

11-06-2026 LETTING ITEM 039

FOR INDEX OF SHEETS, SEE SHEET NO. 2

TRAFFIC DATA

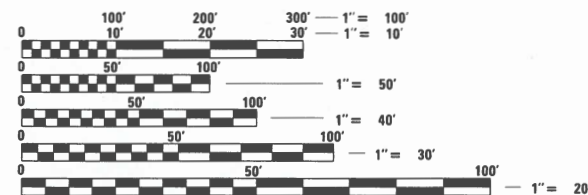
GREEN BAY ROAD: MAJOR COLLECTOR

POSTED AND DESIGN SPEED LIMIT = 30 MPH

2023 ADT = 8,500

MISCELLANEOUS (ADVANCED BEAM AND BEARING PROCUREMENT)
SECTION: 18-00039-02-BR
PROJECT: K2I3(101)
VILLAGE OF LAKE BLUFF
LAKE COUNTY
C-91-382-26

LOCATION MAP
NOT TO SCALE
R12E



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

J.U.L.I.E. DESIGN STAGE REQUEST
DIG. No. A2323097



CONTACT JULIE AT 811 OR 800-892-0123
WITH THE FOLLOWING:

COUNTY = LAKE
CITY-TOWNSHIP = LAKE BLUFF - SHIELDS
SEC. & 1/4 SEC. NO. = 20 & 21
48 HOURS (2 working days) BEFORE YOU DIG

CONTRACT NO. 61M89

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

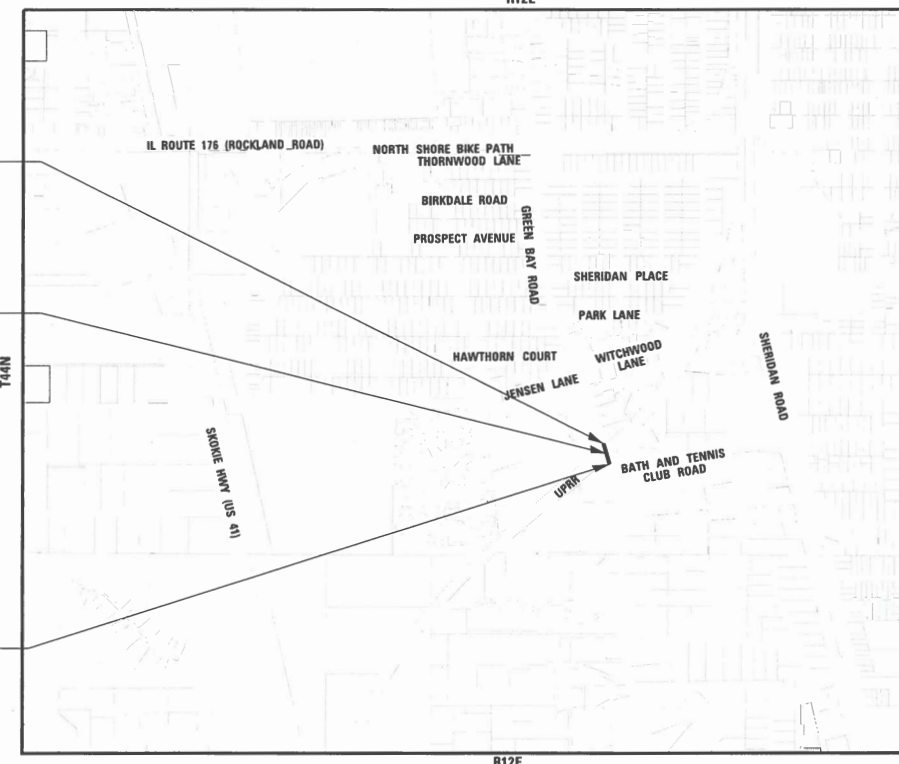
PLANS FOR PROPOSED
FEDERAL AID HIGHWAY

FAU 2711 (GREEN BAY ROAD):
OVER UNION PACIFIC RAILROAD (SN 049-6802)

END PROJECT
GREEN BAY ROAD
STA 21 + 00.50

SN 049-6802

BEGIN PROJECT
GREEN BAY ROAD
STA 19 + 27.34



GROSS LENGTH = 173.16 FT. = 0.033 MILE
NET LENGTH = 173.16 FT. = 0.033 MILE

BAXTER & WOODMAN
Consulting Engineers

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	18-00039-02-BR	LAKE	9	1
K2I3(101)		ILLINOIS	CONTRACT NO. 61M89	



Brandon Rasmussen 7/28/26
LICENSE EXPIRES 11-30-2026

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS	
APPROVED	<i>[Signature]</i> 7/27/26 VILLAGE OF LAKE BLUFF
PASSED	<i>[Signature]</i> September 4, 2026 DISTRICT 1 ENGINEER OF LOCAL ROADS AND STREETS
RELEASING FOR BID BASED ON LIMITED REVIEW	<i>[Signature]</i> September 4, 2026 REGIONAL ENGINEER

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

SUMMARY OF QUANTITIES			CONSTRUCTION CODE
			80% FED 20% LOCAL
			STRUCTURAL
			0013
CODE NO.	ITEM	UNIT	URBAN
52100110	FURNISHING ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	14
52100300	STORAGE OF ELASTOMERIC BEARING ASSEMBLIES	CAL DA	60
\$ Z0076600	TRAINEES	HOOR	500
\$ Z0076604	TRAINEES TRAINING PROGRAM GRADUATE	HOOR	500
XX009765	FURNISHING PRECAST PRESTRESSED CONCRETE BEAMS, IL27N	FOOT	1,186
XX009766	STORAGE OF PRECAST PRESTRESSED CONCRETE BEAMS	CAL DA	60

\$ INDICATES CONSTRUCTION CODE 0042 TRAINEES

INDEX OF SHEETS

- 1
- Cover
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- General Notes, Index of Sheets, and Quantities
- 3
- General Plan and Elevation
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- General Data
- 5
- Framing Plan
- 6
- IL27N Beam – Spans 1 & 3
- 7
- IL27N Beam – Span 2
- 8
- IL27N Beam Details
- 9
- Bearing Details

GENERAL NOTES

1.
- These plans are for fabrication of the precast prestressed concrete beams and elastomeric bearings. All work shown not related to the precast prestressed concrete beams and bearings is for information only and is to be included in Contract 61N09.
2.
- It is anticipated that the delivery of the precast prestressed concrete beams and bearings will be required June 15, 2027, for SN 049-6802. The delivery date shall be coordinated with the Contractor responsible for Contract 61N09.

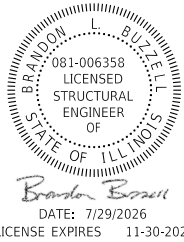
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Benchmark: Southwest flange bolt on fire hydrant on west side of Green Bay Road at Bath and Tennis Club
Road. Elev. = 711.77 (NAVD88)

Existing Structure: S.N. 049-6802 built 1988 as F.A.U. Route 2711 at Station 20+14. Structure consists of three spans consisting of precast, prestressed concrete beams and cast-in-place concrete beams supported by bent concrete abutments and wingwalls supported on four isolated cast-in-place concrete footings and multi-column piers with crash walls supported on spread footing. 173'-2" back-to-back abutments with center-to-center spans of 50'-0", 70'-0", and 50'-0" with a 0° skew. 39'-1" out-to-out deck. The structure includes two of the original steel trusses and several original steel bracket members that were incorporated into the bridge façade.

Road to be closed and traffic detoured during construction.

