

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED
HIGHWAY PLANS

VARIOUS ROUTES
VARIOUS LOCATIONS
SECTION 2013-044BR
BRIDGE REPAIRS (STEEL BEAM REPAIRS)
COOK AND DUPAGE COUNTY

C-91-406-13

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	2013-044BR	COOK & DUPAGE	35	1
ILLINOIS CONTRACT NO. 60W94				

*35-41-36
D-91-406-13 *36-7-29

FOR INDEX OF SHEETS, SEE SHEET NO. 2

IMPROVEMENTS LOCATED IN THE CITIES OF CHICAGO
AND ELMHURST AND THE VILLAGE OF JUSTICE.



LOCATION OF SECTION INDICATED THUS: —

FOR LOACTION MAPS
SEE PAGES 5-9.

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

C.U.A.N.
CHICAGO UTILITY ALERT NETWORK
1-312-744-7000

PROJECT ENGINEER: J. ALAIN MIDY (847) 221-3056
PROJECT MANAGER: ISSAM RYAN (847) 705-4178

CONTRACT NO. 60W94

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
SUBMITTED October 23 2013
John F. T...
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
Dec 6 2013
John D. Baranzelli, P.E.
acting ENGINEER OF DESIGN AND ENVIRONMENT
Dec 6 2013
Omer Osman, P.E.
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS

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* 6 - DELETED

STANDARD NO.	DESCRIPTION
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701400-07	APPROACH TO LANE CLOSURE, FREEWAY/EXPRESSWAY
701401-08	LANE CLOSURE, FREEWAY/EXPRESSWAY
701423-07	LANE CLOSURE, MULTILANE, WITH BARRIER, FOR SPEEDS ≥ 45 MPH TO 55 MPH
701426-06	LANE CLOSURE, MULTILANE, INTERMITTENT OR MOVING OPER., FOR SPEEDS ≥ 45 MPH
701428	TRAFFIC CONTROL SETUP AND REMOVAL FREEWAY/EXPRESSWAY
701446-05	TWO LANE CLOSURE FREEWAY/EXPRESSWAY
701501-06	LANE CLOSURE, 2L, 2W, UNDIVIDED
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701901-03	TRAFFIC CONTROL DEVICES
704001-07	TEMPORARY CONCRETE BARRIER

GENERAL NOTES (BRIDGE)

THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO INSURE THAT NO DEBRIS WILL ENDANGER OR INTERFERE WITH TRAFFIC ON THE ROADWAY (or THE RAILROAD) BENEATH THE BRIDGE ACCORDING TO ARTICLE 107.09 (or 107.12) OF THE STANDARD SPECIFICATIONS. THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE APPROPRIATE PAY ITEM INVOLVED AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

CONCRETE SUPERSTRUCTURE SHALL HAVE A SEVEN DAY MINIMUM CURE.

ALL VERTICAL CLEARANCE SIGNAGE, IF EXISTING, SHALL BE RESTORED TO THE CONDITION EXISTING PRIOR TO THE START OF WORK ASSOCIATED WITH THIS CONTRACT.

WHEN REMOVING THE EXISTING DAMAGED BEAM, THE CONTRACTOR SHALL TAKE APPROPRIATE PRECAUTIONS TO ENSURE THAT THE DECK AND THE BEAM ARE PROPERLY SUPPORTED DURING THE ENTIRE REMOVAL OPERATION SO AS TO PROTECT THE TRAFFIC AND PAVEMENT ON AND BELOW THE BRIDGE. THE CONTRACTOR SHALL SUBMIT THE REMOVAL SEQUENCE AND PROCEDURE TO THE ENGINEER FOR APPROVAL PRIOR TO REMOVAL OF THE EXISTING DECK, DAMAGED BEAM OR CARRIER BEAM. THIS COST IS INCLUDED IN THE COST OF "STRUCTURAL STEEL REMOVAL"

SLIPFORMING OF PARAPETS IS NOT ALLOWED.

BEFORE STARTING ANY EXCAVATION, THE CONTRACTOR SHALL CALL "J.U.L.I.E." AT (800) 892-0123 OR 811 FOR FIELD LOCATIONS OF BURIED ELECTRIC, TELEPHONE AND GAS UTILITIES. 48 HOUR NOTIFICATION IS REQUIRED.

BEFORE STARTING ANY EXCAVATION, THE CONTRACTOR SHALL CALL "C.U.A.N." (CHICAGO UTILITY ALERT NETWORK) AT (312)744-7000 FOR FIELD LOCATIONS OF BURIED ELECTRIC, TELEPHONE AND GAS UTILITIES. (48 HOUR NOTIFICATION IS REQUIRED).

THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH UTILITY COMPANIES, AND THE CITIES OF CHICAGO AND ELMHURST AND THE VILLAGE OF JUSTICE.

THE CONTRACTOR WILL NOT BE ALLOWED TO SET UP A YARD OR FIELD OFFICE ON STATE PROPERTY WITHOUT WRITTEN PERMISSION FROM THE DEPARTMENT.

PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING PLANS ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. THE CONTRACTOR SHALL FIELD VERIFY EXISTING DIMENSIONS AND DETAILS AFFECTING NEW CONSTRUCTION AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN SCOPE OF THE WORK, HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED BASED AT THE UNIT PRICE BID FOR THE WORK.

THE CONTRACTOR SHALL CONTACT THE DISTRICT ONE TRAFFIC CONTROL SUPERVISOR AT (847)705-4470 (FOR ARTERIALS) AND (847)705-4155 (FOR EXPRESSWAYS) A MINIMUM OF 72 HOURS IN ADVANCE OF BEGINNING WORK.

THESE PLANS HAVE BEEN PREPARED FROM NOTES RECEIVED FROM THE BUREAU OF MAINTENANCE BRIDGE INSPECTORS.

THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ACCESS TO ABUTTING
PROPERTY AT ALL TIMES DURING THE CONSTRUCTION OF THIS PROJECT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION OF ALL EMERGENCY SERVICES, SCHOOL DISTRICTS, I.D.O.T.'S COMMUNICATIONS CENTER, SPRINGFIELD TRUCK PERMIT SECTION AND OTHER AGENCIES AFFECTED BY THE CLOSURE. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR POSTING SIGNS THAT WILL INDICATE THE DATES THE CLOSURE WILL BE IN PLACE.

DO NOT SCALE PLANS FOR CONSTRUCTION DIMENSIONS.

THE "ARTERIAL ROAD INFORMATION SIGN (TC-22)" IS APPLICABLE ONLY TO ARTERIAL ROADS AND SHALL NOT BE APPLIED TO EXPRESSWAYS/TOLLWAYS.

FOR LOCATION 4, THE CONTRACTOR SHALL COORDINATE WITH THE IDOT
ELECTRIC MAINTENANCE CONTRACTOR PRIOR TO PERFORMING ANY WORK.

A BARRICADE OR DRUM WITH FLASHING LIGHTS SHALL BE PLACED ON THE SIDEWALK ON EITHER SIDE OF TEMPORARY SLAB SUPPORT SYSTEM. COST INCLUDED IN THE COST OF TRAFFIC CONTROL AND PROTECTION STANDARD 701801.

