⌒
Reinforcement Bars, Epoxy Coated	Pound		34,513	
Concrete Superstructure	Cu. Yds.		149.3	
Bar Splicers	Each		429	

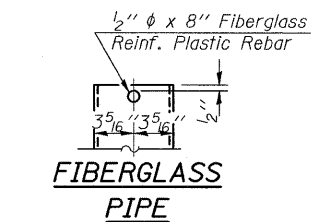
For details of Bar Splicers, see sheet 24 of 26.



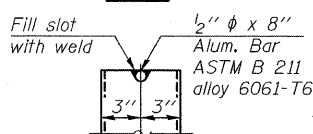
SECTION B-B
*Dimension as required by Pipe Clamp



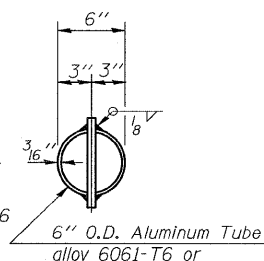
TOP PLAN



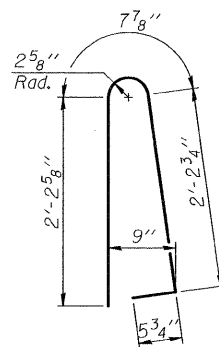
FIBERGLASS PIPE



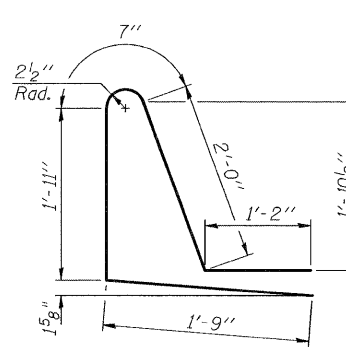
ALUMINUM TUBE



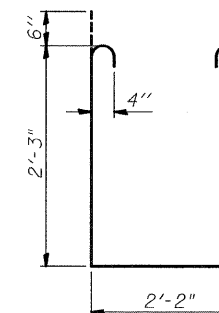
TOP PLAN (Showing Aluminum Tube)



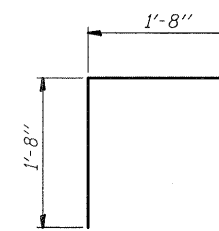
BAR d(E)



BAR d1(E)



BAR s(E)



BAR s1(E)



BAR v(E)

SUPERSTRUCTURE DETAILS
IL ROUTE 242 OVER
SHELTON CREEK
STATION 470+76

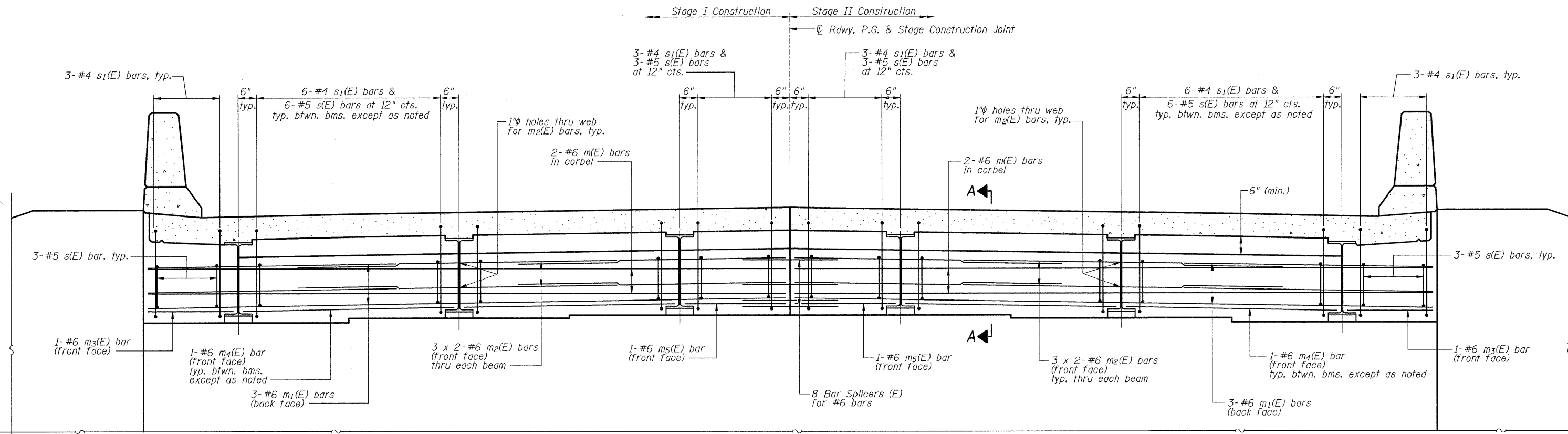
DESIGNED - CJW
CHECKED - VDP
DRAWN - JLR
CHECKED - CJW

S-I-D 9-3-07

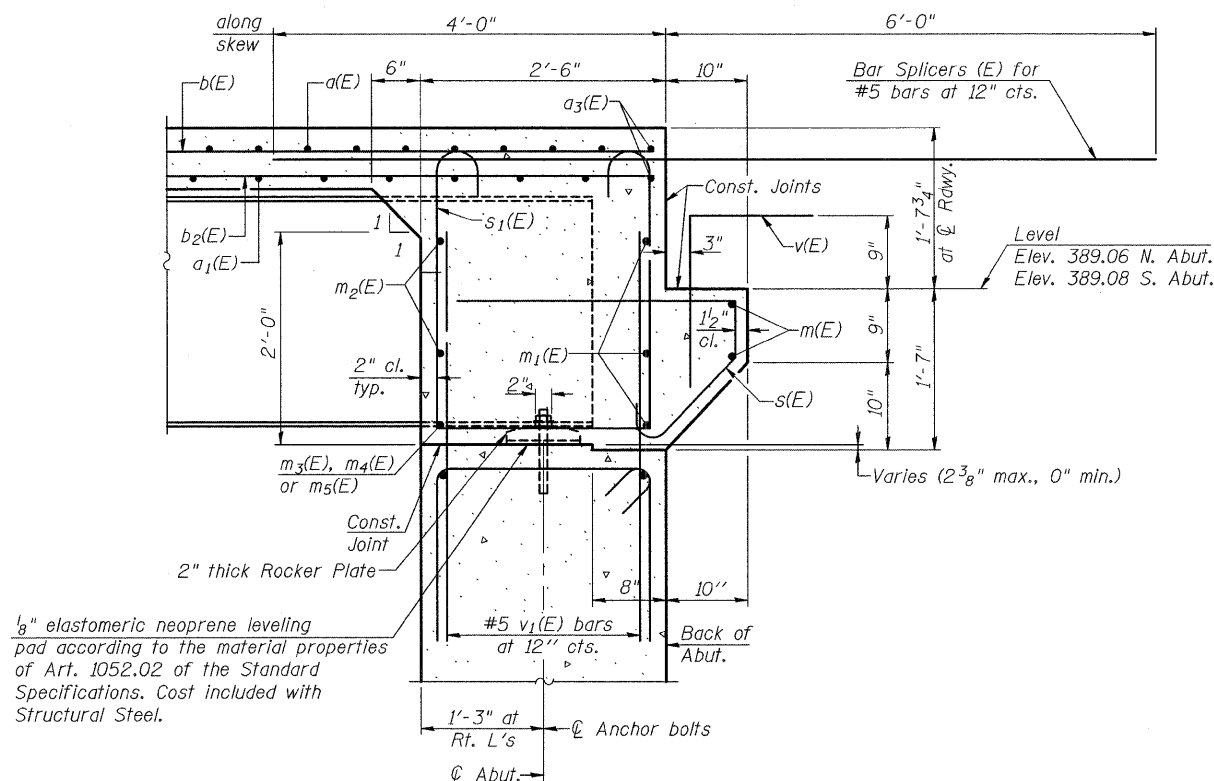
SHEET NO. 14 26 SHEETS	F.A.P. RTE. 776	SECTION (102)B-1	COUNTY HAMILTON	TOTAL SHEETS 53	SHEET NO. 41
	S.N. 033-0053		CONTRACT NO. 78016		
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					

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DEPARTMENT OF TRANSPORTATION



DIAPHRAGM ELEVATION AT ABUTMENT
(North Abutment shown, looking North. South Abutment similar.)



