

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PROPOSED
HIGHWAY PLANS**

FAI ROUTE 90/94: I-90/94 (KENNEDY EXPRESSWAY)
SECTION 2012-055BR
I-94 (EDENS EXPRESSWAY) TO DIVISION STREET
JOINT REPAIR, PAVEMENT PATCHING,
SUPERSTRUCTURE REPAIRS, & SUBSTRUCTURE REPAIRS
COOK COUNTY
C-91-017-13

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2012-055BR	COOK	107	1

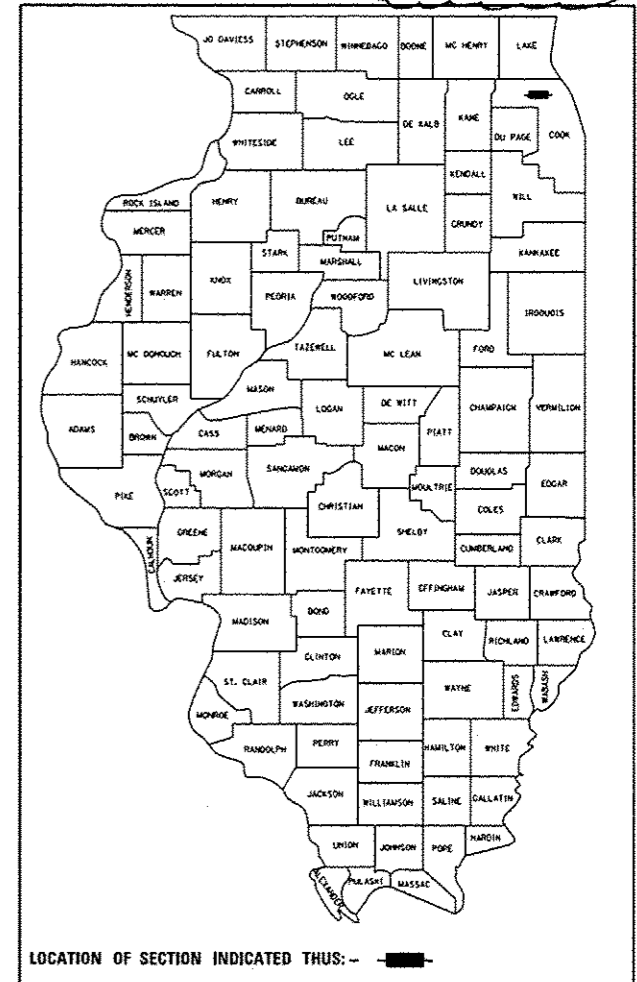
ILLINOIS CONTRACT NO. 60V58
D-91-017-13 *107 & 161 = 168
*168-7 = 161

FOR INDEX OF SHEETS, SEE SHEET NO. 2

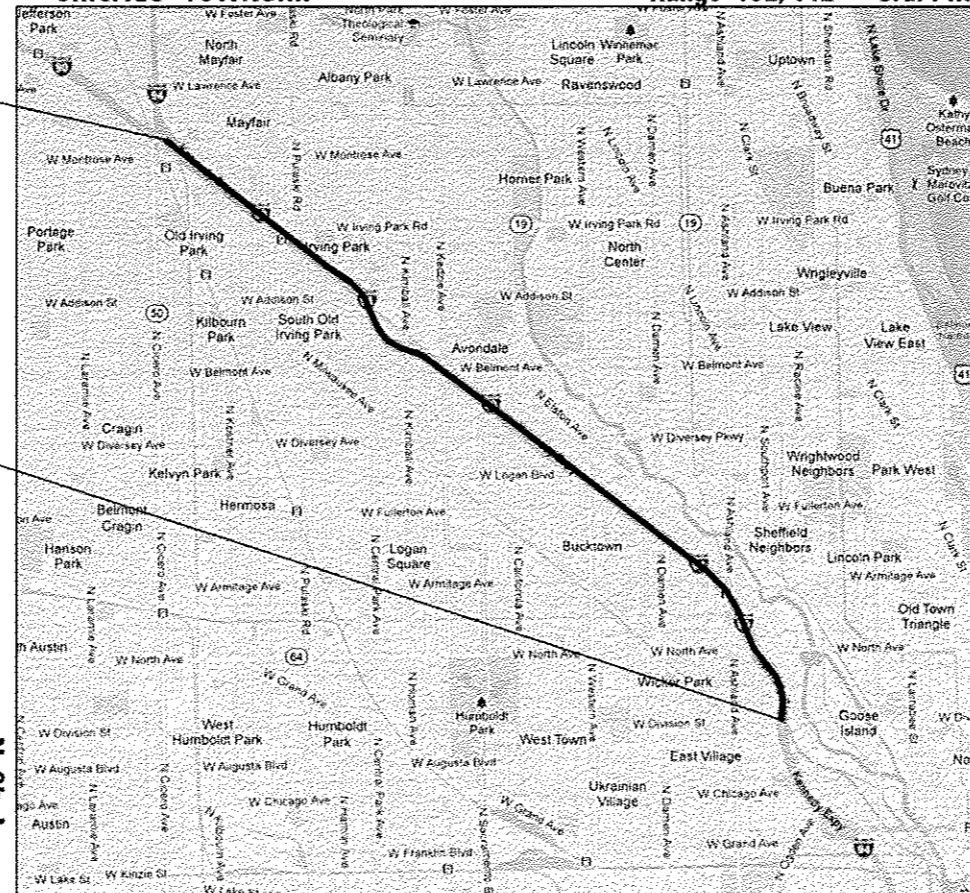
DESIGN DESIGNATION

INTERSTATE
ADT 262,600
SPEED LIMIT 55 MPH

IMPROVEMENT LOCATED IN
THE CITY OF CHICAGO

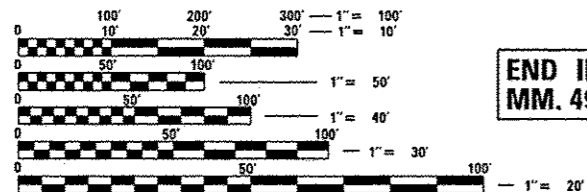


CHICAGO TOWNSHIP Range 13E, 14E - 3rd. PM



BEGIN IMPROVEMENTS
MM. 43 + 28

END IMPROVEMENTS
MM. 49 + 80



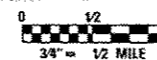
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

PROJECT MANAGER: MR. ISSAM RAYYAN, P.E. (847) 705-4178
PROJECT ENGINEER: MR. ROBERT T. BORO, P.E. (847) 705-4237

CONTRACT NO. 60V58

GROSS LENGTH = 34,425.6 FT. = 6.52 MILE
NET LENGTH = 34,425.6 FT. = 6.52 MILE



STATE OF ILLINOIS
JAMES M. HAMELKA
NO. 81-6116
EXPIRES 11-30-2014

STATE OF ILLINOIS
MATTHEW G. REMPFER
NO. 062-054553
EXPIRES 11-30-2013

COLLINS ENGINEERS
123 N. WACKER DR., SUITE 900
CHICAGO, IL 60606
(312) 704-9300
ILLINOIS PROFESSIONAL DESIGN FIRM
LICENSE NO. 184-000993

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
SUBMITTED December 20 20 12
John Fortmann Jr.
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
March 22 20 13
John D. Baranzoli, P.E.
ENGINEER OF DESIGN AND ENVIRONMENT
March 22 20 13
Omer Osman, P.E., Jr.
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

Rev. 4-15-13

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101	TC09 - Freeway Single and Multi-Lane Weave
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105	TC17 - Traffic Control for Shoulder Closures and Partial Ramp Closures
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* 99A-99KK Added Existing Traffic Surveillance Plans

INDEX OF HIGHWAY STANDARDS

Standard No. Description

420001-07	Pavement Joints
442001-04	Class A Patching
701400-06	Approach to Lane Closure, Freeway / Expressway
701401-07	Lane Closure, Freeway / Expressway
701411-08	Lane Closure, Multi Lane, Intermittent or Moving Operations, for Speeds >= 45 mph.
701426-05	Lane Closure, Freeway / Expressway, Two Lane Closure
701501-06	Urban Lane Closure, 2L, 2W Undivided
701606-08	Urban Lane Closure, 2W with Mountable Median
701801-05	Sidewalk, Corner, or Crosswalk Closure
701901-07	Traffic Control Devices

701101-03
701446-04
780001-03

* DELETE 5A, 5B, 5C, 6, 8, 9, 10

GENERAL NOTES

- Before starting any excavation, the Contractor shall contact "J.U.L.I.E." at (800) 892-0123 or 811 for field locations of buried electric, telephone, and gas facilities. 48 hour notification is required.
- The plans do not represent a complete depiction of all utilities that may be impacted by the proposed work. The Contractor shall conduct his or her own investigation to determine the ownership of impacted utilities. The Contractor shall coordinate with the utility owners and may be required to provide temporary support, adjust, relocate or remove utilities that are impacted by the proposed improvement. This work shall be considered incidental to the project.
- The Contractor will not be allowed to set up a yard or field office on State property without written permission from the Department.
- Where artificial lighting is utilized in night operations, the Contractor shall exercise the utmost precautions in preventing adverse visibility to the motoring public and adjoining residential areas.
- All damage to existing pavement markings or raised reflective pavement markers outside the patch lane shall be replaced at the Contractors expense.
- Before beginning any work, the Contractor shall retain and record for future reference, all existing pavement marking lines, symbols and letters (and raised reflective markers) in order that these locations can be re-established for striping. Exact locations of all pavement markings and raised reflective pavement markers shall be as directed by the Engineer.
- Drainage adjustment or reconstruction locations will be determined in the field by the Engineer.
- These plans have been prepared from notes received from IDOT Field Maintenance Engineers.
- 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.
- Pavement patching shall not disturb the existing pavement base. Any restoration of Contractor disturbed base shall be done at the Contractor's expense.
- The Contractor shall obtain approval from the District One Bureau Chief of Maintenance for any proposed revisions in the schedule pavement patching locations.
- Do not scale these plans for construction purposes.
- Use #8 epoxy-coated tie bars, conforming to Art. 1006.10 of the Standard Specifications for all the tie bars. Use the "Longitudinal Construction Joint (Tie Bar Grouted In Place) detail shown on Highway Standard 420001 for all longitudinal joints.
- The Contractor shall maintain the existing lighting for the duration of the contract. Cost included in the pay item "Protect and Maintain Existing Underpass Luminaire".
- 10 ft (3 m) transitions shall be used to match proposed items of work to existing items in the field, unless otherwise shown. The transitions shall be paid for at the contract unit price for the proposed item of work specified.
- The Resident Engineer must contact the IDOT Traffic Control Supervisor at (847) 705-4155 at least 2 weeks prior to installation of the temporary control devices on 1-90/94.
- The Resident Engineer shall contact the Area Traffic Field Engineer at (847) 705-4412 at least two (2) weeks prior to the placement of permanent pavement markings
- All pavement markings and raised reflectors affected by the pavement patching shall be replaced. Nominal quantities have been included in the contract for this work.

GENERAL NOTES (CONT.)

- The minimum Class A Patch dimensions shall be the length of 4.5 feet and a width that includes half the width of the travel way.
- For work outside the bridge approach pavement, all references in the Highway Standards and Standard Specifications for reinforcement, Dowel Bars and Tie Bars in pavement, shoulders, curb and gutter and median, chair supports for CRC Pavement, shall be Epoxy Coated, unless noted on the plans.

GENERAL NOTES (City of Chicago)

- Before starting any excavation within the City of Chicago, the contractor shall contact "C.U.A.N." (Chicago Utility Alert Network) at (312) 744-7000 for field locations of buried electric, telephone, and gas facilities. 48 hour notification is required.

GENERAL NOTES (CONT.)

- The Contractor shall call for a one-time cable locate of the IDOT District One Electrical Facilities by the IDOT Electrical Maintenance Contractor at (773) 287-7600 prior to start of work.
- There are several surveillance loops potentially in conflict with the proposed patch locations as listed below. As-Built surveillance drawings are included in the contract for Contractor Information Only. The contractor shall perform his/her own investigation and submit to the Engineer for approval prior to ordering materials to determine if the surveillance facilities will be in conflict. The cost of this work shall be incidental to the contract.
- The list of potential surveillance loop conflicts are:
 Montrose Ave (Inbound Direction)
 Addison St. (Inbound Direction)
 Addison St. (Reversible Lanes)
 Kimball St. (Inbound Direction)
 California St. (Outbound Direction)
 Diversey Ave. (Inbound Direction)
 Western Ave. (Reversible Lanes)
 Fullerton Ave. (Inbound Entrance Ramp)
 Armitage Ave. (Inbound Entrance Ramp)
 Division St. (Inbound Direction)
 Division St. (Outbound Direction)
 Division St. (Reversible Lanes)
- All surveillance loops in conflict should be re-cut on the same weekend the patches are poured. Time should be allocated to perform this operation prior to removing the traffic control.
- There is a potential surveillance conflict with the west abutment at Sacramento Blvd. Quantities have been included in the contract to replace the conduit and wire that is in conflict. As-Built drawings of the junction boxes and location of the conduit/wire conflict are included for Contractor Information.

Rev. 4-15-13

COLLINS ENGINEERS <small>ILLINOIS PROFESSIONAL DESIGN FIRM LICENSE NO. 04-000993</small>	USER NAME *	DESIGNED - AMS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	INDEX OF SHEETS, STATE STANDARDS, AND GENERAL NOTES	P.L. & R.T.E. 90/94	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE *	CHECKED - JMH	REVISED -				2012-0558R	COOK	107	2
	PLOT DATE *	DATE - DECEMBER 2012	REVISED -		SHEET NO. OF SHEETS		CONTRACT NO. 60V58			

Rev.

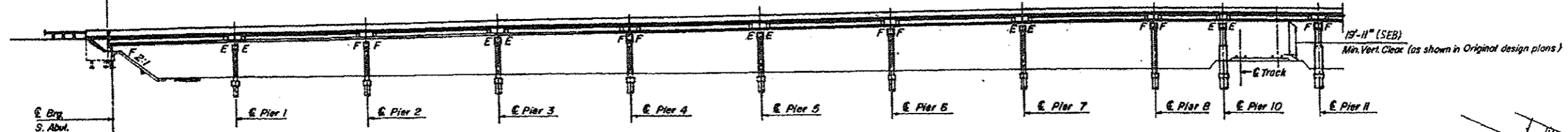
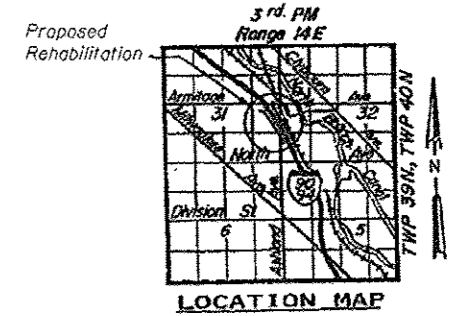
SCOPE OF WORK

1. Expansion Joint Repairs
2. Superstructure Repairs
3. Substructure Repairs

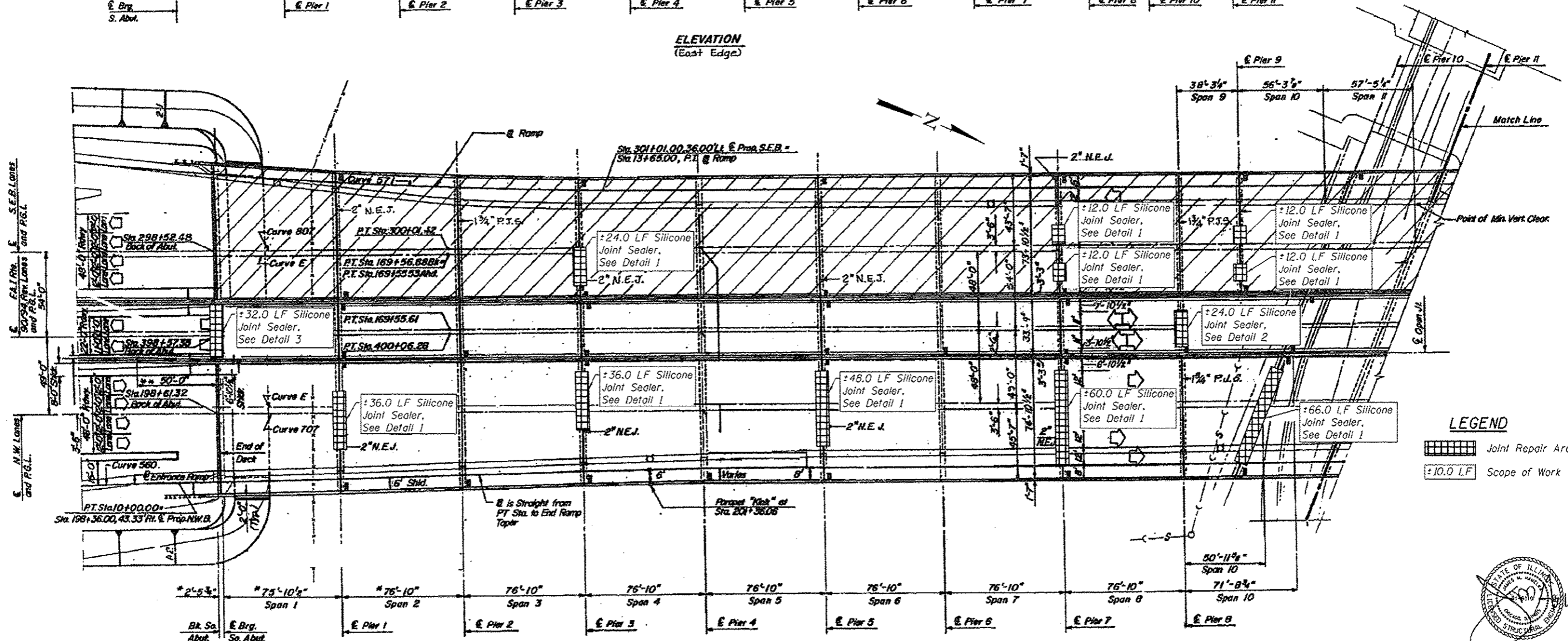
DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges (17th Edition)

LOADING HS20-44



ELEVATION
(East Edge)

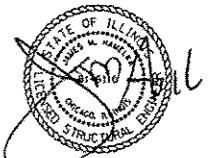


PLAN

* Measured at Rt. Angles to E Substructure
 ** 50'-0" - Transition Length for Shoulder Widths
 (At open joint between Riv. Lanes and N.W.B. Lanes only)

LEGEND

- Joint Repair Area
- Scope of Work



COLLINS ENGINEERS, INC.
 JAMES M. HAMELKA
 NO. 81-6116
 EXPIRES 11-30-2014

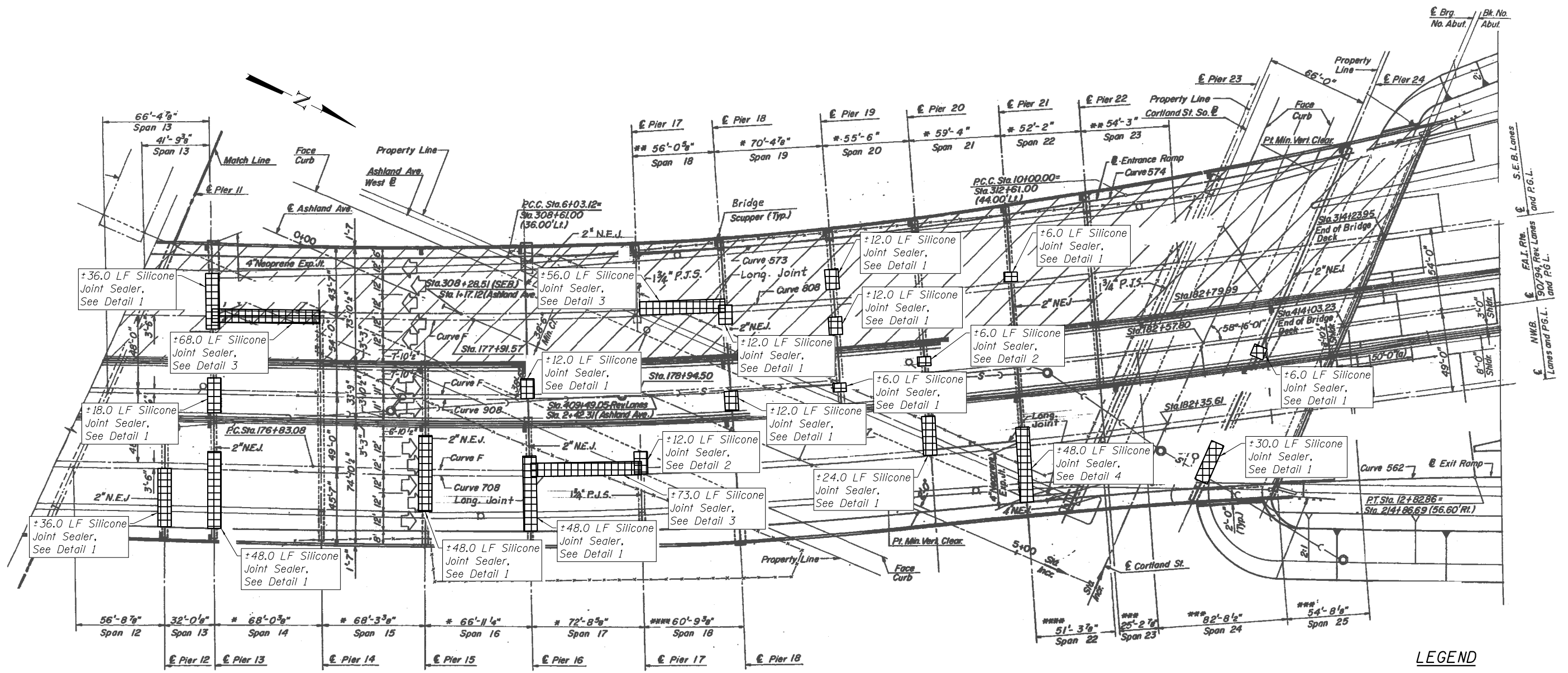
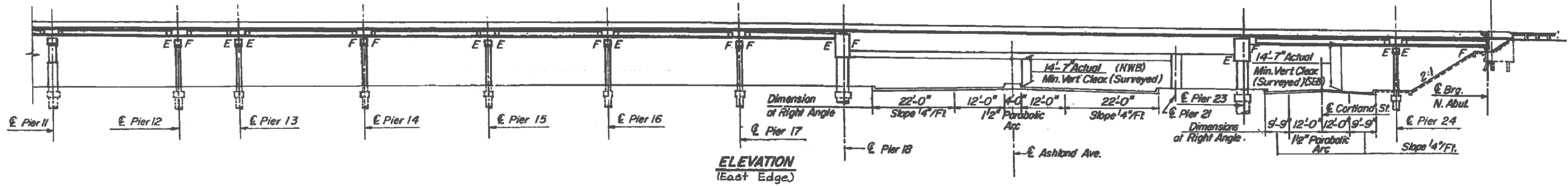


USER NAME :	DESIGNED - AMS	REVISED -
PLOT SCALE :	DRAWN - AMS	REVISED -
PLOT DATE :	CHECKED - JMH	REVISED -
	DATE - DECEMBER 2012	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION I
 I-90/94 OVER ASHLAND AVE (SN 016-0133)
 SHEET NO. 51 OF 534 SHEETS

F.A.I. RTE.:	SECTION:	COUNTY:	TOTAL SHEETS:	SHEET NO.:
90/94	2012-055BR	COOK	107	65
CONTRACT NO. 60V58			ILLINOIS FED. AID PROJECT	



* Measured at Rt. Angles to E. Substructure
 ** Measured along E. S.E. Bound Lanes
 *** Measured along E. Reversible Lanes
 **** Measured along E. N.W. Bound Lanes

PLAN

LEGEND
 Joint Repair Area
 ±10 LF Scope of Work

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 ILLINOIS PROFESSIONAL DESIGN FIRM LICENSE NO. 184-000993

USER NAME =	DESIGNED - AMS	REVISED -
PLOT SCALE =	DRAWN - AMS	REVISED -
PLOT DATE =	CHECKED - JMH	REVISED -
	DATE - DECEMBER 2012	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION II
 I-90/94 OVER ASHLAND AVE (SN 016-0133)

SHEET NO. 52 OF 534 SHEETS

F.A.I. RT. E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2012-055BR	COOK	107	66
CONTRACT NO. 60V58			ILLINOIS FED. AID PROJECT	

INDEX OF SHEETS

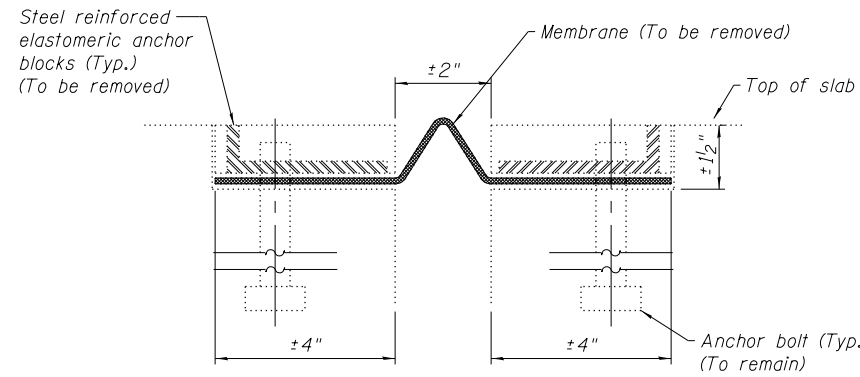
- S1. General Plan and Elevation I
- S2. General Plan and Elevation II
- S3. General Notes, Bill of Materials, Index of Sheets, and Details
- S4. Partial Framing Plan I
- S5. Partial Framing Plan II
- S6. Partial Framing Plan III
- S7. PPC I-Beam Repair Details
- S8. Structural Steel Repair Details I
- S9. Structural Steel Repair Details II
- S10. Pier 1 Repairs
- S11. Pier 2 Repairs
- S12. Pier 3 Repairs
- S13. Pier 4 Repairs
- S14. Pier 5 Repairs
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- S17. Pier 8 Repairs
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- S19. Pier 10 Repairs
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- S22. Pier 13 Repairs
- S23. Pier 14 Repairs
- S24. Pier 15 Repairs
- S25. Pier 16 Repairs
- S26. Pier 17 Repairs
- S27. Pier 18 Repairs
- S28. Pier 19 Repairs
- S29. Pier 20 Repairs
- S30. Pier 21 Repairs
- S31. Pier 22 Repairs
- S32. Pier 23 Repairs
- S33. Pier 24 Repairs
- S34. Pier 24 Repairs

GENERAL NOTES

1. 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.
2. Staged construction shall be utilized to maintain traffic during construction. See Civil Drawings.
3. The Contractor shall exercise care during removal of existing joints to ensure that the slab, beams and diaphragms' integrity will not be detrimentally impacted. The Contractor shall repair any damage(s) to the slab, beams or diaphragms caused by his operation as directed by the Engineer at no additional cost to the Department.
4. Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50° F.
5. Cost for removal and disposal of existing expansion joints is included in the cost of Silicone Joint Sealer 1", Silicone Joint Sealer 1½", Silicone Joint Sealer 2", or Silicone Joint Sealer 3", depending on the proposed repairs at the joint.
6. The Contractor must take extra care to achieve proper bondage at the ends of the joint repair to the existing joint assembly.
7. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead in this project.
8. 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".
9. All new structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type 1. Cost is included in Structural Steel Repair.

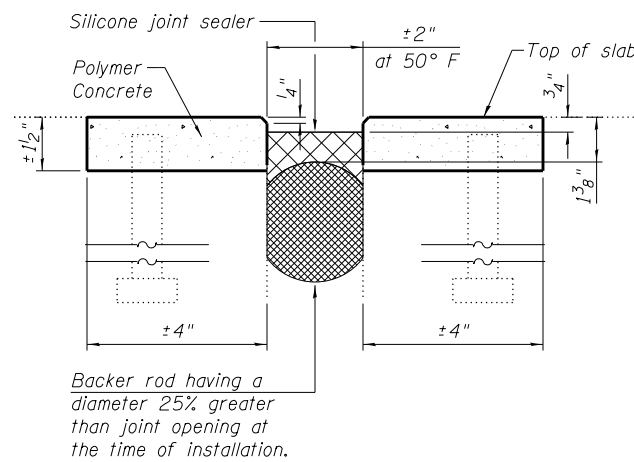
BILL OF MATERIAL

ITEM DESCRIPTION	UNIT	QUANTITY
Silicone Joint Sealer, 1"	Foot	42.0
Silicone Joint Sealer, 1½"	Foot	229.0
Silicone Joint Sealer, 2"	Foot	684.0
Silicone Joint Sealer, 3"	Foot	48.0
Polymer Concrete	Cu. Ft.	61.0
Structural Repair of Concrete (Depth Equal To or Less Than 5")	Sq. Ft.	16,484
Structural Repair of Concrete (Depth Greater Than 5")	Sq. Ft.	278
Precast Prestressed Concrete I-Beam Repair	L. Sum	1
Structural Steel Repair	Pound	3,310
Temporary Shoring and Cribbing	Each	393



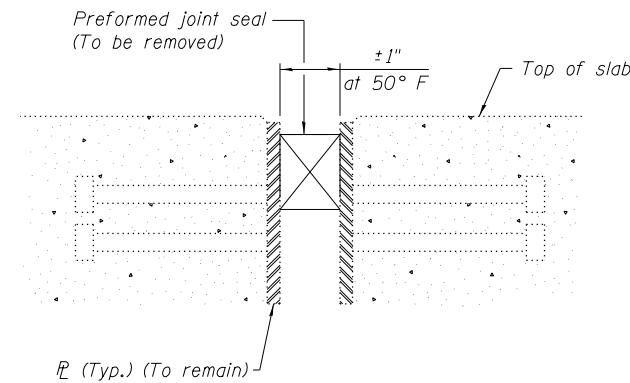
SECTION THROUGH EXISTING NEOPRENE JOINT

DETAIL 1



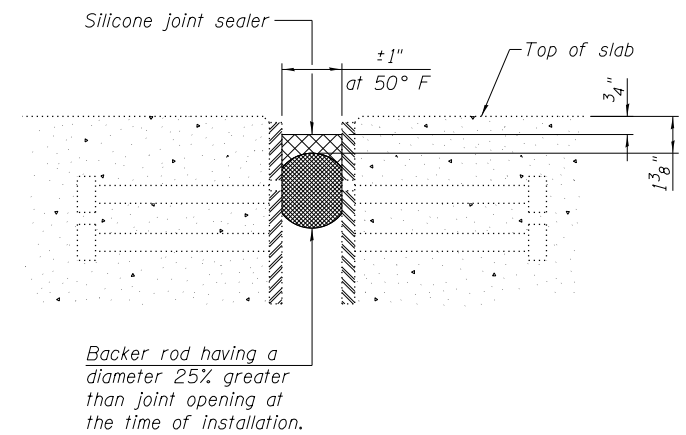
SECTION THROUGH PROPOSED SILICONE JOINT SEALER

Steel reinforced elastomeric anchor blocks (Typ.) (To be removed)



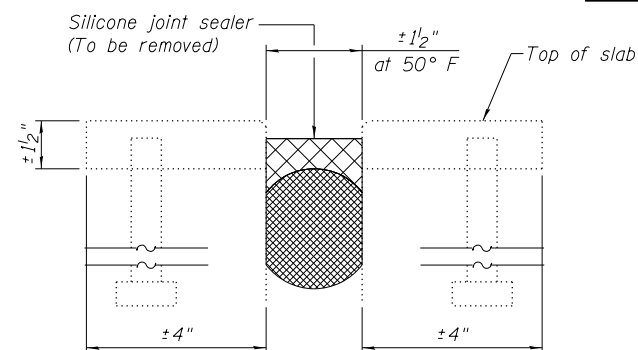
SECTION THROUGH EXISTING PJS JOINT

DETAIL 2



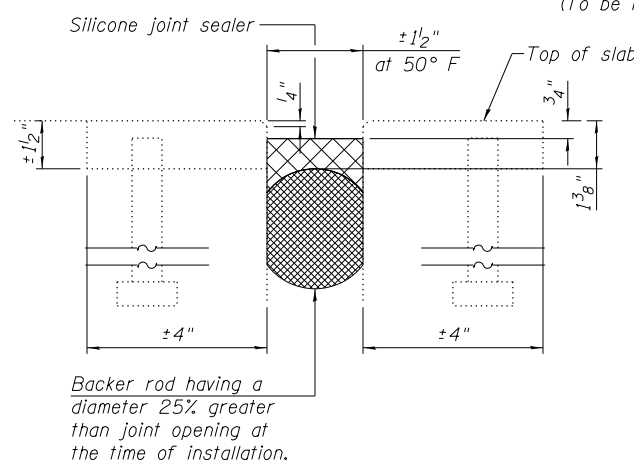
SECTION THROUGH PROPOSED SILICONE JOINT SEALER

Backer rod having a diameter 25% greater than joint opening at the time of installation.



