11-16-07 Letting, Item 022

F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
885	(107A)B-1	JOHNSON	38	1

CONTRACT NO. 98776

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED HIGHWAY PLANS

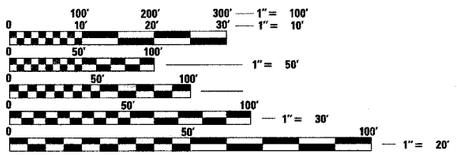
F.A.P. 885 (ILLINOIS 146)
SECTION (107A)B-1
PROJECT NO. ACBRF-0885(036)
JOHNSON COUNTY
C-99-064-02
STRUCTURE REPLACEMENT OVER BUCK RUN CREEK

FOR INDEX OF SHEETS, SEE SHEET NO. 2
FOR SUMMARY OF QUANTITIES, SEE SHEETS NO. 3 AND 4

D-99-036-03

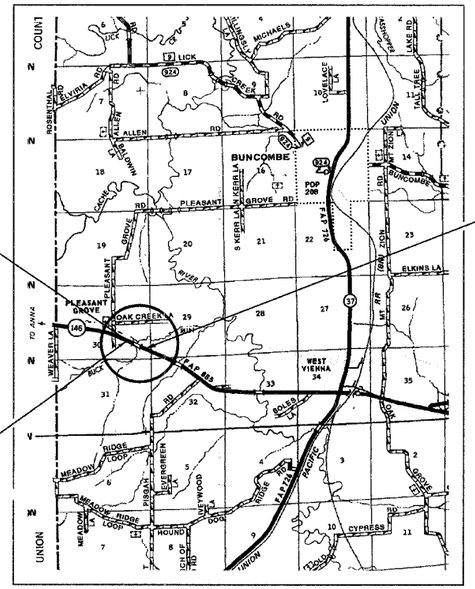
LOCATION OF SECTION INDICATED THUS: –

TRAFFIC DATA
2006 ADT = 2420
20% TRUCKS
POSTED SPEED 55 MPH



PROPOSED BRIDGE
OVER BUCK RUN CREEK (1.2 MILES EAST OF JOHNSON/UNION COUNTY LINE)
STRUCTURE NO. 044-0059
SINGLE SPAN 48" WEB PLATE GIRDER, INTEGRAL ABUTMENT BRIDGE;
92'-0" BK TO BK ABUTMENTS; 36' BRIDGE CLEAR WIDTH; 10° SKEW
CL STRUCTURE STA 628+25

PROPOSED PROJECT BEGINS
STA 625+30



PROPOSED PROJECT ENDS
STA 631+20

N

9

ROADWAY LENGTH = 498 FT
BRIDGE LENGTH = 92 FT

NET LENGTH OF PROJECT = 590 FT
GROSS LENGTH OF PROJECT = 590 FT

ELVIRA 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 WEBSITE: WWW.JULIE1CALL.COM

CONTRACT NO. 98776

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Aug 9 20 07
Mary C Ramos
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

October 12, 20 07
Eva E. Hanna P.E.
Interim ENGINEER OF DESIGN AND ENVIRONMENT

October 12, 20 07
Milton R. Sees, P.E.
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

PLOT DATE = 7/30/2007
FILE NAME = c:\pw_projects\d903803\b44-20113.dgn
PLOT SCALE = 150.0000 ' / IN.
USER NAME = hallsaadka

PROJECT ENGINEER: DAVID PICHE
DESIGNER: MIKE STEPHENSON

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
885	(107A)B-1	JOHNSON	38	2
STA. 624+80	TO STA. 631+60			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 98776

GENERAL NOTES

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

FACTORS USED FOR QUANTITY CALCULATIONS ARE AS FOLLOWS:

ALL HOT MIX ASPHALT:	2.016 TONS/CU. YD.
HOT MIX ASPHALT MATERIALS ON PAVEMENT:	0.09 GAL./SQ. YD.
AGGREGATE (PRIME COAT)	0.0015 TONS/SQ. YD.
ALL AGGREGATE:	2.05 TONS/CU. YD.
RIPRAP	1.50 TONS/CU YD

PLAN DIMENSIONS AND DETAILS RELATIVE TO THE EXISTING STRUCTURE HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT BE A CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN THE SCOPE OF THE WORK. THE CONTRACTOR, HOWEVER, WILL BE PAID FOR THE ACTUAL QUANTITY FURNISHED AT THE UNIT PRICE BID FOR THE WORK. CONSTRUCTION PLANS ARE AVAILABLE FOR REVIEW AT THE DISTRICT 9 OFFICE.

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

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

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

PROTECTIVE COAT SHALL BE APPLIED TO THE BRIDGE, THE BRIDGE APPROACH PAVEMENTS, AND THE BRIDGE APPROACH PAVEMENT CONNECTORS (PCC) SPECIAL IN ACCORDANCE WITH ARTICLE 503.19 OF THE STANDARD SPECIFICATIONS. THE PROTECTIVE COAT SHALL BE APPLIED REGARDLESS OF THE CURING METHOD USED. THE RATE OF APPLICATION FOR EACH COAT ON SAW CUT GROOVED AREAS SHALL BE 25 SQUARE YARDS PER GALLON OF MIXTURE.

REMOVAL OF EXISTING PRECAST CONCRETE BRIDGE SLABS (34 SQ YD) AND 10" PCC PAVEMENT (34 SQ YD) ARE INCLUDED IN THE QUANTITY FOR PAVEMENT REMOVAL.

ALL OBSTRUCTIONS WHICH ARE WITHIN THE CLEAR ZONE SHOWN ON THE TYPICAL SECTION, AND ARE NOT SHIELDED BY THE PROPOSED GUARDRAIL, SHALL BE REMOVED BETWEEN STA. 625+30 AND STA. 631+20. TYPICAL OBSTRUCTIONS ARE HEADWALLS, FOUNDATIONS, EXT. WHICH PROJECT (4 IN.) OR MORE ABOVE THE GROUNDLINE; AND TREES WHICH WILL MATURE TO A DIAMETER OF 4 IN OR GREATER.

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

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

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

THE QUANTITY OF SHORT TERM PAVEMENT MARKING SHOWN IN THE PLANS IS BASED ON ONE APPLICATION EACH FOR THE BINDER COURSE AND THE SURFACE COURSE.

THE QUANTITY OF TEMPORARY PAVEMENT MARKING SHOWN IN THE PLANS IS BASED ON ONE APPLICATION FOR THE SURFACE COURSE.

PRIOR TO PLACEMENT OF THE FINAL PAVEMENT MARKINGS THE RESIDENT ENGINEER SHOULD CONTACT THE BUREAU OF OPERATIONS AND ARRANGE FOR INSPECTION AND APPROVAL OF THE PAVEMENT MARKING LAYOUT.

STATIONING OF THE PROPOSED SURFACE SHALL BE REQUIRED. STAMP STATIONING EVERY 300 FEET ON ALTERNATING SIDES OF THE PAVEMENT AND AS DIRECTED BY THE ENGINEER. THE STATION SYMBOL STAMPS USED SHALL BE 5 1/2 " TALL AND OF A DESIGN APPROVED BY THE ENGINEER. THE STAMPS SHALL BE FURNISHED BY THE CONTRACTOR AND REMAIN HIS/HER PROPERTY.

COST OF REMOVING HOT MIX ASPHALT BASE COURSE WIDENING, 10" USED FOR STAGE I TRAFFIC IS INCLUDED IN "PAVED SHOULDER REMOVAL-SQ YD."

ATTAINMENT OF PROPER CROWN SHALL BE FULLY ACCOMPLISHED WITH THE HOT MIX ASPHALT BINDER COURSE.

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

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

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

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

"NARROW BRIDGE" SIGNS WITH ADVISORY TAGS "10 FT-0 IN" SHALL BE ERECTED BETWEEN "ROAD CONSTRUCTION AHEAD" AND THE "SIGNAL AHEAD" SIGNS FOR STAGE 1 TRAFFIC.

TRIM EDGES OF EXISTING HOT MIX ASPHALT SURFACE FLUSH WITH EXISTING PAVEMENT PRIOR TO CONSTRUCTING NEW BASE COURSE WIDENING.

THE HOT MIX ASPHALT BASE COURSE WIDENING, 10" CONSTRUCTED IN PRE-STAGE 1 MAY BE INCORPORATED INTO THE FINAL HOT MIX ASPHALT SHOULDERS, 8" DURING STAGE II CONSTRUCTION IF APPROVED BY THE ENGINEER. SUCH CHANGE WILL NOT BE A CAUSE FOR ADDITIONAL COMPENSATION, BUT THE CONTRACTOR WILL BE PAID FOR THE ACTUAL QUANTITY FURNISHED AT THE UNIT PRICE BID FOR THE WORK.

COMMITMENTS: NONE AS OF AUGUST 17, 2007. REFER TO COMMITMENT FILE FOR ANY COMMITMENTS AFTER THIS DATE.

HIGHWAY STANDARDS

000001-04	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
280001-03	TEMPORARY EROSION CONTROL SYSTEMS
420001-06	PAVEMENT JOINTS
420401-05	BRIDGE APPROACH PAVEMENT
421001-01	REINFORCEMENT FOR CONTINUOUSLY REINFORCED PCC PAVEMENT
482001-01	BITUMINOUS SHOULDER ADJACENT TO FLEXIBLE PAVEMENT
515001-02	NAME PLATE FOR BRIDGES
542401	METAL END SECTION FOR PIPE CULVERTS
609006-03	BRIDGE APPROACH PAVEMENT (DRAIN DETAIL)
630001-07	STEEL PLATE BEAM GUARDRAIL
630201-04	PCC/BITUMINOUS STABILIZATION AT STEEL PLATE BEAM GUARDRAIL
631031-06	TRAFFIC BARRIER TERMINAL, TYPE 6
635011-01	REFLECTOR MARKER & MOUNTING DETAILS
701006-02	OFF-ROAD OPERATIONS, 2L 2W, 4.5 m (15') TO 600 mm (24") AWAY, FOR SPEEDS ≥ 45 MPH
701201-02	LANE CLOSURE, 2L 2W, DAY ONLY, ON-ROAD TO 600 mm (24") OFF-ROAD, FOR SPEEDS ≥ 45 MPH
701301-02	LANE CLOSURE, 2L 2W, SHORT TIME OPERATIONS, FOR SPEEDS ≥ 45 MPH
701321-08	LANE CLOSURE, 2L, 2W, BRIDGE REPAIR WITH BARRIER
701326-02	LANE CLOSURE, 2L, 2W, PAVEMENT WIDENING, FOR SPEEDS ≥ 45 MPH
702001-06	TRAFFIC CONTROL DEVICES
704001-03	TEMPORARY CONCRETE BARRIER
780001-01	TYPICAL PAVEMENT MARKINGS

INDEX OF SHEETS

Prepared By: DISTRICT STUDIES & PLANS ENGINEER

Examined By: DISTRICT LAND ACQUISITION ENGINEER

Examined By: DISTRICT PROGRAM DEVELOPMENT ENGINEER

Examined By: DISTRICT OPERATIONS ENGINEER

Examined By: DISTRICT CONSTRUCTION ENGINEER

Examined By: DISTRICT MATERIALS ENGINEER

Examined By: DISTRICT PROJECT IMPLEMENTATION ENGINEER

Examined By: ASSISTANT REGIONAL ENGINEER

Approved By: DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

DATE Aug 9 2007

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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
885	(107A)B-1	JOHNSON	38	3
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

CONTRACT NO. 98776

SUMMARY OF QUANTITIES

RURAL - JOHNSON COUNTY
HBP FUNDING
80% FEDERAL; 20% STATE
CONSTRUCTION TYPE CODE X071-2A
SN 044-0059

CODE NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	2
20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	2
20200100	EARTH EXCAVATION	CU YD	95
20300100	CHANNEL EXCAVATION	CU YD	508
20400100	BORROW EXCAVATION	CU YD	1161
20700400	POROUS GRANULAR EMBANKMENT, SPECIAL	CU YD	229
25000350	SEEDING, CLASS 7	ACRE	0.4
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	64
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	48
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	48
25000700	AGRICULTURAL GROUND LIMESTONE	TON	0.8
25001010	SEEDING, CLASS 2 (MODIFIED)	ACRE	0.4
25100115	MULCH, METHOD 2	ACRE	0.6
25100630	EROSION CONTROL BLANKET	SQ YD	1224
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	40
28000400	PERIMETER EROSION BARRIER	FOOT	1152
28100107	STONE RIPRAP, CLASS A4	SQ YD	39
28100109	STONE RIPRAP, CLASS A5	SQ YD	974
28200200	FILTER FABRIC	SQ YD	1013
35600716	HOT-MIX ASPHALT BASE COURSE WIDENING, 10"	SQ YD	288
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	127
40600300	AGGREGATE (PRIME COAT)	TON	2
40600982	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	SQ YD	160
40600990	TEMPORARY RAMP	SQ YD	26
40603090	HOT - MIX ASPHALT BINDER COURSE, IL - 19.0, N90	TON	161
40603320	HOT - MIX ASPHALT SURFACE COURSE, MIX "C", N90	TON	103
42001165	BRIDGE APPROACH PAVEMENT	SQ YD	249
42001300	PROTECTIVE COAT	SQ YD	326
44000100	PAVEMENT REMOVAL	SQ YD	356
44001114	HOT-MIX ASPHALT SURFACE REMOVAL (ASBESTOS)	SQ YD	208
44004250	PAVED SHOULDER REMOVAL	SQ YD	124
48100700	AGGREGATE SHOULDERS, TYPE A, 8"	SQ YD	58
48203029	HOT - MIX ASPHALT SHOULDERS, 8"	SQ YD	566

RURAL - JOHNSON COUNTY
HBP FUNDING
80% FEDERAL; 20% STATE
CONSTRUCTION TYPE CODE X071-2A
SN 044-0059

CODE NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY
48203100	HOT - MIX ASPHALT SHOULDERS	TON	34
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU YD	261
50300100	FLOOR DRAINS	EACH	12
50300225	CONCRETE STRUCTURES	CU YD	29.8
50300255	CONCRETE SUPERSTRUCTURE	CU YD	141.4
50300260	BRIDGE DECK GROOVING	SQ YD	645
50300280	CONCRETE ENCASEMENT	CU YD	5.6
50300300	PROTECTIVE COAT	SQ YD	445
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1
50500505	STUD SHEAR CONNECTORS	EACH	1782
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	33800
50800515	BAR SPLICERS	EACH	421
51201600	FURNISHING STEEL PILES HP12X53	FOOT	632
51202305	DRIVING PILES	FOOT	632
51204650	PILE SHOES	EACH	16
51500100	NAME PLATES	EACH	1
52100520	ANCHOR BOLTS, 1"	EACH	24
54215547	METAL END SECTIONS 12"	EACH	2
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	111
60100945	PIPE DRAINS 12"	FOOT	44
60109580	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	128
60900240	TYPE C INLET BOX, STANDARD 609006	EACH	2
60900515	CONCRETE THRUST BLOCKS	EACH	2
* 63000000	STEEL PLATE BEAM GUARDRAIL, TYPE A	FOOT	375
* 63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	4
* 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1, SPECIAL (TANGENT)	EACH	3
63200310	GUARDRAIL REMOVAL	FOOT	484
66600105	FURNISHING AND ERECTING RIGHT OF WAY MARKERS	EACH	12
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	9
67100100	MOBILIZATION	L SUM	1

* SPECIALTY ITEMS

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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
885	(107A)B-1	JOHNSON	38	4
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 98776

SUMMARY OF QUANTITIES

		RURAL - JOHNSON COUNTY HBP FUNDING 80% FEDERAL; 20% STATE X071-2A SN 044-0059	
CODE NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY
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
70106700	TEMPORARY RUMBLE STRIP	EACH	18
70106800	CHANGEABLE MESSAGE SIGN	CAL MO	2
70300100	SHORT - TERM PAVEMENT MARKING	FOOT	116
70300220	TEMPORARY PAVEMENT MARKING - LINE 4"	FOOT	2800
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	972
70400100	TEMPORARY CONCRETE BARRIER	FOOT	425
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	375
* 78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	2800
* 78200405	GUARDRAIL MARKERS	EACH	14
* 78200500	BARRIER WALL MARKERS	EACH	6
* 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
78300100	PAVEMENT MARKING REMOVAL	SQ FT	553
78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	6
X0321430	BRIDGE APPROACH PAVEMENT CONNECTOR (PCC) SPECIAL	SQ YD	77
X0323988	TEMPORARY SOIL RETENTION SYSTEM	SQ FT	648
X6330103	REMOVE AND RE-ERECT TRAFFIC BARRIER TERMINAL, TYPE 1 SPECIAL, (TANGENT)	EACH	1
X7050167	TEMPORARY TRAFFIC BARRIER TERMINAL, TYPE 1, SPECIAL (TANGENT)	EACH	1
Z0030250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2
Z0030350	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2
X8620020	UNINTERRUPTIBLE POWER SUPPLY	EACH	2

* SPECIALTY ITEMS

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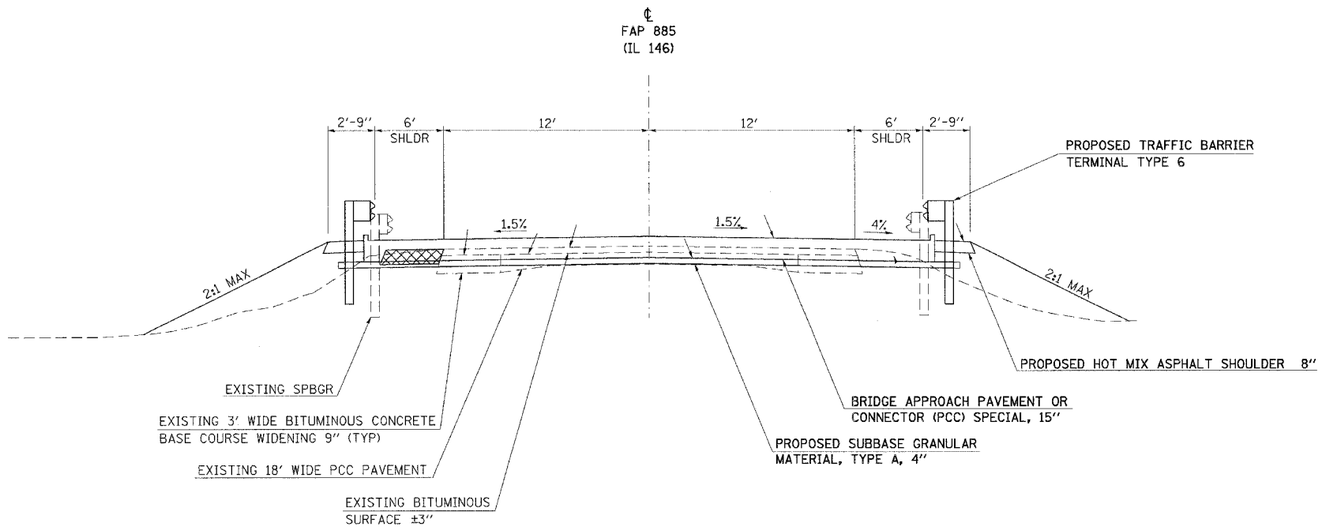
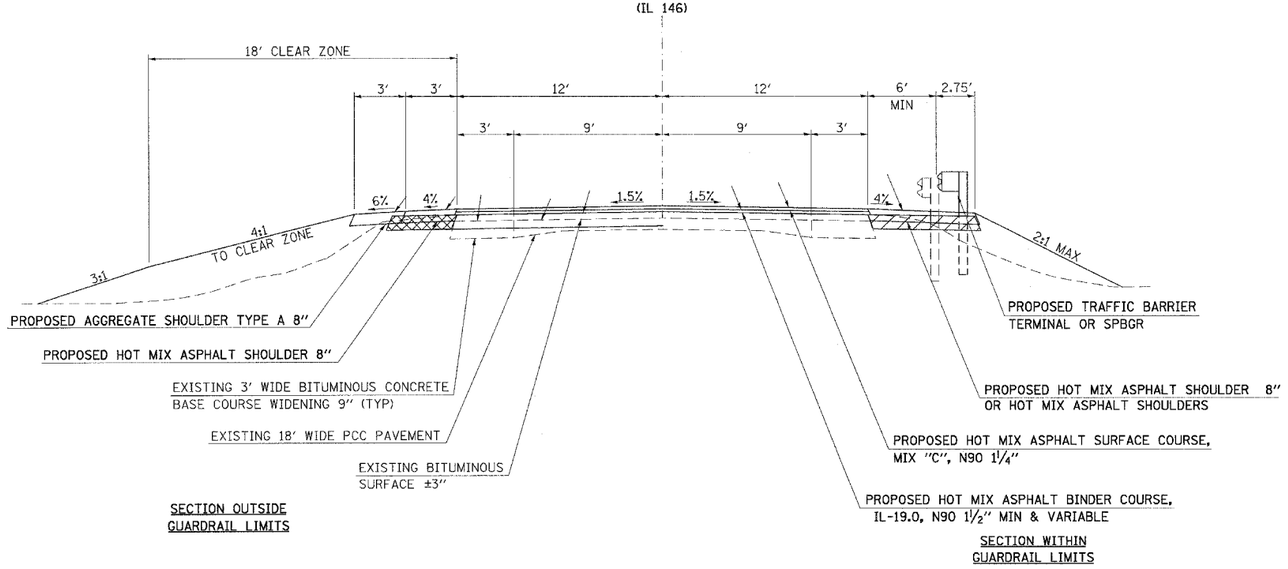
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
885	(107A)B-1	JOHNSON	38	5
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

CONTRACT NO. 98776



TYPICAL SECTION WITHIN PAVEMENT REMOVAL

STA. 627+39.7 TO 627+79 & STA 628+71 TO 629+10.3
(LOOKING EAST)



TYPICAL SECTION OUTSIDE PAVEMENT REMOVAL
STA. 625+30 TO 627+39.7 & STA 629+10.3 TO 631+20
(LOOKING EAST)

HOT MIX ASPHALT MIXTURE REQUIREMENTS

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

LOCATION(S):	HOT-MIX ASPHALT BINDER COURSE & BASE COURSE WIDENING
MIXTURE USE(S):	HOT-MIX ASPHALT BINDER COURSE, N90, IL-19.0
AC/PG:	PG64-22
RAP % (MAX):	10
DESIGN AIR VOIDS:	4.0%, 90 GYRATION DESIGN
MIXTURE COMPOSITION: (GRADATION MIXTURE)	IL-19.0 mm
FRICTION AGGREGATE:	NONE

LOCATION(S):	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: (GRADATION MIXTURE)	HMA SHOULDERS
FRICTION AGGREGATE:	NONE

PROPOSED WIDENING, 10" - 4'-0" WIDE
TO BE REMOVED IN STAGE II

PROPOSED WIDENING, 10" - 8'-9" WIDE
TO REMAIN IN PLACE

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TYPICAL SECTION /MIXTURE REQUIREMENTS – ILLINOIS 146

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
885	(107A)B-1	JOHNSON	38	6
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

CONTRACT NO. 98776

SCHEDULES OF QUANTITIES

SHOULDER SCHEDULE

LOCATION STATION TO STATION	HOT-MIX ASPHALT BASE COURSE WIDENING, 10"	HOT-MIX ASPHALT SHOULDERS, 8"	HOT-MIX ASPHALT SHOULDERS	AGGREGATE SHOULDERS TYPE A, 8"
	SQ YD	SQ YD	TONS	SQ YD
626+40 TO 627+78.4 LT	62			
628+70.9 TO 630+10 LT	62			
626+60 TO 627+39.7 RT	77			
629+10.3 TO 630+00 RT	87			
625+30 TO 627+75 LT		157		
628+67 TO 631+20 LT		209		
625+30 TO 627+82.2 RT		131		
628+74.2 TO 631+20 RT		69		
626+60 TO 627+39.7 RT			16	
629+10.3 TO 630+00 RT			18	
625+30 TO 626+20.5 LT				29
630+29.3 TO 631+20 RT				29
TOTALS	288	566	34	58

TEMPORARY CONCRETE BARRIER SCHEDULE

LOCATION STATION TO STATION	STAGE	TEMPORARY CONCRETE BARRIER FOOT	RELOCATE TEMPORARY CONCRETE BARRIER FOOT
626+12.5 TO 630+37.5	I	425	
626+37.5 TO 630+12.5	II		375
TOTALS		425	375

TREE REMOVAL SCHEDULE

DIAMETER	STA.	6 TO 5 UNITS	>15 UNITS
6"	627+00 RT	1 UNIT	
10"	628+10 RT	1 UNIT	
16"	625+97 LT		1 UNIT
41"	627+15 LT		1 UNIT
TOTALS		2	2