Notes:
Reinforcement bars in diaphragm are billed with superstructure on sheet 14 of 26.
Concrete in diaphragm is included with Concrete Superstructure on sheet 14 of 26.
For details of bars s(E) & s₁(E) see sheet 14 of 26.
The s(E) and s₁(E) bars shall be placed parallel to the structural steel beams. Spacing for these bars shall be at right angles to the beams.

MIN. BAR LAP
(Diaphragms)
#6 bar = 2'-9"

DESIGNED - NK
CHECKED - CJW
DRAWN - JLR
CHECKED - CJW

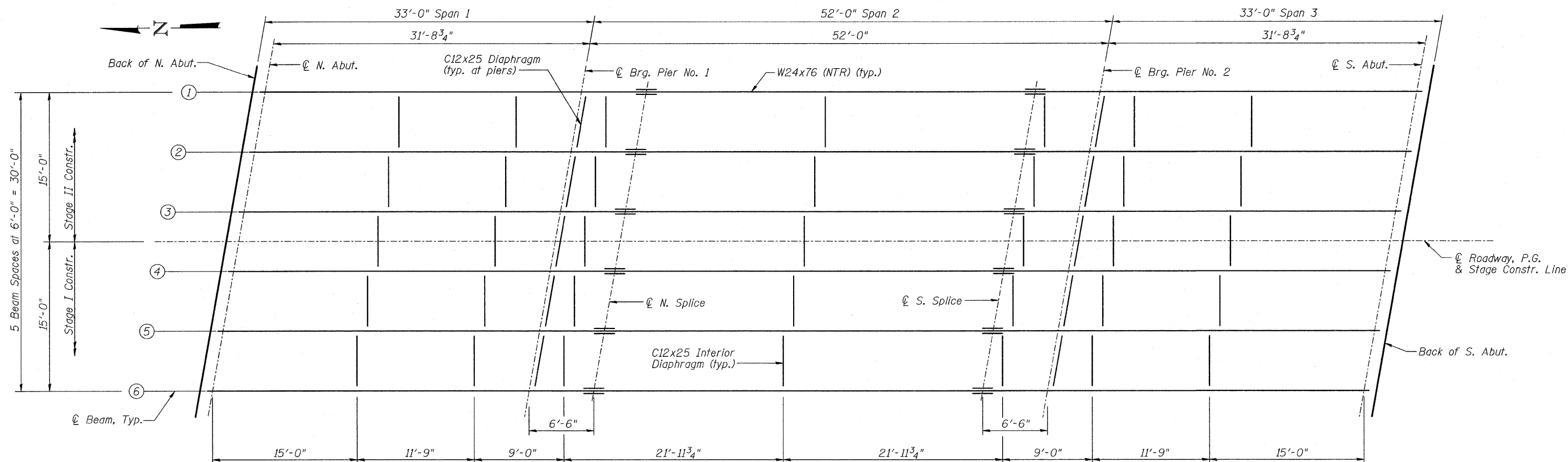
SECTION A-A
Dimensions at right angles to abutment, except as shown.

DIAPHRAGM DETAILS
IL ROUTE 242 OVER
SHELTON CREEK
STATION 470+76

SHEET NO. 15	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	776	(102)B-1	HAMILTON	53	42
26 SHEETS	S.N. 033-0053		CONTRACT NO. 78016		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



FRAMING PLAN

INTERIOR GIRDER MOMENT TABLE			
	0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 or Pier 2	0.5 Sp. 2
I_s	(in ⁴)	2100	2100
$I_c(n)$	(in ⁴)	6658	6658
$I_c(3n)$	(in ⁴)	4931	4931
S_s	(in ³)	176	176
$S_c(n)$	(in ³)	280.9	280.9
$S_c(3n)$	(in ³)	253.8	253.8
Z	(in ³)	-	-
$DC1$	(k/')	0.71	0.71
M_{DC1}	(k)	30	99
$DC2$	(k/')	0.15	0.15
M_{DC2}	(k)	4	22
DW	(k/')	0.27	0.27
M_{DW}	(k)	7	39
M_{LL+IM}	(k)	282	346
M_u (Strength I)	(k)	547	815
$\phi_r M_n, \phi_r M_{nc}$	(k)	1492	1420
f_s DC1	(ksi)	2.4	8.0
f_s DC2	(ksi)	0.2	1.2
f_s DW	(ksi)	0.5	2.6
f_s 1.3(LL+IM)	(ksi)	15.7	19.2
f_s (Service II)	(ksi)	18.2	28.9
f_s (Total)(Strength I)	(ksi)	13.8	35.6
V_r	(k)	13.6	17.7

- I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) 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-Strength I, and Service II) 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-Strength I, and Service II) due to long-term composite (superimposed) dead loads (in⁴ and in³).
- Z : Plastic Section Modulus of the steel section in non-composite areas. Omit line in Moment Table if not used in design calculations (in³).
- $DC1$: Un-factored non-composite dead load (kips/ft.).
- M_{DC1} : Un-factored moment due to non-composite dead load (kip-ft.).
- $DC2$: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).
- M_{DC2} : Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).
- DW : Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).
- M_{DW} : Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).
- M_{LL+IM} : Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
- M_u (Strength I): Factored design moment (kip-ft.).
 $1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{LL+IM}$
- $\phi_r M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 (kip-ft.).
- $\phi_r M_{nc}$: Compact non-composite negative moment capacity computed according to Article A6.1.1 (kip-ft.).
- f_s (Service II): Sum of stresses as computed from the moments below (ksi).
 $M_{DC1} + M_{DC2} + M_{DW} + 1.3 M_{LL+IM}$
- f_s (Total)(Strength I): Sum of stresses as computed from the moments below on non-compact section (ksi).
 $1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{LL+IM}$
- V_r : Maximum factored shear range in composite portion of span computed according to Article 6.10.10.

Notes:

All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
 Diaphragms and connecting plates and angles shall be Grade 36.

