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<td>2-W14 wires at 3'' centers</td>
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**M4 THRU M6 WWR DETAIL**

(See Table of Dimensions)

**M4 AND M6 WWR DETAIL**

(See Table of Dimensions)

**BILL OF MATERIAL**

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**NOTES**

Inserts for 1/4'' threaded dowel rods, when specified, are to be two 45°
Ferrule Type for interior beams and single Ferrule, Flared Loop Type for exterior beams.
Pre-stressing steel should be uncoated high strength, low relaxation 7-wire strand.
Grade 270. The nominal diameter for beam strands shall be 0.4'' and the nominal
cross-sectional area shall be 0.153 sq. in. The nominal diameter for M31 strands shall
be 0.3'' and the nominal cross-sectional area shall be 0.021 sq. in.
The beams shall have a minimum concrete compressive strength, f’cu, of 7000 psi and
a release concrete compressive strength, f’cu, of 7000 psi.
A minimum 2-W14 lifting pin shall be used to engage the lifting loops during handling.
Threaded rods, nuts and washers shall be galvanized according to AASHTO M232.
The top and bottom plates shall be AASHTO M270 Grade 50.
The top 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’cu, of 8500 psi and
be 3'' 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 0.048 sq. in.

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 beams shall have a release concrete compressive strength, f’cu, of 7000 psi. The beams shall be AASHTO M270 Grade 50.

The beams shall have a final concrete compressive strength, f’cu, of 8500 psi and
be 3'' 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 0.048 sq. in.

A minimum 2-W14 lifting pin shall be used to engage the lifting loops during handling.
Threaded rods, nuts and washers shall be galvanized according to AASHTO M232.
The top and bottom plates shall be AASHTO M270 Grade 50.
The top 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’cu, of 8500 psi and
be 3'' 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 0.048 sq. in.

Bend the extended strands inward on the fascia beams to maintain 1'' clearance
inside the pier diaphragm.

A minimum 2-W14 lifting pin shall be used to engage the lifting loops during handling.
Threaded rods, nuts and washers shall be galvanized according to AASHTO M232.
The top and bottom plates shall be AASHTO M270 Grade 50.
The top 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’cu, of 8500 psi and
be 3'' 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 0.048 sq. in.

Bend the extended strands inward on the fascia beams to maintain 1'' clearance
inside the pier diaphragm.

A minimum 2-W14 lifting pin shall be used to engage the lifting loops during handling.
Threaded rods, nuts and washers shall be galvanized according to AASHTO M232.
The top and bottom plates shall be AASHTO M270 Grade 50.
The top and bottom plates assemblies shall be galvanized according to AASHTO M111.
The top and bottom plates shall be AASHTO M270 Grade 50.

**PLAN - TOP PLATE**

**ELEVATION - BOTTOM PLATE ASSEMBLY**

**SECTION E-E**

**A-0W14 wires at 8 centers**

**LIFTING LOOP DETAIL**

**BAR G(IE)**
ELEVATION OF BEAM
(Showing reinforcement & dimensions)

Symmetrical about E

SECTION A-A

SECTION B-B

SECTION C-C

VIEW D-D

Note: See sheet of for additional details and tab of materials.
**Bill of Material**

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**M. WWR Detail**

When multiple sheets of M WWR are required along the beam length, #5(E) bars (5'-0' long) shall be used to splice the longitudinal D31 wires together w/ lap 2'-2'.

**Table of Dimensions**

- **Span**
  - | E | W |
  - | 6'' | 10'' |

**Lifting Loop Detail**

- **Elevations**
  - | E | W |
  - | 4'' | 6'' |

**Notes**

- Inserts for 1/2" threaded dowel holes, when specified, are to be two 5/8" galvanized steel, high-strength, low relaxation 7-wire strand, Grade 270. The nominal diameter for beam strands shall be 0.64" and the nominal cross-sectional area shall be 0.395 sq. in. The nominal diameter for lifting loops shall be 2/3" and the nominal cross-sectional area shall be 0.203 sq. in. The beams shall have a minimum concrete compressive strength, f'c, of 7000 psi and a maximum concrete split tensile strength, f'c', of 700 psi. A minimum 2/3" lifting pin shall be used to engage the lifting loops during handling. The extended strands involved on the fascia beams must maintain 1" 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 M211. 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. Welded Wire Reinforcement (WWR) shall conform to ASTM A666 with a Class A, Type 1 epoxy coating.

- 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. Prestressing shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter for beam strands shall be 0.64" and the nominal cross-sectional area shall be 0.395 sq. in. The nominal diameter for lifting loops shall be 2/3" and the nominal cross-sectional area shall be 0.203 sq. in. The beams shall have a minimum concrete compressive strength, f'c, of 7000 psi and a maximum concrete split tensile strength, f'c', of 700 psi. A minimum 2/3" lifting pin shall be used to engage the lifting loops during handling. The extended strands involved on the fascia beams must maintain 1" 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 M211. 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. Welded Wire Reinforcement (WWR) shall conform to ASTM A666 with a Class A, Type 1 epoxy coating.

