1-20-06 Letting, Item 89

CONTRACT NO. 64B24

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
22	127BR-1	HENRY	33	1

PLANS ENGINEER: ROBERT WAGNER

SENIOR ENGINEER: THOMAS HALLA
PHONE: (815) 284-5993

INDEX OF SHEETS

STATE STANDARDS

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630001-05	STEEL PLATE BEAM GUARDRAIL
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631032-01	TRAFFIC BARRIER TERMINAL, TYPE 6A
635001	DELINEATORS
635006-02	REFLECTOR AND TERMINAL MARKER REPLACEMENT
635011-01	REFLECTOR MARKER AND MOUNTING DETAILS
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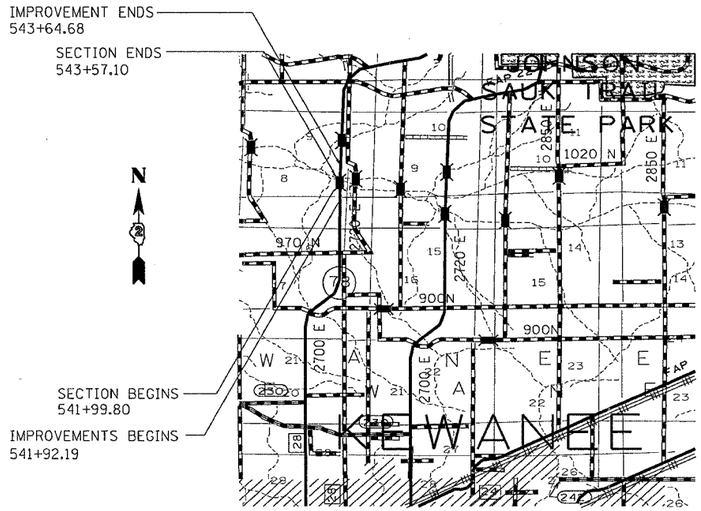
886006	TYPICAL LAYOUT FOR DETECTION LOOPS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED
HIGHWAY PLANS

FAP ROUTE 22 (IL 78)
SECTION 127BR-1
PROJECT BHF-22(065)
HENRY COUNTY
C-92-155-05



THIS PROJECT IS A BRIDGE DECK BEAM REPLACEMENT PROJECT ON A TRIPLE SPAN STRUCTURE WITH GUARDRAIL UPDATE AND STAGE CONSTRUCTION

GROSS LENGTH OF SECTION = 157.3 FEET = 0.030 MILES

NET LENGTH OF SECTION = 157.3 FEET = 0.030 MILES

0 100' 200' 300' — 1"= 100'
0 10' 20' 30' — 1"= 10'
0 50' 100' — 1"= 20'

D-92-087-05

LOCATION OF SECTION INDICATED THUS: –

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

HENRY COUNTY
KEWANEE TOWNSHIP, SECTION 9
T.15N. – R.5E.

CONTRACT NO. 64B24

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Nov 4 2005
Gregory Martz
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
December 9, 2005
Mike Hine PE
ENGINEER OF DESIGN AND ENVIRONMENT
December 9, 2005
Eric Harm PE
DEPUTY DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

CONTRACT NO. 64B24

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
22	127BR-1	HENRY	33	2
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SUMMARY OF QUANTITIES

CODE NUMBER	PAY ITEM	UNIT	TOTAL QUANTITY	X080-2A 80 % FED 20 % STATE	SFTY-3N 80 % FED 20 % STATE
63300456	REMOVAL AND REINSTALLATION OF EXISTING TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	4	4	
44000007	BITUMINOUS SURFACE REMOVAL 2"	SQ YD	118	118	
44002300	CURB REMOVAL (PARTIAL)	FOOT	17	17	
48101200	AGGREGATE SHOULDERS, TYPE B	TON	16	16	
50101500	REMOVAL OF EXISTING SUPERSTRUCTURES	EACH	1	1	
50102400	CONCRETE REMOVAL	CU YD	9.5	9.5	
50300225	CONCRETE STRUCTURES	CU YD	9.3	9.3	
50300260	BRIDGE DECK GROOVING	SQ YD	622	622	
50300300	PROTECTIVE COAT	SQ YD	666	666	
X5030305	CONCRETE WEARING SURFACE, 5"	SQ YD	652	652	
50301245	FORMED CONCRETE REPAIR (LESS THAN 5")	SQ FT	966.9	966.9	
50301250	FORMED CONCRETE REPAIR (GREATER THAN 5")	SQ FT	146	146	
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ. FT.	5858	5858	
50800205	REINFOREMENT BARS, EPOXY COATED	POUND	9650	9650	
50901005	STEEL BRIDGE RAIL, TYPE SM	FOOT	268	268	
51500100	NAME PLATES	EACH	1	1	
59000100	EPOXY CRACK SEALING	FOOT	29	29	
63302700	REMOVE AND RE-ERECT EXISTING TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	4	4	
63500105	DELINEATORS	EACH	4	4	
66700305	PERMANENT SURVEY MARKERS, TYPE II	EACH	2	2	
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	3	3	

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

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CONTRACT NO. 64B24

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
22	127BR-1	HENRY	33	3

STA. TO STA.

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

SUMMARY OF QUANTITIES

	CODE NUMBER	PAY ITEM	UNIT	TOTAL QUANTITY	X080-2A 80 % FED 20 % STATE	SFTY-3N 80 % FED 20 % STATE
	67100100	MOBILIZATION	L SUM	1	1	
	70100405	TRAFFIC CONTROL AND PROTECTION STD 701321	EACH	1	1	
	70100450	TRAFFIC CONTROL AND PROTECTION STD. 701201	L SUM	1	1	
	70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1	1	
	70400100	TEMPORARY CONCRETE BARRIER	FOOT	590	590	
	70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	590	590	
*	78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	864	864	
	X0323557	BRIDGE JOINT SYSTEM EXPANSION 1"	FOOT	152	152	
	X4066414	BITUMINOUS CONCRETE SURFACE COARSE, SUPERPAVE, MIX "C", N50	TON	20	20	
	XX004093	CONCRETE SLOPEWALL REMOVAL	SQ FT	30	30	
	XX004094	CONCRETE SLOPEWALL	SQ FT	30	30	
	XX005466	FURNISH AND INSTALLING GUARDRAIL END SHOE	EACH	4	4	
*	Z0001900	ASBESTOS BEARING PAD REMOVAL	EACH	90	90	
	Z0002600	BAR SPLICERS	EACH	157	157	
	Z0030250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2		2
	Z0030350	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2		2

* SPECIALTY ITEMS

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GENERAL NOTES

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 308 (IL 84)	109BR-3 & 109BR-4	Whiteside	33	4
FED ROAD DIST. NO.	ILLINOIS	PROJECT		
Contract #64B29				

The final top 100 mm (four inches) of soil in any right-of-way area disturbed by the Contractor must be capable of supporting vegetation. The soil must be from the A horizon (zero to 2' deep) of soil profiles of local soils.

The Contractor shall seed all disturbed areas within the project limits. Seeding Class 4 or 6 (modified) shall be used, except in front of properties where the grass will be mowed, then use Seeding, Class 1 (modified). Class 6 (modified) shall be used on front slopes and ditch bottoms. Class 4 shall be used behind Type A gutter, on all backslopes and areas behind the backslope, and beyond the toe of front slope on fill sections without ditches. This work will be included in the contract unit price per Cubic Meter (Cubic Yard) for EARTH EXCAVATION.

Fertilizer shall be applied to all disturbed areas and incorporated into the seedbed prior to seeding or placement of sod at the rate specified in Sections 250 and 252 of the Standard Specifications. This work shall be included in the cost of EARTH EXCAVATION.

Program #5
(Arch. Size)
Enlarge
200%
Enlarge 107%

Mulch Method II shall be applied over all seeded areas. This shall be included in the cost of the EARTH EXCAVATION.

The following Mixture Requirements are applicable for this project:

Mixture Uses(s):	Mainline Surface Course
PG:	PG 64-22
RAP%: (Max)	10%
Design Air Voids	4.2 @ N50
Mixture Composition (Gradation Mixture)	IL 9.5 or 12.5
Friction Aggregate	C
20 Year ESAL	4.3

Install a "TO ACTUATE SIGNAL" sign for the traffic signal detector loops. The detail of this sign is included in the plans. This work will be included in the cost of TRAFFIC CONTROL AND PROTECTION STANDARD 701321.

Bituminous and Aggregate prime coat shall be placed in accordance with Section 406 of the Standard Specifications. The cost of the prime coats shall be included in the contract unit price per metric ton (ton) for LEVELING BINDER (MACHINE METHOD) of the type specified.

These structures will retain the same numbers 098-0022 & 098-0023.

Embankment quantities for the construction of the Traffic Barrier Terminals as shown in the plans are included in quantities for Earth Excavation.

The Contractor shall supply the Resident Engineer with the manufacturer's installation requirements for the type of Steel Plate Beam Guardrail Terminal Type 1 Special (Tangent) or Steel Plate Beam Guardrail Terminal Type I Special (Flared).

Bituminous Prime Coat shall be placed in accordance with Section 406 of the Standard Specifications. The cost of the Bituminous Prime Coat shall be included in the contract unit price per TON for SURFACE COURSE, TYPE I, N50.

The excavated materials from Earth Excavation, grading and shaping ditches, and excavating and grading shoulders shall be used to build up the shoulders throughout the job to conform with the typical sections and shoulder widening for terminals as shown on the plans. This work will be included in the contract unit price per Cubic Yard for EARTH EXCAVATION.

One 16d galvanized nail shall be used to toe nail the wood block out to the wood post on all Traffic Barrier Terminal Type I Specials.

Delineators shall be installed as shown in Standard 635001, except that the post shall be rotated 180° and only metal-backed delineators shall be permitted.

Delineators shall be salvaged and placed at the ends of approach guardrail terminal sections. The Contractor shall take care to not damage delineators and store in a safe manner for re-use. Damaged delineators shall be replaced at the contractor's expense.

Pavement marking shall be done according to Standard 780001, except as follows:

1. All words, such as ONLY, shall be 2.4 m (8 feet) high.
2. All non-freeway arrows shall be the large size.
3. The distance between yellow no-passing lines shall be 200 mm (8"), not 180 mm (7") as shown in the detail of Typical Lane and Edge Lines.

Permanent survey markers, Type II shall be cast-in-place as shown on Highway Standard 667101. A marker shall be placed near each end of the structure in such a location that will take into account satellite and future construction. Location shall be determined by the Engineer.

The Contractor shall submit to the Engineer a description of location, elevation, and coordinates for each permanent survey marker. The Engineer shall submit this information to the Survey Crew.

The Contractor shall be responsible for protecting utility property during construction operations as outlined in Article 107.31 of the Standard Specifications. A minimum of 48 hours advance notice is required for non-emergency work. The JULIE number is 800-892-0123. The following listed utilities located within the project limits or immediately adjacent to the project construction limits are members of JULIE:

Mediacom
Alliant Energy
Norlight Telecommunications
Commonwealth Edison
Citizen's Telephone

Following are the known utilities located within the project limits or immediately adjacent to the project construction limits which are not members of JULIE and should be notified individually by the contractor:

Mr. Dennis Schultz
IDOT
819 Depot Ave.
Dixon, IL 61021

Due to environmental concerns, the following shall be strictly adhered to:

1. All work shall be performed from the existing decks and no work shall take place below the existing structure on the ground.
2. No fill shall be placed in or around Cedar Creek or Spring Creek.

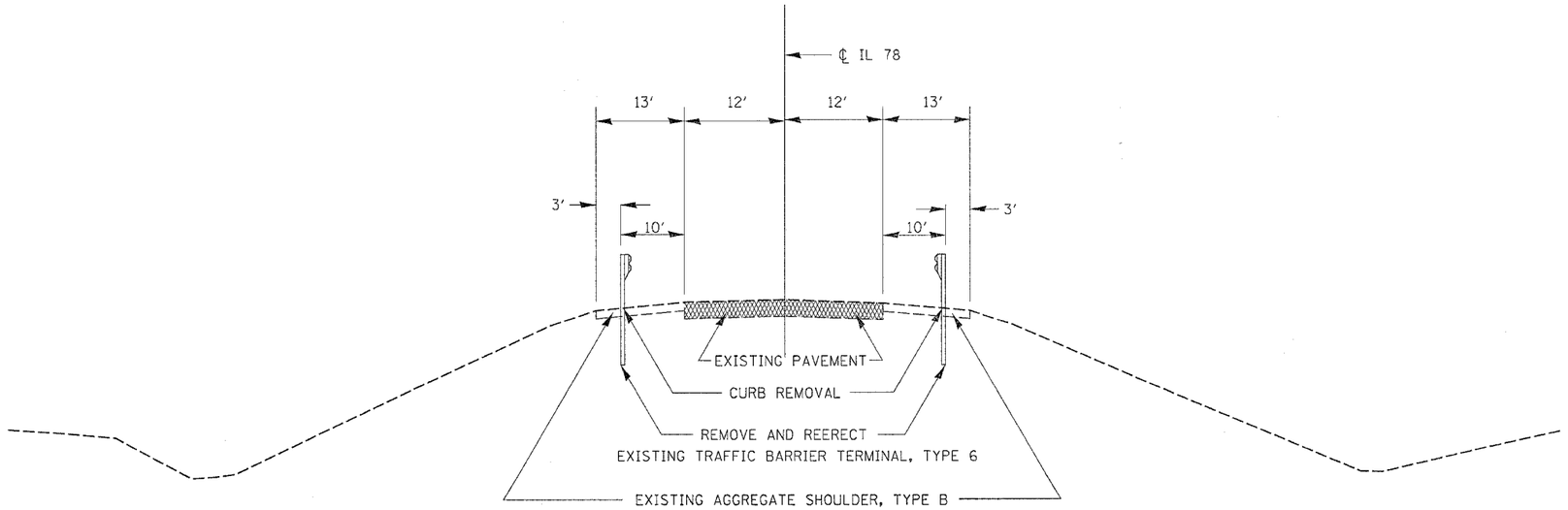
Embankment quantities for the construction of Traffic Barrier Terminals and placement of Steel Plate Beam Guardrail as shown on the plans are included in quantities for EARTH EXCAVATION.

CONTRACT NO. 64B24

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
22	127BR-1	HENRY	33	5
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

EXISTING TYPICAL SECTION

541+92.19 – 543+64.68



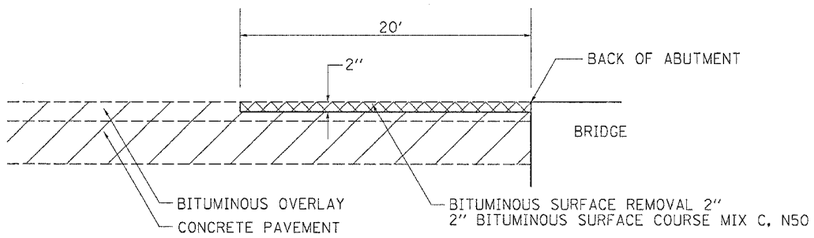
BUTT JOINT

541+92 – 542+12

543+39 – 543+64

BITUMINOUS SURFACE REMOVAL - 2″

STA 1527+35.58 TO STA 1527+55.58 & STA 1528+50.92 TO STA 1528+70.92



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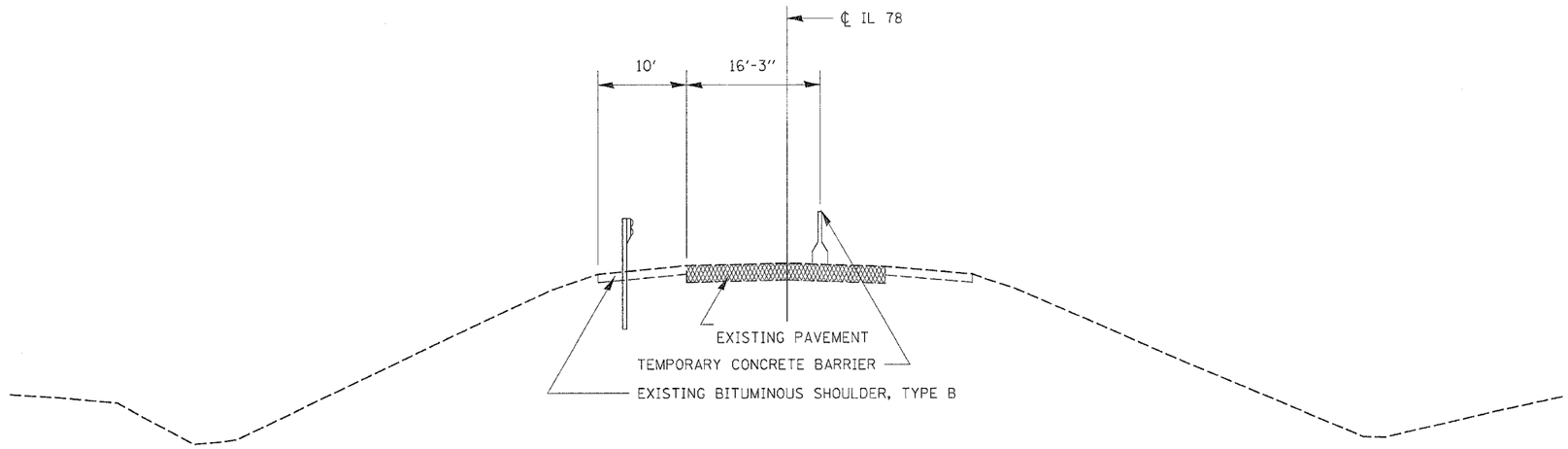
CONTRACT NO. 64B24

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
22	127BR-1	HENRY	33	6
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

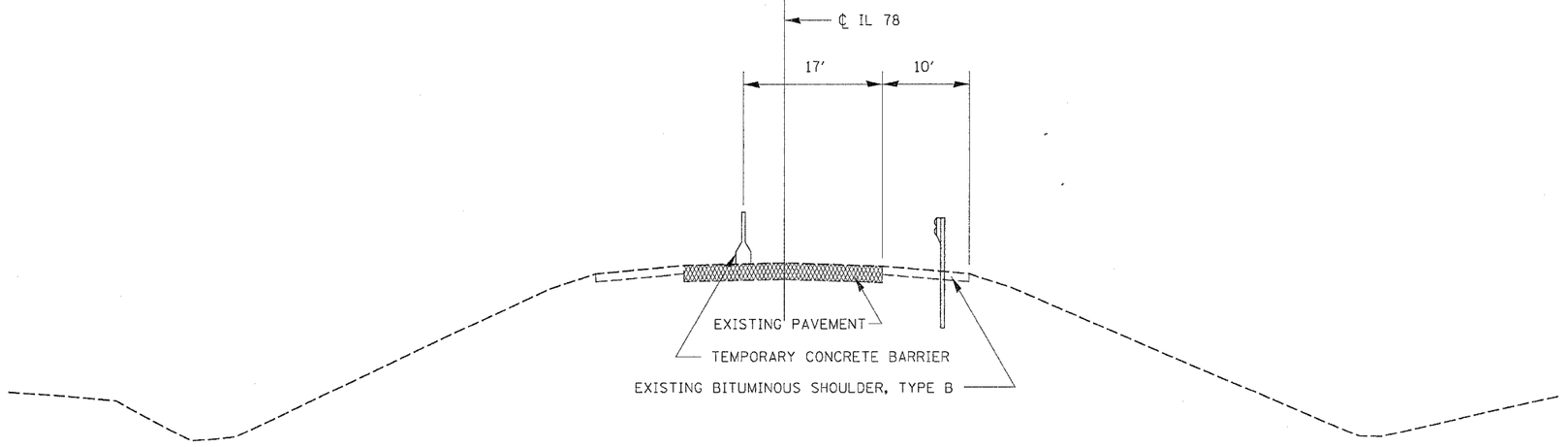
STAGE 1

537+84 – 547+92



STAGE 2

537+84 – 547+92



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CONTRACT NO. 64B24

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
22	127BR-1	HENRY	33	7
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SCHEDULE OF QUANTITIES

mud creek

X4066414 — BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, MIX C, N50

TON	LOCATION			
10	541+	92-	542+	12
10	543+	39-	543+	64
20	TOTAL			

44000007 — BITUMINOUS CONCRETE SURFACE REMOVAL 2"

SQ YD	LOCATION			
65	541+	92-	542+	12
53	543+	39-	543+	64
118	TOTAL			

44002300 — CURB REMOVAL (PARTIAL)

FOOT	LOCATION				
11	542+	14-	542+	23	LT
9	541+	91-	542+	0	RT
8	543+	56-	543+	64	LT
9	543+	32-	543+	41	RT
17	TOTAL				

48101200 — AGGREGATE SHOULDERS, TYPE B

TON	LOCATION				
4	541+	94-	542+	25	LT
4	541+	68-	541+	99	RT
4	543+	58-	543+	89	LT
4	543+	32-	543+	63	RT
16	TOTAL				

63302700 — REMOVE AND RE-ERECT EXISTING TRAFFIC BARRIER TERMINAL, TYPE 6

EACH	LOCATION				
1	541+	94-	542+	25	LT
1	541+	68-	541+	99	RT
1	543+	58-	543+	89	LT
1	543+	32-	543+	63	RT
4	TOTAL				

63500105 — DELINEATORS

EACH	LOCATION	
1	540+	17LT
1	539+	41RT
1	545+	73LT
1	545+	40RT
4	TOTAL	

78001110 — PAINT PAVEMENT MARKING LINE 4"

FOOT	LOCATION				
768	541+	82 -	543+	74	WHITE EDGELINES - 2 COATS
96	541+	82 -	543+	74	SKIP DASH YELLOW - 2 COATS
864	TOTAL				