Original steel trusses and steel bracket members to be salvaged & delivered to a location to be designated by the Village of Lake Bluff.



I certify that to the best of my knowledge, information, and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current AASHTO LRFD Bridge Design Specifications.

DESIGN SPECIFICATIONS

NEW CONSTRUCTION

2024 AASHTO LRFD Bridge Design Specifications, 10th Edition
EXISTING CONSTRUCTION
2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition
2006 FHWA Seismic Retrofitting Manual for Highway Structures: Part 1 - Bridges (FHWA-HRT-06-032)

DESIGN STRESSES

FIELD UNITS (New Construction)

f_c = 4,000 psi (Concrete - Superstructure)
f_c = 3,500 psi (Concrete - Substructure)
f_y = 60,000 psi (Reinforcement)

PRECAST PRESTRESSED UNITS (New Construction)

f_c = 8,500 psi
f_{ci} = 6,500 psi
f_{pu} = 270,000 psi (0.6" Ø low lax. Strands)
f_{pbt} = 202,300 psi (0.6" Ø low lax. Strands)

FIELD UNITS (Existing Construction, 1988)

f_c = 3,500 psi (Substructure)
f_y = 60,000 psi (Reinforcement)
f_y = 36,000 psi (Structural Steel)
f_b = 1,400 psi (Timber)
Allowable Soil Bearing Pressure = 8,000 psf

SEISMIC DATA

Seismic Retrofit Category (SRC) = A
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.091g
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.11g
Soil Site Class = D
Performance Level (PL) = PL1

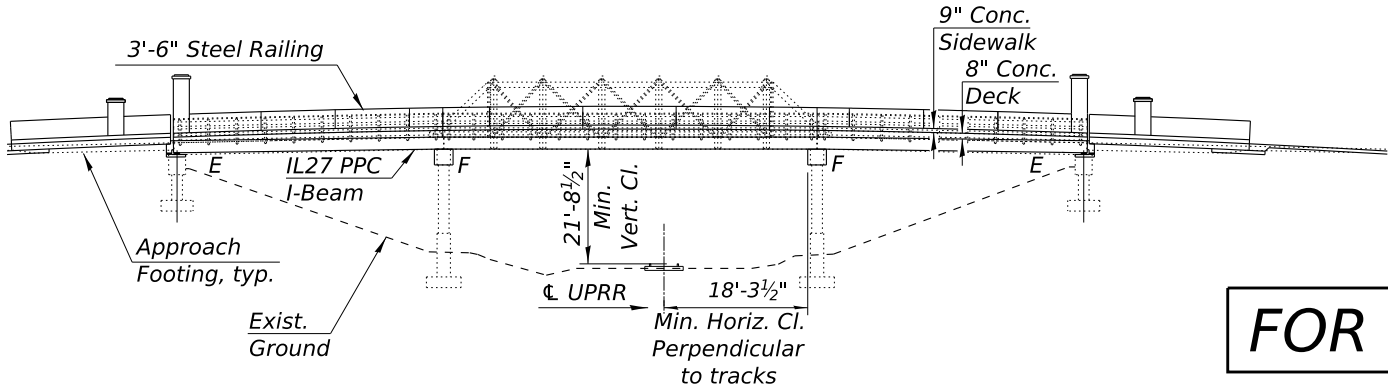
LOADING HL-93

Allow 50#/sq. ft. for future wearing surface.

SCOPE OF WORK

1. Remove existing superstructure and salvage the original steel trusses and steel bracket members and deliver to the Village of Lake Bluff.
2. Extend and modify existing abutments to semi-integral configurations and construct wingwalls.
3. Extend pier cap and reconstruct bearing seats at piers.
4. Construct new bearings and superstructure consisting of PPC IL-Beam and concrete deck slab.
5. Install steel railings and decorative concrete barrier walls.
6. Construct new approach slabs with concrete barrier walls.
7. Repair abutments and piers with formed concrete repairs and epoxy crack sealing.
8. Repair existing slopewalls.

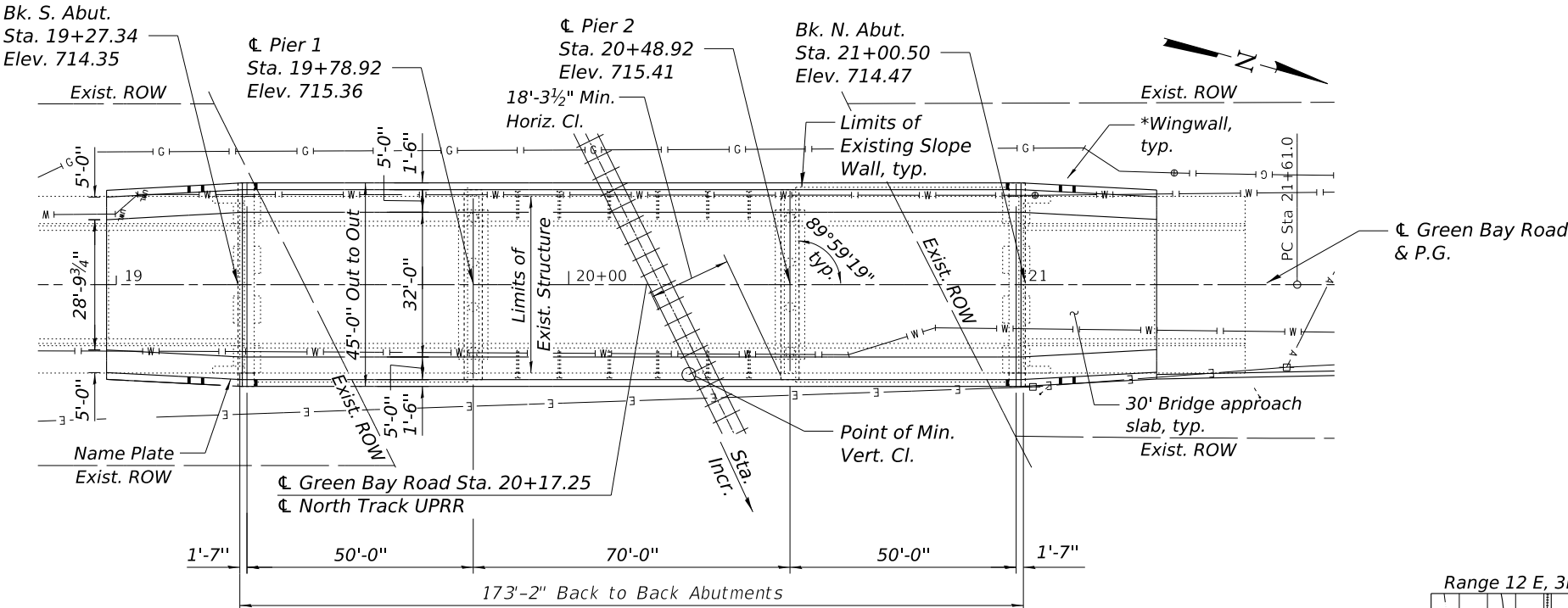
GENERAL PLAN AND ELEVATION
GREEN BAY ROAD OVER UNION PACIFIC RAILROAD
FAU RTE 2711
STA. 20+14.00
SECTION 18-00039-01-BR
LAKE COUNTY
STRUCTURE NO. 049-6802



FOR INFORMATION ONLY

ELEVATION

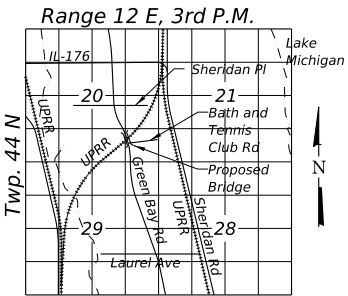
No free fall deck drains will be permitted in the span over tracks.



