THE STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION

STANDARD CONSTRUCTION DETAILS

Design values are presented in this document in both metric and U.S. customary units and were developed independently within each system. The relationship between the metric and U.S. customary values is neither an exact (soft) conversion nor a completely rationalized (hard) conversion. The metric values are those that would have been used had this document been presented exclusively in metric units; the U.S. customary values are those that would have been used if this document had been presented exclusively in U.S. customary units. Therefore, the user is advised to work completely in one system and not attempt to convert directly between the two.
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DEPARTMENT OF TRANSPORTATION

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DELAWARE DEPARTMENT OF TRANSPORTATION

SCALE: NOT.

DATE

DATE

CHIEF ENGINEER

DESIGN ENGINEER

RECOMMENDED

APPROVED

N.T.S.

SHT.                                         OF

STANDARD NO.

6

1

EDGE OF TRAVEL LANE

EDGE OF SHOULDER

SHOULDER

EDGE OF TRAVEL LANE

EDGE OF TRAVEL LANE

EDGE OF TRAVEL LANE

TYPE 1 GUARDRAIL

TYPICAL GUARDRAIL TREATMENT

WHEN THE REQUIRED 4' (1200) CLEARANCE TO OBSTRUCTION IS AVAILABLE

OR APPROPRIATE END TREATMENT

25' (7620) MIN.

POST SPACING 6'-3" (1905)

POST SPACING 3'-4" (992.5)

TYPE 2 GUARDRAIL

TYPICAL GUARDRAIL TREATMENT

WHEN 2' (600) TO 4' (1200) OF CLEARANCE TO OBSTRUCTION IS AVAILABLE

OR APPROPRIATE END TREATMENT

2' (600) MINIMUM

POST SPACING 6'-3" (1905)

TYPE 3 GUARDRAIL

TYPICAL GUARDRAIL TREATMENT WHEN A MINIMUM OF

10' (3000) IS AVAILABLE FOR MEDIAN

OR APPROPRIATE END TREATMENT (TYP.)

2' (600) MINIMUM

4' (1200) MINIMUM

4' (1200) MINIMUM

10' (3000) MINIMUM

FLARE RATES

DESIGN SPEED | FLARE RATE
70 MPH (110 km/h) | 6d
60 MPH (100 km/h) | 6d
55 MPH (90 km/h) | 6d
50 MPH (80 km/h) | 6d
45 MPH (70 km/h) | 6d
40 MPH (60 km/h) | 4d
30 MPH (50 km/h) | 4d

NOTES:

1. THE DISTANCE FROM THE EDGE OF THE TRAVEL

LANE OR SHOULDER TO THE FACE OF GUARDRAIL

SHOULD BE MAXIMIZED. THIS AREA SHALL BE

GRADED 10:1 OR FLATTER.

2. PLACE GUARDRAIL REFLECTOR EVERY FIFTH POST.

DELWARE

DEPARTMENT OF TRANSPORTATION

GUARDRAIL APPLICATIONS

APPROVED

STANDARD NO. B-1 (2000)

SHT. 1 OF 6

RECOMMENDED

11/11/05

10/10/05
SPLICE DETAIL

NOTE: OVERLAP W-SEAMS IN DIRECTION OF TRAVEL.
**Guardsrail Section**

(Rural Shoulder Application)

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<td>4' (1200 mm)</td>
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<td>6' (1800 mm)</td>
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<td>2' (600 mm)</td>
<td>&gt; 50 MPH (80 km/h)</td>
<td>10' (3000 mm)</td>
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**Guardsrail Section**

(Urban Shoulder Application)

Pavement or sidewalk shall be used only when indicated on plans.

Curb to be used only when indicated on the plans.

Curb shall be used only when indicated on the plans.

No fixed objects or obstructions.

See plans for location.

Hinge point.

4' (1200 mm) rounding.

Additional pavement (as indicated on the plans).

2' (600 mm) MIN.

3' (900 mm) MIN.

7' (2100 mm) MIN.

