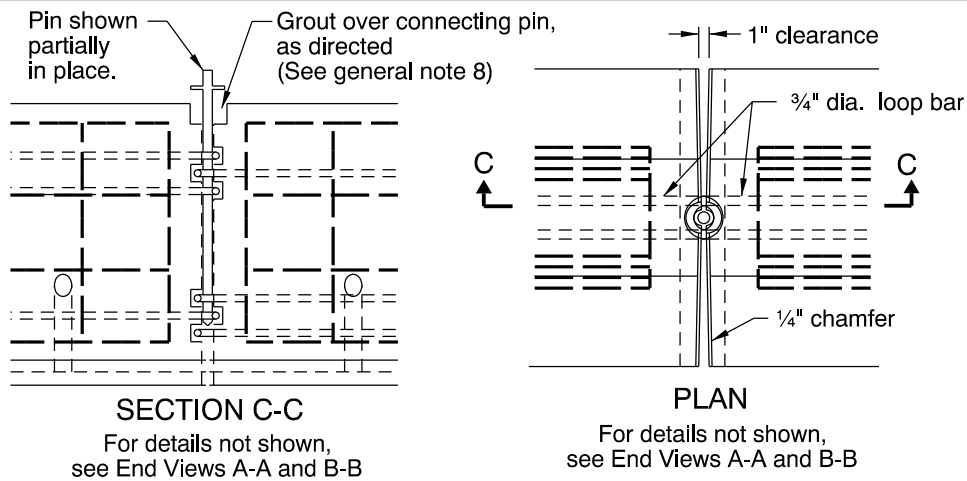
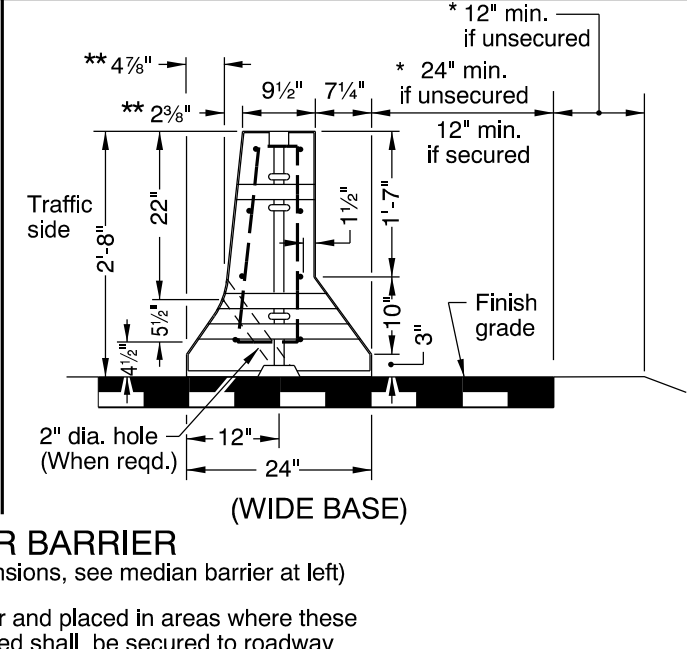
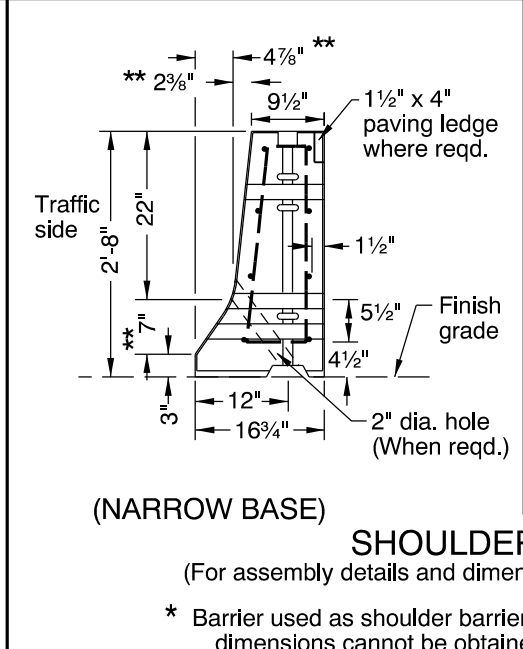
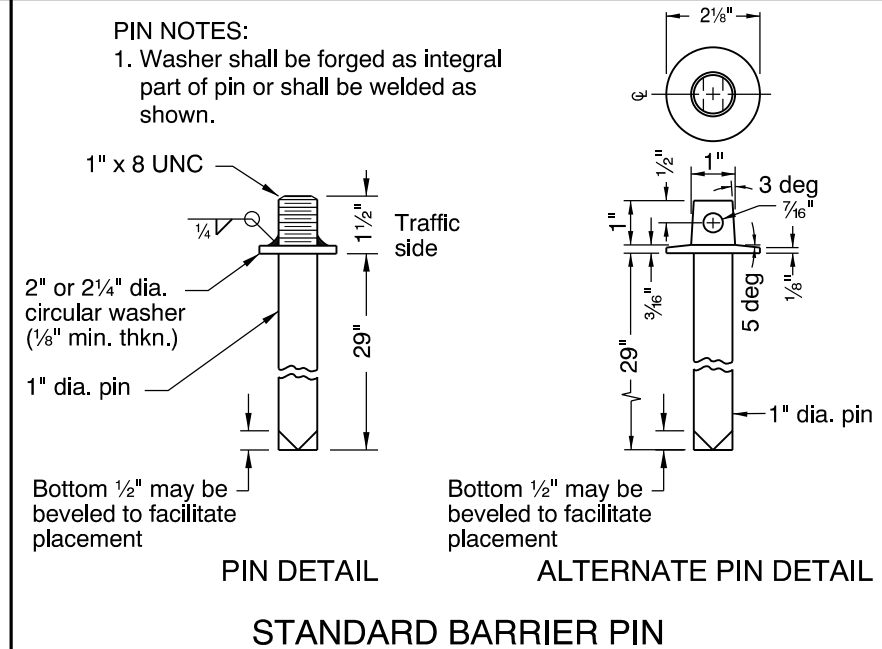




PIN AND LOOP CONNECTION



SHOULDER BARRIER

(For assembly details and dimensions, see median barrier at left)

\* Barrier used as shoulder barrier and placed in areas where these dimensions cannot be obtained shall be secured to roadway

GENERAL NOTES FOR ALL DETAILS:

