04-29-11 LETTING ITEM 130

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-11B-I	MADISON	10	1
	ILLINOIS	CONTRACT NO. 76E25		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

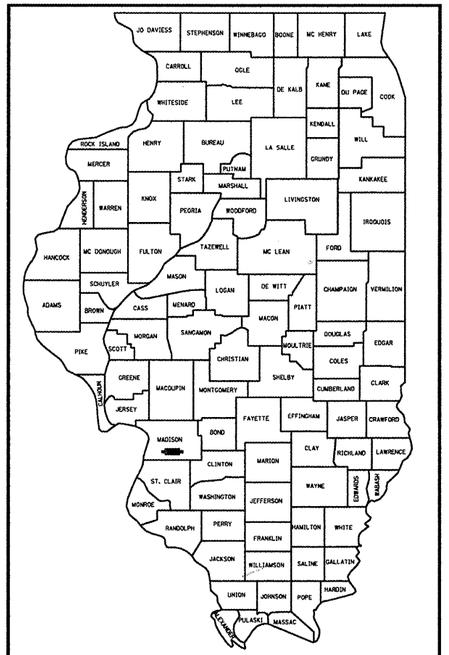
PROPOSED
HIGHWAY PLANS

FAI ROUTE 70 (I-70)
SECTION 60-11B-I
EXPANSION JOINTS - CM
MADISON COUNTY

C-98-118-10

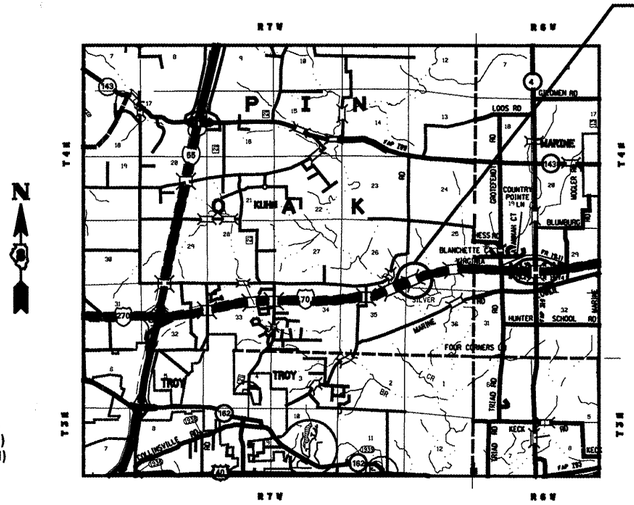
FOR INDEX OF SHEETS, SEE SHEET NO. 2

D-98-094-10



LOCATION OF SECTION INDICATED THUS: - ■

4-SPAN STEEL BRIDGE
OVER MINIER SLOUGH
SN 060-0027 (E)
SN 060-0028 (E)
STA 1127+92.0
116'-0" BK TO BK OF ABUTMENTS

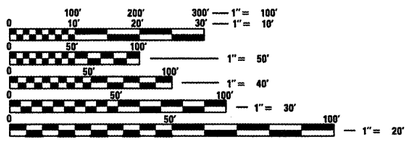


LAYOUT

0 MI 1 MI 2 MI 3 MI

1" = 1 MILE

LATTITUDE: 38.7595 LONGITUDE: -89.8351



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

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

TRAFFIC DATA
ADT: 30,000 (2011)
37,000 (2031)
SU: 3.4%
MU: 24.2%

GROSS LENGTH = 116'-0" FT. = 0.022 MILE
NET LENGTH = 116'-0" FT. = 0.022 MILE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED February 16 20 11
Mary C. Jamie
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
March 25 20 11
Scott E. Stitt P.E. /bs
acting ENGINEER OF DESIGN AND ENVIRONMENT
March 25 20 11
Christine M. Reed /bs
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

PROJECT ENGINEER: PATTI LEBEAU (618) 346-3179
PROJECT MANAGER: HERVE GELIN (618) 346-3323

CONTRACT NO. 76E25

INDEX OF SHEETS

HIGHWAY STANDARDS

000001-06
001001-02
001006
701400-05
701402-08
704001-06
701901-01

GENERAL NOTES

1. THE STANDARDS AND REVISION NUMBERS SHALL APPLY TO THIS PROJECT.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO CONSTRUCTION AND ORDERING MATERIALS.
3. ILLINOIS STATE LAW REQUIRES A 48-HOUR NOTICE BE GIVEN TO ALL UTILITIES BEFORE DIGGING. FIELD MARKING OF FACILITIES MAY BE OBTAINED BY CONTACTING J.U.L.I.E. OR FOR NON-MEMBERS, THE UTILITY COMPANY DIRECTLY. AGENCIES KNOWN TO HAVE FACILITIES WITHIN THE PROJECT AREA ARE AS FOLLOWS:
   - AT&T ILLINOIS
   - BOND MADISON WATER COMPANY
   - SOUTHWESTERN ELECTRIC COOPERATIVE, INC.

   MEMBERS OF J.U.L.I.E. (800)-892-0123 ARE INDICATED BY •. NON J.U.L.I.E. MEMBERS MUST BE NOTIFIED INDIVIDUALLY.
4. ALL TURF AREAS DISTURBED BY THE CONTRACTOR SHALL BE SEEDED WITH THE APPROPRIATE EROSION CONTROL AS DIRECTED BY THE ENGINEER AT THE CONTRACTOR'S EXPENSE.

COMMITMENTS

NONE

SUMMARY OF QUANTITIES

100% STATE

SUMMARY OF QUANTITIES			TOTAL QUANTITIES	CONSTRUCTION TYPE CODE
CODE NO	ITEM	UNIT		0014
50102400	CONCRETE REMOVAL	CU YD	35.2	35.2
50300255	CONCRETE SUPERSTRUCTURE	CU YD	68.9	68.9
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	6240	6240
50800515	BAR SPLICERS	EACH	64	64
67100100	MOBILIZATION	L SUM	1	1
70100207	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402	EACH	2	2
70400100	TEMPORARY CONCRETE BARRIER	FOOT	550	550
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	550	550
78000200	THERMOPLASTIC PAVEMENT MARKING - LINE 4"	FOOT	3056	3056
78008210	POLYUREA PAVEMENT MARKING TYPE I - LINE 4"	FOOT	522	522
78300100	PAVEMENT MARKING REMOVAL	SQ FT	1193	1193
Z0030250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	1	1
Z0030350	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3	EACH	1	1

FILE NAME = c:\pw_work\pwidot\gelinh\d0200825\D876E25-sht-SOO.dgn	USER NAME = gelinh	DESIGNED - ---	REVISED - ---
		DRAWN - ---	REVISED - ---
	PLOT SCALE = 100.0000 ' / IN.	CHECKED - ---	REVISED - ---
	PLOT DATE = 3/4/2011	DATE - _____	REVISED - ---

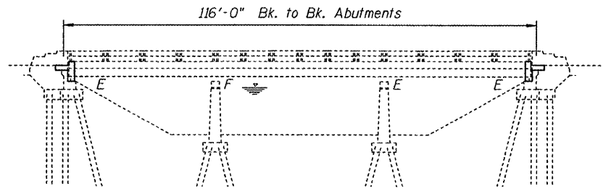
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