- 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. Prestressing shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter for beam strands shall be 0.64" and the nominal cross-sectional area shall be 0.395 sq. in. The nominal diameter for lifting loops shall be 2/3" and the nominal cross-sectional area shall be 0.203 sq. in. The beams shall have a minimum concrete compressive strength, f'c, of 7000 psi and a maximum concrete split tensile strength, f'c', of 700 psi. A minimum 2/3" lifting pin shall be used to engage the lifting loops during handling. The extended strands involved on the fascia beams must maintain 1" 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 M211. 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. Welded Wire Reinforcement (WWR) shall conform to ASTM A666 with a Class A, Type 1 epoxy coating.

- 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. Prestressing shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter for beam strands shall be 0.64" and the nominal cross-sectional area shall be 0.395 sq. in. The nominal diameter for lifting loops shall be 2/3" and the nominal cross-sectional area shall be 0.203 sq. in. The beams shall have a minimum concrete compressive strength, f'c, of 7000 psi and a maximum concrete split tensile strength, f'c', of 700 psi. A minimum 2/3" lifting pin shall be used to engage the lifting loops during handling. The extended strands involved on the fascia beams must maintain 1" 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 M211. 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. Welded Wire Reinforcement (WWR) shall conform to ASTM A666 with a Class A, Type 1 epoxy coating.
ELEVATION OF BEAM
(Showing reinforcement & dimensions)

Symmetrical about E

SECTION A-A

SECTION B-B

SECTION C-C

VIEW D-D

Note:
See sheet of for additional details and fill of materials.
**NOTES**

Inserts for 3/8" 
Threaded dowel rods, when specified, are to be two axial, 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 0.615 sq. in. The minimum diameter for 11/16" bars shall be 5/8" and the minimum cross-sectional area shall be 0.565 sq. in. The beam shall have a final concrete compressive strength, $f'_c$, of 7000 psi and a release concrete compressive strength, $f'_c$, of 7000 psi.

A minimum 2-5/8" 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.

The top and bottom plates shall be AASHTO M270 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.

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.

Beam 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 age or older.

Epoxy coating.

Welded Wire Reinforcement (WWR) shall conform to ASTM A884 with a Class A, Type 1 age or older.

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

**TABLE OF DIMENSIONS**

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**DEPARTMENT OF TRANSPORTATION**

**STATE OF ILLINOIS**

**FILE NAME**

**PLOT SCALE**

**PLOT DATE**

**CHECKED**

**DRAWN**

**CHECKED**

**REVISED**

**DESIGNED**

**CONTRACT NO.**

**COUNTY**

**DEPARTMENT OF TRANSPORTATION**

**F.A.**

**RTE.**

**SECTION**

**TOTAL**

**SHEETS**

**SHEET NO.**

**CONTRACT NO.**

**PROJECT**

**COUNTY**

**DEPARTMENT OF TRANSPORTATION**

**F.A.**

**RTE.**

**SECTION**

**TOTAL**

**SHEETS**

**SHEET NO.**

**CONTRACT NO.**

**PROJECT**

**COUNTY**
STRUCTURE NO. IL45N BEAM details and Bill of Material. See sheet of for additional

Note:

1. 60° min. angle

60° min. angle

Limits of M  WWR (each face) = 2'-0''

Limits of M  WWR (each face) = 2'-9''

Limits of M  WWR (each face) = 4'-0''

Limits of M  WWR (each face) = 2'-0''

Thread flush with bottom plate.

Thread flush with bottom plate.

G (E) bar

Fully bonded strand

Partially debonded strand

Fully tensioned sufficiently to compress lock washers

Jam nut, typ.

*Hex nut with lock washers:

Jam nut

*Lock nut

1/2" threaded bolts

7 Spaces @ 2''

At 3'' cts., each face

3-1" } threaded rods (each face) = 2'-9''

Cl. 1''

Cl. 1' '

Cl. 3' '

Cl. 2' '

1'-0'' Rad.

6" Rad.

8' ' in. x 10' ' in. x 10' ' in.

Top ` ƒ'' x 10'' x 10''

Draped strands

Section A-A

Section C-C

Elevation of Beam (Section B-B)

Elevation of Beam

Symmetrical about E

Hold down points

Protecting strands

VIEW D-D

FILE NAME = USER NAME

PLOT SCALE =

PLOT DATE =

CHECKED =

DRAWN =

CHECKED =

DESIGNED =

- REVISED =

REVISED =

REVISED =

REVISED =

DEPARTMENT OF TRANSPORTATION

STATE OF ILLINOIS

F.A. R.T.E. SECTION

FED. AID PROJECT

COUNTY

CONTRACT NO.

TOTAL SHEETS

SHEET NO.

10-7-2016
Welded Wire Reinforcement (WWR) shall conform to ASTM A884 with a Class A, Type 1 epoxy coating.

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 and bottom plates shall be AASHTO M270 Grade 50.

Threaded rods shall be ASTM 1-3/8"-6" cts. at 3'-3" cts.

Fan at 6" cts.

Fan at 3'-3" cts.

Domino at 2'-0" and the nominal cross sectional area shall be 0.217 sq. in. The nominal diameter for lifting loops shall be 2" and the nominal cross sectional area shall be 0.153 sq. in. The nominal diameter for lifting loop shall be 1/2" and the nominal cross sectional area shall be 0.069 sq. in. The minimum 2"-D31 lifting pin shall be used to engage the lifting loops during handling.

Threaded rods shall be ASTM 1-3/8"-6" cts. at 3'-3" cts.

Fan at 6" cts.

Fan at 3'-3" cts.

A minimum 2"-D31 lifting pin shall be used to engage the lifting loops during handling.

