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</table>
PLAN AT PIER

DIAPHRAGM AT PIER

SIDE RETAINER

© 8-31-12

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DIAPHRAGM DETAILS
STRUCTURE NO.
PLAN AT PIER

1. Concrete in diaphragm is included with Concrete Superstructure on sheet of .
2. Reinforcement bars in diaphragm are billed with superstructure on sheet of .
3. Concrete in diaphragm is included with Concrete Superstructure on sheet of .
4. The side retainer shall be galvanized after shop fabrication according to Article 1006.09 of the Standard Specifications.
5. Anchor bolt assemblies shall be galvanized according to Article 1006.09 of the Standard Specifications.
6. Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified.
7. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
8. Roofing felt (30 Lbs.) shall be bonded to side of beam embedded into diaphragm.
9. '' P.J.F. shall be allowed in lieu of welded plates.
10. Equivalent rolled angle with stiffeners (2 required each side of pier).

Notes:
- For details of bars s(E) see sheet of .
- For details of bars m(E) see sheet of .
- Roofing felt (30 Lbs.) shall be included with Concrete Structure.
- Roofing felt (30 Lbs.) shall be included with Concrete Structure.
- Roofing felt (30 Lbs.) shall be included with Concrete Structure.

DIAPHRAGM AT PIER

SIDE RETAINER

在这些梁中，要求每个梁都贴有标签。这些梁的表面将被涂成灰色或涂成其他颜色，以示区别。
DIAPHRAGM ELEVATION AT ABUTMENT

SECTION A-A
(at Rt. L's)

SECTION B-B

PARTIAL PLAN AT ABUTMENT

Notes:
Reinforcement bars in diaphragm are billed with superstructure on sheet of Concrete in diaphragm is included with Concrete Superstructure on sheet of.
For details of bars s(E) and s(E) see sheet of.
The s(E) and s(E) bars shall be placed parallel to the beams.
Spacing for these bars shall be at right angles to the beams.
The approach slab seat shall have a consistent slope determined from the control points shown.
Cost of cellular polystyrene is included with Concrete Superstructure.
DIAPHRAGM ELEVATION AT ABUTMENT

SECTION B-B

PARTIAL PLAN AT ABUTMENT

SECTION A-A
DIAPHRAGM ELEVATION AT ABUTMENT

Each End
-#5 s(E) bars at |1'-0'' cts., typ. between beams.

Front Face, typ. between beams.
-#6 m(E) bars, typ.

SECTION A-A

PARTIAL PLAN AT ABUTMENT
(Showing bottom flange of beam)

Notes:
- Reinforcement bars in diaphragm are billed with superstructure on sheet of .
- Concrete in diaphragm is included with Concrete Superstructure on sheet of .
- For details of bars s(E), v(E) see sheet of .
- The approach slab and shear walls shall have a constant slope determined from the control points shown.
- Cost of cellular polystyrene is included with Concrete Superstructure.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
PARTIAL PLAN AT ABUTMENT

(Showing bottom flange of beam)

SECTION A-A
(at R.L. 1')

SECTION B-B
(at R.L. 1')

Notes:
- Reinforcement bars in diaphragm are billed with superstructure on sheet of.
- Concrete in diaphragm is included with Concrete Superstructure on sheet of.
- For details of bars s(E), v(E) and s(E) see sheet of.
- The s(E) and s(E) bars shall be placed parallel to the beams.
- Spacing for these bars shall be at right angles to the beams.
- The approach slab seat shall have a constant slope determined from the control points shown.
- Cost of cellular polystyrene is included with Concrete Superstructure.

DIAPHRAGM DETAILS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DIAPHRAGM ELEVATION AT ABUTMENT

DIAPHRAGM DETAILS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DIAPHRAGM ELEVATION AT ABUTMENT

DIAPHRAGM DETAILS

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DIAPHRAGM ELEVATION AT ABUTMENT

1'-0'' cts., typ. btwn. bms.

Each End
-#5 s (E) bars

Front Face
1-#6 m (E) bar

typ. btwn. bms.

Front Face, Each End
-#6 m(E) bars at 1'-0'' cts.,
Pt. 1'-4'' cts.

Front Face, typ. between beams
-#5 m(E) bars

Each End
-#5 m(E) bars at 1'-0'' cts.

BACK WALL

-#6 m(E) bars

Front Face
-#6 m(E) bars

 typ.

See Special Provisions.

PARTIAL PLAN AT ABUTMENT

(Showing bottom flange of beam)

SECTION A-A

SECTION B-B

NOTES:

1. Reinforcement bars in diaphragm are billed with superstructure on

Concrete in diaphragm is included with Concrete Superstructure

2. PJF (per Article 1051.09 of the

Standard Specifications) bonded to

2' Chmfr

Cellular

during pouring of the concrete.

polystyrene

Cellular polystyrene and

Fabric bearing pad, typ.

Control point

Approach slab seat

Approach slab

Construction joint

Concrete in diaphragm is included with Concrete Superstructure

on sheet  of .

For details of bars s(E), s(E) and v(E) see sheet  of .

The approach side seat shall have a constant slope determined from

the control points shown.

Cost of cellular polystyrene is included with Concrete Superstructure.

Cost of cellular polystyrene is included with Concrete Superstructure.
**PARTIAL PLAN AT ABUTMENT**

(Showing bottom flange of beam)

**Abutment**
~ Bridge & 6" 2" Chamfer
and IV-XV)

C578 (Types I-II according to ASTM
1" Cellular polystyrene
fabric bearing pad

**DIAPHRAGM ELEVATION AT ABUTMENT**

btwn. bms. |1'-0'' cts., typ.
-#5 s (E) bars at |1'-0'' cts., typ.
Front Face, typ. between beams

Each End -#5 s (E) bars
Front Face, typ. between beams

**DIAPHRAGM DETAILS**

Each End
Front Face, typ. between beams
1-#6 m (E) bar

Front Face, typ. between beams
-#5 s (E) bars at |1'-0'' cts., typ.

Abutment
Back of m (E) or m (E)

**SECTION A-A**

(To RH. 1/3)

Fabric bearing pad

Notes:

- Reinforcement bars in diaphragm are billed with superstructure on sheet of
Concrete in diaphragm is included with Concrete Superstructure on sheet of
Concrete in diaphragm is included with Concrete Superstructure on sheet of
Concrete in diaphragm is included with Concrete Superstructure on sheet of

- Spacing for these bars shall be at right angles to the beams.
- Spacing for these bars shall be at right angles to the beams.
- Spacing for these bars shall be at right angles to the beams.
- Spacing for these bars shall be at right angles to the beams.

- Cost of cellular polystyrene is included with Concrete Superstructure.
- Cost of cellular polystyrene is included with Concrete Superstructure.
- Cost of cellular polystyrene is included with Concrete Superstructure.
- Cost of cellular polystyrene is included with Concrete Superstructure.

**SECTION B-B**

**PARTIAL PLAN AT ABUTMENT**

(Showing bottom flange of beam):
PARTIAL PLAN AT ABUTMENT

(Showing bottom flange of beam)

DIAPHRAGM ELEVATION AT ABUTMENT

SECTION A-A

(At Right E)

SECTION B-B

DIAPHRAGM DETAILS

Notes:

- Reinforcement bars in diaphragm are billed with superstructure on sheet of.
- Concrete in diaphragm is included with Concrete Superstructure on sheet of.
- For details of bars s(E), s(E) and v(E) see sheet of.
- The v(E) and s(E) bars shall be placed parallel to the beams.
- Spacing for these bars shall be at right angle to the beams.
- The approach slab slab shall have a constant slope determined from the control points shown.
- Cost of cellular polystyrene is included with Concrete Superstructure.

Notes:

- Concrete in diaphragm is included with Concrete Superstructure on sheet of.
- For details of bars s(E), s(E) and v(E) see sheet of.
- The v(E) and s(E) bars shall be placed parallel to the beams.
- Spacing for these bars shall be at right angle to the beams.
- The approach slab slab shall have a constant slope determined from the control points shown.
- Cost of cellular polystyrene is included with Concrete Superstructure.
DIAPHRAGM AT PIER

PLAN AT PIER

SIDE RETAINER

- Reinforcement bars in diaphragm are billed with superstructure on sheet of .
- Concrete in diaphragm is included with Concrete Superstructure on sheet of .
- For details of bars see sheet of .
- Cost of 30 Lb. roofing felt is included with Concrete Superstructure.
- The side retainer shall be galvanized after shop fabrication according to AASHTO M 111. Cost of side retainer and anchor bolts shall be included with Concrete Structures.
- Anchor bolt assemblies shall be galvanized according to Article 206.06 of the Standard Specifications.
- Anchor bolts shall be ASTM F1554 all-thread or an Engineer-approved alternate material of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
- Anchor bolts for side retainers may be cast in place or installed in holes drilled before or after members are in place.
- Gridded and set anchor bolts shall be installed according to Article 206.06 of the Standard Specifications.

Notes:
- Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.
- Tightly fasten the #8 bars together with No. 9 wire ties.
Drilled and set anchor bolts shall be installed according to Article 702 of the Standard Specifications. 

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

The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554. 

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. 

Anchor bolt assemblies shall be galvanized according to Article 702.09 of the Standard Specifications. 

Cost of side retainer and anchor bolts shall be included with Concrete Superstructure. 

The side retainer shall be galvanized after shop fabrication according to AASHTO M 111. Cost of side retainer and anchor bolts shall be included with Concrete Structures. 

Roofing felt (30 Lbs.) shall be bonded to side of beam. 

Concrete in diaphragm is included with Concrete Superstructure. 

Reinforcement bars in diaphragm are billed with superstructure on sheet of . 

Concrete in diaphragm is included with Concrete Superstructure on sheet of . 

For details of bars see sheet of. 

Spacing for these bars shall be at right angles to the beams. 

Each Face, typ. btwn. bms. 

-2'-0" typ. 

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<thead>
<tr>
<th>Type</th>
<th>Notes</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>E</td>
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<tr>
<td>PJF</td>
<td></td>
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</table>

Notes: 

Reinforcement bars in diaphragm are billed with superstructure on sheet of . 

Concrete in diaphragm is included with Concrete Superstructure on sheet of . 

For details of bars see sheet of. 

Spacing for these bars shall be at right angles to the beams. 

Each Face, typ. btwn. bms. 

-2'-0" typ. 

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<thead>
<tr>
<th>Type</th>
<th>Notes</th>
<th>Details</th>
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</thead>
<tbody>
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<td>Fabric Pad</td>
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<tr>
<td>PJF</td>
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DIAPHRAGM AT PIER 

DIAPHRAGM AT PIER

SECTION A-A

Dimensions along of beam, except as shown.

SIDE RETAINER

If required each side of pier. 

