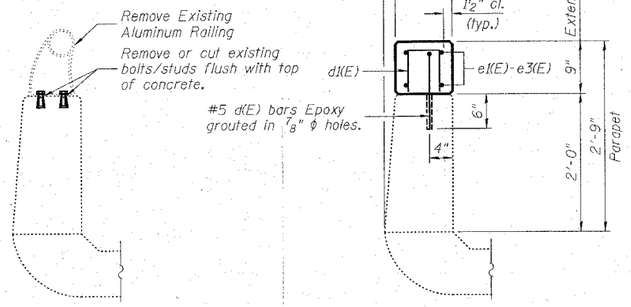
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-10B	MADISON	156	101
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

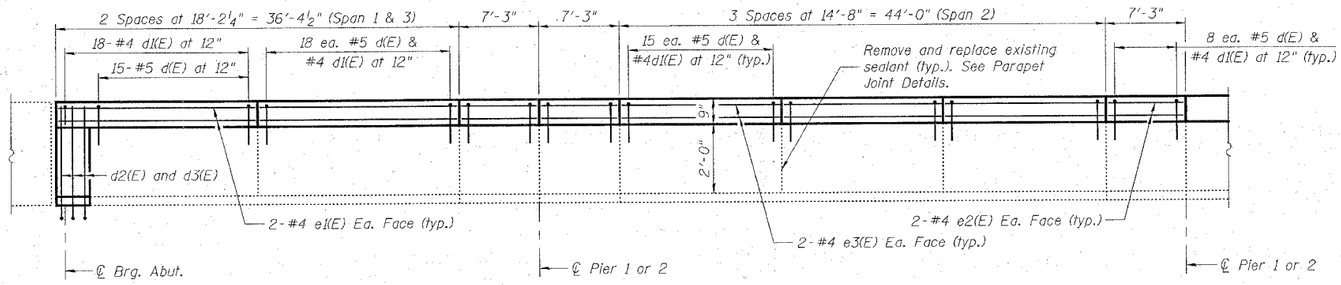
CONTRACT NO. 76857

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

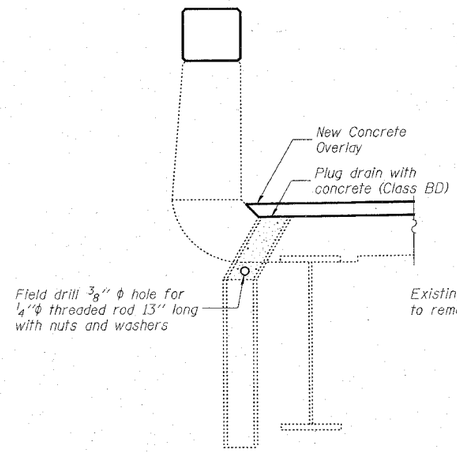


BRIDGE RAIL REMOVAL

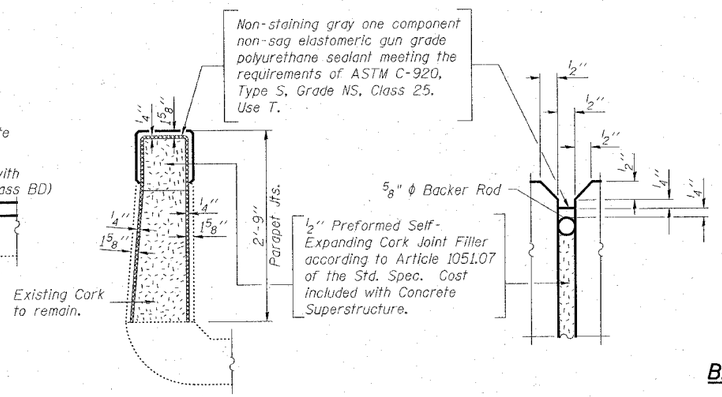
SECTION THRU PARAPET



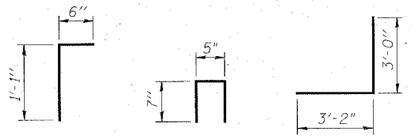
INSIDE ELEVATION OF PARAPET



SECTION AT DRAIN PLUG

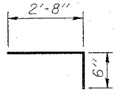


PARAPET JOINT DETAILS

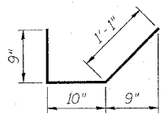


BAR d(E) BAR d1 (E) BAR d2(E)

BAR d3(E)



BAR x(E)



BAR x1(E)

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	24	#5	22'-6"	——
d1(E)	24	#5	18'-6"	——
d2(E)	20	#5	5'-10"	——
d3(E)	4	#5	3'-11"	——
d(E)	286	#5	1'-7"	L
d1(E)	298	#4	1'-7"	⊓
d2(E)	12	#5	6'-2"	L
d3(E)	12	#5	4'-3"	L
e1(E)	32	#4	17'-10"	——
e2(E)	32	#4	6'-11"	——
e3(E)	24	#4	14'-4"	——
h(E)	8	#6	21'-8"	——
h1(E)	8	#6	17'-8"	——
x(E)	72	#5	3'-2"	L
x1(E)	72	#4	2'-8"	⌐

Reinforcement Bars, Epoxy Coated	Pound	3680
Concrete Superstructure	Cu. Yd.	21.6
Bridge Rail Removal	Foot	292
Plug Existing Deck Drains	Each	28
Concrete Removal	Cu. Yd.	14.9
Preformed Joint Strip Seal	Foot	82

Reinforcement bars designated (E) shall be epoxy coated.

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED: CDB	DRAWN: P. Ray
CHECKED: DCD	CHECKED: CDB/DCD

SUPERSTRUCTURE DETAILS
FAI 70 (EB) OVER
WENDELL BRANCH
FAI ROUTE 70 SECTION 60-10B
MADISON COUNTY
STATION 996+73.85
STRUCTURE NO. 060-0023

DATE: $DATE$ - $TIME$ USER: $USER$ FILE: $FILE$

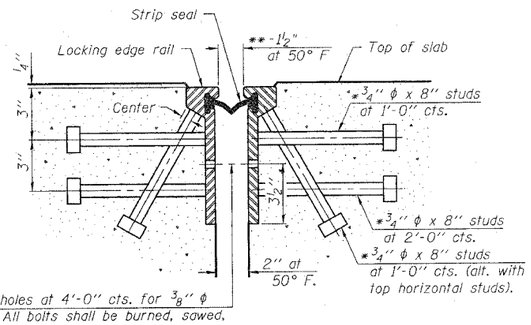
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-10B	MADISON	156	102
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 76857

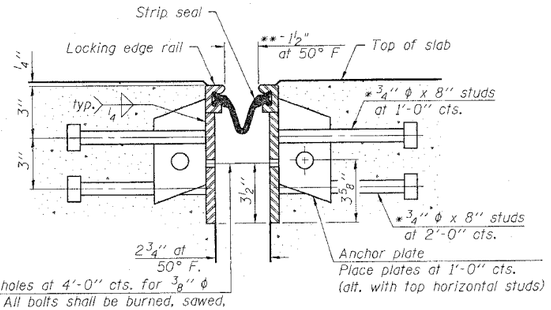
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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

** When joint is fixed, dimension is set at $1\frac{1}{2}$".



$\frac{7}{16}$" ϕ holes at 4'-0" cts. for $\frac{3}{8}$" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.



$\frac{7}{16}$" ϕ holes at 4'-0" cts. for $\frac{3}{8}$" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of ¼". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

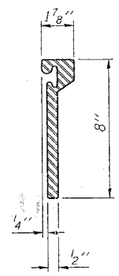
The height and thickness of the Locking Edge Rails shown are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities and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

The manufacturer's recommended installation methods shall be followed.

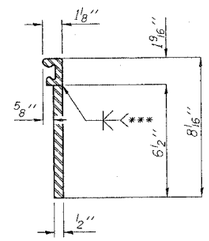
The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.

All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

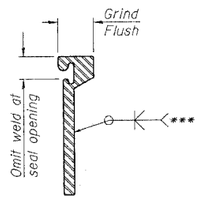
SECTION THRU ROLLED RAIL JOINT



ROLLED (EXTRUDED) RAIL



WELDED RAIL

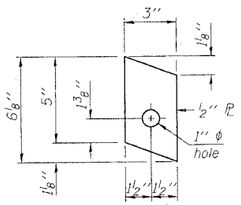


*** Back gouge not required if complete joint penetration is verified by mock-up.

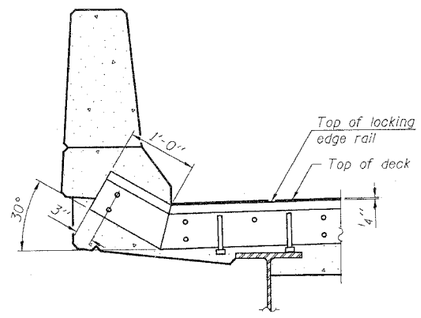
LOCKING EDGE RAIL SPLICE

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

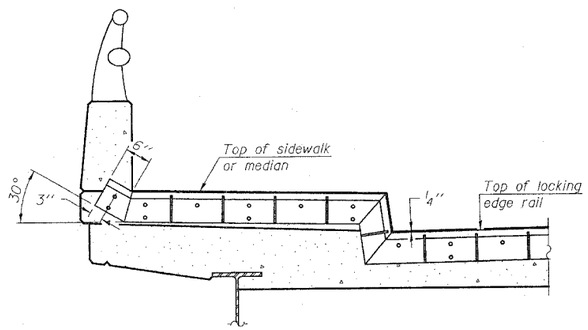
SECTION THRU WELDED RAIL JOINT



ANCHOR PL
(for welded rail)



AT PARAPET

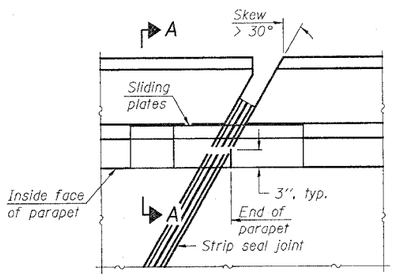


AT SIDEWALK OR MEDIAN

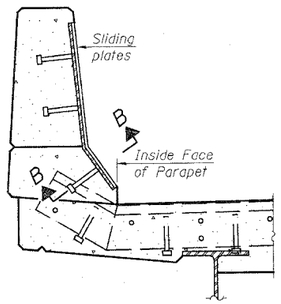
Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.

TYPICAL END TREATMENTS

LOCKING EDGE RAILS

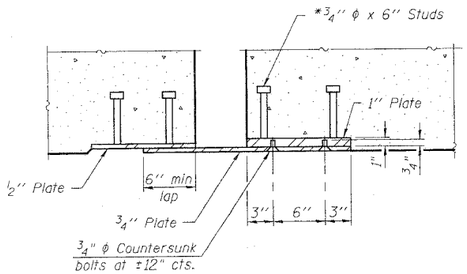


PLAN



SECTION A-A

POINT BLOCK DETAILS
(for skews > 30°)



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	84

PREFORMED JOINT STRIP SEAL

FAI 70 (EB) OVER
WENDELL BRANCH
FAI ROUTE 70 SECTION 60-10B
MADISON COUNTY
STATION 996+73.85
STRUCTURE NO. 060-0023

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED:	CDB	DRAWN:	P. Ray
CHECKED:	DCD	CHECKED:	CDB/DCD

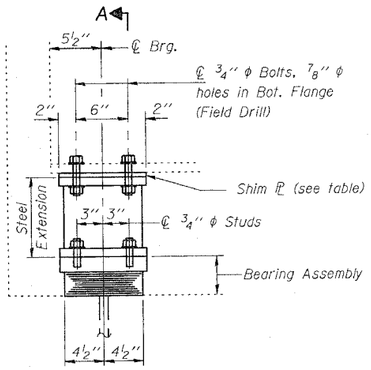
EJ-SSJ 11-1-06

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

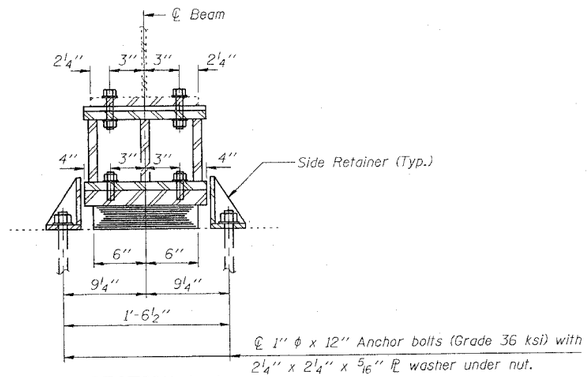
SHEET 6 OF 9

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-10B	MADISON	156	103
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 76857



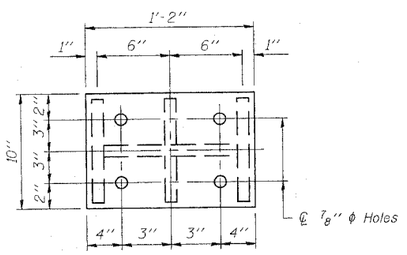
ELEVATION



SECTION A-A

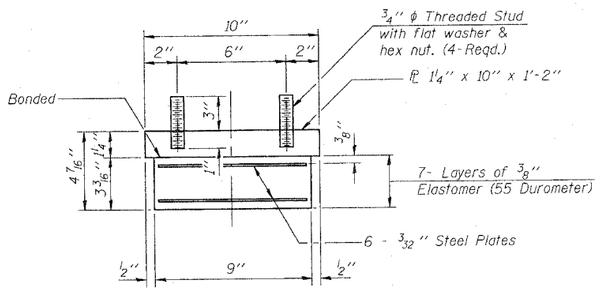
INTERIOR GIRDER REACTION TABLE		
R (DL)	(K)	15.2
R (LL)	(K)	30.8
R (Imp)	(K)	9.2
R (Total)	(K)	55.2
Minimum Jack Capacity	(Tons)	30

SHIM PLATE THICKNESS TABLE		
Beam 10	(in)	¼"
Beam 11	(in)	⅝"



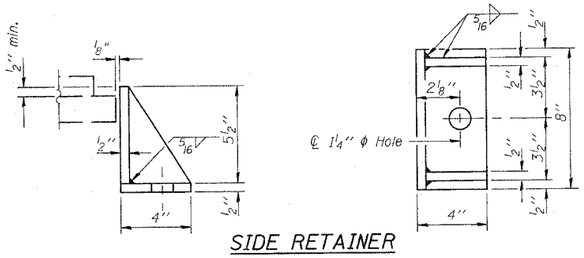
PLAN STEEL EXTENSION

TYPE I ELASTOMERIC EXP. BRG.



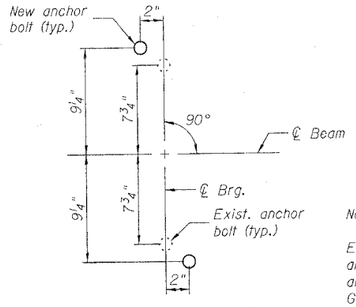
BEARING ASSEMBLY

Note:
Shim plates shall not be placed under Bearing Assembly.



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



ANCHOR BOLT LAYOUT

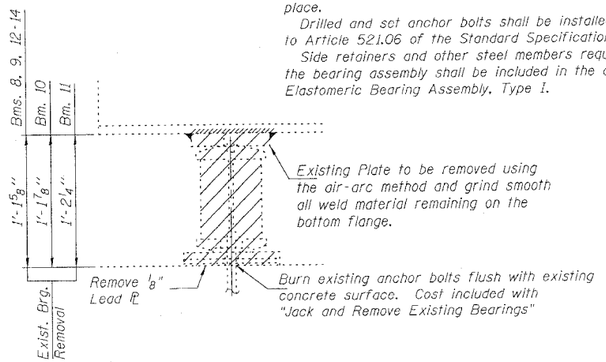
Notes:
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.

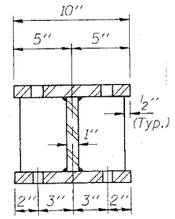
Anchor bolts for side retainers may be cast in place or installed in holes drilled before or after members are in place.

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

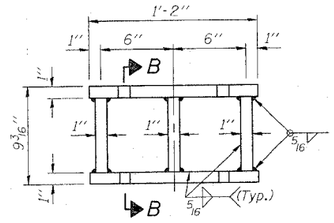
Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.



EXISTING BEARING REMOVAL DETAIL



SECTION B-B



ELEVATION STEEL EXTENSION

Notes:
Existing bearings at the Abutments and Pier 2 shall be removed and replaced according to the plans. Jacking shall be according to the Special Provisions for "JACK AND REMOVE EXISTING BEARINGS". If web stiffeners are not present directly over the jack location, hardwood timbers should be installed tightly between top and bottom flanges to prevent rotation. The abutment bearings shall be in place and the jacks lowered before the new concrete deck is poured at the abutments.

Diaphragm removal and replacement may be required to facilitate drilling holes. Cost shall be included with Furnishing and Erecting Structural Steel.

New steel extensions, shim plates, and connection bolts are included with Furnishing and Erecting Structural Steel.

Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.

The structural steel bearing plates for the expansion bearings shall conform to the requirements of AASHTO M 270 Grade 50.

BILL OF MATERIAL

Item	Unit	Total
Jack and Remove Existing Bearings	Each	21
Elastomeric Bearing Assembly Type I	Each	21
Furnishing and Erecting Structural Steel	Pound	3640
Anchor Bolts, 1"	Each	42

BEARINGS - ABUTMENTS

FAI 70 (EB) OVER
WENDELL BRANCH
FAI ROUTE 70 SECTION 60-10B
MADISON COUNTY
STATION 996+73.85
STRUCTURE NO. 060-0023

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED:	CDB	DRAWN:	P. Ray
CHECKED:	DCD	CHECKED:	CDB/DCD

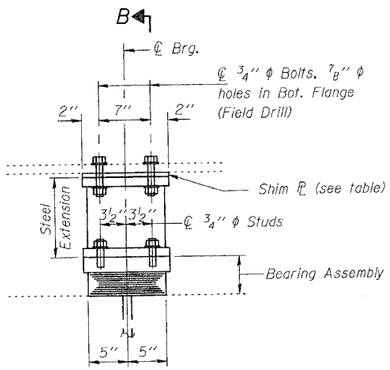
I-2-E1

DATE: 01/12/2007 - 16:41:20 USER: DCD FILE: J:\JDO\110142 IL-DBV\#5 I-70 Bridge Repair's\2-SN060-0023 Wendell\B-EB\060Bearings1.dgn

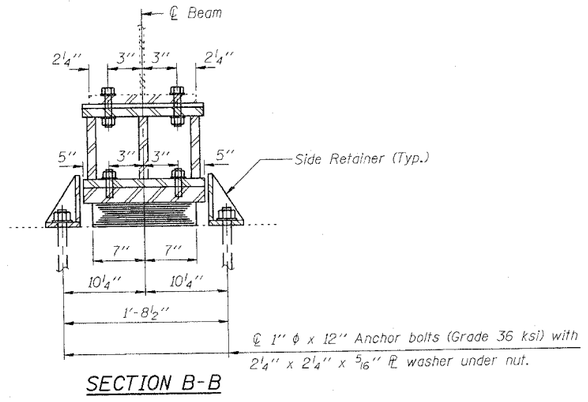
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-10B	MADISON	156	104
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 76857

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



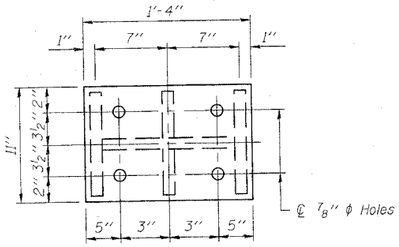
ELEVATION



SECTION B-B

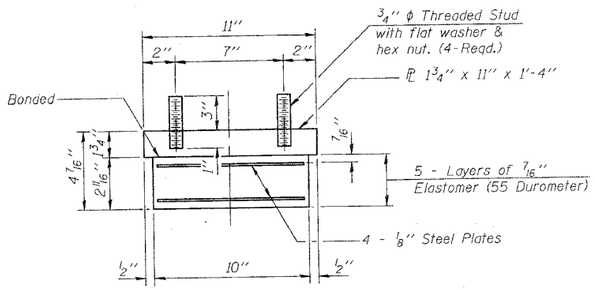
INTERIOR GIRDER REACTION TABLE		
R (DL)	(K)	56.6
R (LL)	(K)	39.2
R (Imp)	(K)	11.2
R (Total)	(K)	107.0
Minimum Jack Capacity	(Tons)	55

SHIM PLATE THICKNESS TABLE		
Beam 10	(in)	1/4"
Beam 11	(in)	5/8"



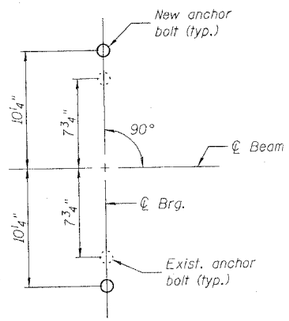
PLAN STEEL EXTENSION

TYPE I ELASTOMERIC EXP. BRG.

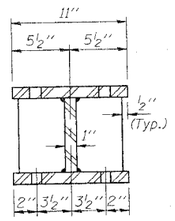


BEARING ASSEMBLY

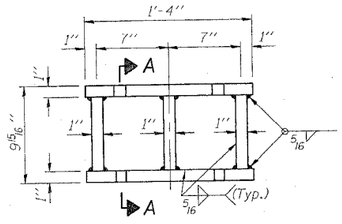
Note:
Shim plates shall not be placed under Bearing Assembly.



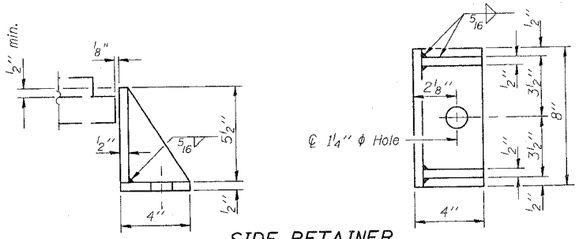
ANCHOR BOLT LAYOUT



SECTION A-A

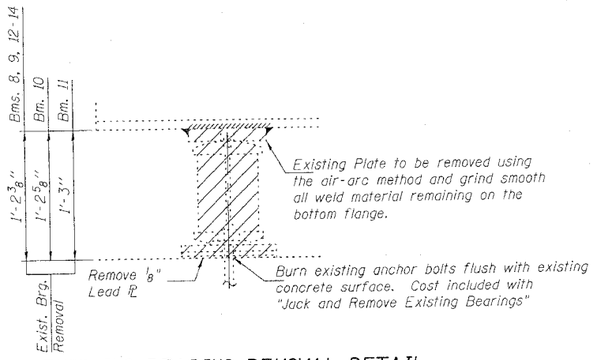


ELEVATION STEEL EXTENSION



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



EXISTING BEARING REMOVAL DETAIL

NOTES:

See Sheet 6 of 9 for Notes and Bill of Material.

Johnson, Depp & Quisenberry CONSULTING ENGINEERS Springfield, Illinois			
DESIGNED:	CDB	DRAWN:	P. Ray
CHECKED:	DCD	CHECKED:	CDB/DCD

I-2-E1

BEARINGS - PIER 2
FAI 70 (EB) OVER
WENDELL BRANCH
FAI ROUTE 70 SECTION 60-10B
MADISON COUNTY
STATION 996+73.85
STRUCTURE NO. 060-0023

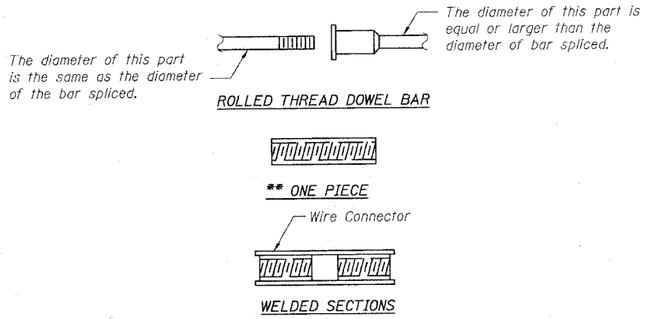
★ PAGE 105 DELETED

SHEET 9 OF 9

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-10B	MADISON	156	106
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

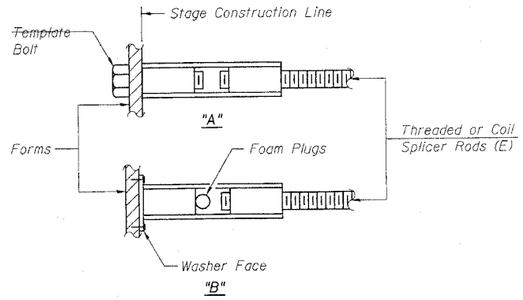
CONTRACT NO. 76857

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



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.

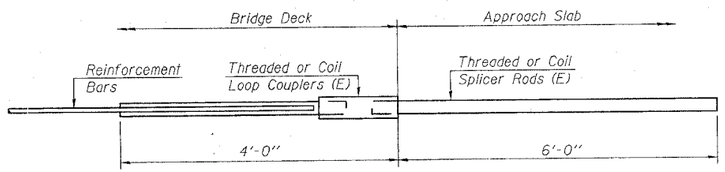
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

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

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

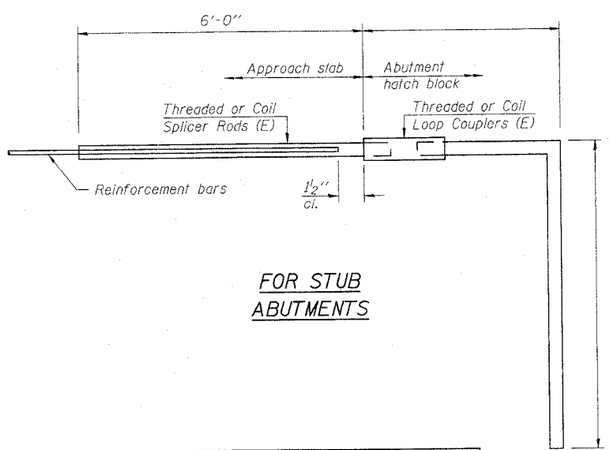
Where fy = Yield strength of lapped reinforcement bars in ksi.
A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

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



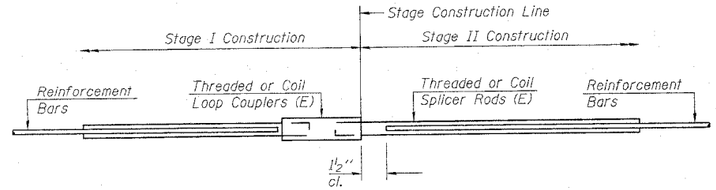
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

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



FOR STUB ABUTMENTS

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



STANDARD

Bar Size	No. Assemblies Required	Location
#5	28	Slab
#6	8	Backwall

BAR SPLICER ASSEMBLY DETAILS

FAI 70 (EB) OVER
WENDELL BRANCH
FAI ROUTE 70 SECTION 60-10B
MADISON COUNTY
STATION 996+73.85
STRUCTURE NO. 060-0023

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

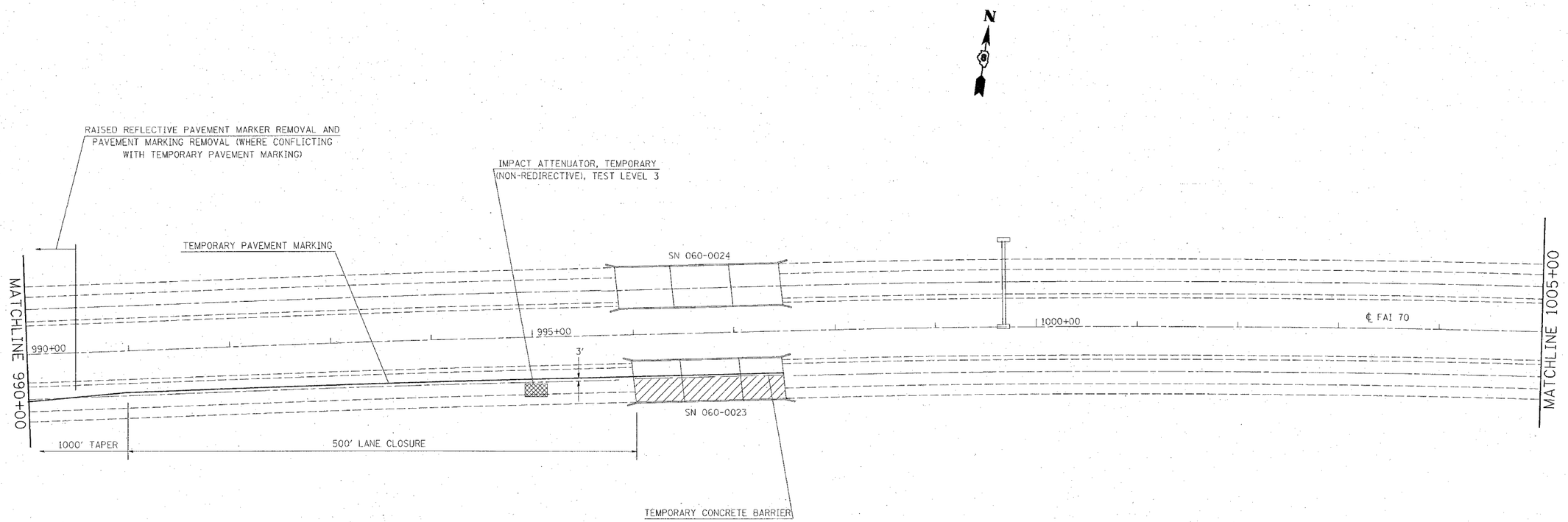
DESIGNED: CDB	DRAWN: P. Ray
CHECKED: DCD	CHECKED: CDB/DCD

BSD-1 11-1-06

DATE: 01/12/2007 - 16:42:20 USER: DCD FILE: J:\JOB\10142 IL-98W\w5 I-70 Bridge Repairs\2-SN060-0023 Wendell\Br-EB\09bar-splicers.dgn

CONTRACT NO. 76857

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	107
STA. _____	TO STA. _____			
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		



NOTES:

TRAFFIC CONTROL SHALL CONFORM TO STANDARDS 701400 AND 701402 INCLUDING ALL DEVICES SHOWN ON THE STANDARDS.

A QUANTITY FOR TEMPORARY PAVEMENT MARKING IS PROVIDED IN THE EVENT THAT THE ORIGINAL NEEDS TO BE REPLACED. THE APPLICATION AND TYPE SHALL BE APPROVED BY THE RESIDENT ENGINEER. THIS ITEM OF WORK SHALL INCLUDE REMOVAL AND WILL ONLY BE PAID FOR ONCE REGARDLESS OF THE NUMBER OF SUBSEQUENT APPLICATIONS.

USE OF NEW JERSEY CONCRETE BARRIER IN ACCORDANCE WITH SECTION 704 OF THE 2002 EDITION OF THE STANDARD SPECIFICATIONS WILL BE PERMITTED ON THIS PROJECT. ALL OTHER TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE 2007 EDITION OF THE STANDARD SPECIFICATIONS.

TRAFFIC CONTROL FOR STAGE 1 IS SHOWN. TRAFFIC CONTROL FOR STAGE 2 WILL BE A MIRROR IMAGE OF STAGE 1.

WORK AREA

TEMPORARY CONCRETE BARRIER

IMPACT ATTENUATOR

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLAN
EB I-70 OVER WENDELL BRANCH
SN 060-0023

FAI 70
SECTION 60-(10,11)RS
MADISON COUNTY

SCALE: VERT. HORIZ.
DRAWN BY
DATE
CHECKED BY

PLOT DATE = $DATE$
FILE NAME = $FILEL$
PLOT SCALE = $SCALE$
REFERENCE = REF

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET 1 OF 9

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-10B	MADISON	136	108
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 76857

INDEX OF SHEETS

GENERAL NOTES

Plan dimensions and details relative to existing plans are subject to routine 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 based upon the unit price bid for the work.

All epoxy grouted bars shall have a minimum embedment as shown on the plans and shall be placed according to Section 584 of the Standard Specifications. Cost of hole drilling and epoxy grouting is included with "Reinforcement Bars, Epoxy Coated".

All structural steel shall be AASHTO M 270 Grade 36, unless noted otherwise.

Field welding of construction accessories will not be permitted to beams or girders.

The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

The existing structural steel shall only be cleaned and painted as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures". All new structural steel shall be shop painted with an inorganic zinc rich primer per AASHTO M300, Type 1. Field painting of structural steel shall be done under a separate painting contract.

Prior to pouring the new concrete deck, all loose rust, loose mill scale and other loose potentially detrimental foreign material shall be removed from the surfaces of the beams or girders in contact with concrete. The cost of this work will be included in the pay item covering removal of the existing concrete All heavy rust and other tightly adhered potentially detrimental foreign matter shall also be removed from the surfaces of the beams or girders in contact with concrete. Tightly adhered paint may remain unless otherwise noted. This removal shall be accomplished by methods that will not damage the steel. The cost of this work will be paid for according to Article 109.04 of the Standard Specifications.

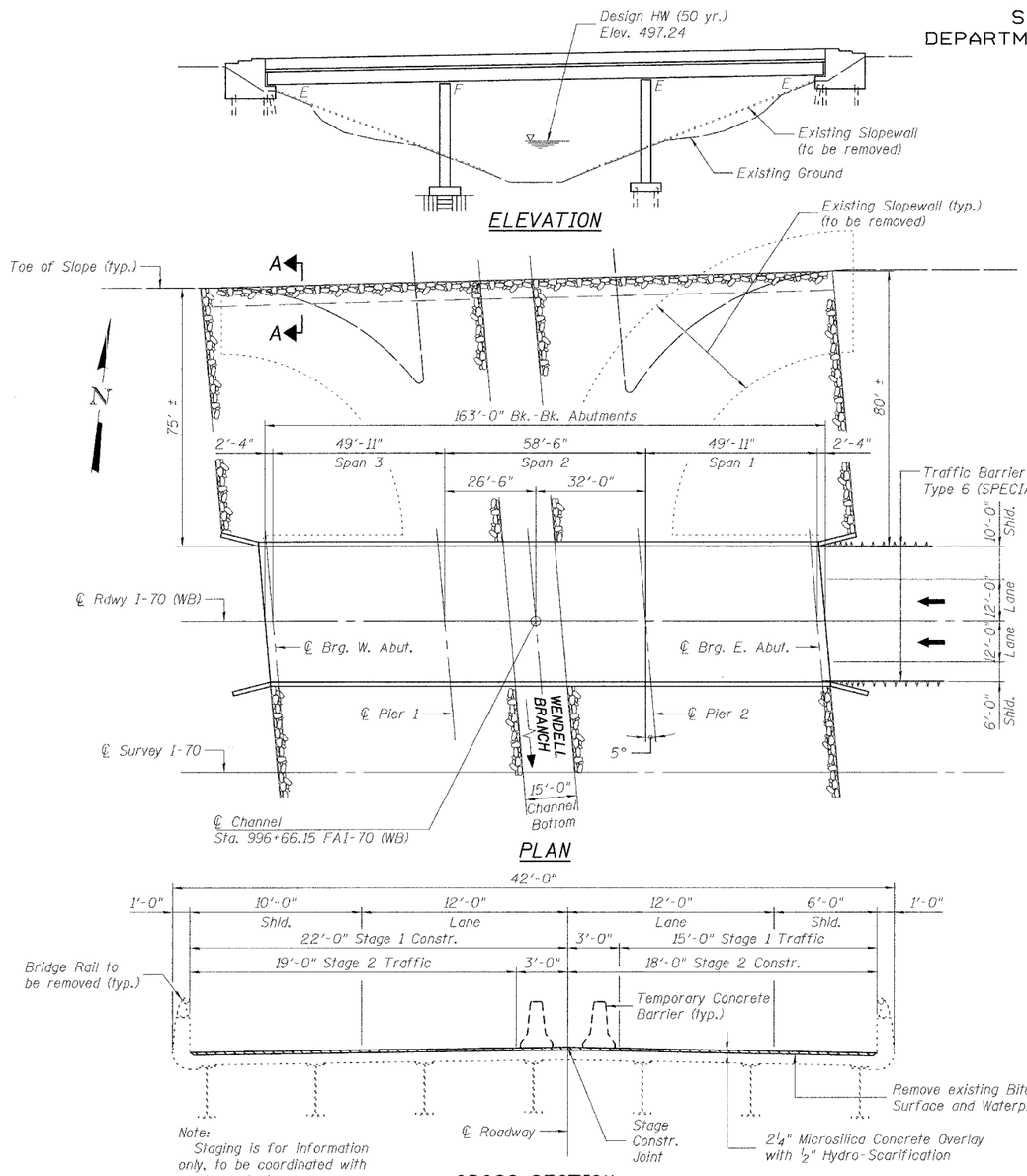
A Protective Coat shall be applied to the surfaces of the deck and parapets, including the wings.

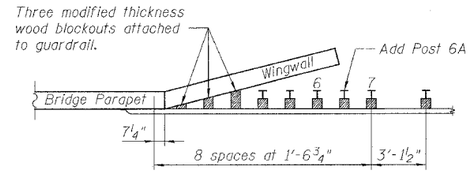
Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.

The severely eroded areas beneath the existing slope wall shall be backfilled after removing the slope wall and prior to installing the riprap filter fabric. The suitable material excavated to install the riprap shall be used as backfill for the eroded areas, and the cost of excavation and backfill installation shall be included in the Stone Riprap pay item. If additional backfill material is required then it shall be paid for as "Furnished Excavation".

TOTAL BILL OF MATERIAL

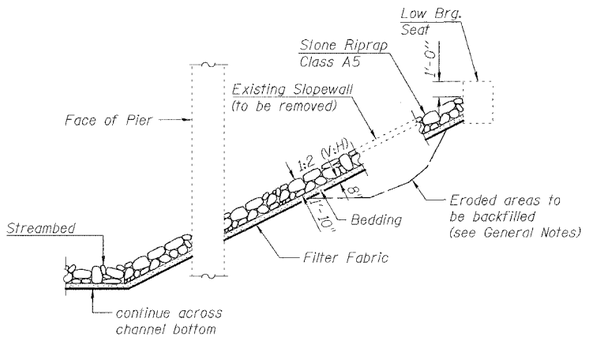
ITEM	UNIT	SUPER	SUB	TOTAL
Furnished Excavation	Cu Yd	--	25	25
Stone Riprap, Class A5	Sq Yd	--	2957	2957
Filter Fabric	Sq Yd	--	2957	2957
HMA Surface Removal (Deck)	Sq Yd	701	--	701
Concrete Removal	Cu Yd	12.2	--	12.2
Bridge Rail Removal	Foot	320	--	320
Slope Wall Removal	Sq Yd	--	2195	2195
Concrete Superstructure	Cu Yd	19.6	--	19.6
Bridge Deck Grooving	Sq Yd	672	--	672
Protective Coat	Sq Yd	854	--	854
Floor Drain Extension	Each	20	--	20
Furnishing And Erecting Structural Steel	Pound	3500	--	3500
Jack And Remove Existing Bearings	Each	21	--	21
Reinforcement Bars, Epoxy Coated	Pound	3400	--	3400
Bar Splicers	Each	28	--	28
Preformed Joint Strip Seal	Foot	84	--	84
Elastomeric Bearing Assembly, Type I	Each	21	--	21
Anchor Bolts, 1"	Each	42	--	42
Plug Existing Deck Drains	Each	32	--	32
Bridge Deck Microsilica Concrete Overlay 2¼"	Sq Yd	684	--	684
Bridge Deck Hydro-Scarification ½"	Sq Yd	684	--	684
Deck Slab Repair (Full Depth, Type II)	Sq Yd	9	--	9



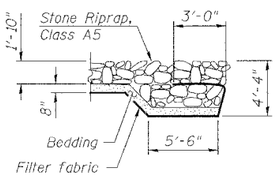


Note:
To be constructed according to
Std. 631031 except as noted above.

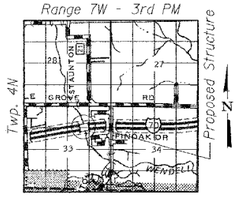
TRAFFIC BARRIER TERMINAL TYPE 6 (SPECIAL)



STONE RIPRAP DETAIL



SECTION A-A



LOCATION SKETCH

GENERAL PLAN
FAI 70 (WB) OVER
WENDELL BRANCH
FAI ROUTE 70 SECTION 60-10B
MADISON COUNTY
STATION 996+66.15
STRUCTURE NO. 060-0024

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED:	CDB	DRAWN:	SJS
CHECKED:	DCD	CHECKED:	CDB/DCD

STATE OF ILLINOIS
DAVID C. DEPP
081-005117
LICENSED
STRUCTURAL ENGINEER

Signed: David Depp
Date: 1-15-2007
Lic. Expires: 11-30-2008

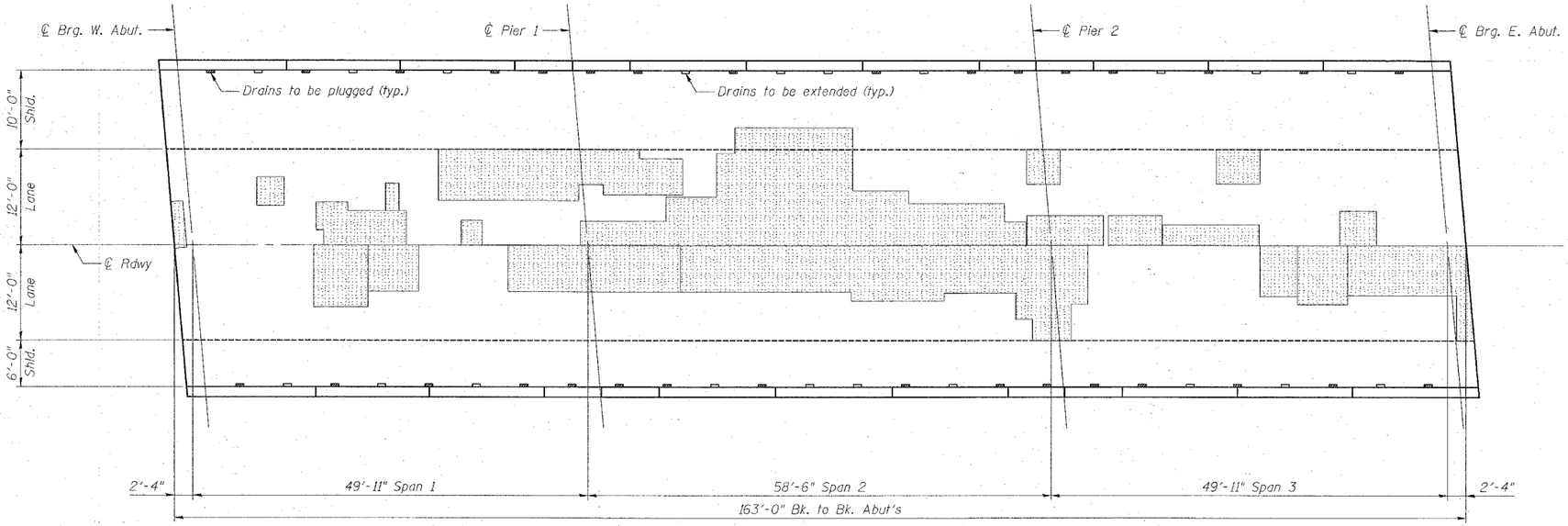
DATE: 01/12/2007 - 16:19:57 USER: DCD FILE: J:\JOB\10142 IL-DBVW#5 I-70 Bridge Repairs\3-SN060-0024 Wendell Br-WB\01gplan.dgn

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

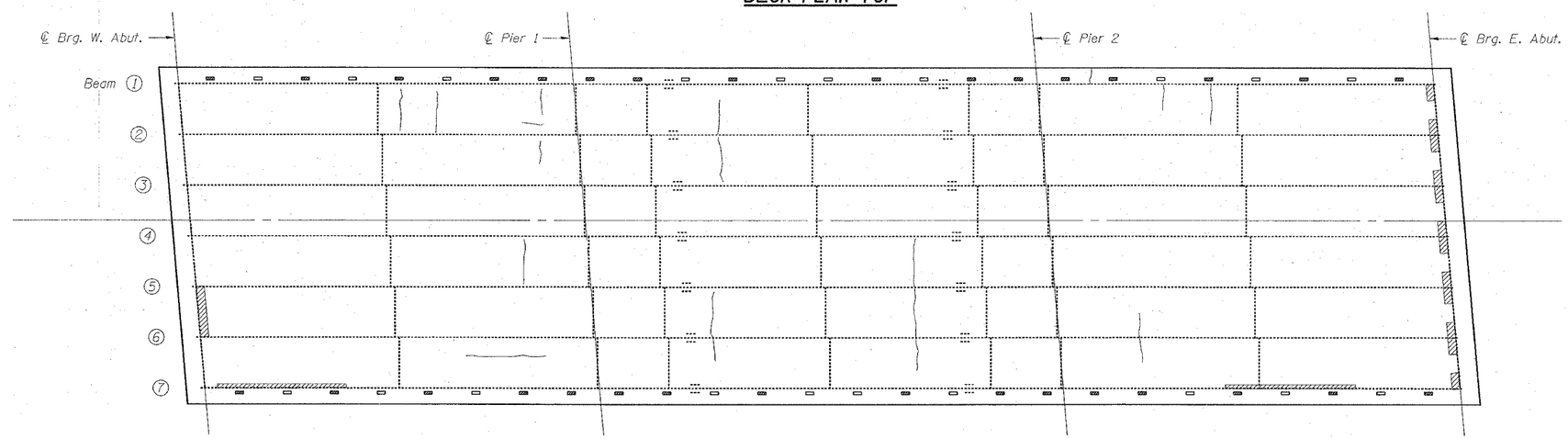
SHEET 2
OF 9

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-10B	MADISON	156	109
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 76857



DECK PLAN-TOP



DECK PLAN-BOTTOM

LEGEND

- Existing Patches to Overlay (1615 S.F.)
- Spalled Concrete (46 S.F.)
- Spalled Concrete with Exposed Rebar (0 S.F.)
- Hairline Crack

NOTES:

Deck Condition Survey performed 8/15/2006.