1. All reinforcement shall be full length as shown and shall be 2" clear of nearest face of conc., unless otherwise shown.
2. Max. chord length for curves with a 1425' radius or less shall be 12.5'. Max. chord length for curves with radii exceeding 1425' shall be 25'.
3. Normal use of precast barrier units is restricted to curvatures with radii greater than 770'.
4. Narrow base shldr. barrier to be used only at locations with backfill behind barrier as shown on plans.
5. Conc. median barrier is an acceptable alternate to wide base shldr. barrier.
6. Temp. conc. barrier to be precast conc. median barrier with pin and loop assembly.
7. When scuppers are not required, plug them with a minimum 2" of grout, as directed.
8. Conc. grout for grouting over pins, pinning holes or grouting of scuppers shall be a non-shrinking grout, weak in strength and of thick consistency, as directed.
9. Precast concrete barrier used in medians less than 8' in width shall be secured to roadway. See Std. Drgs. RD515 & RD516 for details.
10. See Std. Drg. RD516 for securing concrete barrier to roadway.
11. All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 07-JAN-2013

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

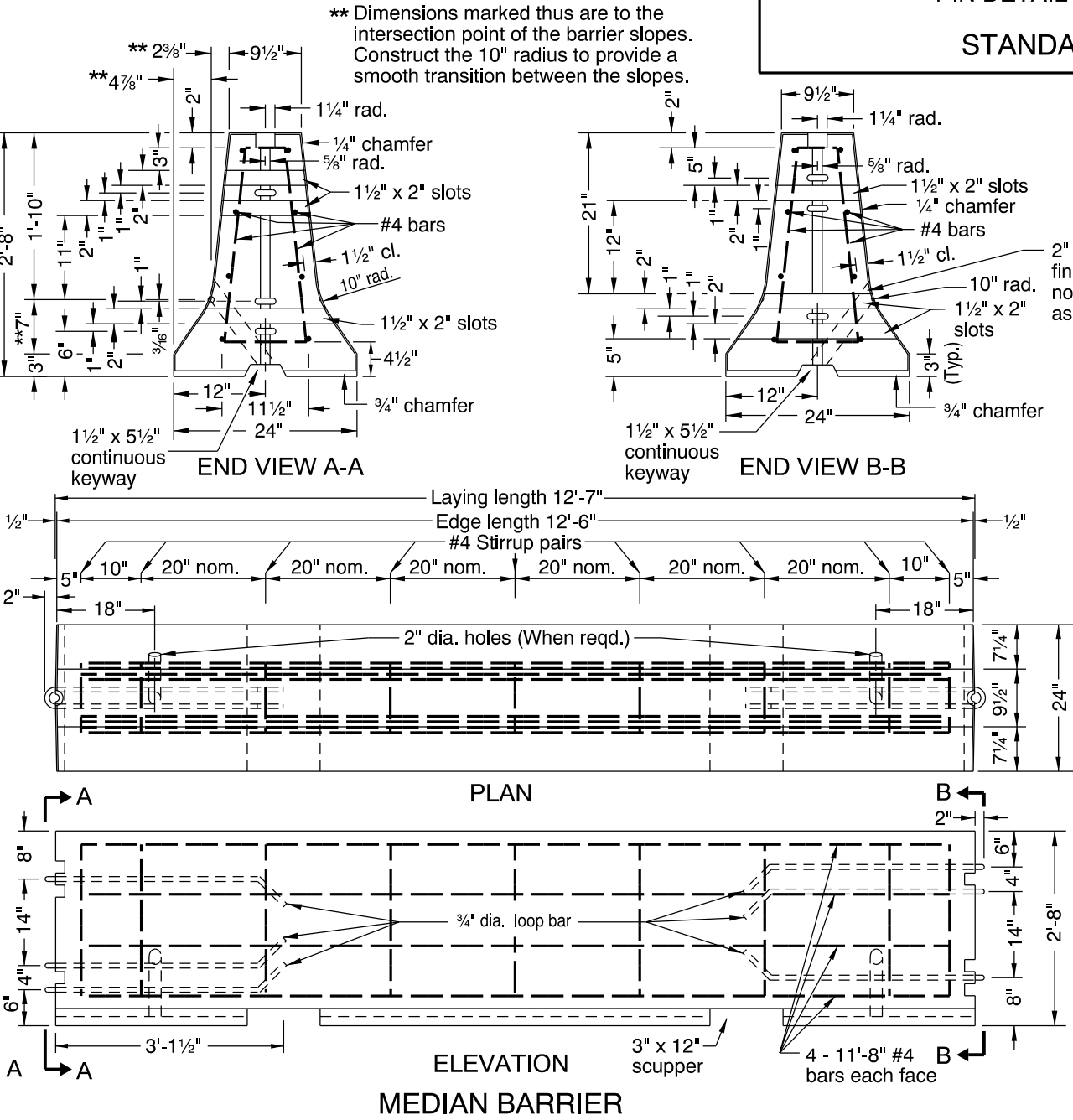
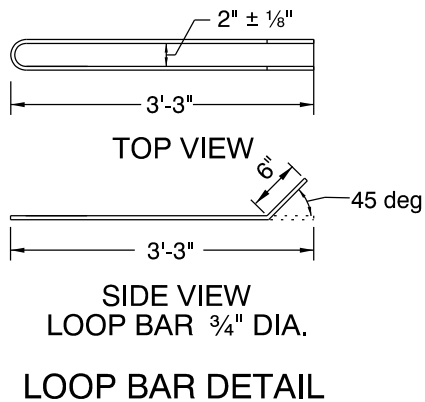
PRECAST CONCRETE BARRIER

PIN AND LOOP ASSEMBLY

2015

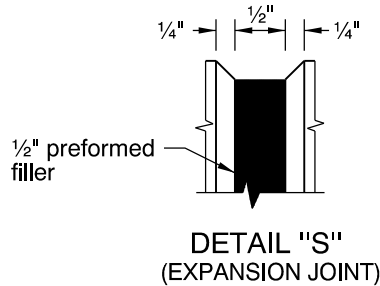
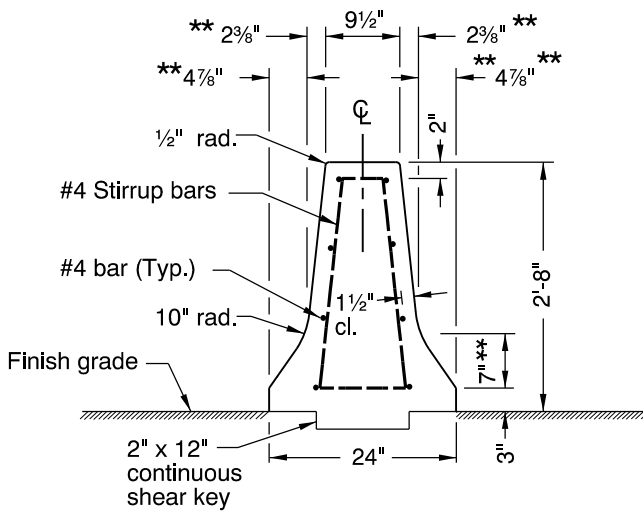
| DATE | REVISION | DESCRIPTION |
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The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