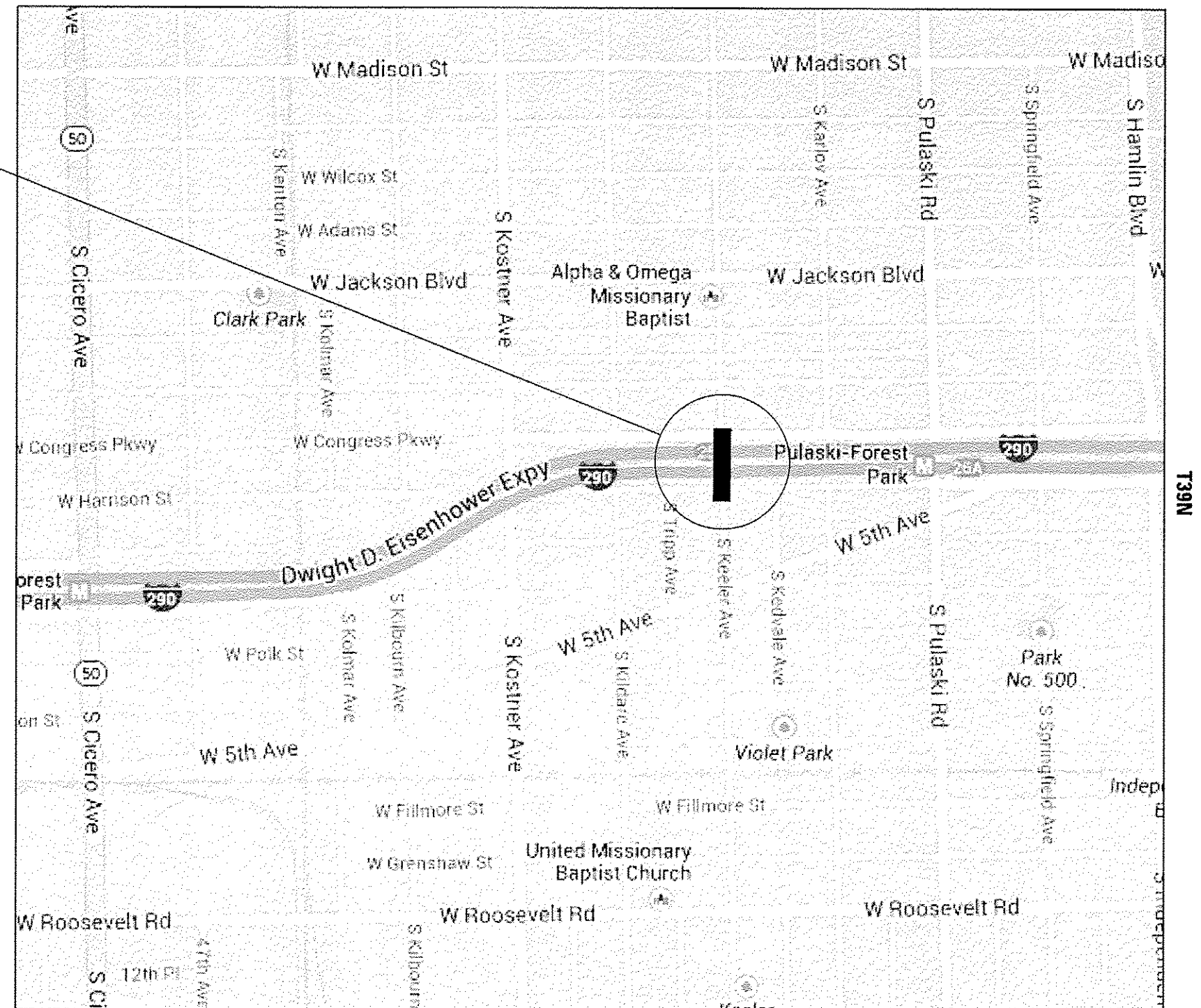
CALL IDOT EMC FOR CABLE LOCATES AT (773) 287-7600.

FOR LOCATION 1, SURVEILLANCE CONDUITS ARE ATTACHED TO THE AUGUSTA
BLVD BRIDGE WEST ABUTMENT. CARE SHALL BE TAKEN NOT TO DAMAGE
CONDUITS.

FOR LOCATION 3, HOMELAND SECURITY VIDEO AND FIBER INSTALLED IN THE HUBBARD ST CAVE. CARE SHALL BE TAKEN NOT TO DAMAGE CONDUITS.

FILE NAME :	USER NAME = SEYMORECP	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	VARIOUS ROUTES INDEX OF SHEETS, STATE STANDARDS, & GENERAL NOTES					F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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PLOT SCALE = 100.0000' / in.	CHECKED -	REVISED -			CONTRACT NO. 60W94									
PLOT DATE = 11/21/2013	DATE -	REVISED -			ILLINOISIFIED AND PROJECT									
Default				SCALE:	SHEET	OF	SHEETS	STA.	TO STA.					

LOCATION 4: I-290 (EISENHOWER EXPRESSWAY) AT
KEELER AVENUE
SN 016-2068

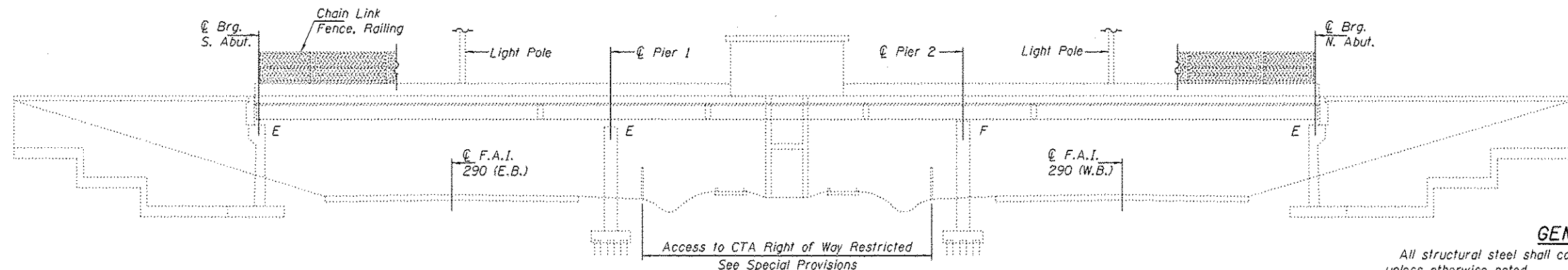
**TRAFFIC DATA:**

KEELER AVE- SPEED LIMIT: 45 MPH
1997 ADT: 5000

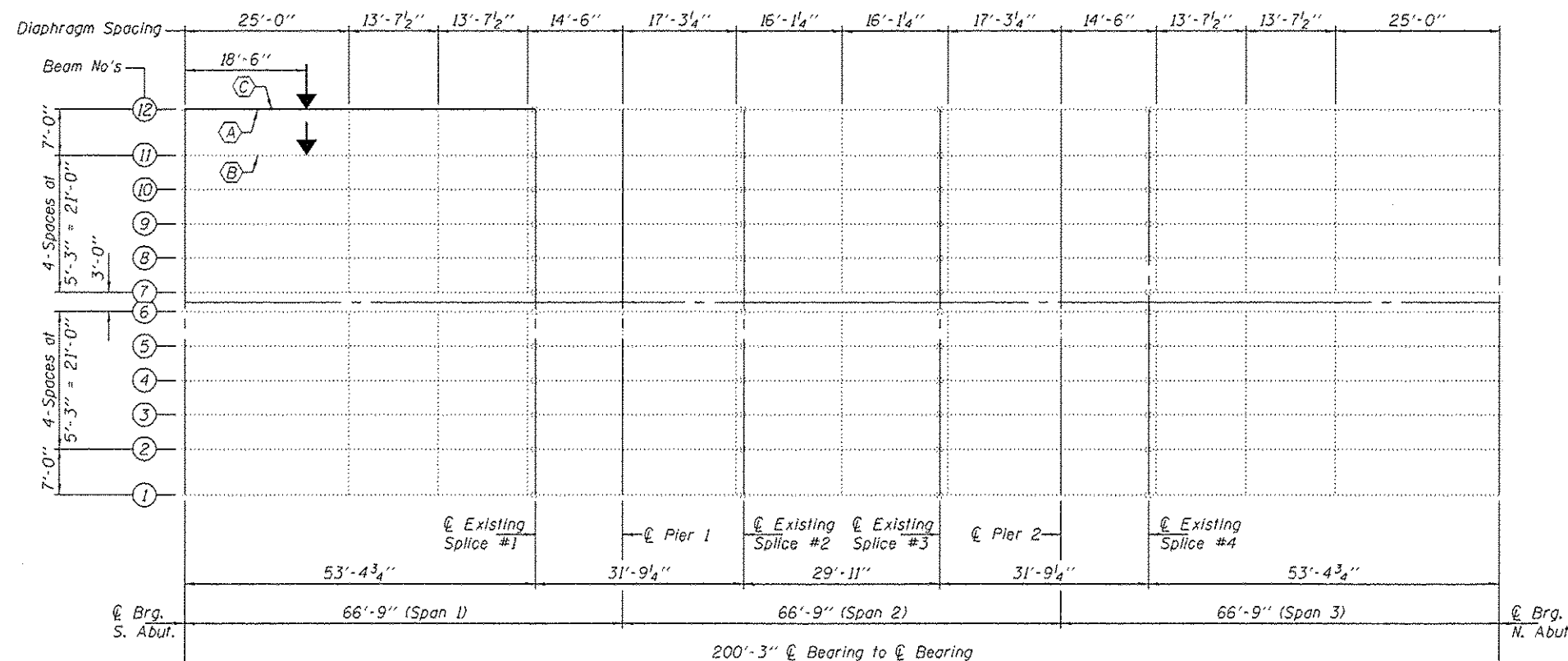
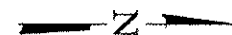
I-290- SPEED LIMIT: 55 MPH
2012 ADT: 210600