Curb to be used only when indicated on the plans.

Delaware Department of Transportation

Guardsrail Applications


Sht. 3 of 6

Recommended

01/31/2002
1. Flare the end treatment at 25'-0" beginning 50'-0" from the end of the impact head, unless the construction plans or specifications specify a smaller flare.
2. This detail was solely created to show the grading required for this type of attenuator.
3. The guardrail end treatment attenuator shall be installed as per the manufacturer's and the Department of Transportation's specifications.
4. If curb is present, depress the curb to a maximum height of 2" (50 mm) within the limits of the end treatment and throughout the length of the taper grading.

**NOTES:**

**SECTION A-A**

**GRADING FOR GUARDRAIL END TREATMENT ATTENUATOR TYPE I**
1. FLARE SHALL BE 4' (1200) UNLESS THE CONSTRUCTION PLANS OR SPECIFICATIONS SPECIFY A SMALLER FLARE. FLARE MAY BE PARABOLIC OR STRAIGHT BASED ON MANUFACTURER'S SPECIFICATIONS.

2. THIS DETAIL WAS SOLELY CREATED TO SHOW THE GRADING REQUIRED FOR THIS TYPE OF ATTENUATOR. THE GUARDRAIL END TREATMENT ATTENUATOR SHALL BE INSTALLED AS PER THE MANUFACTURER'S AND THE DEPARTMENT OF TRANSPORTATION'S SPECIFICATIONS.

3. IF CURB IS PRESENT, DEPRESS THE CURB TO A MAXIMUM HEIGHT OF 2" (50) WITHIN THE LIMITS OF THE END TREATMENT AND THROUGHOUT THE LENGTH OF THE TAPER GRADING.

NOTES:

NORMAL W BEAM GUARDRAIL

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<tr>
<td>2' (600)</td>
<td>3'-3&quot; (1000)</td>
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<td>4/1</td>
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TAPER GRADING

MAINTENANCE PAVING

TAPER WIDTH

105' (32m)

SECTION A-A

GRADING FOR GUARDRAIL END TREATMENT ATTENUATOR, TYPE 2

DEPRESSED CURB

50' (15 m) LIMIT OF PAYMENT

DEPARTMENT OF TRANSPORTATION

DELaware

GUARDRAIL APPLICATIONS

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RECOMMENDED

DATE 10/23/07

DIAGRAM 08/01/07
1. This detail was solely created to show the grading required for this type of attenuator.
2. 6:1 or flatter grading is allowable when the barrier is located 12' (3650 mm) or more from the outside edge of the shoulder.
3. This end treatment can also be used in ramp gores or other areas where 2 rails of W-beam come together and terminate with one end treatment.
4. When opposing roadways have equal elevations the traffic barrier system should be placed on the opposite side of the ditch line from approaching traffic.
5. The guardrail end treatment attenuator shall be installed as per the manufacturer's and the Department of Transportation's specifications.
6. If curb is present, depress the curb to a maximum height of 2" (50) within the limits of the end treatment and throughout the length of the taper grading.
TWO SECTIONS OF W-BEAM, ONE NESTED INSIDE THE OTHER

SINCE NO POST OR OFFSET BLOCK IS PRESENT AT THIS LOCATION, 1/4" (10) GUARDRAIL BOLT (L=26'-2"

Since no post or offset block is present at this location, 1/4" (10) guardrail bolt (L=26'-2") is not required.

NOTES:
1. ALL W-BEAMS ARE 12'-6" (3810) IN LENGTH.
2. PLACE GUARDRAIL REFLECTOR EVERY FIFTH POST.
DELTA \nDEPARTMENT OF TRANSPORTATION

GUARDRAIL OVER CULVERTS, TYPE 2

STANDARD NO. B-3 (2004)  SHT. 1  OF 1  RECOMMENDED  

NOTES:
1. ALL W-BEAMS ARE 12 1/2' (3850) IN LENGTH.
2. PLACE GUARDRAIL REFLECTOR EVERY FIFTH POST.