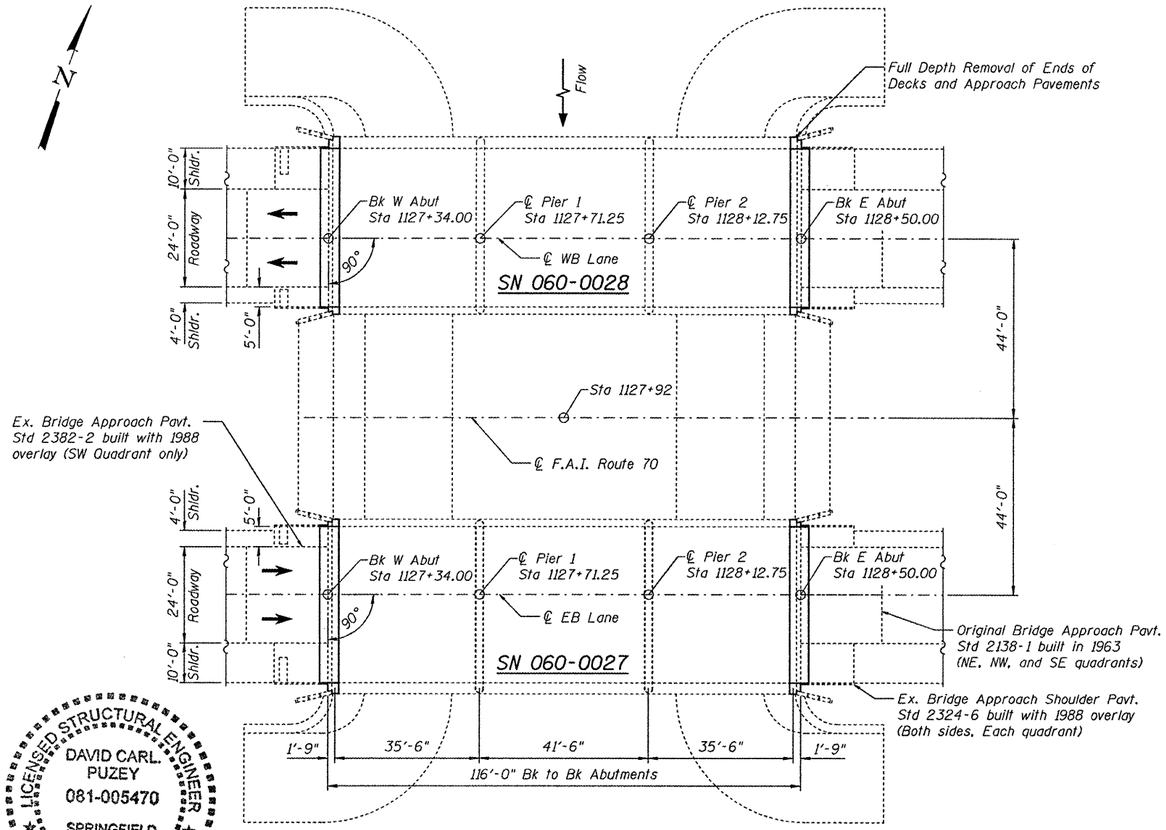
SCALE: _____ | SHEET NO. 1 OF 1 SHEETS | STA. _____ TO STA. _____

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-1(B-1	MADISON	10	2
		CONTRACT NO. 76E25		
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

SN 060-0027(EB) & 060-0028(WB) was originally built in 1963 as I-70, Section 60-HB-1.
It consists of dual 3 span continuous WF structures on pile bent abutments, and pile supported solid wall piers.
In 1970 the decks and approaches were overlayed with bituminous overlays.
In 1988 the deck overlays were removed, the decks were scarified $\frac{1}{4}$" and overlayed with a 2" concrete overlay.
The west approach of the south bridge was replaced with the 24' wide Bridge Approach Pavement Std 2324, and all 4 approaches were widened with concrete Bridge Approach Shoulders Std 2324-6.



ELEVATION
Looking North



PLAN

LICENSED STRUCTURAL ENGINEER
DAVID CARL PUZEY
081-005470
SPRINGFIELD ILLINOIS
STATE OF ILLINOIS

Expires 11/30/2012

GENERAL NOTES

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.

Reinforcement bars designated (E) shall be epoxy coated.

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

Existing reinforcement shall be cleaned and incorporated into the new construction. Cost included with Concrete Removal.

The Contractor shall ensure the approach slabs and approach shoulders do not settle after removal of the ends of the approaches. If voids are encountered after removal of the deck ends, the Contractor shall pump grout under the approaches to maintain support during removal. Cost included with "Concrete Removal".

INDEX OF SHEETS

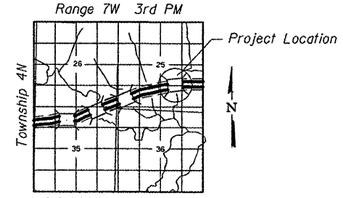
TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Concrete Removal	Cu. Yd.	35.2
Concrete Superstructure	Cu. Yd.	68.9
Reinforcement Bars, Epoxy Coated	Pound	6240
Bar Splicers	Each	64

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)



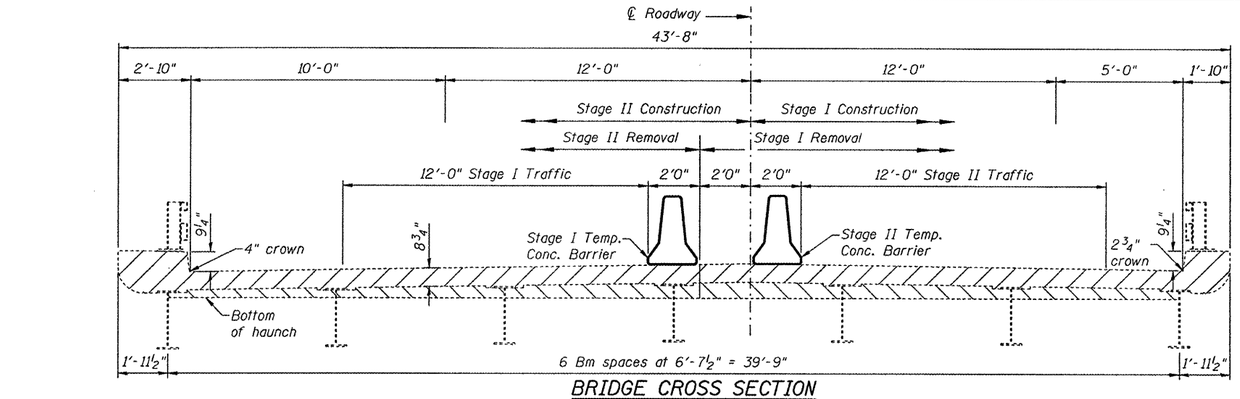
LOCATION SKETCH

DESIGNED	John Uehle	EXAMINED	Jay F. Hollenbach, Jr. ENGINEER OF STRUCTURAL SERVICES
CHECKED	Brad Williams	PASSED	H. Carl Pingry ENGINEER OF BRIDGES AND STRUCTURES
DRAWN	John Uehle	DATE	3-16-2011
CHECKED	Brad Williams		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

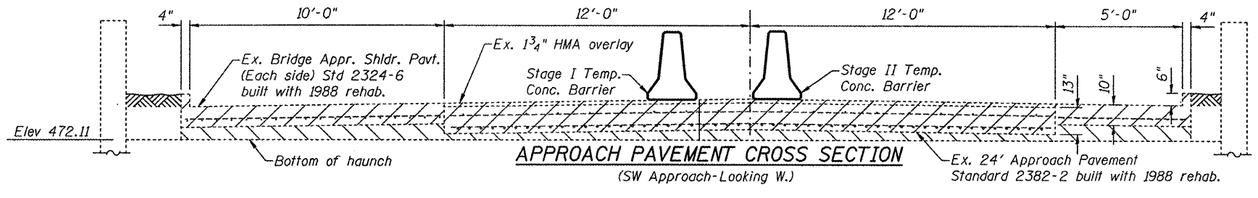
GENERAL PLAN AND ELEVATION
STRUCTURE NO. 060-0027 & 0028
SHEET NO. 1 OF 8 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-1IHB-I	MADISON	10	3
		CONTRACT NO. 76E25		
		ILLINOIS FED. AID PROJECT		



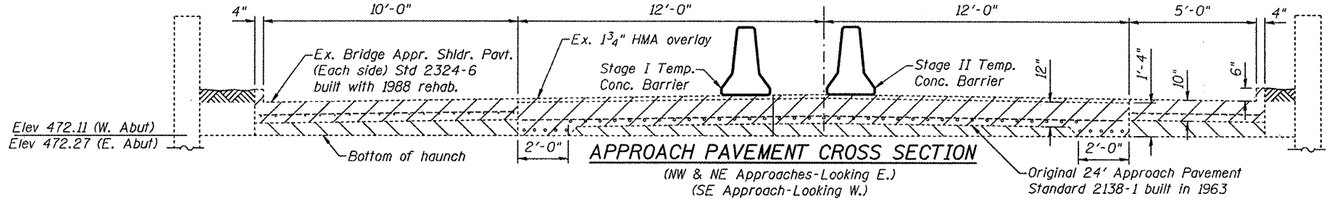
BRIDGE CROSS SECTION

(N. Bridge Looking E., S. Bridge Looking W.)