CITY OF CHICAGO
WEST CHICAGO TOWNSHIP
COOK COUNTY

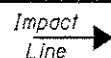
FILE NAME :	USER NAME : SEYMORECP	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	LOCATION MAP				F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
c:\pr\work\pwr\dts\seymorecp\08261409\01	0813-sht-details.dgn	DRAWN -	REVISED -		LOCATION 4				VAR.	2013-044BR	COOK & DUPAGE	35	0
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	PLOT DATE = 10/30/2013	DATE -	REVISED -		SCALE:	SHEET	OF	SHEETS	STA.	TO STA.			
								ILLINOIS FED. AID PROJECT					



ELEVATION



FRAMING PLAN



- (A) - Replace Beam Segment
- (B) - Straighten & Strengthen Existing Beam
- (C) - Remove and replace existing Sign Structure

GENERAL NOTES

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

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

Cost of removal and 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 with 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 final finish coat for all interior steel surfaces shall be gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Reddish Brown, Munsell No. 2.5YR 3/4.

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

Diaphragm connection holes shall be 15/16" ϕ for 3/4" ϕ bolts. Two hardened washers shall be required at diaphragm connections.

Fasteners shall be high strength bolts. Flange splice holes shall be 15/16" ϕ for 7/8" ϕ bolts.

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".

Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.

Existing reinforcement bars 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 included with Concrete Removal.

The deck surface shall have its final finish tined according to Article 420.09(e)(1) of the Standard Specifications. Cost included with Concrete Superstructure.

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

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

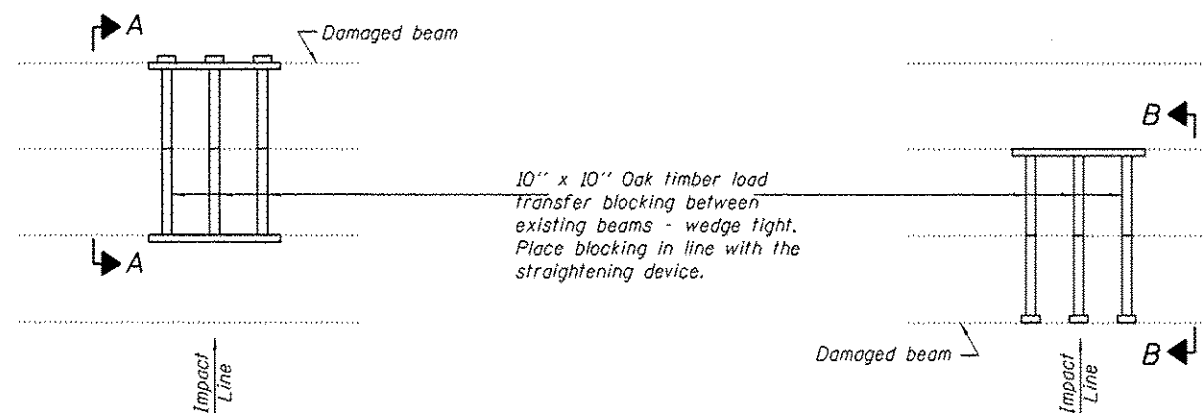
The Contractor shall provide support and/or shoring systems for the slab and beam in the area of existing beam removal. See Special Provisions "Temporary Shoring and Cribbing" and "Temporary Slab Support System."

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	1.1
Concrete Superstructure	Cu. Yd.	1.1
Structural Steel Removal	Pound	8160
Furnishing & Erecting Structural Steel	Pound	8570
Beam Straightening	L.S.	0.25
Temporary Slab Support System	L.S.	0.5
Remove Overhead Sign Structure - Bridge Mounted	Each	1
Overhead Sign Structure - Bridge Mounted	Foot	24

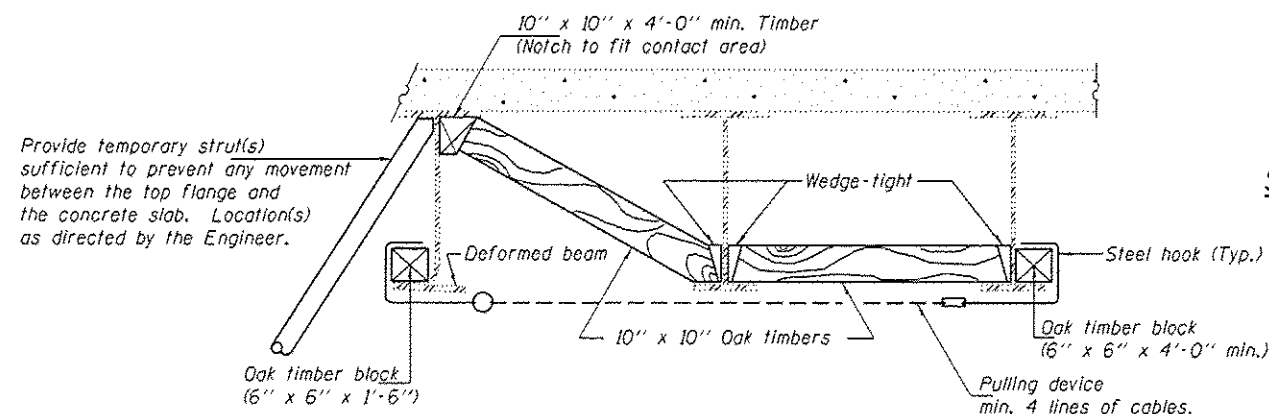


DESIGNED - <i>[Signature]</i>	EXAMINED - <i>[Signature]</i>	DATE - NOVEMBER 15, 2013	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN & ELEVATION KEELER AVENUE OVER I-290 SN 016-2068 SHEET NO. 1 OF 7 SHEETS	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED - <i>[Signature]</i>	PASSED - <i>[Signature]</i>				VAR	2013-0448R	COOK	35	22
DRAWN - Kyle M. Stoffan									
CHECKED - <i>[Signature]</i>									
					CONTRACT NO. 60W94 ILLINOIS FED. AID PROJECT				