PLAN

HIGHWAY CLASSIFICATION

Green Bay Road - F.A.U. Rte. 2711
Functional Class: Major Collector
ADT: 8,500 (2023)
ADTT: 1.2% (2023)
DHV: 0%
Design Speed: 30 m.p.h.
Posted Speed: 30 m.p.h.
Two-Way Traffic
Directional Distribution: 50/50



LOCATION SKETCH

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Consulting Engineers

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PLOT DATE = 7/29/2026	DRAWN - SMA	REVISED -
	CHECKED - MGH	REVISED -

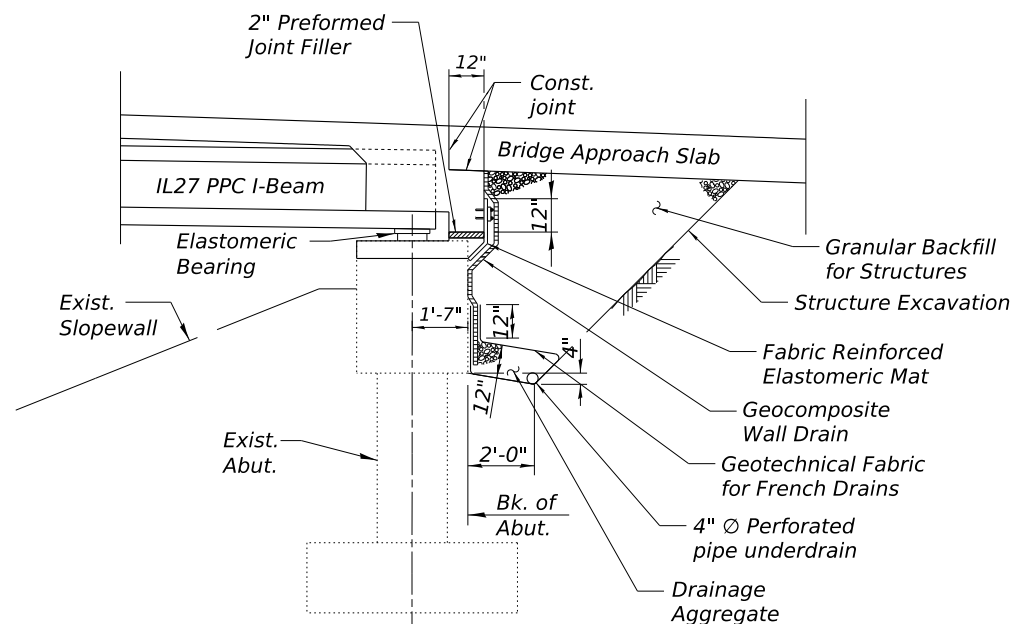
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE NO. 049-6802

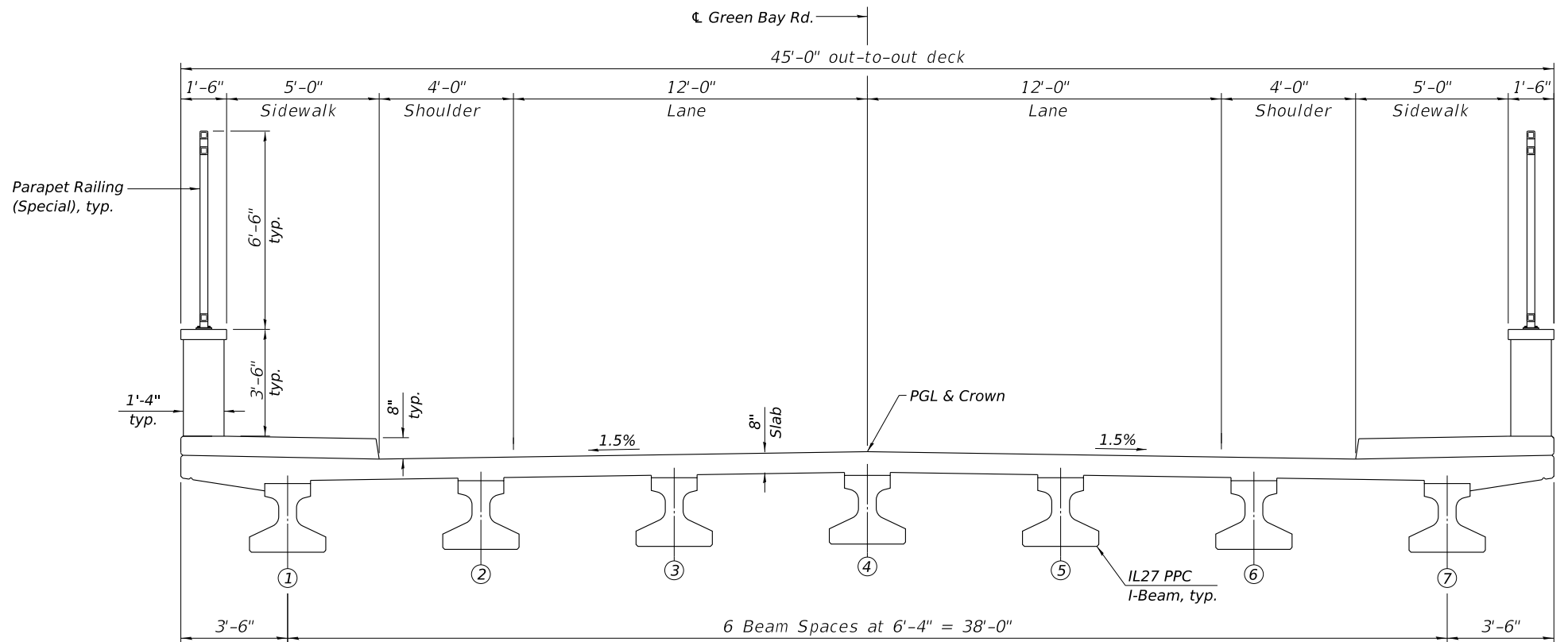
SHEET 1 OF 2 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	18-00039-02-BR	LAKE	9	3
CONTRACT NO. 61M89				
ILLINOIS FED. AID PROJECT K213(101)				

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SECTION THRU SEMI-INTEGRAL ABUTMENT



CROSS SECTION
(Looking North)