XX005466 — FURNISH AND INSTALLING GUARDRAIL END SHOE

EACH	LOCATION		
1	542+	25	LT
1	541+	99	RT
1	543+	58	LT
1	543+	32	RT
4	TOTAL		

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

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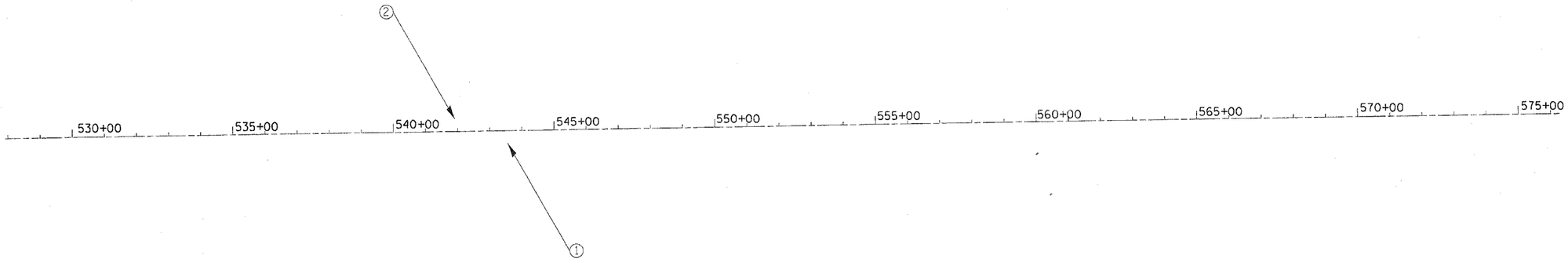
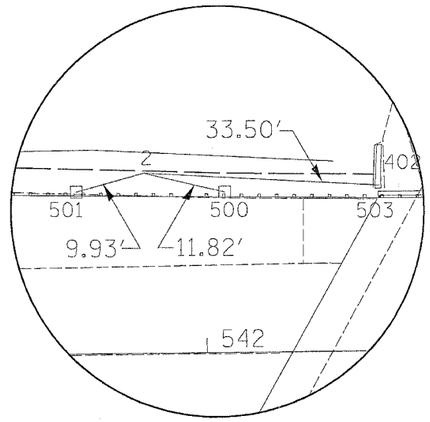
CONTRACT NO. 64B24

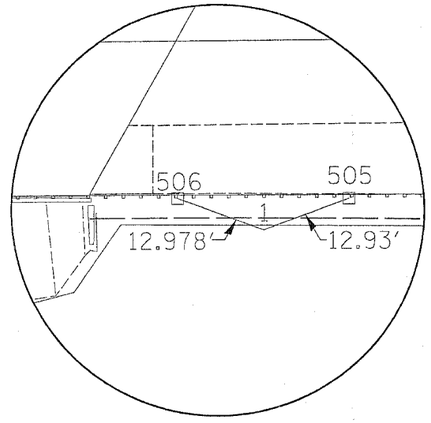
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
22	127BR-1	HENRY	33	8
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

EXISTING HORIZONTAL AND VERTICAL CONTROL





HORIZONTAL CONTROL
POINT No. 2



HORIZONTAL CONTROL
POINT No. 1

Chain IL78 contains:
3 4

Beginning chain IL78 description
==========

Point 3 N 1,684,242.0520 E 2,364,544.7350 Sta 527+92.3131

Course from 3 to 4 359° 25' 25.5612" Dist 4,838.8217'

Point 4 N 1,689,080.6290 E 2,364,496.0710 Sta 576+31.1348

==========
Ending chain IL78 description

HORIZONTAL CONTROL POINTS CHAIN

POINT	NORTH	EAST	ELEVATION	CHAIN	STATION	OFFSET	DESCRIPTION
1	1685806.808	2364556.095	695.6678	IL78	543+56.8757	27.0962' RT	GPS CONTROL POINT, PIN
2	1685640.605	2364505.018	696.2608	IL78	541+91.1948	25.6498' LT	GPS CONTROL POINT, PIN
3	1684242.052	2364544.735	731.8253	IL78	527+92.3131	0.0000'	POT, PAINTED
4	1689080.629	2364496.071	754.5637	IL78	576+31.1348	0.0000'	POT, PAINTED
65723003	1684451.578	2364486.713	718.409	IL78	530+02.4120	55.9119' LT	DISTRICT NETWORK MONUMENT, PERM. SURVEY MARKER
65723004	1687138.112	2364461.425	696.966	IL78	556+89.0645	54.1801' LT	DISTRICT NETWORK MONUMENT, PERM. SURVEY MARKER

BENCH MARKS

POINT	NORTH	EAST	ELEVATION	CHAIN	STATION	OFFSET	DESCRIPTION
402	1685674.062	2364506.712	696.9806	IL78	542+24.6331	23.6194' LT	HEADWALL, CHISELED SQUARE

REFERENCE TIES

POINT	CHAIN	STATION	OFFSET	DESCRIPTION
500	IL78	542+02.7225	22.8747' LT	GUARDPOST, SHINER
501	IL78	541+81.5957	23.1012' LT	GUARDPOST, SHINER
503	IL78	542+24.7032	23.6347' LT	HEADWALL, CHISELED SQUARE
505	IL78	543+69.0510	22.7504' RT	GUARDPOST, SHINER
506	IL78	543+44.7127	22.5646' RT	GUARDPOST, SHINER

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CONTRACT NO. 64B24

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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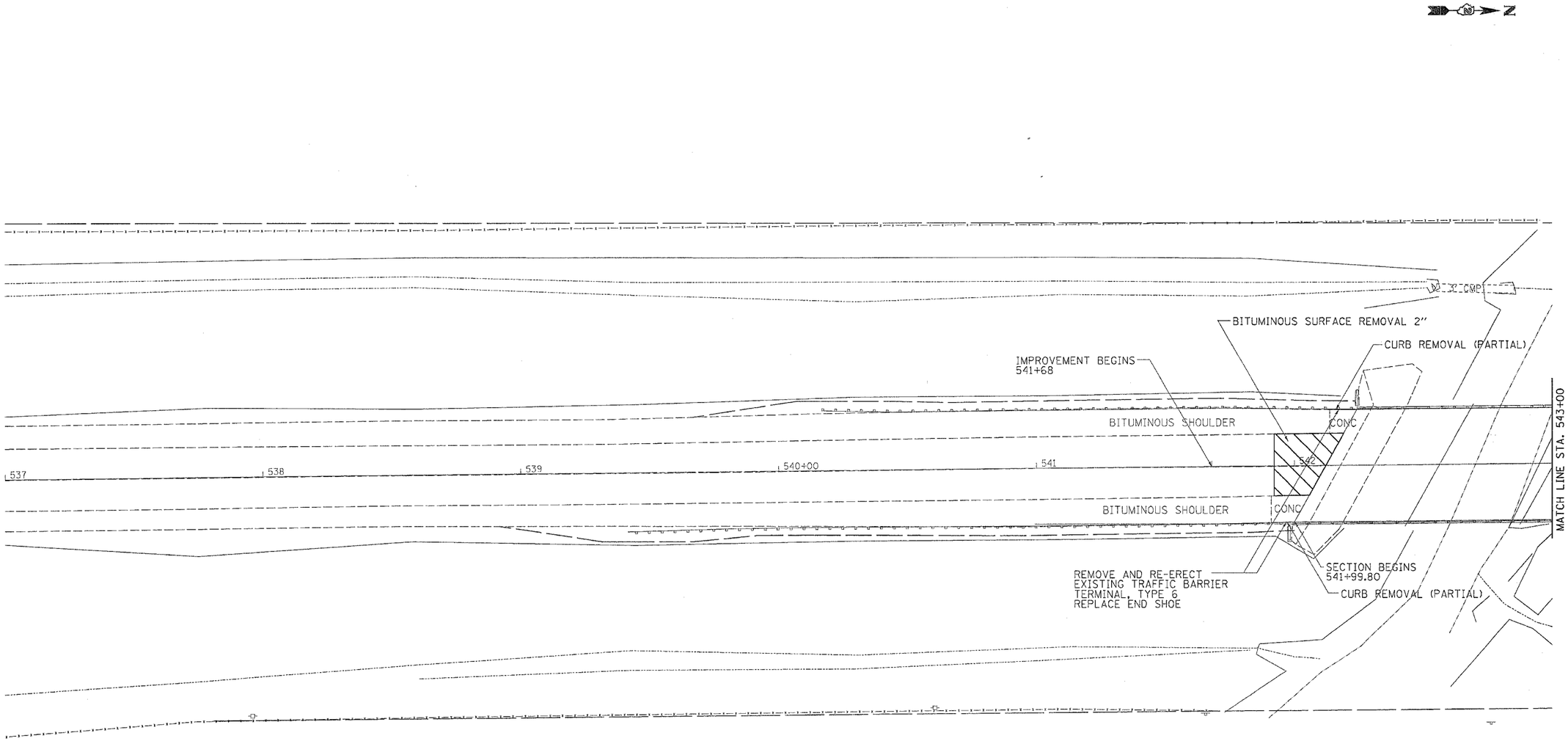
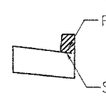
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

PLAN SHEET



DETAIL
CURB REMOVAL (PARTIAL)



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PLAN SHEET

CONTRACT NO. 64B24

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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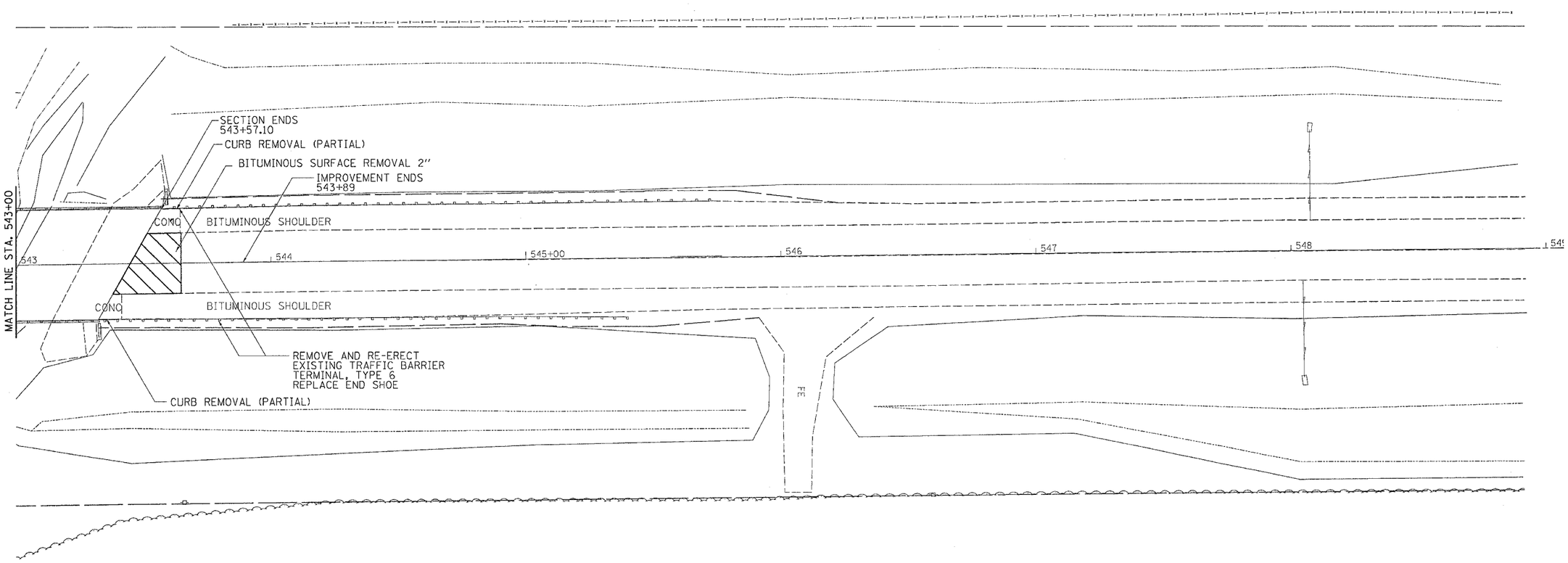
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

PLAN SHEET



DETAIL
CURB REMOVAL (PARTIAL)

REVISIONS NAME	DATE

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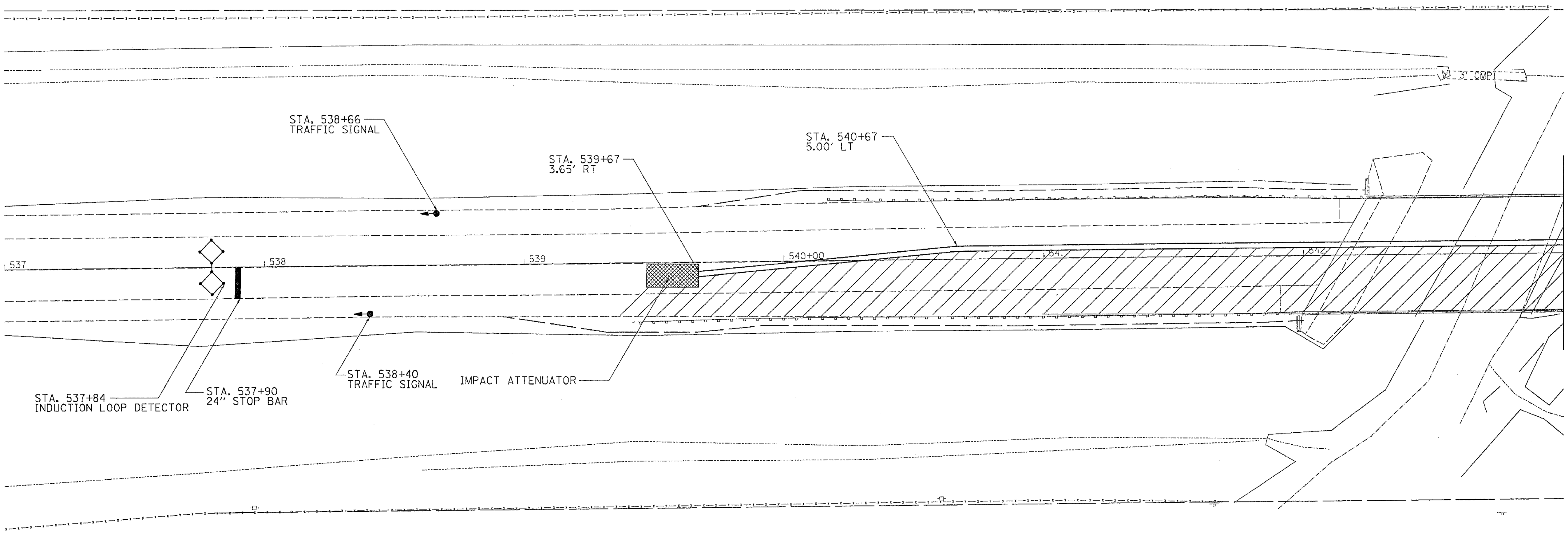
PLAN SHEET

CONTRACT NO. 64B24

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
22	127BR-1	HENRY	33	11
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STAGE DETAILS



= WORK ZONE

= TRAFFIC SIGNAL

= INDUCTION LOOP DETECTOR

= IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3

NOTE:

THIS TRAFFIC CONTROL AND PROTECTION SHALL BE SET UP AND PAID FOR ACCORDING TO STANDARD 701321

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

SCALE: VERT. HORIZ.

DATE

DRAWN BY

CHECKED BY

STAGE 1

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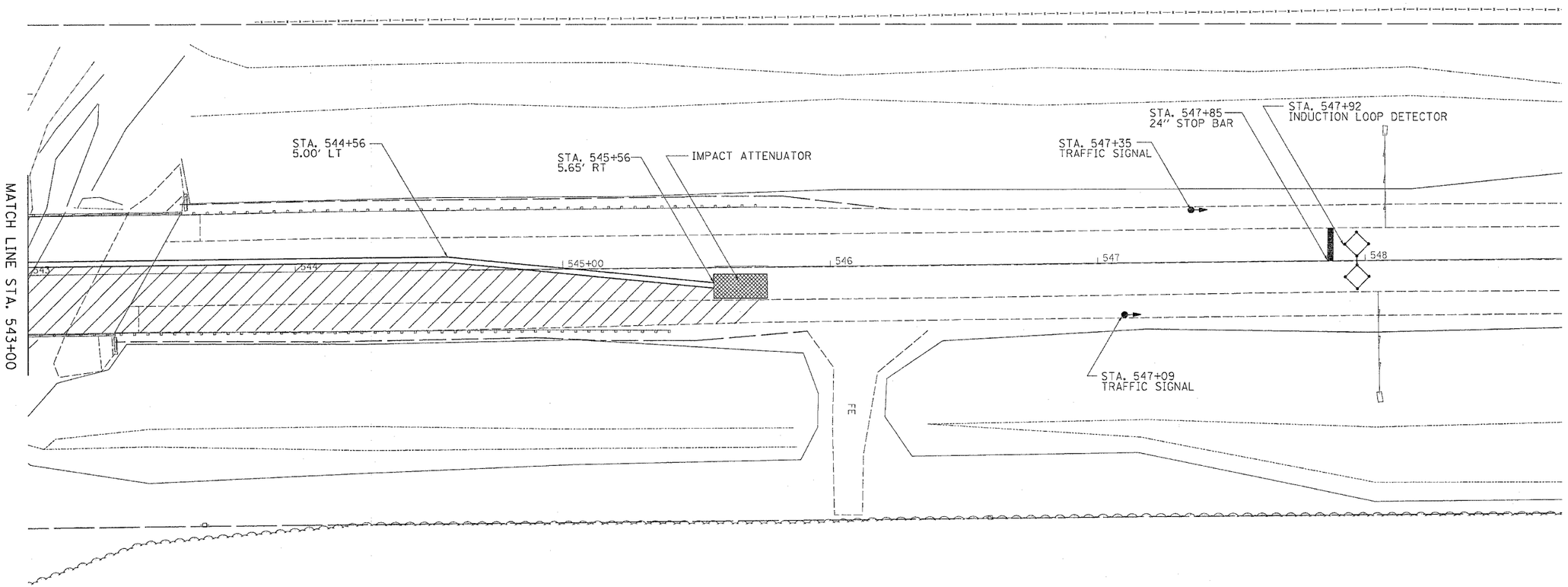
CONTRACT NO. 64B24

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
22	127BR-1	HENRY	33	12
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STAGE DETAILS



= WORK ZONE

= TRAFFIC SIGNAL

= INDUCTION LOOP DETECTOR

= IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3

NOTE:

THIS TRAFFIC CONTROL AND PROTECTION SHALL BE SET UP AND PAID FOR ACCORDING TO STANDARD 701321

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

SCALE: VERT. HORIZ.

DATE

DRAWN BY

CHECKED BY

STAGE 1

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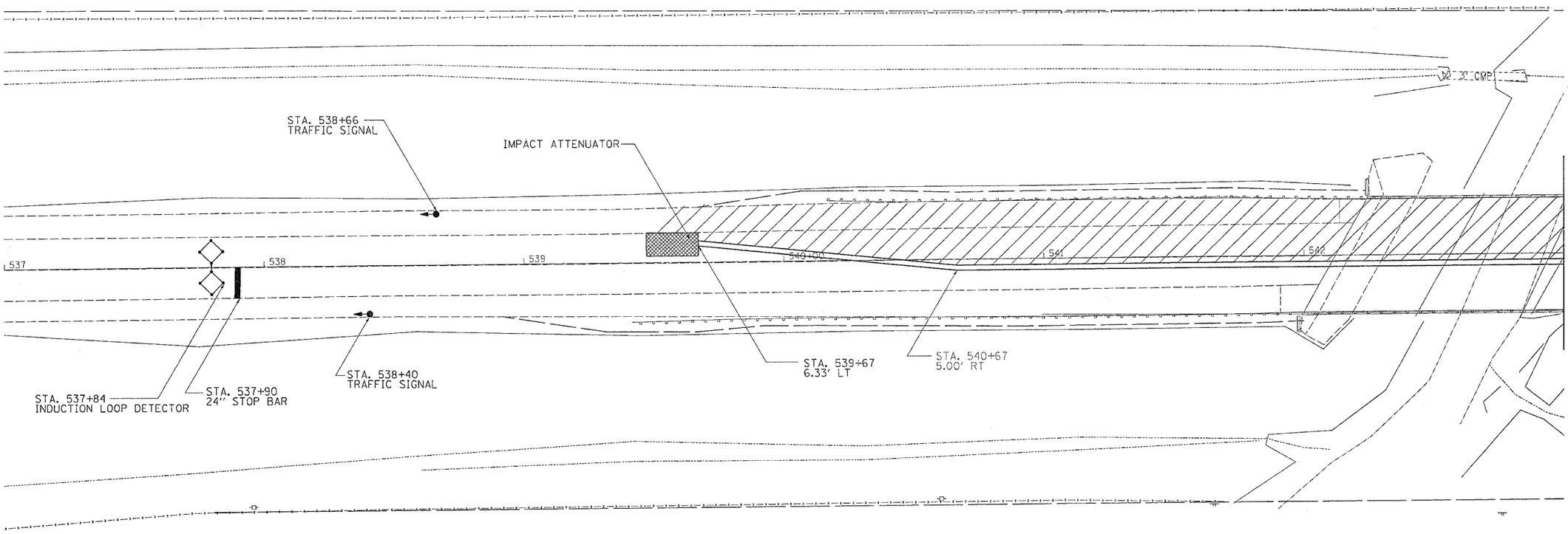
CONTRACT NO. 64B24

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
22	127BR-1	HENRY	33	13
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STAGE DETAILS



= WORK ZONE

= TRAFFIC SIGNAL

= INDUCTION LOOP DETECTOR

= IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3

NOTE:

THIS TRAFFIC CONTROL AND PROTECTION SHALL BE SET UP AND PAID FOR ACCORDING TO STANDARD 701321

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

SCALE: VERT. HORIZ.