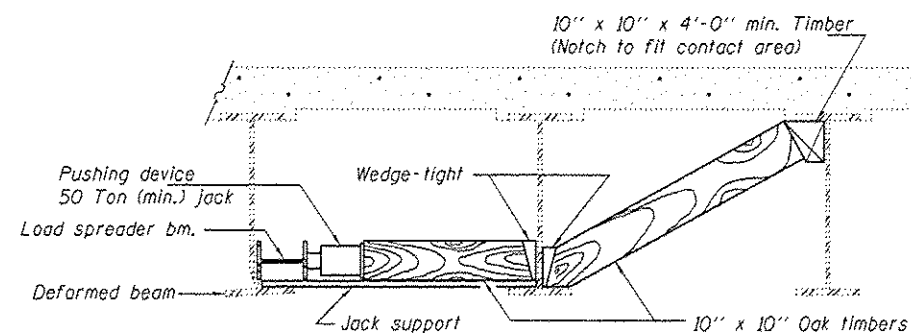


PARTIAL PLANS SUGGESTED BEAM STRAIGHTENING METHODS

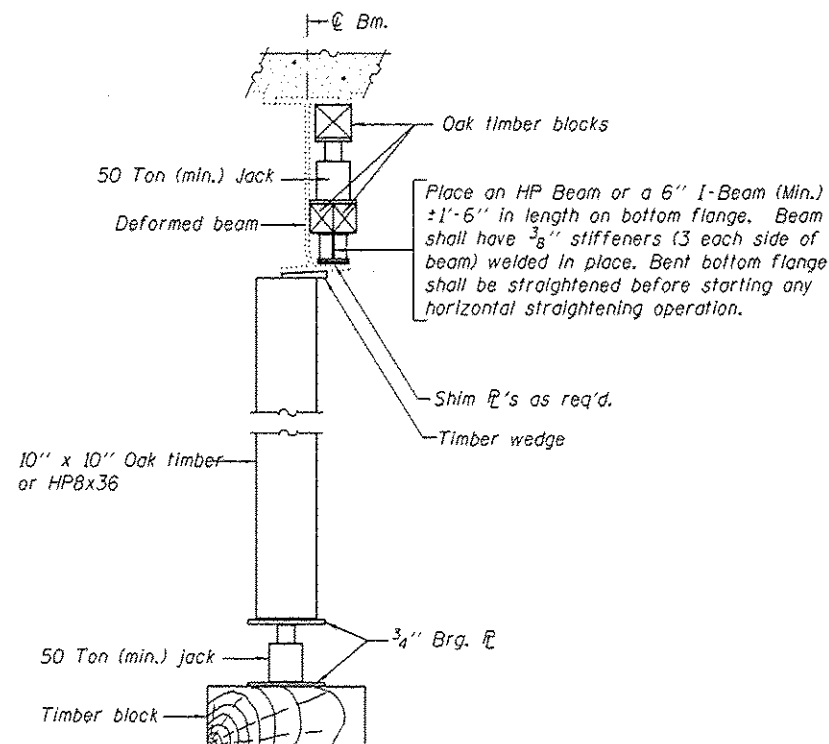
Straightening force shall be maintained on all load transfer blocking during beam straightening.



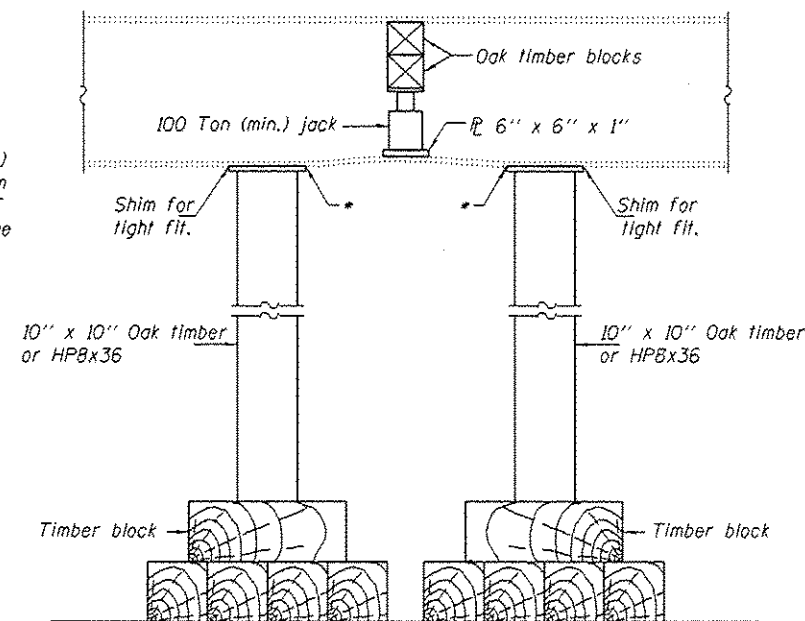
SECTION A-A



SECTION B-B



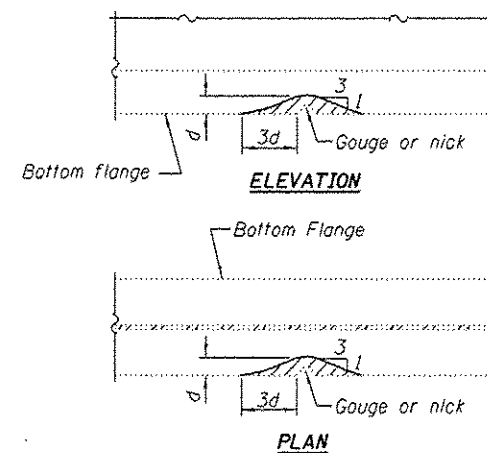
SUGGESTED VERTICAL STRAIGHTENING DETAIL
(To correct flange rotation.)



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.



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 West)
(Approximate max. deflections)
Deflected length of beam to be straightened is approximately 4'.