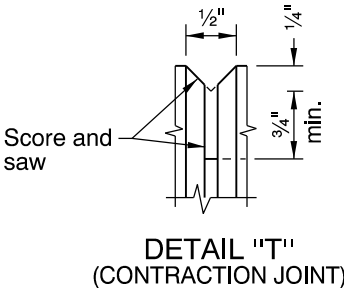


MEDIAN BARRIER

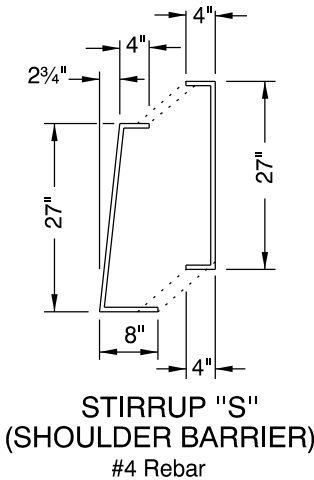
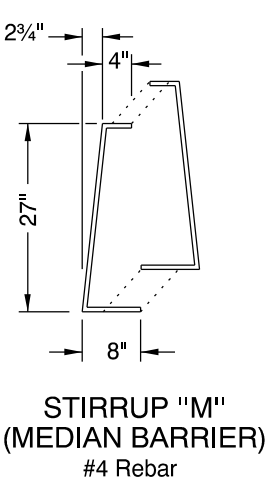
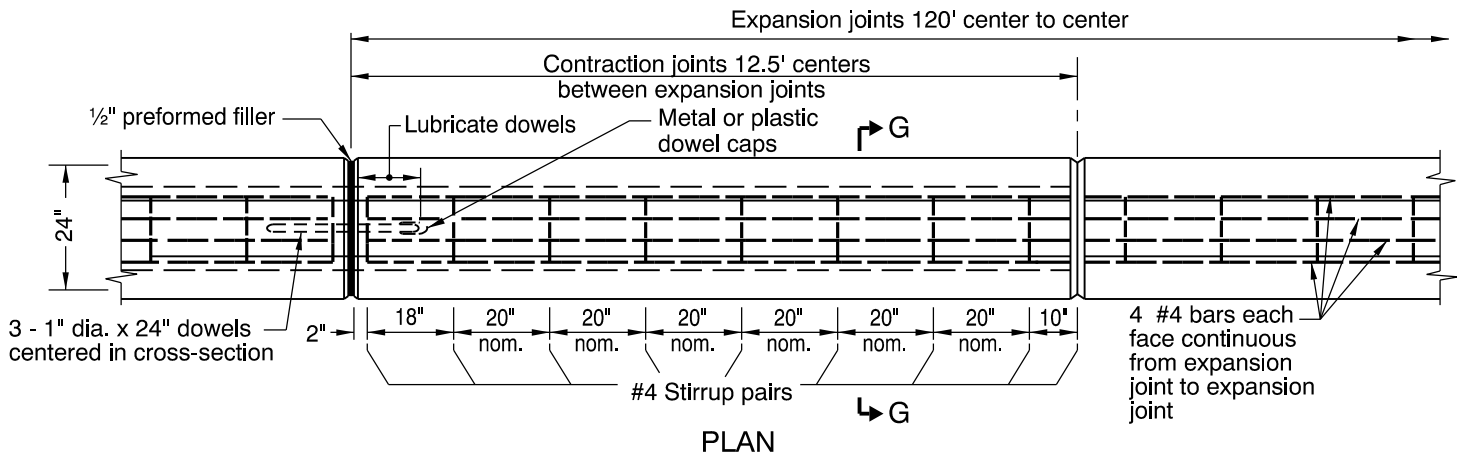
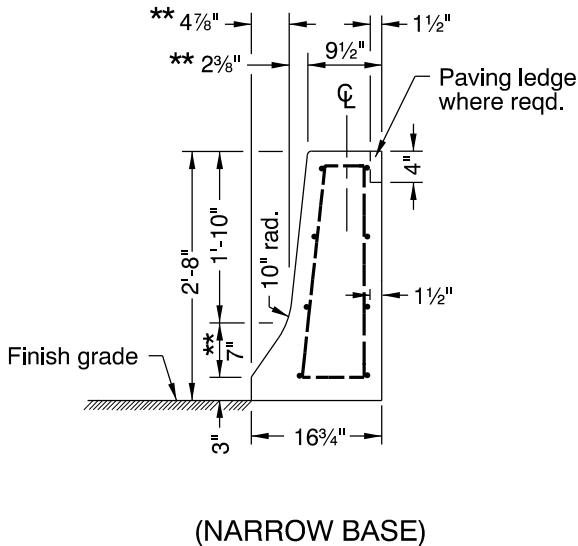
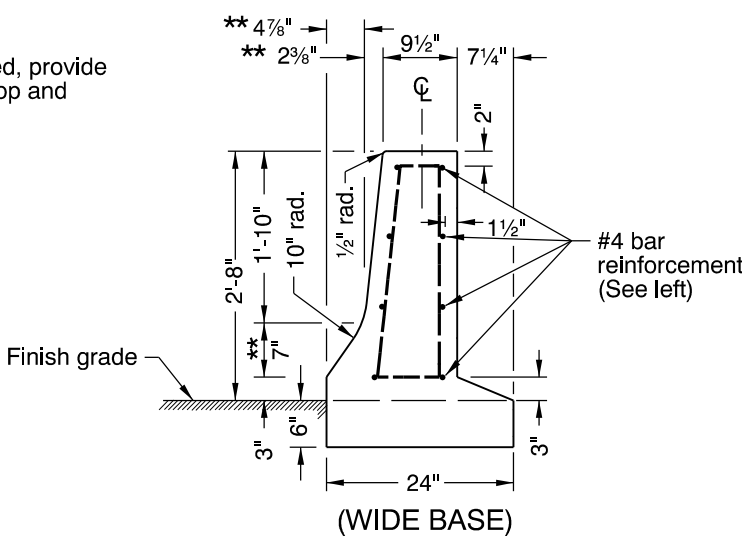
\*\* Dimensions marked thus are to the intersection point of the barrier slopes. Const. the 10" radius to provide a smooth transition between the slopes.



NOTE:  
Where shldr. barrier is backfilled, provide contraction joint on front face top and down 1' of back face.

