Chapter 03 - Superstructure

SECTION 07

CONCRETE SLAB
(SUP-SLAB)
Chapter 03 - Superstructure

Section 07 – Concrete Slabs

SUB-SECTION 01

GENERAL

(SUP-SLAB(GEN))
GENERAL NOTES


Design Assumptions: The superimposed dead load is 1020 lb/ft for a 4 foot slab and 950 lb/ft for a 3 foot slab unless specified otherwise on the Plans.

No composite action between the prestressed concrete slab panels and the concrete overlay has been considered.

Prestressed Concrete: Load and resistance factor method. $f_c = 7,000$ psi. The minimum compressive strength at transfer of prestress shall be $f_c = 5,950$ psi.

Prestressing Steel: Prestressing steel shall consist of $1/2\"$ diameter 7-wire low relaxation strands conforming to the requirements of M 203 Grade 270. Each $1/2\"$ strand shall be pretensioned to 31,000 lb, (0.75 fpu). Have an ultimate strength of 41,300 lb and a yield strength of 37,200 lb (0.90 fpu).

Prestressed Concrete: All concrete for prestressed concrete slabs shall be self-consolidating concrete with a 28 day compressive strength of $f'c = 6,000$ psi.

Construction: Strands shall be pretensioned to the values specified on the Plans.

Camber readings and report shall conform to 440.03.16.

Tolerances shall be as specified in 440.03.17.

Surface finish of the shear keys shall be as specified in 440.03.14.01(a).

The Contractor shall show the type and location of the lifting inserts. The Contractor shall ensure the lifting devices have the safe working capacity to lift the slab panels into position during erection, without overstressing the panels.

The Contractor shall assemble the slab panels for the entire bridge width at the casting plant to ensure that there is no misalignment prior to shipping slab units to the site. Any misalignment of the transverse rod holes will be cause for rejection of the prestressed concrete slab panel. Drilling or coring of the slab panels (either initially) or to rectify a problem is prohibited.

The Contractor will be allowed to place equipment on the slab unit prior to placing the concrete overlay provided that all slab units are in place, the tie rods tensioned to the final tensioning force, the shear key grout has met the curing requirements, and it does not violate Section 1C-6.14.

Measurement and Payment: Measurement and Payment shall be as specified in 440.04.
The Contractor shall follow the following sequence of operations and Section 440.03.20 for the erection of slab panel units:

1. The Contractor shall coordinate and hold a pre-grout meeting prior to concrete slab panel erection with SHA Construction and Office of Structures personnel. The purpose of the meeting will be to discuss slab panel preparation and shear key grout placement procedures.

2. Immediately prior to erecting slab panels, clean the abrasive blasted shear key surfaces with compressed air, stiff bristle fiber brushes, or vacuuming.

3. Pull the slab panels together and field tighten in the transverse direction to the initial tensioning force as specified in Std. No. SUP-SLAB-401. Tension lateral tie rods near mid-span first and then progress towards the ends of the beam.

4. Isolate lateral tie rods from shear key grout by placing expandable spray foam sealant at all tie rod locations, following the manufacturer’s guidelines and as detailed in the Std. No. SUP-SLAB-501.

5. Seal the joint below the shear keys using an approved method that does not interfere with the grout in the shear key pocket.

6. Once the expandable spray foam sealant has met the manufacturer’s curing requirements, procedures for placement of the shear key grout may begin.

7. Clean the shear key surface with compressed air and keep it moist until the grout is placed.

8. Grout the shear keys by overfilling the joint, Drive the grout or compactly tamp it into the keyways; do not vibrate. After 30 minutes, strike off the excess grout flush with the top of the panels. Follow the manufacturer’s recommendations for grouting in cold or hot weather.

9. Start curing of the shear key grout immediately after the grout has been finished, but do not leave any portion of the grout uncovered for more than 45 minutes after placement.

10. Keep the surfaces wet, even in areas where there is no ready water supply.

11. Cure the shear key grout for three (3) days with burlap as specified in 420.03.09(B) or (D), respectively.

12. Allow a minimum of 48 hours between grouting of the last shear keys and final tensioning of lateral tie rods.

13. Tension lateral tie rods to final tensioning force as specified in Std. No. SUP-SLAB-401.
CONCRETE OVERLAY
SEQUENCE OF OPERATIONS

In preparation for the placement of the Mix No. 8 concrete overlay over the precast concrete slab units, the Contractor shall follow the following sequence of operations:

1. Concrete curbs and parapets may be placed once the lateral tie rods have been tensioned to the final tensioning force and the shear key grout has met the curing requirements.

2. Placement of the overlay may occur once the parapet and curbs have cured for 24 hours.

3. The overlay reinforcing mat may be assembled on or off the structure. However, the mats must be assembled in units that can be lifted on and off the structure prior to placing overlay. Reinforcing units shall be assembled with proper bar lap lengths to tie reinforcing units together. Temporary supports attached to the mats, such as diagonal rebars or similar support steel such as steel angles, may be required to prevent racking of the mat during lifting operations. No welding will be allowed.

4. To locate the reinforcing mat 2½" clear of the top of deck overlay the Contractor shall place and tie the support chairs to the underside of the reinforcing mat.

5. The finishing screed shall be set-up and a dry run of the finishing operation made to verify that the reinforcing is properly located and the finished deck elevations shown on the plans can be achieved.

6. The reinforcing mat, including chairs, shall be lifted off of the bridge just prior to the placement of the overlay to permit the entire deck to be cleaned in accordance with Section 440.03.22.

7. Prior to beginning the placement of the overlay, the Contractor shall float the cement slurry across the bridge deck as described in the specifications and work it into the top of the slab units.

8. Keeping the slurry moist with a misting operation, the reinforcing mat shall be placed back on top of the precast slab units, segments tied together and resting on chairs, and the placement of the Mix No. 8 concrete overlay shall commence immediately. It is imperative that the overlay shall be placed while the slurry is in a non-set condition.
Notes:
1. For Type A recess detail see Det. No. SUP-SLAB-401.
2. Skew angle shall not be less than 60°.

PLAN
Scale: None

Center line brg.
Slab Panel Nos.
Skew Angle
Construction or working line
Dowel hole (typ.)

C to C Brd. Length (L)
5'-0"
20'-0" max.
5'-0"

Sta.

5'-0"

Center line
Recess Type A
Center line
tie rod (typ.)
typ.)

5'-0"

Center line
brg.,
panels
Notes:
1. For Type A recess detail see Det. No. SUP-SLAB-401.
2. Skew angle shall not be less than 60°.

PLAN
Scale: None

PRECAST SLAB UNIT AND TIE ROD LAYOUT
SLABS GREATER THAN 30' UP TO 50'

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* GUIDE SHEET FOR PLAN DEVELOPMENT ONLY - DO NOT INCLUDE THIS SHEET IN CONTRACT PLANS *

* FOR OFFICE USE ONLY *
Notes:
1. For Type A recess detail see Det. No. SUP-SLAB-401.
2. Skew angle shall not be less than 60°.
Notes:
1. For Type A & B recess details see Det. No. SUP-SLAB-401, for Type B Tie Rod Details for Stage Construction see Det. No. SUP-SLAB-401.
2. Skew angle shall not be less then 60°.
Notes:
1. For Type A & B recess details see Det. No. SUP-SLAB-401, for Type B Tie Rod Details for Stage Construction see Det. No. SUP-SLAB-401.
2. Skew angle shall not be less than 60°.

* GUIDE SHEET FOR PLAN DEVELOPMENT ONLY – DO NOT INCLUDE THIS SHEET IN CONTRACT PLANS *
Notes:
1. For Type A & B recess details see Det. No. SUP-SLAB-401, for Type B tie rod details for Stage Construction see Det. No. SUP-SLAB-401.
2. Skew angle shall not be less than 60°.
SECTION
LATERAL TIE-ROD DETAIL
Scale: 1/2" = 1'-0"

<table>
<thead>
<tr>
<th>Rod Diameter (Inches)</th>
<th>Initial Tension Force (lb)</th>
<th>Final Tension Force (lb)</th>
<th>Plate Hole Diameter (Inches)</th>
<th>Minimum Root Area through threads (in²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4</td>
<td>20,000</td>
<td>120,000</td>
<td>1/8</td>
<td>0.91</td>
</tr>
</tbody>
</table>

Notes:
1. For tie-rod tensioning procedures, see Contract Plans and 440.03.20.
2. All nuts, plates and tie-rods shall be hot dipped galvanized.
3. All nonshrink grout shall conform to 902.11(C).
4. Heavy hex. nut shall be supplied by tie-rod manufacturer and develop full tensile strength of tie-rod.
Face of precast exterior concrete slab unit

6" x 6" x 1/2"

plate, ASTM A 709 Grade 36

Heavy hex. nut

5 1/2"

2 1/2" dia. tie-rod hole

Threaded bar conforming to ASTM A 722, Type II

-90°

Varies

Face of exterior precast concrete slab unit

Center line 2 1/2" dia. tie-rod hole

Top of slab

6 1/2"

3/4", 3/4"

Cut exterior #5 bar around hand hole

2 1/2" dia. tie rod hole

at face of interior precast concrete slab units

Notes:

1. For tie-rod tensioning procedures, see Contract Plans and 440.03.20.
2. All tie-rods, plates and nuts shall be hot dipped galvanized.
3. All nonshrink grout shall conform to 902.11(C).
4. Shear keys in slabs not shown for clarity.

Note:
For skewed bridges, the Contractor has the option providing a tapered 1 1/2" min. thickness x 6"x 6" plate or forming the tie-rod end of the tie-rod recess to be 90° to the centerline of the tie-rod. No additional compensation will be allowed for whatever option is selected.

TIE-ROD RECESS DETAILS - TYPE A

Scale: 1/2" = 1'-0"

* See precast concrete slab units details for dimensions.

PRECAST CONCRETE SLAB UNITS
TIE-ROD DETAILS
TYPE A

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PRECAST CONCRETE SLAB UNITS
TIE-ROD DETAILS
TYPE A

DETAIL NO. SUP-SLAB-401

SHEET 2 OF 3
Face of precast concrete slab units
6" x 6" x 1/2"
plate, ASTM A 709 Grade 36

Heavy hex nut

2 1/2" dia. tie-rod hole

90°

to tie-rod end

Stage 1 Construction
Stage 2 Construction

Note:
For skewed bridges, the Contractor has the option providing a tapered 1/2" min. thickness x 6" x 6" plate or forming the tie-rod end of the tie-rod recess to be 90° to the centerline of the tie-rod. No additional compensation will be allowed for whatever option is selected.

4" tie-rod hole

Threaded bar conforming to
ASTM A 722, Type II

Tie-rod coupler

ELEVATION

TIE-ROD RECESS DETAILS - TYPE B

Scale: 1/2" = 1'-0"

Notes:
1. For tie-rod tensioning procedures, see Contract Plans and 440.03.20.
2. All couplers tie-rods, plates and nuts shall be hot dipped galvanized.
3. All nonshrink grout shall conform to 902.11(C).
4. Shear keys in slabs not shown for clarity.
5. Coupler shall be supplied by the tie rod manufacturer and develop full tensile strength of tie rod.

SECTION A-A

* See precast concrete slab units details for dimensions.

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PRECAST CONCRETE SLAB UNITS
TIE-ROD DETAILS
TYPE B

DETAIL NO. SUP-SLAB-401
SHEET 3 OF 3
Notes:
1. For shear key placement procedures, see 440.03.20.
2. All nonshrink grout shall conform to 902.11(C).
3. Shear keys shall not be placed on the exposed face of the exterior slab units unless specifically called for on the plans to accommodate future widenings.
4. See sheet 2 of 2 for Section B-B and Section C-C and A, B, C dimensions.

Pourable Nonshrink grout
Expandable spray foam sealant

Limits of expandable spray foam sealant

SECTION A-A
Scale: 1/2" = 1'-0"

Notes:
1. For shear key placement procedures, see 440.03.20.
2. All nonshrink grout shall conform to 902.11(C).
3. Shear keys shall not be placed on the exposed face of the exterior slab units unless specifically called for on the plans to accommodate future widenings.
4. See sheet 2 of 2 for Section B-B and Section C-C and A, B, C dimensions.
SHEAR KEY DETAILS

Scale: 1/8" = 1'-0"

<table>
<thead>
<tr>
<th>Precast Concrete Slab Panel</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple Span 20'-0&quot; or less</td>
<td>1'-6&quot;</td>
<td>10&quot;</td>
<td>8&quot;</td>
<td>3&quot;</td>
</tr>
<tr>
<td>Simple Span greater than 20'-0&quot; to 25'-0&quot;</td>
<td>1'-6&quot;</td>
<td>10&quot;</td>
<td>8&quot;</td>
<td>3&quot;</td>
</tr>
<tr>
<td>Simple Span greater than 25'-0&quot; to 30'-0&quot;</td>
<td>1'-6&quot;</td>
<td>10&quot;</td>
<td>8&quot;</td>
<td>3&quot;</td>
</tr>
<tr>
<td>Simple Span greater than 30'-0&quot; to 35'-0&quot;</td>
<td>1'-9&quot;</td>
<td>1'-0&quot;</td>
<td>9&quot;</td>
<td>5&quot;</td>
</tr>
<tr>
<td>Simple Span greater than 35'-0&quot; to 40'-0&quot;</td>
<td>2'-0&quot;</td>
<td>1'-2&quot;</td>
<td>10&quot;</td>
<td>5&quot;</td>
</tr>
<tr>
<td>Simple Span greater than 40'-0&quot; to 45'-0&quot;</td>
<td>2'-0&quot;</td>
<td>1'-2&quot;</td>
<td>10&quot;</td>
<td>5&quot;</td>
</tr>
<tr>
<td>Simple Span greater than 45'-0&quot; to 50'-0&quot;</td>
<td>2'-3&quot;</td>
<td>1'-4&quot;</td>
<td>11&quot;</td>
<td>7&quot;</td>
</tr>
<tr>
<td>Simple Span greater than 50'-0&quot; to 55'-0&quot;</td>
<td>2'-6&quot;</td>
<td>1'-4&quot;</td>
<td>1'-2&quot;</td>
<td>7&quot;</td>
</tr>
</tbody>
</table>

Notes:
1. For shear key placement procedures, see 440.03.20.
2. All nonshrink grout shall conform to 902.03.11(C).
3. Shear keys shall not be placed on the exposed face of the exterior slab units unless specifically called for on the plans to accommodate future widenings.
Concrete overlay and end portion of slab shall be placed as one continuous pour as shown using Mix. No. 8 concrete.

2½" dia. dowel holes in ends of precast concrete slab units. If an expansion end it is to be filled with an elastomeric or rubberized joint material. If a fixed end it is to be filled with nonshrink grout. *4's @ 6" c/c each way located 2½" clear from top of concrete overlay.

The cost of all reinforcing and concrete in the overlay shall be included in the lump sum price for the Superstructure Concrete item.

Notes:
1. All reinforcing steel to be epoxy coated.
2. All nonshrink grout shall conform to 902.JUL01.
Notes:
1. All reinforcing steel to be epoxy coated.
2. Railing not shown for clarity.
3. Double stirrups, longitudinal reinforcing steel and prestressing strands not shown for clarity.
4. For additional curb reinforcing details see Det. No. SUP-TB(TR)-301.

**PRECAST CONCRETE SLAB CURB JOINT DETAILS**

**SUP-SLAB-602**

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**APPROVAL**
**DIRECTOR**
**OFFICE OF STRUCTURES**

**DATE:** 02/15/2017

**VERSION** 1.0

**SHEET** of
For exact Bridge Typical Section, see pertinent bridge plans.

**TYPICAL SECTION**
Scale: 1/8" = 1'-0"

- Mix No. 8 concrete overlay
- 2 1/2" clear (typ.)
- #4's @ 6" c/c each way (epoxy coated)
- Modified F-Shape or Single Slope parapet (details shall be modified to account for the actual overlay depth)

**PARTIAL DECK OVERLAY PLAN**
Scale: 1/8" = 1'-0"

- 2" bearing substructure unit
- #4's @ 6" c/c both directions
- 2" clear (typ.)