DATE

DRAWN BY

CHECKED BY

STAGE 2

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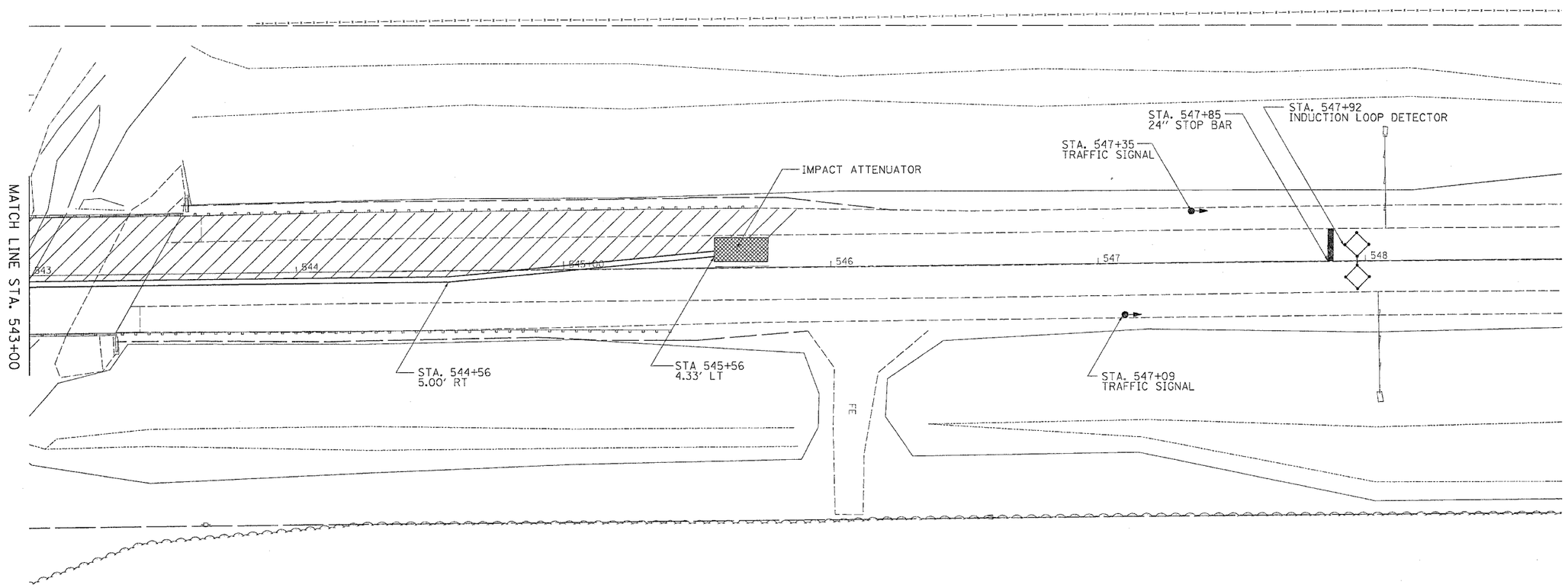
CONTRACT NO. 64B24

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
22	127BR-1	HENRY	33	14
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STAGE DETAILS



= WORK ZONE

= TRAFFIC SIGNAL

= INDUCTION LOOP DETECTOR

= IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3

NOTE:

THIS TRAFFIC CONTROL AND PROTECTION SHALL BE SET UP AND PAID FOR ACCORDING TO STANDARD 701321

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

SCALE: VERT. HORIZ.

DATE

DRAWN BY

CHECKED BY

STAGE 2

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

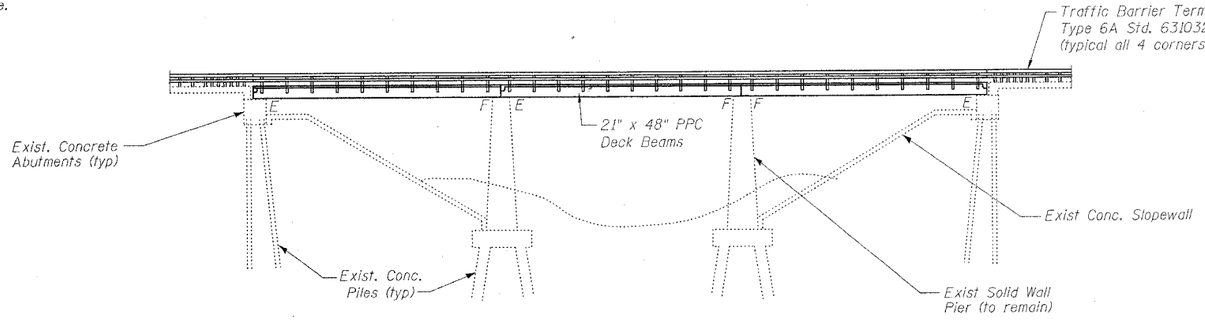
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 22	127BR-1	HENRY	33	15
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 1
16 SHEETS

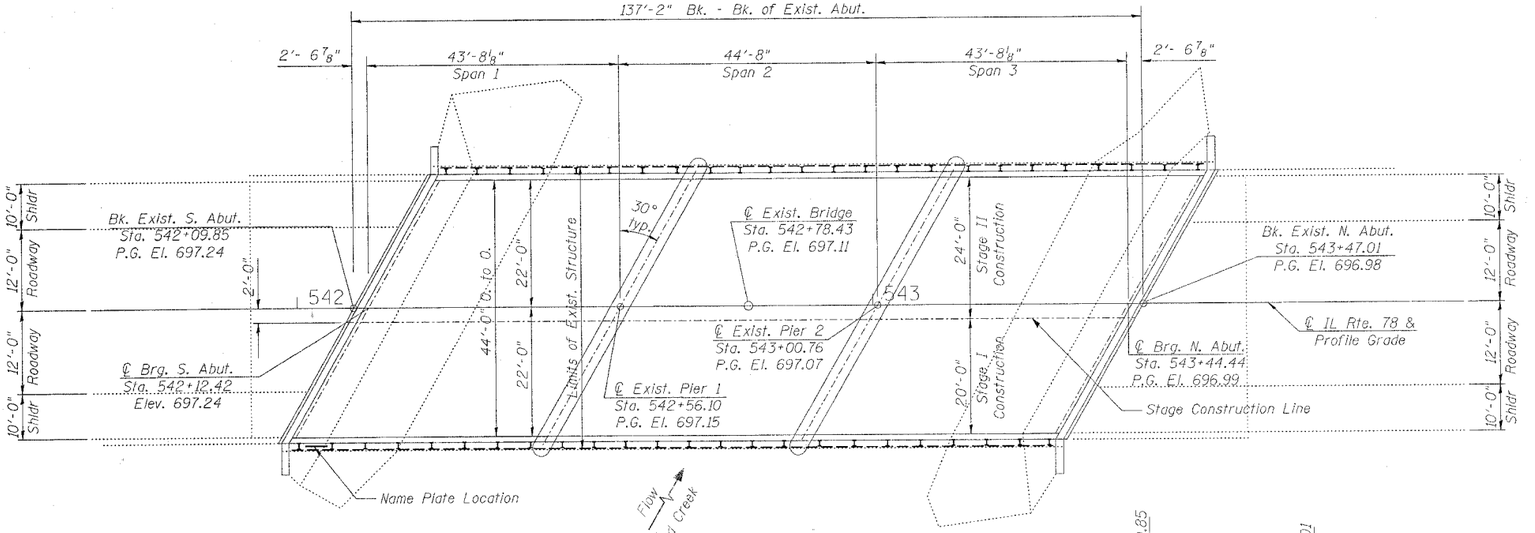
Contract # 64B24

Bench Mark: B.M. #1 - Chiseled square on top of SW wingwall, 23.6' Lt.
Sta. 542+24.60 Elev. 696.98

S.N. 037-0125 Built as F.A. Route 57 Sec. 127BR in 1974. Three-span precast prestressed concrete deck beam (21" depth) superstructure on concrete abutments and reinforced concrete solid wall piers. Abutments and piers are supported by concrete piles. Structure length: 137'-2" Bk.-Bk. of abutments ±46' 0.-0. deck (±44' F.-F.). The existing bridge superstructure shall be removed and replaced. Traffic to be maintained during superstructure replacement by stage construction.
No Salvage.



ELEVATION



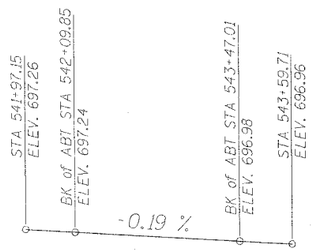
PLAN

STATE OF ILLINOIS
KRISTEN E. FIELDS
5714
PEORIA, IL
LICENSED STRUCTURAL ENGINEER

DESIGNED	BAS
CHECKED	KEF & RJA
DRAWN	
CHECKED	

"I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current 'AASHTO Standard Specifications for Highway Bridges'".

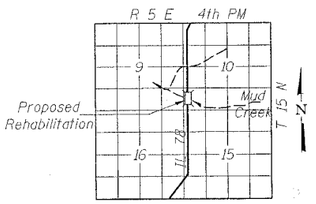
Kristen Fields 11-2-05
ILLINOIS STRUCTURAL NO. 5714 (Expires 11/30/06)



PROFILE GRADE

STATION 542+78.43
REBUILT 200_ BY
STATE OF ILLINOIS
F.A.P. RTE. 22
SEC. 127BR-1
LOADING HS20
STR. NO. 037-0125

NAME PLATE
See Std. 515001



LOCATION SKETCH

INDEX OF SHEETS

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

DESIGN SPECIFICATIONS
2002 AASHTO

DESIGN STRESSES

FIELD UNITS
- f'_c = 5,000 psi (Conc. wearing surface)
- f'_c = 3,500 psi (All others)
- f_y = 60,000 psi (reinforcement)

PRECAST PRESTRESSED UNITS
- f'_c = 5,000 psi
- f'_{ci} = 4,000 psi
- f'_s = 270,000 psi (1/2" ϕ low lax strands)
- f'_{si} = 210,960 psi

SCOPE OF WORK

1. Remove existing surfacing, concrete railings, deck beams, and abutment hatch blocks. Reconstruct a three-span PPC Deck Beam superstructure with concrete wearing surface and Steel Bridge Rail Type SM utilizing stage construction.
2. Seal existing cracks and repair delaminated/spalled concrete areas on abutments and piers. Sound and repair bearing seats at abutments and piers as required.
3. Place new PPC Deck Beams and place concrete wearing surface with joints.
4. Pour abutment hatch blocks to elevation of concrete wearing surface.

GENERAL PLAN AND ELEVATION
IL 78 OVER MUD CREEK
F.A.P. RTE. 22 - SECTION 127BR-1
HENRY COUNTY
STA. 542+78.43 - STR. NO. 037-0125

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 22	127BR-1	HENRY		16
FED. PROJ. DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 2
16 SHEETS

Contract # 64B24

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

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

All new steel shall be shop painted with an inorganic zinc rich primer per AASHTO M 300, Type I. Cost included with Bridge Joint System (Expansion), 1"

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price for the work.

All Construction joints shall be bonded.

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

The minimum thickness of the Concrete overlay shall be 5" and varies as required to adjust for the new profile grade and actual beam camber.

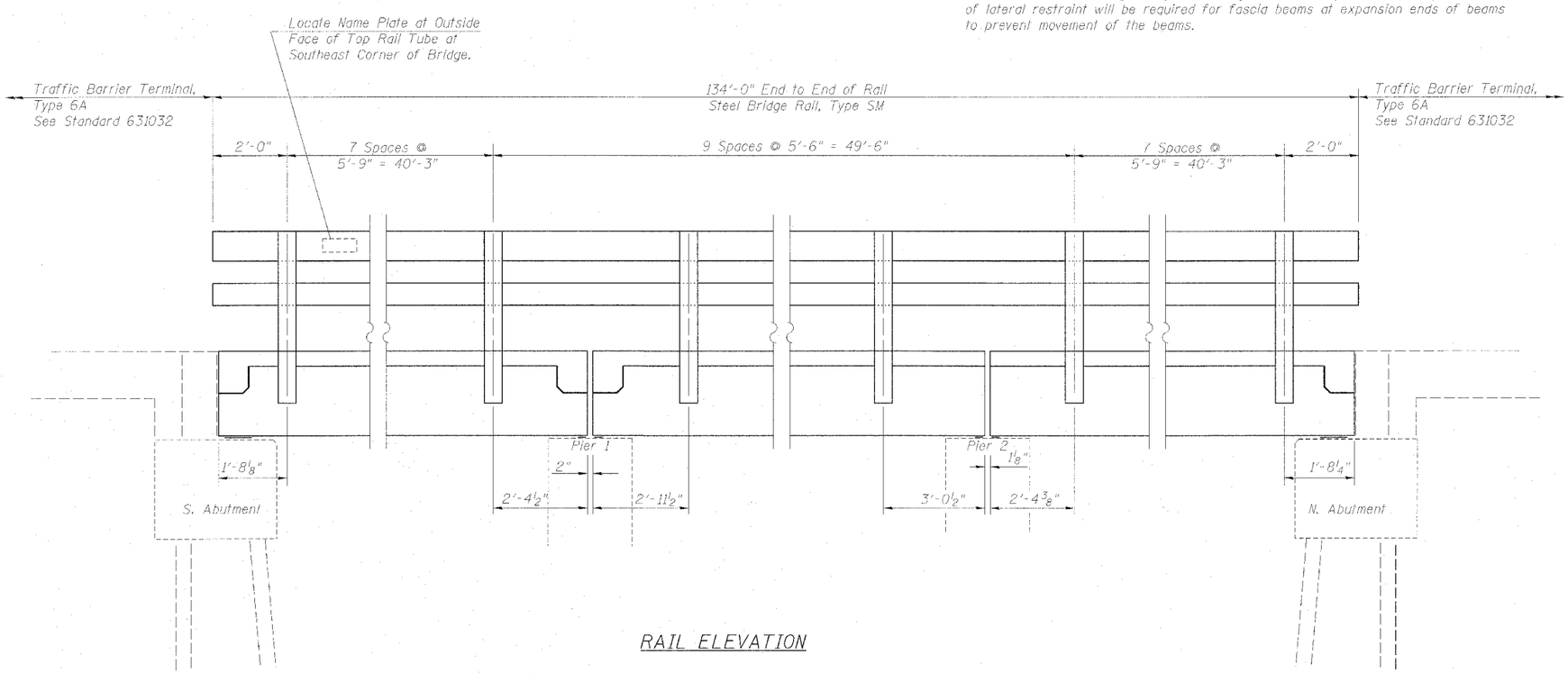
Repair of the pier and abutment caps shall be completed prior to placement of the new deck beams.

The cut strands at each beam end shall be given two coats of zinc dust spray or paint meeting the requirements of ASTM A 780. The zinc dust spray or paint shall be applied before corrosion appears and allowed to dry according to the manufacturer's specifications prior to another coat of zinc. A concrete sealer meeting the requirements of Section 587 of the Standard Specifications shall be applied to the exterior face and 9" in on the underside of the fascia beams. The sealer shall be applied after visible crack growth has subsided. This work shall be performed by the producer and included with the cost of the beam.

No in-stream work will be allowed on this project.

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

If the contractor's procedure for existing beam removal or placement of new beams involves placement of cranes or other heavy equipment on new beams, a detailed procedure shall be submitted to the Engineer for approval. The procedure shall include calculations, prepared and sealed by an Illinois Licensed Structural Engineer, verifying that the equipment and procedure used will not overstress the new beams. To distribute load to multiple beams and protect the concrete, in all cases a double layer mat of heavy timbers shall be used at all times under crane tracks or wheels and any outriggers in the down position. If necessary, shims shall be used under the crane mat to ensure uniform contact with the underlying beams. Prior to placement of the timber mats the following shall be done: placement and tightening of transverse tie assemblies, grouting and curing the dowel rods 24 hours minimum and grouting and curing the shear keys. A temporary means of lateral restraint will be required for fascia beams at expansion ends of beams to prevent movement of the beams.



RAIL ELEVATION

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Superstructures	Each	1		1
Concrete Removal	Cu. Yd.		9.5	9.5
Concrete Structures	Cu. Yd.		9.3	9.3
Bridge Deck Grooving	Sq. Yd.	622		622
Protective Coat	Sq. Yd.	666		666
Concrete Wearing Surface 5"	Sq. Yd.	652		652
Formed Concrete Repair (Depth Equal To or Less Than 5")	Sq. Ft.		966.9	966.9
Formed Concrete Repair (Greater Than 5")	Sq. Ft.		146	146
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	5858		5858
Reinforcement Bars, Epoxy Coated	Pound	9650		9650
Steel Bridge Rail, Type SM	Foot	268		268
Name Plates	Each	1		1
Epoxy Crack Sealing	Foot		29	29
Bridge Joint System (Expansion), 1"	Foot	152		152
Concrete Slopewall Removal	Sq. Ft.		30	30
Concrete Slopewall	Sq. Ft.		30	30
Bar Splicers	Each	157		157
Asbestos Bearing Pad Removal	Each	90		90

DESIGNED	BAS
CHECKED	KEF & RJA
DRAWN	
CHECKED	

GENERAL NOTES, TOTAL BILL OF MATERIAL & RAIL ELEVATION
IL 78 OVER MUD CREEK
F.A.P. RTE. 22 - SECTION 127BR-1
HENRY COUNTY
STA. 542+78.43 - STR. NO. 037-0125

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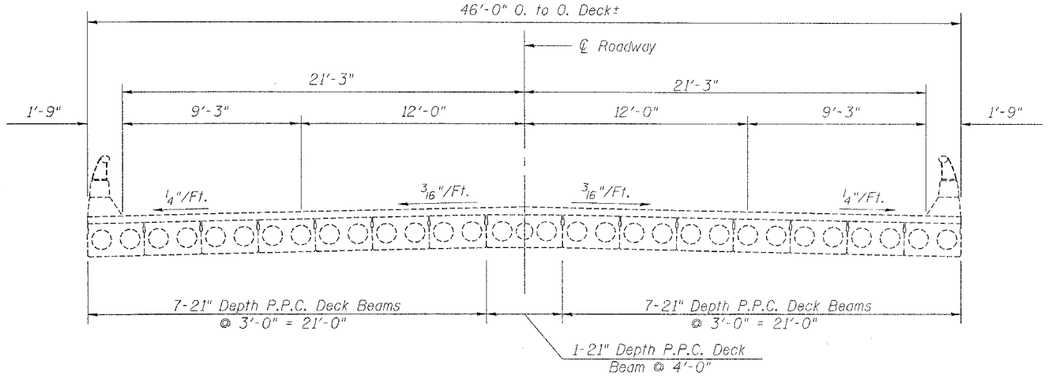
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

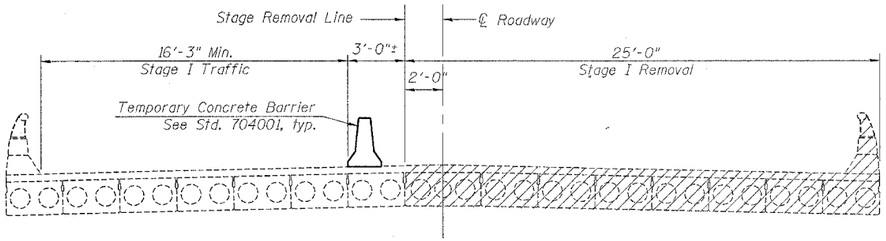
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 22	127BR-1	HENRY	33	17
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT=		