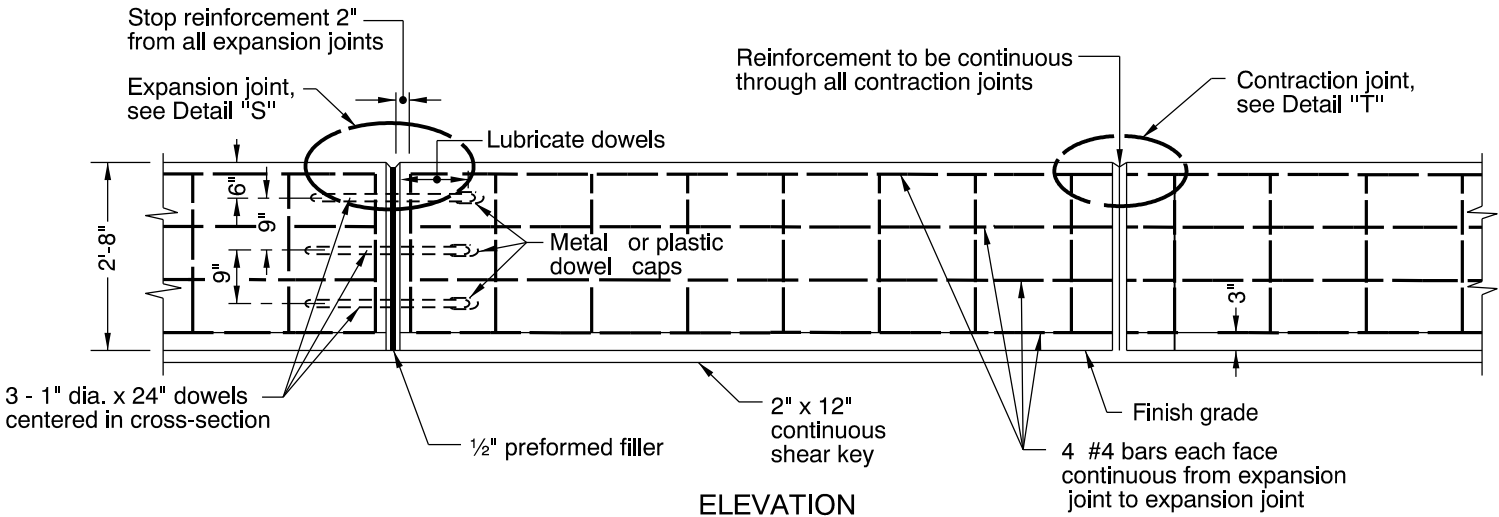


SHOULDER BARRIER

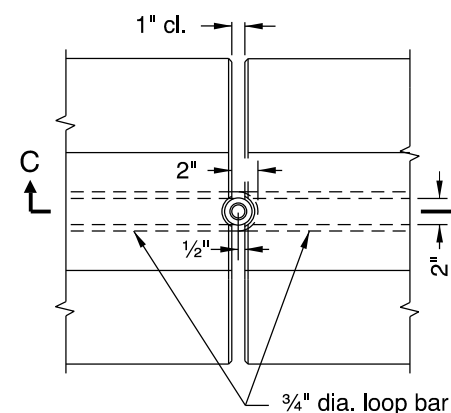


GENERAL NOTES FOR ALL DETAILS:

1. All reinforcement shall be 2" clear of nearest face of conc. unless otherwise shown.
2. Narrow base shldr. barrier to be used only at locations with backfill behind barrier as shown on plans.
3. Conc. median barrier is an acceptable alternate to wide base shldr. barrier.
4. Reinforcement shown is the min. reqd. for all barriers in final position.
5. See Std. Drg. RD516 for securing concrete barrier to roadway.
6. All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.

