

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1627	0102.11-1	COOK	13	1

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PROPOSED
HIGHWAY PLANS**

**FAU ROUTE 1627: GLENWOOD-LANSING RD
OVER IL 394 (BISHOP FORD EXPRESSWAY)
SECTION: 0102.11-1
BEAM REPLACEMENT
COOK COUNTY
C-91-291-06**

FOR INDEX OF SHEETS, SEE SHEET NO. 2

THE IMPROVEMENT IS LOCATED IN THE
CITIES OF GLENWOOD AND LANSING

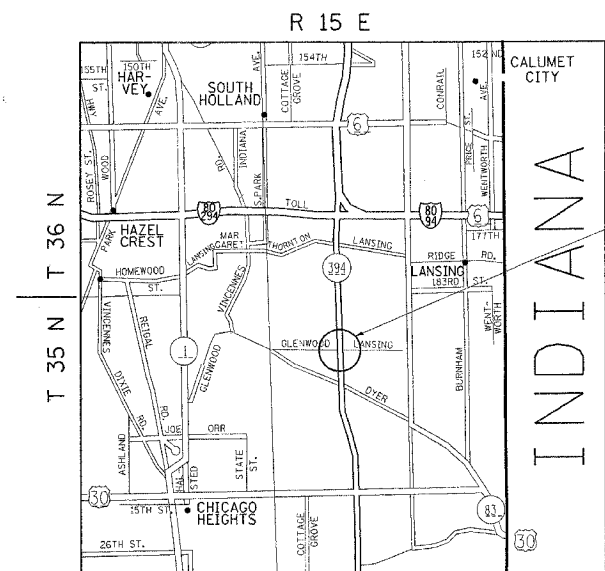
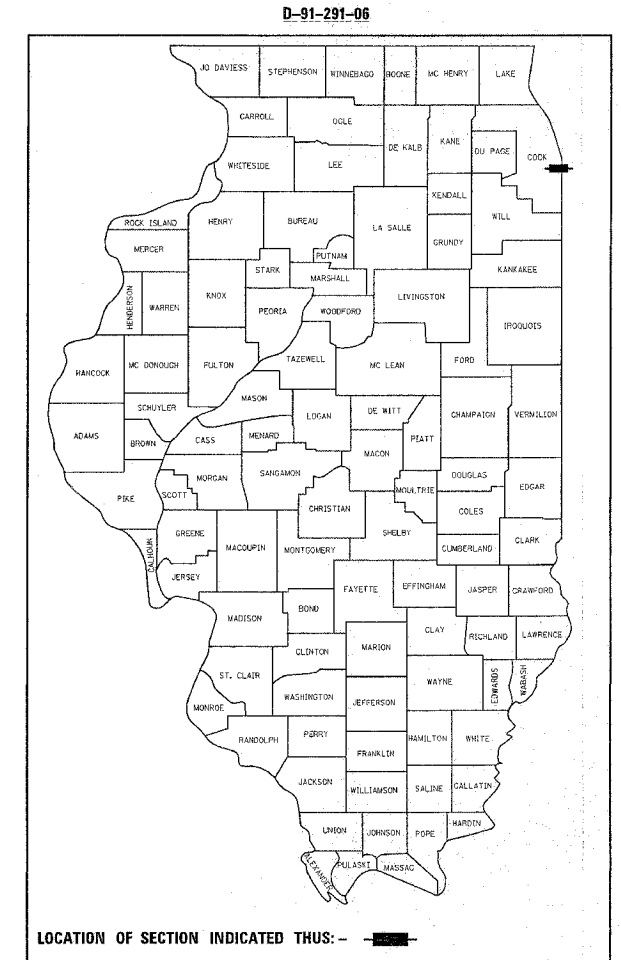
TRAFFIC DATA

GLENWOOD-LANSING RD:

2002 ADT = 8,500
SPEED LIMIT = 30 MPH

IL 394:

2003 ADT = 59,700
SPEED LIMIT = 55 MPH



LOCATION OF IMPROVEMENT
GLENWOOD-LANSING RD OVER
IL 394, SN 016-0918

DISTRICT ONE DESIGN PLAN PREPARATION ENGINEER:
KEN ENG/ROBERT BORO (847)705-4178

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

CONTRACT NO. 60B16

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Sept 11 20 06
Diana O'Keefe /ca
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

October 13, 20 06
Mike Nunez
ENGINEER OF DESIGN AND ENVIRONMENT

October 13, 20 06
Michael P. See, P.E.
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS**

F.A.J.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1627	01082.II-1	COOK	13	3
FED. ROAD DIST. NO. 1		ILLINOIS	HIGHWAY PROJECT	

MCHD CLAIM # 721317

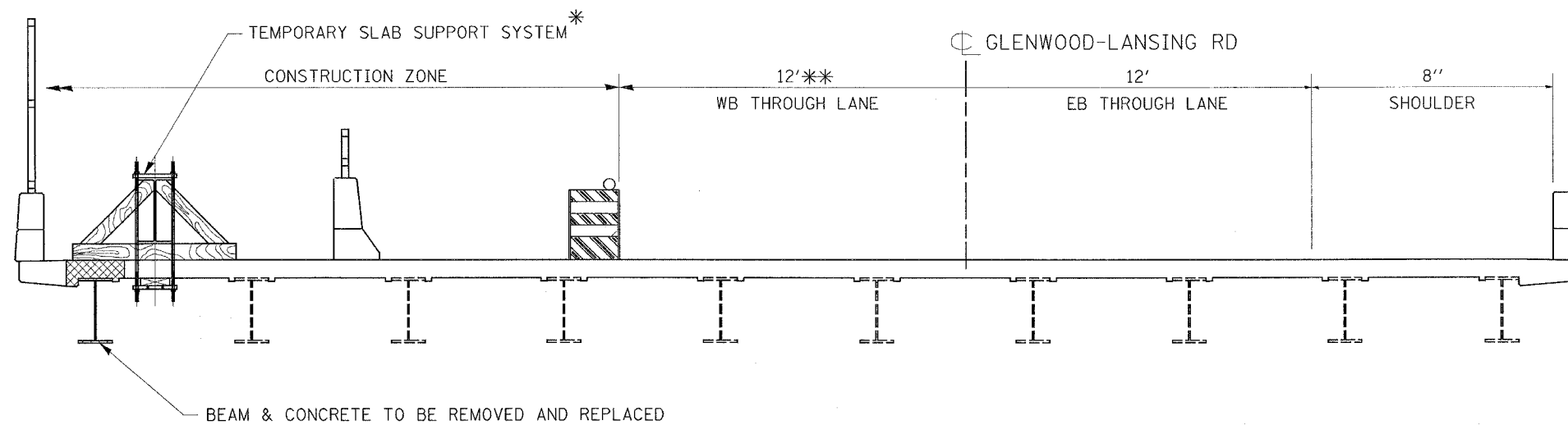
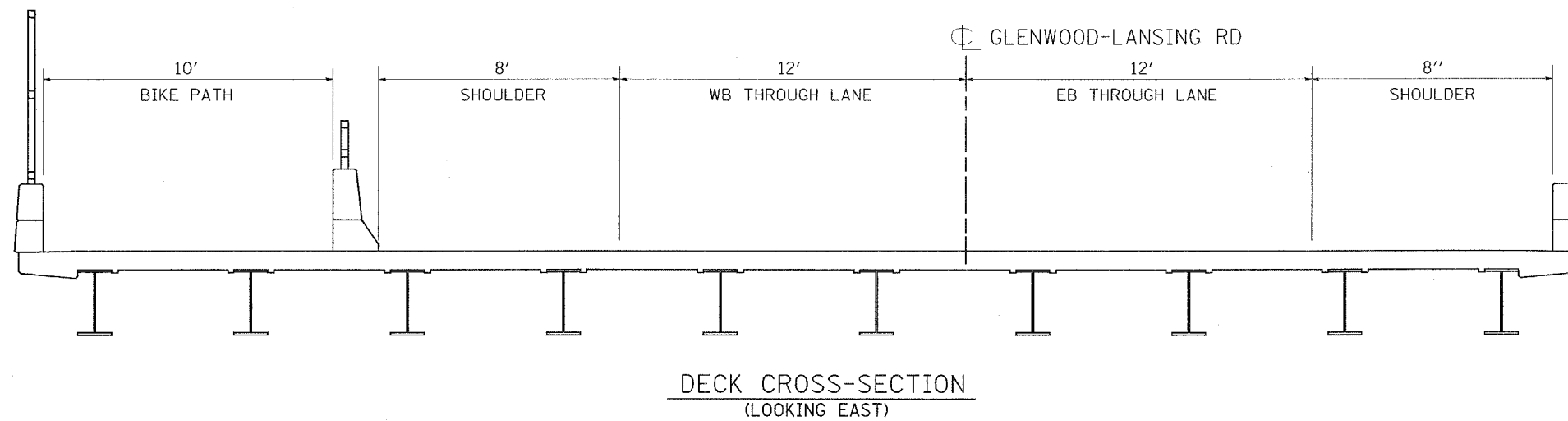
SUMMARY OF QUANTITIES			TOTAL QUANTITIES	MCHD		CONSTRUCTION TYPE CODE				
CODE NO	ITEM	UNIT		100% STATE SFTY-2A	URBAN					
50102400	CONCRETE REMOVAL	CU YD	0.6	0.6						
50300255	CONCRETE SUPERSTRUCTURE	CU YD	0.6	0.6						
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	6010	6010						
50501110	STRUCTURAL STEEL REMOVAL	POUND	5600	5600						
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	3	3						
67100100	MOBILIZATION	L SUM	1	1						
70100455	TRAFFIC CONTROL AND PROTECTION, STANDARD 701206	L SUM	1	1						
70102640	TRAFFIC CONTROL AND PROTECTION, STANDARD 701801	L SUM	1	1						
* 73304000	OVERHEAD SIGN STRUCTURE - BRIDGE MOUNTED	FOOT	22	22						
* 73602000	REMOVE OVERHEAD SIGN STRUCTURE - BRIDGE MOUNTED	EACH	1	1						
* T9992600	RE-ERECT SIGN PANEL	SQ FT	132	132						
X0322467	TEMPORARY INFORMATION SIGNING FOR LANE CLOSURE	SQ FT	48	48						
X7011015	TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS)	L SUM	1	1						
Z0003600	BEAM STRAIGHTENING	L SUM	1	1						
Z0073300	TEMPORARY SHORING AND CRIBBING	L SUM	1	1						
Z0073351	TEMPORARY SLAB SUPPORT SYSTEM	L SUM	1	1						

9/1/2006
c:\p01\p01\9841241018\p018\p018-000011

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION SUMMARY OF QUANTITIES
NAME	DATE	

*SPECIALTY ITEMS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1627	0102.11-1	COOK	13	4
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



NOTES:

- * THE CONTRACTOR SHALL PROTECT THE ENDS OF THE SLAB SUPPORT SYSTEM FOR BICYCLE TRAFFIC. ADVANCED SYGNALS SHALL WARN BICYCLISTS TO WALK ACROSS BRIDGE TO AVOID POTENTIAL OBSTACLES. COST SHALL BE INCLUDED IN THE COST OF THE "TEMPORARY SLAB SUPPORT SYSTEM."
- ** TEMPORARY SHOULDER & LANE CLOSURES MAY BE REQUIRED PER HWY STD 701206

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
SN 016-0918
GLENWOOD-LANSING RD / IL 394
TRAFFIC CONTROL PLAN

SCALE: VERT.
HORIZ.
DATE 7/27/06

DRAWN BY SHB.
CHECKED BY B. BORO

PLOT DATE = 8/1/2006
FILE NAME = c:\projects\msta\1025108\design\road.dgn
PLOT SCALE = 80,000 / IN.
USER NAME = byunah

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.
		Cook	13	5
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

Contract Number: 60B16

GENERAL NOTES

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.

Cost of removal and/or re-installation of all members necessary to complete the work as detailed on the plans and as specified in the Special Provisions shall be included in the cost of Furnishing and Erecting Structural Steel.

The inorganic zinc rich primer/acrylic/acrylic paint system shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the acrylic finish coat shall be Reddish Brown, Munsell No. 2.5 YR 3/4 for the exterior and bottom flanges of the fascia beams and Gray 5B 7/1 for interior surfaces. See Special Provision "Cleaning and Painting New Metal Structures".

Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

Diaphragm connection holes shall be $\frac{15}{16}$ " for $\frac{3}{4}$ " bolts. Two hardened washers shall be required at diaphragm connections.

Fasteners shall be high strength bolts. Flange splice holes shall be $\frac{15}{16}$ " for $\frac{7}{8}$ " bolts. Web splice holes shall be $\frac{13}{16}$ " for $\frac{3}{4}$ " bolts, except as noted.

The Contractor shall provide support and/or shoring systems for the slab and beam in the area of existing beam removal. See Special Provisions "Temporary Shoring and Cribbing" and "Temporary Slab Support System."

After the new beam is in its final position and/or beam straightening operations have been completed, the Engineer in the field shall check to see that the top flange is tight against the slab. If not, the Contractor shall inject epoxy between the existing concrete deck and the top flange of the beam. See Special Provision "Epoxy Injection".

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 bid for the work.

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

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.