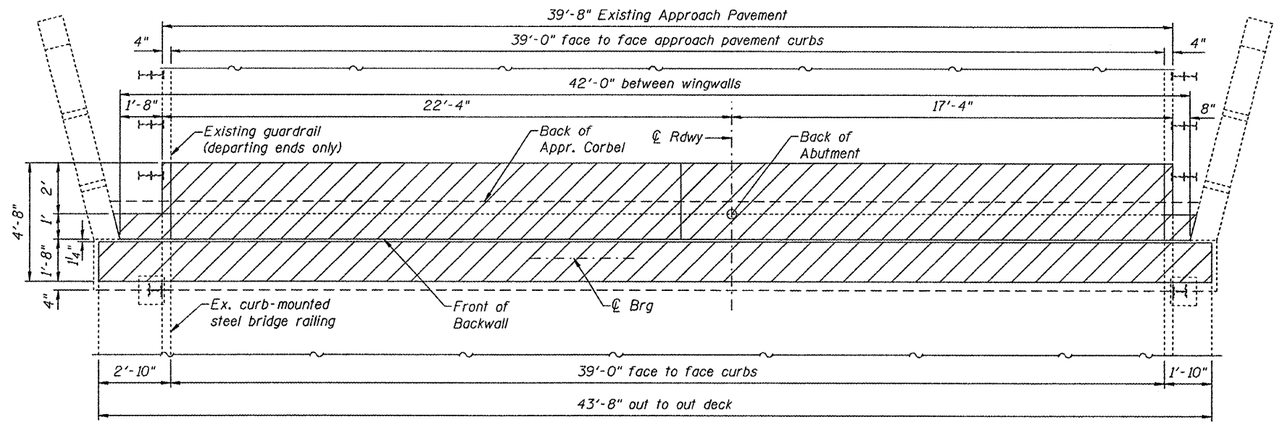
APPROACH PAVEMENT CROSS SECTION

(SW Approach-Looking W.)



APPROACH PAVEMENT CROSS SECTION

(NW & NE Approaches-Looking E.)
(SE Approach-Looking W.)



CONCRETE REMOVAL - PLAN

N. Bridge East Abut & S. Bridge West Abut
Other Abutments Opposite Hand

Deck / Approach Slab Removal

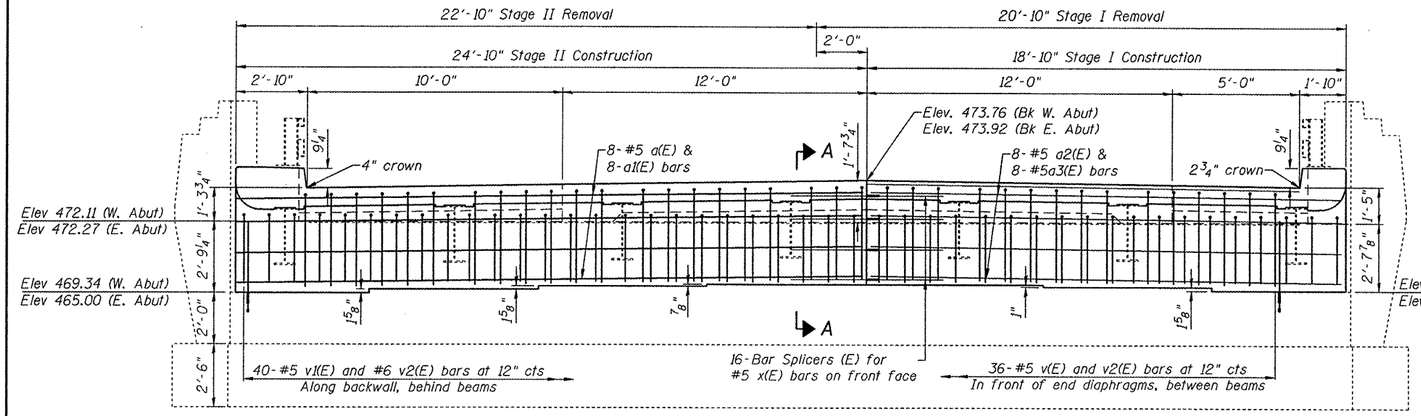
Haunch Removal

DESIGNED	John Uehle	EXAMINED	Joy F. Hoff — ENGINEER OF STRUCTURAL SERVICES
CHECKED	Brad Williams	PASSED	Carl Puzey — ENGINEER OF BRIDGES AND STRUCTURES
DRAWN	John Uehle	DATE	3-16-2011
CHECKED	Brad Williams		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

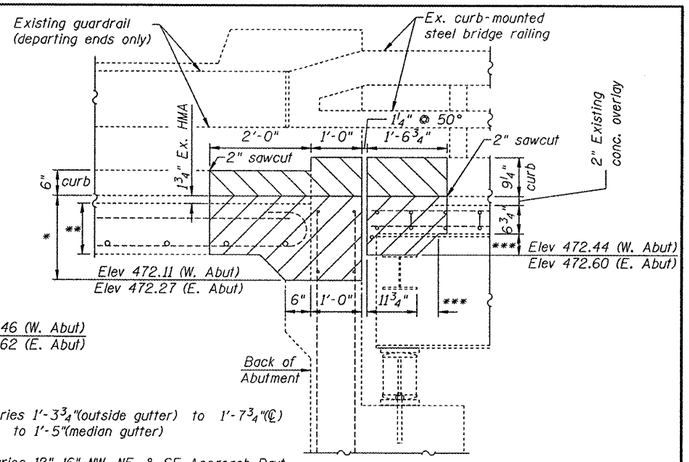
CONCRETE REMOVAL
STRUCTURE NO. 060-0027 & 0028
SHEET NO. 2 OF 8 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-11B-1	MADISON	10	4
		CONTRACT NO. 76E25		
	ILLINOIS FED. AID PROJECT			



ELEVATION

N. Bridge East Abut Looking East
S. Bridge West Abut Looking West
(Other Abutments Opposite Hand)

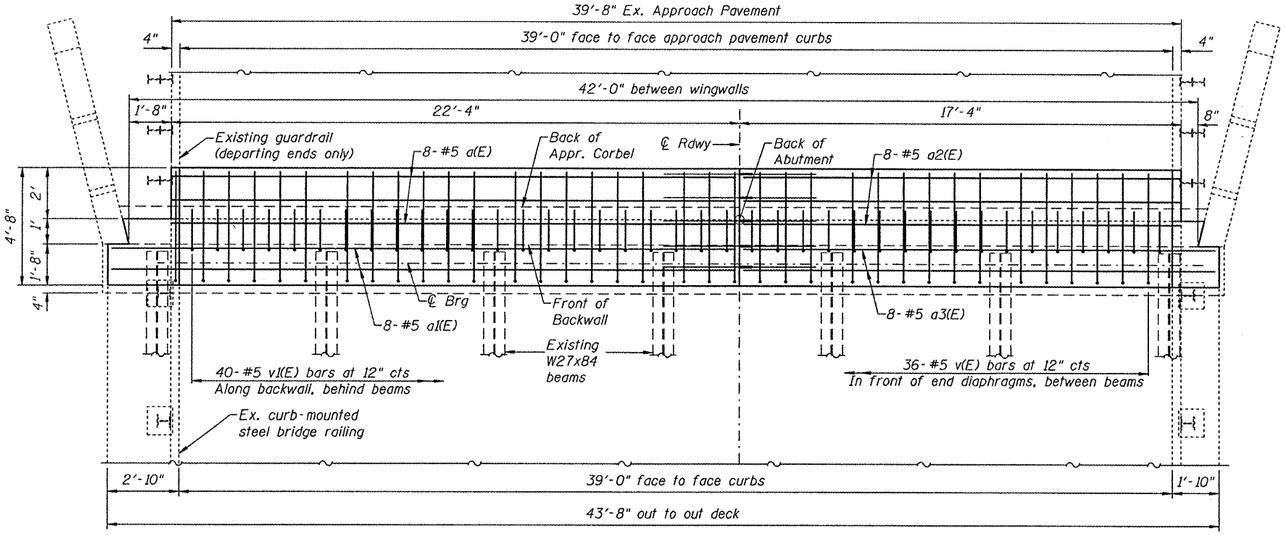


* Varies 1'-3¾"(outside gutter) to 1'-7¾"(℄)
to 1'-5"(median gutter)