The Engineer shall record actual locations of deck repair on the As-Built plans.

Deck Plan-Top represents existing repairs made to the bituminous overlay, but may not represent the condition of the original concrete deck. Estimated quantities are provided for Deck Slab Repair, but actual quantities will be determined by the field Engineer as the work progresses.

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED:	CDB	DRAWN:	P. Ray
CHECKED:	DCD	CHECKED:	CDB/DCD

DATE: $DATE$ $TIME$ USER: $USER$ FILE: $FILE$

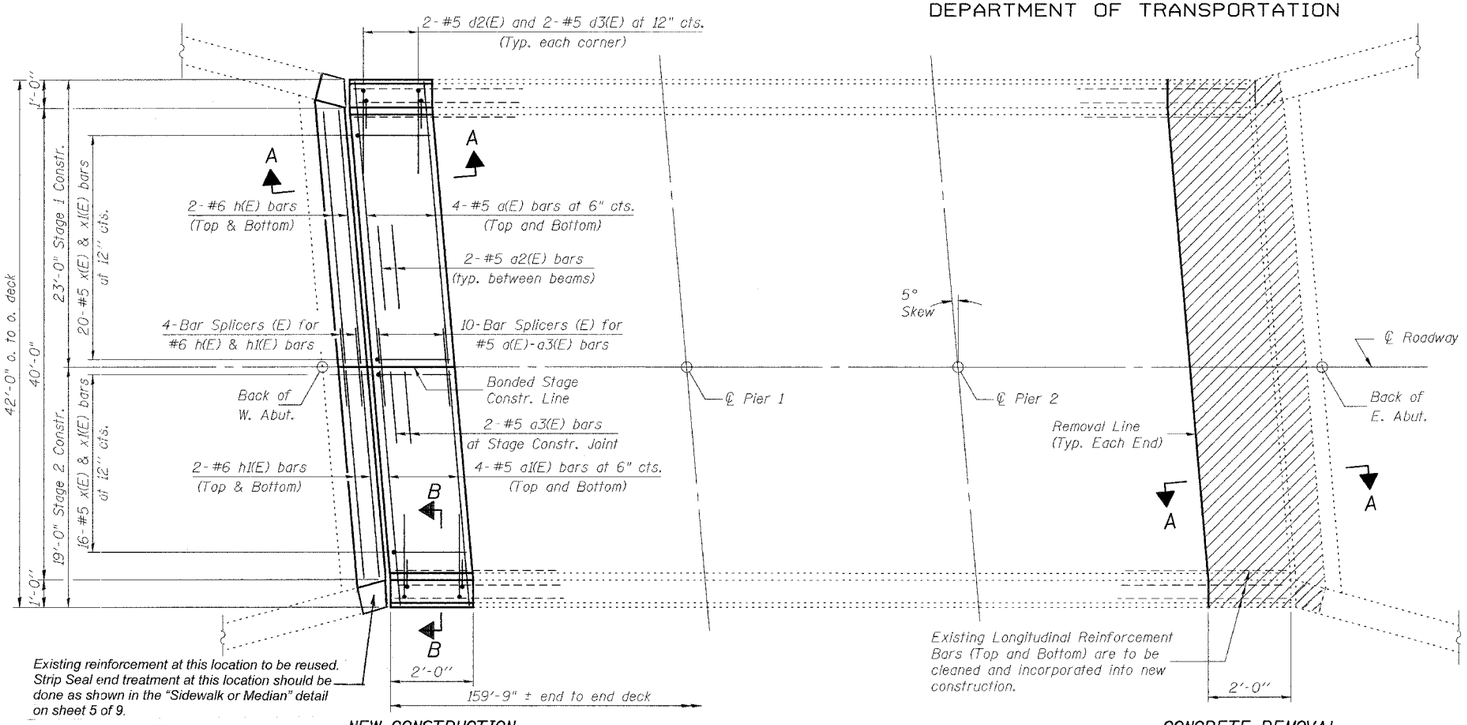
DECK PLAN
FAI 70 (WB) OVER
WENDELL BRANCH
FAI ROUTE 70 SECTION 60-10B
MADISON COUNTY
STATION 996+66.15
STRUCTURE NO. 060-0024

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-10B	MADISON	156	110
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SHEET 3 OF 9

CONTRACT NO. 76857

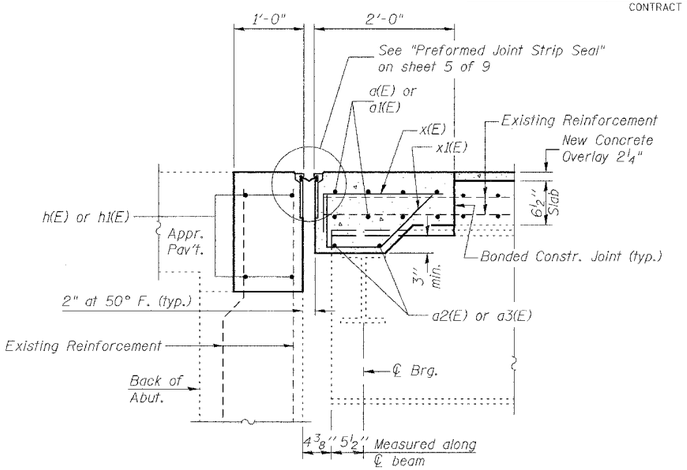


NEW CONSTRUCTION
(Typical Each End of Deck)

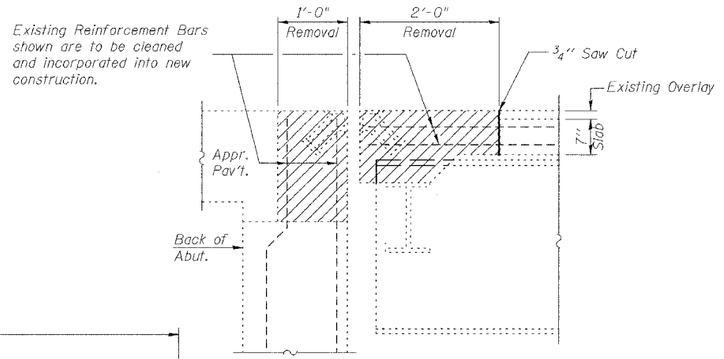
PLAN

CONCRETE REMOVAL
(Typical Each End of Deck)

Indicates Limits of Concrete Removal.

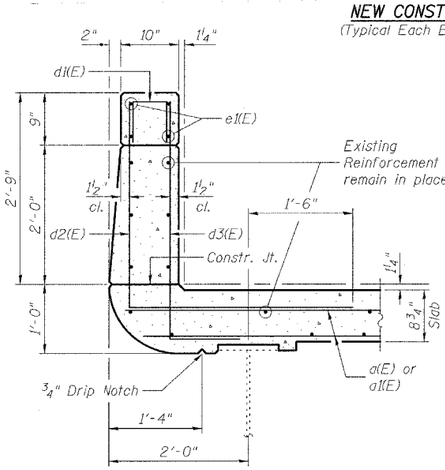


PROPOSED SECTION A-A

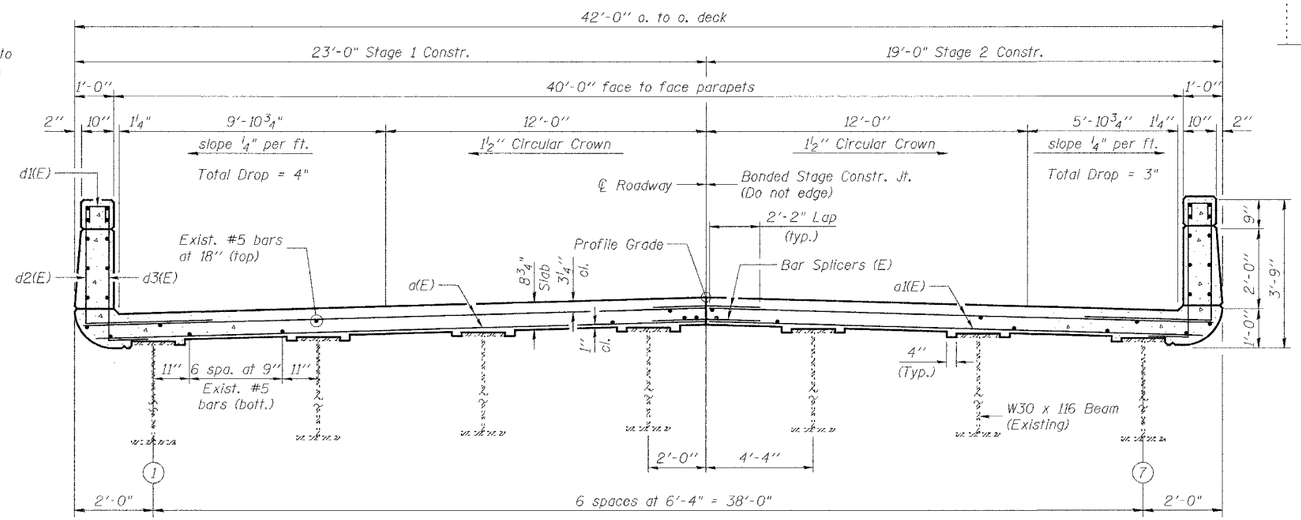


EXISTING SECTION A-A

Note:
Existing longitudinal reinforcement bars projecting from the deck and parapets are to remain in place. The existing reinforcement shall be cleaned, straightened and incorporated into the new construction. Cut the existing reinforcement as required so that it will end 2" from the edge of the new deck. Any reinforcement bars damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.



SECTION B-B



CROSS SECTION AT END OF DECK
(Looking East)

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED:	CDB	DRAWN:	P. Ray
CHECKED:	DCD	CHECKED:	CDB/DCD

SUPERSTRUCTURE

FAI 70 (WB) OVER
WENDELL BRANCH
FAI ROUTE 70 SECTION 60-10B
MADISON COUNTY
STATION 996+66.15
STRUCTURE NO. 060-0024

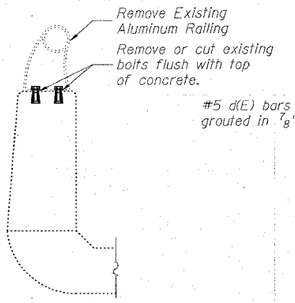
DATE: 01/12/2007 - 18x20x23 USER: DCD FILE: J:\JDQ\N1042 IL-DBV\#5 I-70 Bridge Repairs\3-SN060-0024 WandellBr-WB\03superstr.dgn

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

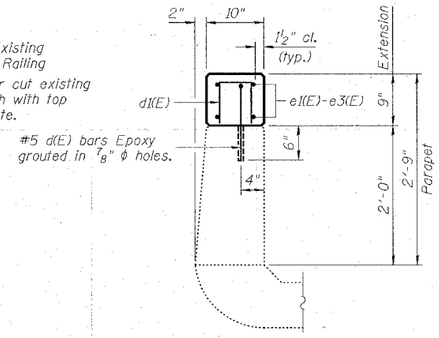
SHEET 4 OF 9

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-10B	MADISON	156	111
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

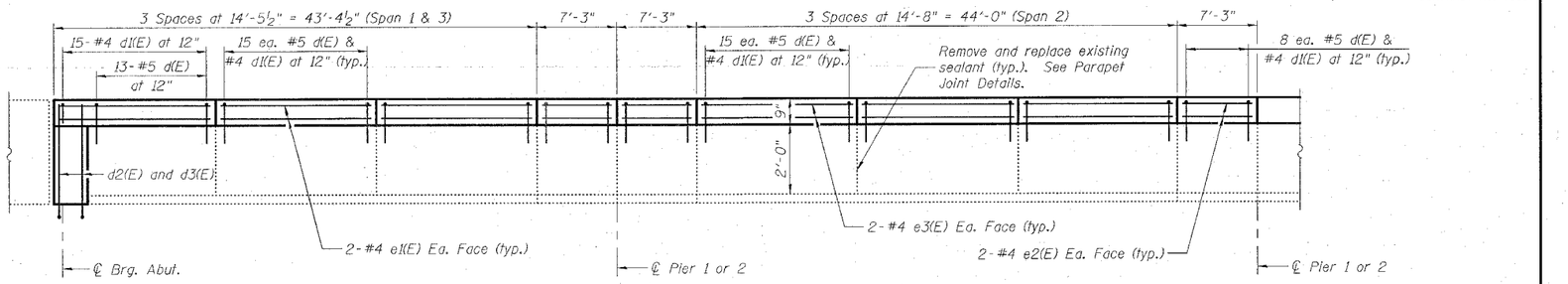
CONTRACT NO. 76857



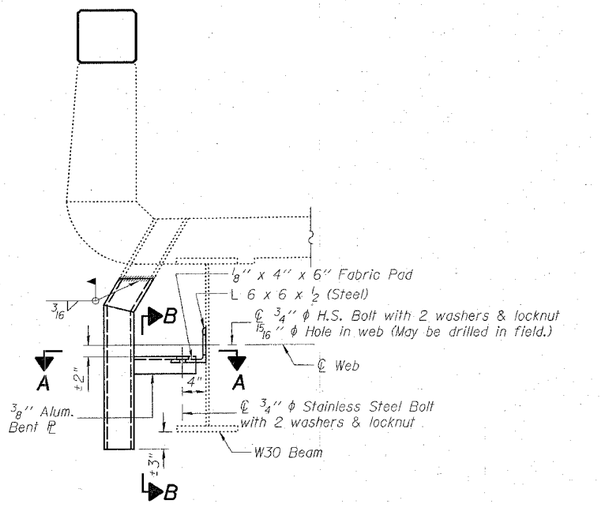
BRIDGE RAIL REMOVAL



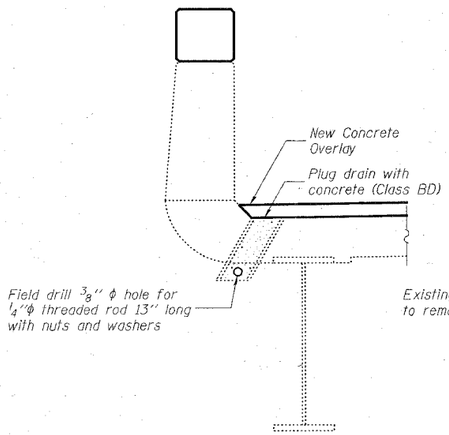
SECTION THRU PARAPET



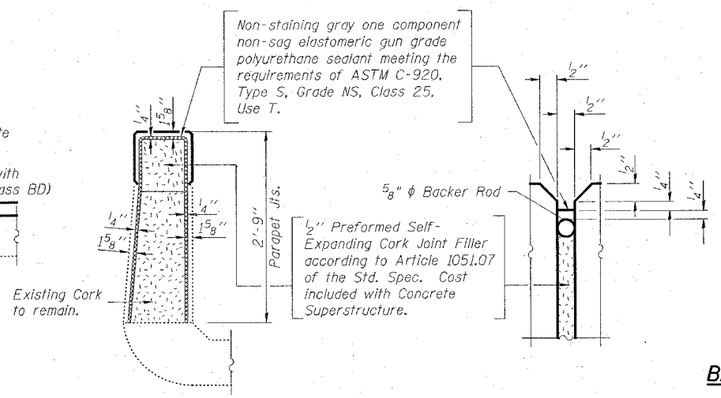
INSIDE ELEVATION OF PARAPET



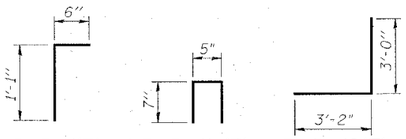
SECTION AT DRAIN EXTENSION



SECTION AT DRAIN PLUG

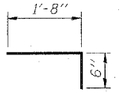


PARAPET JOINT DETAILS

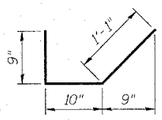


BAR d(E) BAR d1 (E) BAR d2(E)

BAR d3(E)



BAR x(E)

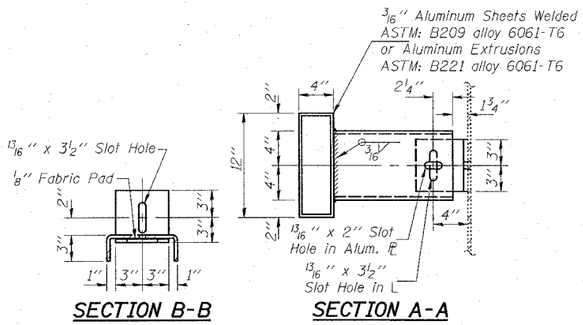


BAR x1(E)

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	16	#5	22'-6"	——
a1(E)	16	#5	18'-6"	——
a2(E)	20	#5	5'-10"	——
a3(E)	4	#5	3'-11"	——
d(E)	326	#5	1'-7"	L
d1(E)	334	#4	1'-7"	⊓
d2(E)	8	#5	6'-2"	L
d3(E)	8	#5	4'-3"	L
e1(E)	48	#4	14'-1"	——
e2(E)	32	#4	6'-11"	——
e3(E)	24	#4	14'-4"	——
h(E)	8	#6	21'-8"	——
h1(E)	8	#6	17'-8"	——
x(E)	72	#5	2'-2"	L
x1(E)	72	#4	2'-8"	⌐
Reinforcement Bars, Epoxy Coated		Pound	3400	
Concrete Superstructure		Cu. Yd.	19.6	
Bridge Rail Removal		Foot	320	
Plug Existing Deck Drains		Each	32	
Floor Drain Extension		Each	20	
Concrete Removal		Cu. Yd.	12.2	
Preformed Joint Strip Seal		Foot	82	

Reinforcement bars designated (E) shall be epoxy coated.



SECTION B-B SECTION A-A

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED:	CDB	DRAWN:	P. Ray
CHECKED:	DCD	CHECKED:	CDB/DCD

SUPERSTRUCTURE DETAILS

FAI 70 (WB) OVER
WENDELL BRANCH
FAI ROUTE 70 SECTION 60-10B
MADISON COUNTY
STATION 996+66.15
STRUCTURE NO. 060-0024

DATE: $DATE$ - $TIME$ USER: $USER$ FILE: $FILE$

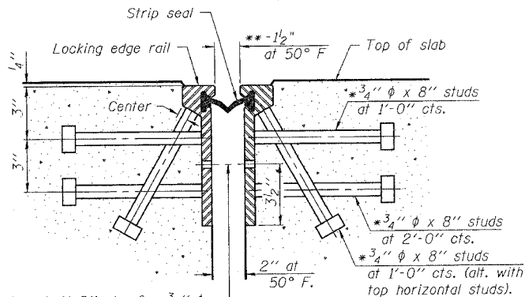
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-10B	MADISON	156	112
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

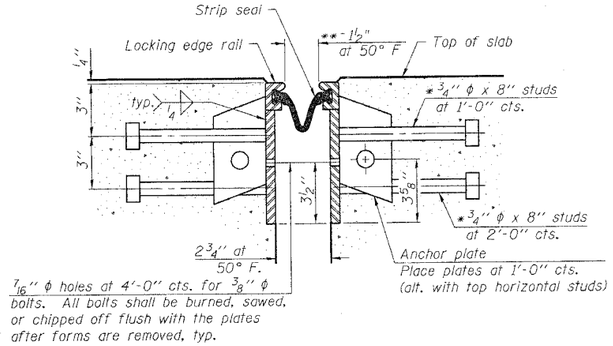
CONTRACT NO. 76857

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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

** When joint is fixed, dimension is set at $1\frac{1}{2}$".





Notes:

The strip seal shall be made continuous and shall have a minimum thickness of ¼". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

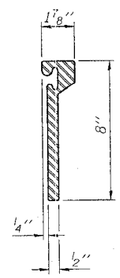
The height and thickness of the Locking Edge Rails shown are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities and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

The manufacturer's recommended installation methods shall be followed.

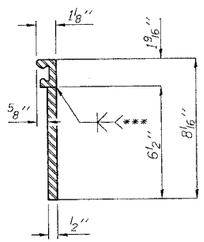
The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.

All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

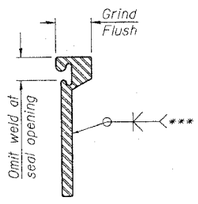
SECTION THRU ROLLED RAIL JOINT



ROLLED (EXTRUDED) RAIL



WELDED RAIL

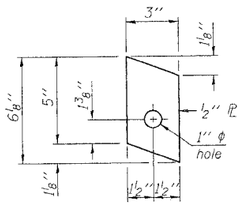


**** Back gouge not required if complete joint penetration is verified by mock-up.*

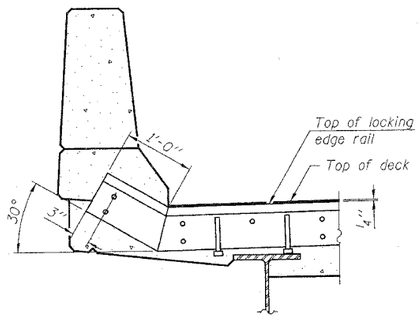
LOCKING EDGE RAIL SPLICE

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

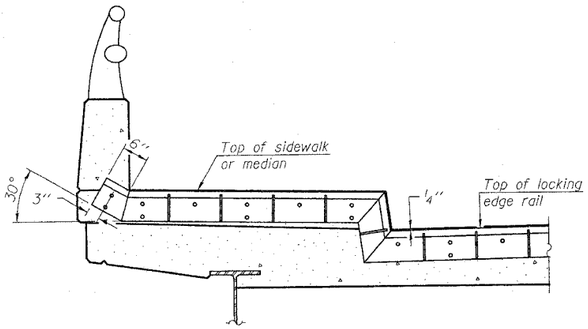
SECTION THRU WELDED RAIL JOINT



ANCHOR ℄ *(for welded rail)*



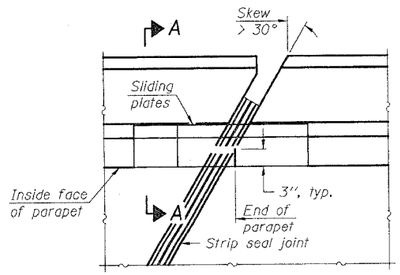
AT PARAPET



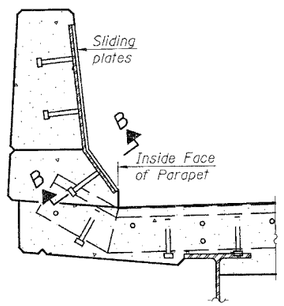
AT SIDEWALK OR MEDIAN

Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.

LOCKING EDGE RAILS



PLAN

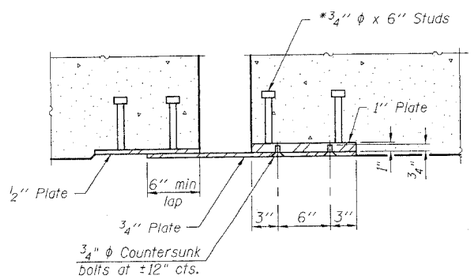


SECTION A-A

POINT BLOCK DETAILS

(for skews > 30°)

TYPICAL END TREATMENTS



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	84

PREFORMED JOINT STRIP SEAL

FAI 70 (WB) OVER
WENDELL BRANCH
FAI ROUTE 70 SECTION 60-10B
MADISON COUNTY
STATION 996+66.15
STRUCTURE NO. 060-0024

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED: CDB	DRAWN: P. Ray
CHECKED: DCD	CHECKED: CDB/DCD

EJ-SSJ 11-1-06

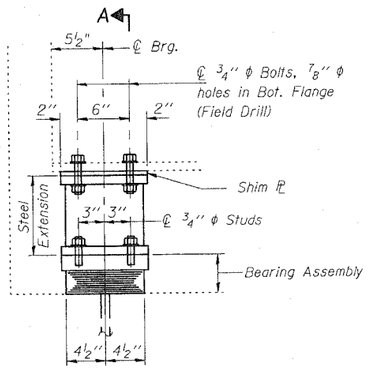
FILE: J:\06\10142 IL-08W*5 I-70 Bridge Repairs\3-SN060-0024 Wendell Br-WB\05jointstrip.dgn USER: DCD DATE: 01/12/2007 - 18:20:55

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

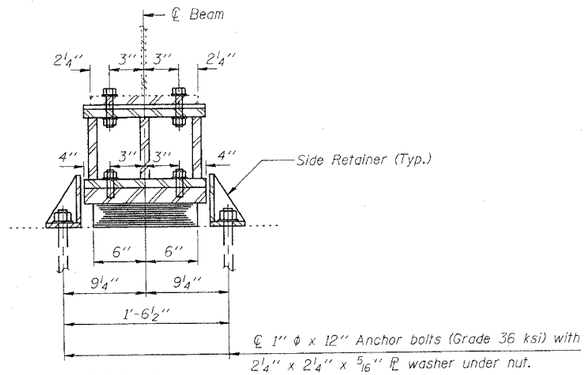
SHEET 6 OF 9

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-10B	MADISON	156	113
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 76857

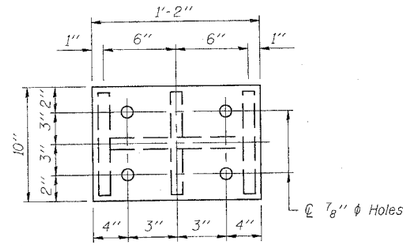


ELEVATION



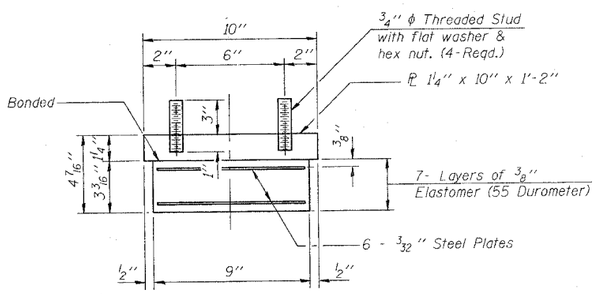
SECTION A-A

INTERIOR GIRDER REACTION TABLE		
R (DL)	(K)	18.8
R (LL)	(K)	32.1
R (Imp)	(K)	9.2
R (Total)	(K)	60.1
Minimum Jack Capacity	(Tons)	30



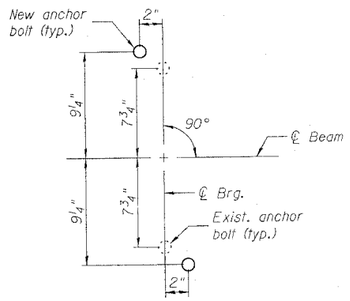
PLAN STEEL EXTENSION

TYPE I ELASTOMERIC EXP. BRG.



BEARING ASSEMBLY

Note:
Shim plates shall not be placed under Bearing Assembly.



ANCHOR BOLT LAYOUT

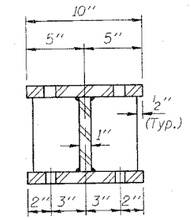
Notes:
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.

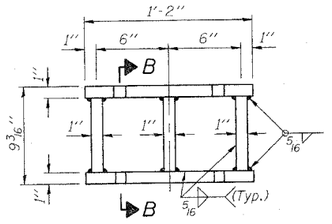
Anchor bolts for side retainers may be cast in place or installed in holes drilled before or after members are in place.

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

Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.



SECTION B-B



ELEVATION STEEL EXTENSION

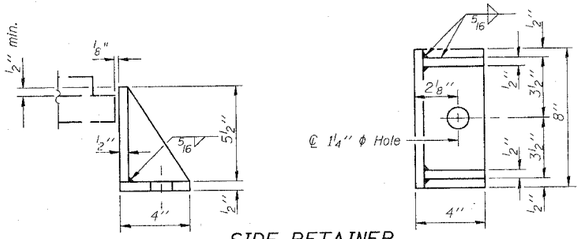
Notes:
Existing bearings at the Abutments and Pier 2 shall be removed and replaced according to the plans. Jacking shall be according to the Special Provisions for "JACK AND REMOVE EXISTING BEARINGS". If web stiffeners are not present directly over the jack location, hardwood timbers should be installed tightly between top and bottom flanges to prevent rotation. The abutment bearings shall be in place and the jacks lowered before the new concrete deck is poured at the abutments.

Diaphragm removal and replacement may be required to facilitate drilling holes. Cost shall be included with Furnishing and Erecting Structural Steel.

New steel extensions, shim plates and connection bolts are included with Furnishing and Erecting Structural Steel.

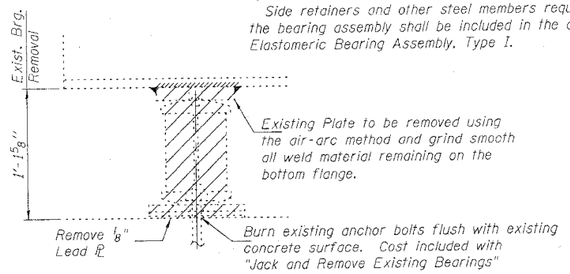
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.

The structural steel bearing plates for the expansion bearings shall conform to the requirements of AASHTO M 270 Grade 50.



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



EXISTING BEARING REMOVAL DETAIL

BILL OF MATERIAL

Item	Unit	Total
Jack and Remove Existing Bearings	Each	21
Elastomeric Bearing Assembly Type I	Each	21
Furnishing and Erecting Structural Steel	Pound	3500
Anchor Bolts, 1"	Each	42

BEARINGS - ABUTMENTS
FAI 70 (WB) OVER
WENDELL BRANCH
FAI ROUTE 70 SECTION 60-10B
MADISON COUNTY
STATION 996+66.15
STRUCTURE NO. 060-0024

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED: CDB	DRAWN: P. Ray
CHECKED: DCD	CHECKED: CDB/DCD

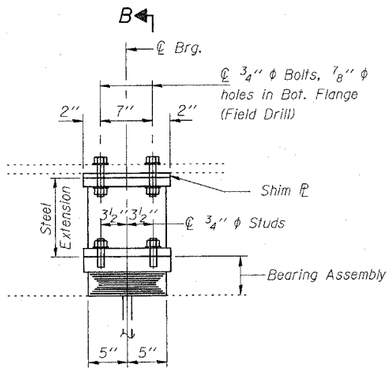
I-2-E1

FILE: J:\JDQ\I0042 IL-08W\V*5 I-70 Bridge Repairs\3-SN060-0024 Wendell Br-WB\06Bearings.dgn
USER: DCD
DATE: 01/12/2007 - 18:21:46

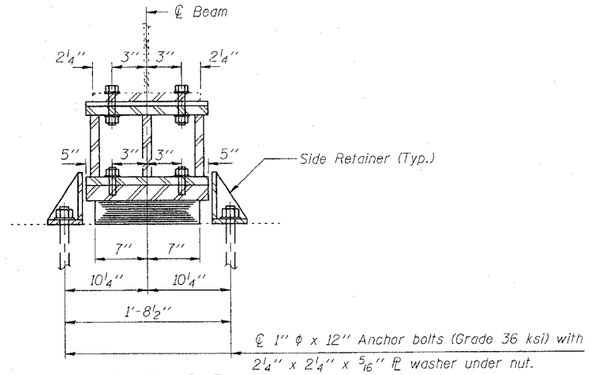
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-10B	MADISON	136	114
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 76857



ELEVATION

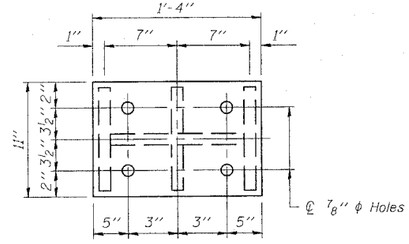


SECTION B-B

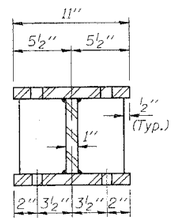
℄ 1" ϕ x 12" Anchor bolts (Grade 36 ksi) with 2¼" x 2¼" x 5/16" ℙ washer under nut.

TYPE I ELASTOMERIC EXP. BRG.

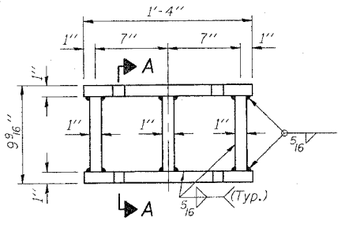
INTERIOR GIRDER REACTION TABLE		
R (DL)	(K)	59.7
R (LL)	(K)	39.4
R (Imp)	(K)	11.0
R (Total)	(K)	110.1
Minimum Jack Capacity	(Tons)	55



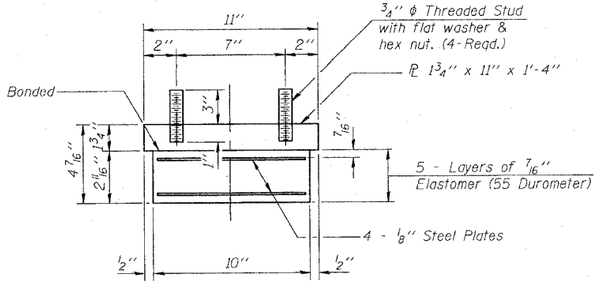
PLAN STEEL EXTENSION



SECTION A-A

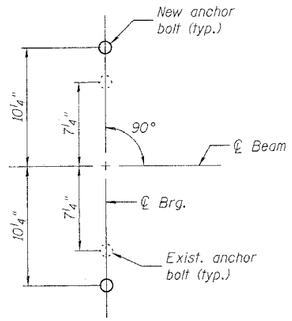


ELEVATION STEEL EXTENSION

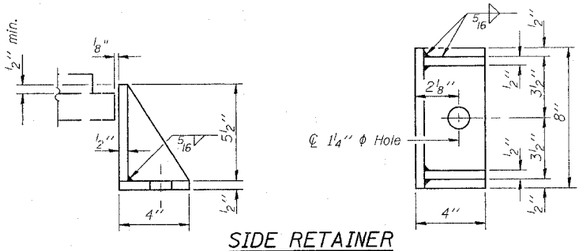


BEARING ASSEMBLY

Note:
Shim plates shall not be placed under Bearing Assembly.

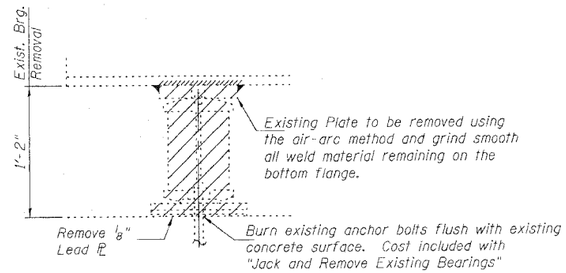


ANCHOR BOLT LAYOUT



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



EXISTING BEARING REMOVAL DETAIL

NOTES:

See Sheet 6 of 9 for Notes and Bill of Material.

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED:	CDB	DRAWN:	P. Ray
CHECKED:	DCD	CHECKED:	CDB/DCD

I-2-E1

BEARINGS - PIER 2
FAI 70 (WB) OVER
WENDELL BRANCH
FAI ROUTE 70 SECTION 60-10B
MADISON COUNTY
STATION 996+66.15
STRUCTURE NO. 060-0024

DATE: 9/12/2007 - 18:21:36 USER: DCD FILE: J:\JOBS\11042 IL-DBW'S I-70 Bridge Repairs\3-SN060-0024 Wendell Br-WB\07Bearings2.dgn

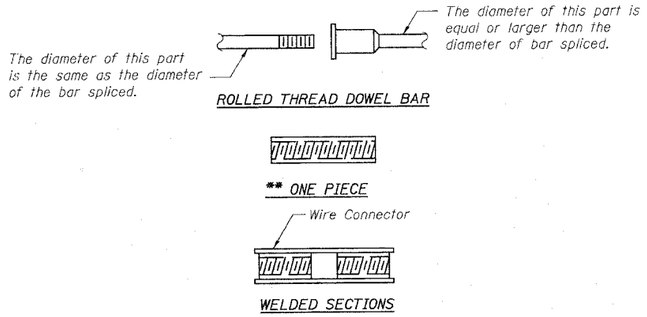
PAGE 115 DELETED

SHEET 9 OF 9

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-10B	MADISON	156	116
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

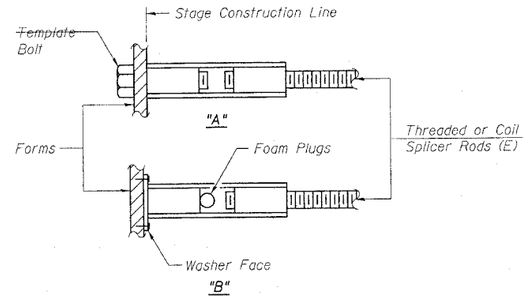
CONTRACT NO. 76857

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



BAR SPLICER ASSEMBLY ALTERNATIVES

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



INSTALLATION AND SETTING METHODS

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

NOTES

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

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

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

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

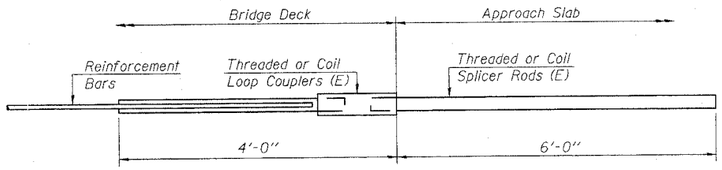
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

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

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

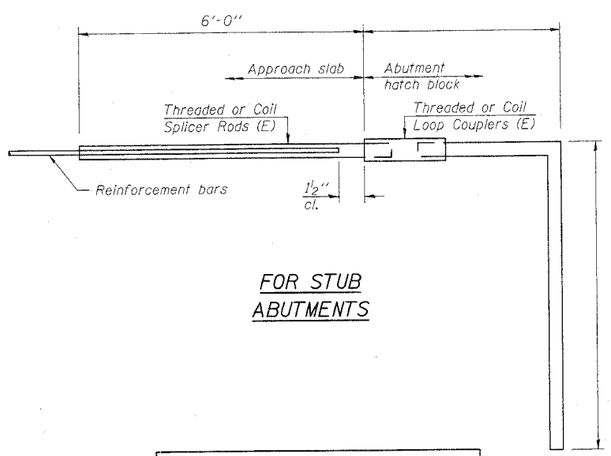
Where f_y = Yield strength of lapped reinforcement bars in ksi.
A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

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



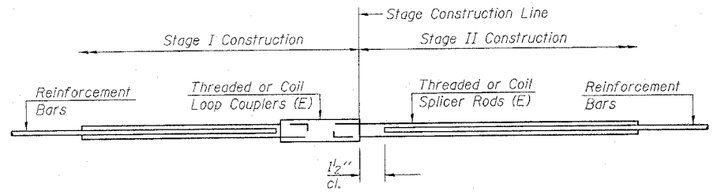
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

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



FOR STUB ABUTMENTS

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



STANDARD

Bar Size	No. Assemblies Required	Location
#5	20	Slab
#6	8	Backwall

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED:	CDB	DRAWN:	P. Ray
CHECKED:	DCD	CHECKED:	CDB/DCD

BSD-1 11-1-06

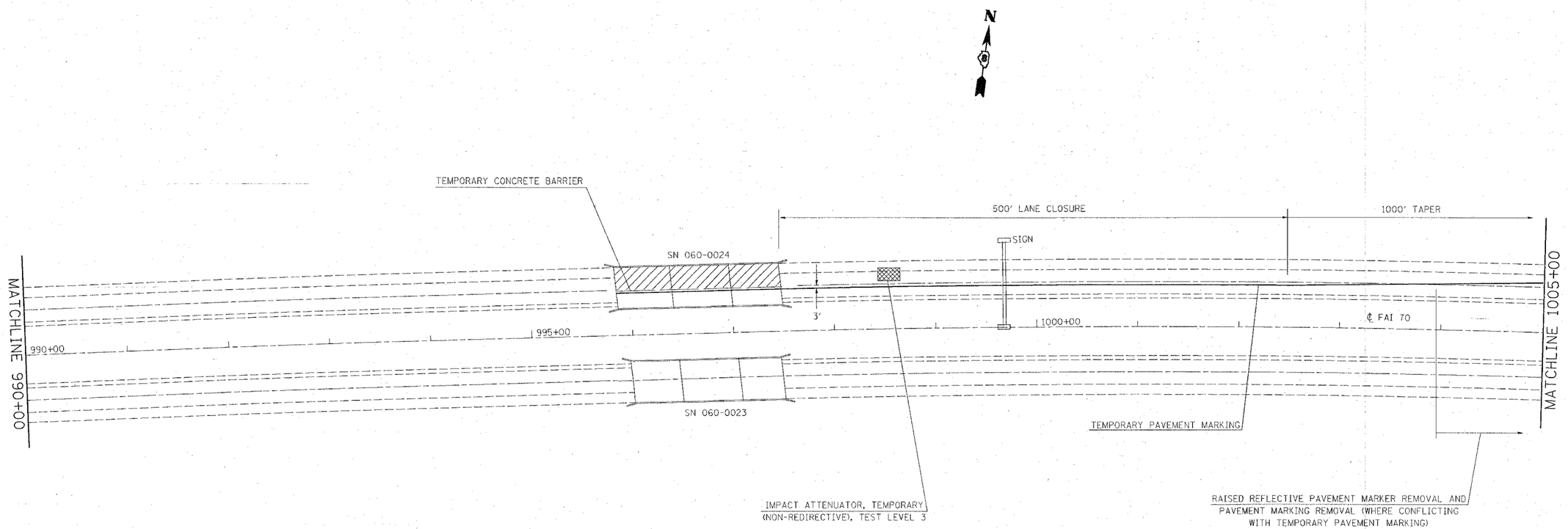
BAR SPLICER ASSEMBLY DETAILS

FAI 70 (WB) OVER
WENDELL BRANCH
FAI ROUTE 70 SECTION 60-10B
MADISON COUNTY
STATION 996+66.15
STRUCTURE NO. 060-0024

DATE: 01/12/2007 - 18:22:13 USER: DCD FILE: J:\JDO\10142 IL-DBW*5 I-70 Bridge Repairs\3-SN060-0024 WendellB--WB\09bar-splicers.dgn

CONTRACT NO. 76857

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	136	117
STA. _____		TO STA. _____		
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		



NOTES:

TRAFFIC CONTROL SHALL CONFORM TO STANDARDS 701400 AND 701402 INCLUDING ALL DEVICES SHOWN ON THE STANDARDS.

A QUANTITY FOR TEMPORARY PAVEMENT MARKING IS PROVIDED IN THE EVENT THAT THE ORIGINAL NEEDS TO BE REPLACED. THE APPLICATION AND TYPE SHALL BE APPROVED BY THE RESIDENT ENGINEER. THIS ITEM OF WORK SHALL INCLUDE REMOVAL AND WILL ONLY BE PAID FOR ONCE REGARDLESS OF THE NUMBER OF SUBSEQUENT APPLICATIONS.