DESIGNED - CJW
CHECKED - DRS
DRAWN - JLR
CHECKED - CJW

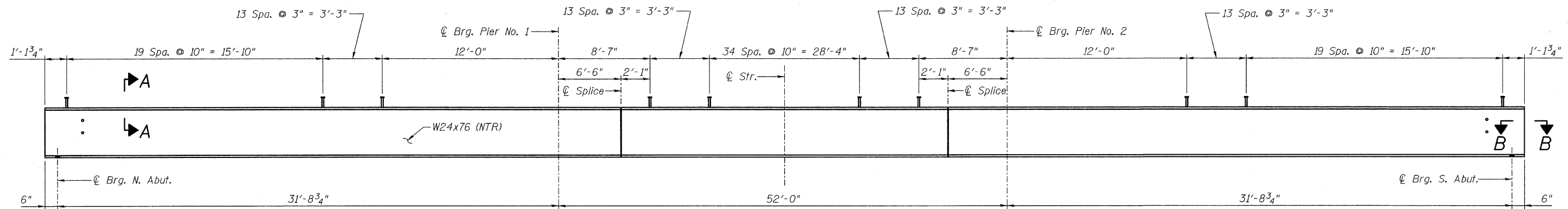
INTERIOR GIRDER REACTION TABLE			
HL93 Loading (Unfactored)			
		Abut.	Pier
R_{DC1}	(k)	7.8	33.1
R_{DC2}	(k)	1.6	7.0
R_{DW}	(k)	2.9	12.5
R_{LL+IM}	(k)	55.6	80.5
R_{Total}	(k)	67.9	133.1

FRAMING PLAN & DESIGN DATA
IL ROUTE 242 OVER
SHELTON CREEK
STATION 470+76

SHEET NO. 16	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	776	(102)B-1	HAMILTON	53	43
26 SHEETS	S.N. 033-0053		CONTRACT NO. 78016		
FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT					



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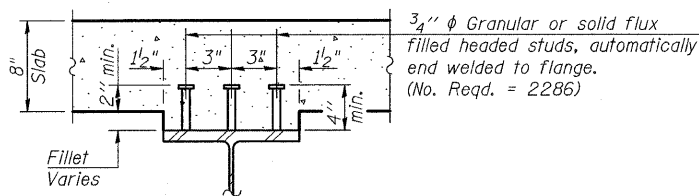


BEAM ELEVATION
(6 Required)

TOP OF BEAM ELEVATIONS

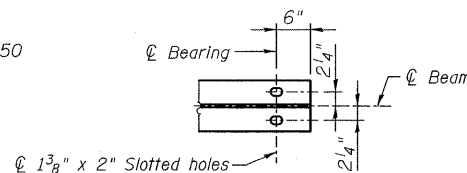
Location	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5	Beam 6
℄ Brg. at North Abut.	389.68	389.79	389.88	389.88	389.79	389.68
℄ Brg. at Pier 1	389.69	389.79	389.89	389.89	389.79	389.68
℄ North Splice	389.69	389.80	389.89	389.89	389.80	389.69
℄ South Splice	389.70	389.80	389.90	389.90	389.80	389.69
℄ Brg. at Pier 2	389.70	389.81	389.90	389.90	389.81	389.70
℄ Brg. at South Abut.	389.70	389.81	389.91	389.91	389.81	389.70

Notes:
Top of Beam Elevations shown for fabrication only.



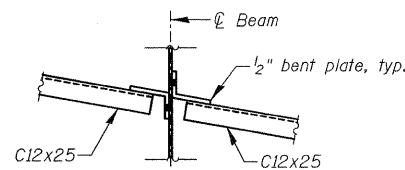
SECTION A-A

Notes:
Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
Structural steel shall be AASHTO M270 Grade 50 except as noted.

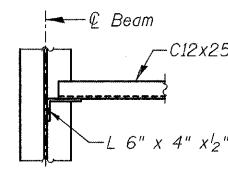


SECTION B-B

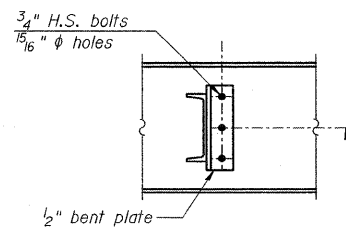
(S. Abut. end shown,
N. Abut. end similar)



SECTION C-C

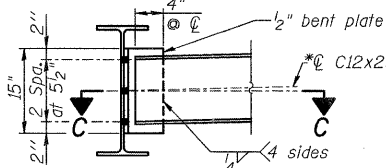


SECTION D-D

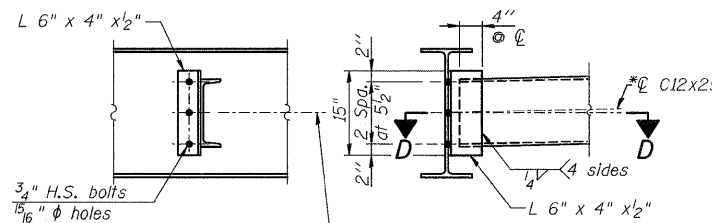


*℄ Beam web and
℄ C12x25 at end
of channel

INTERIOR DIAPHRAGM • PIERS



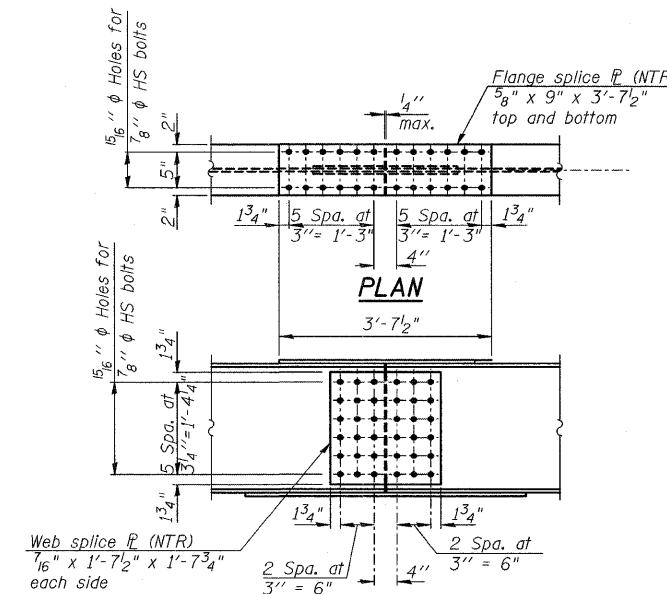
Note: Opposite side diaphragm
not shown for clarity.



*℄ Beam web and
℄ C12x25 at end
of channel

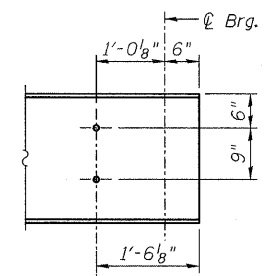
INTERIOR DIAPHRAGM

Note:
Two hardened washers required for each
set of oversized holes.
*Alternate channel C12x30 is permitted to facilitate
material acquisition. Calculated weight of
structural steel is based on the lighter section.
The alternate, if utilized, shall be provided at
no additional cost to the Department.
See sheet 16 of 26 for location of diaphragms.