** Varies 12"-16" NW, NE, & SE Approach Pavt.
13" SW Approach Pavt.
10" Approach Shoulders

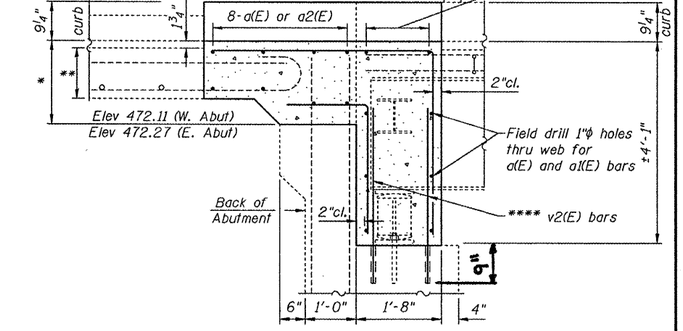
EXISTING SECTION A-A

*** Varies 3"(Bm 1) to 7"(℄) to 4¼" (Bm 8)



PLAN

N. Bridge East Abut
S. Bridge West Abut
(Other Abutments Opposite Hand)

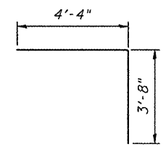


PROPOSED SECTION A-A

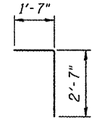
BILL OF MATERIAL

(All 4 Abutments)

Bar	No.	SIze	Length	Shape
a(E)	32	#5	22'-2"	———
a1(E)	32	#5	24'-6"	———
a2(E)	32	#5	17'-2"	———
a3(E)	32	#5	18'-6"	———
v(E)	144	#5	8'-0"	⌐
v1(E)	160	#5	4'-2"	⌐
v2(E)	304	#6	3'-6"	———
Concrete Removal			Cu. Yds.	35.2
Reinforcement Bars, Epoxy Coated			Pound	6240
Concrete Superstructure			Cu. Yds.	68.9



BAR v(E)



BAR v1(E)

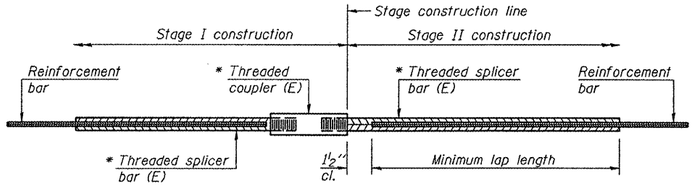
**** Drill and epoxy grout v2(E) bars into the abutment cap in accordance with Article 584 of the Standard Specifications. Lap the v(E) and v1(E) bars with v2(E) bars. Cost included with "Reinforcement Bars, Epoxy Coated".

DESIGNED	John Uehle	EXAMINED	Jerry F. Shultz ENGINEER OF STRUCTURAL SERVICES
CHECKED	Brad Williams	PASSED	Carl Puzey ENGINEER OF BRIDGES AND STRUCTURES
DRAWN	John Uehle	DATE	3-16-2011
CHECKED	Brad Williams		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONCRETE DETAILS
STRUCTURE NO. 060-0027 & 0028
SHEET NO. 3 OF 8 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-11B-I	MADISON	10	5
		CONTRACT NO. 76E25		
	ILLINOIS FED. AID PROJECT			



STANDARD BAR SPLICER ASSEMBLY

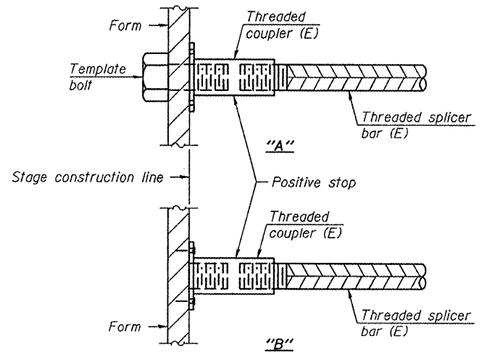
Minimum Lap Lengths					
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-3"
5	1'-9"	2'-5"	2'-7"	2'-11"	2'-10"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-4"
7	2'-9"	3'-10"	4'-2"	4'-8"	4'-6"
8	3'-8"	5'-1"	5'-5"	6'-2"	5'-10"
9	4'-7"	6'-5"	6'-10"	7'-9"	7'-5"

Table 1: Black bar, 0.8 Class C
Table 2: Black bar, Top bar lap, 0.8 Class C
Table 3: Epoxy bar, 0.8 Class C
Table 4: Epoxy bar, Top bar lap, 0.8 Class C
Table 5: Epoxy bar, Top bar lap, Class B

Threaded splicer bar length = min. lap length + 1½" + thread length

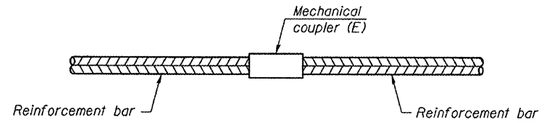
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Abutments	#5	64	2'-11"



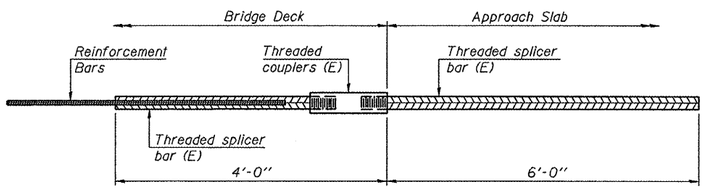
INSTALLATION AND SETTING METHODS

"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.



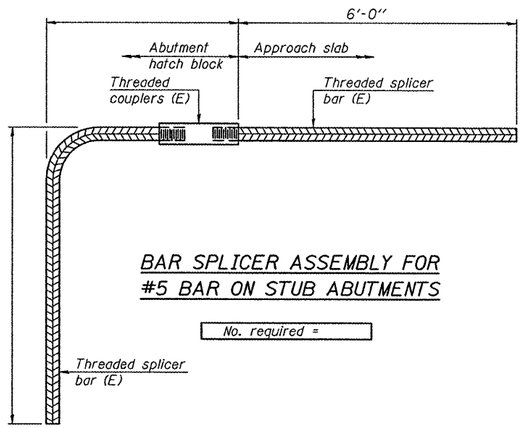
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

No. required =



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.

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

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.

See special provision for Mechanical Splicers.

See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BSD-1 7-1-10

DESIGNED John Uehle	EXAMINED	DATE 3-16-2011	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
CHECKED Brad Williams	PASSED		
DRAWN John Uehle			
CHECKED Brad Williams			

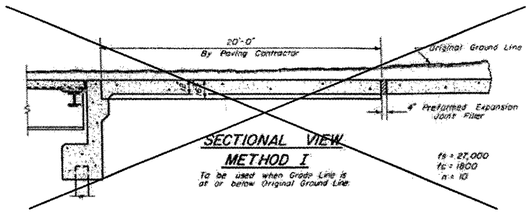
ENGINEER OF STRUCTURAL SERVICES
ENGINEER OF BRIDGES AND STRUCTURES

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 060-0027 & 0028
SHEET NO. 4 OF 8 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-11HB-1	MADISON	10	6
		CONTRACT NO. 76E25		
		ILLINOIS FED. AID PROJECT		

DETAILS OF BRIDGE APPROACHES

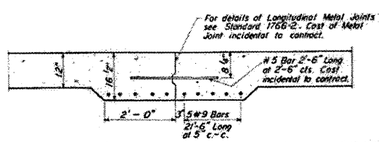
FOR FEDERAL AID INTERSTATE ROUTES



SECTIONAL VIEW
METHOD I

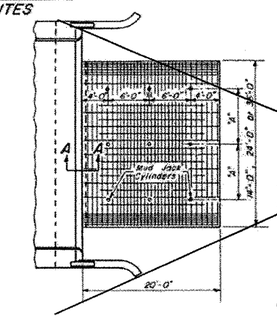
To be used when Grade Line is at or below Original Ground Line.

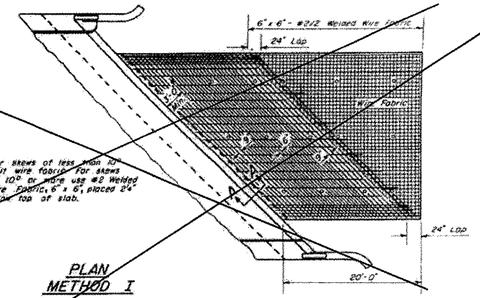
fs = 27,000
fc = 1800
n = 10



OPTIONAL LONGITUDINAL CONSTRUCTION JOINT

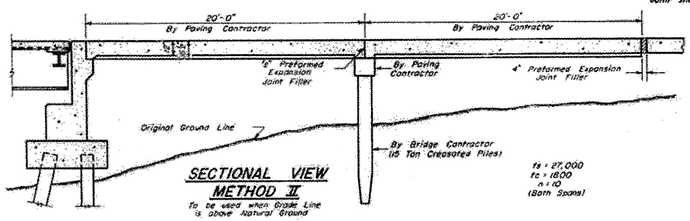
As approved by the Engineer, the Contractor may elect to reduce the widths of pour by use of the Optional Longitudinal Construction Joint shown. Joint shall be located at the edge of Traffic Lane.