USE OF NEW JERSEY CONCRETE BARRIER IN ACCORDANCE WITH SECTION 704 OF THE 2002 EDITION OF THE STANDARD SPECIFICATIONS WILL BE PERMITTED ON THIS PROJECT. ALL OTHER TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE 2007 EDITION OF THE STANDARD SPECIFICATIONS.

TRAFFIC CONTROL FOR STAGE 1 IS SHOWN. TRAFFIC CONTROL FOR STAGE 2 WILL BE A MIRROR IMAGE OF STAGE 1.

WORK AREA

TEMPORARY CONCRETE BARRIER

IMPACT ATTENUATOR

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLAN
WB I-70 OVER WENDELL BRANCH
SN 060-0024

FAI 70
SECTION 60-(10,11)RS
MADISON COUNTY

SCALE: VERT. HORIZ.
DRAWN BY
DATE
CHECKED BY

PLOT DATE = #DATE#
FILE NAME = #FILE#
PLOT SCALE = #SCALE#
REFERENCE = #REF#

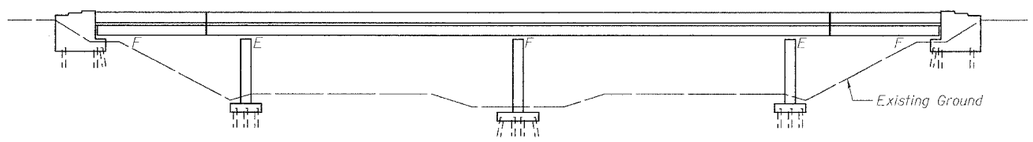
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET 1 OF 4

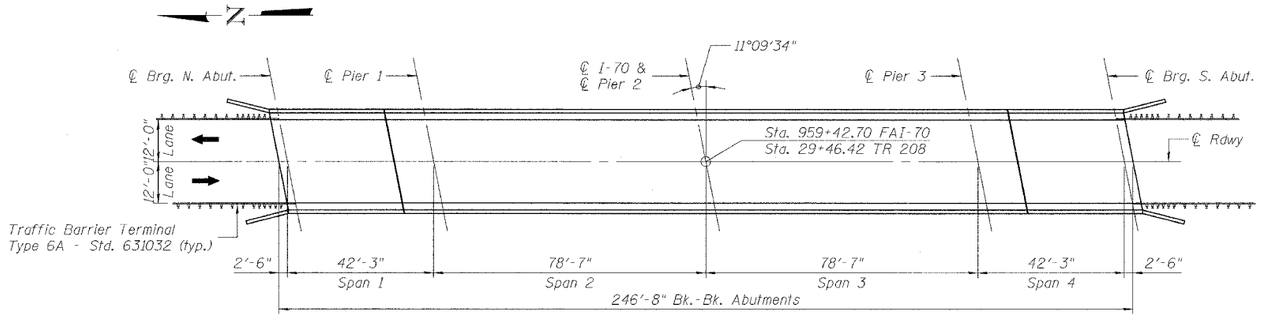
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-10HB-2	MADISON	156	118
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 76857

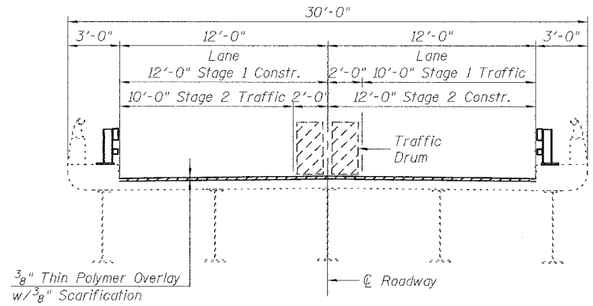
INDEX OF SHEETS



ELEVATION



PLAN



CROSS SECTION
(Looking South)

GENERAL NOTES

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 structural steel shall be AASHTO M 270 Grade 36, unless noted otherwise.

All new structural steel (for Floor Drain Extension) shall be shop painted with an inorganic zinc rich primer per AASHTO M300, Type I. Field painting of structural steel shall be done under a separate painting contract.

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

Field welding of construction accessories will not be permitted to beams or girders.

A Protective Coat shall be applied to the tops and inside faces of the parapets, sidewalks, and wings. The coat shall not be applied to the Polymer Overlay.

TOTAL BILL OF MATERIAL

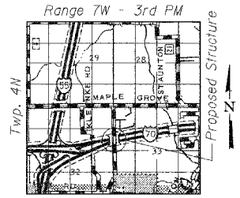
ITEM	UNIT	SUPER	SUB	TOTAL
Protective Coat	Sq Yd	290	--	290
Floor Drain Extension	Each	8	--	8
Steel Railing, Type 2399	Foot	491	--	491
Concrete Bridge Deck Scarification (3/8 Inch)	Sq Yd	654	--	654
Plug Existing Deck Drains	Each	20	--	20
Bridge Deck Thin Polymer Overlay 3/8"	Sq Yd	654	--	654
Silicone Joint Sealer, 1.5"	Foot	62	--	62
Deck Slab Repair (Full Depth, Type II)	Sq Yd	3	--	3
Deck Slab Repair (Partial)	Sq Yd	13	--	13

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED:	CDB	DRAWN:	SJS
CHECKED:	DCD	CHECKED:	CDB/DCD

STATE OF ILLINOIS
DAVID C. DEPP
081-005117
LICENSED
STRUCTURAL ENGINEER

Signed: David Depp
Date: 1-15-2007
Lic. Expires: 11-30-2008



LOCATION SKETCH

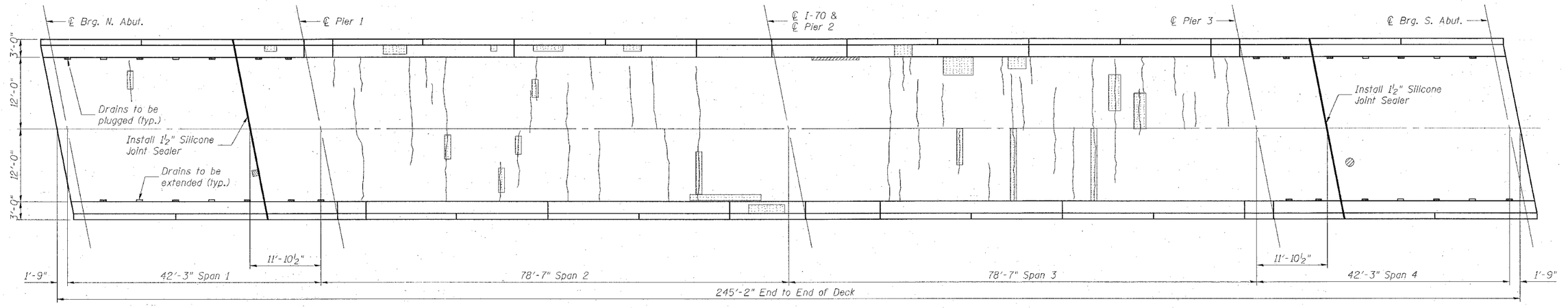
GENERAL PLAN
RIGGIN ROAD (TR 208) OVER
INTERSTATE 70
FAI ROUTE 70 SECTION 60-10HB-2
MADISON COUNTY
STATION 959+42.70
STRUCTURE NO. 060-0173

DATE: 01/12/2007 - 8:28:48 USER: DCD FILE: J:\JDQ\NO\42 IL-08\V#5 I-70 Bridge Repairs\15-SN060-0173 RigginRd\01plan.dgn

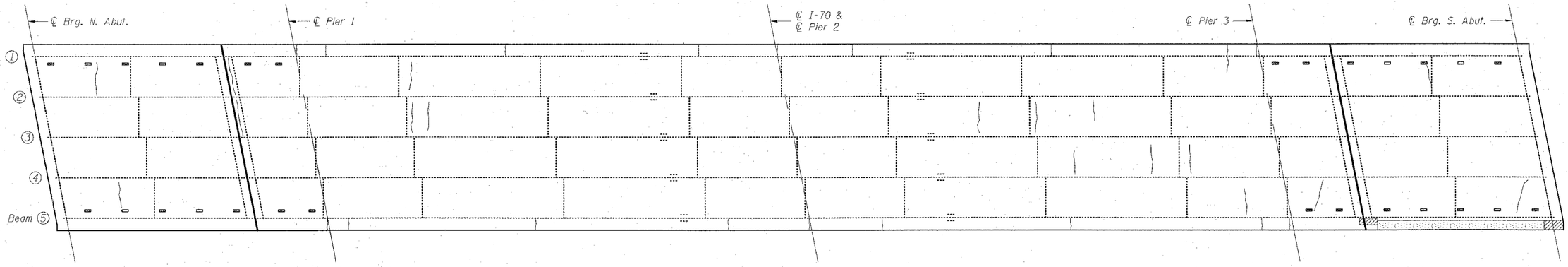
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-10HB-2	MADISON	156	119
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 76857

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



DECK PLAN-TOP



DECK PLAN-BOTTOM

LEGEND

- Hollow or Unsound Concrete (225 S.F.)
- Spalled Concrete (16 S.F.)
- Hairline Crack

NOTES:

Deck Condition Survey performed 8/14/2006.

The Engineer shall record actual locations of deck repair on the As-Built plans.

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED:	CDB	DRAWN:	P. Ray
CHECKED:	DCD	CHECKED:	CDB/DCD

DATE: $DATE$ - $TIME$ USER: $USER$ FILE: $FILE$

DECK PLAN

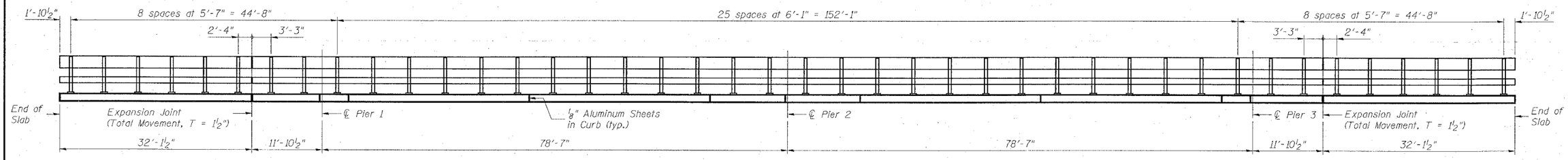
RIGGIN ROAD (TR 208) OVER
INTERSTATE 70
FAI ROUTE 70 SECTION 60-10HB-2
MADISON COUNTY
STATION 959+42.70
STRUCTURE NO. 060-0173

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

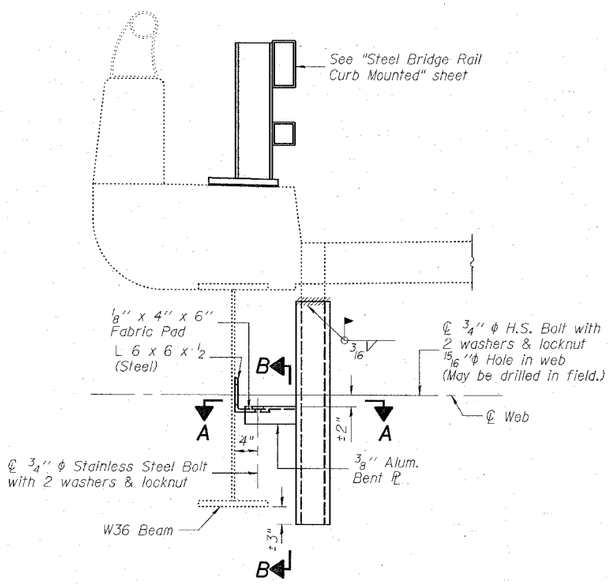
SHEET 3 OF 4

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-10HB-2	MADISON	156	120
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

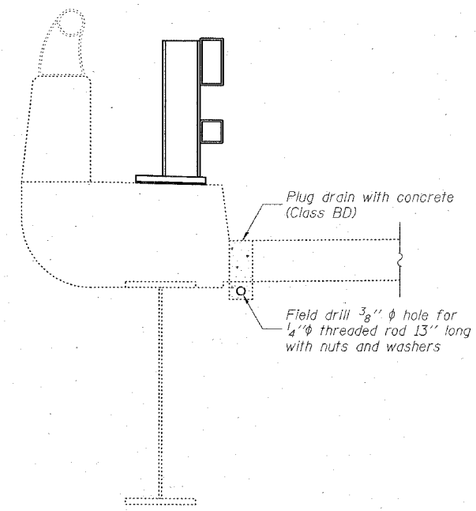
CONTRACT NO. 76857



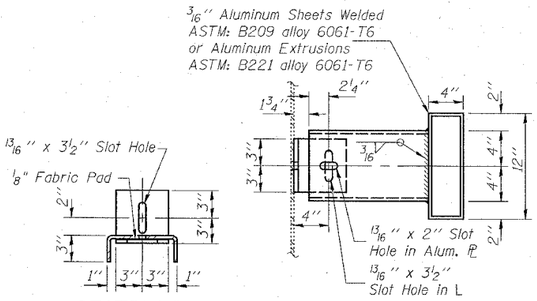
RAIL POST SPACING



SECTION AT DRAIN EXTENSION

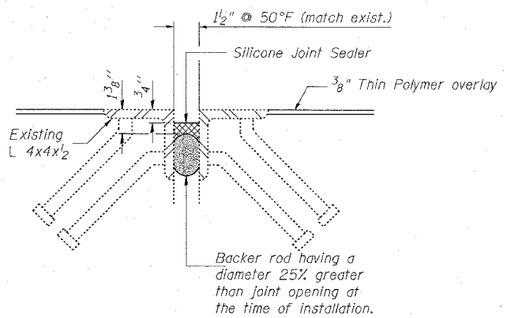


SECTION AT DRAIN PLUG

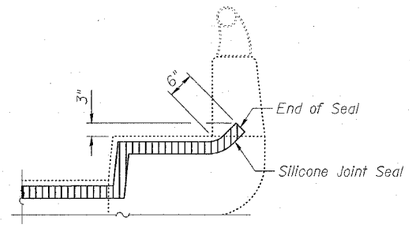


SECTION B-B

SECTION A-A



SILICONE JOINT SEALER DETAIL



TYPICAL END OF SEAL TREATMENT AT EXPANSION JOINT

BILL OF MATERIAL

Floor Drain Extension	Each	8
Plug Existing Deck Drains	Each	20
Silicone Joint Sealer, 1.5"	Foot	62

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED:	CDB	DRAWN:	P. Ray
CHECKED:	DCD	CHECKED:	CDB/DCD

DATE: $DATE$ - $TIME$ USER: $USER$ FILE: $FILE$

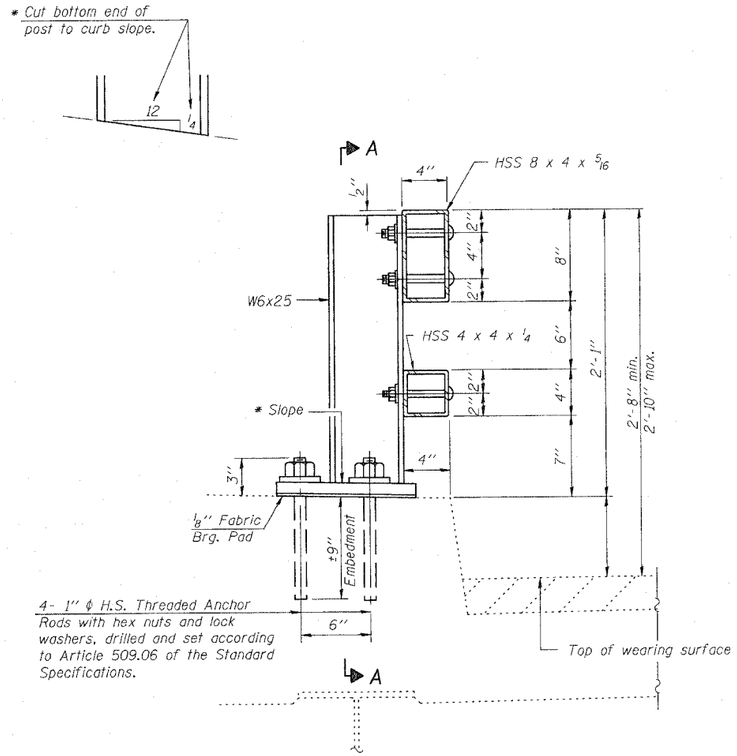
SUPERSTRUCTURE

RIGGIN ROAD (TR 208) OVER
INTERSTATE 70
FAI ROUTE 70 SECTION 60-10HB-2
MADISON COUNTY
STATION 959+42.70
STRUCTURE NO. 060-0173

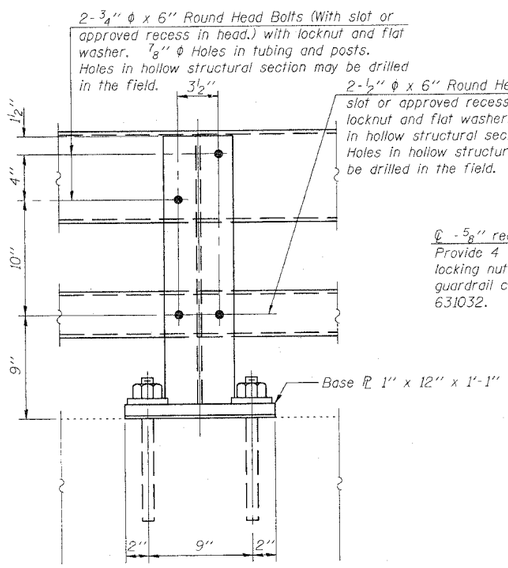
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-10HB-2	MADISON	156	121
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

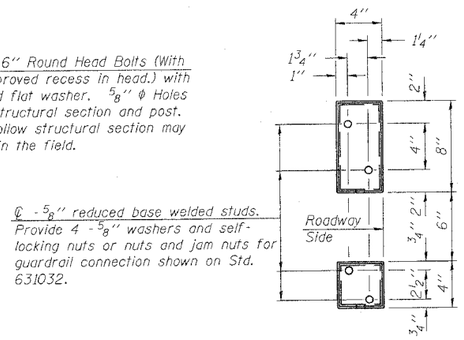
CONTRACT NO. 76857



SECTION AT RAIL POST

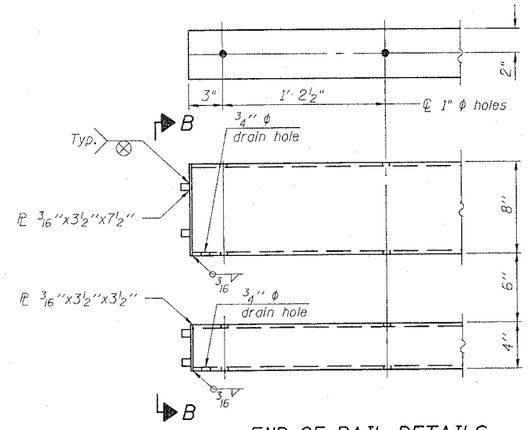


SECTION A-A

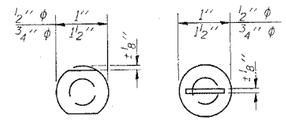


℄ - 5/8" reduced base welded studs. Provide 4 - 5/8" washers and self-locking nuts or nuts and jam nuts for guardrail connection shown on Std. 631032.

VIEW B-B

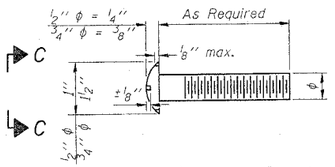


END OF RAIL DETAILS



Without Slot or Recess — With Slot

VIEW C-C

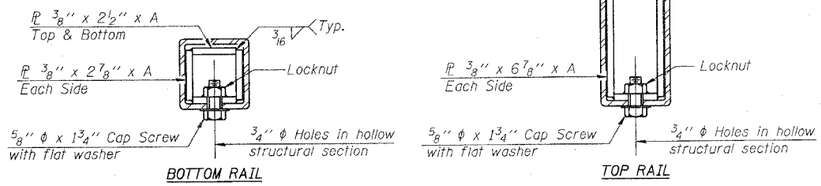


DETAIL OF 1/2" ϕ & 3/4" ϕ ROUND HEAD BOLTS

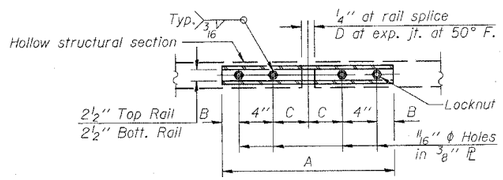
Notes:
All field drilled holes shall be coated with an approved zinc rich paint before erection.
Posts shall not be located closer than 1'-3" to an existing bridge expansion joint or end of bridge.
Steel Bridge Rail expansion joint shall be provided between any two (2) posts which span a bridge expansion joint. Bolts located at expansion joint shall be provided with locknuts and shall be tightened only to a point that will allow railing movement.
Provide one 1/8" and two 1/16" steel shims for 25% of the posts. Shims shall be similar to base plates in size and holes.
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type 2399	Foot	491

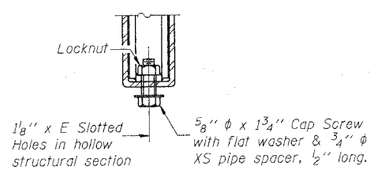


SECTIONS AT RAIL SPLICE



PLAN-BOTT. SPLICE PL TYPICAL

(6'-3" Maximum Post Spacing)



RAIL SPLICE CONNECTION AT EXPANSION JT.

SPLICE DIMENSIONS

T	D	A	B	C	E
≤4"	2 1/2"	1'-8"	2"	4"	2 1/2"
>4" ≤6 1/2"	3 3/4"	2'-0"	2 1/2"	5 1/2"	3 1/2"
>6 1/2" ≤9"	5"	2'-4"	3 1/2"	6 1/2"	9"
>9" ≤13"	7"	2'-10"	4 1/2"	8 1/2"	11"
Rail Splice	1/4"	1'-8"	2"	4"	—

T = Total movement at expansion joint as shown on the design plans.

STEEL RAILING, TYPE 2399
RIGGIN ROAD (TR 208) OVER INTERSTATE 70
FAI ROUTE 70 SECTION 60-10HB-2
MADISON COUNTY
STATION 959+42.70
STRUCTURE NO. 060-0173

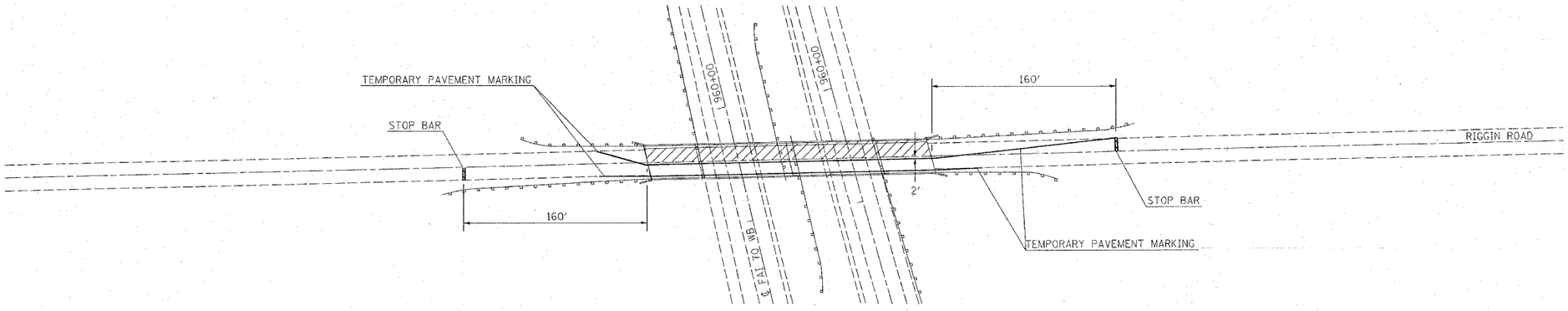
Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED:	CDB	DRAWN:	SJS
CHECKED:	DCD	CHECKED:	CDB/DCD

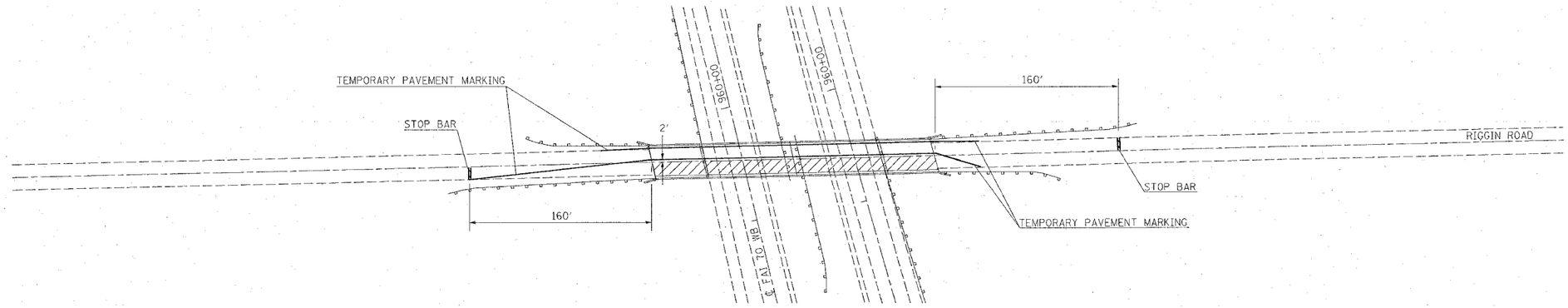
R-31 11-1-06

CONTRACT NO. 76857

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	122
STA. _____	TO STA. _____			
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		



STAGE 1



STAGE 2

NOTES:

TRAFFIC CONTROL SHALL CONFORM TO STANDARD 701316 ON RIGGIN ROAD. TRAFFIC CONTROL SHALL CONFORM TO STANDARD 701406 ON I-70 FOR PLACEMENT OF THE PROTECTIVE SHIELD. THE TRAFFIC CONTROL SHALL INCLUDE ALL DEVICES SHOWN ON THE STANDARDS INCLUDING TEMPORARY RUMBLE STRIPS ON RIGGIN ROAD.

A QUANTITY FOR TEMPORARY PAVEMENT MARKING IS PROVIDED IN THE EVENT THAT THE ORIGINAL NEEDS TO BE REPLACED. THE APPLICATION AND TYPE SHALL BE APPROVED BY THE RESIDENT ENGINEER. THIS ITEM OF WORK SHALL INCLUDE REMOVAL AND WILL ONLY BE PAID FOR ONCE REGARDLESS OF THE NUMBER OF SUBSEQUENT APPLICATIONS.

WORK AREA

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLAN
RIGGIN ROAD (TR 208) OVER I-70
SN 060-0173

FAI 70
SECTION 60-(10,11)RS
MADISON COUNTY

SCALE: VERT. HORIZ.
DRAWN BY
DATE
CHECKED BY

PLOT DATE = $DATE$
FILE NAME = $FILE$
PLOT SCALE = $SCALE$
REFERENCE = REF

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

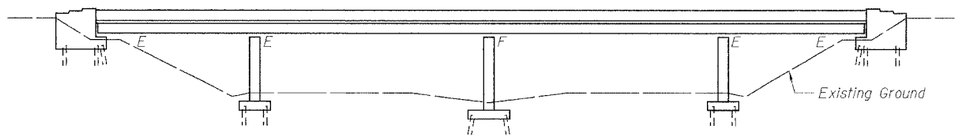
INDEX OF SHEETS

Sheet No.	Description
1	Gen. Plan, Gen. Notes & Total Bill of Mat'l
2	Deck Plan
3	Superstructure
4	Steel Bridge Rail

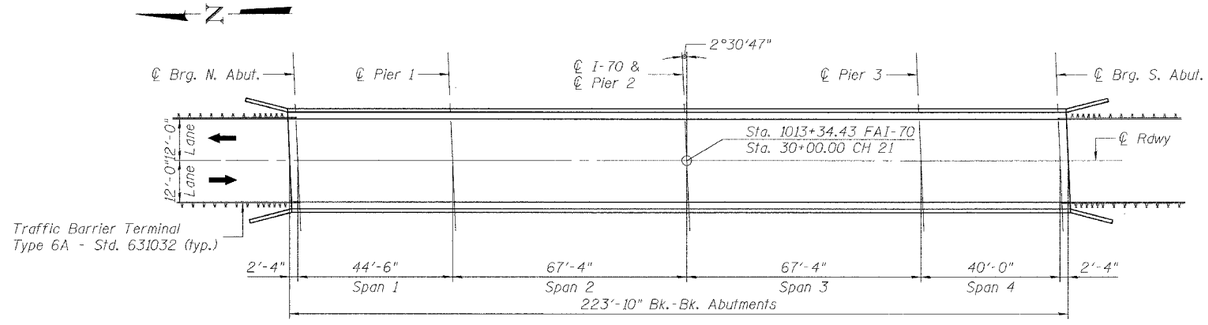
SHEET 1 OF 4

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-10HB-1	MADISON	156	123
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

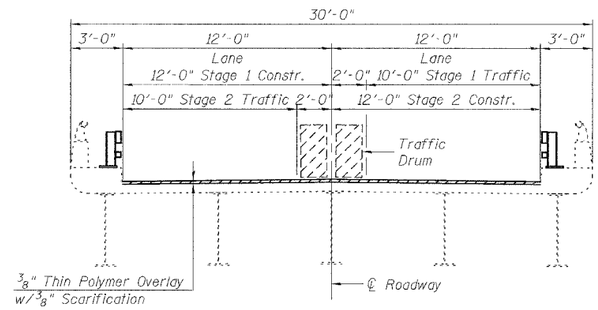
CONTRACT NO. 76857



ELEVATION



PLAN



CROSS SECTION
(Looking South)

GENERAL NOTES

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 structural steel shall be AASHTO M 270 Grade 36, unless noted otherwise.

All new structural steel (for Floor Drain Extension) shall be shop painted with an inorganic zinc rich primer per AASHTO M300, Type 1. Field painting of structural steel shall be done under a separate painting contract.

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

Field welding of construction accessories will not be permitted to beams or girders.

A Protective Coat shall be applied to the tops and inside faces of the parapets, sidewalks, and wings. The coat shall not be applied to the Polymer Overlay.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Protective Coat	Sq Yd	265	--	265
Floor Drain Extension	Each	12	--	12
Steel Railing, Type 2399	Foot	444	--	444
Concrete Bridge Deck Scarification (3/8 Inch)	Sq Yd	592	--	592
Plug Existing Deck Drains	Each	14	--	14
Bridge Deck Thin Polymer Overlay 3/8"	Sq Yd	592	--	592
Deck Slab Repair (Full Depth, Type II)	Sq Yd	12	--	12
Deck Slab Repair (Partial)	Sq Yd	122	--	122

LOCATION SKETCH

GENERAL PLAN
STAUNTON ROAD (CH 21) OVER
INTERSTATE 70
FAI ROUTE 70 SECTION 60-10HB-1
MADISON COUNTY
STATION 1013+34.43
STRUCTURE NO. 060-0182

Johnson, Depp & Quisenberry CONSULTING ENGINEERS Springfield, Illinois			
DESIGNED: CDB		DRAWN: SJS	
CHECKED: DCD		CHECKED: CDB/DCD	

STATE OF ILLINOIS
DAVID C. DEPP
081-005117
LICENSED
STRUCTURAL ENGINEER

Signed: David Depp
Date: 1-15-2009
Lic. Expires: 11-30-2008

FILE: J:\JOO\110142 IL-DBVV#5 I-70 Bridge Repairs\6-SN060-0182 Staunton Rd\01gplan.dgn USER: DCD
DATE: 01/12/2007 - 18:32:09

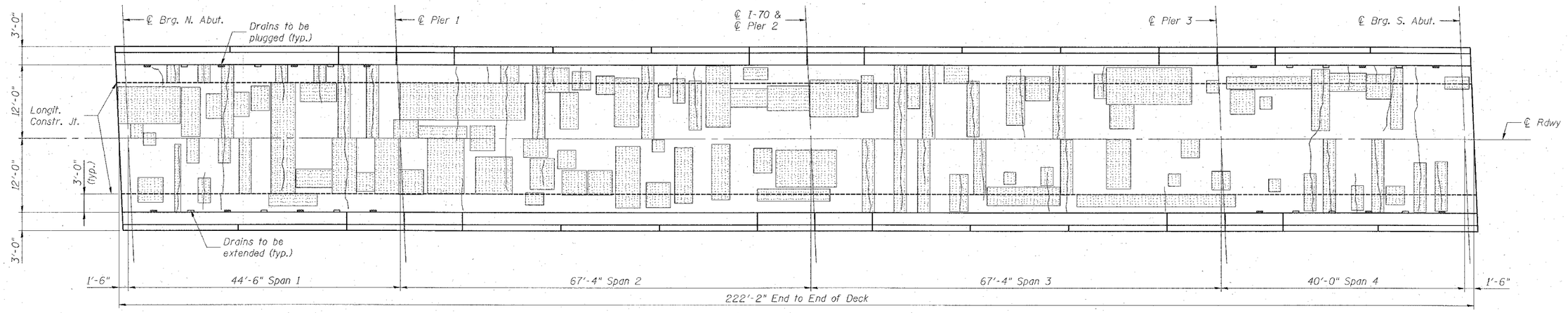
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET 2 OF 4

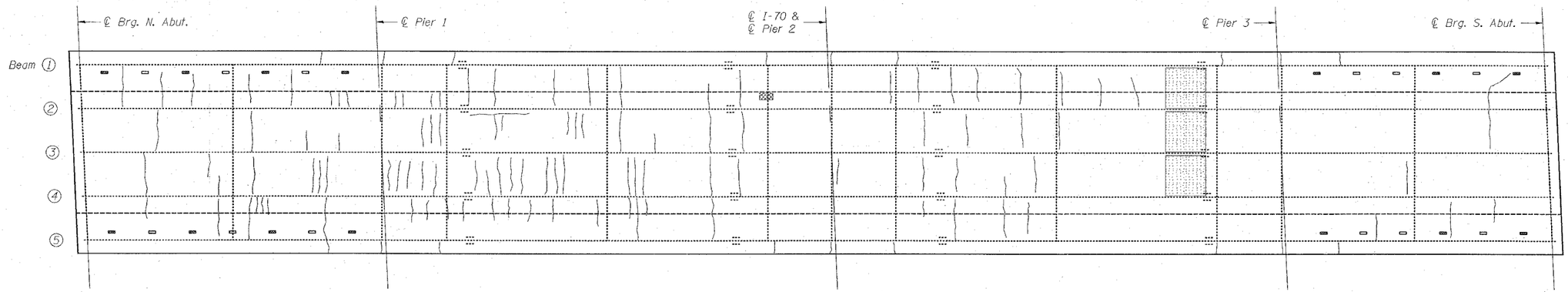
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-10HB-1	MADISON	156	124
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 76857

N



DECK PLAN-TOP



DECK PLAN-BOTTOM

LEGEND

- Hollow or Unsound Concrete (2293 S.F.)
- Spalled Concrete (0 S.F.)
- Spalled Concrete with Exposed Rebar (2 S.F.)
- Hairline Crack

NOTES:

Deck Condition Survey performed 8/14/2006.

The Engineer shall record actual locations of deck repair on the As-Built plans.

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED:	CDB	DRAWN:	P. Ray
CHECKED:	DCD	CHECKED:	CDB/DCD

DATE: $DATE$ - $TIME$ USER: $USER$ FILE: $FILE$

DECK PLAN

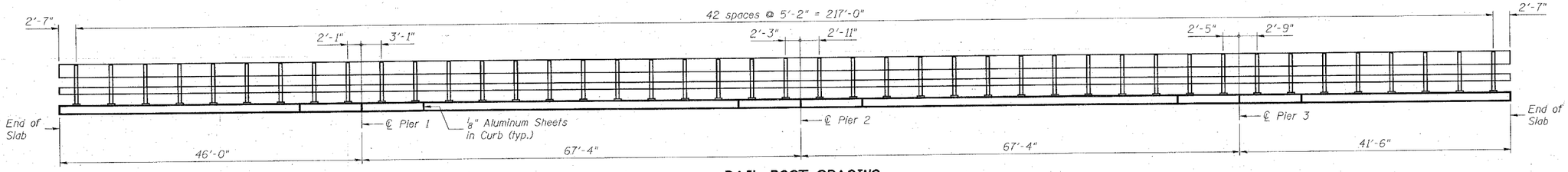
STAUNTON ROAD (CH 21) OVER
INTERSTATE 70
FAI ROUTE 70 SECTION 60-10HB-1
MADISON COUNTY
STATION 1013+34.43
STRUCTURE NO. 060-0182

SHEET 3 OF 4

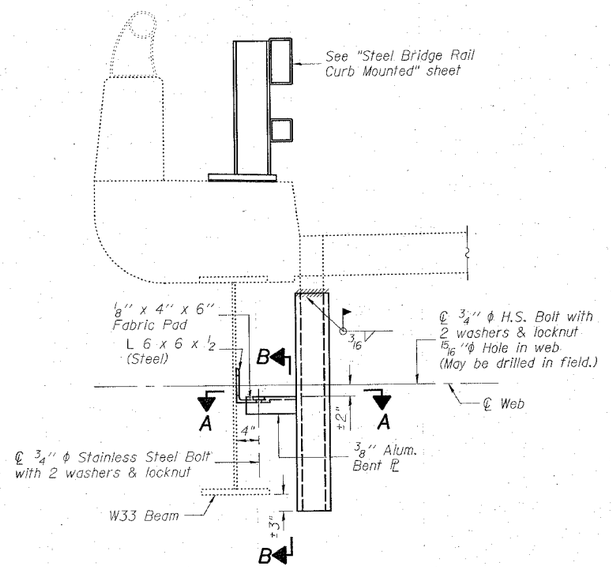
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-10HB-1	MADISON	156	125
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 76857

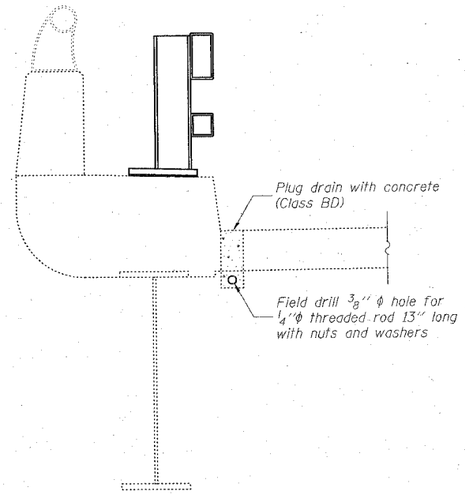
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



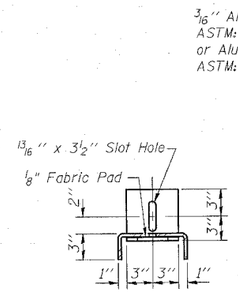
RAIL POST SPACING



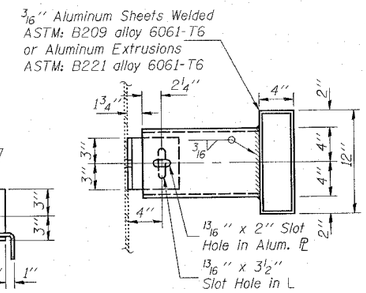
SECTION AT DRAIN EXTENSION



SECTION AT DRAIN PLUG



SECTION B-B



SECTION A-A

BILL OF MATERIAL

Floor Drain Extension	Each	12
Plug Existing Deck Drains	Each	14

Johnson, Depp & Quisenberry CONSULTING ENGINEERS Springfield, Illinois			
DESIGNED:	CDB	DRAWN:	P. Ray
CHECKED:	DCD	CHECKED:	CDB/DCD

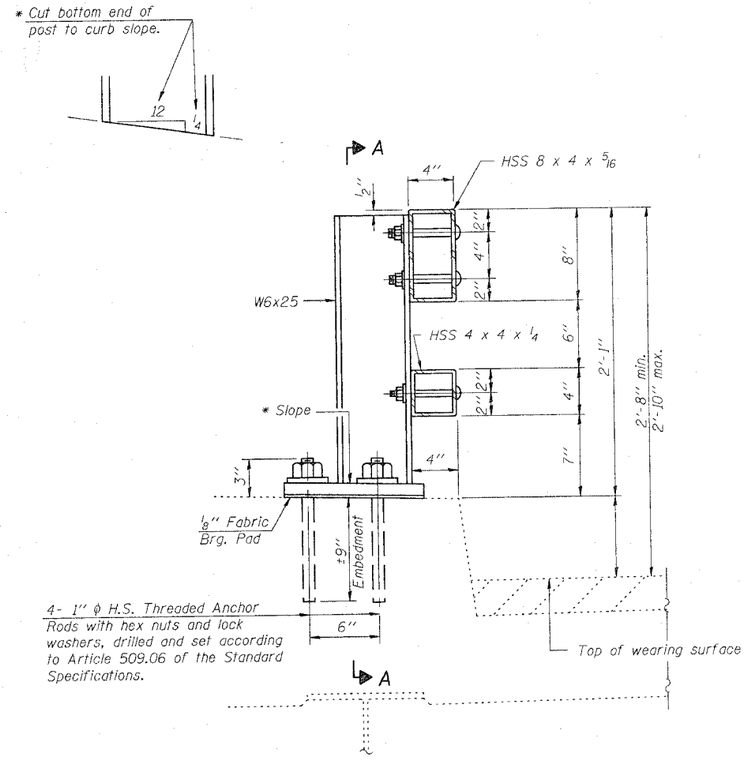
DATE: $DATE$ - $TIME$ USER: $USER$ FILE: $FILE$

SUPERSTRUCTURE
STAUNTON ROAD (CH 21) OVER
INTERSTATE 70
FAI ROUTE 70 SECTION 60-10HB-1
MADISON COUNTY
STATION 1013+34.43
STRUCTURE NO. 060-0182

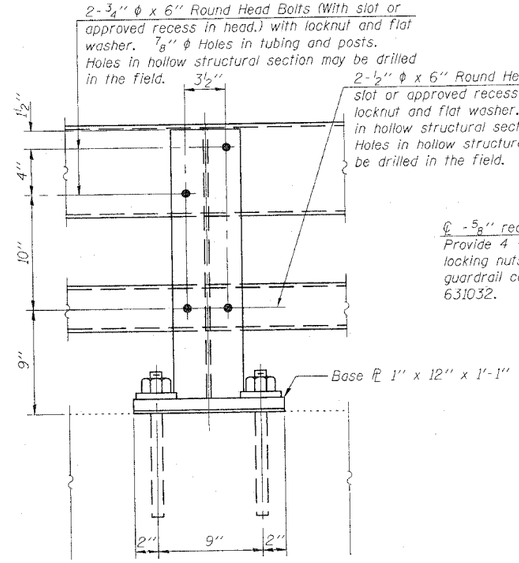
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-10HB-1	MADISON	156	126
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 76857

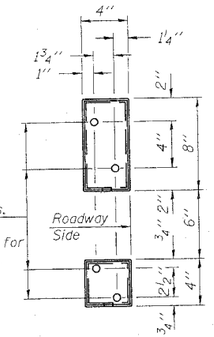
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SECTION AT RAIL POST

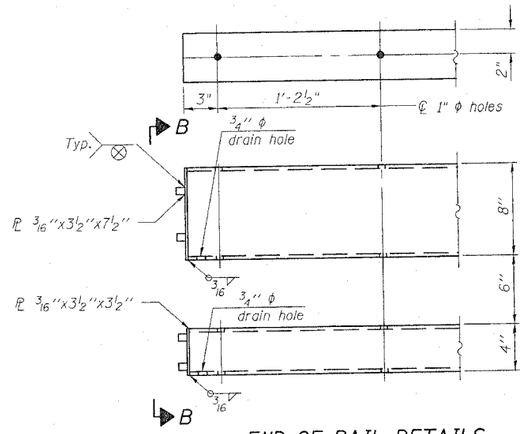


SECTION A-A

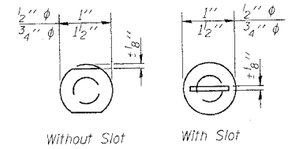


℄ - 5/8" reduced base welded studs. Provide 4 - 5/8" washers and self-locking nuts or nuts and jam nuts for guardrail connection shown on Std. 631032.

VIEW B-B



END OF RAIL DETAILS



VIEW C-C

DETAIL OF 1/2" ϕ & 3/4" ϕ ROUND HEAD BOLTS

Notes:

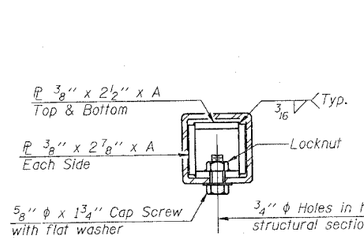
All field drilled holes shall be coated with an approved zinc rich paint before erection.