Expedite rolled angle with welders will be allowed in lieu of welded plates.
PLAN AT PIER

(Showing bearing pads and PJF details)

Notes:

- Reinforcement bars in diaphragm are billed with superstructure on sheet of.
- Concrete in diaphragm is included with Concrete Superstructure on sheet of.
- Roofing felt shall be bonded to side of beam.
- Roofing felt (30 Lbs.) shall be included with Concrete Superstructure.
- Roofing felt (30 Lbs.) shall be bonded to side of beam.
- Roofing felt shall be securely fastened to the diaphragm.
- Roofing felt (30 Lbs.) shall be included with Concrete Superstructure.
- Roofing felt shall be securely fastened to the diaphragm.
- Roofing felt (30 Lbs.) shall be bonded to side of beam.
- Roofing felt (30 Lbs.) shall be included with Concrete Superstructure.
- Roofing felt shall be securely fastened to the diaphragm.
- Roofing felt (30 Lbs.) shall be bonded to side of beam.

SECTION A-A

Dimensions along E of beam, except as shown.
IL27-1830

ELEVATION OF BEAM
(Showing reinforcement & dimensions)

ELEVATION OF BEAM
(Showing prestressing steel)

Note: See sheet [ ] for additional details and Tab of Materials.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL27-1830
# Bill of Material

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<td>1</td>
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<tr>
<td>3' '</td>
<td>2 '</td>
<td>2''</td>
</tr>
<tr>
<td>11'' typ.</td>
<td>9''</td>
<td>1 typ.</td>
</tr>
<tr>
<td>2-D31 wires</td>
<td>2'-4''</td>
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## Plate Assembly

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<td>ELEVATION - BOTTOM</td>
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<tr>
<td>typ.</td>
<td>4''</td>
<td>1 typ.</td>
</tr>
<tr>
<td>2 … '</td>
<td>3‡ '</td>
<td>each end</td>
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<tr>
<td>ƒ'' Chamfer</td>
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## Section E-E

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<tr>
<td>1 0 '</td>
<td>typ.</td>
<td>2&quot;</td>
</tr>
<tr>
<td>3' '</td>
<td>3 '</td>
<td>2' '</td>
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## Plan - Top Plate

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<tr>
<td>BAR G(E)</td>
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<tr>
<td>8''</td>
<td>6' '</td>
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## Notes

- For 1'-6'' threaded dowel rods, when specified, one to be two strands. Ferrule type for interior beams and single ferrule, flared loop type for exterior beams. Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, grade 270. The nominal diameter for beam strands shall be 0.6" and the nominal cross-sectional area shall be 0.277 sq. in. The nominal diameter for M4 rods shall be 0.323 sq. in. The beams shall have a 70 concrete compressive strength, f'c, of 7000 psi and a release concrete compressive strength, f'c, of 7000 psi.
- A minimum 1'-0'' lifting pin shall be used to engage the lifting loops during handling. Bend the extended strands inward on the fascia beams to maintain 1" clearance inside the pier diaphragm.
- The top and bottom plates shall be AASHTO M270 Grade 50. Threaded rods, nuts and washers shall be galvanized according to AASHTO M232. Beams shall not be released from the fabricator until they have attained 45 days of age or older.
- Welded Wire Reinforcement (WWR) shall conform to ASTM A884 with a Class A, Type 1 epoxy coating.

## Table of Dimensions

<table>
<thead>
<tr>
<th>Span</th>
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<tr>
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<td>M6</td>
<td>M7</td>
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## Lifting Loop Detail

**Inserts for 1'-0'' threaded dowel rods, when specified, one to be two strands.**

*F.S. bars (4'-6'' long) shall be used to splice the longitudinal D31 wires together.*

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, grade 270. The nominal diameter for beam strands shall be 0.6" and the nominal cross-sectional area shall be 0.277 sq. in. The nominal diameter for M4 rods shall be 0.323 sq. in. The beams shall have a 70 concrete compressive strength, f'c, of 7000 psi and a release concrete compressive strength, f'c, of 7000 psi.

- A minimum 1'-0'' lifting pin shall be used to engage the lifting loops during handling. Bend the extended strands inward on the fascia beams to maintain 1" clearance inside the pier diaphragm.
- The top and bottom plates shall be AASHTO M270 Grade 50. Threaded rods, nuts and washers shall be galvanized according to AASHTO M232.
- Beams shall not be released from the fabricator until they have attained 45 days of age or older.
- Welded Wire Reinforcement (WWR) shall conform to ASTM A884 with a Class A, Type 1 epoxy coating.
**ELEVATION OF BEAM**  
(Showing reinforcement & dimensions)

- **Symmetrical about E**
- Steel: 60 ksi
- Lighting loops spaced @ 2'-6''

**SECTION A-A**

- Hold down points
- Limits of strands
- As shown

**SECTION B-B**

- Only tighten sufficiently to compress lock washers
- 4'-6'' threaded dowel rods @ 3'' cts., Each Face

**SECTION C-C**

- Partially debonded strand
- Fully bonded strand
- 1'' threaded rod through flange

**VIEW D-D**

- 270 ksi strands
- 2'' symmetric at pier only

- Limits of M WWR @ 2'-6''
- Limits of M WWR @ 2'-0''
- Limits of M WWR @ 1'-0''

- 4'-0'' cts.
- 3'' cts., Each Face
- 8 strands
- 1'' threaded rod
- Symmetrical about ~

**Note:**  
See Sheet C for additional details and Tab of Materials.
### BILL OF MATERIAL

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### TABLE OF DIMENSIONS

#### SPAN

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#### LIFTING LOOP DETAIL

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<tr>
<td>(See Table of Dimensions)</td>
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</table>

### NOTS

- Inserts for 1/4"-6 threaded dowel rods, when specified, are to be two strat. Ferrule type for interior beams and single ferrule, flared loop type for exterior beams. Welded Wire Reinforcement (WWR) shall conform to ASTM A884 with a Class A, Type 1 epoxy coating.
- Threaded rods, nuts and washers shall be galvanized according to AASHTO M232.
- The top plates and bottom plates assemblies shall be galvanized according to AASHTO M111.
- The top and bottom plates shall be AASHTO M270 Grade 50.
- The beams shall have a final concrete compressive strength, f'c, of 8500 psi and be 2" and the nominal cross-sectional area shall be 0.217 sq. in. When multiple sheets of M  WWR are required along the beam length, #5(E) bars (4'-6" long) shall be used to splice the longitudinal D31 wires together.
- The threaded rods, nuts and washers shall be galvanized according to AASHTO M232.
- The beams shall be released from the fabricator until they have attained 45 days of age or older.
- The top plates and bottom plates assemblies shall be galvanized according to AASHTO M111.
- Cross-sectional area shall be 0.153 sq. in.  The nominal diameter for lifting loops shall be 0.6" and the nominal cross-sectional area shall be 0.217 sq. in.  The nominal diameter for lifting straps shall be 1.0" and the nominal cross-sectional area shall be 0.217 sq. in. The beams shall be released from the fabricator until they have attained 45 days of age or older.
- A minimum 3" radius lifting pin shall be used to engage the lifting loops during handling.
- Beams shall not be released from the fabricator until they have attained 45 days of age or older.
- The beams shall have a final concrete compressive strength, f'c, of 8500 psi and be 2" and the nominal cross-sectional area shall be 0.217 sq. in.  The nominal diameter for lifting loops shall be 0.6" and the nominal cross-sectional area shall be 0.217 sq. in.  The beams shall be released from the fabricator until they have attained 45 days of age or older.
- Welded Wire Reinforcement (WWR) shall conform to ASTM A884 with a Class A, Type 1 epoxy coating.
**ELEVATION OF BEAM**  
(Showing reinforcement & dimensions)

- 4-\(\frac{1}{2}\)" threaded dowel rods at 3" cts. Each Face
- **Only tighten sufficiently to compress lock washers**

**ELEVATION OF BEAM**  
(Showing prestressing steel)

- Symmetrical about E

**SECTION A-A**

**SECTION B-B**

**SECTION C-C**

**VIEW D-D**

- Fully bonded strand
- Partially debonded strand

---

**Note:** See sheet ___ of ___ for additional details and Tab of Materials.
ILLINOIS DEPARTMENT OF TRANSPORTATION
STATE OF ILLINOIS

BILL OF MATERIAL

<table>
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<tr>
<td>9''</td>
<td>6''</td>
<td>11''</td>
</tr>
<tr>
<td>2''</td>
<td>1'-0''</td>
<td>11''</td>
</tr>
<tr>
<td>11''</td>
<td>11''</td>
<td>1'-10''</td>
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</table>

**M5 WWR DETAIL**

When multiple sheets of M5 WWR are required along the beam length, 1-W4.5 wires (4'-6'' long) shall be used to splice the longitudinal D31 wires together.

**TABLE OF DIMENSIONS**

**SPAN**

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<tr>
<th>Span</th>
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**SECTION THRU TOP FLANGE**

(Showing limits of bond breaker)

- Approved bond breaker
- Full length applied to beam
- Special provisions,

**LIFTING LOOP DETAIL**

Approved bond breaker
Full length applied to beam
Special provisions,

**NOTES**

- Inserts for 3'-0'' threaded dowel rods, when specified, are to be two strips.
- Ferrule type for interior beams and single ferrule, flared loop type for exterior beams.
- Prestressing steel shall be uncoated high strength, pre-stabilization 7-wire strands, Grade 270. The nominal diameter for beam strands shall be 0.6'' and the nominal cross-sectional area shall be 0.302 sq. in. The nominal diameter for M514 strand shall be 0.253 sq. in. The beams shall have a 100 concrete compressive strength, f'c, of 8500 psi and a release concrete compressive strength, f'c', of 7000 psi. A minimum 12'-0'' #5 lifting pin shall be used to engage the lifting loops during handling.
- Fluid extracted strands inward on the fascia beams to maintain 1-0'' clearance inside the pier diaphragm.
- The top and bottom plates shall be AASHTO M270 Grade 50. The top plates and bottom plates assemblies shall be galvanized according to AASHTO M270.
- The threaded rods, nuts and washers shall be galvanized according to AASHTO M270.
- Threaded rods shall be ASTM F 1554 Grade 55.
- The top and bottom plates shall be AASHTO M270 Grade 50.
- Threaded rods shall be ASTM F 1554 Grade 55.
- Beams shall not be released from the fabricator until they have attained 45 days of age or older.
- Prestressed Concrete Beams, IL36 - Furnishing and Erecting Precast
- Prestressed Concrete Beams, IL36 - Furnishing and Erecting Precast
- Prestressed Concrete Beams, IL36
- Prestressed Concrete Beams, IL36 - Furnishing and Erecting Precast
- Prestressed Concrete Beams, IL36
- Prestressed Concrete Beams, IL36 - Furnishing and Erecting Precast
- Prestressed Concrete Beams, IL36 - Furnishing and Erecting Precast
- Prestressed Concrete Beams, IL36
- Prestressed Concrete Beams, IL36

**M5 THRU M7 WWR DETAIL**

(See Table of Dimensions)

**BAR G (E)**

Be used to splice the longitudinal D31 wires together.