Note:
F-Shape barrier and three strand tube rail is for illustrative purposes only.
Lifting devices to have a minimum factor of safety of 2 on a working load of 20,000 lb. for each device.

Typical slab unit

2'0"Typ.

Lifting devices location (90° panels) - Plan View

Scale: ½" = 1'-0"

Lifting devices to have a minimum factor of safety of 2 on a working load of 20,000 lb. for each device.

Typical slab unit

Notes:
1. If prestressing strands are used for the lifting device, they shall be cut flush with the slab surface and epoxy coated prior to placing the overlay.
2. Lifting device working load of 20,000 lb. is satisfactory for all slab panels up to and including those 4' wide & 55' span length.
3. The exact location of the lifting device may be altered to avoid all prestressing strands, stirrups, mild reinforcing steel, tie rods, and railing anchorage as long as the specified clear cover is maintained.
4. The Contractor shall show the type and location of the lifting inserts. The Contractor shall ensure that the lifting devices have the safe working capacity to lift the slab panels into position during erection, without overstressing the panels.
Chapter 03 - Superstructure

Section 07 – Concrete Slabs

SUB-SECTION 02

3 FT WIDE SLABS
(SUP-SLAB(3FT))
**Camber Notes:**

Camber due to prestress plus slab dead load to be checked in the field.

The thickness of the concrete overlay shall be varied to compensate for any inaccuracies in the camber of slabs.

Prestress camber and dead load deflection data shown is theoretical and may vary with concrete strength, variable prestressing conditions and prestress losses.

Camber in slabs will increase due to concrete creep during storage. Precautions shall be taken by loading or other means to prevent additional camber from developing during storage of prestressed slabs.

A = Estimated camber due to prestress
B = Deflection due to dead load of prestressed slabs
C = Deflection due to dead load of cast-in-place concrete overlay, curbs and railing
D = Net final camber

<table>
<thead>
<tr>
<th>Precast Concrete Slab Panel</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple Span 20'-0'' or less</td>
<td>( \frac{1}{6}'' )</td>
<td>( \frac{1}{6}'' )</td>
<td>( \frac{1}{6}'' )</td>
<td>( \frac{1}{6}'' )</td>
</tr>
<tr>
<td>Simple Span greater than 20'-0'' to 25'-0''</td>
<td>( \frac{1}{6}'' )</td>
<td>( \frac{1}{6}'' )</td>
<td>( \frac{1}{6}'' )</td>
<td>( \frac{1}{6}'' )</td>
</tr>
<tr>
<td>Simple Span greater than 25'-0'' to 30'-0''</td>
<td>( \frac{1}{6}'' )</td>
<td>( \frac{1}{4}'' )</td>
<td>( \frac{1}{6}'' )</td>
<td>( \frac{1}{6}'' )</td>
</tr>
<tr>
<td>Simple Span greater than 30'-0'' to 35'-0''</td>
<td>( \frac{1}{6}'' )</td>
<td>( \frac{1}{4}'' )</td>
<td>( \frac{1}{4}'' )</td>
<td>( \frac{1}{6}'' )</td>
</tr>
<tr>
<td>Simple Span greater than 35'-0'' to 40'-0''</td>
<td>( \frac{1}{4}'' )</td>
<td>( \frac{1}{2}'' )</td>
<td>( \frac{1}{4}'' )</td>
<td>( \frac{1}{2}'' )</td>
</tr>
<tr>
<td>Simple Span greater than 40'-0'' to 45'-0''</td>
<td>( \frac{1}{2}'' )</td>
<td>( \frac{3}{4}'' )</td>
<td>( \frac{1}{2}'' )</td>
<td>( \frac{1}{6}'' )</td>
</tr>
<tr>
<td>Simple Span greater than 45'-0'' to 50'-0''</td>
<td>( \frac{3}{4}'' )</td>
<td>( \frac{3}{4}'' )</td>
<td>( \frac{3}{4}'' )</td>
<td>( \frac{1}{6}'' )</td>
</tr>
<tr>
<td>Simple Span greater than 50'-0'' to 55'-0''</td>
<td>( \frac{3}{4}'' )</td>
<td>( \frac{3}{4}'' )</td>
<td>( \frac{3}{4}'' )</td>
<td>( \frac{1}{6}'' )</td>
</tr>
</tbody>
</table>
**3'-0" INTERIOR SLAB PLAN**

Scale: $\frac{1}{4}'' = 1'-0''$

- Center line bearing
- 5' (typ.)
- 2½'' dia. dowel hole (typ.)
- 2½'' dia. tie rod hole (typ.)
- 6''
- 5'-0''
- 6''
- 3'-0''
- 1'-2'' step
- 1'-0''
- 1'-2'' step

*For exact slab lengths, skew angle and tie rod pattern see contract plans' sheets.

**3'-0" INTERIOR SLAB ELEVATION**

Scale: $\frac{1}{4}'' = 1'-0''$

- Varies 10½'' Max.
- Varies 10½'' Max.
- 4 - #5 bars (typ.)

**Notes:**
- Stirrup spacing shown is for a 90° crossing. For bridges with other skew angles, see Det. No. SUP-SLAB(3FT)-103 for details of skewed ends.

**Notes:**
1. Extreme care shall be used in locating tie rod holes during the casting operation. Contractor shall assemble the slab units for the entire bridge width at the casting plant to ensure that there is no hole misalignment prior to shipping slab units to the site. Any misalignment of the holes will be cause for rejection of the slab unit. Drilling or coring of the slabs to create new or modified cast holes is prohibited.
2. Adjust stirrup spacing as needed to avoid tie rod hole.
3. All reinforcing steel to be epoxy coated.
SECTION - SLAB AT MIDSPAN

NOTE:
For location of tie rod holes, see contract plans.

SECTION - SLAB AT ENDS

NOTE:
Any misplaced dowel bar holes or tie rod holes will be cause for rejection of the precast slab unit.
**3'-0" EXTERIOR SLAB PLAN**

Scale: $\frac{1}{4'} = 1'-0"$

- L + 1'-0" Slab Length (max. 21'-0"
- $L = 20'-0"$ or Less

- Exterior face
- 2" x 6" continuous key (if curb is used)

**For exact slab lengths, skew angle and tie rod pattern see contract plans' sheets.**

### Notes:
- Reinforcing steel at ends of slab and curb reinforcing not shown for clarity.
- For curb steel is required use #5 bars equally spaced between stirrups - 10/2" max.

### Stirrup Spacing

- 2½" dia. dowel hole (typ.)
- 2½" dia. tie rod hole (typ.)

**3'-0" EXTERIOR SLAB ELEVATION**

Scale: $\frac{1}{4'} = 1'-0"$

- Varies 1'-2¼" Max.
- If curb steel is required use #5 bars equally spaced between stirrups - 10/2" max.
- 2½" dia. tie rod hole with recess (exterior face only)

**Notes:**
- Stirrup spacing shown is for a 90° crossing. For bridges with other skew angles, see Det. No. SUP-SLAB(3FT)-103 for details of skewed ends.
- Extreme care shall be used in locating tie rod holes during the casting operation. Drilling or coring of the slabs to create new or modified cast holes is prohibited.
- Adjust curb rebar and stirrup spacing as needed to avoid tie rod hole and railing anchor bolts (if applicable).
- All reinforcing steel to be epoxy coated.

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**SIMPLE SPAN 20'-0" OR LESS**

**EXTERIOR 3'-0" PRECAST CONCRETE SLAB PANEL**

**PLAN & ELEVATION**

**DETAIl NO. SUP-SLAB(3FT)-102**

**SHEET 2 OF 2**
**SECTION - SLAB AT MIDSPAN**
Scale: $\frac{1}{4}'' = 1'-0''$

- Roughened surface in accordance with Section 440.03.14 for concrete overlay
- See Shear Key Detail Det. No. SUP-SLAB-501
- 4 - 5's placed as shown
- $2\frac{1}{2}''$ dia. tie rod hole
- 4 double stirrups placed in pairs as shown
- #4 double stirrups placed in pairs see Plans for spacing at ends
- 8 - $\frac{1}{2}''$ dia. prestressing strands placed as shown

**SECTION - SLAB AT ENDS**
Scale: $\frac{1}{4}'' = 1'-0''$

- #5 curb rebar - see note 2.
- Alternate @ 10\(\frac{1}{2}''\) c/c between 
- #4 double stirrups
- If bridge has curb
- Extreme care shall be used when placing and tying the curb rebar, railing and anchor bolts assembly to provide for the required clearances. Any misplaced rebar, dowel bar holes, tie rod holes or anchor bolts will be cause for rejection of the precast slab unit.

Notes:
1. For location of tie rod holes, see contract plans.
2. For location of curb reinforcement and anchor bolts and plates to be cast in slab for railing, see Det. No. SUP-TB(TR)-301

* FOR OFFICE USE ONLY *
PLAN
Scale: $\frac{3/4}{1'-0''}$

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SIMPLE SPAN 20'-0" OR LESS
INTERIOR 3'-0" PRECAST CONCRETE SLAB PANEL
SKewed END DETAIL

DETAIL NO. SUP-SLAB(3FT)-103
 SHEET ___ OF __

Notes:
- All reinforcing steel to be epoxy coated.
- For exact skew angle, see contract plan sheets.
- End stirrup spacing must be laid out to determine spacing.
- Layout shown works up to a skew angle of 55°. For angles less than 55°, designer must layout skewed end detail on plans.
**PLAN**

Scale: \( \frac{\frac{1}{4}}{\text{in.}} = 1\text{-ft} \)

---

**Notes**:
- All reinforcing steel to be epoxy coated.

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**SUPERSTRUCTURE SLABS**

**SIMPLE SPAN 20'-0" OR LESS**

**EXTERIOR 3'-0" PRECAST CONCRETE SLAB PANEL**

**SKewed END DETAIL**

**DETAIL NO. SUP-SLAB(3FT)-103**

**SHEET 2 OF 2**
1. Simple span greater than 20'-0" to 25'-0"

2. Adjust curb rebar and stirrup spacing as needed to avoid tie rod hole and rolling anchor bolts, if applicable.

3. All reinforcing steel to be epoxy coated.

2/3 dia. dowel hole (typ.)

2/3 dia. tie rod hole (typ.)

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**Notes:**

- Extreme care shall be used in locating the slab unit. Extreme care will be necessary to avoid tie rod hole and rolling anchor bolts, if applicable. Adjust curb rebar and stirrup spacing as needed to avoid tie rod hole and rolling anchor bolts, if applicable.
- All reinforcing steel to be epoxy coated.

**For exact slab lengths, skew angle and tie rod pattern see contract plans' sheets.**

**3'-0" EXTERIOR SLAB PLAN**

Scale: 1/4" = 1'-0"

- L + 1'-0" Slab Length (max. 26'-0"

L = over 20'-0" to 25'-0"

**3'-0" EXTERIOR SLAB ELEVATION**

Scale: 1/4" = 1'-0"

- Bars to be bent at casting plant after formwork has been removed.
For stage construction
Type B tie rod recess may be required.
For location see Slab Layout sheet in Plans.

SECTION - SLAB AT MIDSPAN
Scale: \( \frac{1}{4}'' = 1'-0'' \)

- Roughened surface in accordance with Section 440.03.14 for concrete overlay
- See Shear Key Detail Det. No. SUP-SLAB-501
- 4 - *5's placed as shown
- 2 ½'' dia. tie rod hole
- #4 double stirrups placed in pairs @ 10'' c/c, see Plans.
- 11 - ½'' dia. strands placed as shown

SECTION - SLAB AT ENDS
Scale: \( \frac{1}{4}'' = 1'-0'' \)

- Roughened surface in accordance with Section 440.03.14 for concrete overlay
- 2 ½'' dia. dowel bar holes
- 4 - *5's placed as shown
- #4 double stirrups see Plans for spacing at ends
- 11 - ½'' dia. strands placed as shown

Note:
Any misplaced dowel bar holes or tie rod holes will be cause for rejection of the precast slab unit.

Note:
For location of tie rod holes, see contract plans.
Notes:

1. Extreme care shall be used in locating reinforcing steel bars (typ.) to avoid tie rod hole and dowel hole (typ.) as needed to avoid tie rod hole and dowel hole (typ.) during the casting operation. Contractor shall assemble slab units for the entire bridge width at the casting plant to ensure that there is no hole to the site. Any misalignment of the holes will be cause for rejection of the slab unit. Drilling or coring of the slab unit to create new or modified holes is prohibited.

2. Assemble slab units to be epoxy coated. Extreme care shall be taken when installing slab units to avoid any misalignment of the slab unit. Drilling or coring of dowel holes (typ.) is prohibited. Drilling or coring of tie rod holes (typ.) is prohibited to create new or modified holes. Extreme care shall be used in locating reinforcing steel (typ.) to avoid tie rod hole and dowel hole (typ.) as needed to avoid tie rod hole and dowel hole (typ.) during the casting operation.

3. Reinforcing steel at ends of slab not shown for clarity.

4. Bars to be bent at casting plant after formwork has been removed.

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STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
OFFICE OF STRUCTURES
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

APPROVAL
DIRECTOR
OFFICE OF STRUCTURES

DATE:
VERSION

DETAIL NO.
SHEET

L + 1'-0'' Slab Length (max. 26'-0'')

L = over 20'-0'' to 25'-0'' *

STIRRUP SPACING

2'-0'' dia. dowel hole (typ.)

2'-0'' dia. tie rod hole (typ.)

5'' (typ.)

1'-2'' step

1'-4'' (typ.)

2'-0'' dia. tie rod hole

3'-0'' INTERIOR SLAB PLAN
Scale: 1/4'' = 1'-0''

Note:
Stirrup spacing shown is for a 90° skew angle crossing. For bridges with other skew angles, see Det. No. SUP-SLAB(3FT)-203 for details of skewed ends.

3'-0'' INTERIOR SLAB ELEVATION
Scale: 1/4'' = 1'-0''

Note:
Reinforcing steel at ends of slab not shown for clarity.

Bars to be bent at casting plant after formwork has been removed.

* FOR OFFICE USE ONLY *

* GUIDE SHEET FOR PLAN DEVELOPMENT ONLY - DO NOT INCLUDE THIS SHEET IN CONTRACT PLANS *
Center line key

2' x 6' key
1'-0" typ.
2" cl.

Roughened surface in accordance with Section 440.03.14 for concrete overlay

See Shear Key Detail Det. No. SUP-SLAB-50L

4 - #5's placed as shown

2 1/2" dia. tie rod hole

#4 double stirrups

placed in pairs @ 10" c/c, see Plans.

11 - 1/2" dia. strands placed as shown

SECTION - SLAB AT MIDSPAN
Scale: 1/4" = 1'-0"

21/2" dia. dowel bar holes

4 - #5's placed as shown

#4 double stirrups

placed in pairs see Plans for spacing at ends

11 - 1/2" dia. strands placed as shown

Note:
Extreme care shall be used when placing and tying the curb rebar, rolling and anchor bolts assembly to provide for the required clearances. Any misplaced rebar, dowel bar holes, tie rod holes or anchor bolts will cause for rejection of the precast slab unit.

SECTION - SLAB AT ENDS
Scale: 1/4" = 1'-0"

4 double stirrups placed in pairs @ 10" c/c, see Plans.

11 - 1/2" dia. strands placed as shown

Notes:
1. For location of tie rod holes, see contract plans.

2. For location of curb reinforcement and anchor bolts and plates to be cast in slab for railing, see Det. No. SUP-TBTRI-301

Notes:
1. For location of tie rod holes, see contract plans.