SCALE: N.T.S.

* SINCE NO POST OR OFFSET BLOCK IS PRESENT AT THIS LOCATION, 7/8" (16) GUARDRAIL BOLT (L=1250) IS NOT REQUIRED.
DATE 08/14/2006

DELAWARE DEPARTMENT OF TRANSPORTATION

SCALE:N.T.S.

CHIEF ENGINEER

DESIGN ENGINEER

RECOMMENDED

APPROVED

N.T.S.

SHT. 1 OF 1

STANDARD NO. B-4 (2007)

CURVED GUARDRAIL SECTION

TYPE IS GUARDRAIL PLACEMENT OR GUARDRAIL TO BARBER CONNECTION

AREA BEHIND GUARDRAIL TO BE MAINTAINED FREE OF FIXED OBJECTS OR OTHER HAZARDS.

AREA BEHIND GUARDRAIL TO BE MAINTAINED FREE OF FIXED OBJECTS OR OTHER HAZARDS.

LIMIT OF PLACEMENT 6'-3" (1905) MAX.

LONG WOOD BREAKAWAY POSTS

RADIUS

SCALE 6'-3" (1905)

MIN. REQUIRED AREA FREE OF FIXED OBJECTS

W x L

NOTE:

1. NO WASHERS ARE USED ON THE RAIL SIDE OF THE LONG WOOD BREAKAWAY POSTS.

2. THE CURVED GUARDRAIL SECTION SHALL BE SHOP BENT.

3. PLACE GUARDRAIL REFLECTOR EVERY FIFTH POST.

4. IF CURB IS USED IN CONJUNCTION WITH CURVED GUARDRAIL SECTION, THE CURB CANNOT BE HIGHER THAN 2" (50).

5. ON THE 8'-6" (2600) RADIUS SYSTEM ONLY, THE RAIL IS NOT TO BE BOLTED TO THE CENTER POST.

CURVED GUARDRAIL SECTION

SECTION A-A

PLAN

SECTION A-A

LONG WOOD BREAKAWAY POST

SLOPE = 15:1 OR FLATTER

4" (1200) Rounding

8'-6" (2600) POST & OFFSET BLOCK

SEE ANCHOR PLATE DETAIL, SHEET B-13, 8 OF 13

CONCRETE ANCHOR

SECURE CABLE LOOP WITH 5 CABLE CLIPS

1/4" (320) x 7'-3" (220) GALVANIZED ROD W/ WELDED EYE

6" (150) HOOK OR 5" (125) DIA WASHER & NUT.

SEE ANCHOR PLATE DETAIL, SHEET B-13, 8 OF 13

CONCRETE ANCHOR

SECURE CABLE LOOP WITH 5 CABLE CLIPS

1/4" (320) x 7'-3" (220) GALVANIZED ROD W/ WELDED EYE

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SEE ANCHOR PLATE DETAIL, SHEET B-13, 8 OF 13

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SEE ANCHOR PLATE DETAIL, SHEET B-13, 8 OF 13

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SEE ANCHOR PLATE DETAIL, SHEET B-13, 8 OF 13

CONCRETE ANCHOR

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1/4" (320) x 7'-3" (220) GALVANIZED ROD W/ WELDED EYE

6" (150) HOOK OR 5" (125) DIA WASHER & NUT.

SEE ANCHOR PLATE DETAIL, SHEET B-13, 8 OF 13

CONCRETE ANCHOR

SECURE CABLE LOOP WITH 5 CABLE CLIPS

1/4" (320) x 7'-3" (220) GALVANIZED ROD W/ WELDED EYE

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1/4" (320) x 7'-3" (220) GALVANIZED ROD W/ WELDED EYE

6" (150) HOOK OR 5" (125) DIA WASHER & NUT.
FLARE RATES

<table>
<thead>
<tr>
<th>DESIGN SPEED</th>
<th>FLARE RATE</th>
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<tr>
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<tr>
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</tr>
<tr>
<td>30 MPH</td>
<td>200d</td>
</tr>
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</table>