- When multiple sheets of M5 WWR are required along the beam length, 3.5E (5-6") long shall be used to splice the longitudinal D31 wires together.
- Inserted #5 (E) bars (4'-6" long) shall be used to splice the longitudinal D31 wires together.
- When multiple sheets of M5 WWR are required along the beam length, 3.5E (5-6") long shall be used to splice the longitudinal D31 wires together.
- Inserted #5 (E) bars (4'-6" long) shall be used to splice the longitudinal D31 wires together.
- When multiple sheets of M5 WWR are required along the beam length, 3.5E (5-6") long shall be used to splice the longitudinal D31 wires together.
- Inserted #5 (E) bars (4'-6" long) shall be used to splice the longitudinal D31 wires together.
- When multiple sheets of M5 WWR are required along the beam length, 3.5E (5-6") long shall be used to splice the longitudinal D31 wires together.
- Inserted #5 (E) bars (4'-6" long) shall be used to splice the longitudinal D31 wires together.
- When multiple sheets of M5 WWR are required along the beam length, 3.5E (5-6") long shall be used to splice the longitudinal D31 wires together.
- Inserted #5 (E) bars (4'-6" long) shall be used to splice the longitudinal D31 wires together.
- When multiple sheets of M5 WWR are required along the beam length, 3.5E (5-6") long shall be used to splice the longitudinal D31 wires together.
- Inserted #5 (E) bars (4'-6" long) shall be used to splice the longitudinal D31 wires together.
- When multiple sheets of M5 WWR are required along the beam length, 3.5E (5-6") long shall be used to splice the longitudinal D31 wires together.
- Inserted #5 (E) bars (4'-6" long) shall be used to splice the longitudinal D31 wires together.
- When multiple sheets of M5 WWR are required along the beam length, 3.5E (5-6") long shall be used to splice the longitudinal D31 wires together.
- Inserted #5 (E) bars (4'-6" long) shall be used to splice the longitudinal D31 wires together.
ELEVATION OF BEAM
(Showing reinforcement & dimensions)

- Limits of beam
- Limits of WWR
- Limits of WWR

- 5-” # threaded rod at 3’-6”, each face
- #3 @ 3/4” post spaced with
- Button flange reinforcement
- Rotate 90°

- #3 bar @ 3” cts., each face
- M WWR thru

- Limits of M WWR
- Limits of M WWR
- Limits of M WWR

- Symmetrical about E
- Except as shown

- Lifting loops spacing 4’-6”
- 60° min angle of M, typ.

- Jam nut, typ.
- Hex nut with

- Lock washer, typ.
- Threaded rods

- Bottom plate assembly

- Recess into beam

- Fully bonded strand
- Partially debonded strand

Note:
- See sheet for additional details and list of materials.
**BILL OF MATERIAL**

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<td></td>
<td></td>
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<tr>
<td>11'</td>
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**M  WWR DETAIL**

When multiple sheets of M WWR are required along the beam length, #5(E) bars (4'-6'' long) shall be used to splice the longitudinal D31 wires together.

**NOTES**

Inserts for 3/8'' threaded dowel rods, when specified, are to be two strut, ferrule type for interior beams and single ferrule, flared loop type for exterior beams. Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter for beam strands shall be 0.6'' and the nominal cross-sectional area shall be 0.217 sq. in. The nominal diameter for lifting rods shall be 3/4'' and the nominal cross-sectional area shall be 0.263 sq. in. The beams shall have a 70 ksi concrete compressive strength, f'c, of 7000 psi.

When multiple sheets of M WWR are required along the beam length, #5(E) bars (4'-6'' long) shall be used to splice the longitudinal D31 wires together.

**TABLE OF DIMENSIONS**

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</tr>
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<tr>
<td>6' 0''</td>
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<td>10''</td>
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**LIFTING LOOP DETAIL**

A minimum 3/8'' } lifting pin shall be used to engage the lifting loops during handling.  Bend the extended strands inward on the fascia beams to maintain 1/2'' clearance inside the pier diaphragm.

**PLATE ASSEMBLY**

The top and bottom plates shall be AASHTO M70 Grade 50. The top plates and bottom plate assemblies shall be galvanized according to AASHTO M111. The top and bottom plates shall be AASHTO M270 Grade 50. Beams shall not be released from the fabricator until they have attained 45 days of age or older.

**PRESTRESSED CONCRETE BEAMS**

Pollak Wire Reinforcement (WWR) shall conform to ASTM A684 with a Class A, Type 1 epoxy coating.

Furnishing and Erecting Precast Prestressed Concrete Beams, IL45N

- Grade 270 steel shall be used to splice the longitudinal D31 wires together.
- When multiple sheets of M WWR are required along the beam length, #5(E) bars (4'-6'' long) shall be used to splice the longitudinal D31 wires together.
- Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter for beam strands shall be 0.6'' and the nominal cross-sectional area shall be 0.217 sq. in. The nominal diameter for lifting rods shall be 3/4'' and the nominal cross-sectional area shall be 0.263 sq. in. The beams shall have a 70 ksi concrete compressive strength, f'c, of 7000 psi.

A minimum 3/8'' } lifting pin shall be used to engage the lifting loops during handling. Bend the extended strands inward on the fascia beams to maintain 1/2'' clearance inside the pier diaphragm.
ELEVATION OF BEAM
(Showing reinforcement & dimensions)

- 4-3/8' threaded dowel rods
- Each Face
- Only tighten sufficiently to
- compress lock washers

1. Rotate as
2. (Recess `...'' into beam)
3. Top `1/2'' x 10'' x 10''

Sheets:
- VIEW D-D
- Section C-C
- Section A-A
- Section B-B

Note:
- See Sheet__ for additional
- details and list of materials.

DEPARTMENT OF TRANSPORTATION
STATE OF ILLINOIS
FILE NAME = USER NAME =
PLOT SCALE = PLOT DATE =
CHECKED = DRAWN =
CHECKED = DESIGNED =
REVISED = REVISED =
DEPARTMENT OF TRANSPORTATION
STATE OF ILLINOIS
FILE NAME = USER NAME =
PLOT SCALE = PLOT DATE =
CHECKED = DRAWN =
CHECKED = DESIGNED =
REVISED = REVISED =
IL45-3838D

Furnishing and Erecting Precast Prestressed Concrete Beams, IL45

**Bill of Material**

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**M1 WWR DETAIL**

When multiple sheets of M1 WWR are required along the beam length, #5(E) bars (4'-6'' long) shall be used to splice the longitudinal D31 wires together.

**TABLE OF DIMENSIONS**

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**NOTES**

**General**

Inserts for 1/4'' threaded dowel rods, when specified, are to be two strands.

**Special Provisions**

- Prestressed steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter for beam strands shall be 0.6'' and the nominal cross-sectional area shall be 0.202 sq. in. The nominal diameter for 270 ksi strands shall be 1" and the nominal cross-sectional area shall be 0.521 sq. in.
- Beams shall not be released from the fabricator until they have attained 45 days of age or older.
- Threaded rods shall be ASTM F 1554 Grade 55.
- The threaded rods, nuts and washers shall be galvanized according to AASHTO M232.
- The top and bottom plates shall be galvanized according to AASHTO M111.
- The top plates and bottom plate assemblies shall be galvanized according to AASHTO M270.
- Threaded rods shall be ASTM F 1554 Grade 55.
- Beams shall not be released from the fabricator until they have attained 45 days of age or older.
- Prestressed Concrete Beams, IL45
- Beams shall have a final concrete compressive strength, f'c, of 8500 psi and a release concrete compressive strength, f'ci, of 7000 psi.
- A minimum 2'-0'' lifting pin shall be used to engage the lifting loops during handling.
- Beams shall be designed for a release concrete compressive strength, f'ci, of 7000 psi.
- The threaded rods, nuts and washers shall be galvanized according to AASHTO M232.
- The top and bottom plates shall be galvanized according to AASHTO M111.
- The top plates and bottom plate assemblies shall be galvanized according to AASHTO M270.
- Threaded rods shall be ASTM F 1554 Grade 55.
- Beams shall not be released from the fabricator until they have attained 45 days of age or older.
- Prestressed Concrete Beams, IL45
- Beams shall have a final concrete compressive strength, f'c, of 8500 psi and a release concrete compressive strength, f'ci, of 7000 psi.
- A minimum 2'-0'' lifting pin shall be used to engage the lifting loops during handling.
- Beams shall be designed for a release concrete compressive strength, f'ci, of 7000 psi.
- The threaded rods, nuts and washers shall be galvanized according to AASHTO M232.
- The top and bottom plates shall be galvanized according to AASHTO M111.
- The top plates and bottom plate assemblies shall be galvanized according to AASHTO M270.
- Threaded rods shall be ASTM F 1554 Grade 55.
- Beams shall not be released from the fabricator until they have attained 45 days of age or older.
- Prestressed Concrete Beams, IL45
- Beams shall have a final concrete compressive strength, f'c, of 8500 psi and a release concrete compressive strength, f'ci, of 7000 psi.
- A minimum 2'-0'' lifting pin shall be used to engage the lifting loops during handling.
- Beams shall be designed for a release concrete compressive strength, f'ci, of 7000 psi.
- The threaded rods, nuts and washers shall be galvanized according to AASHTO M232.
- The top and bottom plates shall be galvanized according to AASHTO M111.
- The top plates and bottom plate assemblies shall be galvanized according to AASHTO M270.
- Threaded rods shall be ASTM F 1554 Grade 55.
- Beams shall not be released from the fabricator until they have attained 45 days of age or older.
- Prestressed Concrete Beams, IL45
- Beams shall have a final concrete compressive strength, f'c, of 8500 psi and a release concrete compressive strength, f'ci, of 7000 psi.
- A minimum 2'-0'' lifting pin shall be used to engage the lifting loops during handling.
- Beams shall be designed for a release concrete compressive strength, f'ci, of 7000 psi.
- The threaded rods, nuts and washers shall be galvanized according to AASHTO M232.
- The top and bottom plates shall be galvanized according to AASHTO M111.
- The top plates and bottom plate assemblies shall be galvanized according to AASHTO M270.
- Threaded rods shall be ASTM F 1554 Grade 55.
End-to-end beam

Limits of M WWR (each face) - 4'-6" cts.

Lifting Loop Spacing - 6'-0" min. angle of lift, typ.