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Consulting Engineers

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	CHECKED - BLB	REVISED -
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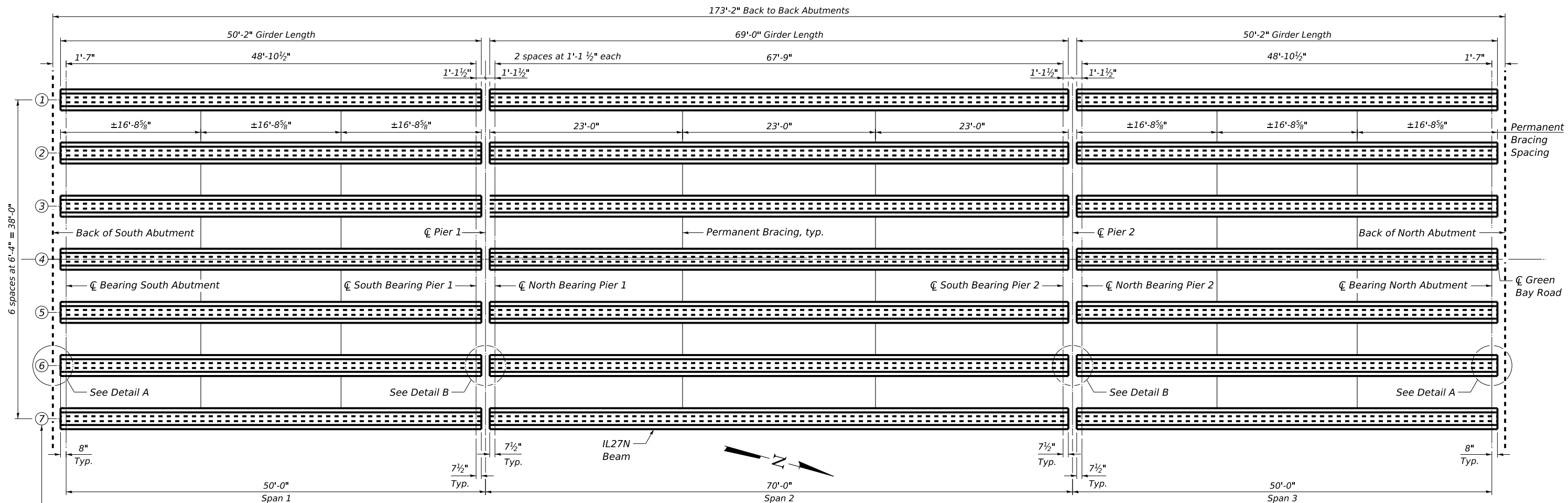
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL DATA
STRUCTURE NO. 049-6802

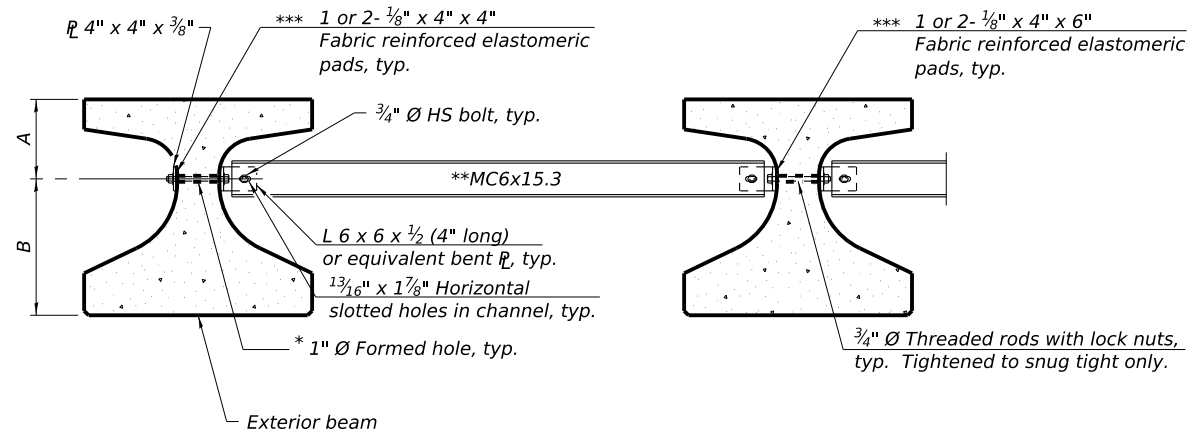
SHEET 2 OF 2 SHEETS

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CONTRACT NO. 61M89				
ILLINOIS FED. AID PROJECT K213(101)				

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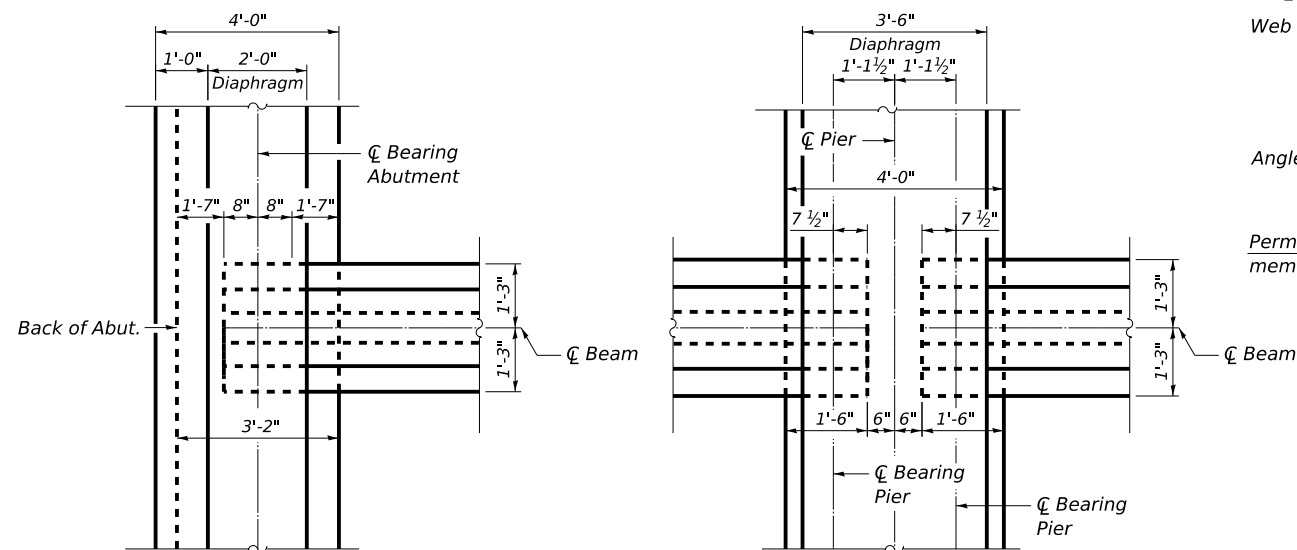
FRAMING PLAN



Notes:
All material for bracing shall be hot dip galvanized according to AASHTO M111 unless otherwise noted.
Two hardened washers are required for each set of oversized holes.
All holes shall be $\frac{15}{16}$ " $\varnothing$ unless otherwise noted.
 $\frac{5}{16}$ " x 3" x 3" plate washers are required over all slotted holes.
All bolts, threaded rods, and hardware shall be galvanized according to AASHTO M232.
Threaded rods shall be ASTM F 1554 Grade 55.
Bracing shall be installed as beams are erected and tightened as soon as possible during erection.
Permanent bracing shall not be paid for separately, but shall be included in the cost of Furnishing Precast Prestressed Concrete Beams.

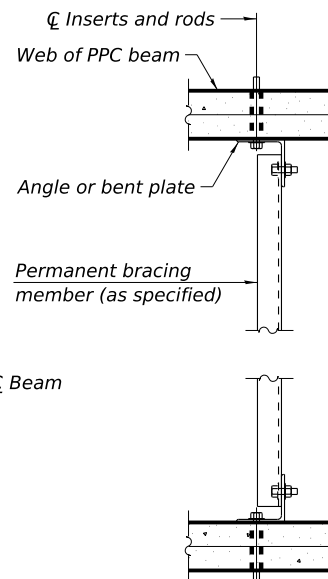
- * Fabricator shall locate to miss strands within permissible tolerances.
- ** Alternate MC6x18 channels are permitted to facilitate material acquisition.
- *** Place pads as necessary to provide a flat mounting surface between the steel and concrete.

