ABOUT ` OF POST
LONG.   PLACE SYM.
#6 BARS 4'-0"
ONLY.
CULVERT HEADERS
BOLT ASSEMBLY) FOR
EACH SIDE OF ANCHOR
4-#6 BARS (TWO ON
CULVERT HEADER
7‡" FOR 1'-6"
CULVERT HEADER
4‡" FOR 1'-3"
STANDARDS.
A THRIE BEAM CONNECTION
SHALL HAVE PROVISIONS FOR
AT END POSTS, RAIL MEMBER
WELD
SEAL
SLAB
END OF WINGWALL
2
10
9
11
1'-0"
10"
1
6"
3'
7 ‡"
4 ƒ"
11"
Min.
1'-7" MAX.
11" MIN.
FIRST PANEL VARIABLE
IF NEEDED 6'-3" MAX.
GIVE ANGLE
6
3
FOR RAIL TYPE.
SPECIFICATIONS
SEE STANDARD
EXPANSION JOINT
SLAB SUPERSTRUCTURE
REINFORCEMENT FOR CONC.
THIS FACE TO
BEND AS SHOWN.
#6 BARS X 12'-0" LONG.
H E X  B O L T  ‡ " |
(A 3 2 5  G A L V A N I Z E D )
†" DIA. BUTTON HEAD OVAL SHOULDER
4 PER POST
EXPANDS IN DRAW GAUGE AND CHANNEL
RAIL SHALL BE DETAILED AT A POST ON EITHER
SIDE OF EXPANSION JOINT. (ONLY ONE REQ'D.)
RAIL SHALL BE DETAILED AT A POST ON EITHER
EXPANSION SPLICE IN BEAM GUARD AND CHANNEL
MEMBER TO ACHIEVE VERT. ALIGNMENT.
SHIM PLATES 6" X ˆ" X 6" MAY BE USED BETWEEN TOP OF
CHANNEL MEMBER DETAILS
PLATE ‡" x 5ƒ" x 1'-2".  1" DIA. HOLES IN PLATE.
†" DIA. x 2" HEX BOLTS WITH NUT AND TWO WASHERS EACH.
‡" DIA. BUTTON HEAD POST MOUNTING BOLT WITH ROUND
BASE PLATE 1" X 9" x 10" WITH 1ˆ" x 1"
SHOWN.
BOLTS NO. 4.
§" x 10" LONG AT END POSTS AND AT POSTS ON CONCRETE
UPPER RAIL SHALL LAP THE LOWER RAIL.
TURN AND BURR THREADS.  RAIL MEMBERS SHALL
BE DETAINED AT MINIMUM OF FOUR POSTS AND A
MAXIMUM OF EIGHT (EXCEPT AT ABUTMENTS).
CHANNEL MEMBER SHALL BE ATTACHED CONTINUOUSLY
TO A MINIMUM OF POSTS AND A MINIMUM OF EACH EXCEPT AT ENDPOSTS.
AT EXPANSION SPLICES IN RAIL AND CHANNEL,
MEMBERS ADJACENT TO THE RAIL SPLICE SHOULDN'T BE CUT THE Width
AND CUT OFF THE RAIL TIP AND SLAB IMMEDIATELY NEXT TO THE RAIL,
BE LEFT IN THE DIRECTION OF TRAFFIC AND THE
UPPER RAIL SHALL BE LINED UP.  ALL
STEEL POST SHIMS MAY BE USED UNDER POSTS
MEET ANCHORAGE REQUIREMENTS.
SEE BRIDGE MANUAL 30.2 FOR ALLOWED USE.

STEEL RAILING TYPE 'W'

BILL OF BARS FOR SUPERSTRUCTURE.  NOT REQ'D.
TIE TO TOP MAT OF STEEL.  PUT THESE BARS IN
PLACE BEFORE HANGING STEEL SUPERSTRUCTURE.  NOT Hình
FOR BOX CULVERT HEADERS.
BILL LIMITS FOR TYPE "W" STEEL RAILING.
FOR BARS & STEEL_CHANNEL 31.18
SEE BRIDGE MANUAL 30.2 FOR ALLOWED USE.
 Bills Oliva

 1971

**Standard 3G05**
NOTES

1. THIS SHEET SHALL BE "RAILING STEEL TYPE 3T", WHICH SHALL INCLUDE ALL STEEL ITEMS SHOWN.

2. MATERIAL (EXCEPT NO. 3 & 12) SHALL BE GALVANIZED AFTER FABRICATION. ALL PLATE CUTS SHALL BE TRUE AND SMOOTH. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES STRAIGHT. POSTS SHALL BE MODULAR, WITH 4 POSTS TO TOE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS. ALL CUT ENDS SHALL BE TRUE AND SMOOTH. POSTS SHALL BE MODULAR, WITH 4 POSTS TO TOE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.