**ELEVATION
SPLICE DETAIL**

(12 Required)



END OF GIRDER ELEVATION

(S. Abut. end shown,
N. Abut. end similar)

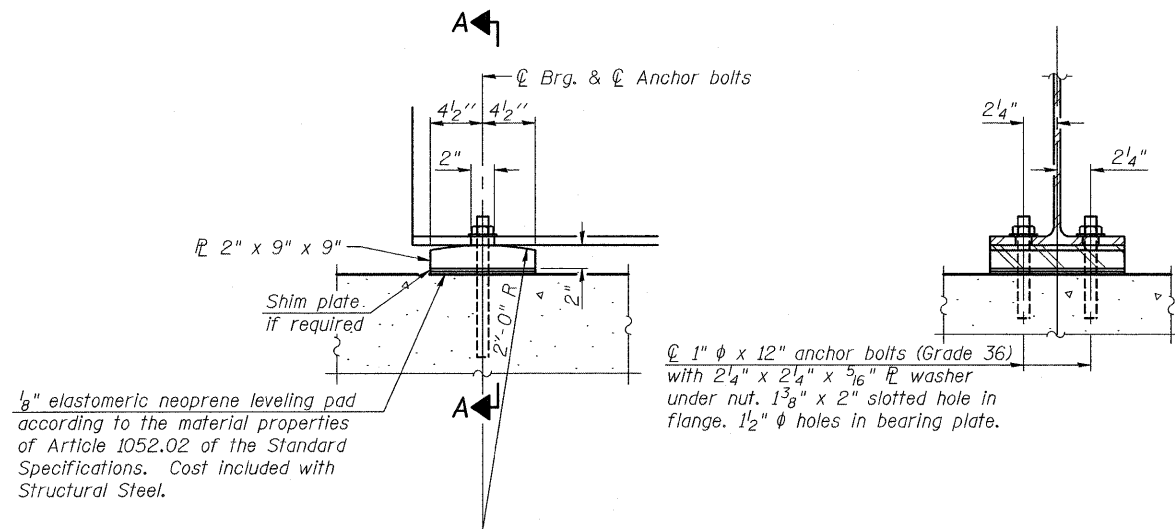
**BEAM DETAILS
IL ROUTE 242 OVER
SHELTON CREEK
STATION 470+76**

DESIGNED - CJW
CHECKED - MJC/DDB
DRAWN - JLR
CHECKED - CJW

SHEET NO. 17 26 SHEETS	F.A.P. RTE. 776	SECTION (102)B-1	COUNTY HAMILTON	TOTAL SHEETS 53	SHEET NO. 44
	S.N. 033-0053		CONTRACT NO. 78016		
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					

JACOBS

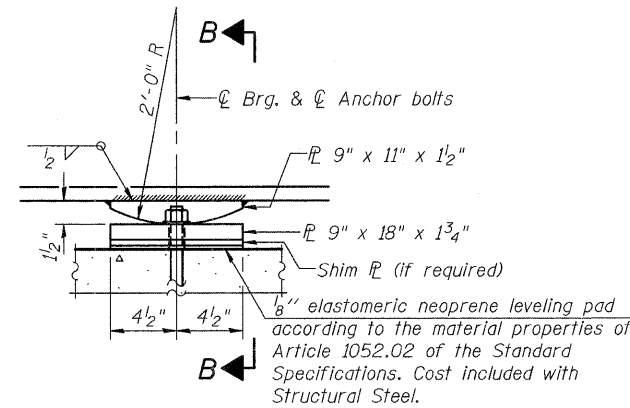
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION

SECTION A-A

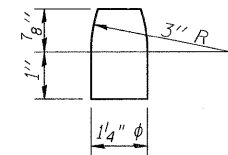
FIXED BEARING AT ABUTMENT
(12 Required)



ELEVATION

SECTION B-B

FIXED BEARING AT PIER
(12 Required)



PINTLE
(24 Required)

Notes:

- Bearing plates and pintles shall be AASHTO M270 Grade 50.
- 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 either be 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.
- Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

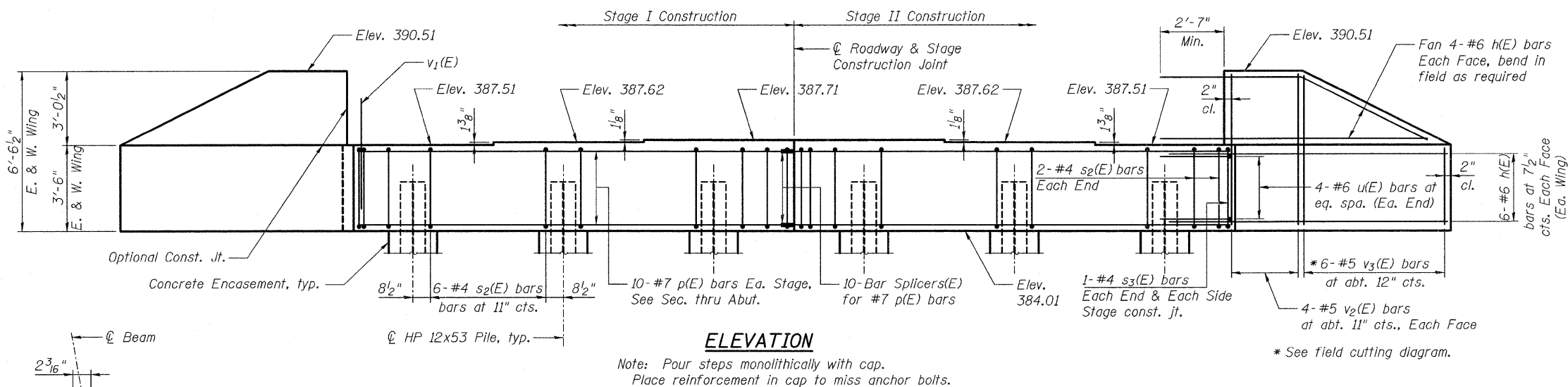
DESIGNED - CJW
CHECKED - DDB
DRAWN - JLR
CHECKED - CJW

BEARING DETAILS
IL ROUTE 242 OVER
SHELTON CREEK
STATION 470+76

SHEET NO. 18	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	776	(102)B-1	HAMILTON	53	45
26 SHEETS	S.N. 033-0053		CONTRACT NO. 78016		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

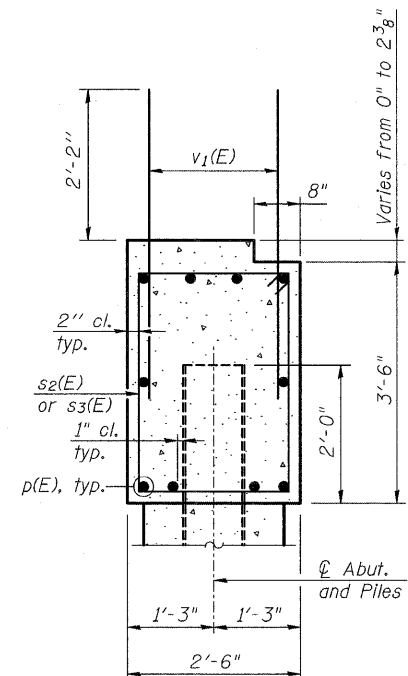
JACOBS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