ELEVATION OF BEAM
(Showing reinforcement & dimensions)

** Section A-A **

- #3 bar cl. 1"
- Jam nut, typ.
- Hex nut with lock washer, typ.
- @ 4'-0" cts.
- *Fully bonded strand
- *Partially debonded strand
- Construction in 2 piece sheets and slide together.
- \( \text{Limits of M WWR (each face)} = 3'-6" \)
- \( \text{Limits of M WWR (each face)} = 5'-6" \)
- \( \text{Limits of M WWR (each face)} = 2'-0" \)

SECTION B-B

** Section C-C **

- 7" Rad.
- 1'-7" Rad.
- 6" Rad.
- 3' Rad.
- 2' Rad.
- 1' Rad.
- Limits of M WWR (each face) - 5'-6" cts.
- Limits of M WWR (each face) - 2'-0" cts.
- Limits of M WWR (each face) - 4'-0" cts.

Note:
See sheet _ of _ for additional details and tab of materials.
IL54-2438D
3-28-16

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NOTE:
Inserts for 1/4"-8 threaded dowel rods, when specified, are to be two strut ferrule type for interior beams and single ferrule, flared loop type for exterior beams. Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand. Grade 270. The nominal diameter for beam strands shall be 0.6" and the nominal cross-sectional area shall be 0.557 sq. in. The nominal diameter for lifting rods shall be 1/2" and the nominal cross-sectional area shall be 0.235 sq. in.

The beams shall have a 7-day concrete compressive strength, f'c, of 7000 psi and rebar concrete compressive strength, f'c, of 7000 psi.

A minimum 1/2"-8 lifting pin shall be used to engage the lifting loops during handling. Bend the extended strands inward on the fascia beams to maintain 1" clearance inside the pier diaphragm.

The top and bottom plates shall be AASHTO M210 Grade 50. Welded Wire Reinforcement (WWR) shall conform to ASTM A884 with a Class A, Type 1 epoxy coating.

AASHTO M210 Grade 50 Plate assemblies shall be galvanized according to AASHTO M111. The top and bottom plates shall be galvanized according to AASHTO M210. Threaded rods, nuts and washers shall be galvanized according to AASHTO M210. Beams shall not be released from the fabricator until they have attained 45 days of age or older.

The beams shall have a final concrete compressive strength, f'c, of 8500 psi and a release concrete compressive strength, f'c, of 7000 psi.

The top plates and bottom plate assemblies shall be galvanized according to AASHTO M210. Threaded rods shall be ASTM F1554 Grade 55. The top plates and bottom plates shall be galvanized according to AASHTO M210.

The top plates and bottom plate assemblies shall be galvanized according to AASHTO M210. Threaded rods, nuts and washers shall be galvanized according to AASHTO M210. Beams shall not be released from the fabricator until they have attained 45 days of age or older.

The beams shall have a final concrete compressive strength, f'c, of 8500 psi and a release concrete compressive strength, f'c, of 7000 psi.

The top plates and bottom plate assemblies shall be galvanized according to AASHTO M210. Threaded rods shall be ASTM F1554 Grade 55. The top plates and bottom plates shall be galvanized according to AASHTO M210. Threaded rods, nuts and washers shall be galvanized according to AASHTO M210. Beams shall not be released from the fabricator until they have attained 45 days of age or older.

The beams shall have a final concrete compressive strength, f'c, of 8500 psi and a release concrete compressive strength, f'c, of 7000 psi.

The top plates and bottom plate assemblies shall be galvanized according to AASHTO M210. Threaded rods shall be ASTM F1554 Grade 55. The top plates and bottom plates shall be galvanized according to AASHTO M210. Threaded rods, nuts and washers shall be galvanized according to AASHTO M210. Beams shall not be released from the fabricator until they have attained 45 days of age or older.

The beams shall have a final concrete compressive strength, f'c, of 8500 psi and a release concrete compressive strength, f'c, of 7000 psi.

The top plates and bottom plate assemblies shall be galvanized according to AASHTO M210. Threaded rods shall be ASTM F1554 Grade 55. The top plates and bottom plates shall be galvanized according to AASHTO M210. Threaded rods, nuts and washers shall be galvanized according to AASHTO M210. Beams shall not be released from the fabricator until they have attained 45 days of age or older.

The beams shall have a final concrete compressive strength, f'c, of 8500 psi and a release concrete compressive strength, f'c, of 7000 psi.

The top plates and bottom plate assemblies shall be galvanized according to AASHTO M210. Threaded rods shall be ASTM F1554 Grade 55. The top plates and bottom plates shall be galvanized according to AASHTO M210. Threaded rods, nuts and washers shall be galvanized according to AASHTO M210. Beams shall not be released from the fabricator until they have attained 45 days of age or older.

The beams shall have a final concrete compressive strength, f'c, of 8500 psi and a release concrete compressive strength, f'c, of 7000 psi.

The top plates and bottom plate assemblies shall be galvanized according to AASHTO M210. Threaded rods shall be ASTM F1554 Grade 55. The top plates and bottom plates shall be galvanized according to AASHTO M210. Threaded rods, nuts and washers shall be galvanized according to AASHTO M210. Beams shall not be released from the fabricator until they have attained 45 days of age or older.

The beams shall have a final concrete compressive strength, f'c, of 8500 psi and a release concrete compressive strength, f'c, of 7000 psi.
**ELEVATION OF BEAM**

(Showing reinforcement & dimensions)

- 5-\(\frac{1}{2}\)" threaded dowel rods at 3" cts. Each face
- Only tighten sufficiently to compress lock washers

**SECTION A-A**

- Limits of M  WWR (each face) = 3'-8"
- Limits of M  WWR (each face) = 5'-6"
- Limits of M  WWR (each face) = 8'-6"

**SECTION B-B**

- Limits of M  WWR (each face) = 1'-0"
- Limits of M  WWR (each face) = 3'-6"
- Limits of M  WWR (each face) = 6'-0"

**SECTION C-C**

- Limits of M  WWR (each face) = 10'-0"
- Limits of M  WWR (each face) = 13'-0"
- Limits of M  WWR (each face) = 16'-0"

**VIEW D-D**

- Fully bonded strand
- Partially debonded strand

**Note:**
- See sheet ___ of ___ for additional details and Tab of Materials.
ELEVATION OF BEAM

(Symmetrical about E)

- Fully bonded strand
- Partially debonded strand

- 4-1/2" threaded dowel rods @ 3" cts., Each Face

* Only tighten sufficiently to compress lock washers

** Partially debonded strand

Note:
See sheet ___ of ___ for additional details and list of materials.
**Plan - Top Plate**

When multiple sheets of M WWR are required along the beam length, #5(E) bars (4'-6'' long) shall be used to splice the longitudinal D31 wires together.

**Table of Dimensions**

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**Lifting Loop Detail**

A minimum 1'' threaded rod shall be used to engage the lifting loops during handling.

**Notes**

Inserts for 3/8'' threaded dowel rods, when specified, are to be two struts.

Prestressed Concrete Beams, IL63N

Furnishing and Erecting Precast Beams shall not be released from the fabricator until they have attained 45 days of age or older.

Welded Wire Reinforcement (WWR) shall conform to ASTM A884 with a Class A, Type 1 epoxy coating.

Beams shall have a final concrete compressive strength, f'_c, of 8500 psi and a release concrete compressive strength, f'_ci, of 7000 psi.

Threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

The top plates and bottom plate assemblies shall be galvanized according to AASHTO M270.

Threaded rods shall be ASTM F 1554 Grade 55.

The top and bottom plates shall be AASHTO M270 Grade 50.

Threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

The beams shall have a final concrete compressive strength, f'_c, of 8500 psi and a release concrete compressive strength, f'_ci, of 7000 psi.

The beams shall have a final concrete compressive strength, f'_c, of 8500 psi and a release concrete compressive strength, f'_ci, of 7000 psi.

The threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

Threaded rods shall be ASTM F 1554 Grade 55.

The top plates and bottom plate assemblies shall be galvanized according to AASHTO M270.

Threaded rods shall be ASTM F 1554 Grade 55.

The top and bottom plates shall be AASHTO M270 Grade 50.

Threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

The beams shall have a final concrete compressive strength, f'_c, of 8500 psi and a release concrete compressive strength, f'_ci, of 7000 psi.

The beams shall have a final concrete compressive strength, f'_c, of 8500 psi and a release concrete compressive strength, f'_ci, of 7000 psi.

The threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

Threaded rods shall be ASTM F 1554 Grade 55.

The top plates and bottom plate assemblies shall be galvanized according to AASHTO M270.

Threaded rods shall be ASTM F 1554 Grade 55.

The top and bottom plates shall be AASHTO M270 Grade 50.

Threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

The beams shall have a final concrete compressive strength, f'_c, of 8500 psi and a release concrete compressive strength, f'_ci, of 7000 psi.

The beams shall have a final concrete compressive strength, f'_c, of 8500 psi and a release concrete compressive strength, f'_ci, of 7000 psi.

The threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

Threaded rods shall be ASTM F 1554 Grade 55.

The top plates and bottom plate assemblies shall be galvanized according to AASHTO M270.

Threaded rods shall be ASTM F 1554 Grade 55.

The top and bottom plates shall be AASHTO M270 Grade 50.

Threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

The beams shall have a final concrete compressive strength, f'_c, of 8500 psi and a release concrete compressive strength, f'_ci, of 7000 psi.

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Threaded rods shall be ASTM F 1554 Grade 55.

The top and bottom plates shall be AASHTO M270 Grade 50.

Threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

The beams shall have a final concrete compressive strength, f'_c, of 8500 psi and a release concrete compressive strength, f'_ci, of 7000 psi.

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Threaded rods shall be ASTM F 1554 Grade 55.

The top plates and bottom plate assemblies shall be galvanized according to AASHTO M270.

Threaded rods shall be ASTM F 1554 Grade 55.

The top and bottom plates shall be AASHTO M270 Grade 50.

Threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

The beams shall have a final concrete compressive strength, f'_c, of 8500 psi and a release concrete compressive strength, f'_ci, of 7000 psi.

The beams shall have a final concrete compressive strength, f'_c, of 8500 psi and a release concrete compressive strength, f'_ci, of 7000 psi.

The threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

Threaded rods shall be ASTM F 1554 Grade 55.

The top plates and bottom plate assemblies shall be galvanized according to AASHTO M270.

Threaded rods shall be ASTM F 1554 Grade 55.