2. For location of curb reinforcement and anchor bolts and plates to be cast in slab for railing, see Det. No. SUP-TBTRI-301

Extreme care shall be used when placing and tying the curb rebar, rolling and anchor bolts assembly to provide for the required clearances. Any misplaced rebar, dowel bar holes, tie rod holes or anchor bolts will cause for rejection of the precast slab unit.
**SKewed END DETAIL**

**INTERIOR 3'-0'' PRECAST CONCRETE SLAB PANEL**

**SIMPLE SPAN GREATER THAN 20'-0'' TO 25'-0''**

**PLAN**

Scale: $\frac{3/4''}{1'}$

- **Normal stirrup spacing**
  - 4 equal spaces
  - 3'' c/c min. - 10'' c/c max.

- **Center line slab**
  - 4'' cl. (typ.)
  - 2'' cl. (typ.)
  - Top of slope area
  - 10'' c/c max.

- **Skew angle**
  - *4 double stirrups placed as shown

- **Center line bearing**
  - 1'' cl.
  - 5'' cl.
  - Step
  - 6''
  - 6''
  - 3'' cl.

- **2 1/2'' dia. dowel hole (typ.)**

**Notes:**
- 4 - #5 bars in end of slab not shown for clarity.

**Note to Fabricator:**
End stirrup spacing must be laid out to determine spacing.

**Note to Designer:**
Layout shown works up to a skew angle of 55°. For angles less than 55°, designer must layout skewed end detail on plans.

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All reinforcing steel to be epoxy coated.

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**SUP-SLAB(3FT)-203**

**SHEET 1 OF 2**
**Note:**
All reinforcing steel to be epoxy coated.

---

**PLAN**

Scale: $\frac{3/4}{1}^\prime = 1^\prime-0^\prime$

---

**Notes:**
- For exact skew angle, see contract plan sheets.
- 4 - #5 bars in end of slab not shown for clarity.
- Note to Fabricator:
  End stirrup spacing must be laid out to determine spacing.
- Note to Designer:
  Layout shown works up to a skew angle of 55°. For angles less than 55° designer must layout skewed end detail on plans.

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SIMPLE SPAN GREATER THAN 20'-0" TO 25'-0"

EXTERIOR 3'-0" PRECAST CONCRETE SLAB PANEL

SKewed END DETAIL

DETAIL NO. SUP-SLAB(3FT)-203

SHEET 2 OF 2
Notes:

1. Extreme care shall be used in locating tie rod holes during the casting operation. Contractor shall assemble the slab units for the entire bridge width at the casting plant to ensure that there is no hole misalignment prior to shipping slab units to the site. Any misalignment of the holes will be cause for rejection of the slab unit. Drilling or coring of the slabs to create new or modified cast holes is prohibited.

2. Adjust curb rebar and stirrup spacing as needed to avoid tie rod hole and railing anchor bolt (if applicable).

3. All reinforcing steel to be epoxy coated.

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SIMPLE SPAN GREATER THAN 25'-0" TO 30'-0"
INTERIOR 3'-0" PRECAST CONCRETE SLAB PANEL
PLAN & ELEVATION

DETAIL NO. SUP-SLAB(3FT)-301 SHEET 1 of 2
For stage construction
Type B tie rod recess may be required.
For location see Slab Layout sheet in Plans.

Note:
For location of tie rod holes, see contract plans.

SECTION - SLAB AT MIDSPAN
Scale: \( \frac{1}{4}'' = 1'-'0'' \)

Roughened surface in accordance with Section 440.0314 for concrete overlay

4 - #5's placed as shown

2½" dia. tie rod hole

4 double stirrups placed in pairs @ 10" c/c, see Plans.

23 - ½" dia. strands placed as shown

SECTION - SLAB AT ENDS
Scale: \( \frac{1}{4}'' = 1'-'0'' \)

Roughened surface in accordance with Section 440.0314 for concrete overlay

2½" dia. dowel bar holes

4 - #5's placed as shown

4 double stirrups placed in pairs see Plans for spacing at ends.

23 - ½" dia. strands placed as shown

Note:
Any misplaced dowel bar holes or tie rod holes will be cause for rejection of the precast slab unit.

Notes:
1. All reinforcing steel to be epoxy coated.
2. Adjust stirrup spacing to avoid tie rod holes as needed.
Notes:
1. Extreme care shall be used in locating reinforcing steel at ends of skews. Adjust curb rebar and stirrup spacing as needed to avoid tie rod hole and bearing recess. Note: Stirrup spacing shown is for a 90° skew. For bridges with other skew angles, see Det. No. SUP-SLAB(3FT)-303 for details of skewed ends.
2. Adjust curb rebar and stirrup spacing as needed to avoid tie rod hole and bearing recess. Reinforcing steel at ends of skews shall be epoxy coated.
3. All reinforcing steel to be epoxy coated. Extreme care shall be used in locating reinforcing steel to avoid tie rod holes.

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NOTES:

1. For location of tie rod holes, see contract plans.

2. For location of curb reinforcement and anchor bolts and plates to be cast in slab for railing, see Det. No. SUP-TB(TR)-301

SECTION - SLAB AT MIDSPAN
Scale: $\frac{3}{4}'' = 1'-0''$

- Roughened surface in accordance with Section 440.03.14 for concrete overlay
- See Shear Key Detail Det. No. SUP-SLAB-501
- 4 - *5's placed as shown
- 2 1/2'' dia. tie rod hole
- 4 double stirrups placed in pairs @ 10'' c/c, see Plans
- 23 - 1/2'' dia. strands placed as shown
- #5 curb rebar - see note 2.
- Alternate @ 10'' c/c between *4 double stirrups

SECTION - SLAB AT ENDS
Scale: $\frac{3}{4}'' = 1'-0''$

- 21/2'' dia. dowel bar holes
- Roughened surface in accordance with Section 440.03.14 for concrete overlay
- 4 - *5's placed as shown
- #4 double stirrups placed in pairs see Plans for spacing at ends
- 23 - 1/2'' dia. strands placed as shown

Note:
Extreme care shall be used when placing and tying the curb rebar, railing and anchor bolts assembly to provide for the required clearances. Any misplaced rebar, dowel bar holes, tie rod holes or anchor bolts will be cause for rejection of the precast slab unit.

* FOR OFFICE USE ONLY *
Center line slab

6''

3'' cl.

6''

3'' cl.

2'' cl. (typ.)

Normal stirrup spacing

4 equal spaces

10'' c/c max.

Top of slope area

2'' cl. (typ.)

4 double stirrups placed as shown

* Skew angle

Center line slab

2 1/2'' dia. dowel hole (typ.)

PLAN

Scale: 1/4'' = 1'-0''

Notes:

* For exact skew angle, see contract plan sheets.

* Note to Fabricator:
End stirrup spacing must be laid out to determine spacing.

* Note to Designer:
Layout shown works up to a skew angle of 55°. For angles less than 55°, designer must layout skewed end detail on plans.

Notes:

All reinforcing steel to be epoxy coated.

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PLAN
Scale: 1/4" = 1'-0"

4 equal spaces
10" c/c max.
Top of slope area
2" cl. (typ.)

4 equal spaces
3" c/c min. - 10" c/c max.

"4 double stirrups"

"2" x 6"
key

"2" cl. (typ.)

"4 double stirrups placed as shown"

"Skew angle"

Center line slab

2 1/2" dia. dowel hole (typ.)

5-#5 curb reinforcement placed as shown

Note: 4 - #5 bars in end of slab not shown for clarity.

Note to Fabricator:
End stirrup spacing must be laid out to determine spacing.

Note to Designer:
Layout shown works up to a skew angle of 55°. For angles less than 55°, designer must layout skewed end detail on plans.

STATE OF MARYLAND
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SIMPLE SPAN GREATER THAN 25'-0" TO 30'-0"
EXTERIOR 3'-0" PRECAST CONCRETE SLAB PANEL
SKewed END DETAIL

DETAIL NO. SUP-SLAB(3FT)-303  SHEET 2 OF 2

Notes:
All reinforcing steel to be epoxy coated.
1. Stirrup spacing shown is for a 90° crossing. For bridges with other skew angles, see Det. No. SUP-SLAB(3FT)-403 for details of skewed ends.

2. Extreme care shall be used in locating tie rod holes during the casting operation. Contractor shall assemble the slab unit to ensure there is no hole alignment prior to shipping slab units to the site. Any misalignment of the slab unit will be cause for rejection of the slab. Drilling or coring of the slab unit is prohibited. Any deviation or modification to the slab unit to create new or modified cast holes will be cause for rejection of the slab unit. Drilling or coring of the slab unit to create new or modified cast holes is prohibited. Ends of the slab unit shall be epoxy coated.

3. Adjust curb rebar and stirrup spacing as needed to avoid tie rod hole and railing anchor bolts (if applicable).

4. All reinforcing steel to be bent at casting plant to ensure that there is no hole for the entire bridge width at the casting plant. Drilling or coring of tie rod holes during the casting operation. Extreme care shall be used in locating tie rod holes during the casting operation. Contractor shall assemble the slab unit to ensure there is no hole alignment prior to shipping slab units to the site. Any misalignment of the slab unit will be cause for rejection of the slab. Drilling or coring of the slab unit is prohibited. Any deviation or modification to the slab unit to create new or modified cast holes will be cause for rejection of the slab. Drilling or coring of the slab unit to create new or modified cast holes is prohibited. Ends of the slab unit shall be epoxy coated.

Note:
- Stirrup spacing shown is for a 90° crossing. For bridges with other skew angles, see Det. No. SUP-SLAB(3FT)-403 for details of skewed ends.
- Extreme care shall be used in locating tie rod holes during the casting operation. Contractor shall assemble the slab unit to ensure there is no hole alignment prior to shipping slab units to the site. Any misalignment of the slab unit will be cause for rejection of the slab. Drilling or coring of the slab unit is prohibited. Any deviation or modification to the slab unit to create new or modified cast holes will be cause for rejection of the slab. Drilling or coring of the slab unit to create new or modified cast holes is prohibited. Ends of the slab unit shall be epoxy coated.
- All reinforcing steel to be bent at casting plant to ensure that there is no hole for the entire bridge width at the casting plant. Drilling or coring of tie rod holes during the casting operation. Extreme care shall be used in locating tie rod holes during the casting operation. Contractor shall assemble the slab unit to ensure there is no hole alignment prior to shipping slab units to the site. Any misalignment of the slab unit will be cause for rejection of the slab. Drilling or coring of the slab unit is prohibited. Any deviation or modification to the slab unit to create new or modified cast holes will be cause for rejection of the slab. Drilling or coring of the slab unit to create new or modified cast holes is prohibited. Ends of the slab unit shall be epoxy coated.

For exact slab lengths, skew angle and tie rod pattern see contract plans’ sheets.
SECTION - SLAB AT MIDSPAN

Scale: \( \frac{\text{1/4"}}{\text{1'-0"}} \)

- Type B tie rod recess, for location see Slab Layout sheet.
- See Shear Key Detail Det. No. SUP-SLAB-501
- 4 - 5's placed as shown
- \( 2\frac{1}{2}'' \) dia. tie rod hole
- #4 double stirrups placed in pairs @ 1'-0" c/c, see Plans.
- 22 - \( \frac{1}{2}'' \) dia. strands placed as shown

Note:
Any misplaced dowel bar holes or tie rod holes will be cause for rejection of the precast slab unit.

SECTION - SLAB AT ENDS

Scale: \( \frac{\text{1/4"}}{\text{1'-0"}} \)

- Roughened surface in accordance with Section 440.03.14 for concrete overlay
- 2\( \frac{1}{2}'' \) dia. dowel bar holes
- 22 - \( \frac{1}{2}'' \) dia. strands placed as shown

Note:
For location of tie rod holes, see contract plans.
Notes:

1. For location of tie rod holes, see contract plans.

2. For location of curb reinforcement and anchor bolts and plates to be cast in slab for railing, see Det. No. SUP-TBR-301.

Note:
Extreme care shall be used when placing and tying the curb rebar, railing and anchor bolts assembly to provide for the required clearances. Any misplaced rebar, dowel bar holes, tie rod holes or anchor bolts will be cause for rejection of the precast slab unit.
**GUIDE SHEET FOR PLAN DEVELOPMENT ONLY – DO NOT INCLUDE THIS SHEET IN CONTRACT PLANS**

**PLAN**

Scale: $\frac{3}{4}'' = 1'-0''$

- **#4 double stirrups**
- **4 equal spaces**
  - 1'-0'' c/c max.
- **Top of slope area**
  - 2'' c/c (typ.)
- **Center line slab**
- **2 1/2'' dia. dowel hole (typ.)**
- **4 double stirrups placed as shown**
- **Skew angle**
- **Center line bearing**

**Normal stirrup spacing**

- **4 equal spaces**
  - 3'' min.
  - 1'-0'' c/c max.

**Notes:**

- All reinforcing steel to be epoxy coated.

**Sup-Slab(3FT)-403**

**Simple span greater than 30'-0'' to 35'-0''**

**Interior 3'-0'' precast concrete slab panel**

**Skewed end detail**

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Note to Fabricator:
End stirrup spacing must be laid out to determine spacing.

Note to Designer:
Layout shown works up to a skew angle of 55°. For angles less than 55°, designer must layout skewed end detail on plans.

States:
All reinforcing steel to be epoxy coated.

* GUIDE SHEET FOR PLAN DEVELOPMENT ONLY - DO NOT INCLUDE THIS SHEET IN CONTRACT PLANS *
1. Extreme care shall be used in locating the casting operation. Stakeout to be completed prior to the site. Any misalignment of the hole shall be cause for rejection of the slab. Any misalignment prior to shipping slab units to the casting plant to ensure that there is no hole misalignment at the casting plant will be cause for rejection of the slab units. All reinforcing steel to be epoxy coated.

2. Adjust curb rebar and stirrup spacing as needed to avoid tie rod hole and rolling anchor bolts if applicable.

3. All reinforcing steel to be epoxy coated.

Note:
Stirrup spacing shown is for a 90° crossing. For bridges with other skew angles, see Det. No. SUP-SLAB(3FT)-503 for details of skewed ends.

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**3'-0" INTERIOR SLAB PLAN**

Scale: \( \frac{1}{10}" = 1'-0" \)

Note:
Reinforcing steel at ends of slab not shown for clarity.

---

**3'-0" INTERIOR SLAB ELEVATION**

Scale: \( \frac{1}{10}" = 1'-0" \)

Bar spacing to be bent at casting plant after formwork has been removed.

---

*Note:*

For exact slab lengths, skew angle and tie rod pattern see contract plans' sheets.

---

*FOR OFFICE USE ONLY*
SECTION - SLAB AT MIDSPAN
Scale: \( \frac{\frac{3}{4}}{\frac{1}{4}} = 1\)-0"

- Type B tie rod recess, for location see Slab Layout sheet.
- 2.5" dia, tie rod hole
- 2 - #5's placed as shown
- 4 double stirrups placed in pairs @ 1'-1/2" c/c, see Plans.
- 25 - 1/2" dia. strands placed as shown

SECTION - SLAB AT ENDS
Scale: \( \frac{\frac{3}{4}}{\frac{1}{4}} = 1\)-0"

- Roughened surface in accordance with Section 440.03.14 for concrete overlay
- See Shear Key Detail Det. No. SUP-SLAB-501
- 4 - #5's placed as shown
- 2.5" dia, dowel bar holes
- 4 - #5's placed as shown
- 25 - 1/2" dia. strands placed as shown

Note:
For location of tie rod holes, see contract plans.

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1. Extreme care shall be used in locating centerline bearing points. Contractor shall assemble the slab unit to ensure that there is no hole misalignment at the site. Any misalignment prior to shipping slab units to the site will be cause for rejection of the slab unit. Drilling or coring of any slab holes is prohibited. The Superstructure Slabs shall be epoxy coated.