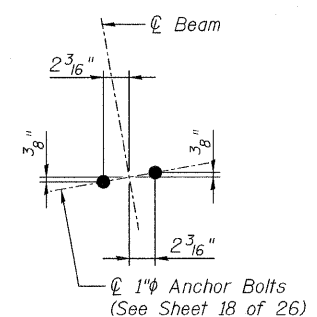


ELEVATION

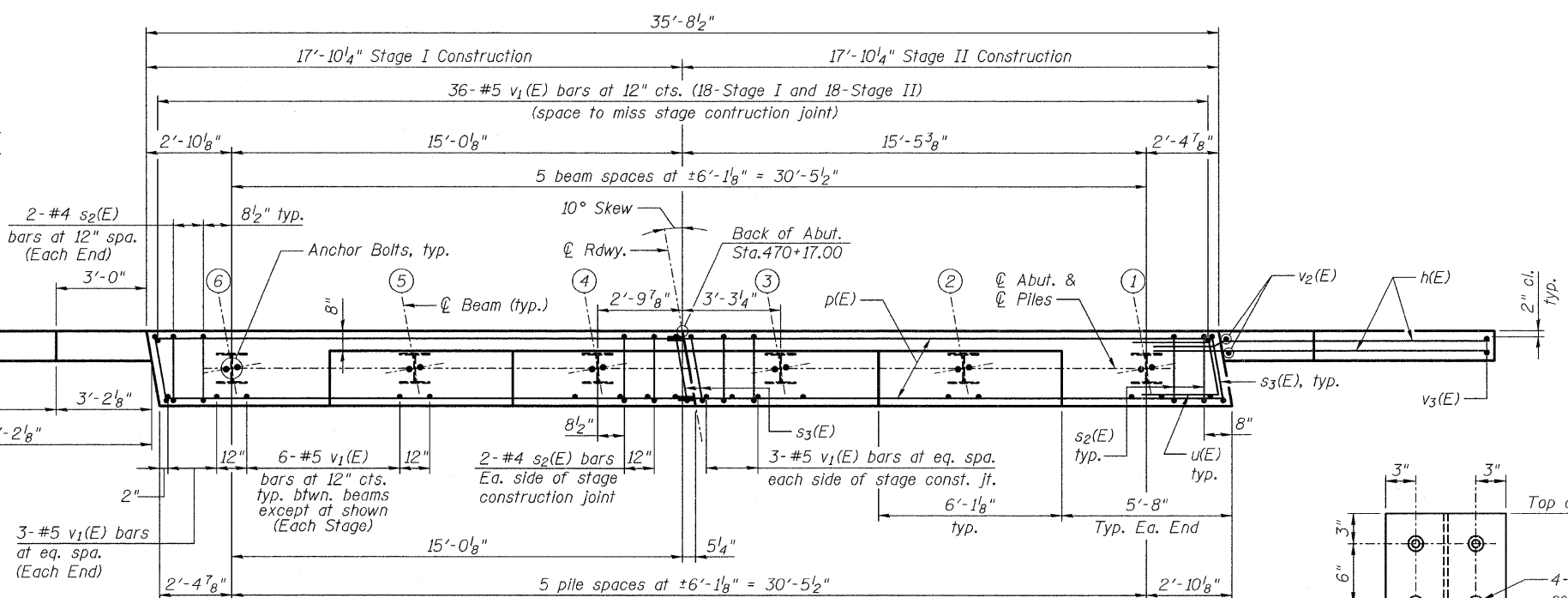
Note: Pour steps monolithically with cap.
Place reinforcement in cap to miss anchor bolts.



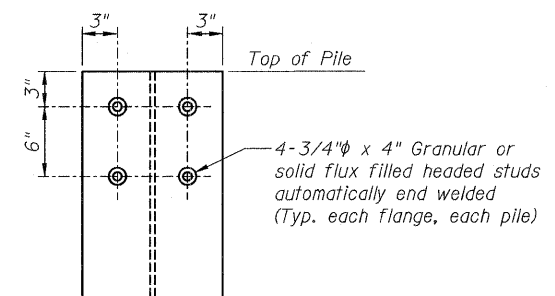
SEC. THRU ABUT.



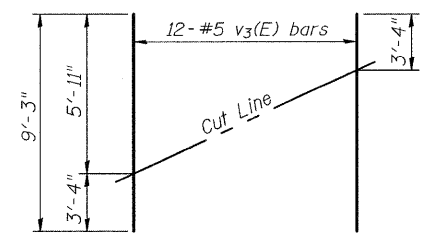
ANCHOR BOLT LAYOUT



PLAN

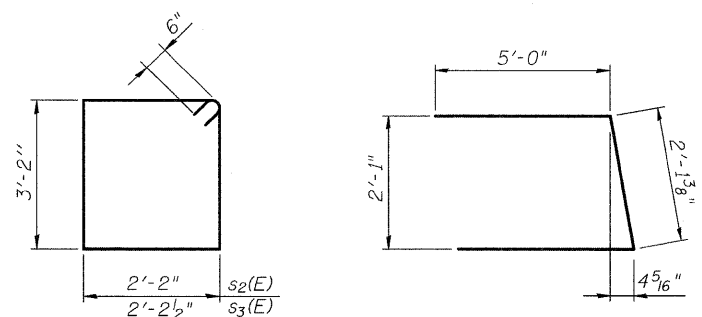


SEISMIC ANCHORAGE FOR PILES



FIELD CUTTING DIAGRAM

Order v3(E) full length. Cut as shown and use remainder of bars in opposite face.



BARS s2(E) & s3(E)

BAR u(E)

PILE DATA

Type: Steel HP 12x53
Nominal Required Bearing: 419 kips
Factored Resistance Available: 209 kips
Est. Length: 56 ft
No. Production Piles: 5
No. Test Piles: 1

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	40	#6	12'-1"	—
p(E)	20	#7	17'-7"	—
s2(E)	32	#4	11'-8"	□
s3(E)	4	#4	11'-9"	□
u(E)	8	#6	12'-1"	⌒
v1(E)	72	#5	4'-4"	—
v2(E)	16	#5	6'-3"	—
v3(E)	12	#5	9'-3"	—
Structure Excavation	Cu. Yd.		76.7	
Concrete Structures	Cu. Yd.		15.5	
Stud Shear Connectors	Each		48	
Reinforcement Bars, Epoxy Coated	Pound		2420	
Bar Splicers	Each		10	
Furnishing Steel Piles, HP 12x53	Foot		280	
Driving Piles	Foot		280	
Test Pile Steel HP 12x53	Each		1	
Pile Shoes	Each		6	
Concrete Encasement	Cu. Yd.		2.1	

For details of Bar Splicers, see sheet 24 of 26.
For details of piles and Concrete Encasement, see sheet 23 of 26.