SHEET NO. 3
16 SHEETS

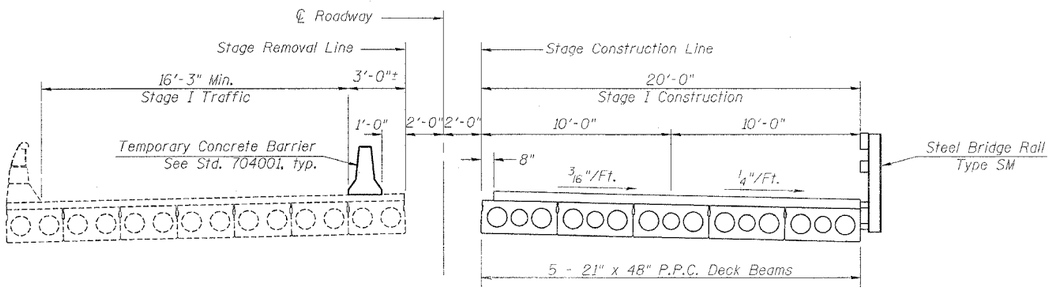
Contract # 64B24



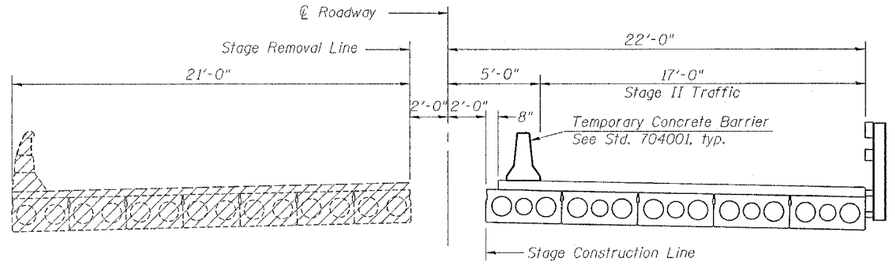
EXISTING CROSS SECTION



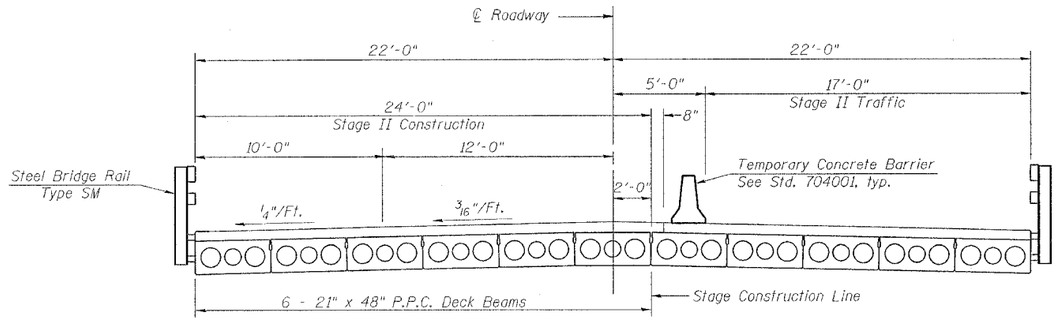
STAGE I REMOVAL



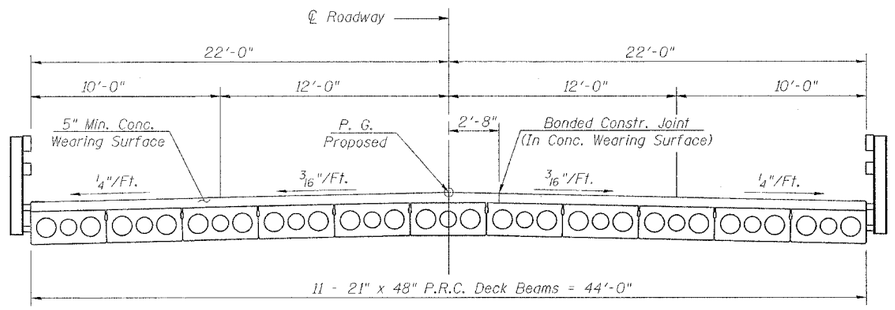
STAGE I CONSTRUCTION



STAGE II REMOVAL



STAGE II CONSTRUCTION



PROPOSED CROSS SECTION

DESIGNED	BAS
CHECKED	KEF & RJA
DRAWN	
CHECKED	

NOTE: All Views Looking North

STAGING DETAILS
IL 78 OVER MUD CREEK
F.A.P. RTE. 22 - SECTION 127BR-1
HENRY COUNTY
STA. 542+78.43 - STR. NO. 037-0125

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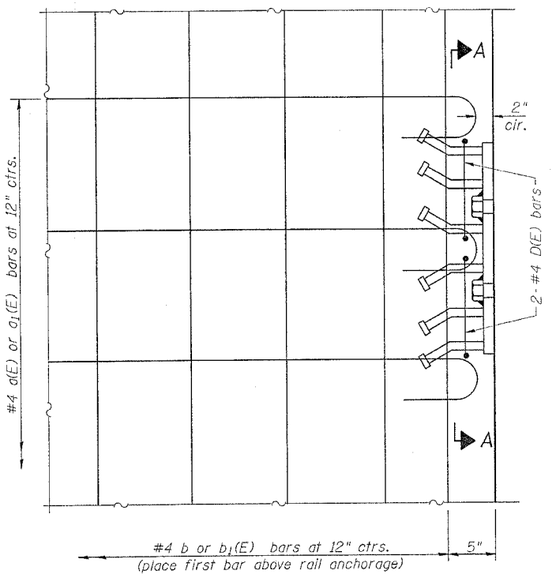
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 22	127BR-1	HENRY	33	18
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 4
16 SHEETS

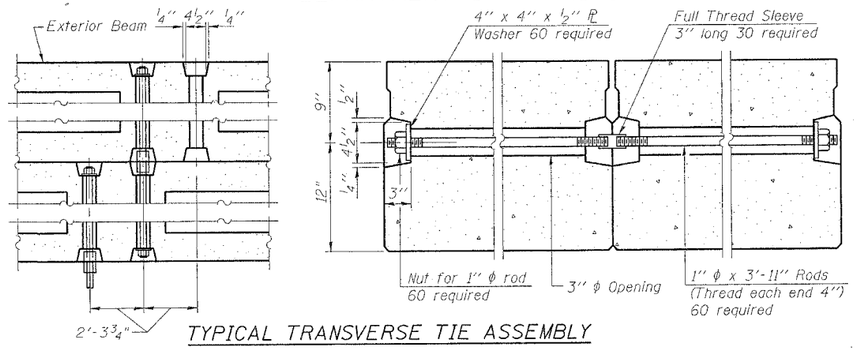
Contract # 64B24

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

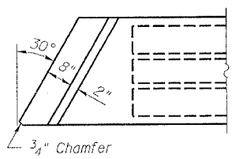


PLAN VIEW

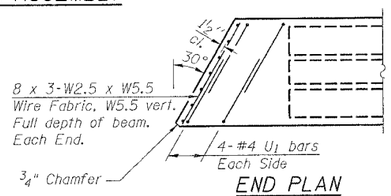
The rail anchorage shall be cast with the beam and the wearing surface shall be cast in the field. Formwork necessary for the wearing surface may be secured utilizing the bottom rail anchorage inserts and/or additional inserts cast into beam. Drilling into the beam will not be permitted.



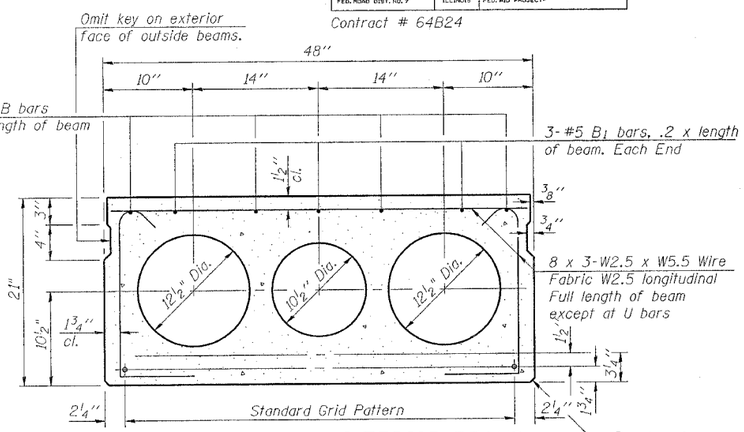
TYPICAL TRANSVERSE TIE ASSEMBLY



END PLAN
AT BLOCKOUT END



END PLAN
AT END W/O BLOCKOUT

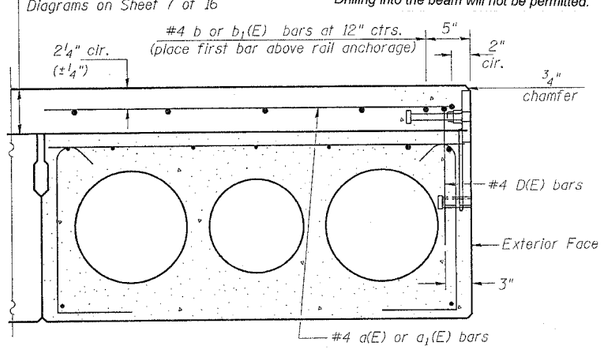


TYPICAL SECTION - INTERIOR BEAMS

½" ϕ Strands, Each Strand Stressed to 30,900 Lbs.
8 Strands 1 3/4" up, 7 Strands 3 1/4" up, 2 Strands 6" up

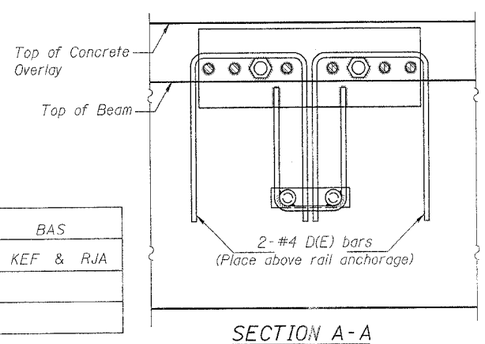
Note:
Place strands symmetrically about ℄ of beam.

5" Min. & Varies See Profile
Diagrams on Sheet 7 of 16

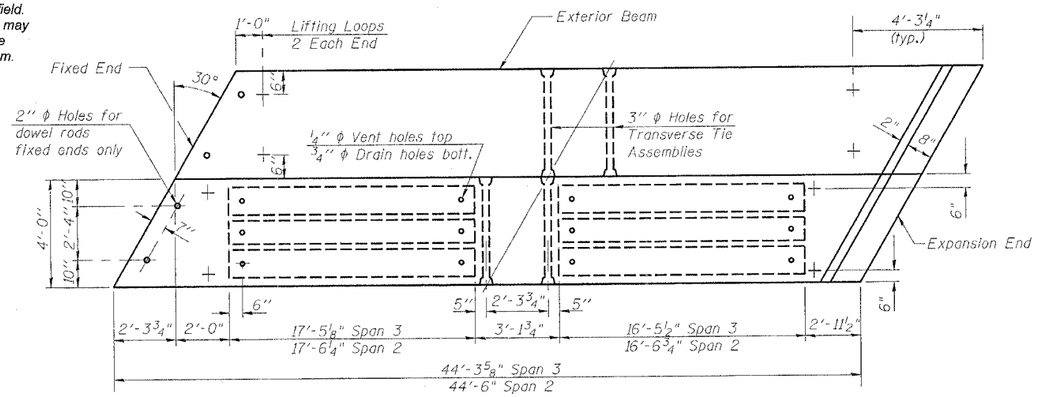


SECTION THRU EXTERIOR BEAMS

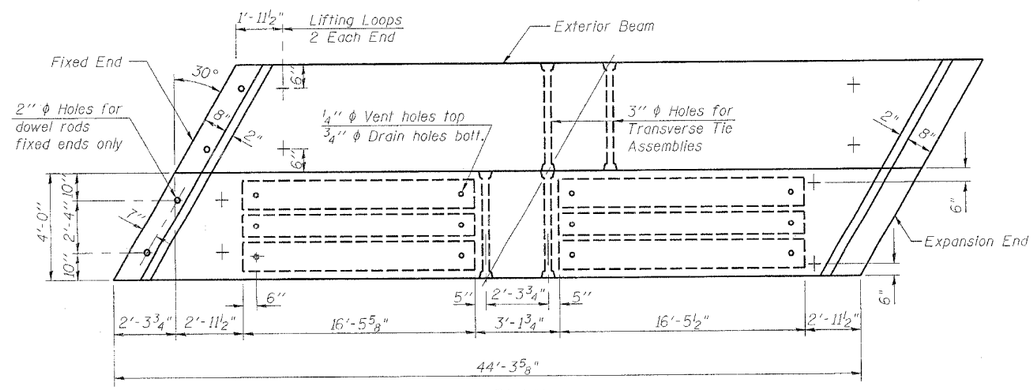
See Section Thru Interior Beams for strand pattern, dimensions and bar call outs.



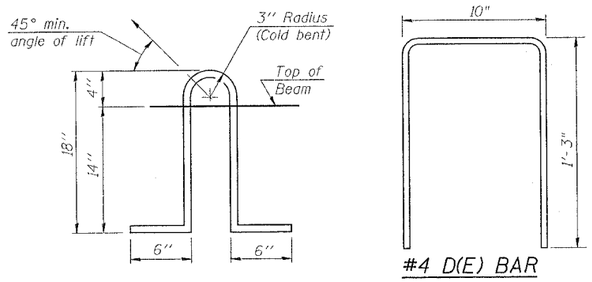
SECTION A-A



PLAN
(Spans 2 & 3)



PLAN
(Span 1)



LIFTING LOOP DETAIL

#4 D(E) BAR

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be ½" and the nominal cross-sectional area shall be 0.153 sq. in.

Lifting loops shall be 2 - ½" ϕ-270 ksi strands, as shown.

The 1" ϕ rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside shall be filled with grout after transverse tie assembly is in place.

Non prestressing steel shall conform to AASHTO M-31 or M-322 Grade 60.

The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two ⅛" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.

Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between top of the beam and the bottom edge of the key.

Corrosion Inhibitor, as covered in the Special Provisions, shall be used in the concrete for precast prestressed concrete deck beams.

Required Release Strength, f'ci, shall be 4,000 p.s.i.

Bridge rail inserts shall be cast in precast beams.

See Sheet 2 of 16 for location of rail inserts.

DESIGNED	BAS
CHECKED	KEF & RJA
DRAWN	
CHECKED	

SUPERSTRUCTURE DETAILS
IL 78 OVER MUD CREEK
F.A.P. RTE. 22 - SECTION 127BR-1
HENRY COUNTY
STA. 542+78.43 - STR. NO. 037-0125

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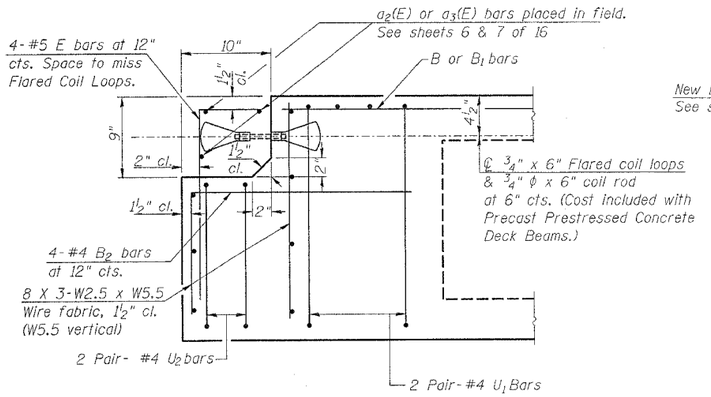
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

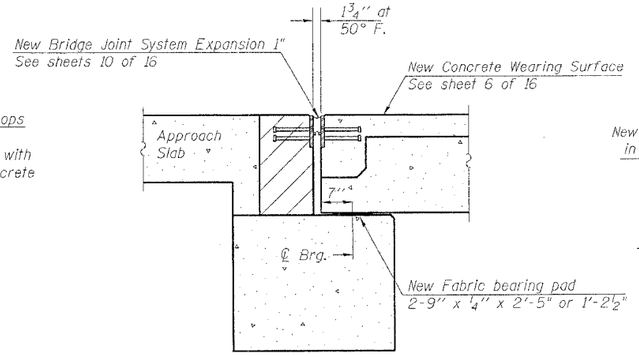
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 22	127BR-1	HENRY	33	19
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 5
16 SHEETS

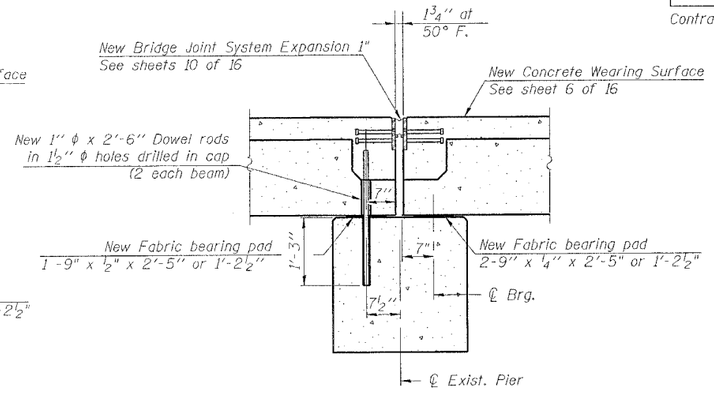
Contract # 64B24



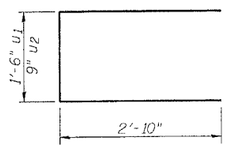
END OF BEAM (EXP. END)



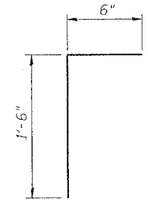
SECTION THRU ABUTMENT



SECTION THRU PIER 1

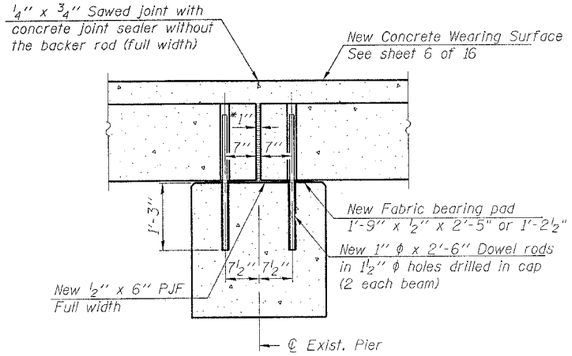


BAR U_1 & U_2



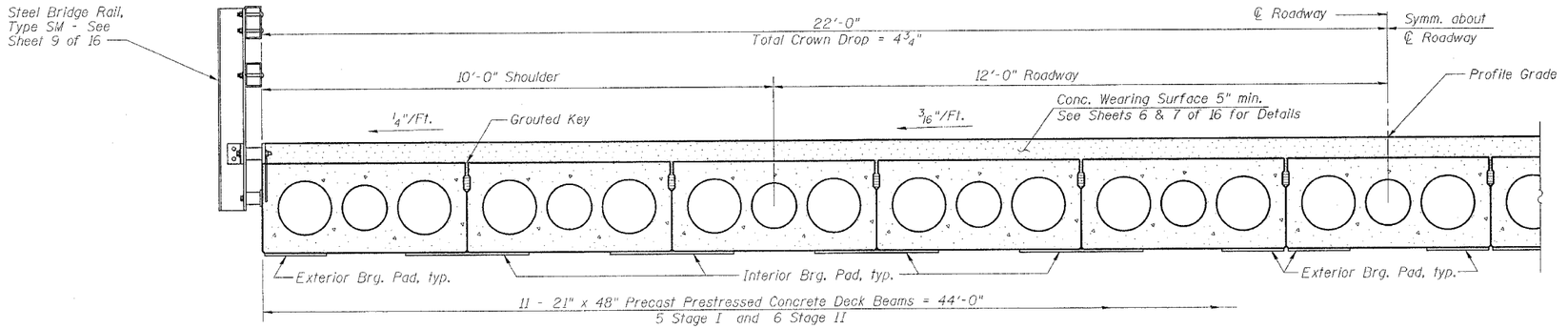
BAR E

Notes :
After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.
All horizontal dimensions are at right angles to beam ends.
Hatched area to be poured after beams are in place.

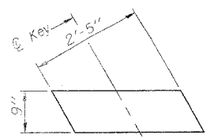


SECTION THRU PIER 2

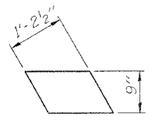
* 1" Jt. shall be filled with non-shrink grout. 1" dimension may vary to accommodate tolerance in beam lengths.



HALF CROSS SECTION

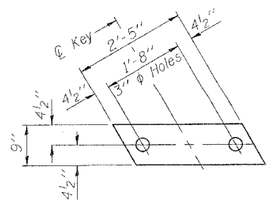


¼" FABRIC BEARING PAD
(Interior 48 required)

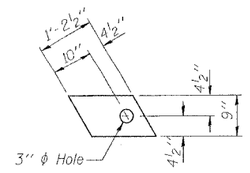


¼" FABRIC BEARING PAD
(Exterior 36 required)

EXPANSION



½" FABRIC BEARING PAD
(Interior 24 required)



½" FABRIC BEARING PAD
(Exterior 18 required)

FIXED

BILL OF MATERIALS

Item	Unit	Quantity
Precast Prestressed Conc. Deck Beams (21" Depth)	Sq. Ft.	5858

DESIGNED	BAS
CHECKED	KEF & RJA
DRAWN	
CHECKED	

SUPERSTRUCTURE DETAILS
IL 78 OVER MUD CREEK
F.A.P. RTE. 22 - SECTION 127BR-1
HENRY COUNTY
STA. 542+78.43 - STR. NO. 037-0125

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 22	127BR-1	HENRY		20
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT=		

SHEET NO. 6
16 SHEETS

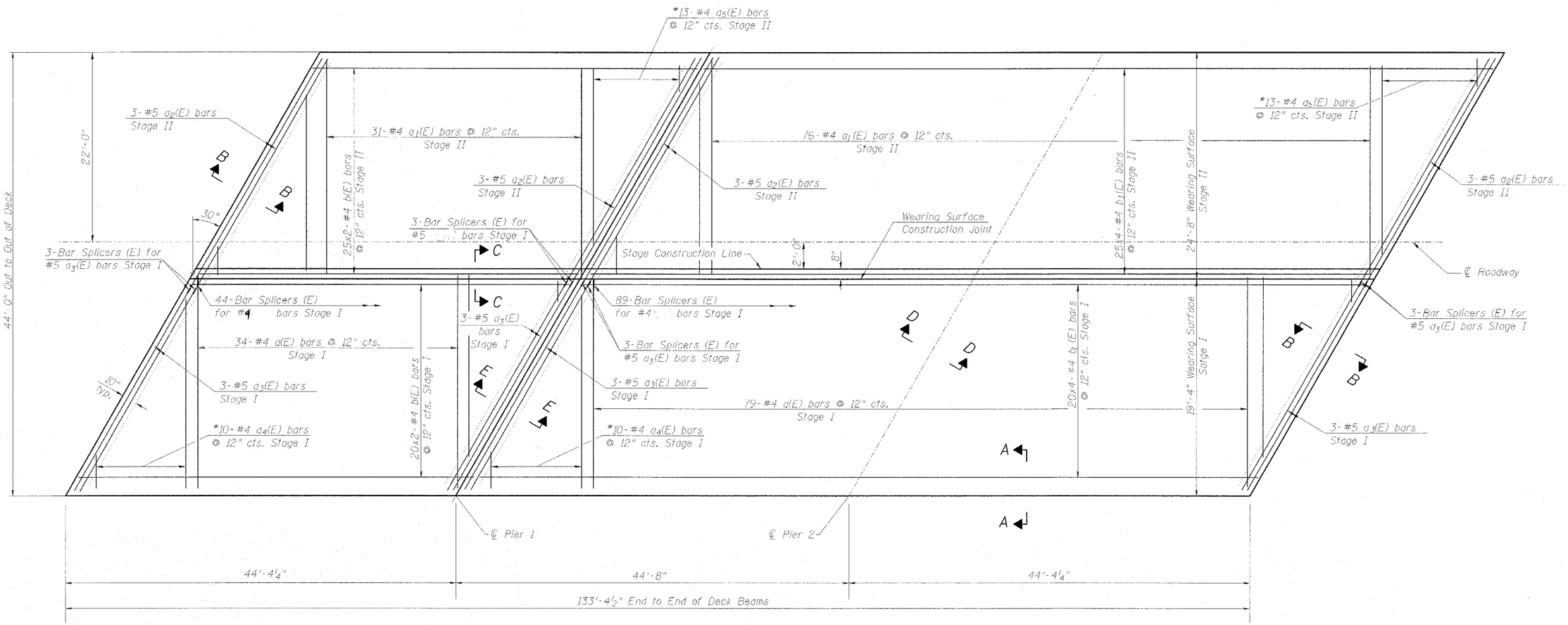
Contract # 64B24

N

MIN. BAR LAP

#4 Bar = 1'-4"

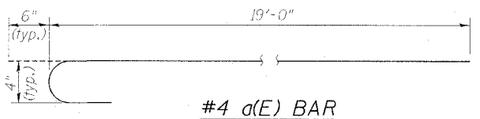
* Order bars full length and cut in field to fit skew. Use remainder of bars at opposite end of spans on same side of stage construction line



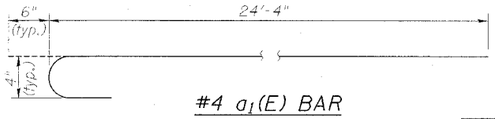
WEARING SURFACE PLAN

Notes:

Reinforcement bars designated (E) shall be epoxy coated.
For section details, See sheet 7 of 16.
Bars indicated thus 3x2-#5 etc. indicates 3 lines of bars with 2 lengths per line.