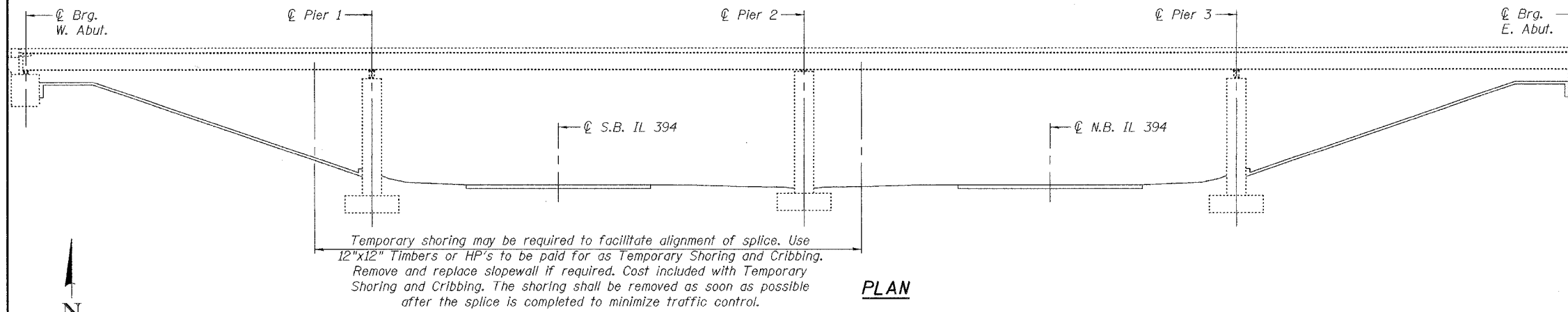
Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.

The main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are the wide flange beams and all splice plate material except fill plates.

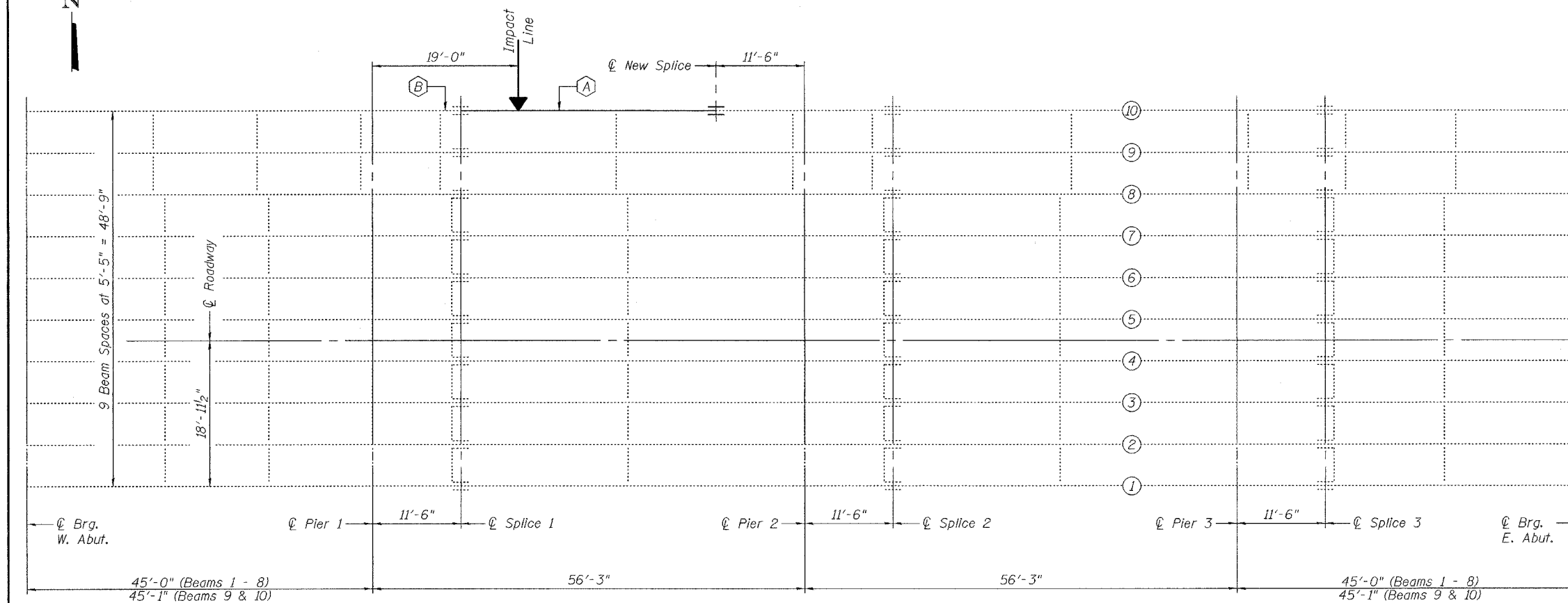
Field welding of construction accessories will not be permitted to beams. All construction joints shall be bonded.

See sheet 8 of 8 for existing sign structure details (For Information Only). Contractor should contact District 1 Office for storage location of existing sign to be reinstalled.

The cost of all field drilling required for installation of the steel members is included with Furnishing and Erecting Structural Steel.



PLAN



ELEVATION

- (A) Beam segment to be removed and replaced
- (B) Beam Straightening

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Furnishing and Erecting Structural Steel	Pound	6,010
Temporary Slab Support System	L.S.	1
Temporary Shoring and Cribbing	L.S.	1
Concrete Removal	Cu. Yd.	0.6
Concrete Superstructure	Cu. Yd.	0.6
Structural Steel Removal	Pound	5,600
Beam Straightening	L.S.	1
Remove Overhead Sign Structure - Bridge Mounted	Each	1
Overhead Sign Structure - Bridge Mounted	Foot	22
Re-Erect Sign Panel	Sq. Ft.	132

DESIGNED *Paul B. Bost*
CHECKED *Paul A. Johnson*
DRAWN *[Signature]*
CHECKED *STB* *P5J*

September 19, 2006
EXAMINED *John A. Morris*
ENGINEER OF STRUCTURAL SERVICES
PASSED *Robert E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES



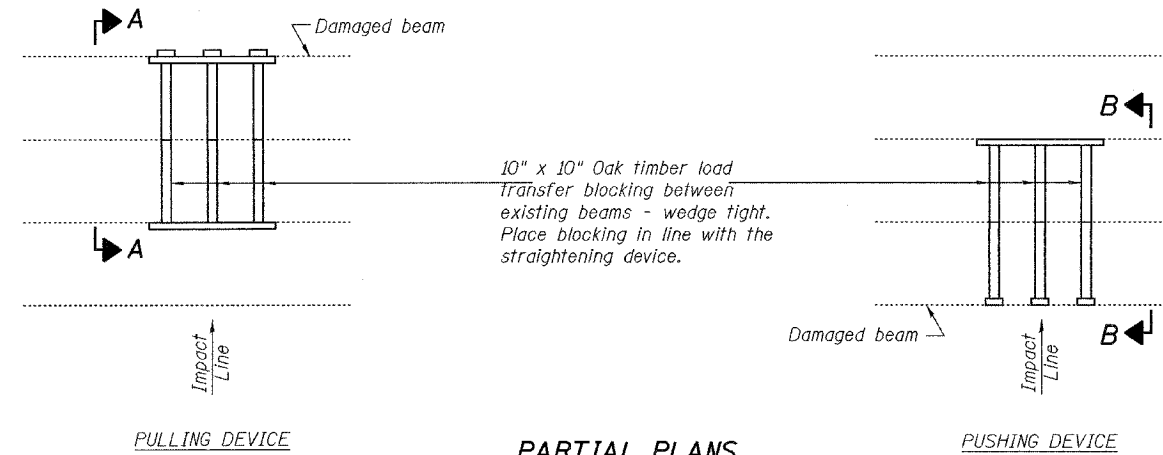
Expires: November 30, 2006

PLAN AND ELEVATION
GLENWOOD-LANSING RD / IL 394
COOK COUNTY
SN 016-0918

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

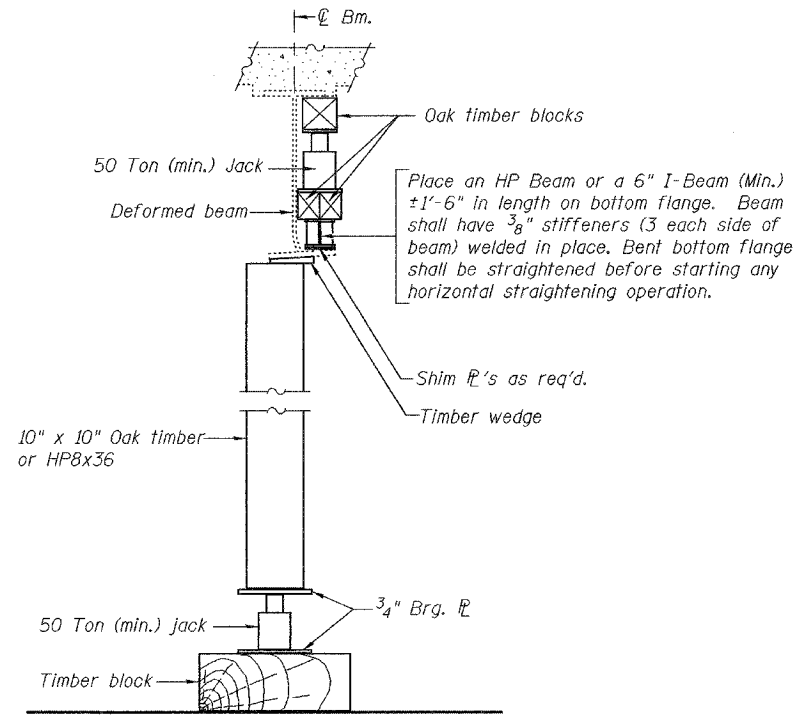
ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.
		Cook	13	6
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

Contract Number: 60B16

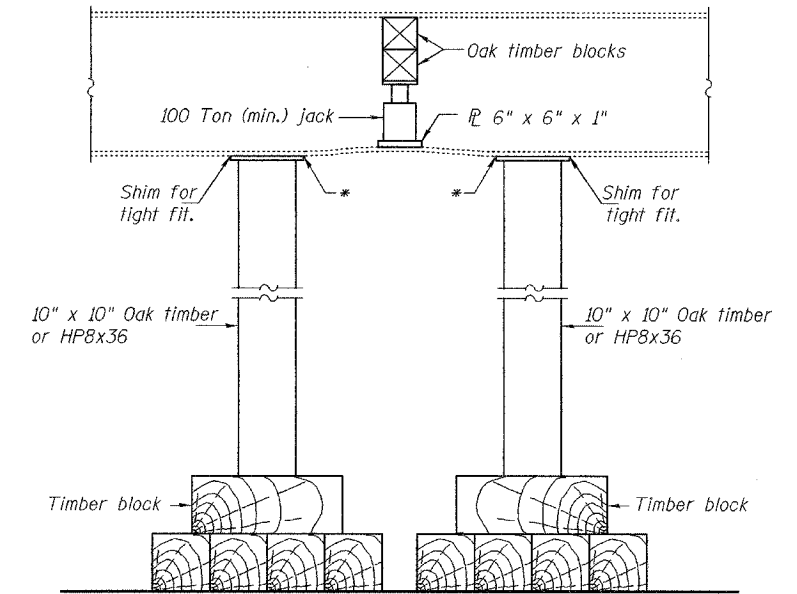


**PARTIAL PLANS
SUGGESTED BEAM STRAIGHTENING METHODS**

Straightening force shall be maintained on all load transfer blocking during beam straightening.



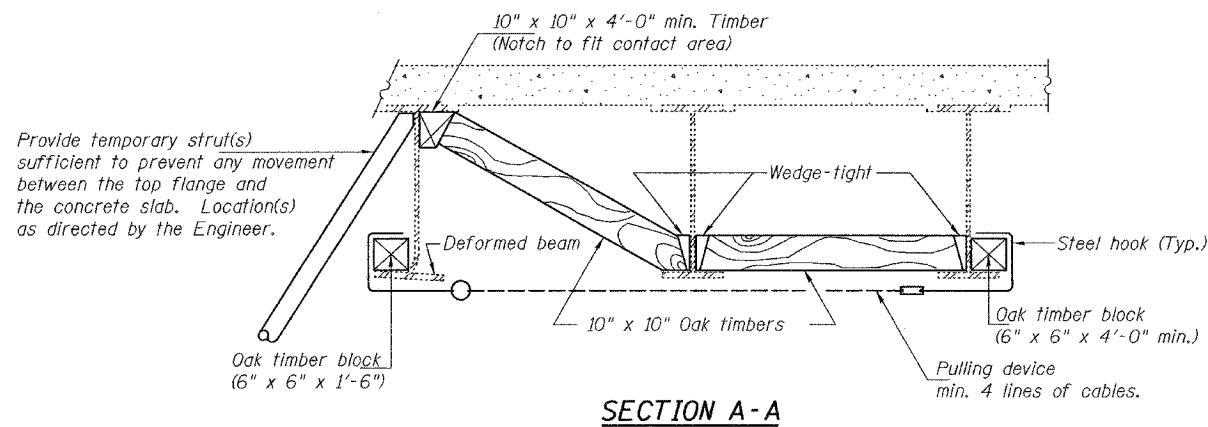
SUGGESTED VERTICAL STRAIGHTENING DETAIL
(To correct flange rotation.)