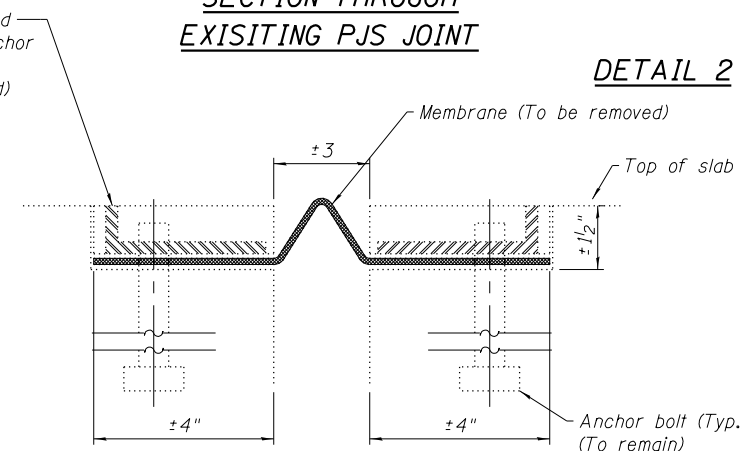
SECTION THROUGH EXISTING SILICONE JOINT

DETAIL 3



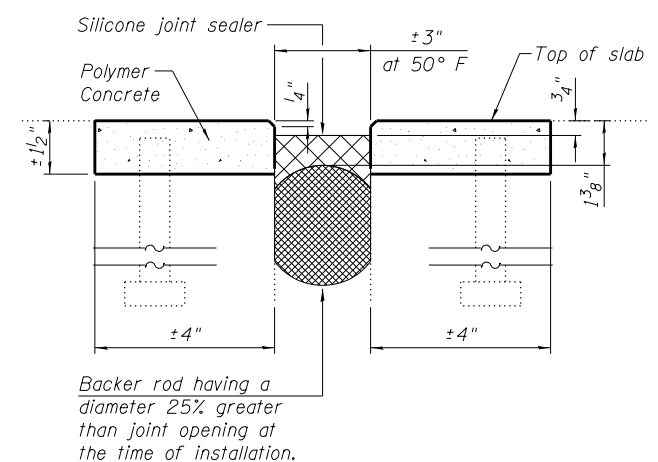
SECTION THROUGH PROPOSED SILICONE JOINT SEALER

Backer rod having a diameter 25% greater than joint opening at the time of installation.



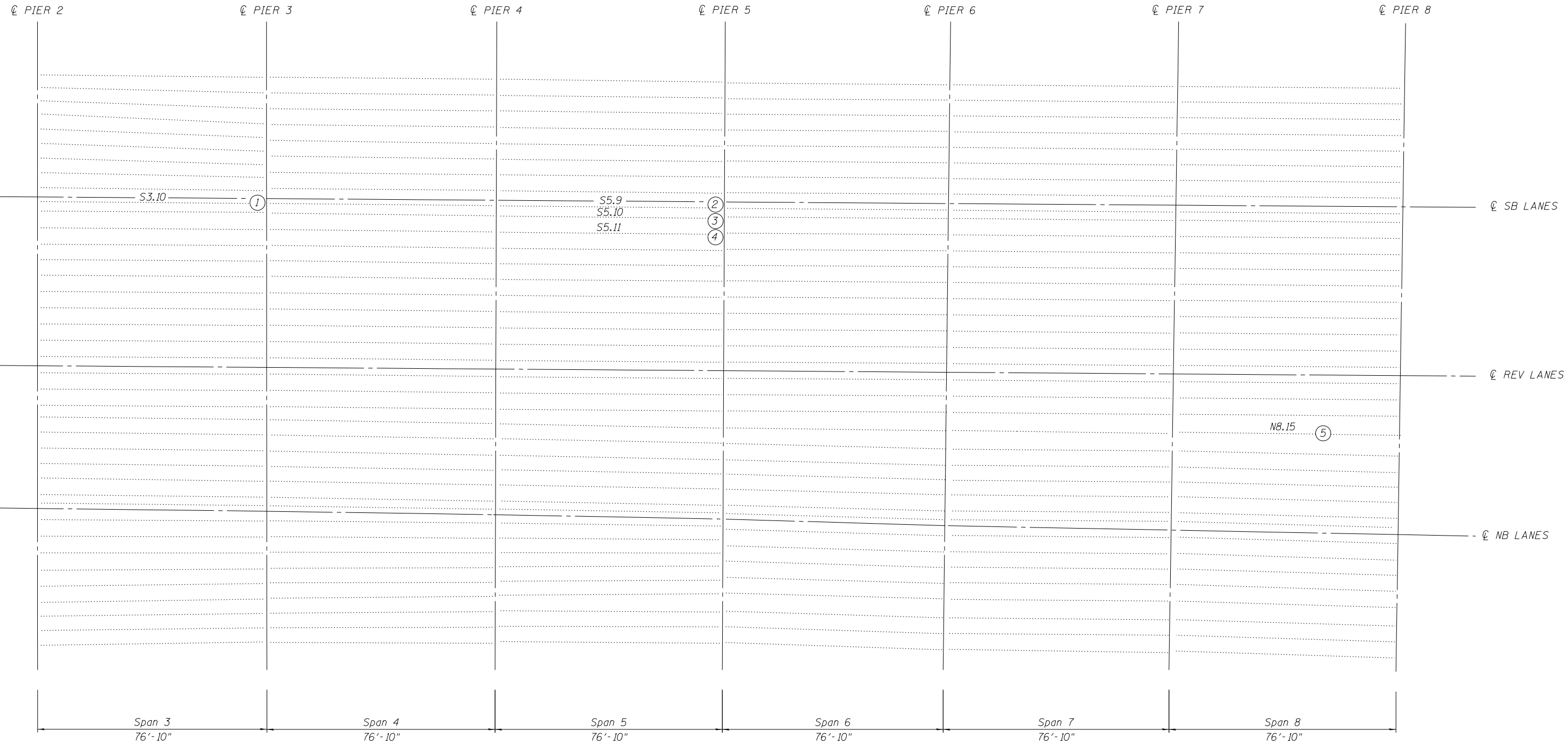
SECTION THROUGH EXISTING NEOPRENE JOINT

DETAIL 4

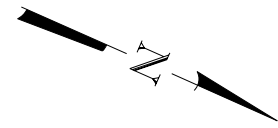


SECTION THROUGH PROPOSED SILICONE JOINT SEALER

Backer rod having a diameter 25% greater than joint opening at the time of installation.



PARTIAL FRAMING PLAN - SPANS 3-8



LEGEND

Indicates North/South/Reversible Portion of Structure

S3.9 Beam Designation

First Number Indicates Span, Second Number Indicates Beam

① PPC I-Beam Repair Location

Notes:
 Beams in the North Portion are numbered North to South.
 Beams in the Reversible Portion are numbered North to South.
 Beams in the South Portion are numbered South to North.

COLLINS ENGINEERS
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PLOT SCALE =	DATE - DECEMBER 2012	REVISED -
PLOT DATE =		

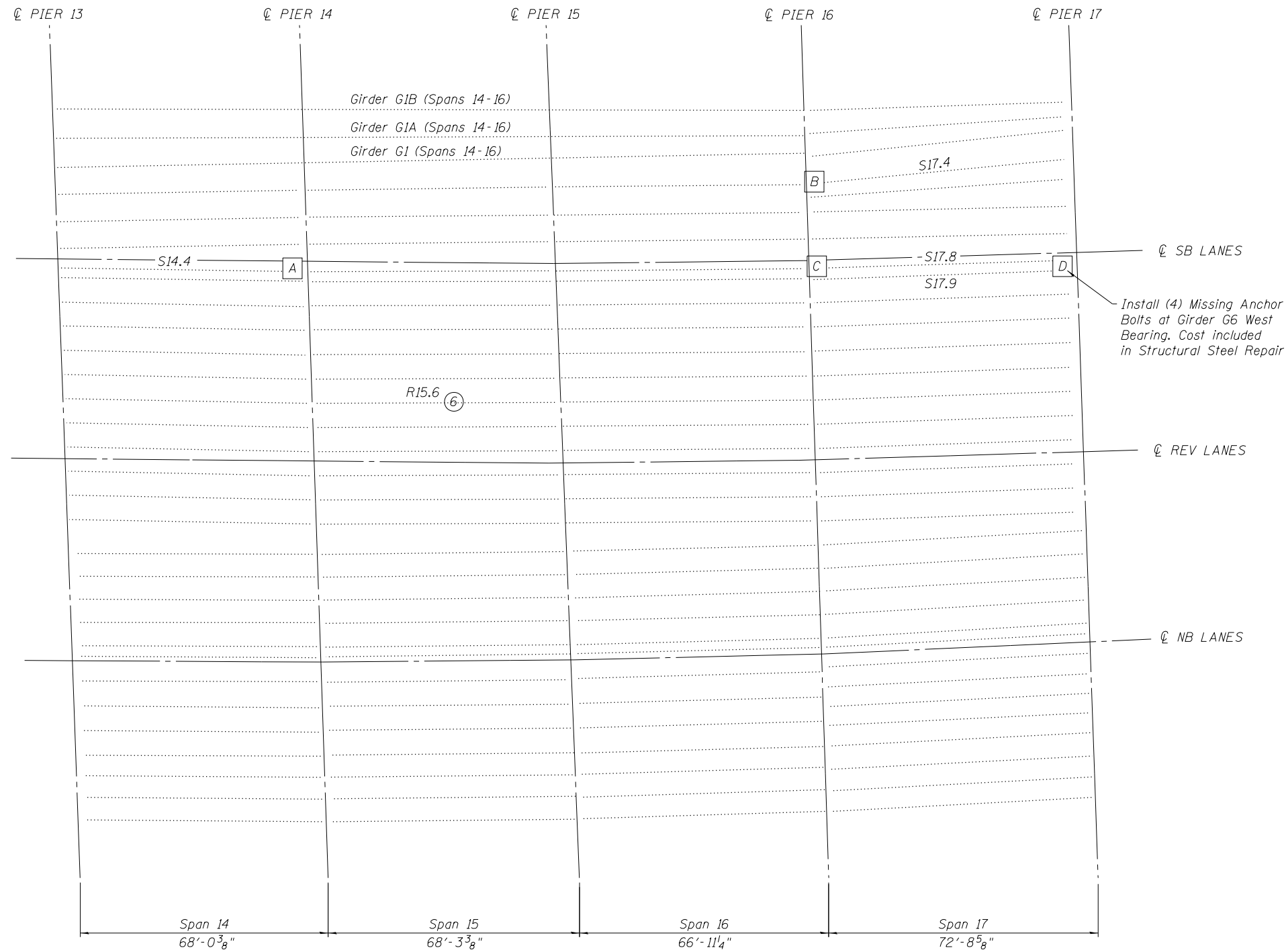
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**PARTIAL FRAMING PLAN I
 I-90/94 OVER ASHLAND AVE (SN (016-0133))**

SHEET NO. S4 OF S34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2012-055BR	COOK	107	68
CONTRACT NO.			60V58	

ILLINOIS FED. AID PROJECT



PARTIAL FRAMING PLAN - SPANS 14-17

LEGEND

- Indicates North/South/Reversible Portion of Structure
- S3.9 Beam Designation
- First Number Indicates Span, Second Number Indicates Beam
- ① PPC I-Beam Repair Location
- A Structural Steel Repair Location

Notes:
 Beams in the North Portion are numbered North to South.
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 Beams in the South Portion are numbered South to North.

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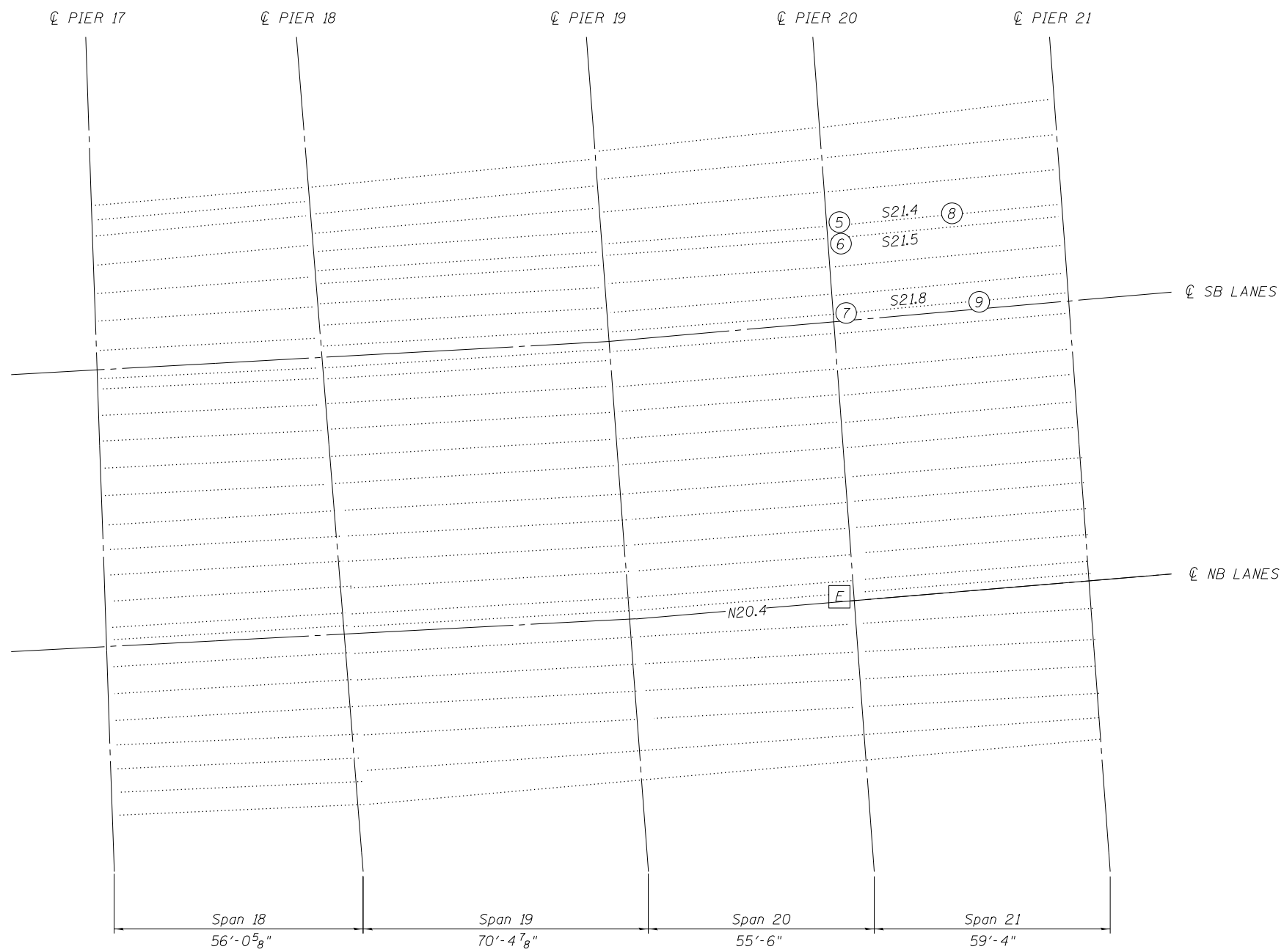
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DATE - DECEMBER 2012		

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**PARTIAL FRAMING PLAN II
 I-90/94 OVER ASHLAND AVE (SN 016-0133)**

SHEET NO. 55 OF 534 SHEETS

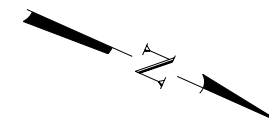
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2012-055BR	COOK	107	69
CONTRACT NO. 60V58			ILLINOIS FED. AID PROJECT	



LEGEND

- S3.9 Beam Designation
- Indicates North/South Portion of Structure
- First Number Indicates Span, Second Number Indicates Beam
- (1) PPC I-Beam Repair Location
- A Structural Steel Repair Location

PARTIAL FRAMING PLAN - SPANS 18, 19, 20, & 21



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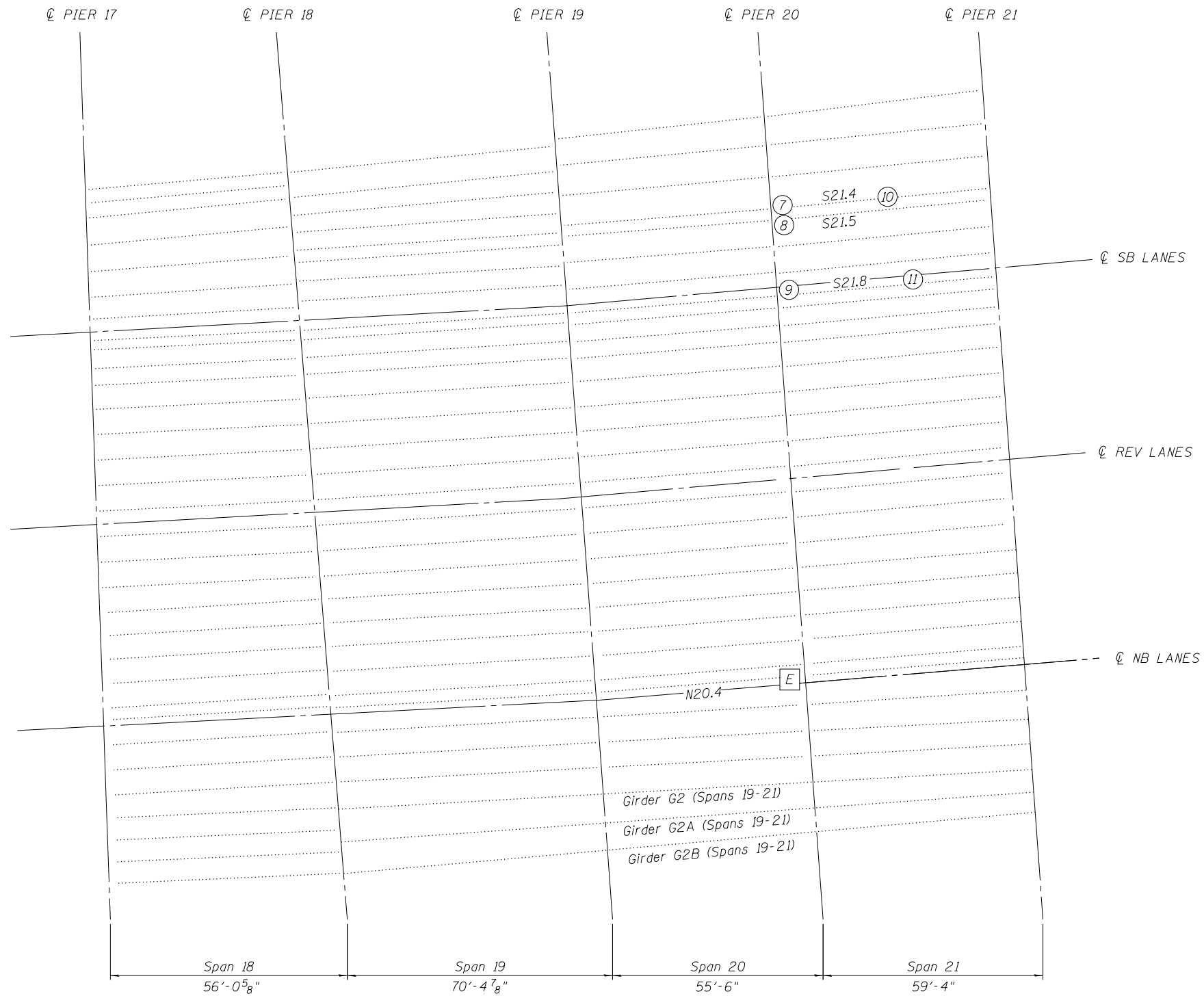
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DRAWN - AMS	CHECKED - JMH	REVISED -
PLOT SCALE =	DATE - DECEMBER 2012	REVISED -
PLOT DATE =		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

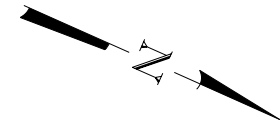
PARTIAL FRAMING PLAN II
I-90/94 OVER ASHLAND AVE (SN 016-0133)

SHEET NO. 56 OF 531 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2012-055BR	COOK	107	70
CONTRACT NO. 60V58			ILLINOIS FED. AID PROJECT	



PARTIAL FRAMING PLAN - SPANS 18-21

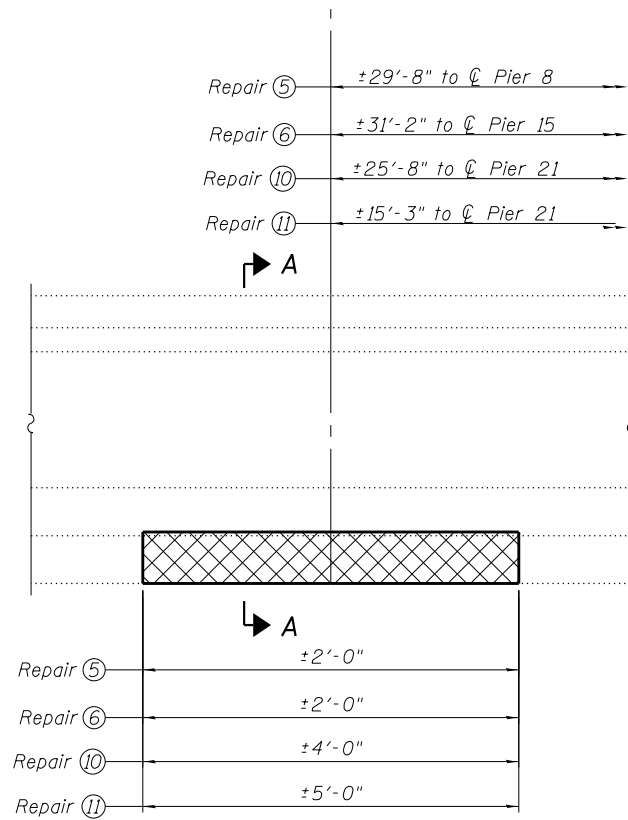


Notes:
 Beams in the North Portion are numbered North to South.
 Beams in the Reversible Portion are numbered North to South.
 Beams in the South Portion are numbered South to North.

LEGEND

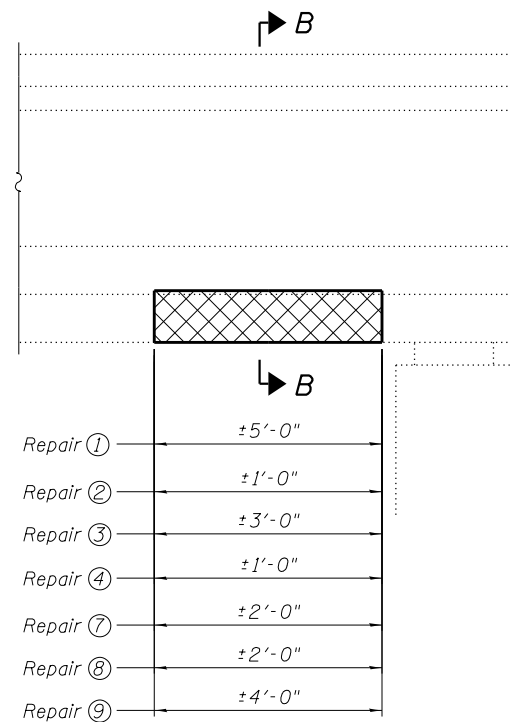
- Indicates North/South/Reversible Portion of Structure
- S3.9 Beam Designation
- First Number Indicates Span, Second Number Indicates Beam
- (1) PPC I-Beam Repair Location
- A Structural Steel Repair Location

COLLINS ENGINEERS <small>133 N. Wacker Dr., Suite 900, Chicago, IL 60606 Tel: (312) 704-9300 Fax: (312) 704-9320 www.collinsengr.com ILLINOIS PROFESSIONAL DESIGN FIRM LICENSE NO. 184-000993</small>	USER NAME =	DESIGNED - AMS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PARTIAL FRAMING PLAN II I-90/94 OVER ASHLAND AVE (SN 016-0133)	F.A.I. RTE. =	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE =	CHECKED - JMH	REVISED -			90/94	2012-055BR	COOK	107	70A
	PLOT DATE =	DATE - DECEMBER 2012	REVISED -			CONTRACT NO. 60V58				
	SHEET NO. 56 OF 534 SHEETS					ILLINOIS FED. AID PROJECT				



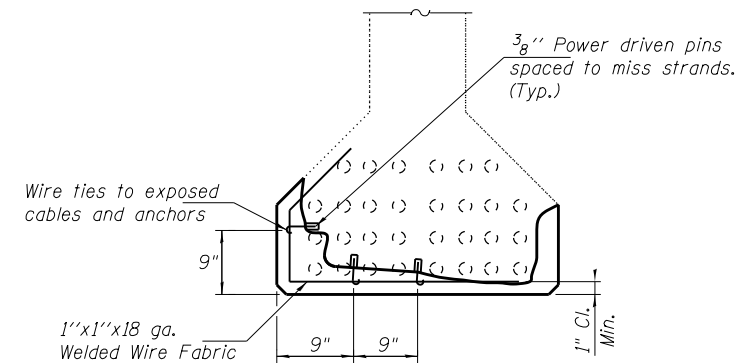
BEAM ELEVATION AT REPAIRS 5, 6, 10 & 11

See Preloading Requirements Below.
 Cross-Hatched areas indicate areas to be patched.
 Actual repair to be determined in the field.

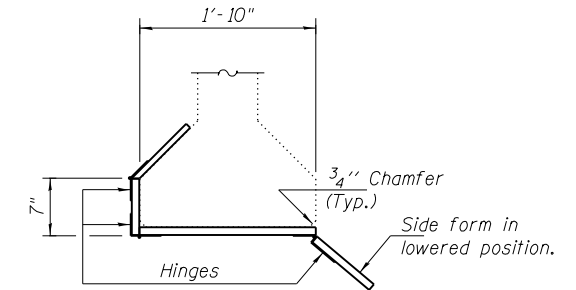


BEAM ELEVATION AT REPAIRS 1-4 & 7-9

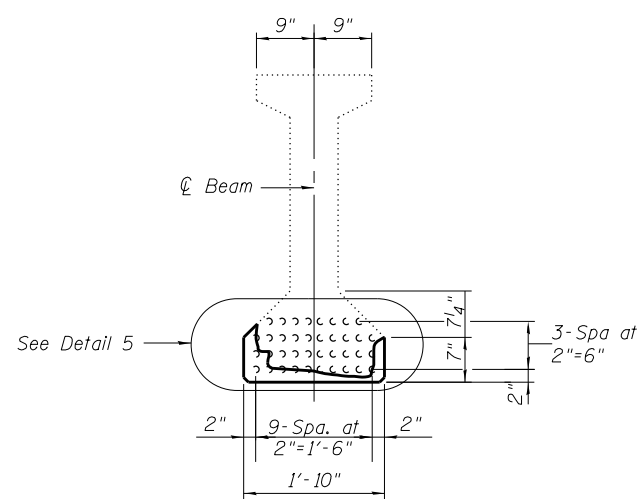
Cross-Hatched areas indicate areas to be patched.
 Actual repair to be determined in the field.



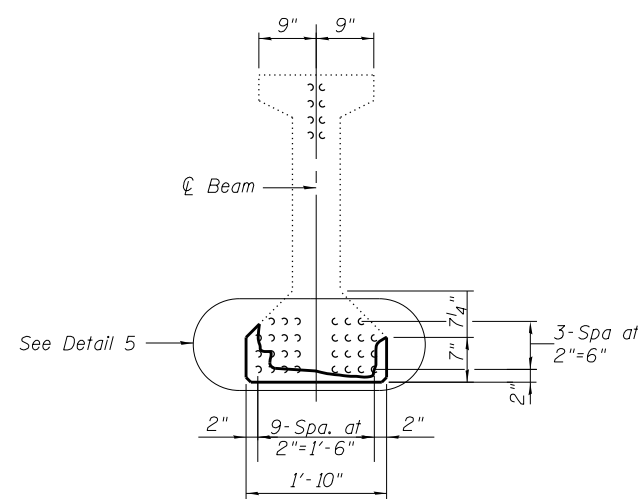
DETAIL 5



SUGGESTED FORM DETAIL



**SECTION A-A
 PATCHING DETAIL**



**SECTION B-B
 PATCHING DETAIL**

PPC I-BEAM REPAIR PROCEDURE:

- The damaged area of the beam shall be cleaned of all loose and spalled concrete. Hand tools shall be used for the removal of concrete adjacent to the prestressing strands. While a 15 pound chipping hammer may be used away from prestressing strands, extreme care shall be taken not to damage the exposed prestressing strands. Any exposed portions of the strands shall be sandblasted.
- Using the same tools, remove the existing concrete to sound concrete along the edges of the damaged area to a depth of 1" min. to 1 1/2" max. The edges shall be saw cut 3/4" deep or less.
- Power driven pins as shown in Detail A shall be placed at 9" alternate centers along damaged length of beam at locations shown in Detail 5. Use wire ties in areas where the strands are exposed as shown in Detail 5. Place 1" x 1" x 18 gauge welded wire fabric in repair areas and attach it to the pins or strands with wire ties. The clearance between the finished surface of the new concrete and the welded wire fabric shall be 1" minimum. All beams involved in this work shall be rebuilt to their original dimensions.
- All surfaces of the existing concrete in the areas to be repaired shall be prepared in accordance with Art. 503.09 (b) of the Standard Specs. The concrete beam to be repaired must be at a temperature of at least 50° F. or higher.
- The repair shall be made using a concrete meeting all the requirements specified in Section 1020 of the Standard Specifications for Class PS Concrete for precast prestressed concrete members, except the maximum size of the aggregate shall be 1/2". Place the lower form on the bottom of the beam and compact by vibrating (or other approved methods) the concrete mix into the voids. After accessible voids have been filled and compacted, the top vertical form shall be raised into position and the remaining voids filled and compacted. The sloping upper surface shall be finished to the configuration of the existing PPC I-Beam flange.