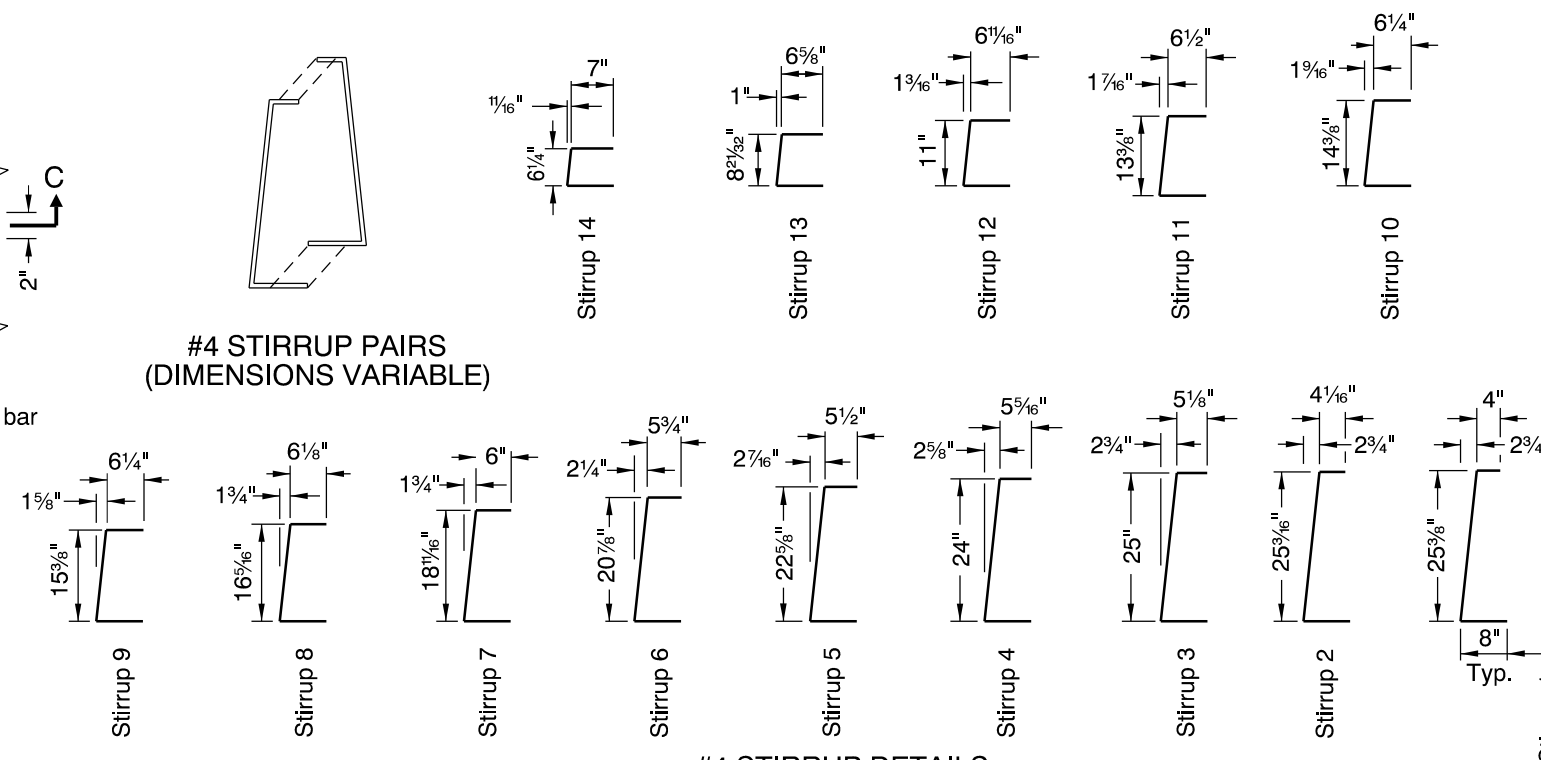


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| CALC. BOOK NO. N/A                                                                                                                                                                                                                                              | BASELINE REPORT DATE 07-JAN-2013                                                                          |
| The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer. | NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications |
|                                                                                                                                                                                                                                                                 | OREGON STANDARD DRAWINGS                                                                                  |
|                                                                                                                                                                                                                                                                 | CONCRETE BARRIER CAST-IN-PLACE                                                                            |
|                                                                                                                                                                                                                                                                 | 2015                                                                                                      |
|                                                                                                                                                                                                                                                                 | DATE REVISION DESCRIPTION                                                                                 |

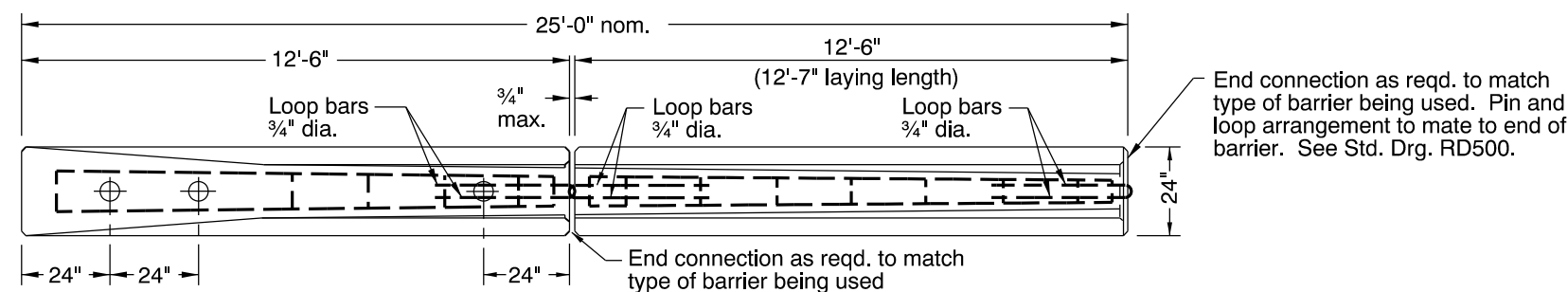


## PLAN

#4 STIRRUP PAIRS  
(DIMENSIONS VARIABLE)



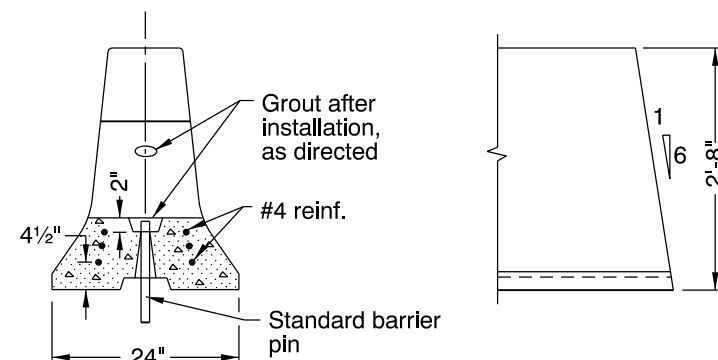
#### #4 STIRRUP DETAILS



## PLAN

GENERAL NOTES FOR ALL DETAILS:

1. All reinforcement shall be full length as shown and shall be 2" clear of nearest face of conc., unless otherwise shown.
2. Reinf. shown is the minimum reqd. for all barriers in final position. Additional reinf. may be used to facilitate production, handling and installation of "Precast" units at the contractor's option and responsibility. (See note 1)
3. For details not shown, see Std. Drg. RD500.
4. See Std. Drg. RD516 for securing concrete barrier to roadway.
5. All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.