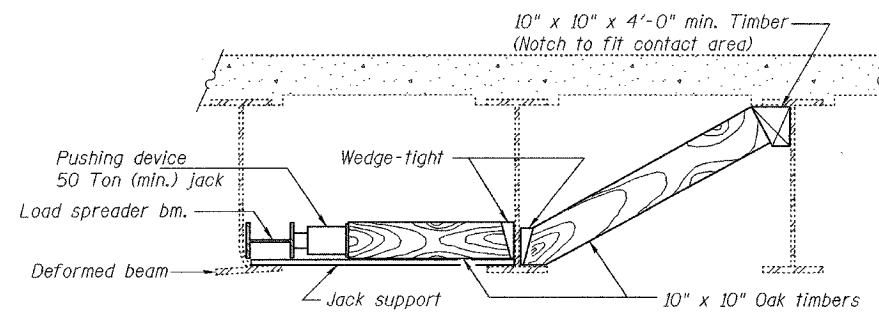
SUGGESTED VERTICAL STRAIGHTENING DETAIL
(To correct localized vertical flange deformations.)

* Edge of plate shall line up with edge of deformation.

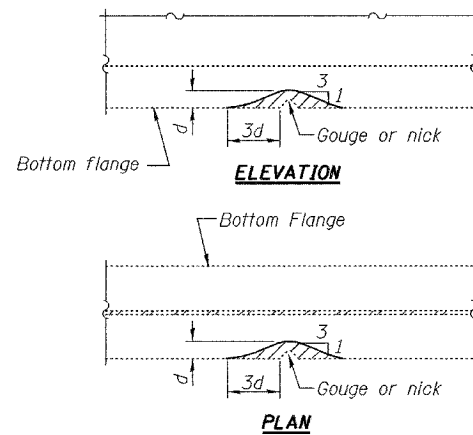
Note:
Braces and jack assembly shall be placed on same side of web.
Bent bottom flange shall be straightened before starting any horizontal straightening operations.



SECTION A-A

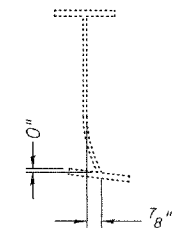


SECTION B-B



GRINDING DETAIL

Grind existing nicks, gouges and shallow cracks in the damaged beams as detailed. Ground surfaces shall be inspected for cracks using magnetic particle testing prior to initiating any beam straightening operations. Any cracks that cannot be removed by grinding approximately 1/4" deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. Ground surfaces shall be spot cleaned and painted with an aluminum epoxy mastic primer followed by a finish coat to match the color of the existing beam. Cost of grinding, testing and spot painting included with Beam Straightening.



**EXISTING DEFORMATION
TO BE STRAIGHTENED**

(Looking)
(Approximate max. deflections)
Deflected length of beam to be straightened is approximately 5'-0".

**BEAM STRAIGHTENING DETAILS
GLENWOOD-LANSING RD / IL 394
COOK COUNTY
SN 016-0918**

DESIGNED	S.J.B.
CHECKED	P.S.J.
DRAWN	Drew Christopher
CHECKED	S.J.B. P.S.J.

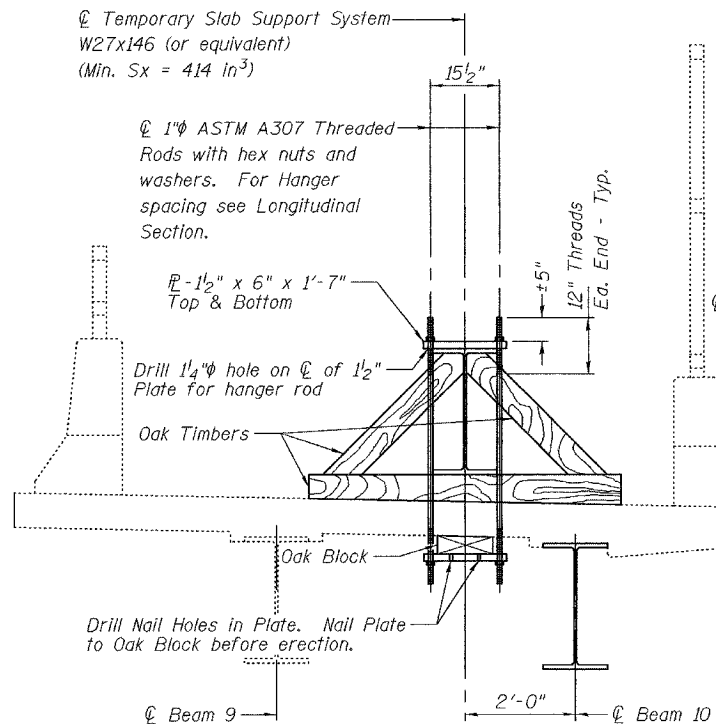
EXAMINED	September 19, 2006
	John A. Morris ENGINEER OF STRUCTURAL SERVICES
PASSED	Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES

REP-11-14-2005
SLT-91-001-06

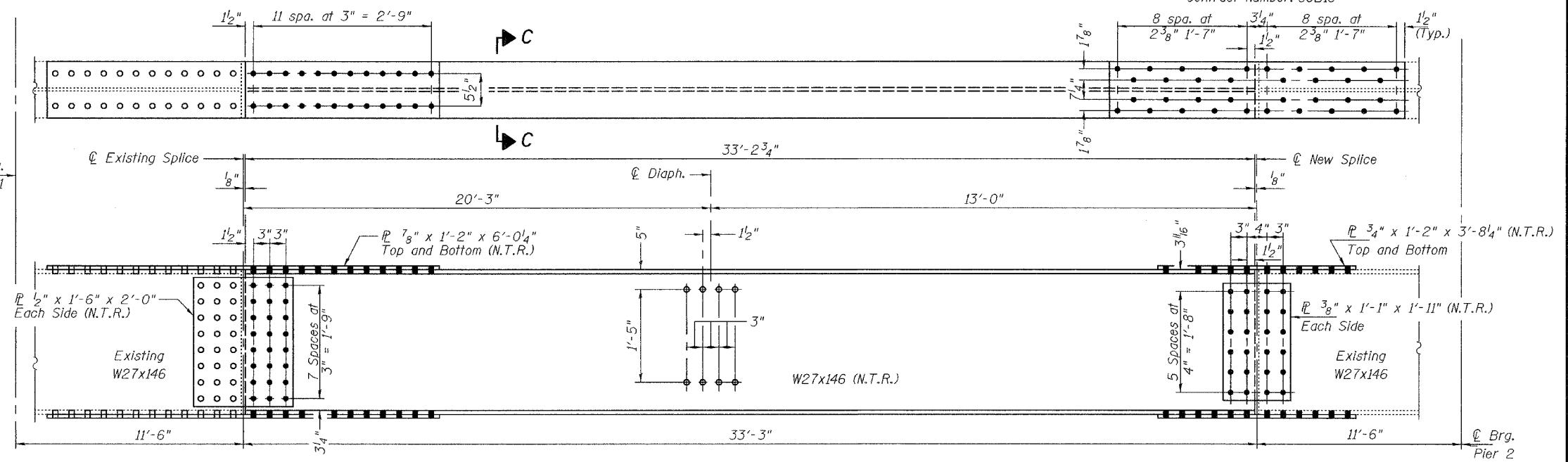
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET NO. 3
		Cook	13	7
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		8 SHEETS

Contract Number: 60B16



SECTION A-A

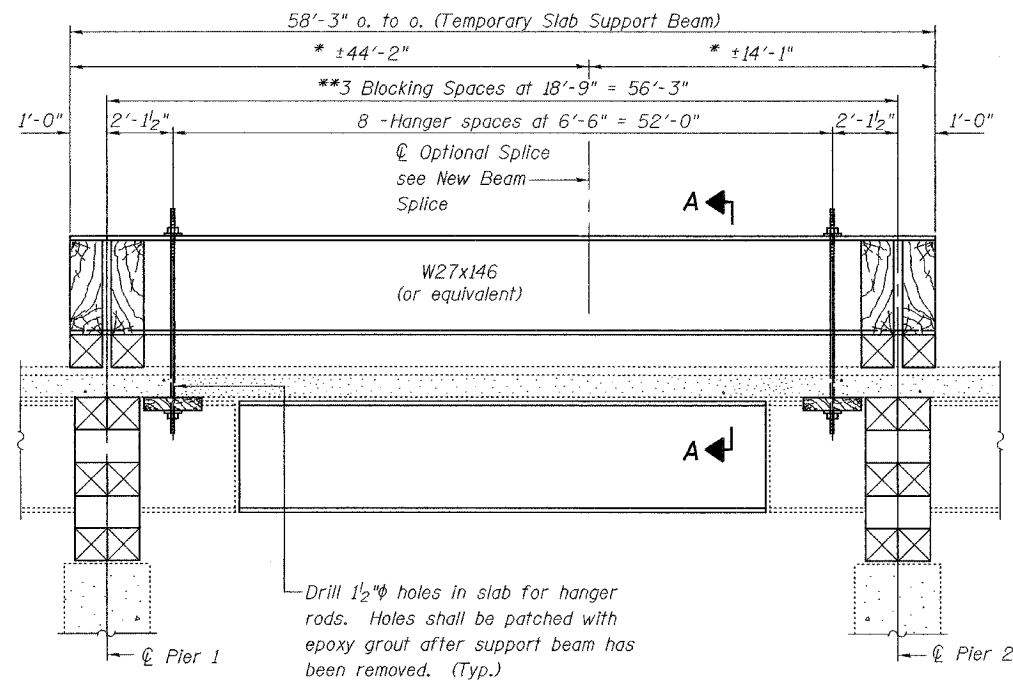


ELEVATION BEAM 10

(N.T.R. = Notch Toughness Required)
Web splice holes at new splice shall be $\frac{5}{16}$ " ϕ for $\frac{7}{8}$ " ϕ bolts.

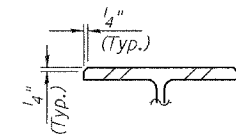
- = Shop Drill
- = Field Drill

* These dimensions may vary for available beams in stock.

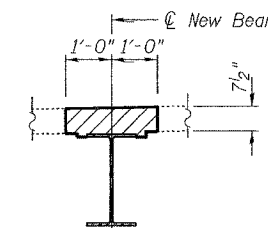


LONGITUDINAL SECTION
SUGGESTED TEMPORARY SLAB SUPPORT SYSTEM

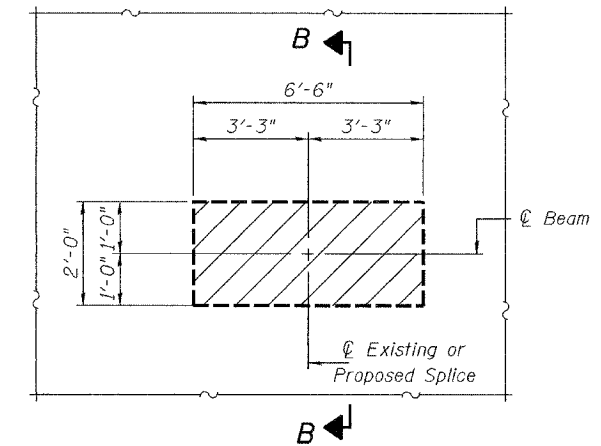
**Wood blocking between piers to be placed after support beam deflects under its own weight.



SECTION C-C



SECTION B-B



TYPICAL CONCRETE REMOVAL
AND REPLACEMENT

Hatched areas indicate concrete sections to be removed and replaced. Perimeters of concrete removal areas shall be saw cut $\frac{3}{4}$ " prior to the removal of concrete. Reinforcement shall be cut only if required for fitting bolts. Cut reinforcement shall be spliced as directed by the Engineer. Cost shall be included with Concrete Removal.

DESIGNED	S.J.B.
CHECKED	P.S.J.
DRAWN	Drew Christopher
CHECKED	S.J.B. P.S.J.

EXAMINED	September 19, 2006
PASSED	John A. Morris ENGINEER OF STRUCTURAL SERVICES
	Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES

BEAM REPLACEMENT DETAILS
GLENWOOD-LANSING RD / IL 394
COOK COUNTY
SN 016-0918

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 4
		Cook	13	8	8 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT	Contract Number: 60B16		

GENERAL NOTES

SPECIFICATIONS:

DESIGN: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. ("AASHTO Specifications") ②

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.

MINIMUM CLEARANCE: 3" greater than bridge members at all locations. (All Obstructions)

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

MATERIALS: 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 (M183, M223 Gr. 50).

HIGH STRENGTH BOLTS: All bolts, washers, nuts and locknuts shall satisfy the requirements of ASTM designation A307 unless noted as "H.S." which shall require AASHTO M164 (A325), ASTM A449, or approved alternate. All fasteners shall be hot dip galvanized per AASHTO M232 unless otherwise specified.

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

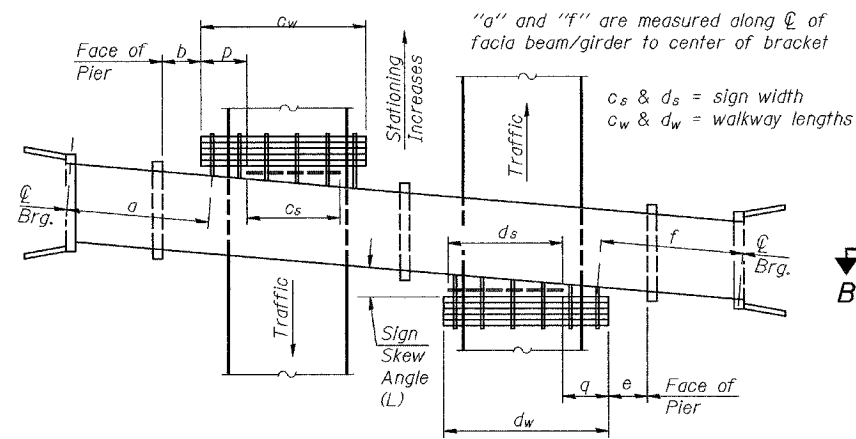
ANCHOR RODS: All-threaded rod conforming to ASTM A307, 3/4" φ x 12" long, each with one plate washer and locknut and be hot dip galvanized per AASHTO M232. They shall be either cast into the concrete or epoxy grouted in accordance with Section 584 of the Standard Specifications. Minimum embedment in concrete shall be 9".