Posts shall not be located closer than 1'-3" to an existing bridge expansion joint or end of bridge.

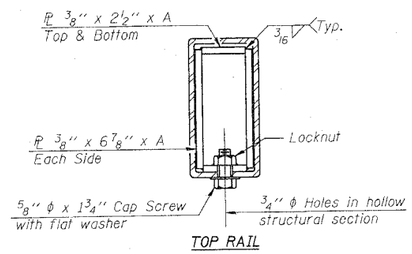
Steel Bridge Rail expansion joint shall be provided between any two (2) posts which span a bridge expansion joint. Bolts located at expansion joint shall be provided with locknuts and shall be tightened only to a point that will allow railing movement.

Provide one 1/8" and two 1/16" steel shims for 25% of the posts. Shims shall be similar to base plates in size and holes.

All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.



BOTTOM RAIL



TOP RAIL

SECTIONS AT RAIL SPLICE

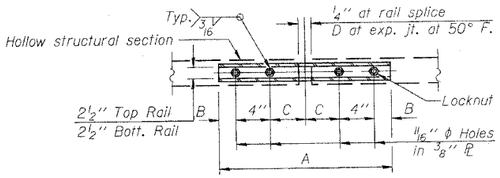
BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type 2399	Foot	444

SPLICE DIMENSIONS

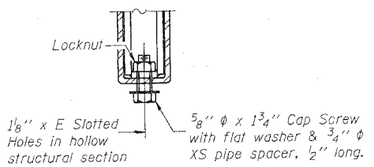
T	D	A	B	C	E
≤4"	2 1/2"	1'-8"	2"	4"	2 1/2"
>4" ≤6 1/2"	3 3/4"	2'-0"	2 1/2"	5 1/2"	3 1/2"
>6 1/2" ≤9"	5"	2'-4"	3 1/2"	6 1/2"	9"
>9" ≤13"	7"	2'-10"	4 1/2"	8 1/2"	11"
Rail Splice	1/4"	1'-8"	2"	4"	—

T = Total movement at expansion joint as shown on the design plans.

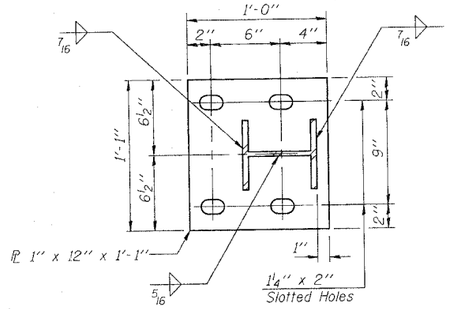


PLAN-BOTT. SPLICE ℄ TYPICAL

(6'-3" Maximum Post Spacing)



RAIL SPLICE CONNECTION AT EXPANSION JT.



BASE PLATE DETAIL

Johnson, Depp & Quisenberry CONSULTING ENGINEERS Springfield, Illinois	
DESIGNED: CDB	DRAWN: SJS
CHECKED: DCD	CHECKED: CDB/DCD

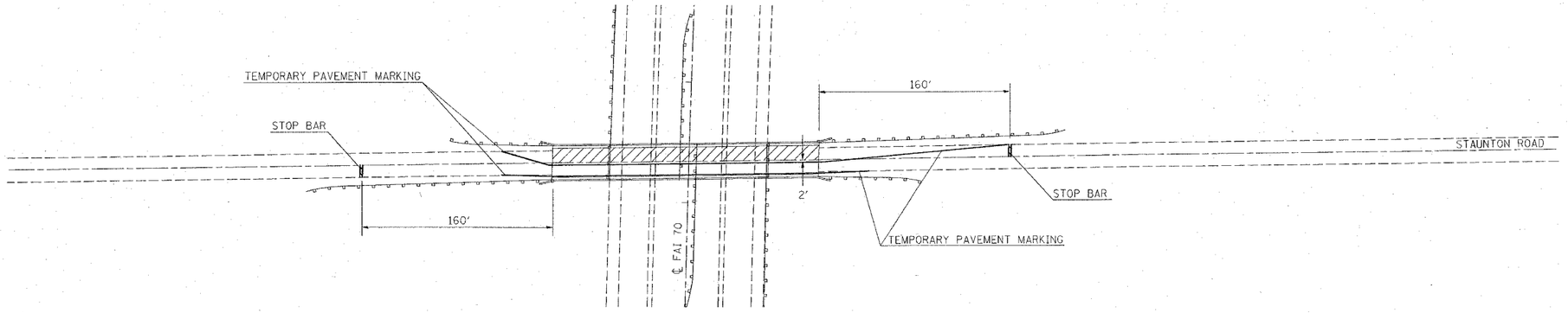
R-31 11-1-06

STEEL RAILING, TYPE 2399

STAUNTON ROAD (CH 21) OVER
INTERSTATE 70
FAI ROUTE 70 SECTION 60-10HB-1
MADISON COUNTY
STATION 1013+34.43
STRUCTURE NO. 060-0182

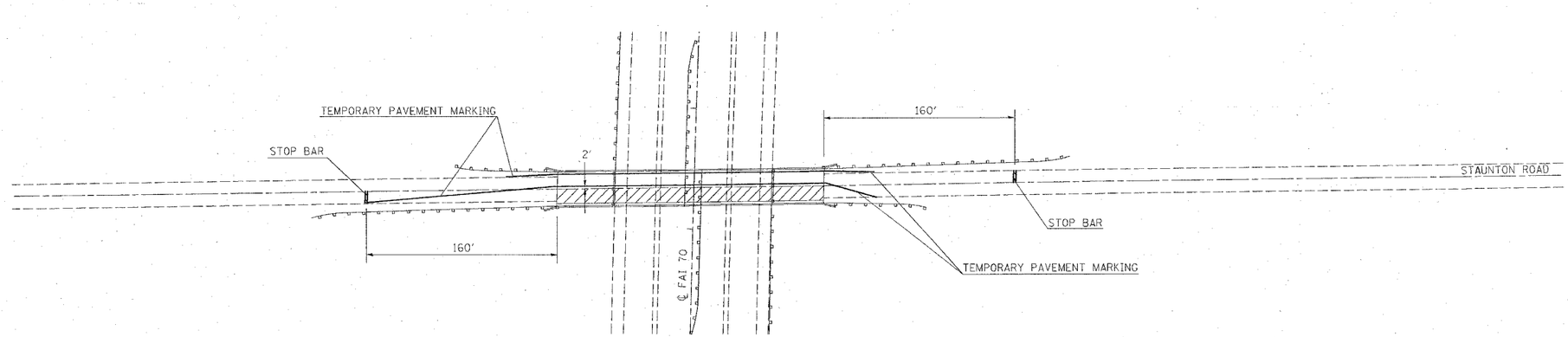
CONTRACT NO. 76857

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	127
STA. _____	TO STA. _____			
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		



STAGE 1

N



STAGE 2

NOTES:

TRAFFIC CONTROL SHALL CONFORM TO STANDARD 701316 ON STAUNTON ROAD. TRAFFIC CONTROL SHALL CONFORM TO STANDARD 701406 ON I-70 FOR PLACEMENT OF THE PROTECTIVE SHIELD. THE TRAFFIC CONTROL SHALL INCLUDE ALL DEVICES SHOWN ON THE STANDARDS INCLUDING TEMPORARY RUMBLE STRIPS ON STAUNTON ROAD.

A QUANTITY FOR TEMPORARY PAVEMENT MARKING IS PROVIDED IN THE EVENT THAT THE ORIGINAL NEEDS TO BE REPLACED. THE APPLICATION AND TYPE SHALL BE APPROVED BY THE RESIDENT ENGINEER. THIS ITEM OF WORK SHALL INCLUDE REMOVAL AND WILL ONLY BE PAID FOR ONCE REGARDLESS OF THE NUMBER OF SUBSEQUENT APPLICATIONS.

WORK AREA

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL PLAN
STAUNTON ROAD (CH 21) OVER I-70
SN 060-0182
FAI 70
SECTION 60-(10,11)RS
MADISON COUNTY

SCALE: VERT. HORIZ.
DRAWN BY
DATE
CHECKED BY

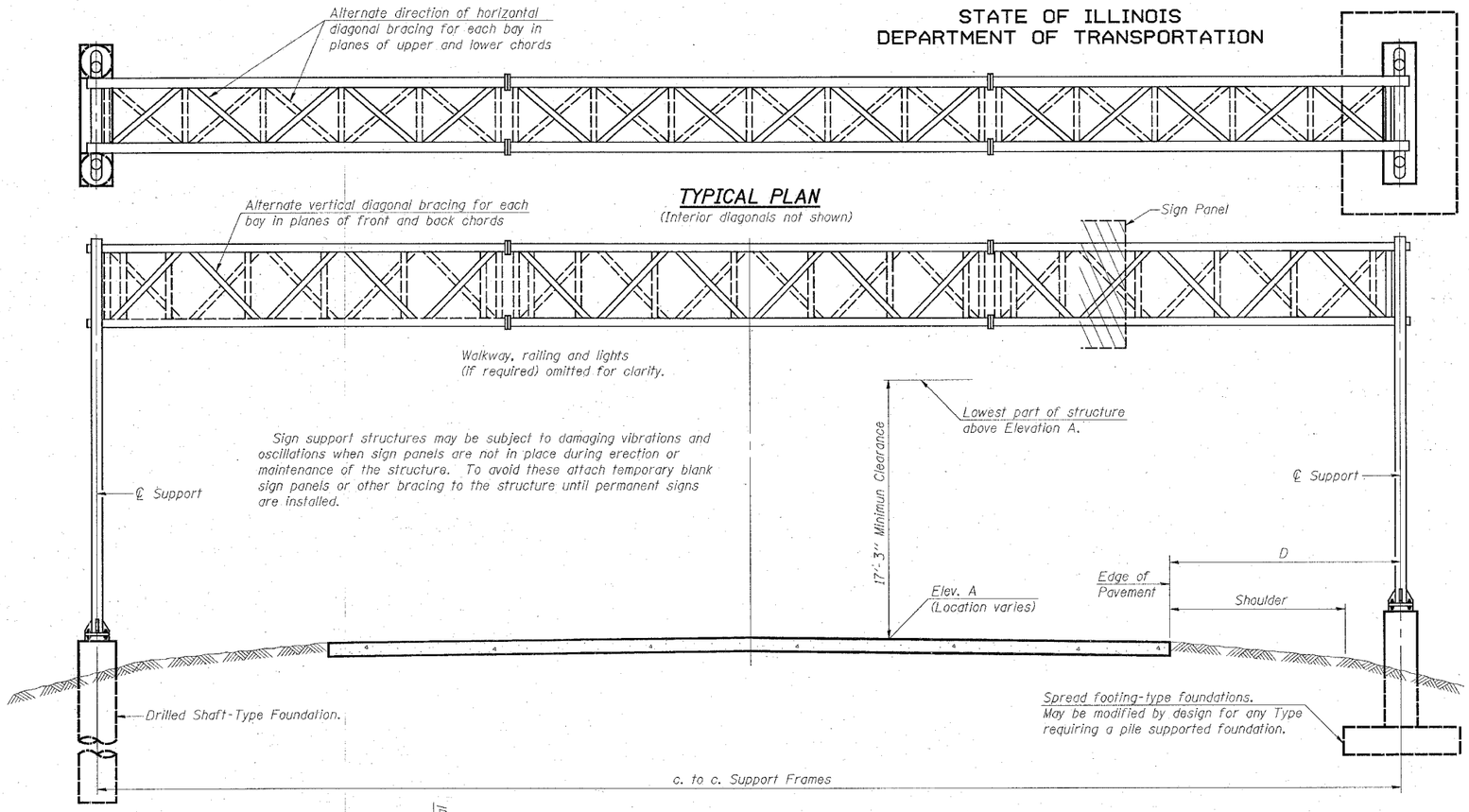
PLOT DATE = $DATE$
FILE NAME = $FILE$
PLOT SCALE = $SCALE$
REFERENCE = REF

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET 1 OF 10

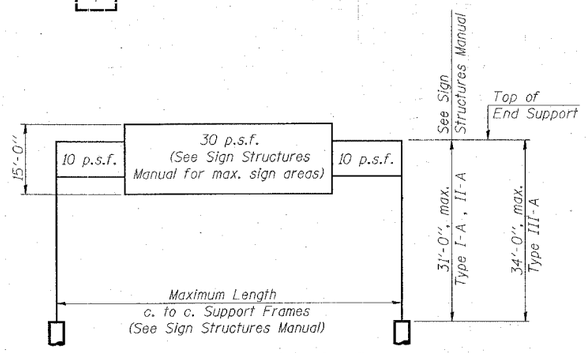
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	128
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 76857



TYPICAL PLAN

(Interior diagonals not shown)



DESIGN WIND LOADING DIAGRAM

Parameters shown are basis for I.D.O.T. Standards and Sign Manual Tables. Installations not within dimensional limits shown require special analysis for all components.

TYPICAL ELEVATION

(Looking at Face of Signs**)

Elev. A = Elevation at point of minimum clearance to sign, walkway support or truss.

Structure Number	Station	Design Truss Type	c. to c. Supports	Elev. A	Dim. D	Height of Tallest Sign	Total Sign Area
8S060107OL015.8	975+20	I-A	50'-0"	546.44	15'-0"	13'-6"	358

**Looking upstation for structures with signs both sides.

NUMBER	REVISION	DATE

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
OVERHEAD SIGN STRUCTURE SPAN TYPE I-A	Foot	50
OVERHEAD SIGN STRUCTURE SPAN TYPE II-A	Foot	
OVERHEAD SIGN STRUCTURE SPAN TYPE III-A	Foot	
OVERHEAD SIGN STRUCTURE WALKWAY TYPE A	Foot	32
CONCRETE FOUNDATIONS	Cu. Yds.	
DRILLED SHAFT CONCRETE FOUNDATIONS	Cu. Yds.	12.4

GENERAL NOTES

DESIGN: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. ("AASHTO Specifications")

CONSTRUCTION: Current (at time of letting) Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Special Provisions. ("Standard Specifications")

LOADING: 90 M.P.H. WIND VELOCITY

WIND LOADING: 30 p.s.f. normal to Sign Panel Area and truss elements not behind sign Loading Diagram.

WALKWAY LOADING: Dead load plus 500 lbs. concentrated live load.

DESIGN STRESSES:
Field Units
f'_c = 3,500 p.s.i.
fy = 60,000 p.s.i. (reinforcement)

WELDING: All welds to be continuous unless otherwise shown. All welding to be done in accordance with current AWS D1.1 and D1.2 Structural Welding Codes (Steel and Aluminum) and the Standard Specificiations.

MATERIALS: Aluminum Alloys as shown throughout plans. All Structural Steel Pipe shall be ASTM A53 Grade B with a minimum yield of 35,000 p.s.i., or A500 Grade B or C with a minimum yield of 46,000 p.s.i. If A500 pipe is substituted for A53, then the outside diameter shall be as detailed and wall thickness greater than or equal to A53.
All Structural Steel Plates and Shapes shall conform to AASHTO M270 Gr. 36, Gr. 50 or Gr. 50W*. Stainless steel for shims, sleeves and handhole covers shall be ASTM A240, Type 302 or 304, or another alloy suitable for exterior exposure and acceptable to the Engineer.
The steel pipe and stiffening ribs at the base plate for the column shall have a minimum longitudinal Charpy V-Notch (CVN) energy of 15 lb.-ft. at 40° F. (Zone 2) before galvanizing.

FASTENERS FOR ALUMINUM TRUSSES: All bolts noted as "high strength" must satisfy the requirements of AASHTO M164 (ASTM A325), or approved alternate, and must have matching lock nuts. Threaded studs for splices (if Members interfere) must satisfy the requirements of ASTM A449, ASTM A193, Grade B7, or approved alternate, and must have matching lock nuts. Bolts and lock nuts not required to be high strength must satisfy the requirements of ASTM A307. All bolts and lock nuts must be hot dip galvanized per AASHTO M232. The lock nuts must have nylon or steel inserts. A stainless steel flat washer conforming to ASTM A240 Type 302 or 304, is required under both head and nut or under both nuts where threaded studs are used. High strength bolt installation shall conform to Article 505.04 (f) (2)d of the IDOT Standard Specifications for Road and Bridge Construction. Rotational capacity ("ROCAP") testing of bolts will not be required.

U-BOLTS AND EYEBOLTS: U-Bolts and Eyebolts must be produced from ASTM A276 Type 304, 304L, 316 or 316L, Condition A, cold finished stainless steel, or an equivalent material acceptable to the Engineer. All nuts for U-Bolts and Eyebolts must be lock nuts equivalent to ASTM A307 with nylon or steel inserts and hot dip galvanized per AASHTO M232. A stainless steel flat washer conforming to ASTM A240, Type 302 or 304, is required under each U-Bolt and Eyebolt lock nut.

GALVANIZING: All Steel Grating, Plates, Shapes and Pipe shall be Hot Dip Galvanized after fabrication in accordance with AASHTO M111. Painting is not permitted.

ANCHOR RODS: Shall conform to AASHTO M314 Gr. 36 or 55 with a minimum Charpy V-Notch (CVN) energy of 15 lb.-ft. at 40° F.

CONCRETE SURFACES: All concrete surfaces above an elevation 6" below the lowest final ground line at each foundation shall be cleaned and coated with Bridge Seat Sealer in accordance with the Standard Specifications.

REINFORCEMENT BARS: Reinforcement Bars designated (E) shall be epoxy coated in accordance with the Standard Specifications.

* If M270 Gr. 50W (M222) steel is proposed, chemistry for plate to be used shall first be approved by the Engineer as suitable for galvanizing and welding.

OVERHEAD SIGN STRUCTURES
GENERAL PLAN & ELEVATION
ALUMINUM TRUSS & STEEL SUPPORTS

FAI ROUTE 70
SECTION 60-(10,11)RS
MADISON COUNTY

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED:	CDB	DRAWN:	SJS
CHECKED:	DCD	CHECKED:	CDB/DCD

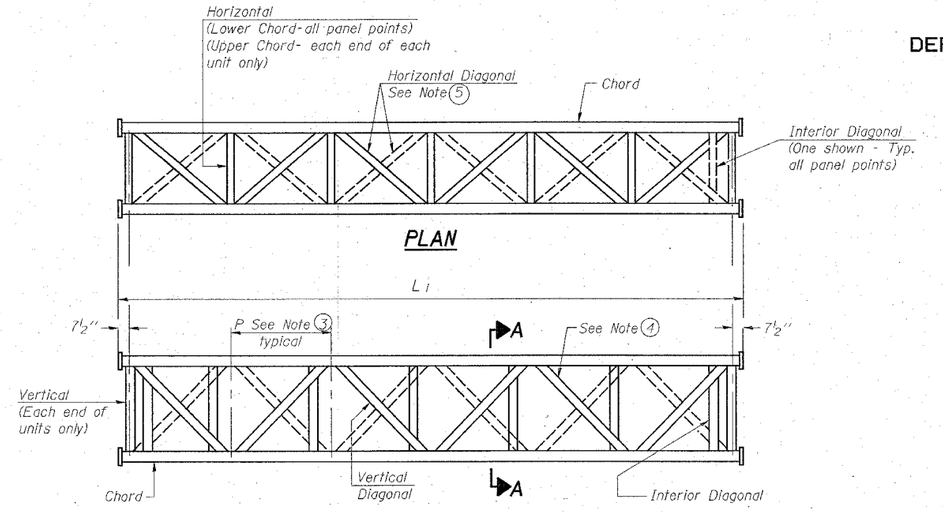
OS-A-1 7/01/2006

DATE: $DATE$ - $TIME$ USER: $USER$ FILE: $FILE$

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

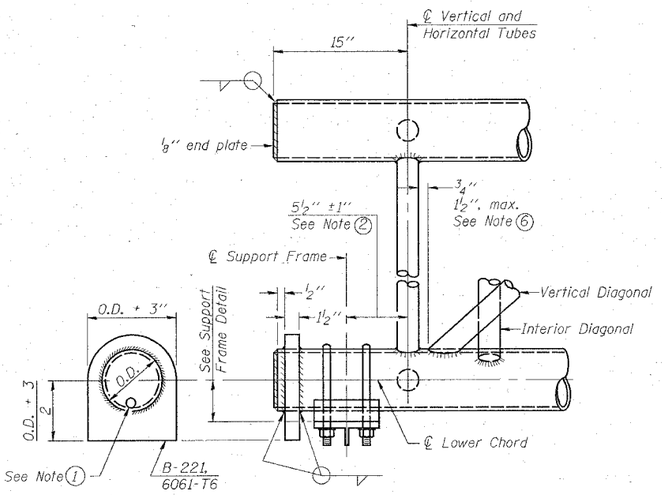
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	129
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 76857

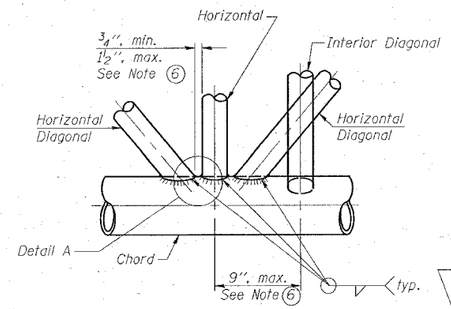


ELEVATION
TYPICAL INTERIOR UNIT

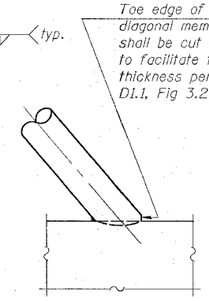
Even number of panels/interior unit required.



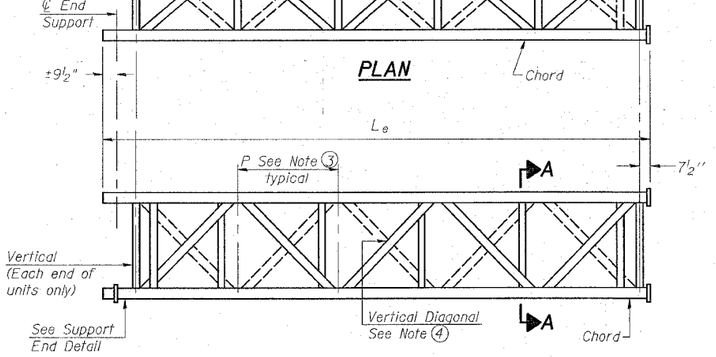
SUPPORT END DETAIL FOR EXTERIOR UNIT



TYPICAL JOINT DETAILS

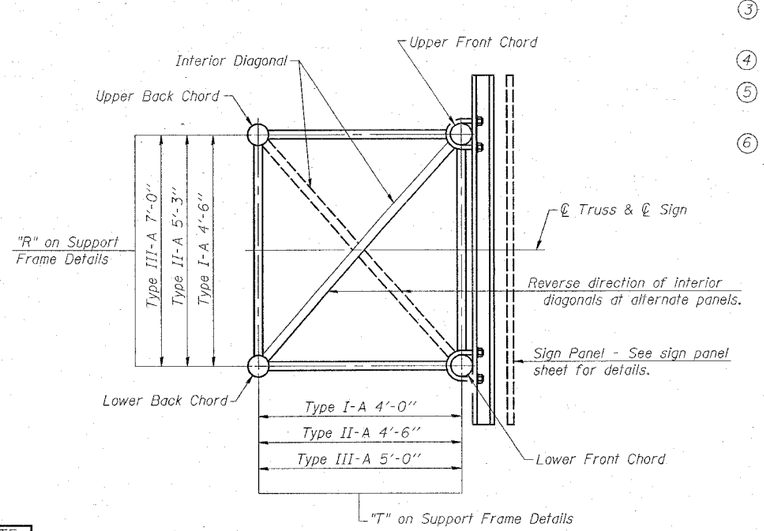


DETAIL A



ELEVATION
TYPICAL EXTERIOR UNIT

Even or odd number of panels/exterior units allowed.



SECTION A-A

NOTES

(1) Contractor may alternatively use standard aluminum drive-fit cap to close end. ½" ϕ drain hole in end plate/drive-fit cap. (Typ. at ends of all chords)

(2) 5½" end dimension may vary by ±1" to provide uniform panel spacing (P).

(3) Panel spacing (P) shall be uniform for entire truss and between 4'-0" and 5'-0" for Type I-A or 4'-0" and 5'-6" for Types II-A and III-A.

(4) Vertical Diagonals in front and back face shall alternate.

(5) Hidden lines show wind bracing alternates direction between planes of top and bottom chords.

(6) All diagonals shall be detailed for minimum offset from the panel point based on the following: Offset shall be such as to provide a ¾" minimum to 1½" maximum clearance between any diagonal and any horizontal or vertical member, and to provide clearance for U-bolt connections of signs or walkway brackets.

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED:	CDB	DRAWN:	SJS
CHECKED:	DCD	CHECKED:	CDB/DCD

OS-A-2 7/01/2006

NUMBER	REVISION	DATE

OVERHEAD SIGN STRUCTURES
ALUMINUM TRUSS DETAILS
FOR TRUSS TYPES I-A, II-A AND III-A

FAI ROUTE 70
SECTION 60-(10,11)RS
MADISON COUNTY

FILE: $FILE$ USER: $USER$ - $TIME$ DATE: $DATE$

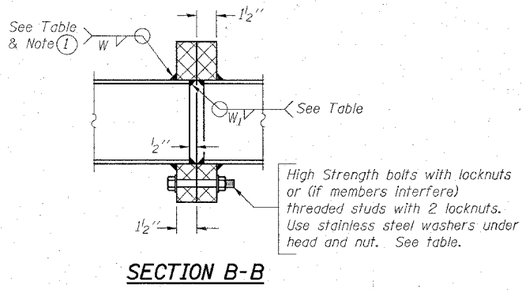
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	130
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 76857

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

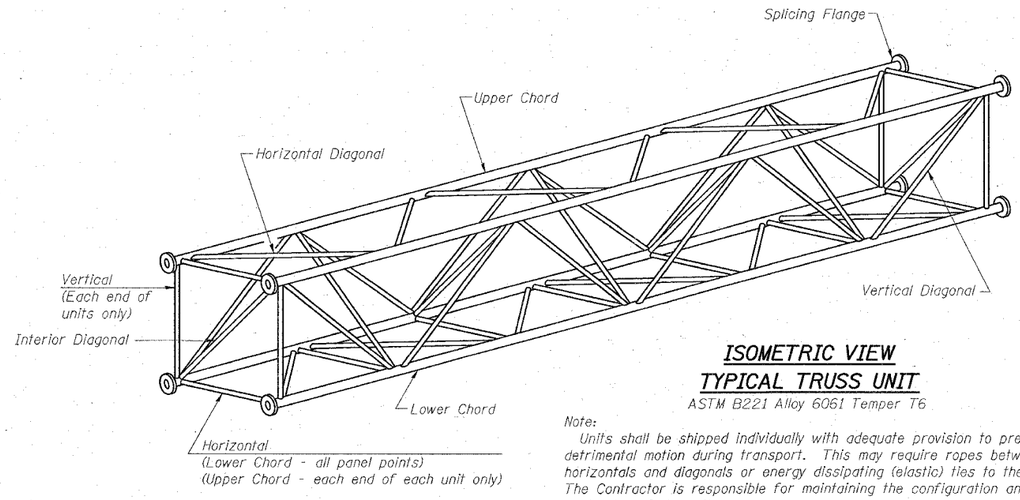
TRUSS UNIT TABLE

Structure Number	Station	Design Truss Type	Exterior Units (2)			Interior Unit				Upper & Lower Chord		Verticals; Horizontals; Vertical, Horizontal, and Interior Diagonals		Camber at Midspan	Splicing Flange					
			No. Panels per Unit	Unit Lgth.(L_e)	Panel Lgth.(P)	No. Req'd.	No. Panels per Unit	Unit Lgth.(L_i)	Panel Lgth.(P)	O.D.	Wall	O.D.	Wall		Bolts		Weld Sizes		A	B
															No./Splice	Dia.	W	W_1		
8S0601070L015.8	975+20	I-A	5	25'-10"	4'-9½"	0	-	-	-	5"	¼"	2½"	¼"	⅝"	6	⅞"	5/16"	¼"	8¾"	11¾"



SECTION B-B

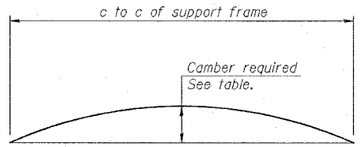
(1) Splicing Flanges shall be attached to each truss unit with the truss shop assembled to camber shown. Truss units shall be in proper alignment and flange surfaces shall be shop bolted into full contact before welding. Sufficient external welds or tacks shall be made to secure flanges until remaining welds are made after disassembly. Adjacent flanges shall be "match marked" to insure proper field assembly.



ISOMETRIC VIEW
TYPICAL TRUSS UNIT

ASTM B221 Alloy 6061 Temper T6

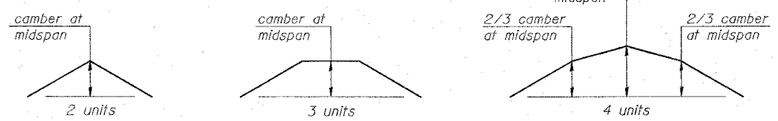
Note:
Units shall be shipped individually with adequate provision to prevent detrimental motion during transport. This may require ropes between horizontals and diagonals or energy dissipating (elastic) ties to the vehicle. The Contractor is responsible for maintaining the configuration and protection of the units.



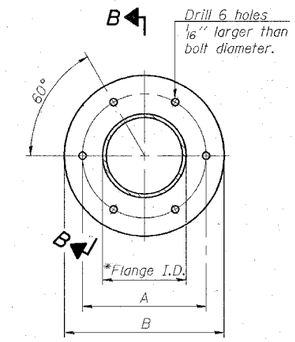
CAMBER DIAGRAM

Camber curve shown is theoretical. Actual camber attained by slope changes at splices between units.

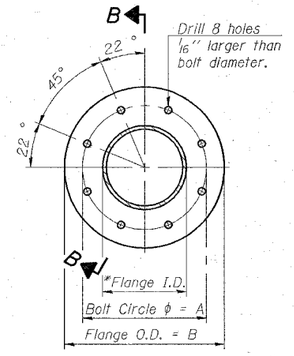
CAMBER ATTAINMENT EXAMPLES:



Camber shown is for fabrication only, measured with truss fully supported. (No-load condition)



TRUSS TYPES I-A, II-A, & III-A



TRUSS TYPES II-A & III-A

SPLICING FLANGES

ASTM B221, Alloy 6061-T6
or ASTM B209, Alloy 6061-T651
*To fit O.D. of Chord with maximum gap of 1/16".

NUMBER	REVISION	DATE

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED:	CDB	DRAWN:	SJS
CHECKED:	DCD	CHECKED:	CDB/DCD

OS4-A-2 7/01/2006

DATE: $DATE$ - $TIME$ USER: $USER$ FILE: $FILE$

OVERHEAD SIGN STRUCTURES
ALUMINUM TRUSS DETAILS
FOR TRUSS TYPES I-A, II-A AND III-A

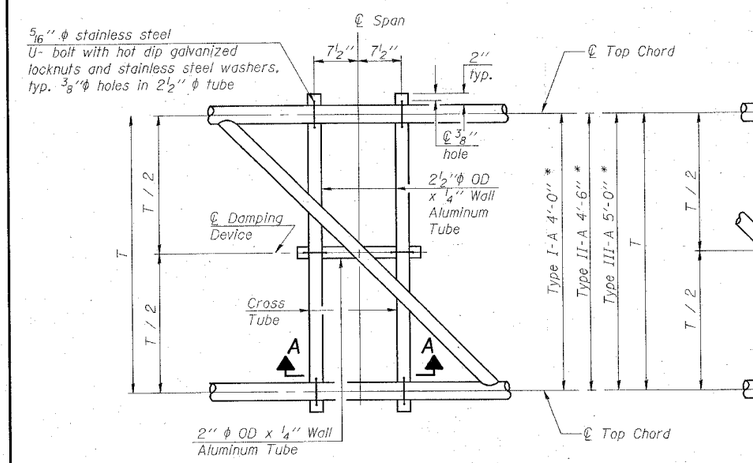
FAI ROUTE 70
SECTION 60-(10,11)RS
MADISON COUNTY

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

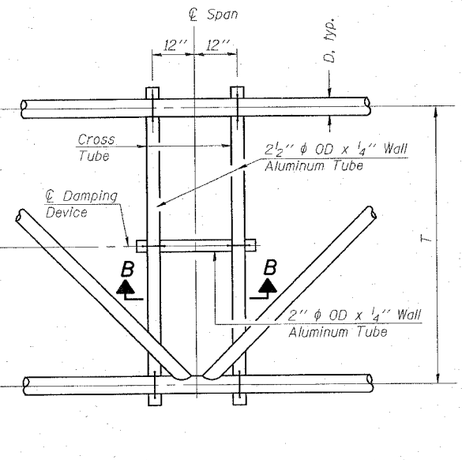
* Center of horizontal to center of splice dimension may vary. Verify before drilling holes in mounting tube.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	131
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

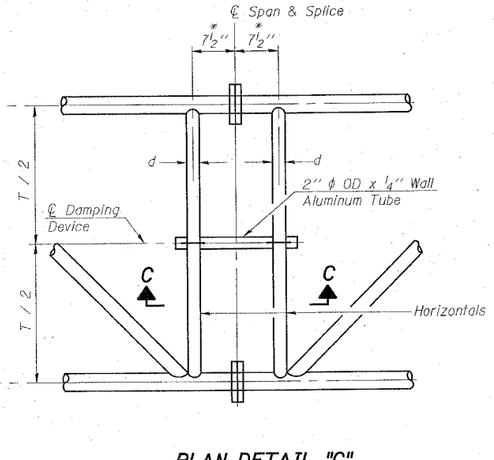
CONTRACT NO. 76857



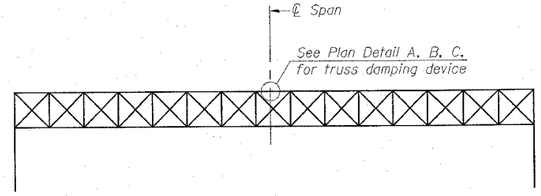
PLAN DETAIL "A"
℄ Span between Panel Points



PLAN DETAIL "B"
℄ Span at Panel Point



PLAN DETAIL "C"
℄ Span at ℄ Chord Splice



ELEVATION
Aluminum Overhead Sign Truss

NOTES

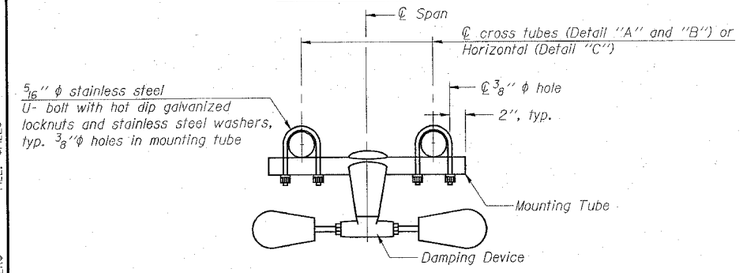
Damper: One damper per truss. (31 lbs. Stockbridge-Type Aluminum) Cost included in Overhead Sign Structure...

Materials: Aluminum tubes shall be ASTM B221 alloy 6061 temper T6. Cost included in Overhead Sign Structure...

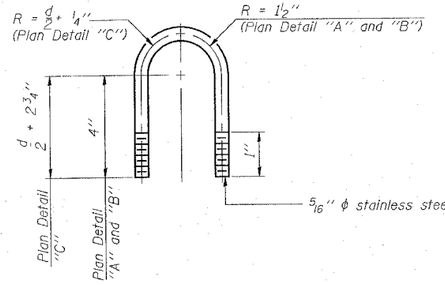
SECTION A-A

SECTION B-B

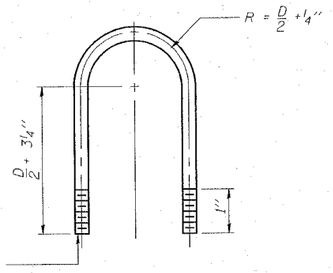
SECTION C-C



TRUSS DAMPING DEVICE CONNECTION DETAIL
(Typical)



DAMPING DEVICE MOUNTING TUBE U-BOLT DETAIL
(Typical)



TOP CHORD TO CROSS TUBE U-BOLT DETAIL
(Typical - Detail "A" and "B")

Johnson, Depp & Quisenberry CONSULTING ENGINEERS Springfield, Illinois	
DESIGNED: CDB	DRAWN: SJS
CHECKED: DCD	CHECKED: CDB/DCD

OS-A-D 7/01/2006

OVERHEAD SIGN STRUCTURE DAMPING DEVICE

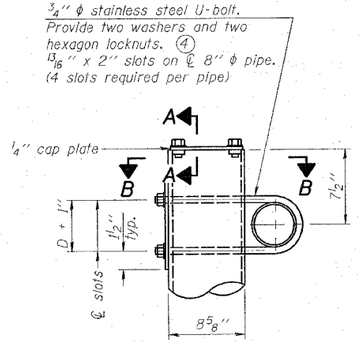
FAI ROUTE 70
SECTION 60-(10,11)RS
MADISON COUNTY

DATE: $DATE$ - $TIME$ USER: $USER$ FILE: $FILE$

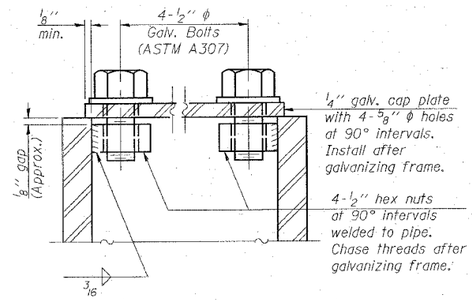
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	132
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 76857

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

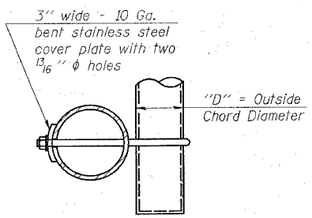


DETAIL A

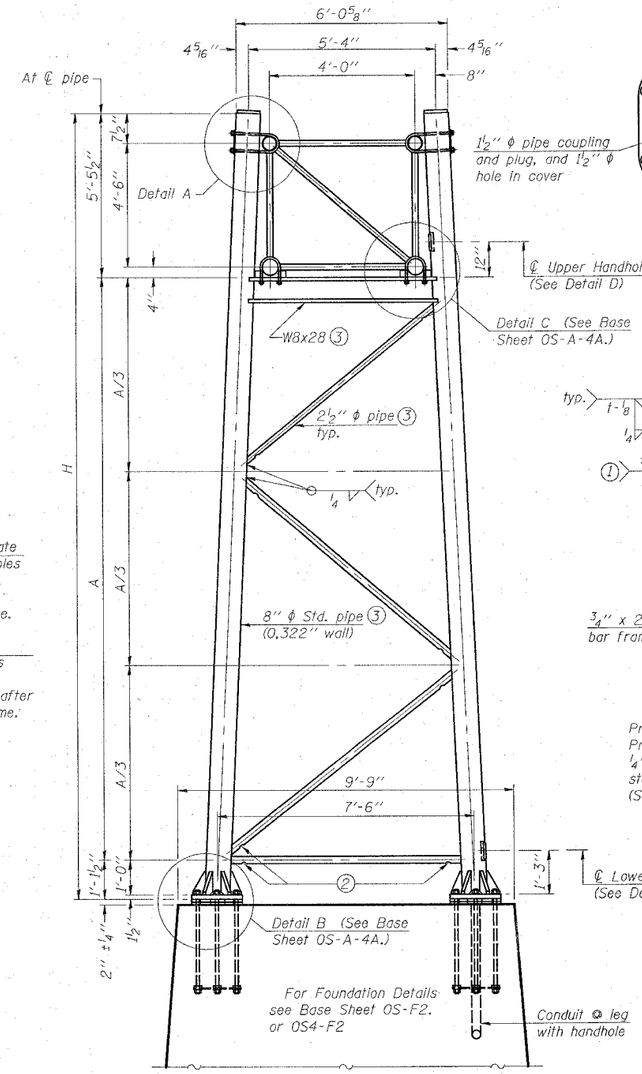


SECTION A-A

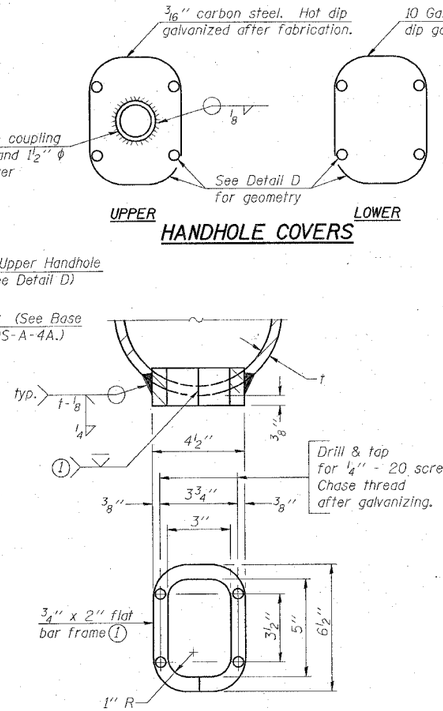
As an alternate to bolts, may use galvanized drive-fit caps installed after galvanizing frame.



SECTION B-B



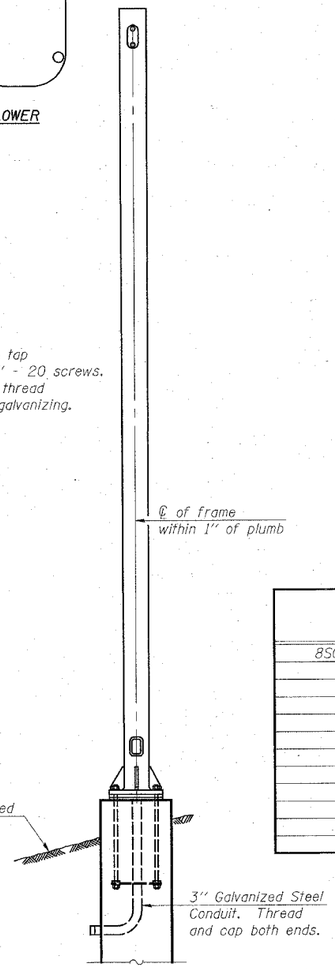
SIDE ELEVATION



HANDHOLE COVERS

Provide 6 1/2" x 4 1/2" cover.
Provide 4-5/16" ϕ holes in cover for 1/4"-20 round head hot dip galvanized or stainless steel machine screws.
(See cover details)

DETAIL D



END ELEVATION

Support Design Loads: See Base Sheet OS-A-1 for design and loading criteria.
Load combinations checked include deadload plus:
a) 100% wind normal to sign, 20% parallel to sign
b) 60% wind normal to sign, 30% parallel to sign

(1) In lieu of fabricated handhole frame as shown, may cut from 2" plate (rolling direction vertical). All cut faces to be ground to ANSI Roughness of 500 **μ**in or less.

(2) Galvanizing vent holes of adequate size shall be provided on underside at each end of bracing pipes. Alternately, holes may be provided in wall of pipe column. All vent holes shall be drilled and de-burred, typ.

(3) Steel pipe, plate, carbon steel handhole covers and rolled sections shall be hot dip galvanized after fabrication. Painting is not permitted. See Base Sheet OS-A-1.

(4) See General Notes for fasteners.

(5) Dimensions shown are based on selection criteria in the Sign Structures Manual. Nonstandard applications must have dimensions verified or amended as appropriate.

(6) "H" based on 15'-0" or actual sign height, whichever is greater.