3. ALL PLATES AND RECTANGULAR SLEEVES SHALL BE MODULAR. ALL SLAB AND RECTANGULAR SLEEVES SHALL BE MODULAR. ALL PLATE CUTS SHALL BE TRUE AND SMOOTH. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT. ALL PLATE CUTS SHALL BE TRUE AND SMOOTH. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

4. VIEW AREA PERIMETER OF BASE PLATE NO. 1 AND SLEEVE DETAIL IN SLEEVES AND RAIL U-MEMBER TO BE PAINTED AT ALL FIELD ERECTION AND EXPANSION JOINTS. VIEW AREA PERIMETER OF BASE PLATE NO. 1 AND SLEEVE DETAIL TO BE PAINTED AT ALL FIELD ERECTION AND EXPANSION JOINTS. VIEW AREA PERIMETER OF BASE PLATE NO. 1 AND SLEEVE DETAIL TO BE PAINTED AT ALL FIELD ERECTION AND EXPANSION JOINTS.

5. TOUCH-UP PAINTING TO BE DONE AT COMPLETION OF STEEL RAILING INSTALLATION. TOUCH-UP PAINTING TO BE DONE AT COMPLETION OF STEEL RAILING INSTALLATION. TOUCH-UP PAINTING TO BE DONE AT COMPLETION OF STEEL RAILING INSTALLATION.

6. ALL MATERIALS EXCEPT NO. 3 & 12 SHALL BE GALVANIZED AFTER FABRICATION. ALL MATERIALS EXCEPT NO. 3 & 12 SHALL BE GALVANIZED AFTER FABRICATION. ALL MATERIALS EXCEPT NO. 3 & 12 SHALL BE GALVANIZED AFTER FABRICATION.

7. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

8. ALL STEEL ITEMS SHOWN.

9. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

10. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

11. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

12. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

13. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

14. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

15. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

16. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

17. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

18. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

19. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

20. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

21. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

22. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

23. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

24. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

25. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

26. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

27. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

28. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

29. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

30. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

31. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

32. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

33. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

34. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

35. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

36. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

37. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

38. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

39. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

40. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

41. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

42. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

43. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

44. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

45. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

46. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

47. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

48. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

49. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

50. ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.
SECTION A

INSIDE ELEVATION

SECTION B

SECTION C

DESIGNER NOTES

SECTION THRU PARAPET ON BRIDGE

INSIDE ELEVATION

PLAN

SECTION THRU PARAPET ON BRIDGE

CHAIN LINK FENCE MOUNTED ON DECK

ADHESIVE ANCHOR CONNECTION

ANCHOR CONNECTION DETAIL

ALTERNATIVE - SEE ADHESIVE

USED AS AN APPROVED

ADHESIVE ANCHORS MAY BE

OPTION OF THE CONTRACTOR,

REINFORCEMENT (AT THE

WITH CAST-IN-PLACE

PARAPET SHALL BE DETAILED

WITH CRASHWORTHY ADJACENT EXTERIOR PARAPET)

INTERIOR PARAPET (USED IN CONJUNCTION

WITH GIRDERS)

FOR DETAIL ON THE PLAN. THE CONTRACTOR MAY REQUEST

DO NOT SHOW THE ADHESIVE ANCHOR CONNECTION

DETAIL ON THE PLAN. THE CONTRACTOR MAY REQUEST

THIS DETAIL IF DESIRED.

DETAIL ON THE PLAN. THE CONTRACTOR MAY REQUEST

DO NOT SHOW THE ADHESIVE ANCHOR CONNECTION

DETAIL ON THE PLAN. THE CONTRACTOR MAY REQUEST

THIS DETAIL IF DESIRED.

DETAIL ON THE PLAN. THE CONTRACTOR MAY REQUEST

DO NOT SHOW THE ADHESIVE ANCHOR CONNECTION

DETAIL ON THE PLAN. THE CONTRACTOR MAY REQUEST

THIS DETAIL IF DESIRED.