- Bracket spacing $g \leq 6'-0"$, max. Spacing shall be uniform if possible but may vary $\pm 6"$ to miss existing obstruction (rail post, light poles, web stiffeners, splice plates, etc.). Adjust bracket lengths accordingly on skewed structures.
- Any design modifications shall be based on the current version of applicable specifications and submitted for the Engineer's approval.
- Unit price includes grating, handrail, brackets, supports, anchor bolts, fasteners, fabrication, delivery, erection, field drilling and other necessary items. Limits of payment are based on grating length (c_w , d_w) unless otherwise specified. For Safety Chain Details and Details D, F and G, see Base Sheet BM-4.
- If walkway bracket at safety chain location is behind sign, add angle to bracket. See detail on Base Sheet BM-4.

NUMBER	REVISION	DATE

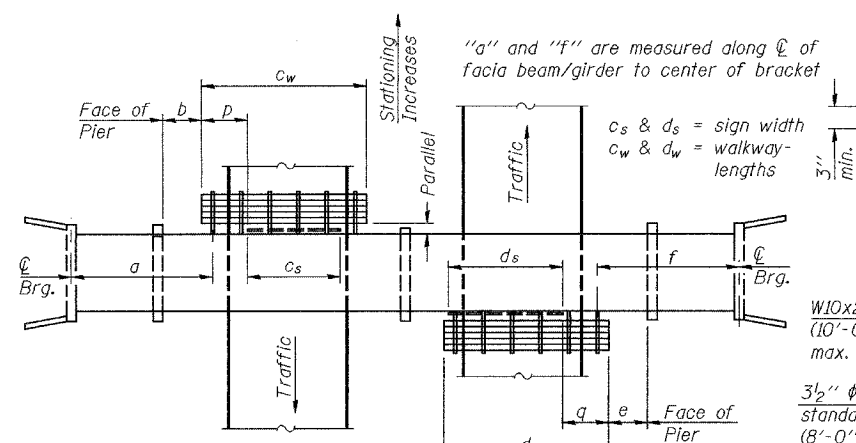
TOTAL BILL OF MATERIAL

③ OVERHEAD SIGN STRUCTURE - BRIDGE MOUNTED	Foot	22
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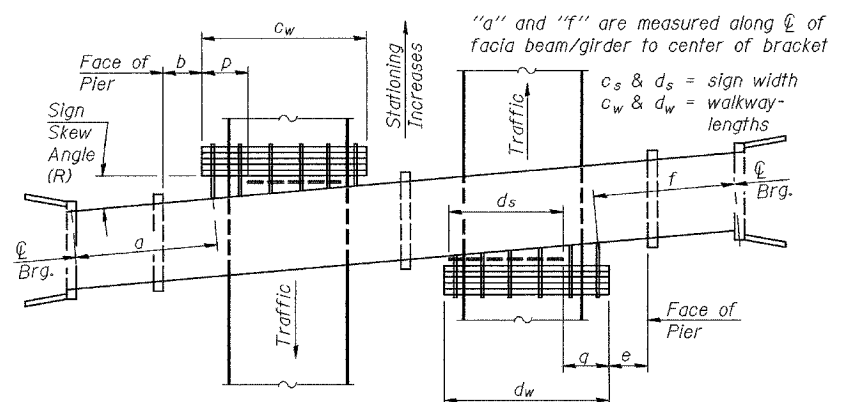
WALKWAY AND HANDRAIL SKETCH

(Road plan beneath structure varies.)



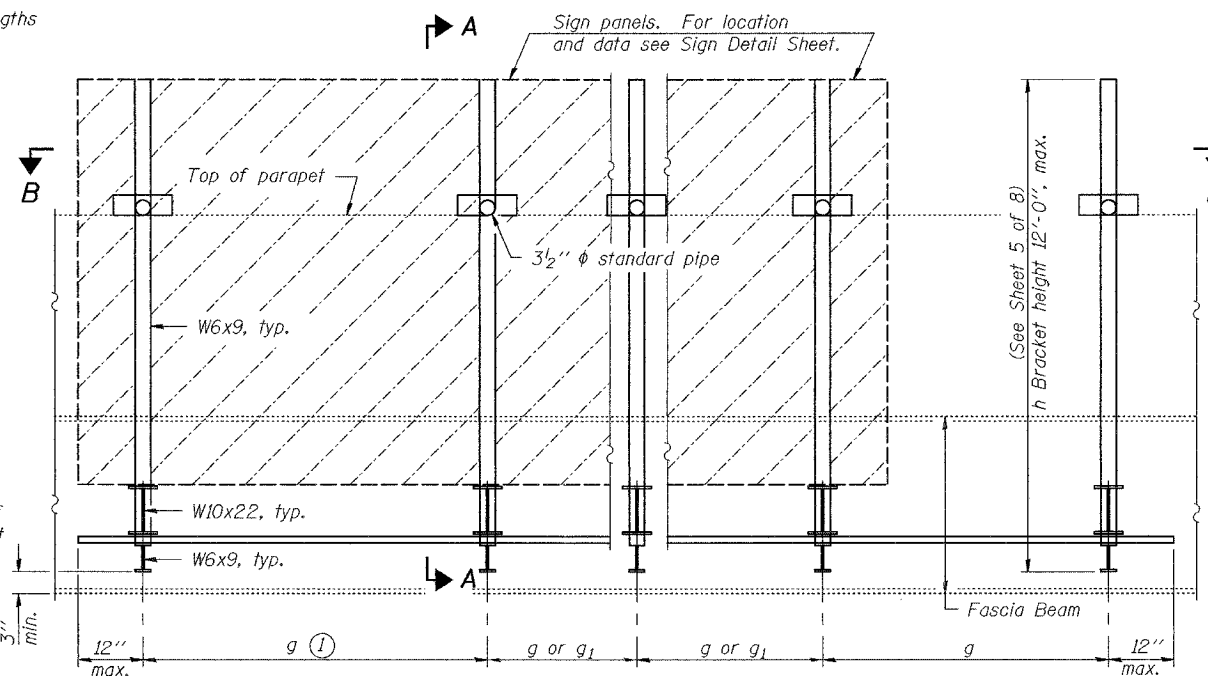
WALKWAY AND HANDRAIL SKETCH

(Road plan beneath structure varies.)



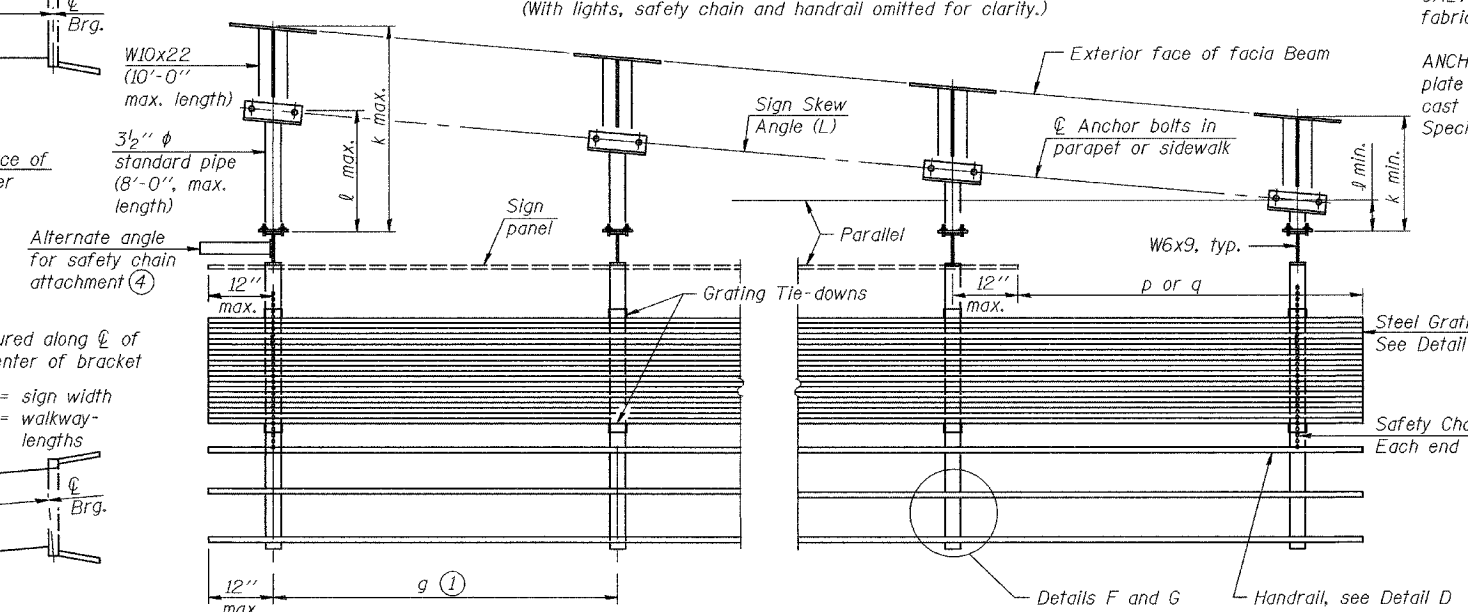
WALKWAY AND HANDRAIL SKETCH

(Road plan beneath structure varies.)



TYPICAL FRONT ELEVATION

(With lights, safety chain and handrail omitted for clarity.)



SECTION B-B

(Shown: Left Sign Skew > 15°)

Structure Number	Sign Skew Angle (L) or (R)	Bridge Station	Bridge Structure Number	Contract Route Designation	a	b	c _s	c _w	d _s	d _w	e	f	g	g ₁	No. of Brackets (Total)	p	q	Total Grating/Hndrl. Lengths (c _w + d _w)
1B016S394 R000.0-000	0°	12+17.93	016-0918	FA 332					22'-0"	22'-0"	+11'-6"	+58'-4"	5'-4 1/2"	5'-2"	5		0"	22'-0"

Dimensions a, b, e, f & g may vary as approved by the Engineer, see ①.
When $c_w < c_s$ and/or $d_w < d_s$, use alternate brackets without walkway supports where applicable, see ③.
The Contractor must field verify location of existing sign structure and replace in kind.