Note:
 The cost of preloading, concrete removal, Class PS Concrete, power driven pins, wire ties, wire mesh, epoxy bonding agent, epoxy crack sealing and all other work required to preform repairs at locations 1-11 shall be included in the unit cost Lump Sum of Precast Prestressed Concrete I-Beam Repairs.

PRELOADING FOR PPC I-BEAM REPAIRS

(Service Moment)

Prior to beginning any work, the Contractor shall be responsible for providing a preloading system on the bridge deck over the existing damaged beams. The preloading system should produce a total maximum service load moment (including impact) as tabulated below at the centerline of the damaged areas. The Contractor's proposed preloading system, with computations, shall be submitted to the Bureau of Bridge's and Structures for approval. The preloading system shall be placed shortly after bridge closure for repairs.

Span	Beam	Location		* Moment (kip-ft)
		From	Distance	
8	N8.15	Cl Pier 8	38'-5"	543.9*
15	R15.6	Cl Pier 15	34'-1 1/6"	664.1*
21	S21.4	Cl Pier 21	29'-8"	515.7
21	S21.8	Cl Pier 21	29'-8"	446.1

*The magnitude of the moments to be applied were obtained by assuming a simple span behavior between the fascia and first interior beams (2002 AASHTO 3.23.2.3.1.2) for Live Load + Impact. The effect of the proposed preload system shall be determined using the same assumption.

Note:
 Preloading shall be kept in place for at least three (3) days after completion of concrete repair or until the concrete has reached an ultimate strength of 5,000 psi.

BILL OF MATERIAL

ITEM DESCRIPTION	UNIT	QUANTITY
Precast Prestressed Concrete I-Beam Repairs	L. Sum	1

LEGEND

For Sheets S8 and S9

- - Existing Bolt/Rivet to Remain
 - - Remove Existing Bolt/Rivet and Install New Bolt
 - - Drill New Bolt Hole and Install New Bolt
- N.S. indicates Near Side.

STRUCTURAL STEEL REPAIR NOTES

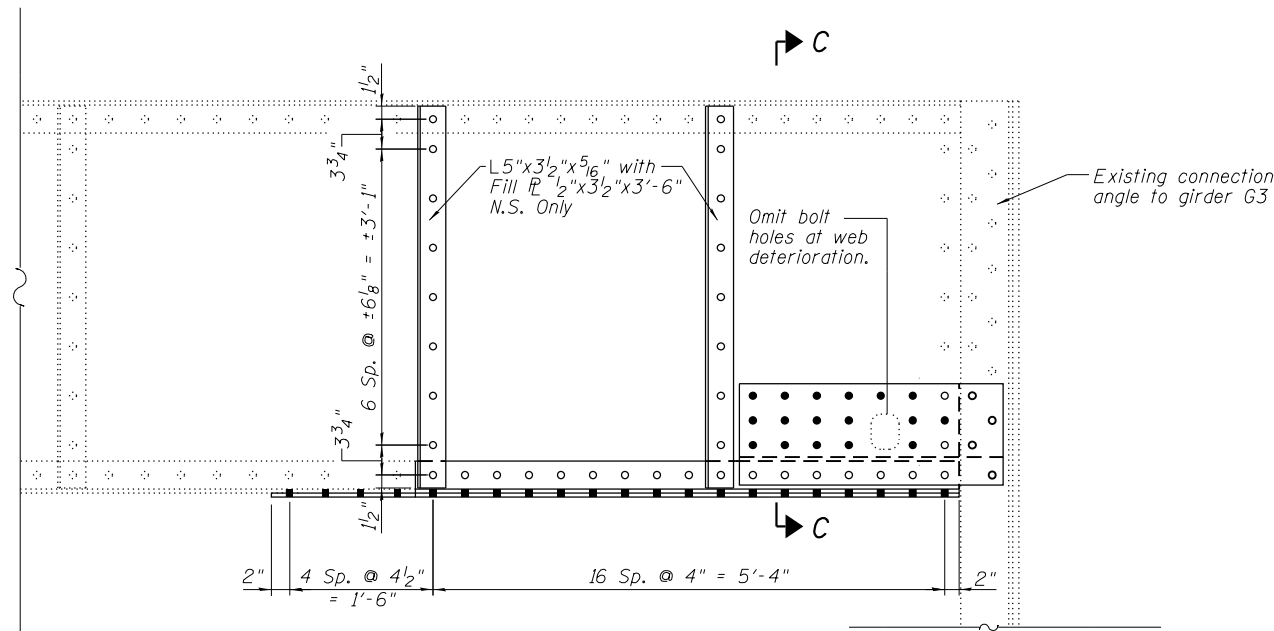
For Sheets S8 and S9

1. 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 fabrication, 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.
2. The Contractor shall perform the structural steel repairs during the weekend and/or night closures of the lanes above the structural steel repair areas.
3. The details shown are the final configurations and details. The Contractor shall be responsible for obtaining approval from the Engineer for all methods and procedures necessary to achieve the details shown.
4. Removal and disposal of all structural steel necessary to complete the work as detailed on the plans shall be performed in accordance with Section 501 of the Standard Specifications and included is in the cost of Structural Steel Repair.
5. Where existing structural steel is shown to be removed, the Contractor shall exercise care during removal of existing structural steel to ensure that the adjacent structural steel will not be detrimentally impacted. The Contractor shall repair any damage to the existing structural steel caused by his operation as directed by the Engineer at no additional cost to the Department.
6. Fasteners shall be ASTM A325, Type 1 mechanically galvanized bolts. Bolts $\frac{7}{8}$ " ϕ , holes $\frac{15}{16}$ " ϕ , unless noted otherwise.
7. Holes shall be subpunched or subdrilled $\frac{13}{16}$ " ϕ and reamed in the field to $\frac{15}{16}$ " ϕ for $\frac{7}{8}$ " ϕ , bolts unless noted otherwise.
8. Where removal of existing rivets is required to facilitate the work, remove rivets and replace with the same diameter high strength bolts, unless noted otherwise.
9. Burning of existing rivets or bolts will not be permitted when the subject fasteners are installed in existing structural steel to remain in place. Such rivets and bolts shall have the head of the fastener sheared off and the shank driven or drilled out. Extreme care shall be exercised when removing such fasteners so as not to damage the existing structural steel to remain. Removal of such fasteners will not be measured for payment but shall be included in the cost of the associated work. Any damage to the existing structural steel to remain in place due to the removal of such fasteners shall be repaired or replaced to the satisfaction of the Engineer at no additional cost to the Department.
10. No field welding will be permitted except as specified in the Contract Documents.
11. All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.
12. Ends of stiffener angle fill plates shall be clipped an/or ground to match top and bottom flange angle fillets. Cost included in Structural Steel Repair.
13. Anchor bolts shall be ASTM F1554, Grade 55.
14. Anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

BILL OF MATERIAL

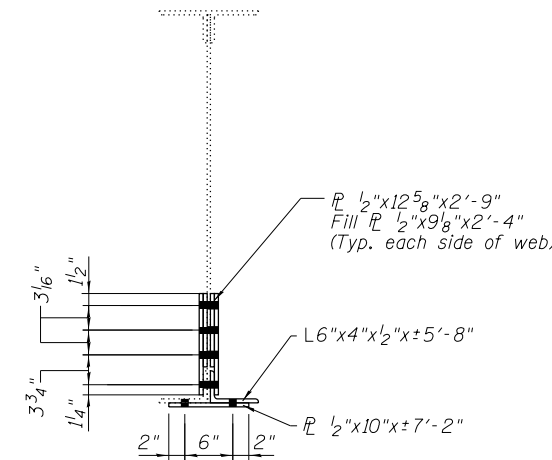
For Sheets S8 and S9

ITEM DESCRIPTION	UNIT	QUANTITY
Structural Steel Repair	Pound	3,310

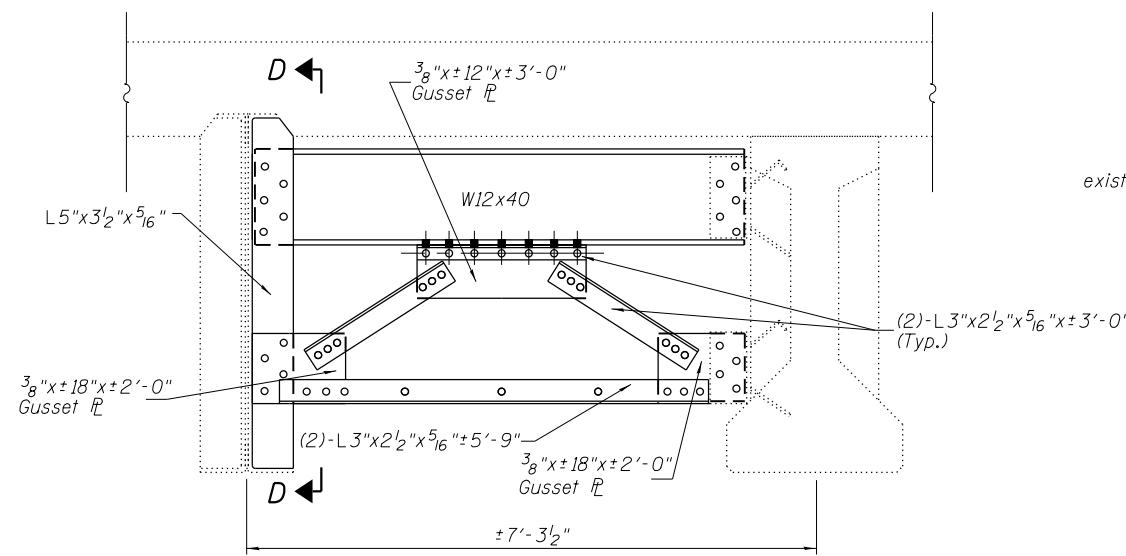


EAST ELEVATION
Looking West

STEEL REPAIR A

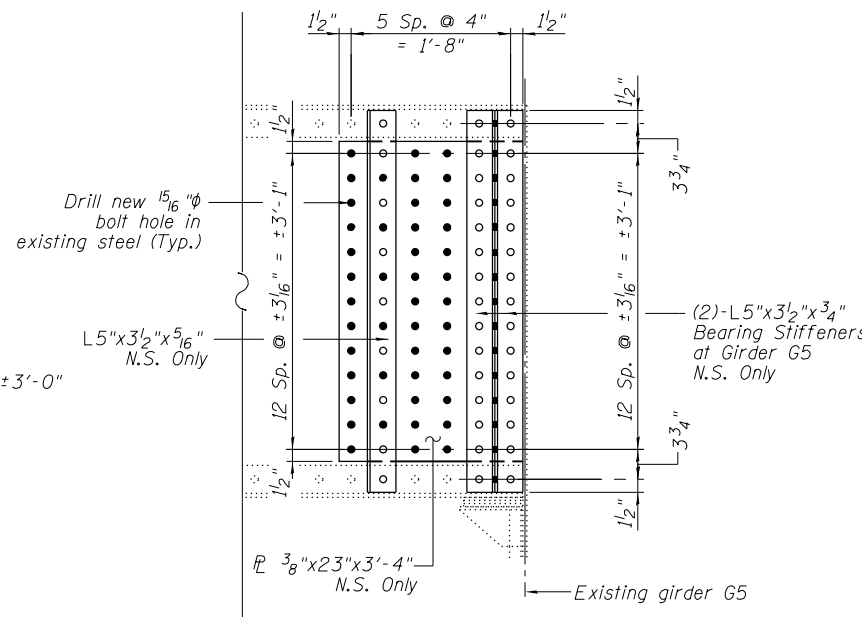


SECTION C-C



NORTH ELEVATION
Looking South

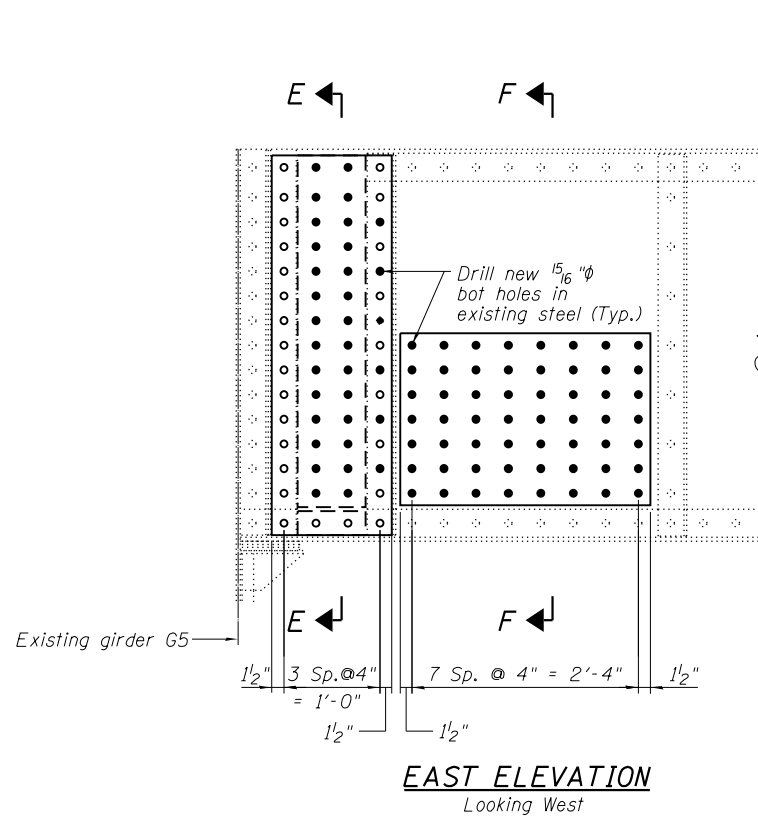
STEEL REPAIR B



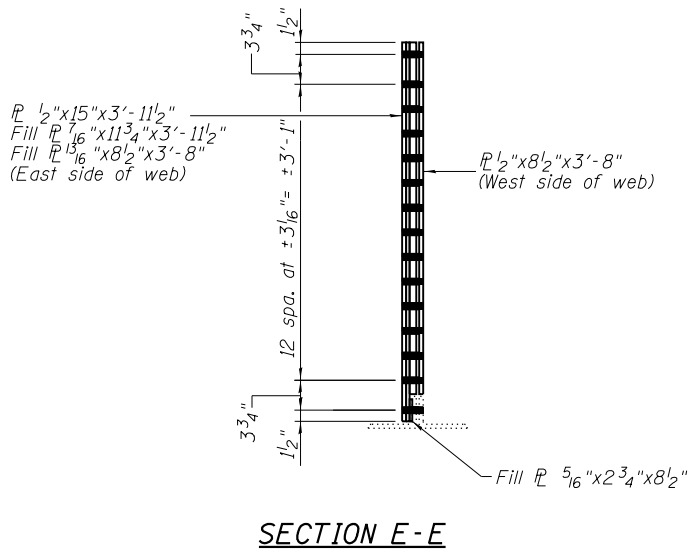
SECTION D-D

USER NAME =	DESIGNED - JMS	REVISED -
PLOT SCALE =	DRAWN - LS	REVISED -
PLOT DATE =	CHECKED - JMH	REVISED -
	DATE - DECEMBER 2012	REVISED -

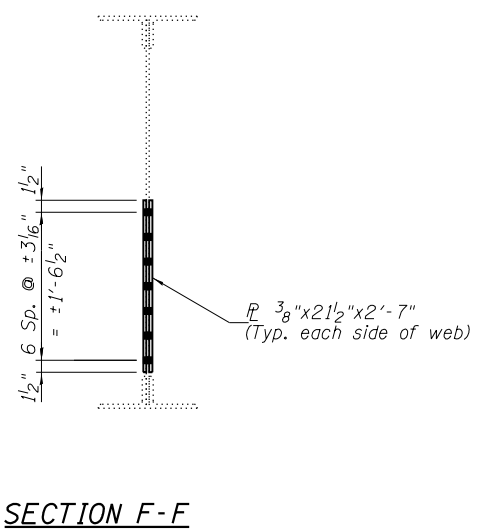
F.A.I. RTE. 90/94	SECTION 2012-055BR	COUNTY COOK	TOTAL SHEETS 107	SHEET NO. 70C
CONTRACT NO. 60V58			ILLINOIS FED. AID PROJECT	



EAST ELEVATION
Looking West



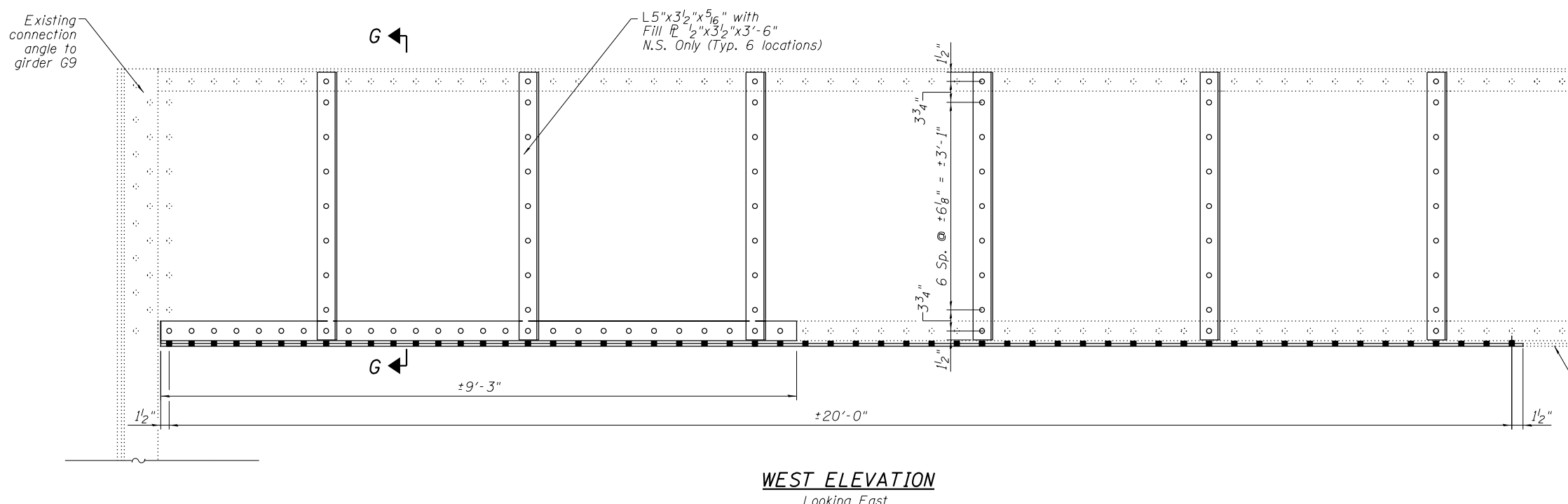
SECTION E-E



SECTION F-F

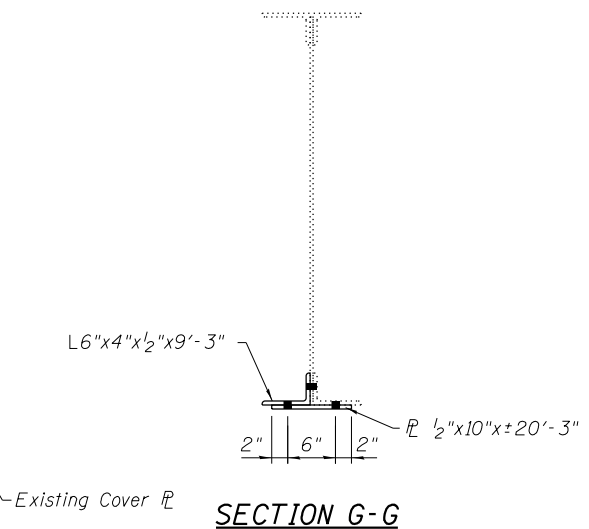
Note:
Refer to Sheet S8 for
Structural Steel Repair
Legend, Notes, and Bill
of Materials.

STEEL REPAIR C



WEST ELEVATION
Looking East

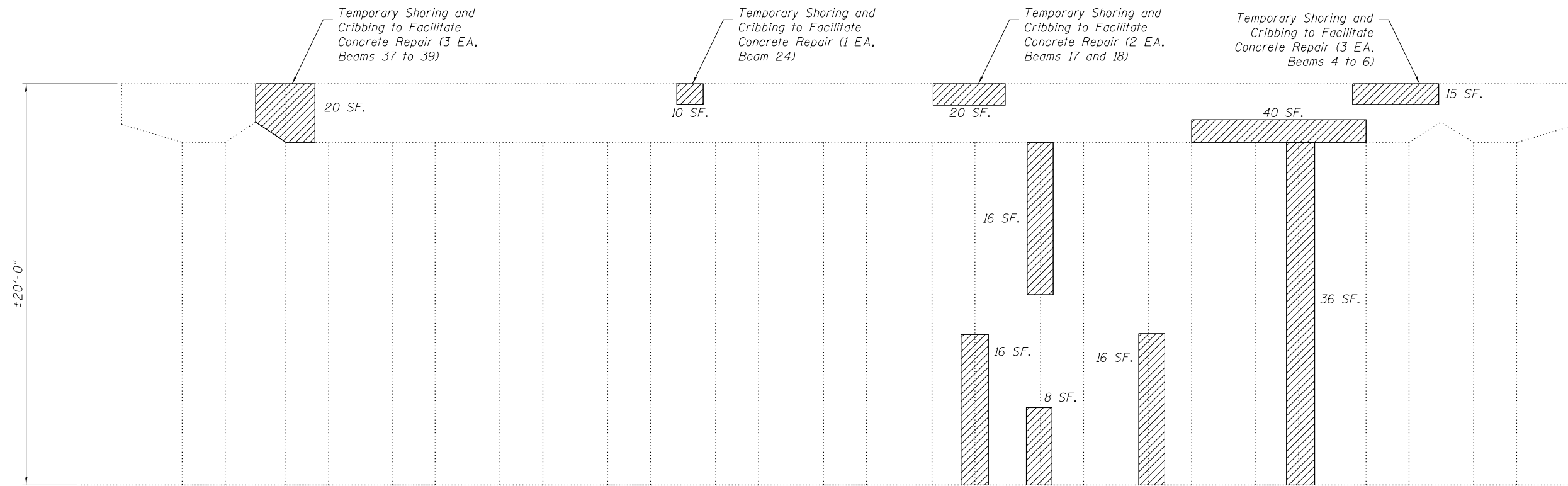
STEEL REPAIR E



SECTION G-G

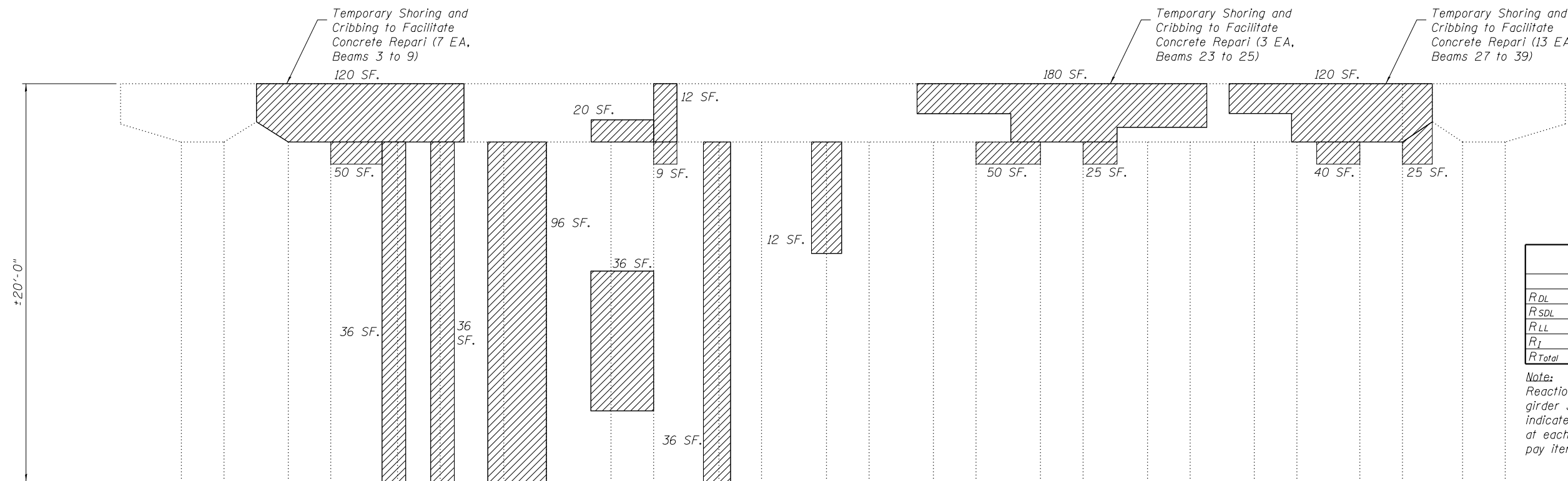
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DRAWN - LS	REVISED -	
CHECKED - JMH	REVISED -	
DATE - DECEMBER 2012	REVISED -	

F.A.I. RTE. 90/94	SECTION 2012-055BR	COUNTY COOK	TOTAL SHEETS 107	SHEET NO. 70D
CONTRACT NO. 60V58			ILLINOIS FED. AID PROJECT	



PIER 1 SOUTH ELEVATION
(Looking North)

Note:
Beams are numbered East to West.



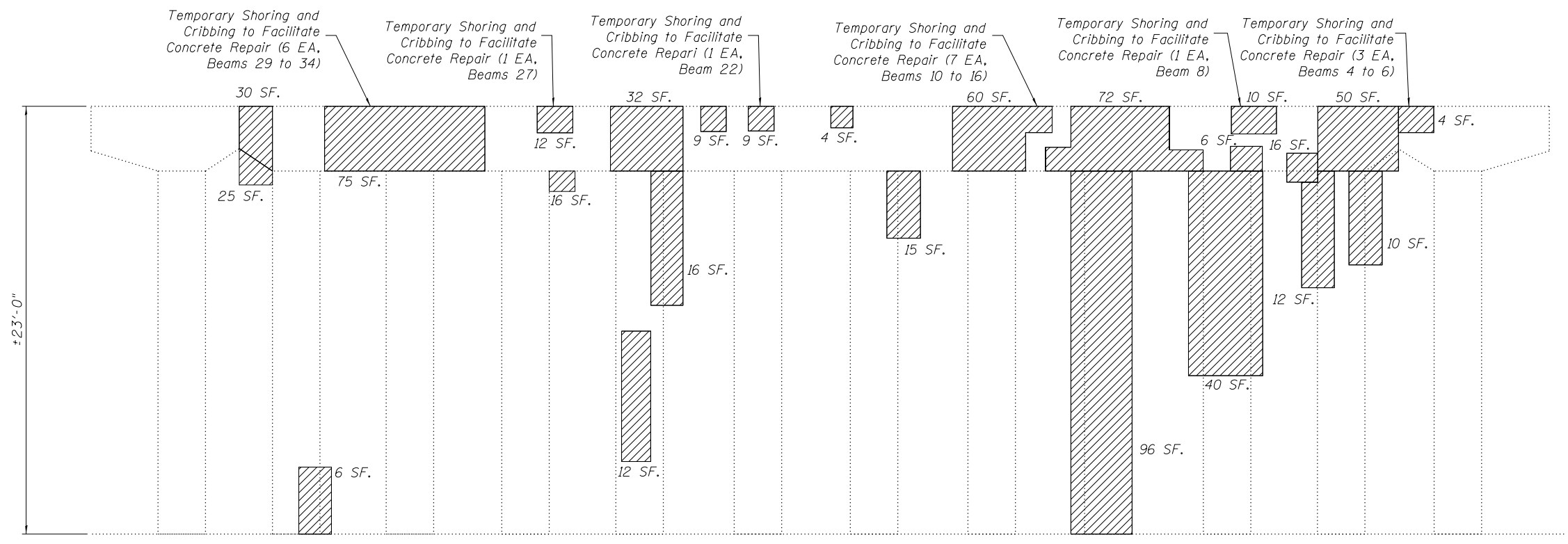
PIER 1 NORTH ELEVATION
(Looking South)

PIER 1 GIRDER REACTION TABLE		
	Span 1	Span 2
R _{DL} (k)	48.3	46.8
R _{SDL} (k)	13.1	12.4
R _{LL} (k)	33.0	30.6
R _T (k)	8.3	7.7
R _{Total} (k)	102.7	97.5

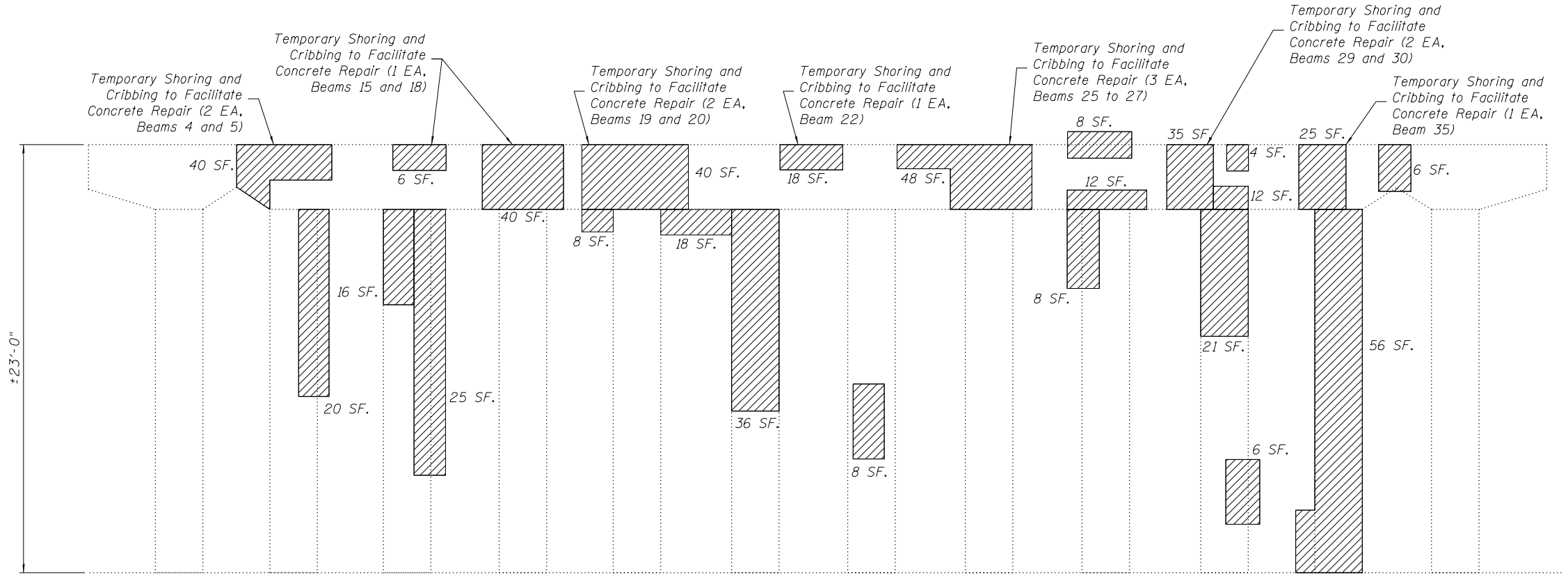
Note:
Reactions provided are for the maximum girder spacing and length within the span indicated. Contractor shall verify loading at each shoring location. Cost included in pay item 'Temporary Shoring and Cribbing.'