Threaded rods shall be ASTM 1-3/8"-6" cts. at 3'-3" cts.

Fan at 6" cts.

Fan at 3'-3" cts.

The beams shall have a final concrete compressive strength, f'c, of 8,500 psi.

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.

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 0.069 sq. in. The nominal diameter for lifting loops shall be 1/2" and the nominal cross sectional area shall be 0.153 sq. in. The beams shall have a final concrete compressive strength, f'c, of 7,000 psi.

A minimum 2"-D31 lifting pin shall be used to engage the lifting loops during handling.

Threaded rods shall be ASTM 1-3/8"-6" cts. at 3'-3" cts.

Fan at 6" cts.

Fan at 3'-3" cts.

The beams shall have a final concrete compressive strength, f'c, of 8,500 psi.

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.

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 0.069 sq. in. The nominal diameter for lifting loops shall be 1/2" and the nominal cross sectional area shall be 0.153 sq. in. The beams shall have a final concrete compressive strength, f'c, of 7,000 psi.

A minimum 2"-D31 lifting pin shall be used to engage the lifting loops during handling.

Threaded rods shall be ASTM 1-3/8"-6" cts. at 3'-3" cts.

Fan at 6" cts.

Fan at 3'-3" cts.

The beams shall have a final concrete compressive strength, f'c, of 8,500 psi.

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.

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 0.069 sq. in. The nominal diameter for lifting loops shall be 1/2" and the nominal cross sectional area shall be 0.153 sq. in. The beams shall have a final concrete compressive strength, f'c, of 7,000 psi.

A minimum 2"-D31 lifting pin shall be used to engage the lifting loops during handling.

Threaded rods shall be ASTM 1-3/8"-6" cts. at 3'-3" cts.

Fan at 6" cts.

Fan at 3'-3" cts.

The beams shall have a final concrete compressive strength, f'c, of 8,500 psi.

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.

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 0.069 sq. in. The nominal diameter for lifting loops shall be 1/2" and the nominal cross sectional area shall be 0.153 sq. in. The beams shall have a final concrete compressive strength, f'c, of 7,000 psi.

A minimum 2"-D31 lifting pin shall be used to engage the lifting loops during handling.

Threaded rods shall be ASTM 1-3/8"-6" cts. at 3'-3" cts.

Fan at 6" cts.

Fan at 3'-3" cts.

The beams shall have a final concrete compressive strength, f'c, of 8,500 psi.

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.

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 0.069 sq. in. The nominal diameter for lifting loops shall be 1/2" and the nominal cross sectional area shall be 0.153 sq. in. The beams shall have a final concrete compressive strength, f'c, of 7,000 psi.

A minimum 2"-D31 lifting pin shall be used to engage the lifting loops during handling.

Threaded rods shall be ASTM 1-3/8"-6" cts. at 3'-3" cts.
IL45-3838D

BILL OF MATERIAL

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M2 THRU M8 WWR DETAIL

When multiple sheets of M2 WWR are required along the beam length, M8C bars (12'' long) shall be used to splice the longitudinal D31 wires together. Min. Lap 2'2''.

M2 THRU M8 WWR DETAIL (See Table of Dimensions)

TABLE OF DIMENSIONS

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NOTE:
Inserts for 1/2'' threaded dowel rods when specified, are to be two strand. Prestressed steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter for beam strands shall be 0.69'' and the nominal cross-sectional area shall be 0.057 sq. in. The nominal diameter for AASHTO Grade 55 cables shall be 0.54'' and the nominal cross-sectional area shall be 0.053 sq. in. The beams shall have a 45-day concrete compressive strength, f'c, of 8500 psi and a release concrete compressive strength, f'ci, of 7000 psi.

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

The top and bottom plates shall be AASHTO M270 Grade 55.

The top plates and bottom plates assemblies shall be galvanized according to AASHTO M232.

The top and bottom plates shall be galvanized according to AASHTO M111.

The top and bottom plates shall be AASHTO M270 Grade 55.

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

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

NOTES
Prestressed Concrete Beams, IL45 Furnishing and Erecting Precast Prestressed Concrete Beams, IL45

PLATE ASSEMBLY

** 3 Spaced at 2" = 6"
*** 2 Spaced at 3" = 6"

SECTION E-E

** 3 Spaced at 2" = 6"
*** 2 Spaced at 3" = 6"

SECTION THRU TOP FLANGE

** 3 Spaced at 2" = 6"

LIFTING LOOP DETAIL

** 3 Spaced at 2" = 6"
ELEVATION OF BEAM

(Symmetrical about E)

Limits of M WWR (each face) = 1'-0'' Rad.

Draped strands

ELEVATION OF BEAM

(Symmetrical about E)

Limits of M WWR (each face) = 1'-0'' Rad.

Hold down points

SECTION B-B

Note: Sightlines sufficiently to compress lock washers

SECTION C-C

(5/8'' x 270 kpsi strands)

VIEW D-D

- Fully bonded strand
- Partially debonded strand

Note: See sheet for additional details and list of materials.

FILE NAME

USERNAME

PLOT SCALE

PLOT DATE

CHECKED

DRAWN

CHECKED

DESIGNED

REVISED

DEPARTMENT OF TRANSPORTATION

STATE OF ILLINOIS

ILLINOIS DEPARTMENT OF TRANSPORTATION

REVISED

REVISION

CONTRACT NO.