PLAN
METHOD I

For skews of less than ten units wire spacing. For skews of 10° or more use #2 Welded Wire Fabric, 6" x 6", placed 2" below top of slab.



SECTIONAL VIEW
METHOD II

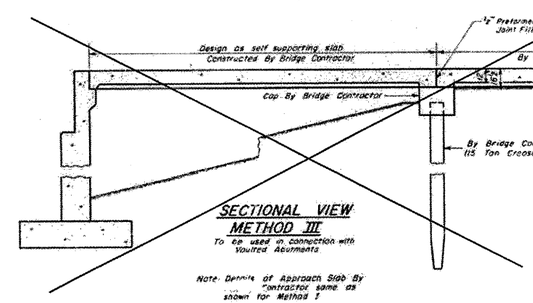
To be used when Grade Line is above Natural Ground

fs = 27,000
fc = 1800
n = 10
(Both Spans)

TABLE OF "A" DIMENSIONS

Width of Approach Slab	Dimension "A" (Spacing of Mud Jack Cylinders)
12'	6'-0"
24'	8'-0"
36'	2 Spaces at 8'-0"

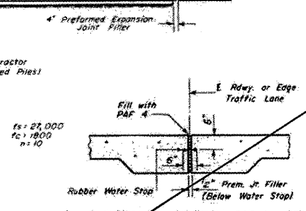
Expanded Metal weighing not less than 78 Lbs. per 100 sq.ft. or a welded bar mat weighing not less than 78 Lbs. per 100 sq.ft. having members of equal size in both directions and spaced not over 6" apart may be used instead of the #2 Welded Wire Fabric, 6" x 6", provided the expanded metal or bar mat is furnished at no additional cost to the State.



SECTIONAL VIEW
METHOD III

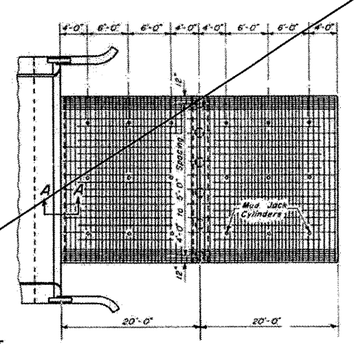
To be used in connection with Vaulted Abutments

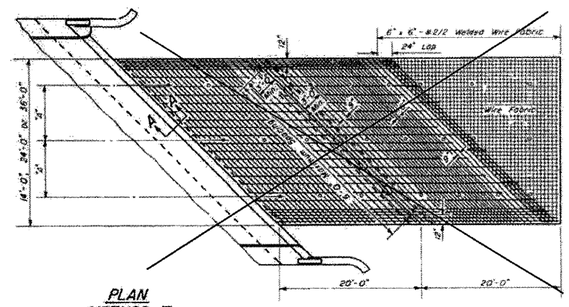
Note: Dennis of Approach Slab By "contractor same as shown for Method I"



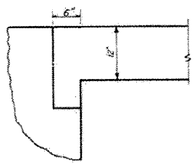
LONGITUDINAL EXPANSION JOINT

To be used when Approach Slabs are greater than 36'-0" wide. Joint shall be placed at edge of Traffic Lane nearest to the ℄ of the total width of Approach Slab.

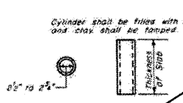




PLAN
METHOD II

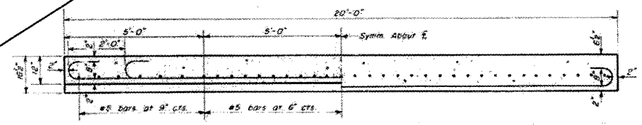


SECTION A-A



DETAIL OF
MUD JACK CYLINDER

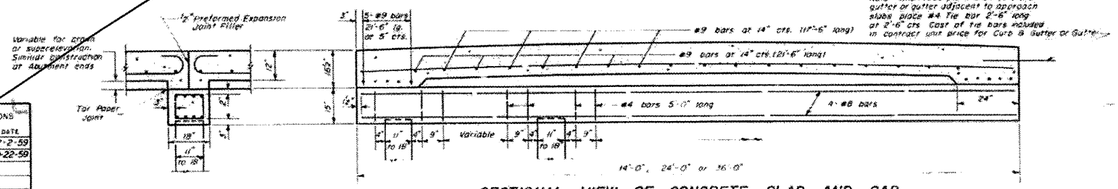
Cylinders shall be Standard Weight Black Steel Pipe.



LONGITUDINAL SECTION THRU
CENTER OF SLAB

LONGITUDINAL SECTION THRU
THICKENED EDGE OF SLAB

Note: When road plans show curb and gutter or gutter adjacent to approach slabs place #4 Tie Bar 2'-6" long at 2'-6" cts. Cost of the bars included in contract unit price for Curb & Gutter or Gutter.



SECTIONAL VIEW OF CONCRETE SLAB AND CAP

GENERAL NOTES

The slab or slabs will be paid for at the contract unit price for PORTLAND CEMENT CONCRETE PAVEMENT (16'-8"-12"-16'-8")

The concrete cap will be paid for at the contract unit price for CLASS X CONCRETE

All Reinforcement Bars, except tie bars for curb and gutter or gutter, will be paid for at the contract unit price for REINFORCEMENT BARS.

The Welded Wire Fabric, Mud Jack Cylinders and Preformed Expansion Joint Filler shall be included in the unit price bid for PORTLAND CEMENT CONCRETE PAVEMENT (16'-8"-12"-16'-8")

Preformed Expansion Joint Filler shall conform to Section 1211 of the Standard Specifications.

Width of Bridge Approach Slab pours shall be determined before the reinforcement bars are fabricated.

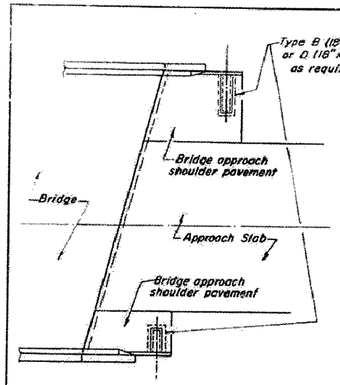
Quantities shown for Reinforcement Bars are for two(2) thickened edges only.

FOR INFORMATION ONLY
1959 Bridge Approach Pavement
Standard 2138-1

STANDARD 2138-1

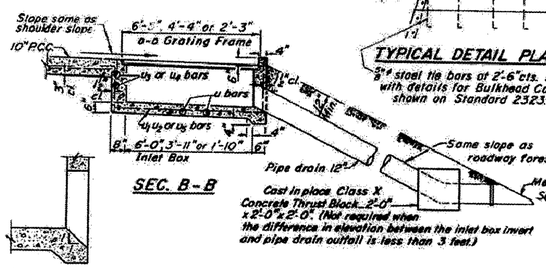
STATE OF ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS DIVISION OF HIGHWAYS	REVISIONS BY	DATE
PASSED DEC. 18 1958	WAS	2-2-59
ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES	CET	10-22-59
APPROVED Dec. 18 1958		
ENGINEER OF DESIGN		

DESIGNED	John Uehle	EXAMINED	DATE -	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**FOR INFORMATION SHEET (STANDARD 2138-1) STRUCTURE NO. 060-0027 & 0028**	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED	Brad Williams	ENGINEER OF STRUCTURAL SERVICES				70	60-11B-1	MADISON	10	7
DRAWN	John Uehle	PASSED			SHEET NO. 5 OF 8 SHEETS			CONTRACT NO. 76E25		
CHECKED	Brad Williams	ENGINEER OF BRIDGES AND STRUCTURES						ILLINOIS FED. AID PROJECT		

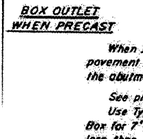


GENERAL PLAN

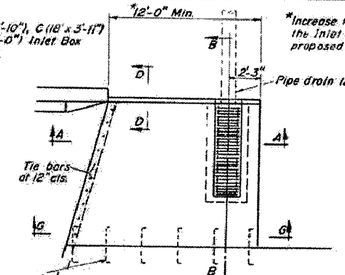
SEC. C-C SEC. D-D



SEC. B-B



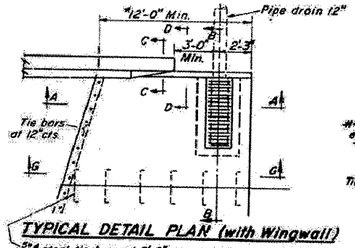
BOX OUTLET WHEN PRECAST



TYPICAL DETAIL PLAN (w/o Wingwall)

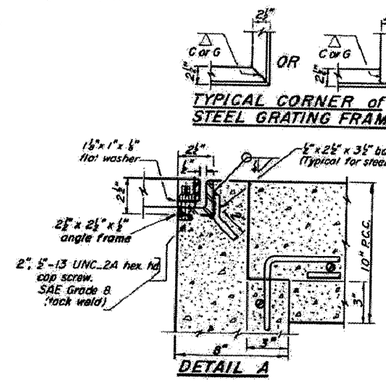
#4 steel tie bars at 2'-6" cts. shall be in accordance with details for Bulkhead Construction Joint shown on Standard 2323.