TERMINALS AND GUARDRAIL SCHEDULE

LOCATION STATION TO STATION	TRAFFIC BARRIER TERMINAL TYPE 1 SPECIAL TANGENT (TEMP.)	TRAFFIC BARRIER TERMINAL TYPE 1 SPECIAL TANGENT (RE-ERECT)	TRAFFIC BARRIER TERMINAL TYPE 1 SPECIAL TANGENT	TRAFFIC BARRIER TERMINAL TYPE 6	SPBGR TYPE A	GUARDRAIL REMOVAL	TERMINAL MARKER DIRECT APPLIED	GUARDRAIL MARKER	BARRIER WALL MARKER
	EACH	EACH	EACH	EACH	FOOT	FOOT	EACH	EACH	EACH
627+39.0 TO 627+82.1 RT				1					
627+32.7 TO 627+75.8 LT				1					
628+67.8 TO 629+10.9 LT				1					
628+74.1 TO 629+17.2 RT				1					
626+01.5 TO 627+39.0 RT					137.5				
626+82.7 TO 627+32.7 LT					50				
629+10.9 TO 630+48.4 LT					137.5				
629+17.2 TO 629+67.2 RT					50				
625+51.5 TO 626+01.5 RT			1				1		
626+32.7 TO 626+82.7 LT		1							
630+48.4 TO 630+98.4 LT			1				1		
629+67.2 TO 630+17.2 RT			1				1		
627+53.4 TO 628+03.4 LT	1						1		
625+76.4 TO 627+78.4 RT						202			
627+38.4 TO 627+78.4 LT						40			
628+70.9 TO 630+72.9 LT						202			
628+70.9 TO 629+10.9 RT						40			
625+51.5 TO 627+82.2 RT								4	
626+32.7 TO 627+75.8 LT								3	
628+67.8 TO 630+98.5 LT								4	
628+74.2 TO 630+17.3 RT								3	
627+75.8 TO 628+67.8 LT									3
627+82.2 TO 628+74.2 RT									3
TOTALS	1	1	3	4	375	484	4	14	6

PLOT DATE = 8/7/2007
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PLOT SCALE = 50.000 '/ IN.
USER NAME = holsteadt

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
885	(107A)B-1	JOHNSON	38	7
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

CONTRACT NO. 98776

SCHEDULES OF QUANTITIES

EARTHWORK SCHEDULE

LOCATION STATION TO STATION	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
625+10 TO 627+79		52	25	39	787	-748	25	-997
627+79 TO 628+71	508							
628+71 TO 631+40		43	25	32	155	-123	25	-164
TOTALS	508	95						-1161

*CUTS FROM CROSS SECTIONS
**FILLS FROM CROSS SECTIONS

PAVEMENT REMOVAL AND MISCELLANEOUS SCHEDULE

LOCATION STATION TO STATION	PAVEMENT REMOVAL	HOT-MIX ASPHALT SURFACE REMOVAL BUTT-JOINT	TEMPORARY RAMP	PAVED SHOULDER REMOVAL
	SQ YD	SQ YD	SQ YD	SQ YD
627+39.7 TO 627+98.3	177			
628+50.9 TO 629+10.3	179			
624+75 TO 625+05		80		
631+45 TO 631+75		80		
624+75 TO 624+80			13	
631+70 TO 631+75			13	
626+40 LT TO 627+78.4 LT				62
628+70.9 LT TO 630+10 LT				62
TOTALS	356	160	26	124

HOT-MIX ASPHALT PAVEMENT SCHEDULE

LOCATION STATION TO STATION	HOT-MIX ASPHALT BINDER COURSE IL-19.0, N90	HOT-MIX ASPHALT SURFACE COURSE MIX C, N90	HOT-MIX ASPHALT MATERIALS (PRIME COAT)	AGGREGATE (PRIME COAT)
	TON	TON	GALLON	TON
625+30 TO 627+39.7	82			
629+10.3 TO 631+20	79			
624+75 TO 627+39.7		51.5	63.5	1
629+10.3 TO 631+75		51.5	63.5	1
TOTAL	161	103	127	2

EROSION CONTROL

LOCATION STATION TO STATION	PERIMETER EROSION BARRIER	MULCH METHOD 2	EROSION CONTROL BLANKET	STONE RIPRAP CLASS A4	FILTER FABRIC
	FOOT	ACRES	SQ YD	SQ YD	SQ YD
625+10 TO 631+40 RT	583	0.3	680		
625+10 TO 631+40 LT	569	0.3	544		
625+30 TO 626+00 RT				31	31
627+67.6 RT				4	4
627+61.4 LT				4	4
TOTALS	1152	0.6	1224	39	***39

*** FILTER FABRIC FOR STONE RIPRAP CLASS A4 IS ADDITIONAL TO QUANTITIY NEEDED FOR STONE RIPRAP CLASS A5

BRIDGE APPROACH SCHEDULE

LOCATION STATION TO STATION	CONNECTOR (PCC) SPECIAL	BRIDGE APPROACH PAVEMENT	PROTECTIVE COAT 42001300	BRIDGE DECK GROOVING	TYPE C INLET BOX	METAL END SECTIONS 12''	PIPE DRAINS 12''	CONCRETE THRUST BLOCK
	SQ YD	SQ YD	SQ YD	SQ YD	EACH	EACH	FOOT	EACH
627+39.7 TO 627+49	38.5		38.5	35				
629+01 TO 629+10.3	38.5		38.5	35				
627+49 TO 627+79		124.5	124.5	113.5	2	2	44	2
628+71 TO 629+01		124.5	124.5	113.5				
TOTALS	77	249	326	* 297	2	2	44	2

* GROOVING FOR CONNECTOR (PCC) SPECIAL AND BRIDGE PAVEMENT IS ADDITIONAL TO QUANTITY NEEDED FOR BRIDGE DECK

SEEDING SCHEDULE

LOCATION STATION TO STATION	TEMPORARY EROSION CONTROL SEEDING	SEEDING CLASS 7	SEEDING CLASS 2 (MODIFIED)	NITROGEN (N)	PHOSPHOROUS (P)	POTASSIUM (K)	AGRICULTURAL GROUND LIMESTONE
	POUND	ACRES	ACRES	POUND	POUND	POUND	TON
625+10 TO 631+40 RT	20	0.2	0.2	32	24	24	0.4
625+10 TO 631+40 LT	20	0.2	0.2	32	24	24	0.4
TOTALS	40	0.4	0.4	64	48	48	0.8

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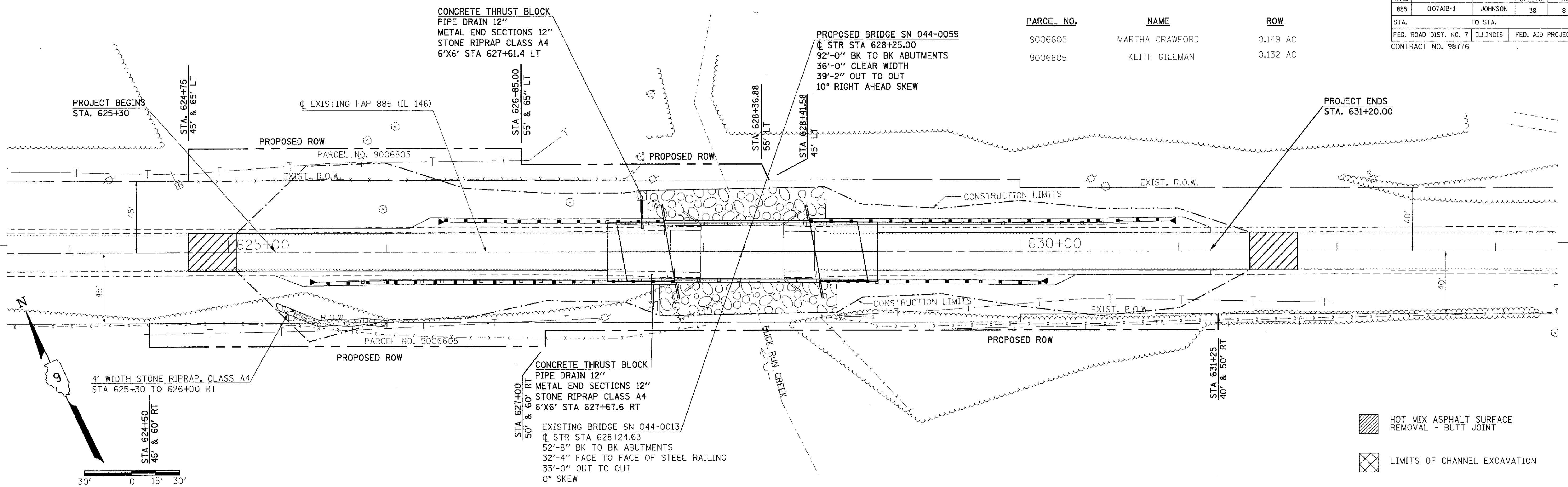
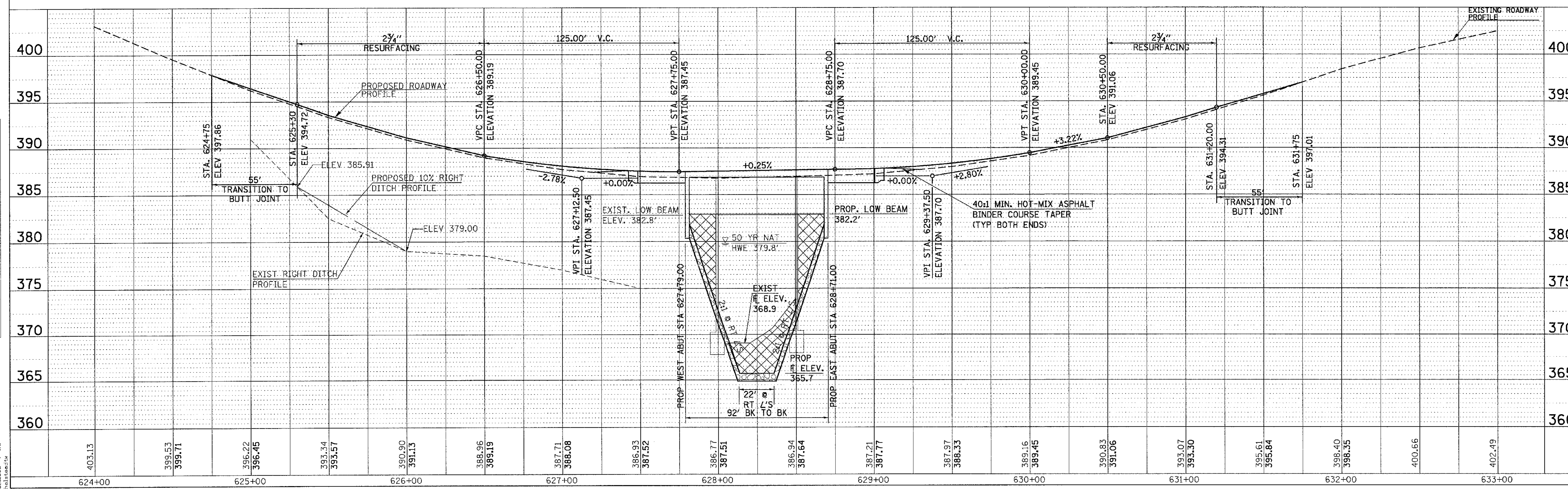
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
885	(107A)B-1	JOHNSON	38	8
STA.		TO STA.		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 98776

PARCEL NO.	NAME	ROW
9006605	MARTHA CRAWFORD	0.149 AC
9006805	KEITH GILLMAN	0.132 AC

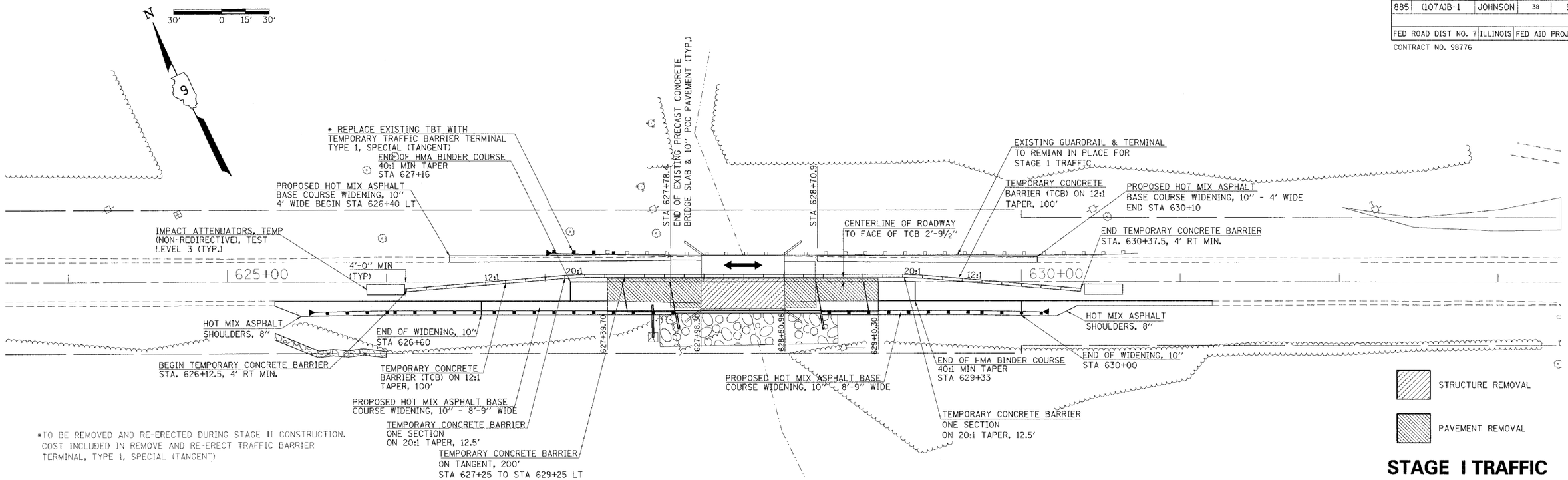




PLAN PROFILE SHEET /RIGHT OF WAY PLANS IL 146 OVER BUCK RUN CREEK

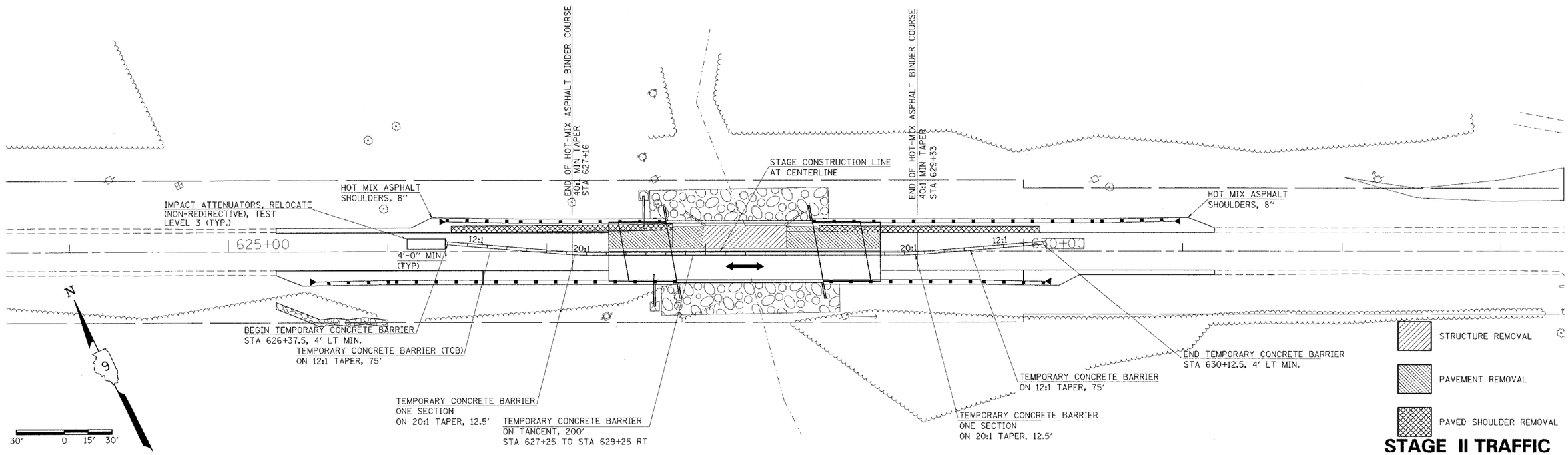
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
885	(107A)B-1	JOHNSON	38	9
FED ROAD DIST NO. 7	ILLINOIS	FED AID PROJECT		

CONTRACT NO. 98776



*TO BE REMOVED AND RE-ERECTED DURING STAGE II CONSTRUCTION. COST INCLUDED IN REMOVE AND RE-ERECT TRAFFIC BARRIER TERMINAL, TYPE 1, SPECIAL (TANGENT)

STAGE I TRAFFIC



STAGE II TRAFFIC

STAGING PLAN

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USER NAME = hakimovic

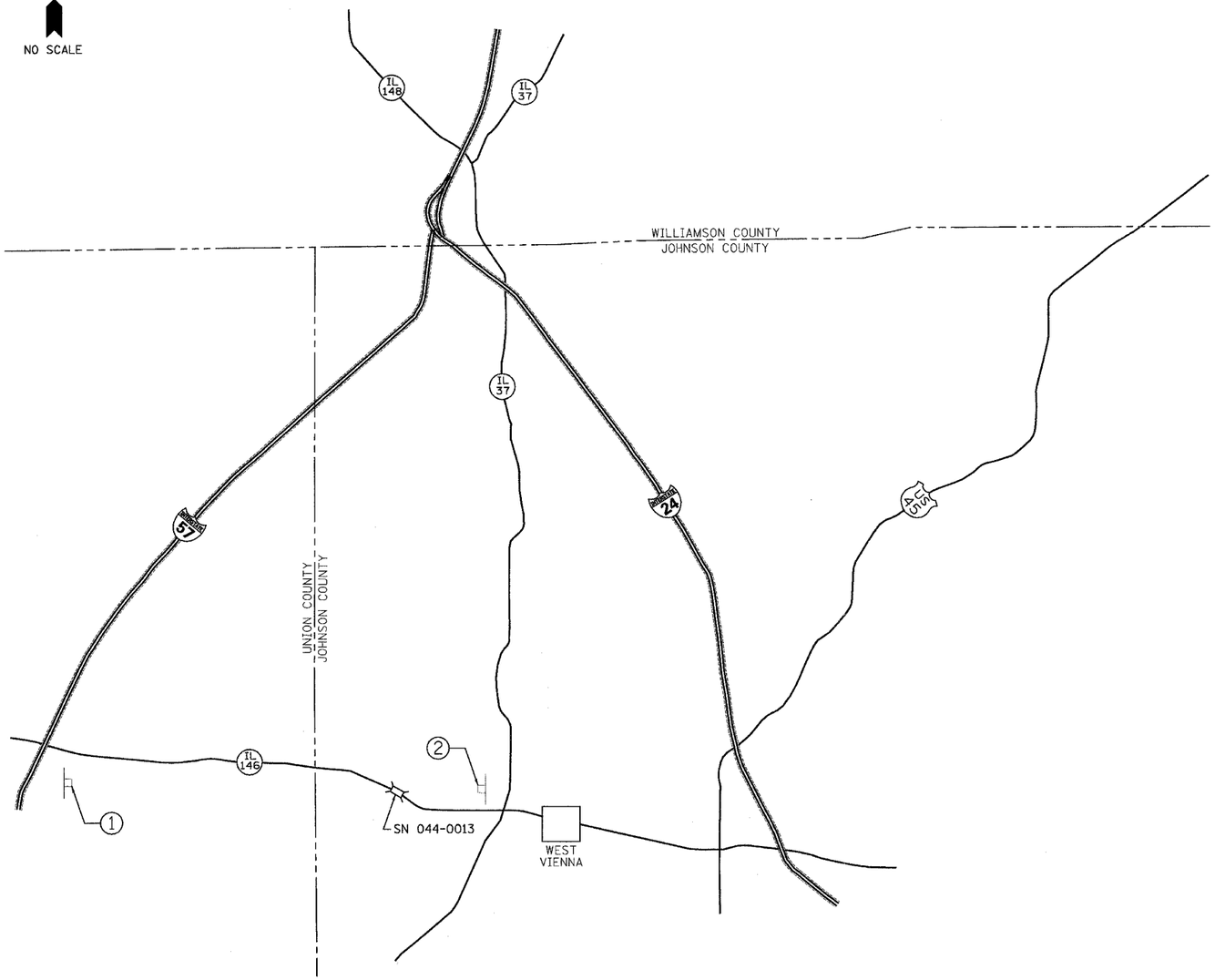
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
885	(107A)B-1	JOHNSON	38	10
STA. 624+80		TO STA. 631+60		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 98776

DETOUR SIGNING FOR LANE WIDTH RESTRICTION

N

NO SCALE



①

WIDE LOADS OVER 10'-0"
DETOUR VIA
NORTH: INTERSTATE 57 / SOUTH: ILLINOIS 148 / SOUTH: ILLINOIS 37

60" x 120"

TO BE USED:
STAGE I ONLY

②

WIDE LOADS OVER 10'-0"
DETOUR VIA
NORTH: ILLINOIS 37 / NORTH: ILLINOIS 148 / SOUTH: INTERSTATE 57

60" x 120"

TO BE USED:
STAGE I ONLY

NOTES

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

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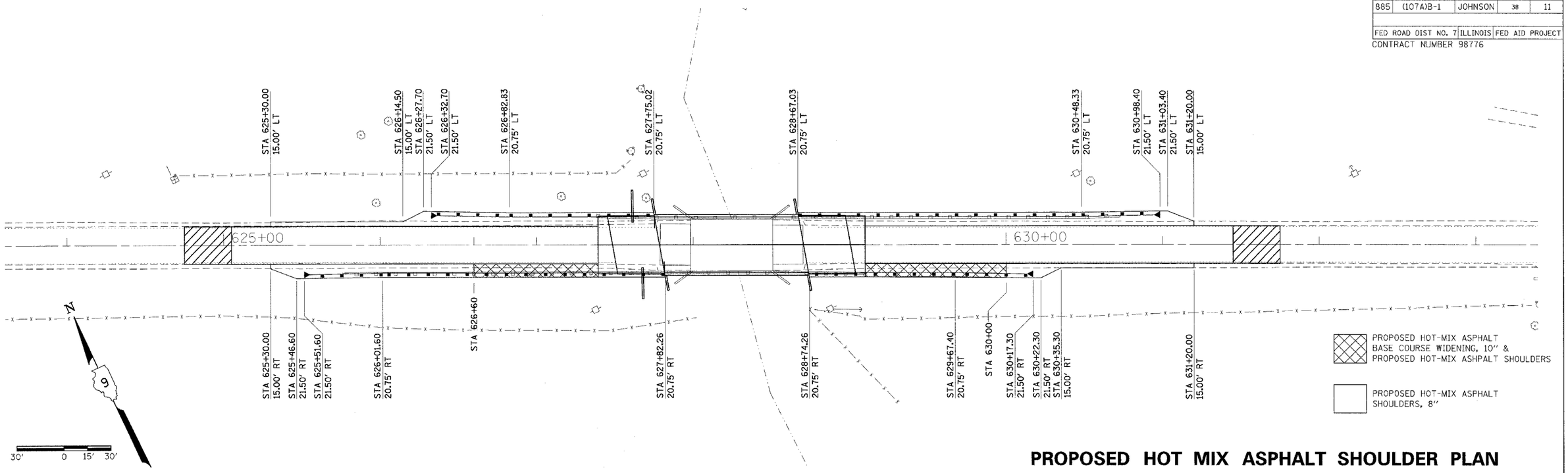
USER NAME = holstead

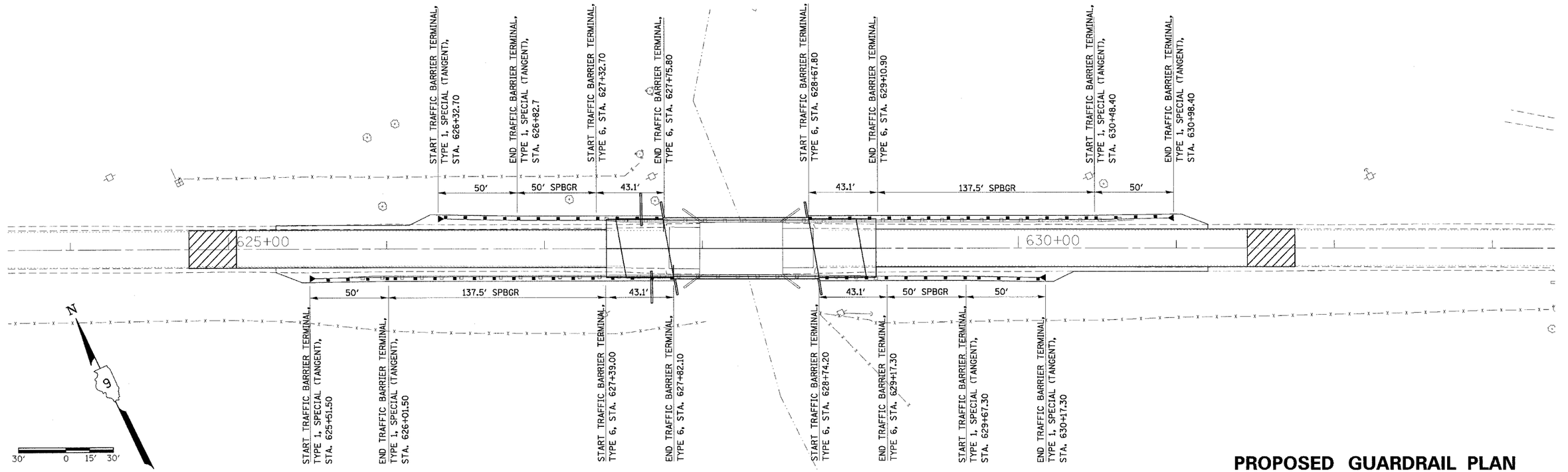
DETOUR SIGNING

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
885	(107A)B-1	JOHNSON	38	11
FED ROAD DIST NO. 7	ILLINOIS	FED AID PROJECT		