The top and bottom plates shall be AASHTO M270 Grade 50.
**NOTES**

Inserts for 3⁄8"-16 threaded dowel rods, when specified, are to be two-strand, ferrule type. For interior beams and single ferrule, threaded loop type for exterior beams. Prestressing steel shall be uncoated high strength, pre-stressed 7-wire strand, Grade 270. The nominal diameter for beam strands shall be 0.62" and the nominal cross-sectional area shall be 0.33 sq. in. The nominal diameter for 3-W14 strands shall be 2.75" and the nominal cross-sectional area shall be 0.38 sq. in. The beams shall have a 28-day concrete compressive strength, f'c, of 7000 psi and a release concrete compressive strength, f'c, of 7000 psi. A minimum 2-W14 lifting pin shall be used to engage the lifting loops during handling. Bend the extended strands inward on the fascia beams to maintain 1" clearance inside the pier diaphragm.

The top and bottom plates shall be AASHTO M27 Grade 50. The top plates and bottom plate assemblies shall be galvanized according to AASHTO M111. The top and bottom plates shall be AASHTO M27 Grade 50.

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**SECTION THRU TOP FLANGE**

- 1½" Radius
- 1½"-6" Conduit
- 3½"-6" Top of Beams
- 7½"-6" Lift Loop

**LIFTING LOOP DETAIL**

- 1½"-6" Lift Loop
- 3½"-6" Top of Beams
- 7½"-6" Lift Loop

**BILL OF MATERIAL**

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**ILLINOIS DEPARTMENT OF TRANSPORTATION**

**STATE OF ILLINOIS**

**IL63 BEAM DETAILS**

**FILE NAME**

*IL63-3938D*

**CHECKED**

*CHECKED*

**REVISED**

*REVISED*

**DESIGNED**

*DESIGNED*

**DRAWN**

*DRAWN*

**CHECKED**

*CHECKED*

**REVISED**

*REVISED*

**DEPARTMENT OF TRANSPORTATION**

**STATE OF ILLINOIS**

**CONTRACT NO.**

*CONTRACT NO.*

**SHEETS**

*SHEETS*

**TOTAL**

*TOTAL*
**ELEVATION OF BEAM**

*(Showing reinforcement & dimensions)*

- 6-1/2' threaded rods at 3" cts. Each Face
- Only tighten sufficiently to compress lock washers

**SECTION A-A**

- Symmetrical about E

**SECTION B-B**

- Partially debonded strand
- Fully bonded strand

**SECTION C-C**

- Fully bonded strand
- Partially debonded strand

**VIEW D-D**

- See sheet for additional details and Bill of Materials.
**NOTE:**

Inserts for 3/8\" threaded dowel rods, when specified, are to be two-strand ferrule type for interior beams and single ferrule, flared loop type for exterior beams.

- Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter for beam strands shall be 0.600\" and the nominal cross-sectional area shall be 0.217 sq. in. The nominal diameter for 1/4\" lifting pins shall be 0.353 sq. in.
- The beams shall have a 350 psi concrete compressive strength, f'c, of 1000 psi.
- A minimum 2-½\" lifting pin shall be used to engage the lifting loops during handling.
- Bend the extended strands inward on the fascia beams to maintain 1\" clearance inside the pier diaphragm.
- A minimum 2\" lifting pin shall be used to engage the lifting loops during handling.
- The top and bottom plates shall be AS5070 Grade 50. The beams shall be released from the fabricator until they have attained 45 days of age or older.
- Prestressed Concrete Beams, IL72

**PLATE ASSEMBLY**

- Where multiple sheets of M5 WWR are required along the beam length, #5(E) bars (4'-6\" long) shall be used to splice the longitudinal D31 wires together.

**SECTION E-E**

- **Bars & Wire**:
  - 3 Spaces at 2\" to 3\" centers
  - 3 Spaces at 3\" to 6\" centers

**LIFTING LOOP DETAIL**

- A minimum 2\" lifting pin shall be used to engage the lifting loops during handling.

**ELEVATION - BOTTOM**

- Tapped holes for 7/8\" threaded rods

**PLAN - TOP PLATE**

- 6''
- 11''
- 1'-10"

**TABLE OF DIMENSIONS**

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</table>

**Material**:

- Prestressed Concrete Beams, IL72

**Dimensions**: See Table of Dimensions
MINIMUM BAR LAP

#5 bar = 3'-6"

PLAN

CROSS SECTION

See sheet of for superstructure details and Bill of Material.
For Section A-A and diaphragm details see sheet of .
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
See sheet of for parapet reinforcement.
MINIMUM BAR LAP
-#5 bar = 3'-6"

PLAN
out to out deck

CROSS SECTION
(looking )

Notes:
- See sheet of for superstructure details and Bill of Materials.
- For Section A-A and diaphragm details see sheet of.
- See sheet of for parapet reinforcement.
- See sheet of for point block details.
- See sheet of for superstructure details.
- See sheet of for point block details.

Notes:
- Minimum bar lap
- #5 bar = 3'-6"
- Order a(E) & a(E) bars full length.
- Cut to fit view and have remainder of bars in opposite end.
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- Order a(E) & a(E) bars full length.
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See sheet of for parapet reinforcement.

For Section A-A and diaphragm details see and Bill of Material.

See sheet of for superstructure details.

Notes:

- Cut to fit skew and use remainder of bars in opposite end.
- Order d(E) & a(E) bars full length.
- Lap with each a(E) bar.
- d(E) bars at 6'' cts.
- #5 bar = 3'-6''
- Bar, bottom
- Total drop =
- Spaces at
- 50° F.
- Slope " per ft.
- Top of slab
- Slope " per ft.
- Slope " per ft.
- Slope " per ft.
See sheet of for superstructure details and lift at weir.

For Section A-A and diaphragm details see sheet of.

Bars indicated thus #5 x 3-#5 bars indicates 20 lines of bars with 3 lengths per line.

See sheet of for parapet reinforcement.
A

end to end deck

Aluminum sheeted construction

~ Pier

end to end deck

MINIMUM BAR LAP

#5 bar = 3'-6"

HALF PLAN

out to out deck

Face to face parapets

CROSS SECTION

(looking )

MINIMUM BAR LAP

#5 bar = 3'-6"

HALF PLAN

out to out deck

Face to face parapets

CROSS SECTION

(looking )

Notes:

See sheet of for superstructure details and (E) at Midspan.

For Sections A-A and B-B and diaphragm details see sheet of .

Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.

See sheet of for parapet reinforcement.
Aluminum sheeted construction

* - # a(E) bars at cts. top
* - # a(E) bars at cts. bottom
- # a(E) bars at 12'' cts.
- # b(E) bars at 12'' cts.
- # b(E) bars at 6'' cts.
- # b(E) bars on slab
- # b(E) bars spaced as shown in
- # b(E) bars at top of parapet
- # b(E) bars at slab top

Notes:
- See sheet of for parapet reinforcement.
- 20 lines of bars with 3 lengths per line.
- Bars indicated thus 20 x 3-#5 etc. indicates sheet of.
- For Section A-A and diaphragm details see and Bill of Material.
- See sheet of for superstructure details.
- Order a(E) & a(E) bars full length.
- Cut to fit skew and use remainder of bars in opposite end.

MINIMUM BAR LAP
- #5 bar = 3'-6''

HALF PLAN

MINIMUM BAR LAP
- #5 bar = 3'-6''

FACE TO FACE PARAPETS

CROSS SECTION

TOTAL DROP =

SPECIFICATIONS

06-2-15

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE
STRUCTURE NO.

FILE NAME =
USER NAME =
PLOT SCALE =
PLOT DATE =
CHECKED =
DRAWN =
CHECKED =
DESIGNED =
REVIEWED =
REVISED =
DEPARTMENT OF TRANSPORTATION
STATE OF ILLINOIS
F.A. RTE.
SECTION
FED. AID PROJECT
CONTRACT NO.
TOTAL SHEETS
SHEET NO.
MINIMUM BAR LAP
#5 bar = 3'-6''

6-8-15

6-8-15

6-8-15

6-8-15
**Notes:**

- See sheet for superstructure details and B/N of Materials.
- For Section A-A and diaphragm details see sheet of.
- Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
- See sheet of for parapet reinforcement.

**Minimum bar lap**

- #5 bar = 3'-6''
- #6 a(E) bars at cts. top over pier
- #6 b(E) bars at |12'' cts.
- #5 b(E) bars equally spaced at |12'' cts.
- #5 d(E) bars at 11'' cts.
- #5 d(E) bars at 6'' cts., top between beams.
- #5 d(E) bars at 6'' cts., bottom between beams.
- #5 a(E) bars at 6'' cts., top.
- #5 a(E) bars at 6'' cts., bottom.
- 1-# a(E) bars.
- 1-# a(E) bars.
- 2-#6 b(E) bars.
- 1-# a(E) bars.
- 4-# a(E) bars at 6'' cts., top.
- 4-# a(E) bars at 6'' cts., bottom.
- 3-#5 b(E) bars.
- 3-#5 b(E) bars.
- 2-#6 b(E) bars.
- 1-# a(E) bars.
- 1-# a(E) bars.
- 3 x #5 b(E) bars.
- 2-#6 b(E) bars.
- PBT-2-LK30°
- NEAR PIER
- NEAR MIDDEN
- CROSS SECTION
- TOTAL DROP =
- Typical between beams
- See sheet of
- PLOT SCALE
- PLOT DATE
- CHECKED
- DRAWN
- DESIGNED
- REVISED
- DEPARTMENT OF TRANSPORTATION
- STATE OF ILLINOIS
- CONTACT NO.
- SHEET NO.
- TOTAL SHEETS
- FED. AID PROJECT
- DEPARTMENT OF TRANSPORTATION
- STATE OF ILLINOIS
- FED. AID PROJECT
- CONTACT NO.
Aluminum sheeted construction
joints in base of parapet

1'-7''
1'-2''
5''

Pier
deck
end to end deck

Aluminum sheeted construction
joints in base of parapet

Top of slab
3 x -#5 b(E) bars
Top of slab
2-#6 b(E) bars

2'-10''
1''

PBT-2-R(>30°)
See sheet of for parapet reinforcement.
20 lines of bars with 3 lengths per line.
Bars indicated thus 20 x 3-#5 etc. indicates
sheet of.

For Section A-A and diaphragm details see
and Bill of Material.

See sheet of for superstructure details
and Bill of Materials.

Notes:

Order a(E) & a(E) bars full length.
Cut to fit skew and use remainder
of bars in opposite end.

5''
12''

2'-10''
1''

20 x 3-#5 etc. indicates
sheet of.
For parapet reinforcement.

Cut to fit skew and use remainder
Order a(E) & a(E) bars full length.

MINIMUM BAR LAP
#5 bar = 3'-6''

Top of slab
Top of slab

Total drop =

Typ. between beams
-#6 b(E) bars at 12'' cts.