TOTAL SHEETS

SHEET NO.

F.A.

RTE.

SECTION

COUNTY

F.AID PROJECT

ILLINOIS
**TABLE OF DIMENSIONS**

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**LIFTING LOOP DETAIL**

- 5" Diameter
- 1/8" x 3/4" @ Conduit
- Top of Beam

**BILLOW MATERIAL**

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| E105 | Ft.  | 11'

**NOTES**

- Inserts for 1/8" threaded dowel rods, when specified, are to be two wire, ferrule type, single strand, prestressing steel, Grade 70. The nominal diameter shall be 0.125" and the nominal cross-sectional area shall be 0.0125 sq. in. The nominal diameter for lifting laps shall be 0.064", and the nominal cross-sectional area shall be 0.062 sq. in.
- The beams shall have a minimum concrete compressive strength, f'c, of 7000 psi and a release concrete compressive strength, f'c, of 7000 psi.
- A minimum 1/8" x 3/4" lifting pin shall be used to engage the lifting laps during handling. Before the extended strands are cut on the fascia beams, ensure they maintain 5" clearance inside the pier diaphragms.
- The top and bottom plates shall be AASHTO M270 Grade 50.
- The top and bottom plates shall be galvanized according to AASHTO M270.
- Prestressed concrete shall be AASHTO M270.
- Threaded rods, nuts, and washers shall be galvanized according to AASHTO M270.
- The beams shall be AASHTO M270 Grade 50.
- The beams shall be furnished and erected by the precast concrete beam manufacturer, IL54.
- Epoxy coating shall be provided on all steel components.
- Welded Wire Reinforcement (WWR) shall conform to ASTM A884 with a Class A, Type 1 designation.
- Beams shall not be released from the manufacturer until they have attained 45 days of age or older.
- 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.
- The top plates and bottom plates shall be galvanized according to AASHTO M111.
- The top and bottom plates shall be AASHTO M270 Grade 50.
- Prestressed concrete shall be AASHTO M270.
- Threaded rods, nuts, and washers shall be galvanized according to AASHTO M270.
- The beams shall be AASHTO M270 Grade 50.
- The beams shall be furnished and erected by the precast concrete beam manufacturer, IL54.
- Epoxy coating shall be provided on all steel components.
- Welded Wire Reinforcement (WWR) shall conform to ASTM A884 with a Class A, Type 1 designation.
- Beams shall not be released from the manufacturer until they have attained 45 days of age or older.
- 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.
- The top plates and bottom plates shall be galvanized according to AASHTO M111.
- The top and bottom plates shall be AASHTO M270 Grade 50.
- Prestressed concrete shall be AASHTO M270.
- Threaded rods, nuts, and washers shall be galvanized according to AASHTO M270.
- The beams shall be AASHTO M270 Grade 50.
- The beams shall be furnished and erected by the precast concrete beam manufacturer, IL54.
- Epoxy coating shall be provided on all steel components.
- Welded Wire Reinforcement (WWR) shall conform to ASTM A884 with a Class A, Type 1 designation.
- Beams shall not be released from the manufacturer until they have attained 45 days of age or older.
- 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.
- The top plates and bottom plates shall be galvanized according to AASHTO M111.
- The top and bottom plates shall be AASHTO M270 Grade 50.
- Prestressed concrete shall be AASHTO M270.
- Threaded rods, nuts, and washers shall be galvanized according to AASHTO M270.
- The beams shall be AASHTO M270 Grade 50.
- The beams shall be furnished and erected by the precast concrete beam manufacturer, IL54.
- Epoxy coating shall be provided on all steel components.
- Welded Wire Reinforcement (WWR) shall conform to ASTM A884 with a Class A, Type 1 designation.
- Beams shall not be released from the manufacturer until they have attained 45 days of age or older.
- 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.
- The top plates and bottom plates shall be galvanized according to AASHTO M111.
- The top and bottom plates shall be AASHTO M270 Grade 50.
- Prestressed concrete shall be AASHTO M270.
- Threaded rods, nuts, and washers shall be galvanized according to AASHTO M270.
- The beams shall be AASHTO M270 Grade 50.
- The beams shall be furnished and erected by the precast concrete beam manufacturer, IL54.
ELEVATION OF BEAM

- Symmetrical about E
- Lifting Loop Spacing
- 10° min. angle

SECTION A-A

- Only tighten sufficiently to compress lock washers
- Tighten snug Jam nut, typ.
- Bottom plate assembly
- M WWR placed in top flange full length, except as shown

SECTION C-C

- Fully bonded strand
- Partially debonded strand

Note: See sheet of for additional details and list of materials.
IL63-2438

STRUCTURE NO. IL63N BEAM

ELEVATION OF BEAM
(showing reinforcement & dimensions)

Symmetrical about E
except as shown

SECTION A-A

SECTION B-B

SECTION C-C

VIEW D-D

Note:
See sheet of for additional details and bill of materials.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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

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

10-7-2016

ELEVATION OF BEAM (showing prestressing steel)
#3 bar

## BILL OF MATERIAL

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## M. WWR DETAIL

When multiple sheets of M. WWR are required along the beam length, #5(E) bar (15' X 10' long) shall be used to splice the longitudinal D31 wire together. See Table of Dimensions.