#4 a(E) BAR



#4 a1(E) BAR

DESIGNED	BAS
CHECKED	KEF & RJA
DRAWN	
CHECKED	

SUPERSTRUCTURE DETAILS
IL 78 OVER MUD CREEK
F.A.P. RTE. 22 - SECTION 127BR-1
HENRY COUNTY
STA. 542+78.43 - STR. NO. 037-0125

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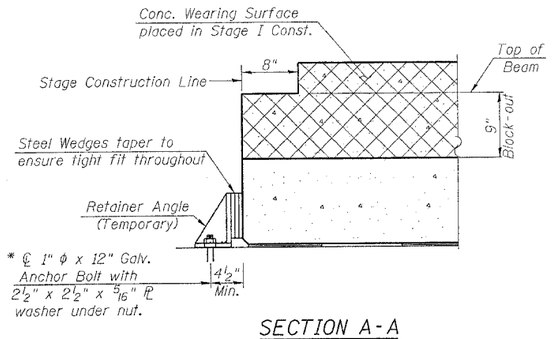
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 22	127BR-1	HENRY	33	21
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

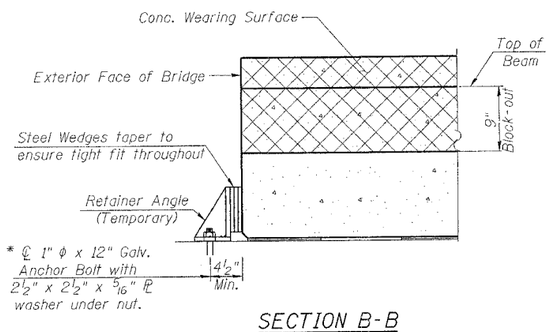
SHEET NO. 8
16 SHEETS

Contract # 64B24



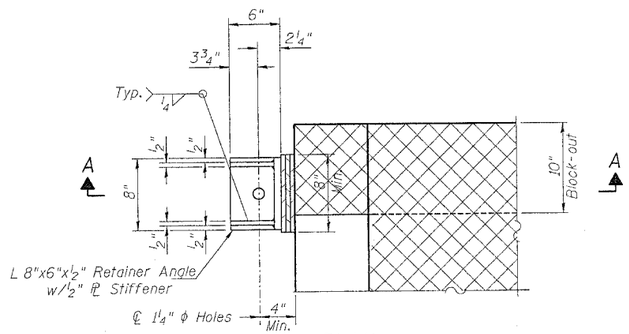
SECTION A-A

* Anchor bolts may be cast into the masonry or approved threaded rod may be placed in drilled holes and grouted in place. Cost of retainer and accessories are included with Precast Prestressed Concrete Deck Beams.



SECTION B-B

* Anchor bolts may be cast into the masonry or approved threaded rod may be placed in drilled holes and grouted in place. Cost of retainer and accessories are included with Precast Prestressed Concrete Deck Beams.

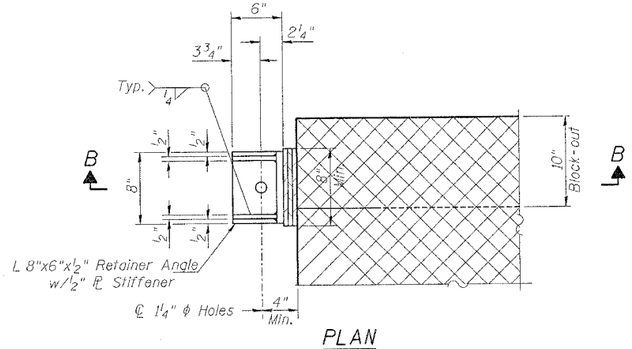


PLAN

BEAM RETAINER DETAILS @ STAGE CONST.

(3 Required)

Note:
After Stage I block-outs are poured and cured the retainer angles shall be removed. Anchor bolts shall be burned or cut off flush with the concrete surface. Grind anchor bolt smooth and seal with epoxy.

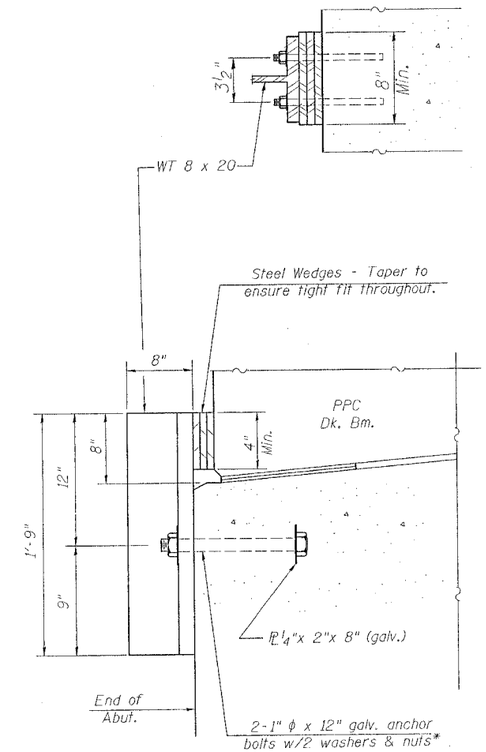


PLAN

BEAM RETAINER DETAILS @ EXTERIOR BEAMS

(6 Required)

Note:
After Stage II block-outs are poured and cured the retainer angles shall be removed. Anchor bolts may be left in place.



ALTERNATE RETAINER

DESIGNED	BAS
CHECKED	KEF & RJA
DRAWN	
CHECKED	

SUPERSTRUCTURE DETAILS
IL 78 OVER MUD CREEK
F.A.P. RTE. 22 - SECTION 127BR-1
HENRY COUNTY
STA. 542+78.43 - STR. NO. 037-0125

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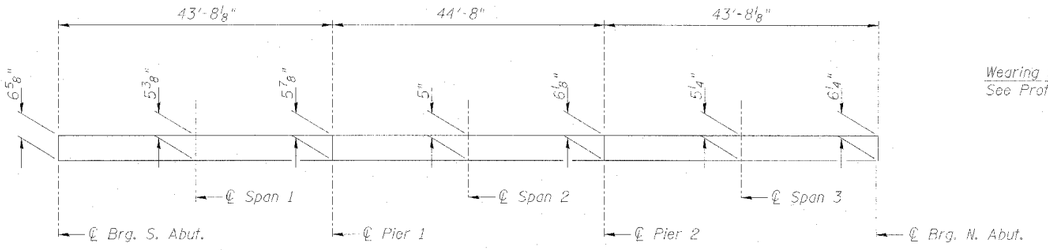
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 22	127BR-1	HENRY		22
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

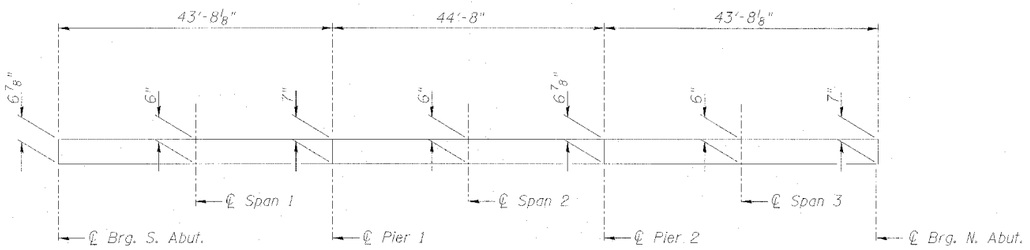
SHEET NO. 7
16 SHEETS

Contract # 64B24



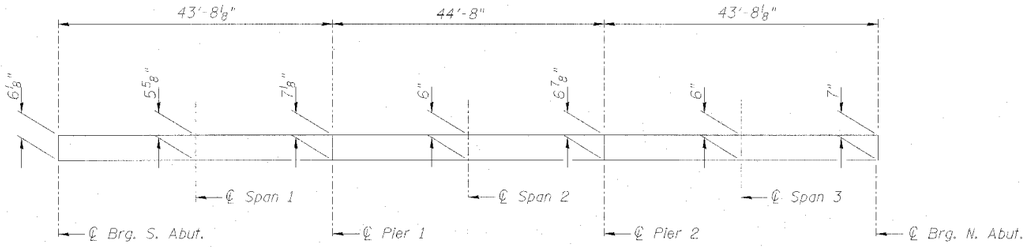
REINFORCED CONCRETE WEARING SURFACE PROFILE

(Concrete wearing surface thickness along west edge of deck)



REINFORCED CONCRETE WEARING SURFACE PROFILE

(Theoretical concrete wearing surface thickness along ℄ of Roadway)



REINFORCED CONCRETE WEARING SURFACE PROFILE

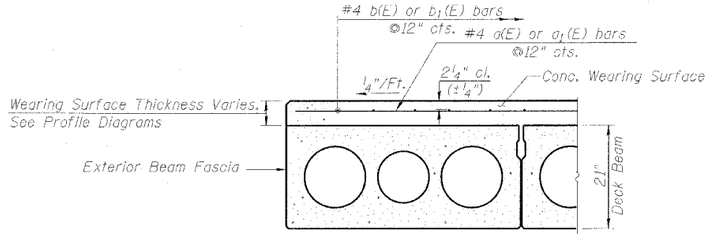
(Concrete wearing surface thickness along east edge of deck)

Expected Camber = 1"

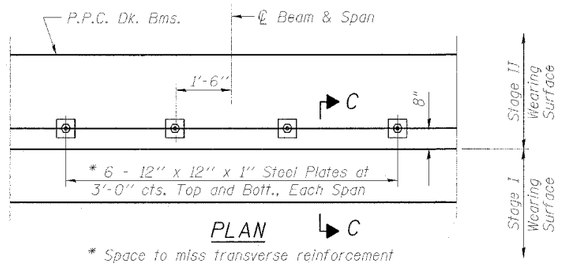
DESIGNED	BAS
CHECKED	KFF & RJA
DRAWN	
CHECKED	

CONCRETE WEARING SURFACE BILL OF MATERIALS

Bar	No.	Size	Length	Shape
d(E)	113	#4	19'-6"	C
a_1(E)	107	#4	24'-10"	C
a_2(E)	12	#5	28'-1"	——
a_3(E)	12	#5	22'-0"	——
a_4(E)	20	#4	19'-0"	——
a_5(E)	26	#4	24'-4"	——
b(E)	90	#4	22'-8"	——
b_1(E)	180	#4	23'-2"	——
Reinforcing Bars, Epoxy Coated		Pound	8700	
Concrete Wearing Surface, 5"		Sq. Yd.	652	
Bridge Deck Grooving		Sq. Yd.	622	
Protective Coat		Sq. Yd.	666	

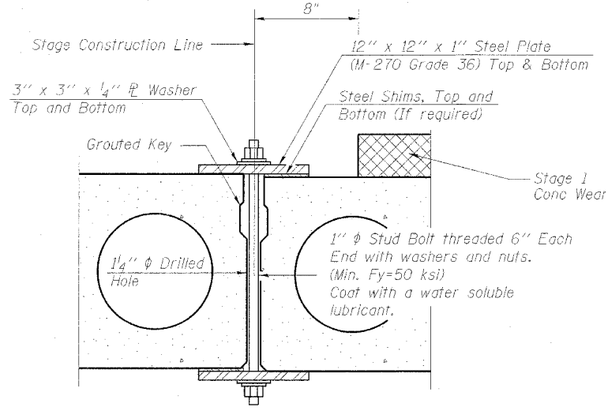


SECTION A-A

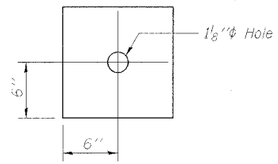


PLAN

* Space to miss transverse reinforcement in concrete wearing surface.



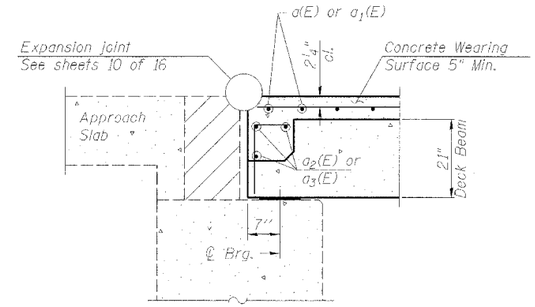
SECTION C-C



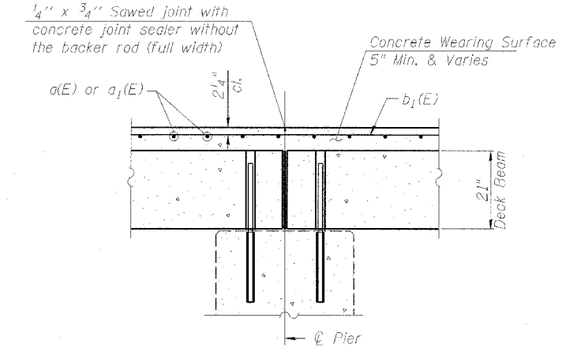
CLAMPING PLATE

SHEAR KEY CLAMPING DETAILS AT STAGE CONST. JT.

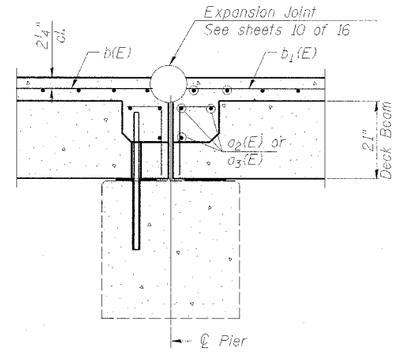
See Special Provisions for Stage Construction of Precast Prestressed Concrete Deck Beams.
Cost included with "Precast Prestressed Concrete Deck Beams".



SECTION B-B



SECTION D-D



SECTION E-E

Notes :
All horizontal dimensions are at right angles to beam ends.
Hatched area to be poured after concrete wearing surface is in place.

SUPERSTRUCTURE DETAILS
IL 78 OVER MUD CREEK
F.A.P. RTE. 22 - SECTION 127BR-1
HENRY COUNTY
STA. 542+78.43 - STR. NO. 037-0125

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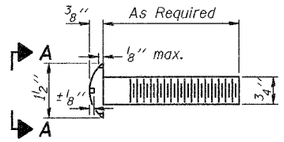
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

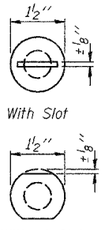
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 22	127BR-1	HENRY	33	23
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 9
16 SHEETS

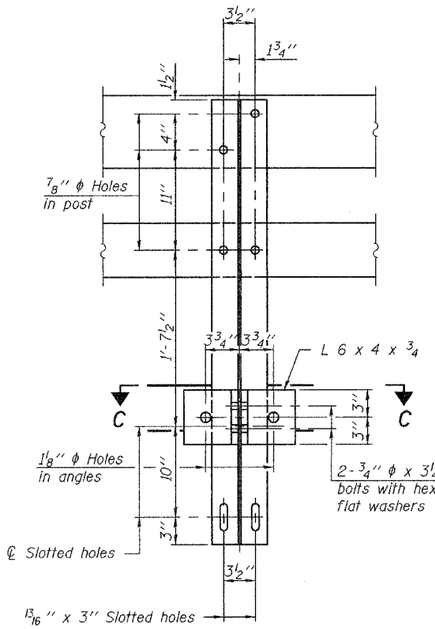
Contract # 64B24



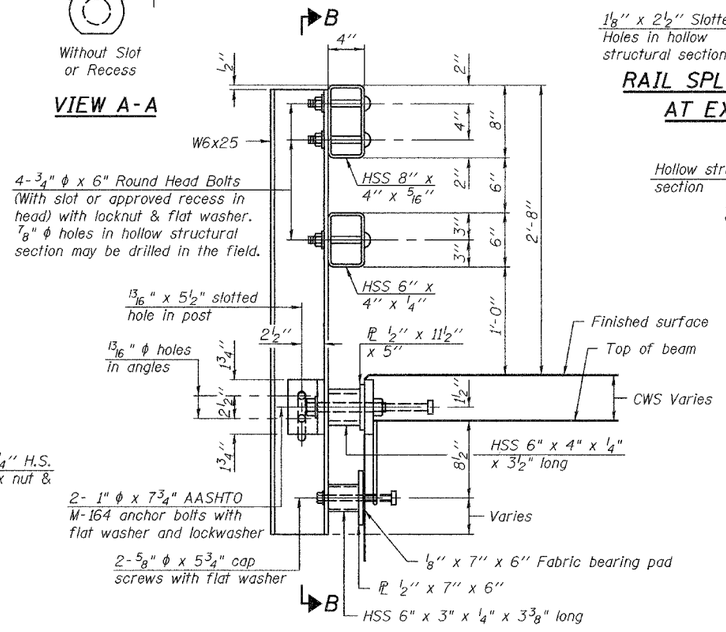
DETAIL OF 3/4" ϕ ROUND HEAD BOLT



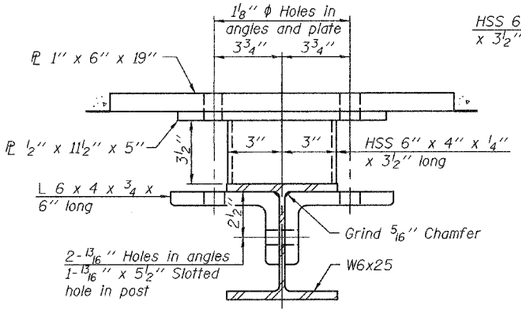
VIEW A-A



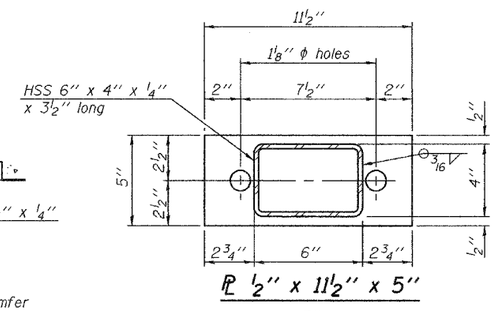
SECTION B-B



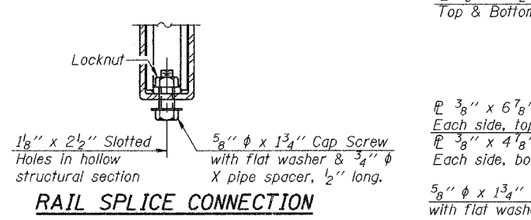
SECTION AT RAIL POST



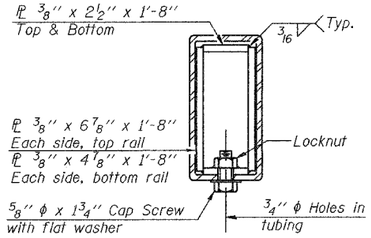
SECTION C-C



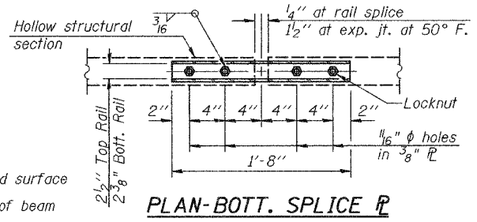
SECTION AT RAIL SPLICE



RAIL SPLICE CONNECTION AT EXPANSION JT.