Beam	A	B
IL27	11 $\frac{1}{4}$ "	1'-3 $\frac{3}{4}$ "
IL36	1'-1 $\frac{1}{4}$ "	1'-10 $\frac{3}{4}$ "



DETAIL A
(North Abutment is Opposite Hand)

DETAIL B



PLAN

(When 90° bracing is specified)

PERMANENT BRACING DETAILS FOR
IL27 AND IL36 BEAMS

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Consulting Engineers

USER NAME =	DESIGNED -	REVISED -
PLOT SCALE =	CHECKED -	REVISED -
PLOT DATE =	DRAWN -	REVISED -
	CHECKED -	REVISED -

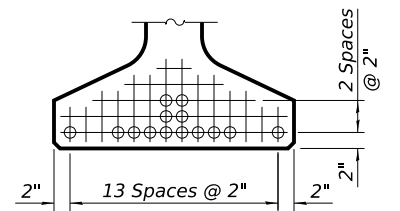
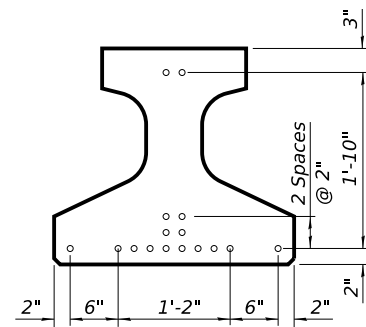
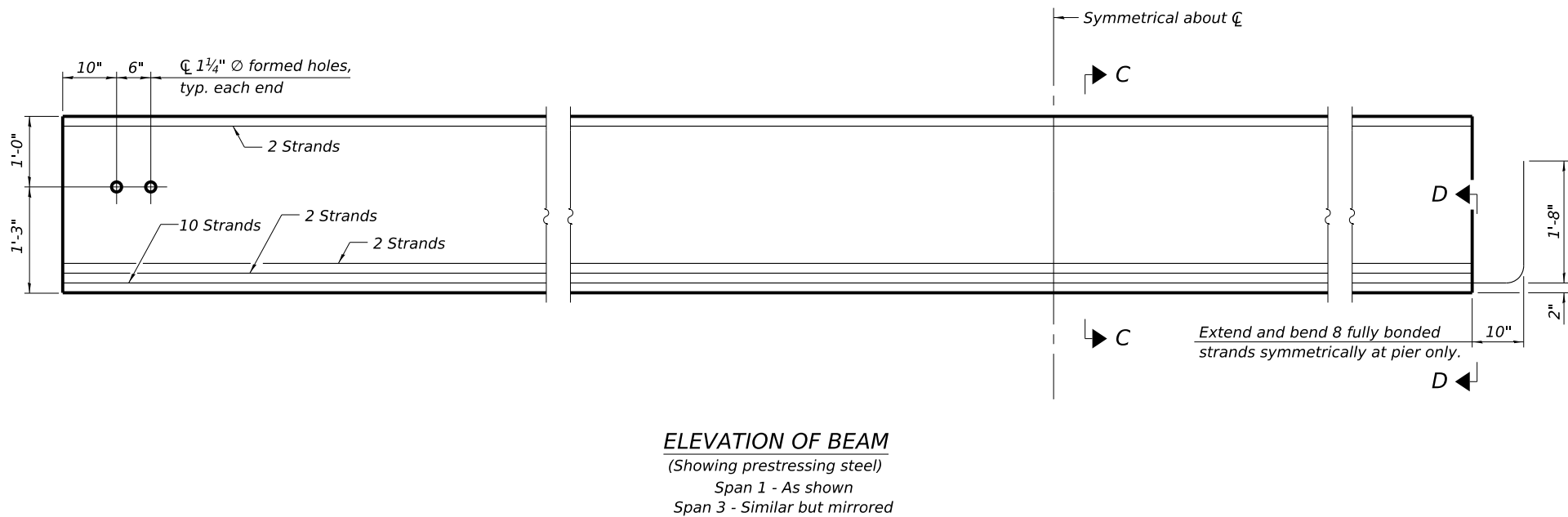
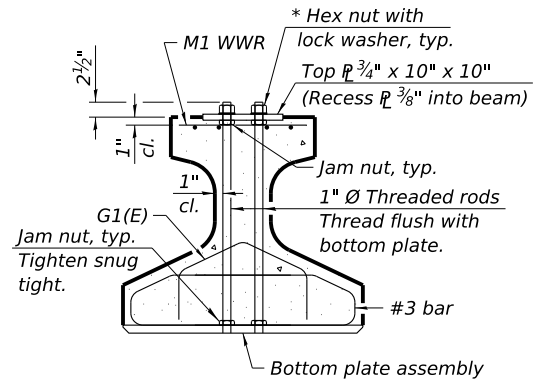
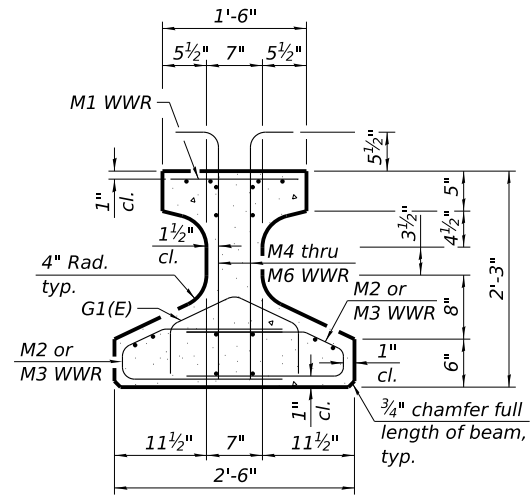
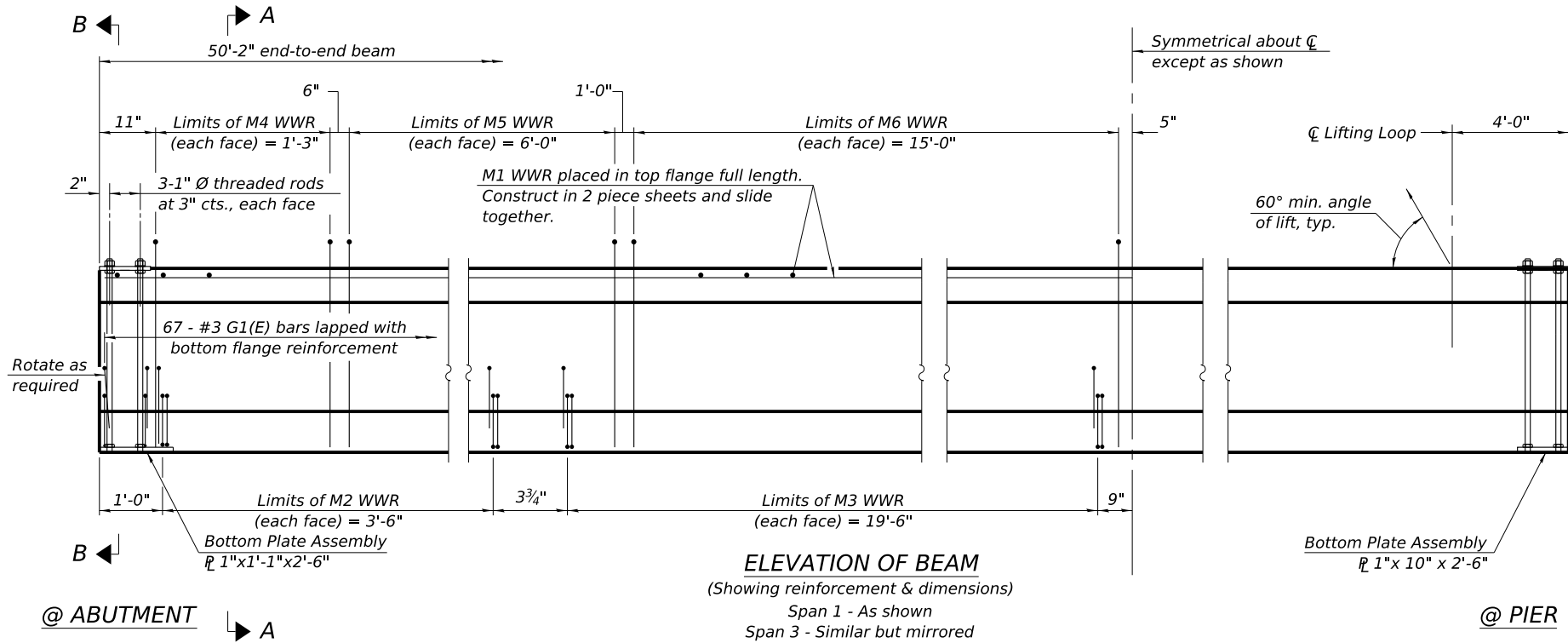
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN
STRUCTURE NO. 049-6802