## TABLE OF DIMENSIONS

### SPAN

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### LIFTING LOOP DETAIL

Inserts for 1/4" X 4 threaded dowel rods, when specified, are to be two strip. 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 0.153 sq. in. The nominal diameter for lifting loops shall be 1.5" and the nominal cross-sectional area shall be 0.217 sq. in. A minimum 1/2" X 18 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. The top plates and bottom plate assemblies shall be galvanized according to AASHTO M111. The top plates and bottom plates assemblies shall be galvanized according to AASHTO M270. The beams shall not be released from the fabricator until they have attained 45 days of age or older. Washed Wire Reinforcement (WWR) shall conform to ASTM A664 with a Class A, Type 1 epoxy coating.

## NOTES

- 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 0.153 sq. in.
- The nominal diameter for lifting loops shall be 1.5" and the nominal cross-sectional area shall be 0.217 sq. in.
- A minimum 1/2" X 18 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.
- The top plate and bottom plate assemblies shall be galvanized according to AASHTO M111. The top plates and bottom plate assemblies shall be galvanized according to AASHTO M270.
- The beams shall not be released from the fabricator until they have attained 45 days of age or older.
- Washed Wire Reinforcement (WWR) shall conform to ASTM A664 with a Class A, Type 1 epoxy coating.

## BAR G (E)

- 3" X 10" X 3'-2"

## BAR H (E)

- 3" X 10" X 3'-2"

## SECTION E-E

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## PLATE ASSEMBLY

- Tapped holes for 1/4" X 4 threaded rods

## ELEVATION - BOTTOM

- At B centers

## PLAN - TOP PLATE

- At B centers

## PLAN - TOP PLATE

- Each end

###.getTableDimensions

<table>
<thead>
<tr>
<th>Bar G (E)</th>
<th>Bar H (E)</th>
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## NOTES

- 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 0.153 sq. in. The nominal diameter for lifting loops shall be 1.5" and the nominal cross-sectional area shall be 0.217 sq. in. A minimum 1/2" X 18 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. The top plates and bottom plate assemblies shall be galvanized according to AASHTO M111. The top plates and bottom plate assemblies shall be galvanized according to AASHTO M270.
- The beams shall not be released from the fabricator until they have attained 45 days of age or older. Washed Wire Reinforcement (WWR) shall conform to ASTM A664 with a Class A, Type 1 epoxy coating.

## TABLE OF DIMENSIONS

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## LIFTING LOOP DETAIL

- Inserts for 1/4" X 4 threaded dowel rods, when specified, are to be two strip. 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 0.153 sq. in. The nominal diameter for lifting loops shall be 1.5" and the nominal cross-sectional area shall be 0.217 sq. in. A minimum 1/2" X 18 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. The top plates and bottom plate assemblies shall be galvanized according to AASHTO M111. The top plates and bottom plate assemblies shall be galvanized according to AASHTO M270. The beams shall not be released from the fabricator until they have attained 45 days of age or older. Washed Wire Reinforcement (WWR) shall conform to ASTM A664 with a Class A, Type 1 epoxy coating.

## BAR G (E)

- 3" X 10" X 3'-2"

## BAR H (E)

- 3" X 10" X 3'-2"
**NOTES**

Inserts for 1/4" Ø threaded dowel rods, when specified, are to be two straights.
Ferrules for interior beams and single ferrules, flared loop type, for exterior beams.

Prestressing steel shall be uncoated high strength, low relaxation Type 7 wires, Grade 270. The nominal diameter for beam strands shall be 0.6" and the nominal cross-sectional area shall be 0.153 sq. in. The nominal diameter for lifting rods shall be 1" and the nominal cross-sectional area shall be 0.625 sq. in.

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

A minimum 1/4" Ø lifting pin shall be used to engage the lifting loop during handling. Reinforced strands located on the fascia beams to maintain 1" clearance inside the pier diaphragm.

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

The top and bottom plates assemblies shall be galvanized according to AASHTO M232.

The top plates and bottom plates assemblies shall be galvanized according to AASHTO M232.

The top plates and bottom plates assemblies shall be galvanized according to AASHTO M232.

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

Threaded rods shall be ASTM F 1554 Grade 55.

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

The beams shall be galvanized according to AASHTO M232.

The top plates and bottom plates assemblies shall be galvanized according to AASHTO M232.

The top plates and bottom plates assemblies shall be galvanized according to AASHTO M232.

The beams shall be galvanized according to AASHTO M232.

The beams shall be galvanized according to AASHTO M232.

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. 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.

**TABLE OF DIMENSIONS**

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**SECTION THRU TOP FLANGE**

(Showing other sections of same detail)

**LIFTING LOOP DETAIL**

(Showing other sections of same detail)
ELEVATION OF BEAM
(Showing reinforcement & dimensions)

Section A-A

Symmetrical about E

ELEVATION OF BEAM
(Showing prestressing steel)

Section B-B

Fully tighten sufficiently to compress lock washers

Section C-C

Fully bonded strand

Partially debonded strand

View D-D

Note:
See sheet of for additional details and Bill of Materials.
**BILL OF MATERIAL**

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**PLATE ASSEMBLY**

**ELEVATION - BOTTOM**

- typ. | 4'' |
- 3'' Radius

**SECTION E-E**

- 3 Spaced at 2' - 1''
- 2 Spaced at 3'' - 6''

**Ms THRU Ms WWR DETAIL**

(See Table of Dimensions)

**TABLE OF DIMENSIONS**

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**SPAN**

- typ. | 2'' |

**LIFTING LOOP DETAIL**

**BAR G (E)**

(See Table of Dimensions)

**NOTES**

Inserts for 1/2''-8 threaded dowel rods, specified, are to be two strips.