2. Adjust curb rebar and stirrup spacing as needed to avoid tie rod holes, and rolling rebar to create new or modified rebar patterns. Reinforcing steel at slab ends and curb reinforcing not shown for clarity.

3. All reinforcing steel to be epoxy coated. Extreme care shall be used in locating centerline bearing points. Contractor shall assemble the slab unit to ensure that there is no hole misalignment at the site. Any misalignment prior to shipping slab units to the site will be cause for rejection of the slab unit. Drilling or coring of any slab holes is prohibited. The Superstructure Slabs shall be epoxy coated.

4. Bars to be bent at casting plant after formwork has been removed. Extreme care shall be used in locating centerline bearing points. Contractor shall assemble the slab unit to ensure that there is no hole misalignment at the site. Any misalignment prior to shipping slab units to the site will be cause for rejection of the slab unit. Drilling or coring of any slab holes is prohibited. The Superstructure Slabs shall be epoxy coated.

Notes:
- Stirrup spacing shown is for a 90° crossing, for bridges with other skew angles, see Det. No. SUP-SLAB(3FT)-503 for details of skewed ends.
- For exact slab lengths, skew angles and tie rod pattern see contract plans’ sheets.
- Varies 1'-1½" Max.
Notes:
1. For location of tie rod holes, see contract plans.
2. For location of curb reinforcement and anchor bolts and plates to be cast in slab for railing, see Det. No. SUP-SLAB-501.

Note:
Extreme care shall be used when placing and tying the curb rebar, railing and anchor bolts assembly to provide for the required clearances. Any misplaced rebar, dowel bar holes, tie rod holes or anchor bolts will be cause for rejection of the precast slab unit.
**GUIDE SHEET FOR PLAN DEVELOPMENT ONLY - DO NOT INCLUDE THIS SHEET IN CONTRACT PLANS**

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**PLAN**
Scale: $\frac{3}{4}" = 1'-0"$

- **Center line slab**
- **4 equal spaces**
- **3" min. - 1'-1/2" c/c max.**
- **2" cl. (typ.)**
- **Normal stirrup spacing**

---

**Note to Fabricator:**
End stirrup spacing must be laid out to determine spacing.

**Note to Designer:**
Layout shown works up to a skew angle of 55°. For angles less than 55°, the designer must layout skewed end detail on plans.

---

**Notes:**
- All reinforcing steel to be epoxy coated.
- For exact skew angle, see contract plan sheets.

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**STATE OF MARYLAND**
**DEPARTMENT OF TRANSPORTATION**
**STATE HIGHWAY ADMINISTRATION**
**OFFICE OF STRUCTURES**

**SIMPLE SPAN GREATER THAN 35'-0" TO 40'-0"**
**INTERIOR 3'-0" PRECAST CONCRETE SLAB PANEL**
**SKewed END DETAIL**

**DETAIL NO. SUP-SLAB(3FT)-503**
**SHEET 1 OF 2**

---

**APPROVAL**
**DIRECTOR**
**OFFICE OF STRUCTURES**
**DATE: 05/04/2017**

**VERSION**
**1.0**
Center line slab

Step

6"

6"

5"

6"

3"

6"

6"

6"

6"

5"

1'-2"

1"

1"

1"

1"

1"

4 equal spaces

1'-1/2" c/c max.

4 equal spaces

3" min. - 1'-1/2" c/c max.

2" cl.(typ.)

2" cl.

#4 double stirrups

#4 double stirrups

placed as shown

* Skew angle

Center line slab

2½" dia. dowel hole (typ.)

4-#5 curb reinforcement placed as shown

Notes:

4 - #5 bars in end of slab not shown for clarity.

Note to Fabricator:
End stirrup spacing must be laid out to determine spacing.

Note to Designer:
Layout shown works up to a skew angle of 55°. For angles less than 55° designer must layout skewed end detail on plans.

PLAN

Scale: 1/4" = 1'-0"

#4 double stirrups

Top of slope area

2" x 6" key

Normal stirrup spacing

*For exact skew angle, see contract plan sheets.

Notes:
All reinforcing steel to be epoxy coated.

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SIMPLE SPAN GREATER THAN 35'-0" TO 40'-0"
EXTERIOR 3'-0" PRECAST CONCRETE SLAB PANEL
SKewed END DETAIL

DETAIL NO. SUP-SLAB(3FT)-503

* FOR OFFICE USE ONLY *
**3'-0" INTERIOR SLAB PLAN**

Scale: \( \frac{1}{60}" = 1'-0" \)

Note:
- Stirrup spacing shown is for a 90° skew angle. For skew angles, see Det. No. SUP-SLAB(3FT)-603 for details of skewed ends.
- Bars to be bent at casting plant after formwork has been removed.

**3'-0" INTERIOR SLAB ELEVATION**

Scale: \( \frac{1}{60}" = 1'-0" \)

Note:
- Reinforcing steel at ends of slab not shown for clarity.

### Notes:
1. Extreme care shall be used in locating tie rod holes during the casting operation. Contractor shall assemble the slab units to the site. Misalignment prior to shipping slab units to the site will be cause for rejection of the slab unit. Drilling or coring of the slab to create new or modified tie holes is prohibited. Repair of the slab unit shall be performed at the site. The site shall be repaired to ensure that there is no hole left after the slab is repaired.
2. Adjust curb rebars and stirrup spacing as needed to avoid tie rod hole and bearing misalignment.
3. All reinforcing steel to be epoxy coated.
4. Adjust curb rebars and stirrup spacing as needed to avoid tie rod hole and bearing misalignment.
5. All reinforcing steel to be epoxy coated.
6. Adjust curb rebars and stirrup spacing as needed to avoid tie rod hole and bearing misalignment.
7. All reinforcing steel to be epoxy coated.
Note:
For location of tie rod holes, see contract plans.

SECTION - SLAB AT MIDSPAN
Scale: $\frac{1}{4}'' = 1'-0''$

SECTION - SLAB AT ENDS
Scale: $\frac{1}{4}'' = 1'-0''$

Note:
Any misplaced dowel bar holes or tie rod holes will be cause for rejection of the precast slab unit.
1. Extreme care shall be used in locating the casting operation. All reinforcing steel to be epoxy coated.

2. Adjust curb rebar and stirrup spacing as needed to avoid tie rod hole and rolling anchor bolt holes in slab unit. Drilling or coring of cast holes is prohibited. Any misalignment of the tie rod holes will be cause for rejection of the slab unit. Drilling or coring of the slab to create new or modified holes will be cause for rejection of the slab unit. Drilling or coring of the slab to ensure that there is no hole to the site. Any misalignment of the tie rod holes will be cause for rejection of the slab unit. Drilling or coring of the slab to ensure that there is no hole to the site.

3. All reinforcing steel at ends of slab and curb reinforcing not shown for clarity.

Note: Stirrup spacing shown is for a 90° crossing. For bridges with other skew angles, see Det. No. SUP-SLAB(3FT)-603 for details of skewed ends.

3'-0" EXTERIOR SLAB PLAN
Scale: \( \frac{\text{6''}}{1'-0''} \)

For exact slab lengths, skew angle and tie rod pattern see contract plans’ sheets.

3'-0" EXTERIOR SLAB ELEVATION
Scale: \( \frac{\text{6''}}{1'-0''} \)

Bars to be bent at casting plant after formwork has been removed.
Notes:
1. For location of tie rod holes, see contract plans.
2. For location of curb reinforcement and anchor bolts and plates to be cast in slab for railing, see Det. No. SUP-TB(TR)-301

Note:
Extreme care shall be used when placing and tieing the curb rebar, railing and anchor bolts assembly to provide for the required clearances. Any misplaced rebar, dowel bar holes, tie rod holes or anchor bolts will be cause for rejection of the precast slab unit.
*4 double stirrups

Top of slope area

4 equal spaces

1"-1/2" c/c max.

2" c.(typ.)

*6 double stirrups placed as shown

*Skew angle

Center line slab

2 1/2" dia. dowel hole (typ.)

4 equal spaces

3" min. - 1"-1/2" c/c max.

Normal stirrup spacing

*For exact skew angle, see contract plan sheets.

PLAN

Scale: 1/4" = 1'-0"

Note:

4 - #5 bars in end of slab not shown for clarity.

Note to Fabricator:
End stirrup spacing must be laid out to determine spacing.

Note to Designer:
Layout shown works up to a skew angle of 55°. For angles less than 55° designer must layout skewed end detail on plans.

Note:
All reinforcing steel to be epoxy coated.
**Skew angle**

Center line slab

4 equal spaces

1'-1/2" c/c max.

2" cl. (typ.)

4 double stirrups

4 equal spaces

3" min. - 1'-1/2" c/c max.

Normal stirrup spacing

*For exact skew angle, see contract plan sheets.*

**PLANT**

Scale: 1/4" = 1'-0"

2" x 6" key

4-#5 curb reinforcement placed as shown

*6 double stirrups placed as shown

*Skew angle

Center line bearing

2 1/2" dia. dowel hole (typ.)

4-#5 curb reinforcement placed as shown

Notes:

4 - #5 bars in end of slab not shown for clarity.

Note to Fabricator:

End stirrup spacing must be laid out to determine spacing.

Note to Designer:

Layout shown works up to a skew angle of 55°. For angles less than 55° designer must layout skewed end detail on plans.

Notes:

All reinforcing steel to be epoxy coated.

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SUPERSTRUCTURE SLABS
1. Extreme care shall be used in locating curves and reinforcing steel to avoid tie rod holes.

2. Adjust curb rebar and stirrup spacing as needed to avoid tie rod holes.

3. Reinforcing steel at ends of slab not shown for clarity.

Note:
Stirrup spacing shown is for a 90° skew angle crossing. For bridges with other skew angles, see Det. No. SUP-SLAB3FT-703 for details of skewed ends.

Note:
For exact slab lengths, skew angle and tie rod pattern see contract plans' sheets.

3'-0" INTERIOR SLAB PLAN
Scale: 1/6" = 1'-0"

3'-0" INTERIOR SLAB ELEVATION
Scale: 1/6" = 1'-0"

Bars to be bent at casting plant after formwork has been removed.
SECTION - SLAB AT MIDSPAN
Scale: 1/4" = 1'-0"

Note:
For location of tie rod holes, see contract plans.

SECTION - SLAB AT ENDS
Scale: 1/4" = 1'-0"

Note:
Any misplaced dowel bar holes or tie rod holes will be cause for rejection of the precast slab unit.

* FOR OFFICE USE ONLY *
Notes:

1. Extreme care shall be used in locating and marking the slab unit. Drilling or coring of the slab unit, before shipping slab units to the site, is prohibited. Any misalignment of the slab unit prior to shipping to the site will be cause for rejection of the slab. Drilling or coring of the slab unit to create new or modified holes is prohibited. Any misalignment of the slab unit to ensure that there is no hole after formwork has been removed.

2. All reinforcing steel to be epoxy coated.

3. Adjust curb rebar and stirrup spacing as needed to avoid tie rod hole and railing anchor bolts (if applicable).

4. Extreme care shall be used in locating and marking the slab unit. Drilling or coring of the slab unit is prohibited. Any misalignment of the slab unit prior to shipping to the site will be cause for rejection of the slab unit. Drilling or coring of the slab unit to create new or modified holes is prohibited. Any misalignment of the slab unit to ensure that there is no hole after formwork has been removed.

Note:
Stirrup spacing shown is for a 90° crossing. For bridges with other skew angles, see Det. No. SUP-SLAB(3FT)-703 for details of skewed ends.

Note:
Reinforcing steel at ends of slab and curb reinforcing not shown for clarity.

3'-0" EXTERIOR SLAB PLAN
Scale: \( \frac{1}{6}" = 1'-0" \)

3'-0" EXTERIOR SLAB ELEVATION
Scale: \( \frac{1}{6}" = 1'-0" \)
**SECTION - SLAB AT MIDSPAN**

Scale: $\frac{1}{4''} = 1'-0''$

- 2½'' dia. dowel bar holes
- #5 curb rebar - see note 2.
- Alternate @ 1'-3½'' c/c between #4 double stirrups
- If bridge has curb

**SECTION - SLAB AT ENDS**

Scale: $\frac{1}{4''} = 1'-0''$

- 42 - ½'' dia. strands placed as shown
- 4 double stirrups placed in pairs see Plans for spacing at ends

**Notes:**

1. For location of tie rod holes, see contract plans.
2. For location of curb reinforcement and anchor bolts and plates to be cast in slab for railing, see Det. No. SUP-SLAB(3FT)-501

*FOR OFFICE USE ONLY*
#4 double stirrups

4 equal spaces
1'-3½" c/c max.

Normal stirrup spacing

2" cl. (typ.)

Top of slope area

Center line bearing

1" cl.

1'-2" step

6"

5" cl.

3" cl.

#6 double stirrups placed as shown

* Skew angle

Center line slab

2½" dia. dowel hole (typ.)

4 equal spaces
3" min. - 1'-3½" c/c max.

PLAN
Scale: ¼" = 1'-0"

Notes:
- For exact skew angle, see contract plan sheets.
- 5 - 8 bars in end of slab not shown for clarity.
- End stirrup spacing must be laid out to determine spacing.
- Layout shown works up to a skew angle of 55°. For angles less than 55° designer must layout skewed end detail on plans.

Note to Fabricator:

Normal reinforcing steel to be epoxy coated.

Note to Designer:

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Notes:
1. Extreme care shall be used in locating bearing centers. Contractor shall assemble the slab units to ensure that there is no hole misalignment prior to shipping slab units to the site. Any misalignment of the holes will cause rejection of the slab unit. Drilling or cutting of the slab unit to create new or modified holes is prohibited. Rounding of bearing holes is prohibited.

2. Adjust curb rebar and stirrup spacing as needed to avoid tie rod hole and roller anchor bolts (if applicable).

3. All reinforcing steel to be epoxy coated.

4. Extreme care shall be used in locating bearing centers. Contractor shall assemble the slab units to ensure that there is no hole misalignment prior to shipping slab units to the site. Any misalignment of the holes will cause rejection of the slab unit. Drilling or cutting of the slab unit to create new or modified holes is prohibited. Rounding of bearing holes is prohibited.

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Note:  Stirrup spacing shown is for a 90° crossing. For bridges with other skew angles, see Det. No. SUP-SLAB(3FT)-803 for details of skewed ends.

For exact slab lengths, skew angle and tie rod pattern see contract plans’ sheets.

**3'-0" INTERIOR SLAB PLAN**

Scale: \( \frac{3/8"}{1'-0"} \)

Note: Reinforcing steel at ends of slab not shown for clarity.

**3'-0" INTERIOR SLAB ELEVATION**

Bars to be bent at casting plant after formwork has been removed.
Note:
For location of tie rod holes, see contract plans.

Note:
Any misplaced dowel bar holes or tie rod holes will be cause for rejection of the precast slab unit.
Notes:
1. Extreme care shall be used in locating tie rod holes during the casting operation. Contractor shall assemble the slab units for the entire bridge width at the casting plant to ensure that there is no hole misalignment prior to shipping slab units to the site. Any misalignment of the holes will be cause for rejection of the slab unit. Drilling or coring of the slabs to create new or modified cast holes is prohibited.
2. Adjust curb rebar and stirrup spacing as needed to avoid tie rod hole and railing anchor bolts (if applicable).
3. All reinforcing steel to be epoxy coated.

1.0 VERSION DETAIL NO. SUP-SLAB(3FT)-802 SHEET 1 OF 2

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

SIMPLE SPAN GREATER THAN 50'-0" TO 55'-0"
EXTERIOR 3'-0" PRECAST CONCRETE SLAB PANEL
PLAN & ELEVATION

OFFICE OF STRUCTURES

SUPERSTRUCTURE SLABS

3'-0" EXTERIOR SLAB PLAN
Scale: 3/16" = 1'-0"*

3'-0" EXTERIOR SLAB ELEVATION
Scale: 3/16" = 1'-0"*

Note:
Stirrup spacing shown is for a 90° crossing. For bridges with other skew angles, see Std. No. SUP-SLAB(3FT)-803 for details of skewed ends.