NOTES:
1. BURIED END SECTION PAYMENT INCLUDES THE CONCRETE OR POST ANCHORAGE, EXCAVATION, BACKFILL, AND ALL APPROPRIATE ITEMS, INCLUDING LABOR NECESSARY TO COMPLETE END ANCHORAGE.
2. THE CONTRACTOR HAS THE OPTION OF USING EITHER A CONCRETE BLOCK ANCHOR OR A POST ANCHOR TO TERMINATE THE BURIED END SECTION.
4. WHEN USING A SECOND RAIL, 8" (200MM) LONG POSTS ARE REQUIRED BEHIND THE DITCHLINE, POSTS MUST PROVIDE 4" (100MM) MINIMUM EMBERSMENT (30" (750MM) WHEN ROCK IS ENCOUNTERED), POSTS FOR THE POST ANCHOR SHALL BE 4" (100MM) LONG.
6. MAINTAIN THE FLARE OF THE GUARDRAIL UNTIL A 12" (300MM) COVER HAS BEEN ATTAIN Bail. If the 12" (300MM) COVER CANNOT BE ATTAINED BEFORE THE RAIL IS 7" (180MM) BEHIND THE BOTTOM OF THE DITCH, THEN SLOPE THE GUARDRAIL FROM THE POINT WHERE IT CROSSES THE DITCH TO WHERE IT IS 12" (300MM) BEHIND THE DITCH, SO THAT IT HAS 24" (600MM) COVER.

DELAWARE DEPARTMENT OF TRANSPORTATION

STANDARD NO. B-6 (2002) SHT. 2 OF 3

APPROVED

01/31/2002
STEEL SPACER TUBE
6'150c L. L. SCHEDULE 40
GALVANIZED PIPE 6'9" (2051)

PLAN

LIMIT OF PAYMENT FOR GUARDRAIL TO BARRIER CONNECTION, APPROACH TYPE 1

ELEVATION

POSTS NO. 1 & 2
SECTION B-B

POSTS NO. 3, 4 & 5
SECTION A-A

NOTES:
1. WM BEAM IS NOT BOLTED TO POSTS AT POSTS 2 THROUGH 4.
2. RUB RAIL IS NOT BOLTED AT POSTS 2 AND 4.
3. POSTS 1 THROUGH 6 REQUIRE AN ADDITIONAL HOLE TO ATTACH LOWER WOOD BLOCKS AND/OR RUB RAIL AND WOOD BLOCK.
4. USE APPROPRIATE EPOXY BOLT ANCHORS TO REDUCE THE CHANCE OF SPLITTING THE CONCRETE.
5. ALL HOLES SHALL BE DRILLED PRIOR TO GALVANIZING.
6. PLACE GUARDRAIL REFLECTOR EVERY FIFTH POST.
7. APPROVED CONCRETE INSERTS MAY BE USED IN NEW CONSTRUCTION TO ATTACH TERMINAL CONNECTOR TO PARAPET.
8. POSTS 1 & 2 ARE #8x3 (200x9.3); ALL OTHER POSTS IN TRANSITION ARE #6x3 (160x9.3).
9. APPROVED CONCRETE INSERTS MAY BE USED IN NEW CONSTRUCTION.

DELAWARE
DEPARTMENT OF TRANSPORTATION
GUARDRAIL TO BARRIER CONNECTION, APPROACH TYPE 1
STANDARD NO. B7 (2004)
SHT. 1 OF 1
RECOMMENDED

APPROVED

12/5/05

08/08/05
**RUB RAIL TO BARRIER CONNECTION**

1. The rub rail to barrier connection end must be attached flush with the sloped toe of the safety barrier installation can be simplified by fabricating or shop twisting the rub rail end to be consistent with the slope of the barrier, however, field bending using heat is permitted.