DETAIL ON THE PLAN. THE CONTRACTOR MAY REQUEST

DO NOT SHOW THE ADHESIVE ANCHOR CONNECTION

DETAIL ON THE PLAN. THE CONTRACTOR MAY REQUEST

THIS DETAIL IF DESIRED.

DETAIL ON THE PLAN. THE CONTRACTOR MAY REQUEST

DO NOT SHOW THE ADHESIVE ANCHOR CONNECTION

DETAIL ON THE PLAN. THE CONTRACTOR MAY REQUEST

THIS DETAIL IF DESIRED.

DETAIL ON THE PLAN. THE CONTRACTOR MAY REQUEST

DO NOT SHOW THE ADHESIVE ANCHOR CONNECTION

DETAIL ON THE PLAN. THE CONTRACTOR MAY REQUEST

THIS DETAIL IF DESIRED.

DETAIL ON THE PLAN. THE CONTRACTOR MAY REQUEST

DO NOT SHOW THE ADHESIVE ANCHOR CONNECTION

DETAIL ON THE PLAN. THE CONTRACTOR MAY REQUEST

THIS DETAIL IF DESIRED.

DETAIL ON THE PLAN. THE CONTRACTOR MAY REQUEST

DO NOT SHOW THE ADHESIVE ANCHOR CONNECTION

DETAIL ON THE PLAN. THE CONTRACTOR MAY REQUEST

THIS DETAIL IF DESIRED.

DETAIL ON THE PLAN. THE CONTRACTOR MAY REQUEST

DO NOT SHOW THE ADHESIVE ANCHOR CONNECTION

DETAIL ON THE PLAN. THE CONTRACTOR MAY REQUEST

THIS DETAIL IF DESIRED.

DETAIL ON THE PLAN. THE CONTRACTOR MAY REQUEST

DO NOT SHOW THE ADHESIVE ANCHOR CONNECTION

DETAIL ON THE PLAN. THE CONTRACTOR MAY REQUEST

THIS DETAIL IF DESIRED.

DETAIL ON THE PLAN. THE CONTRACTOR MAY REQUEST

DO NOT SHOW THE ADHESIVE ANCHOR CONNECTION

DETAIL ON THE PLAN. THE CONTRACTOR MAY REQUEST

THIS DETAIL IF DESIRED.

DETAIL ON THE PLAN. THE CONTRACTOR MAY REQUEST

DO NOT SHOW THE ADHESIVE ANCHOR CONNECTION

DETAIL ON THE PLAN. THE CONTRACTOR MAY REQUEST

THIS DETAIL IF DESIRED.

DETAIL ON THE PLAN. THE CONTRACTOR MAY REQUEST

DO NOT SHOW THE ADHESIVE ANCHOR CONNECTION

DETAIL ON THE PLAN. THE CONTRACTOR MAY REQUEST

THIS DETAIL IF DESIRED.
SECTION THRU RAILING ON DECK

ANCHOR BOLTS
Place anchor bolts in tubes. Cut bottoms of tubes. After anchor plate is in place, check for constructibility.

ANCHOR PLATE
At rail to deck connection.

FIELD ERECTION JOINT DETAIL
Provide 3/8" thru 1/2" holes in low and high cover plates.

SECTION A-A

SECTION B-B

SECTION THRU POST WEB

ANCHOR PLATE
At deck guard attachment.

ANCHOR BOLTS
Place anchor bolts in tubes. Cut bottoms of tubes. After anchor plate is in place, check for constructibility.

ANCHOR PLATE
At rail to deck connection.

ANCHOR PLATE
At beam guard attachment.

ANCHOR BOLTS
Place anchor bolts in tubes. Cut bottoms of tubes. After anchor plate is in place, check for constructibility.

ANCHOR PLATE
At floor guard attachment.

ANCHOR BOLTS
Place anchor bolts in tubes. Cut bottoms of tubes. After anchor plate is in place, check for constructibility.

ANCHOR PLATE
At rail to deck connection.

ANCHOR BOLTS
Place anchor bolts in tubes. Cut bottoms of tubes. After anchor plate is in place, check for constructibility.

ANCHOR PLATE
At deck guard attachment.

ANCHOR BOLTS
Place anchor bolts in tubes. Cut bottoms of tubes. After anchor plate is in place, check for constructibility.

ANCHOR PLATE
At floor guard attachment.

ANCHOR BOLTS
Place anchor bolts in tubes. Cut bottoms of tubes. After anchor plate is in place, check for constructibility.