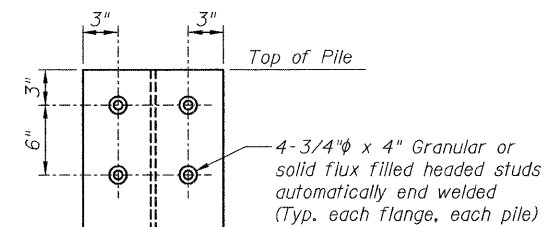
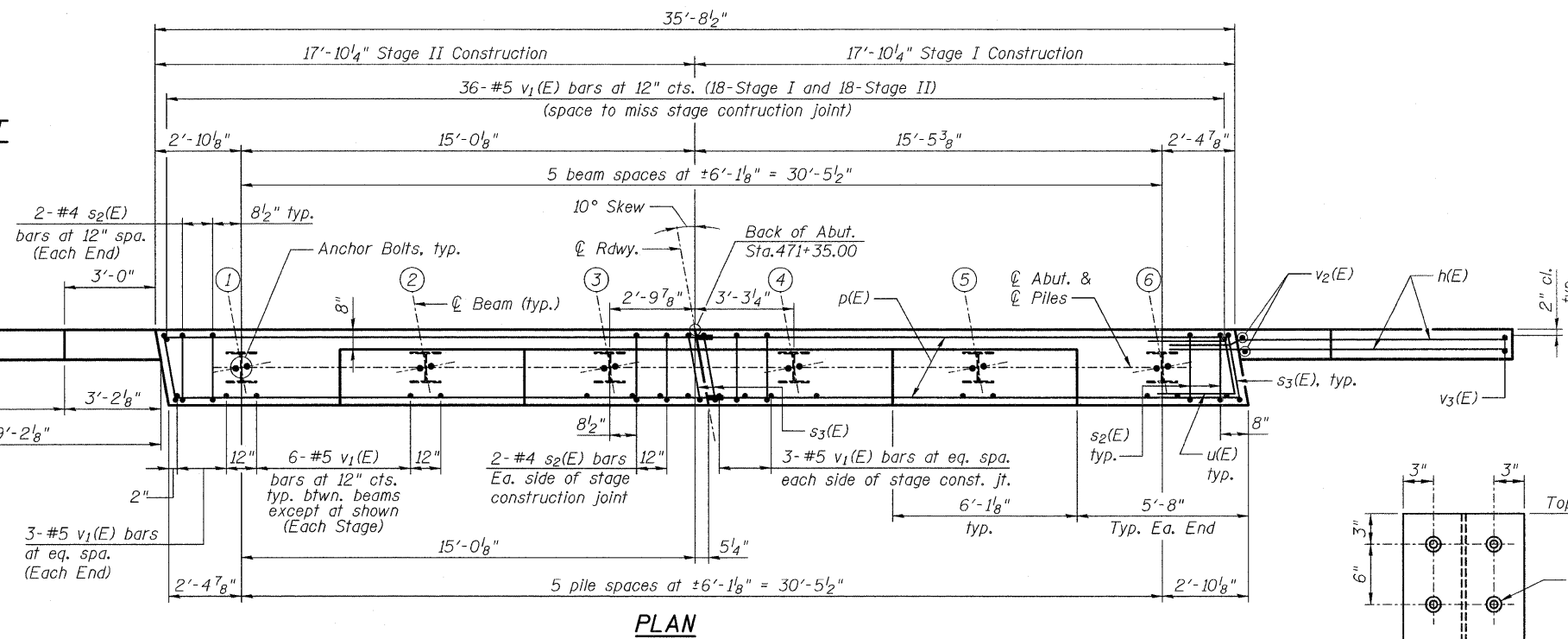
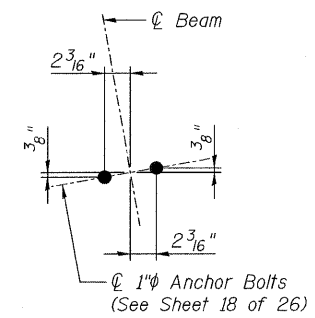
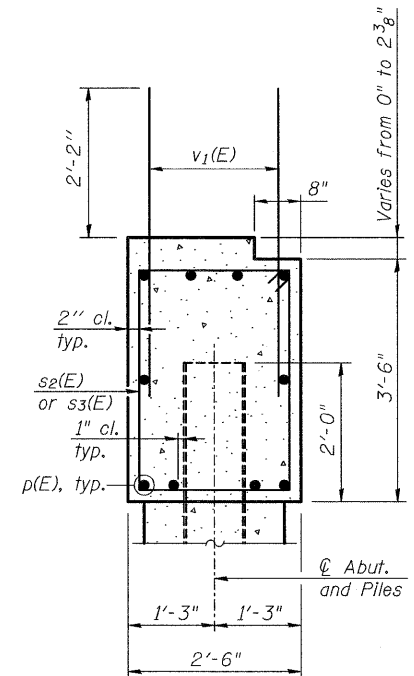
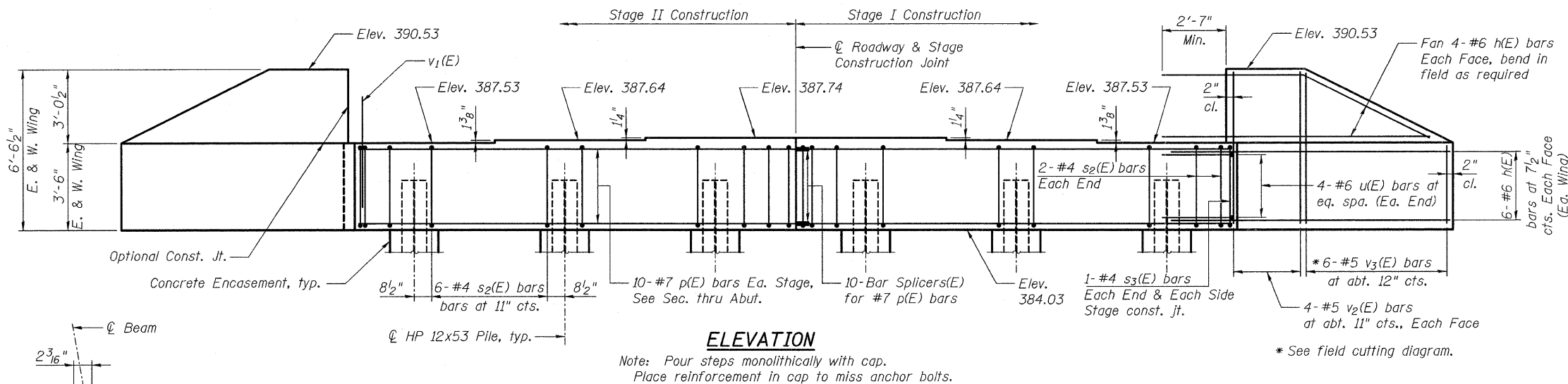
**NORTH ABUTMENT DETAILS
IL ROUTE 242 OVER
SHELTON CREEK
STATION 470+76**

DESIGNED -	NK
CHECKED -	CJW
DRAWN -	CLS
CHECKED -	CJW

SHEET NO. 19 26 SHEETS	F.A.P. RTE. 776	SECTION (102)B-1	COUNTY HAMILTON	TOTAL SHEETS 53	SHEET NO. 46
	S.N. 033-0053		CONTRACT NO. 78016		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



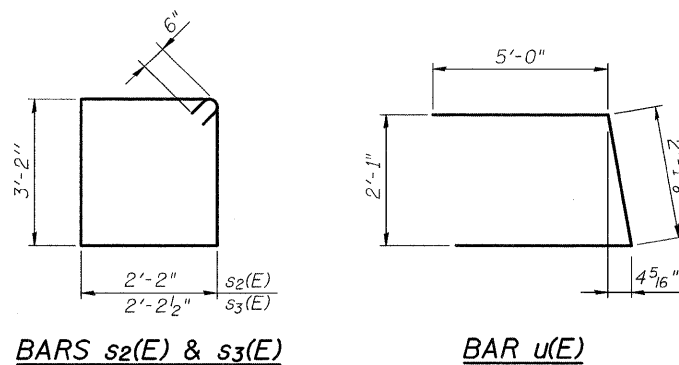
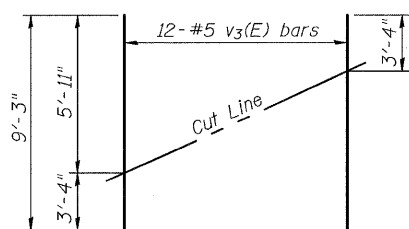
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	40	#6	12'-1"	—
p(E)	20	#7	17'-7"	—
s ₂ (E)	32	#4	11'-8"	□
s ₃ (E)	4	#4	11'-9"	□
u(E)	8	#6	12'-1"	∩
v ₁ (E)	72	#5	4'-4"	—
v ₂ (E)	16	#5	6'-3"	—
v ₃ (E)	12	#5	9'-3"	—
Structure Excavation			Cu. Yd.	76.7
Concrete Structures			Cu. Yd.	15.5
Stud Shear Connectors			Each	48
Reinforcement Bars, Epoxy Coated			Pound	2,420
Bar Splicers			Each	10
Furnishing Steel Piles, HP 12x53			Foot	280
Driving Piles			Foot	280
Test Pile Steel HP 12x53			Each	1
Pile Shoes			Each	6
Concrete Encasement			Cu. Yd.	2.1

For details of Bar Splicers, see sheet 24 of 26.
For details of piles and Concrete Encasement, see sheet 23 of 26.