SIGN STRUCTURE
DETAILS
GLENWOOD-
LANSING RD / IL 394
COOK COUNTY
SN 016-0918

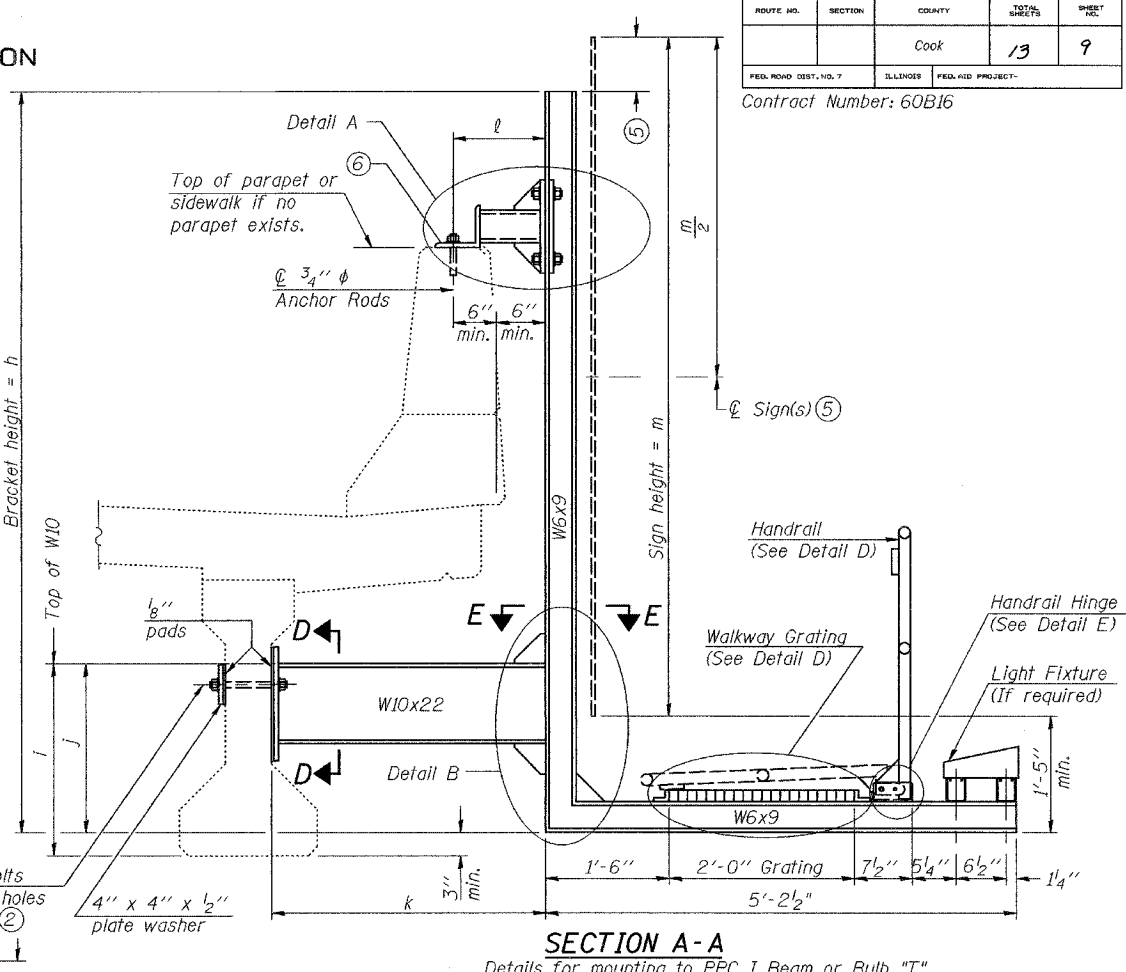
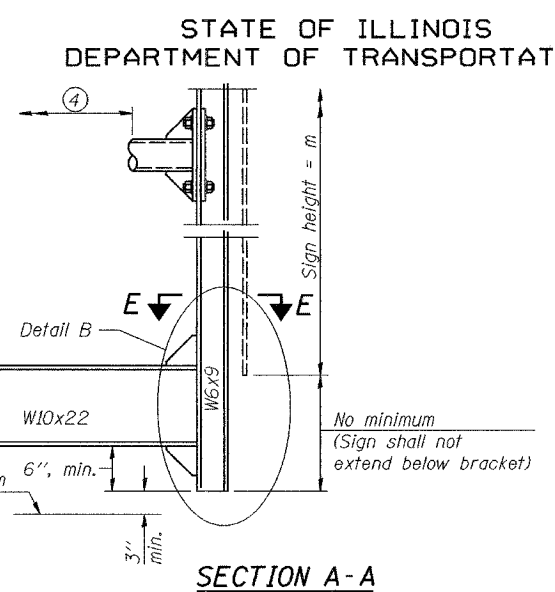
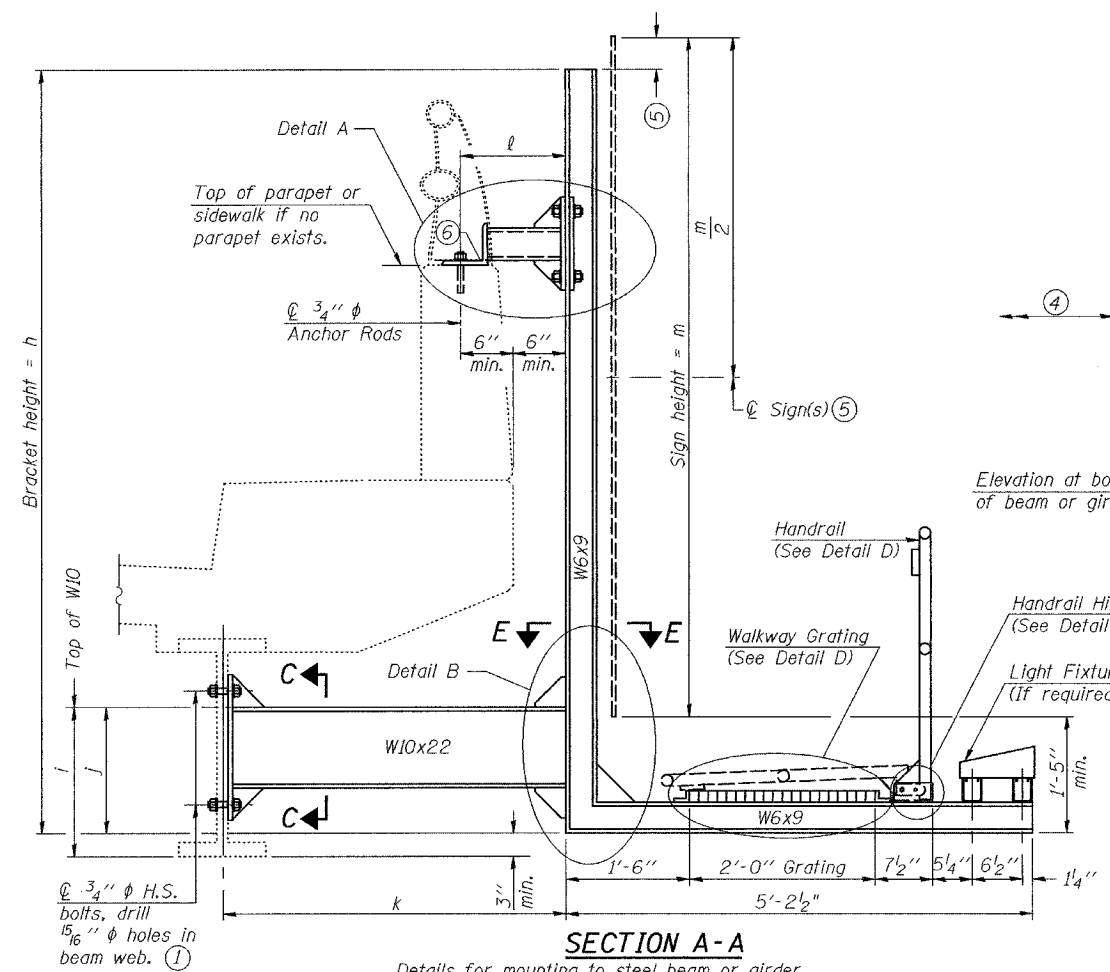
DESIGNED	S.J.B.
CHECKED	P.S.J.
DRAWN	Drew Christopher
CHECKED	S.J.B. P.S.J.

EXAMINED	September 19, 2006
PASSED	John A. Morris ENGINEER OF STRUCTURAL SERVICES
	Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		Cook	13	9
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT-				
Contract Number: 60B16				

SHEET NO. 5
8 SHEETS



SECTION A-A
Details for mounting to steel beam or girder
& Details for mounting with existing parapet mounted rail

SECTION A-A
Alternate with no lights or walkways

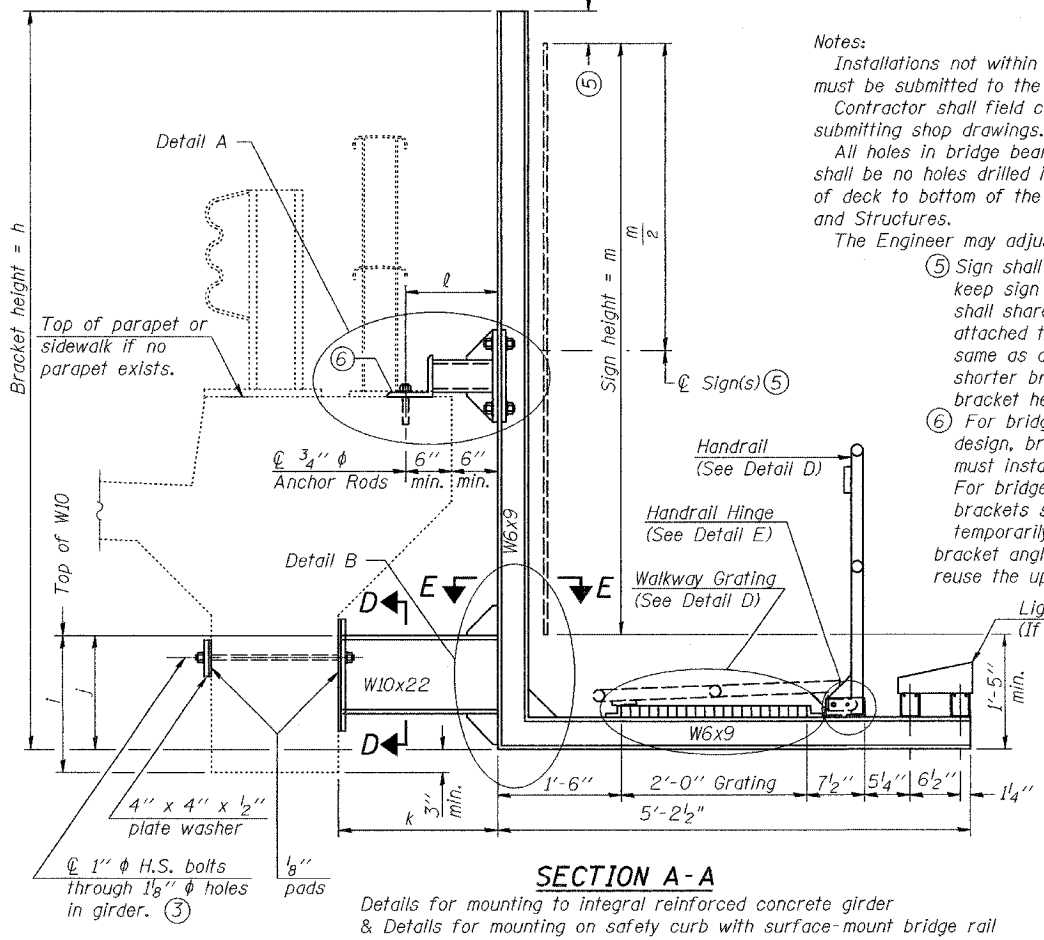
SECTION A-A
Details for mounting to PPC I Beam or Bulb "T"
& Details for mounting to parapet w/o rail

Structure Number	Station	h (12'-0" max.)	i	j	k max. (10'-0" max.)	l max. (8'-0" max.)	m (11'-0" max.)
1B016S394R000.0-000	161+01.65	9'-5"	1'-6" Min.	1'-3"	4'-0 1/2"	1'-9 5/8"	6'-0"

For Details A & B, Sections C-C, D-D and E-E, see Base Sheet BM-3.
For Details D & E, see Base Sheet BM-4.

- ① Holes in new steel members may be drilled in the fabrication shop or in the field. Field drill existing members.
- ② For new PPC I beams, holes shall be formed during casting. For existing PPC I beams, prestressing strand locations shall be determined and spaced to miss strands by 6", min. Minimize spalling during field drilling of existing beams.
- ③ For new construction, form holes. For existing RC beams, locate primary reinforcement and space holes to miss by 6", min. Minimize spalling and concrete fracturing/damage during field drilling of existing concrete. Spalls over 1/4" deep or beyond the coverage of the 4x4 plate washer shall be repaired with epoxy mortar before installing washer.

DESIGNED	S.J.B.	September 19, 2006
CHECKED	P.S.J.	EXAMINED <i>John A. Morris</i> ENGINEER OF STRUCTURAL SERVICES
DRAWN	Drew Christopher	PASSED <i>Ralph E. Anderson</i> ENGINEER OF BRIDGES AND STRUCTURES
CHECKED	S.J.B. P.S.J.	



SECTION A-A
Details for mounting to integral reinforced concrete girder
& Details for mounting on safety curb with surface-mount bridge rail

- Notes:
Installations not within dimensional limits shown require special analysis for all components and must be submitted to the Bureau of Bridges and Structures for approval.
Contractor shall field check all pertinent existing bridge dimensions shown on plans before submitting shop drawings.
All holes in bridge beams or girders should be located in the middle half of the member. There shall be no holes drilled in the lower quarter of the member's depth. (For R.C. girder, depth = bottom of deck to bottom of the girder.) Proposed exceptions must be approved by the Bureau of Bridges and Structures.
The Engineer may adjust dimension "i" to meet the above condition and to keep the sign level.
- ⑤ Sign shall not extend more than 6" above top of bracket, and this dimension may vary to keep sign level if bridge is on grade or vertical curve. Multiple signs of various heights shall share a common horizontal centerline and use equal bracket heights. If no sign is attached to a W6x9 vertical (bracket only supporting walkway), dimension h shall be the same as an adjacent bracket with a sign attached, unless Engineer specifically directs shorter brackets due to locational restraints on future uses. (See Detail A for minimum bracket height.)
 - ⑥ For bridge mounted sign structures installed on new bridges with railing, during design, bracket spacing must be coordinated with railing post spacing and the Contractor must install upper brackets prior to railing installation. For bridge mounted sign structures installed on existing bridges with railing, during design, brackets spacing must be coordinated with railing post spacing and the Contractor must temporarily remove sections of railing to facilitate upper bracket installation. If existing upper bracket angle is not damaged or torn from the bikeway parapet, the contractor may choose to reuse the upper bracket in lieu of removing existing railing. See sheet 8 of 8 for existing sign structure details. It will be the contractor's responsibility to ensure the structural adequacy of reused upper bracket components. If it is determined during design that existing railings can't be removed, alternate upper connection details must be developed for the contract plans and approved by the Bureau of Bridges and Structures.