ANCHOR PLATE
At rail to deck connection.

ANCHOR BOLTS
Place anchor bolts in tubes. Cut bottoms of tubes. After anchor plate is in place, check for constructibility.

ANCHOR PLATE
At floor guard attachment.

ANCHOR BOLTS
Place anchor bolts in tubes. Cut bottoms of tubes. After anchor plate is in place, check for constructibility.

ANCHOR PLATE
At rail to deck connection.

ANCHOR BOLTS
Place anchor bolts in tubes. Cut bottoms of tubes. After anchor plate is in place, check for constructibility.
Combination railings type C1 - C6 may also be used as a traffic barrier is required between the roadway and the sidewalk or retaining wall by increasing the railing height to a minimum of 3'-6" and a maximum of 4'-6" and using a minimum post size of 3"x3"x‰". When used on a bridge, and the sidewalk, for this pedestrian railing, a minimum 12'-0" wing length is recommended to accommodate the rail end transition and provide a post spacing on the wing that will maintain the rail aesthetics.

SEE STANDARD 30.17 FOR ADDITIONAL RAILING DETAILS.

The clear space between the top two rails may be increased to a 6" maximum except for "type c1" railing.

Approved: Bill Oliva

DATE: 7-19

STANDARD 30.17

COMBINATION RAILING TYPES C1 - C6

INSIDE ELEVATION

Optional construction joints in the parapets may be used. Use end panel transition for all railing types unless shown otherwise. See standard 30.06 for application of parapet field splice detail.

SIDEWALK

MINIMUM JOINT SPACING OF 80'-0" SEE DETAIL 30.17 FOR MODULAR EXP. JT. LOCATION. SEE "DETAIL A" FOR CURVED MEMBER END CLOSURE. SEE STANDARD 30.07 FOR: - DEFLECTION JOINT DETAILS AND NOTES - BEAM GUARD ANCHOR ASSEMBLY DETAILS
SECTION A-A

SECTION C-C

SECTION E-F

SECTION B-B

CONSTRUCTION OF JUNCTION BOX

1. Use a 18" x 12" x 6" Junction Box when (2) - 2" dia. conduits are used.
2. Use a 18" x 6" x 6" Junction Box when (1) - 2" dia. conduit is used.
3. Use a Junction Box to keep a continuous run of conduit pull length to a maximum of 15 ft.
4. Each light standard contains conduit pull length.
5. Replace S504 & S508 bars with S404 bars @ 6" spa. (W/O Hook @ ends, 5'-6" square anchor plate with (4) 1" dia. anchor bolts. This standard is based on a 8" min. eccentricity of bolt hole circle and a maximum 15" x 15" opening joint.
6. See STD. 30.22 for conduit details and notes.

LEGEND

CONSTRUCTION JOINT, STRIKE OFF AS SHOWN.
CUT 1/3" OF CAULK AT EDGES OF JUNCTION BOX COVER TO ALLOW FOR DRAINAGE.
LOCATION OF CONDUIT IS MEASURED FROM OUTSIDE EDGE OF JUNCTION BOX.
NONMETALLIC CONDUIT TO METALLIC CONDUIT ADAPTER FITTING JUNCTION BOX.

DATE: 7-18

BILL OF BARS

BUREAU OF STRUCTURES

LIGHT STANDARD AND JUNCTION BOX FOR PARAPETS

STANDARD 30.21

APPROVED: Bill Oliva
This railing meets NCHRP report 350 evaluation criteria for Test Level 2 (TL-2). To 32 inches.

When placing overlay (FWS) on top of existing slab, the thickness of the overlay must be tapered near the transition block. The tops of rail posts and top of the rail splice plate kerf shall be sealed with roofing cement or other material to prevent water from entering the structure.

All cuts, bore holes, and damage shall be immediately treated with wood preservative in accordance with AASHTO M133 and standard specifications.

Steel transition plate, ASTM A36.

Timber railing attached to concrete slab details.