**SOUTH ABUTMENT DETAILS
IL ROUTE 242 OVER
SHELTON CREEK
STATION 470+76**

DESIGNED -	NK
CHECKED -	CJW
DRAWN -	CLS
CHECKED -	CJW



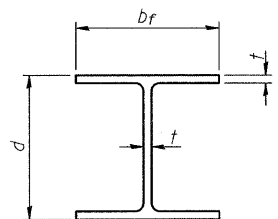
PILE DATA

Type: Steel HP 12x53
Nominal Required Bearing: 419 kips
Factored Resistance Available: 209 kips
Est. Length: 56 ft
No. Production Piles: 5
No. Test Piles: 1

SHEET NO. 20 26 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	776	(102)B-1	HAMILTON	53	47
S.N. 033-0053			CONTRACT NO. 78016		
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					

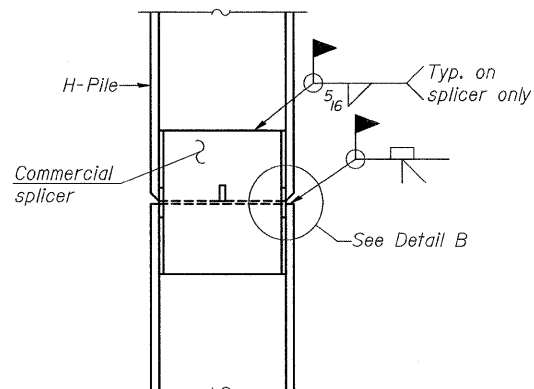


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

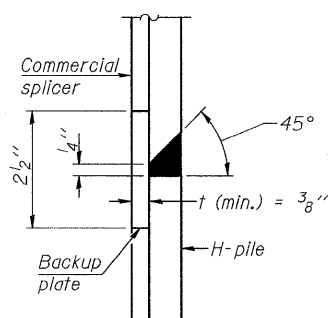


STEEL PILE TABLE

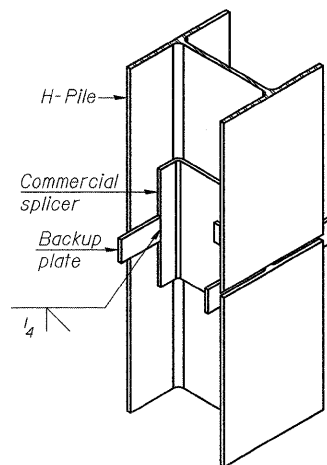
Designation	Depth d	Flange width b _f	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"



ELEVATION

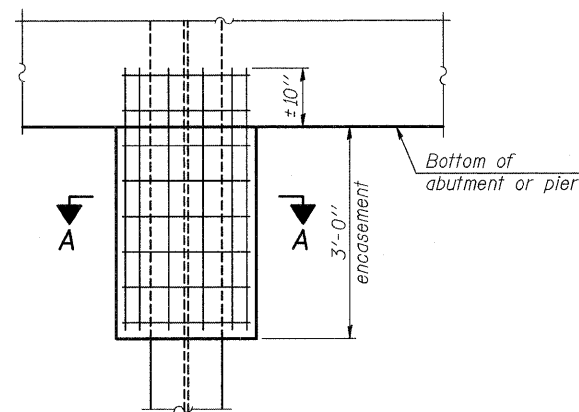


DETAIL "B"

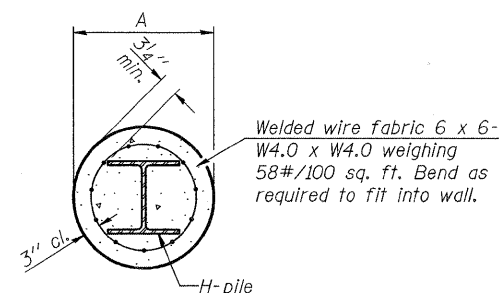


ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



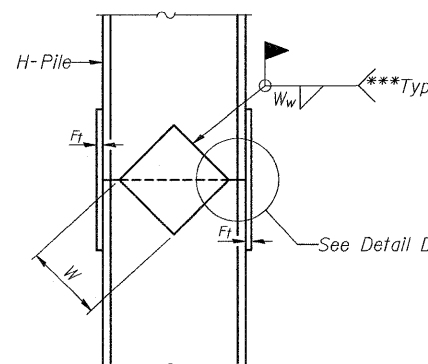
ELEVATION



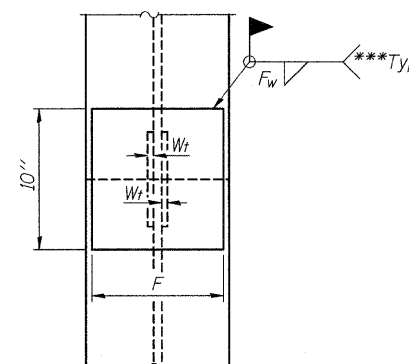
Note:
Forms for encasement may be omitted when soil conditions permit.
Cost of furnishing and installing welded wire fabric is included in the cost unit price for Concrete Encasement.

SECTION A-A

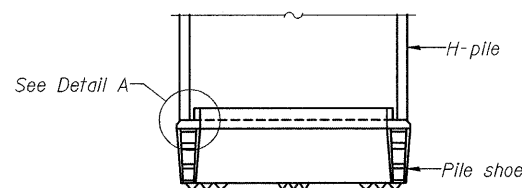
PILE ENCASUREMENT



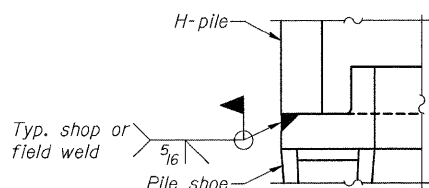
ELEVATION



END VIEW

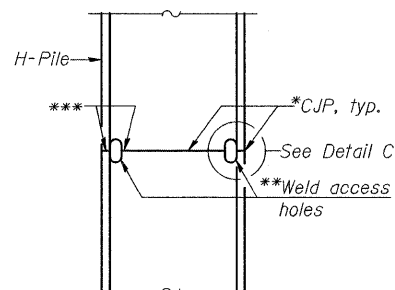


ELEVATION

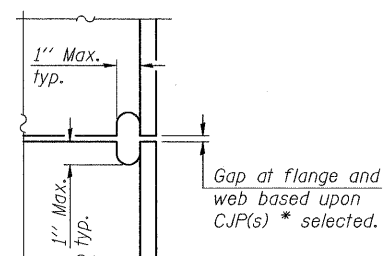


DETAIL A

H-PILE SHOE ATTACHMENT

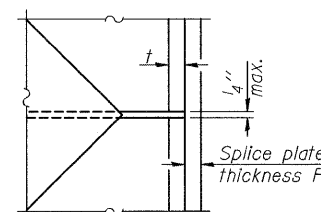


ELEVATION



DETAIL C

COMPLETE PENETRATION WELD SPLICE



DETAIL D

WELDED PLATE FIELD SPLICE

Designation	F	F _t	F _w	W	W _t	W _w
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5 1/2"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5 1/2"	1/2"
x89	12 1/2"	3/4"	1/16"	7 3/4"	5 1/2"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5 1/2"	1/2"
HP 12x84	10"	7/8"	1/16"	6 1/2"	5 1/2"	1/2"
x74	10"	7/8"	1/16"	6 1/2"	5 1/2"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

DESIGNED - CJW
CHECKED - CLS
DRAWN - JLR
CHECKED - CJW

*Use joint conforming to Figure 3.4 in AWS D1.1, Structure Welding Code - Steel.