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete, (Depth Equal To or Less Than 5")	Sq. Ft.	1100
	Temporary Shoring and Cribbing	Each	32



PIER 2 SOUTH ELEVATION
(Looking North)



PIER 2 NORTH ELEVATION
(Looking South)

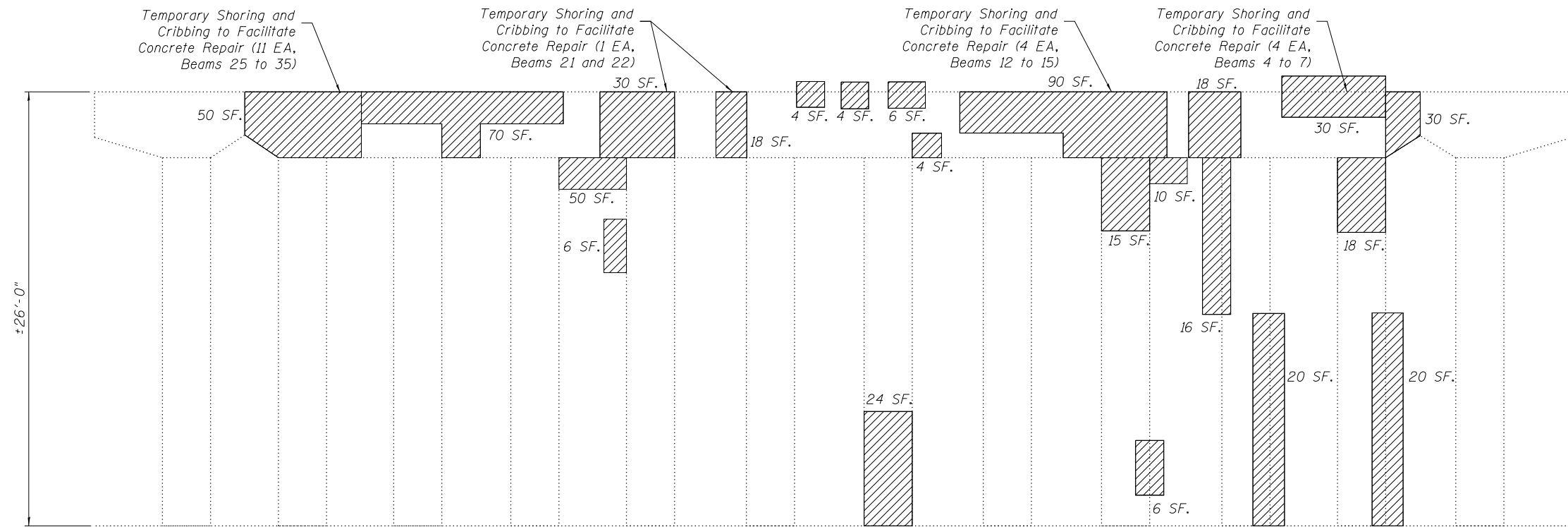
Note:
Beams are numbered East to West.

PIER 2 GIRDER REACTION TABLE		
	Span 2	Span 3
R _{DL} (k)	46.8	47.8
R _{SDL} (k)	12.4	12.8
R _{LL} (k)	30.6	32.0
R _T (k)	7.7	8.0
R _{Total} (k)	97.5	100.6

Note:
Reactions provided are for the maximum girder spacing and length within the span indicated. Contractor shall verify loading at each shoring location. Cost included in pay item 'Temporary Shoring and Cribbing.'

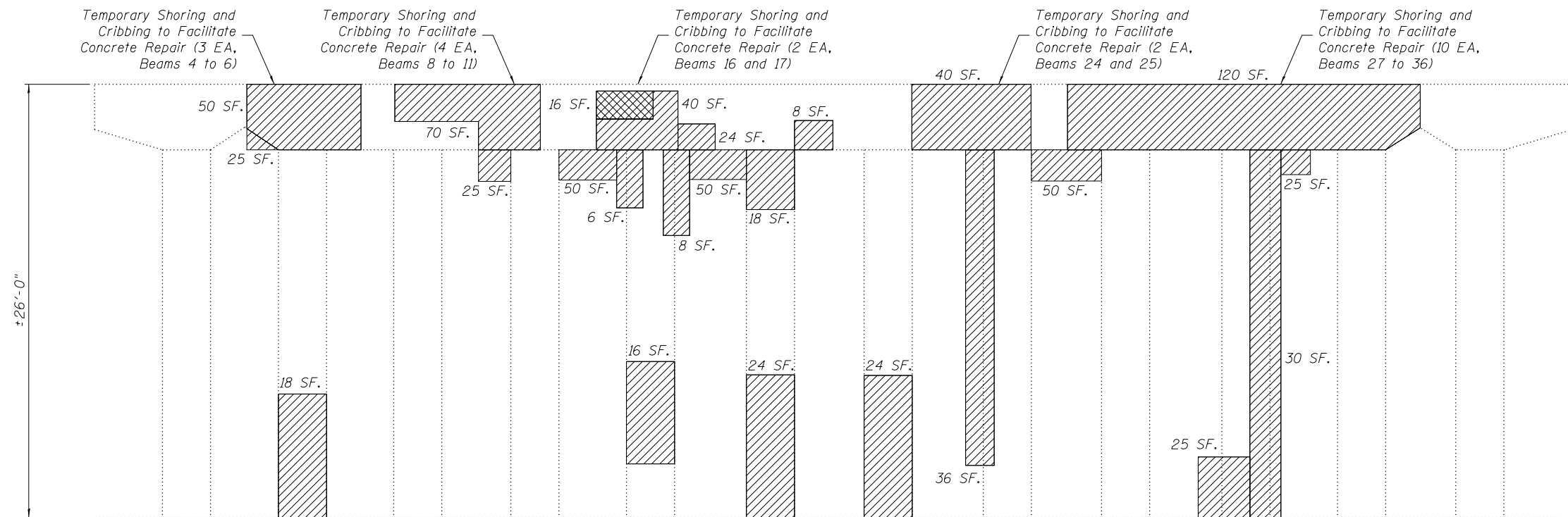
BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete, (Depth Equal To or Less Than 5")	Sq. Ft.	1153
	Temporary Shoring and Cribbing	Each	32



PIER 3 SOUTH ELEVATION
(Looking North)

Note:
Beams are numbered East to West.



PIER 3 NORTH ELEVATION
(Looking South)

PIER 3 GIRDER REACTION TABLE		
	Span 3	Span 4
R _{DL} (k)	47.8	49.8
R _{SDL} (k)	12.8	13.9
R _{LL} (k)	32.0	35.4
R _T (k)	8.0	8.9
R _{Total} (k)	100.6	108.0

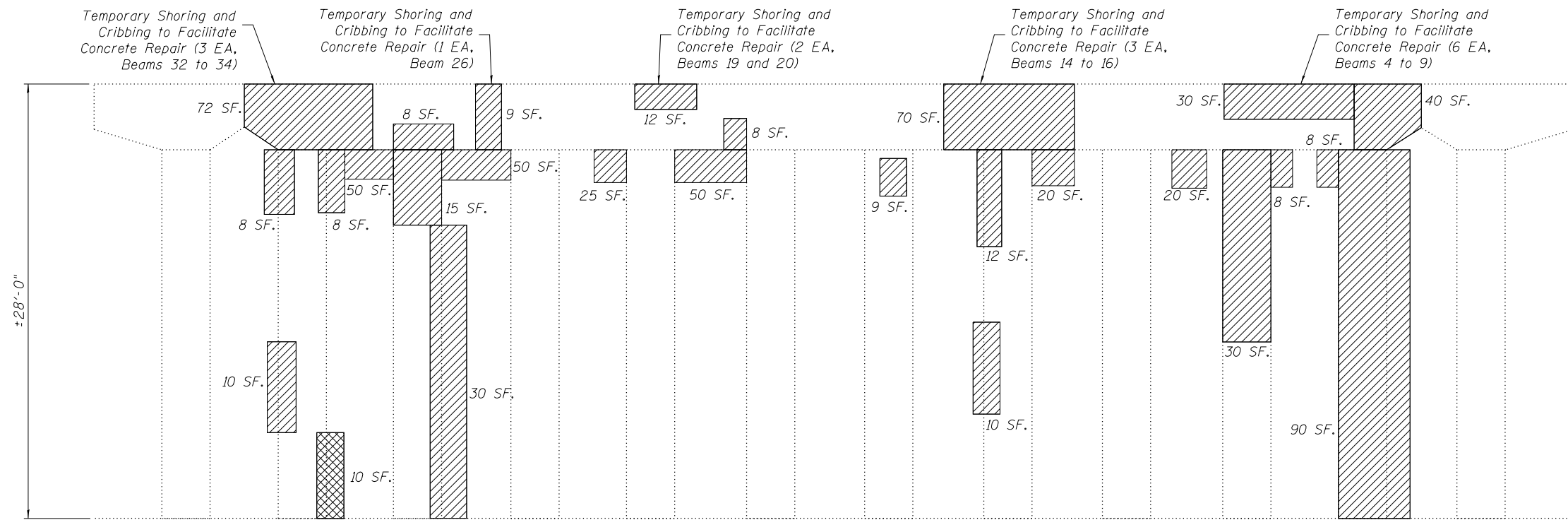
Note:
Reactions provided are for the maximum girder spacing and length within the span indicated. Contractor shall verify loading at each shoring location. Cost included in pay item 'Temporary Shoring and Cribbing.'

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete, (Depth Equal To or Less Than 5")	Sq. Ft.	1321
	Structural Repair of Concrete, (Depth Greater Than 5")	Sq. Ft.	16
	Temporary Shoring and Cribbing	Each	42

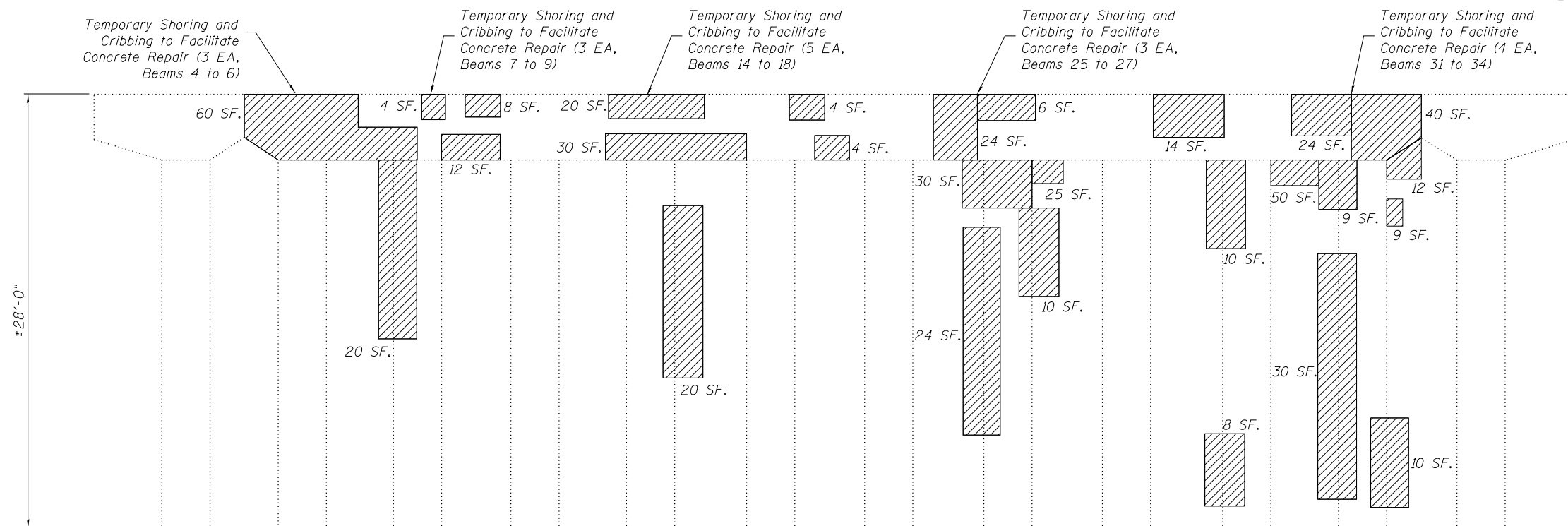
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DRAWN - DR	REVISOR -	REVISIONS -
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PLLOT DATE =	DATE - DECEMBER 2012	REVISOR -

F.A.I. RTÉ.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2012-055BR	COOK	107	73
CONTRACT NO.			60V58	
ILLINOIS FED. AID PROJECT				



PIER 4 SOUTH ELEVATION

(Looking North)



PIER 4 NORTH ELEVATION

(Looking South)

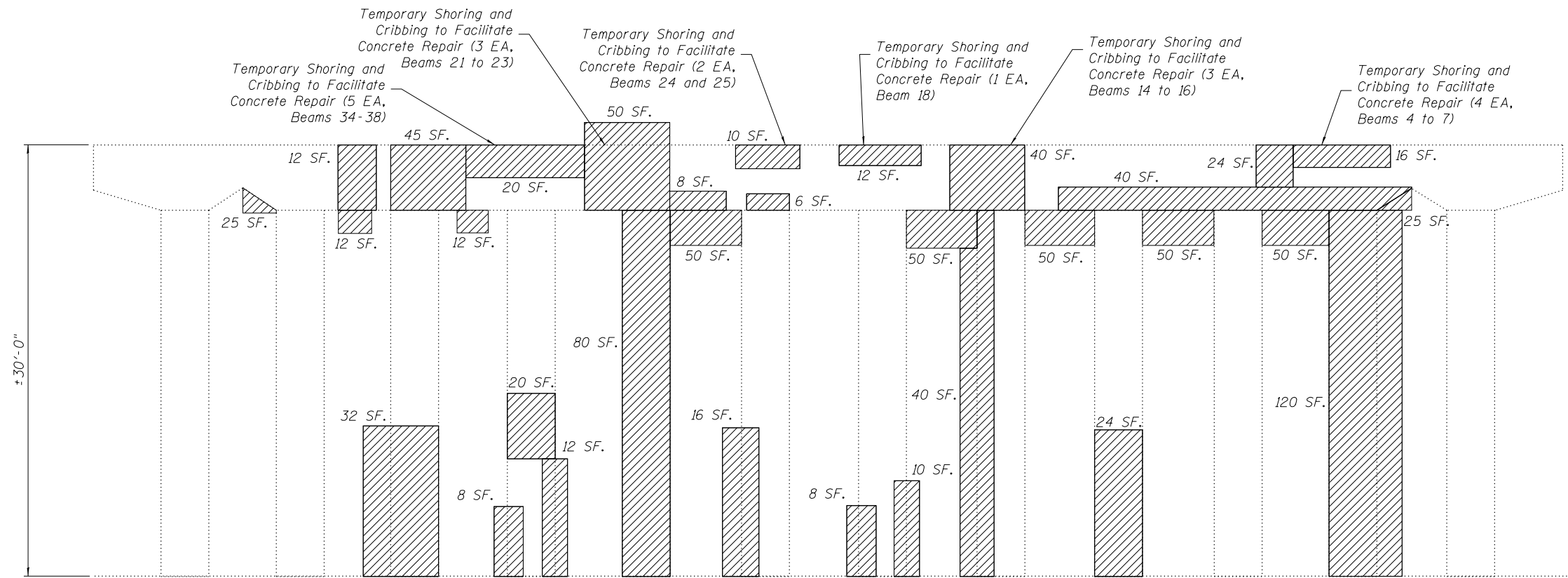
Note:
Beams are numbered East to West.

PIER 4 GIRDER REACTION TABLE		
	Span 4	Span 5
R _{DL} (k)	49.8	49.8
R _{SDL} (k)	13.9	13.9
R _{LL} (k)	35.4	35.4
R _T (k)	8.9	8.9
R _{Total} (k)	108.0	108.0

Note:
Reactions provided are for the maximum girder spacing and length within the span indicated. Contractor shall verify loading at each shoring location. Cost included in pay item 'Temporary Shoring and Cribbing.'

BILL OF MATERIAL

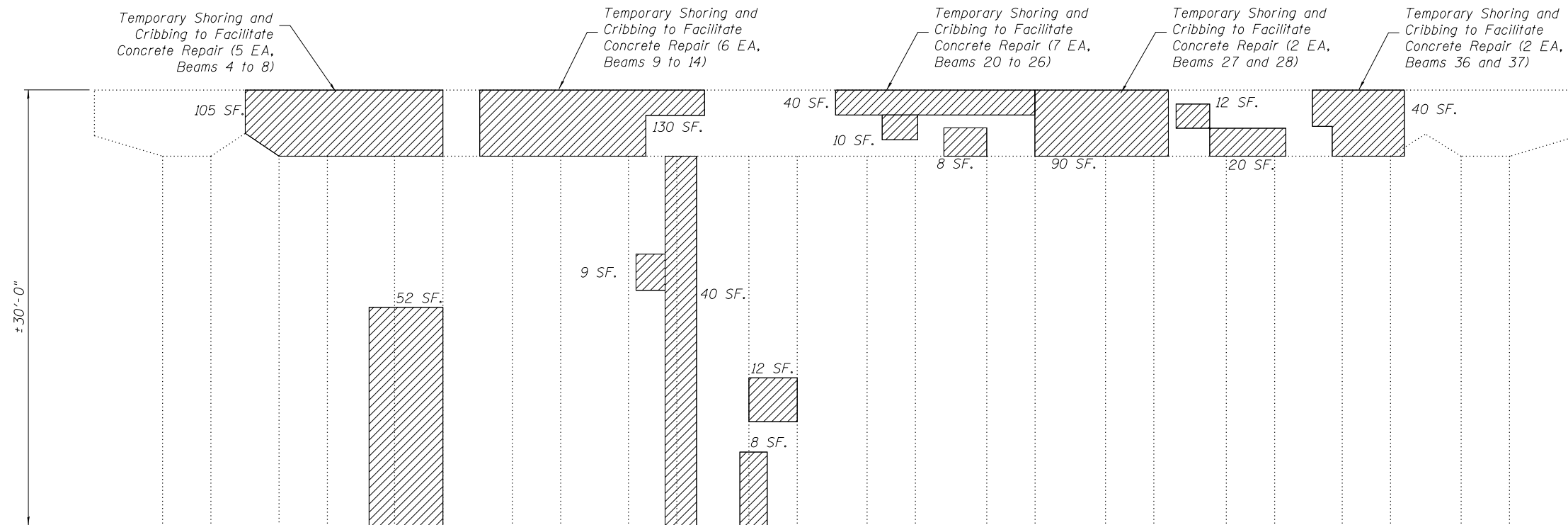
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	Structural Repair of Concrete, (Depth Greater Than 5")	Sq. Ft.	10
	Temporary Shoring and Cribbing	Each	33



PIER 5 SOUTH ELEVATION

(Looking North)

Note:
Beams are numbered East to West.




PIER 5 NORTH ELEVATION

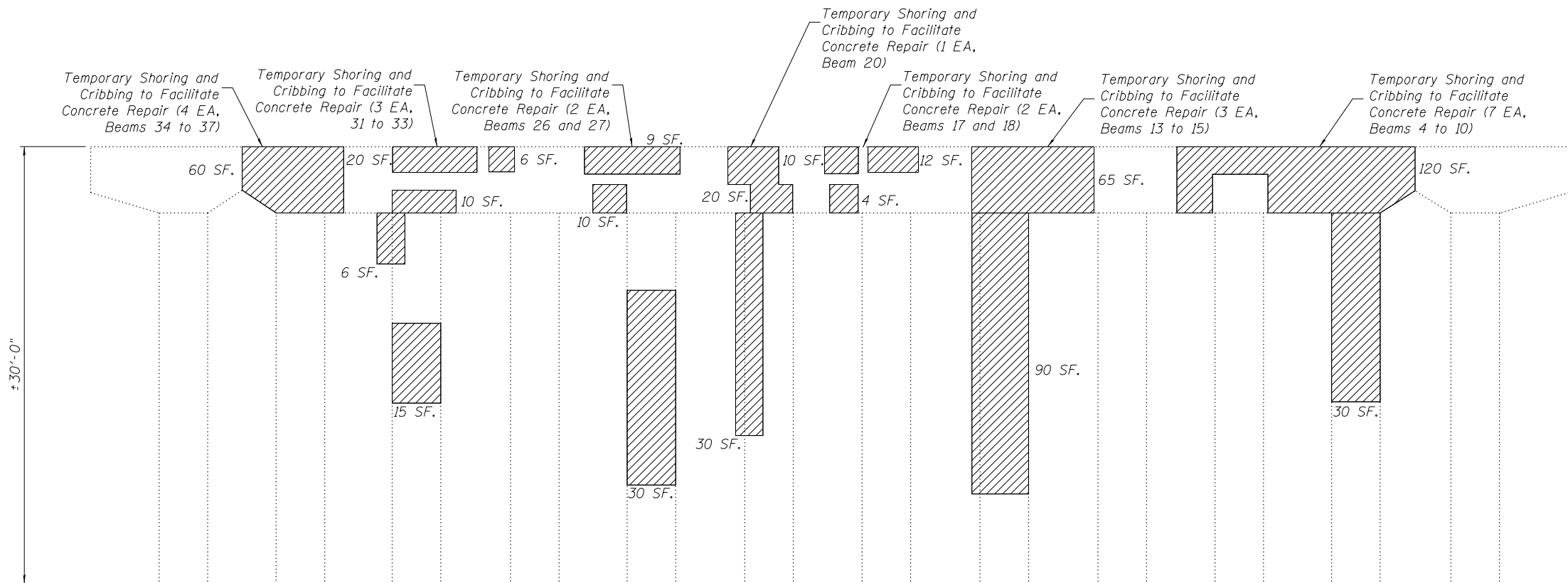
(Looking South)

PIER 5 GIRDER REACTION TABLE		
	Span 5	Span 6
R _{DL} (k)	49.8	50.7
R _{SDL} (k)	13.9	14.6
R _{LL} (k)	35.4	36.8
R _T (k)	8.9	9.2
R _{Total} (k)	108.0	111.3

Note:
Reactions provided are for the maximum girder spacing and length within the span indicated. Contractor shall verify loading at each shoring location. Cost included in pay item 'Temporary Shoring and Cribbing.'

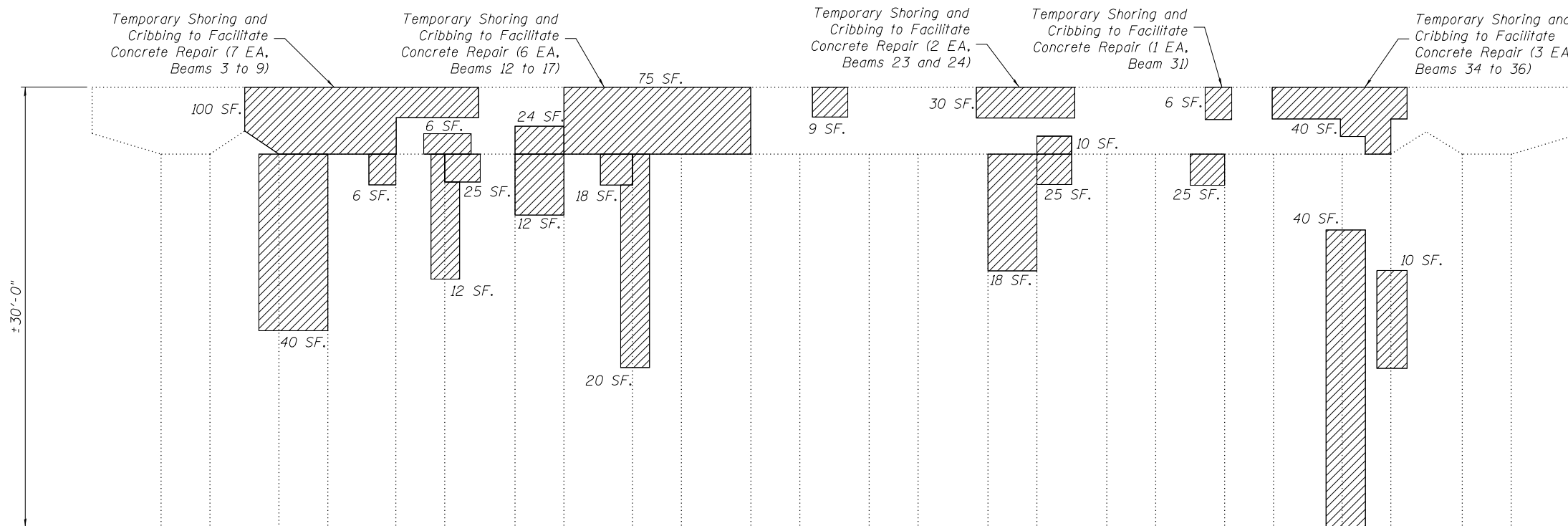
BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete, (Depth Equal To or Less Than 5")	Sq. Ft.	1553
	Temporary Shoring and Cribbing	Each	40



PIER 6 SOUTH ELEVATION
(Looking North)

Note:
Beams are numbered East to West.



PIER 6 NORTH ELEVATION
(Looking South)

PIER 6 GIRDER REACTION TABLE		
	Span 6	Span 7
R _{DL} (k)	50.7	50.7
R _{SDL} (k)	14.6	14.6
R _{LL} (k)	36.8	36.8
R _T (k)	9.2	9.2
R _{Total} (k)	111.3	111.3

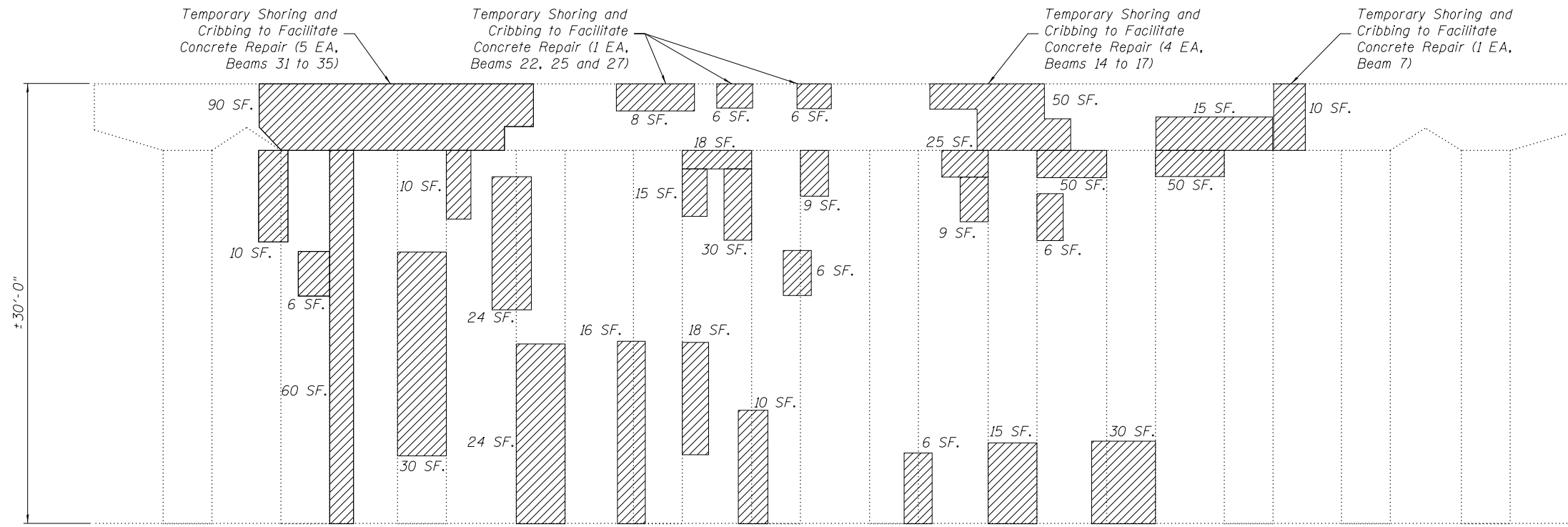
Note:
Reactions provided are for the maximum girder spacing and length within the span indicated. Contractor shall verify loading at each shoring location. Cost included in pay item 'Temporary Shoring and Cribbing.'