REP-11-14-2005

DESIGNED - DAB
CHECKED - TLC
DRAWN - Kyle M. Stoffen
CHECKED - DAB TLC

EXAMINED
PASSED
ACTING ENGINEER OF STRUCTURAL SERVICES
ACTING ENGINEER OF BRIDGES AND STRUCTURES

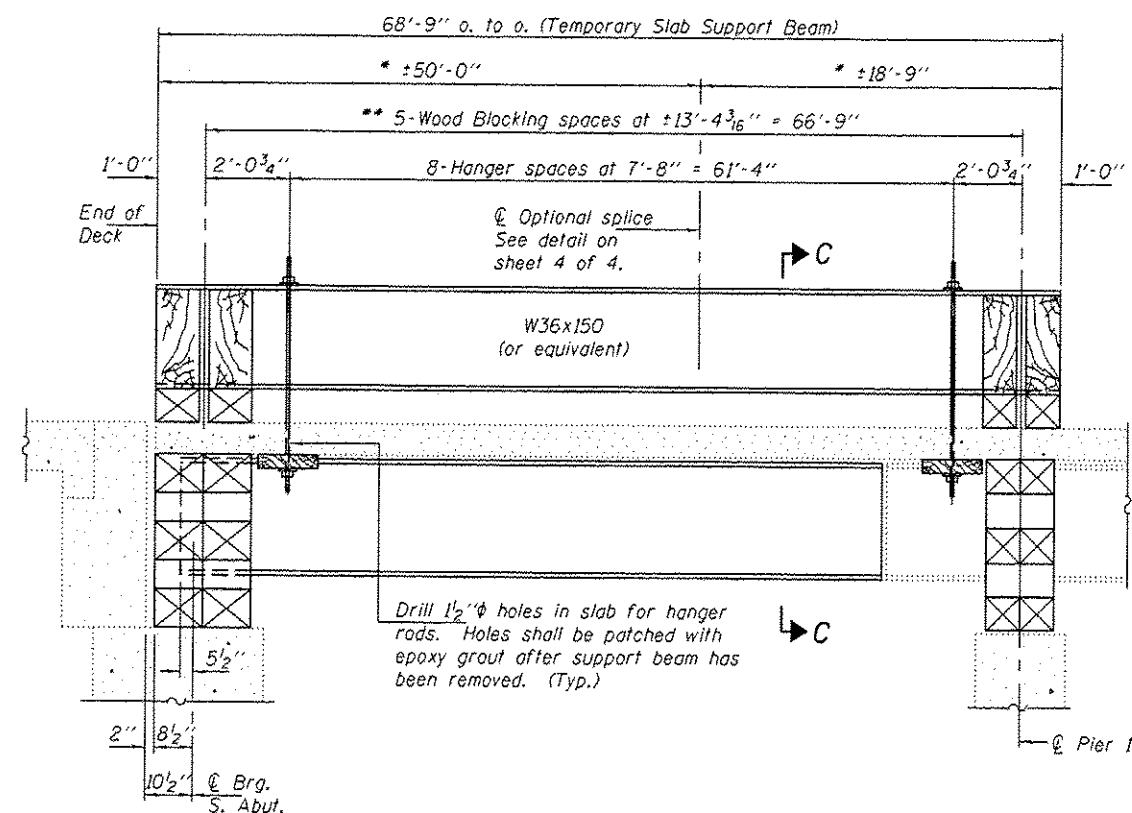
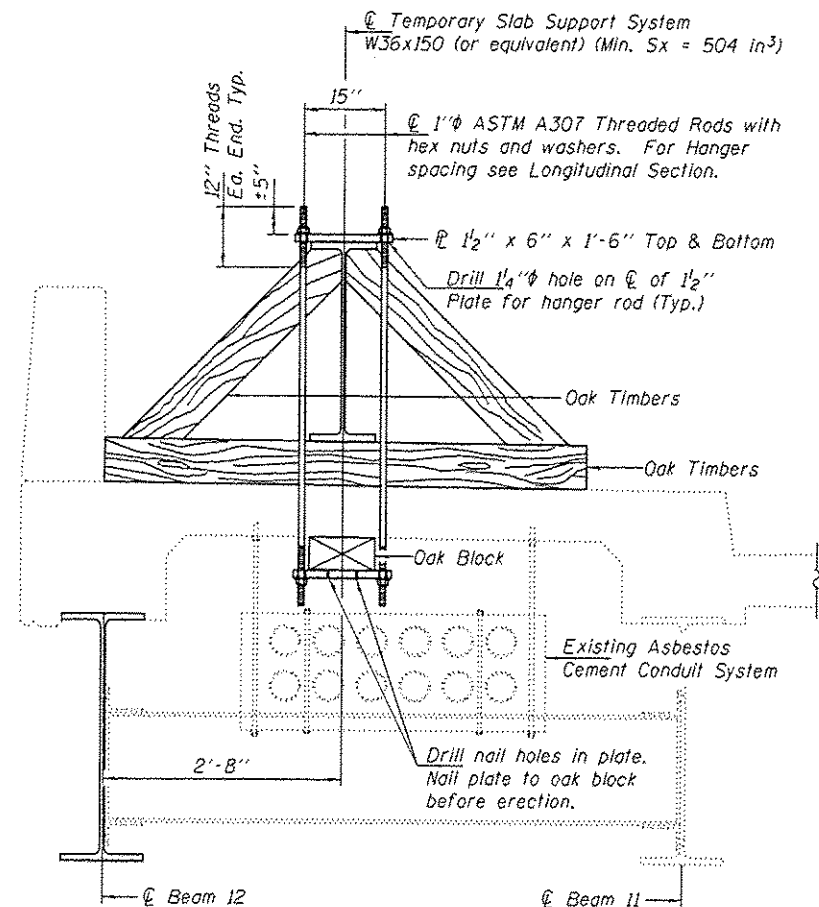
DATE - NOVEMBER 15, 2013

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEAM STRAIGHTENING DETAILS
SN 016-2068

SHEET NO. 2 OF 7 SHEETS

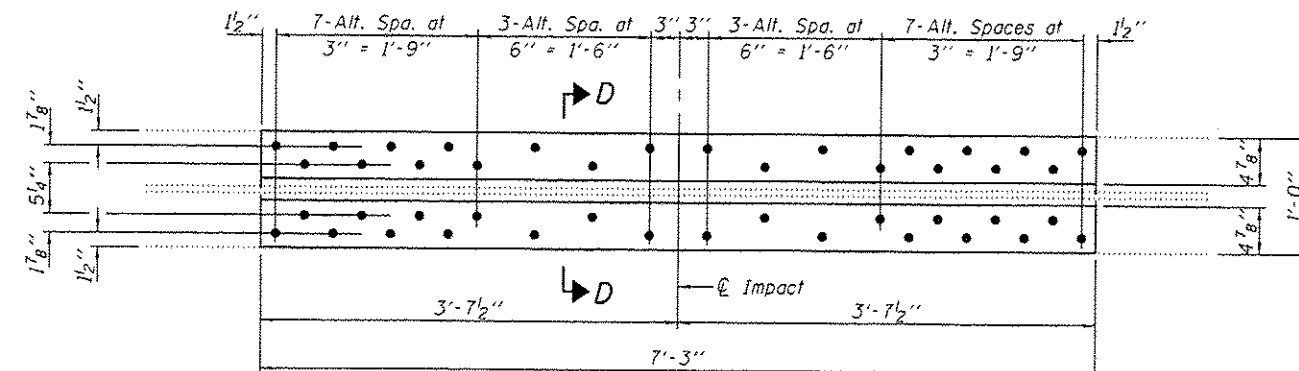
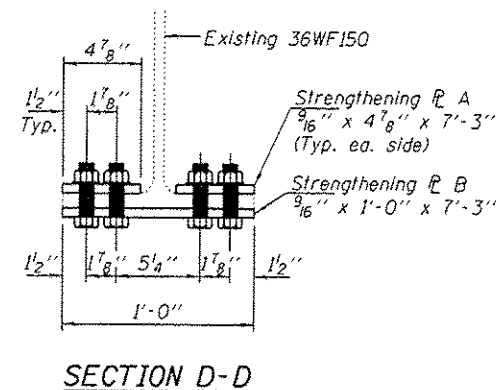
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	2013-044BR	COOK	35	23
CONTRACT NO. 60W94			ILLINOIS FED. AID PROJECT	



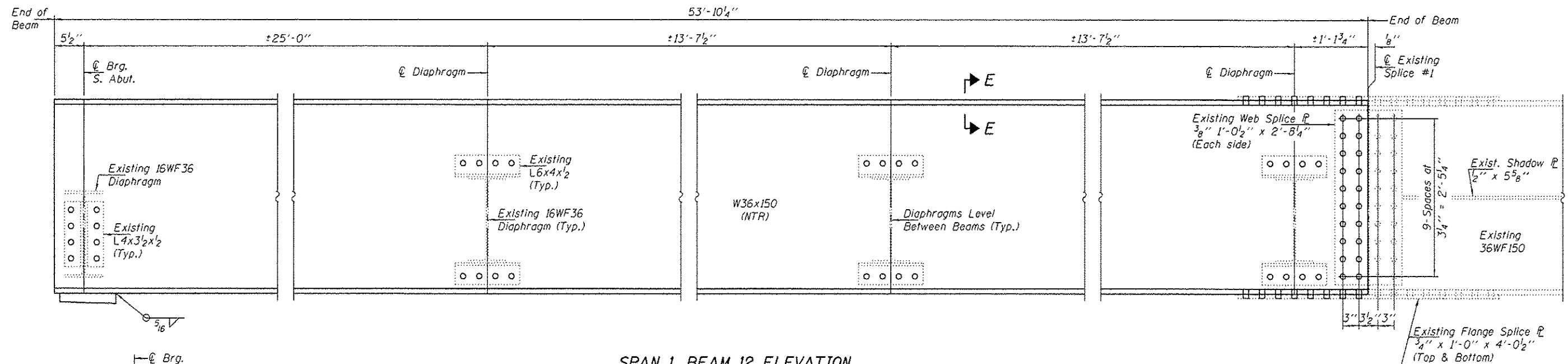
LONGITUDINAL SECTION
SUGGESTED TEMPORARY SLAB SUPPORT SYSTEM

* These dimensions may vary for available beams in stock.