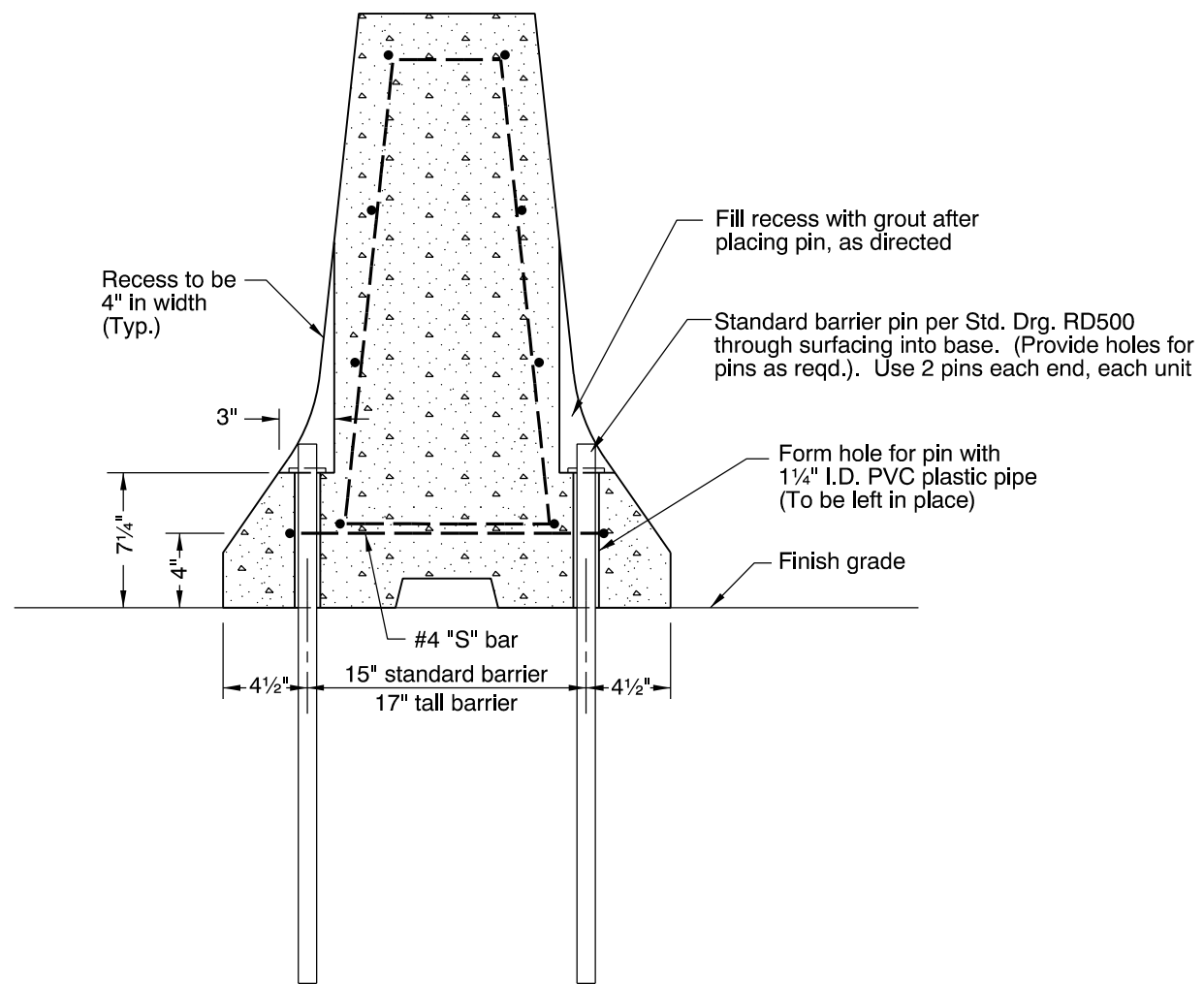
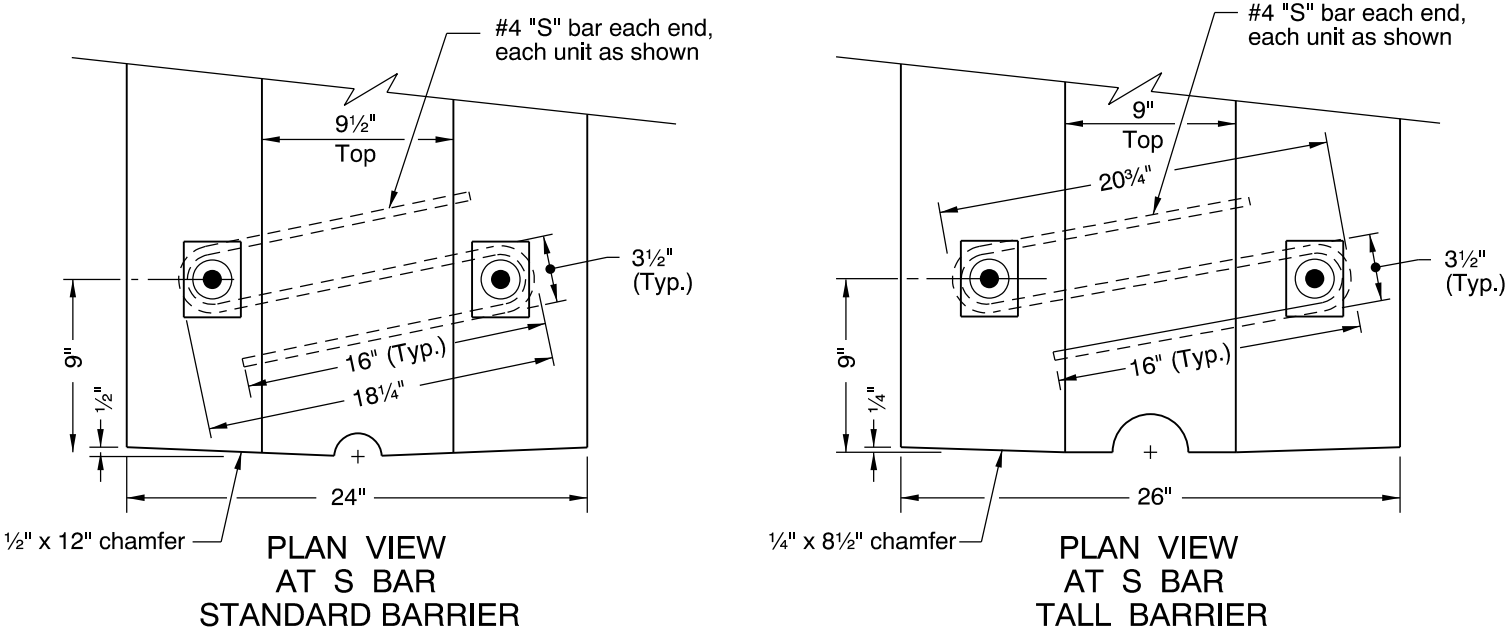
ALTERNATE ELEVATION  
TRAILING END TERMINAL

Space #4 Stirrup pairs at 21½" nom., unless otherwise shown.

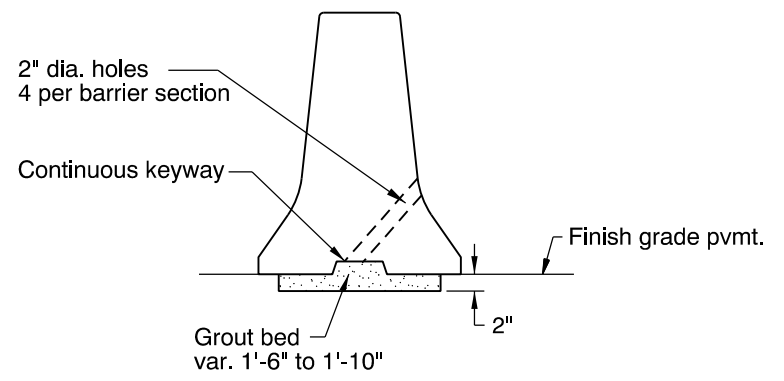
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| CALC. BOOK NO.    N/A                                                                                                                                                                                                                                                         | BASELINE REPORT DATE    07-JAN-2013                                                                       |                      |
| <p><i>The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.</i></p> | NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications |                      |
|                                                                                                                                                                                                                                                                               | OREGON STANDARD DRAWINGS                                                                                  |                      |
|                                                                                                                                                                                                                                                                               | CONCRETE BARRIER<br>TERMINAL                                                                              |                      |
|                                                                                                                                                                                                                                                                               | 2015                                                                                                      |                      |
|                                                                                                                                                                                                                                                                               | DATE                                                                                                      | REVISION DESCRIPTION |
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rd515.dgn 14-JUL-2014