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete, (Depth Equal To or Less Than 5")	Sq. Ft.	1098
	Temporary Shoring and Cribbing	Each	41

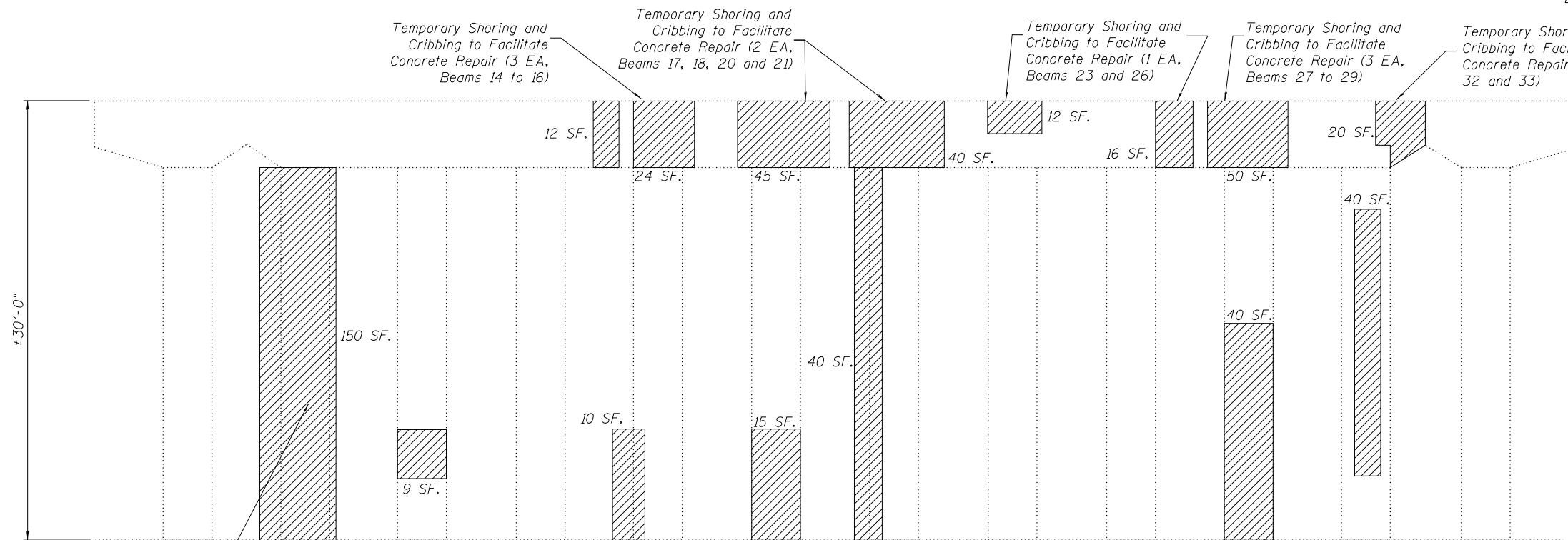
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	DRAWN - DR	REVISED -
PLOT SCALE =	CHECKED - JMH	REVISED -
PLOT DATE =	DATE - DECEMBER 2012	REVISED -

F.A.I. RTÉ.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2012-055BR	COOK	107	76
CONTRACT NO.			60V58	
ILLINOIS FED. AID PROJECT				



PIER 7 SOUTH ELEVATION
(Looking North)

Note:
Beams are numbered East to West.



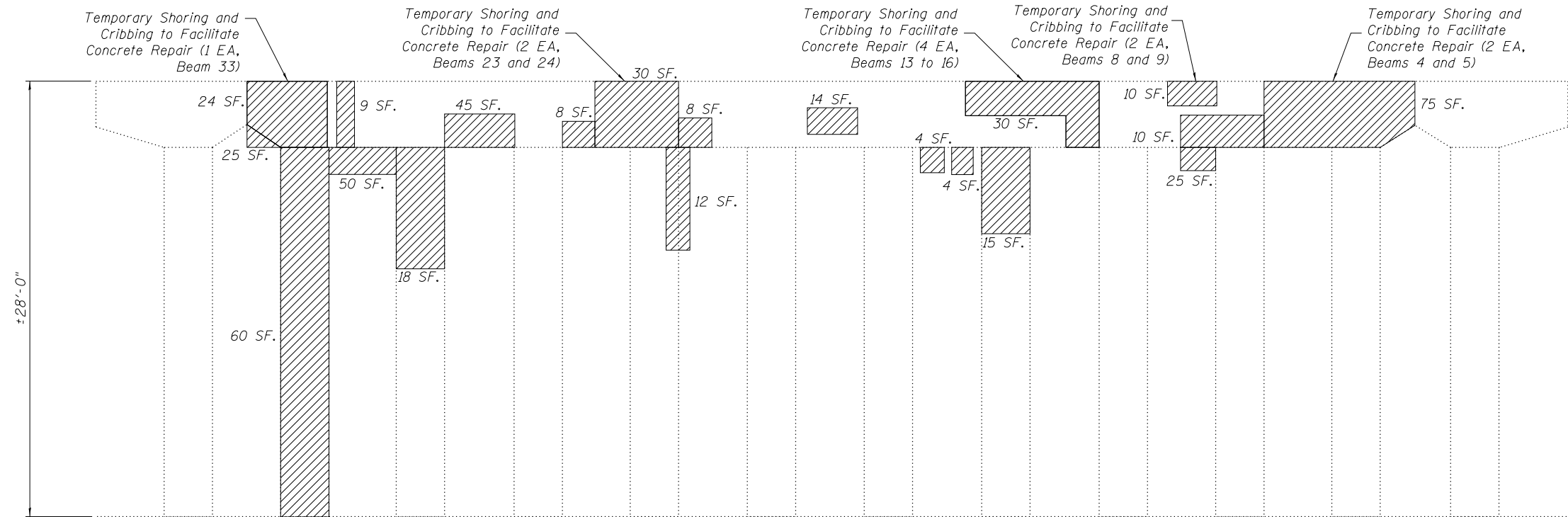
PIER 7 NORTH ELEVATION
(Looking South)

PIER 6 GIRDER REACTION TABLE		
	Span 6	Span 7
R _{DL} (k)	50.7	50.7
R _{SDL} (k)	14.6	14.6
R _{LL} (k)	36.8	36.8
R _T (k)	9.2	9.2
R _{Total} (k)	111.3	111.3

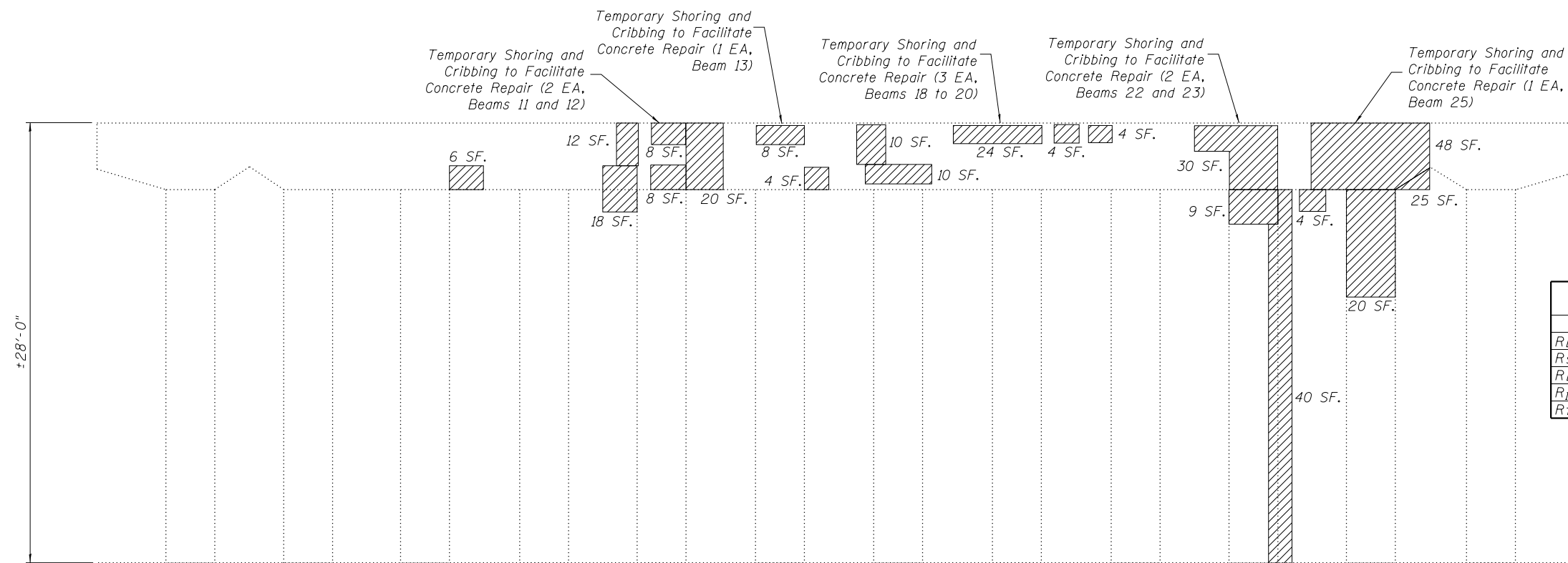
Note:
Reactions provided are for the maximum girder spacing and length within the span indicated. Contractor shall verify loading at each shoring location. Cost included in pay item 'Temporary Shoring and Cribbing.'

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete, (Depth Equal To or Less Than 5")	Sq. Ft.	1185
	Temporary Shoring and Cribbing	Each	27



PIER 8 SOUTH ELEVATION
(Looking North)



PIER 8 NORTH ELEVATION
(Looking South)

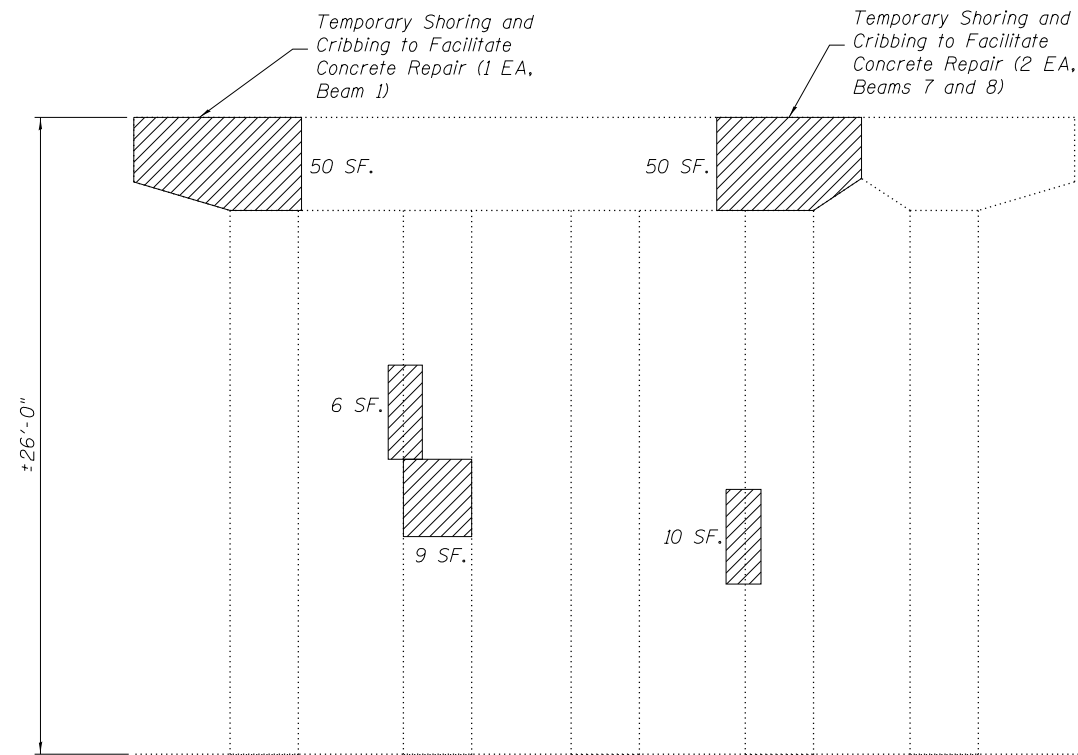
Note:
Beams are numbered East to West.

PIER 8 GIRDER REACTION TABLE			
	Span 8	Span 9	Span 10
R_{DL} (k)	50.7	30.1	48.7
R_{SDL} (k)	14.6	9.9	16.1
R_{LL} (k)	36.8	42.3	47.4
R_I (k)	9.2	12.7	12.6
R_{Total} (k)	111.3	95.0	124.8

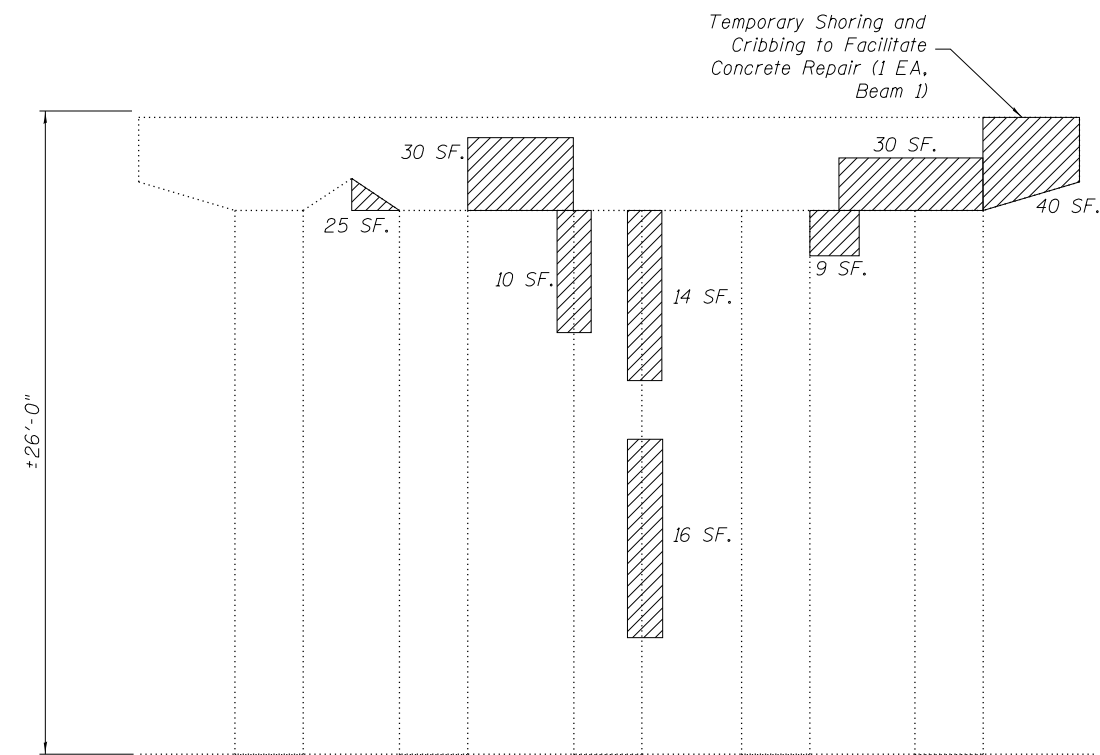
Note:
Reactions provided are for the maximum girder spacing and length within the span indicated. Contractor shall verify loading at each shoring location. Cost included in pay item 'Temporary Shoring and Cribbing.'

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete, (Depth Equal To or Less Than 5")	Sq. Ft.	788
	Temporary Shoring and Cribbing	Each	20



PIER 9 NORTH ELEVATION
(Looking South)



PIER 9 SOUTH ELEVATION
(Looking North)

Note:
Beams are numbered East to West.

PIER 9 GIRDER REACTION TABLE		
	Span 9	Span 10
R_{DL} (k)	30.1	48.7
R_{SDL} (k)	9.9	16.1
R_{LL} (k)	42.3	47.4
R_T (k)	12.7	12.6
R_{Total} (k)	95.0	124.8

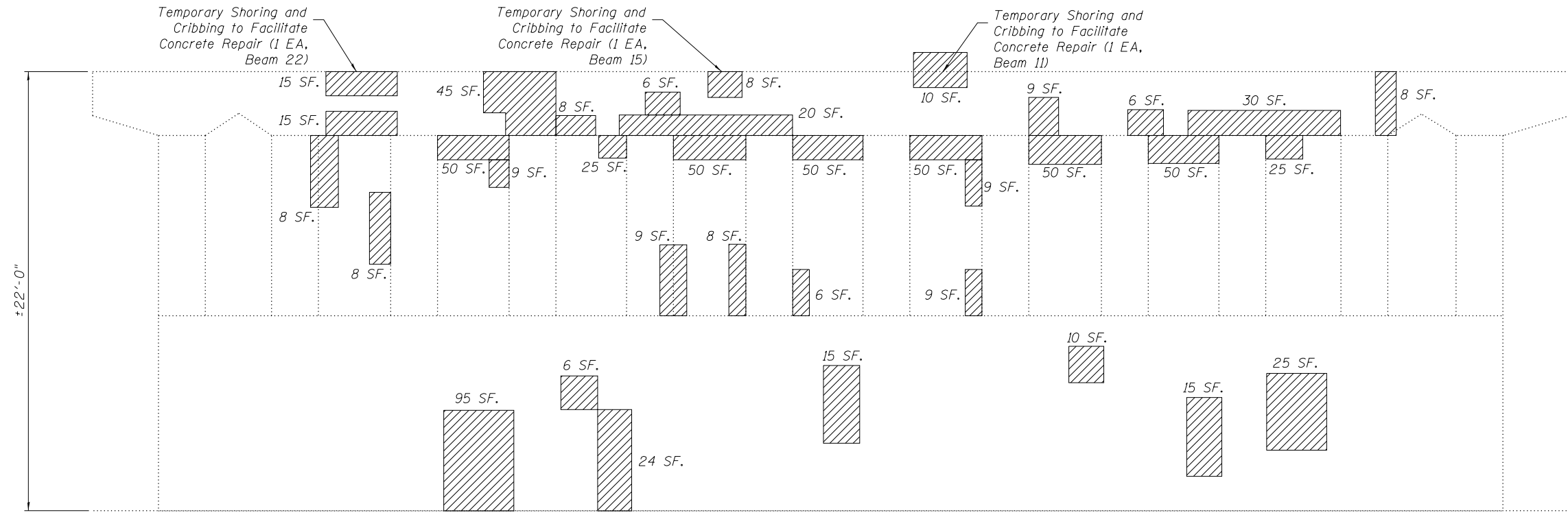
Note:
Reactions provided are for the maximum girder spacing and length within the span indicated. Contractor shall verify loading at each shoring location. Cost included in pay item 'Temporary Shoring and Cribbing.'

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete, (Depth Equal To or Less Than 5")	Sq. Ft.	299
	Temporary Shoring and Cribbing	Each	4

USER NAME =	DESIGNED - AMS	REVISED -
DRAWN - DR	CHECKED - JMH	REVISED -
PLOT SCALE =	DATE - DECEMBER 2012	REVISED -
PLOT DATE =		

F.A.I. RTE. 90/94	SECTION 2012-055BR	COUNTY COOK	TOTAL SHEETS 107	SHEET NO. 79
ILLINOIS FED. AID PROJECT			CONTRACT NO. 60V58	



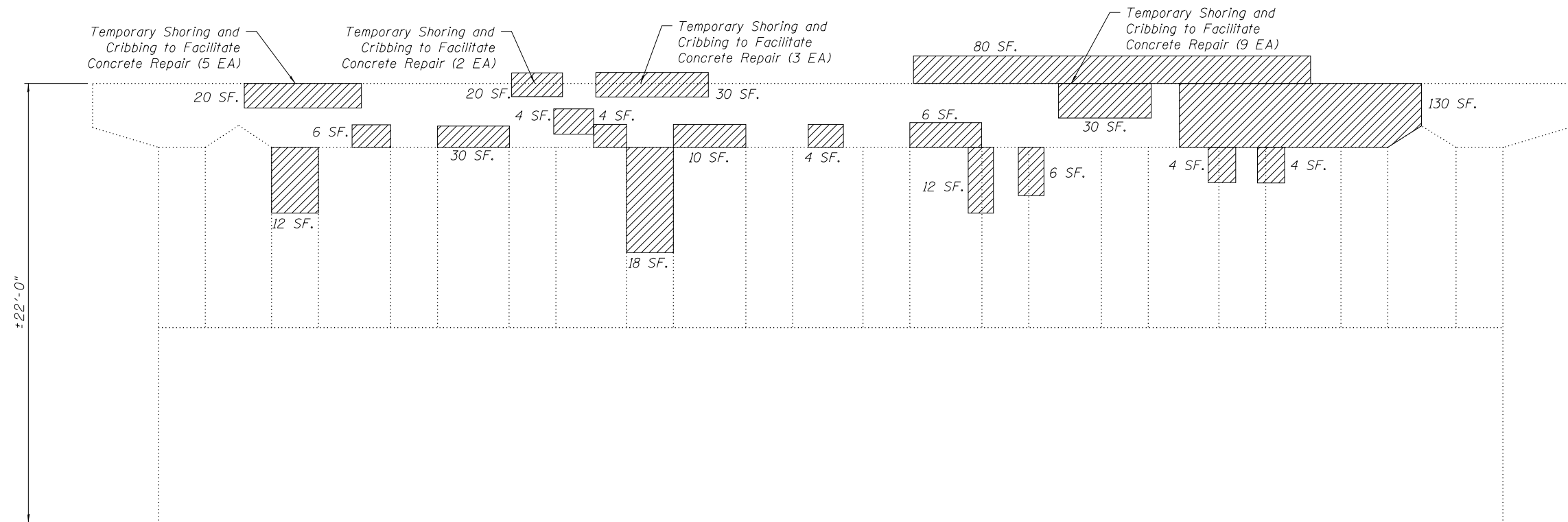
PIER 10 SOUTH ELEVATION

(Looking North)

Note:

Beams are numbered East to West.

The numbers of the beams to be shored along the North Face were not included in the inspection notes. A fence around the railroad prevented access.



PIER 10 NORTH ELEVATION

(Looking South)

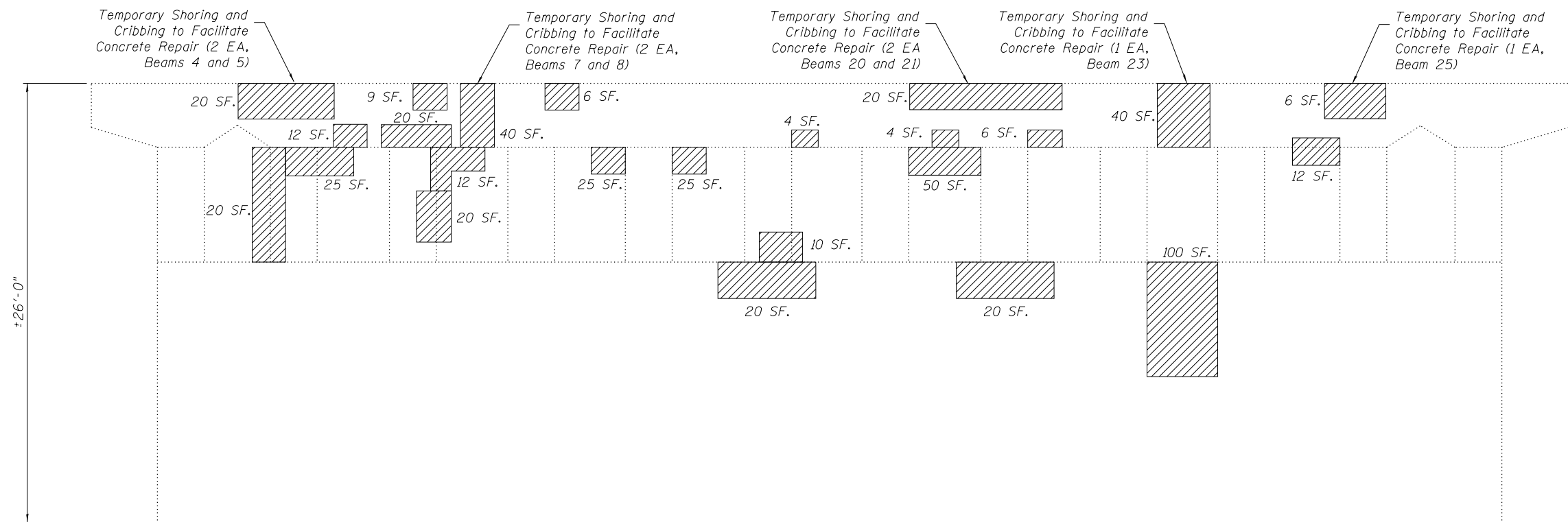
PIER 10 GIRDER REACTION TABLE		
	Span 10	Span 11
R _{DL} (k)	48.7	24.7
R _{SDL} (k)	16.1	8.2
R _{LL} (k)	47.4	24.9
R _T (k)	12.6	6.9
R _{Total} (k)	124.8	64.7

Note:

Reactions provided are for the maximum girder spacing and length within the span indicated. Contractor shall verify loading at each shoring location. Cost included in pay item 'Temporary Shoring and Cribbing.'

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete, (Depth Equal To or Less Than 5")	Sq. Ft.	1216
	Temporary Shoring and Cribbing	Each	22



PIER 11 NORTH ELEVATION
(Looking South)

Note:
Beams are numbered East to West.

	Span 11	Span 12	Span 13
R_{DL} (k)	24.7	57.2	51.8
R_{SDL} (k)	8.2	18.9	17.4
R_{LL} (k)	24.9	48.6	47.9
R_I (k)	6.9	12.2	12.5
R_{Total} (k)	64.7	136.9	129.6

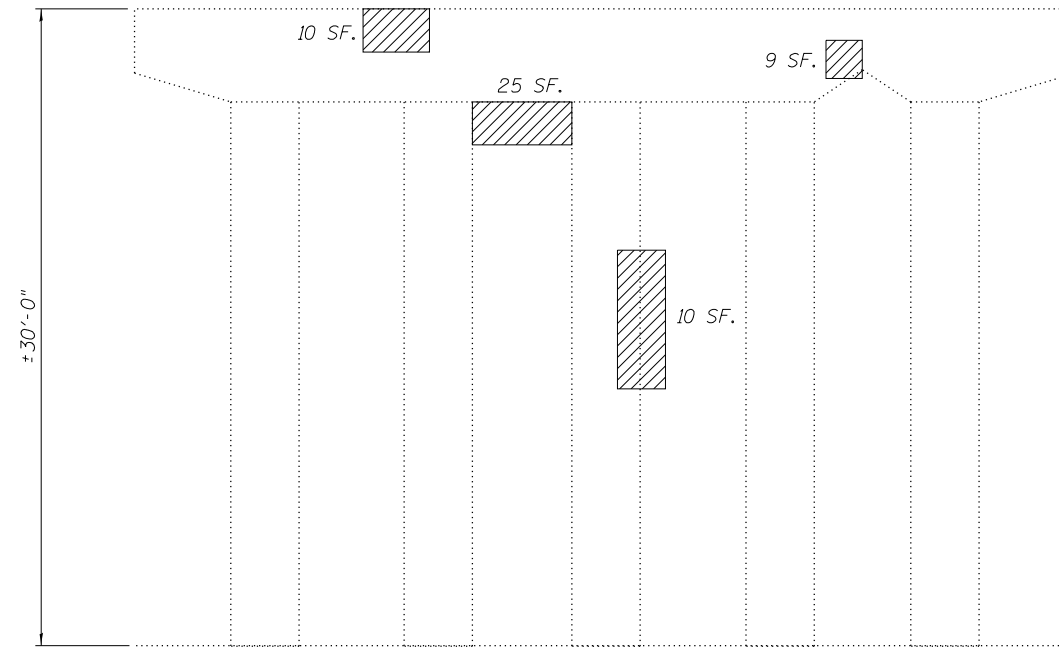
Note:
Reactions provided are for the maximum girder spacing and length within the span indicated. Contractor shall verify loading at each shoring location. Cost included in pay item 'Temporary Shoring and Cribbing.'

BILL OF MATERIAL

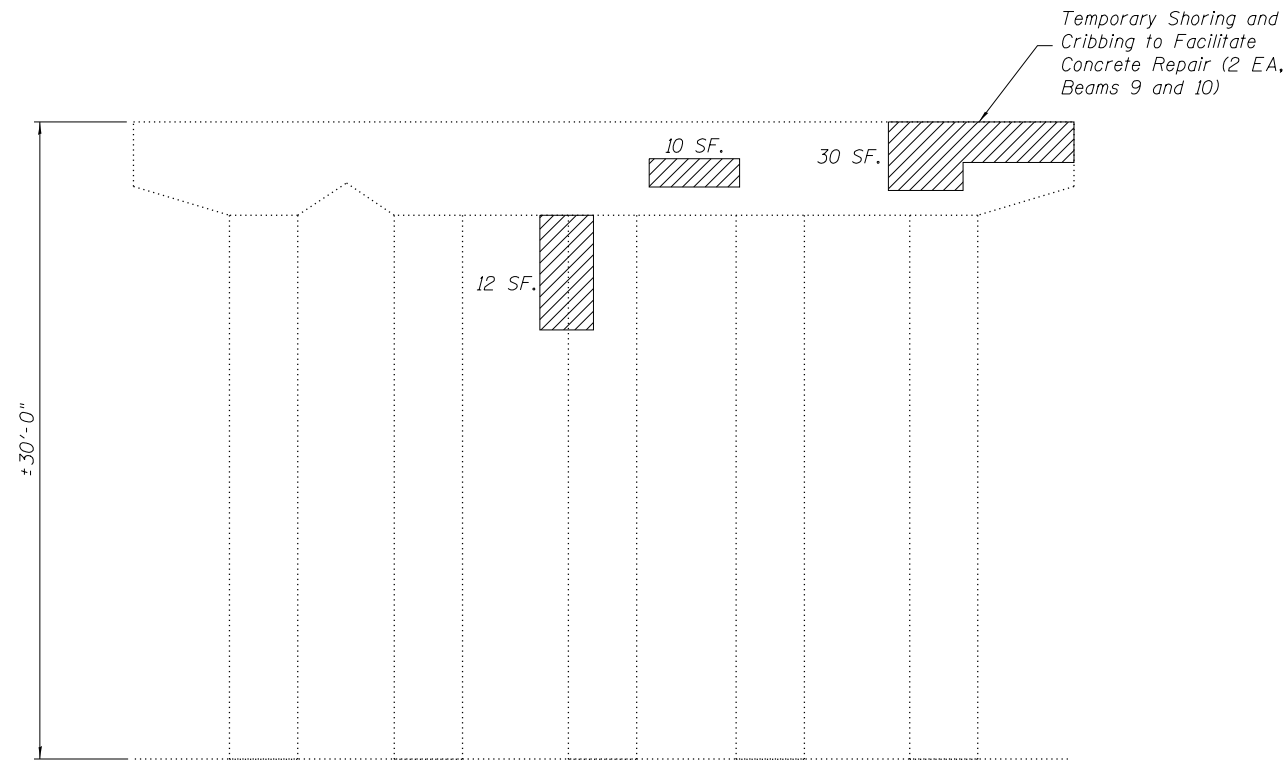
SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete, (Depth Equal To or Less Than 5")	Sq. Ft.	526
	Temporary Shoring and Cribbing	Each	8

USER NAME =	DESIGNED - AMS	REVISED -
	DRAWN - DR	REVISED -
PLOT SCALE =	CHECKED - JMH	REVISED -
PLOT DATE =	DATE - DECEMBER 2012	REVISED -

F.A.I. RE. 90/94	SECTION 2012-055BR	COUNTY COOK	TOTAL SHEETS 107	SHEET NO. 81
			CONTRACT NO. 60V58	
ILLINOIS FED. AID PROJECT				



PIER 12 SOUTH ELEVATION
(Looking North)



PIER 12 NORTH ELEVATION
(Looking South)

Note:
Beams are numbered East to West.