*Increase this dimension as needed to position the Inlet Box and Pipe Drain between the proposed approach guardrail posts.

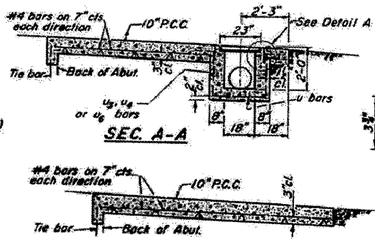


TYPICAL DETAIL PLAN (with Wingwall)

#4 steel tie bars at 2'-6" cts. shall be in accordance with details for Bulkhead Construction Joint shown on Standard 2323.

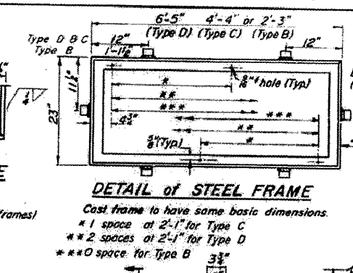


DETAIL A



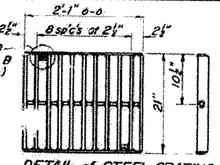
SEC. A-A

SEC. G-G



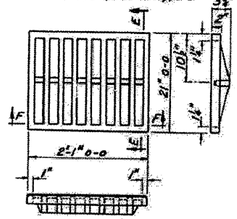
DETAIL of STEEL FRAME

Cast frame to have same basic dimensions.
* 1 space at 2'-1" for Type C
** 2 spaces at 2'-1" for Type D
*** 0 space for Type B



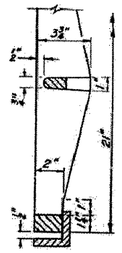
DETAIL of STEEL GRATING

Type B requires 1 grate
Type C requires 2 grates
Type D requires 3 grates

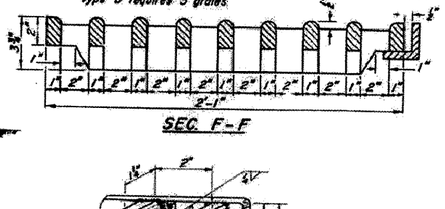


DETAIL of CAST GRATING

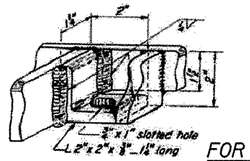
Type B requires 1 grate
Type C requires 2 grates
Type D requires 3 grates



SEC. E-E



SEC. F-F

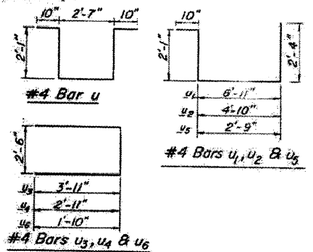


DETAIL B

FOR INFORMATION ONLY

1984 Approach Shoulder Pavement

Standard 2324-6



Material Required for One Type B Inlet Box

Bar	No.	Size	Length
u	4	#4	8'-5"
u5	3	#4	8'-0"
u6	4	#4	6'-2"
Concrete-Class X or Precast	Cu. Yds.		0.4
Reinf. Bars	Lbs.		60
Grating	Sq. Ft.		3.7

Material Required for One Type C Inlet Box

Bar	No.	Size	Length
u	6	#4	8'-5"
u8	3	#4	10'-1"
u4	4	#4	8'-4"
Concrete-Class X or Precast	Cu. Yds.		0.9
Reinf. Bars	Lbs.		80
Grating	Sq. Ft.		7.3

Material Required for One Type D Inlet Box

Bar	No.	Size	Length
u	8	#4	8'-5"
u1	3	#4	12'-2"
u3	4	#4	10'-4"
Concrete-Class X or Precast	Cu. Yds.		1.2
Reinf. Bars	Lbs.		100
Grating	Sq. Ft.		11.0

GENERAL NOTES

When Inlet Box or Boxes are not required, surface of the shoulder pavement shall be finished to provide a smooth transition from back of the abutment to normal approach roadway shoulder.

See plans for location of bridge approach shoulder pavement.

Use Type C Inlet Box for 5' and 6' shoulder widths, use Type D Inlet Box for 7' and wider shoulder widths, use Type B Inlet Box for shoulders less than 5' wide.

For placement of approach shoulder pavement on existing construction substitute expansion anchor ties for tie bars. For non-rigid approaches, shoulder pavement will be as shown except omit tie bars in approach pavement.

The material for 12" ϕ Pipe Drains shall be either corrugated steel, aluminum alloy or polyethlene (PE) pipe with UV protection.

Corrugated steel and aluminum alloy pipe shall have 2' coupling bands. All pipe connections shall be water tight.

The P.C. Concrete used in the shoulder slab shall meet the requirements of Section 408 of the Standard Specifications.

The lengths of #6 bars used in the approach shoulder pavement shall be as required to accommodate the length, width and skew of the slab.

Class X concrete or precast concrete shall be used for the inlet.

Precast concrete shall be in accordance with Sections 505.01 thru 505.05 of the Standard Specifications except that the concrete strength shall be 4000 psi after 28 days.

All exposed edges of the inlet, except the upper perimeter, shall be beveled ¾".

Shop drawings will not be required for precast Inlet Boxes.

A 3" deep CA-12 bedding conforming to Article 704.01,D Quality or better shall be provided under full length and width of precast units, and all voids around the pipe drain entrance, both inside and outside, shall be sealed with mortar.

The grating shall seat firmly in the frame and steel grates shall be secured to the frame with a locking device as shown. Cast grates will not require the locking device.

Steel grating and frames shall conform to Article 710.04 of the Standard Specifications and shall be galvanized to AASHTO Specification M 111 after fabrication.

Cast grating and frames shall conform to Article 710.17 of the Standard Specifications. Cast grating and frames shall not be galvanized.

Pipe drains shall be installed, measured and paid for in accordance with Section 607 of the Standard Specifications, except sand bedding will not be required.

Metal End Sections shall be installed, measured and paid for in accordance with Section 511 of the Standard Specifications.

Bridge approach shoulder pavement will be measured in place and paid for in square yards as P.C. CONCRETE BRIDGE APPROACH SHOULDER PAVEMENT which shall include the cost of subgrade preparation, expansion anchor ties, reinforcement and joint fillers. In computing the area for payment, a deduction will be made for the area displaced by the inlet. (1.2 Sq. Yds. Type C; 1.7 Sq. Yds. Type D, 0.6 Sq. Yds. Type B).

The contract unit price "Each" for TYPE (B, C or D) INLET BOX STANDARD 2324, in place, shall include the frame and grating, class X or precast concrete, reinforcement bars, excavation, bedding when required, and compacted backfill.

The contract unit price "Each" for CONCRETE THRUST BLOCKS, in place, shall include excavation and compacted backfilling.