NUMBER	REVISION	DATE

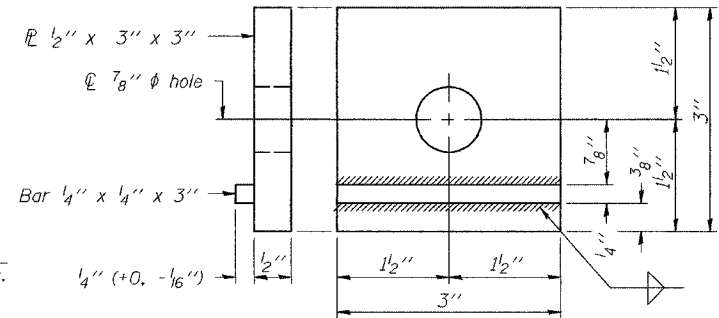
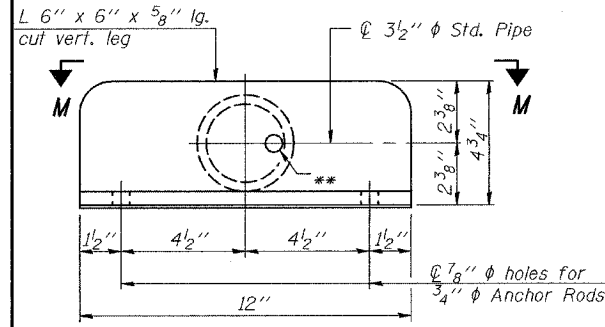
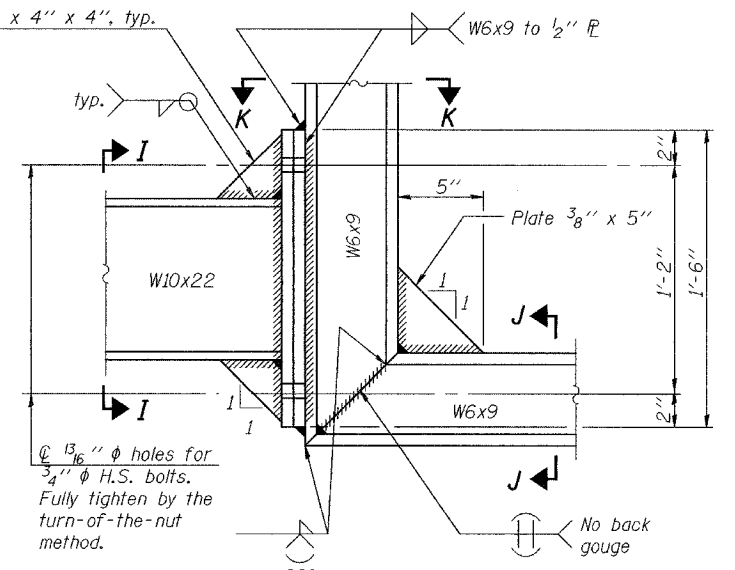
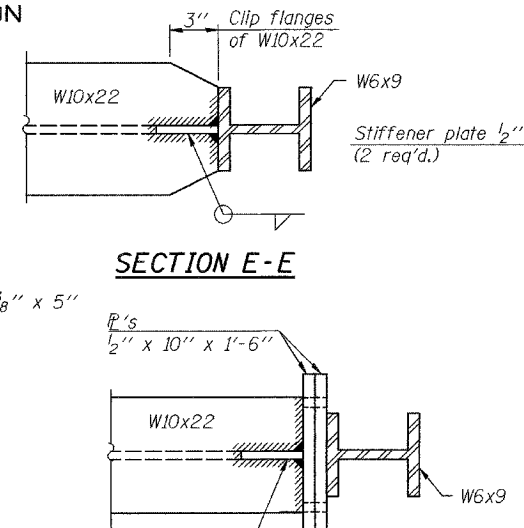
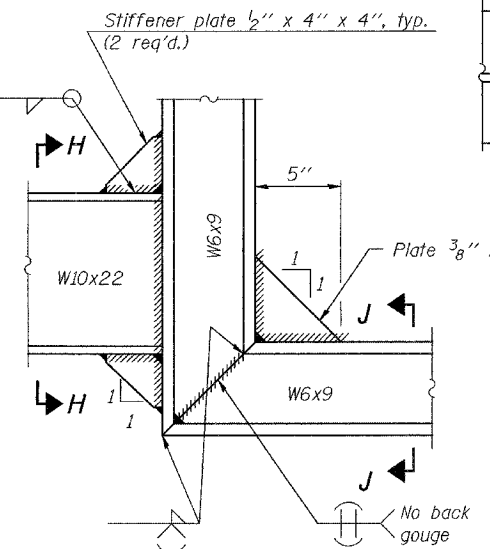
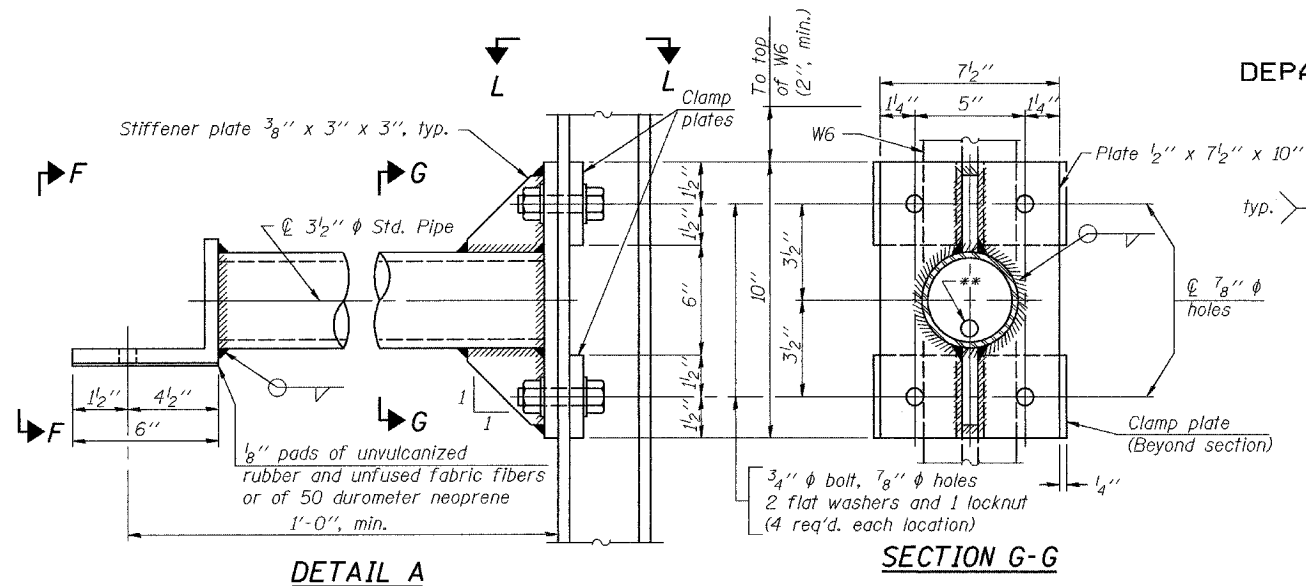
**SIGN STRUCTURE
DETAILS
GLENWOOD-
LANSING RD / IL 394
COOK COUNTY
SN 016-0918**

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

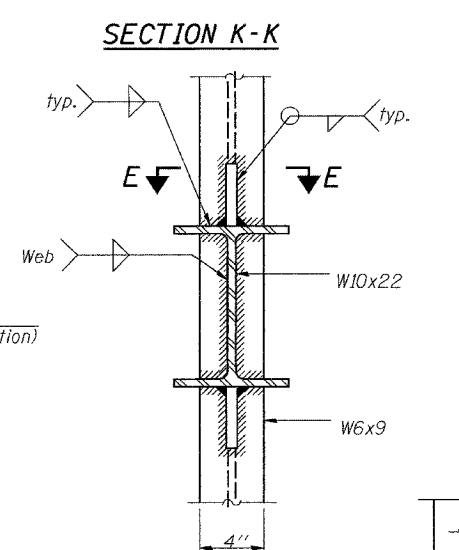
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		Cook	13	10
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 6
8 SHEETS

Contract Number: 60B16



DETAIL B - WELDED W10x22 TO W6x9 CONNECTION

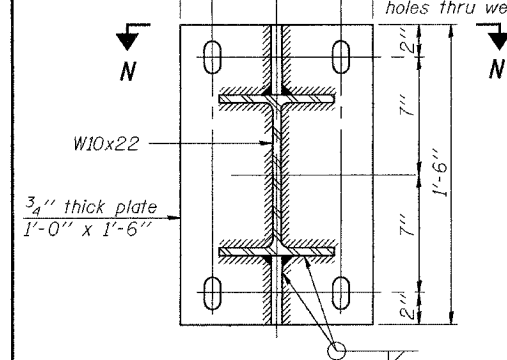


DETAIL B - ALTERNATE BOLTED W10x22 TO W6x9 CONNECTION

Alternate may be substituted by contractor to facilitate construction or galvanizing, especially on long struts for skewed bridges.

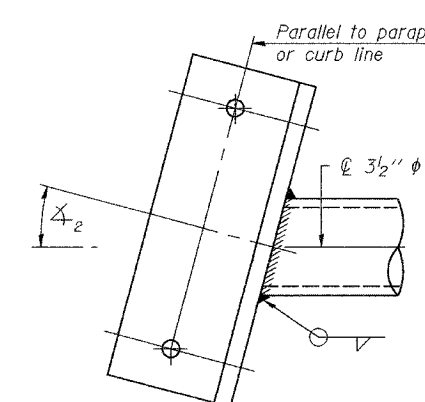
** $\frac{13}{16}$ " ϕ holes for galvanizing. After galvanizing, install $\frac{7}{8}$ " ϕ A307 hot-dip galvanized bolt to close hole in angle. (No bolt required in $\frac{1}{2}$ " plate.)

$\frac{13}{16}$ " x 1" slotted holes in base plate for $\frac{3}{4}$ " ϕ H.S. bolts with two hardened washers, and nut for each. Fully tighten using turn-of-the-nut method. ($\frac{13}{16}$ " ϕ holes thru web of fascia beam.)



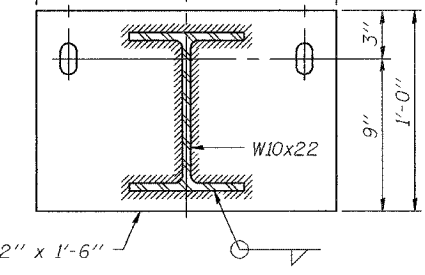
SECTION N-N
Skewed connection detail for W10x22 to fascia beam.

Note: For constant slab overhang at fascia beam, $\Delta_1 = \Delta_2 =$ sign angle. For flared beams or other special cases where $\Delta_1 \neq \Delta_2$, $\Delta_1 =$ sign angle.

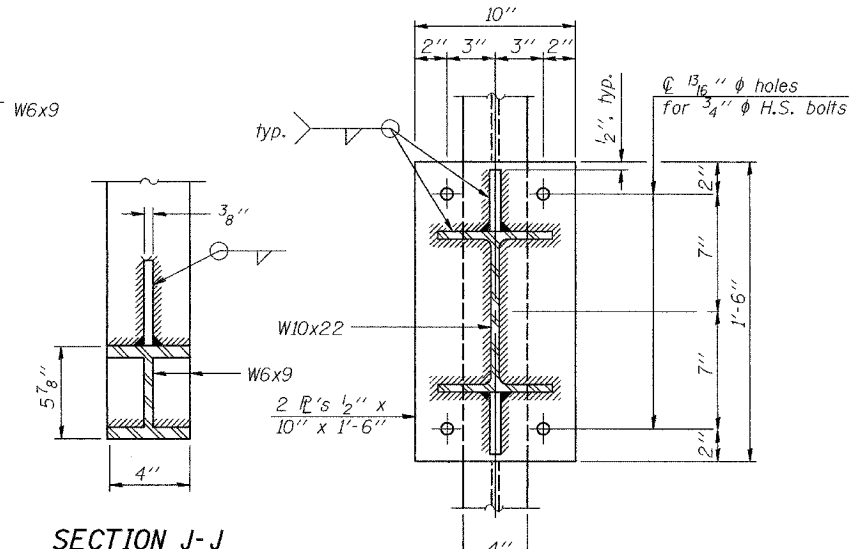


SECTION L-L

$\frac{1}{8}$ " x 2" slotted holes in plate for 1" ϕ H.S. bolts with hardened plate washer over slot, and standard flat washer and 4" x 4" x $\frac{1}{2}$ " plate washer on far end. Use locknuts and only snug-tighten bolts, insuring pad is in uniform contact with concrete before tightening begins.



SECTION H-H



SECTION J-J

DESIGNED	S.J.B.
CHECKED	P.S.J.
DRAWN	Drew Christopher
CHECKED	S.J.B. P.S.J.