 Bars to be bent at casting plant after formwork has been removed?

* Guide Sheet for Plan Development Only - Do Not Include This Sheet in Contract Plans *
Notes:

1. For location of tie rod holes, see contract plans.

2. For location of curb reinforcement and anchor bolts and plates to be cast in slab for railing, see Det. No. SUP-TB(TR)-301

Note:

Extreme care shall be used when placing and tying the curb rebar, railing and anchor bolts assembly to provide for the required clearances. Any misplaced rebar, dowel bar holes, tie rod holes or anchor bolts will be cause for rejection of the precast slab unit.

SECTION - SLAB AT MIDSPAN
Scale: \( \frac{3}{4}'' = 1'-0'' \)

- 2'' x 6'' key
- 2'' cl.
- 1'-0'' typ.
- 2'' cl.
- 2'' cl.
- 2'' cl.
- 2'' cl.
- 2'' cl.
- 2'' cl.

- 5 curb rebar - see note 2.
- Alternate @ 1'-3\(\frac{3}{4}''\) c/c between 4 double stirrups

- Roughened surface in accordance with Section 440.03.14 for concrete overlay

- See Shear Key Detail Det. No. SUP-SLAB-501

- 4 - #5's placed as shown

- 2'-6'' tie rod hole

- 4 - #5's placed as shown

- 56 - \( \frac{1}{2}'' \) dia. strands placed as shown

SECTION - SLAB AT ENDS
Scale: \( \frac{3}{4}'' = 1'-0'' \)

- 2\(\frac{1}{2}''\) dia. dowel bar holes
- 2\(\frac{1}{2}''\) dia. dowel bar holes

- 2'' cl.
- 2'' cl.
- 2'' cl.
- 2'' cl.
- 2'' cl.
- 2'' cl.
- 2'' cl.
- 2'' cl.

- 4 - #5's placed as shown

- 6 double stirrups placed in pairs see Plans for spacing at ends.

- 56 - \( \frac{1}{2}'' \) dia. strands placed as shown

Note:

Overlay 440.03.14 for concrete accordance with Section Roughened surface in bar holes

2 - #5's placed as shown

2 - #5's placed as shown

56 - \( \frac{1}{2}'' \) dia. strands placed as shown

Note:

Alternate @ 1'-3\(\frac{1}{4}''\) c/c between #4 double stirrups placed @ 1'-3\(\frac{1}{4}''\) c/c, see Plans.

- 2" cl.
- 2" cl.
- 2" cl.
- 2" cl.
- 2" cl.
- 2" cl.
- 2" cl.
- 2" cl.

Note:

Overlay 440.03.14 for concrete accordance with Section Roughened surface in bar holes
**SKEWED END DETAIL**

**INTERIOR 3'-0'' PRECAST CONCRETE SLAB PANEL**

**SIMPLE SPAN GREATER THAN 50'-0'' TO 55'-0''**

Notes:
- All reinforcing steel to be epoxy coated.

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**PLAN**
Scale: $\frac{1}{4}'' = 1'-0''$

End stirrup spacing must be laid out to determine spacing.

Note to Designer:
Layout shown works up to a skew angle of 55°. For angles less than 55°, designer must layout skewed end detail on plans.

Note to Fabricator:
- 4 - #5 bars in end of slab not shown for clarity.

*6 double stirrups placed as shown

*Skew angle

Center line bearing

1'' cl.
6''
5'' cl.
12'' step

6' cl.
3' cl.

Top of slope area

2'' cl. (typ.)

6''
5''
1'-2''

Normal stirrup spacing

4 equal spaces
1'-3\(\frac{3}{4}\)'' c/c max.

3'' min. - 1'-3\(\frac{3}{4}\)'' c/c max.

4 equal spaces

4 - #5 bars in end of slab not shown for clarity.

Note to Designer:
Layout shown works up to a skew angle of 55°. For angles less than 55°, designer must layout skewed end detail on plans.

Note to Fabricator:
End stirrup spacing must be laid out to determine spacing.

*For exact skew angle, see contract plan sheets.

Note:
- All reinforcing steel to be epoxy coated.
* For exact skew angle, see contract plan sheets.

Note:
All reinforcing steel to be epoxy coated.

PLAN
Scale: 1/4" = 1'-0"

Notes:
- 6 double stirrups placed as shown
- Center line bearing
- 6" cl.
- 1'-2" step
- Top of slope area
- 6" cl.
- 3" cl.
- 6" cl.
- 6" cl.
- 6" cl.
- 5" cl.
- 1'-0"
- 6" cl.
- 2" cl. (typ.)
- 2" cl. (typ.)
- 2½" dia, dowel hole (typ.)
- 5'-5" curb reinforcement placed as shown
- 4 - #5 bars in end of slab not shown for clarity.

Note:
End stirrup spacing must be laid out to determine spacing.

Note:
Layout shown works up to a skew angle of 55°. For angles less than 55° designer must layout skewed end detail on plans.

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ALTERNATE REINFORCING SECTION - SLAB AT MIDSPAN

Scale: $\frac{1}{4}'' = 1'-0''$

Reinforcing bars, bent as shown, see plans for size and spacing at ends

Longitudinal reinforcing as required

Hooks can be rotated up to 90° as required for mat placement

*5 bars, see plans for spacing and amount

2½" dia. dowel bar holes

2" cl. (typ.)

Hooks can be rotated up to 90° as required and placed at the dowel hole locations

Strands (location and amount vary according to precast slab design)

ALTERNATE REINFORCING SECTION - SLAB AT ENDS

Scale: $\frac{1}{4}'' = 1'-0''$

* These bars are only required for span lengths greater than 50'-0''.

Note:
All reinforcing steel to be epoxy coated.

* GUIDE SHEET FOR PLAN DEVELOPMENT ONLY - DO NOT INCLUDE THIS SHEET IN CONTRACT PLANS *
ALTERNATE REINFORCING SECTION - SLAB AT MIDSPAN

Scale: 1/4" = 1'-0"

Reinforcing bars, bent as shown, see plans for size and spacing at ends

Longitudinal reinforcing as required

2" x 6" key

1'-0"

Hooks can be rotated up to 90° as required for mat placement

*5 bars, see plans for spacing and amount

2" cl. (typ.)

ALTERNATE REINFORCING SECTION - SLAB AT ENDS

Scale: 1/4" = 1'-0"

These bars are only required for span lengths greater than 50'-0".

ALTERNATE REINFORCING SECTION - SLAB AT ENDS

Scale: 1/4" = 1'-0"

Reinforcing bars, bent as shown, see plans for size and spacing at ends

Longitudinal reinforcing as required

2" x 6" key

1'-0"

Hooks can be rotated up to 90° as required for mat placement

*5 bars, see plans for spacing and amount

2" cl. (typ.)

Strands (location and amount vary according to precast slab design)

Note:
All reinforcing steel to be epoxy coated.

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Chapter 03 - Superstructure

Section 07 – Concrete Slabs

SUB-SECTION 03

4 FT WIDE SLABS
(SUP-SLAB(4FT))
Camber Notes:
Camber due to prestress plus slab dead load to be checked in the field.

The thickness of the concrete overlay shall be varied to compensate for any inaccuracies in the camber of slabs.

Prestress camber and dead load deflection data shown is theoretical and may vary with concrete strength, variable prestressing conditions and prestress losses.

Camber in slabs will increase due to concrete creep during storage. Precautions shall be taken by loading or other means to prevent additional camber from developing during storage of prestressed slabs.

A = Estimated camber due to prestress
B = Deflection due to dead load of prestressed slabs
C = Deflection due to dead load of cast-in-place concrete overlay, curbs and railing
D = Net final camber

### Camber Diagram

**Scale:** None

### Precast Concrete Slab Panel

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**STATE OF MARYLAND**
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**SIMPLE SPAN EXTERIOR/INTERIOR**
4'-0'' PRECAST CONCRETE SLAB PANEL
DIAGRAM AND NOTES FOR CAMBER

**DETAIL NO. SUP-SLAB(4FT)-050**

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**4'-0'' INTERIOR SLAB PLAN**

**Scale:** $\frac{1}{4''} = 1'-0''$

**Details:**
- **Spacing:** $2\frac{1}{2}''$ dia. tie rod hole (typ.)
- **Stirrup Spacing:** $3''$ (typ.)
- **Center line bearing**
- **L + 1'-0'' Slab Length (max. 21'-0'')**
- **L = 20'-0'' or Less**
- **Bars to be bent at casting plant after formwork has been removed.**

**Notes:**
- **Reinforcing steel at ends of slab not shown for clarity.**
- **Include the exact slab length, skew angle and tie rod pattern in the Contract Plans.**

---

**4'-0'' INTERIOR SLAB ELEVATION**

**Scale:** $\frac{1}{4''} = 1'-0''$

**Details:**
- **Spacing:** $6''$ (typ.)
- **Spacing:** $1'-2''$ step
- **Spacing:** $1'-6''$ (typ.)
- **Spacing:** $2\frac{1}{2}''$ dia. tie rod hole
- **Spacing:** $6 - #5$ bars (typ.)
- **Spacing:** $5'-0''$
- **Spacing:** $5\frac{1}{2}''$ spaces @ $10\frac{1}{2}'' = 6\frac{1}{2}''$
- **Spacing:** $6''$
- **Spacing:** $5\frac{1}{2}''$
- **Spacing:** $3''$
- **Spacing:** $6''$
- **Spacing:** $6''$
- **Spacing:** $5\frac{1}{2}''$

**Notes:**
- **1.** Extreme care shall be used in locating tie rod holes during the casting operation. Contractor shall assemble the slab units for the entire bridge width at the casting plant to ensure that there is no hole misalignment prior to shipping slab units to the site. Any misalignment of the holes will be cause for rejection of the slab unit. Drilling or boring of the slabs to create new or modified cast holes is prohibited.
- **2.** Adjust stirrup spacing as needed to avoid tie rod hole.
- **3.** All reinforcing steel to be epoxy coated.

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**SIMPLE SPAN 20'-0'' OR LESS**

**INTERIOR 4'-0'' PRECAST CONCRETE SLAB PANEL**

**PLAN & ELEVATION**

**DETAIL NO. SUP-SLAB(4FT)-101**

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**SUPERSTRUCTURE SLABS**

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**SUPERSTRUCTURE SLABS**

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**SIMPLE SPAN 20'-0'' OR LESS**

**INTERIOR 4'-0'' PRECAST CONCRETE SLAB PANEL**

**PLAN & ELEVATION**

**DETAIL NO. SUP-SLAB(4FT)-101**

**SHEET 1 OF 2**
For stage construction
Type B tie rod recess
For location see Slab
Layout sheet in Plans.
Do not show unless required.

Note:
For location of tie rod
holes, see Plans.

SECTION - SLAB AT MIDSPAN
Scale: $\frac{3}{4}'' = 1'-0''$

Roughened surface in
accordance with Section
440.03.14 for concrete
overlay

See Shear Key Detail
No. SUP-SLAB-501

6 - #5's placed as shown

$\# \frac{2}{\ell}$ dia. tie rod hole

4 double stirrups
placed in pairs as shown

10-$\frac{2}{\ell}$" c/c, see Plans,
II - $\frac{1}{2}$" dia. prestressing
strands placed as shown

Note:
Any misplaced dowel bar
holes or tie rod holes will
be cause for rejection of
the precast slab unit.

SECTION - SLAB AT ENDS
Scale: $\frac{3}{4}'' = 1'-0''$

Roughened surface in
accordance with Section
440.03.14 for concrete
overlay

6 - #5's placed as shown

$\# \frac{2}{\ell}$ dia. dowel bar
holes

4 double stirrups
placed in pairs see Plans for
spacing at ends

II - $\frac{1}{2}$" dia. prestressing
strands placed as shown

Note:
Any misplaced dowel bar
holes or tie rod holes will
be cause for rejection of
the precast slab unit.
**4'-0" EXTERIOR SLAB PLAN**

Scale: \( \frac{1}{4"} = 1'-0" \)

*Note to designers: Include the exact slab length, skew angle and tie rod pattern in the Contract Plans.*

1. Reinforcing steel at ends of slab and curb reinforcing not shown for clarity.
2. If curb steel is required use "5 bars equally spaced between stirrups - 10\(\frac{1}{2}"\) max.
3. 2\(\frac{1}{2}"\) dia. tie rod hole with recess (exterior face only)
4. Bars to be bent at casting plant after formwork has been removed.

**4'-0" EXTERIOR SLAB ELEVATION**

Scale: \( \frac{1}{4"} = 1'-0" \)

*Note to Designers: Stirrup spacing shown is for a 90° crossing. For bridges with other skew angles, see Detail No. SUP-SLAB(4FT)-103 for details of skewed ends. Adjust this detail to show proper skew in the Contract Plans.*

**Notes:**
1. Extreme care shall be used in locating tie rod holes during the casting operation. Contractor shall assemble the slab units for the entire bridge width at the casting plant to ensure that there is no hole misalignment prior to shipping slab units to the site. Any misalignment of the holes will cause rejection of the slab unit. Drilling or coring of the slabs to create new or modified cast holes is prohibited.
2. Adjust curb rebar and stirrup spacing as needed to avoid tie rod hole and railing anchor bolts (if applicable).
3. All reinforcing steel to be epoxy coated.
Notes:

1. For location of tie rod holes, see contract plans.

2. For location of curb reinforcement and anchor bolts and plates to be cast in slab for railing, see Detail No. SUP-TB(TR)-301

SECTION - SLAB AT MIDSPAN
Scale: \( \frac{1}{4}'' = 1'-0'' \)

- Roughened surface in accordance with Section 440.03.14 for concrete overlay
- See Shear Key Detail No. SUP-SLAB-501
- 6 - \#5's placed as shown
- 4 double stirrups placed in pairs at 10\(\frac{1}{2}''\) c/c, see Plans.
- II - \(\frac{1}{2}''\) dia. prestressing strands placed as shown
- #4 double stirrups placed as shown
- 11 - \(\frac{1}{2}''\) dia. prestressing strands placed as shown

SECTION - SLAB AT ENDS
Scale: \( \frac{1}{4}'' = 1'-0'' \)

- Roughened surface in accordance with Section 440.03.14 for concrete overlay
- 6 - \#5's placed as shown
- 4 double stirrups placed in pairs see Plans for spacing at ends
- II - \(\frac{1}{2}''\) dia. prestressing strands placed as shown

Note:
Extreme care shall be used when placing and tying the curb rebar, railing and anchor bolts assembly to provide for the required clearances. Any misplaced rebar, dowel bar holes, tie rod holes or anchor bolts will be cause for rejection of the precast slab unit.

* FOR OFFICE USE ONLY *
4 equal spaces
10½" c/c max.
Top of slope area
2" cl. (typ.)

"4 double stirrups
placed as shown

Normal stirrup
spacing
4 equal spaces
3" c/c min.
10½" c/c max.

Plan

Scale: 1/4" = 1'-0"

Center line bearing

1" cl.
1'-2"
step

5" cl.

6"
6"
6"
3" cl.
2"

4 equal spaces

*4 double stirrups
placed as shown

* Skew angle

Center line slab

2½" dia. dowel
hole (typ.)

Normal stirrup
spacing
4 equal spaces
3" c/c min.
10½" c/c max.

Notes:
6 - #5 bars in end of
slab not shown for clarity.

Note to Fabricator:
End stirrup spacing must be
laid out to determine spacing.

Note to Designer:
Layout shown works up to a
skew angle of 55°. For angles
less than 55° designer must
layout skewed end detail on
plans.

Note:
All reinforcing steel to
be epoxy coated.