Illinois Department of Transportation

PASSED July 18, 1984
Engineer of Bridge and Traffic Structures

APPROVED July 18, 1984
Engineer of Design

ISSUED 12-1-89

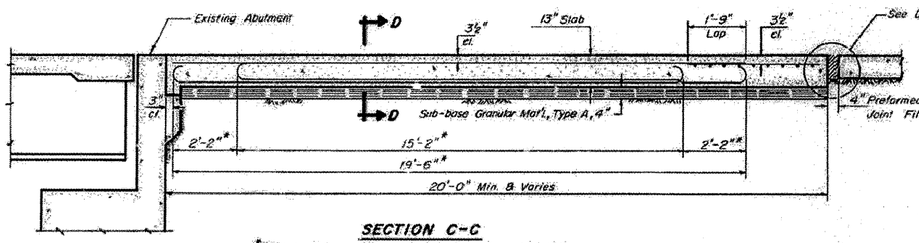
BRIDGE APPROACH SHOULDER PAVEMENT

STANDARD 2324-6

(Full Size)

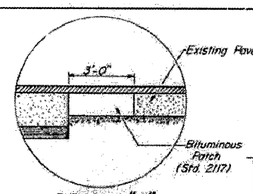
H-1.2DT

DESIGNED John Uehle	EXAMINED	DATE -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	FOR INFORMATION SHEET (STANDARD 2324-6) STRUCTURE NO. 060-0027 & 0028	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED Brad Williams	ENGINEER OF STRUCTURAL SERVICES				70	60-11B-1	MADISON	10	8
DRAWN John Uehle	PASSED			SHEET NO. 6 OF 8 SHEETS			CONTRACT NO. 76E25		
CHECKED Brad Williams	ENGINEER OF BRIDGES AND STRUCTURES						ILLINOIS FED. AID PROJECT		



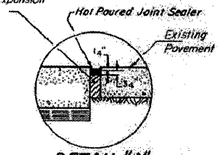
SECTION C-C

*Stagger alternate #7 bars as shown on plan - 'ull width.



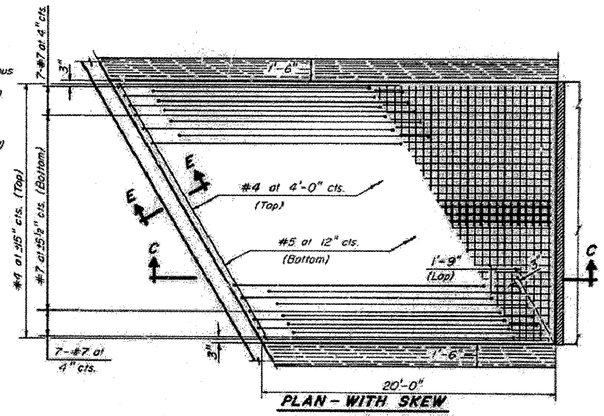
DETAIL "A"

(When bituminous surface is being placed)



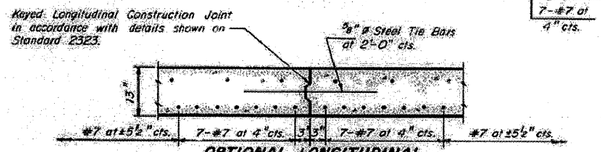
DETAIL "A"

(P.C.C. Pavement Construction)



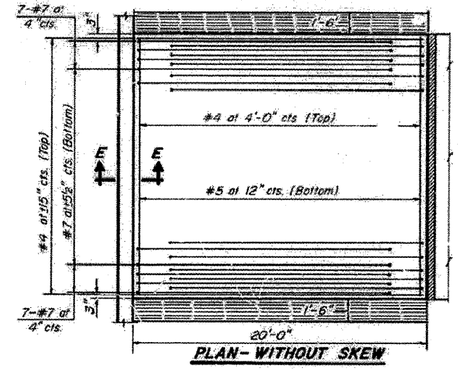
PLAN - WITH SKEW

#7 BARS



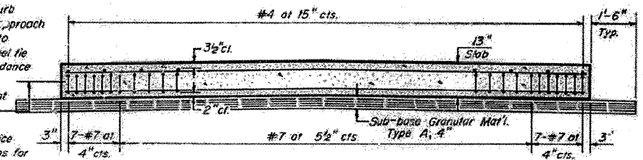
OPTIONAL LONGITUDINAL CONSTRUCTION JOINT

As approved by the Engineer, the Contractor may elect to reduce the widths of pour by use of the Optional Longitudinal Construction Joint shown. Joints shall be located at the edge of a traffic lane.

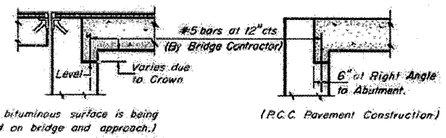


PLAN - WITHOUT SKEW

When the road plans show curb and gutter, gutter, or bridge approach shoulder pavement adjacent to approach slabs, place ½" ø steel tie bars at 2'-6" centers in accordance with the detail for Bulkhead Longitudinal Construction Joint shown on Standard 2323. Cost of the tie bars will be included in the contract unit price for the adjacent item. Transitions for curb and gutter or gutter shall be as shown on the plans.



SECTION D-D



(When bituminous surface is being placed on bridge and approach.)

(P.C.C. Pavement Construction)

SECTION E-E

Notes:

For skews of less than 10° omit wire fabric. For skews of 10° or more use Welded Wire Fabric, 6"x 6"- W5.5 x W5.5, placed 3½" below top of slab. Expanded Metal weighing not less than 78 Pounds per 100 Sq. Ft. or a welded bar mat weighing not less than 78 Pounds per 100 Sq. Ft. having members of equal size in both directions and spaced not over 8" apart may be used instead of the Welded Wire Fabric, 6"x6"-W5.5 x W5.5, provided the expanded metal or bar mat is furnished at no additional cost to the State.

Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. - M 31 or M 53, Grade 60.

DESIGN STRESSES

fy = 60,000 p.s.i.
f'c = 3500 psi
n = 8.5

GENERAL NOTES

The cost of tie bars, expansion joint filler, sub-base, welded wire fabric and bituminous prime when required shall be considered as included in the unit cost of the Bridge Approach Pavement.

Preformed Expansion Joint Filler shall conform to Art. 715.10 of the Standard Specifications.

Width of Bridge Approach Slab shall be determined before the reinforcement bars are fabricated.

The bituminous patch, when required, will be paid for in accordance with Section 620 of the Standard Specifications.

FOR INFORMATION ONLY
1986 Bridge Approach Pavement
Standard 2382-2 (Sheet 1 of 2)

Illinois Department of Transportation

APPROVED Mar. 10, 1986
Engineer of Bridges and Structures

APPROVED Mar. 10, 1986
Engineer of Design

ISSUED 3-6-79

BRIDGE APPROACH PAVEMENT

Sheet 1 of 2

STANDARD 2382-2

DESIGNED John Uehle	EXAMINED	DATE -	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**FOR INFORMATION SHEET (STANDARD 2382-2 SHEET 1) STRUCTURE NO. 060-0027 & 0028**	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED Brad Williams	ENGINEER OF STRUCTURAL SERVICES				TO	60-11B-1	MADISON	10	9
DRAWN John Uehle	PASSED			SHEET NO. 7 OF 8 SHEETS			CONTRACT NO. 76E25		
CHECKED Brad Williams	ENGINEER OF BRIDGES AND STRUCTURES						ILLINOIS FED. AID PROJECT		

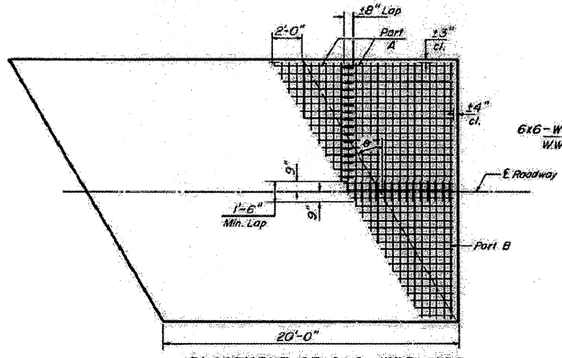
Note: The notation for the number of bars given as "4 x 2" indicates 4 lines of bars with 2 lengths per line. Min. bar lap = 1'-3"