Structure Number	Station	Support Left	Support Right	H (6)	A
8S0601070L015.8	975+20			26'-7"	20'-0"

8" ϕ PIPE TRUSS SUPPORT FRAME

NUMBER	REVISION	DATE

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED:	CDB	DRAWN:	SJS
CHECKED:	DCD	CHECKED:	CDB/DCD

OS-A-4 7/01/2006

OVERHEAD SIGN STRUCTURES
SUPPORT FRAME FOR TYPE I-A ALUMINUM TRUSS

FAI ROUTE 70
SECTION 60-(10,11)RS
MADISON COUNTY

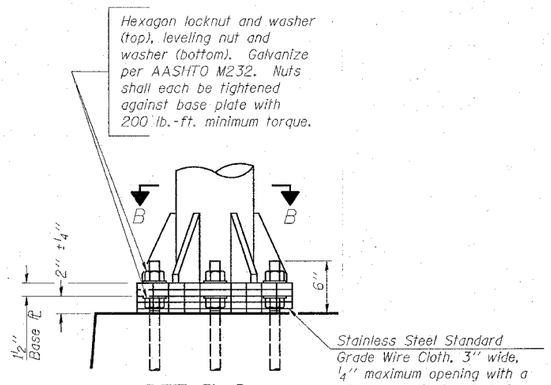
DATE: $DATE$ - $TIME$ USER: $USER$ FILE: $FILE$

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET 6 OF 10

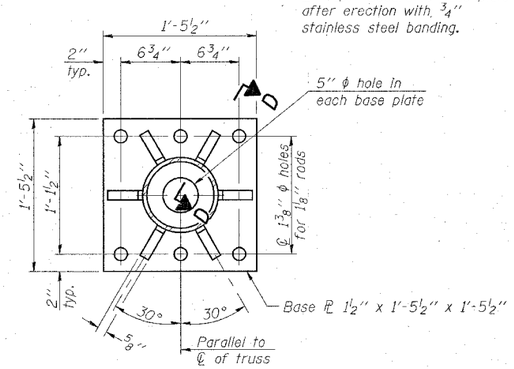
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	133
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 76857

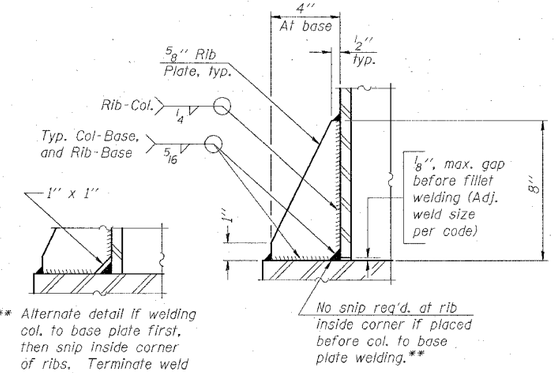


DETAIL B

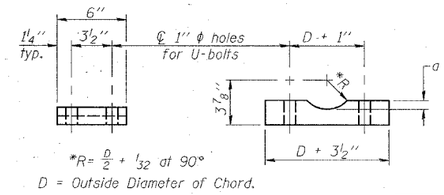
Ribs shall be cut to fit slope of pipe.



SECTION B-B



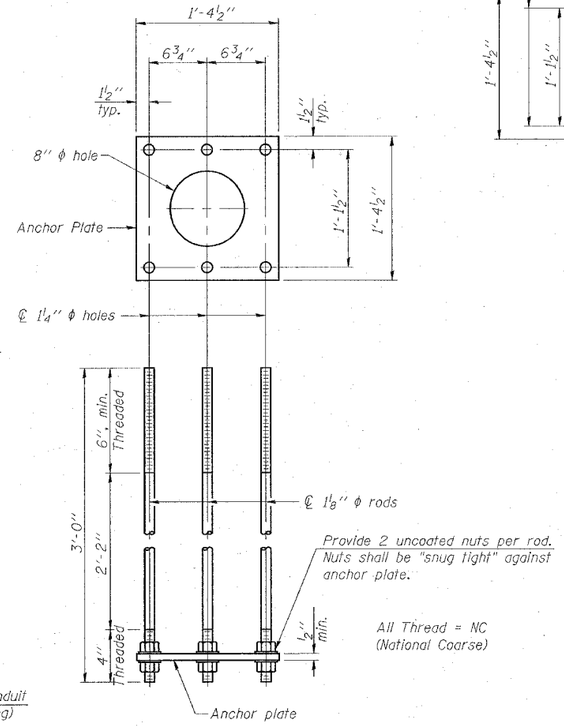
SECTION D-D



SADDLE SHIM DETAIL

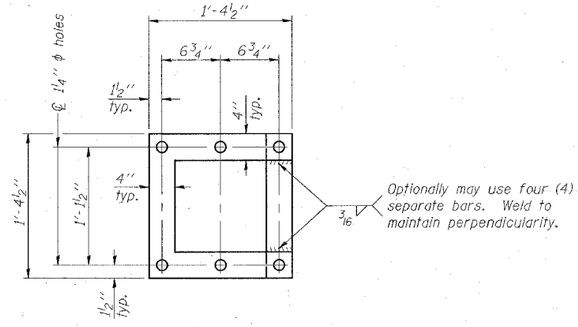
ASTM B26 Alloy 356-F
or
ASTM B209 Alloy 6061-T651
(4 required per sign truss)

Truss Chord Nominal Dia.	a
5"	3/4"
5 1/2"	13/16"
6"	7/8"
6 1/2"	15/16"

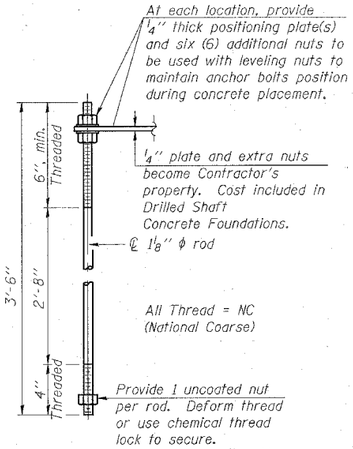


ANCHOR ROD DETAIL

Spread Footing Foundation



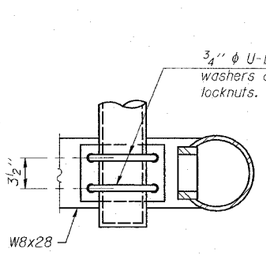
POSITIONING PLATE(S)



ANCHOR ROD DETAIL

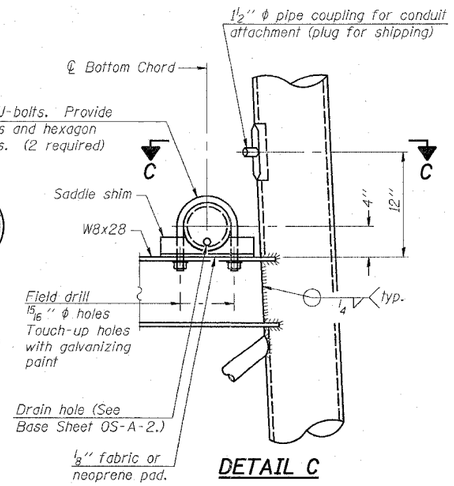
Drilled Shaft Foundation

Anchor rods shall conform to AASHTO M314 Grade 36 or 55 and meet Charpy V-Notch (CVN) energy of 15 lb.-ft. at 40° F. Galvanize upper 12" per AASHTO M232. No welding shall be permitted on rods.



SECTION C-C

(Handhole cover not shown)



DETAIL C

TYPE I-A TRUSS
8" ϕ PIPE SUPPORT FRAME DETAILS

NUMBER	REVISION	DATE

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED:	CDB	DRAWN:	SJS
CHECKED:	DCD	CHECKED:	CDB/DCD

OS-A-4A 7/01/2006

DATE: $DATE$ - $TIME$ USER: $USER$ FILE: $FILE$

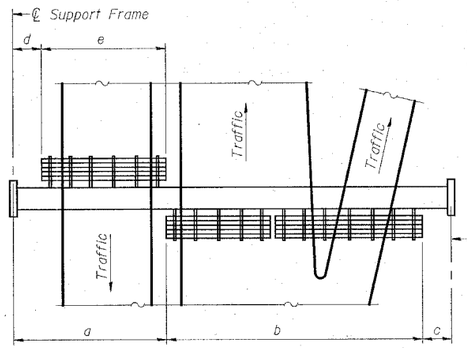
OVERHEAD SIGN STRUCTURES
SUPPORT FRAME DETAILS ALUMINUM TRUSS

FAI ROUTE 70
SECTION 60-(10,11)RS
MADISON COUNTY

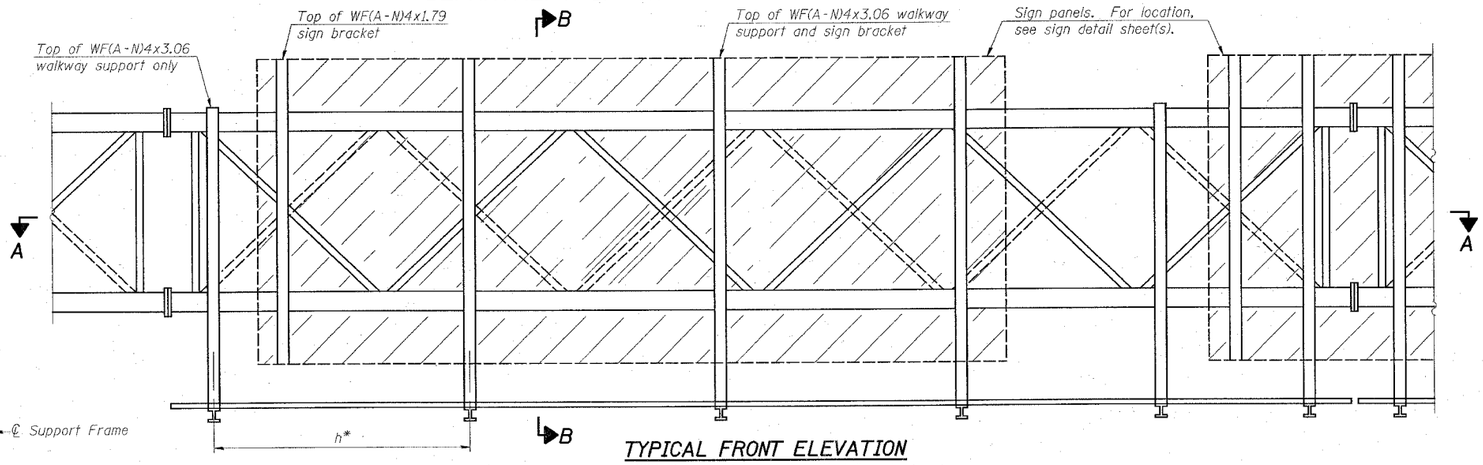
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	134
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 76857

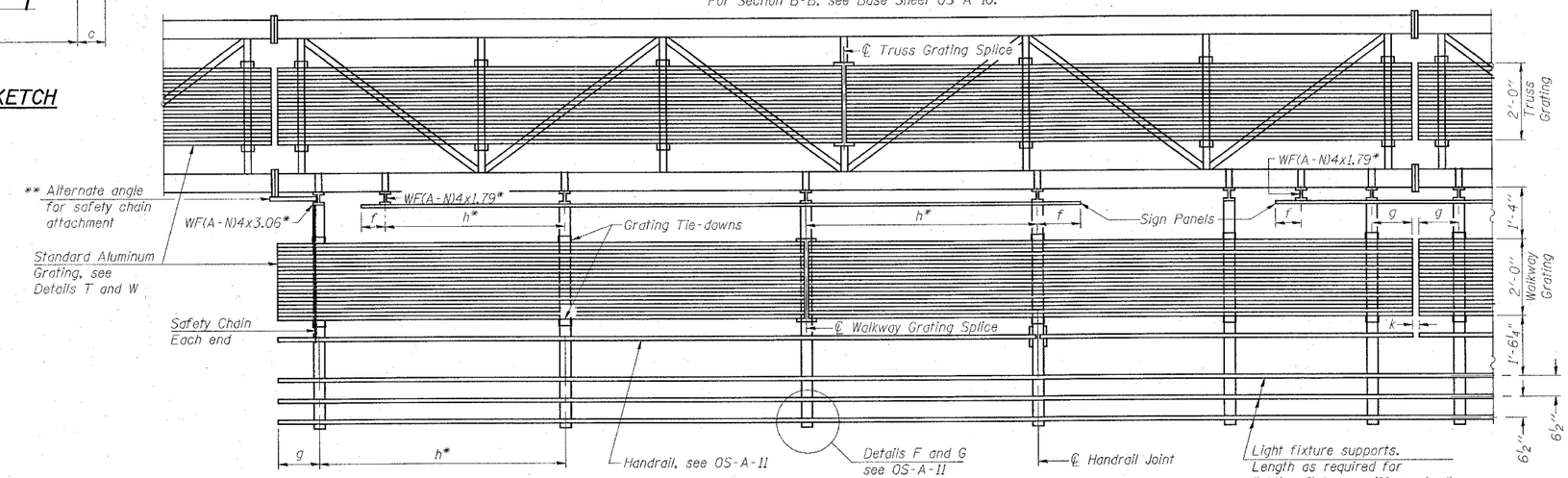
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN
WALKWAY AND HANDRAIL SKETCH
(Road plan beneath truss varies)



TYPICAL FRONT ELEVATION
With lights and handrail omitted for clarity.
For Section B-B, see Base Sheet OS-A-10.



Walkway and Truss Grating width dimensions are nominal and may vary ±½" based on available standard widths.

BRACKET TABLE

WF(A-N)4x1.79 or WF(A-N)4x3.06
ASTM B308, Alloy 6061-T6

Sign Width		Number Brackets Required
Greater Than	Less Than or Equal To	
	8'-0"	2
8'-0"	14'-0"	3
14'-0"	20'-0"	4
20'-0"	26'-0"	5
26'-0"	32'-0"	6

Notes:
* Space walkway brackets WF(A-N)4x3.06 and sign brackets WF(A-N)4x1.79 for efficiency and within limits shown:

f = 12" maximum, 4" minimum (End of sign to ℄ of nearest bracket)
g = 12" maximum, 4" minimum (End of walkway grating to ℄ of nearest support bracket)
h = 6'-0" maximum (℄ to ℄ sign and/or walkway support brackets, WF(A-N)4x1.79 or WF(A-N)4x3.06)
k = 2" maximum gap between adjacent walkway grating sections and handrail ends

** If walkway bracket at safety chain location is behind sign, add angle to bracket, see Alternate Safety Chain Attachment on Base Sheet OS-A-11.

For Details T and W, Section B-B and Grating Splice Details see Base Sheet OS-A-10.
For Handrail Details see Base Sheet OS-A-11.

SECTION A-A

Handrail and walkway shall span a minimum of three brackets between splices and/or gap joints.
Place all sign and walkway brackets as close to panel points as practical.
Handrail joints, grating, and light support splices placed as needed.

Structure Number	Station	a	b	c	d	e	Walkway Grating and Handrail Lengths
8S060I070L015.8	975+20	7'-0"	32'-0"	11'-0"	-	-	32'-0"

Truss grating to facilitate inspection shall run full length (center to center of support frames) ±12" on overhead trusses. Cost of truss grating is included in "Overhead Sign Structure".

NUMBER	REVISION	DATE

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED:	CDB	DRAWN:	SJS
CHECKED:	DCD	CHECKED:	CDB/DCD

OS-A-9 7/01/2006

OVERHEAD SIGN STRUCTURES
ALUMINUM WALKWAY DETAILS

FAI ROUTE 70
SECTION 60-(10,11)RS
MADISON COUNTY

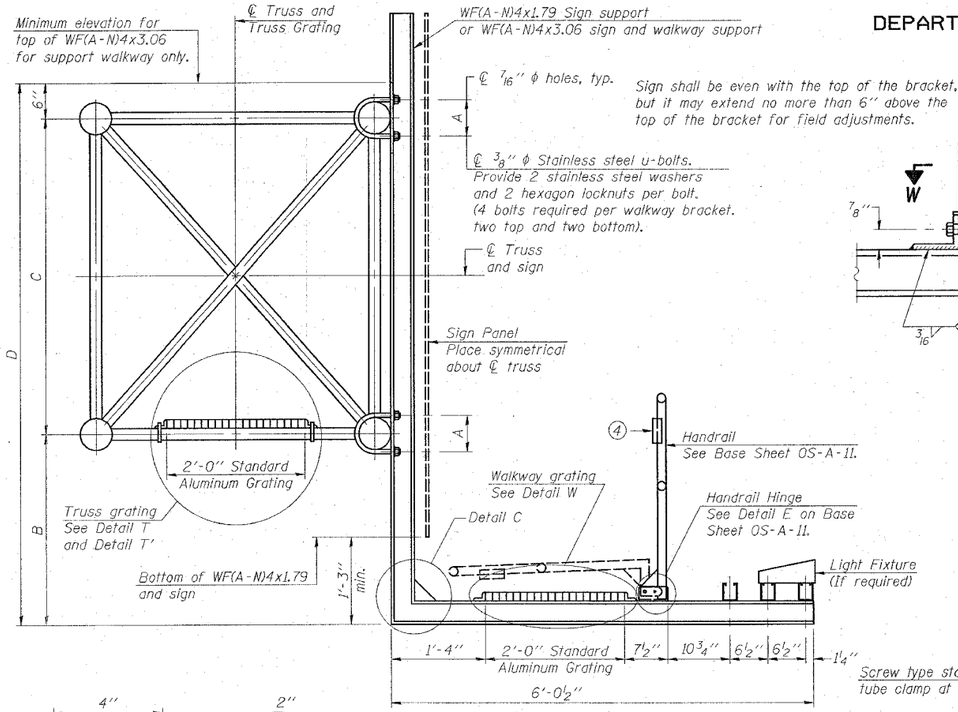
DATE: $DATE$ - $TIME$ USER: $USER$ FILE: $FILE$

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

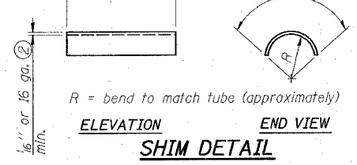
SHEET 8 OF 10

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	135
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

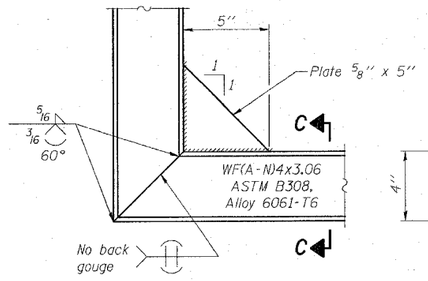
CONTRACT NO. 76857



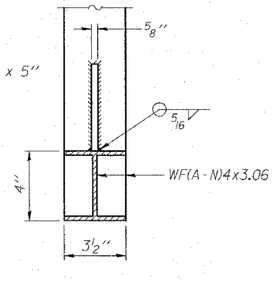
SECTION B-B



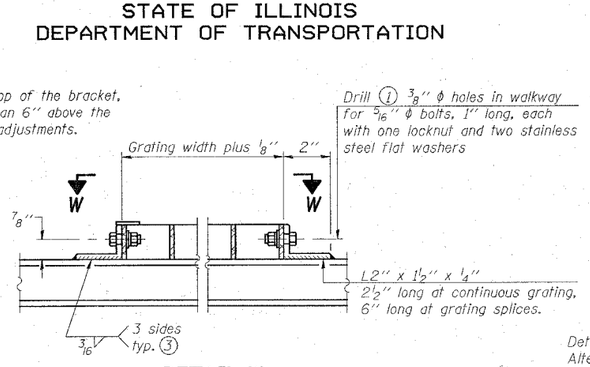
SHIM DETAIL



DETAIL C

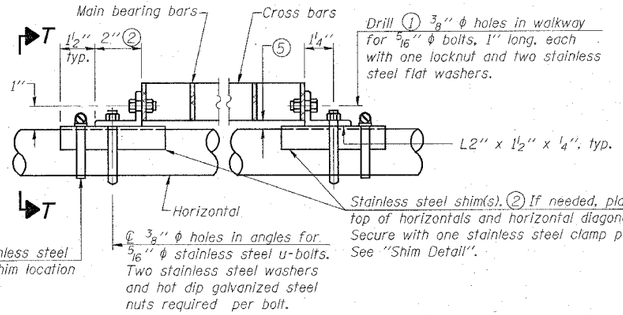


SECTION C-C



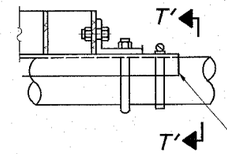
DETAIL W

(Walkway grating)



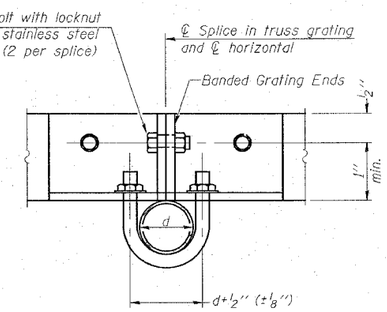
DETAIL T

(Continuous Truss grating)

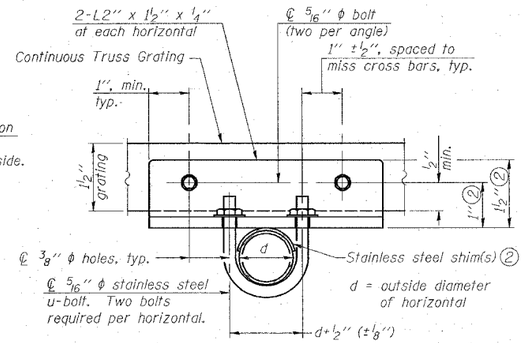


DETAIL T'

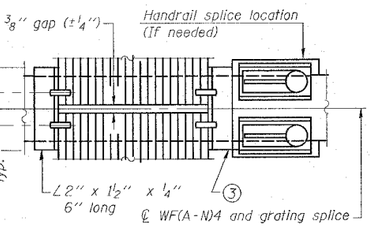
(Truss grating splice)
Details not shown same as Detail T. Alternate materials may be used subject to the Engineer's review and approval.



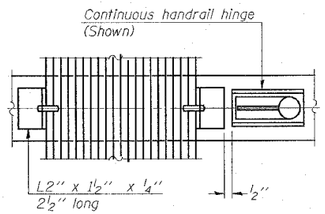
SECTION T'-T'



SECTION T-T



(AT WALKWAY GRATING SPLICE)



(CONTINUOUS WALKWAY GRATING)

SECTION W-W

SPECIFICATIONS FOR STANDARD ALUMINUM GRATING

Main Bearing Bars shall be 3/16" x 1½" on 1 3/16" centers and conform to ASTM B221 Alloy 6061-T6.
Cross bars shall be 3/16" x 1½" on 4" centers and conform to ASTM B221 Alloy 6063-T5 or 6061-T6.

OR

Aluminum Grating with modified "T" sections for main bearing bars shall meet the following requirements:
Main bars shall conform to ASTM B221 Alloy 6061-T6 and have a minimum section modulus equal to 0.0705 in.³ per bar, a depth of 1½", spaced on 1 3/16" centers.
Cross bars shall conform to ASTM B221 Alloy 6063-T5 or T-42 and spaced on 4" centers.

Structure Number	Station	A	B	C	D
8S060I070L015.8	975+20	5½"	5'-9"	4'-6"	10'-9"

1. Drilling holes in grating may be done in shop or field, based on Contractor's preference and subject to accurate alignment.
2. Stainless steel shims shall be placed as shown in Detail T if needed to compensate for alignment variations between horizontal and diagonal pipes beyond adjustment provided by angles. Thicker shims may be used subject to shims performing properly.
3. If Handrail Joint present, weld angle to WF(A-N)4 and ¼" extension bars. (See Base Sheet OS-A-11.)
4. ℄ ⅛" x ½" x 2" welded to handrail posts to protect locations that contact grating.
5. Tube to grating gap may vary from 0 to ½", max. to align walkway, allow for camber, etc.

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED:	CDB	DRAWN:	SJS
CHECKED:	DCD	CHECKED:	CDB/DCD

NUMBER	REVISION	DATE

OS-A-10 7/01/2006

OVERHEAD SIGN STRUCTURES
ALUMINUM WALKWAY DETAILS

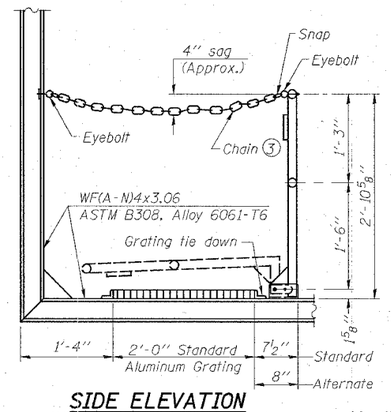
FAI ROUTE 70
SECTION 60-(10,11)RS
MADISON COUNTY

DATE: $DATE$ - $TIME$ USER: $USER$ FILE: $FILE$

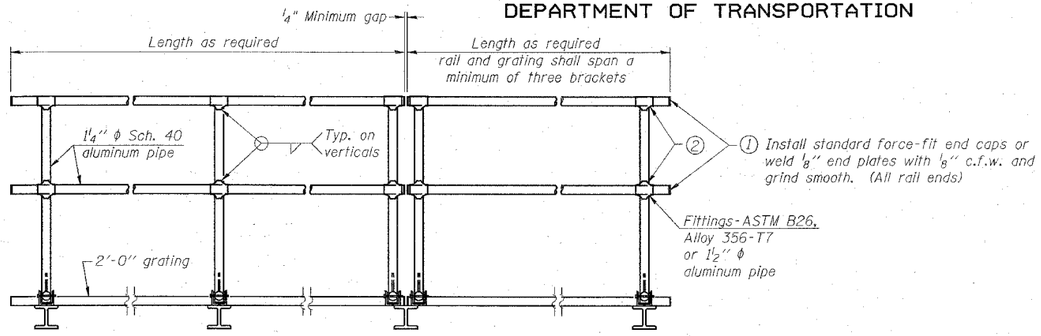
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	136
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 76857

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

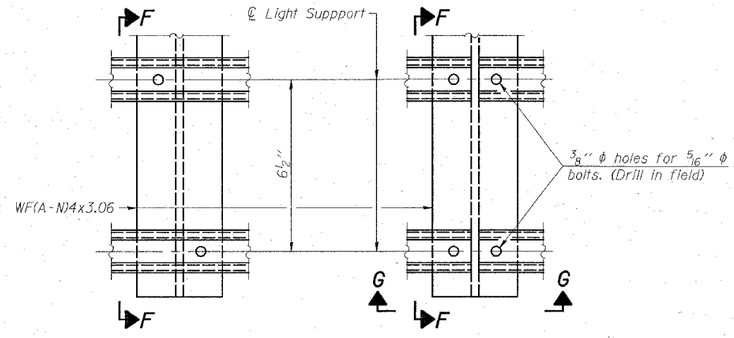


SIDE ELEVATION
(Showing safety chain w/o sign)



FRONT ELEVATION

(2) Horizontal handrail member shall be continuous thru fitting. Provide $\frac{7}{16}$" ϕ hole in fitting for $\frac{3}{8}$" ϕ bolt. Field drill $\frac{7}{16}$" ϕ hole in horizontal rail member. Provide locknut and two stainless steel washers for bolt. (Use $\frac{5}{16}$" eyebolts in $\frac{7}{16}$"ϕ holes on top rail at ends only.)

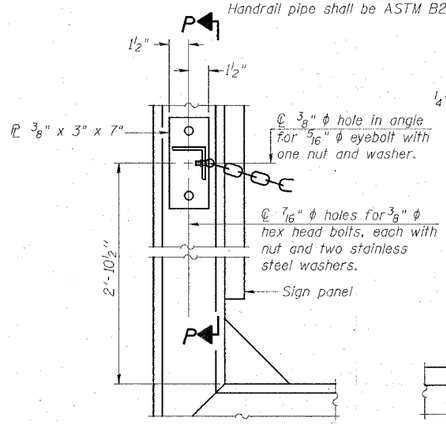


DETAIL F

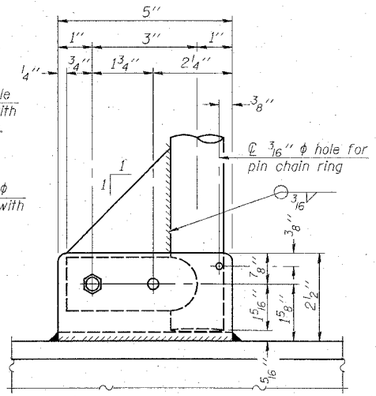
DETAIL G

HANDRAIL DETAILS

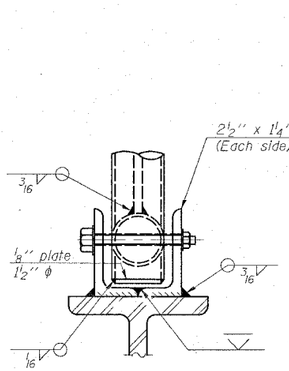
Handrail pipe shall be ASTM B241 or B429, Alloy 6063-T6 or Alloy 6061-T6.



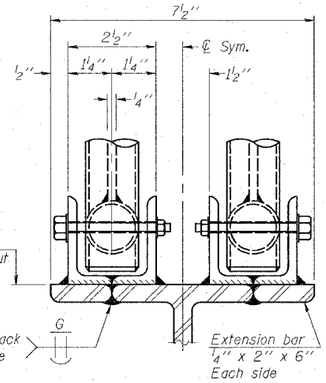
ALTERNATE SAFETY CHAIN ATTACHMENT
(With Sign Present)
Items not shown same as "Side Elevation" of "Handrail Details"



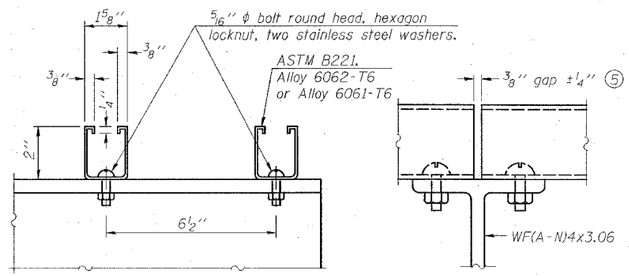
SIDE ELEVATION



FRONT ELEVATION
See "Elevation" at right for dimensions.



ELEVATION AT HANDRAIL JOINT (4)

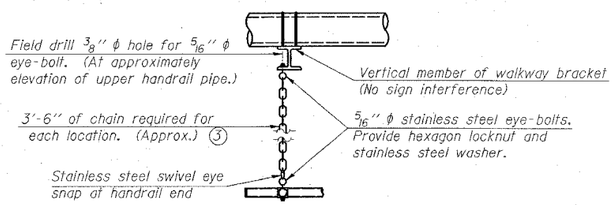


SECTION F-F

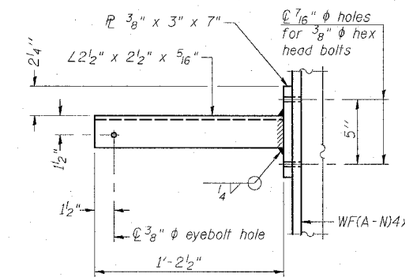
SECTION G-G

LIGHTING FIXTURE MOUNTS (IF REQUIRED)

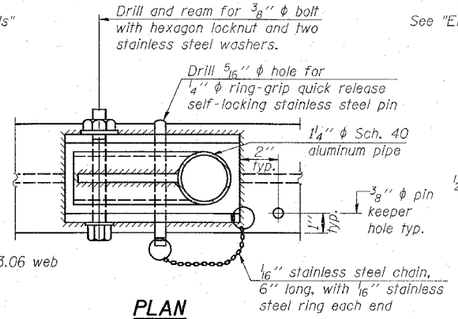
(5) Field cut ends of light support channels shall be free of burrs or hazardous projections and coated with zinc-rich primer or equivalent.



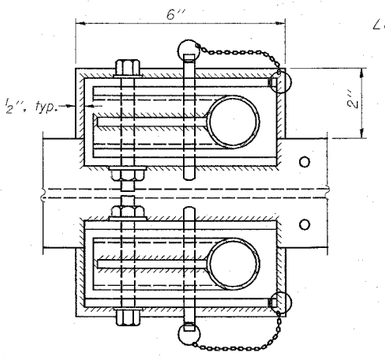
SAFETY CHAIN
One required for each end of each walkway.



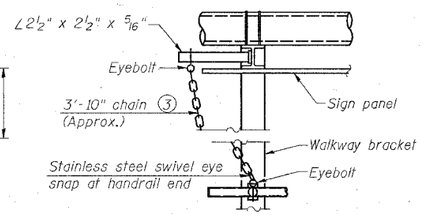
SECTION P-P



PLAN
DETAIL E HANDRAIL HINGE



PLAN AT HANDRAIL JOINT
Details not shown same as "PLAN"



ALTERNATE SAFETY CHAIN ATTACHMENT
Details not shown similar to "Safety Chain" Details
(Walkway omitted for clarity)

(3) 3/16" Type 304L stainless steel chain, approximately 12 links per foot.

(4) Extrusions may be used in lieu of the details shown, with approval of the Engineer.

NUMBER	REVISION	DATE

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED:	CDB	DRAWN:	SJS
CHECKED:	DCD	CHECKED:	CDB/DCD

OS-A-11 7/01/2006

DATE: $DATE$ - $TIME$ USER: $USER$ FILE: $FILE$

OVERHEAD SIGN STRUCTURES
ALUMINUM HANDRAIL DETAILS

FAI ROUTE 70
SECTION 60-(10,11)RS
MADISON COUNTY

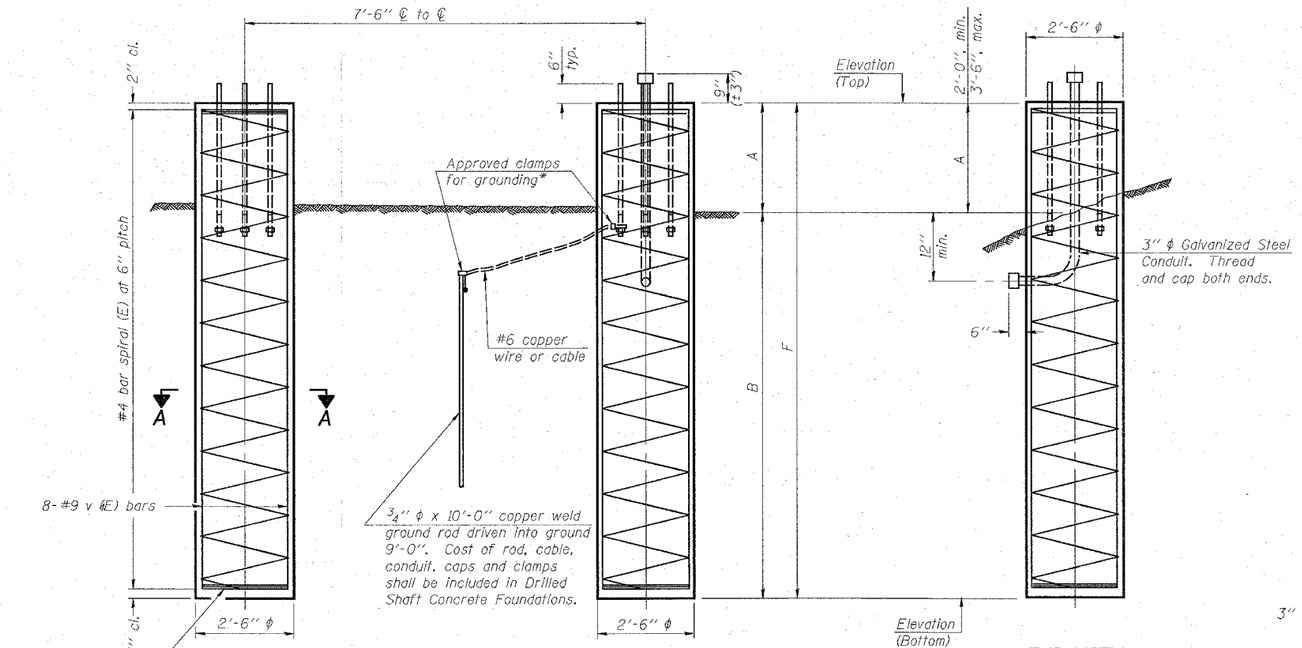
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	137
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 76857

For anchor rod size and placement, see Support Frame Detail Sheet.

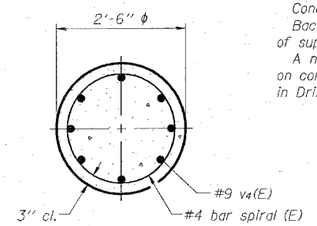
* Anchor rod shall be ground or filed to bright metal at clamp and cable connection location.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SIDE ELEVATION

END VIEW



SECTION A-A

BAR LIST - EACH FOUNDATION

Bar	Number	Size	Length	Shape
v4(E)	16	#9	F less 5"	——
#4 bar spiral (E) - see Side Elevation				

NOTES:

The foundation dimensions shown are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Qu) of at least 1.25 tsf, which must be determined by previous soil investigations at the jobsite. When other conditions are indicated, the boring data will be included in the plans and the foundation dimensions shown will be the result of site specific designs.

If the conditions encountered are different than those indicated, the Contractor shall notify the Engineer to determine if the foundation dimensions need to be modified. If dimensions "B" or "F" are revised by more than 12" by the Contractor, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.

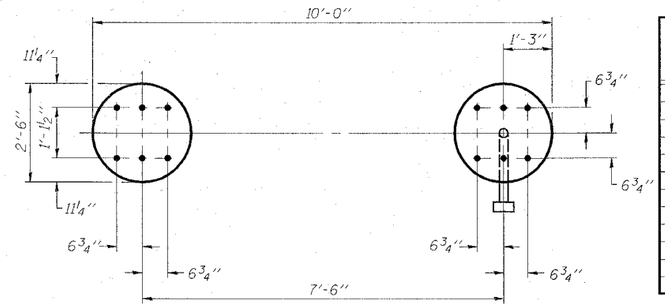
No sonotubes or decomposable forms shall be used below the lower conduit entrance.

Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.

Concrete shall be placed monolithically, without construction joints.

Backfill shall be placed per Article 502 of Standard Specification and prior to erection of support column.

A normal surface finish followed by a Bridge Seat Sealer application will be required on concrete surfaces above the lowest elevation 6" below finished ground line. Cost included in Drilled Shaft Concrete Foundation.



PLAN

Structure Number	Station	Left Foundation					Right Foundation					Class SI Concrete (Cu. Yds.)
		Elevation Top	Elevation Bottom	A	B	F	Elevation Top	Elevation Bottom	A	B	F	
8S0601070L015.8	975+20	548.80	531.80	3'-0"	14'-0"	17'-0"	548.80	531.80	3'-6"	13'-6"	17'-0"	12.4

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED:	CDB	DRAWN:	SJS
CHECKED:	DCD	CHECKED:	CDB/DCD

OS4-F2 7/01/2006

NUMBER	REVISION	DATE

DETAILS FOR 8" ϕ SUPPORT FRAME TYPE I-A TRUSS

OVERHEAD SIGN STRUCTURES
DRILLED SHAFT DETAILS

FAI ROUTE 70
SECTION 60-(10,11)RS
MADISON COUNTY

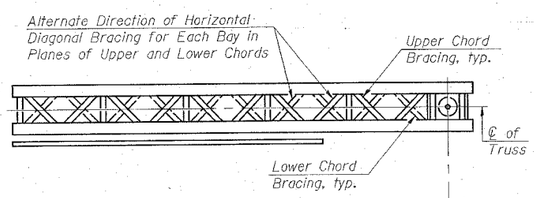
DATE: $DATE$ - $TIME$ USER: $USER$ FILE: $FILE$

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

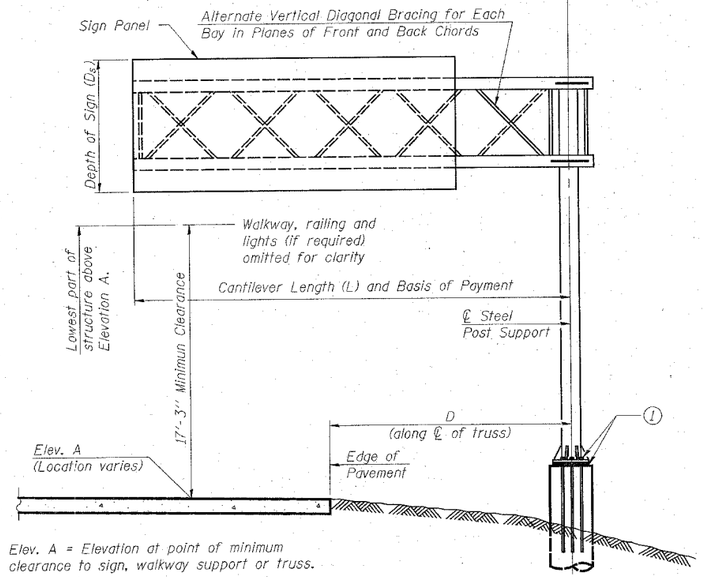
SHEET 1 OF 9

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	138
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 76857



TYPICAL PLAN
(Walkway not shown)



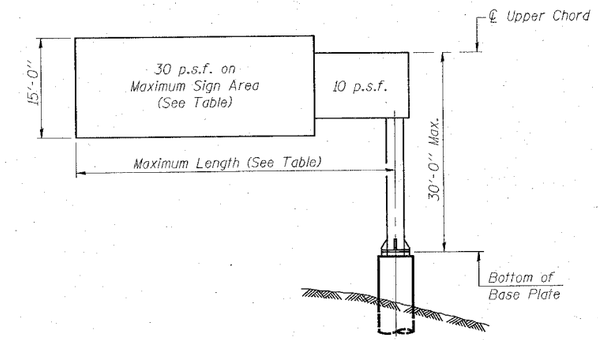
Elev. A = Elevation at point of minimum clearance to sign, walkway support or truss.

TYPICAL ELEVATION
Looking in Direction of Traffic

Sign support structures may be subject to damaging vibrations and oscillations when sign panels are not in place during erection or maintenance of the structure. To avoid these vibrations and oscillations, consideration should be given to attaching temporary blank sign panels to the structure.

Structure Number	Station	Design Truss Type	Cantilever Length (L)	Elev. A	Dim. D	D_s	Total Sign Area
8C060I270R014.8	862+15 (FAI-270)	III-C-A	32'-0"	584.80	18'-0"	10'-0"	150 s.f.

Truss Type	Maximum Sign Area	Maximum Length
I-C-A	170 Sq. Ft.	25 Ft.
II-C-A	340 Sq. Ft.	30 Ft.
III-C-A	400 Sq. Ft.	40 Ft.



DESIGN WIND LOADING DIAGRAM
Parameters shown are basis for I.D.O.T. Standards Installations not within dimensional limits shown require special analysis for all components.

(1) After adjustments to level truss and insure adequate vertical clearance, all top and leveling nuts shall be tightened against the base plate with a minimum torque of 200 lb.-ft. Stainless steel mesh shall then be placed around the perimeter of the base plate. Secure to base plate with stainless steel banding.

Note:
Trusses shall be shipped individually with adequate provision to prevent detrimental motion during transport. This may require ropes between horizontals and diagonals or energy dissipating (elastic) ties to the vehicle. The contractor is responsible for maintaining the configuration and protection of the trusses.

GENERAL NOTES

DESIGN: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. ("AASHTO Specifications")

CONSTRUCTION: Current (at time of letting) Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Special Provisions. ("Standard Specifications")

LOADING: 90 M.P.H. WIND VELOCITY

WALKWAY LOADING: Dead load plus 500 lbs. concentrated live load.

DESIGN STRESSES:
Field Units
f'c = 3,500 p.s.i.
fy = 60,000 p.s.i. (reinforcement)

WELDING: All welds to be continuous unless otherwise shown. All welding to be done in accordance with current AWS D1.1 and D1.2 Structural Welding Codes (Steel and Aluminum) and the Standard Specificiations.

MATERIALS: Aluminum Alloys as shown throughout plans. All Structural Steel Pipe shall be ASTM A53 Grade B with a minimum yield of 35,000 p.s.i., or A500 Grade B or C with a minimum yield of 46,000 p.s.i. If A500 pipe is substituted for A53, then the outside diameter shall be as detailed and wall thickness greater than or equal to A53.
All Structural Steel Plates and Shapes shall conform to AASHTO M270 Gr. 36, Gr. 50 or Gr. 50W*. Stainless steel for shims, sleeves and handhole covers shall be ASTM A240, Type 302 or 304, or another alloy suitable for exterior exposure and acceptable to the Engineer.
The steel pipe and stiffening ribs at the base plate for the column shall have a minimum longitudinal Charpy V-Notch (CVN) energy of 15 lb.-ft. at 40° F. (Zone 2) before galvanizing.