Bill of treated lumber

<table>
<thead>
<tr>
<th>Item</th>
<th>Size</th>
<th>Length Min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glulam rail</td>
<td>6 x 10&quot;</td>
<td>6 x 10&quot;</td>
</tr>
<tr>
<td>Rail spacer block</td>
<td>8 x 6&quot;</td>
<td>8 x 6&quot;</td>
</tr>
<tr>
<td>Scupper block</td>
<td>4 x 4&quot;</td>
<td>4 x 4&quot;</td>
</tr>
<tr>
<td>Post</td>
<td>8 x 8&quot;</td>
<td>8 x 8&quot;</td>
</tr>
<tr>
<td>Curve</td>
<td>6 x 10&quot;</td>
<td>6 x 10&quot;</td>
</tr>
<tr>
<td>Curb transition</td>
<td>6 x 10&quot;</td>
<td>6 x 10&quot;</td>
</tr>
<tr>
<td>Transition deck</td>
<td>6 x 10&quot;</td>
<td>6 x 10&quot;</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**SIDEWALK DETAILS FOR TUBULAR STEEL RAILING TYPE NY4**

**LEGEND**

1. **5 x 5 x 1/4" structural tubing** (1 1/4" holes for bolt no. 6 at top & bottom).
2. **5 x 5 x 1/4" structural tubing** (1 1/4" holes for bolt no. 6 at top & bottom).
3. **5 x 3 x 1/4" structural tubing** (1 1/4" holes for bolt no. 6 in top & bottom). Epoxy/grout as shown.
4. **5 x 3 x 1/4" structural tubing** (1 1/4" holes for bolt no. 6 in top & bottom). Epoxy/grout as shown.
5. **5 x 5 x 1/4" structural angle** (1 1/4" holes for bolt no. 6 at top & bottom). Epoxy/grout as shown.
6. **5 x 5 x 1/4" structural angle** (1 1/4" holes for bolt no. 6 at top & bottom). Epoxy/grout as shown.

**SIDEWALK WIDTH**

For sidewalk widths > 6'-0" and < 11'-0".
- **6'-0"**
- **7'-0"**
- **8'-0"**
- **9'-0"**
- **10'-0"**

**SIDEWALK LENGTH**

Bolt lengths:
- **17"**
- **18"**
- **19"**

**SIDEWALK WIDTH**

For sidewalk widths > 11'-0".
- **1'-8"**
- **7'-0"**
- **6'-0"**

**ANCHORAGE RAILING**

` Place Sym. about ` of post 4-#6 bars 6'-0" long. Bend as shown. Tie to top mat of steel.

Base plate normal to top of steel. Use 3/8" dia. A325 slotted round head bolt with hex nut, 1 1/2" x 1 1/2" washer, and spring lock washer (2 required at rail to post locations shown).

**ASEM A325 - 1" dia. anchor bolts with heavy hex nut and 2" O.D. hardened washers and lock washers may be substituted for anchor bolts in wings if required for constructability.**

**5 x 5 x 1/4" anchor plate galvanized with 1/4" dia. holes for anchor bolts no. 2.**

**Back** & 1/4" dia. holes for Bolt no. 6a (Top & Bottom).

**1 1/4" dia. holes for Bolt no. 6 (Front & Back). Use 1/2" x 1/2" horizontal slotted holes for Bolt no. 6 (Front & Back). Use 1" dia. holes for Bolt no. 6 in top & bottom.**

**W1 x 6 x 7/8" structural angle.** Attach to No. 1 and No. 5 as shown.

**W6 x 12 with 1/4" horizontal slotted holes on each side of post.**

**Face to be vertical.**

**A.M. RAILING ON SIDEWALK**

**SECTION THRU RAILING ON SIDEWALK**

**SECTION THRU RAILING ON SIDEWALK**

**30.29**

**STANDARD**
For wing locations:

- "General Plan" sheet

For three beams, see

- Name Plate for location

See "general plan" sheet for anchor assembly.

### Inside Elevation

- Inside openings or cut-outs for expansion joints, use 3/8" opening with filler for all applications.

### Plan

- Inside openings or cut-outs for expansion joints, use 3/8" opening with filler for all applications.

### Section A

- Benchmark when supported by placing

### Section B

- Scale surface

### Section C

- Benchmark when supported by placing

### Bill of Bars

<table>
<thead>
<tr>
<th>Bar #</th>
<th>Qty</th>
<th>Length</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>R501</td>
<td>X</td>
<td>5'-0&quot;</td>
<td>Parapet Vert.</td>
</tr>
<tr>
<td>R502</td>
<td>X</td>
<td>5'-0&quot;</td>
<td>Parapet Vert.</td>
</tr>
<tr>
<td>R503</td>
<td>X</td>
<td>5'-0&quot;</td>
<td>Parapet Vert.</td>
</tr>
<tr>
<td>R504</td>
<td>X</td>
<td>4'-5&quot;</td>
<td>Parapet Vert.</td>
</tr>
<tr>
<td>R505</td>
<td>X</td>
<td>4'-10&quot;</td>
<td>Parapet Vert.</td>
</tr>
<tr>
<td>R506</td>
<td>X</td>
<td>4'-10&quot;</td>
<td>Parapet Vert.</td>
</tr>
<tr>
<td>R501</td>
<td>X</td>
<td>5'-0&quot;</td>
<td>Parapet Horiz.</td>
</tr>
</tbody>
</table>

### Outside Elevation

- Inside openings or cut-outs for expansion joints, use 3/8" opening with filler for all applications.