- Prestressed Concrete Beams (PCB), Foster Loop type for interior beams, Prestressing 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 0.35 sq. in. The nominal diameter for tying rods shall be 0.25-3 sq. in.

- The beams shall have a typical concrete compressive strength, fᶜ, of 7000 psi and a release concrete compressive strength, fᶜᵢ, of 7000 psi.

- The toughened rod, nuts, and washers shall be galvanized according to AASHTO M232.

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

- Threaded rods, nuts and washers shall be galvanized according to AASHTO M111.

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

- Threaded rods shall be ASTM F 1554 Grade 55.

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

- The top plates and bottom plates shall be galvanized according to AASHTO M111.

- 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.

- The minimum 2-D31 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.

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

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

- Beam strands shall be 0.6'' and the nominal cross-sectional area shall be 0.153 sq. in. The nominal diameter for beam strand shall be 0.6'' and the nominal cross-sectional area shall be 0.217 sq. in.

- The nominal diameter for beam strand shall be 0.6'' and the nominal cross-sectional area shall be 0.217 sq. in.

- Beams shall have a final concrete compressive strength, fᶜᵢ, of 8500 psi and a release concrete compressive strength, fᶜᵢ, of 8500 psi.

- The beams shall have a final concrete compressive strength, fᶜᵢ, of 8500 psi.

- Beams shall be 3'' and the nominal cross-sectional area shall be 0.153 sq. in. The nominal diameter for beam strand shall be 0.6'' and the nominal cross-sectional area shall be 0.217 sq. in.

- Prestressing steel shall conform to ASTM A884 with a Class A, Type 1 epoxy coating.

- Beam strands shall be 0.6'' and the nominal cross-sectional area shall be 0.153 sq. in. The nominal diameter for beam strand shall be 0.6'' and the nominal cross-sectional area shall be 0.217 sq. in.

- Beams shall have a final concrete compressive strength, fᶜᵢ, of 8500 psi, and a release concrete compressive strength, fᶜᵢ, of 8500 psi.

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- The beams shall have a final concrete compressive strength, fᶜᵢ, of 8500 psi, and a release concrete compressive strength, fᶜᵢ, of 8500 psi.
**NOTES**

Inserts for 1/2"-6 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-stressed 7-wire strand grade 270.  The nominal diameter for beam strands shall be 0.68" and the nominal cross-sectional area shall be 0.025 sq. in.  The nominal diameter for lifting loops shall be 0.265 sq. in.  The beams shall have a 70 ksi concrete compressive strength, 1% of 7000 psi and a release concrete compressive strength, 1% of 7000 psi.

A minimum 0.26" lifting pin shall be used to engage the lifting loops during handling.  Thread the extended strands inward on the fascia beams to maintain 1/2" 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 M41.  Threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

The top and bottom plates shall be AASHTO M270 Grade 50.  The top plates and bottom plates assemblies shall be galvanized according to AASHTO M232.  Threaded rods shall be ASTM A193 Grade 56.  The top plates and bottom plates assemblies shall be galvanized according to AASHTO M232.  Threaded rods shall be ASTM A193 Grade 56.

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

**PLATE ASSEMBLY**

**ELEVATION - BOTTOM**

PLATE ASSEMBLY

**SECTION E-E**

**ELEVATION - BOTTOM**

**PLATE ASSEMBLY**

**SECTION E-E**

**BAR G (E)**

**M2 THRU M4 WWR DETAIL**

(See Table of Dimensions)

**TABLE OF DIMENSIONS**

<table>
<thead>
<tr>
<th>SPAN</th>
<th>D31 wires</th>
<th>0.217 sq. in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1</td>
<td>2-W14</td>
<td>0.153 sq. in.</td>
</tr>
<tr>
<td>M2</td>
<td>2-W14</td>
<td>0.153 sq. in.</td>
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<tr>
<td>M3</td>
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</tr>
<tr>
<td>M6</td>
<td>2-W14</td>
<td>0.153 sq. in.</td>
</tr>
</tbody>
</table>

**SECTION THRU TOP FLANGE**

(Showing limits of bond breaker)

**LIFTING LOOP DETAIL**

**BILL OF MATERIAL**

10-7-2016

Furnishing and Erecting PreCast Prestressed Concrete Beams, IL72
**ELEVATION OF BEAM**

*(Showing reinforcement & dimensions)*

**SECTION A-A**

*Symm. about ~*

**Hold down points**

**ELEVATION OF BEAM**

*(Showing prestressing sheath)*

**SECTION C-C**

*(Showing limits of bond breaker)*

**BAR LIST**

**ONE BEAM ONLY**

*For information only*

---

**FILE NAME** = USER NAME

**PLOT SCALE** = **PLOT DATE** = **CHECKED** = **DRAWN** = **CHECKED** = **DESIGNED** = **REVISED** =

---

**STATE OF ILLINOIS**

**DEPARTMENT OF TRANSPORTATION**

**PBT-4-63**

10-7-2016
6'' Radius
Top of Beam

LIFTING LOOP DETAIL

270 ksi strands

F an at 6' cts.
F an at 6' cts.