FASTENERS FOR ALUMINUM TRUSSES: All bolts noted as "high strength" must satisfy the requirements of AASHTO M164 (ASTM A325), or approved alternate, and must have matching lock nuts. Threaded studs for splices (if Members interfere) must satisfy the requirements of ASTM A449, ASTM A193, Grade B7, or approved alternate, and must have matching lock nuts. Bolts and lock nuts not required to be high strength must satisfy the requirements of ASTM A307. All bolts and lock nuts must be hot dip galvanized per AASHTO M232. The lock nuts must have nylon or steel inserts. A stainless steel flat washer conforming to ASTM A240 Type 302 or 304, is required under both head and nut or under both nuts where threaded studs are used. High strength bolt installation shall conform to Article 505.04 (f) (2)d of the IDOT Standard Specifications for Road and Bridge Construction. Rotational capacity ("ROCAP") testing of bolts will not be required.

U-BOLTS AND EYEBOLTS: U-Bolts and Eyebolts must be produced from ASTM A276 Type 304, 304L, 316 or 316L, Condition A, cold finished stainless steel, or an equivalent material acceptable to the Engineer. All nuts for U-Bolts and Eyebolts must be lock nuts equivalent to ASTM A307 with nylon or steel inserts and hot dip galvanized per AASHTO M232. A stainless steel flat washer conforming to ASTM A240, Type 302 or 304, is required under each U-Bolt and Eyebolt lock nut.

GALVANIZING: All Steel Grating, Plates, Shapes and Pipe shall be Hot Dip Galvanized after fabrication in accordance with AASHTO M111. Painting is not permitted.

ANCHOR RODS: Shall conform to AASHTO M314 Gr. 55 with a minimum Charpy V-Notch (CVN) energy of 15 lb.-ft. at 10° F.

CONCRETE SURFACES: All concrete surfaces above an elevation 6" below the lowest final ground line at each foundation shall be cleaned and coated with Bridge Seat Sealer in accordance with the Standard Specifications.

REINFORCEMENT BARS: Reinforcement Bars designated (E) shall be epoxy coated in accordance with the Standard Specifications.

* If M270 Gr. 50W (M222) steel is proposed, chemistry for plate to be used shall first be approved by the Engineer as suitable for galvanizing and welding.

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
OVERHEAD SIGN STRUCTURE CANTILEVER TYPE I-C-A	Foot	
OVERHEAD SIGN STRUCTURE CANTILEVER TYPE II-C-A	Foot	
OVERHEAD SIGN STRUCTURE CANTILEVER TYPE III-C-A	Foot	32
OVERHEAD SIGN STRUCTURE WALKWAY, TYPE A	Foot	18
DRILLED SHAFT CONCRETE FOUNDATIONS	Cu. Yds.	8.0

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED:	CDB	DRAWN:	SJS
CHECKED:	DCD	CHECKED:	CDB/DCD

OSC-A-1 7/01/2006

NUMBER	REVISION	DATE

CANTILEVER SIGN STRUCTURES
GENERAL PLAN & ELEVATION
ALUMINUM TRUSS & STEEL POST

FAI ROUTE 70
SECTION 60-(10,11)RS
MADISON COUNTY

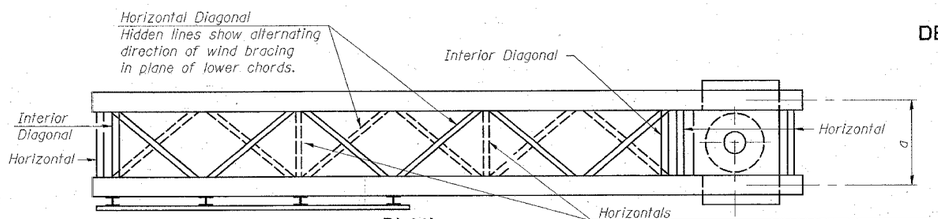
DATE: $DATE$ - $TIME$ USER: $USER$ FILE: $FILE$

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

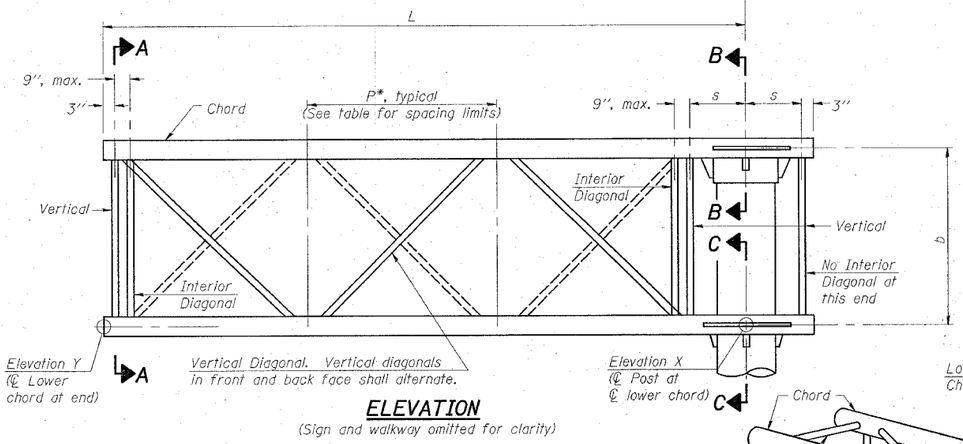
SHEET 2 OF 9

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	139
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 76857

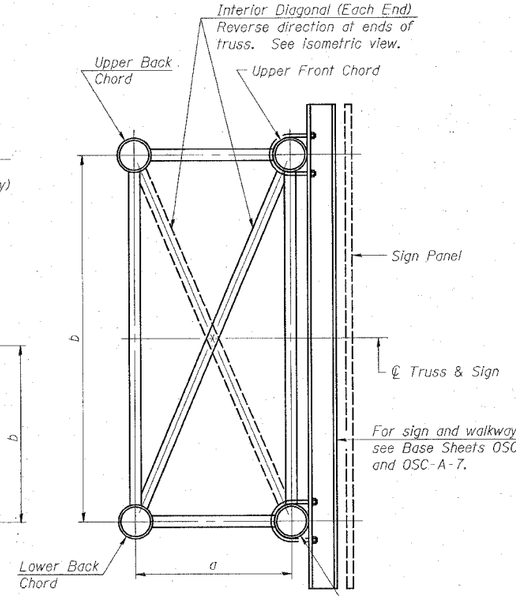


PLAN
(Walkway not shown)

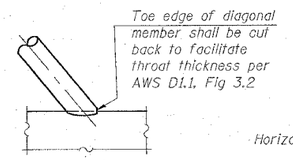


ELEVATION
(Sign and walkway omitted for clarity)

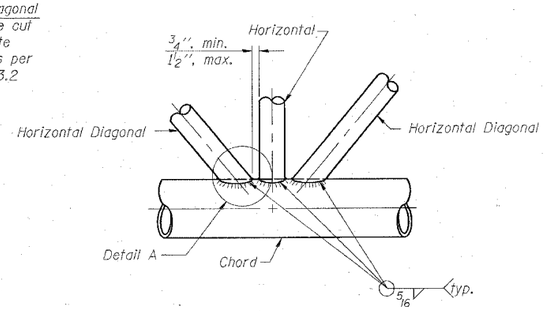
TYPICAL TRUSS UNIT
For Section B-B and Section C-C, see Base Sheet OSC-A-3.



SECTION A-A



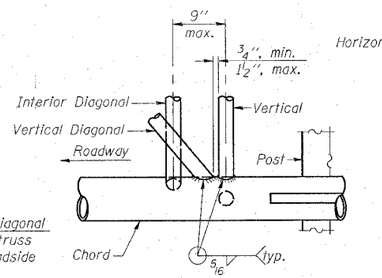
DETAIL A



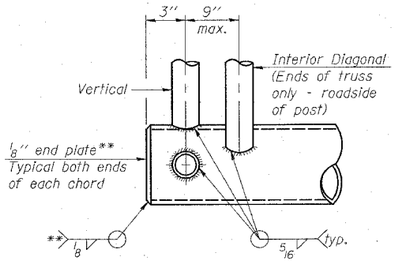
TRUSS INTERIOR JOINT DETAIL

Structure Number	Station	Truss Type	Design Length (L)	Number of Panels Per Unit	Panel Length (P)*
8C060I270R014.8	862+15 (FAI-270)	III-C-A	32'-0"	6	5'-0"

Note:
There are twice as many horizontal diagonals as there are vertical diagonals.



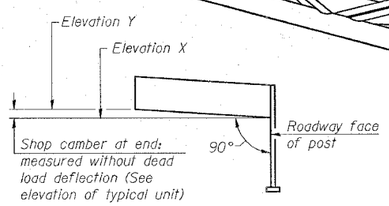
POST END JOINT DETAIL



CANTILEVER END JOINT DETAIL
** Contractor may alternatively use standard aluminum drive-fit cap to close ends.

SHOP CAMBER TABLE

Unit Length (L)	Shop Camber at End
15'	1 1/2"
16'-17'	1 3/4"
18'-20'	2"
21'-22'	2 1/4"
23'-25'	2 1/2"
26'-27'	2 3/4"
28'-30'	3"
31'-32'	3 1/4"
33'-35'	3 1/2"
36'-37'	4"
38'-40'	4 1/2"



CAMBER DIAGRAM
(For Fabrication Only)

ISOMETRIC VIEW
TYPICAL TRUSS UNIT
ASTM B221 Alloy 6061 Temper T6

TRUSS UNIT TABLE

Truss Type	Dimension "a"	Dimension "b"	Dimension "s"	Limits for Panel Spacing (P)*	Up. & Low. Chord O.D.	Up. & Low. Chord Wall	Verticals; Horizontals; Vertical, Horizontal, and Interior Diagonals O.D.	Verticals; Horizontals; Vertical, Horizontal, and Interior Diagonals Wall
I-C-A	24"	54"	16"	36" min. to 48" max.	5"	5/16"	2 1/2"	5/16"
II-C-A	36"	66"	21"	42" min. to 54" max.	6 1/2"	5/16"	3 1/4"	5/16"
III-C-A (35' Max.)	36"	84"	21"	48" min. to 66" max.	7"	3/8"	3 1/2"	3/8"
III-C-A (>35' to 40')	36"	84"	21"	48" min. to 66" max.	8"	3/8"	3 1/2"	3/8"

$*P = \frac{L - s - 3''}{\#\ Panels}$

NUMBER	REVISION	DATE

CANTILEVER SIGN STRUCTURES
TRUSS DETAILS
ALUMINUM TRUSS & STEEL POST

FAI ROUTE 70
SECTION 60-(10,11)RS
MADISON COUNTY

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED: CDB	DRAWN: SJS
CHECKED: DCD	CHECKED: CDB/DCD

OSC-A-2 7/01/2006

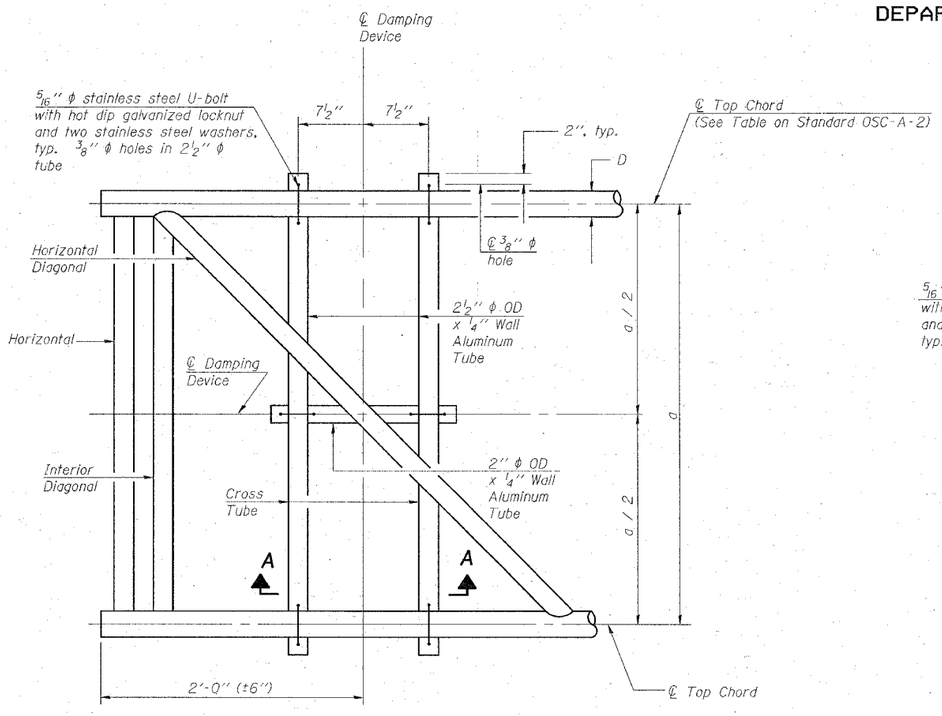
DATE: $DATE$ - $TIME$ USER: $USER$ FILE: $FILE$

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

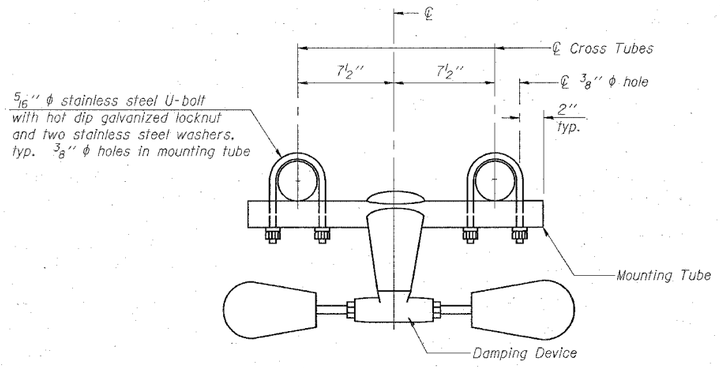
SHEET 3
OF 9

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	140
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

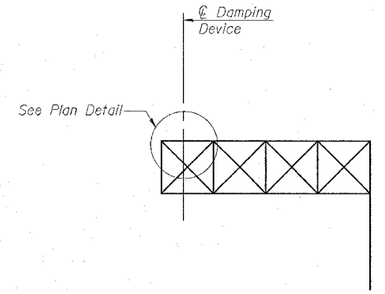
CONTRACT NO. 76857



PLAN DETAIL



TRUSS DAMPING DEVICE CONNECTION DETAIL

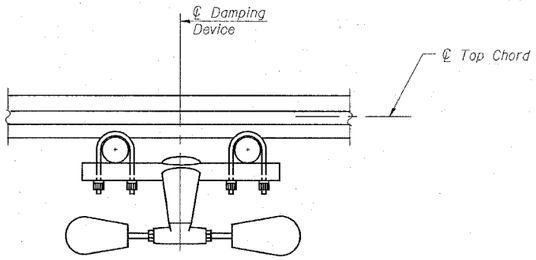


ELEVATION
Aluminum Cantilever Sign Structure

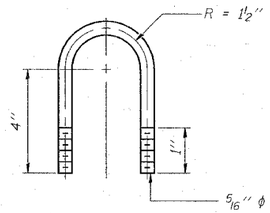
GENERAL NOTES

Damper: One damper per truss. (31 lbs. Stockbridge-Type Aluminum)

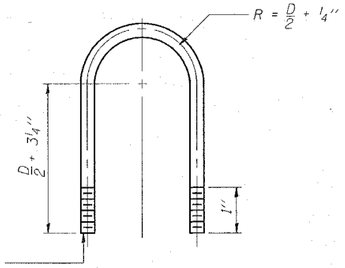
Materials: Aluminum tubes shall be ASTM B221 alloy 6061 temper T6



SECTION A-A



DAMPING DEVICE MOUNTING TUBE U-BOLT DETAIL
(Typical)



TOP CHORD TO CROSS TUBE U-BOLT DETAIL
(Typical)

Johnson, Depp & Quisenberry CONSULTING ENGINEERS Springfield, Illinois	
DESIGNED: CDB	DRAWN: SJS
CHECKED: DCD	CHECKED: CDB/DCD

OSC-A-D 7/01/2006

CANTILEVER SIGN STRUCTURE
DAMPING DEVICE

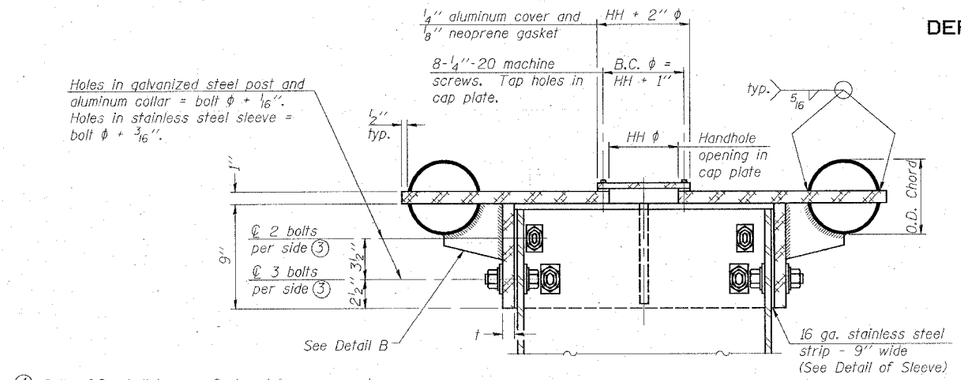
FAI ROUTE 70
SECTION 60-(10,11)RS
MADISON COUNTY

DATE: $DATE$ - $TIME$ USER: $USER$ FILE: $FILE$

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	141
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 76857

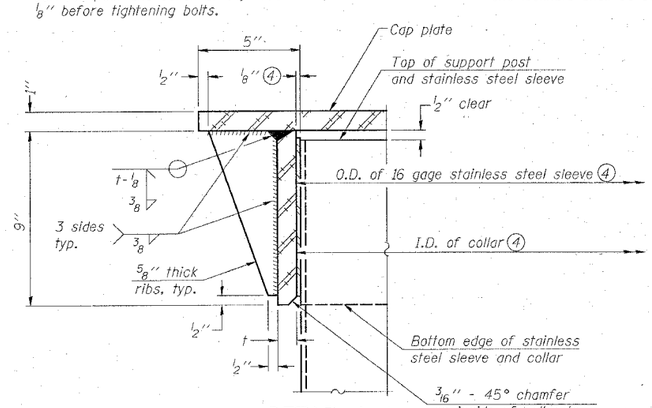
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SECTION B-B

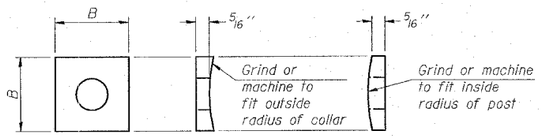
Bolts, washers (including contoured washers), and locknuts shall be stainless steel.

(4) Collar I.D. shall be manufactured to correspond to O.D. of actual galvanized post and stainless steel sleeve plus 1/8" (±1/16"). Maximum gap between post and collar at any location equals 1/8" before tightening bolts.



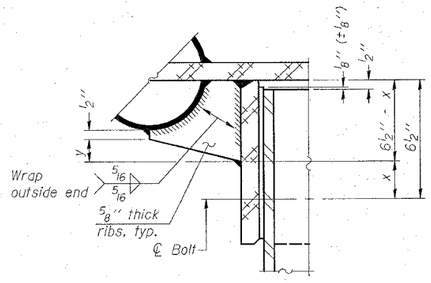
DETAIL A

(Two locations)



CONTOURED WASHERS

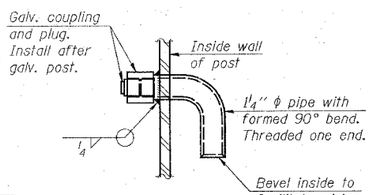
Bolt Size	Contoured Washers	
	Hole Dia.	B
7/8"	1"	2 1/2"
1"	1 1/8"	3"
1 1/4"	1 3/8"	3 1/4"



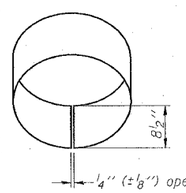
DETAIL B

Two locations

(For details not shown, see Detail C)

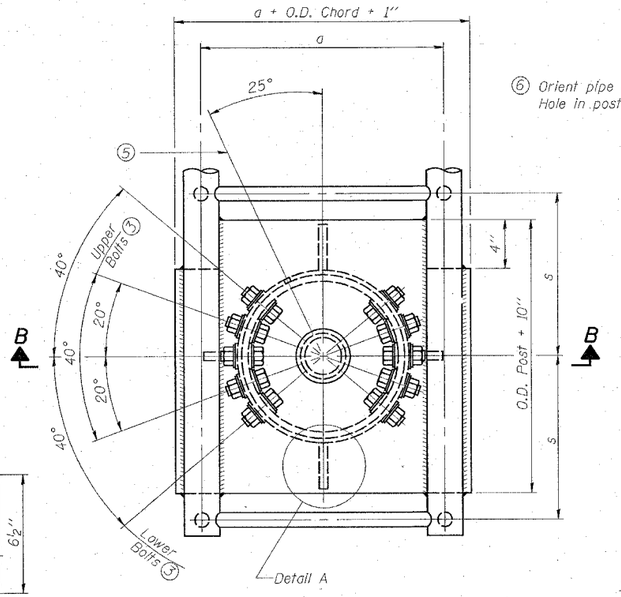


DETAIL D



DETAIL OF STAINLESS STEEL SLEEVE

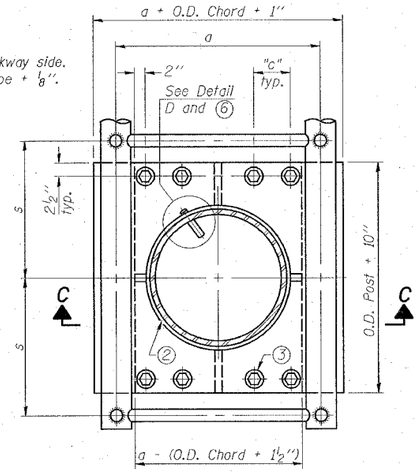
Weld to post after galvanizing. (Prepare post surface to insure tight, uniform fit and allow welding.) Welds to be 1 1/2" long at 6" cts. along top edge and at 1/4" opening.



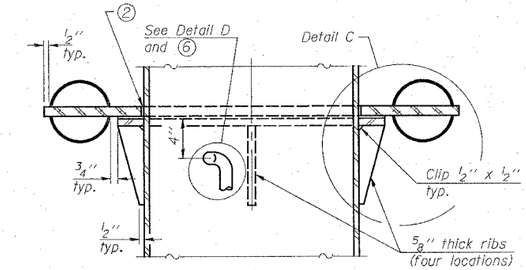
PLAN VIEW - TOP OF COLUMN

(5) Optional full penetration weld in collar. (Two locations maximum....(180° apart)....X-ray or UT 100%)

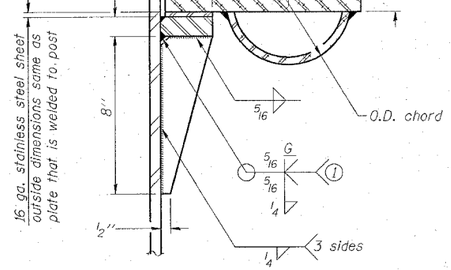
(6) Orient pipe toward walkway side. Hole in post = O.D. pipe + 1/8".



SECTION THRU POST ABOVE LOWER CHORDS



SECTION C-C



DETAIL C

(1) Grind top if required to fully seat aluminum plate and stainless steel sheet.

(2) After tightening lower connection bolts, fill gap with non-hardening, silicone caulk suitable for exterior exposure and acceptable to the Engineer. Cost is included in Overhead Sign Structure Cantilever.

Truss Type	Post Size	Upper & Lower Connection Bolt Diameter (3)	Lower Juncture Bolt Spacing Dimension "c" (3)	Opening in Cap Plate "HH"	Collar Thickness (t)	Side Ribs	
						x	y
I-C-A	16" ϕ (83#/')	7/8"	3 1/4"	8"	5/8"	1 3/4"	2 1/4"
II-C-A	24" ϕ (125#/')	1"	3 1/2"	12"	7/8"	2"	1 1/4"
III-C-A (35' max.)	24" ϕ (125#/')	1 1/4"	3 1/2"	12"	7/8"	2"	1"
III-C-A (>35' to 40')	24" ϕ (171#/')	1 1/4"	3 1/2"	12"	7/8"	2"	1"

(3) Upper and lower connection bolts in collar and bolts at lower chord connection shall be high strength with matching locknuts. Connection bolts shall have 2 stainless steel flat washers each.

NUMBER	REVISION	DATE

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED: CDB	DRAWN: SJS
CHECKED: DCD	CHECKED: CDB/DCD

OSC-A-3 7/01/2006

CANTILEVER SIGN STRUCTURES
JUNCTURE DETAILS
ALUMINUM TRUSS & STEEL POST

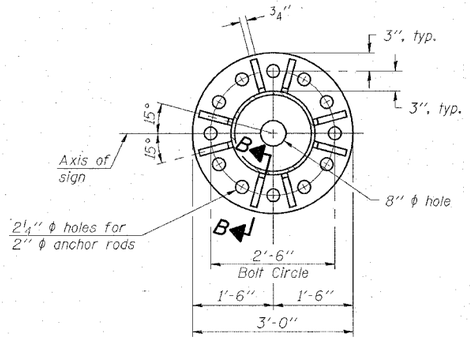
FAI ROUTE 70
SECTION 60-(10,11)RS
MADISON COUNTY

DATE: $DATE$ - $TIME$ USER: $USER$ FILE: $FILE$

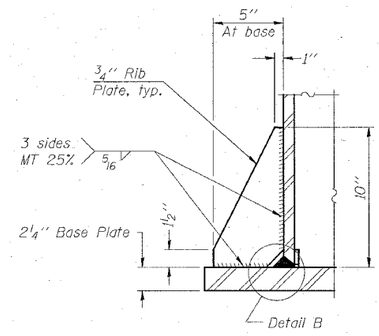
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	142
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 76857

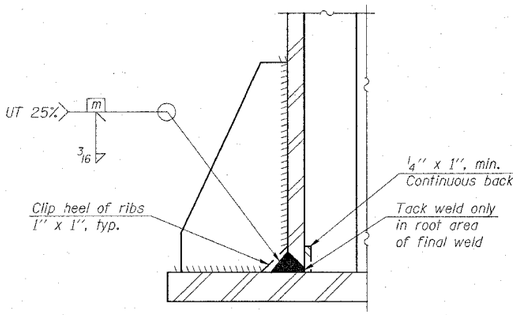
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



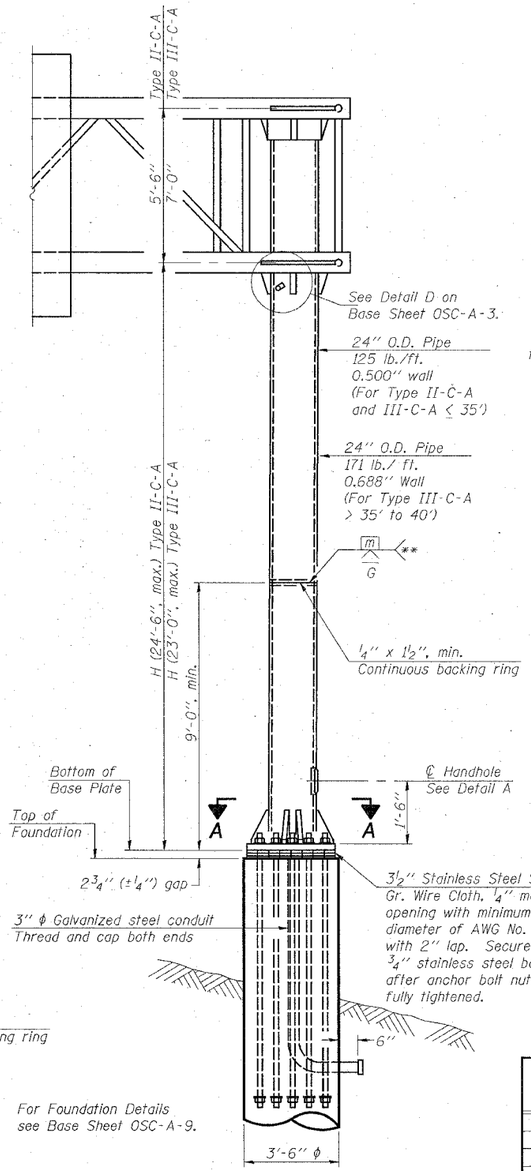
SECTION A-A



SECTION B-B

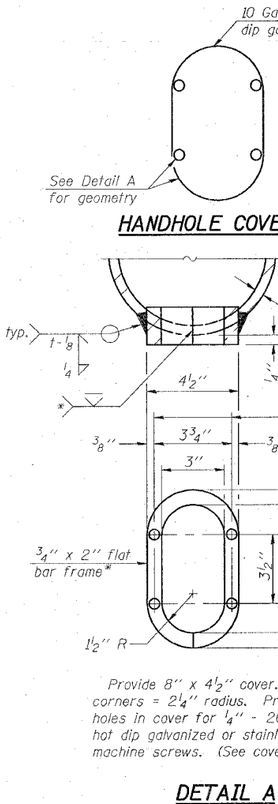


DETAIL B
(Typical rib)



FRONT ELEVATION

For Foundation Details see Base Sheet OSC-A-9.



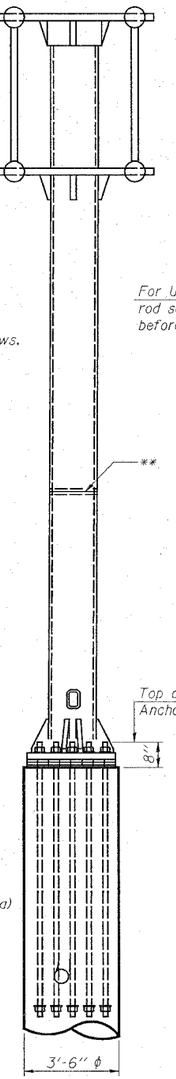
HANDHOLE COVER

Provide 8" x 4 1/2" cover. Outside corners = 2 1/4" radius. Provide 4-5/16" ϕ holes in cover for 1/4" - 20 round head hot dip galvanized or stainless steel machine screws. (See cover details.)

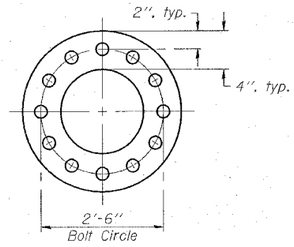
DETAIL A

* Bent bars may be butt welded top and bottom or bottom only. In lieu of fabricated handhole frame as shown, may cut from 2" plate (rolling direction vertical). All cut faces to be ground to ANSI Roughness of 500 min or less.

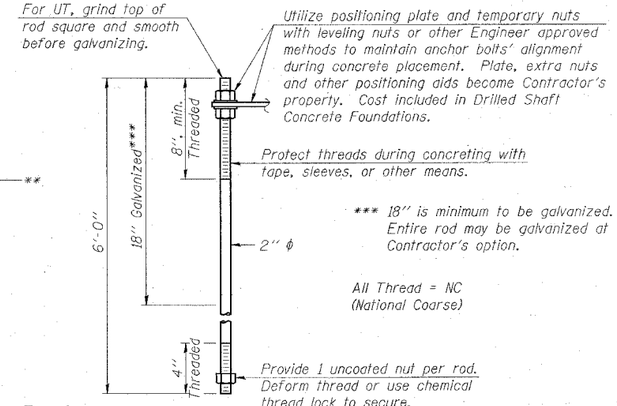
** Butt welded joint in post is only allowed for post heights (H) over 20 ft. in length. If used, weld procedure must be preapproved by Engineer and joint shall receive 100% RT or UT (tension criteria) at Contractor's expense.



SIDE ELEVATION



SUGGESTED POSITIONING PLATE



ANCHOR ROD DETAIL

Anchor rods shall conform to AASHTO M314 Grade 55 and meet Charpy V-Notch (CVN) energy of 15 lb.-ft. at 10° F. before galvanizing. Galvanize the upper 18" (minimum***) and associated M291, Grade A, C or DH heavy hex nuts and hardened washers per AASHTO M232. No welding shall be permitted on rods. Provide an unfinished nut at bottom, a hexagon locknut and washer above base plate and a leveling nut and washer below base plate. Nuts shall each be tightened with 200 lb.-ft. minimum torque against base plate. Before or after threading, but before galvanizing, each anchor rod shall be ultrasonically tested (UT) by a Level II or III inspector, qualified in accord with ANSI guidelines, using a straight beam, 1/2" ϕ 3.5 mhz. transducer, to insure no rejectable flaws exist in the upper 18" (tension criteria). Cost of testing included in Drilled Shaft Concrete Foundations.

Structure Number	Station	H
8C060127OR014.8	862+15 (FAI-270)	23'-0"

Note: "H" based on 15'-0" or actual sign height, whichever is greater.

NUMBER	REVISION	DATE

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED: CDB	DRAWN: SJS
CHECKED: DCD	CHECKED: CDB/DCD

OSC-A-5 7/01/2006

DATE: $DATE$ - $TIME$ USER: $USER$ FILE: $FILE$

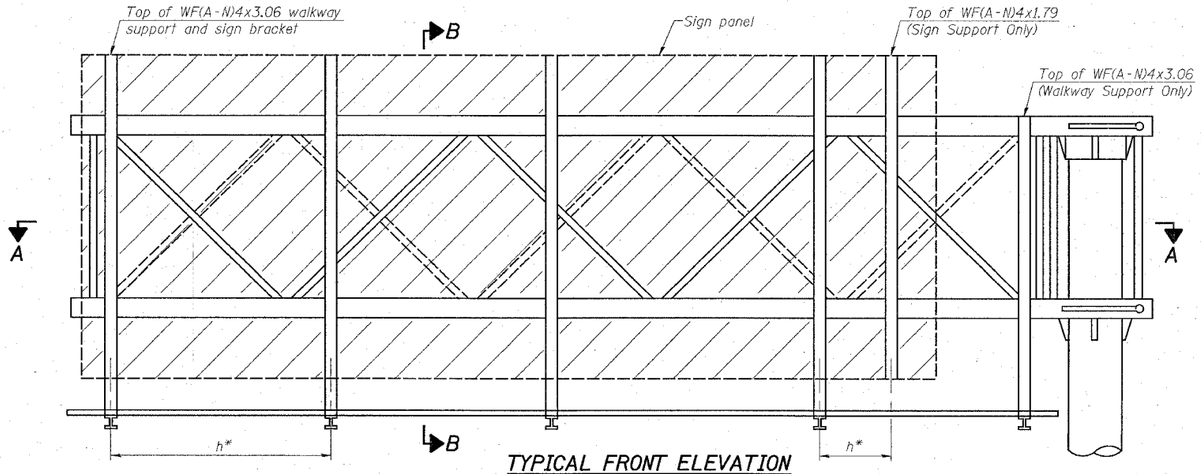
CANTILEVER SIGN STRUCTURES
TYPE II-C-A & III-C-A TRUSS SUPPORT POST
ALUMINUM TRUSS & STEEL POST

FAI ROUTE 70
SECTION 60-(10,11)RS
MADISON COUNTY

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	143
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

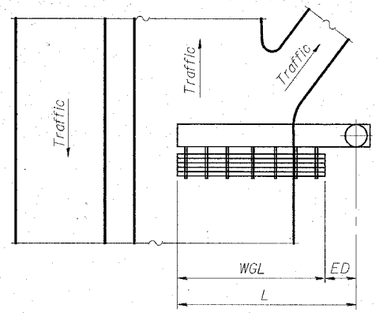
CONTRACT NO. 76857

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



TYPICAL FRONT ELEVATION

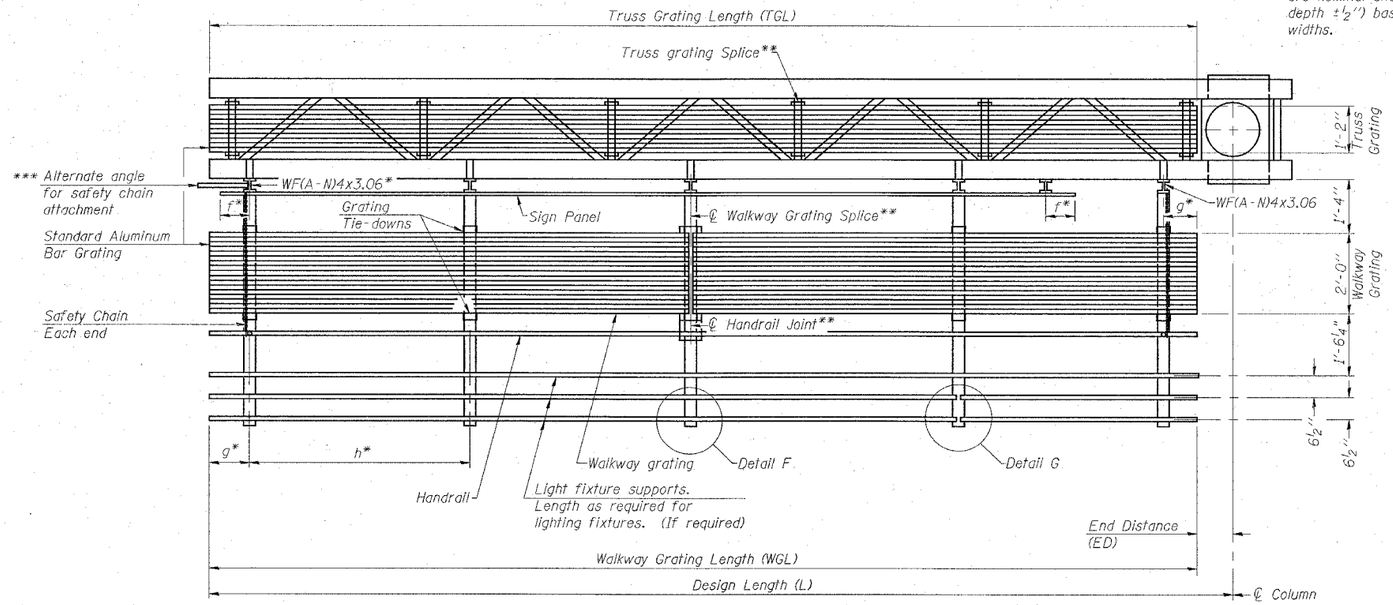
With lights and handrail omitted for clarity.



PLAN
WALKWAY AND HANDRAIL SKETCH

(Road plan beneath truss varies)

Walkway and truss grating dimensions are nominal and may vary (width ±½", depth ±½") based on available standard widths.



Structure Number	Station	WGL	ED	TGL
8C060127OR014.8	862+15 (FAI-270)	18'-0"	14'-0"	30'-6"

Notes:

* Space walkway brackets WF(A-N)4x3.06 and sign brackets WF(A-N)4x1.79 for efficiency and within limits shown:

f = 12" maximum, 4" minimum (End of sign to ℄ of nearest bracket)
g = 12" maximum, 4" minimum (End of walkway to ℄ of nearest bracket)
h = 6'-0" maximum (℄ to ℄ sign and/or walkway support brackets. WF(A-N)4x1.79 or WF(A-N)4x3.06)

*** If walkway bracket at safety chain location is behind sign, add angle to bracket. See alternate safety chain attachment on base sheet OSC-A-8

For details of sign placement, sign/walkway brackets, truss and walkway gratings, grating splices and Section B-B, see Base Sheet OSC-A-7.
For details of handrail, handrail joint, safety chain and Details F and G, see Base Sheet OSC-A-8.

Truss grating to facilitate inspection shall run full length of cantilevers. Cost of truss grating is included in Overhead Sign Structure Cantilever.

SECTION A-A

Handrail and walkway grating shall span a minimum of three brackets between splices.
** Use and location of handrail joints or grating splices are optional, based on lengths needed and material availability.

$$TGL = L - \left(\frac{\text{Post O.D.}}{2} + 6''\right)$$

BRACKET TABLE

WF(A-N)4x1.79 or WF(A-N)4x3.06
ASTM B308, Alloy 6061-T6

Sign Width		Number Brackets Required
Greater Than	Less Than or Equal To	
	8'-0"	2
8'-0"	14'-0"	3
14'-0"	20'-0"	4
20'-0"	26'-0"	5
26'-0"	32'-0"	6

NUMBER	REVISION	DATE

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED:	CDB	DRAWN:	SJS
CHECKED:	DCD	CHECKED:	CDB/DCD

OSC-A-6 7/01/2006

CANTILEVER SIGN STRUCTURES
ALUMINUM WALKWAY DETAILS
ALUMINUM TRUSS & STEEL POST

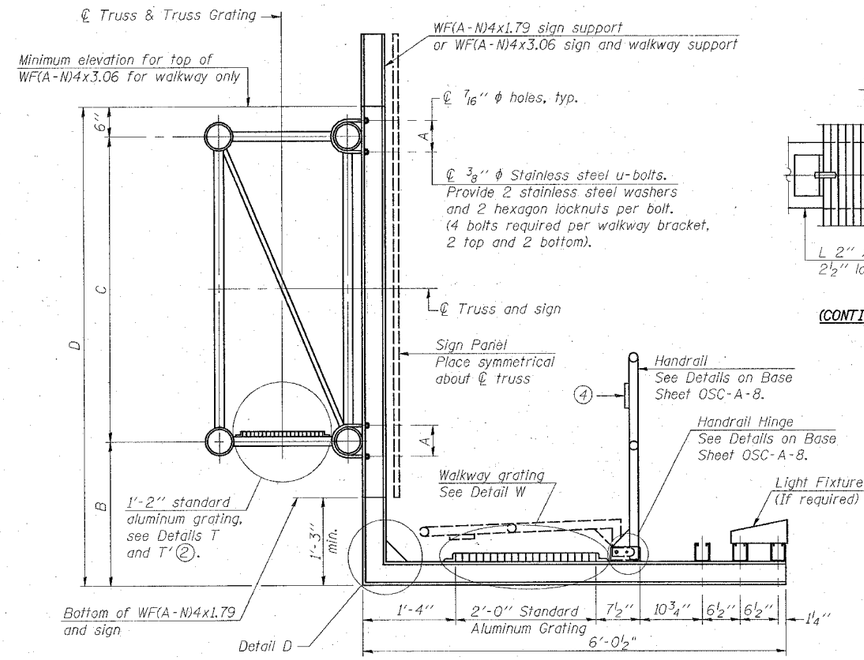
FAI ROUTE 70
SECTION 60-(10,11)RS
MADISON COUNTY

DATE: #DATE# - #TIME# USER: #USER# FILE: #FILE#

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	144
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

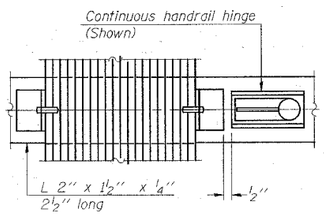
CONTRACT NO. 76857

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

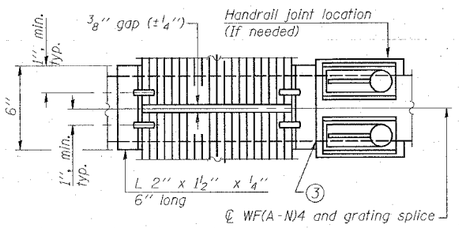


SECTION B-B

Sign shall be even with the top of the bracket, but it may extend no more than 6" above the top of the bracket for field adjustments.



(CONTINUOUS WALKWAY GRATING)



(AT WALKWAY GRATING SPLICE)

SECTION W-W

SPECIFICATIONS FOR STANDARD ALUMINUM GRATING

Main Bearing Bars (MBB) shall be 3/16" x 1 1/2" on 1 3/16" centers and conform to ASTM B211 Alloy 6061-T6.

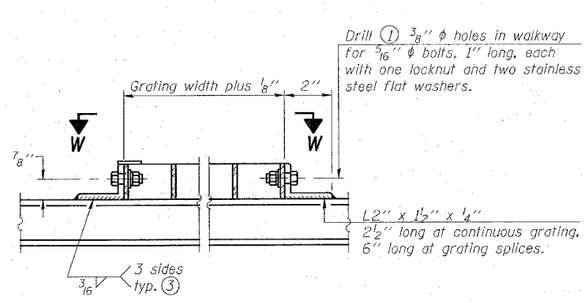
Cross bars (CB) shall be 3/16" x 1 1/2" on 4" centers and conform to ASTM B221 Alloy 6063-T5 or 6061-T6.