* GUIDE SHEET FOR PLAN DEVELOPMENT ONLY - DO NOT INCLUDE THIS SHEET IN CONTRACT PLANS *
Note:
6 - #5 bars in end of slab not shown for clarity.

Note to Fabricator:
End stirrup spacing must be laid out to determine spacing.

Note to Designer:
Layout shown works up to a skew angle of 55°. For angles less than 55° designer must layout skewed end detail on plans.

Notes:
All reinforcing steel to be epoxy coated.
**4'-0'' INTERIOR SLAB PLAN**

*Note to designers: Include the exact slab length, skew angle, and tie rod pattern in the Contract Plans.*

Note: Reinforcing steel at ends of slab not shown for clarity.

**4'-0'' INTERIOR SLAB ELEVATION**

*Note to designers: Stirrup spacing shown is for a 90° crossing. For bridges with other skew angles, see Detail No. SUP-SLAB(4FT)-203 for details of skewed ends. Adjust this detail to show proper skew in Contract Plans.*
For stage construction
Type B tie rod recess
For location see Slab
Layout sheet in Plans.
Do not show unless required.

Note:
For location of tie rod holes, see contract plans.

SECTION - SLAB AT MIDSPAN
Scale: \( \frac{1}{4}'' = 1'-0'' \)

SECTION - SLAB AT ENDS
Scale: \( \frac{1}{4}'' = 1'-0'' \)

Note:
Any misplaced dowel bar holes or tie rod holes will be cause for rejection of the precast slab unit.
**Note to designers:**
Include the exact slab length, skew angle, and tie rod pattern in the Contract Plans.

Reinforcing steel at ends of slab and curb reinforcing not shown for clarity.

Adjust curb rebar and stirrup spacing as needed to avoid tie rod hole and railing anchor bolts (if applicable).

3. Extreme care shall be used in locating reinforcing steel for the entire bridge width at the casting plant to ensure that there is no hole cast holes is prohibited.

Drilling or coring of holes will be cause for rejection of the slab unit. Drilling or coring of the slab unit will be the cause for rejection of the slab unit. Drilling or coring of the slab unit will be the cause for rejection of the slab unit.

Any misalignment of the slab will be cause for rejection of the slab unit. Drilling or coring of the slab unit will be the cause for rejection of the slab unit.

Contractor shall assemble the slab units and tie rod holes during the casting operation. Extreme care shall be used in locating reinforcing steel for the entire bridge width at the casting plant to ensure that there is no hole.

2. All reinforcing steel to be epoxy coated.

* Guide Sheet for Plan Development Only - Do Not Include This Sheet in Contract Plans.*

---

**4'-0" EXTERIOR SLAB PLAN**

Scale: $\frac{1}{4}'' = 1'-0"$

L + 1'-0" Slab Length (max. 26'-0"

L = over 20'-0" to 25'-0" *

6"

5'"

6'"

5'"

1'-2" step

2½" dia. dowel hole (typ.)

2½" dia. tie rod hole (typ.)

* (typ.)

1'-0"

2" x 6" Continuous key

Varies 1'-2" Max.

1'-0"

6" 6'-0"

5'-0"

5'-0"

1'-0"

4'-0"

Note to designers:
Stirrup spacing shown is for a 90° crossing. For bridges with other skew angles, see Detail No. SUP-SLAB4FT/7-203 for details of skewed ends. Adjust this detail to show proper skew in Contract Plans.

**4'-0" EXTERIOR SLAB ELEVATION**

Scale: $\frac{1}{4}'' = 1'-0"$

Bars to be bent at casting plant after formwork has been removed.

Note to designers:
Stirrup spacing shown is for a 90° crossing. For bridges with other skew angles, see Detail No. SUP-SLAB4FT/7-203 for details of skewed ends. Adjust this detail to show proper skew in Contract Plans.
Notes:
1. For location of tie rod holes, see contract plans.
2. For location of curb reinforcement and anchor bolts and plates to be cast in slab for railing, see Detail No. SUP-TB(TR)-301

SECTION - SLAB AT MIDSPAN
Scale: 1/4" = 1'-0"

SECTION - SLAB AT ENDS
Scale: 1/4" = 1'-0"

Note:
Extreme care shall be used when placing and tying the curb rebar, railing and anchor bolts assembly to provide for the required clearances. Any misplaced rebar, dowel bar holes, tie rod holes or anchor bolts will be cause for rejection of the precast slab unit.
Center line slab step bearing

6'' 3'' cl.

Center line

6 - #5 bars in end of slab not shown for clarity.

Normal stirrup

4 equal spaces

Scale: $\frac{3/4''}{1'-0''}$

$4$ double stirrups

$5'' cl.$

$5'' cl.$

$6'' cl.$

$6'' cl.$

$3'' cl.$

Notes:

All reinforcing steel to be epoxy coated.

Note to Fabricator:

End stirrup spacing must be laid out to determine spacing.

Note to Designer:

Layout shown works up to a skew angle of 55°. For angles less than 55° designer must layout skewed end detail on plans.

Notes:

$2'' cl.$ (typ.)

Top of slope area

$4$ equal spaces

$10'' c/c$ max.

$2'' cl.$ (typ.)

$1'' cl.$

$5'' cl.$

$1'-2''

$2\frac{1}{2}''$ dia. dowel hole (typ.)

$2\frac{1}{2}''$ dia.

$4$ equal spaces

$3'' c/c$ min.

$10'' c/c$ max.

PLAN

Scale: $\frac{3/4''}{1'-0''}$

CENTER LINE BEARING

Note:

Skew angle

$6' - 8' - 8'$

Note:

$L$ bars in end of slab not shown for clarity.
Center line slab
step
bearing

4 equal spaces
10" c/c max.
Top of slope area
2" cl. (typ.)

"4 double stirrups placed as shown

* Skew angle
Center line slab
2½" dia. dowel hole (typ.)

5-#5 curb reinforcement placed as shown

4 equal spaces
3" c/c min.
10" c/c max.

#4 double stirrups placed as shown

2" x 6" key

Normal stirrup spacing

2" cl. (typ.)

6 - #5 bars in end of slab not shown for clarity.

Note to Fabricator:
End stirrup spacing must be laid out to determine spacing.

Note to Designer:
Layout shown works up to a skew angle of 55°. For angles less than 55°, designer must layout skewed end detail on plans.

Note to designers: Draw to scale on the contract plan sheets.

PLAN
Scale: 1/4" = 1'-0"

Notes:
All reinforcing steel to be epoxy coated.

Note to Designer:

Note to Fabricator:

Plan:
SUP-SLAB(4FT)-203

Simple span greater than 20'-0" to 25'-0"
Exterior 4'-0" precast concrete slab panel
Skewed end detail

For Office Use Only

State of Maryland
Department of Transportation
Office of Structures

501 W. fake street
Annapolis, MD 21401

Date: 05/12/2017
Version: 1.0

Detail No. SUP-SLAB(4FT)-203
Notes:

1. Extreme care shall be used in locating tie rod holes during the casting operation. Contractor shall assemble the slab units for the entire bridge width at the casting plant to ensure that there is no hole misalignment prior to shipping slab units to the site. Any misalignment of the holes will be cause for rejection of the slab unit. Drilling or coring of cast holes is prohibited. Rolling anchor bolts are not applicable.

2. All reinforcing steel to be epoxy coated.

3. All reinforcing steel to be epoxy coated.

4. Extreme care shall be used in locating tie rod holes during the casting operation. Contractor shall assemble the slab units for the entire bridge width at the casting plant to ensure that there is no hole misalignment prior to shipping slab units to the site. Any misalignment of the holes will be cause for rejection of the slab unit. Drilling or coring of cast holes is prohibited. Rolling anchor bolts are not applicable.

5. All reinforcing steel to be epoxy coated.

6. Extreme care shall be used in locating tie rod holes during the casting operation. Contractor shall assemble the slab units for the entire bridge width at the casting plant to ensure that there is no hole misalignment prior to shipping slab units to the site. Any misalignment of the holes will be cause for rejection of the slab unit. Drilling or coring of cast holes is prohibited. Rolling anchor bolts are not applicable.

7. All reinforcing steel to be epoxy coated.

8. Extreme care shall be used in locating tie rod holes during the casting operation. Contractor shall assemble the slab units for the entire bridge width at the casting plant to ensure that there is no hole misalignment prior to shipping slab units to the site. Any misalignment of the holes will be cause for rejection of the slab unit. Drilling or coring of cast holes is prohibited. Rolling anchor bolts are not applicable.

9. All reinforcing steel to be epoxy coated.

10. Extreme care shall be used in locating tie rod holes during the casting operation. Contractor shall assemble the slab units for the entire bridge width at the casting plant to ensure that there is no hole misalignment prior to shipping slab units to the site. Any misalignment of the holes will be cause for rejection of the slab unit. Drilling or coring of cast holes is prohibited. Rolling anchor bolts are not applicable.

11. All reinforcing steel to be epoxy coated.

12. Extreme care shall be used in locating tie rod holes during the casting operation. Contractor shall assemble the slab units for the entire bridge width at the casting plant to ensure that there is no hole misalignment prior to shipping slab units to the site. Any misalignment of the holes will be cause for rejection of the slab unit. Drilling or coring of cast holes is prohibited. Rolling anchor bolts are not applicable.

13. All reinforcing steel to be epoxy coated.

14. Extreme care shall be used in locating tie rod holes during the casting operation. Contractor shall assemble the slab units for the entire bridge width at the casting plant to ensure that there is no hole misalignment prior to shipping slab units to the site. Any misalignment of the holes will be cause for rejection of the slab unit. Drilling or coring of cast holes is prohibited. Rolling anchor bolts are not applicable.

15. All reinforcing steel to be epoxy coated.

16. Extreme care shall be used in locating tie rod holes during the casting operation. Contractor shall assemble the slab units for the entire bridge width at the casting plant to ensure that there is no hole misalignment prior to shipping slab units to the site. Any misalignment of the holes will be cause for rejection of the slab unit. Drilling or coring of cast holes is prohibited. Rolling anchor bolts are not applicable.

17. All reinforcing steel to be epoxy coated.

18. Extreme care shall be used in locating tie rod holes during the casting operation. Contractor shall assemble the slab units for the entire bridge width at the casting plant to ensure that there is no hole misalignment prior to shipping slab units to the site. Any misalignment of the holes will be cause for rejection of the slab unit. Drilling or coring of cast holes is prohibited. Rolling anchor bolts are not applicable.

19. All reinforcing steel to be epoxy coated.

20. Extreme care shall be used in locating tie rod holes during the casting operation. Contractor shall assemble the slab units for the entire bridge width at the casting plant to ensure that there is no hole misalignment prior to shipping slab units to the site. Any misalignment of the holes will be cause for rejection of the slab unit. Drilling or coring of cast holes is prohibited. Rolling anchor bolts are not applicable.

21. All reinforcing steel to be epoxy coated.

22. Extreme care shall be used in locating tie rod holes during the casting operation. Contractor shall assemble the slab units for the entire bridge width at the casting plant to ensure that there is no hole misalignment prior to shipping slab units to the site. Any misalignment of the holes will be cause for rejection of the slab unit. Drilling or coring of cast holes is prohibited. Rolling anchor bolts are not applicable.

23. All reinforcing steel to be epoxy coated.

24. Extreme care shall be used in locating tie rod holes during the casting operation. Contractor shall assemble the slab units for the entire bridge width at the casting plant to ensure that there is no hole misalignment prior to shipping slab units to the site. Any misalignment of the holes will be cause for rejection of the slab unit. Drilling or coring of cast holes is prohibited. Rolling anchor bolts are not applicable.

25. All reinforcing steel to be epoxy coated.

26. Extreme care shall be used in locating tie rod holes during the casting operation. Contractor shall assemble the slab units for the entire bridge width at the casting plant to ensure that there is no hole misalignment prior to shipping slab units to the site. Any misalignment of the holes will be cause for rejection of the slab unit. Drilling or coring of cast holes is prohibited. Rolling anchor bolts are not applicable.

27. All reinforcing steel to be epoxy coated.
For stage construction
Type B tie rod recess.
For location see Slab
Layout sheet in Plans.
Do not show unless required.

Note:
For location of tie rod
holes, see contract plans.

SECTION - SLAB AT MIDSPAN
Scale: 1/4" = 1'-0"

Roughened surface in accordance with Section 440.03.14 for concrete overlay

See Shear Key Detail No. SUP-SLAB-501

6 - #5's placed as shown

4 1/2" dia tie rod hole

#4 double stirrups placed in pairs @ 10" c/c, see Plans.

22 - 1/2" dia. strands placed as shown

SECTION - SLAB AT ENDS
Scale: 1/4" = 1'-0"

Roughened surface in accordance with Section 440.03.14 for concrete overlay

Note:
Any misplaced dowel bar holes or tie rod holes will be cause for rejection of the precast slab unit.

Notes:
1. All reinforcing steel to be epoxy coated.
2. Adjust stirrup spacing to avoid tie rod holes as needed.
For stage construction
Type B tie rod recess
may be required.
For location see Slab
Layout sheet in Plans

Roughened surface in
accordance with Section
440.03.14 for concrete
overlay

See Shear Key Detail
Std. No. SUP-SLAB-501

6 - #5's placed as shown

$\frac{3}{4}$ dia. tie rod hole

#4 double stirrups
placed in pairs @
10" c/c, see Plans.

22 - $\frac{1}{2}$ dia. strands
placed as shown

Note:
Any misplaced dowel bar
holes or tie rod holes will
be cause for rejection of
the precast slab unit.

Notes:
1. All reinforcing steel to be epoxy coated.
2. Adjust stirrup spacing to avoid tie rod holes as needed.
Notes:

1. For location of tie rod holes, see contract plans.

2. For location of curb reinforcement and anchor bolts and plates to be cast in slab for railing, see Detail No. SUP-TB(TR)-301.

SECTION - SLAB AT MIDSPAN
Scale: $\frac{1}{4}'' = 1'-0''$

- Roughened surface in accordance with Section 440.03.14 for concrete overlay
- See Shear Key Detail No. SUP-SLAB-501
- 6 - #5's placed as shown
- 4 double stirrups placed in pairs @ 10" c/c, see Plans
- 22 - $\frac{1}{2}''$ dia. strands placed as shown

SECTION - SLAB AT ENDS
Scale: $\frac{1}{4}'' = 1'-0''$

- Roughened surface in accordance with Section 440.03.14 for concrete overlay
- 6 - #5's placed as shown
- 4 double stirrups placed in pairs see Plans for spacing at ends
- 22 - $\frac{1}{2}''$ dia. strands placed as shown

Note:
Extreme care shall be used when placing and tying the curb rebar, railing and anchor bolts assembly to provide for the required clearances. Any misplaced rebar, dowel bar holes, tie rod holes or anchor bolts will be cause for rejection of the precast slab unit.

* FOR OFFICE USE ONLY *
**Note to designer:** Draw to scale on the contract plan sheets.

**PLAN**
Scale: $\frac{3}{4}'' = 1'-0''$

**Notes:**
- All reinforcing steel to be epoxy coated.
- 6 - \#5 bars in end of slab not shown for clarity.
- Layout shown works up to a skew angle of 55°. For angles less than 55° designer must layout skewed end detail on plans.

**Note to Fabricator:**
End stirrup spacing must be laid out to determine spacing.

**Note to Designer:**
- Layout shown works up to a skew angle of 55°. For angles less than 55° designer must layout skewed end detail on plans.
**Note to Designer:** Draw to scale on the contract plan sheets.

**Notes:**
- All reinforcing steel to be epoxy coated.

**Note to Fabricator:**
End stirrup spacing must be laid out to determine spacing.

**Note to Designer:**
Layout shown works up to a skew angle of 55°. For angles less than 55°, designer must layout skewed end detail on plans.