2. Steel spacer tube is schedule 40 galvanized pipe, 6" (152) OD x 3" (76) ID.

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**RUB RAIL WOOD BLOCKS**

<table>
<thead>
<tr>
<th>POST NO.</th>
<th>WIDTH</th>
<th>BOLT LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4½&quot;(114)</td>
<td>6&quot; (152)</td>
</tr>
<tr>
<td>2</td>
<td>3½&quot;(89)</td>
<td>4&quot; (102)</td>
</tr>
<tr>
<td>3</td>
<td>2½&quot;(64)</td>
<td>4&quot; (102)</td>
</tr>
<tr>
<td>4</td>
<td>1½&quot;(38)</td>
<td>2½&quot; (64)</td>
</tr>
</tbody>
</table>

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**NOTES**

DELWARE DEPARTMENT OF TRANSPORTATION

GUARDRAIL TO BARRIER CONNECTION, APPROACH TYPE 1

STANDARD NO. B-7 (2001)  SHT. 2 OF 3  APPROVED

RECOMMENDED

04/05/2001
NOTES:

1. CURB SHALL NOT BE USED AT THE FACE OF RAIL WITHIN THE LIMITS OF THIS INSTALLATION.
2. POSTS 1, 2, 3, 4, AND 6 REQUIRE AN ADDITIONAL HOLE TO ATTACH WOOD BLOCKS AND/OR BENT RAIL.
3. DO NOT ATTACH RAILS TO POSTS 1, 2, 3, 4, OR 5.
4. POSTS 1 AND 2 ARE #6x3 (920x6x3); ALL OTHER POSTS IN TRANSITION ARE #6x9 (920x9x9).
5. ALL HOLES SHALL BE DRILLED PRIOR TO GALVANIZING.
6. BENT RAIL MAY BE SHIP BENT TO FACILITATE INSTALLATION OR MAY BE FIELDED BENT USING HEAT.

TL. APPROVED CONCRETE INSERTS MAY BE USED IN NEW CONSTRUCTION TO ATTACH TERMINAL CONNECTORS TO PARAPET.

BL. PLACE GUARDRAIL REFLECTOR EVERY FIFTH POST.

SL. FOR INSTALLATIONS WHERE CURB EXISTS, IF THE EXISTING CURB IS 8" (200) OR HIGHER AND CANNOT BE REMOVED, THE BOTTOM RAIL CAN BE ELIMINATED.
BENT RAIL WOOD BLOCKS
1'-2" (360) x 4'/2" (115)

<table>
<thead>
<tr>
<th>BLOCK</th>
<th>WIDTH</th>
<th>BOLT LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5&quot; (25)</td>
<td>8&quot; (200)</td>
</tr>
<tr>
<td>2</td>
<td>4&quot; (100)</td>
<td>6&quot; (150)</td>
</tr>
<tr>
<td>3</td>
<td>3&quot; (75)</td>
<td>6&quot; (150)</td>
</tr>
<tr>
<td>4</td>
<td>2&quot; (50)</td>
<td>4&quot; (100)</td>
</tr>
</tbody>
</table>

NOTE: BOTTOM WOOD BLOCKS LOCATED ON POSTS 1-4 ARE OFFSET DRILLED TO SIT SQUARELY ON THE POST FLANGE AND SECURED WITH 5/8" (16) CARRIAGE BOLTS. WIDTH VARES, SEE BENT RAIL WOOD BLOCKS TABLE.
NOTES: 6. CONCRETE INSERTS MAY BE USED IN NEW CONSTRUCTION TO ATTACH TERMINAL CONNECTOR TO PARAPET.

2L. GUARDRAIL SECTION AND TERMINAL CONNECTORS SHALL BE OVERLAPPED IN THE DIRECTION OF TRAVEL.

3L. INSTALLATION SHOWN ABOVE WITH AN 'F'-TYPE BARRIER FACE. GUARDRAIL SECTION OF BARRIER CONNECTION SHALL BE ADJUSTED HORIZONTALLY IN ORDER TO MEET FLUSH AGAINST VARIOUS TYPES OF WALLS AND BARRIERS.
THREE BEAM GUARDRAIL WITH WOOD POSTS SPACED AT 6'-3" (1905) MIN.