CONTRACT NUMBER 98776



PROPOSED HOT MIX ASPHALT SHOULDER PLAN



PROPOSED GUARDRAIL PLAN

HOT MIX ASPHALT SHOULDER AND GUARDRAIL PLAN

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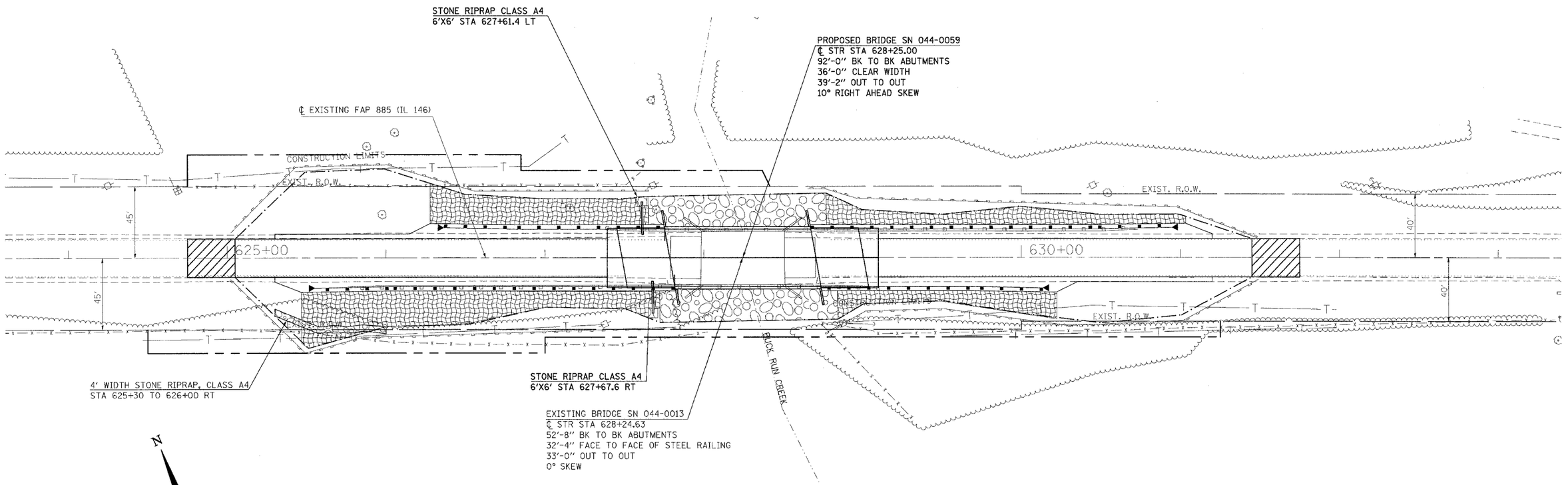
USER NAME = halstead

CONTRACT NUMBER 98776

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
885	(107A)B-1	JOHNSON	38	12
FED ROAD DIST NO. 7	ILLINOIS	FED AID PROJECT		



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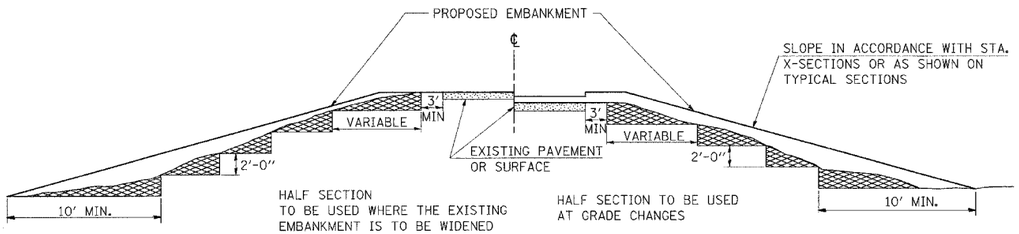
EROSION CONTROL PLAN

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
885	(107A)B-1	JOHNSON	38	13
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 98776

TYPICAL CROSS SECTION SHOWING STEP CONSTRUCTION ON EXISTING FILL

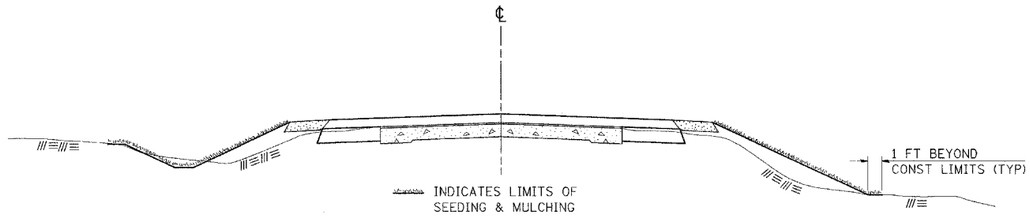


MATERIAL TO BE REMOVED AND REPLACED IN THE EMBANKMENT IN ACCORDANCE WITH ART. 205.04 OF THE STANDARD SPECIFICATION. COST TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED BECAUSE OF THIS WORK.

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

STD. 9-16

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.

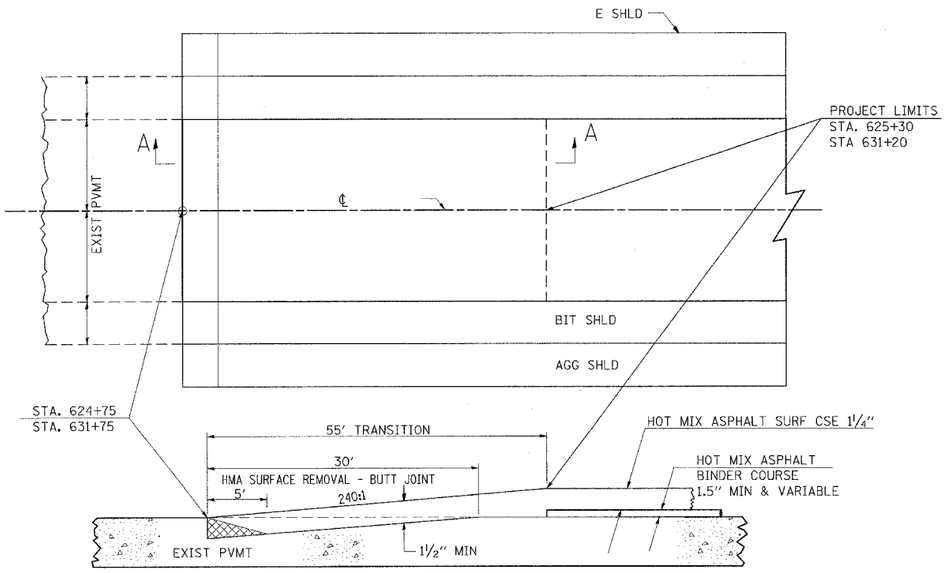
THE RATES OF APPLICATION OF FERTILIZER, MULCH AND LIMESTONE SHALL BE AS SPECIFIED IN THE SPECIAL PROVISIONS.

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

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

STD. 9-12

BUTT JOINT



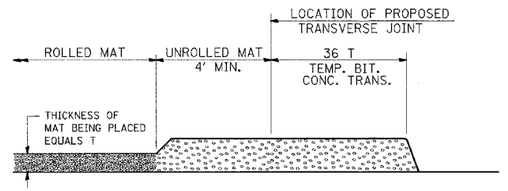
SECTION A-A

40:1 MINIMUM TEMPORARY RAMP

REVISIONS
DRAWN 10-17-90
REVISED
REVISED
REVISED

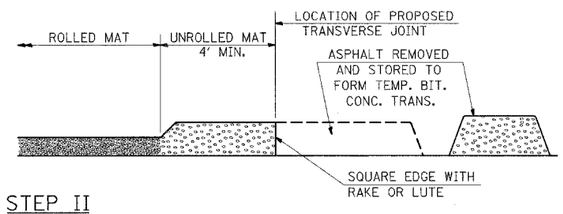
STD. 9-86

TEMPORARY BITUMINOUS CONCRETE TRANSITIONS



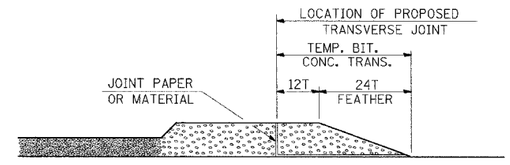
STEP I

1. PLACE BITUMINOUS MAT, LENGTH 36 TIMES THE THICKNESS OF THE MAT BEING PLACED PAST THE PROPOSED TRANSVERSE JOINT LOCATION USING NORMAL OPERATING PROCEDURES.
2. EXTREME CARE SHOULD BE TAKEN TO MAINTAIN ENOUGH MATERIAL IN FRONT OF THE SCREED TO MAINTAIN REQUIRED PAVING DEPTH.



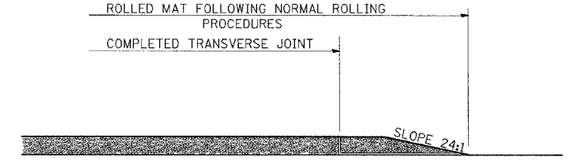
STEP II

1. MOVE THE PAVER OUT OF THE WAY AND REMOVE THE ASPHALT FROM THE AREA OF THE PROPOSED TEMPORARY BITUMINOUS CONCRETE TRANSITION.
2. SQUARE UP THE END OF THE MAT WITH A RAKE OR LUTE.
3. NOTE THAT THE MAT WITHIN 4' OF THE END OF JOINT IS NOT TO BE ROLLED AT THIS TIME.



STEP III

1. JOINT PAPER OR OTHER PRESELECTED JOINT MATERIAL IS THEN PLACED IN THE CLEARED AREA AND THE EXCESS ASPHALT USED TO HAND FORM A TRANSITION TO THE DIMENSIONS SHOWN ABOVE.
2. NOTE THAT IN CONSTRUCTING THE TRANSITION, THE MAT DEPTH IS CONTINUED AS PART OF THE TRANSITION BEFORE FORMING THE FEATHER.



STEP IV

1. COMPLETE TEMPORARY TRANSITION BY ROLLING.
2. TO RESUME PAVING, AT THE JOINT, REMOVE TEMPORARY TRANSITION AND DISPOSE OF THE MATERIAL ACCORDING TO ART. 202.03 OF THE STD. SPECS. (COST INCLUDED IN THE CONTRACT).
3. CONSTRUCTING THE TEMPORARY TRANSITIONS WILL NOT BE PAID FOR SEPARATELY BUT WILL BE INCLUDED IN THE BITUMINOUS MATERIAL BEING PLACED.

REVISIONS
REDRAWN 2-15-89
REVISED 8-16-94
REVISED
REVISED

STD. 9-26

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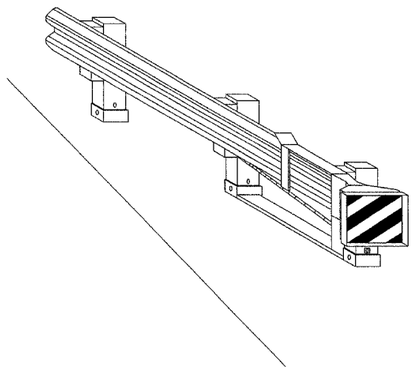
USER NAME = haisenmh

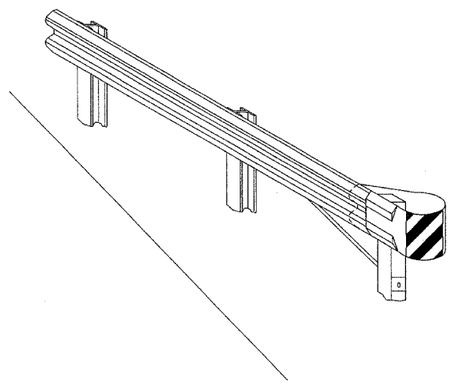
DETAILS – SEEDING AND MULCHING; BUTT JOINT; TEMP BIT CONC TRANSITION; STEP CONSTRUCTION ON EXISTING FILL

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
885	(107A)B-1	JOHNSON	38	14
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

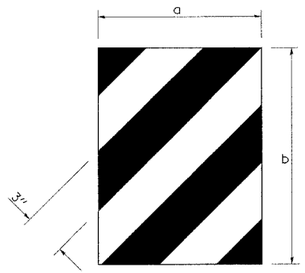
CONTRACT NO. 98776

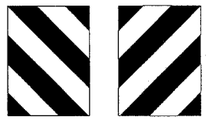


CASE I



CASE II



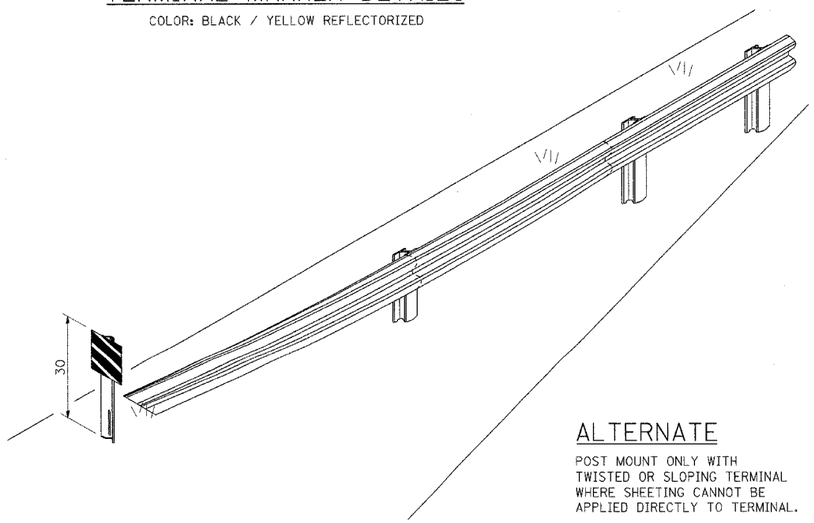


LEFT RIGHT

DIMENSION	CASE I	CASE II
a	15″	18″
b	20″	16″

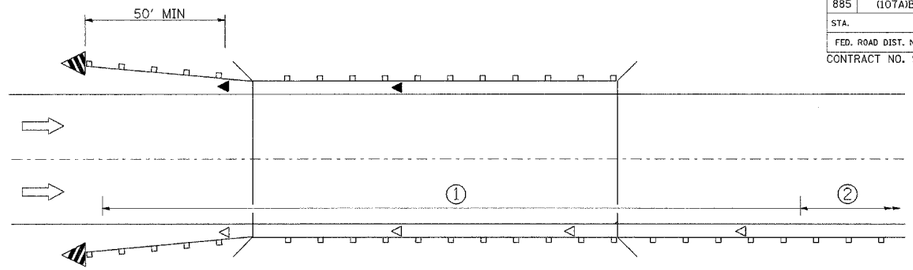
TERMINAL MARKER DETAILS

COLOR: BLACK / YELLOW REFLECTORIZED



ALTERNATE

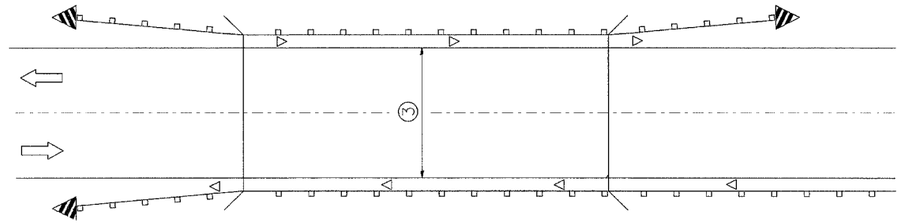
POST MOUNT ONLY WITH TWISTED OR SLOPING TERMINAL WHERE SHEETING CANNOT BE APPLIED DIRECTLY TO TERMINAL.



① SPACING 80 FEET MAX FOR FIRST 400 FEET OR CURVE SPACING SHOWN IN STANDARD 635001, WHICHEVER IS LESS (MIN 4 REFLECTORS REGARDLESS OF LENGTH).

② AFTER 400 FEET, TRANSITION TO NORMAL DELINEATOR SPACING SHOWN IN STANDARD 635001, AND CONTINUE AS REQUIRED.

ONE-WAY TRAFFIC



③ BIDIRECTIONAL SILVER/SILVER SHOULD BE USED IN LIEU OF MONODIRECTIONAL SILVER ON BOTH SIDES OF TWO-LANE BRIDGES WHERE THE PAVEMENT IS LESS THAN 24 IN WIDER THAN THE PAVEMENT APPROACHING THE BRIDGE.

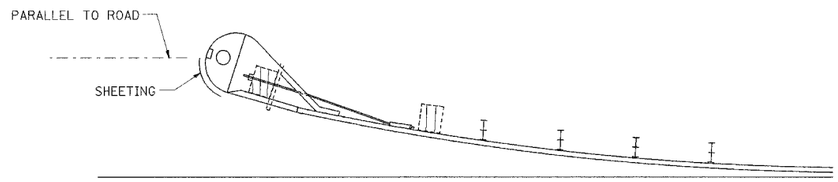
◁ MONODIRECTIONAL SILVER

◀ MONODIRECTIONAL AMBER

TERMINAL MARKER - BLACK/YELLOW LEFT OR RIGHT AS APPROPRIATE

TWO-WAY TRAFFIC

GUARDRAIL/ BARRIER WALL/ BRIDGE RAIL REFLECTIORS



SHEETING POSITION: CASE II

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SHOWN.

REFLECTOR AND TERMINAL MARKER PLACEMENT

DETAIL

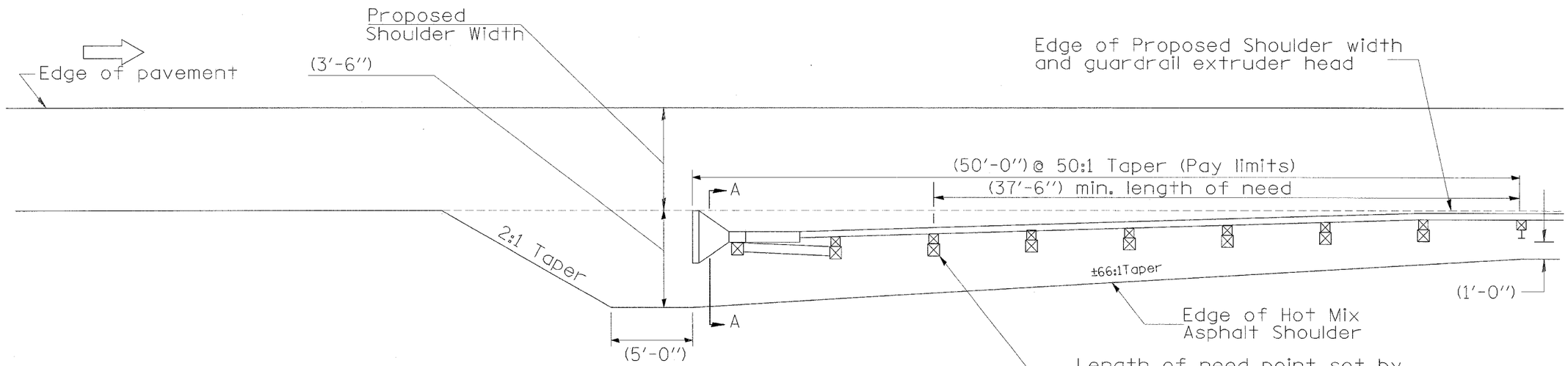
REFLECTOR AND MARKER PLACEMENT

PLOT DATE = 7/30/2007
FILE NAME = c:\projects\c9403803\d44-0213.dgn
PLOT SCALE = 50.0000 ' / IN.
USER NAME = hallsandr

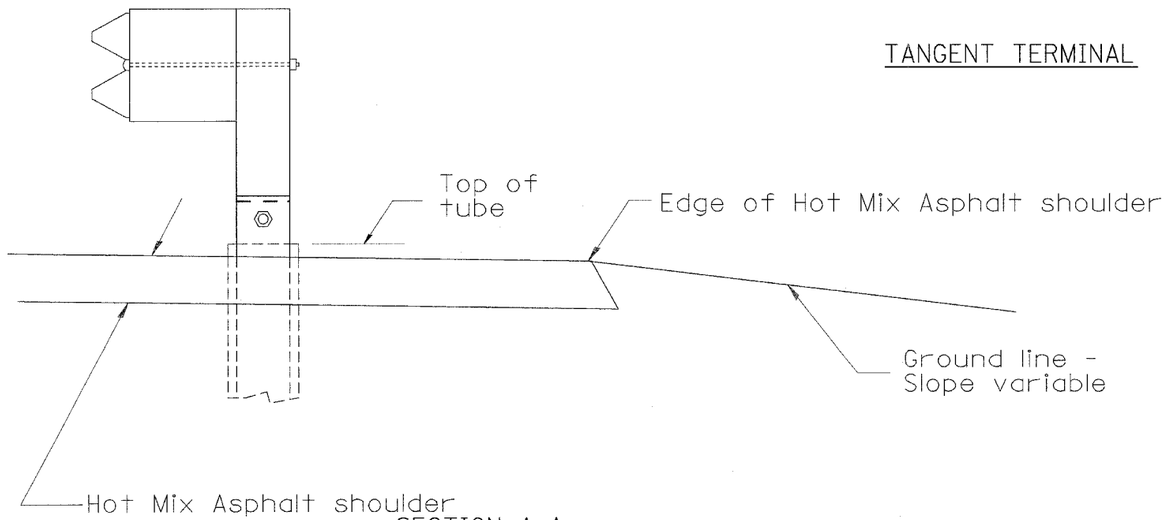
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
885	(107A)B-1	JOHNSON	38	15
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 98776

DETAIL - BITUMINOUS SHOULDER AT GUARDRAIL TERMINAL



TANGENT TERMINAL



SECTION A-A

(Impact Head omitted for clarity.)

NOTE

50:1 Taper required so the extruder head will not encroach on the shoulder.