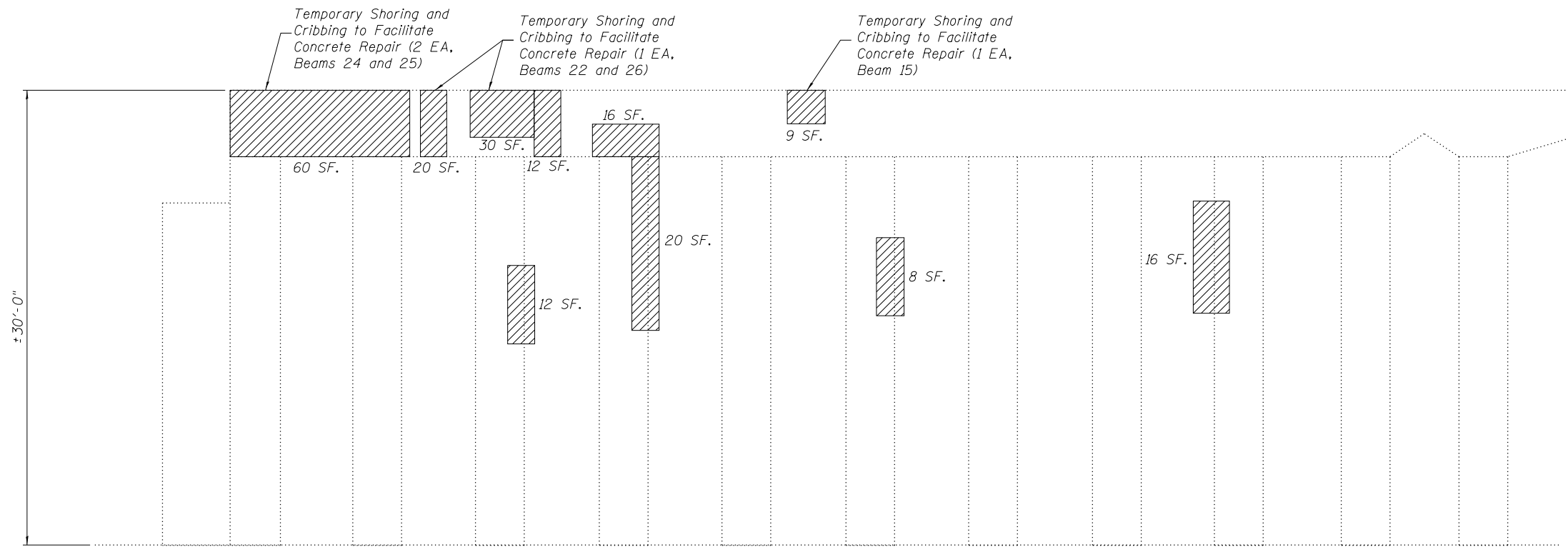
PIER 12 GIRDER REACTION TABLE			
		Span 12	Span 13
R _{DL}	(k)	57.2	24.0
R _{SDL}	(k)	18.9	8.1
R _{LL}	(k)	48.6	38.9
R _T	(k)	12.2	11.7
R _{Total}	(k)	136.9	82.7

Note:
Reactions provided are for the maximum girder spacing and length within the span indicated. Contractor shall verify loading at each shoring location. Cost included in pay item 'Temporary Shoring and Cribbing.'

BILL OF MATERIAL

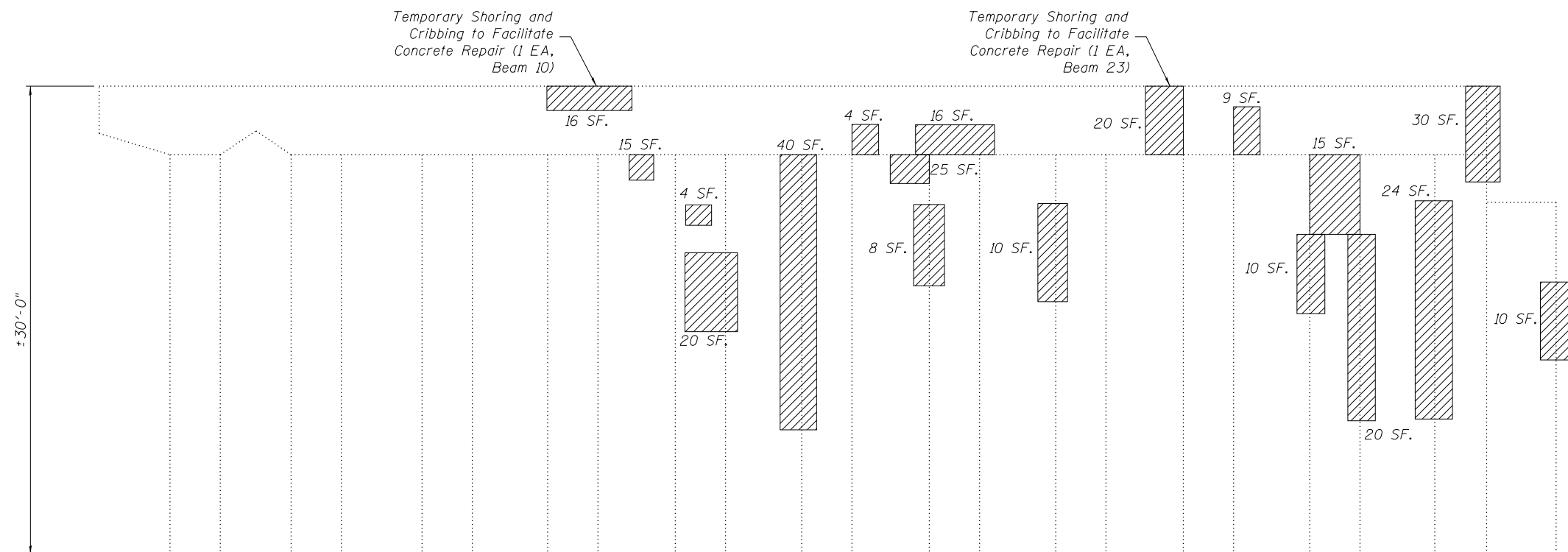
SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete, (Depth Equal To or Less Than 5")	Sq. Ft.	106
	Temporary Shoring and Cribbing	Each	2

USER NAME =	DESIGNED - AMS	REVISED -
	DRAWN - DR	REVISED -
PLOT SCALE =	CHECKED - JMH	REVISED -
PLOT DATE =	DATE - DECEMBER 2012	REVISED -



PIER 13 SOUTH ELEVATION

(Looking North)



PIER 13 NORTH ELEVATION

(Looking South)

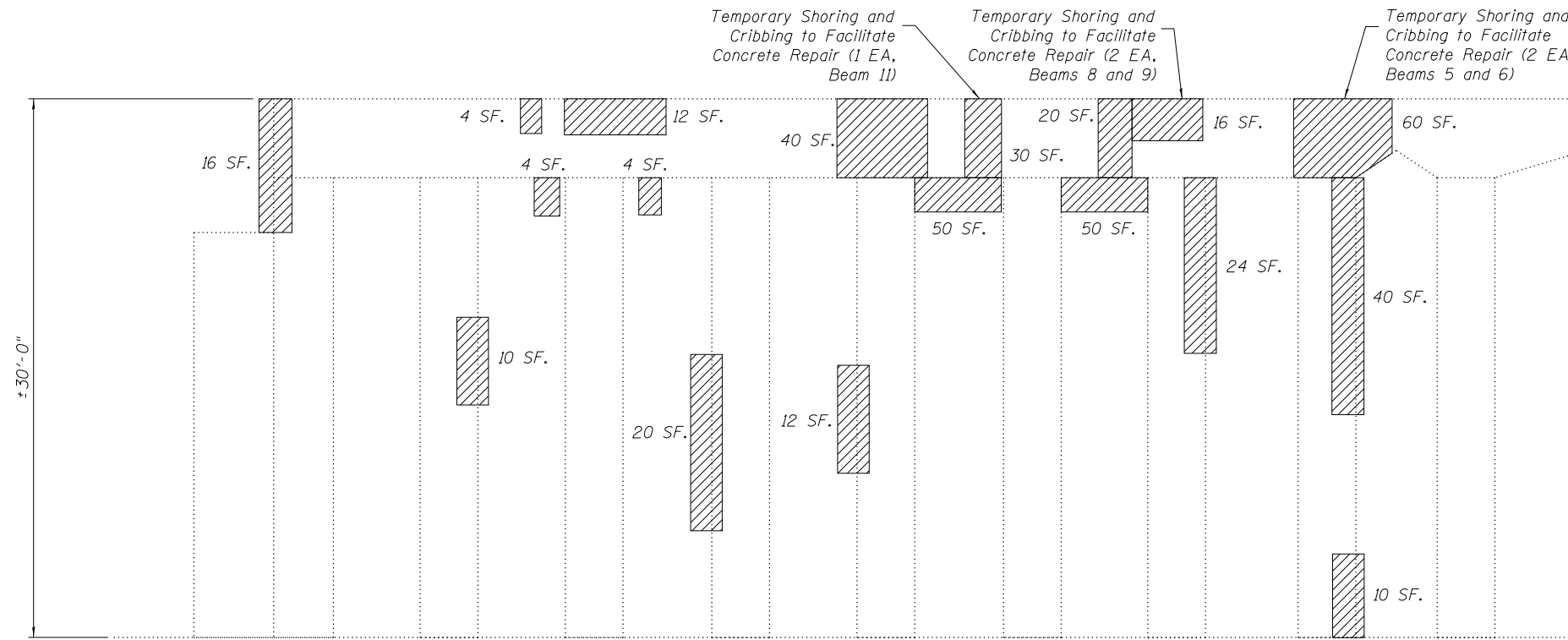
Note:
Beams are numbered East to West.

PIER 13 GIRDER REACTION TABLE			
	Span 13 NB	Span 13 SB	Span 14
R _{DL} (k)	24.0	51.8	46.1
R _{SDL} (k)	8.1	17.4	13.7
R _{LL} (k)	38.9	47.9	37.6
R _I (k)	11.7	12.5	9.8
R _{Total} (k)	82.7	129.6	107.2

Note:
Reactions provided are for the maximum girder spacing and length within the span indicated. Contractor shall verify loading at each shoring location. Cost included in pay item 'Temporary Shoring and Cribbing.'

BILL OF MATERIAL

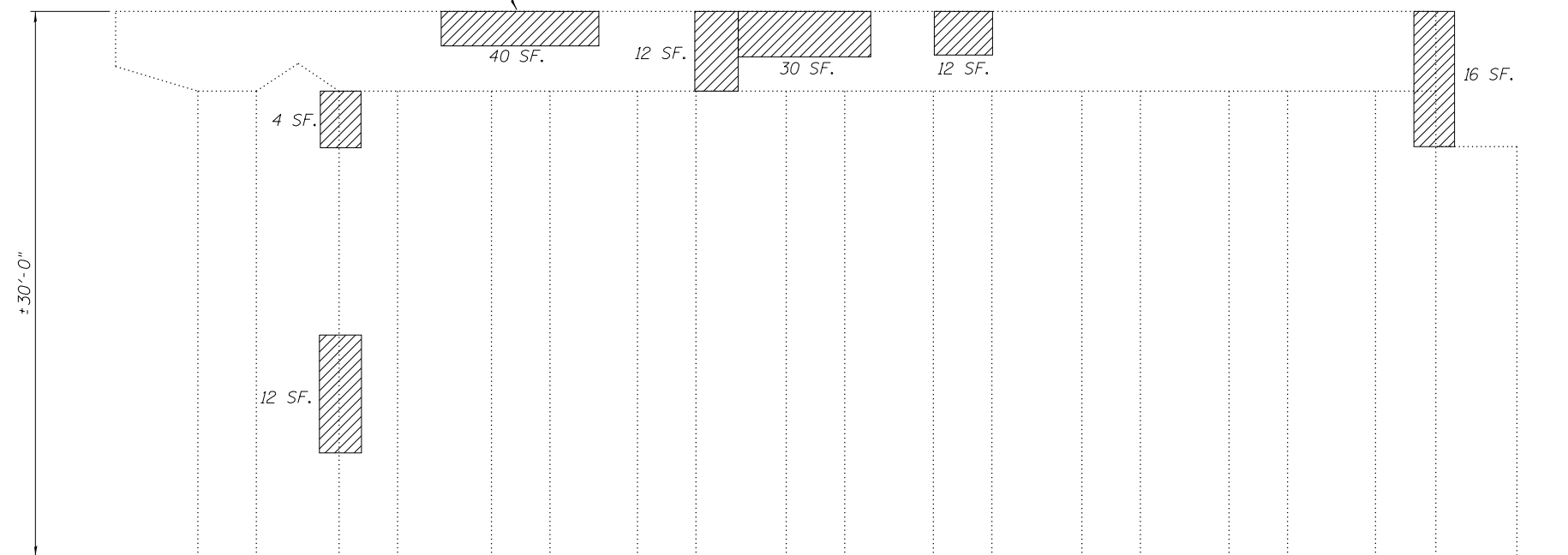
SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete, (Depth Equal To or Less Than 5")	Sq. Ft.	499
	Temporary Shoring and Cribbing	Each	7



PIER 14 SOUTH ELEVATION

(Looking North)

Temporary Shoring and Cribbing to Facilitate Concrete Repair (2 EA, Beams 8 and 9)



PIER 14 NORTH ELEVATION

(Looking South)

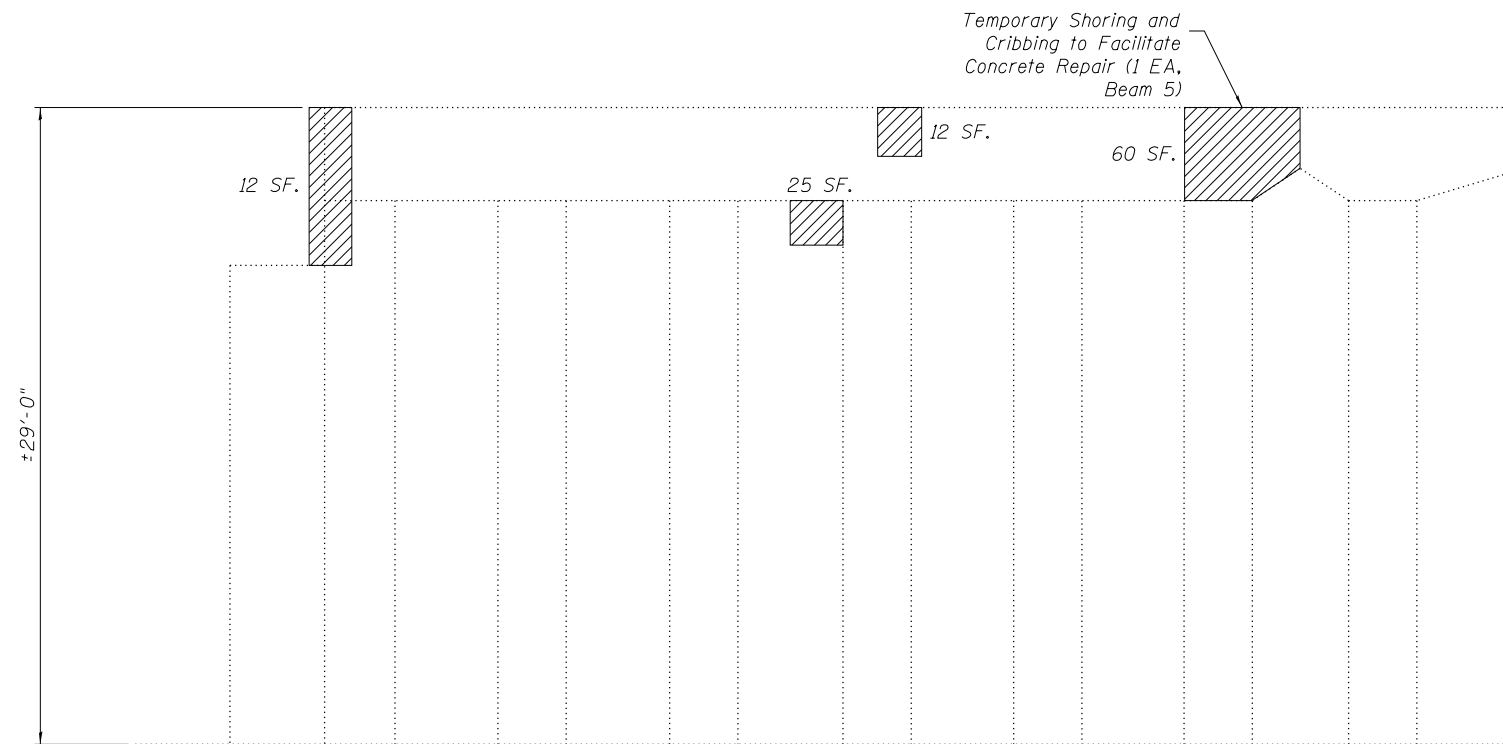
Note:
Beams are numbered East to West.

PIER 14 GIRDER REACTION TABLE		
	Span 14	Span 15
R _{DL} (k)	46.1	46.1
R _{SDL} (k)	13.7	13.7
R _{LL} (k)	37.6	37.6
R _T (k)	9.8	9.8
R _{Total} (k)	107.2	107.2

Note:
Due to variable girder type, spacing, and span, reactions provided are a general indication for the loads within the indicated span. Contractor shall verify loading at each shoring location. Cost included in pay item 'Temporary Shoring and Cribbing.'

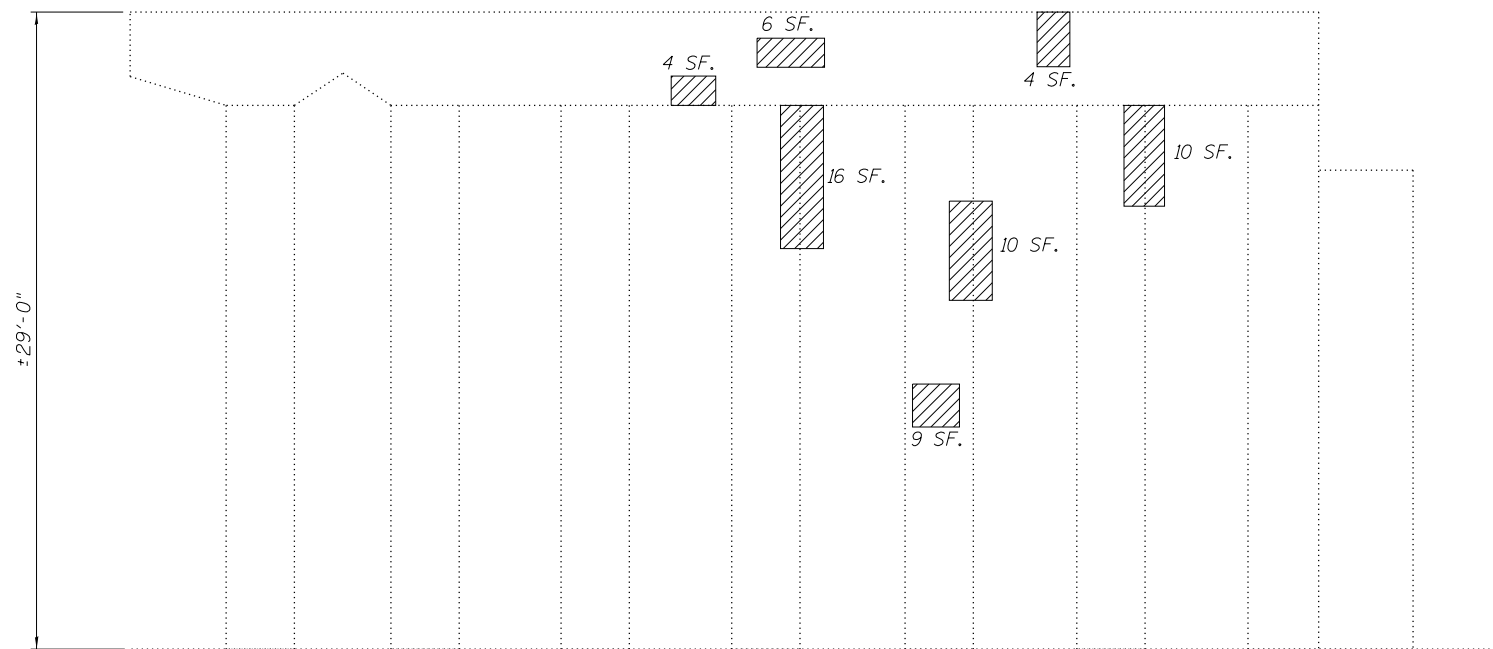
BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete, (Depth Equal To or Less Than 5")	Sq. Ft.	548
	Temporary Shoring and Cribbing	Each	7



PIER 15 SOUTH ELEVATION
(Looking North)

Note:
Beams are numbered East to West.



PIER 15 NORTH ELEVATION
(Looking South)

PIER 15 GIRDER REACTION TABLE		
	Span 15	Span 16
R _{DL} (k)	46.1	46.1
R _{SDL} (k)	13.7	13.7
R _{LL} (k)	37.6	37.6
R _T (k)	9.8	9.8
R _{Total} (k)	107.2	107.2

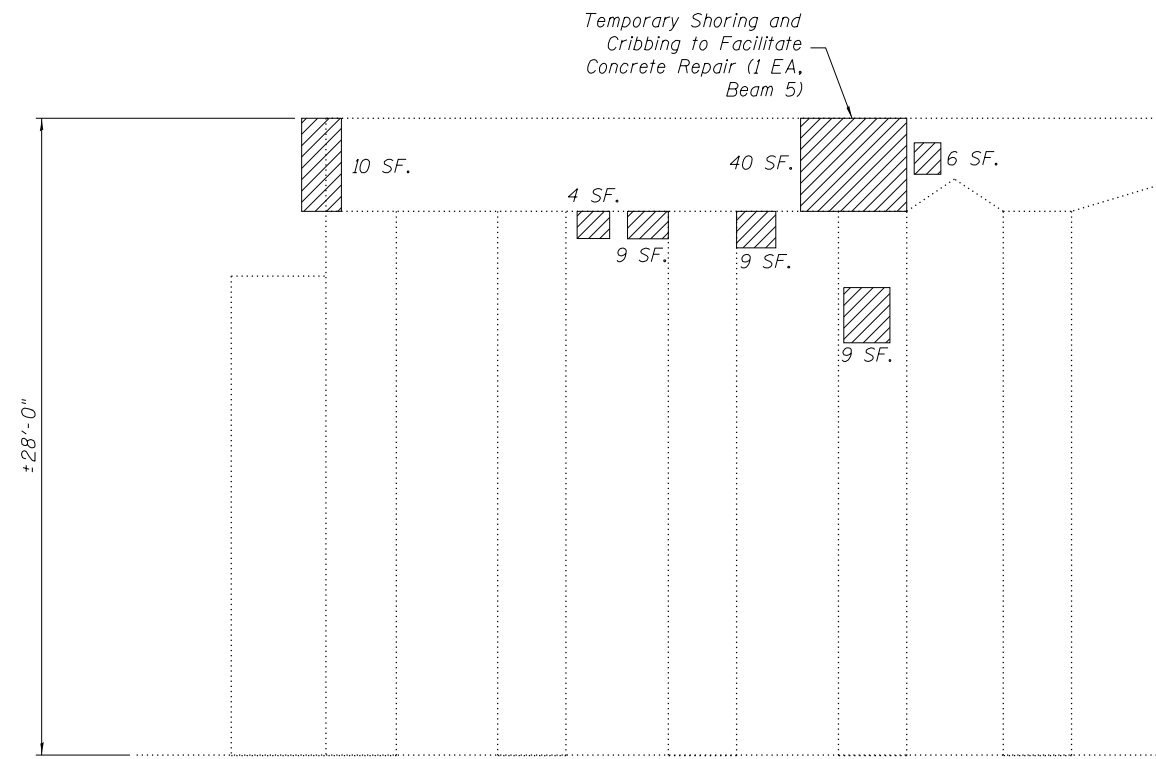
Note:
Due to variable girder type, spacing, and span, reactions provided are a general indication for the loads within the indicated span. Contractor shall verify loading at each shoring location. Cost included in pay item 'Temporary Shoring and Cribbing.'

BILL OF MATERIAL

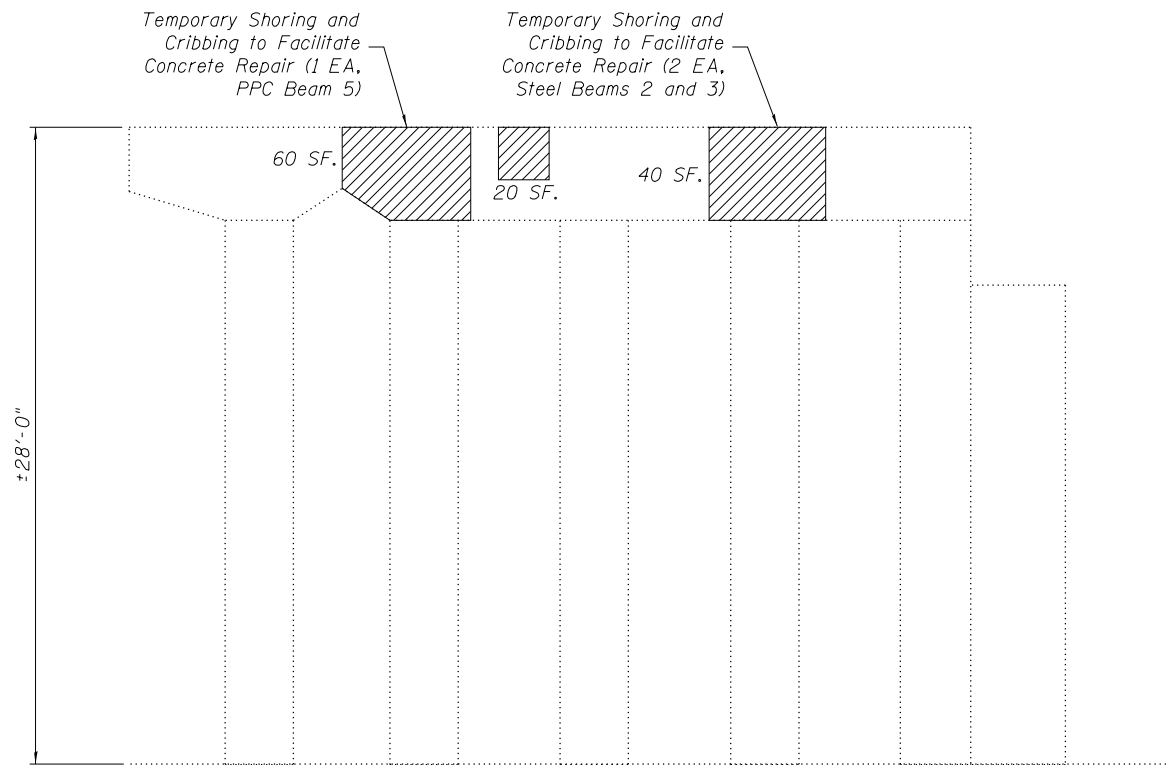
SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete, (Depth Equal To or Less Than 5")	Sq. Ft.	168
	Temporary Shoring and Cribbing	Each	1

USER NAME =	DESIGNED - AMS	REVISED -
	DRAWN - DR	REVISED -
PLOT SCALE =	CHECKED - JMH	REVISED -
PLOT DATE =	DATE - DECEMBER 2012	REVISED -

F.A.I. R.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2012-055BR	COOK	107	85
ILLINOIS FED. AID PROJECT			CONTRACT NO. 60V58	



PIER 16 SOUTH ELEVATION
(Looking North)



PIER 16 NORTH ELEVATION
(Looking South)

Note:
Beams are numbered East to West.

PIER 16 GIRDER REACTION TABLE		
	Span 16	Span 17
R _{DL} (k)	46.1	51.7
R _{SDL} (k)	13.7	15.8
R _{LL} (k)	37.6	41.8
R _T (k)	9.8	10.6
R _{Total} (k)	107.2	119.9

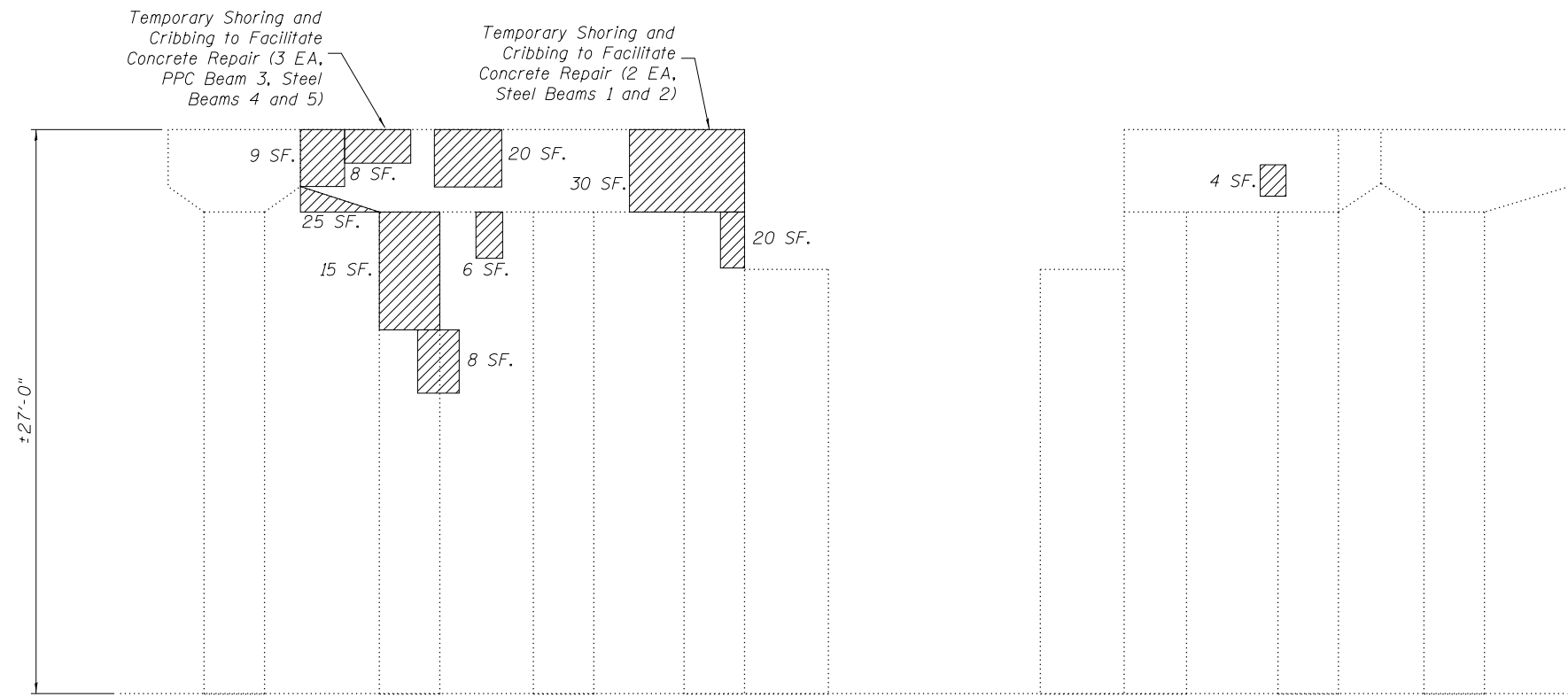
Note:
Due to variable girder type, spacing, and span, reactions provided are a general indication for the loads within the indicated span. Contractor shall verify loading at each shoring location. Cost included in pay item 'Temporary Shoring and Cribbing.'