SEE NOTE

8" (200) x 8" (200) TIMBER BLOCKS

THREE BEAM GUARDRAIL BEARING PLATE DETAIL

NOTES:

1. THIS INSTALLATION SHALL BE USED WHEN THE EXISTING SIDEWALK IS 6'-3" (1905) OR LESS.

2. USE A THREE BEAM EXPANSION SECTION AT BRIDGE EXPANSION JOINTS.

3. PLACE GUARDRAIL REFLECTOR IN THE UPPER VALLEY OF THE THREE BEAM EVERY FIFTH POST.

4. TIMBER BLOCK THICKNESS SHALL BE ADJUSTED TO ALLOW FACE OF THE THREE BEAM TO BE FLUSH WITH BOTTOM OF CURB. MINIMUM THICKNESS SHALL BE 4" (100).

5. THE EXIT END APPLICATION SHALL BE USED ONLY ON DIVIDED HIGHWAYS. FOR ALL OTHER SITUATIONS, THE ENTRANCE END APPLICATION SHALL BE USED ON BOTH ENDS OF THE BRIDGE PARAPET.

6. SPACING OF WOOD POSTS MAY NEED TO BE REDUCED TO ACCOMMODATE LINING UP POSTS AT THE END OF THE PARAPET.

THREE BEAM GUARDRAIL WITH WOOD POSTS SPACED AT 6'-3" (1905) MIN.

SEE NOTE

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THREE BEAM GUARDRAIL WITH WOOD POSTS SPACED AT 6'-3" (1905) MIN.

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8" (200) x 8" (200) TIMBER BLOCKS

THREE BEAM GUARDRAIL BEARING PLATE DETAIL

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THREE BEAM GUARDRAIL WITH WOOD POSTS SPACED AT 6'-3" (1905) MIN.

SEE NOTE

8" (200) x 8" (200) TIMBER BLOCKS

THREE BEAM GUARDRAIL BEARING PLATE DETAIL

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6. SPACING OF WOOD POSTS MAY NEED TO BE REDUCED TO ACCOMMODATE LINING UP POSTS AT THE END OF THE PARAPET.
THREE BEAM GUARDRAIL WITH STEEL POSTS SPACED AT 6'-3" (1905) CENTER TO CENTER

SEE NOTE

EXISTING CURB LINE (BOTTOM OF CURB)

CHIP OUT 1'-0" (300) MIN. EMBEDMENT

SEE NOTE

ADHESIVE ANCHORS (55,000 lbs (25,000 kg) ULTIMATE ADHESIVE BOND STRENGTH), 1'-0" (300) MIN. EMBEDMENT

SEE NOTE

4). PLACE GUARDRAIL REFLECTOR IN THE UPPER VALLEY OF THE THREE BEAM EVERY FIFTH POST.

5). THE EXIT END APPLICATION SHALL BE USED ONLY ON DIVIDED HIGHWAYS. FOR ALL OTHER SITUATIONS, THE ENTRANCE END APPLICATION SHALL BE USED ON BOTH ENDS OF THE BRIDGE PARAPET.

6). SPACING OF STEEL POSTS MAY NEED TO BE REDUCED TO ACCOMMODATE LINING UP POSTS AT THE END OF THE PARAPET.

NOTE: 1. THIS INSTALLATION SHALL BE USED WHEN THE EXISTING SIDEWALK IS 18" (450) OR WIDER, AND DEAD LOAD CONSIDERATIONS ARE A CONCERN WHEN USING BRIDGE RAIL RETROFIT, TYPE 3.

2. ADHESIVE ANCHORS SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS AND SHALL BE GALVANIZED.

3. USE A THREE BEAM EXPANSION SECTION AT BRIDGE EXPANSION JOINTS.

4. PLACE GUARDRAIL REFLECTOR IN THE UPPER VALLEY OF THE THREE BEAM EVERY FIFTH POST.

5. THE EXIT END APPLICATION SHALL BE USED ONLY ON DIVIDED HIGHWAYS, FOR ALL OTHER SITUATIONS, THE ENTRANCE END APPLICATION SHALL BE USED ON BOTH ENDS OF THE BRIDGE PARAPET.