*** Wood Blocking between supports to be placed after support beam deflects under its own weight.*

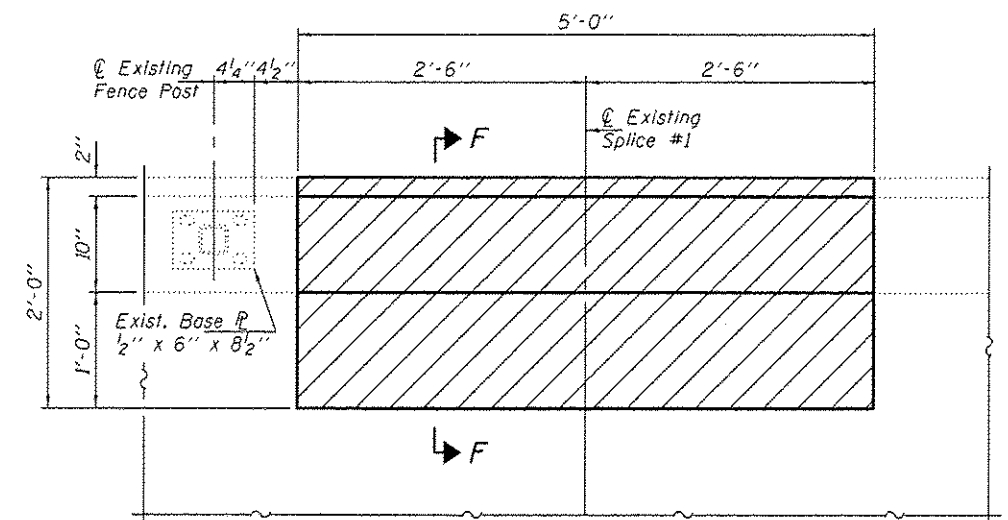
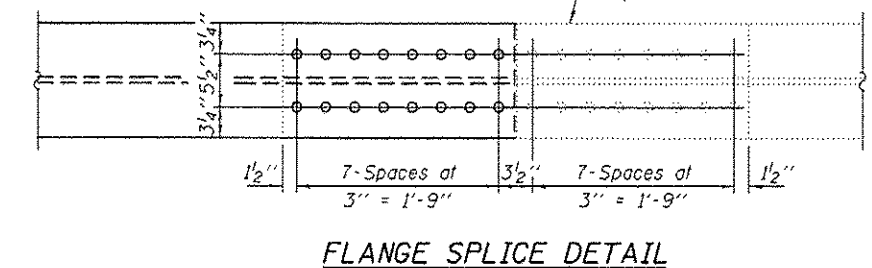
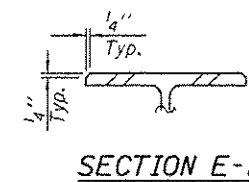
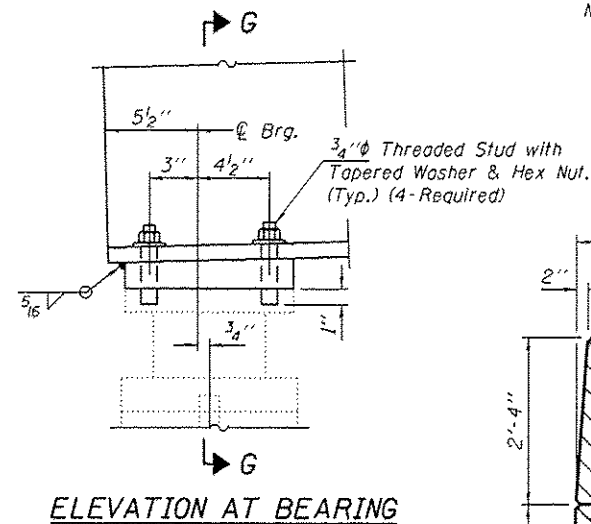
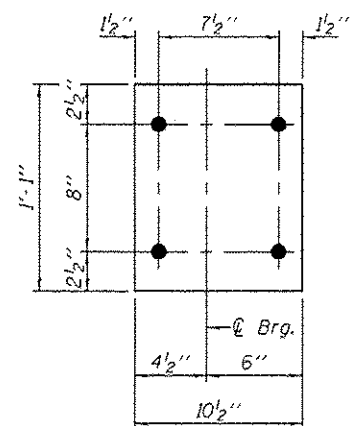
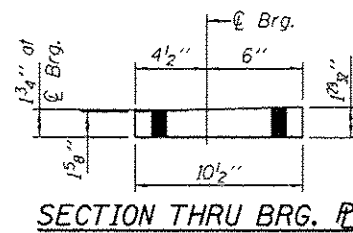


DESIGNED - DAB	EXAMINED  ACTING ENGINEER OF STRUCTURAL SERVICES PASSED  ACTING ENGINEER OF BRIDGES AND STRUCTURES	DATE - NOVEMBER 15, 2013	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TEMPORARY SLAB SUPPORT SYSTEM & STRENGTHENING DETAILS SN 016-2068	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED - TLC		VAR			2013-044BR	COOK	35	24	
DRAWN - Kyle M. Stoffen		CONTRACT NO. 60W94							
CHECKED - DAB TLC		SHEET NO. 3 OF 7 SHEETS							
ILLINOIS FED. AID PROJECT									