OR

Aluminum Grating with modified "I" sections for main bearing bars shall meet the following requirements:

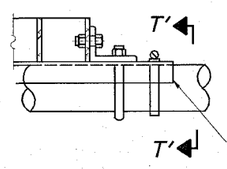
Main bars shall conform to ASTM B221 Alloy 6061-T6 and have a minimum section modulus equal to 0.0705 in.³ per bar, a depth of 1 1/2", spaced on 1 3/16" centers.

Cross bars shall conform to ASTM B221 Alloy 6063-T5 or T-42 and spaced on 4" centers.



DETAIL W

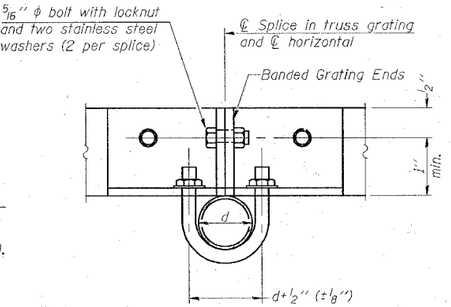
(Walkway grating)



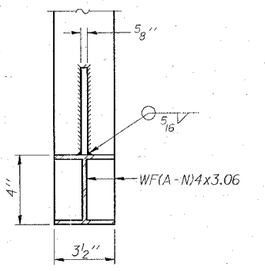
DETAIL T'

(Truss grating splice)

Details not shown same as Detail T. Alternate materials may be used subject to the Engineer's review and approval.

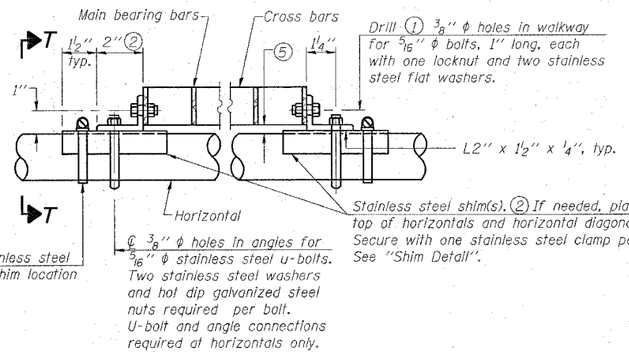


SECTION T'-T'



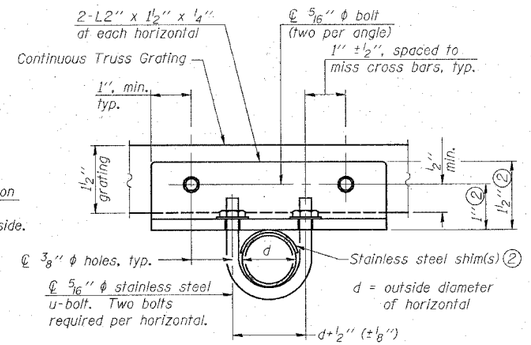
SECTION D-D

Screw type stainless steel tube clamp at shim location

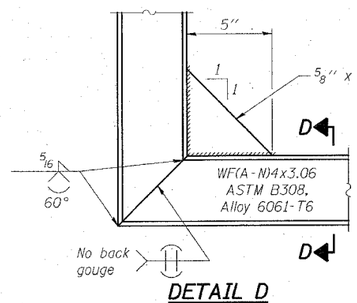


DETAIL T

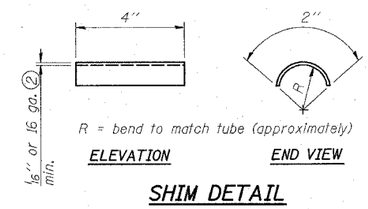
(Continuous Truss grating)



SECTION T-T



DETAIL D



SHIM DETAIL

NUMBER	REVISION	DATE

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED:	CDB	DRAWN:	SJS
CHECKED:	DCD	CHECKED:	CDB/DCD

OSC-A-7 7/01/2006

1. (1) Drilling holes in grating may be done in shop or field, based on Contractor's preference and subject to accurate alignment.
2. (2) Stainless steel shims shall be placed as shown in Detail T if needed to compensate for alignment variations between horizontal and diagonal pipes beyond adjustment provided by angles. Thicker shims may be used subject to shims performing properly.
3. (3) If Handrail Joint present, weld angle to WF(A-N)4 and 1/4" extension bars. (See Base Sheet OSC-A-8.)
4. (4) ℔ 1/8" x 1/2" x 2" welded to handrail posts to protect locations that contact grating.
5. (5) Tube to grating gap may vary from 0 to 1/2", max. to align walkway, allow for camber, etc.

Structure Number	Station	A	B	C	D
8C060127OR014.8	862+15 (FAI-270)	7 1/2"	2'-9"	7'-0"	10'-3"

CANTILEVER SIGN STRUCTURES
WALKWAY DETAILS
ALUMINUM TRUSS & STEEL POST

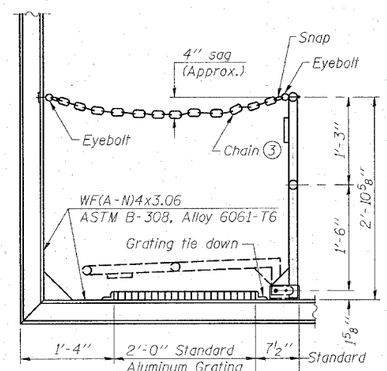
FAI ROUTE 70
SECTION 60-(10,11)RS
MADISON COUNTY

DATE: $DATE$ - $TIME$ USER: $USER$ FILE: $FILE$

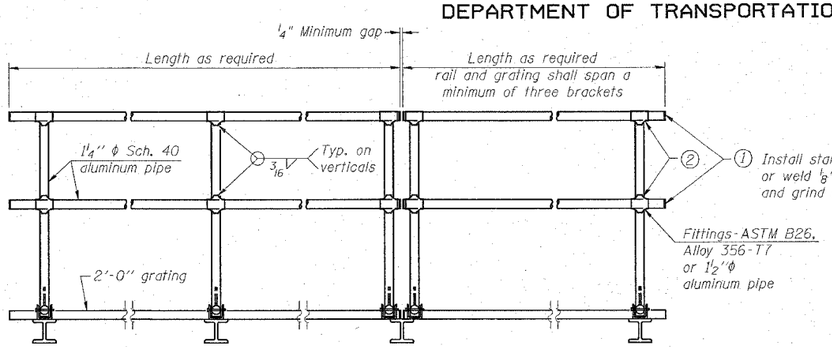
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	145
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 76857

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



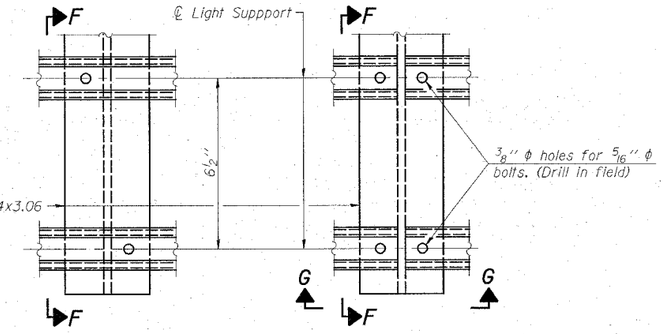
SIDE ELEVATION
(Showing Safety Chain W/O Sign)



FRONT ELEVATION

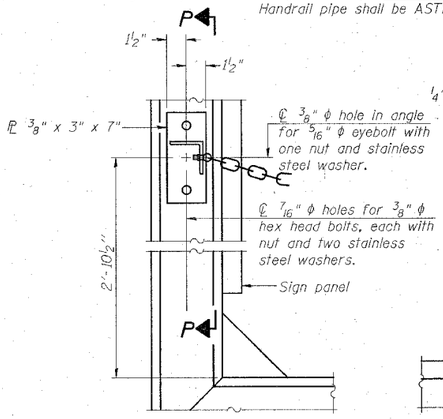
HANDRAIL DETAILS
Handrail pipe shall be ASTM B241 or B429, Alloy 6063-T6 or Alloy 6061-T6.

(2) Horizontal handrail member shall be continuous thru fitting. Provide 7/16" ϕ hole in fitting for 3/8" ϕ bolt. Field drill 7/16" ϕ hole in horizontal rail member. Provide locknut and two stainless steel washers for bolt. (Use 5/16" eyebolts in 7/16" ϕ holes on top rail at ends only.)

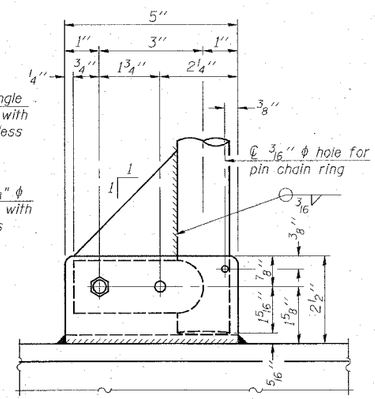


DETAIL F

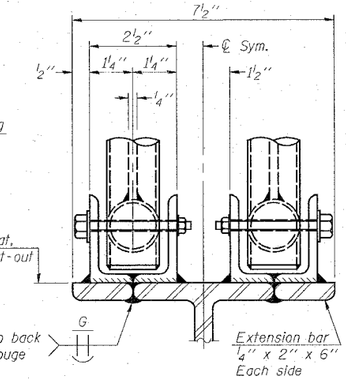
DETAIL G



ALTERNATE SAFETY CHAIN ATTACHMENT
(With Sign Present)
Items not shown same as "Side Elevation" of "Handrail Details"

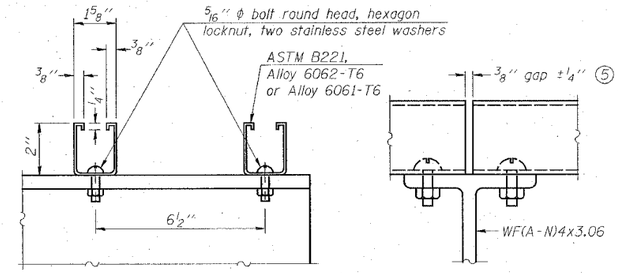


SIDE ELEVATION



FRONT ELEVATION
Details not shown same as "ELEVATION" at right.

ELEVATION AT HANDRAIL JOINT (4)
Details not shown same as "FRONT ELEVATION"

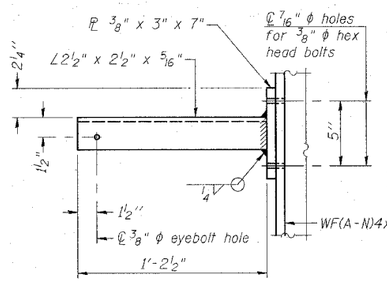


SECTION F-F

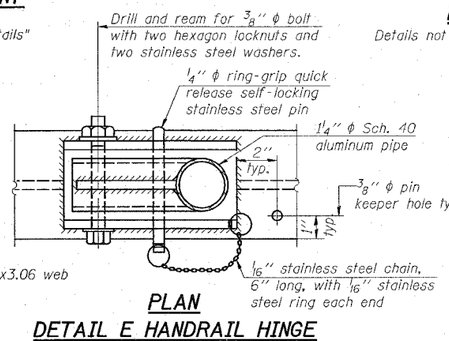
SECTION G-G

LIGHTING FIXTURE MOUNTS (IF REQUIRED)

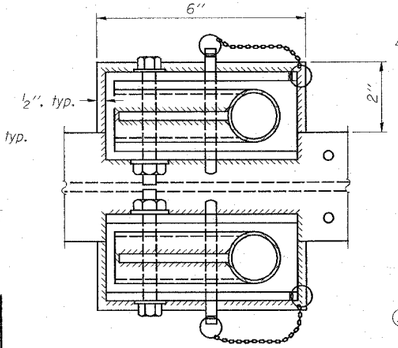
(5) Field cut ends of light support channels shall be free of burrs or hazardous projections and coated with zinc-rich primer or equivalent.



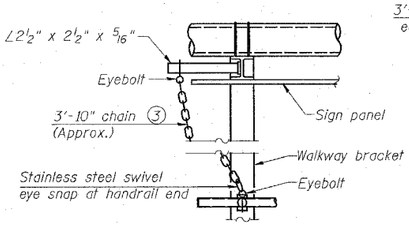
SECTION P-P



PLAN
DETAIL E HANDRAIL HINGE



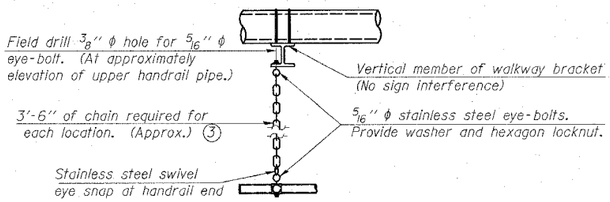
PLAN AT HANDRAIL JOINT
Details not shown same as "PLAN"



ALTERNATE SAFETY CHAIN ATTACHMENT
Details not shown similar to "Safety Chain" Details (Walkway omitted for clarity)

(3) 3/16" Type 304L stainless steel chain, approximately 12 links per foot.

(4) Extrusions may be used in lieu of the details shown, with approval of the Engineer.



SAFETY CHAIN
One required for each end of each walkway.

NUMBER	REVISION	DATE

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED: CDB	DRAWN: SJS
CHECKED: DCD	CHECKED: CDB/DCD

OSC-A-8 7/01/2006

CANTILEVER SIGN STRUCTURES
HANDRAIL DETAILS
ALUMINUM TRUSS & STEEL POST

FAI ROUTE 70
SECTION 60-(10,11)RS
MADISON COUNTY

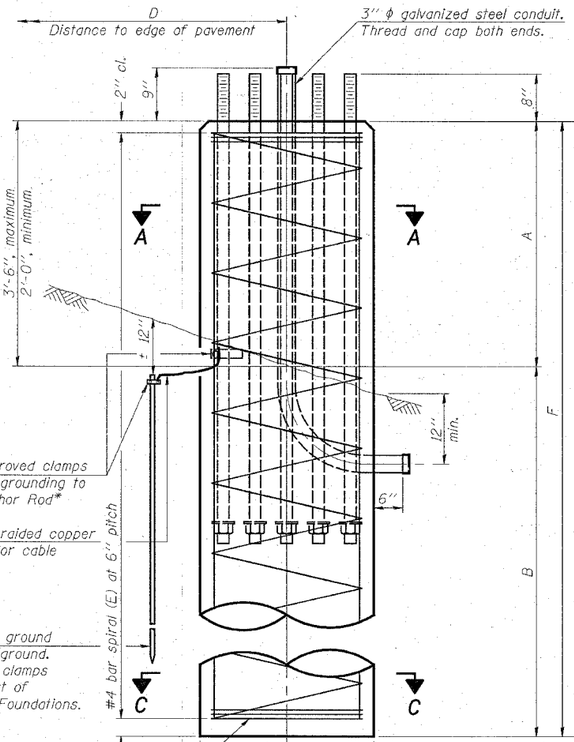
DATE: $DATE$ - $TIME$ USER: $USER$ FILE: $FILE$

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	14c
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

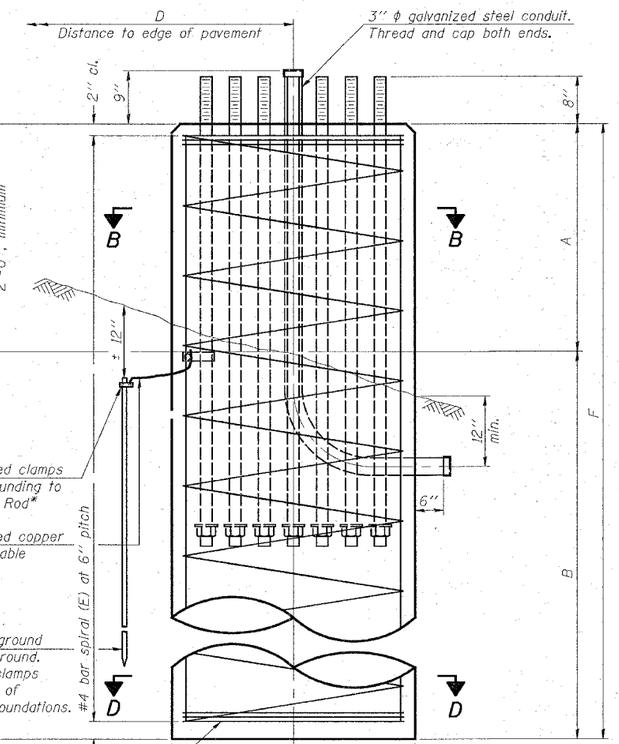
CONTRACT NO. 76857

* Grind anchor rod to bright finish at ground clamp location before installing clamp.

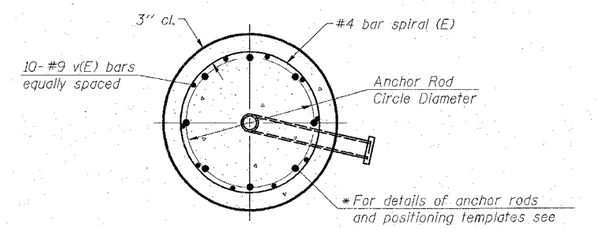
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



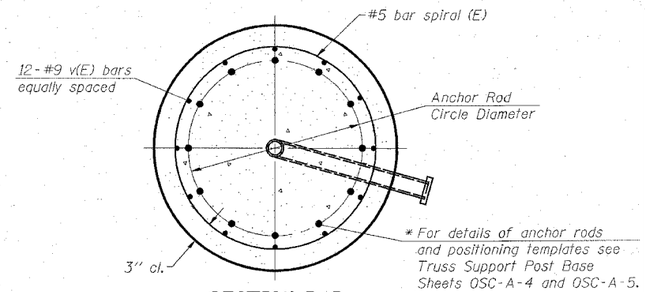
ELEVATION



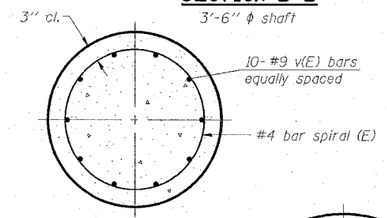
ELEVATION



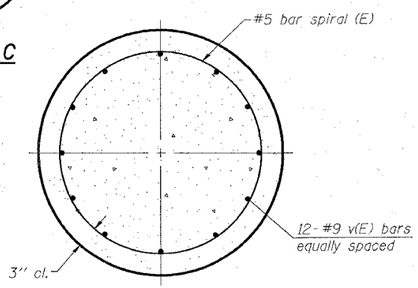
SECTION A-A
3'-0" ϕ shaft



SECTION B-B
3'-6" ϕ shaft



SECTION C-C
3'-0" ϕ shaft



SECTION D-D
3'-6" ϕ shaft

NOTES:

The foundation dimensions shown in the Foundation Design Table are based on the presence of mostly cohesive soils with an average Unconfined Compressive Strength (Qu) of at least 1.25 tsf, which must be determined by previous soil investigations at the jobsite. When other conditions are indicated, the boring data will be included in the plans and the foundation dimensions shown in the Foundation Data Table will be the result of site specific designs.

If the conditions encountered are different than those indicated, the Contractor shall notify the Engineer to determine if the foundation dimensions need to be modified. If dimensions "B" or "F" are revised by more than 12" by the Contractor, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.

No sonotubes or decomposable forms shall be used below the lower conduit entrance. Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.

Concrete shall be placed monolithically, without construction joints.

Backfill shall be placed per Article 502 of Standard Specification and prior to erection of support column.

A normal surface finish followed by a Bridge Seat Sealer application will be required on concrete surfaces above the lowest elevation 6" below finished ground line. Cost included in "Drilled Shaft Concrete Foundation".

FOUNDATION DATA TABLE

Structure Number	Station	Truss Type	Shaft Diameter	Elevation Top	Elevation Bottom	Qu	A	B	F	Class SI Concrete Cubic Yards
8C0601270R014.8	862+15 (FAI-270)	III-C-A	3'-6"	584.30	561.80	unknown	3'-6"	19'-0"	22'-6"	8.0

FOUNDATION DESIGN TABLE

Truss Type	Post Base Sheet	Maximum CantileverLength (ft)	Maximum Total Sign Area (sq ft)	Shaft Diameter (ft)	"B" Depth (ft)	Anchor Rods No.	Anchor Rods Diameter (in)	Anchor Rod Circle Diameter (in)
I-C-A	OSC-A-4	25	170	3.0	16.0	8	2	22
II-C-A	OSC-A-5	30	170	3.5	17.0	12	2	30
II-C-A	OSC-A-5	30	340	3.5	21.5	12	2	30
III-C-A	OSC-A-5	35	170	3.5	19.0	12	2	30
III-C-A	OSC-A-5	35	250	3.5	22.5	12	2	30
III-C-A	OSC-A-5	35	400	3.5	26.5	12	2	30
III-C-A	OSC-A-5	40	400	3.5	32.0	12	2	30

Johnson, Depp & Quisenberry
CONSULTING ENGINEERS
Springfield, Illinois

DESIGNED:	CDB	DRAWN:	SJS
CHECKED:	DCD	CHECKED:	CDB/DCD

OSC-A-9 7/01/2006

NUMBER	REVISION	DATE

CANTILEVER SIGN STRUCTURES
DRILLED SHAFT
ALUMINUM TRUSS & STEEL POST

FAI ROUTE 70
SECTION 60-(10,11)RS
MADISON COUNTY

FILE: $FILE$ USER: $USER$ - $TIME$ DATE: $DATE$

FAI ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
70	60-(10)RS	MADISON	156	147
STA.		TO STA.		
CONTRACT NO.: 76857				

Illinois Department of Transportation — SOIL BORING LOG

Division of Highways, Illinois Department of Transportation

Page 1 of 1

Date 10/17/06

ROUTE FAI 70 DESCRIPTION I-270 Eastbound at I-55 North – Cantilever Sign Truss LOGGED BY S. Wiszkon

SECTION 60-(10,11)RS LOCATION NW 1/4, SEC. 32, TWP. 3N, RNG. 7W, 3 PM

COUNTY Madison DRILLING METHOD Hollow Stem Auger HAMMER TYPE 140# Automatic

STRUCT. NO. 8C060I270R014.8
Station
BORING NO. 1
Station 862+25
Offset 28.00ft Right
Ground Surface Elev. 100 ft

Surface Water Elev. N/A ft
Stream Bed Elev. N/A ft
Groundwater Elev.:
First Encounter Dry Hole ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (6")	UCS Qu (tsf)	MOIST (%)
Asphalt Shoulder 99.5			
Gray Silt LOAM	6		
	6	1.90	21
	9	S20	
-5	4		
	6	1.20	22
	9	B	
93.5			
Brown SILT	12		
	12	4.5+	17
	15	P	
-10	9		
	11	4.94	18
	16	S15	
88.5			
Gray/Brown Silty Clay LOAM	4		
	5	2.31	24
	9	S20	
86.0			
Mottled Silt LOAM -15	10		
	13	2.47	19
	14	S20	
83.5			
Dark Gray Silty Clay LOAM	4		
	5	0.91	27
	11	S20	
-20	3		
Dark Gray Silty Clay LOAM (continued) 79.0		5	1.27 23
		12	S20
End of Boring			
-25			
-30			
-35			
-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation — SOIL BORING LOG

Division of Highways, Illinois Department of Transportation

Page 1 of 1

Date 10/17/06

ROUTE FAI 70 DESCRIPTION I-70 Westbound East of Riggin Road – Overhead Sign Truss LOGGED BY S. Wiszkon

SECTION 60-(10,11)RS LOCATION NW 1/4, SEC. 33, TWP. 3N, RNG. 7W, 3 PM

COUNTY Madison DRILLING METHOD Hollow Stem Auger HAMMER TYPE 140# Automatic

STRUCT. NO. 8S060I070L015.8
Station
BORING NO. 3
Station 975+27
Offset 0.00ft Right EOS
Ground Surface Elev. 100 ft

Surface Water Elev. N/A ft
Stream Bed Elev. N/A ft
Groundwater Elev.:
First Encounter 85.0 ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (6")	UCS Qu (tsf)	MOIST (%)
Brown SILT	9		
	9	4.24	18
	12	S20	
98.0			
Brown Silt LOAM -5	4		
	4	1.14	24
	5	S20	
	4		
	4	1.14	23
91.0	6	S20	
Mottled Silty Clay LOAM -10	3		
	5	1.93	23
	7	S20	
	5		
	6	1.93	21
Sand Lens 86.0	7	S20	
Brown LOAM ▼-10	3		
	3	1.43	22
84.0	3	S20	
End of Boring			
-20			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation — SOIL BORING LOG

Division of Highways, Illinois Department of Transportation

Page 1 of 1

Date 10/17/06

ROUTE FAI 70 DESCRIPTION I-70 Westbound East of Riggin Road – Overhead Sign Truss LOGGED BY S. Wiszkon

SECTION 60-(10,11)RS LOCATION NW 1/4, SEC. 33, TWP. 3N, RNG. 7W, 3 PM

COUNTY Madison DRILLING METHOD Hollow Stem Auger HAMMER TYPE 140# Automatic

STRUCT. NO. 8S060I070L015.8
Station
BORING NO. 2
Station 975+27
Offset 6.60ft Left EOS
Ground Surface Elev. 100 ft

Surface Water Elev. N/A ft
Stream Bed Elev. N/A ft
Groundwater Elev.:
First Encounter 85.0 ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (6")	UCS Qu (tsf)	MOIST (%)
Brown SILT	12		
	11	5.54	17
	9	S20	
96.0			
Brown Silt LOAM -5	4		
	5	0.98	24
	6	S20	
	4		
	7	1.07	22
91.0	8	S20	
Mottled Silty Clay LOAM -10	3		
	4	1.46	22
	6	S20	
	5		
87.0	5	1.88	21
	5	S20	23
Brown Silty Clay LOAM		0.8 P	
▼-15	2		
	3	0.98	17
84.0	5	S20	
End of Boring			
-20			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
BBS, from 137 (Rev. 8-99)

ILLINOIS DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS

FAI 70
SECTION 60-(10,11)RS
MADISON COUNTY

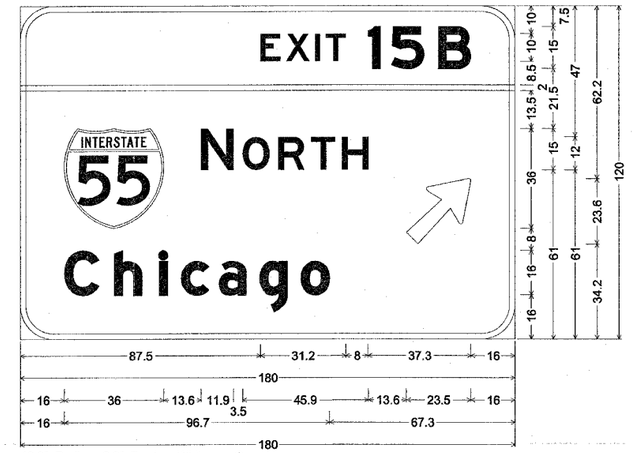
PLOT DATE: *DATE-TIME*

$$DATE$$
DATE-TIME
DGN-SPEC
*REF-
*REF-

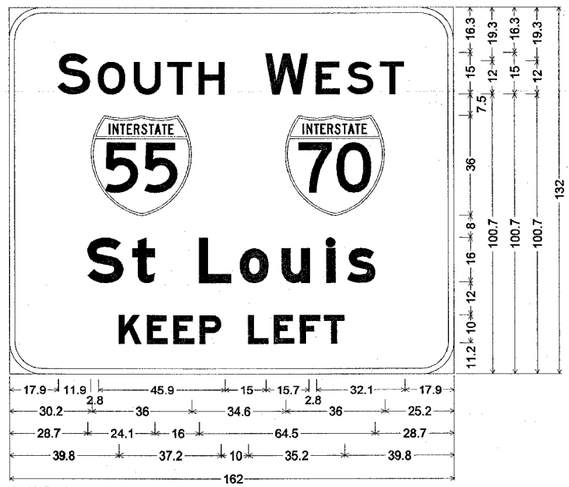
CONTRACT NO. 76857

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
IQ	60-(10,11)RS	MADISON	156	146
STA. _____	TO STA. _____			
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

12.0" Radius, 2.0" Border, White on Green;
[WEST] E; [NORTH] E; [Kansas City] E Mod; [Chicago] E Mod;
[KEEP RIGHT] E Mod;



12.0" Radius, 2.0" Border, White on Green;
[EXIT] E [15B] E Mod; [NORTH] E; [Chicago] E Mod; Arrow 133 - 30.0° 45°;



12.0" Radius, 2.0" Border, White on Green;
[SOUTH] E; [WEST] E; [St Louis] E Mod; [KEEP LEFT] E Mod;

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

SIGN PANEL DETAILS DETAILS

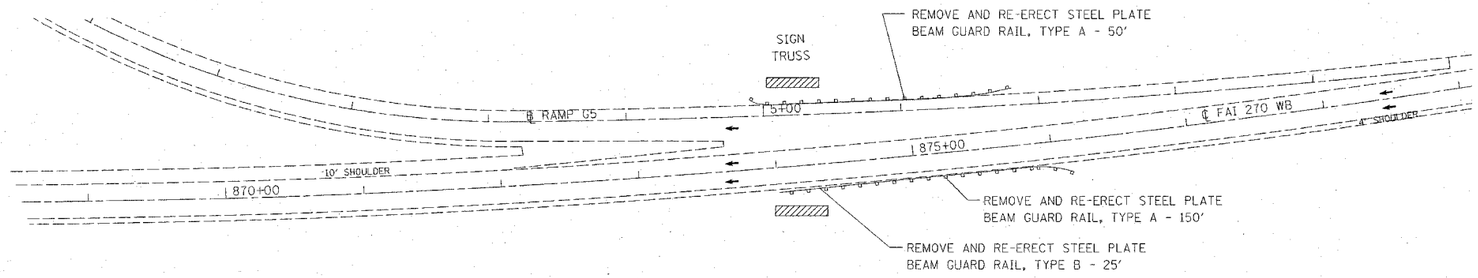
FAI ROUTE 70
SECTION 60-(10,11)RS
MADISON COUNTY

SCALE: VERT. HORIZ.
DATE
DRAWN BY
CHECKED BY

PLOT DATE = #DATE#
FILE NAME = #FILE#
FILE SCALE = #SCALE#
REFERENCE = #REF#

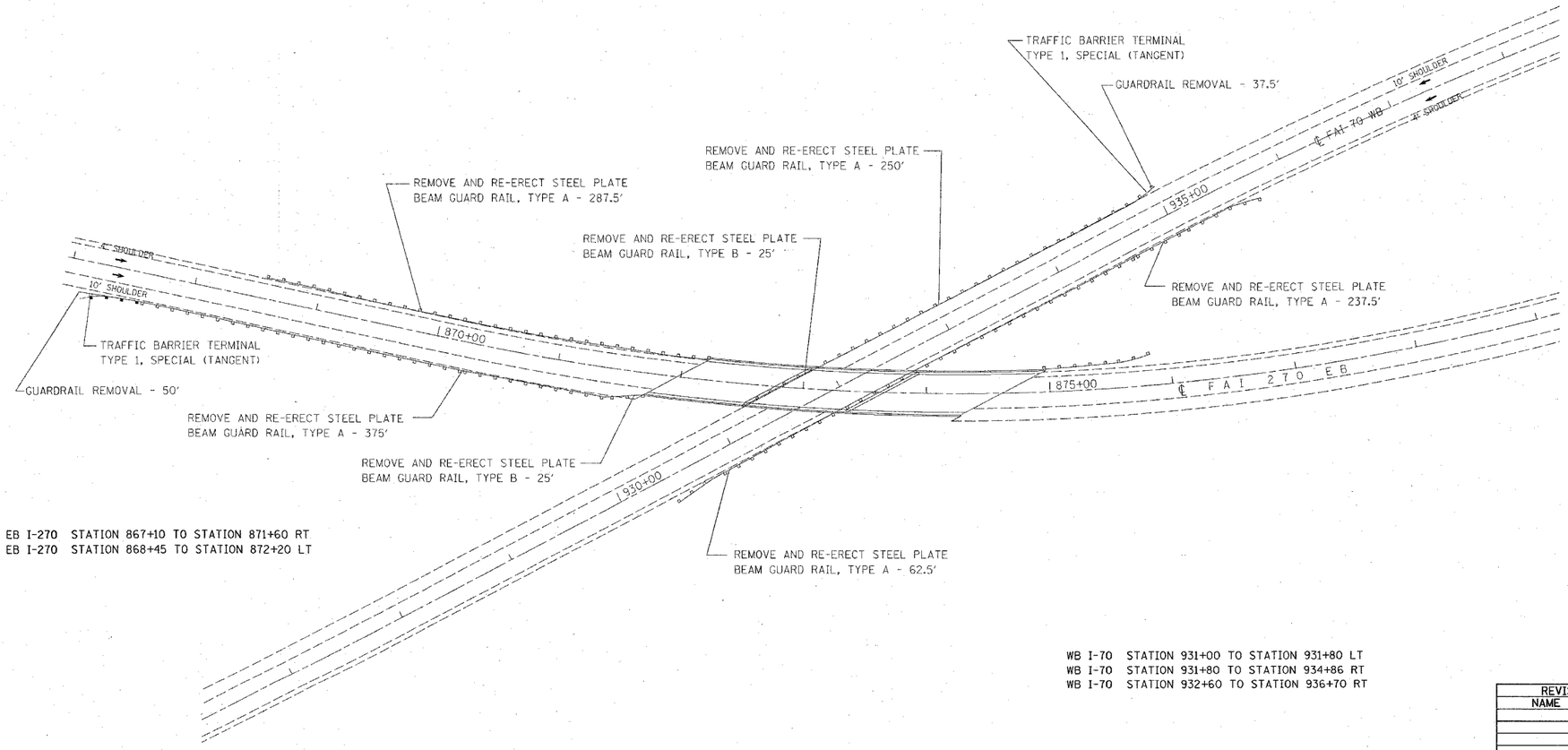
CONTRACT NO. 76857

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TO	60-(10,11)RS	MADISON	156	149
STA. _____	TO STA. _____			
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		



WB I-270 STATION 873+90 TO STATION 875+75 RT
WB I-270 STATION 874+00 TO STATION 876+12 LT

N



EB I-270 STATION 867+10 TO STATION 871+60 RT
EB I-270 STATION 868+45 TO STATION 872+20 LT

WB I-70 STATION 931+00 TO STATION 931+80 LT
WB I-70 STATION 931+80 TO STATION 934+86 RT
WB I-70 STATION 932+60 TO STATION 936+70 RT

HAZARD
EXISTING GUARDRAIL
PROPOSED GUARDRAIL

REVISIONS NAME	DATE

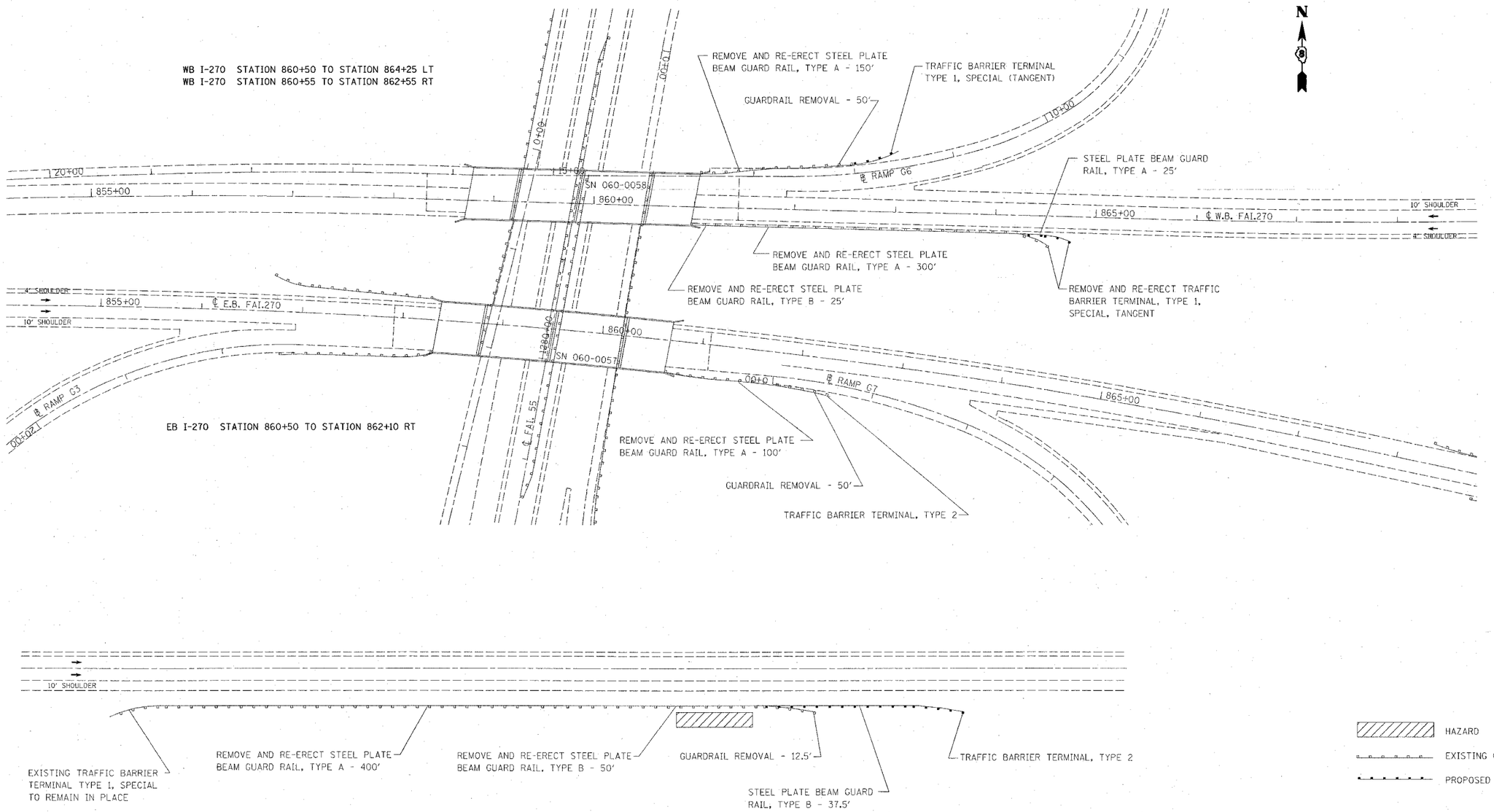
ILLINOIS DEPARTMENT OF TRANSPORTATION
GUARDRAIL DETAILS AT SN 060-0059 EB I-270 OVER WB I-70
FAI 70
SECTION 60-(10,11)RS
MADISON COUNTY

SCALE: VERT. HORIZ.
DRAWN BY
DATE
CHECKED BY

PLOT DATE = $DATE$
FILE NAME = $FILEL$
PLOT SCALE = $SCALE$
REFERENCE = REF

CONTRACT NO. 76857

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	150
STA. _____	TO STA. _____			
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		



PLOT DATE = $DATE$
FILE NAME = $FILE$
PLOT SCALE = $SCALE$
REFERENCE = REF

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

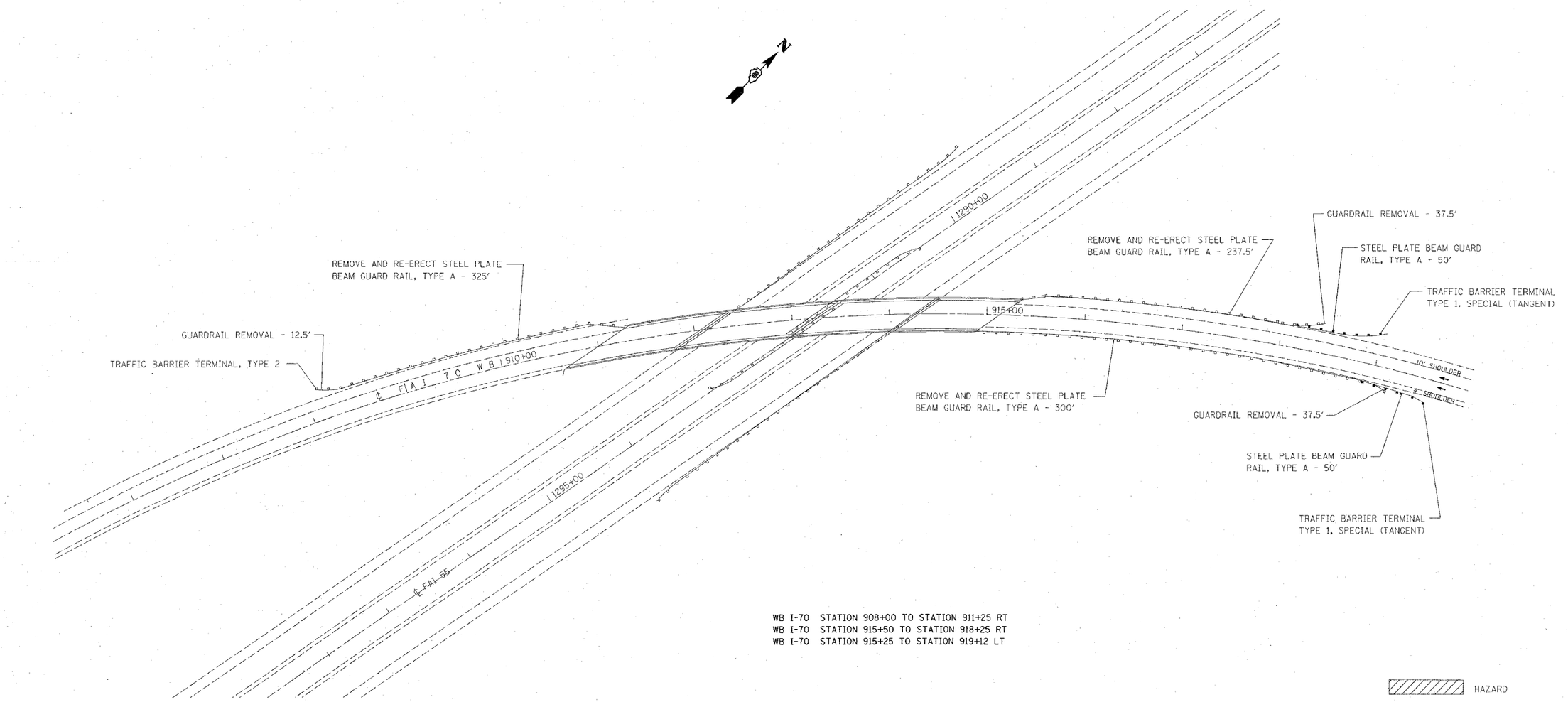
GUARDRAIL DETAILS AT SN 060-0057, 060-0058 I-270 OVER I-55

FAI 70
SECTION 60-(10,11)RS
MADISON COUNTY

SCALE: VERT.
HORIZ.
DATE
DRAWN BY
CHECKED BY

CONTRACT NO. 76857

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	151
STA. _____	TO STA. _____			
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		



WB I-70 STATION 908+00 TO STATION 911+25 RT
WB I-70 STATION 915+50 TO STATION 918+25 RT
WB I-70 STATION 915+25 TO STATION 919+12 LT