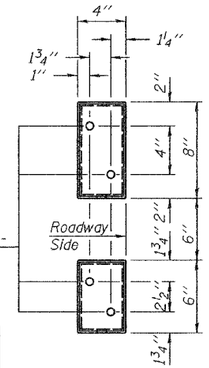


SECTION AT RAIL SPLICE

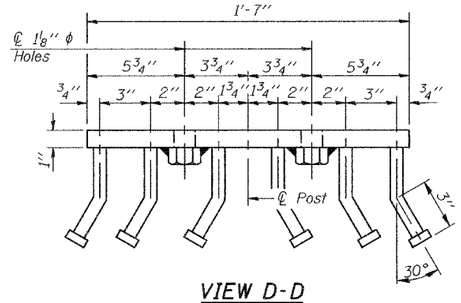


PLAN-BOTT. SPLICE PL TYPICAL

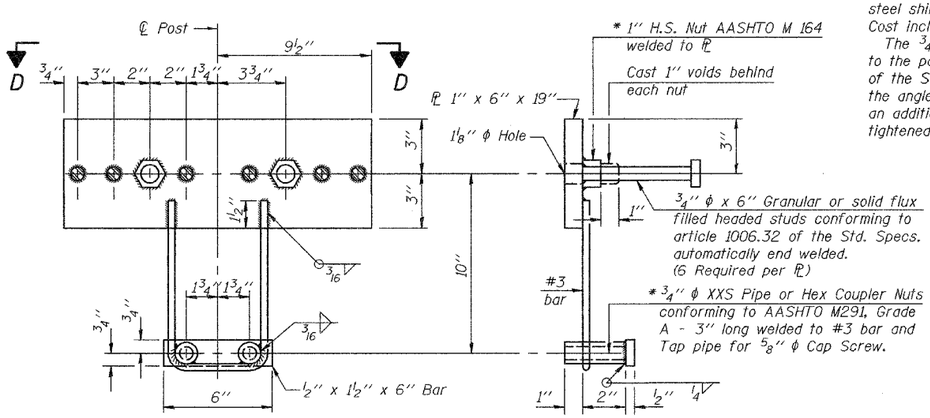
℄ - 5/8" reduced base welded studs. Provide 4 - 5/8" washers and self-locking nuts or nuts and jam nuts for guardrail connection shown on Std. 631032



VIEW E-E

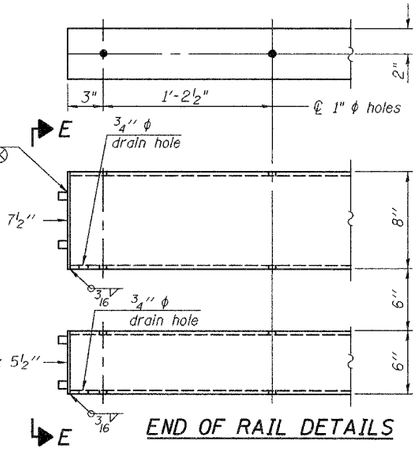


VIEW D-D



ANCHOR DEVICE

* Threaded areas shall be plugged or blocked off during casting of beam. Galvanized after fabrication.



END OF RAIL DETAILS

NOTES

Hollow structural sections shall conform to the requirements of ASTM designation A 500 Grade B Structural Steel Tubing and shall meet the longitudinal CVN requirements of 15 ft-lbs at 0° F.

All other steel shapes and plates shall conform to the requirements of AASHTO M 270 Grade 36 except posts and angles shall conform to AASHTO M 270, Grade 50.

Bolts, cap screws, and nuts shall conform to the requirements of ASTM designation A 307 except for high strength bolts, nuts and washers noted which shall conform to AASHTO M 164.

All bolts, nuts, cap screws, washers and lock washers shall be galvanized according to AASHTO M 232.

All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication according to AASHTO M 111 and ASTM A 385. Galvanized rail shall not be painted.

Railing shall be according to Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per foot for Steel Bridge Rail, Type SM.

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

For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Bridge Rail, Type SM.

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

BILL OF MATERIAL

Item	Unit	Quantity
Steel Bridge Rail, Type SM	Foot	268

DESIGNED	BAS
CHECKED	KEF & RJA
DRAWN	
CHECKED	

EXAMINED _____ 200
ENGINEER OF BRIDGE DESIGN

PASSED _____
ENGINEER OF BRIDGES AND STRUCTURES

R-34CWS 10-28-05 (6'-3" Maximum Post Spacing) (5" minimum to 7 1/8" maximum CWS thickness)

TYPE SM
STEEL BRIDGE RAIL SIDE MOUNTED WITH CONCRETE WEARING SURFACE

IL 78 OVER MUD CREEK
F.A.P. RTE. 22 - SECTION 127BR-1
HENRY COUNTY
STA. 542+78.43 - STR. NO. 037-0125

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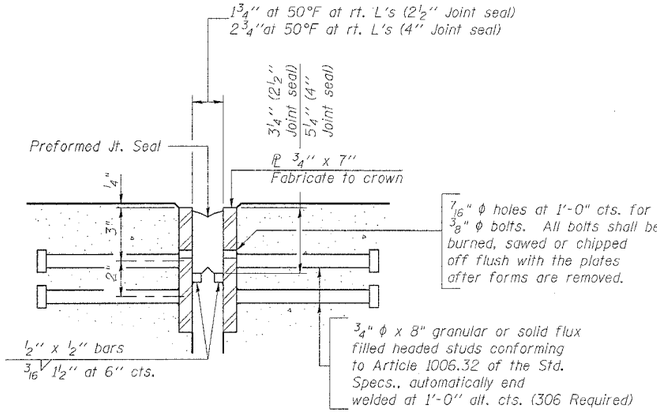
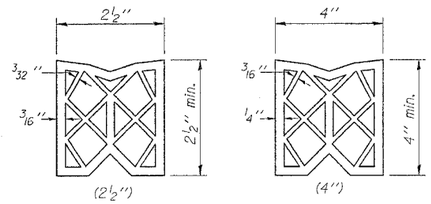


SECTION THRU EXPANSION JOINT

(2 1/2" and 4" joint seals)



PREFORMED JOINT SEAL

Bridge Joint System (Expansion)		
Design Movement	Required Preformed Joint Seal Size	Required Strip Seal Rated movement
1"	2 1/2"	1"
1 5/8"	4"	2"

BILL OF MATERIAL

Item	Unit	Total
Bridge Joint System (Expansion)	Foot	152

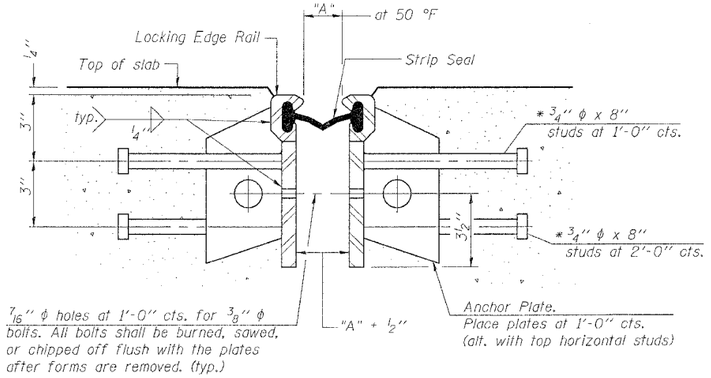
GENERAL NOTES

Furnish steel plates in segments of 20 feet maximum length. Maximum space between installed segments shall be 3/16". Seal space with silicone sealant suitable for structural steel.

DESIGNED	BAS
CHECKED	KEF & RJA
DRAWN	
CHECKED	

(PREFORMED JOINT SEAL)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

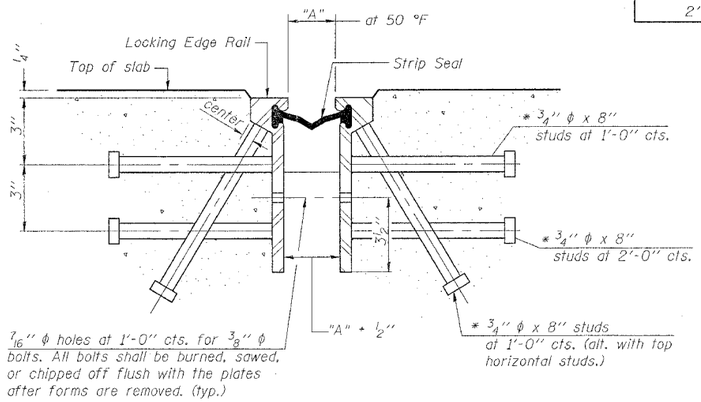


SECTION THRU WELDED RAIL EXP. JOINT

(462 Studs Required)
(306 Anchor Plates Required)

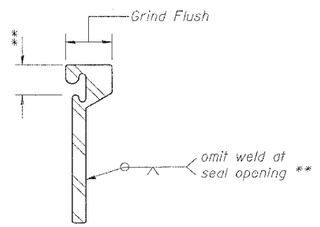
* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.

Required Strip Seal rated movement	"A"
1"	1 1/8"
2"	1 3/4"



SECTION THRU ROLLED RAIL EXP. JOINT

(768 Studs Required)



LOCKING EDGE RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.

(ALTERNATE-STRIP SEAL)

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 22	127BR-1	HENRY	33	24
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 10
16 SHEETS

Contract # 64B24

GENERAL NOTES

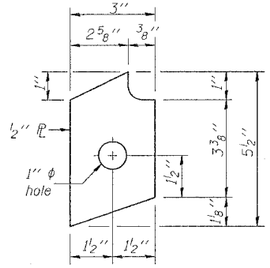
The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails.

The height and thickness of the Locking Edge Rails shown are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed.

Locking Edge Rails may be spliced at slope discontinuities and stage construction joints.

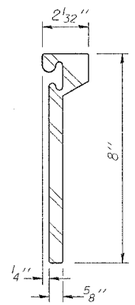
The manufacturer's recommended installation methods shall be followed.

The joint opening and deck dimensions detailed on the superstructure are based on a preformed joint seal. If the contractor elects to use the alternate strip seal joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.

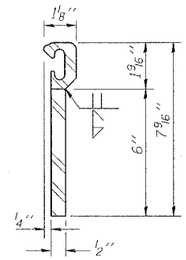


ANCHOR ℄

(for welded rail)



ROLLED (EXTRUDED) RAIL



WELDED RAIL

LOCKING EDGE RAILS

BRIDGE JOINT SYSTEM - EXPANSION

IL 78 OVER MUD CREEK
F.A.P. RTE. 22 - SECTION 127BR-1
HENRY COUNTY
STA. 542+78.43 - STR. NO. 037-0125

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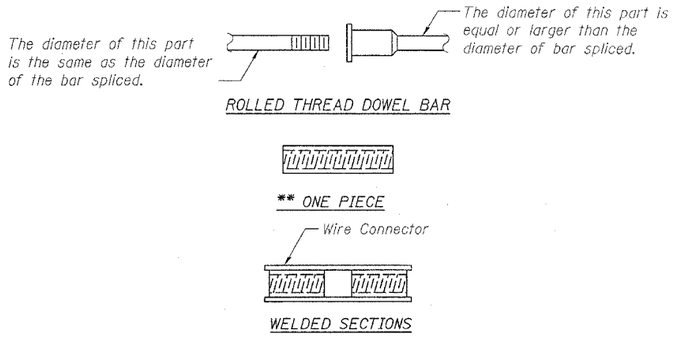
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 22	127BR-1	HENRY	33	25
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

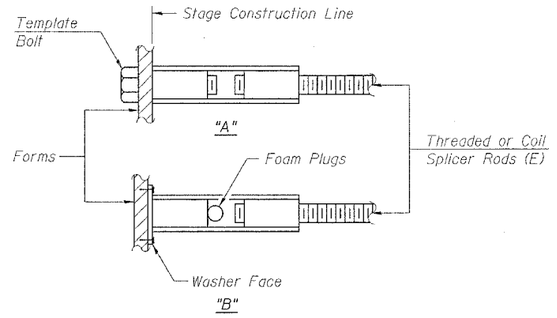
SHEET NO. 11
16 SHEETS

Contract # 64B24



BAR SPLICER ASSEMBLY ALTERNATIVES

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



INSTALLATION AND SETTING METHODS

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

NOTES

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

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

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

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

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

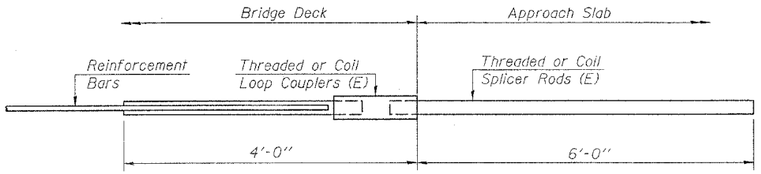
① Minimum Capacity (Tension in kips) = $1.25 \times fy \times A_t$

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

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

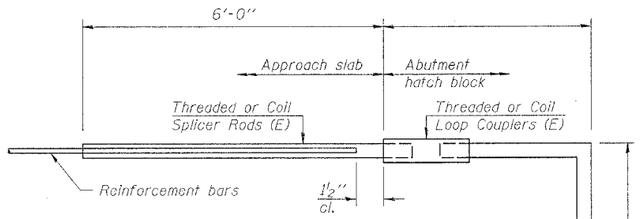
BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	5.9
#5	2'-0"	23.0	9.2
#6	2'-7"	33.1	13.3
#7	3'-5"	45.1	18.0
#8	4'-6"	58.9	23.6
#9	5'-9"	75.0	30.0
#10	7'-3"	95.0	38.0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

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



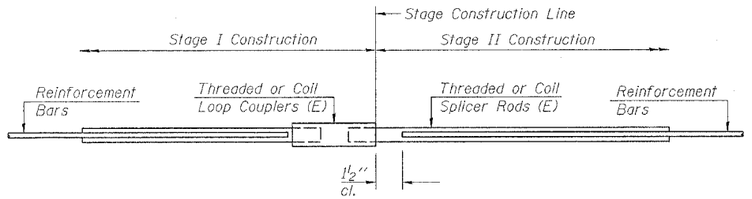
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

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



FOR PILE BENT ABUTMENTS

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



STANDARD

Bar Size	No. Assemblies Required	Location
#4	133	Conc. Wearing Surface
#5	12	Beam End Blockouts
#6	12	Abut. Backwalls

DESIGNED	BAS
CHECKED	KEF & RJA
DRAWN	
CHECKED	

BAR SPLICER ASSEMBLY DETAIL
IL 78 OVER MUD CREEK
F.A.P. RTE. 22 - SECTION 127BR-1
HENRY COUNTY
STA. 542+78.43 - STR. NO. 037-0125

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The Illinois Coil-Lock Anchor Bolt is a proprietary item which is the property of the Illinois Department of Transportation. Use, reproduction or disclosure without express written permission is prohibited and protected under Federal copyright laws. The production and the fabrication of this bolt for use on highway projects in the State of Illinois shall be permitted and there shall be no incurred charges or fees to the manufacturer or the fabricator for producing or fabricating this bolt.

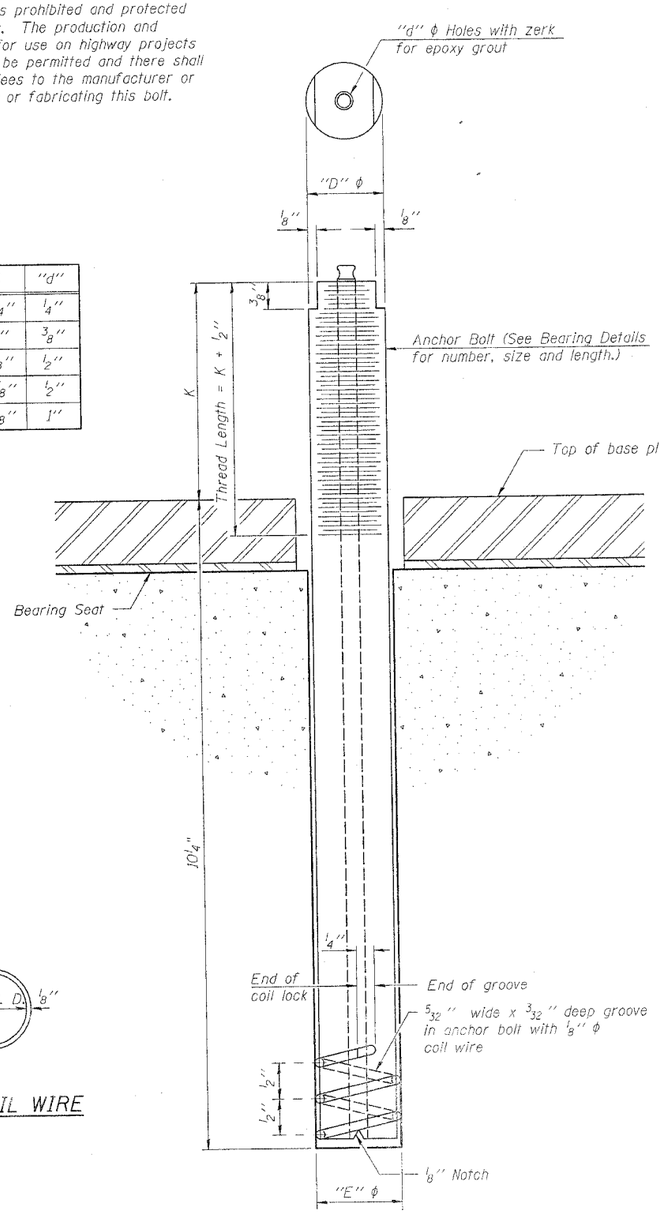
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 22	127BR-1	HENRY	33	26
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

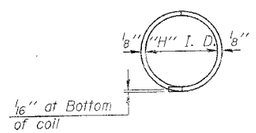
SHEET NO. 12
16 SHEETS

Contract # 64B24

D	E	H	K	"d"
1"	$1\frac{1}{8}$"	$\frac{13}{16}$"	$1\frac{3}{4}$"	$\frac{1}{4}$"
$1\frac{1}{4}$"	$1\frac{3}{8}$"	$1\frac{1}{16}$"	2"	$\frac{3}{8}$"
$1\frac{1}{2}$"	$1\frac{5}{8}$"	$1\frac{5}{16}$"	$2\frac{1}{8}$"	$\frac{1}{2}$"
2"	$2\frac{1}{8}$"	$1\frac{13}{16}$"	$2\frac{7}{8}$"	$\frac{1}{2}$"
$2\frac{1}{2}$"	$2\frac{5}{8}$"	$2\frac{5}{16}$"	$3\frac{3}{8}$"	1"



ILLINOIS COIL-LOCK ANCHOR BOLT



PLAN-COIL WIRE

MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A 519, Grade 1026, CW and supplied with hexagonal nuts and cut washers.

The coil wire shall be made of any suitable soft steel wire.

The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.

The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C 881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures.

The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:

1. A threaded rod stud with nut and washer of the type specified.
2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

Location	Type	
Abuts. & Pier 1	A325	(temporary retainers)

ASTM F 1554 Grade 105, ASTM A 449 and AASHTO M 314 Grade 105 anchor bolts may be substituted for the anchor bolts shown above.

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or according to the manufacturer's recommendation after beams or girders have been erected and adjusted.

Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.

The anchor bolts, furnished and installed and including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for Precast Prestressed Concrete Deck Beams.