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**SCALE:** 1/4" = 1'-0"

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**SUPERSTRUCTURE SLABS**

**STATE OF MARYLAND**
DEPARTMENT OF TRANSPORTATION
OFFICE OF STRUCTURES

**SIMPLE SPAN GREATER THAN 25'-0" TO 30'-0"
EXTERIOR 4'-0" PRECAST CONCRETE SLAB PANEL
SKewed END DETAIL

**DETAIL NO. SUP-SLAB(4FT)-303**

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**FOR OFFICE USE ONLY**
**4'-0" INTERIOR SLAB PLAN**  
*Note to designers: Include the exact slab length, skew angle, and tie rod pattern in the Contract Plans.

Note: Reinforcing steel at ends of slab not shown for clarity.

Bars to be bent at casting plant after formwork has been removed.

**4'-0" INTERIOR SLAB ELEVATION**  
*Note to designers: Stirrup spacing shown is for a 90° crossing. For bridges with other skew angles, see Detail No. SUP-SLAB(4FT)-403 for details of skewed ends. Adjust this detail to show proper skew in Contract Plans.*

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1. Extreme care shall be used in locating cast holes. Drilling or coring of cast holes is prohibited. All reinforcing steel to be epoxy coated.

2. Adjust curb rebar and stirrup spacing as needed to avoid tie rod hole and misalignment prior to shipping slab units to the site. Any misalignment shall be cause for rejection of the slab unit. Drilling or coring of cast holes will be cause for rejection of the slab unit. A misalignment prior to shipping slab units to the site. Any misalignment shall be cause for rejection of the slab unit.

3. All reinforcing steel to be epoxy coated.

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**STATE HIGHWAY ADMINISTRATION**  
**DEPARTMENT OF TRANSPORTATION**  
**OFFICE OF STRUCTURES**

**DETAIL NO. SUP-SLAB(4FT)-401**

**INTERIOR 4'-0" PRECAST CONCRETE SLAB PANEL**

**SIMPLE SPAN GREATER THAN 30'-0" TO 35'-0"**

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**FOR OFFICE USE ONLY**

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**GUIDE SHEET FOR PLAN DEVELOPMENT ONLY - DO NOT INCLUDE THIS SHEET IN CONTRACT PLANS**
Type B tie rod recess, for location see Slab Layout sheet. Do not include unless required.

**SECTION - SLAB AT MIDSPAN**

- Roughened surface in accordance with Section 440.03.14 for concrete overlay
- See Shear Key Detail No. SUP-SLAB-501
- 6 - #5's placed as shown
- 2 1/2" dia. tie rod hole
- 4 double stirrups placed in pairs @ 1 1/4" c/c, see Plans.
- 26 - 1/2" dia. strands placed as shown

**SECTION - SLAB AT ENDS**

- Roughened surface in accordance with Section 440.03.14 for concrete overlay
- 6 - #5's placed as shown
- 5 double stirrups placed in pairs see Plans for spacing at ends.
- 26 - 1/2" dia. strands placed as shown

**Note:**
Any misplaced dowel bar holes or tie rod holes will be cause for rejection of the precast slab unit.

---

**STATE OF MARYLAND**
**DEPARTMENT OF TRANSPORTATION**
**STATE HIGHWAY ADMINISTRATION**
**OFFICE OF STRUCTURES**

**SIMPLE SPAN GREATER THAN 30'-0" TO 35'-0"**
**INTERIOR 4'-0" PRECAST CONCRETE SLAB PANEL SECTIONS**

**DETAIL NO. SUP-SLAB(4FT)-401**

**SHEET 2 OF 2**

* FOR OFFICE USE ONLY *
1. Extreme care shall be used in locating and reinforcing steel to be epoxy coated.
2. Adjust curb, rebar, and stirrup spacing as needed to avoid tie rod hole and tight rebar spacing. Rolling anchor bolts if applicable.
3. All reinforcing steel to be epoxy coated.

Note to designers:
Include the exact slab length, skew angle, and tie rod pattern in the Contract Plans.

**4'-0'' EXTERIOR SLAB PLAN**
Scale: 3⁄8'' = 1'-0''

**4'-0'' EXTERIOR SLAB ELEVATION**
Scale: 3⁄8'' = 1'-0''

Bars to be bent at casting plant after formwork has been removed.
SECTION - SLAB AT MIDSPAN
Scale: $\frac{3}{4}'' = 1'-0''$

- Roughened surface in accordance with Section 440.03.14 for concrete overlay
- See Shear Key Detail No. SUP-SLAB-501
- 6 - #5's placed as shown
- $\frac{3}{4}''$ dia. tie rod hole
- 4 double stirrups placed in pairs @ 11$\frac{3}{4}$" c/c, see Plans.
- 26 - $\frac{1}{2}''$ dia. strands placed as shown

SECTION - SLAB AT ENDS
Scale: $\frac{3}{4}'' = 1'-0''$

- 5 double stirrups placed in pairs see Plans for spacing at ends
- 26 - $\frac{1}{2}''$ dia. strands placed as shown

Note:
Extreme care shall be used when placing and tying the curb rebar, railing and anchor bolts assembly to provide for the required clearances. Any misplaced rebar, dowel bar holes, tie rod holes or anchor bolts will be cause for rejection of the precast slab unit.

Notes:
1. For location of tie rod holes, see contract plans.
2. For location of curb reinforcement and anchor bolts and plates to be cast in slab for railing, see Detail No. SUP-TB(TR)-301
**Center line slab**

**Step**

**Bearing**

*4 double stirrups*

**Scale:** 3/8" = 1'-0"

**PLAN**

4 equal spaces

11⅞" c/c max.

Top of slope area

2" cl. (typ.)

Normal stirrup spacing

4 equal spaces

3" min. - 11⅞" c/c max.

*5 double stirrups placed as shown*

*Skew angle*

**Center line slab**

2½" dia. dowel hole (typ.)

**Notes:**

6 - 5 bars in end of slab not shown for clarity.

Note to Fabricator:
End stirrup spacing must be laid out to determine spacing.

Note to Designer:
Layout shown works up to a skew angle of 55°. For angles less than 55° designer must layout skewed end detail on plans.

* Note to designer: Draw to scale on the contract plan sheets.

* Note to Designer: Draw to scale on the contract plan sheets.

* For Office Use Only *

**Details:**

Sup-Slab(4FT)-403

Simple span greater than 30'-0" to 35'-0"

Interior 4'-0" precast concrete slab panel

Skewed end detail

Notes:
All reinforcing steel to be epoxy coated.
#4 double stirrups placed as shown

4 equal spaces
11/4" c/c max.
Top of slope area
2" cl. (typ.)

Center line slab

2 1/2" dia. dowel hole (typ.)

6 - #5 curb reinforcement placed as shown

Notes:
6 - #5 bars in end of slab not shown for clarity.

Note to Fabricator:
End stirrup spacing must be laid out to determine spacing.

Note to Designer:
Layout shown works up to a skew angle of 55°. For angles less than 55° designer must layout skewed end detail on plans.

Notes:
All reinforcing steel to be epoxy coated.

* Note to designer: Draw to scale on the contract plan sheets.

PLAN
Scale: 1/4" = 1'-0"

* FOR OFFICE USE ONLY *
Notes:
1. Extreme care shall be used in locating the tie rod holes during the casting operation. Contractor shall assemble the slab units for the entire bridge width at the casting plant to ensure that there is no hole misalignment prior to shipping slab units to the site. Any misalignment of the holes will be cause for rejection of the slab unit. Drilling or coring of the slabs to create new or modified cast holes is prohibited.
2. Adjust curb rebar and stirrup spacing as needed to avoid tie rod hole and railing anchor bolts (if applicable).
3. All reinforcing steel to be epoxy coated.

Note to designers:
Include the exact slab length, skew angle, and the rod pattern in the Contract Plans.

Note:
Reinforcing steel at ends of slab not shown for clarity.

Note to designers:
Stirrup spacing shown for a 90° crossing. For bridges with other skew angles, see Detail No. SUP-SLAB(4FT)-501 for details of skewed ends. Adjust this detail to show proper skew in Contract Plans.

Bars to be bent at casting plant after formwork has been removed.

Extreme care shall be used in locating the tie rod hole (type) after formwork has been removed.

Bars to be bent at casting plant after formwork has been removed.
**SECTION - SLAB AT MIDSPAN**

Scale: $\frac{1}{4}'' = 1'-0''$

- Roughened surface in accordance with Section 440.03.14 for concrete overlay.
- See Shear Key Detail No. SUP-SLAB-501
- 6 - #5's placed as shown
- $\frac{3}{4}''$ dia. tie rod hole
- 4 double stirrups placed in pairs @ 11/2'' c/c, see Plans.
- 28 - $\frac{1}{2}''$ dia. strands placed as shown

Note:
For location of tie rod holes, see contract plans.

**SECTION - SLAB AT ENDS**

Scale: $\frac{1}{4}'' = 1'-0''$

- Roughened surface in accordance with Section 440.03.14 for concrete overlay.
- 5 double stirrups placed in pairs see Plans for spacing at ends.
- 28 - $\frac{1}{2}''$ dia. strands placed as shown

Note:
Any misplaced dowel bar holes or tie rod holes will be cause for rejection of the precast slab unit.

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* FOR OFFICE USE ONLY *
**4'-0'' EXTERIOR SLAB PLAN**

Scale: \( \frac{\text{\(6\)}}{\text{\(1\)}} \) = 1'-0''

1. Extreme care shall be used in locating reinforcing steel at ends of slab and curb reinforcing not shown for clarity.

2. Adjust curb rebars and stirrup spacing as needed to avoid tie rod hole and bearing recess.

3. All reinforcing steel to be epoxy coated.

---

**4'-0'' EXTERIOR SLAB ELEVATION**

Scale: \( \frac{\text{\(6\)}}{\text{\(1\)}} \) = 1'-0''

**Notes:**

* For bridges with other skew angles, see Detail No. SUP-SLAB(4FT)-503 for details of skewed ends. Adjust this detail to show proper skew in Contract Plans.

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**State Highway Administration**

**Department of Transportation**

**State of Maryland**

**Office of Structures**

**DO NOT INCLUDE THIS SHEET IN CONTRACT PLANS**

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**APPROVAL**

**DIRECTOR**

**OFFICE OF STRUCTURES**

**DATE:**

**VERSION**
SECTION - SLAB AT MIDSPAN
Scale: 1/4" = 1'-0"

SECTION - SLAB AT ENDS
Scale: 1/4" = 1'-0"

Notes:
1. For location of tie rod holes, see contract plans.
2. For location of curb reinforcement and anchor bolts and plates to be cast in slab for railing, see Detail No. SUP-TB(TR)-301

Roughened surface in accordance with Section 440.03.14 for concrete overlay

- #5 double stirrups placed in pairs see Plans. for spacing at ends
- 28 - 1/2" dia. strands placed as shown

Note:
Extreme care shall be used when placing and tying the curb rebar, railing and anchor bolts assembly to provide for the required clearances. Any misplaced rebar, dowel bar holes, tie rod holes or anchor bolts will be cause for rejection of the precast slab unit.

* FOR OFFICE USE ONLY *

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

SIMPLE SPAN GREATER THAN 35'-0" TO 40'-0"
EXTERIOR 4'-0" PRECAST CONCRETE SLAB PANEL
SECTIONS

DETAIL NO. SUP-SLAB(4FT)-502

SHEET 2 OF 2

** GUIDE SHEET FOR PLAN DEVELOPMENT ONLY – DO NOT INCLUDE THIS SHEET IN CONTRACT PLANS **
Note to designer: Draw to scale on the contract plan sheets.

PLAN
Scale: $\frac{1}{4}'' = 1'-0''$

Notes:
All reinforcing steel to be epoxy coated.

* Note to Fabricator:
End stirrup spacing must be laid out to determine spacing.

Note to Designer:
Layout shown works up to a skew angle of 55°. For angles less than 55°, designer must layout skewed end detail on plans.

* FOR OFFICE USE ONLY *
**Skew angle**

* Note to Fabricator: End stirrup spacing must be laid out to determine spacing.

* Note to Designer: Layout shown works up to a skew angle of 55°. For angles less than 55°, designer must layout skewed end detail on plans.

**Plan**

Scale: $\frac{1}{4}'' = 1'-0''$

- **Center line slab**
- **2½" dia. dowel hole (typ.)**
- **6-#5 curb reinforcement placed as shown**
- **#5 double stirrups placed as shown**

**Note to Fabricator:**

- 2" cl. (typ.)
- 6 "
- 3" min. - 11⅞" c/c max.
- #5 double stirrups

**Note to Designer:**

- 6-#5 bars in end of slab not shown for clarity.
- Normal stirrup spacing

**Notes:**

- All reinforcing steel to be epoxy coated.
NOTES:
1. Extreme care shall be used in locating and adjusting cut rebar and stirrup spacing as needed to avoid tie rod hole misalignment prior to shipping slab units to the site. Any misalignment of the tie rod holes is prohibited. Drilling or coring of the tie rod holes will be cause for rejection of the slab unit. Defining or coring of the slab unit to create new or modified cast holes is prohibited. Rolling anchor bolts if applicable, shall be epoxy coated.  
2. Adjust curb rebar and stirrup spacing to ensure that there is no hole misalignment in the Superstructure slab. Include the exact slab length, skew angle, and tie rod pattern in the Contract Plans. 
3. Bars to be bent at casting plant after formwork has been removed.
**SECTION - SLAB AT MIDSPAN**

Scale: $\frac{1}{4}'' = 1'-0''$

- Roughened surface in accordance with Section 440.03.14 for concrete overlay
- See Shear Key Detail No. SUP-SLAB-501
- 6 - #5's placed as shown
- $\frac{4}{5}$ dia. tie rod hole
- 4 double stirrups placed in pairs @ $\frac{11}{2}'' c/c$, see Plans.
- 39 - $\frac{1}{2}''$ dia. strands placed as shown

**SECTION - SLAB AT ENDS**

Scale: $\frac{1}{4}'' = 1'-0''$

- Roughened surface in accordance with Section 440.03.14 for concrete overlay
- 6 - #5's placed as shown
- 5 double stirrups placed in pairs see Plans for spacing at ends.
- 39 - $\frac{1}{2}''$ dia. strands placed as shown

Note:
- Any misplaced dowel bar holes or tie rod holes will be cause for rejection of the precast slab unit.

**Note:**
For location of tie rod holes, see contract plans.
**Guideline for Plan Development Only - Do Not Include This Sheet in Contract Plans**

1. Extreme care shall be used in locating tie rod holes during the casting operation. Contractor shall assemble the slab units for the entire bridge width at the casting plant to ensure that there is no hole misalignment prior to shipping slab units to the site. Any misalignment of the holes will be cause for rejection of the slab unit. Drilling or coring of the slabs to create new or modified cast holes is prohibited.

2. Adjust curb rebar and stirrup spacing as needed to avoid tie rod hole and railing anchor bolts (if applicable).

3. All reinforcing steel to be epoxy coated.

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**Sheet: 4'-0'' Exterior Precast Concrete Slab Panel**

**Superstructure Slabs**

**Detail No. SUP-SLAB4(FT)-602**

**Date:** 05/12/2017

**State of Maryland**

**Department of Transportation**

**Office of Structures**

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**Notes:**

- Extensive use shall be made in locating tie rod holes during the casting operation. Contractor shall assemble the slab units at the casting plant to ensure that there is no hole misalignment prior to shipping slab units to the site. Any misalignment of the holes will cause for rejection of the slab unit. Drilling or coring of the slabs to create new or modified cast holes is prohibited.

- Adjust curb rebar and stirrup spacing as needed to avoid tie rod hole and railing anchor bolts (if applicable).