SPAN 1, BEAM 12 ELEVATION

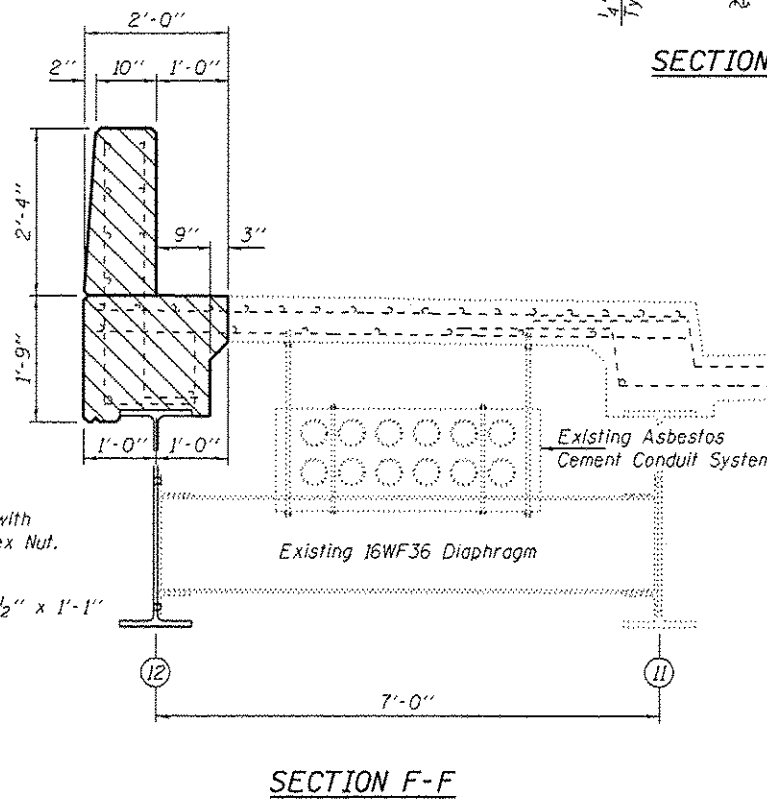
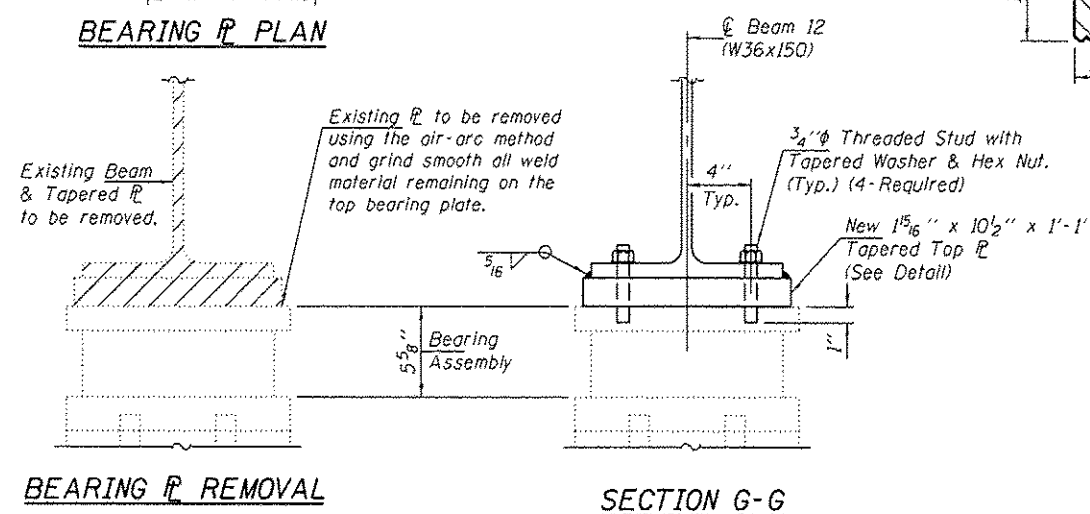
Notes:
Natural camber of new beam shall be placed upward for fabrication.
All holes to be field drilled using holes in existing steel as template.



CONCRETE SURFACE 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.