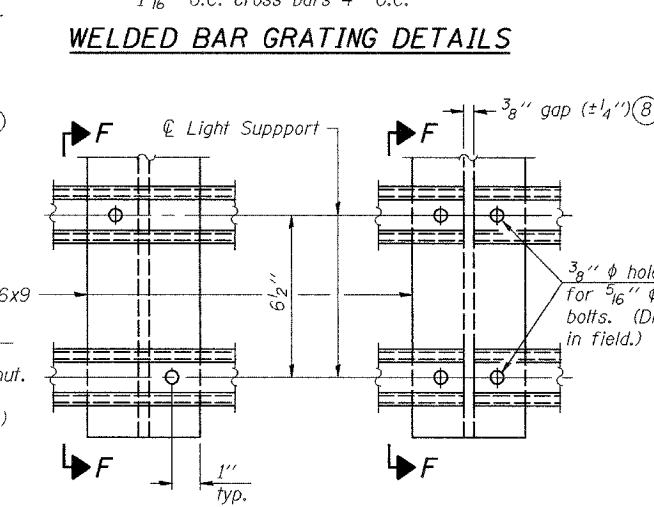
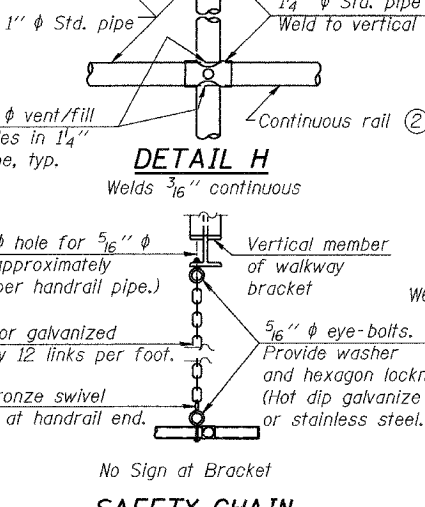
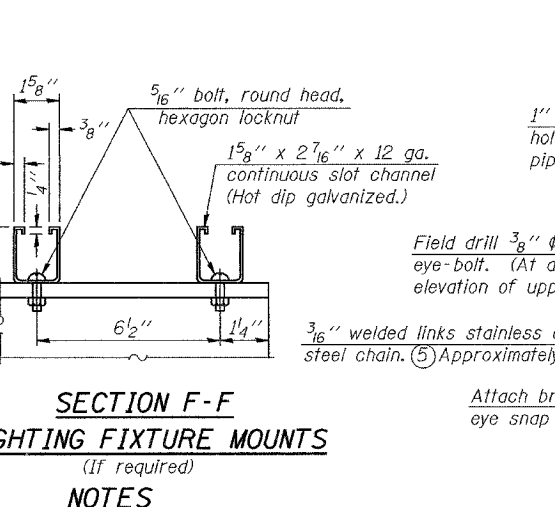
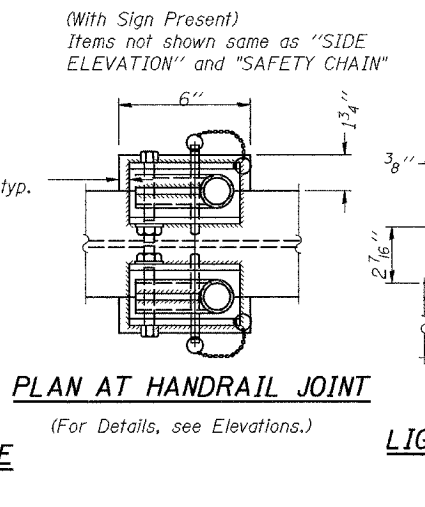
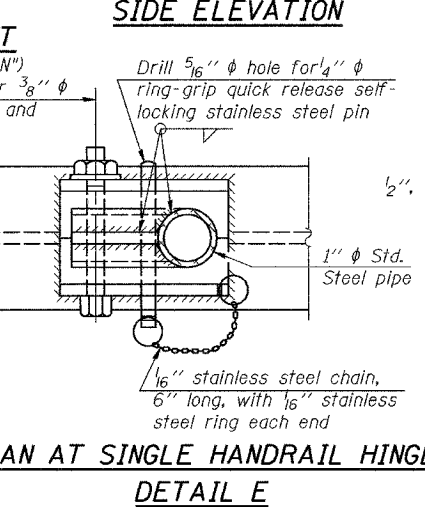
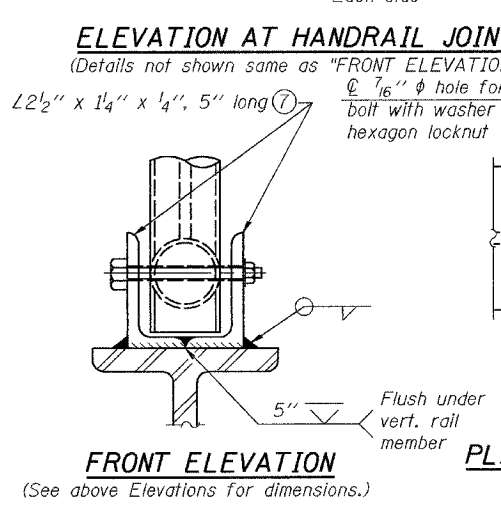
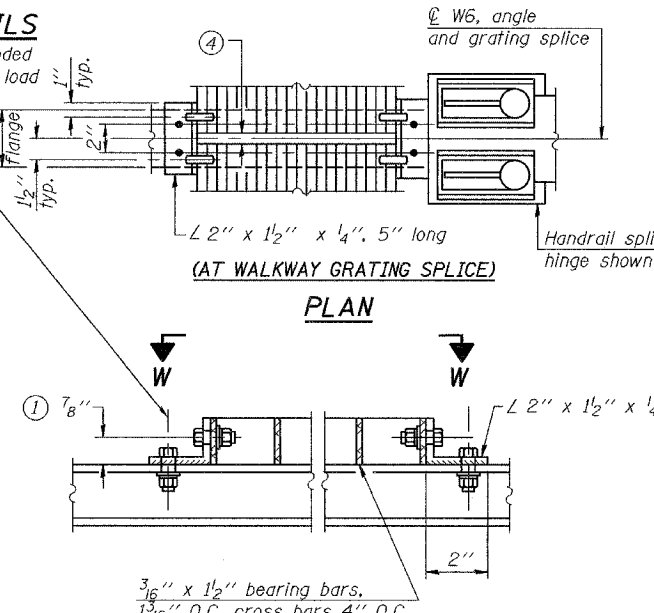
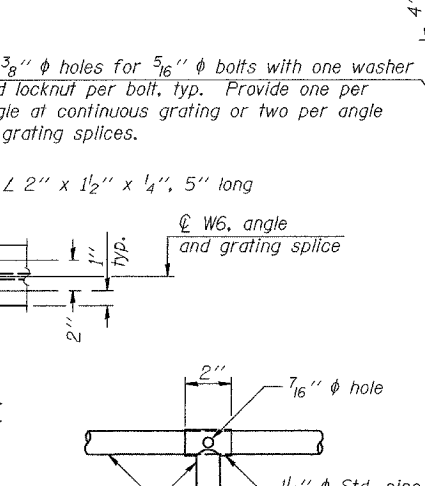
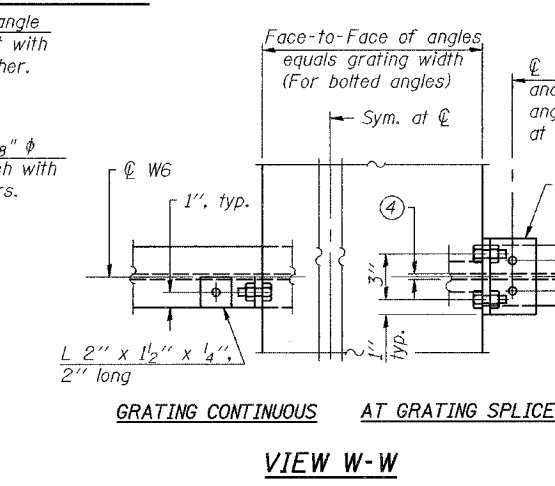
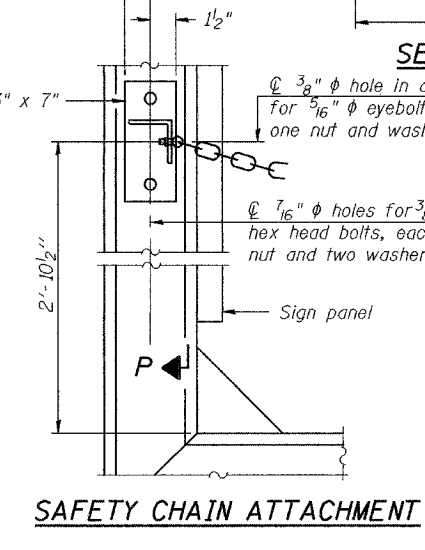
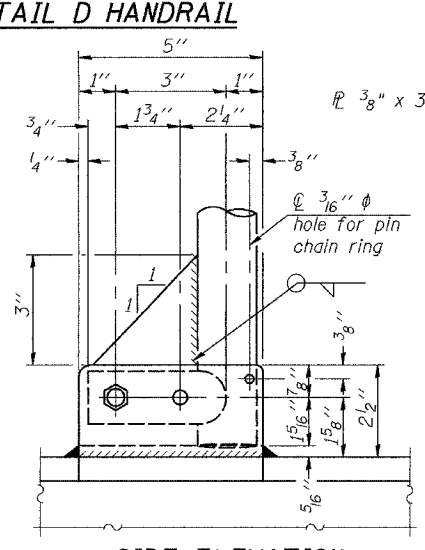
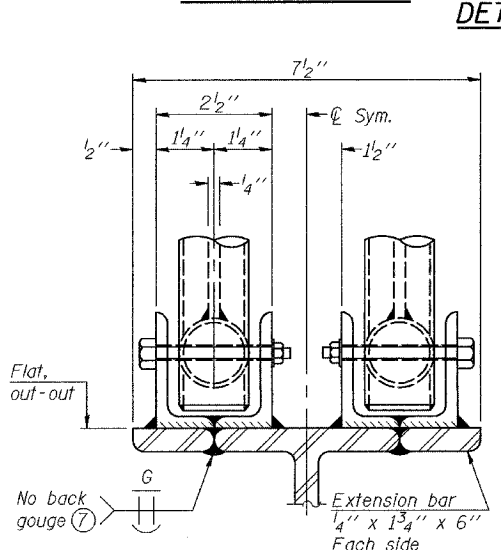
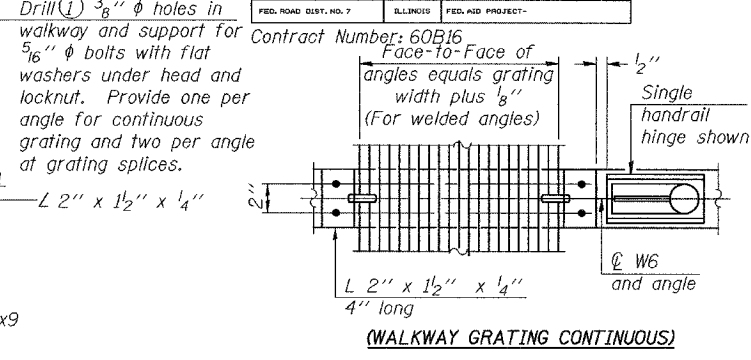
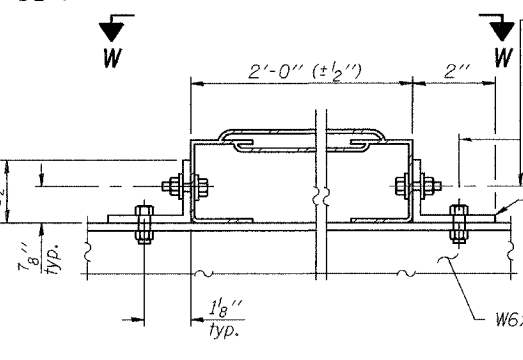
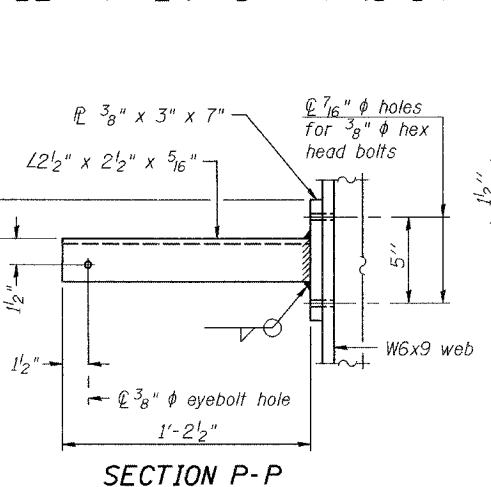
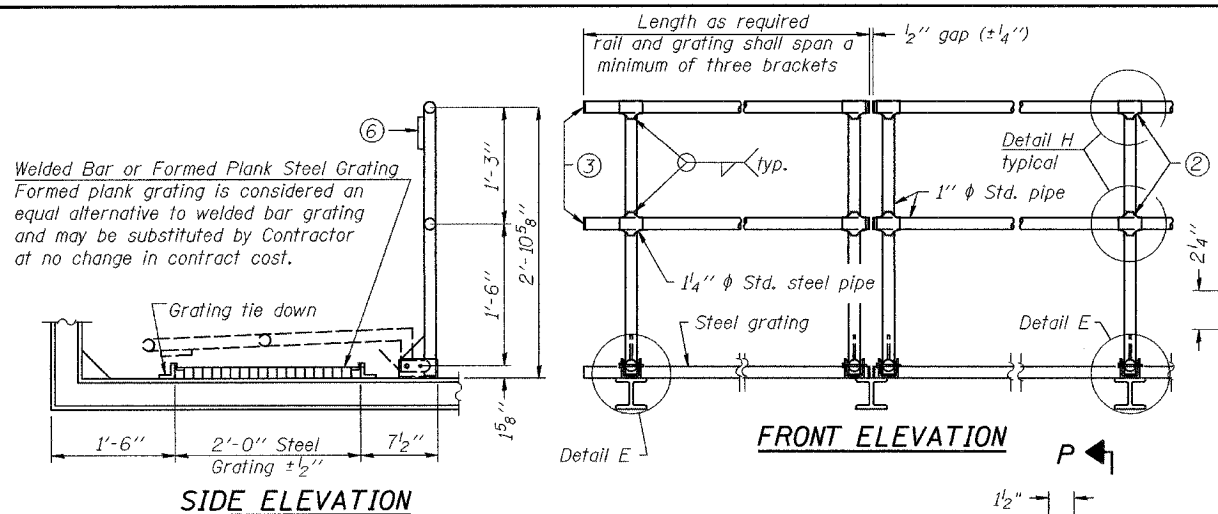
EXAMINED	September 19, 2006
PASSED	John A. Morris ENGINEER OF STRUCTURAL SERVICES
	Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES

NUMBER	REVISION	DATE

SIGN STRUCTURE DETAILS
GLENWOOD-LANSING RD / IL 394
COOK COUNTY
SN 016-0918

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET NO.
		Cook	13	11
8 SHEETS				



NUMBER	REVISION	DATE

DESIGNED	S.J.B.	EXAMINED	September 19, 2006
CHECKED	P.S.J.	PASSED	John A. Morris ENGINEER OF STRUCTURAL SERVICES
DRAWN	Drew Christopher		Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES
CHECKED	S.J.B. P.S.J.		