**Preparation per Fig. 5.2 in AWS D1.1, Structure Welding Code - Steel.

***Interrupt welds 1/4" from end of each pile.

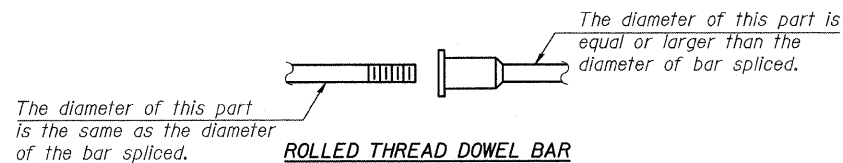
Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.

SHEET NO. 23 26 SHEETS	F.A.P. RTE. 776	SECTION (102)B-1	COUNTY HAMILTON	TOTAL SHEETS 53	SHEET NO. 50
	S.N. 033-0053		CONTRACT NO. 78016		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

JACOBS

STEEL H-PILE DETAILS
IL ROUTE 242 OVER
SHELTON CREEK
STATION 470+76

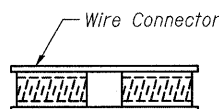
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ROLLED THREAD DOWEL BAR



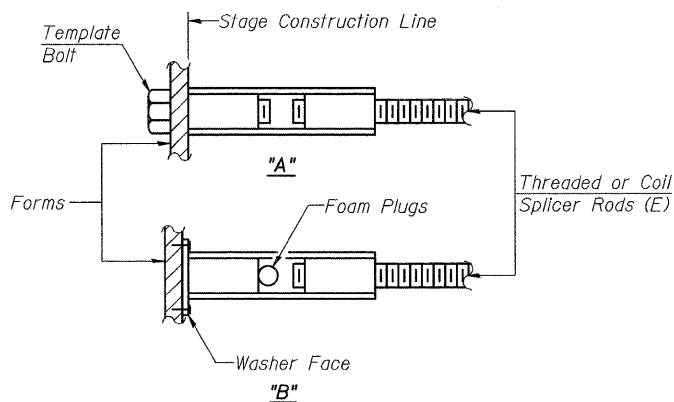
** ONE PIECE



WELDED SECTIONS

BAR SPLICER ASSEMBLY ALTERNATIVES

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



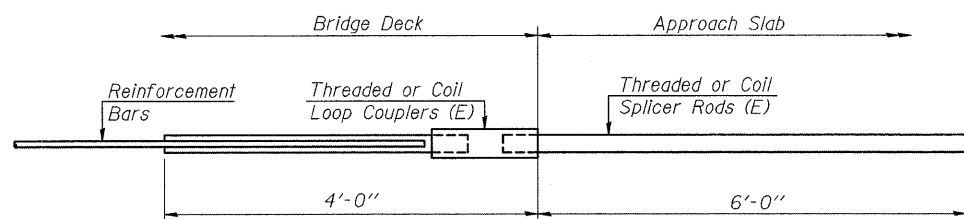
INSTALLATION AND SETTING METHODS

"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.

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:

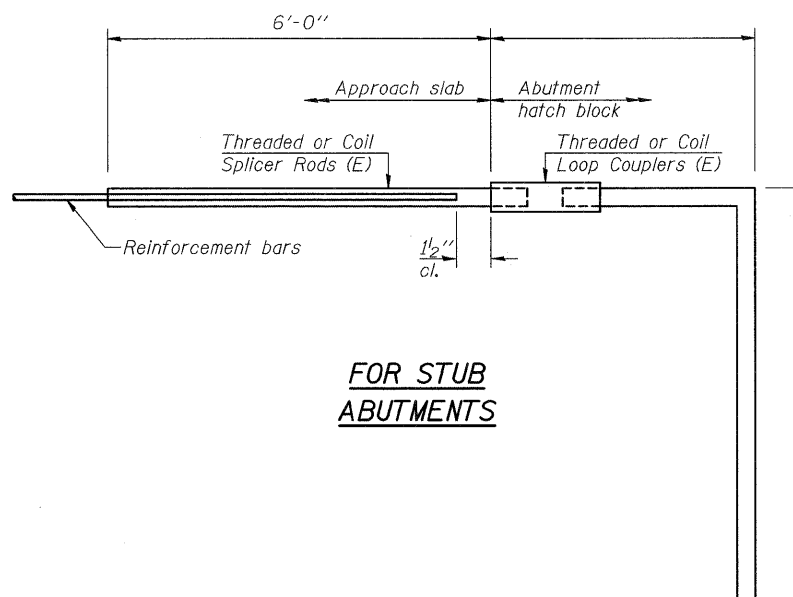
- ① Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_t$
 - ② Minimum *Pull-out Strength (Tension in kips) = $0.66 \times f_y \times A_t$
- Where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

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



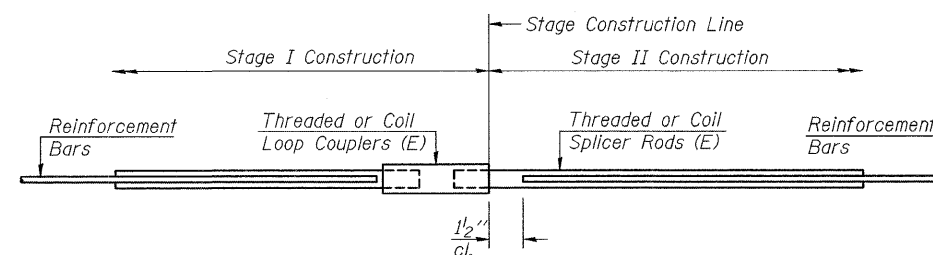
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required = 68



FOR STUB ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required = 0



STANDARD

Bar Size	No. Assemblies Required	Location
#5	345	Slab
#6	16	Slab
#7	10	N. Abut.
#7	10	S. Abut.
#5	26	Pier 1
#5**	48	Pier 1
#7	10	Pier 1
#5	26	Pier 2
#5**	48	Pier 2
#7	10	Pier 2

** Mechanical Splice

**BAR SPLICER ASSEMBLY DETAILS
IL ROUTE 242 OVER
SHELTON CREEK
STATION 470+76**

DESIGNED - NK
CHECKED - CJW
DRAWN - JLR
CHECKED - CJW

BSD-1

11-1-06

JACOBS

SHEET NO. 24	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	776	(102)B-1	HAMILTON	53	51
26 SHEETS	S.N. 033-0053		CONTRACT NO. 78016		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