SHEET 1 OF 1 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	18-00039-02-BR	LAKE	9	5
CONTRACT NO. 61M89				
ILLINOIS FED. AID PROJECT K213(101)				

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Note:
See sheet S06 of S07 for additional details and Bill of Material.

IL27-1830

5-15-2023

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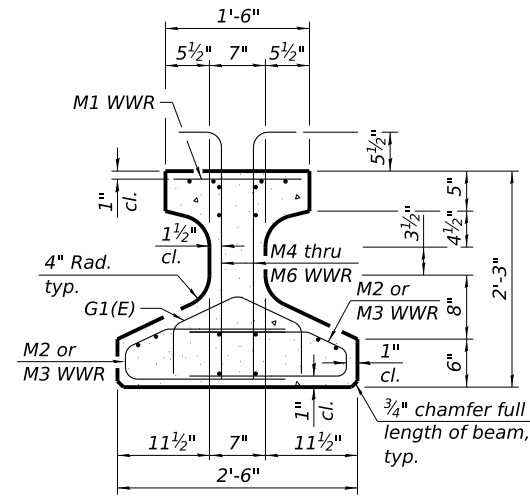
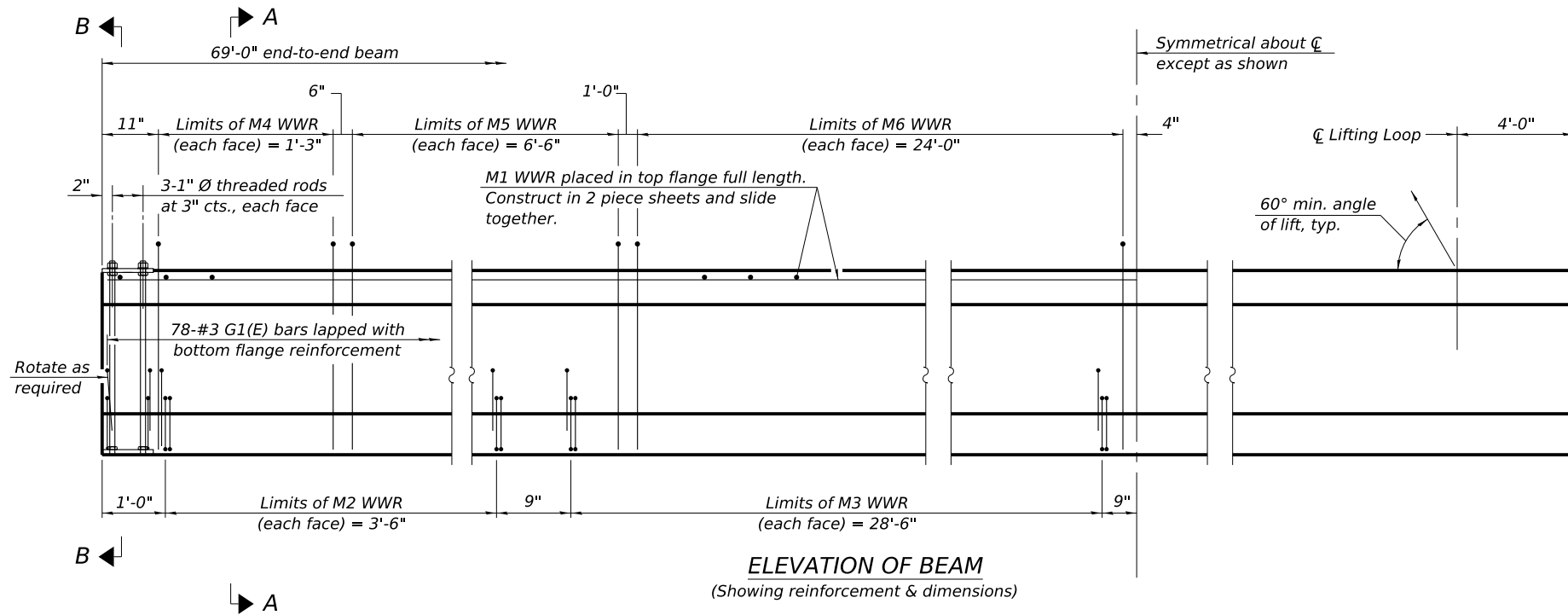
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL27N BEAM - SPANS 1&3
STRUCTURE NO. 049-6802

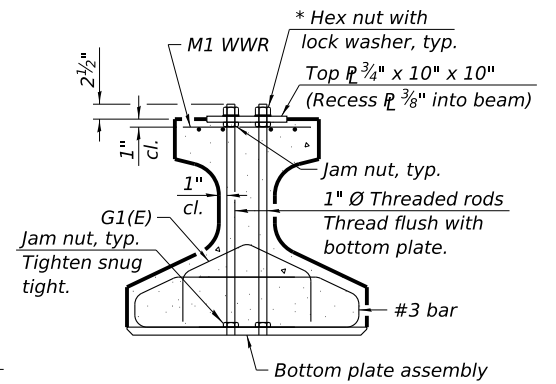
SHEET 1 OF 1 SHEETS

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2711	18-00039-02-BR	LAKE	9	6
CONTRACT NO. 61M89				
ILLINOIS FED. AID PROJECT K213(101)				