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete, (Depth Equal To or Less Than 5")	Sq. Ft.	207
	Temporary Shoring and Cribbing	Each	4

USER NAME =	DESIGNED - AMS	REVISED -
	DRAWN - DR	REVISED -
PLOT SCALE =	CHECKED - JMH	REVISED -
PLOT DATE =	DATE - DECEMBER 2012	REVISED -

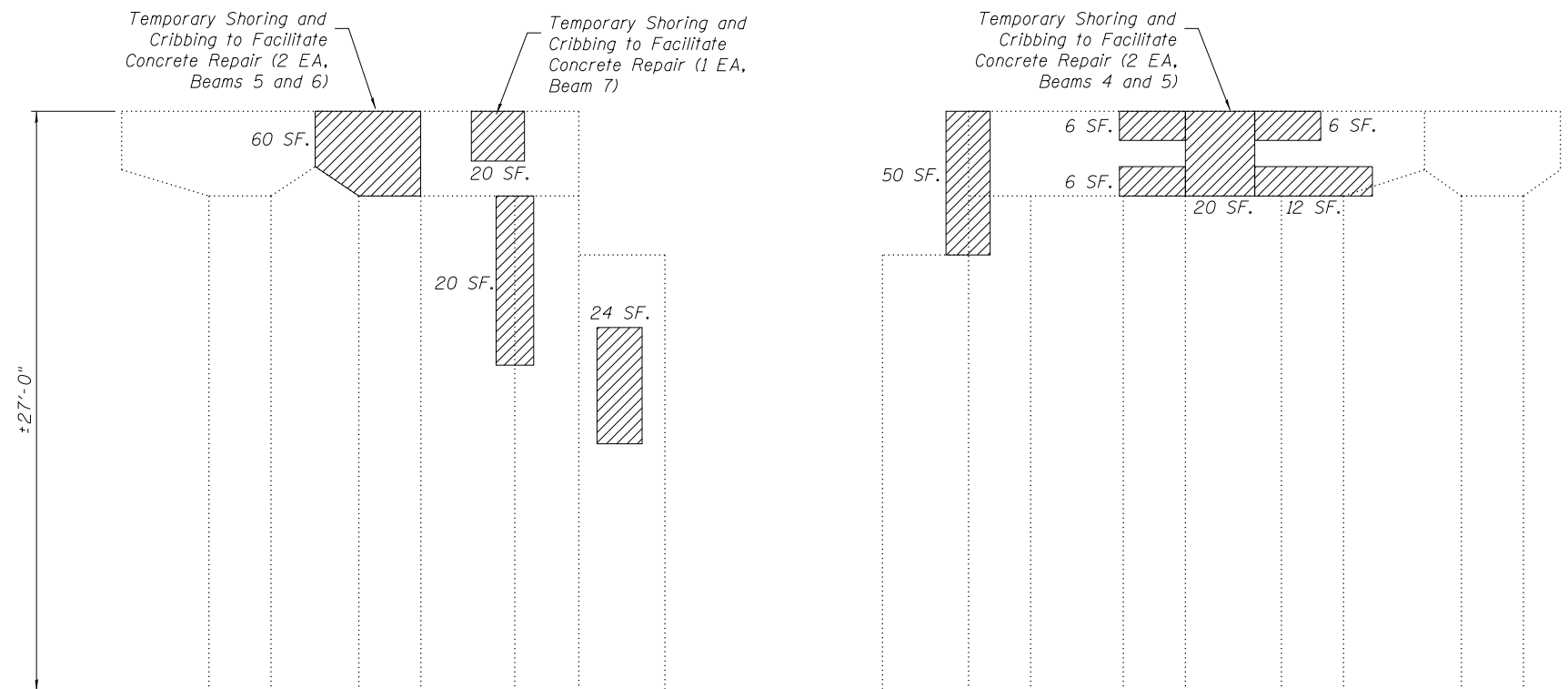
F.A.I. RE. 90/94	SECTION 2012-055BR	COUNTY COOK	TOTAL SHEETS 107	SHEET NO. 86
ILLINOIS FED. AID PROJECT			CONTRACT NO. 60V58	



PIER 17 SOUTH ELEVATION

(Looking North)

Note:
Beams are numbered East to West.



PIER 17 NORTH ELEVATION

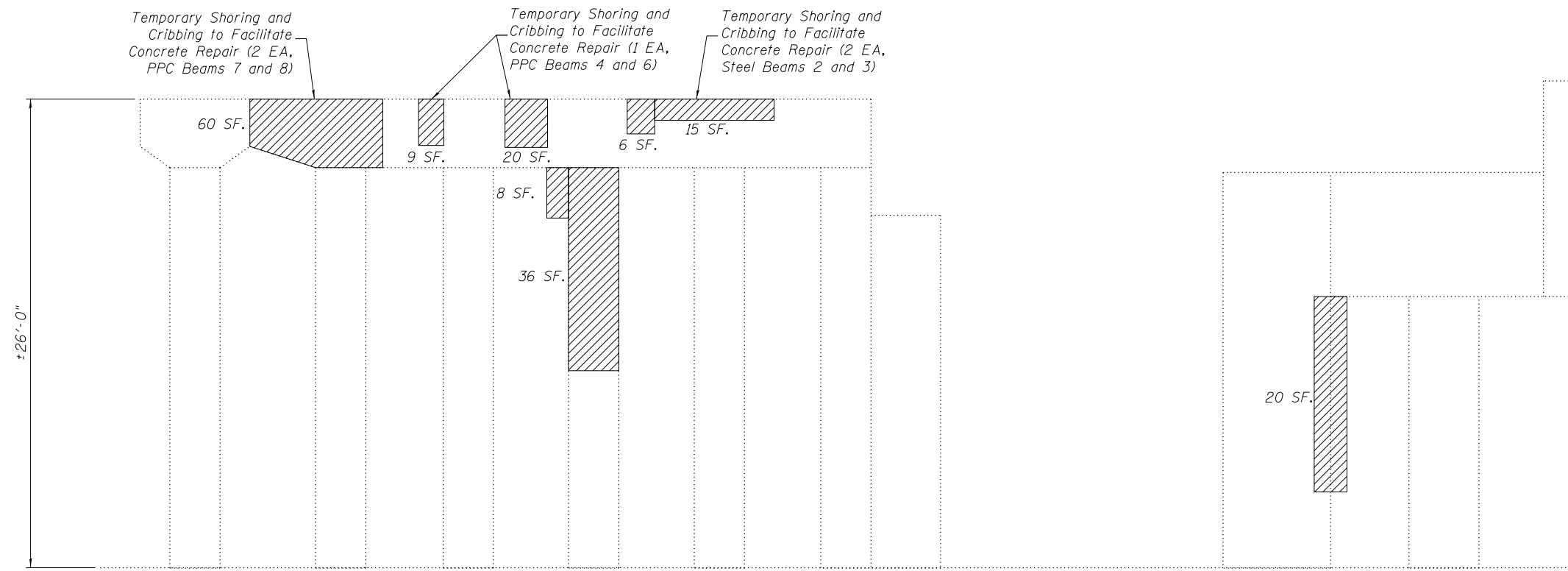
(Looking South)

PIER 17 GIRDER REACTION TABLE		
	Span 17	Span 18
R _{DL} (k)	51.7	51.1
R _{SDL} (k)	15.8	16.1
R _{LL} (k)	41.8	43.0
R _T (k)	10.6	11.0
R _{Total} (k)	119.9	121.2

Note:
Due to variable girder type, spacing, and span, reactions provided are a general indication for the loads within the indicated span. Contractor shall verify loading at each shoring location. Cost included in pay item 'Temporary Shoring and Cribbing.'

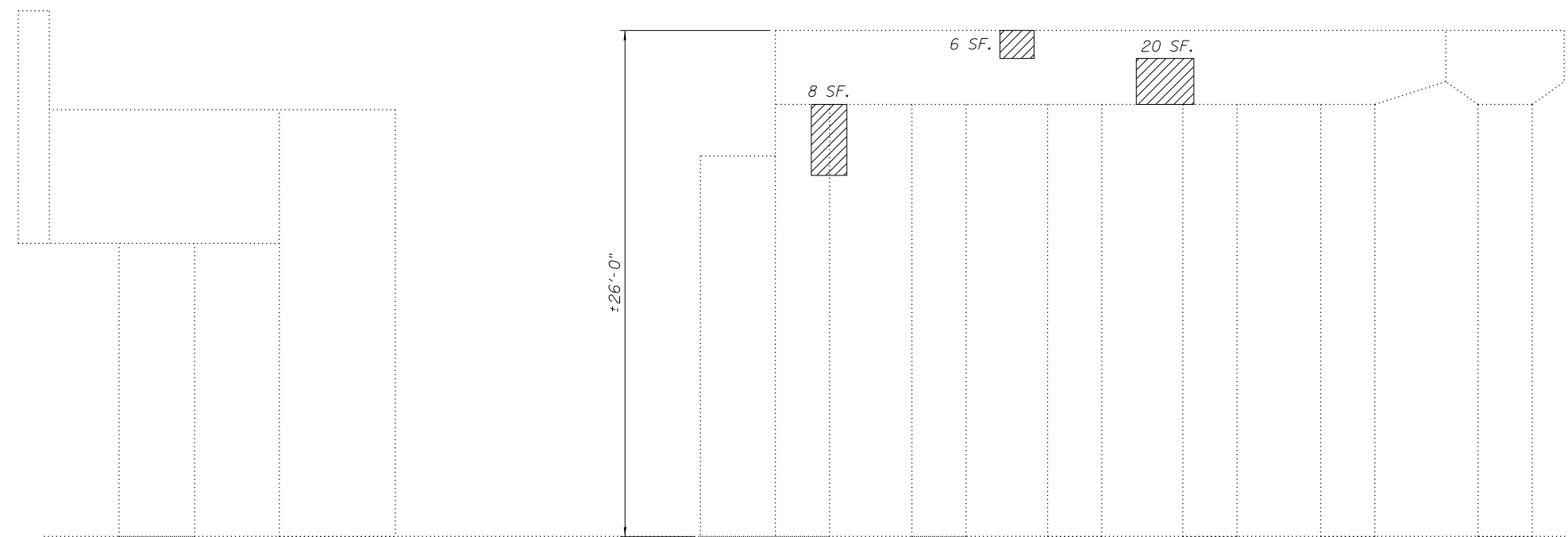
BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete, (Depth Equal To or Less Than 5")	Sq. Ft.	369
	Temporary Shoring and Cribbing	Each	10



PIER 18 SOUTH ELEVATION
(Looking North)

Note:
Beams are numbered East to West.



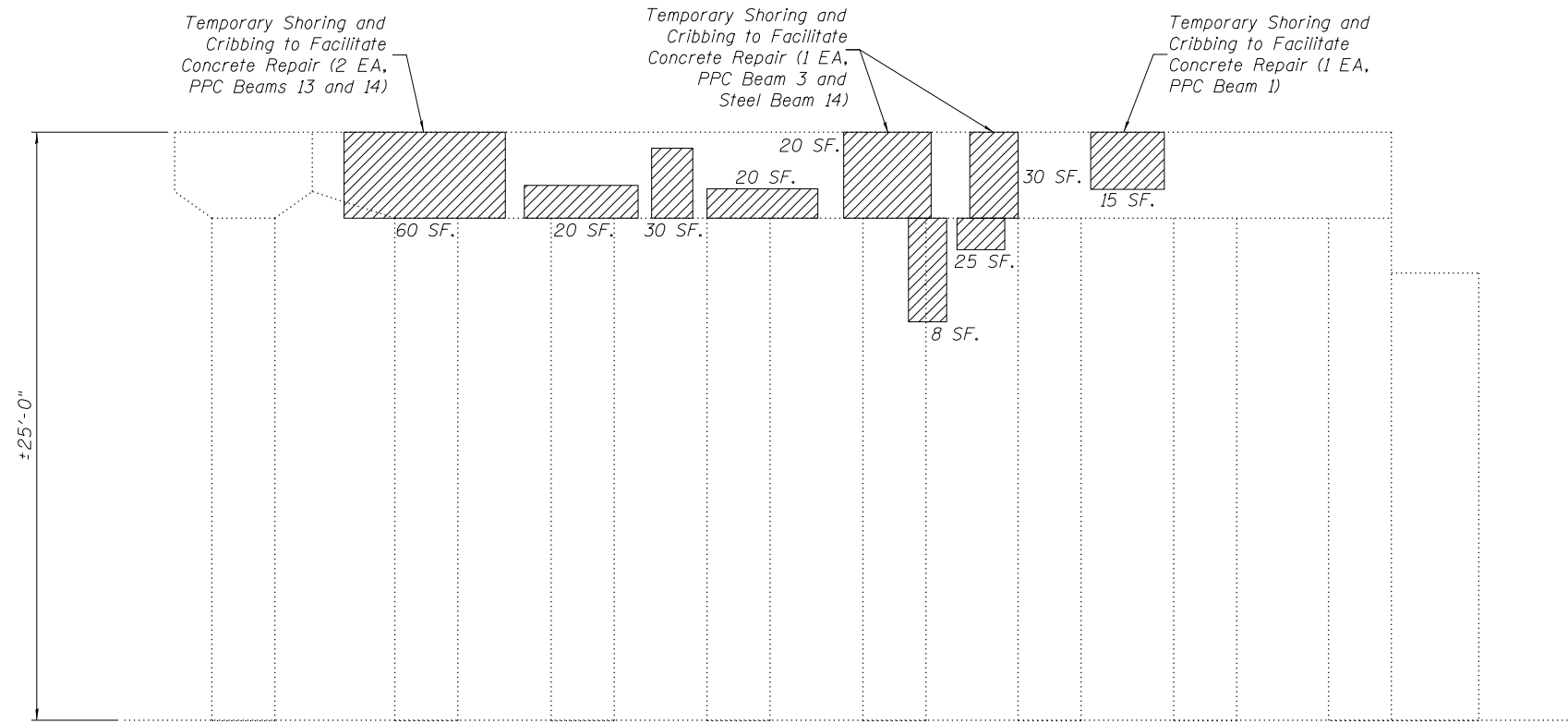
PIER 18 NORTH ELEVATION
(Looking South)

PIER 18 GIRDER REACTION TABLE		
	Span 18	Span 19
R_{DL} (k)	51.1	53.7
R_{SDL} (k)	16.1	15.4
R_{LL} (k)	43.0	37.5
R_T (k)	11.0	9.2
R_{Total} (k)	121.2	115.8

Note:
Due to variable girder type, spacing, and span, reactions provided are a general indication for the loads within the indicated span. Contractor shall verify loading at each shoring location. Cost included in pay item 'Temporary Shoring and Cribbing.'

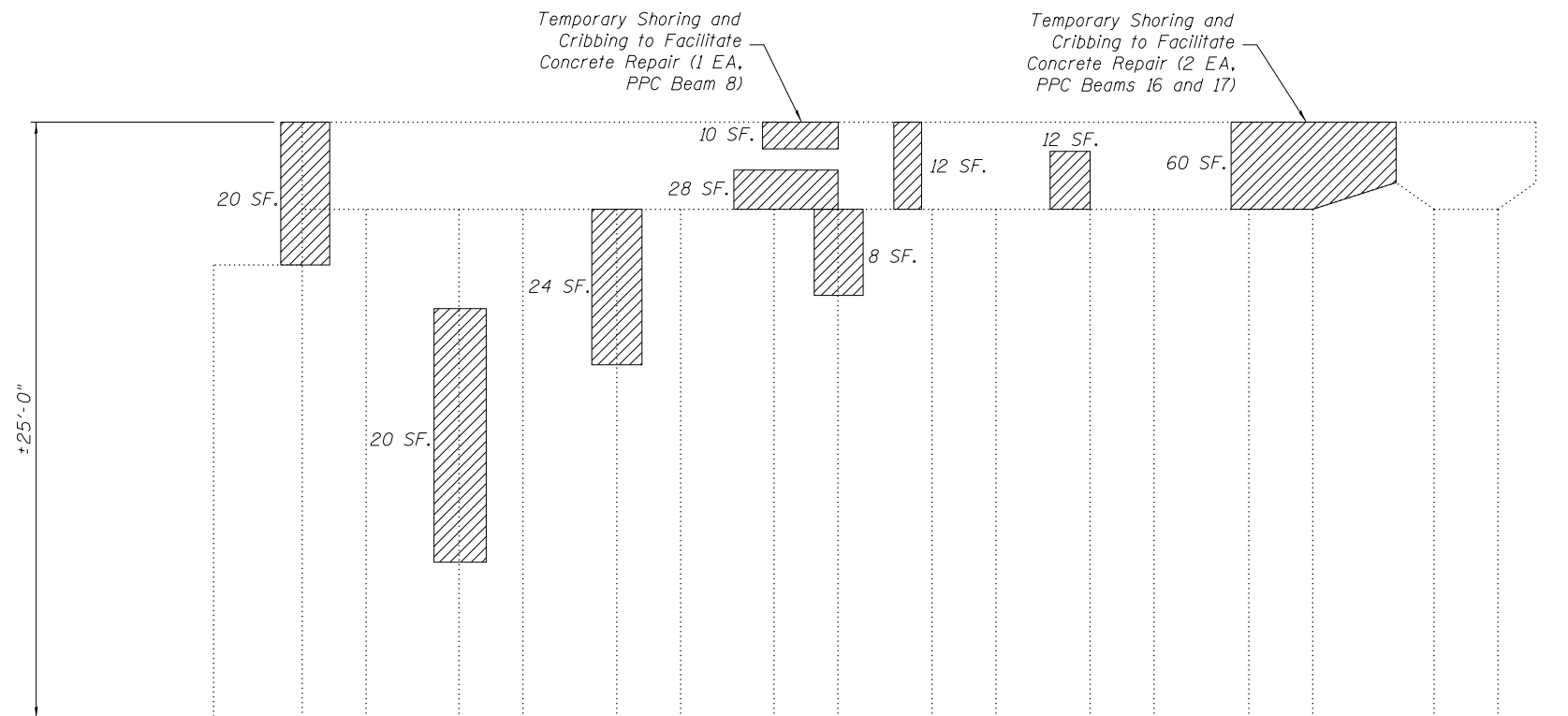
BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete, (Depth Equal To or Less Than 5")	Sq. Ft.	208
	Temporary Shoring and Cribbing	Each	6



PIER 19 SOUTH ELEVATION
(Looking North)

Note:
Beams are numbered East to West.



PIER 19 NORTH ELEVATION
(Looking South)

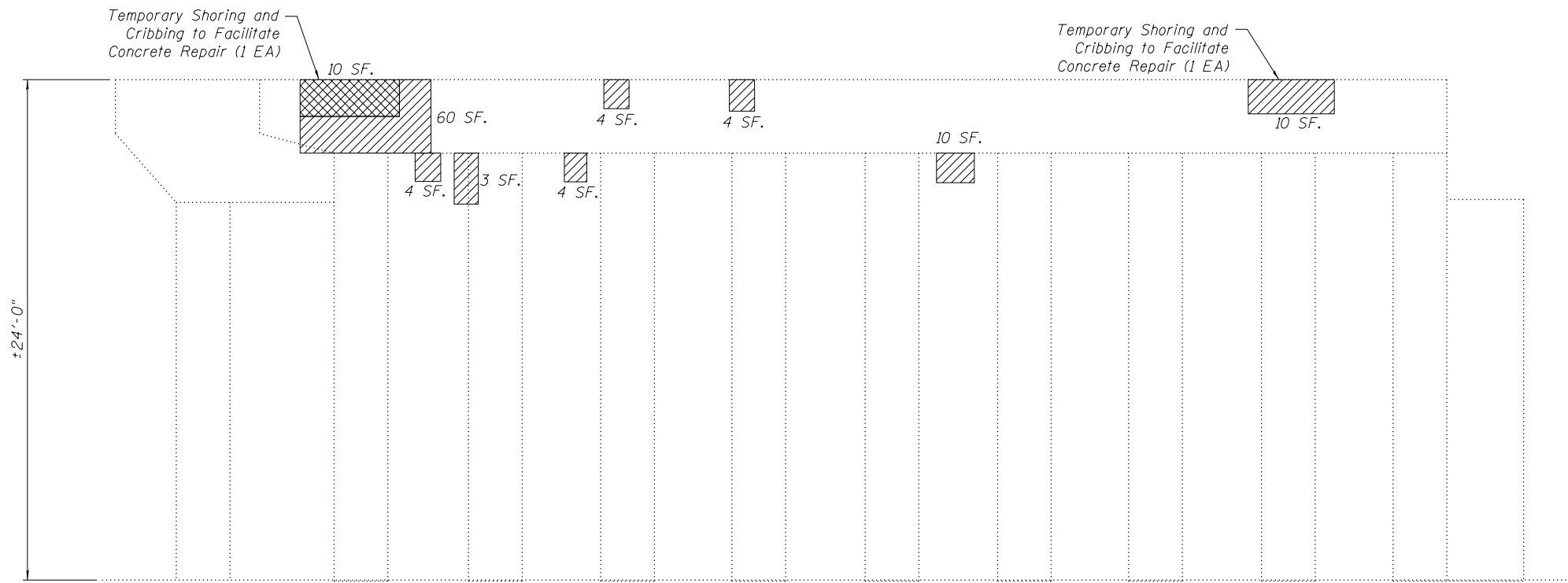
**PIER 19
GIRDER REACTION TABLE**

	Span 19	Span 20
R _{DL} (k)	53.7	42.0
R _{SDL} (k)	15.4	13.8
R _{LL} (k)	37.5	46.5
R _T (k)	9.2	13.0
R _{Total} (k)	115.8	115.3

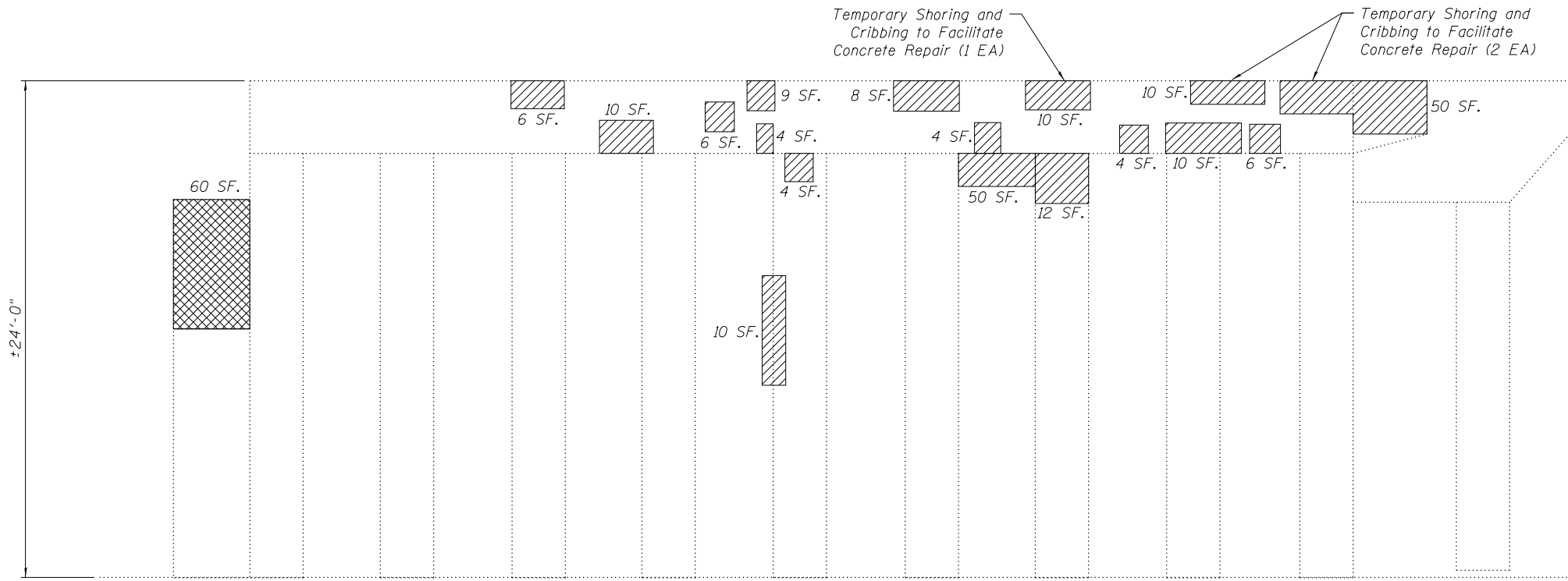
Note:
Due to variable girder type, spacing, and span, reactions provided are a general indication for the loads within the indicated span. Contractor shall verify loading at each shoring location. Cost included in pay item 'Temporary Shoring and Cribbing.'

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete, (Depth Equal To or Less Than 5")	Sq. Ft.	422
	Temporary Shoring and Cribbing	Each	8



PIER 20 SOUTH ELEVATION
(Looking North)





PIER 20 NORTH ELEVATION
(Looking South)

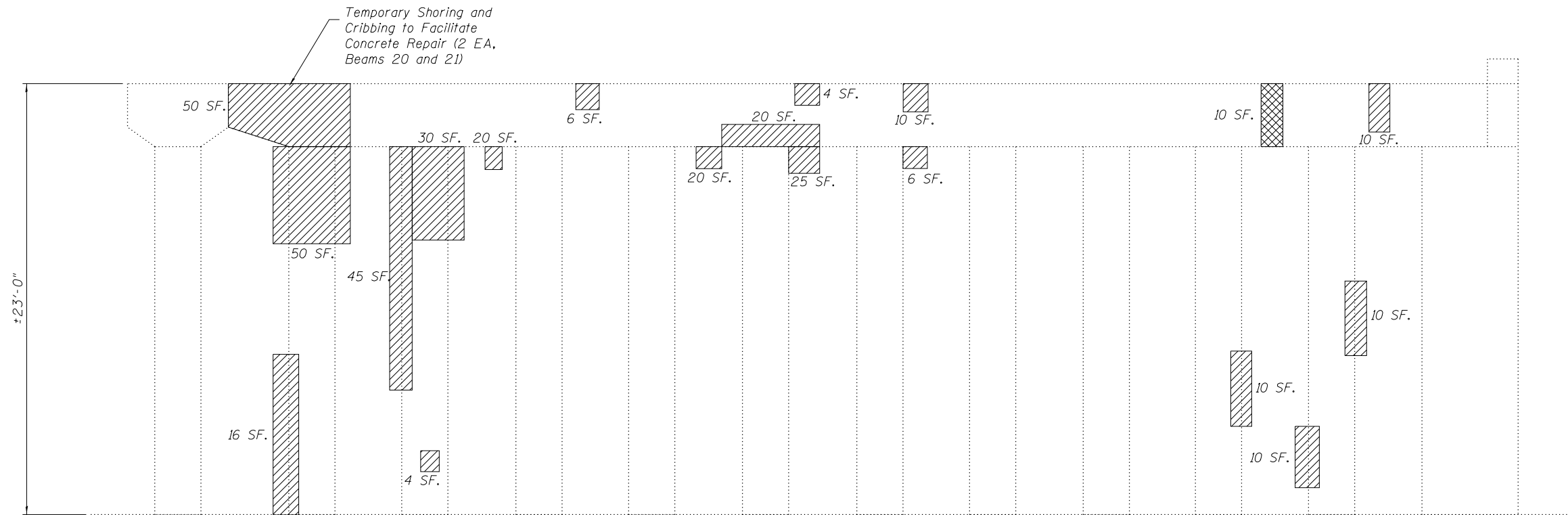
Note:
The numbers of the beams to be shored were not included in the inspection notes.

PIER 20 GIRDER REACTION TABLE			
		Span 20	Span 21
R _{DL}	(k)	42.0	45.7
R _{SDL}	(k)	13.8	14.8
R _{LL}	(k)	46.5	47.1
R _T	(k)	13.0	12.9
R _{Total}	(k)	115.3	120.5

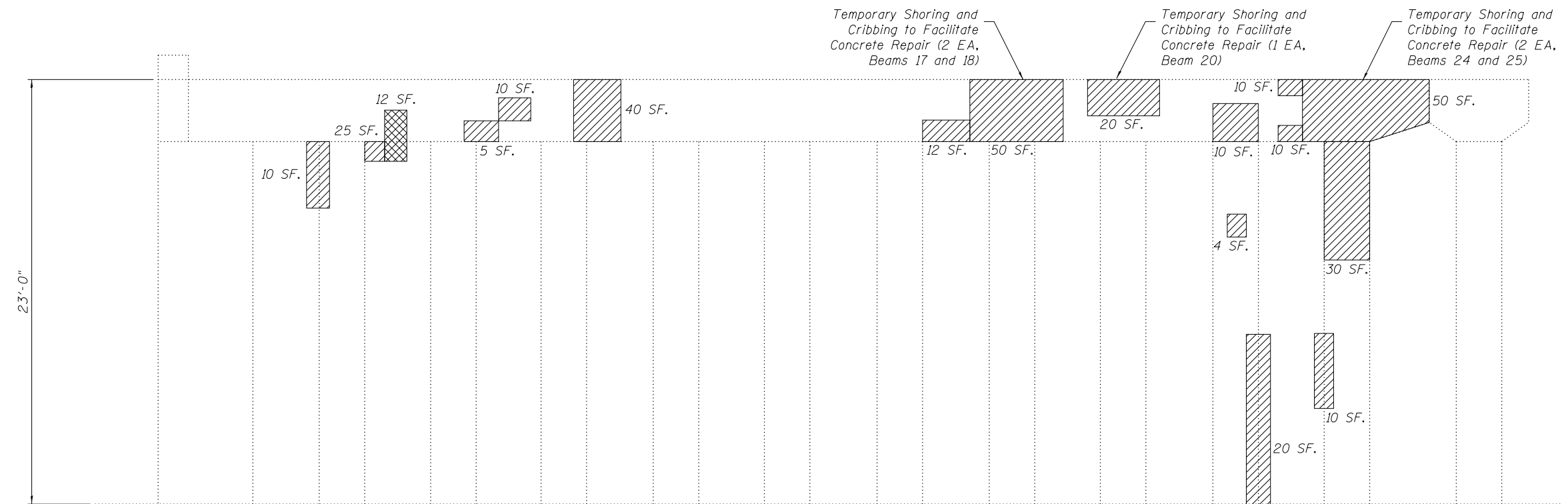
Note:
Due to variable girder type, spacing, and span, reactions provided are a general indication for the loads within the indicated span. Contractor shall verify loading at each shoring location. Cost included in pay item 'Temporary Shoring and Cribbing.'