Bar, bottom

2'-10''
1''

PBT-2-R(>30°)
See sheet of for parapet reinforcement.
20 lines of bars with 3 lengths per line.
Bars indicated thus 20 x 3-#5 etc. indicates
sheet of.

For Section A-A and diaphragm details see
and Bill of Material.

See sheet of for superstructure details
and Bill of Materials.

Notes:

Order a(E) & a(E) bars full length.
Cut to fit skew and use remainder
of bars in opposite end.

5''
12''

2'-10''
1''

20 x 3-#5 etc. indicates
sheet of.
For parapet reinforcement.
**Notes:**
- See sheet for superstructure details and Bill of Materials.
- For Section A-A and diaphragm details see Sheet 1.
- Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
- See Sheet 1 for parapet reinforcement.

**Minimum Bar Lap**
- #5 bar = 3'-6''

**Half Plan**
- Out to out deck
- Face to face parapets
- Total drop =

**CROSS SECTION**

**NEAR PIER**

**NEAR MIDSPAN**
**ELEVATION OF BEAM**

*Showing reinforcement & dimensions*

- **SECTION A-A**
- **SECTION B-B**
- **SECTION C-C**

**BAR LIST**

**ONE BEAM ONLY**

*For information only*

- **No.**
- **Bar Size**
- **Length**
- **Shape**

---

**NOTES:**

- See sheet for additional details and Bill of Material.
- *For information only*

---

**STATE OF ILLINOIS**

**DEPARTMENT OF TRANSPORTATION**

**COUNTY**

**TOTAL SHEETS**

**SHEET NO.**

---

**FILE NAME**

**USER NAME**

---

**PLOT SCALE**

**PLOT DATE**

---

**CHECKED**

**DRAWN**

---

**CONTRACT NO.**

**F.A. RTE. SECTION**

---

**FED. AID PROJECT**

**ILLINOIS DEPARTMENT OF TRANSPORTATION**
NOTES

Inserts for \( \frac{1}{2}'' \) threaded dowel rods, when specified, are to be two struts.

Ferrule type for interior beams and single ferrule, flared loop type for exterior beams.

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strands, grade 270. The nominal diameter shall be \( \frac{5}{32}'' \) and the nominal cross-sectional area shall be 0.153 sq. in.

The beams shall have a final concrete compressive strength, \( f'_c \), of 5,000 psi and a release concrete compressive strength, \( f'_c \), of 4,000 psi.

A minimum \( \frac{1}{2}'' \) lifting pin shall be used to engage the lifting loops during handling. The \( \frac{1}{2}'' \) lifting pin shall be galvanized according to AASHTO M120.

The top and bottom plates shall be AASHTO M270 Grade 50. The threaded rods, nuts and washers shall be galvanized according to AASHTO M22.

Threaded rods shall be ASTM F 1554 Grade 55.

The G (E) bar assembly shall develop, in tension, at least 125 percent of the yield strength of a grade 60 reinforcement bar times the nominal cross-sectional area of a \#8 bar. The assembly shall allow completion of the splice without turning of the hook bar. The hook bar shall be threaded such that the entire coupler can be threaded onto the hook bar.

Beams shall be released from the fabricator until they have attained 45 days of age or older.
CROSS SECTION (Looking )

Face to face parapets

total drop =

typ. between beams

-#5 a(E) bars at cts., top

Lap with each a(E) bar

-#6 a(E) bars at cts., top

Typ. between beams

#5 bar = 3'-6"

MINIMUM BAR LAP
#5 bar = 3'-6"
PLAN

CROSS SECTION

MINIMUM BAR LAP
-# b(E) bars at 3'-6" cts.

Note:
See sheet 1-00 for superstructure details and Bill of Materials.
Bars indicated thus (6 x 3'-5") cts. indicates 6 lines of bars with 3 lengths per line.
See sheet 1-00 for parapet reinforcement.
PARTIAL PLAN

MINIMUM BAR LAP
#5 bar = 3'-6"

PARTIAL PLAN

out to out deck

Face to face parapets

slope = per ft.

slope = per ft.

slope = per ft.

slope = per ft.

Total drop =

MINIMUM BAR LAP
#5 bar = 3'-6"

PARTIAL PLAN

out to out deck

Face to face parapets

slope = per ft.

slope = per ft.

slope = per ft.

slope = per ft.

Total drop =

MINIMUM BAR LAP
#5 bar = 3'-6"
**SUPERSTRUCTURE DETAILS**

**BILL OF MATERIAL**

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<tr>
<th>SHEET NO.</th>
<th>DESCRIPTION</th>
<th>COUNT</th>
<th>VOL.</th>
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<td>Fiberglass Pipe</td>
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**SUPERSTRUCTURE STRUCTURE NO.**

**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE DETAILS**

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<td>Aluminum Sheet</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2</td>
<td>Fiberglass Pipe</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Pipe Clamp</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4</td>
<td>Fabric</td>
<td></td>
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<tr>
<td>5</td>
<td>Epoxy Coated Reinforcement Bars, Type S, Grade NS, Class 25. Use T with weld</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>6</td>
<td>Joint Filler according to Article 1051.07</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
PI-1-L(>30°)

**CROSS SECTION** (Looking out to out deck)

1'-7'' face to face parapets

Spaces at d(E)

1) a(E) bars at cts. top

<table>
<thead>
<tr>
<th>Total drop</th>
<th>#5 d(E) bars at 11'' cts.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2) a(E) bars at cts. bottom</td>
<td></td>
</tr>
</tbody>
</table>

See sheet of for parapet reinforcement. 20 lines of bars with 3 lengths per line. Bars indicated thus 20 x 3-#5 etc. indicates sheet of.

For Section A-A and diaphragm details see and Bill of Material.

See sheet of for superstructure details and No of Material. For Section A-A and diaphragm details see sheet.

Minimum bar lap

- #5 bar = 3'-6''

Notes:

- Order a(E) & a(E) bars full length.
- Cut to fit skew and use remainder of bars in opposite end.

**PLAN**

out to out deck

Face to face parapets

slope = per ft.

Total drop =

Spaces of

**CROSS SECTION** (Looking out)

1'-7''

Note: See sheet of for superstructure details and No of Material. For Section A-A and diaphragm details see sheet.

Bars indicated thus 20 x 3-#5 etc., indicates 20 lines of bars with 3 lengths per line. See sheet of for parapet reinforcement.
**Plan**

**Minimum Bar Lap**

\#5 bar = 3'-6"

**Crossection**

Typ. between beams

- \#5 \(\text{d(E)}\) bars at 12' cts.
- \#5 \(\text{d(E)}\) bars at 11'' cts.
- \#5 \(\text{b(E)}\) bars spaced as shown in plan, bottom of slab
- \#6 \(\text{a(E)}\) bars at cts. top

**Notes:**

- See sheet for superstructure details and C/W of materials.
- For section A-A and diaphragm details see sheet A-A.
- Bars indicated thus 20 x 3-\#5 etc. indicates 20 lines of bars with 3 lengths per line.
- See sheet for parapet reinforcement.

**MINIMUM BAR LAP**

**PLAN**

MINIMUM BAR LAP

\#5 bar = 3'-6''

**CROSSECTION**

Looking 4'

Notes:

- See sheet for superstructure details and C/W of materials.
- For Section A-A and diaphragm details see sheet A-A.
- Bars indicated thus 20 x 3-\#5 etc. indicates 20 lines of bars with 3 lengths per line.
- See sheet for parapet reinforcement.
MINIMUM BAR LAP
#5 bar = 3'-6"

PLAN

out to out deck

Face to face parapets

CROSS SECTION
(Looking 7°)

PI-1-R030°

6-8-19

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE
STRUCTURE NO.

FILE NAME
= USER NAME

PLOT SCALE
= PLOT DATE

CHECKED
= DRAWN

CHECKED
= DESIGNED

REVISED
= REVISED

DEPARTMENT OF TRANSPORTATION
STATE OF ILLINOIS
F.A. RTE.
SECTION
COUNTY
CONTRACT NO.
TOTAL SHEETS
SHEET NO.
FED. AID PROJECT

MINIMUM BAR LAP
#5 bar = 3'-6"

PLAN

out to out deck

Face to face parapets

CROSS SECTION
(Looking 7°)

PI-1-R030°

6-8-19

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE
STRUCTURE NO.

FILE NAME
= USER NAME

PLOT SCALE
= PLOT DATE

CHECKED
= DRAWN

CHECKED
= DESIGNED

REVISED
= REVISED

DEPARTMENT OF TRANSPORTATION
STATE OF ILLINOIS
F.A. RTE.
SECTION
COUNTY
CONTRACT NO.
TOTAL SHEETS
SHEET NO.
FED. AID PROJECT
PLAN

MINIMUM BAR LAP
#5 bar = 3'-6''

Notations:
- * = For superstructure details end 30° of work.
- @ = For Section A-A and diaphragm details see sheet of.
- (E) = Indicates that 20 x #5 bars, bottom.
- @ = 20 lines of bars with 3 lengths per line.
- See sheet of for parapet reinforcement.
- See sheet of for superstructure details and 30° of work.
- For Section A-A and diaphragm details see sheet of.
- Bars indicated thus 20 x #5 bars, bottom.

Notes:
- See sheet of for superstructure details end 30° of work.
- For Section A-A and diaphragm details see sheet of.
- Bars indicated thus 20 x #5 bars, bottom.
- 20 lines of bars with 3 lengths per line.
- See sheet of for parapet reinforcement.

PLAN

MINIMUM BAR LAP
#5 bar = 3'-6''

Notations:
- * = For superstructure details end 30° of work.
- @ = For Section A-A and diaphragm details see sheet of.
- (E) = Indicates that 20 x #5 bars, bottom.
- @ = 20 lines of bars with 3 lengths per line.
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- Bars indicated thus 20 x #5 bars, bottom.
- 20 lines of bars with 3 lengths per line.
- See sheet of for parapet reinforcement.

Notes:
- See sheet of for superstructure details end 30° of work.
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- 20 lines of bars with 3 lengths per line.
- See sheet of for parapet reinforcement.
- See sheet of for superstructure details and 30° of work.
- For Section A-A and diaphragm details see sheet of.
- Bars indicated thus 20 x #5 bars, bottom.
- 20 lines of bars with 3 lengths per line.
- See sheet of for parapet reinforcement.