DESIGNED	BAS
CHECKED	KEF & RJA
DRAWN	
CHECKED	

ANCHOR BOLT DETAILS
IL 78 OVER MUD CREEK
F.A.P. RTE. 22 - SECTION 127BR-1
HENRY COUNTY
STA. 542+78.43 - STR. NO. 037-0125

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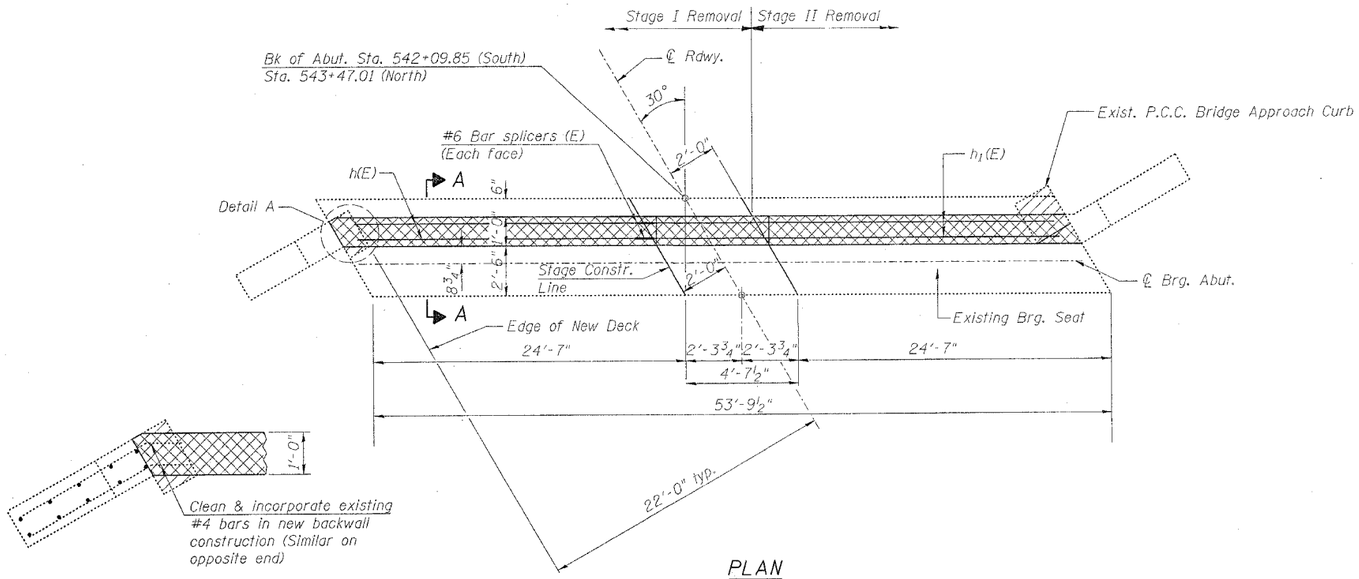
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 22	127BR-1	HENRY	33	27
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

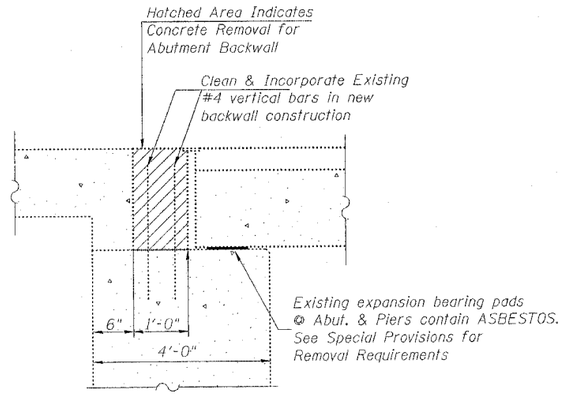
SHEET NO. 13
16 SHEETS

Contract # 64B24

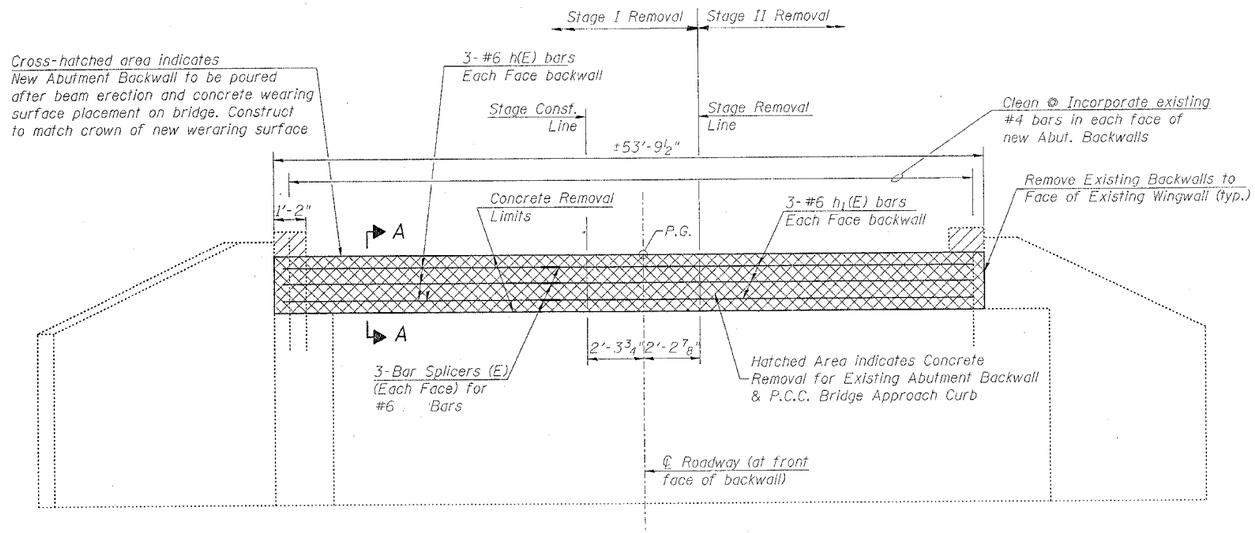


DETAIL A

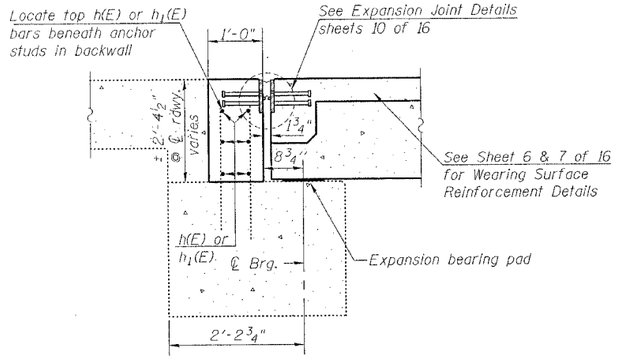
PLAN
(South Abut. shown. North Abut. similar)



SECTION A-A EXISTING
(Dimensions at Rt. L's)



ELEVATION
(South Abut. shown. North Abut. similar)



SECTION A-A PROPOSED
(Dimensions at Rt. L's)

BILL OF MATERIAL
(BOTH ABUTMENTS)

Bar	No.	Size	Length	Shape
h(E)	12	#6	24'-4"	——
h1(E)	12	#6	28'-4"	——
Reinforcing Bars, Epoxy Coated			Pound	950
Concrete Removal			Cu. Yd.	9.5
Concrete Structures			Cu. Yd.	9.3

DESIGNED	BAS
CHECKED	KEF & RJA
DRAWN	
CHECKED	

ABUTMENT DETAILS
IL 78 OVER MUD CREEK
F.A.P. RTE. 22 - SECTION 127BR-1
HENRY COUNTY
STA. 542+78.43 - STR. NO. 037-0125

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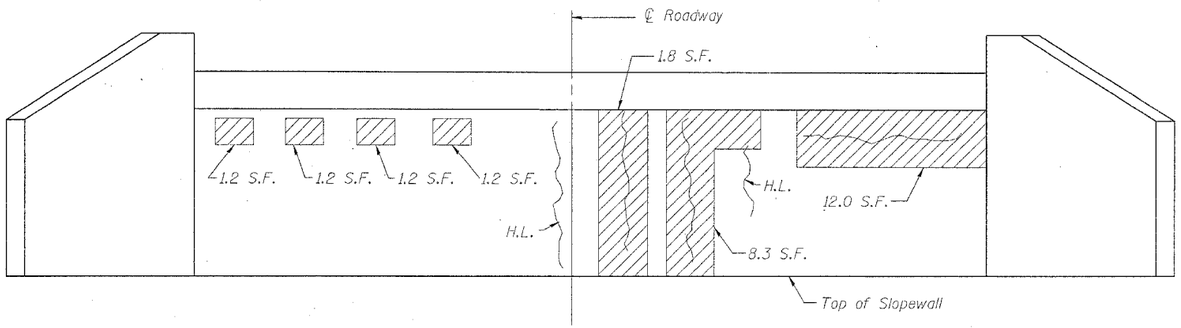
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 22	127BR-1	HENRY	33	28
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 14
16 SHEETS

Contract # 64B24



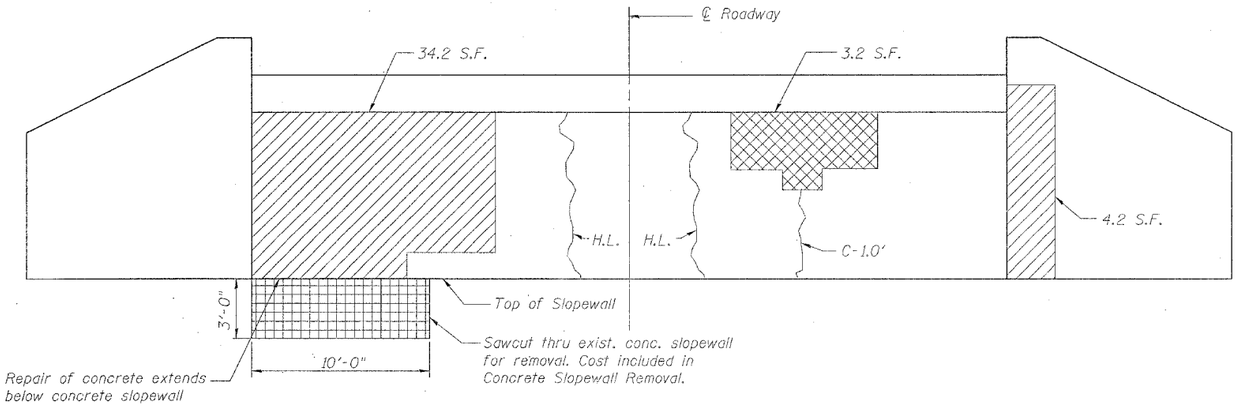
ELEVATION OF S. ABUTMENT
(Looking South)

REPAIR LEGEND

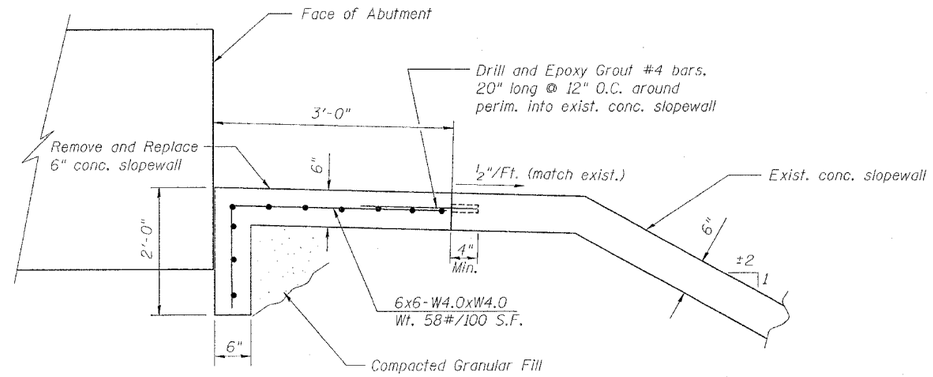
Inspection Date: 08-03-05

- Form Conc. Repair > 5"
- Form Conc. Repair < 5"
- Slopewall Removal & Replacement
- C-8' Epoxy Crack Sealing
- H.L. Hairline Crack (do not seal)

EXISTING BEARING SEAT TO BE INSPECTED BY THE ENGINEER AFTER DECK BEAM REMOVAL. DETERIORATED CONCRETE AREAS SHALL BE REPAIRED (FORMED CONCRETE REPAIR DEPTH ≤ 5") AND CRACKS SHALL BE SEALED (EPOXY CRACK SEALING) IF FOUND.



ELEVATION OF N. ABUTMENT
(Looking North)



SLOPEWALL REPAIR DETAIL

Cost of Welded Wire Mesh, drilling and grouting #4 bars, placing concrete, and any necessary excavation and soil placement is included in the cost of Concrete Slopewall.

ABUTMENTS
BILL OF MATERIAL
REPAIR QUANTITY SUMMARY

ITEM	UNIT	TOTAL
Form Conc. Rep. ≤5"	Sq. Ft.	65.3
Form Conc. Rep. >5"	Sq. Ft.	3.2
Epoxy Crack Sealing	Foot	1.0
Concrete Slopewall Removal	Sq. Ft.	30.0
Concrete Slopewall	Sq. Ft.	30.0

DESIGNED	BAS
CHECKED	KEF. & RJA
DRAWN	
CHECKED	

ABUTMENT REPAIR DETAIL
IL 78 OVER MUD CREEK
F.A.P. RTE. 22 - SECTION 127BR-1
HENRY COUNTY
STA. 542+78.43 - STR. NO. 037-0125

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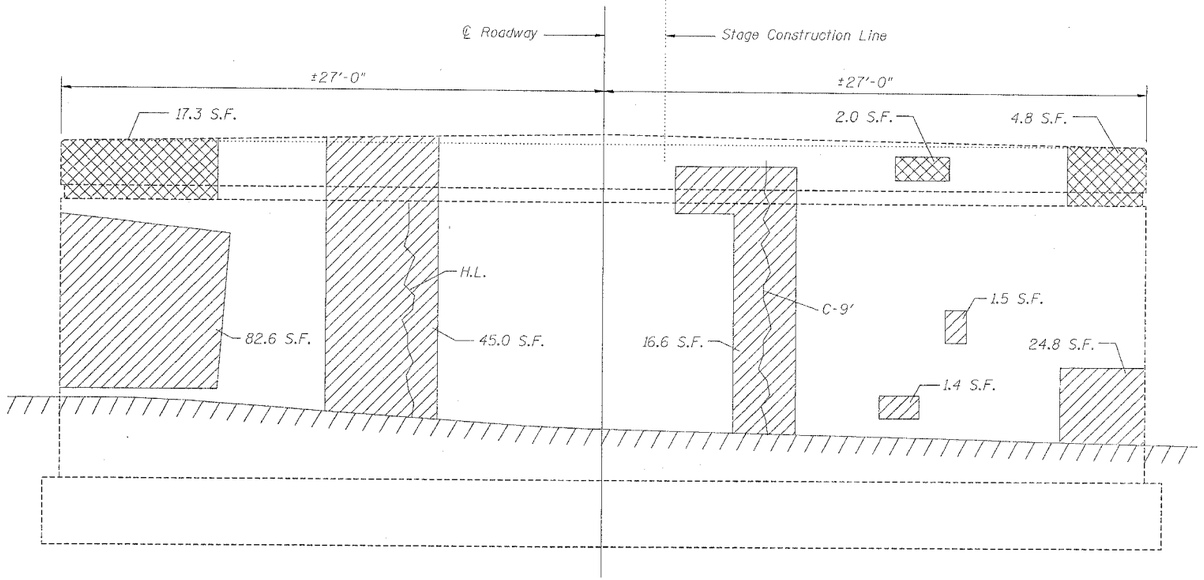
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

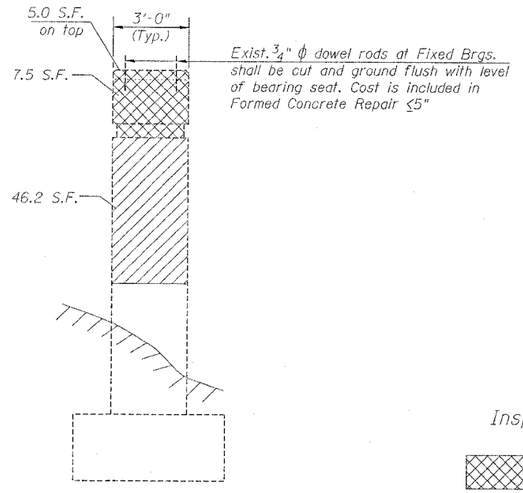
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 22	127BR-1	HENRY	33	29
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 15
16 SHEETS

Contract # 64B24

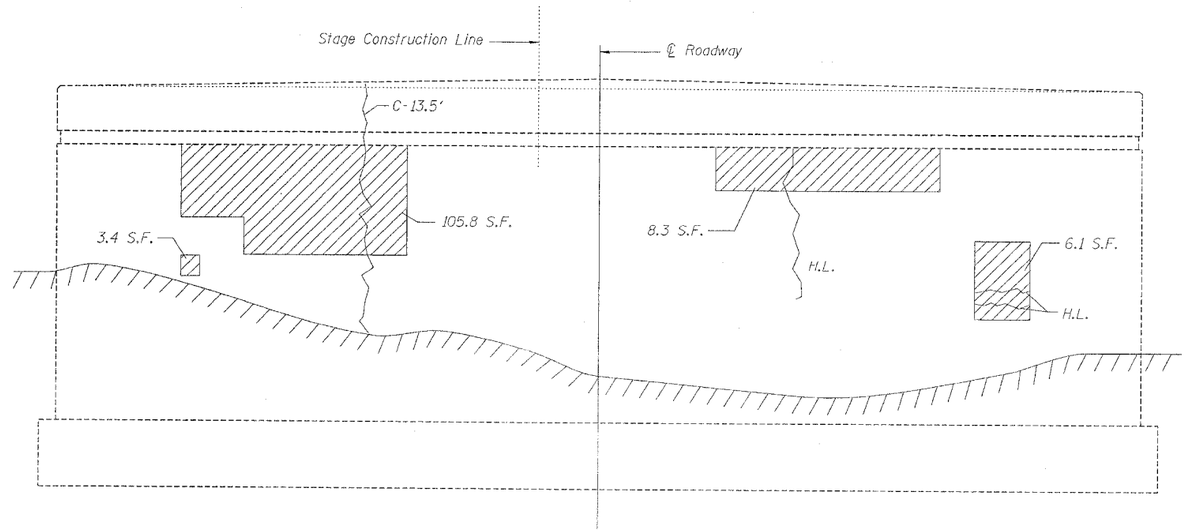


SOUTH ELEVATION PIER 1

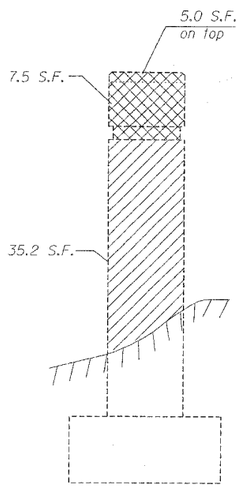


EAST ELEVATION

EXISTING BEARING SEAT TO BE INSPECTED BY THE ENGINEER AFTER DECK BEAM REMOVAL. DETERIORATED CONCRETE AREAS SHALL BE REPAIRED (FORMED CONCRETE REPAIR DEPTH ≤ 5") AND CRACKS SHALL BE SEALED (EPOXY CRACK SEALING) IF FOUND.



NORTH ELEVATION PIER 1



WEST ELEVATION

REPAIR LEGEND

Inspection Date: 08-03-05

- Form Conc. Repair > 5"
- Form Conc. Repair < 5"
- C-8' Epoxy Crack Sealing
- H.L. Hairline Crack (do not seal)

PIER 1
BILL OF MATERIAL
REPAIR QUANTITY SUMMARY

ITEM	UNIT	TOTAL
Form Conc. Rep. ≤5"	Sq. Ft.	376.9
Form Conc. Rep. >5"	Sq. Ft.	49.1
Epoxy Crack Sealing	Foot	22.5

DESIGNED	BAS
CHECKED	KEF & RJA
DRAWN	
CHECKED	

PIER 1 REPAIR DETAILS
IL 78 OVER MUD CREEK
F.A.P. RTE. 22 - SECTION 127BR-1
HENRY COUNTY
STA. 542+78.43 - STR. NO. 037-0125

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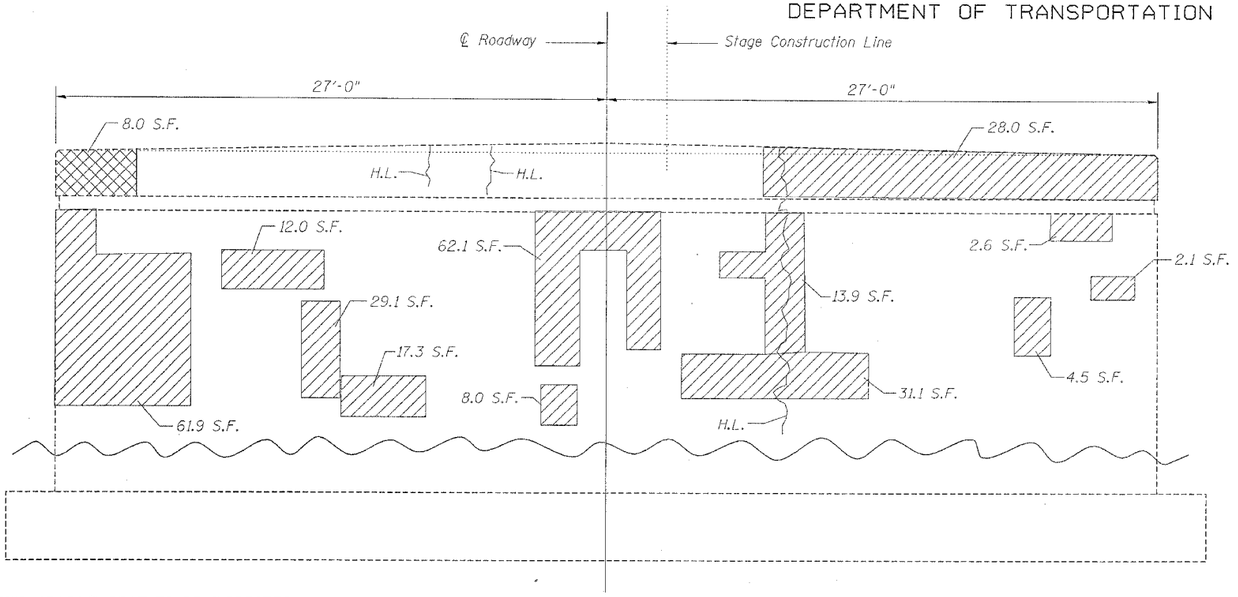
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 22	127BR-1	HENRY	33	30
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

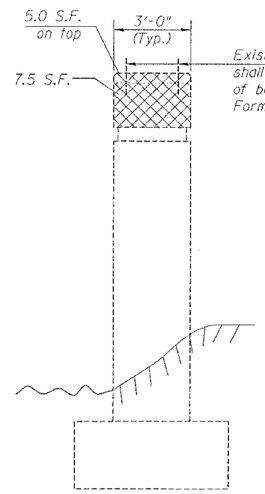
SHEET NO. 16
16 SHEETS

Contract # 64B24



EXISTING BEARING SEAT TO BE INSPECTED BY THE ENGINEER AFTER DECK BEAM REMOVAL. DETERIORATED CONCRETE AREAS SHALL BE REPAIRED (FORMED CONCRETE REPAIR DEPTH ≤ 5") AND CRACKS SHALL BE SEALED (EPOXY CRACK SEALING) IF FOUND.