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PLOT SCALE = 100.000 '/ IN.
USER NAME = halstead1x

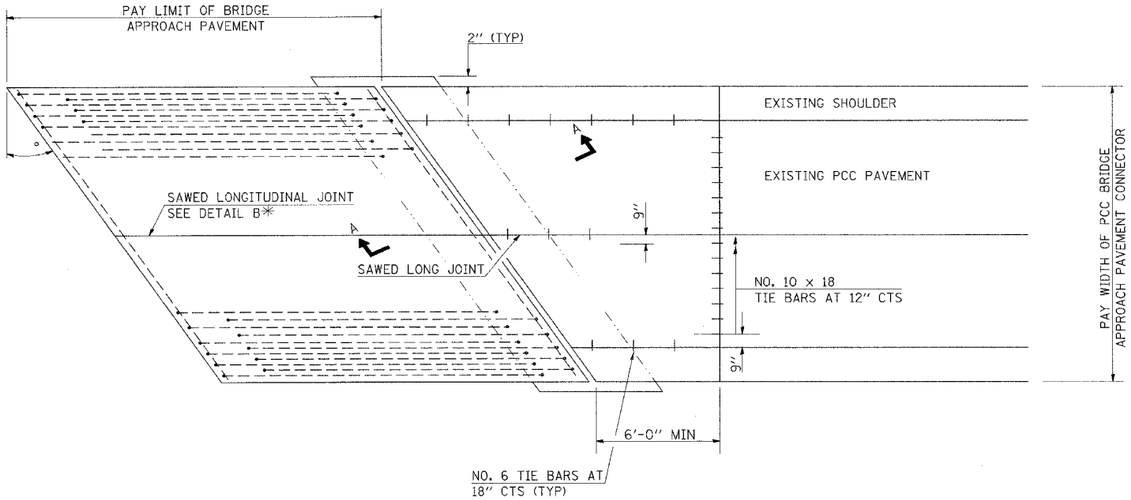
HOT-MIX ASPHALT BEHIND TBT TYPE 1 (SPECIAL)

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
885	(107A)B-1	JOHNSON	38	16
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

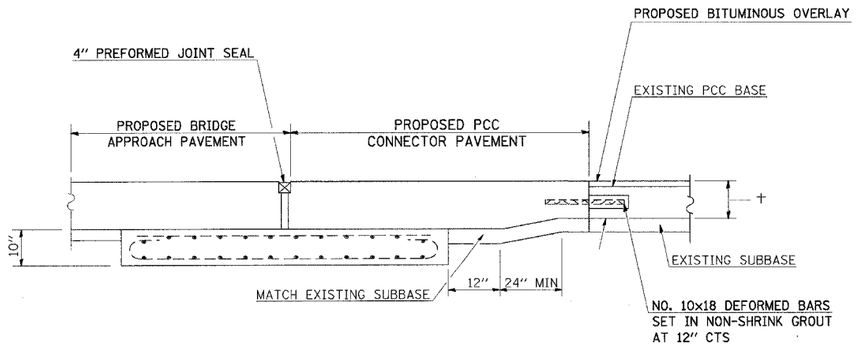
CONTRACT NO. 98776

PCC PAVEMENT CONNECTOR

EXISTING CONSTRUCTION



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



SECTION A-A - RIGID PAVEMENT

STD. 9-111

REVISIONS
REVISED 10-11-01
REVISED
REVISED

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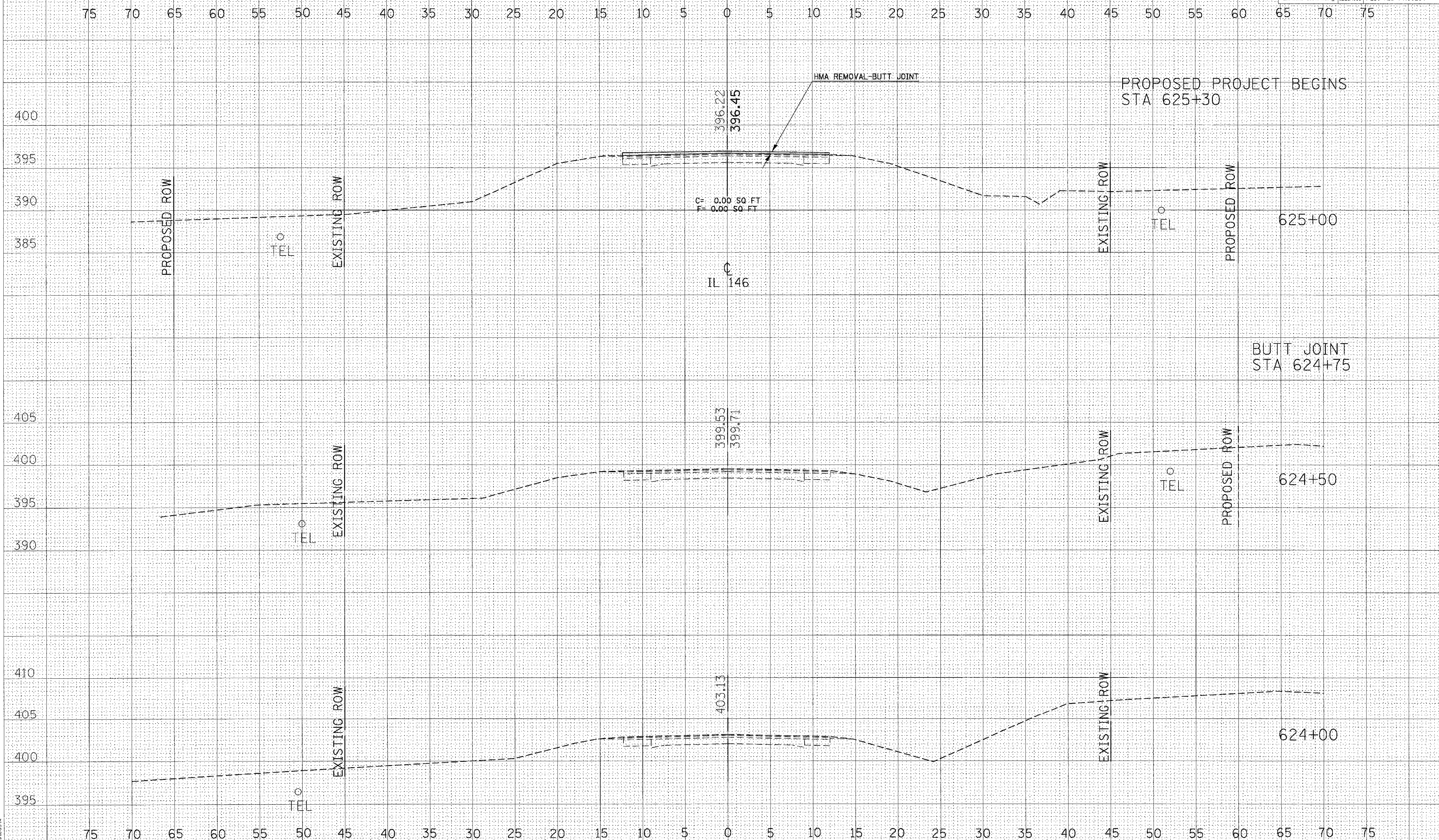
DETAIL – PCC PAVEMENT CONNECTOR (SPECIAL)

CONTRACT NO. 98776

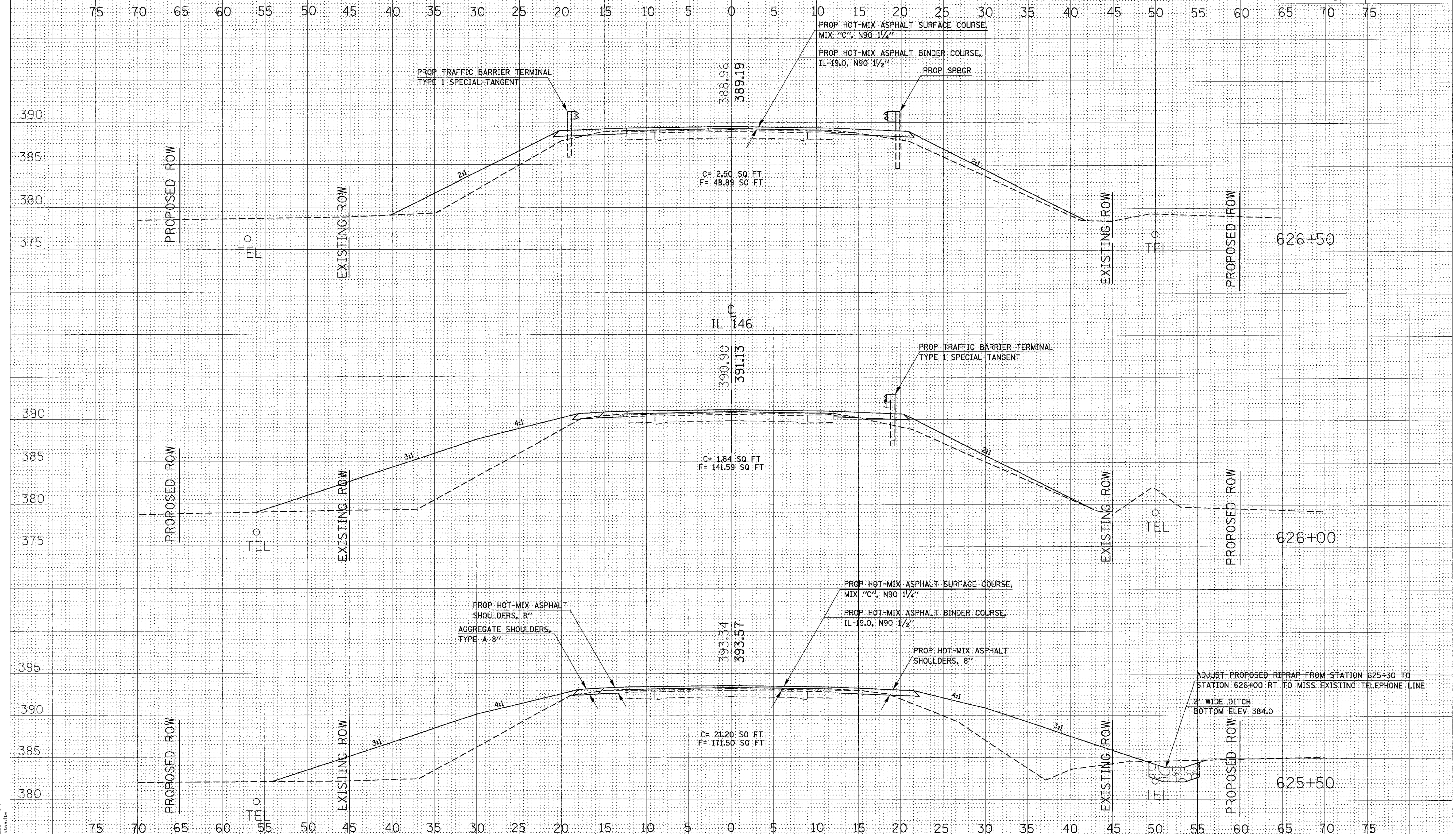
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
885	(107A)B-1	JOHNSON	38	17
STA. 624+00.00 TO STA. 625+00.00				
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		



CROSS SECTIONS – IL 146

CONTRACT NO. 98776

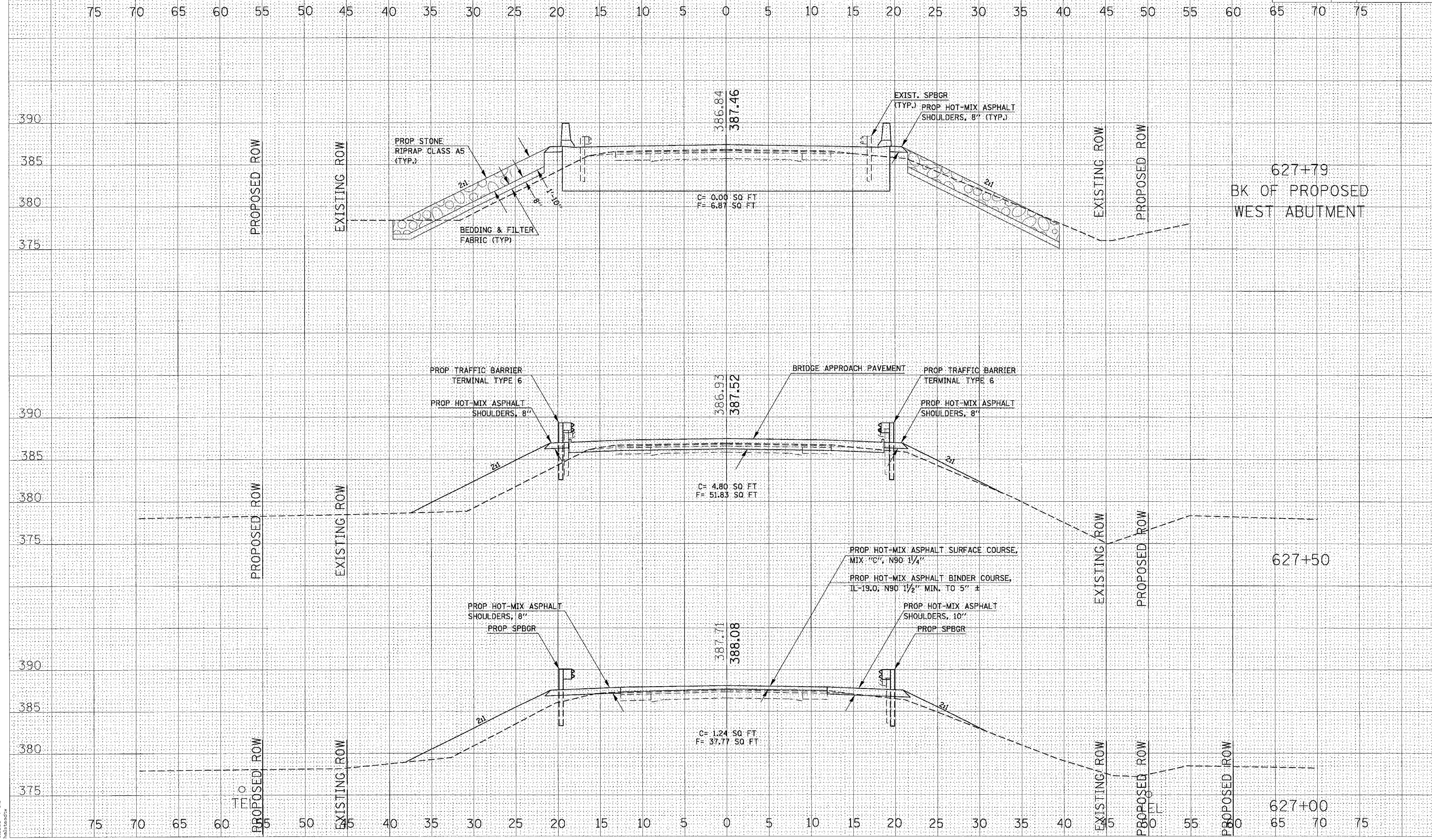
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
885	(107A)B-1	JOHNSON	38	18
STA. 625+50.00 TO STA. 626+50.00				
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		



CROSS SECTIONS - IL 146

CONTRACT NO. 98776

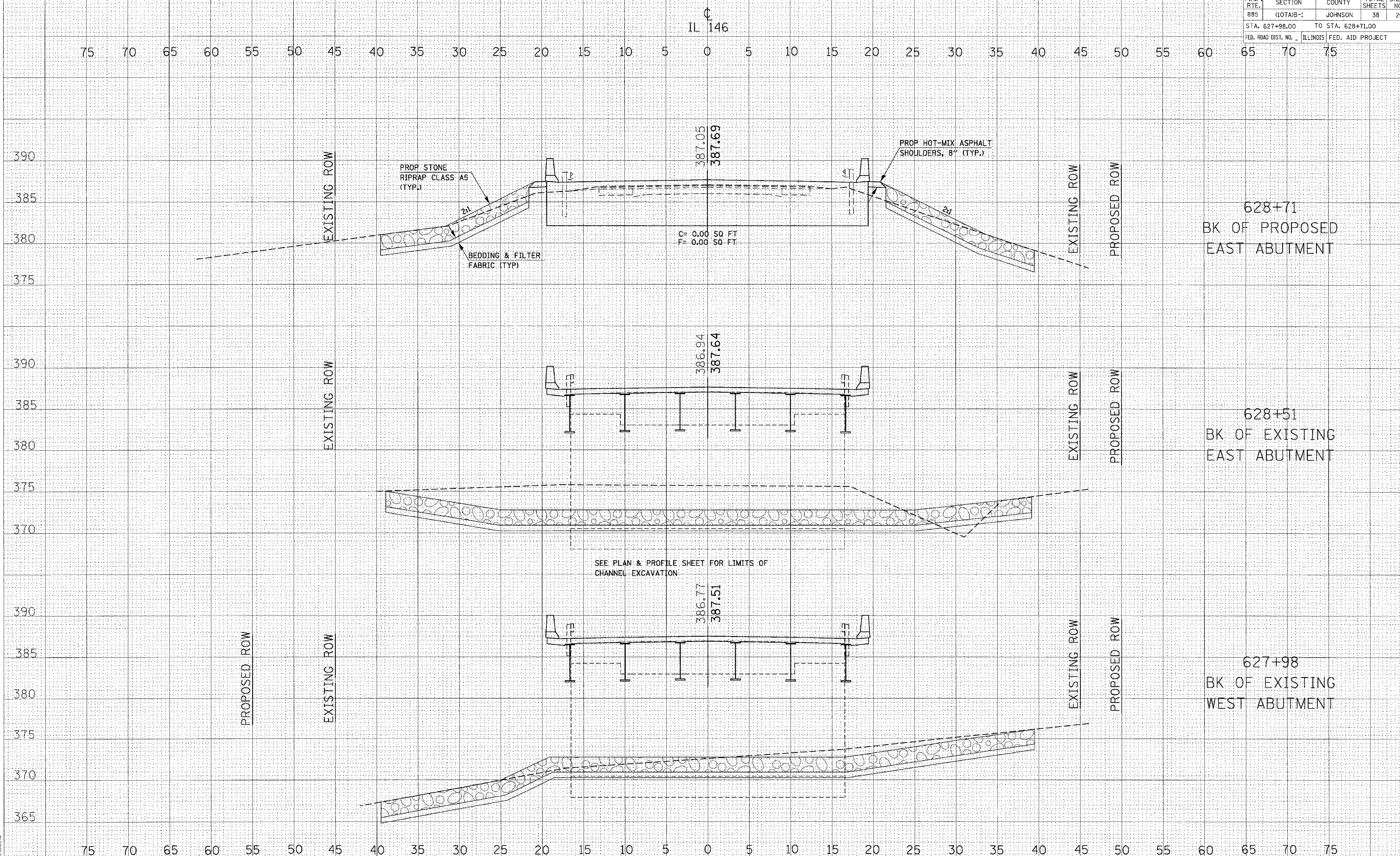
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
885	(107A)B-1	JOHNSON	38	19
STA. 627+00.00	TO STA. 627+79.00			
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		



CROSS SECTIONS - IL 146

CONTRACT NO. 98776

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
885	(107A)B-1	JOHNSON	38	20
STA. 627+98.00 TO STA. 628+71.00				
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		



7/30/2007
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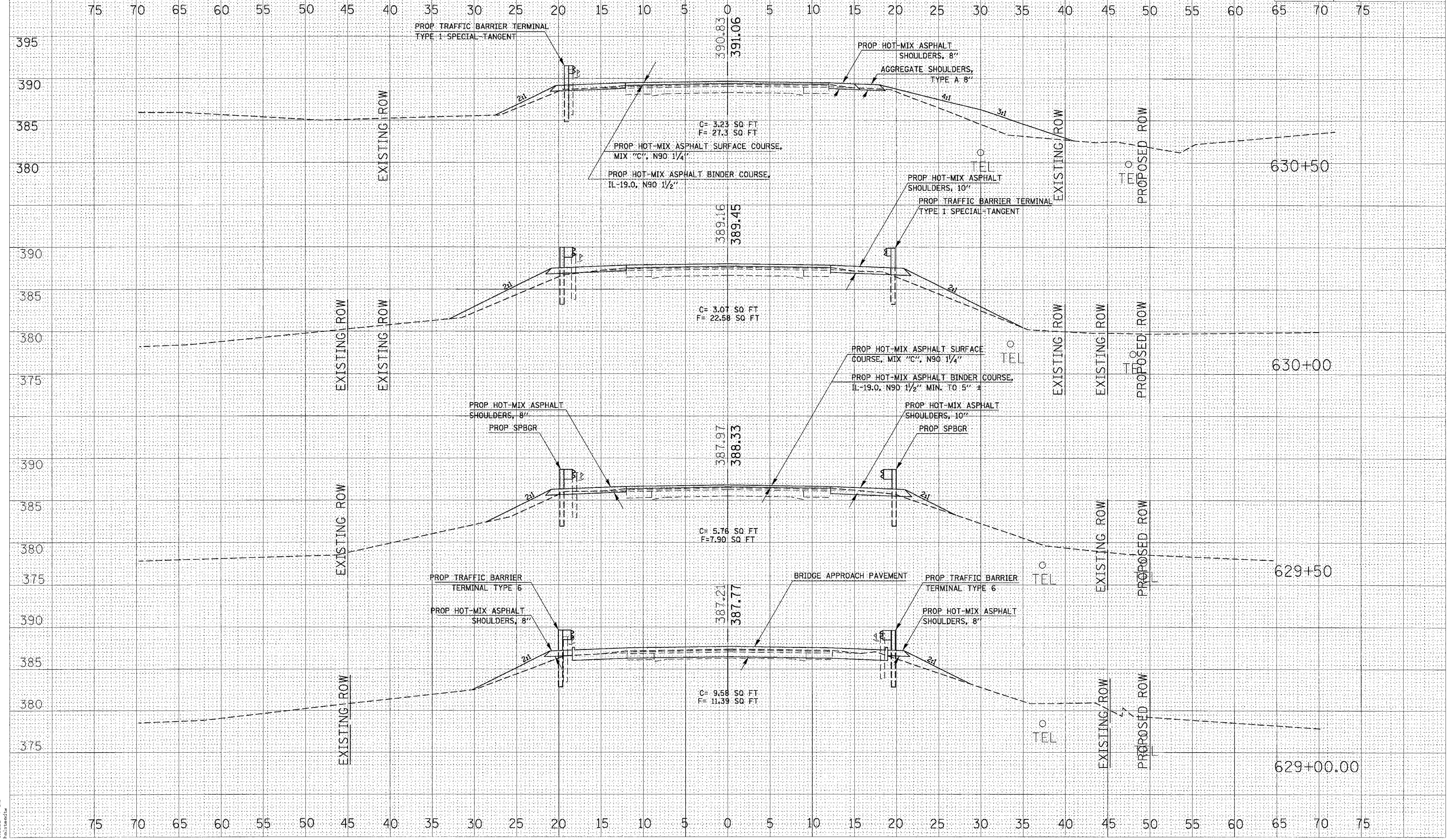
5.0000 ' / IN.
halsteadtw

CROSS SECTIONS - IL 146

CONTRACT NO. 98776

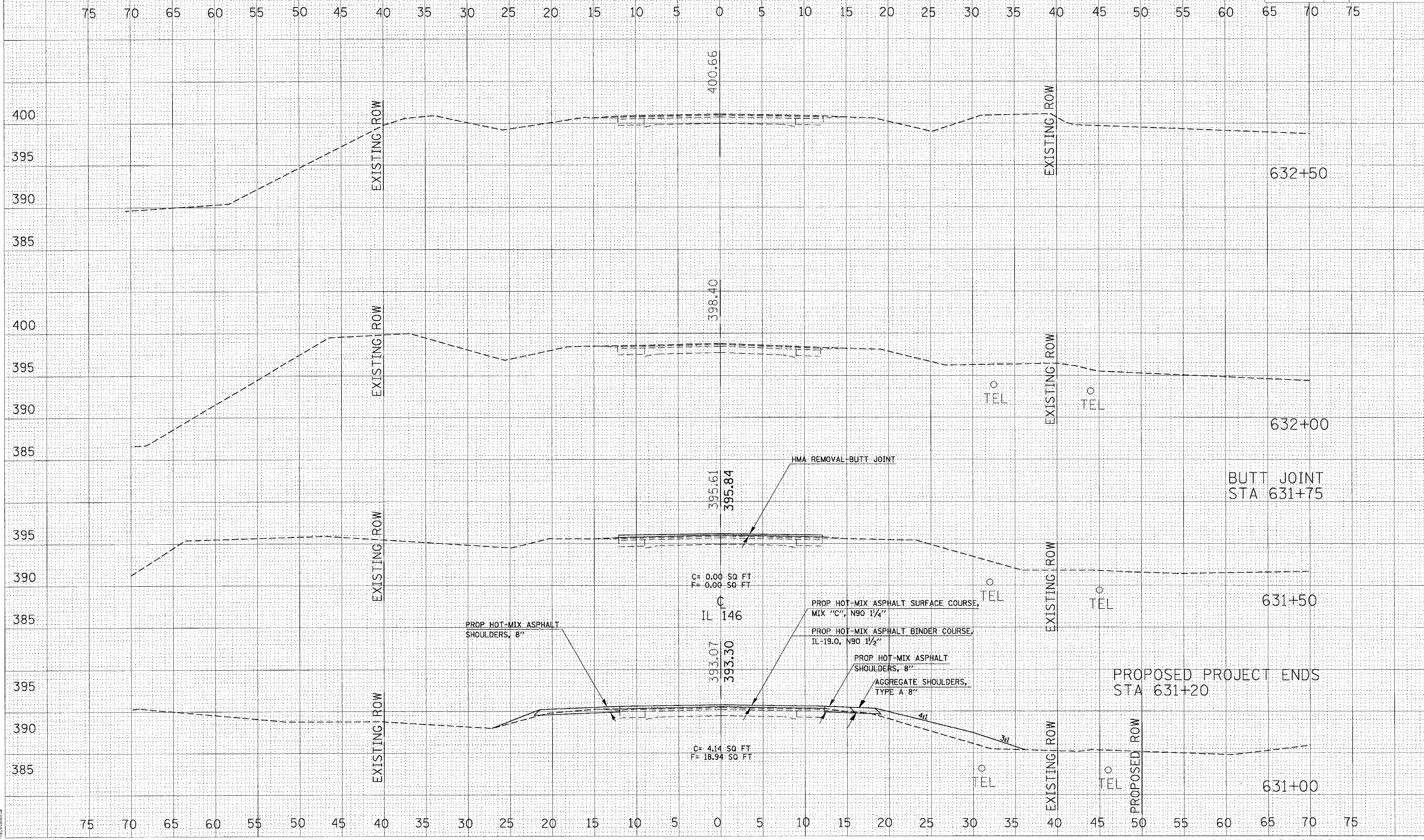
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
885	(107A)B-1	JOHNSON	38	21
STA. 629+50.00	TO STA. 630+50.00			
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		



CROSS SECTIONS - IL 146

CONTRACT NO. 98776

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
885	(107A)IB-1	JOHNSON	38	22
STA. 631+00.00	TO STA. 632+50.00			
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		



CROSS SECTIONS - IL 146

Bench Mark: Square cut in NW wingwall @ Sta. 627+93, Elev. 384.92

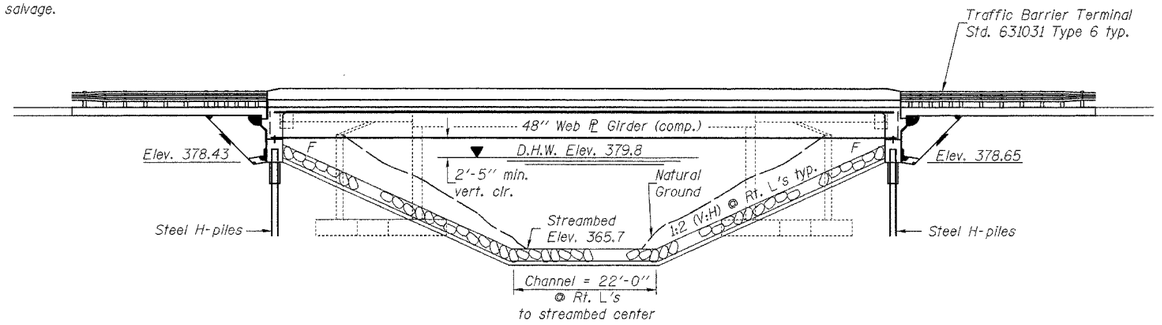
Existing Structure: S.N. 044-0013 Built in 1930 as SBI Rte. 146 Sec. 107A at Sta. 628+28 as a simple span reinforced concrete T-beam 52'-8" Bk.-Bk. abutment supported on timber piles. Bridge widening in 1983 at Sta. 628+24.63 with PPC deck beams & bituminous overlay. Traffic maintained utilizing stage construction.