PLAN

MINIMUM BAR LAP
#5 bar = 3'-6''

Notations:
- * = For superstructure details end 30° of work.
- @ = For Section A-A and diaphragm details see sheet of.
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- See sheet of for parapet reinforcement.
- See sheet of for superstructure details and 30° of work.
- For Section A-A and diaphragm details see sheet of.
- Bars indicated thus 20 x #5 bars, bottom.
- 20 lines of bars with 3 lengths per line.
**PARTIAL PLAN**

MINIMUM BAR LAP

#5 bar = 3'-6''

**CROSS SECTION**

Looking 

**NEAR PIER**

**NEAR MIDSPAN**

**Notes:**

- Order all #5 and #6 bars full length.
- Cut to fit view and use remainder of bars in opposite end.
- See sheet for superstructure details and Bill of Material.
- For Section A-A and diaphragm details see sheet of .
- Bars indicated thus 20 x 3-#5 etc. indicates 20 bars of bars with 3 lengths per line,
- See sheet of for parapet reinforcement.
Notes:
See sheet of for superstructure details and Bill of Materials.
For Section A-A and diaphragm details see Sheet 1.
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
See Sheet of for parapet reinforcement.

MINIMUM BAR LAP
#5 bar = 3'-6''
(Lap with each #5 bar)

PARTIAL PLAN

NEAR PIER

CROSS SECTION
(Looking )

NEAR MIDSPAN

Total drop =

SECTIONS 

BEWEEN BEAMS
Slope = per ft.
Slope = per ft.
Slope = per ft.
Slope = per ft.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
See sheet of for parapet reinforcement.
20 lines of bars with 3 lengths per line.
Bars indicated thus 20 x 3-#5 etc. indicates sheet of.
For Section A-A and diaphragm details see and Bill of Material.
See sheet of for superstructure details.

Notes:
1. Order all bars full length. Cut to fit skew and use remainder of bars in opposite end.
2. Order a(E) & a(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.
3. Order all bars full length. Cut to fit skew and use remainder of bars in opposite end.

Minimum Bar Lap
#5 bar = 3'-6"

PARTIAL PLAN
end to end deck
out to out deck
Face to face parapets
spaces of
NEAR PIER
CROSS SECTION (looking )
NEAR MIDSPAN

Note:
See sheet of for superstructure details and Bill of Material.
For Section A-A and diaphragm details see sheet of.
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
See sheet of for paraple reinforcement.
See sheet of for parapet reinforcement.

20 lines of bars with 3 lengths per line.

Bars indicated thus 20 x 3-#5 etc. indicates sheet of.

For Section A-A and diaphragm details see and Bill of Material.

See sheet of for superstructure details

Notes:

1. Order #2 & #4 bars full length, cut to fit skew and use remainder of bars in opposite end.

2. 5-8-15 minimum bar lap.

#5 bar = 3'-6''

- #5 (E) bars at 11'' cts.
- #5 (E) bars at 6'' cts., top
- #5 (E) bars at 6'' cts., bottom
- #6 (E) bars at 12'' cts.

- #5 (E) bars at 11'' cts.
- #5 (E) bars at 6'' cts., top
- #6 (E) bars at 12'' cts.

- #6 (E) bars at 12'' cts.
- #6 (E) bars at 11'' cts.
- #6 (E) bars at 6'' cts., top
- #6 (E) bars at 6'' cts., bottom
- #5 (E) bars at 11'' cts.
- #5 (E) bars at 6'' cts., top
- #6 (E) bars at 12'' cts.

50° F. total drop =

See sheet of for superstructure details.

For Section A-A and diaphragm details see sheet of.

Bars indicated thus 20 x 3-#5 etc. indicates 20 these of bars with 3 lengths per line.

See sheet of for parapet reinforcement.
Type I Elastomeric Exp. Brg.

**BILL OF MATERIAL**

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asbestos Bearing Assembly, Type I</td>
<td>Each</td>
<td></td>
</tr>
<tr>
<td>Anchor Bolts</td>
<td>Each</td>
<td></td>
</tr>
</tbody>
</table>

**NOTES:**

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

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

See sheet ___ for additional details of plate cast with beam.

Beams shall be braced for stability during erection and remain braced until deck is poured and cured.

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

**SECTION AT ABUT.**

**SECTION A-A**

**BEARING ASSEMBLY**

**PINTLE**

**SIDE RETAINER**

Equipment rated angle with stiffeners will be allowed in lieu of welded plates.
**Type II Elastomeric Expansion Bearing**

As per the Standard Specifications, cast included with Elastomeric Bearing Assembly, Type II.

**Expansion Details**

- **Dimples on Centers**
  - BELOW 50°F.
  - ABOVE 50°F.

**Bill of Material**

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Total</th>
</tr>
</thead>
</table>

**Notes:**
- Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 or AASHTO M314-51 anchor bolts may be used in lieu of ASTM F1554.
- Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type II.
- The 0.040 PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.
- Bonding of 0.040 PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.
- See sheet No. for additional details of plates cast in lieu of welded plates.
- Beam shall be braced for stability during erection and remain braced until deck is poured and cured.
- 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.

---

**Expansion Bearing Orientation**

The above diagrams are for informational purposes only to show the amount of expected offset "D" for the current temperature in the field.
**SECTION AT ABUT.**

**FIXED BEARING**

**PLAN OF TOP & BOTTOM PLATES**

**BILL OF MATERIAL**

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anchor Bolts</td>
<td>Each</td>
<td></td>
</tr>
</tbody>
</table>
DIAPHRAGM DETAILS
 sectional details section A-A
 sectional details section B-B
 sectional details section C-C

DIAPHRAGM AT PIER
 sectional details section B-B
 sectional details section C-C

DIAPHRAGM AT ABUTMENT
 sectional details section A-A
 sectional details section B-B
 sectional details section C-C

Notes:

- Reinforcement bars in diaphragm are billed with superstructure on sheets of Concrete, reinforcement bars in diaphragm are included with Concrete Superstructure except those shown on P.J.F.
- The #5 x(E) and #6 x(E) bars shall be placed parallel to the beams.
- The #5 x(E) and #6 x(E) bars shall be placed parallel to the beams.
- Space inserts to miss strands and bend dowel rods to match view.

Concrete in diaphragm is included with Concrete Superstructure.
Roofing felt shall be included with Concrete Superstructure.

Reinforcement bars in diaphragm are billed with superstructure on sheets of Concrete, reinforcement bars in diaphragm are included with Concrete Superstructure except those shown on P.J.F.
Concrete in diaphragm is included with Concrete Superstructure.
Roofing felt shall be included with Concrete Superstructure.

Reinforcement bars in diaphragm are billed with superstructure on sheets of Concrete, reinforcement bars in diaphragm are included with Concrete Superstructure except those shown on P.J.F.
Concrete in diaphragm is included with Concrete Superstructure.
Roofing felt shall be included with Concrete Superstructure.
**Elevation of Beam**

- 3 spaces at 3" x 9"
- 4-3/8" # threaded dowel rods of 3" dia. Each face
- Only tighten sufficiently to compress lock washers

**Bar List**

<table>
<thead>
<tr>
<th>Bar List</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
</tr>
<tr>
<td>#4</td>
</tr>
<tr>
<td>#5</td>
</tr>
<tr>
<td>#3</td>
</tr>
<tr>
<td>#8</td>
</tr>
<tr>
<td>#6</td>
</tr>
<tr>
<td>#10</td>
</tr>
</tbody>
</table>

Notes:
- See sheet for additional details and Bill of Material.
- Lap with G (E) bars.
- Spacing #4 G (E) bars.
- Spacing #3 G (E) bars.
- Min. lap 2'-11". (Un lengths)
- 3-#5 G (E) bars full length of beam.
- 2-#8 G (E) bar assembly with threaded coupler splice at pier only. (See sheet of for details)
- Threaded cluster splice at pier only. (See sheet of for details)
- 1'-6" = 1'-6"
- 2'-11" = 2'-11"
- 3'-0" = 3'-0"
- 4'-1" = 4'-1"
- 5'-8" = 5'-8"
- 6'-6" = 6'-6"
- 7'-7" = 7'-7"
**NOTES**

Inserts for \(\frac{3}{4}\)" threaded dowel rods, when specified, are to be two struts.

Threaded type for interior beams and single ferrule, flared loop type for exterior beams.

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand. Grade 270. The nominal diameter shall be \(\frac{1}{8}\)" and the nominal cross-sectional area shall be 0.153 sq. in.

The beams shall have a final concrete compressive strength, \(f'c\), of 45 days of age or older.

Beams shall not be released from the fabricator until they have attained 45 days of age or older.

Threads shall be ASTM F 1554 Grade 55.

Threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

The top and bottom plates shall be AASHTO M270 Grade 50.

Tilt G (E) bars when necessary to maintain 1\(\frac{1}{2}\)" clearance.

A minimum 2\(\frac{1}{2}\)" lifting pin shall be used to engage the lifting loops during handling.

The beams shall be prestressed, to at least 0.153 percent of the yield strength of a grade 60 reinforcement bar times the nominal cross-sectional area of a #8 bar. The assembly shall allow completion of the splice without turning of the hook bar. The hook bar shall be threaded such that the entire coupler can be threaded onto the hook bar.

Beams shall not be released from the fabricator until they have attained 45 days of age or older.

**BILL OF MATERIAL**

<table>
<thead>
<tr>
<th>Title</th>
<th>Unit</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnishing and Erecting Precast Prestressed Concrete</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
NOTES

Inserts for 3" threaded dowel rods, when specified, are to be two strut, ferrule type for interior beams and single ferrule, flared loop type for exterior beams. Prestressing steel shall be uncoated high strength, low relaxation 7-wire strands, Grade 270. The nominal diameter shall be 5/8" and the nominal cross-sectional area shall be 0.153 sq. in.

The beams shall have a final concrete compressive strength, f'c, of 5,000 psi and a release concrete compressive strength, f'ci, of 4,500 psi. A minimum 3/8" lifting pin shall be used to engage the lifting loops during handling.

The beams shall be galvanized according to AASHTO M270 Grade 50. The top and bottom plates shall be AASHTO M270 Grade 50. The threaded rods, nuts and washers shall be galvanized according to AASHTO M220.