6. SPACING OF STEEL POSTS MAY NEED TO BE REDUCED TO ACCOMMODATE LINING UP POSTS AT THE END OF THE PARAPET.
TYPE I GUARDRAIL PLACEMENT OR APPROPRIATE END TREATMENT
GUARDRAIL TO BARRIER CONNECTION
LIMIT OF PAYMENT

END OF SIDEWALK
TAPER END OF WALL TO TOP OF
GUARDRAIL AT A SLOPE OF 4% OR FLATTER
CONTRACTION JOINTS -
BRIDGE BARRIER
DIRECTION OF TRAVEL

PLAN

EXTENDING RAIL - DO NOT DISTURB

NOTES:
STANDARD GUARDRAIL TO BARRIER CONNECTIONS SHALL BE CONNECTED TO THE END OF THE NEW
BRIDGE BARRIER AND TRANSITIONED TO THE EXISTING
GUARDRAIL.

SECTION A-A

DRILL 3/8" DIA. HOLE, FILL WITH HIGH
STRENGTH NON-SHRINK CEMENT

#6 (25) BARS SPACED 15"(575) LONGITUDINALLY,
FRONT AND BACK ROWS SHALL BE STAGGERED

EXISTING RAIL - DO NOT DISTURB

SCALE: 1/4" = 1'-0"
NOTES: B. TWO ADDITIONAL \( \frac{3}{4} \times 120 \times 2\frac{3}{4} \times 165 \) SLOTS SHALL BE PROVIDED AT 6'-3" (1905) SPACING FOR BEAM LENGTH OF 26'-0" (7920).

W-BEAM ELEVATION

W-BEAM SECTION
W-BEAM STEEL POST AND WOOD OFFSET BLOCK

NOTE:
WHERE CONDITIONS REQUIRE, ALTERNATE LENGTHS IN INCREMENTS OF 6" (150) MAY BE USED.

LOWER HOLES ONLY REQUIRED WHERE RUB RAIL IS USED.

* 12" (300) FOR GUARDRAIL TO BARRIER CONNECTIONS - TYPE 1
* 6" (150) FOR GUARDRAIL TO BARRIER CONNECTIONS - TYPE 2

WHERE RUB RAIL IS USED.

NOTE:
ALL HOLES SHALL BE 1/4" (6.35) IN. BOLT HOLE PATTERN IS SYMMETRICAL WITH RESPECT TO THE VERTICAL AXIS OF THE POST.
W-BEAM TERMINAL CONNECTOR

HARDWARE


DELAWARE DEPARTMENT OF TRANSPORTATION

APPROVED

RECOMMENDED

CHIEF ENGINEER

DESIGN ENGINEER

RECOMMENDED

APPROVED

SLOT (OPTIONAL)

\( \frac{1}{8} \times 2 \times \frac{1}{8} \times 6 \) SLOTS

\( \frac{5}{16} \times 2 \times \frac{1}{8} \times 130 \) SLOTS

1" (25) DIA. HOLES

\( \frac{1}{4} " \) (24) x 1" (20)

\( \frac{1}{4} " \) (100)

\( \frac{1}{2} " \) (100)

\( \frac{3}{4} " \) (75)
NOTE: WHERE CONDITIONS REQUIRE, USE ALTERNATE LENGTHS IN INCREMENTS OF 6" (150).

THREE BEAM STEEL POST AND WOOD OFFSET BLOCK

POST 2

SIDE

FRONT

OPTIONAL FOR HANDLING DURING GALVANIZING

TOP

SIDE

FRONT

OFFSET BLOCK

NOTE: ALL HOLES SHALL BE 3/8" (20) C/W BOLT HOLE PATTERN IS SYMMETRICAL WITH RESPECT TO THE VERTICAL AXIS OF THE POST.