No salvage.

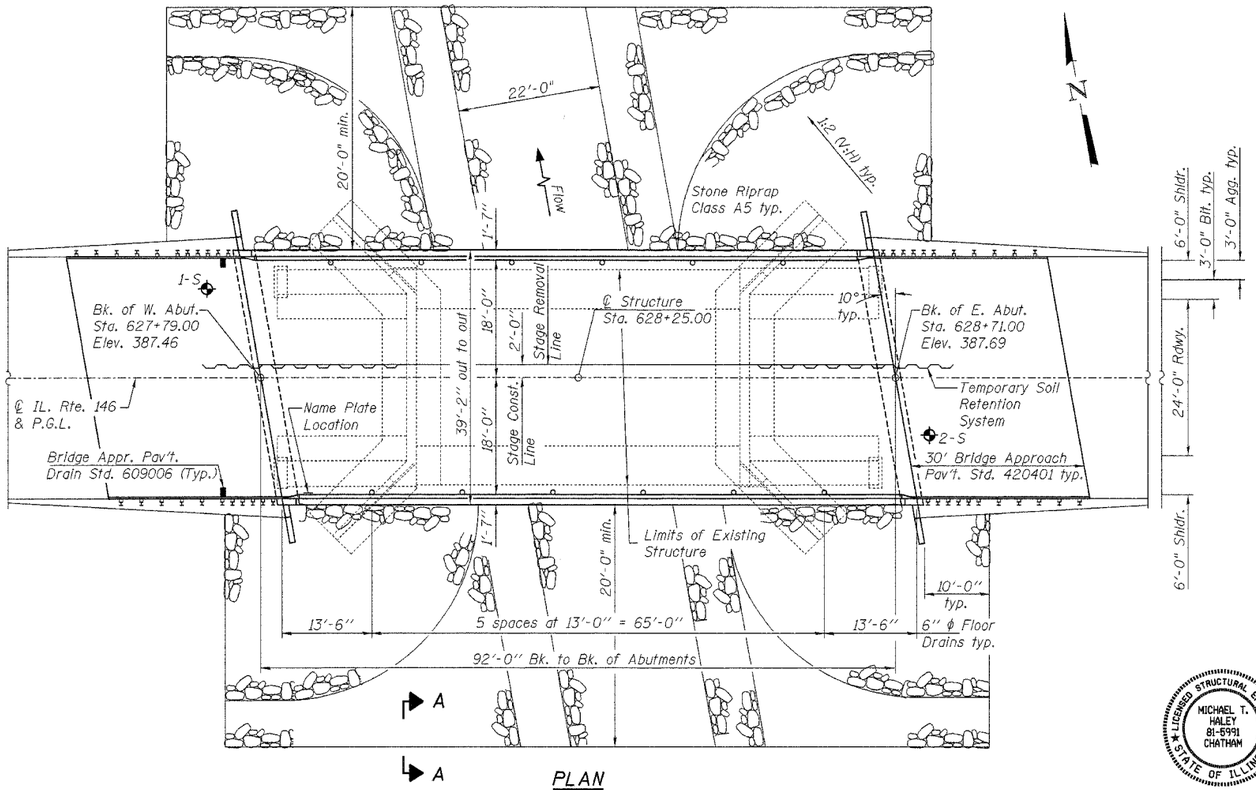
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	(107A) B-1	Johnson	38	23
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 1
16 SHEETS

Contract # 98776



ELEVATION



PLAN

Design Scour Elevation (feet)	W. Abutment	E. Abutment
	378.43	378.65

INDEX OF SHEETS

LOADING HL-93

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

DESIGN SPECIFICATIONS

2004 LRFD AASHTO w/2005 & 2006 Interims

DESIGN STRESSES

FIELD UNITS

f'_c = 3,500 psi
f_y = 60,000 psi (reinforcement)
f_y = 50,000 psi (Structural Steel, M270 Gr. 50)

SEISMIC DATA

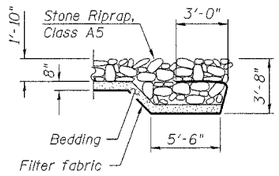
Seismic Performance Zone (SPZ) = 3
Bedrock Acceleration Coefficient (A) = 0.20g
Site Coefficient (S) = 1.0

WATERWAY INFORMATION

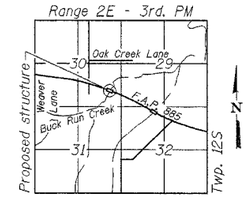
Exist. Low Grade Elev. 386.77 @ Sta. 628+00 (Exist. Align.)
Drainage Area = 6.51 mi.² Prop. Low Grade Elev. 387.45 @ Sta. 627+75 (Prop. Align.)

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	1940	414.9	631.4	378.8	0.3	0.3	379.1	379.1
Design	50	2930	464.9	707.8	379.8	0.7	0.4	380.5	380.2
Base	100	3350	484.9	739.5	380.2	0.6	0.2	380.8	380.4
Max. Calc.	500	4340	519.9	796.5	380.9	1.0	0.3	381.9	381.2

10 year velocity through existing bridge = 4.7 fps 10 year velocity through prop. bridge = 3.1 fps



SECTION A-A



LOCATION SKETCH

LICENSED STRUCTURAL ENGINEER
MICHAEL T. HALEY
81-5991
CHATHAM
STATE OF ILLINOIS

Michael J. Haley 8-16-07
Michael T. Haley Date
Licensed Structural Engineer
State of Illinois No. 81-5991
Expires 11/30/2008

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Ralph E. Anderson (TJD)
ENGINEER OF BRIDGES AND STRUCTURES

LIN ENGINEERING, LTD.
Consulting Engineers
Chatham, Illinois
Designed By: KNH | Checked By: MTH | Drawn By: AJF
Date: 3/2007 | Files: 044-0059.DGN

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
GENERAL PLAN
ILLINOIS ROUTE 146 OVER
BUCK RUN CREEK
F.A.P. ROUTE 885 - SEC. (107A)B-1
JOHNSON COUNTY
STA. 628+25.00
STRUCTURE NO. 044-0059

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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	(107A) B-1	Johnson	38	24
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 2
16 SHEETS

Contract # 98776

GENERAL NOTES

Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts. Bolts $^{7}/_{8}$ in. ϕ, holes $^{15}/_{16}$ in. ϕ, unless otherwise noted.

Calculated weight of Structural Steel = 80,150 lbs. (AASHTO M270, Grade 50)
11,820 lbs. (AASHTO M270, 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 (IL Modified). See Special Provisions

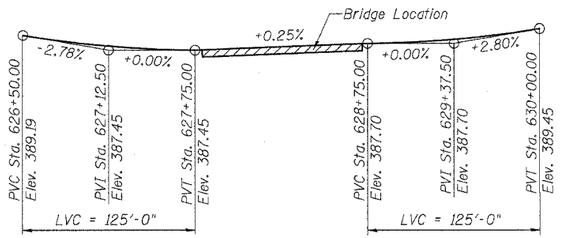
Reinforcement bars designated (E) shall be epoxy coated.

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.

TOTAL BILL OF MATERIAL

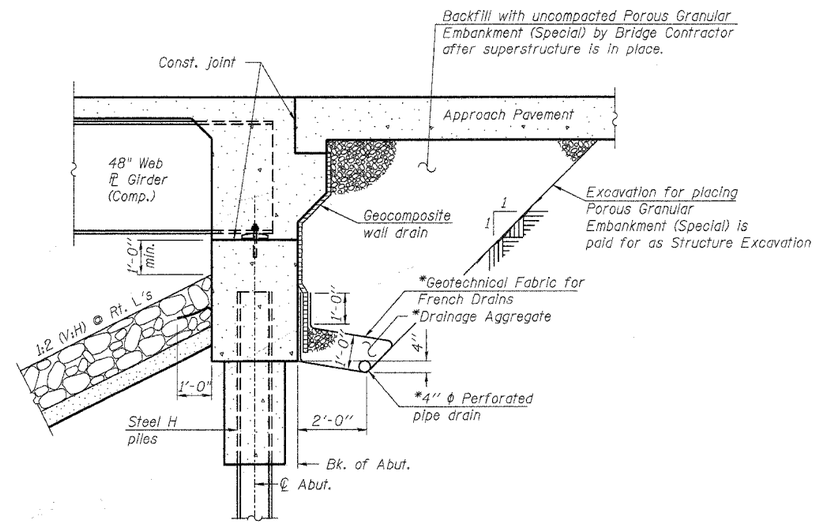
ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Structures	Each	1	-	1
Structure Excavation	Cu. Yd.	-	261	261
Geocomposite Wall Drain	Sq. Yd.	-	111	111
Pipe Underdrains for Structures 4"	Foot	-	128	128
Temporary Soil Retention System	Sq. Ft.	-	648	648
Porous Granular Embankment (Special)	Cu. Yd.	-	229	229
Concrete Structures	Cu. Yd.	-	29.8	29.8
Concrete Superstructure	Cu. Yd.	141.4	-	141.4
Bridge Deck Grooving	Sq. Yd.	348	-	348
Reinforcement Bars, Epoxy Coated	Pound	27600	6200	33800
Bar Splicers	Each	401	20	421
Furnishing and Erecting Structual Steel	Lump Sum	1	-	1
Stud Shear Connectors	Each	1782	-	1782
Protective Coat	Sq. Yd.	445	-	445
Floor Drains	Each	12	-	12
Driving Piles	Foot	-	632	632
Furnishing Steel Piles HP12x 53	Foot	-	632	632
Name Plates	Each	1	-	1
Stone Riprap, Class A5	Sq. Yd.	-	974	974
Filter Fabric	Sq. Yd.	-	974	974
Concrete Encasement	Cu. Yd.	-	5.6	5.6
Anchor Bolts, 1"	Each	-	24	24
Pile Shoes	Each	-	16	16



PROFILE GRADE
(along ℄ Roadway)

STATION 628+25.00
BUILT 20 BY
STATE OF ILLINOIS
F.A.P. RT. 885 SEC. (107A)B-1
LOADING HL-93
STR. NO. 044-0059

NAME PLATE
See Std. 515001



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

* 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 concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

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LIN ENGINEERING, LTD.
Consulting Engineers
Chatham, Illinois
Designed By: KHN | Checked By: MTH | Drawn By: AJF
Date: 3/2007 | File: 044-0059.DGN

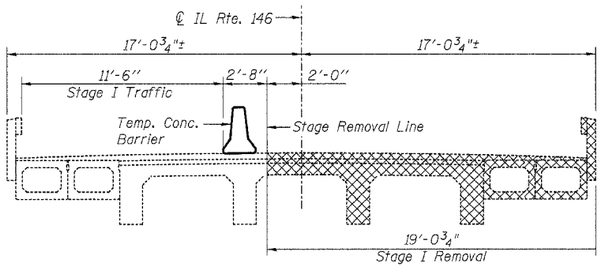
REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
GENERAL NOTES & DETAILS
ILLINOIS ROUTE 146 OVER
BUCK RUN CREEK
F.A.P. ROUTE 885 - SEC. (107A)B-1
JOHNSON COUNTY
STA. 628+25.00
STRUCTURE NO. 044-0059

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	(107A) B-1	Johnson	38	25
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

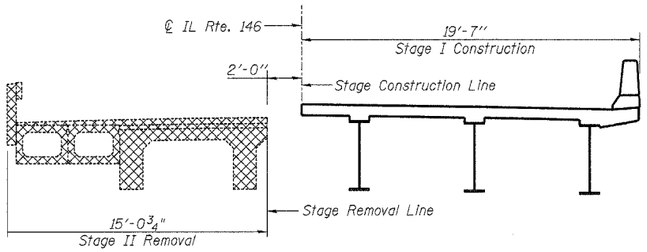
SHEET NO. 3
16 SHEETS

Contract # 98776



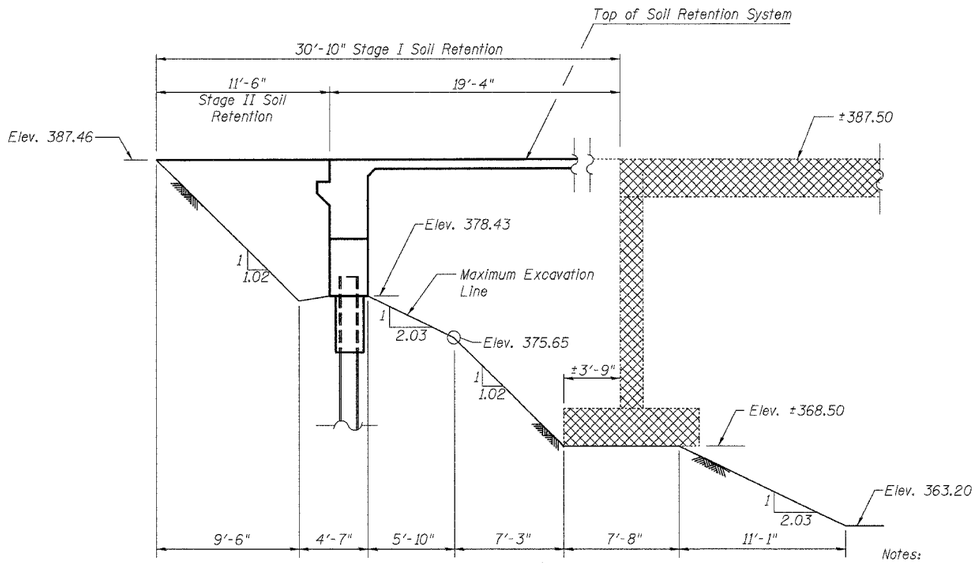
STAGE I REMOVAL & TRAFFIC

(Looking East)



STAGE I CONSTRUCTION & STAGE II REMOVAL

(Looking East)



TEMPORARY SOIL RETENTION SYSTEM AT WEST ABUT.

(Horizontal dimensions along ℄ roadway)

Notes:

A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.

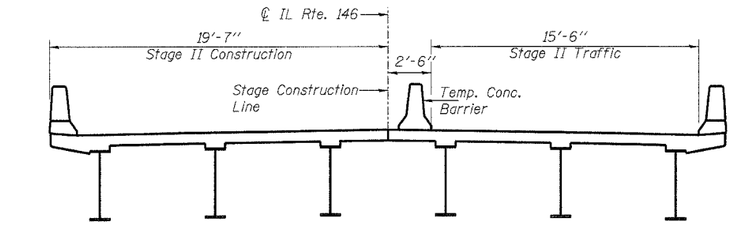
Location of Stage Removal & Construction lines is also applicable to existing abutments.

Cross-hatched areas indicate removal of existing structures.

Removal of existing bridge railing and bituminous wearing surface is included with the Removal of Existing Structure.

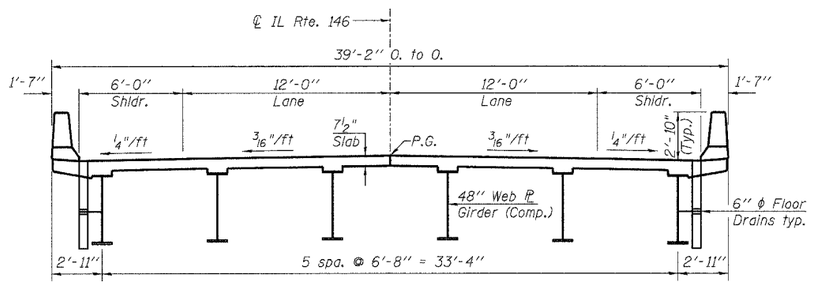
See roadway plans for quantity of Temporary Concrete Barrier.

See sheet 12 of 16 for details of Temporary Concrete Barrier.



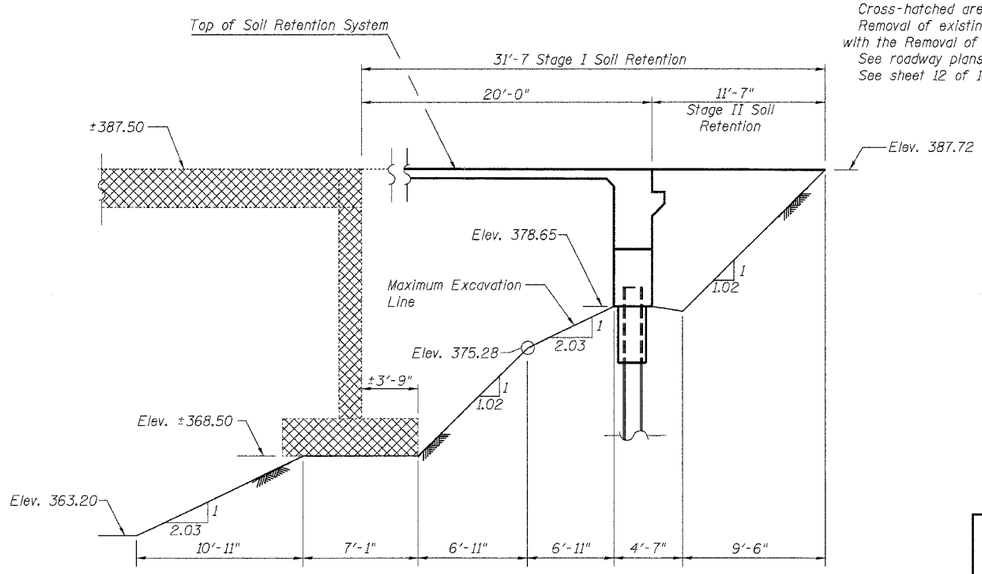
STAGE II CONSTRUCTION & TRAFFIC

(Looking East)



PROPOSED CROSS SECTION

(Looking East)



TEMPORARY SOIL RETENTION SYSTEM AT EAST ABUT.

(Horizontal dimensions along ℄ roadway)

LIN ENGINEERING, LTD.
Consulting Engineers
Chatham, Illinois

Designed By: KNH	Checked By: MTH	Drawn By: AJF
Date: 3/2007	File: 044-0059.DGN	

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION DETAILS
ILLINOIS ROUTE 146 OVER BUCK RUN CREEK
F.A.P. ROUTE 885 - SEC. (107A)B-1
JOHNSON COUNTY
STA. 628+25.00
STRUCTURE NO. 044-0059

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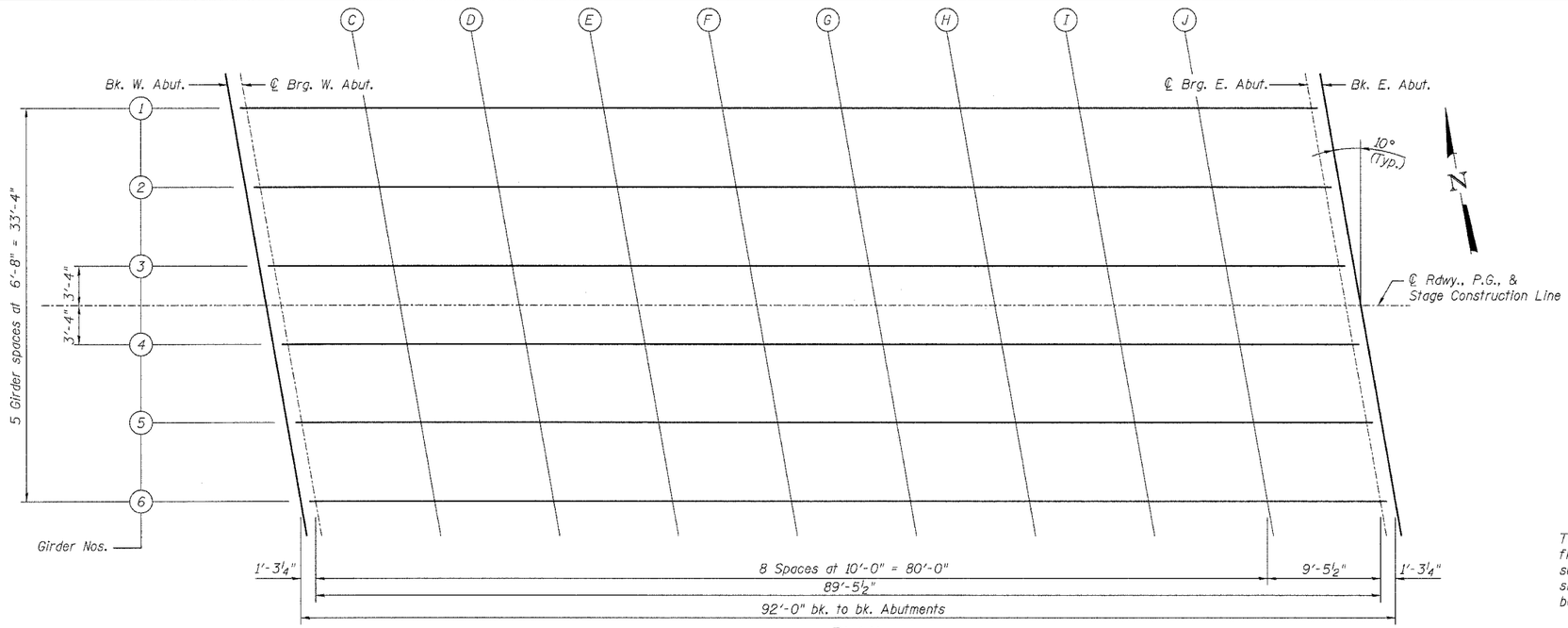
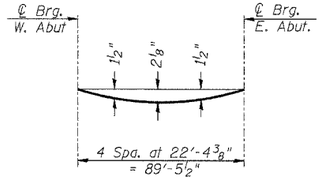
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	(107A) B-1	Johnson	38	26
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 4
16 SHEETS

Contract # 98776



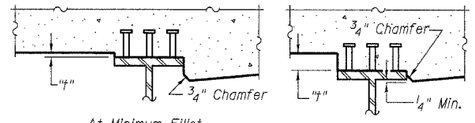
PLAN



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only)

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



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

FILLET HEIGHTS

GIRDER 1

Location	Station	Offset (ft)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	627+76.11	-16.67	387.17	387.17
℄ Brg. W. Abut.	627+77.38	-16.67	387.17	387.17
C	627+87.38	-16.67	387.20	387.26
D	627+97.38	-16.67	387.22	387.33
E	628+07.38	-16.67	387.25	387.40
F	628+17.38	-16.67	387.27	387.44
G	628+27.38	-16.67	387.30	387.47
H	628+37.38	-16.67	387.32	387.47
I	628+47.38	-16.67	387.35	387.46
J	628+57.38	-16.67	387.37	387.43
℄ Brg. E. Abut.	628+66.84	-16.67	387.39	387.39
Bk. of E. Abut.	628+68.11	-16.67	387.40	387.40

GIRDER 2

Location	Station	Offset (ft)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	627+77.26	-10.00	387.30	387.30
℄ Brg. W. Abut.	627+78.53	-10.00	387.30	387.30
C	627+88.53	-10.00	387.33	387.39
D	627+98.53	-10.00	387.35	387.47
E	628+08.53	-10.00	387.38	387.54
F	628+18.53	-10.00	387.40	387.58
G	628+28.53	-10.00	387.43	387.61
H	628+38.53	-10.00	387.45	387.61
I	628+48.53	-10.00	387.48	387.59
J	628+58.53	-10.00	387.50	387.56
℄ Brg. E. Abut.	628+67.99	-10.00	387.53	387.53
Bk. of E. Abut.	628+69.26	-10.00	387.53	387.53