- All reinforcing steel to be epoxy coated.
Notes:

1. For location of tie rod holes, see contract plans.

2. For location of curb reinforcement and anchor bolts and plates to be cast in slab for railing, see Detail No. SUP-TB(TR)-301

SECTION - SLAB AT MIDSPAN
Scale: 1/4" = 1'-0"

SECTION - SLAB AT ENDS
Scale: 1/4" = 1'-0"

Note:
Extreme care shall be used when placing and tying the curb rebar, railing and anchor bolts assembly to provide for the required clearances. Any misplaced rebar, dowel bar holes, tie rod holes or anchor bolts will be cause for rejection of the precast slab unit.

1. For location of tie rod holes, see contract plans.

2. For location of curb reinforcement and anchor bolts and plates to be cast in slab for railing, see Detail No. SUP-TB(TR)-301

SECTION - SLAB AT MIDSPAN
Scale: 1/4" = 1'-0"

SECTION - SLAB AT ENDS
Scale: 1/4" = 1'-0"

Note:
Extreme care shall be used when placing and tying the curb rebar, railing and anchor bolts assembly to provide for the required clearances. Any misplaced rebar, dowel bar holes, tie rod holes or anchor bolts will be cause for rejection of the precast slab unit.

1. For location of tie rod holes, see contract plans.

2. For location of curb reinforcement and anchor bolts and plates to be cast in slab for railing, see Detail No. SUP-TB(TR)-301
NOTE TO DESIGNER:
Draw to scale on the contract plan sheets.

PLAN
Scale: \( \frac{\frac{3}{4}}{1"} = 1'-0" \)

**Note to Fabricator:**
End stirrup spacing must be laid out to determine spacing.

**Note to Designer:**
Layout shown works up to a skew angle of 55°. For angles less than 55° designer must layout skewed end detail on plans.

Notes:
- All reinforcing steel to be epoxy coated.
- 6 - #5 bars in end of slab not shown for clarity.
Skew angle

#5 double stirrups placed as shown

* Skew angle

Center line slab

2½" dia. dowel hole (typ.)

6 - #5 curb reinforcement placed as shown

Notes:
6 - #5 bars in end of slab not shown for clarity.

Note to Fabricator:
End stirrup spacing must be laid out to determine spacing.

Note to Designer:
Layout shown works up to a skew angle of 55°. For angles less than 55° designer must layout skewed end detail on plans.

Note to designer: Draw to scale on the contract plan sheets.

PLAN
Scale: ¼" = 1'-0"
**4'-0" INTERIOR SLAB PLAN**

Scale: \( \frac{\frac{1}{8}}{1'0"} \)

Note: Reinforcing steel at ends of slab not shown for clarity.

Note to designers: Include the exact slab length, skew angle, and tie rod pattern in the Contract Plans.

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**4'-0" INTERIOR SLAB ELEVATION**

Scale: \( \frac{\frac{1}{8}}{1'0"} \)

Bars to be bent at casting plant after formwork has been removed.

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Note to designers: Stirrup spacing shown is for a 90° crossing. For bridges with other skew angles, see Detail No. SUP-SLAB4FT1-503 for details of skewed ends. Adjust this detail to show proper skew in Contract Plans.

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**SUPERSTRUCTURE SLABS**

**STATE OF MARYLAND**

**DEPARTMENT OF TRANSPORTATION**

**OFFICE OF STRUCTURES**

**INTERIOR 4'-0" PRECAST CONCRETE SLAB PANEL & ELEVATION**

**SIMPLE SPAN GREATER THAN 45'-0" TO 50'-0"**

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**NOTES:**

1. Extreme care shall be used in locating the tie rebar during the casting operation. Contractor shall assemble the slab units to ensure that there is no hole to the site. Any misalignment of the slab units shall be corrected prior to shipping slab units to the site.

2. Adjust curb, rebar and stirrup spacing as needed to avoid tie rod holes. Rolling anchor bolts if applicable, shall be epoxy coated.

3. All reinforcing steel to be epoxy coated.

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**SECTION - SLAB AT MIDSPAN**
Scale: \( \frac{3}{8}" = 1'-0" \)

- *4 double stirrups placed in pairs see Plans for spacing at ends.*
- *46 - \( \frac{1}{2}" \) dia. strands placed as shown*
- Roughened surface in accordance with Section 440.03.14 for concrete overlay

**SECTION - SLAB AT ENDS**
Scale: \( \frac{3}{8}" = 1'-0" \)

- *6 double stirrups placed in pairs see Plans for spacing at ends.*
- *46 - \( \frac{1}{2}" \) dia. strands placed as shown*
- Roughened surface in accordance with Section 440.03.14 for concrete overlay

Note:
Any misplaced dowel bar holes or tie rod holes will be cause for rejection of the precast slab unit.

Type B tie rod recess, for location see Slab Layout sheet. Do not show unless required.

Note:
For location of tie rod holes, see contract plans.

*FOR OFFICE USE ONLY*
**4'-0'' EXTERIOR SLAB PLAN**

Scale: \( \frac{\frac{1}{6}''}{1'-0''} \)

**Note to designers:**
Include the exact slab length, skew angle, and tie rod pattern in the Contract Plans.

**4'-0'' EXTERIOR SLAB ELEVATION**

Scale: \( \frac{\frac{1}{6}''}{1'-0''} \)

Bars to be bent at casting plant after formwork has been removed.

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1. Extreme care shall be used in locating and installing reinforcing steel.
2. Extreme care shall be used in locating and installing tie rebar and stirrup spacing as needed to avoid tie rod hole and rebar hole alignment.
3. All reinforcing steel to be epoxy coated.

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**STATE OF MARYLAND**
**DEPARTMENT OF TRANSPORTATION**
**OFFICE OF STRUCTURES**

**SIMPLE SPAN GREATER THAN 45'-0'' TO 50'-0''**

**EXTERIOR 4'-0'' PRECAST CONCRETE SLAB PANEL**

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**Note to designers:**
Reinforcing steel at ends of slab and curb reinforcing not shown for clarity.

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**Note to designers:**
Stirrup spacing shown is for a 90° crossing. For bridges with other skew angles, see Detail No. SUP-SLAB(4FT)-703 for details of skewed ends. Adjust this detail to show proper skew in Contract Plans.
Notes:
1. For location of tie rod holes, see contract plans.
2. For location of curb reinforcement and anchor bolts and plates to be cast in slab for railing, see Detail No. SUP-TB(TR)-301.

For any misplaced rebar, dowel bar holes, tie rod holes or anchor bolts, the precast slab unit will be rejected.

* FOR OFFICE USE ONLY *
PLAN
Scale: $\frac{1}{4}'' = 1'-0''$

Notes:
- All reinforcing steel to be epoxy coated.

* Note to designer: Draw to scale on the contract plan sheets.

For angles less than 55°, the designer must layout skewed end detail on plans.

Note to Fabricator:
End stirrup spacing must be laid out to determine spacing.

Note to Designer:
Layout shown works up to a skew angle of 55°. For angles greater than 55°, the designer must layout skewed end detail on plans.

Note to Designer:
Draw to scale on the contract plan sheets.

Notes:
- 8 - #5 bars in end of slab not shown for clarity.

* GUIDE SHEET FOR PLAN DEVELOPMENT ONLY – DO NOT INCLUDE THIS SHEET IN CONTRACT PLANS *
**Note to Fabricator:**

End stirrup spacing must be laid out to determine spacing.

**Note to Designer:**

Layout shown works up to a skew angle of 55°. For angles less than 55°, designer must layout skewed end detail on plans.

**Notes:**

All reinforcing steel to be epoxy coated.

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**PLAN**

Scale: ¼" = 1'-0"
4'-0'' INTERIOR SLAB ELEVATION

SUPERSTRUCTURE SLABS

SIMPLE SPAN GREATER THAN 50'-0'' TO 55'-0''
INTERIOR 4'-0'' PRECAST CONCRETE SLAB PANEL
PLAN & ELEVATION

STATE OF MARYLAND
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

Detail No. SUP-SLAB(4FT)-801
Sheet ___ of ___

Notes:
1. Extreme care shall be used in locating tie rod holes during the casting operation. Contractor shall assemble the slab units for the entire bridge width at the casting plant to ensure that there is no hole misalignment prior to shipping slab units to the site. Any misalignment of the holes will be cause for rejection of the slab unit. Drilling or coring of the slabs to create new or modified cast holes is prohibited.
2. Adjust curb rebar and stirrup spacing as needed to avoid tie rod hole and railing anchor bolts (if applicable).
3. All reinforcing steel to be epoxy coated.

* FOR OFFICE USE ONLY *
Type B tie rod recess, for location see Slab Layout sheet. Do not show unless required.

Note:
For location of tie rod holes, see contract plans.

Any misplaced dowel bar holes or tie rod holes will be cause for rejection of the precast slab unit.

SECTION - SLAB AT MIDSPAN
Scale: \( \frac{3}{4}'' = 1' - 0'' \)

SECTION - SLAB AT ENDS
Scale: \( \frac{3}{4}'' = 1' - 0'' \)

Roughened surface in accordance with Section 440.03.14 for concrete overlay

See Shear Key Detail No. SUP-SLAB-501

8 - #5's placed as shown

3/4'' tie rod hole

*4 double stirrups @ 11 3/4'' c/c, see Plans.

2 - #5's placed as shown

51 - 1/2'' dia. strands placed as shown

#6 double stirrups placed in pairs see Plans for spacing at ends.

2 - #5's placed as shown

51 - 1/2'' dia. strands placed as shown

Note:
Any misplaced dowel bar holes or tie rod holes will be cause for rejection of the precast slab unit.
1. Extreme care shall be used in locating the reinforcing steel. Adjust curb rebar and stirrup spacing as needed to avoid tie rod hole and rolling anchor bolt holes.

2. All reinforcing steel to be epoxy coated.

3. Drilling or coring of holes is prohibited. The contractor shall assemble the slab units to ensure that there is no hole cast holes to create new or modified holes at the site. Any misalignment of the holes will cause for rejection of the slab units. Drilling or coring of the slab units to create new or modified holes prior to shipping slab units to the site will be cause for rejection of the slab units. Any misalignment of the holes will cause for rejection of the slab units. Any misalignment of the holes will be cause for rejection of the slab units.

* Note to designers: Include the exact slab length, skew angle, and tie rod pattern in the Contract Plans.

Note: Reinforcing steel at ends of slab and curb reinforcing not shown for clarity.

Note: Bars to be bent at casting plant after formwork has been removed.

Notes:

- All reinforcing steel to be epoxy coated.
- Drilling or coring of holes is prohibited.
- The contractor shall assemble the slab units to ensure that there is no hole cast holes to create new or modified holes at the site. Any misalignment of the holes will cause for rejection of the slab units. Drilling or coring of the slab units to create new or modified holes prior to shipping slab units to the site will be cause for rejection of the slab units. Any misalignment of the holes will cause for rejection of the slab units. Any misalignment of the holes will be cause for rejection of the slab units.

Note to designers:

Stirrup spacing shown is for a 90° crossing. For bridges with other skew angles, see Detail No. SUP-SLAB(4FT)-803 for details of skewed ends. Adjust this detail to show proper skew in Contract Plans.
Notes:
1. For location of tie rod holes, see contract plans.
2. For location of curb reinforcement and anchor bolts to be cast in slab for railing, see Detail No. SUP-TB(TR)-301.

SECTION - SLAB AT MIDSPAN
Scale: $\frac{1}{4}'' = 1'-0''$

Roughened surface in accordance with Section 440.03.14 for concrete overlay.
See Shear Key Detail No. SUP-SLAB-501.
8 - #5’s placed as shown.

Roughened surface in accordance with Section 440.03.14 for concrete overlay.
See Shear Key Detail No. SUP-SLAB-501.
8 - #5’s placed as shown.

Note:
Extreme care shall be used when placing and tieing the curb rebar, railing and anchor bolts assembly to provide for the required clearances. Any misplaced rebar, dowel bar holes, tie rod holes or anchor bolts will be cause for rejection of the precast slab unit.

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

SIMPLE SPAN GREATER THAN 50'-0'' TO 55'-0''
EXTERIOR 4'-0'' PRECAST CONCRETE SLAB PANEL SECTIONS

DETAIL NO. SUP-SLAB(4FT)-802 SHEET 2 OF 2
Skew angle

*4 double stirrups

4 equal spaces

11\(\frac{3}{4}\)" c/c max.

Top of slope area

2" cl. (typ.)

Normal stirrup spacing

4 equal spaces

3" min. - 11\(\frac{3}{4}\)" c/c max.

* Note to designer: Draw to scale on the contract plan sheets.

PLAN

Scale: \(\frac{1}{4}" = 1'-0"

Notes:
- All reinforcing steel to be epoxy coated.
- 8 - #5 bars in end of slab not shown for clarity.
- For angles less than 55°, designer must layout skewed end detail on plans.

Note to Fabricator:
End stirrup spacing must be laid out to determine spacing.

Note to Designer:
Layout shown works up to a skew angle of 55°. For angles less than 55°, designer must layout skewed end detail on plans.
**SUP-STRUCTURE SLABS**

**SIMPLE SPAN GREATER THAN 50'-0" TO 55'-0"
EXTERIOR 4'-0" PRECAST CONCRETE SLAB PANEL
SKewed END Detail**

**STATE OF MARYLAND**
DEPARTMENT OF TRANSPORTATION
OFFICE OF STRUCTURES

**DETAIL NO. SUP-SLAB(4FT)-803**

**SKEWED END DETAIL**

**NOTE TO DESIGNER:**
Draw to scale on the contract plan sheets.

**Note:**
All reinforcing steel to be epoxy coated.

**Scale:** $\frac{\text{1/4"}}{=1\text{-0"}}$

**PLAN**

- Center line bearing
- Top of slope area
- 2" cl. (typ.)
- 6" cl.
- 3" cl.
- 5" cl.
- Step
- 1'-2"

**4 double stirrups**

- 4 equal spaces
- 3" min. - 11\(\frac{3}{4}\)" c/c max.

**Normal stirrup spacing**

- 2" x 6" key

**8 - #5 curb reinforcement placed as shown**

**8 - #5 bars in end of slab not shown for clarity.**

**Note to Fabricator:**
End stirrup spacing must be laid out to determine spacing.

**Note to Designer:**
Layout shown works up to a skew angle of 55°. For angles less than 55° designer must layout skewed end detail on plans.

**FOR OFFICE USE ONLY**
ALTERNATE REINFORCING SECTION - SLAB AT MIDSPAN

Scale: $\frac{1}{4}'' = 1'-0''$

Reinforcing bars, bent as shown, see plans for size and spacing

Hooks can be rotated up to 90° as required for mat placement

*5 bars, see plans for spacing and amount

2½'' dia. dowel bar holes

Strands (location and amount vary according to precast slab design)

ALTERNATE REINFORCING SECTION - SLAB AT ENDS

Scale: $\frac{1}{4}'' = 1'-0''$

Longitudinal reinforcing as required

2-#5 bars

Hooks can be rotated up to 90° as required for mat placement

*5 bars, see plans for spacing and amount

2½'' dia. dowel bar holes

Strands (location and amount vary according to precast slab design)

Note:
All reinforcing steel to be epoxy coated.

* These bars are only required for span lengths greater than 50'-0''.

* FOR OFFICE USE ONLY *
APPRAOVAL
DIRECTOR
OFFICE OF STRUCTURES

DATE: 05/12/2017
VERSION 1.0

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES

EXTERIOR 4'-0" PRECAST CONCRETE SLAB PANEL
ALTERNATE REINFORCING DETAILS

Note:
All reinforcing steel to be epoxy coated.

* FOR OFFICE USE ONLY *

ALTERNATE REINFORCING SECTION - SLAB AT MIDSPAN
Scale: 1/4" = 1'-0"

ALTERNATE REINFORCING SECTION - SLAB AT ENDS
Scale: 1/4" = 1'-0"

* These bars are only required for span lengths greater than 50'-0".

SUPERSTRUCTURE SLABS

* GUIDE SHEET FOR PLAN DEVELOPMENT ONLY - DO NOT INCLUDE THIS SHEET IN CONTRACT PLANS *