HAZARD
EXISTING GUARDRAIL
PROPOSED GUARDRAIL

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

GUARDRAIL DETAILS AT SN 060-0022 WB I-70 OVER I-55

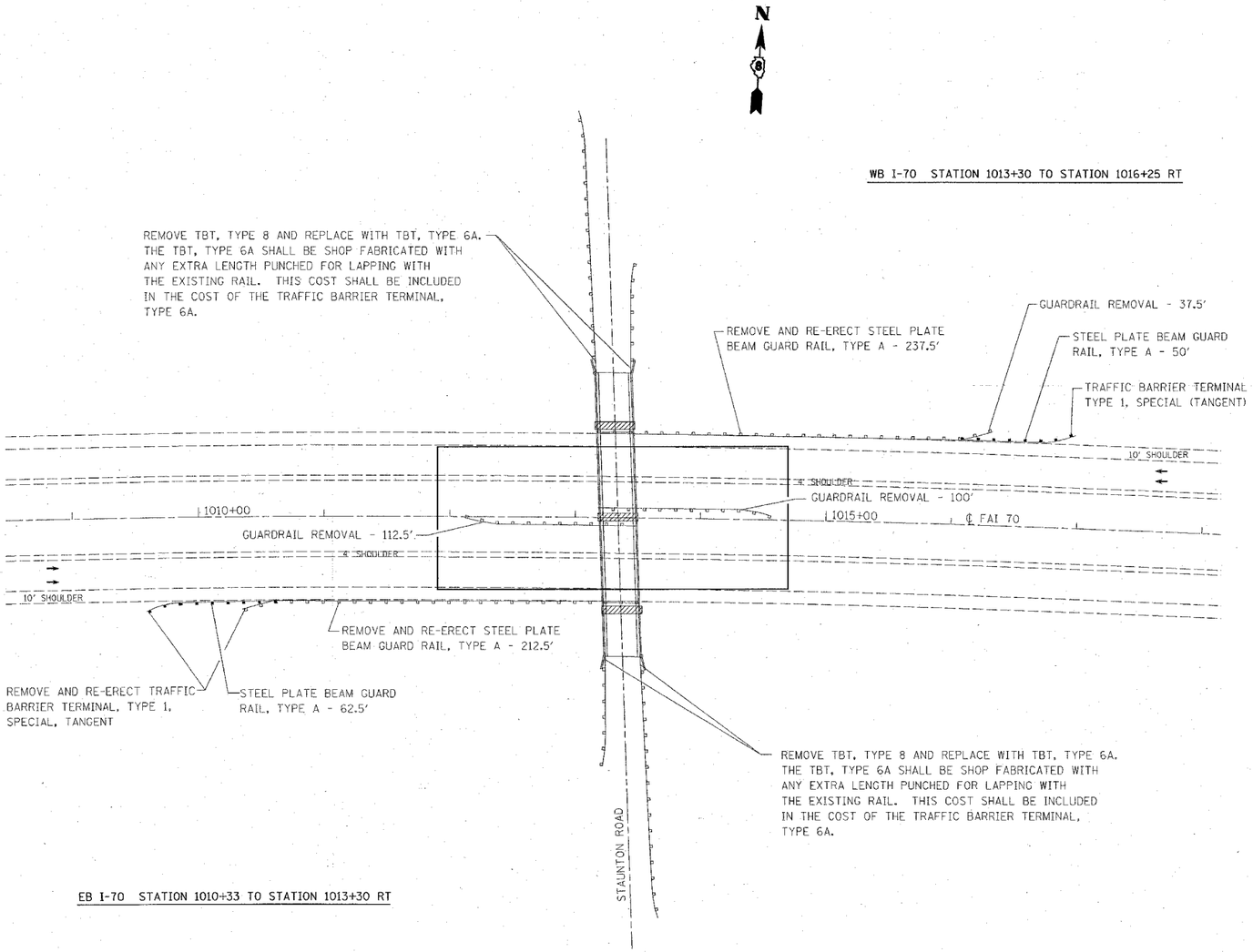
FAI 70
SECTION 60-(10,11)RS
MADISON COUNTY

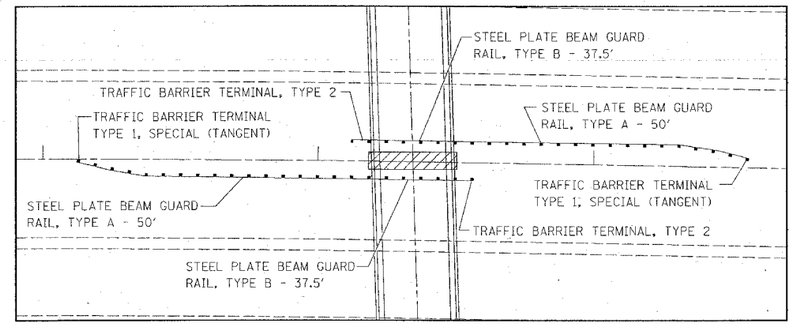
SCALE: VERT.
HORIZ.
DATE
DRAWN BY
CHECKED BY

PLOT DATE = #DATE#
FILE NAME = #FILE#
PLOT SCALE = #SCALE#
REFERENCE = #REF#

CONTRACT NO. 76857

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	132
STA. _____	TO STA. _____			
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		





INSET

EB I-70 STATION 1012+10 TO STATION 1013+50 LT
WB I-70 STATION 1013+00 TO STATION 1014+00 LT

HAZARD
EXISTING GUARDRAIL
PROPOSED GUARDRAIL

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
GUARDRAIL DETAILS AT SN 060-0182 I-70 AT STAUNTON ROAD
FAI 70
SECTION 60-(10,11)RS
MADISON COUNTY

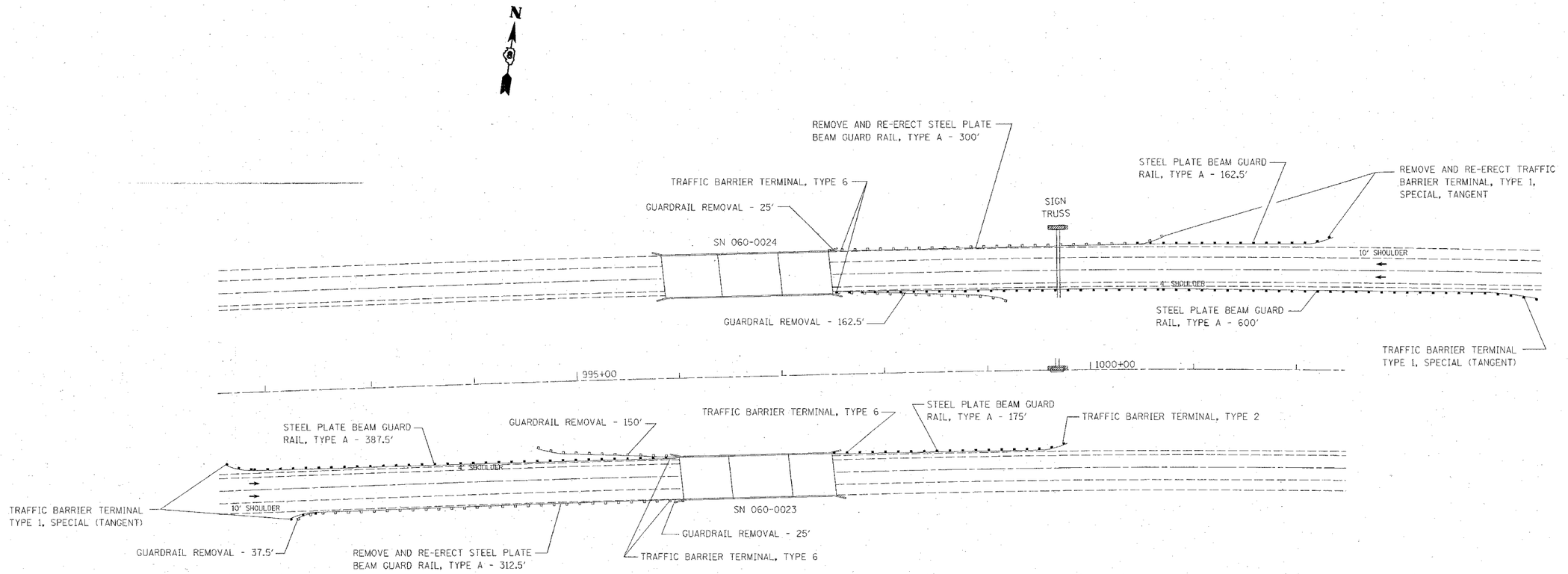
SCALE: VERT. HORIZ.
DRAWN BY
DATE
CHECKED BY

PLOT DATE = #DATE#
FILE NAME = #FILE1#
PLOT SCALE = #SCALE#
REFERENCE = #REF#

CONTRACT NO. 76857

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	133
STA. _____	TO STA. _____			
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

WB I-70 STATION 997+50 TO STATION 1002+85 RT
WB I-70 STATION 997+50 TO STATION 1003+90 LT



EB I-70 STATION 991+95 TO STATION 996+00 RT
EB I-70 STATION 994+75 TO STATION 996+00 LT

EB I-70 STATION 997+50 TO STATION 991+75 LT

HAZARD
EXISTING GUARDRAIL
PROPOSED GUARDRAIL

REVISIONS NAME	DATE

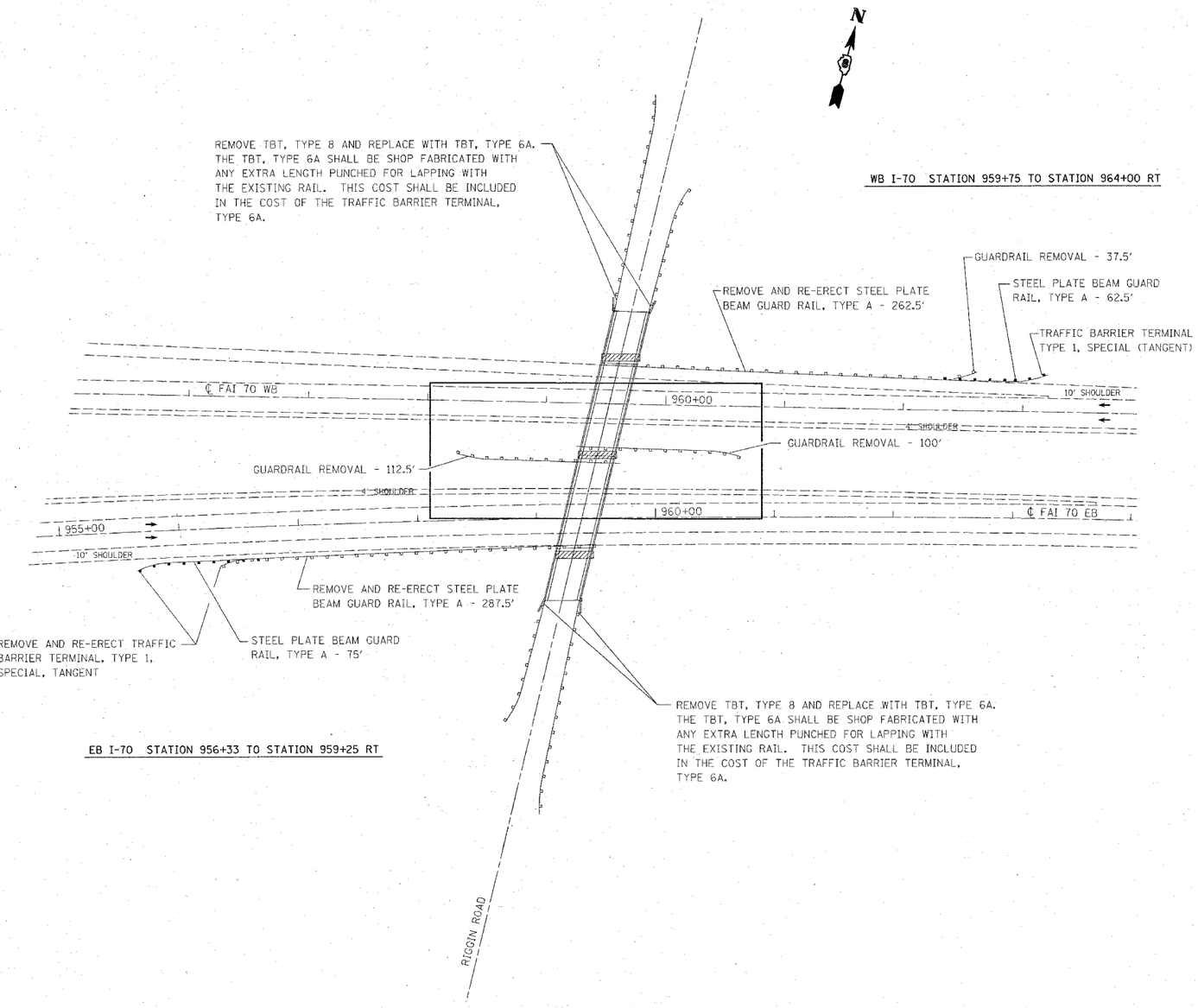
ILLINOIS DEPARTMENT OF TRANSPORTATION
GUARDRAIL DETAILS AT SN 060-0023, 060-0024 I-70 OVER WENDELL BRANCH
FAI 70
SECTION 60-(10,11)RS
MADISON COUNTY

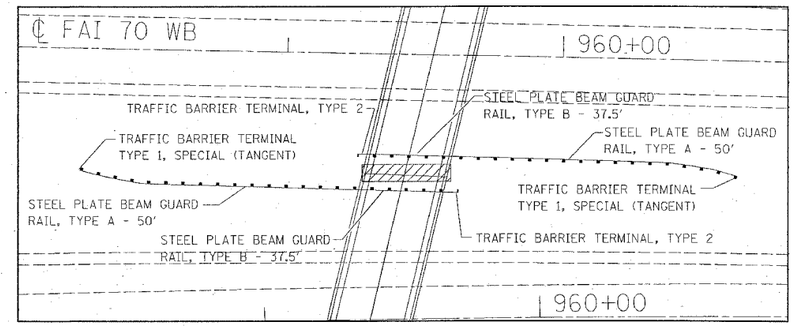
SCALE: VERT. HORIZ.
DATE
DRAWN BY
CHECKED BY

PLOT DATE = #DATE#
FILE NAME = #FILE NAME#
PLOT SCALE = #SCALE#
REFERENCE = #REF#

CONTRACT NO. I6857

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	154
STA. _____	TO STA. _____			
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		





INSET

EB I-70 STATION 958+50 TO STATION 959+25 LT
WB I-70 STATION 959+75 TO STATION 961+00 LT

HAZARD
EXISTING GUARDRAIL
PROPOSED GUARDRAIL

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
GUARDRAIL DETAILS AT SN 060-0173 I-70 AT RIGGIN ROAD
FAI 70
SECTION 60-(10,11)RS
MADISON COUNTY

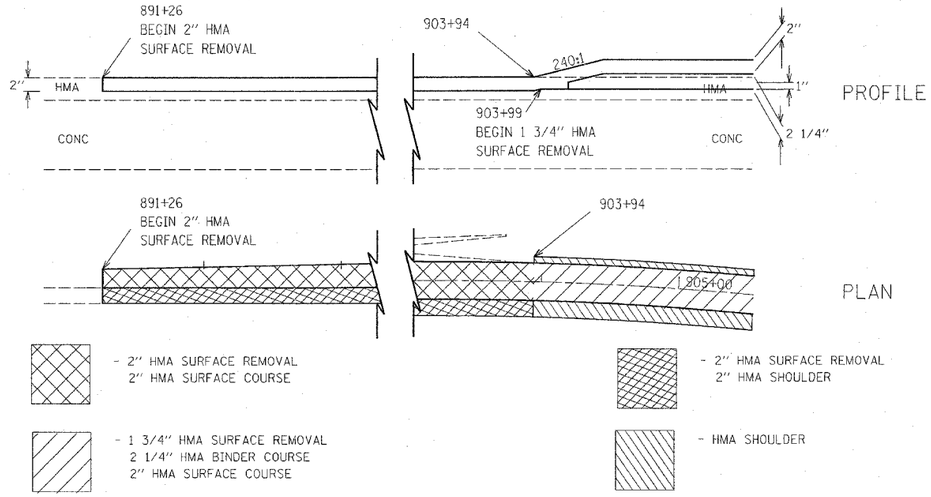
SCALE: VERT. HORIZ.
DATE
DRAWN BY
CHECKED BY

PLOT DATE = #DATE#
FILE NAME = #FILE#
PLOT SCALE = #SCALE#
REFERENCE = #REF#

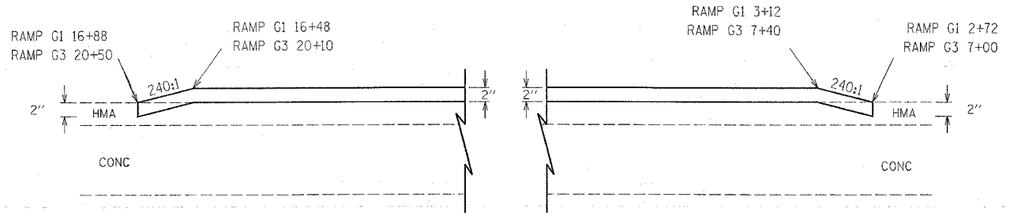
CONTRACT NO. 76857

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
IQ	60-(10,11)RS	MADISON	156	155
STA. _____	TO STA. _____			
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

EASTBOUND 70 RESURFACING DETAIL

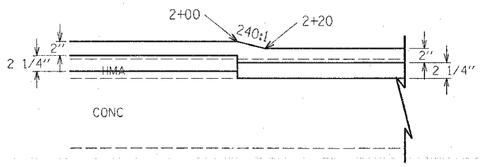


RAMP G1 & RAMP G3 BUTT JOINT DETAILS

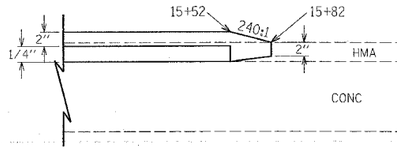


RAMP G7

RESURFACING DETAIL

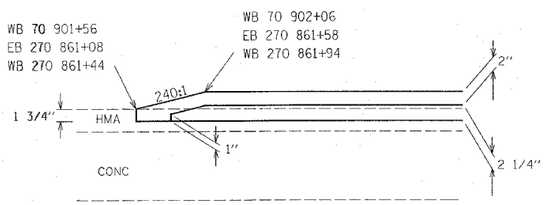


BUTT JOINT DETAIL



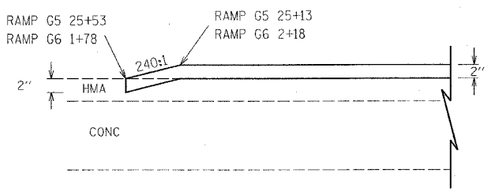
WESTBOUND 70, EASTBOUND 270 WESTBOUND 270, RAMP G4

RESURFACING DETAIL

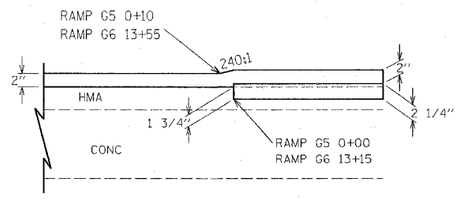


RAMP G5 & RAMP G6

BUTT JOINT DETAIL



RESURFACING DETAIL



REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

BUTT JOINT DETAILS

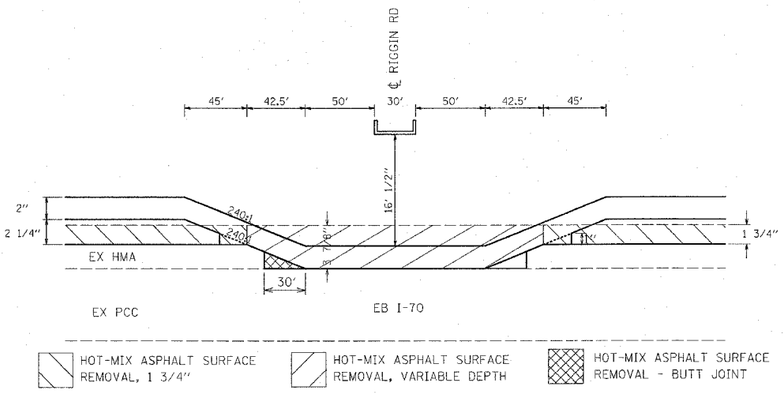
FAI ROUTE 70
SECTION 60-(10,11)RS
MADISON COUNTY

SCALE: VERT. HORIZ.
DATE
DRAWN BY
CHECKED BY

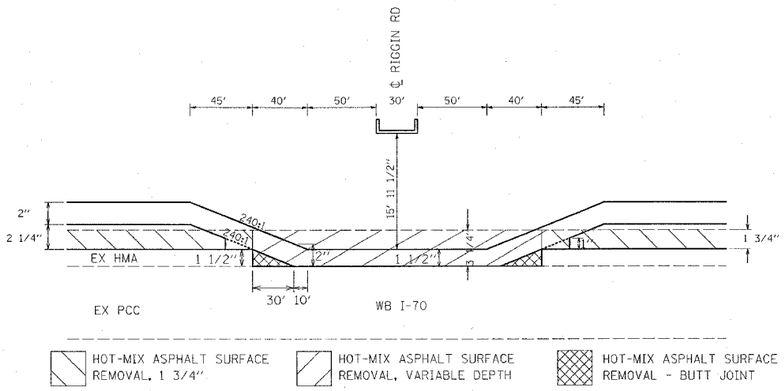
PLOT DATE = $DATE$
FILE NAME = $FILE$
PLOT SCALE = $SCALE$
REFERENCE = REF

CONTRACT NO. 76857

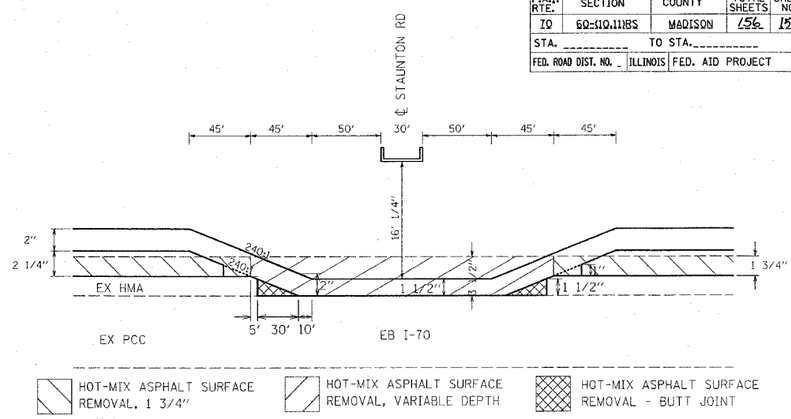
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
IO	60-(10,11)RS	MADISON	156	156
STA. _____	TO STA. _____			
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		



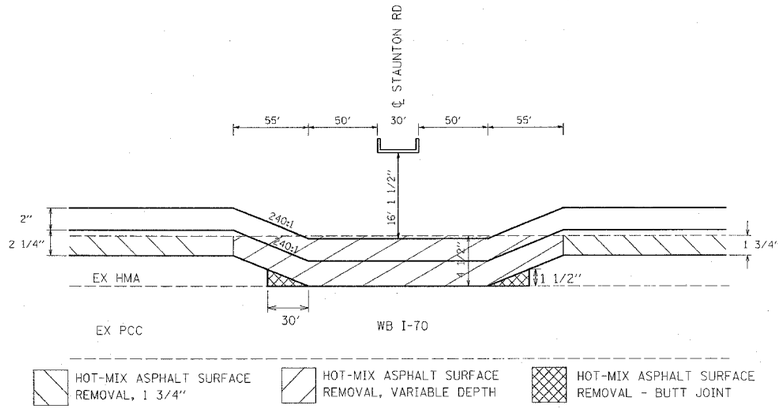
MILLING DETAIL - EASTBOUND I-70 UNDER RIGGIN RD



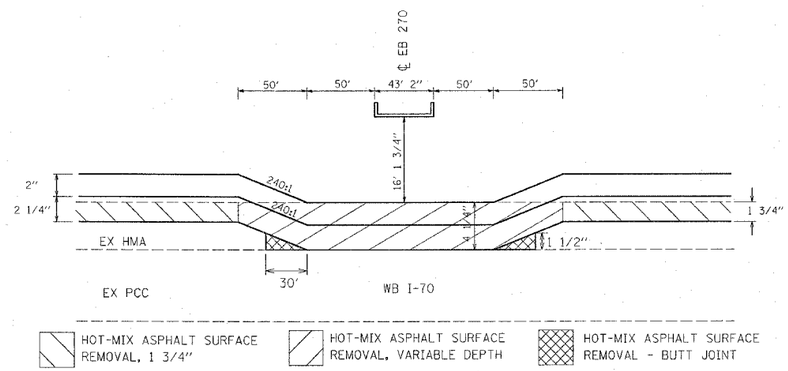
MILLING DETAIL - WESTBOUND I-70 UNDER RIGGIN RD



MILLING DETAIL - EASTBOUND I-70 UNDER STAUNTON RD



MILLING DETAIL - WESTBOUND I-70 UNDER STAUNTON RD



MILLING DETAIL - WESTBOUND I-70 UNDER EASTBOUND 270

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

RESURFACING DETAILS

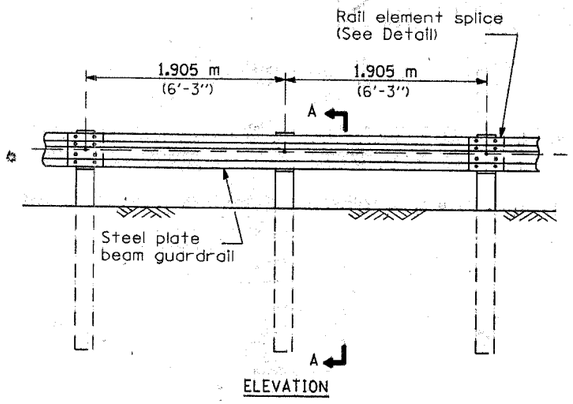
FAI ROUTE 70
SECTION 60-(10,11)RS
MADISON COUNTY

SCALE: VERT. HORIZ.
DATE
DRAWN BY
CHECKED BY

PLOT DATE = $DATE$
FILE NAME = $FILE$
PLOT SCALE = $SCALE$
REFERENCE = REF

Contract 76857

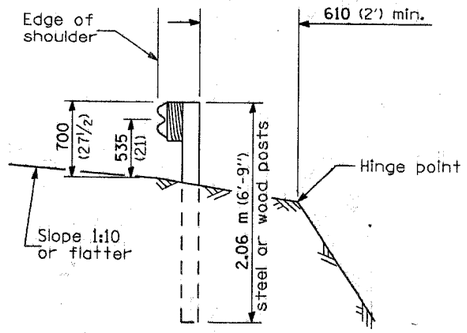
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	156A.
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



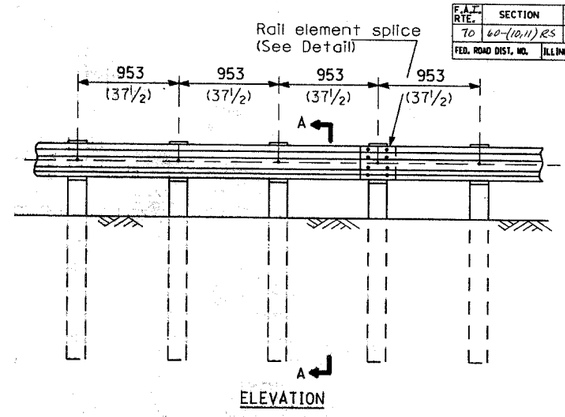
ELEVATION

TYPE A

1.905 m (6'-3") Typical post spacing



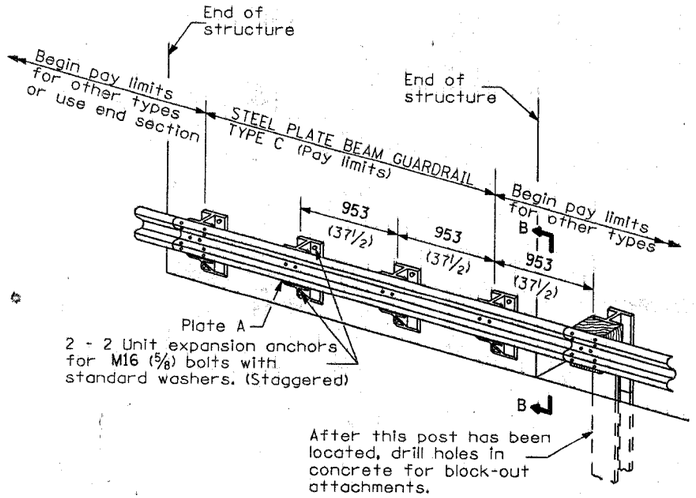
SECTION A-A



ELEVATION

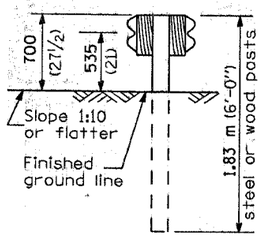
TYPE B

953 (37½) Closed post spacing

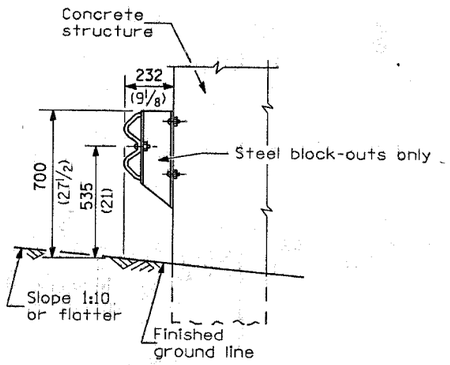


TYPE C

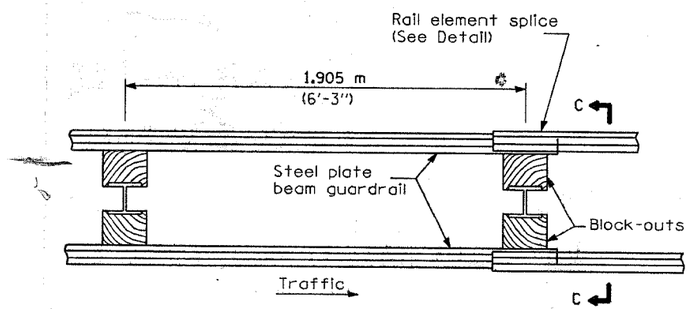
953 (37½) Block-out spacing



SECTION C-C



SECTION B-B



PLAN

TYPE D

Double steel plate beam guardrail
1.905 m (6'-3") typical post spacing

GENERAL NOTES

All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

All dimensions are in millimeters (inches) unless otherwise shown.

The existing steel posts may be drilled to match the bolt pattern shown herein for the wood block-out, or a new steel post shall be provided.

This detail is applicable to the guardrail system used prior to January 1, 2007. For details on the Midwest Guardrail System, see Standard 630001.

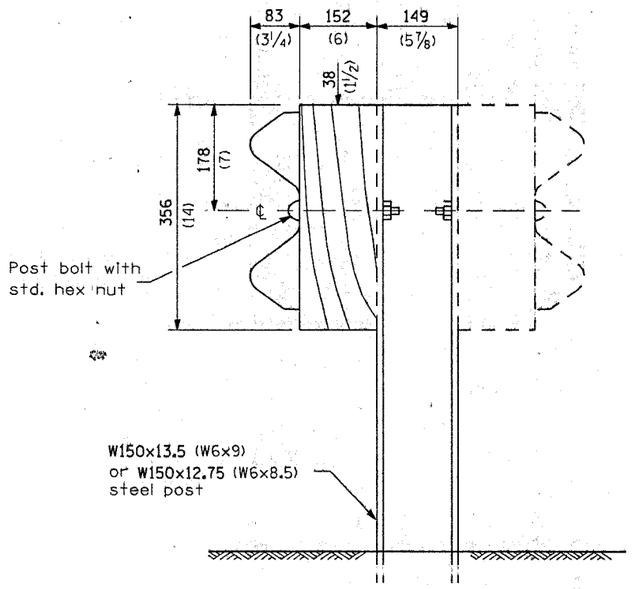
REMOVE AND REERECT STEEL PLATE BEAM GUARDRAIL

(Sheet 1 of 4)

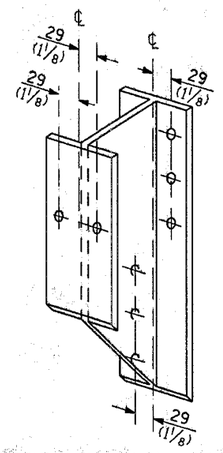
DETAIL

Contract 76857

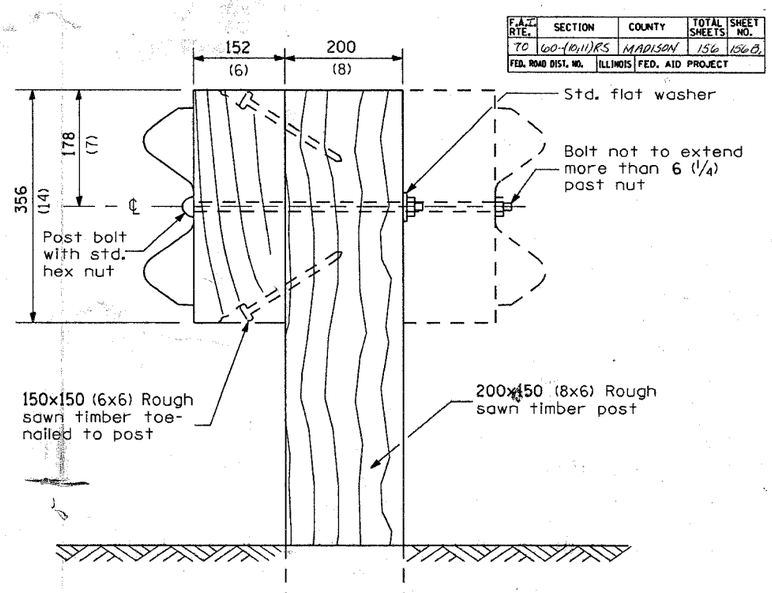
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	156B
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



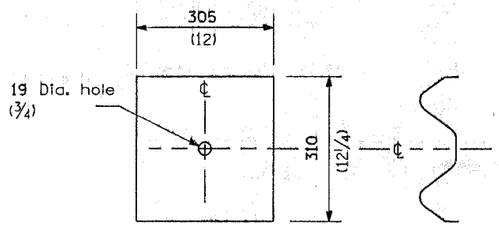
STEEL POST CONSTRUCTION



STEEL BLOCK-OUT DETAIL



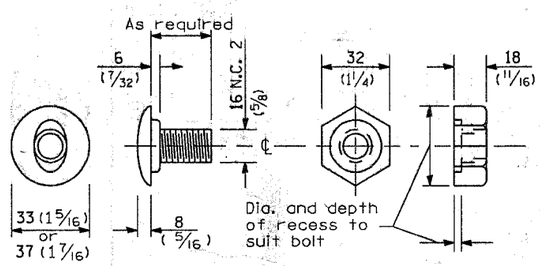
WOOD POST CONSTRUCTION



NOTE

Plate A shall be placed between rail element and block-out at non-splice mounting points only when steel block-outs are used.

PLATE A



POST OR SPLICE BOLT & NUT

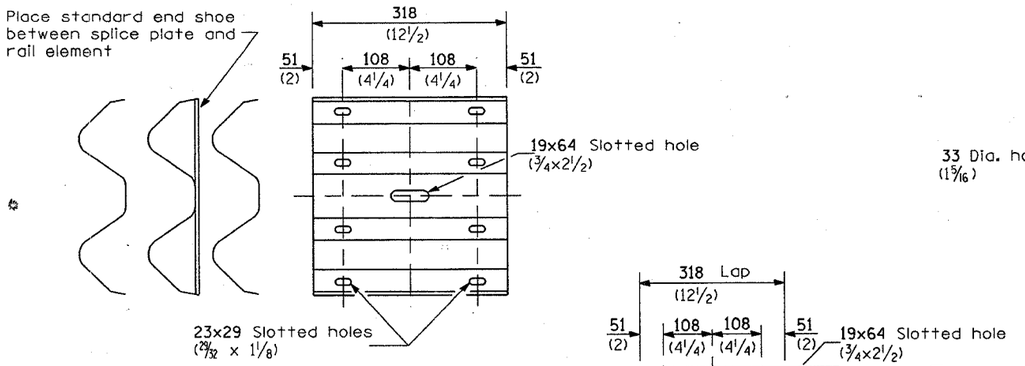
REMOVE AND REERECT STEEL PLATE BEAM GUARDRAIL

(Sheet 2 of 4)

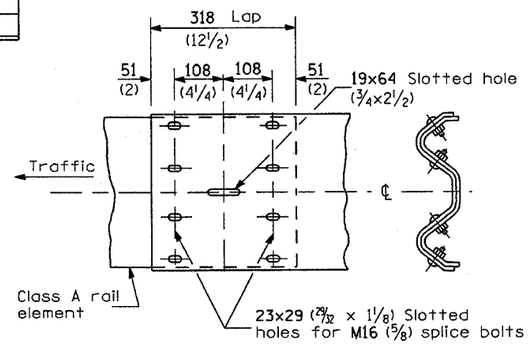
DETAIL

Contract 76857

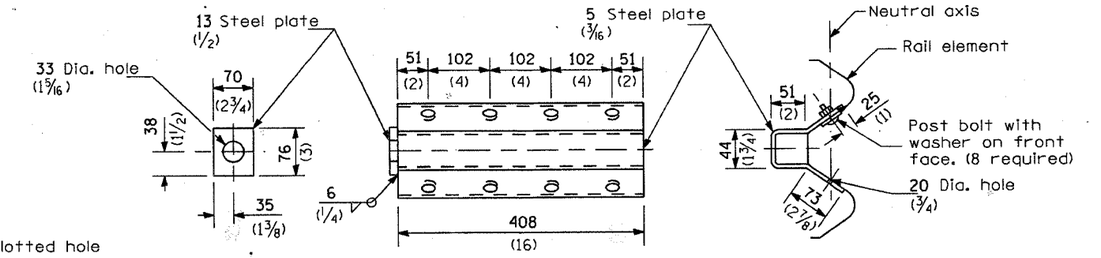
F.A.T. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60(011)RS	MADISON	156	156C
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



SPLICE PLATE



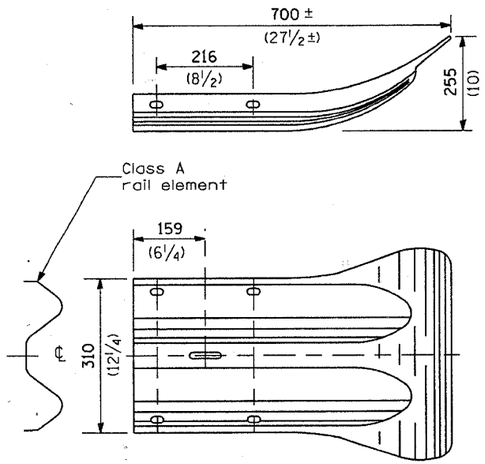
RAIL ELEMENT SPLICE



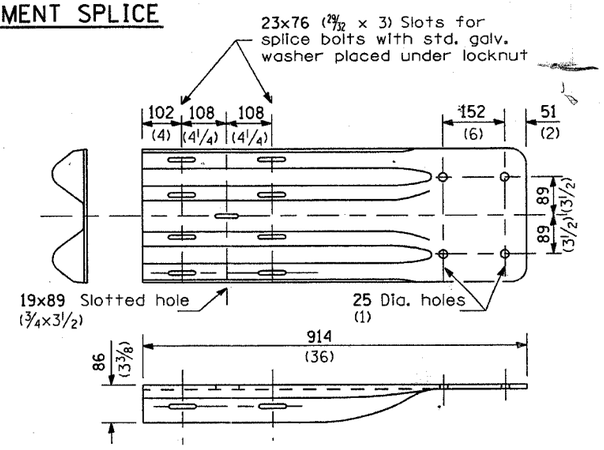
NOTE

Anchor plate T shall be used to attach cable assembly to guardrail when required on traffic barrier terminals.

ANCHOR PLATE T DETAILS



END SECTION



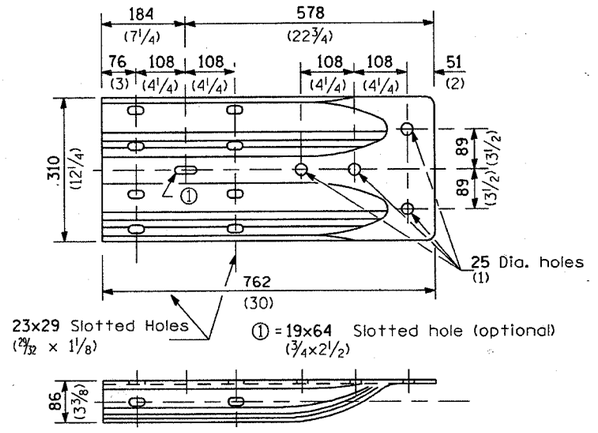
NOTE

When end shoe is attached to a bridge parapet which has an expansion joint, the bolts shall be provided with a locknut or double nut and shall be tightened only to a point that will allow guardrail movement.

The standard end shoe shall be attached to the concrete with pre-drilled or self-drilling anchor bolts. The anchor cone shall be set flush with the surface of the concrete.

Externally threaded studs protruding from the surface of the concrete will not be permitted.

END SHOE



ALTERNATE END SHOE

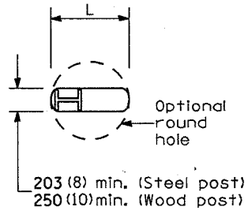
REMOVE AND REERECT STEEL PLATE BEAM GUARDRAIL

(Sheet 3 of 4)

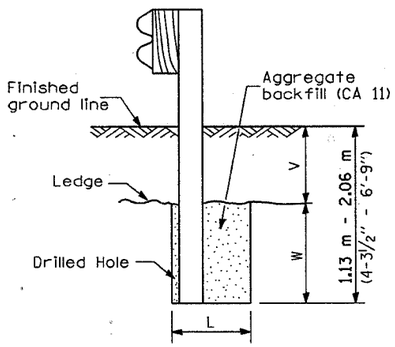
DETAIL

Contract 76837

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	60-(10,11)RS	MADISON	156	1660.
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



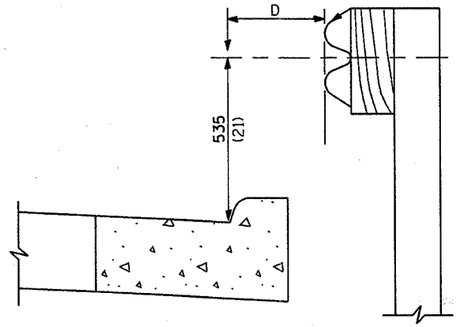
PLAN



Note:
Ledge line is top of rock ledge or hard slag fill.

ELEVATION

FOOTING FOR POST WHEN IMPERVIOUS MATERIAL IS ENCOUNTERED

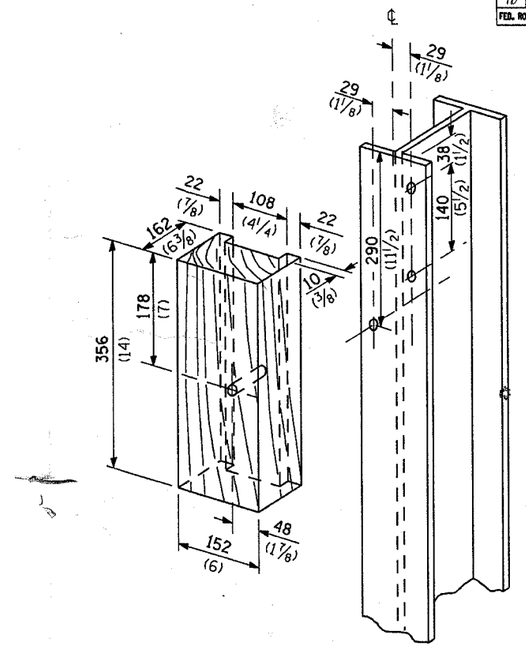


Note:
If it is necessary for D to be more than 300 (12) and less than 3.0 m (10'-0") type M-5 (M-2) curb and gutter (Std. 606001) shall be used in front of and in advance of the guardrail.

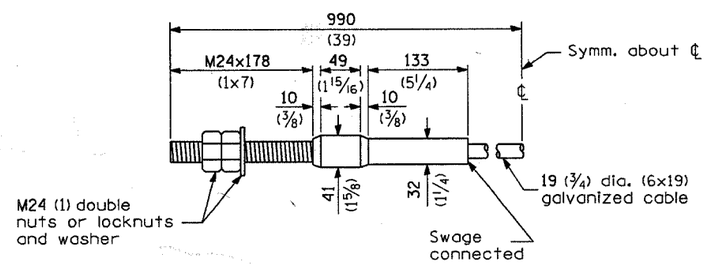
GUARDRAIL PLACED BEHIND CURB

(D = 0 desirable to 300 (12) maximum)

V	W	L	
		Steel Post	Wood Post
0 - 460 (0 - 18)	610 (24)	530 (21)	580 (23)
>460 - 825 (>18 - 41.5)	305 (12)	203 (8)	250 (10)
>825 - 1.13 m (>41.5 - 53.5)	305 - 0 (12 - 0)	203 (8)	250 (10)



WOOD BLOCK-OUT AND STEEL POST DETAILS



CABLE ASSEMBLY

(18,100 kg (40,000 lbs.) min. breaking strength)
Tighten to taut tension.

REMOVE AND REERECT STEEL PLATE BEAM GUARDRAIL

(Sheet 4 of 4)

DETAIL