2'' 3''' = 1'-1''

TOP PLATE

BOTTOM PLATE

See bearing details for splice holes when required.

BAR G(E)

BAR G(E)

BAR G(E)

G(E) BAR ASSEMBLY

Threaded one end
#8-bar. Threaded

to end.

Hook bar,

Coupler,

Threaded one end
to end.

#8-90° hook bar.

Threaded one end
to end.

NOTES

Inserts for 9/16" threaded dowel rods, when specified, are to be two strut,
ferrocement 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 0.153 sq. in.

The beams shall have a final concrete compressive strength, f'c, of pat and a
release concrete compressive strength, f'c, of pat.
A minimum 6'' lifting pin shall be used to engage the lifting loops during handling.

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

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

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

Beams shall be released after a minimum of 252% 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.

Tilt G(E) bars when necessary to maintain 1" clearance.

Bond G (E) 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.

Inserts for 1/2" threaded dowel rods, when specified, are to be two strut,
ferrocement 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 0.153 sq. in.

The beams shall have a final concrete compressive strength, f'c, of pat and a
release concrete compressive strength, f'c, of pat.
A minimum 6'' lifting pin shall be used to engage the lifting loops during handling.

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

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

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

Beams shall be released after a minimum of 252% 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.

Tilt G (E) bars when necessary to maintain 1" clearance.

Threaded one end
#8-bar. Threaded

to end.

Hook bar,

Coupler,

Threaded one end
to end.

#8-90° hook bar.

Threaded one end
to end.

#8-bar. Threaded

to end.

Hook bar,
**ELEVATION OF BEAM AT PIER**

**PLAN OF BEAM AT PIER**

**LIFTING LOOP DETAIL**

**TOP PLATE**

**BOTTOM PLATE**

**NOTES**

Inserts for 2" 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 3/8" and the nominal cross-sectional area shall be 0.153 sq. in.

The beams shall have a final concrete compressive strength, f′c, of 4500 psi and a release concrete compressive strength, f′ci, of 3000 psi. A minimum 2" lifting pin shall be used to engage the lifting loops during handling. The lift & gusset bars shall be 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 M232.

Threaded rods shall be ASTM F 1554 Grade 55.

The top and bottom plates shall be AASHTO M270 Grade 50. 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 coupling can be threaded onto the hook bar. The 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 4500 psi and a release concrete compressive strength, f′ci, of 3000 psi. A minimum 2" lifting pin shall be used to engage the lifting loops during handling. The lift & gusset bars shall be 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 M232.

Threaded rods shall be ASTM F 1554 Grade 55.

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

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The beams shall have a final concrete compressive strength, f′c, of 4500 psi and a release concrete compressive strength, f′ci, of 3000 psi. A minimum 2" lifting pin shall be used to engage the lifting loops during handling. The lift & gusset bars shall be 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 M232.

Threaded rods shall be ASTM F 1554 Grade 55.

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

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Threaded rods shall be ASTM F 1554 Grade 55.

The top and bottom plates shall be AASHTO M270 Grade 50. 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 coupling can be threaded onto the hook bar. The beams shall not be released from the fabricator until they have attained 45 days of age or older.
**NOTES**

Inserts for 3/4" threaded dowel rods, when specified, are to be two struts.

Threaded type ferrule 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 0.153 sq. in.

The beams shall have a final concrete compressive strength, f'_c, of 4500 psi at age of 45 days or older.

Steel reinforcing bars shall be Grade 60. The nominal diameter shall be 3/4" and the nominal cross-sectional area shall be 0.153 sq. in.

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

The 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.

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

Threaded rods shall be threaded such that the entire coupler can be threaded onto the hook 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. The hook bar shall be threaded such that the entire coupler can be threaded onto the hook bar.

A minimum 3/4" lifting pin shall be used to engage the lifting loops during handling.

The top and bottom plates shall be galvanized according to AASHTO M111. 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.

G(E) bars shall be threaded such that the entire coupler can be threaded onto the hook bar. The hook bar shall be threaded such that the entire coupler can be threaded onto the hook bar.

The beams shall have a final concrete compressive strength, f'_c, of 4500 psi at age of 45 days or older.

Threaded rods shall be ASTM F 1554 Grade 55.

Threaded rods shall be threaded such that the entire coupler can be threaded onto the hook 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.

A minimum 3/4" lifting pin shall be used to engage the lifting loops during handling.

The top and bottom plates shall be galvanized according to AASHTO M111. The threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

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The top and bottom plates shall be galvanized according to AASHTO M111. The threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

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Threaded rods shall be ASTM F 1554 Grade 55.

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A minimum 3/4" lifting pin shall be used to engage the lifting loops during handling.

The top and bottom plates shall be galvanized according to AASHTO M111. The threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

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A minimum 3/4" lifting pin shall be used to engage the lifting loops during handling.

The top and bottom plates shall be galvanized according to AASHTO M111. The threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

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A minimum 3/4" lifting pin shall be used to engage the lifting loops during handling.

The top and bottom plates shall be galvanized according to AASHTO M111. The threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

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A minimum 3/4" lifting pin shall be used to engage the lifting loops during handling.

The top and bottom plates shall be galvanized according to AASHTO M111. The threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

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G(E) bars shall be threaded such that the entire coupler can be threaded onto the hook bar. The hook bar shall be threaded such that the entire coupler can be threaded onto the hook bar.