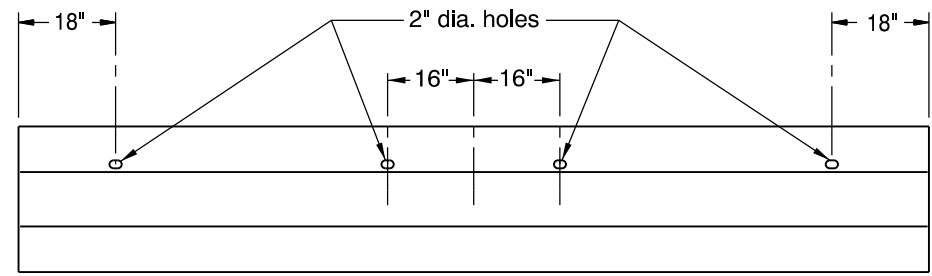
RD515



ELEVATION VIEW @ ANCHOR RODS  
SECURING TO PAVEMENT OPTION



GROUT DETAIL  
FOR PRECAST CONCRETE BARRIER



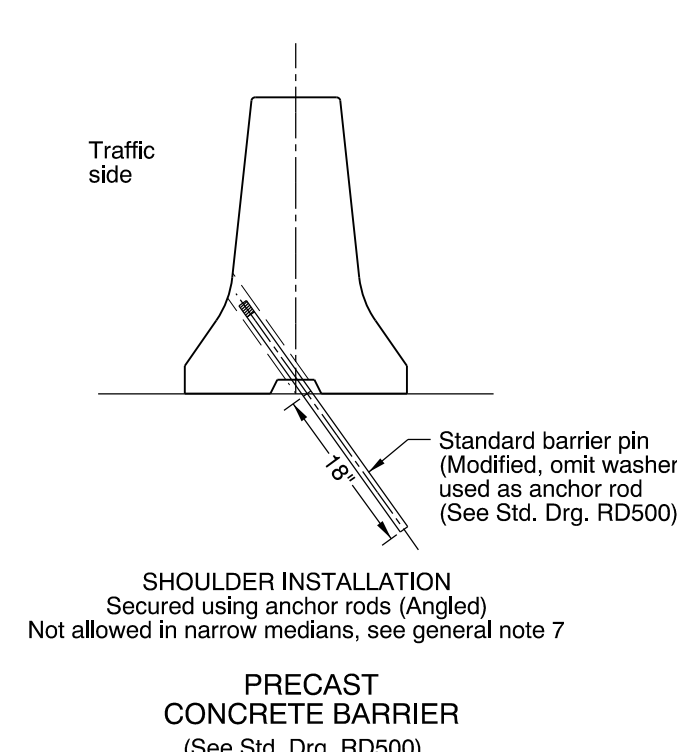