GIRDER 3

Location	Station	Offset (ft)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	627+78.42	-3.33	387.41	387.41
℄ Brg. W. Abut.	627+79.69	-3.33	387.41	387.41
C	627+89.69	-3.33	387.43	387.50
D	627+99.69	-3.33	387.46	387.58
E	628+09.69	-3.33	387.48	387.64
F	628+19.69	-3.33	387.51	387.69
G	628+29.69	-3.33	387.53	387.71
H	628+39.69	-3.33	387.56	387.72
I	628+49.69	-3.33	387.58	387.70
J	628+59.69	-3.33	387.61	387.67
℄ Brg. E. Abut.	628+69.15	-3.33	387.63	387.63
Bk. of E. Abut.	628+70.42	-3.33	387.64	387.64

℄ ROADWAY, P.G., & STAGE CONSTRUCTION LINE

Location	Station	Offset (ft)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	627+79.00	0.00	387.46	387.46
℄ Brg. W. Abut.	627+80.27	0.00	387.46	387.46
C	627+90.27	0.00	387.49	387.55
D	628+00.27	0.00	387.51	387.63
E	628+10.27	0.00	387.54	387.70
F	628+20.27	0.00	387.56	387.74
G	628+30.27	0.00	387.59	387.77
H	628+40.27	0.00	387.61	387.77
I	628+50.27	0.00	387.64	387.75
J	628+60.27	0.00	387.66	387.72
℄ Brg. E. Abut.	628+69.73	0.00	387.69	387.69
Bk. of E. Abut.	628+71.00	0.00	387.69	387.69

GIRDER 4

Location	Station	Offset (ft)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	627+79.58	3.33	387.41	387.41
℄ Brg. W. Abut.	627+80.85	3.33	387.41	387.41
C	627+90.85	3.33	387.44	387.50
D	628+00.85	3.33	387.46	387.58
E	628+10.85	3.33	387.49	387.65
F	628+20.85	3.33	387.51	387.69
G	628+30.85	3.33	387.54	387.72
H	628+40.85	3.33	387.56	387.72
I	628+50.85	3.33	387.59	387.70
J	628+60.85	3.33	387.61	387.67
℄ Brg. E. Abut.	628+70.31	3.33	387.64	387.64
Bk. of E. Abut.	628+71.58	3.33	387.64	387.64

GIRDER 5

Location	Station	Offset (ft)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	627+80.74	10.00	387.31	387.31
℄ Brg. W. Abut.	627+82.01	10.00	387.31	387.31
C	627+92.01	10.00	387.34	387.40
D	628+02.01	10.00	387.36	387.48
E	628+12.01	10.00	387.39	387.54
F	628+22.01	10.00	387.41	387.59
G	628+32.01	10.00	387.44	387.61
H	628+42.01	10.00	387.46	387.62
I	628+52.01	10.00	387.49	387.60
J	628+62.01	10.00	387.51	387.57
℄ Brg. E. Abut.	628+71.47	10.00	387.53	387.53
Bk. of E. Abut.	628+72.74	10.00	387.54	387.54

GIRDER 6

Location	Station	Offset (ft)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	627+81.89	16.67	387.18	387.18
℄ Brg. W. Abut.	627+83.16	16.67	387.19	387.19
C	627+93.16	16.67	387.21	387.27
D	628+03.16	16.67	387.24	387.35
E	628+13.16	16.67	387.26	387.41
F	628+23.16	16.67	387.29	387.46
G	628+33.16	16.67	387.31	387.48
H	628+43.16	16.67	387.34	387.48
I	628+53.16	16.67	387.36	387.47
J	628+63.16	16.67	387.39	387.44
℄ Brg. E. Abut.	628+72.62	16.67	387.41	387.41
Bk. of E. Abut.	628+73.89	16.67	387.41	387.41

LIN ENGINEERING, LTD.
Consulting Engineers
Chatham, Illinois

Designed By: KHH	Checked By: MTH	Drawn By: AJF
Date: 5/2007	Files: 044-0059.DGN	

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

DECK ELEVATIONS
ILLINOIS ROUTE 146 OVER
BUCK RUN CREEK
F.A.P. ROUTE 885 - SEC. (107A)B-1
JOHNSON COUNTY
STA. 628+25.00
STRUCTURE NO. 044-0059

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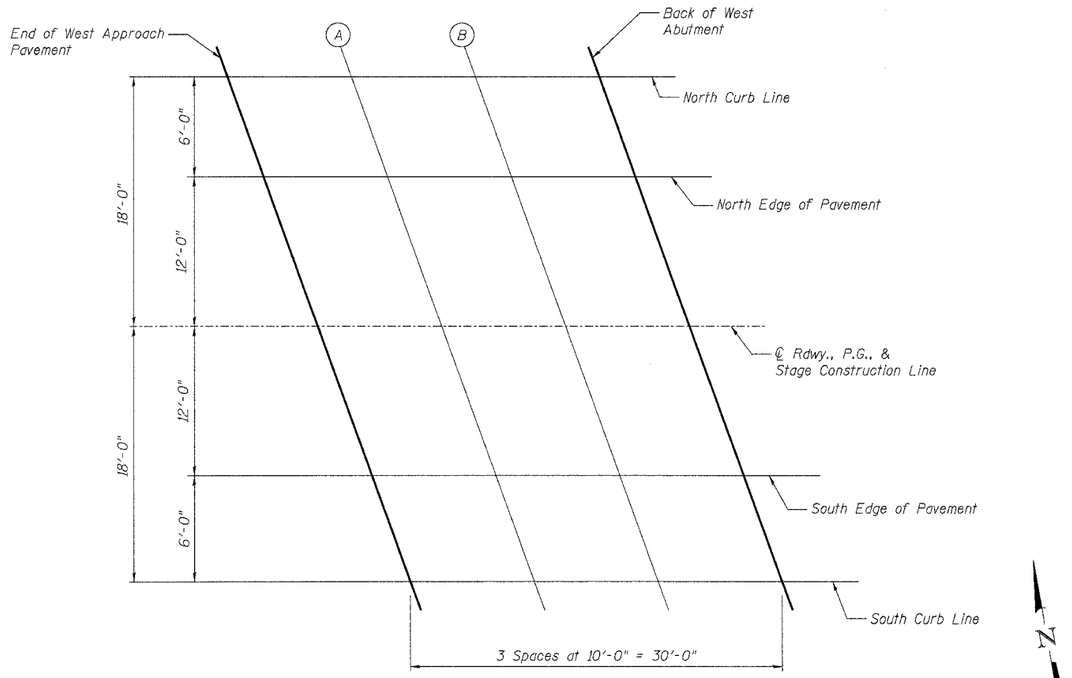
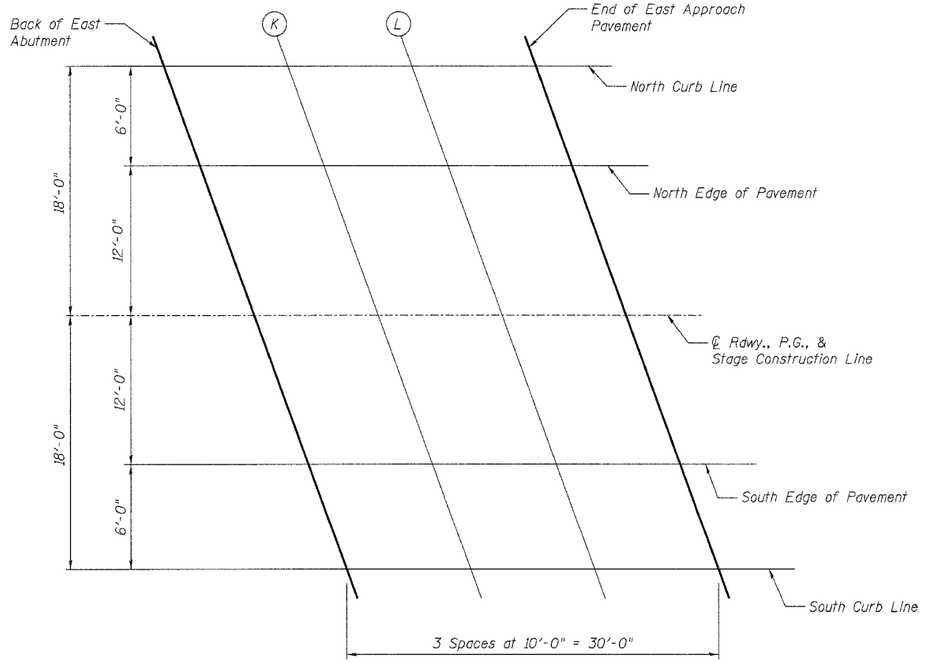
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	(107A) B-1	Johnson	38	27
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 5
16 SHEETS

Contract # 98776



PLAN - WEST APPROACH



PLAN - EAST APPROACH

NORTH CURB LINE

Location	Station	Offset (ft)	Theoretical Grade Elevations
End W. Appr. Pav't.	627+45.87	-18.00	387.23
A	627+55.87	-18.00	387.18
B	627+65.87	-18.00	387.15
Bk. W. Abut.	627+75.87	-18.00	387.14
Bk. E. Abut.	628+67.87	-18.00	387.37
K	628+77.87	-18.00	387.39
L	628+87.87	-18.00	387.41
End E. Appr. Pav't	628+97.87	-18.00	387.45

NORTH EDGE OF PAVEMENT

Location	Station	Offset (ft)	Theoretical Grade Elevations
End W. Appr. Pav't.	627+46.92	-12.00	387.35
A	627+56.92	-12.00	387.30
B	627+66.92	-12.00	387.27
Bk. W. Abut.	627+76.92	-12.00	387.27
Bk. E. Abut.	628+68.92	-12.00	387.50
K	628+78.92	-12.00	387.51
L	628+88.92	-12.00	387.53
End E. Appr. Pav't	628+98.92	-12.00	387.58

℄ RDWY, P.G., & STAGE CONSTRUCTION LINE

Location	Station	Offset (ft)	Theoretical Grade Elevations
End W. Appr. Pav't.	627+49.00	0.00	387.53
A	627+59.00	0.00	387.48
B	627+69.00	0.00	387.46
Bk. W. Abut.	627+79.00	0.00	387.46
Bk. E. Abut.	628+71.00	0.00	387.69
K	628+81.00	0.00	387.70
L	628+91.00	0.00	387.73
End E. Appr. Pav't	629+01.00	0.00	387.78

SOUTH EDGE OF PAVEMENT

Location	Station	Offset (ft)	Theoretical Grade Elevations
End W. Appr. Pav't.	627+51.08	12.00	387.33
A	627+61.08	12.00	387.29
B	627+71.08	12.00	387.27
Bk. W. Abut.	627+81.08	12.00	387.28
Bk. E. Abut.	628+73.08	12.00	387.51
K	628+83.08	12.00	387.52
L	628+93.08	12.00	387.55
End E. Appr. Pav't	629+03.08	12.00	387.60

SOUTH CURB LINE

Location	Station	Offset (ft)	Theoretical Grade Elevations
End W. Appr. Pav't.	627+52.13	18.00	387.20
A	627+62.13	18.00	387.16
B	627+72.13	18.00	387.14
Bk. W. Abut.	627+82.13	18.00	387.16
Bk. E. Abut.	628+74.13	18.00	387.39
K	628+84.13	18.00	387.40
L	628+94.13	18.00	387.43
End E. Appr. Pav't	629+04.13	18.00	387.48

LIN ENGINEERING, LTD.
Consulting Engineers
Chatham, Illinois

Designed By: KHH | Checked By: MTH | Drawn By: AJF
Date: 3/2007 | Files: 044-0059.DGN

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

APPROACH PAVEMENT ELEVATIONS
ILLINOIS ROUTE 146 OVER BUCK RUN CREEK
F.A.P. ROUTE 885 - SEC. (107A)B-1
JOHNSON COUNTY
STA. 628+25.00
STRUCTURE NO. 044-0059

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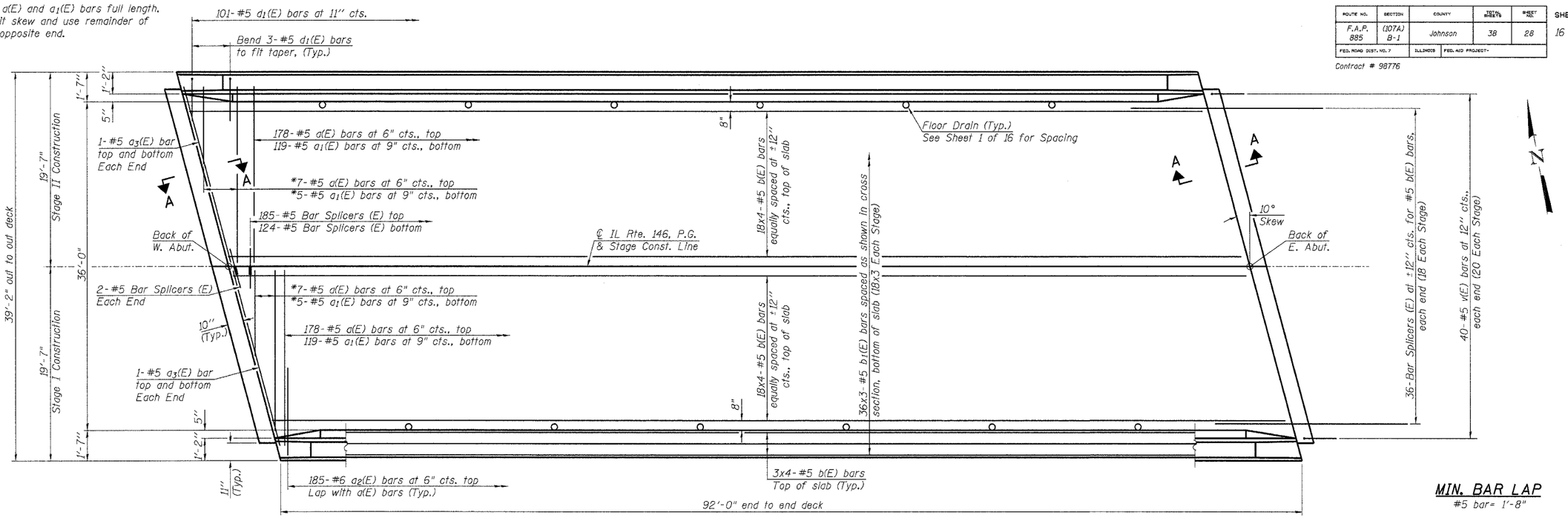
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	(107A) B-1	Johnson	38	28
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

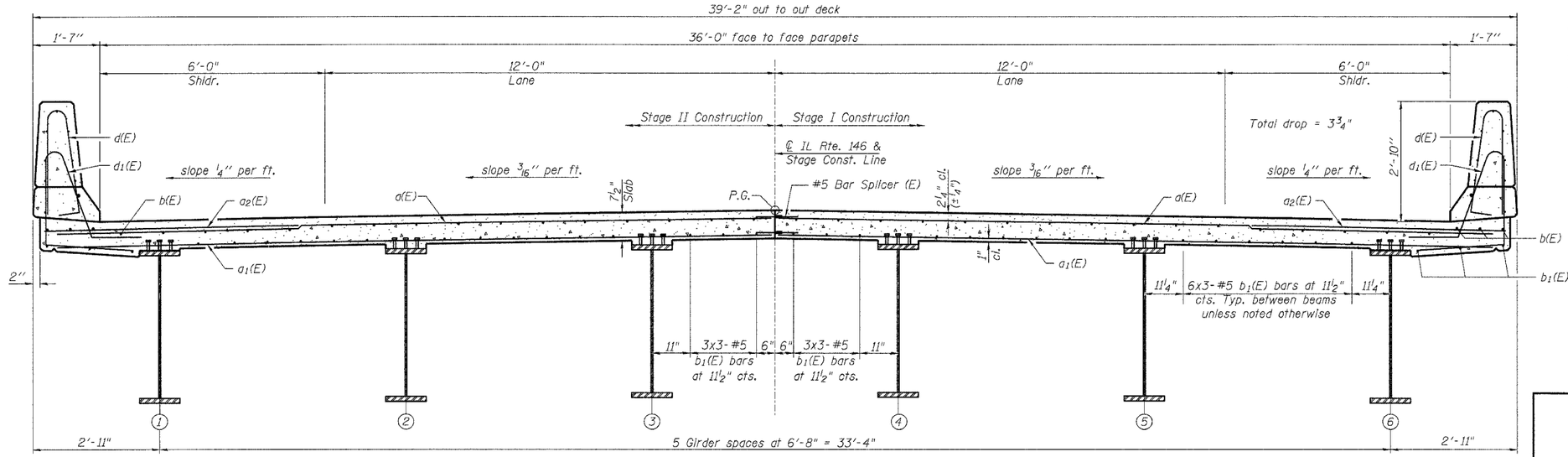
SHEET NO. 6
16 SHEETS

Contract # 98776

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



PLAN



CROSS SECTION
(Looking East)

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

Notes:
See Sheet 7 of 16 for superstructure details and Bill of Material.
Bars indicated thus 36 x 3-#5 etc. indicates 36 lines of bars with 3 lengths per line.
See Sheet 7 of 16 for parapet reinforcement.
See Sheet 8 of 16 for section A-A.
See Sheet 13 of 16 for Bar Splicer Details.

REVISIONS	
NAME	DATE

LIN ENGINEERING, LTD.
Consulting Engineers
Chatham, Illinois

Designed By: KRH | Checked By: MTH | Drawn By: AJF
Date: 3/2007 | File: 044-0059.DGN

ILLINOIS DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE
ILLINOIS ROUTE 146 OVER BUCK RUN CREEK
F.A.P. ROUTE 885 - SEC. (107A)B-1
JOHNSON COUNTY
STA. 628+25.00
STRUCTURE NO. 044-0059

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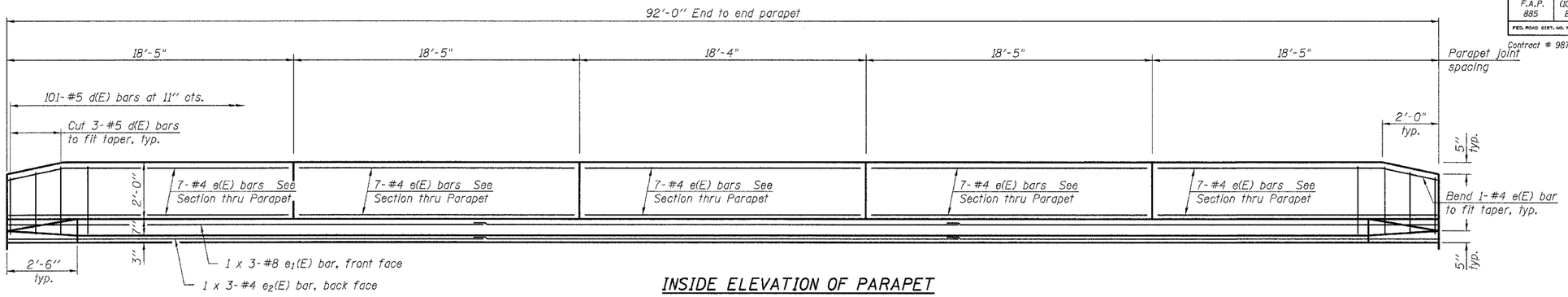
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	(107A) B-1	Johnson	38	29
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 7
16 SHEETS

Contract # 98776

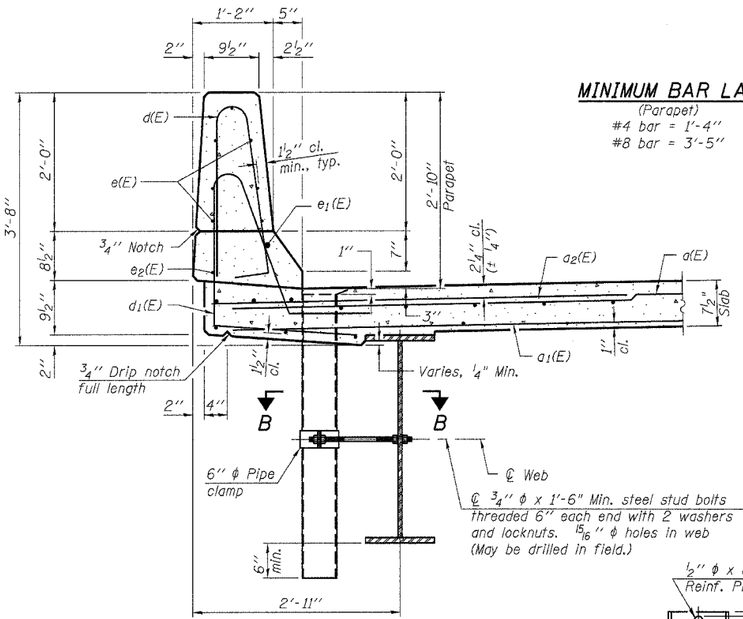


INSIDE ELEVATION OF PARAPET

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	370	#5	18'-11"	
a_1(E)	124	#5	18'-7"	
a_2(E)	370	#6	6'-0"	
a_3(E)	8	#5	19'-1"	
b(E)	168	#5	24'-2"	
b_1(E)	108	#5	31'-8"	
d(E)	202	#5	5'-7"	
d_1(E)	202	#5	7'-6"	
e(E)	70	#4	18'-2"	
e_1(E)	6	#8	32'-10"	
e_2(E)	6	#4	31'-6"	
m(E)	8	#6	18'-8"	
m_1(E)	12	#6	19'-6"	
m_2(E)	24	#6	8'-5"	
m_3(E)	8	#6	5'-5"	
m_4(E)	4	#6	2'-0"	
m_5(E)	4	#6	2'-7"	
s(E)	82	#5	5'-9"	
s_1(E)	72	#4	12'-4"	
v(E)	80	#5	3'-4"	
Reinforcement Bars, Epoxy Coated		Pound	27600	
Concrete Superstructure		Cu. Yds.	141.4	
Floor Drains		Each	12	

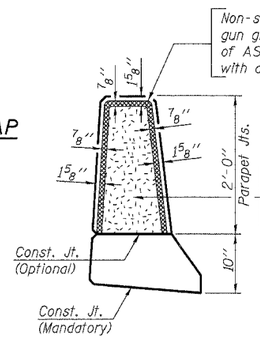
Bars indicated thus 1 x 3 - #8 etc. indicates 1 line of bars with 3 lengths per line.