The beams shall have a final concrete compressive strength, f'_c, of 4500 psi at age of 45 days or older.
**ELEVATION OF BEAM**
(Drawing reinforcement & dimensions)

**SECTION A-A**

- 5' x 5' x 2''
- @ 3'-3''
- 4-#4 G/E bars full length of beam
- Min. lap 3'-7'' (lengths)
- Spacing #4 G/E bars
- Spacing #6 G/E bars
- Spacing #6 G/E bars @ required spacing to pier only. (See sheet of for details)

- 5' x 3-3''
- 4-#8 G/E bars full length of beam
- Min. lap 3'-7'' (lengths)
- Spacing #8 G/E bars
- Spacing #10 G/E bars
- Spacing #10 G/E bars (bevel to match)

**SECTION B-B**

- 5' x 2''
- @ 3'-3''
- 4-#6 G/E bars full length of beam
- Min. lap 3'-7'' (lengths)
- Spacing #6 G/E bars
- Spacing #8 G/E bars
- Spacing #10 G/E bars

**SECTION C-C**

- 5' x 2''
- @ 3'-3''
- 4-#8 G/E bars full length of beam
- Min. lap 3'-7'' (lengths)
- Spacing #8 G/E bars
- Spacing #10 G/E bars

**BAR LIST**

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<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Length</th>
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<tbody>
<tr>
<td>#4</td>
<td>G/E</td>
<td>4'-11''</td>
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<tr>
<td>#6</td>
<td>G/E</td>
<td>6'-8''</td>
</tr>
<tr>
<td>#8</td>
<td>G/E</td>
<td>8'-7''</td>
</tr>
</tbody>
</table>

*3 spaces at 3'' = 9''*

*3 spaces at 3'' = 9''*

*3 spaces at 3'' = 9''*

*3 spaces at 3'' = 9''*

*3 spaces at 3'' = 9''*
**LIFTING LOOP DETAIL**

**TOP PLATE**

**BOTTOM PLATE** (Showing threaded rods)

**NOTES**

Inserts for ⅜" threaded dowel rods, when specified, are to be two struts.

Forces_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 ⅛" and the nominal cross-sectional area shall be 0.031 sq. in.

The beams shall have a final concrete compressive strength, f'c, of 6000 psi and a release concrete compressive strength, f'ci, of 5000 psi.

A minimum ⅛" lifting pin shall be used to engage the lifting loops during handling.

THR G(E) bars when necessary to maintain ⅛" clearance.

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

The lap and bottom plates shall be galvanized according to AASHTO M270.

The threaded rods, nuts and washers shall be galvanized according to AASHTO M270.

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 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. The 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>Item</th>
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<tbody>
<tr>
<td>TOP PLATE</td>
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<tr>
<td>BOTTOM PLATE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAR G(E)</td>
<td></td>
<td></td>
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<td>BAR G(E)</td>
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<td>BAR G(E)</td>
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<td>G(E) BAR ASSEMBLY</td>
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</table>

**STATE OF ILLINOIS**

**DEPARTMENT OF TRANSPORTATION**

**STRUCTURE NO.**

**62" PPC I-BEAM DETAILS**

**FILE NAME**

**USER NAME**

**PLOT SCALE**

**PLOT DATE**

**CHECKED**

**DRAWN**

**CHECKED**

**DESIGNED**

**REVISED**

**REVISED**

**REVISED**

**REVISED**

**DEPARTMENT OF TRANSPORTATION**

**STATE OF ILLINOIS**

**F.A. RTE. SECTION**

**COUNTY**

**CONTRACT NO.**

**SHEETS**

**SHEET NO.**

**TOTAL**

**FED. AID PROJECT**
ELEVATION OF BEAM
(Showing reinforcement & dimensions)

*3 G5/8 bars at 1'-0" cts.
Spacing #4 G5/8 bars
5 spaces at 6" = 7'-6"

**Elongation tip

5 spaces at 6" = 7'-6"

ELEVATION OF BEAM
(Showing prestressing steel)

BAR LIST

ONE BEAM ONLY
(For information only)

Notes:
See sheet of for additional details and Bill of Material.
**BILL OF MATERIAL**

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>Total</th>
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<tbody>
<tr>
<td><strong>TOP PLATE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bottom of beam</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>BOTTOM PLATE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>See bearing details for hole locations when required.</td>
<td></td>
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**ELEVATION OF BEAM AT PIER**

**PLAN OF BEAM AT PIER**

**LIFTING LOOP DETAIL**

**NOTES**

Inserts for 2" threaded dowel rods, when specified, are to be two 24" long, 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 shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.

The beams shall have a final concrete compressive strength, f'c, of 4500 psi and a release concrete compressive strength, f'c, of 3000 psi.

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

The beams shall be prestressed per AASHTO M405 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 M232.

Threaded rods shall be ASTM F 1554 Grade 55.

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

Threaded rods shall be threaded such that the entire coupler can be threaded onto the hook 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.

**BAR G(E)**

**BAR Gs(E)**

**BAR G(E)**

**Ge(E) BAR ASSEMBLY**

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.
**NOTES**

Inserts for 3⁄8" threaded dowel rods, when specified, are 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 shall be 3⁄8" and the nominal cross-sectional area shall be 0.153 sq. in.

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

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

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

The top and bottom plates shall be galvanized according to AASHTO M111. 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.