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete, (Depth Equal To or Less Than 5")	Sq. Ft.	312
	Structural Repair of Concrete, (Depth Greater Than 5")	Sq. Ft.	70
	Temporary Shoring and Cribbing	Each	7



PIER 21 SOUTH ELEVATION
(Looking North)



PIER 21 NORTH ELEVATION
(Looking South)

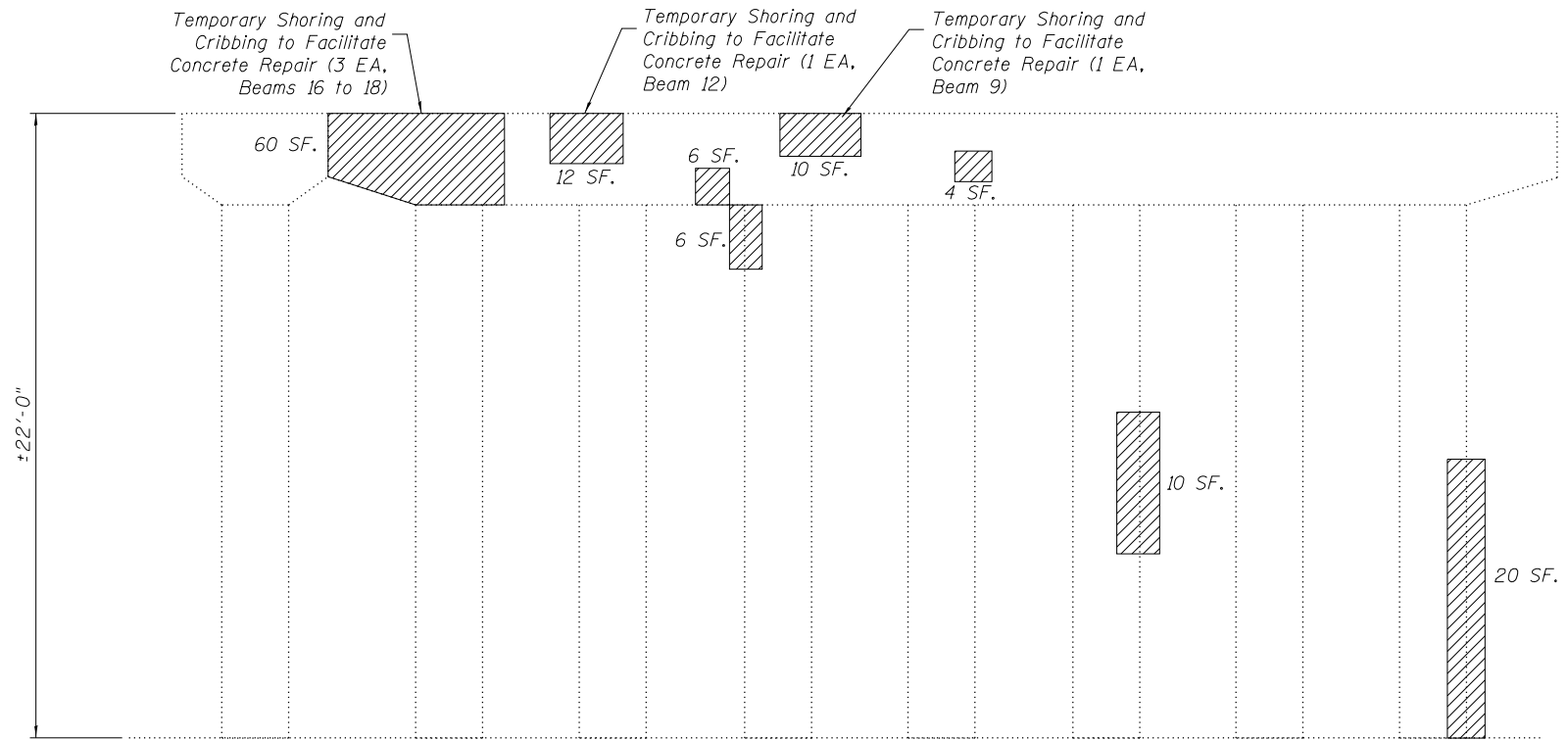
PIER 21 GIRDER REACTION TABLE

	Span 21	Span 22
R _{DL} (k)	45.7	35.8
R _{SDL} (k)	14.8	11.0
R _{LL} (k)	47.1	37.4
R _T (k)	12.9	10.6
R _{Total} (k)	120.5	94.8

Note:
Reactions provided are for the maximum girder spacing and length within the span indicated. Contractor shall verify loading at each shoring location. Cost included in pay item 'Temporary Shoring and Cribbing.'

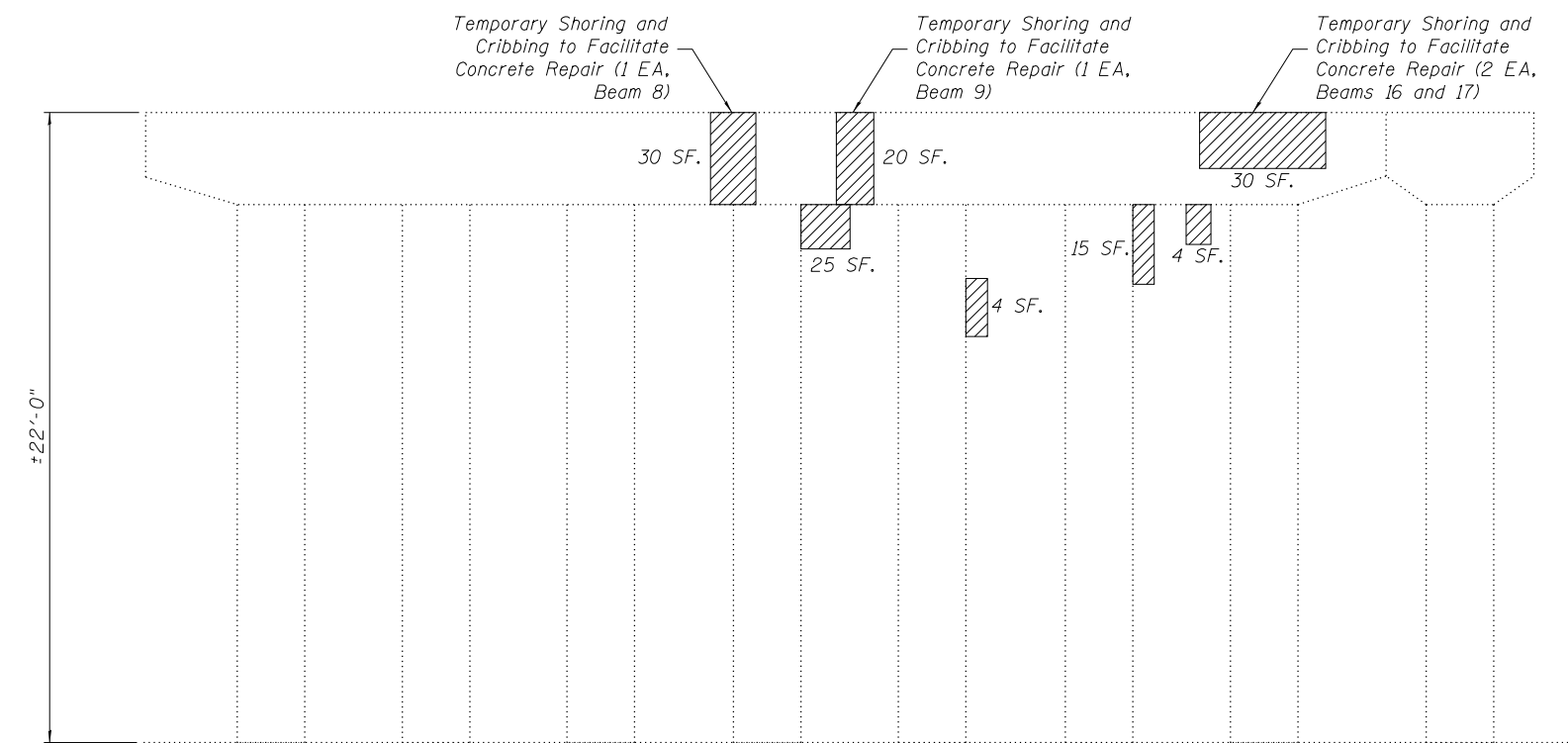
BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete, (Depth Equal To or Less Than 5")	Sq. Ft.	662
	Structural Repair of Concrete, (Depth Greater Than 5")	Sq. Ft.	22
	Temporary Shoring and Cribbing	Each	7



PIER 22 SOUTH ELEVATION
(Looking North)

Note:
Beams are numbered East to West.



PIER 22 NORTH ELEVATION
(Looking South)

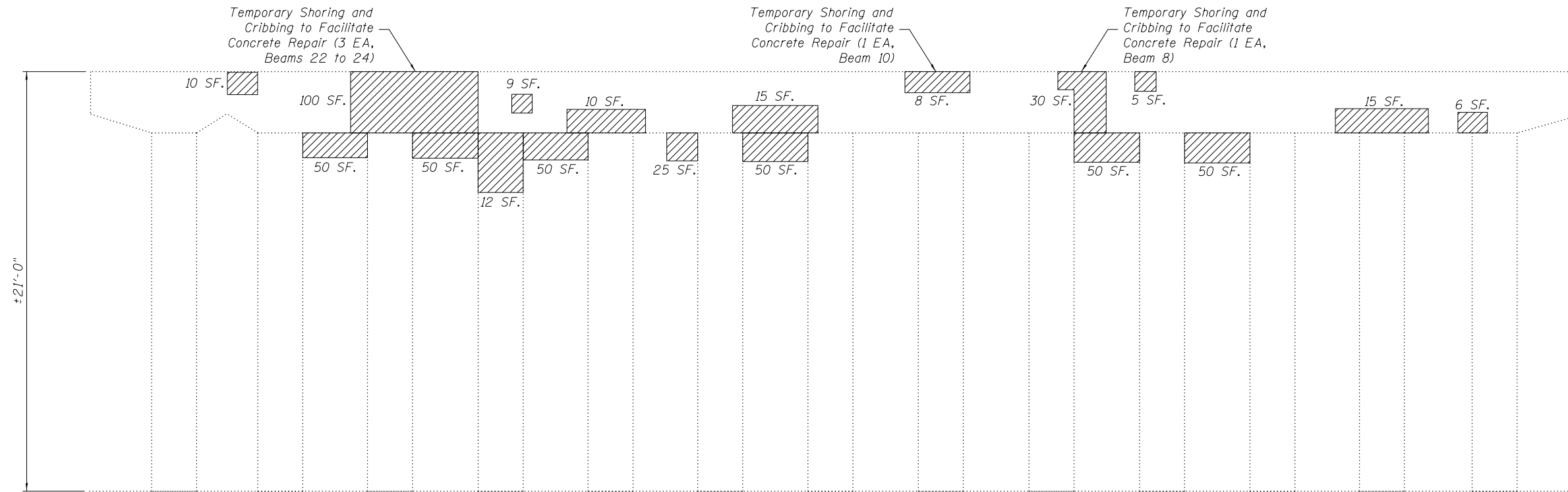
**PIER 22
GIRDER REACTION TABLE**

	Span 22	Span 23
R _{DL} (k)	35.8	56.2
R _{SDL} (k)	11.0	17.2
R _{LL} (k)	37.4	40.4
R _T (k)	10.6	9.9
R _{Total} (k)	94.8	123.7

Note:
Reactions provided are for the maximum girder spacing and length within the span indicated. Contractor shall verify loading at each shoring location. Cost included in pay item 'Temporary Shoring and Cribbing.'

BILL OF MATERIAL

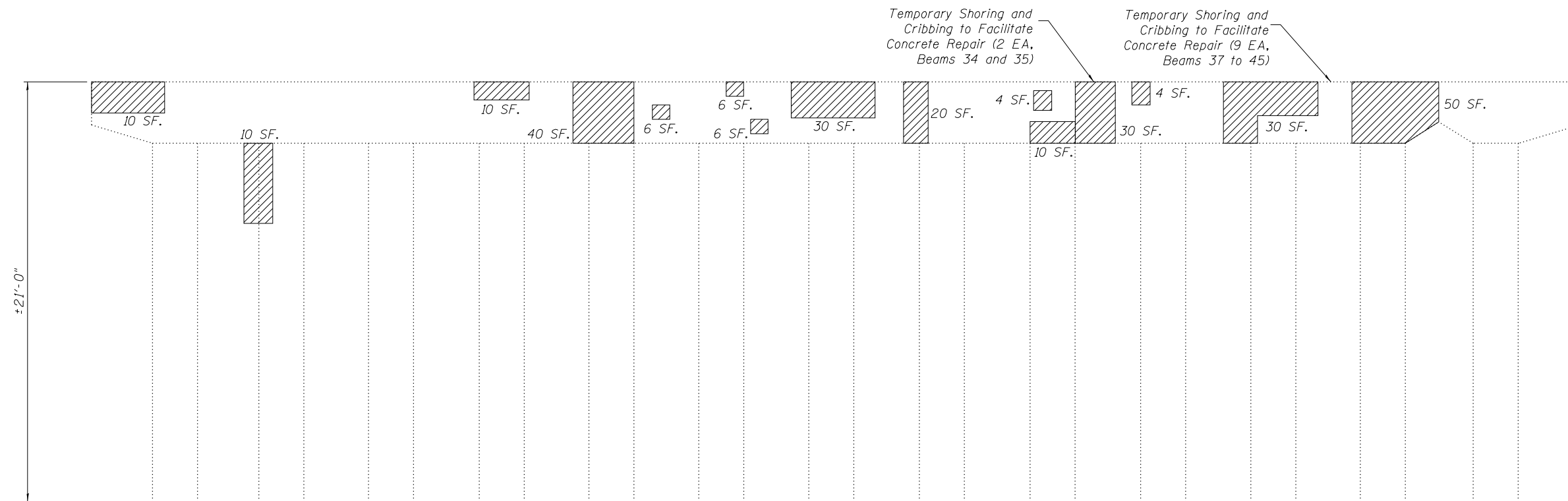
SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete, (Depth Equal To or Less Than 5")	Sq. Ft.	256
	Temporary Shoring and Cribbing	Each	9



PIER 23 SOUTH ELEVATION

(Looking North)

Note:
Beams are numbered East to West.



PIER 23 NORTH ELEVATION

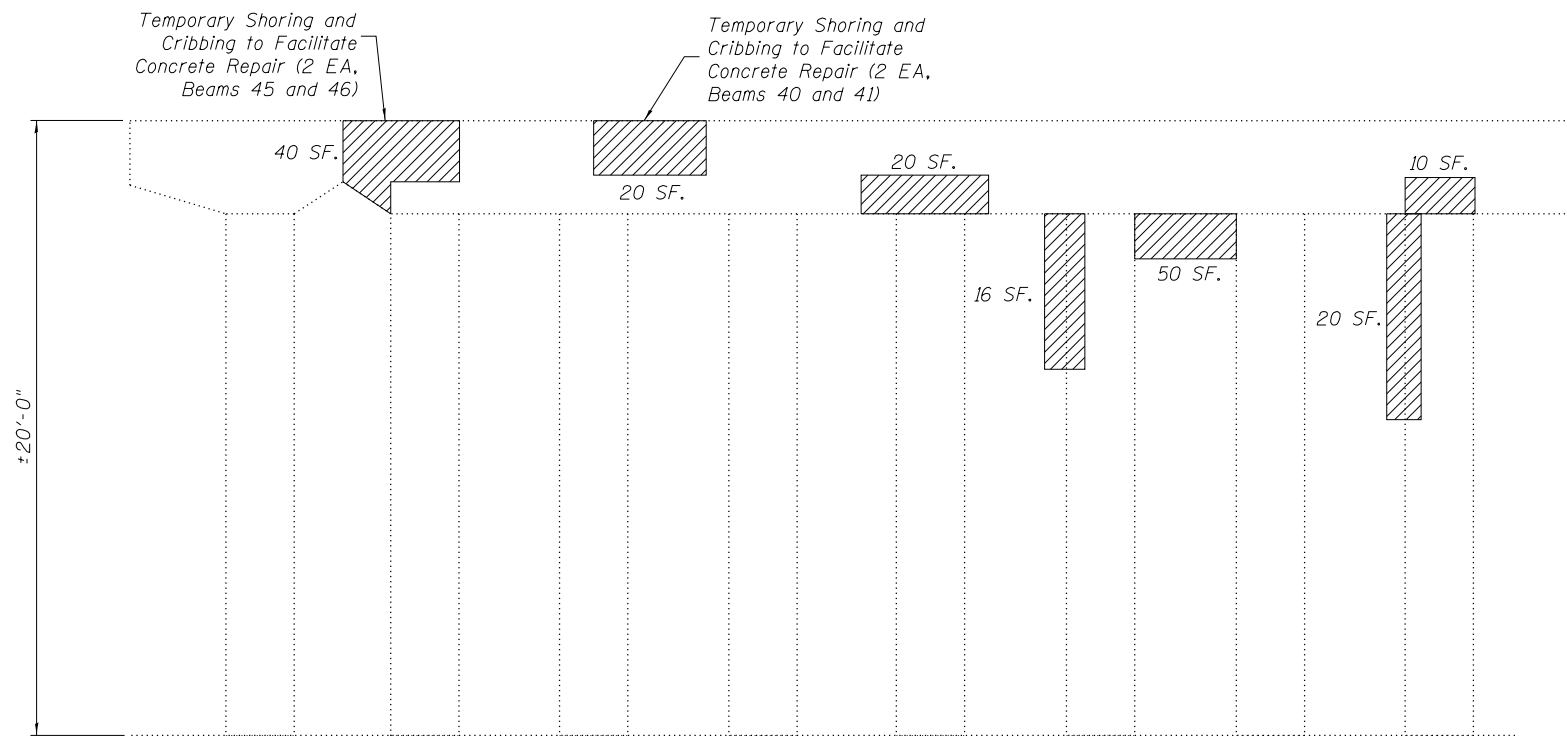
(Looking South)

PIER 23 GIRDER REACTION TABLE		
	Span 23	Span 24
R _{DL} (k)	56.2	55.0
R _{SDL} (k)	17.2	15.4
R _{LL} (k)	40.4	37.6
R _T (k)	9.9	9.1
R _{Total} (k)	123.7	117.1

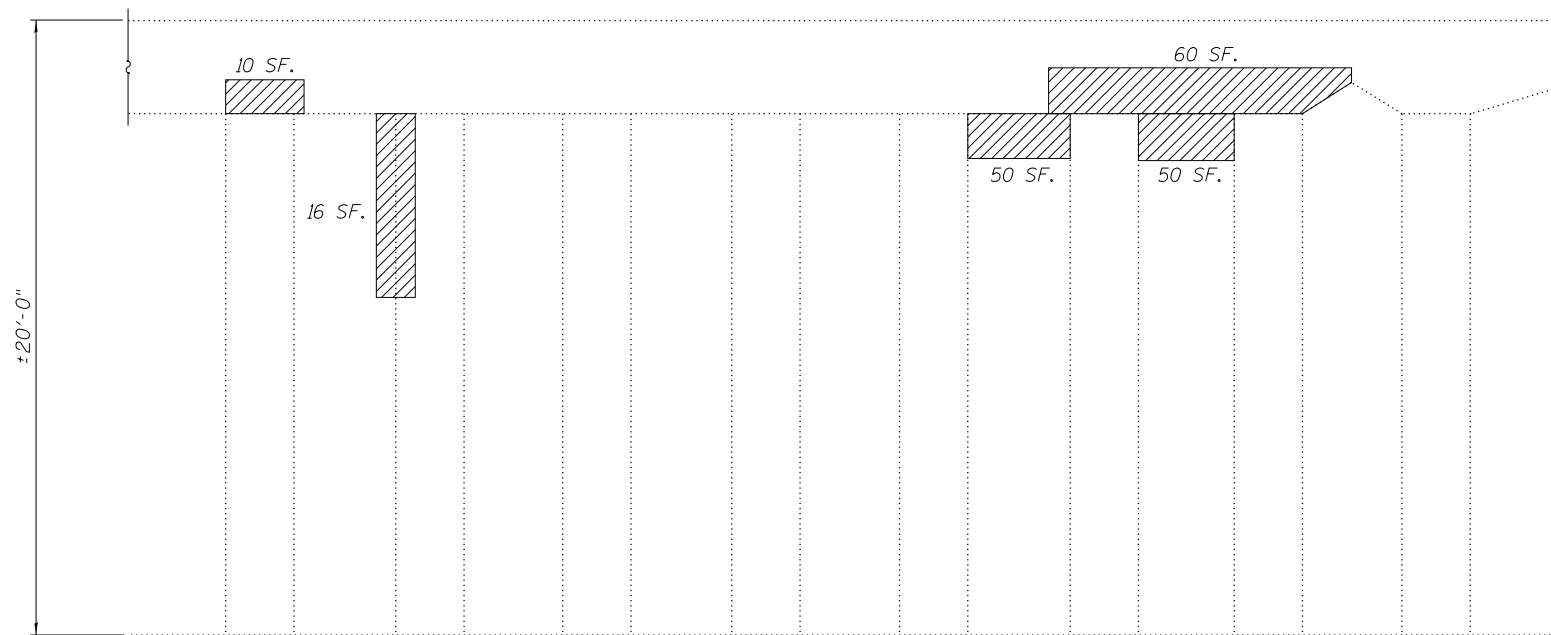
Note:
Reactions provided are for the maximum girder spacing and length within the span indicated. Contractor shall verify loading at each shoring location. Cost included in pay item 'Temporary Shoring and Cribbing.'

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete, (Depth Equal To or Less Than 5")	Sq. Ft.	811
	Temporary Shoring and Cribbing	Each	16



Note:
Beams are numbered East to West.



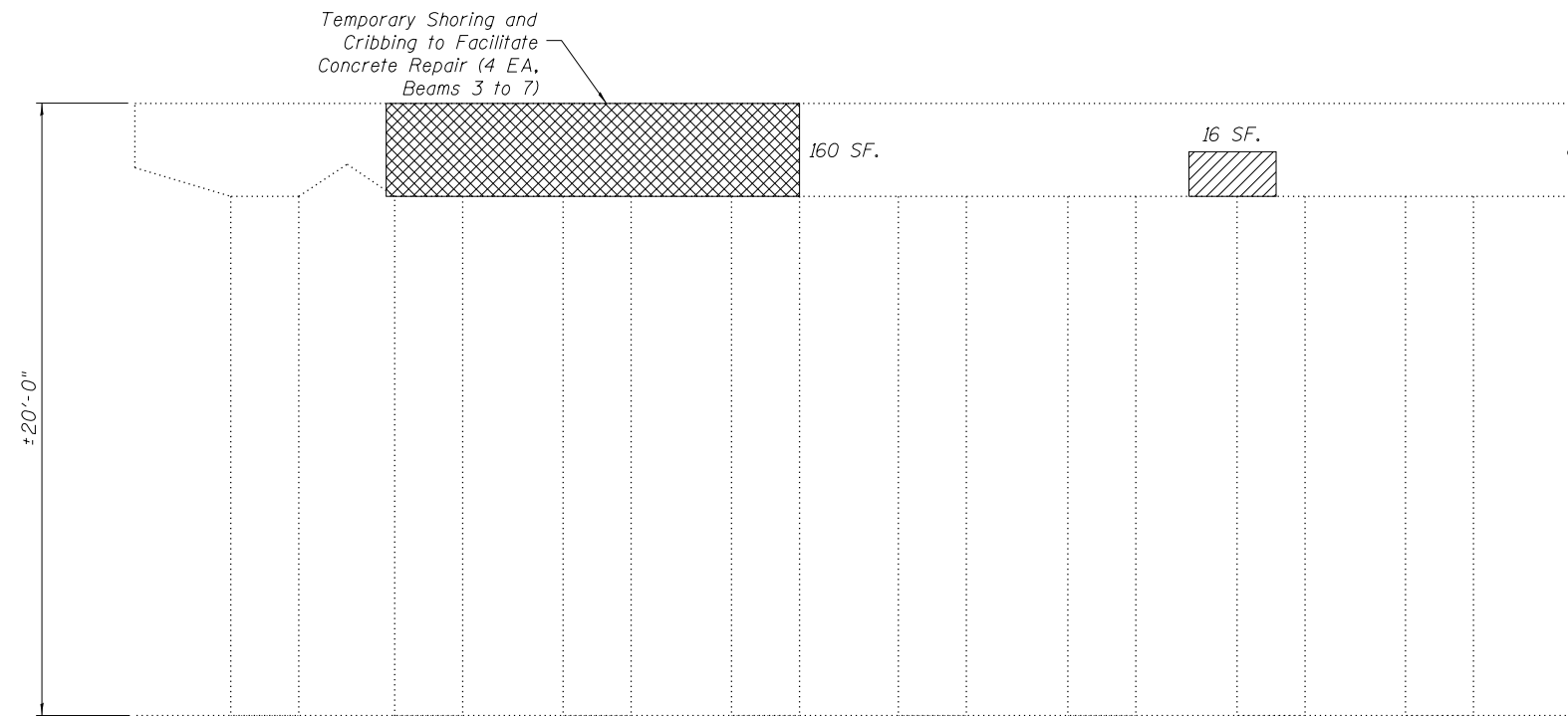
PIER 24 GIRDER REACTION TABLE		
	Span 24	Span 25
R _{DL} (k)	55.0	39.1
R _{SDL} (k)	15.4	12.8
R _{LL} (k)	37.6	46.1
R _T (k)	9.1	13.2
R _{Total} (k)	117.1	111.2

Note:
Reactions provided are for the maximum girder spacing and length within the span indicated. Contractor shall verify loading at each shoring location. Cost included in pay item 'Temporary Shoring and Cribbing.'

PIER 24 SOUTH ELEVATION
(Looking North)

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete, (Depth Equal To or Less Than 5")	Sq. Ft.	362
	Temporary Shoring and Cribbing	Each	4



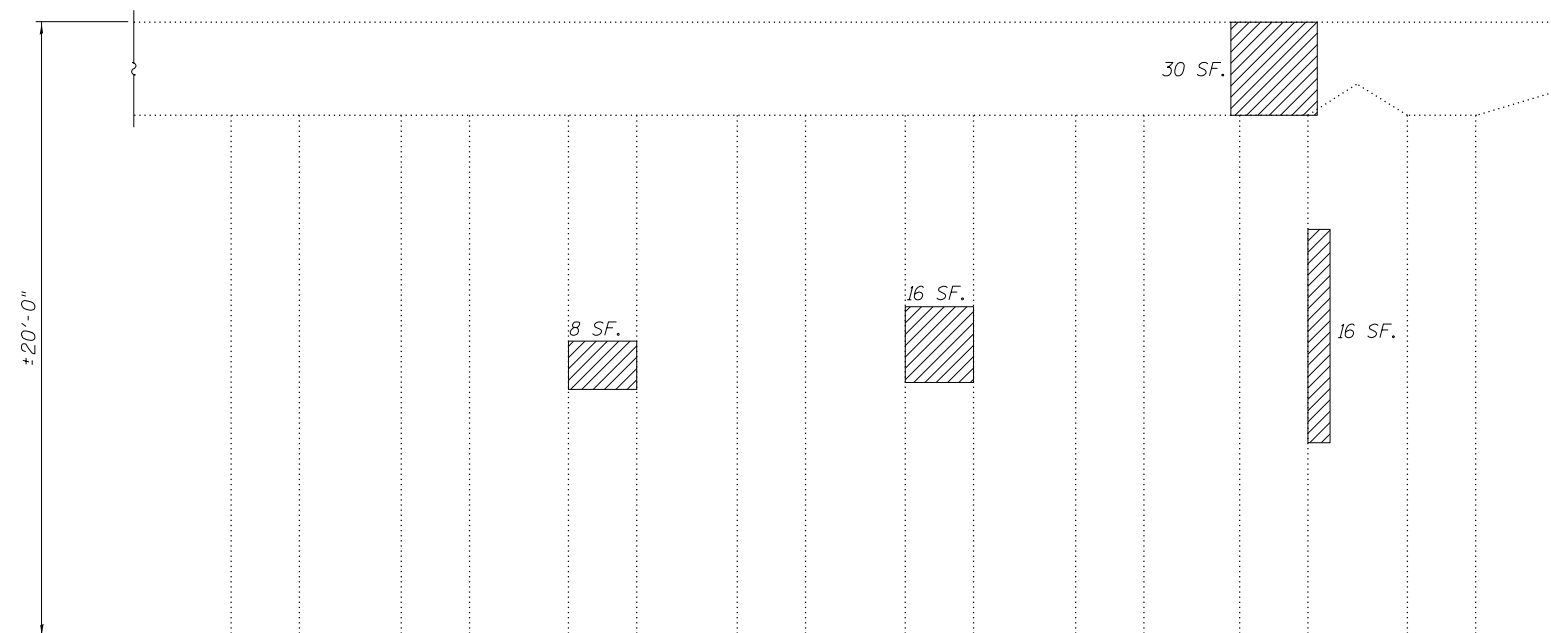
Temporary Shoring and Cribbing to Facilitate Concrete Repair (4 EA. Beams 3 to 7)

160 SF.

16 SF.

±20'-0"

Note:
Beams are numbered East to West.



30 SF.

16 SF.

16 SF.

8 SF.

±20'-0"

PIER 24 GIRDER REACTION TABLE			
		Span 24	Span 25
<i>R</i> _{DL}	(k)	55.0	39.1
<i>R</i> _{SDL}	(k)	15.4	12.8
<i>R</i> _{LL}	(k)	37.6	46.1
<i>R</i> _T	(k)	9.1	13.2
<i>R</i> _{Total}	(k)	117.1	111.2

Note:
Reactions provided are for the maximum girder spacing and length within the span indicated. Contractor shall verify loading at each shoring location. Cost included in pay item 'Temporary Shoring and Cribbing.'

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete, (Depth Equal To or Less Than 5")	Sq. Ft.	86
	Structural Repair of Concrete, (Depth Greater Than 5")	Sq. Ft.	160
	Temporary Shoring and Cribbing	Each	4

PIER 24 NORTH ELEVATION
(Looking South)

USER NAME =	DESIGNED - AMS	REVISED -
DRAWN - DR	REVISIONS -	
PLOT SCALE =	CHECKED - JMH	REVISED -
PLOT DATE =	DATE - DECEMBER 2012	REVISED -

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2012-055BR	COOK	107	95
CONTRACT NO. 60V58			ILLINOIS FED. AID PROJECT	