Threaded rods shall be ASTM F 1554 Grade 55. Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, ferrule type for interior beams and single ferrule, flared loop type for exterior beams. Inserts for 3/4" threaded dowel rods, when specified, are to be two strut, ferrule type for interior beams and single ferrule, flared loop type for exterior beams. The G (E) bar assembly shall develop, in tension, at least 25% percent of the yield strength of a grade 60 reinforcement bar times the nominal cross-sectional area of a #8 bar. The assembly shall allow completion of the splice without turning of the hook bar. The hook bar shall be threaded such that the entire coupler can be threaded onto the hook bar. Beams shall not be released from the fabricator until they have attained 45 days of age or older.
**Bill of Material**

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<tr>
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<th>Unit</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOP PLATE</td>
<td>6&quot;</td>
<td></td>
</tr>
<tr>
<td>3&quot; Radius</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top of Beam</td>
<td>8&quot;</td>
<td>4&quot;</td>
</tr>
<tr>
<td>LIFTING LOOP DETAIL</td>
<td>270 ksi strands</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>BOTTOM PLATE</td>
<td>6&quot; cts.</td>
<td>6&quot; cts.</td>
</tr>
<tr>
<td>~ Beam</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>~ Beams</td>
<td>3&quot;</td>
<td>3&quot;</td>
</tr>
<tr>
<td></td>
<td>3&quot; = 9&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 spa. at beam</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3'-6&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4&quot;</td>
</tr>
<tr>
<td>R = 2&quot;</td>
<td>Outside</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3&quot;</td>
<td></td>
</tr>
<tr>
<td>BOTTOM PLATE</td>
<td>1'-0&quot;</td>
<td>1'-4&quot;</td>
</tr>
<tr>
<td></td>
<td>2&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1'-4&quot;</td>
<td>5&quot;</td>
</tr>
<tr>
<td>~ Studs</td>
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<tr>
<td></td>
<td>~ Beam</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>~ Pier</td>
<td>-</td>
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</tbody>
</table>

**Notes**

Inserts for 1/2" threaded dowel rods, when specified, are to be two straights. Inserts type for interior beams and single ferrule, flared loop type for exterior beams. Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 5/8" and the nominal cross-sectional area shall be GL33 sq. in.

The beams shall have a final concrete compressive strength, f'c, of 4500 psi and a yield concrete compressive strength, f'c, of 23,000 psi.

A minimum 1/2" lifting pin shall be used to engage the lifting loops during handling.

TW 60/56 bars when necessary to maintain 1/8" clearance. The top and bottom plates shall be AASHTO M270 Grade 50. The top and bottom plates shall be galvanized according to AASHTO M270. The threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

Threaded rods shall be ASTM F 1554 Grade 55.

The top and bottom plates shall be AASHTO M270 Grade 50. The top and bottom plates shall be galvanized according to AASHTO M270. The threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

The G(E) bar assembly shall develop, in tension, at least 125 percent of the yield strength of a Grade 60 reinforcement bar times the nominal cross-sectional area of a #8 bar. The assembly shall allow completion of the splice without turning of the hook bar. The hook bar shall be threaded such that the entire coupler can be threaded onto the hook bar. Beams shall not be released from the fabricator until they have attained 45 days of age or older.
**PI-4-54D**

**6'' Radius**
**Top of Beam**
8' ' 4'
**LIFTING LOOP DETAIL**
270 ksi strands
- (Showing threaded rods)
- (Showing studs)

**BILL OF MATERIAL**

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-Beams, 54''</td>
<td>Feet</td>
<td>1'-3''</td>
</tr>
<tr>
<td>Prestressed Concrete Furnishing and Erecting Precast</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTES**

*Inserts for 3/8" # threaded dowel rods, when specified, are to be two struts.*

*Ferrule type for interior beams and single ferrule, flared loop type for exterior beams.*

*Prestressing steel shall be uncoated high strength, low relaxation 7-wire strands, Grade 270.* The nominal diameter shall be 5/8" and the nominal cross-sectional area shall be 0.153 sq. in.

*The beams shall have a final concrete compressive strength, f'ci, of at least 5250 psi and a release concrete compressive strength, f'c', of at least 4500 psi.*

*A minimum 3/8" lifting pin shall be used to engage the lifting loops during handling. The 3/8" lifting pin shall be ASTM F 550 Grade 55.*

*The top and bottom plates shall be AASHTO M270 Grade 50.* The top and bottom plates shall be galvanized according to AASHTO M270. The threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

*Threaded rods shall be ASTM F 1554 Grade 55.*

*The G (E) bar assembly shall develop, in tension, at least 125 percent of the yield strength of a grade 60 reinforcement bar times the nominal cross-sectional area of a #8 bar. The assembly shall allow completion of the splice without turning of the hook bar. The hook bar shall be threaded such that the entire coupler can be threaded onto the hook bar.*

*Beams shall be released from the fabricator until they have attained 45 days of age or older.*
See Sheet of for parapet reinforcement.

20 lines of bars with 3 lengths per line. Bars indicated thus 20 x 3-#5 etc. indicates and Bill of Material. See Sheet of for superstructure details.

Notes:

out to out deck

1'-7''

1'-7''

1'-2''

5''

1'-2''

-#5 d (E) bars at 11'' cts.

end to end deck

end to end deck

1'-0''

out to out deck

Top of slab

MINIMUM BAR LAP

#5 per x 3'-6''

PLAN

Total drop =

typ. between beams

-# b (E) bars at cts.

-# a (E) bars at cts., top

-# a (E) bars at cts., bottom

CROSS SECTION

Looking at |12' cts., top of slab

x -#5 b (E) bars equally spaced

12' cts., each end

-#5 v (E) bars at
typ. between beams

-#6 a (E) bars at cts. top

(Loaping with each a(E) bar)

-# b (E) bars at cts., bottom

-# a(E) bars at cts., top
PLAN

See Sheet of for parapet reinforcement.

20 lines of bars with 3 lengths per line.

Bars indicated thus 20 x 3-#5 etc. indicates and Bill of Material.

See Sheet of for superstructure details.

Notes:

- #5 d (E) bars at 11'' cts.
- 1'-2 ' '
- 5 ' '
- 1'-7 ' '
- 1'-7 ' '
- 1'-2 ' '
- 5 ' '

out to out deck

end to end deck

MINIMUM BAR LAP

#5 bar = 3'-6''

PLAN

MINIMUM BAR LAP

#5 bar = 3'-6''

out to out deck

end to end deck

Notes:

- See Sheet of for superstructure details and Bil of Material.
- Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
- See Sheet of for parapet reinforcement.

SUPERSTRUCTURE

STATE OF ILLINOIS

DEPARTMENT OF TRANSPORTATION
See Sheet for parapet reinforcement.

20 lines of bars with 3 lengths per line. Bars indicated thus 20 x 3-#5 etc. indicates and Bill of Material.

See Sheet for superstructure details.

Notes:
- 3 x #5 bars at cts. each end.
- #5 bars at cts. top and bottom.
- 3 x #5 bars at cts. top and bottom.
- #5 bars at cts. top and bottom.
- #5 bars at cts. top and bottom.

Minimum Bar Lap

#5 bar • 3'-6".

Plan

Continuous bars indicated thus 20 x 3-#5 etc. indicates #5 bars with 3 lengths per line.

See Sheet for superstructure details and Bill of Material.

Bars indicated thus 20 x 3-#5 etc. indicates #5 bars with 3 lengths per line.

See Sheet for parapet reinforcement.

CROSS SECTION

(Top view)

**MINIMUM BAR LAP**

- #5 bar • 3'-6"

**PLAN**

- 3 x #5 bars at cts. each end.
- #5 bars at cts. top and bottom.
- 3 x #5 bars at cts. top and bottom.
- #5 bars at cts. top and bottom.
- #5 bars at cts. top and bottom.

**NOTES**

- See Sheet for superstructure details and Bill of Material.
- Bars indicated thus 20 x 3-#5 etc. indicates #5 bars with 3 lengths per line.
- See Sheet for parapet reinforcement.
See Sheet [for parapet reinforcement.
20 lines of bars with 3 lengths per line. Bars indicated thus 20 x 3-#5 etc. indicates and Bill of Material.
See Sheet [for superstructure details.

Notes:

out to out deck
1'-7''
1'-7''
1'-2''
5''
1'-2''

Abut.
Back of

Top of slab
3 - #5 b(E) bars
in cross section, bottom of slab
2 - #5 b(E) bars at 11'' cts.
2 - #5 d(E) bars at 12'' cts., top
2 - #5 a(E) bars at 12'' cts., bottom

Top of slab over pier
- #6 b(E) bars at |12'' cts.
- #5 b(E) bars equally spaced as shown
- #5 v(E) bars at 12'' cts., each end

spaces of

MINIMUM BAR LAP
#5 bar = 3'-6''
End to end deck
Face to face parapets
slope '' per ft.
slope '' per ft.
slope '' per ft.
slope '' per ft.
Total drop =
typ. between beams
- #6 a(E) bars at 12'' cts.
- #5 a(E) bars at 12'' cts.
1'-0''

CROSS SECTION
(Looking )
NEAR PIER
NEAR MIDSPAN
See Sheet of parapet reinforcement.

20 lines of bars with 3 lengths per line. Bars indicated thus 20 x 3-#5 etc. indicates Bill of Material.

See Sheet of superstructure details.

Notes:

- 1'-2'  
- 5'  
- 1'-7''  
- 1'-7''  
- 1'-2'  
- 5'  
- out to out deck

2-#6 b(E) bars at 12'' cts.

3 x -#5 b(E) bars top of slab

2-#5 d(E) bars at 12'' cts., top of slab

-#5 a(E) bars at 12'' cts., bottom

Total drop = typ. between beams

#5 bar = 3'-6''

5-6-15
See Sheet of for parapet reinforcement.

20 lines of bars with 3 lengths per line. Bars indicated thus 20 x 3-#5 etc. indicates

and Bill of Material.

See Sheet of for superstructure details

Notes:

in cross section, bottom of slab

-#5 bars at 6" cts., top of slab

-#5 bars at each end

-#6 bars at 12" cts.

-#6 bars at each end deck

Total drop =

typ. between beams

#6 bar = 3'-6"

-#5 bar = 3'-6"

Order #6(E) and #5(E) bars full length.

Cut to fit shown and use remainder of bars in opposite end.

Aluminum sheeted construction, joints in base of parapet.

Pier

Spaces at

Spaces at

Spaces at

Spaces at

-#5 bars at each end

-#5 bars at each end

-#5 bars at each end

-#5 bars at each end

MINIMUM BAR LAP

#5 bar = 3'-6"

PARTIAL PLAN

cut to out deck

cut to out deck

cut to out deck

cut to out deck

MINIMUM BAR LAP

#5 bar = 3'-6"

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MINIMUM BAR LAP

#5 bar = 3'-6"
THE EXTERIOR SURFACES OF THE FLOOR DRAINS SHALL BE PAINTED AN OFF-WHITE COLOR, PIGMENTED BY THE MANSURFACES OF THE FLOOR DRAINS SHALL BE PAINTED AN OFF-WHITE COLOR, PIGMENTED BY THE MANUFACTURER WITH A COLOR THAT MATCHES THE CONCRETE.

THE EXTERIOR SURFACES OF THE FLOOR DRAINS SHALL BE PAINTED AN OFF-WHITE COLOR, PIGMENTED BY THE MANUFACTURER WITH A COLOR THAT MATCHES THE CONCRETE. THE EXTERIOR SURFACES OF THE FLOOR DRAINS SHALL BE PAINTED AN OFF-WHITE COLOR, PIGMENTED BY THE MANUFACTURER WITH A COLOR THAT MATCHES THE CONCRETE.