### Section thru Parapet on Bridge

- Bars for transition on bridge

### Single Slope Parapet 32SS

- Bars for transition on bridge

### Standard 30.30

- Approved: Bill Oliva

- Date: 7-19
w in g

'V' GROOVE.
DEFINE CONST. JOINT WITH A ƒ" - MIN. JOINT SPACING OF 80'-0".
LAP LONGIT. BARS A MIN. OF 1'-9".
RUN BAR REINF. THRU THE JOINT.
IN THE PARAPETS MAY BE USED.
OPTIONAL CONSTRUCTION JOINTS

3"

r501
r502
r503

OUTSIDE ELEVATION

INSIDE ELEVATION
ROADWAY OUTER BAR OR FOR WELT, AN EXTENSION JOINT, USE ½" OPENING WITH FILLER FOR ALL ABUTMENTS.

PLAN
SCALE 1" = R501, R502
R503

SECTION A
OPTIMAL CONSTRUCTION JOINTS IN THE PARAPET MAY BE USED. PLAN ALL HEAT, TIE THE JOINT. LAY LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 18". JOINT WITH A ½" - ¾" FILLER.

SECTION THRU PARAPET ON BRIDGE

DESIGNER NOTES
THE 56SS PARAPET IS ONLY TO BE USED IF A "TYPE 56" SINGLE SLOPE CONCRETE ROADWAY BARREL ALLOWS THE END OF THE 56SS PARAPET.
USE A 1'-0" WING WIDTH FOR WINGS PARALLEL TO THE ROADWAY.

BILL OF BARS
FOR ABUTMENT PARAPETS

<table>
<thead>
<tr>
<th>BAR MARK</th>
<th>DIA.</th>
<th>HTGT.</th>
<th>LENGTH</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>R501</td>
<td>3&quot;</td>
<td></td>
<td>2'-0&quot;</td>
<td>X PARAPET-VEST</td>
</tr>
<tr>
<td>R502</td>
<td>3&quot;</td>
<td></td>
<td>2'-0&quot;</td>
<td>X PARAPET-VEST</td>
</tr>
<tr>
<td>R503</td>
<td>3&quot;</td>
<td></td>
<td>2'-0&quot;</td>
<td>X PARAPET-VEST</td>
</tr>
</tbody>
</table>

S5__

PARAPET BAR
ON BRIDGE.

STANDARD 30.33

BILL OLIVA
DATE: 1-18

BUREAU OF STRUCTURES

SINGLE SLOPE PARAPET 56SS
FOR WING LOCATIONS.

"GENERAL PLAN" SHT.

FOR THREE BEAM SEE ONE OF ANCHOR ASSEMBLY

1'-8"
2'-6"

BILL OF BARS

BILL OF BARS

R501
R502
R503
R504
R505
R506
R507
R508
R509

LENGTH LOCATION

BILL OF BARS

r501
r502
r503
r504
r505
r506
r507
r508
r509

4-5
5-8
2-9
4-4
5-5
5-6
4-9

x
x
x
x
x
x
x
x
x
x
x
x
x

parapet-vert.
parapet-vert.
parapet-vert.
parapet-vert.
parapet-vert.
parapet-vert.
parapet-horiz.
parapet-vert.

OUTSIDE ELEVATION

INSIDE ELEVATION

PLAN

SECTION A

SECTION B

SECTION C

DESIGNER NOTES

SEE STRUCTURAL APPROACH SLAB STANDARDS 12.2 AND 12.8 FOR APPROACH SLAB INFORMATION.

AS MIN. SHOW, SEE STANDARD 12.2 FOR AS MIN. DETAILS.

SEE STANDARD 30.35 FOR DETAILS OF 36SS PARAPET ON BRIDGE.

STANDARD 30.35

BUREAU OF STRUCTURES

Bill Oliva 1-19

APPROVED