Skew Angle Degrees	Bottom Reinforcement: Transverse #5 No.	Transverse #5 Length	Longitudinal #7 No. Required	Top Reinforcement: Transverse #4 No.	Transverse #4 Length	Longitudinal #4 No. Required	Reinforcement (Total Weight) (Pounds)	Slab Area (Sq.Yds.)	6x6-W5.5xW5.5 W.W.F. Dimensions L(ft.)xW(ft.)	6x6-W5.5xW5.5 W.W.F. Area* (Sq.Yds.)
18'-0" PAVEMENT										
0	20	17'-6"	71 Each Edge Beam) + 23 (Slab) at 35° cts. = 19'-0" long Weight = 1670 Pounds	6	17'-6"	15 bars - 19'-6" long Weight = 195 Pounds	2300	40.0	———	———
5	20	17'-7"		6	17'-7"		2302	41.6	———	———
10	20	17'-9"		6	17'-9"		2306	43.2	7'-0" x 9'-6"	7.4
15	20	18'-1"		5	18'-1"		2303	44.8	8'-6" x 9'-6"	9.0
20	19	18'-8"		5	18'-8"		2297	46.6	10'-6" x 9'-6"	11.1
25	18	19'-4"		5	19'-4"		2292	48.4	12'-3" x 9'-6"	12.9
30	18	20'-3"		5	20'-3"		2313	50.4	14'-3" x 9'-6"	15.0
35	17	21'-4"		5	21'-4"		2315	52.6	16'-6" x 9'-6"	17.4
40	16	22'-10"		4	22'-10"		2307	55.1	19'-0" x 9'-6"	20.1
45	14	24'-9"		4	24'-9"		2293	58.0	21'-9" x 9'-6"	23.0
50	13	27'-3"		4	27'-3"		2308	61.6	25'-6" x 9'-6"	26.9
55	12x2	15'-9"		3x2	15'-9"		2322	65.7	29'-9" x 9'-6"	31.4
60	10x2	18'-0"		3x2	18'-0"		2313	71.2	35'-3" x 9'-6"	37.2
24'-0" PAVEMENT										
0	20	23'-6"	71 Each Edge Beam) + 42 (Slab) at 35° cts. = 19'-0" long Weight = 2175 Pounds	6	23'-6"	20 bars - 19'-6" long Weight = 260 Pounds	3019	53.3	———	———
5	20	23'-7"		6	23'-7"		3021	56.1	———	———
10	20	23'-10"		6	23'-10"		3028	58.9	8'-0" x 12'-6"	11.1
15	20	24'-4"		5	24'-4"		3024	61.9	10'-3" x 12'-6"	14.2
20	19	25'-0"		5	25'-0"		3014	64.9	12'-6" x 12'-6"	17.4
25	18	25'-11"		5	25'-11"		3008	68.2	15'-0" x 12'-6"	20.8
30	18	27'-2"		5	27'-2"		3036	71.8	17'-9" x 12'-6"	24.7
35	17	28'-8"		5	28'-8"		3039	75.7	20'-3" x 12'-6"	28.8
40	16x2	16'-0"		4x2	16'-0"		3055	80.2	24'-0" x 12'-6"	33.3
45	14x2	17'-3"		4x2	17'-3"		3031	85.3	27'-6" x 12'-6"	38.2
50	13x2	18'-10"		4x2	18'-10"		3046	91.4	32'-9" x 12'-6"	45.5
55	12x2	21'-1"		3x2	21'-1"		3047	99.0	38'-3" x 12'-6"	53.1
60	10x2	24'-0"		3x2	24'-0"		3032	108.7	45'-6" x 12'-6"	63.2

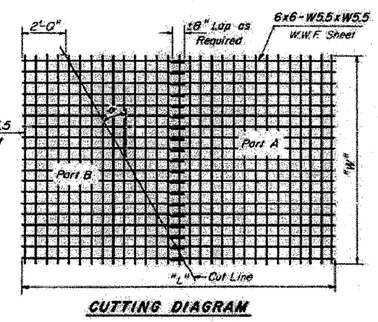
*Area does not include 8" longitudinal laps.
W.W.F. = Welded Wire Fabric

Skew Angle Degrees	Bottom Reinforcement: Transverse #5 No.	Transverse #5 Length	Longitudinal #7 No. Required	Top Reinforcement: Transverse #4 No.	Transverse #4 Length	Longitudinal #4 No. Required	Reinforcement (Total Weight) (Pounds)	Slab Area (Sq.Yds.)	6x6-W5.5xW5.5 W.W.F. Dimensions L(ft.)xW(ft.)	6x6-W5.5xW5.5 W.W.F. Area* (Sq.Yds.)
26'-0" PAVEMENT										
0	20	25'-6"	71 Each Edge Beam) + 46 (Slab) at 35° cts. = 19'-0" long Weight = 2230 Pounds	6	25'-6"	21 bars - 19'-6" long Weight = 274 Pounds	3238	57.8	———	———
5	20	25'-7"		6	25'-7"		3240	61.1	———	———
10	20	25'-11"		6	25'-11"		3249	64.4	8'-6" x 13'-6"	12.8
15	20	26'-5"		5	26'-5"		3243	67.8	11'-0" x 13'-6"	16.5
20	19	27'-2"		5	27'-2"		3233	71.4	13'-6" x 13'-6"	20.3
25	18	28'-2"		5	28'-2"		3227	75.3	16'-3" x 13'-6"	24.4
30	18x2	15'-3"		5x2	15'-3"		3278	79.5	19'-0" x 13'-6"	28.5
35	17x2	16'-1"		5x2	16'-1"		3282	84.1	22'-3" x 13'-6"	33.4
40	16x2	17'-2"		4x2	17'-2"		3269	89.3	25'-9" x 13'-6"	38.6
45	14x2	18'-6"		4x2	18'-6"		3243	95.3	30'-0" x 13'-6"	45.0
50	13x2	20'-4"		4x2	20'-4"		3264	102.5	35'-0" x 13'-6"	52.5
55	12x2	22'-9"		3x2	22'-9"		3265	111.4	41'-3" x 13'-6"	61.9
60	10x2	26'-0"		3x2	26'-0"		3251	122.8	49'-0" x 13'-6"	73.5
36'-0" PAVEMENT										
0	20x2	18'-3"	71 Each Edge Beam) + 68 (Slab) at 35° cts. = 19'-0" long Weight = 3185 Pounds	6x2	18'-3"	29 bars - 19'-6" long Weight = 376 Pounds	4471	80.0	———	———
5	20x2	18'-4"		6x2	18'-4"		4475	86.3	———	———
10	20x2	18'-6"		6x2	18'-6"		4483	92.7	10'-0" x 18'-6"	20.6
15	20x2	18'-10"		5x2	18'-10"		4475	99.3	13'-6" x 18'-6"	27.7
20	19x2	19'-5"		5x2	19'-5"		4462	106.2	17'-0" x 18'-6"	34.9
25	18x2	20'-2"		5x2	20'-2"		4455	113.6	20'-6" x 18'-6"	42.1
30	18x2	21'-0"		5x2	21'-0"		4492	121.6	24'-9" x 18'-6"	50.8
35	17x2	22'-3"		5x2	22'-3"		4501	130.4	29'-0" x 18'-6"	59.6
40	16x2	23'-9"		4x2	23'-9"		4483	140.4	33'-9" x 18'-6"	69.4
45	14x2	25'-8"		4x2	25'-8"		4450	152.0	39'-6" x 18'-6"	81.2
50	13x2	28'-2"		4x2	28'-2"		4477	165.8	46'-6" x 18'-6"	95.6
55	12x3	21'-4"		3x3	21'-4"		4492	182.8	55'-0" x 18'-6"	113.0
60	10x3	24'-4"		3x3	24'-4"		4471	204.7	65'-9" x 18'-6"	135.1

*Area does not include 8" longitudinal laps.



PLACEMENT OF 6x6 - W5.5 x W5.5
W.W.F. only required on skews ≥ 10°



CUTTING DIAGRAM

FOR INFORMATION ONLY
1986 Bridge Approach Pavement
Standard 2382-2 (Sheet 2 of 2)

Illinois Department of Transportation

APPROVED Mar. 10, 1986
Engineer of Bridges and Structures

APPROVED Mar. 10, 1986
Engineer of Design

ISSUED 5-6-86

BRIDGE APPROACH PAVEMENT

Sheet 2 of 2

STANDARD 2382-2

DESIGNED John Uehle	EXAMINED	DATE -	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**FOR INFORMATION SHEET (STANDARD 2382-2 SHEET 2) STRUCTURE NO. 060-0027 & 0028**	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS / SHEET NO.
CHECKED Brad Williams	ENGINEER OF STRUCTURAL SERVICES			SHEET NO. 8 OF 8 SHEETS	70	60-11B-I	MADISON	10 / 10
DRAWN John Uehle	PASSED						CONTRACT NO. 76E25	
CHECKED Brad Williams	ENGINEER OF BRIDGES AND STRUCTURES						ILLINOIS FED. AID PROJECT	