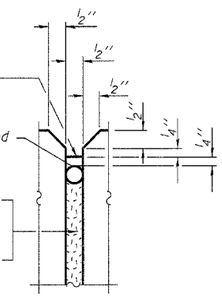


SECTION THRU PARAPET

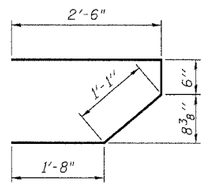
MINIMUM BAR LAP

(Parapet)
#4 bar = 1'-4"
#8 bar = 3'-5"





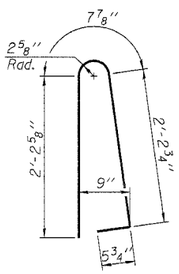
PARAPET JOINT DETAILS



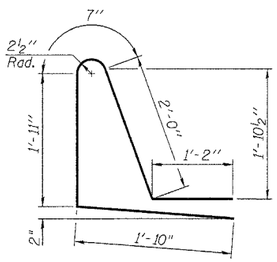
BAR s(E)

BAR v(E)

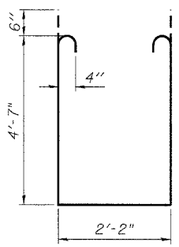
Notes:
The exterior surfaces of the floor drains shall be painted with the finish coat as specified in the special provisions for Cleaning and Painting New Metal Structures. The exterior surfaces of the drains shall be cleaned according to Steel Structures Painting Council's Spec. SSPC-SP1 prior to painting.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



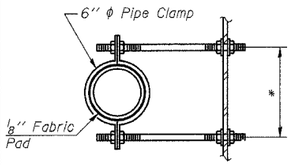
BAR d(E)



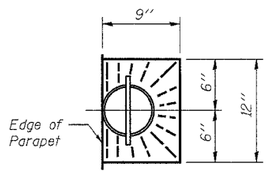
BAR d_1(E)



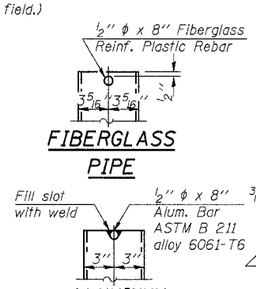
BAR s_1(E)



SECTION B-B
* Dimension as required by Pipe Clamp

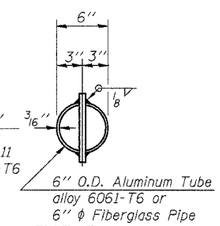


TOP PLAN



FIBERGLASS PIPE

ALUMINUM TUBE



TOP PLAN
(Showing Aluminum Tube)

REVISIONS	
NAME	DATE

LIN ENGINEERING, LTD.
Consulting Engineers
Chatham, Illinois

Designed By: KHH	Checked By: WTH	Drawn By: AJF
Date: 3/2007	Files: 044-0059.DGN	

ILLINOIS DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS
ILLINOIS ROUTE 146 OVER BUCK RUN CREEK
F.A.P. ROUTE 885 - SEC. (107A)B-1
JOHNSON COUNTY
STA. 628+25.00
STRUCTURE NO. 044-0059

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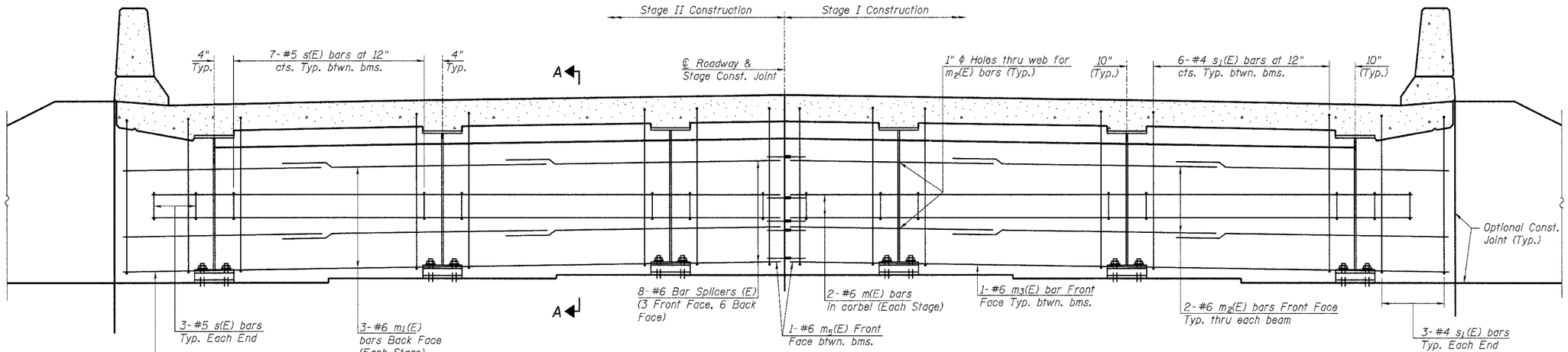
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	(107A) B-1	Johnson	38	30
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 8
16 SHEETS

Contract # 98776



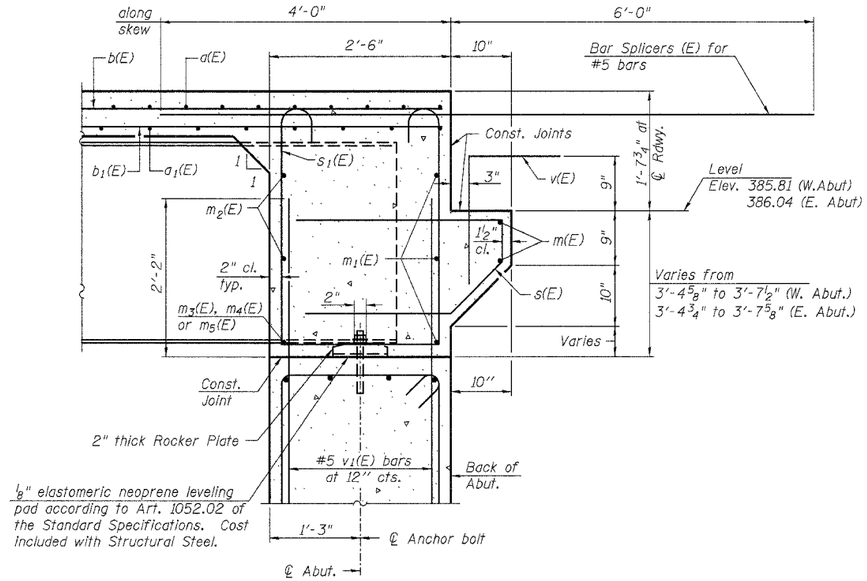
DIAPHRAGM ELEVATION AT EAST ABUTMENT

(Looking East)
(West Abutment mirrored about ℄ Roadway)

Notes:
Reinforcement bars in diaphragm are billed with superstructure on sheet 7 of 16.
Concrete in diaphragm is included with Concrete Superstructure on sheet 7 of 16.
For details of bars s(E) & s_1(E) see sheet 7 of 16.
The s(E) and s_1(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.
For location of holes thru web, see sheet 9 of 16.

MIN. BAR LAP

#6 bar = 2'-9"



SECTION A-A

Dimensions at right angles to abutment, except as shown.

REVISIONS	
NAME	DATE

LIN ENGINEERING, LTD.
Consulting Engineers
Chatham, Illinois

Designed By: KHH | Checked By: MTH | Drawn By: AJF
Date: 3/2007 | File: 044-0059.DGN

ILLINOIS DEPARTMENT OF TRANSPORTATION

CONCRETE END DIAPHRAGMS
ILLINOIS ROUTE 146 OVER BUCK RUN CREEK
F.A.P. ROUTE 885 - SEC. (107A)B-1
JOHNSON COUNTY
STA. 628+25.00
STRUCTURE NO. 044-0059

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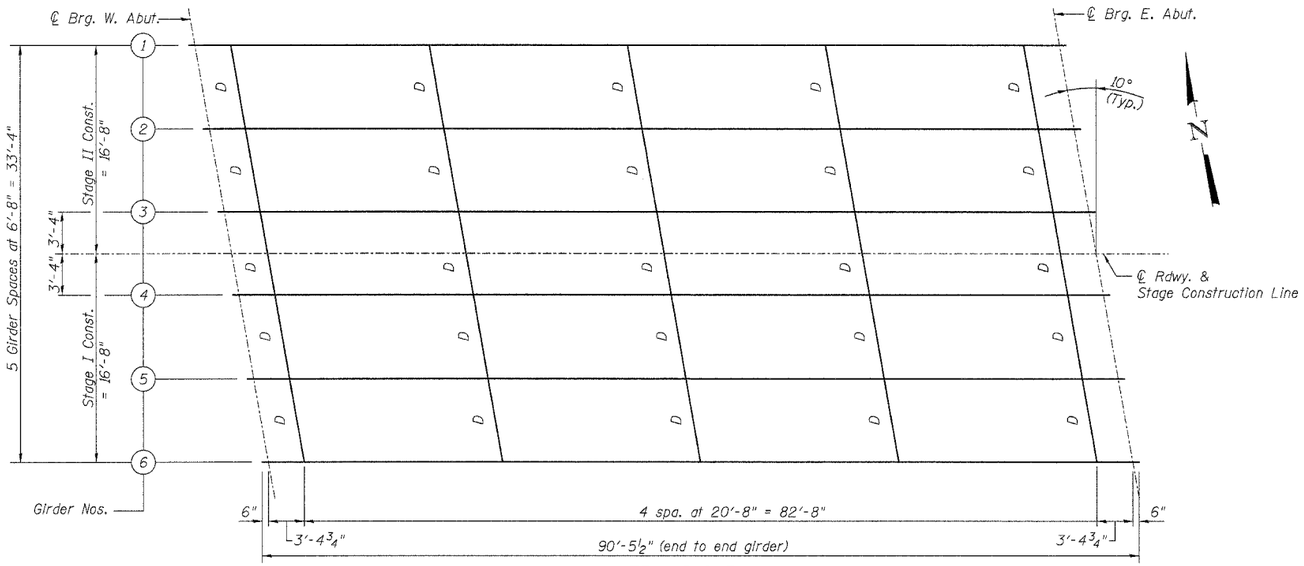
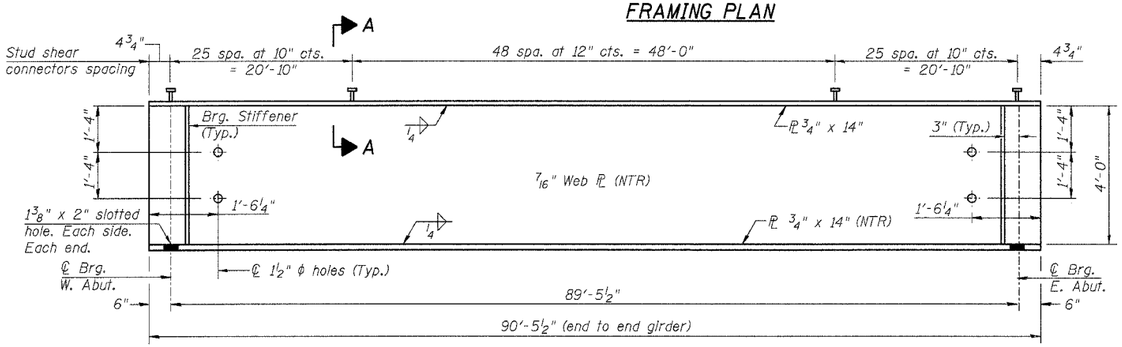
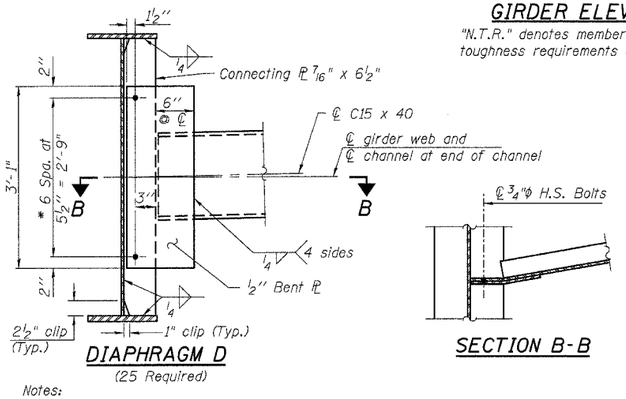


FRAMING PLAN



GIRDER ELEVATION

"N.T.R." denotes members to which notch toughness requirements are applicable.



DIAPHRAGM D

(25 Required)

SECTION B-B

Notes:
Two hardened washers required for each set of oversized holes and 5/16" plate washer over slotted holes.

* 3/4" ϕ H.S. bolts, 15/16" ϕ holes. For diaphragms at stage construction provide 13/16" x 1 7/8" vertical slotted holes at south side of beam 3 in connecting plates and for north side of beam 4 provide oversize holes in connecting plates. Bolts in slotted holes shall be finger tightened prior to the deck slab pouring and then fully tightened after completion of the pour.

NOTES:

1. All girders and bearing stiffeners shall be AASHTO M270 Grade 50. All diaphragms and connecting plates shall be AASHTO M270 Grade 36.

2. All diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted.

3. Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

4. 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.

5. Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

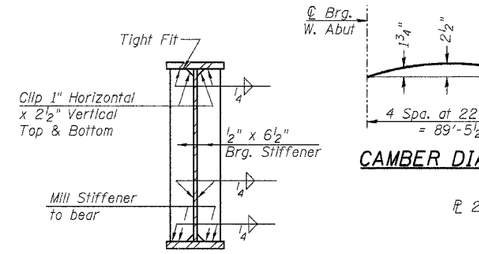
TOP OF WEB ELEVATIONS

(For Fabrication Only)

Location	Girder 1	Girder 2	Girder 3	Girder 4	Girder 5	Girder 6
℄ Brg. W. Abut.	386.42	386.55	386.66	386.66	386.56	386.44
℄ Brg. E. Abut.	386.65	386.78	386.88	386.89	386.79	386.66

INTERIOR GIRDER MOMENT TABLE		0.5 Span
I_s	(in^4)	16510
$I_c(n)$	(in^4)	39246
$I_c(3n)$	(in^4)	29261
S_s	(in^3)	667
$S_c(n)$	(in^3)	916
$S_c(3n)$	(in^3)	837
DC1	(k/')	0.811
M_{DC1}	('k)	811
DC2	(k/')	0.150
M_{DC2}	('k)	150
DW	(k/')	0.300
M_{DW}	('k)	300
M_{L+Imp}	('k)	1364
M_U(Strength I)	('k)	4038
$\phi_f M_n$	('k)	4859
f_s DC1	(ksi)	14.59
f_s DC2	(ksi)	2.15
f_s DW	(ksi)	4.30
f_s 1.3(L+I)	(ksi)	23.23
f_s (Service II)	(ksi)	44.27
V_r	(k)	31.5

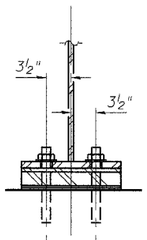
INTERIOR GIRDER REACTION TABLE HL93 Loading		Abut.
R_{DC1}	(k)	36.3
R_{DC2}	(k)	6.7
R_{DW}	(k)	13.4
R_{L+Imp}	(k)	85.2
R_{Total}	(k)	141.6



BEARING STIFFENER

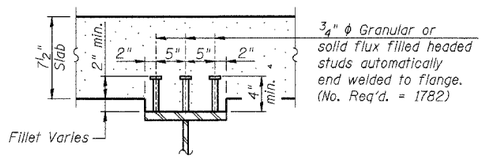
CAMBER DIAGRAM

ELEVATION AT ABUTMENT



SECTION C-C

FIXED BEARING



SECTION A-A

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	(107A) B-1	Johnson	38	31
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 9
16 SHEETS

Contract # 98776

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 (in.^{4} and in.^{3}).

$I_c(n)$, $S_c(n)$: 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 (in.^{4} and in.^{3}).

$I_c(3n)$, $S_c(3n)$: 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 (in.^{4} and in.^{3}).

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_{L+Imp}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

M_U (Strength I): Factored design moment (kip-ft.). $1.25\,(M_{DC1} + M_{DC2}) + 1.5\,M_{DW} + 1.75\,M_{L+Imp}$

$\phi_f M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 (kip-ft.).

f_s (Service II): Sum of stresses as computed from the moments below (ksi). $M_{DC1} + M_{DC2} + M_{DW} + 1.3\,M_{L+Imp}$

V_r: Factored shear range computed according to Article 6.10.10.

REVISIONS NAME	DATE

LIN ENGINEERING, LTD.
Consulting Engineers
Chatham, Illinois

Designed By: KRH | Checked By: WTH | Drawn By: AJF
Date: 3/2007 | File: 044-0059.DGN

ILLINOIS DEPARTMENT OF TRANSPORTATION

FRAMING PLAN & STEEL DETAILS
ILLINOIS ROUTE 146 OVER BUCK RUN CREEK
F.A.P. ROUTE 885 - SEC. (107A)B-1
JOHNSON COUNTY
STA. 628+25.00
STRUCTURE NO. 044-0059

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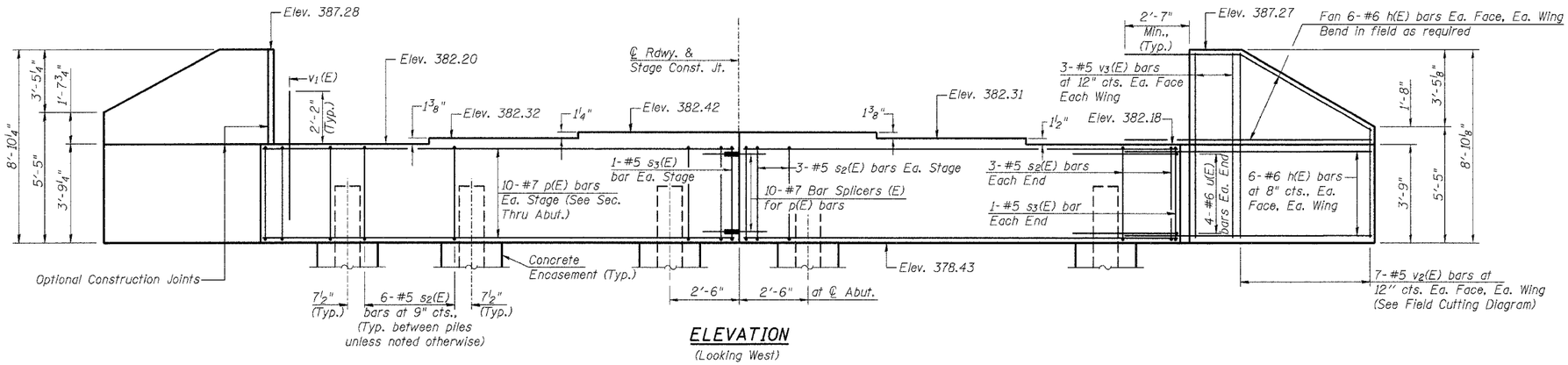
Notes:
Pour steps monolithically with cap.
Space reinforcement in cap to miss Anchor Bolts.

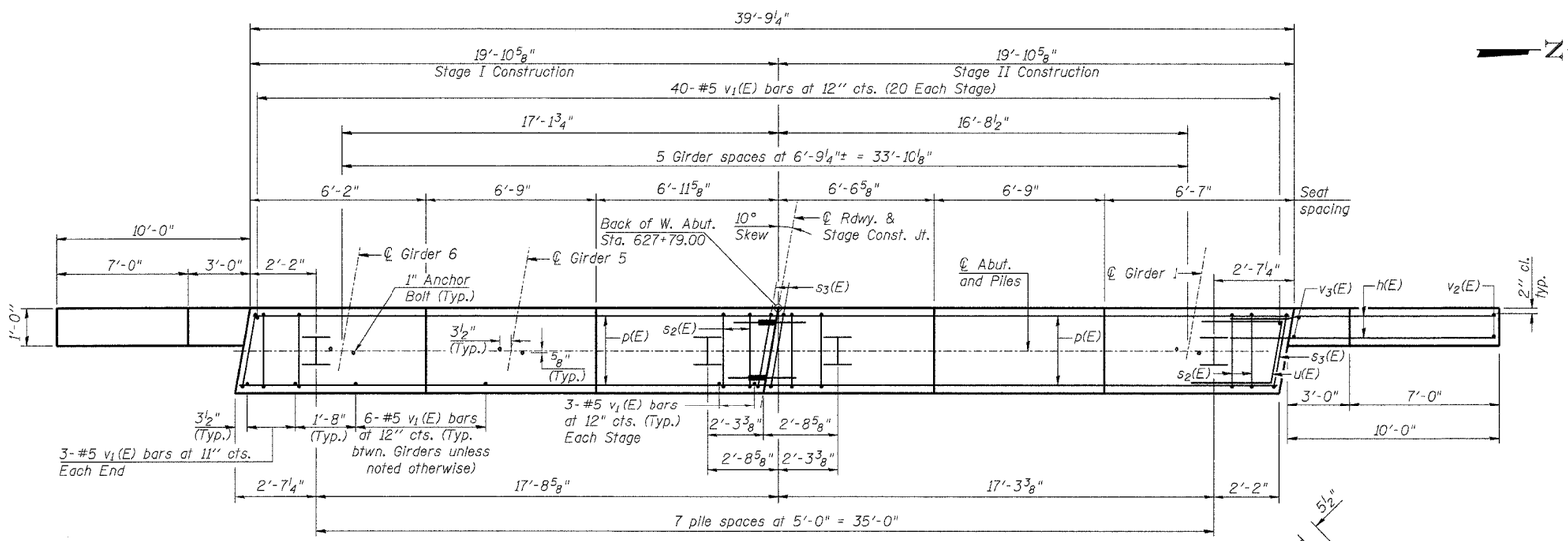
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	(107A) B-1	Johnson	38	32
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 10
16 SHEETS

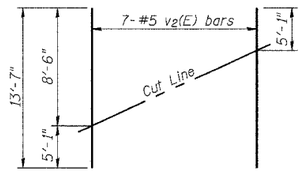
Contract # 98776



ELEVATION
(Looking West)

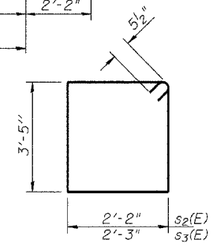


PLAN

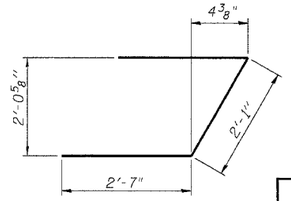


FIELD CUTTING DIAGRAM
Order $v_2(E)$ full length. Cut as shown and use remainder of bars in opposite face.

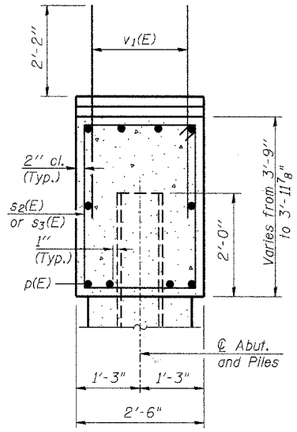
PILE DATA
Type: Steel HP12x53 with pile shoes
Nominal Required Bearing: 419 kips
Factored Resistance Available: 209 kips
Est. Length: 50 ft
No. Production Piles: 8



BARS $s_2(E)$ & $s_3(E)$



BAR u(E)



SEC. THRU ABUT.
(Dimensions at Rt. L's)

BILL OF MATERIAL
(West Abutment)

Bar	No.	Size	Length	Shape
h(E)	48	#6	12'-6"	
p(E)	20	#7	19'-7"	
$s_2(E)$	48	#5	12'-1"	
$s_3(E)$	4	#5	12'-3"	
u(E)	8	#6	7'-3"	
$v_1(E)$	76	#5	4'-4"	
$v_2(E)$	14	#5	13'-7"	
$v_3(E)$	12	#5	8'-6"	
Structure Excavation		Cu. Yd.		131
Concrete Structures		Cu. Yd.		14.9
Reinforcement Bars, Epoxy Coated		Pound		3100
Furnishing Steel Piles HP12x53		Foot		400
Driving Piles		Foot		400
Pile Shoes		Each		8
Concrete Encasement		Cu. Yd.		2.8
Anchor Bolts, 1"		Each		12

For details of Bar Splicers, see sheet 13 of 16.
For details of piles and Concrete Encasement, see sheet 14 of 16.
For details of Integral Abutment Bearing, see sheet 9 of 16.
For drainage details, see Section Thru Integral Abutment on sheet 2 of 16.

LIN ENGINEERING, LTD.
Consulting Engineers
Chatham, Illinois
Designed By: KHH | Checked By: MTH | Drawn By: AJF
Date: 3/2007 | File: 044-0059.DGN

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT
ILLINOIS ROUTE 146 OVER BUCK RUN CREEK
F.A.P. ROUTE 885 - SEC. (107A)B-1
JOHNSON COUNTY
STA. 628+25.00
STRUCTURE NO. 044-0059

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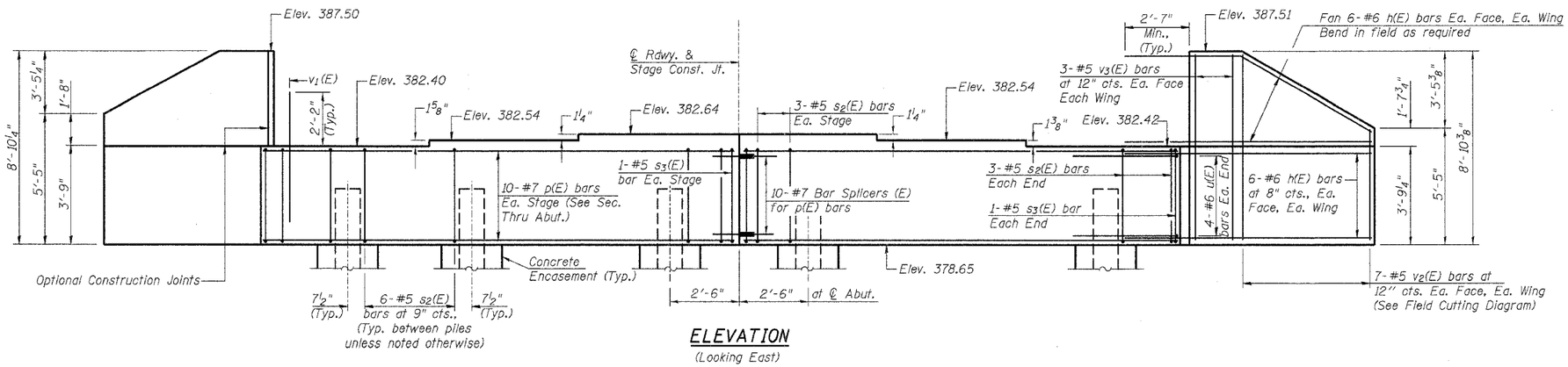
Notes:
Pour steps monolithically with cap.
Space reinforcement in cap to miss Anchor Bolts.