SOUTH ELEVATION PIER 2

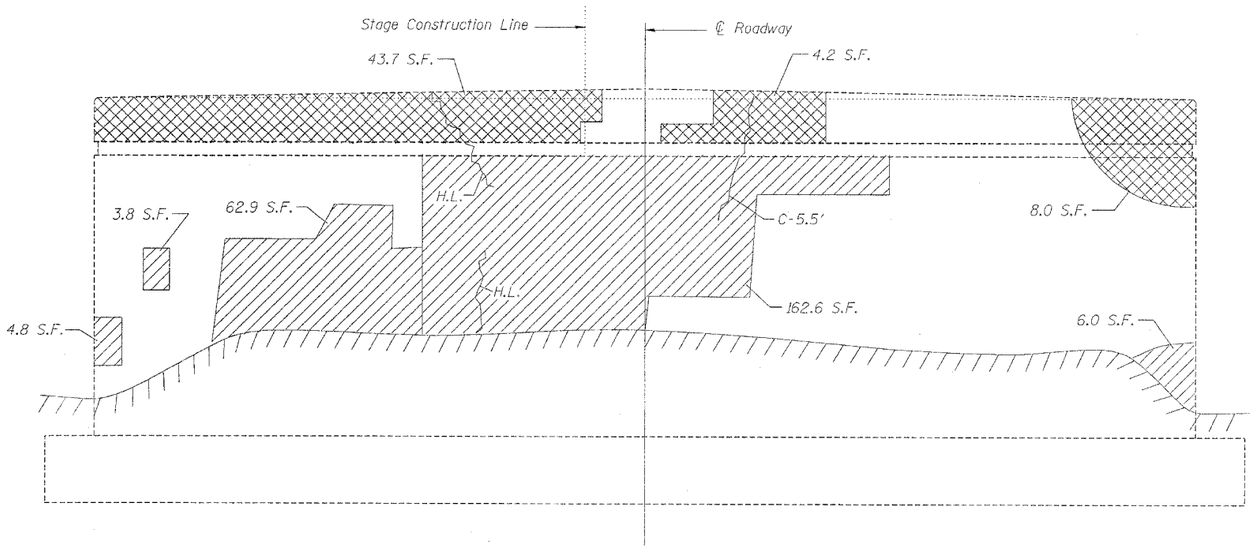


EAST ELEVATION

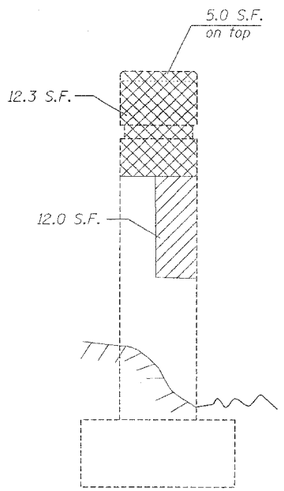
REPAIR LEGEND

Inspection Date: 08-03-05

	Form Conc. Repair > 5"
	Form Conc. Repair < 5"
C-8'	Epoxy Crack Sealng
H.L.	Hairline Crack (do not seal)



NORTH ELEVATION PIER 2



WEST ELEVATION

PIER 2
BILL OF MATERIAL
REPAIR QUANTITY SUMMARY

ITEM	UNIT	TOTAL
Form Conc. Rep. ≤5"	Sq. Ft.	524.7
Form Conc. Rep. >5"	Sq. Ft.	93.7
Epoxy Crack Sealing	Foot	5.5

DESIGNED	BAS
CHECKED	KEF & RJA
DRAWN	
CHECKED	

PIER 2 REPAIR DETAILS
IL 78 OVER MUD CREEK
F.A.P. RTE. 22 - SECTION 127BR-1
HENRY COUNTY
STA. 542+78.43 - STR. NO. 037-0125

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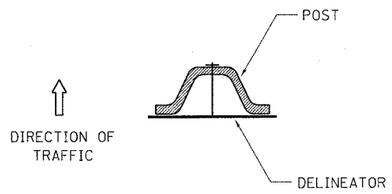
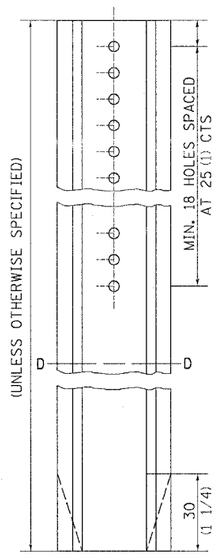
CONTRACT NO. 64B24

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
22	127BR-1	HENRY	33	31
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

DELINEATOR AND POST ORIENTATION





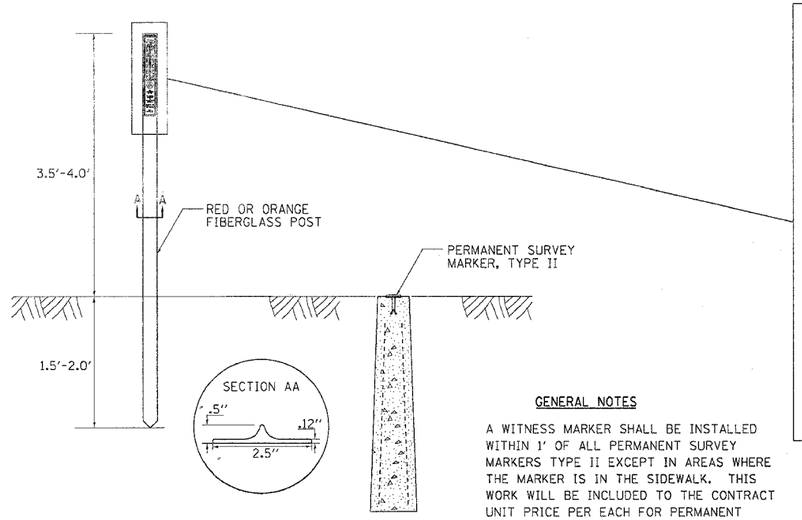
DELINEATORS SHALL BE INSTALLED ACCORDING TO STANDARD 635001 EXCEPT THAT THE POST SHALL BE ROTATED 180° . THE POST WILL HAVE THE WIDE SIDE FACING TRAFFIC AND THE DELINEATOR ATTACHECD AS SHOWN ABOVE.

ALL DIMENSIONS ARE IN MILLIMETERS (INCHES) UNLESS OTHERWISE NOTED.

DELINEATOR AND POST ORIENTATION 37.4

REVISED 1-31-00

WITNESS MARKER FOR PERMANENT SURVEY MARKERS TYPE II



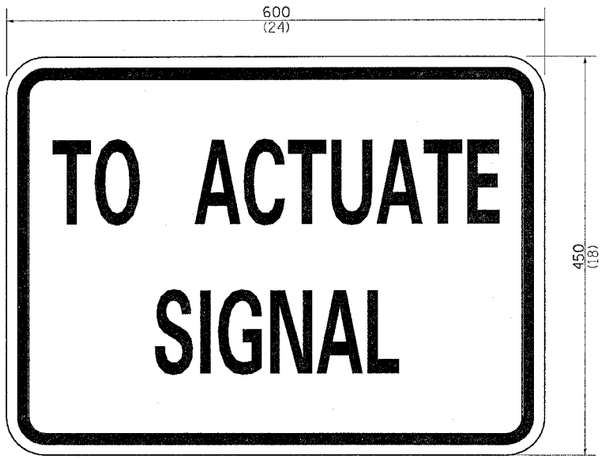
GENERAL NOTES

A WITNESS MARKER SHALL BE INSTALLED WITHIN 1' OF ALL PERMANENT SURVEY MARKERS TYPE II EXCEPT IN AREAS WHERE THE MARKER IS IN THE SIDEWALK. THIS WORK WILL BE INCLUDED TO THE CONTRACT UNIT PRICE PER EACH FOR PERMANENT SURVEY MARKERS, TYPE II.

WITNESS MARKER FOR PERMANENT SURVEY MARKERS TYPE II 38.4

REVISED 1-31-00

STOP LINE SIGN FOR TEMPORARY SIGNALS



SIZE: 600(24) x 450(18)

100(4) CAPITAL LETTERS - BLACK

13(1/2) BORDER - BLACK

WHITE REFLECTIVE - TYPE B ENGINEERING GRADE SHEETING

GENERAL NOTE:

THIS SIGN SHALL BE INSTALLED AT THE STOP LINE AS DIRECTED BY ENGINEER.

ALL DIMENSIONS ARE IN MILLIMETERS (INCHES) UNLESS OTHERWISE NOTED.

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REFERENCE = REF

STOP LINE SIGN FOR TEMPORARY SIGNALS 99.4

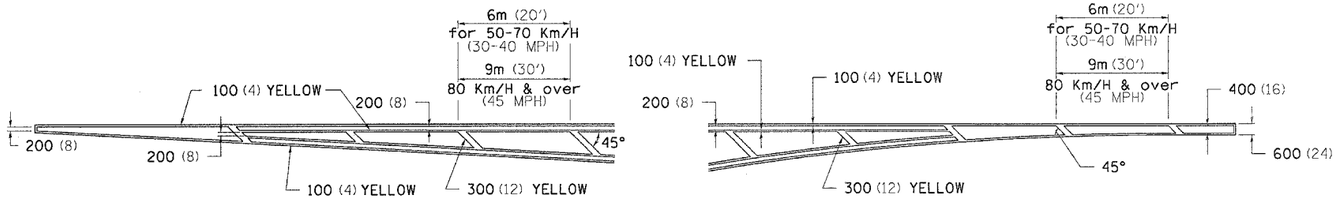
REVISED 8-7-90

CONTRACT NO. 64B24

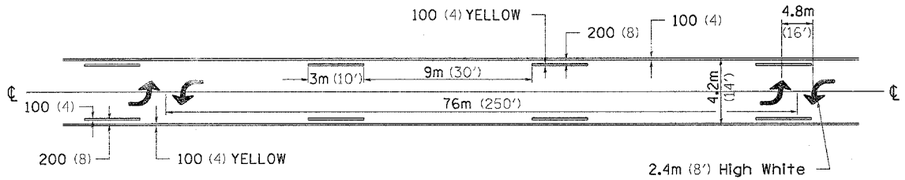
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
22	127BR-1	HENRY	33	32
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

TYPICAL PAVEMENT MARKINGS

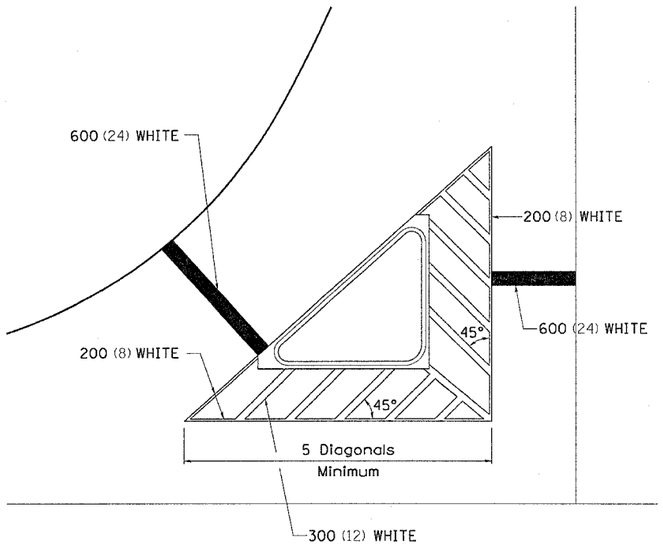
TYPICAL PAVEMENT MARKING FOR FLUSH MEDIAN



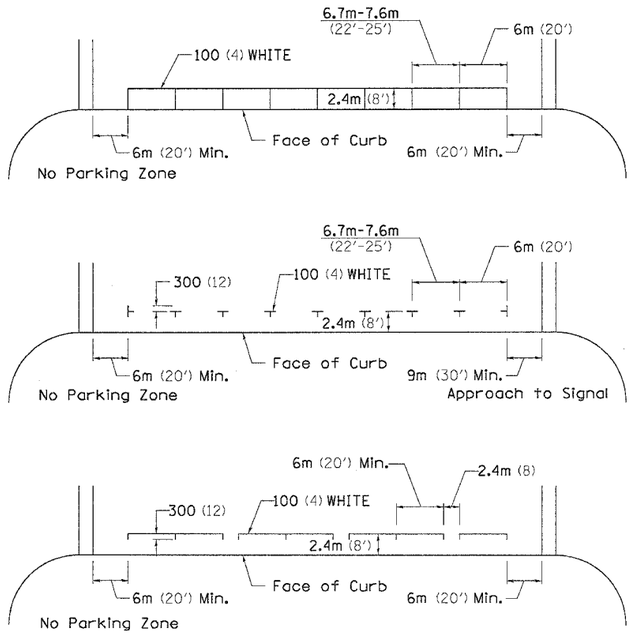
MEDIAN PAVEMENT MARKING



TYPICAL ISLAND OFFSET SHOULDER WIDTH



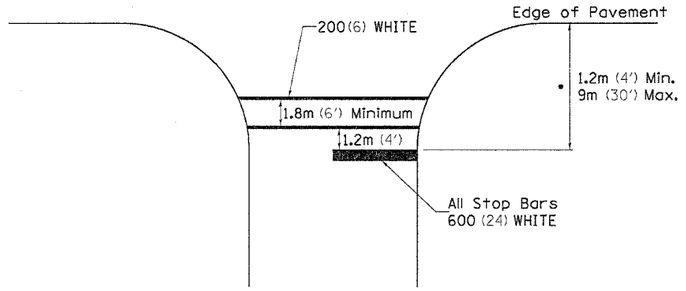
TYPICAL PARKING SPACING



** ALL DIMENSIONS ARE IN MILLIMETERS (INCHES) UNLESS OTHERWISE NOTED.

STANDARD CROSSWALK MARKING

See Schedules for Locations



• Distance to the nearest edge of the intersecting roadway in the absence of a marked crosswalk.

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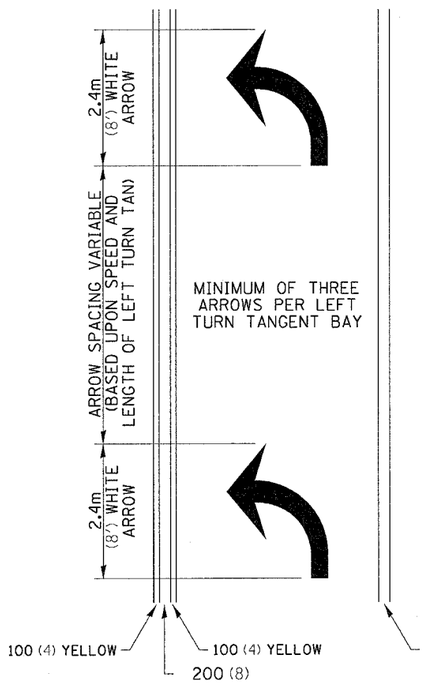
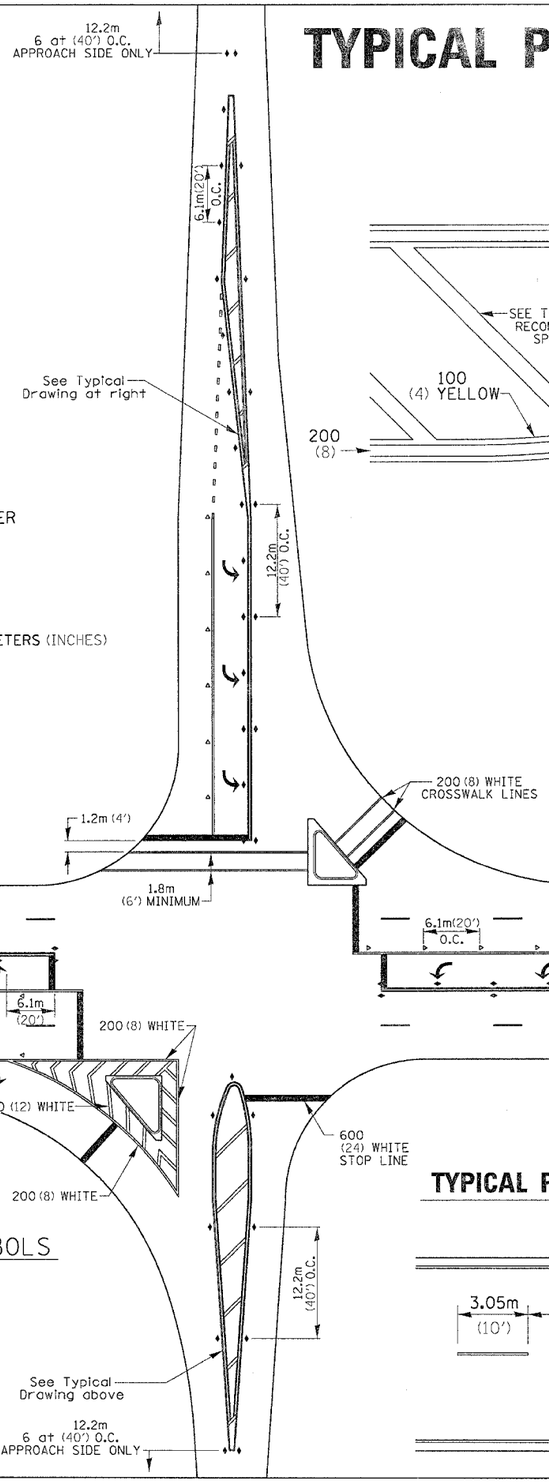
CONTRACT NO. 64B24

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
22	127BR-1	HENRY	33	33
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

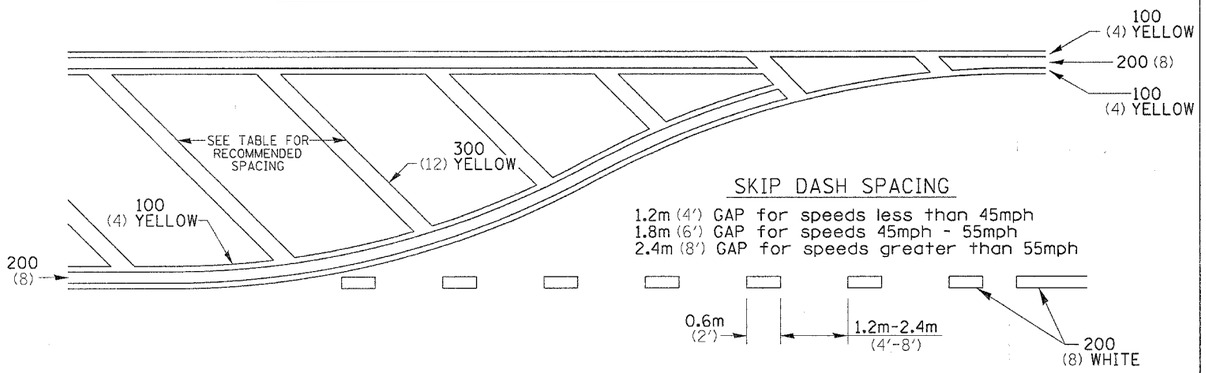
TYPICAL PAVEMENT MARKINGS

ARROW LAYOUT





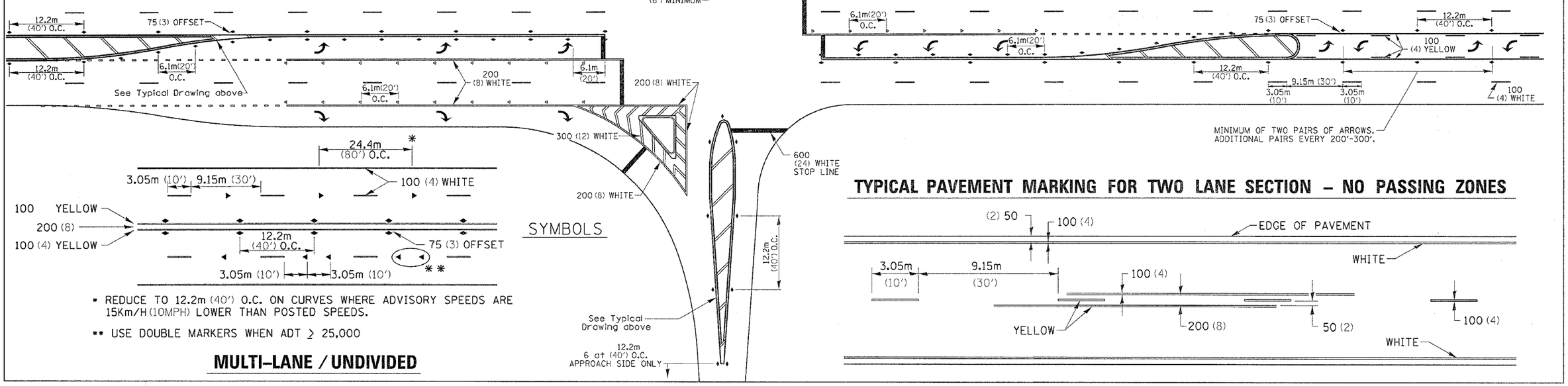
TYPICAL PAVEMENT MARKING FOR FLUSH MEDIAN



RECOMMENDED SPACING BETWEEN DIAGONALS (IN FEET)

Speed Limit Range	Continuous Median Area	Intersection Channelization	Objects (Islands)
less than 50Km/H (30MPH)	15.3m (50')	4.53m (15')	3.05m (10')
50-60Km/H (30-40MPH)	22.9m (75')	6.1m (20')	4.53m (15')
70Km/H (45MPH) & over	22.9m (75')	9.05m (30')	6.1m (20')

NOTE: if the spacing recommended in the Table does not permit at least five diagonal lines in the area being marked, the spacing from the next lowest speed range should be used. The recommended spacing is measured parallel to the pavement center line.



* REDUCE TO 12.2m (40') O.C. ON CURVES WHERE ADVISORY SPEEDS ARE 15Km/H (10MPH) LOWER THAN POSTED SPEEDS.

** USE DOUBLE MARKERS WHEN ADT ≥ 25,000

MULTI-LANE / UNDIVIDED

TYPICAL PAVEMENT MARKING FOR TWO LANE SECTION – NO PASSING ZONES

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REVISED 10-15-04