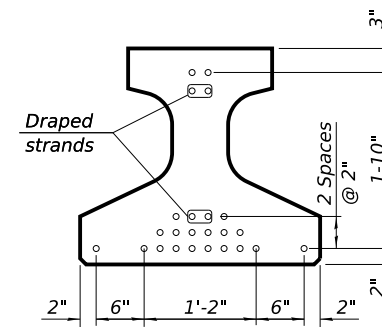
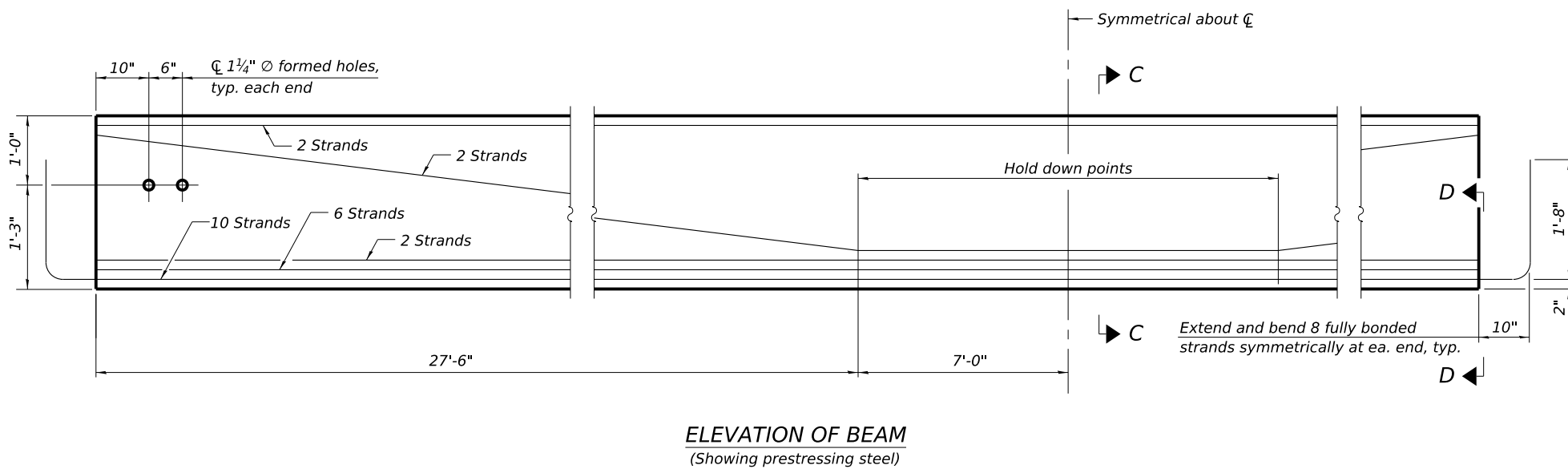
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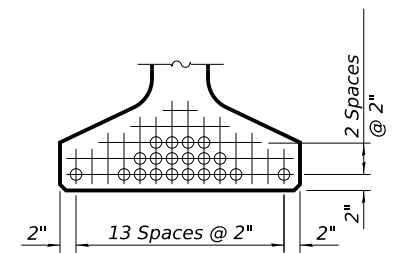
SECTION A-A



SECTION B-B
* Only tighten sufficiently to compress lock washers



SECTION C-C
(22-0.6" Ø 270 ksi strands)



VIEW D-D
○ Fully bonded strand

Note:
See sheet S06 of S07 for additional details and Bill of Material.

IL27-1830

5-15-2023

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Consulting Engineers

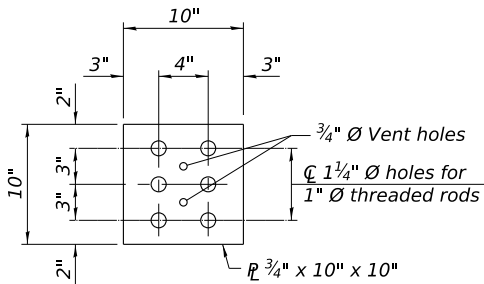
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

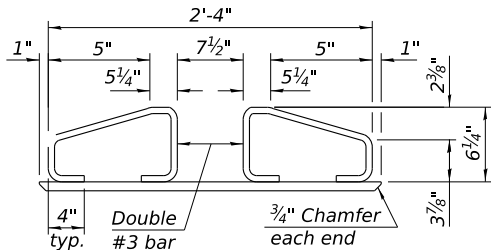
IL27N BEAM - SPAN 2
STRUCTURE NO. 049-6802

SHEET 1 OF 1 SHEETS

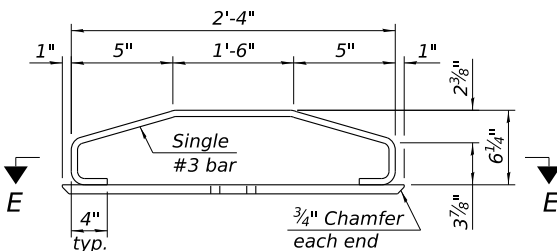
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2711	18-00039-02-BR	LAKE	9	7
CONTRACT NO. 61M89				
ILLINOIS FED. AID PROJECT K213(101)				



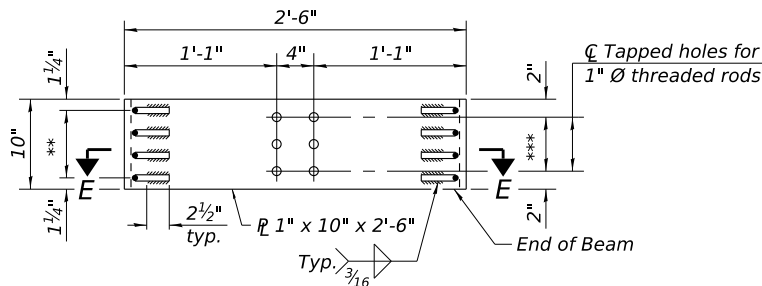
PLAN - TOP PLATE



SECTION E-E

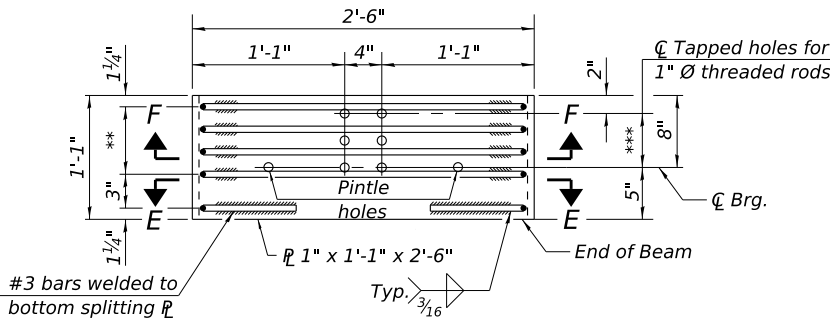


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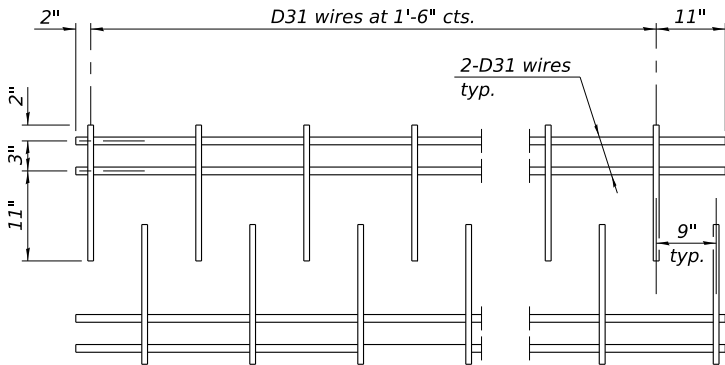


BOTTOM PLATE ASSEMBLY
@ PIER

** 3 Spa. at 2 1/2" = 7 1/2"
*** 2 Spa. at 3" = 6"

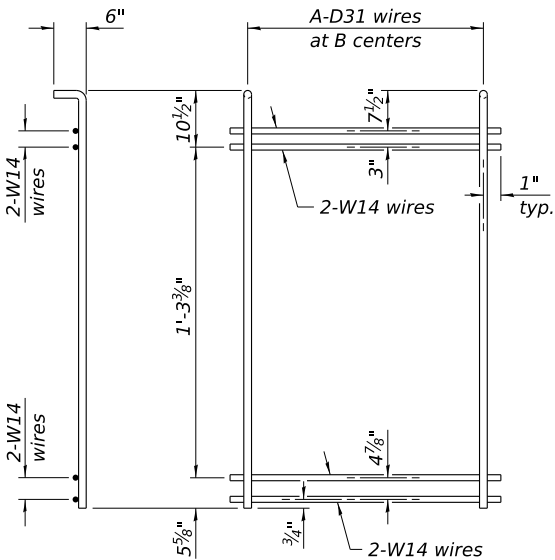


BOTTOM PLATE ASSEMBLY
@ ABUTMENT



M1 WWR DETAIL

When multiple sheets of M1 WWR are required along the beam length, #5(E) bars (5'-0" long) shall be used to splice the longitudinal D31 wires together (Min. Lap 2'-4").