- NOTES
- Drilling holes in grating may be done in shop or field, based on Contractor's preference and subject to accurate alignment. Field drilled holes must be touched up with galvanized paint.
 - Horizontal rail member shall be continuous thru 1 1/4 inch diameter pipe. Provide 7/16 inch diameter hole in fitting for 3/8 inch diameter bolt. Field drill 7/16 inch diameter hole in horizontal rail member. Provide washer and locknut for bolt. (Use 5/16 inch eyebolts in 7/16 inch diameter holes on top rail at ends only.)
 - Install standard force-fit end caps or weld 1/8 inch end plates with 1/8 inch c.f.w. and grind smooth. (All rail ends.)
 - 3/8 inch (±1/4 inch) gap between grating panels at splice.
 - Chain to be hot dip galvanized after manufacture or stainless steel suitable for prolonged exterior exposure. Approximately 3'-6" long chain per location. Maximum sag with handrail erected = 4".
 - 1/8 inch x 1/2 inch x 2 inch welded to handrail posts to protect locations that contact grating.
 - Extrusions may be used in lieu of details shown, with approval by Engineer.
 - Field cut ends of light support channels shall be free of burrs or hazardous projections and coated with zinc-rich primer or equivalent.

BM-4 1-7-05

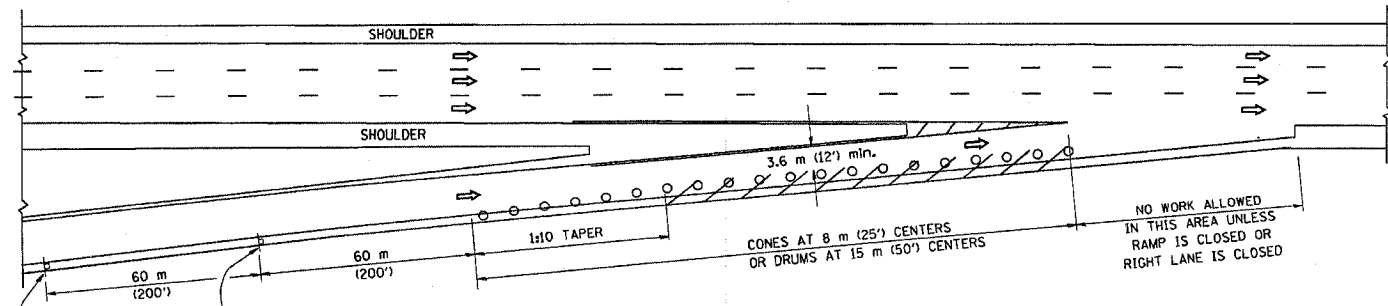
SIGN STRUCTURE
DETAILS
GLENWOOD-
LANSING RD / IL 394
COOK COUNTY
SN 016-0918

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			13	13
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

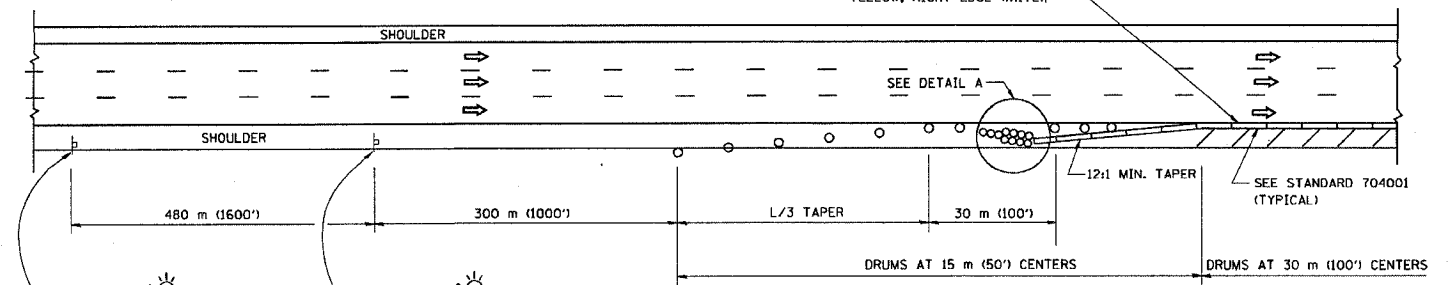
PARTIAL RAMP CLOSURE DETAILS

SHOULDER CLOSURE DETAILS

REFLECTIVE 150 (6) EDGE LINE ON LOWER SLOPE OF WALL (LEFT EDGE YELLOW, RIGHT EDGE WHITE)

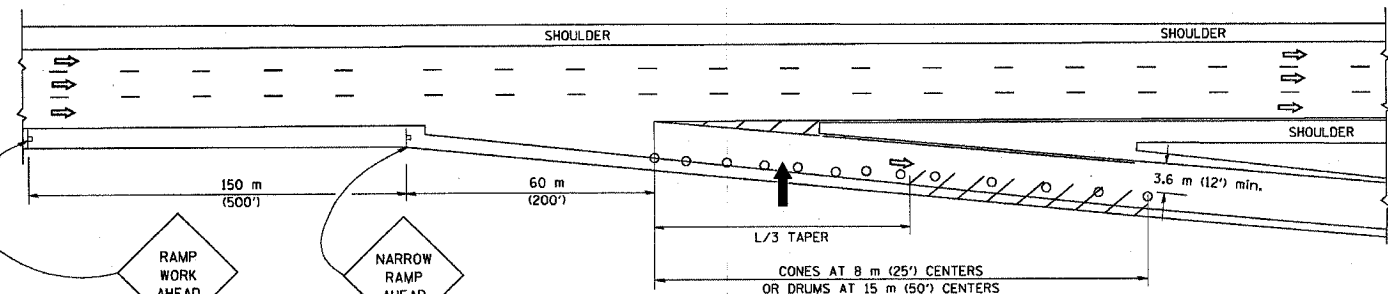


TYPICAL ENTRANCE RAMP

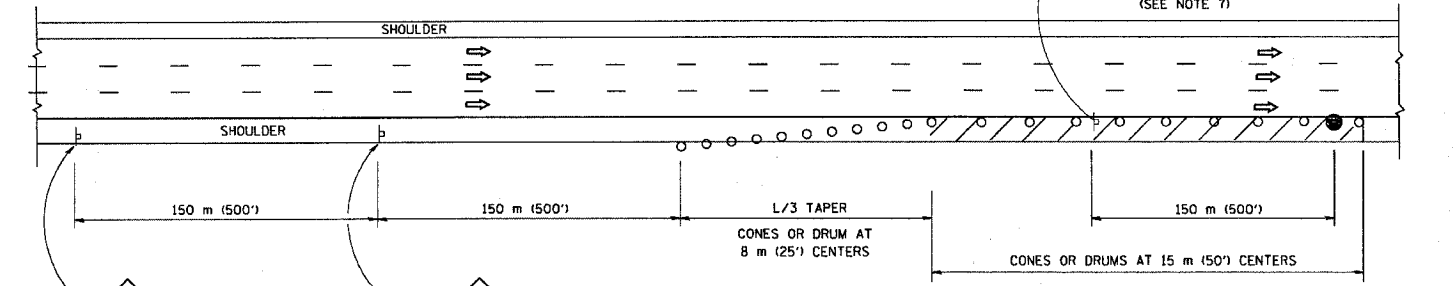


PERMANENT SHOULDER CLOSURE

OR WHEN SPECIFIED INSTALL TEMPORARY CONCRETE BARRIER WALL WITH BARRIER WALL REFLECTORS PER TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS)

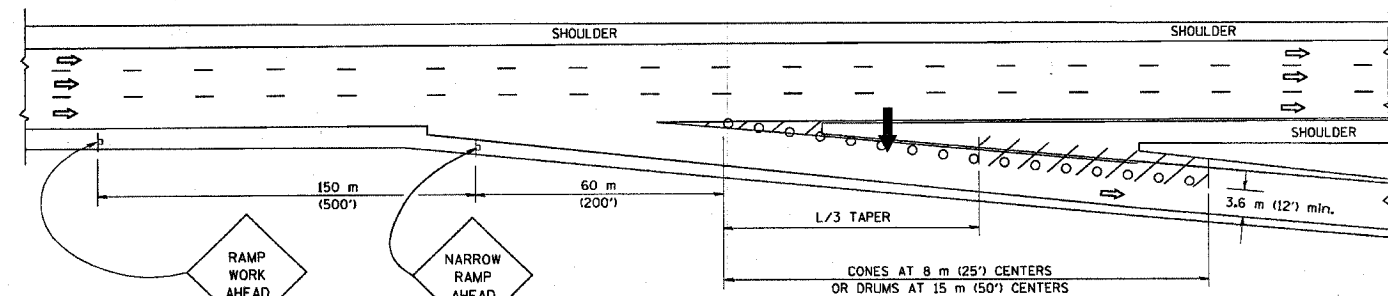


TYPICAL EXIT RAMP

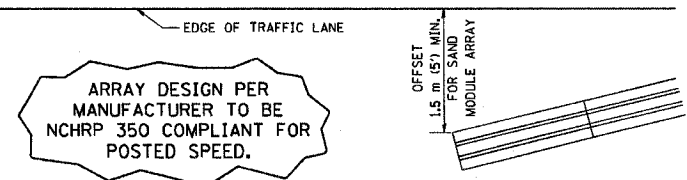


DAYTIME SHOULDER CLOSURE

THIS DETAIL IS USED WHERE:
1. VEHICLES, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCR OACH IN AN AREA CLOSER THAN 4.5 m (15') TO THE EDGE OF PAVEMENT FOR A PERIOD IN EXCESS OF 15 MINUTES.



TYPICAL EXIT RAMP



DETAIL "A"
IMPACT ATTENUATOR, TEMPORARY
(SEE NOTE 5)

SYMBOLS

- ARROWBOARD
- WORK AREA
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- FLAGGER WITH CONTROL SIGN
- DRUM WITH MONO-DIRECTIONAL STEADY BURNING LIGHT
- CONES - 700 (28) IN HEIGHT

GENERAL NOTES

- THE "L" DISTANCE EQUALS:
SPEED LIMIT FORMULAS
80 km/h (45 mph) OR GREATER: METRIC $L=0.65(W)(S)$ ENGLISH $L=(W)(S)$
W = WIDTH OF OFFSET IN METERS (FEET)
S = NORMAL POSTED SPEED KM/H (MPH)
- PLASTIC DRUMS WITH HIGH PERFORMANCE REFLECTIVE SHEETING AND STEADY BURNING LIGHTS ARE REQUIRED FOR ALL NIGHTTIME CLOSURES.
- ALL SIGNS SHALL BE POST MOUNTED IF THE CLOSURE TIME EXCEEDS FOUR DAYS.
- FLASHING LIGHTS SHALL BE USED DURING THE HOURS OF DARKNESS AND SHALL BE INSTALLED ABOVE THE FIRST TWO SETS OF SIGNS.

- THE IMPACT ATTENUATOR, TEMPORARY IS NOT REQUIRED WHEN THE TEMPORARY CONCRETE BARRIER WALL IS PROTECTED BY OR IS TIED INTO THE EXISTING GUARDRAIL. IF OFFSET IS LESS THAN 5 FEET USE "TRAFFIC BARRIER TERMINAL, TYPE III, TEMPORARY" DEVICE TO MEET NCHRP350 FOR POSTED SPEED.
- AUTHORIZATION FROM THE DISTRICT'S BUREAU OF TRAFFIC IS REQUIRED FOR ALL FREEWAY CLOSURES.
- THE FLAGGER AND FLAGGER SIGN ARE REQUIRED AT THE ABOVE WORK SITES WHEN:
 - FOUR OR MORE WORK VEHICLES ENTER THE TRAFFIC LANES IN A ONE HOUR PERIOD.
 - THE WORK ACTIVITY REQUIRES FREQUENT ENCR OACHMENT INTO THE LANE OPEN TO TRAFFIC.
 THE FLAGGER SHALL BE STATIONED APPROXIMATELY 30 m (100') TO 60 m (200') IN ADVANCE OF THE WORKERS.

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

REVISIONS	
NAME	DATE
DWS	11/96
JAF	12/02
NCHRP 350	04/03
JAF	2/06

ILLINOIS DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL DETAILS
FOR FREEWAY
SHOULDER CLOSURES
PARTIAL RAMP CLOSURES

SCALE: NONE
DATE: 3/1/2006

DESIGNED BY: DWS
DRAWN BY
CHECKED BY
TC-17

PLOT DATE = 3/1/2006
FILE NAME = K:\chris\17.dgn
USER NAME = chris