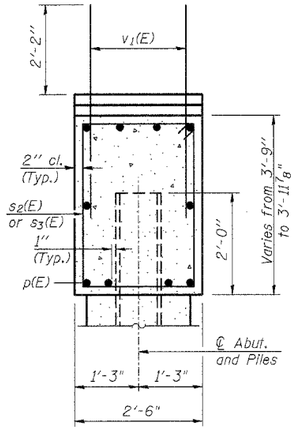
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	(107A) B-1	Johnson	38	33
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 11
16 SHEETS

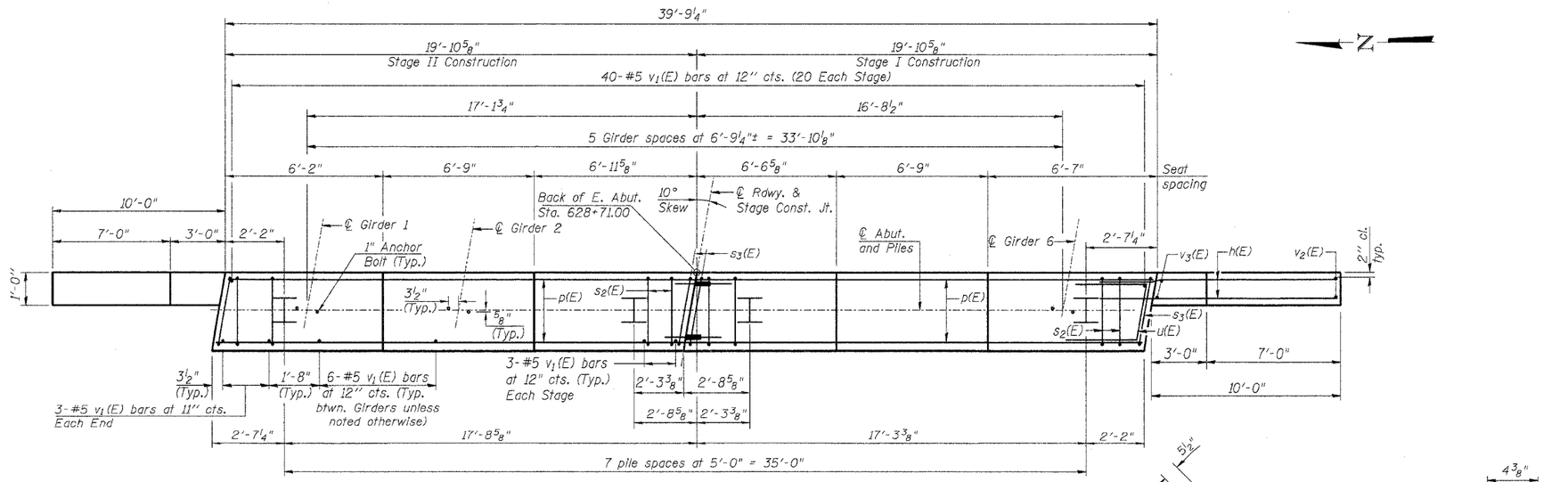
Contract # 98776



ELEVATION
(Looking East)



SEC. THRU ABUT.
(Dimensions at Rt. L's)



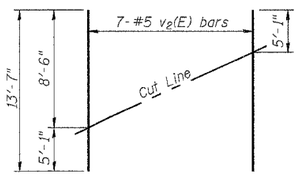
PLAN

BILL OF MATERIAL
(East Abutment)

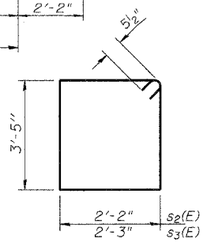
Bar	No.	Size	Length	Shape
h(E)	48	#6	12'-6"	
p(E)	20	#7	19'-7"	
s2(E)	48	#5	12'-1"	
s3(E)	4	#5	12'-3"	
u(E)	8	#6	7'-3"	
v1(E)	76	#5	4'-4"	
v2(E)	14	#5	13'-7"	
v3(E)	12	#5	8'-6"	
Structure Excavation		Cu. Yd.	130	
Concrete Structures		Cu. Yd.	14.9	
Reinforcement Bars, Epoxy Coated		Pound	3100	
Furnishing Steel Piles HP12x53		Foot	232	
Driving Piles		Foot	232	
Pile Shoes		Each	8	
Concrete Encasement		Cu. Yd.	2.8	
Anchor Bolts, 1"		Each	12	

For details of Bar Splicers, see sheet 13 of 16.
For details of piles and Concrete Encasement, see sheet 14 of 16.
For details of Integral Abutment Bearing, see sheet 9 of 16.
For drainage details, see Section Thru Integral Abutment on sheet 2 of 16.

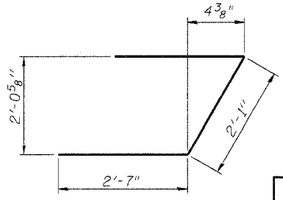
PILE DATA
Type: Steel HP12x53 with pile shoes
Nominal Required Bearing: 419 kips
Factored Resistance Available: 209 kips
Est. Length: 29 ft
No. Production Piles: 8



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



BARS s2(E) & s3(E)



BAR u(E)

LIN ENGINEERING, LTD.
Consulting Engineers
Chatham, Illinois
Designed By: KHH | Checked By: MTH | Drawn By: AJF
Date: 3/2007 | File: 044-0059.DGN

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT
ILLINOIS ROUTE 146 OVER BUCK RUN CREEK
F.A.P. ROUTE 885 - SEC. (107A)B-1
JOHNSON COUNTY
STA. 628+25.00
STRUCTURE NO. 044-0059

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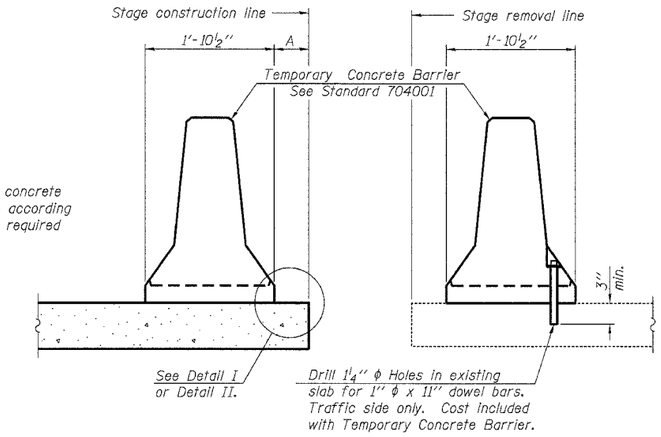
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	(107A) B-1	Johnson	38	34
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 12
16 SHEETS

Contract # 98776



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

NEW SLAB EXISTING SLAB

SECTIONS THRU SLAB

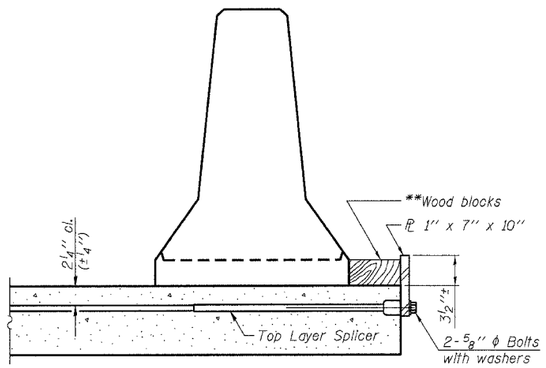
NOTES

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

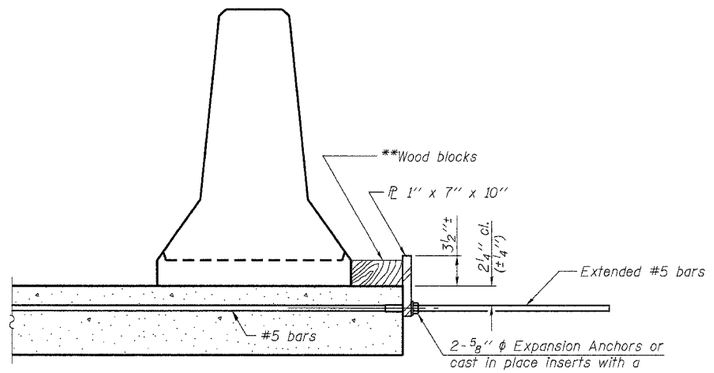
Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" steel ℙ to the concrete slab with 2-⅝" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate ℄ of each barrier panel.

Cost of anchorage is included with Temporary Concrete Barrier.

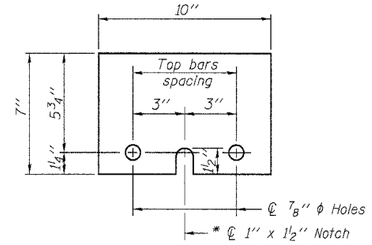
The 1" x 7" x 10" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.



DETAIL I



DETAIL II



STEEL RETAINER ℙ 1" x 7" x 10"

* Required only with Detail II

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

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LIN ENGINEERING,LTD.
Consulting Engineers
Chatham, Illinois
Designed By: KHH | Checked By: MTH | Drawn By: AJF
Date: 3/2007 | File: 044-0059.DGN

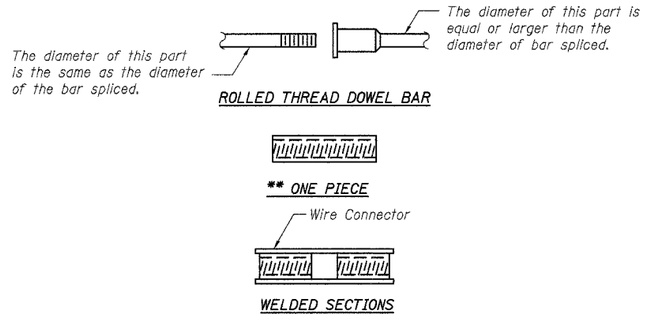
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
TEMPORARY CONCRETE BARRIER
ILLINOIS ROUTE 146 OVER
BUCK RUN CREEK
F.A.P. ROUTE 885 - SEC. (107A)B-1
JOHNSON COUNTY
STA. 628+25.00
STRUCTURE NO. 044-0059

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	(107A) B-1	Johnson	38	35
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

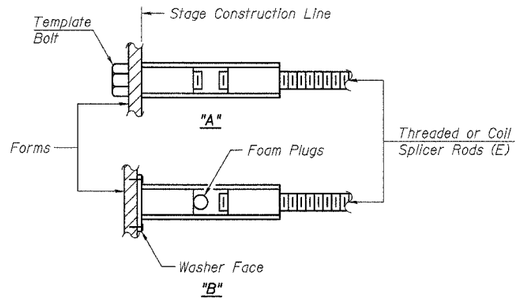
SHEET NO. 13
16 SHEETS

Contract # 98776



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.

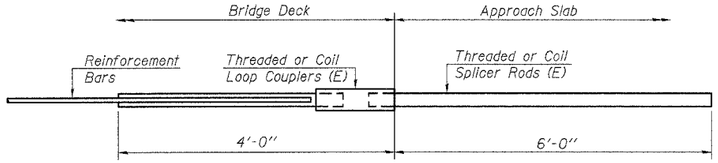
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

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

② Minimum *Pull-out Strength (Tension in kips) = $0.66 \times f_y \times A_t$

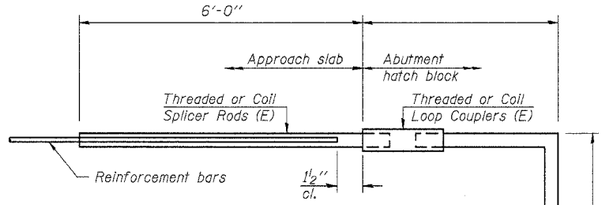
Where f_y = Yield strength of lapped reinforcement bars in ksi.
A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

BAR SPLICER ASSEMBLIES			
		Strength Requirements	
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	7.9
#5	2'-0"	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



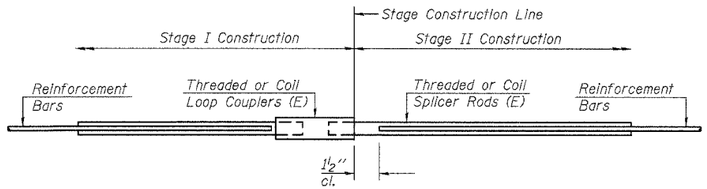
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required = 72



FOR STUB ABUTMENTS

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



STANDARD

Bar Size	No. Assemblies Required	Location
#5	313	Deck
#6	16	Diaphragms
#7	20	Abutments

LIN ENGINEERING, LTD.
Consulting Engineers
Chatham, Illinois

Designed By: KHH | Checked By: MTH | Drawn By: AJF
Date: 3/2007 | File: 044-0059.DGN

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY DETAILS
ILLINOIS ROUTE 146 OVER BUCK RUN CREEK
F.A.P. ROUTE 885 - SEC. (107A)B-1
JOHNSON COUNTY
STA. 628+25.00
STRUCTURE NO. 044-0059

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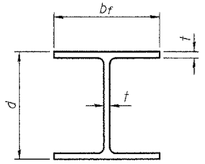
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	(107A) B-1	Johnson	38	36
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

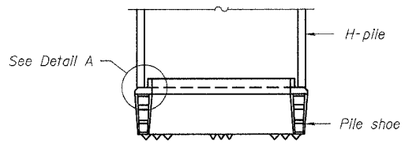
SHEET NO. 14
16 SHEETS

Contract # 98776

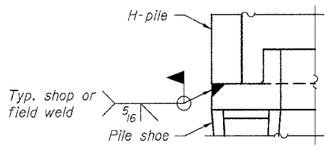


STEEL PILE TABLE

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"	11/16"	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"	11/16"	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"

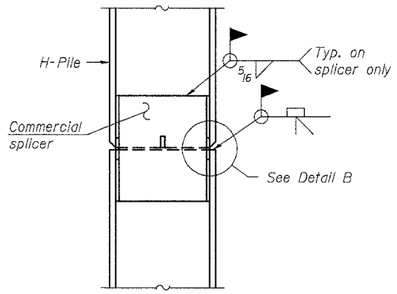


ELEVATION



DETAIL A

H-PILE SHOE ATTACHMENT



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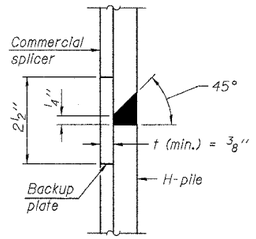
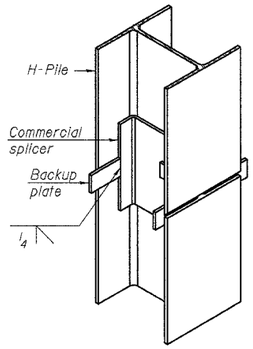
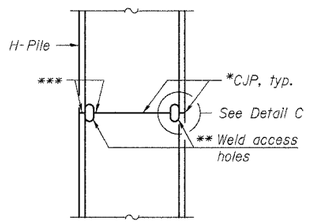


DETAIL "B"

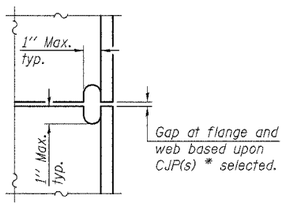


ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



ELEVATION



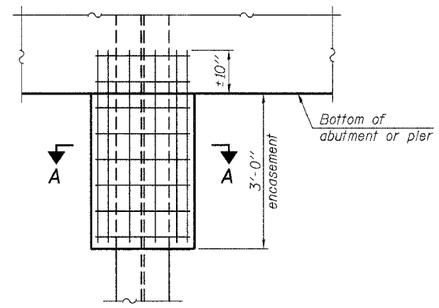
DETAIL C

COMPLETE PENETRATION WELD SPLICE

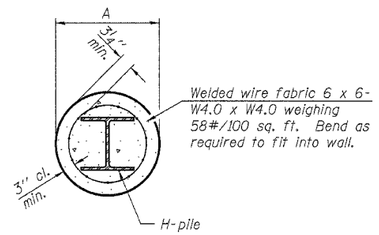
* Use joint conforming to Figure 3.4 in AWS D1.1, Structure Welding Code - Steel.

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

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



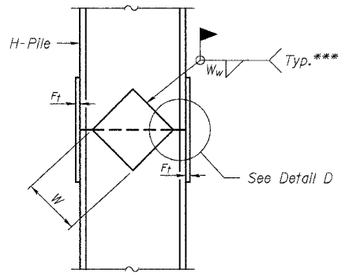
ELEVATION



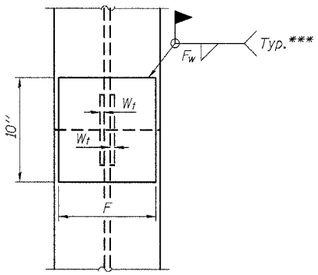
Note:
Forms for encasement may be omitted when soil conditions permit.

SECTION A-A

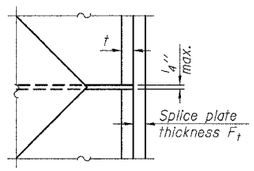
PILE ENCASEMENT



ELEVATION



END VIEW



DETAIL D

Designation	F	F_t	F_w	W	W_t	W_w
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	11/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	11/16"	6 1/2"	5/8"	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"

WELDED PLATE FIELD SPLICE

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

F-HP 11-1-06

REVISIONS NAME	DATE

LIN ENGINEERING, LTD.
Consulting Engineers
Chatham, Illinois

Designed By: KNH | Checked By: MTH | Drawn By: AJF
Date: 3/2007 | File: 044-0059.DGN

ILLINOIS DEPARTMENT OF TRANSPORTATION

STEEL PILE DETAILS
ILLINOIS ROUTE 146 OVER BUCK RUN CREEK
F.A.P. ROUTE 885 - SEC. (107A)B-1
JOHNSON COUNTY
STA. 628+25.00
STRUCTURE NO. 044-0059

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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	(107A) B-1	Johnson	38	37
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AND PROJECT-		

SHEET NO. 15
16 SHEETS

Contract # 98776

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials

Bridge Foundation Boring Log
Sheet 1 of 2

Illinois Route 146 Over Buck Run
Route: Ill 146 Structure Number: 044 0059 Date: 10/15/2002
Section
County: Johnson Location: 1.2 Mi E Union Co Bored By: Bryan Keller
Checked By: Rob Graeff

Boring No 1-S
Station 627+68
Offset 33' LT CL
Ground Surface 386.9 Ft

Surf Wat Elev: 369.3
Ground Water Elevation when Drilling 359.4
At Completion
At: Hrs:

DEPTH	BLOWS	Qu tsf	W%	DEPTH	BLOWS	Qu tsf	W%
Crushed Aggregate				Stiff, moist, brown mottled grey, Silt Loam A-4	2 2	1.4S	23
384.9				368.9			
Medium, very moist, brown, Silty Clay A-6 with some gravel	2 3 3	0.9S	22	Stiff, moist, grey, Silt Loam to Silty Clay Loam A-6	2 2 2	1.1S	23
5.0	2			30.0	1		
	1 2	0.6S	22		2 2	1.6S	24
379.9				354.9			
Medium to stiff, moist, brown, Silty Clay Loam A-6	1 2 2	1.0S	22	Soft to medium, very moist, grey, Silty Clay Loam A-6	1 WH WH	0.5S	24
377.4				352.4			
Medium, moist, grey, Silty Clay Loam A-6	10.0 WH 2 1	0.8S	24	Very soft, very moist, grey, Silty Clay A-6	35.0 WH WH WH	0.2S	24
	WH			349.9			
	1 1	0.9S	26	Stiff, very moist, grey, Silty Clay A-6	1 1 2	1.8S	24
372.4				347.4			
Soft, very moist, grey, Silty Clay Loam A-6	15.0 WH WH WH	0.3S	29	Medium, very moist, grey, Clay A7-6	40.0 WH WH WH	0.8S	29
369.9							
Very soft, very moist, grey, Silty Clay Loam A-6	WH WH WH	0.2S	29				
367.4				342.4			
Medium, very moist, brown mottled grey, Silty Clay Loam A-6	20.0 WH WH WH	0.7S	28	Stiff to medium, very moist, grey, Silty Clay A-6	45.0 WH WH WH	0.5S	30
364.9							
Very stiff, moist, grey, Silt Loam to Silty Clay Loam A-6	1 3 4	2.9S	22				
362.4				337.4			
	25.0 2				50.0 4		

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

Sheet 2 of 2
Date: 10/15/2002

Route: Ill 146
Section
County: Johnson

Boring No: 1-S
Station: 627+68
Offset: 33' LT CL
Ground Surface: 386.9 Ft

DEPTH	BLOWS	Qu tsf	W%	DEPTH	BLOWS	Qu tsf	W%
Medium, very moist, grey, Sandy Gravel 47% Sand; 18% Silt 9% Clay; 26% Gravel	384.0	6 8	16				
		9 100/7"					
Hard, dry, grey, Clay Shale	361.0			361.0			
Hard, dry, grey, Limestone with Clay Shale Seams Cored from 07.0 ft to 62.0 ft. 88% Recovery 84% RQD	328.0	100/4"					
	324.0			324.0			
Bottom of hole = 62.0 ft.							
Free water observed at 31.0 ft.							
Elevation referenced to RK W About Sta 627+00 Elev = 337.5 ft.				324.0			
To convert "N" values to "N60" values multiply by 1.2b.				299.0			
				274.0			

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

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LIN ENGINEERING,LTD.
Consulting Engineers
Chatham, Illinois

Designed By: KRH | Checked By: MTH | Drawn By: AJF
Date: 3/2007 | File: 044-0059.DGN

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
SOIL BORINGS-1
ILLINOIS ROUTE 146 OVER
BUCK RUN CREEK
F.A.P. ROUTE 885 - SEC. (107A)B-1
JOHNSON COUNTY
STA. 628+25.00
STRUCTURE NO. 044-0059

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 885	(107A) B-1	Johnson	38	38
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 16
16 SHEETS

Contract # 98776

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials

Bridge Foundation
Boring Log
Sheet 1 of 2

Illinois Route 146 Over Buck Run
Route: ILL 146 Structure Number: 044 0013 Date: 10/31/2002
Section Bored By: Bryan Keller
County: Johnson Location: 1.2 Mi E Union Co Checked By: Rob Graeff

Boring No 2-S
Station 628+77
Offset 15' RT Cl
Ground Surface 387.2 Ft.

Surf Wat Elev: 369.3
Ground Water Elevation
when Drilling
At Completion
At: hrs:

DEPTH	BLOWS	Qu tsf	W%	DEPTH	BLOWS	Qu tsf	W%
Crushed Aggregate				Medium, very moist, brown mottled grey, Silty Clay A-6	3	0.8S	26
386.2				380.2	2		
Stiff, very moist, brown, Silty Clay A-6	1			Medium, very moist, brown mottled grey, Silty Clay Loam A 6	WH		
	3	1.1S	24		WH	0.8S	29
	3				WH		
				357.7			
6.0	2			Medium to stiff, very moist, grey, Silty Clay A-6	30.0 4		
	3	1.1S	24	356.7	3	1.0S	25
	4			Hard, dry, brown, Sandstone	100/4"		
380.2							
Medium, very moist, brown, Silty Clay A-6 with some Gravel	2						
	3	0.9S	29				
	3						
377.7							
Stiff, very moist, grey, Silty Clay A/-6	10.0 1			Hard, dry, brown, Sandstone 352.2	35.0	100/3"	
	3	1.4S	23	Hard, dry, grey, Sandstone			
	3			Cored from 35.0 ft to 40.0 ft.			
375.2				100% Recovery			
Medium, very moist, grey, Silty Clay Loam A-6	WH			98% RQD			
	WH	0.7S	26				
	1						
372.7							
Medium, moist, grey, Silt Loam A 4	15.0 4						
	6	0.8S	22				
	5						
370.2							
Stiff, mosl, grey mottled brown, Silty Clay Loam A-6	3						
	4	1.3S	21				
	5						
367.7				347.2	40.0		
Medium, very moist, grey mottled brown, Silty Clay Loam A-6	20.0 1			Hard, dry, grey to brown, Sandstone with Clay Layers			
	2	0.8S	26	Cored from 40.0 ft to 45.0 ft.			
	3			100% Recovery			
365.2				77% RQD			
Very stiff, moist, brown, Silty Clay Loam A-6	1						
	5	2.1S	23				
	5						
362.7							
	25.0 1			342.2	45.0		
				Hard, dry, brown to grey Sandstone			
				Cored from 45.0 ft to 50.0 ft.			
				100% Recovery			
				82% RQD			
				337.2	50.0		

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

Sheet 2 of 2
Date: 10/31/2002

Route: ILL 146
Section:
County: Johnson

Boring No: B-1
Station: 628+77
Offset: 15' RT Cl
Ground Surface: 387.2 Ft.

DEPTH	BLOWS	Qu tsf	W%	DEPTH	BLOWS	Qu tsf	W%
Bottom of hole = 50.0 ft.							
No free water observed							
Elevation referenced to NAVD 88 as Sta 627+90 Elev = 387.0 ft.							
To convert "N" values to "N60" values multiply by 1.25.							
40.0				40.0			
50.0				50.0			
60.0				60.0			
70.0				70.0			
80.0				80.0			
90.0				90.0			
100.0				100.0			

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

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LIN ENGINEERING, LTD.
Consulting Engineers
Chatham, Illinois

Designed By: KHH	Checked By: MTH	Drawn By: AJF
Date: 3/2007	File: 044-0059.DGN	

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
SOIL BORINGS-2
ILLINOIS ROUTE 146 OVER
BUCK RUN CREEK
F.A.P. ROUTE 885 - SEC. (107A)B-1
JOHNSON COUNTY
STA. 628+25.00
STRUCTURE NO. 044-0059