M4 THRU M6 WWR DETAIL
(See Table of Dimensions)

TABLE OF DIMENSIONS

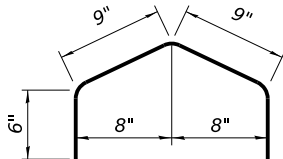
(The WWR designs assume grade 60. If necessary, this permits the fabricator to directly substitute grade 60 rebar as detailed in the Manual for Fabrication of Precast Prestressed Concrete Products.)

SPAN 1 & 3

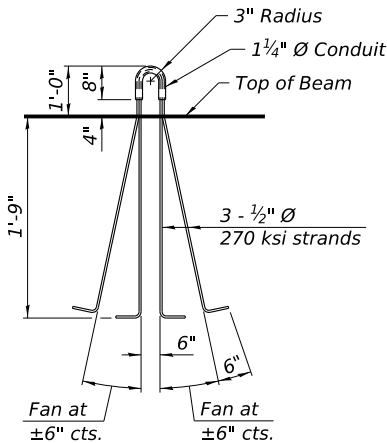
WWR	A	B
M2	15	3"
M3	14	1'-6"
M4	6	3"
M5	13	6"
M6	16	1'-0"

SPAN 2

WWR	A	B
M2	15	3"
M3	20	1'-6"
M4	6	3"
M5	14	6"
M6	25	1'-0"



BAR G1(E)



LIFTING LOOP DETAIL

BILL OF MATERIAL

Item	Unit	Total
Furnishing Precast Prestressed Concrete Beams, IL27N	Foot	1,186

IL27-1830D

4-4-2025

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Consulting Engineers

USER NAME =	DESIGNED -	REVISED -
PLOT SCALE =	CHECKED -	REVISED -
PLOT DATE =	DRAWN -	REVISED -
	CHECKED -	REVISED -

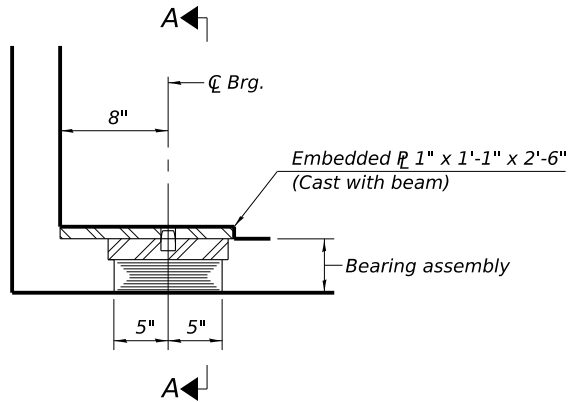
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL27N BEAM DETAILS
STRUCTURE NO. 049-6802

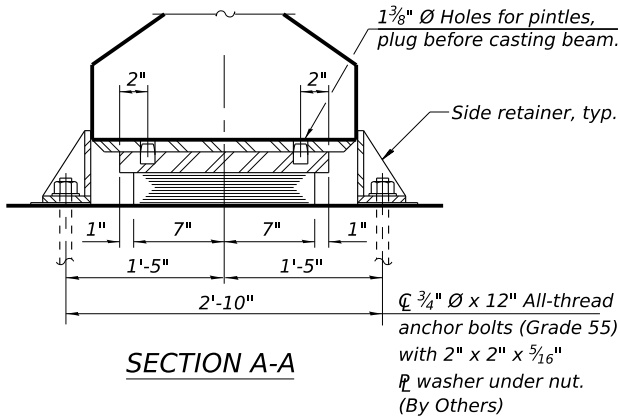
SHEET 1 OF 1 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	18-00039-02-BR	LAKE	9	8
CONTRACT NO. 61M89				
ILLINOIS FED. AID PROJECT K213(101)				

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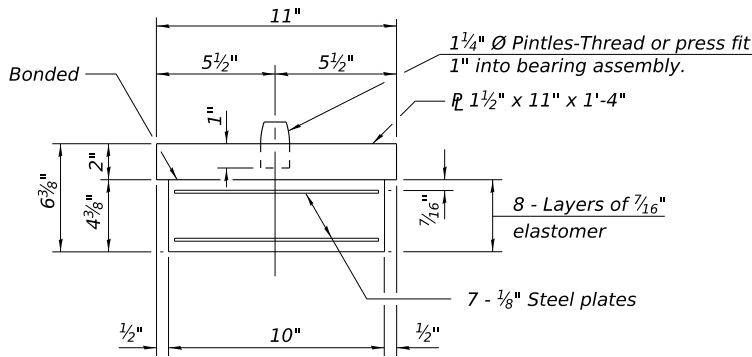


ELEVATION AT ABUT.

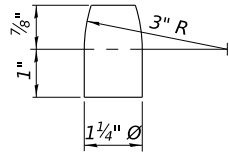


SECTION A-A

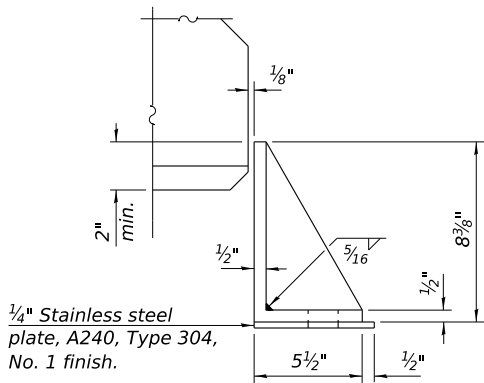
TYPE I ELASTOMERIC EXP. BRG.



BEARING ASSEMBLY

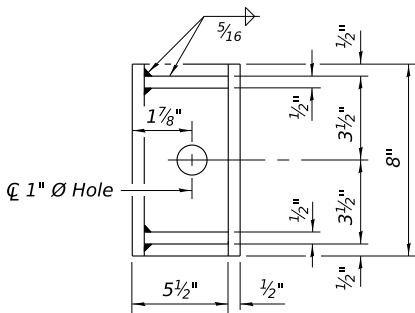


PINTLE



SIDE RETAINER

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



Notes:
Side retainers and stainless steel plates shall be included in the cost of Elastomeric Bearing Assembly, Type I.

See sheet S04 & S05 of S07 for additional details of embedded plate.

** Anchor bolts and side retainers at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.

All (embedded and separate) bearing plates, side retainers, anchor bolts, nuts, washers and pintles shall be galvanized according to AASHTO M111 or M232 as applicable.

The structural steel plates of the Bearing Assembly shall conform to the requirements of AASHTO M270 Grade 50.

** For information only

BILL OF MATERIAL

Item	Unit	Total
Furnishing Elastomeric Bearing Assembly, Type I	Each	14

PI-2E-1

5-15-2023

BAXTER & WOODMAN
Consulting Engineers

USER NAME =	DESIGNED -	REVISED -
PLOT SCALE =	CHECKED -	REVISED -
PLOT DATE =	DRAWN -	REVISED -
	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING DETAILS
STRUCTURE NO. 049-6802

SHEET 1 OF 1 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2711	18-00039-02-BR	LAKE	9	9
CONTRACT NO. 61M89				
ILLINOIS FED. AID PROJECT K213(101)				