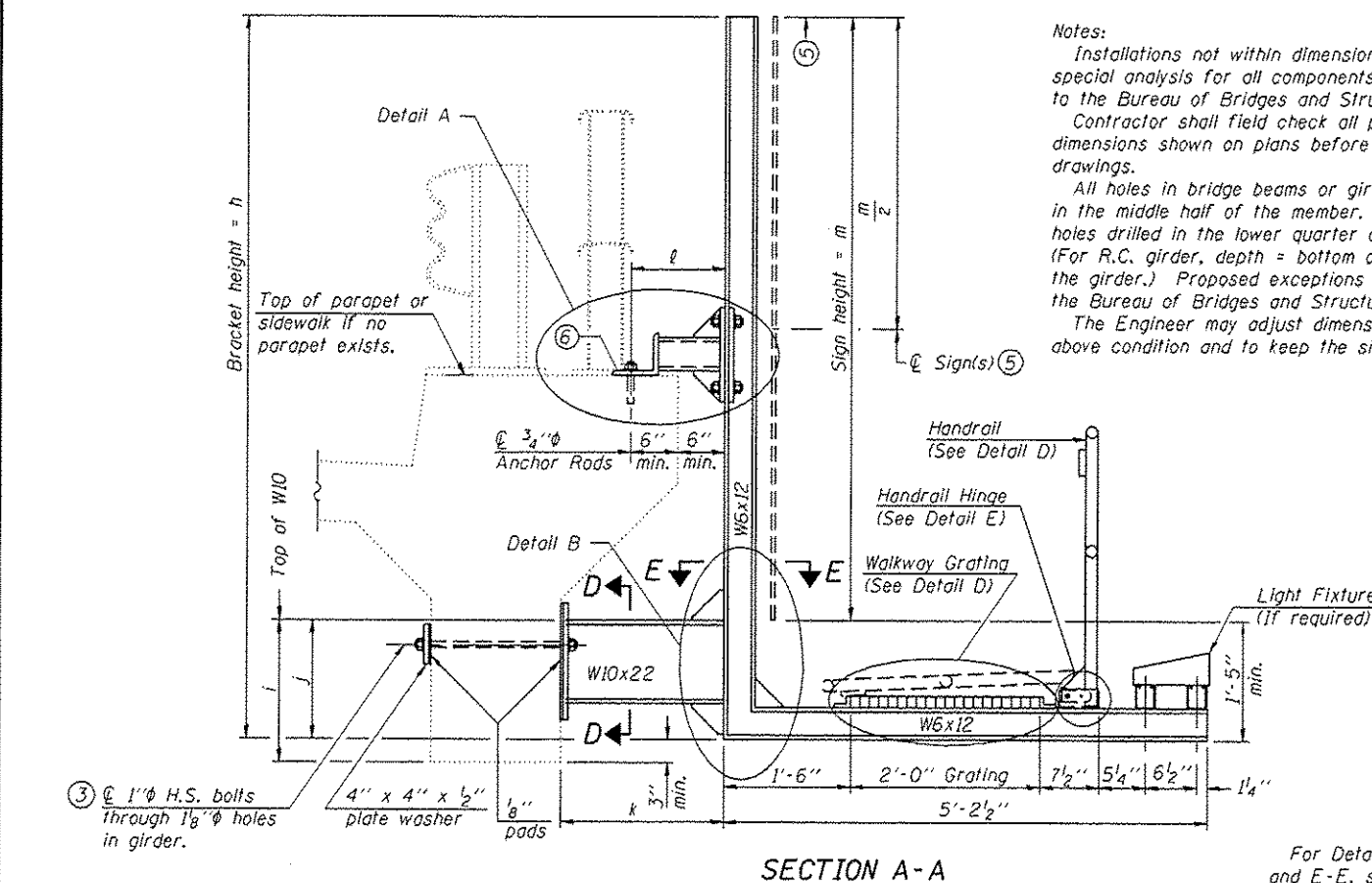
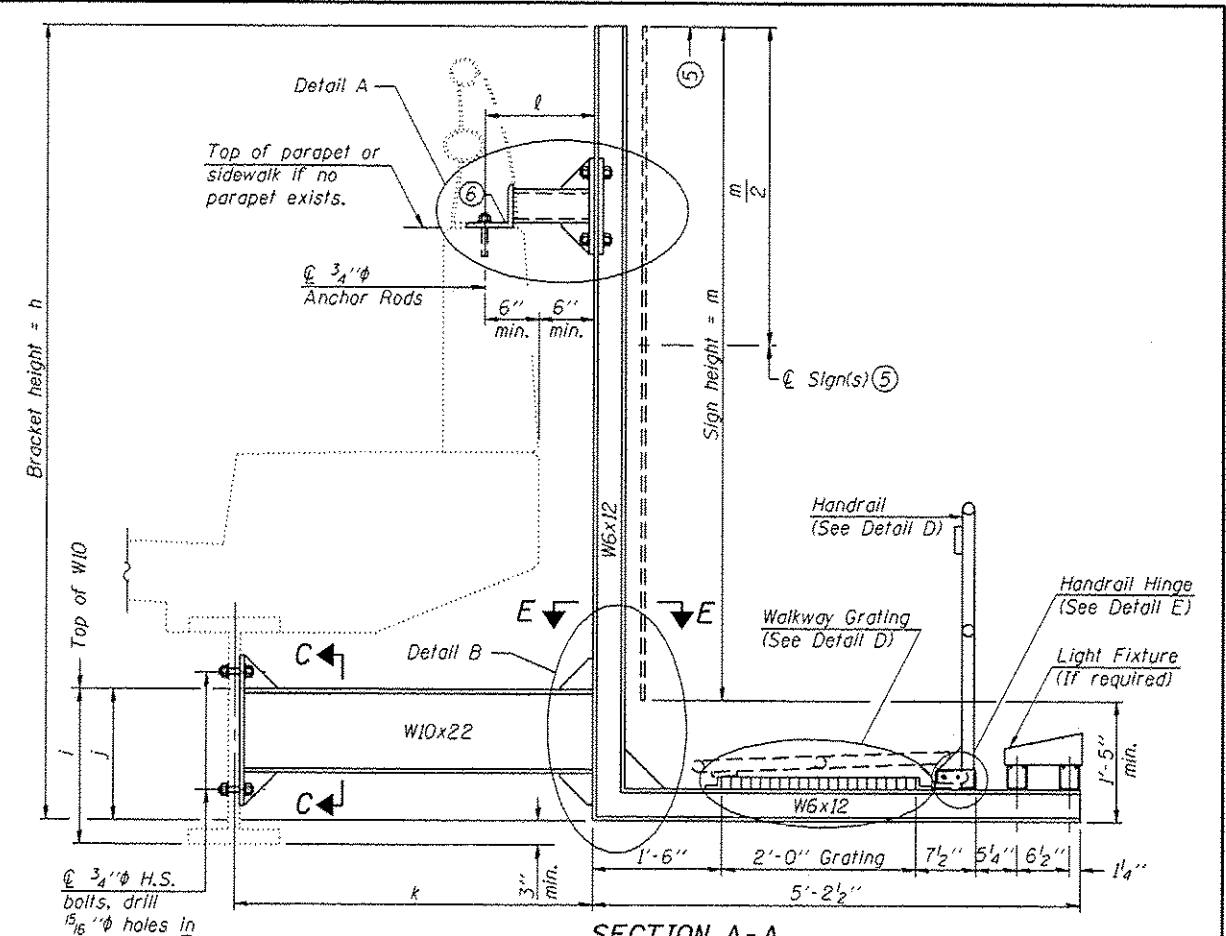
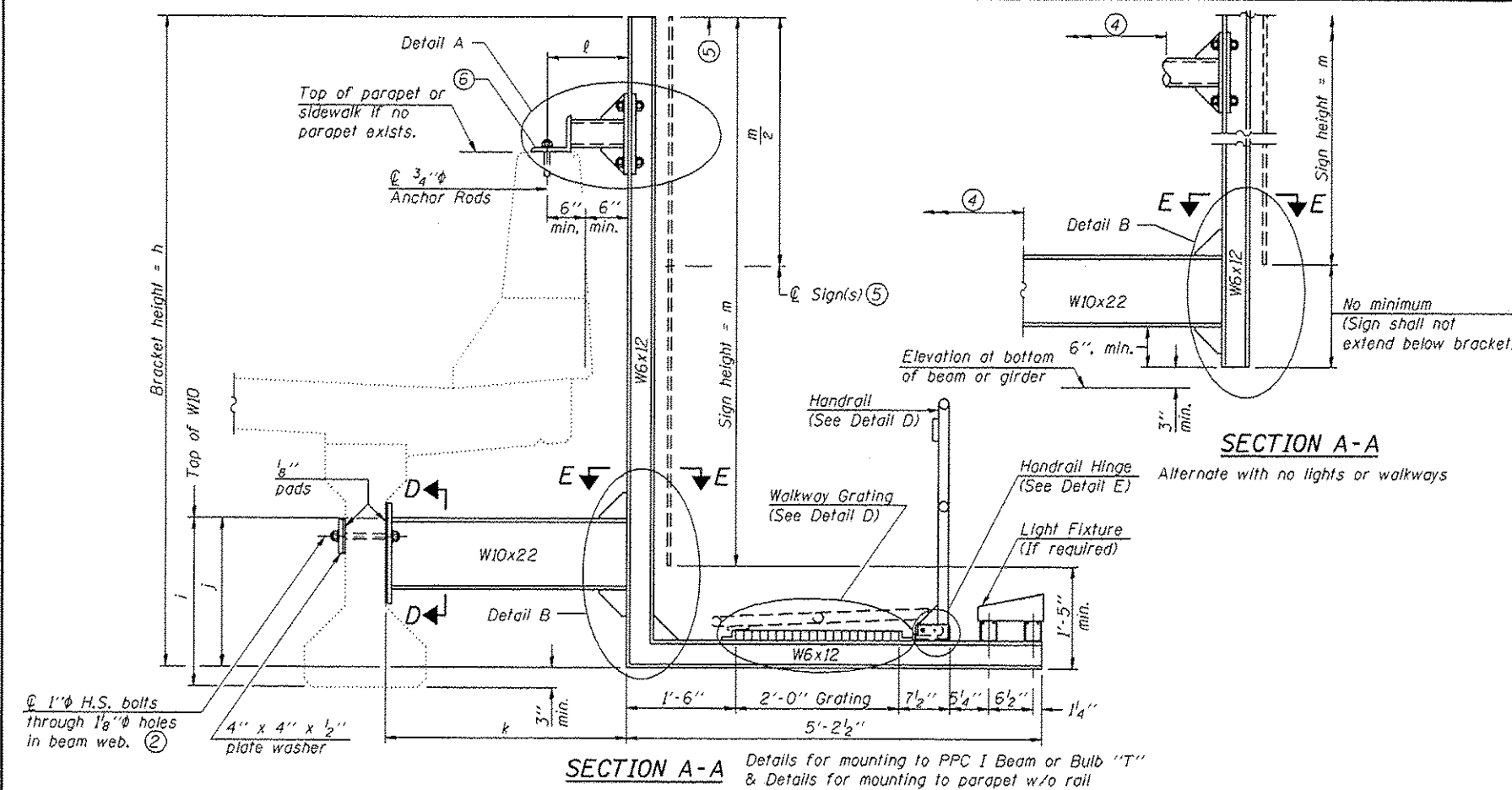
Reinforcement shall be cut only if required for fitting bolts. Cut reinforcement shall be spliced as directed by the Engineer. Cost shall be included with Concrete Removal.



SECTION F-F

SECTION G-G

DESIGNED - DAB	EXAMINED  ACTING ENGINEER OF STRUCTURAL SERVICES PASSED  ACTING ENGINEER OF BRIDGES AND STRUCTURES	DATE - NOVEMBER 15, 2013	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BEAM 12 REPLACEMENT DETAILS SN 016-2068	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED - TLC		VAR			2013-044BR	COOK	35	25	
DRAWN - Kyle M. Staffen		CONTRACT NO. 60W94							
CHECKED - DAB TLC		ILLINOIS FED. AID PROJECT							



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.

- Holes in new steel members may be drilled in the fabrication shop or in the field. Field drill existing members.
- 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.
- 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.
- For attachment details of 3/2" pipe and W10x22, see other sections as applicable.
- 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 W6x12 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.)
- 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 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.

Structure Number	Station	h	i	j	k max. (10'-0" max.)	l max. (8'-0" max.)	m (15'-0" max.)
1B0161290R025.5-000	132+60.98	7'-5"	-	-	1'-6"	1'-0"	8'-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.

BM-2 1-20-11

DESIGNED - DAB	EXAMINED	DATE - NOVEMBER 15, 2013
CHECKED - TLC	ACTING ENGINEER OF STRUCTURAL SERVICES	
DRAWN - Kyle M. Steffen	PASSED	
CHECKED - DAB TLC	ACTING ENGINEER OF BRIDGES AND STRUCTURES	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE MOUNT SIGN STRUCTURES
WALKWAY AND CONNECTION DETAILS
SN 016-2068

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR	2013-044BR	COOK	35	27
CONTRACT NO. 60W94				ILLINOIS FED. AID PROJECT

SHEET NO. 6 OF 7 SHEETS