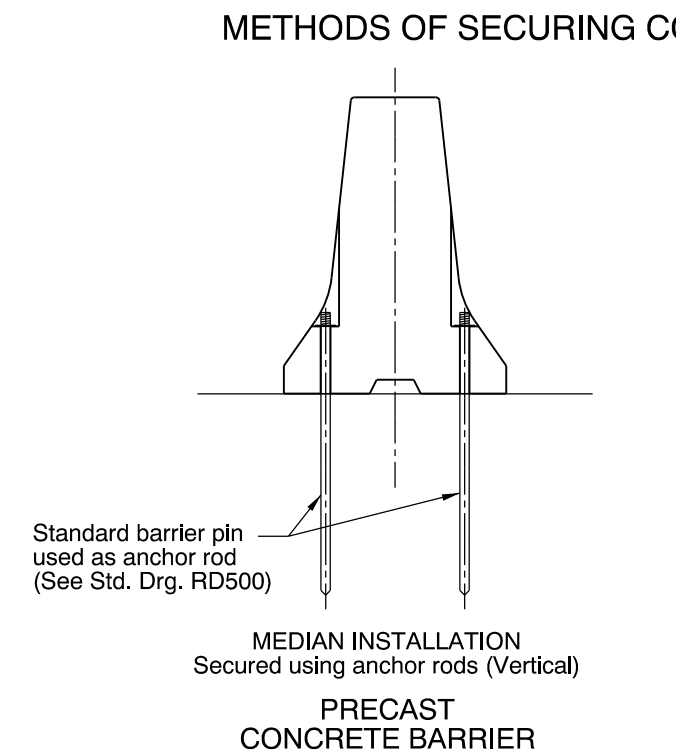
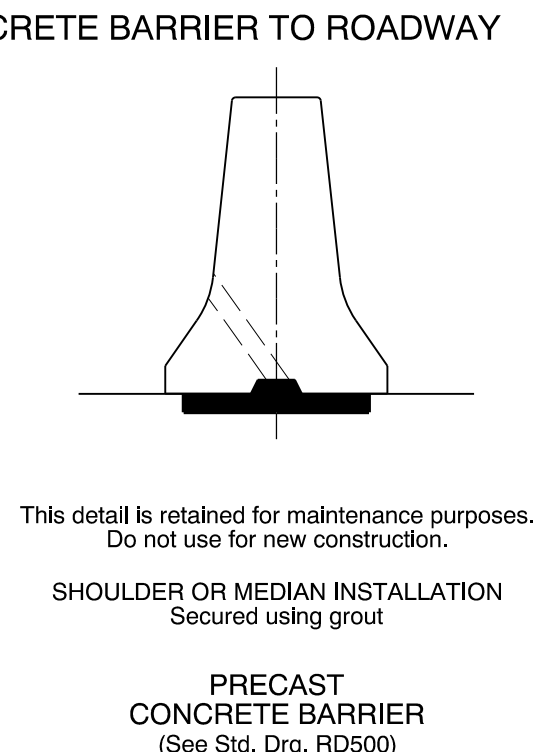
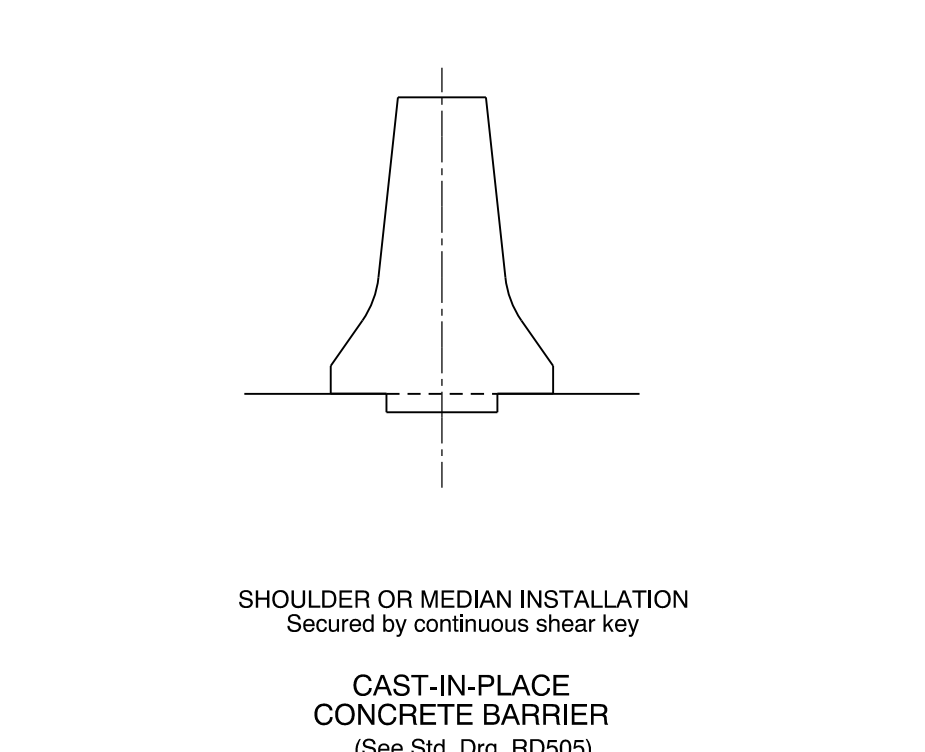
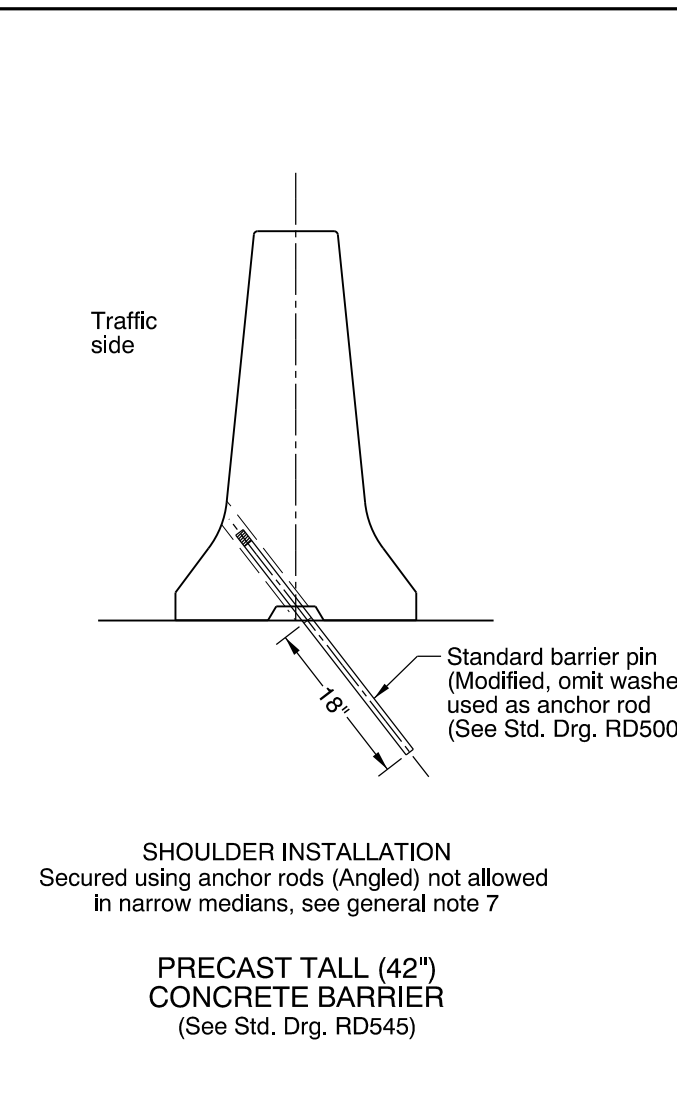
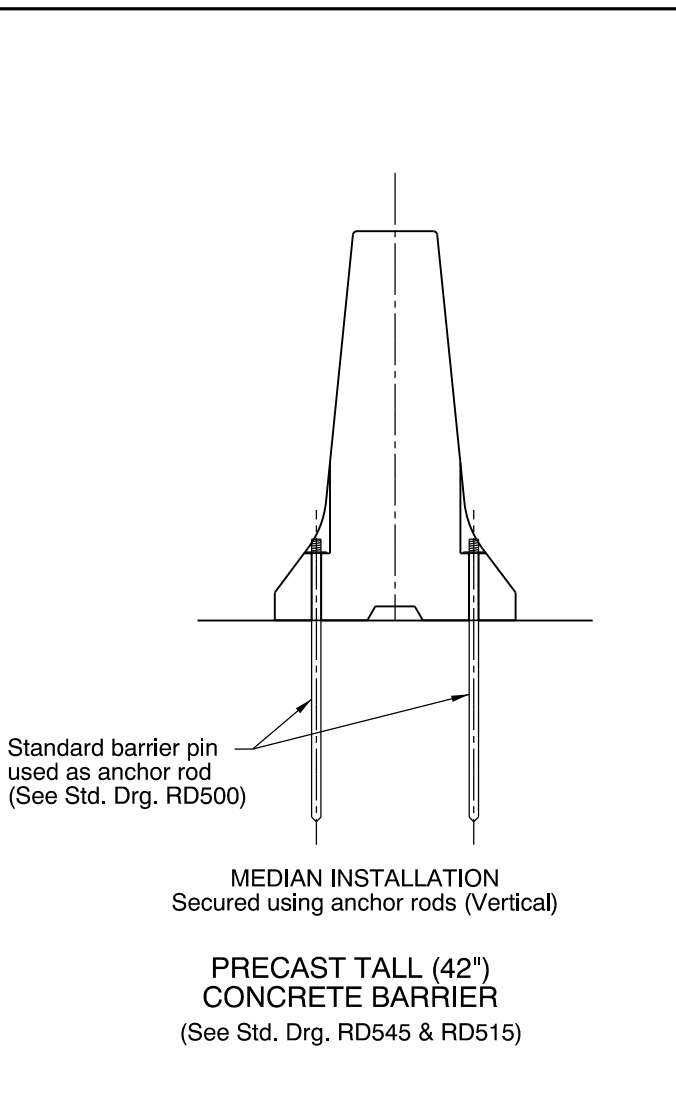
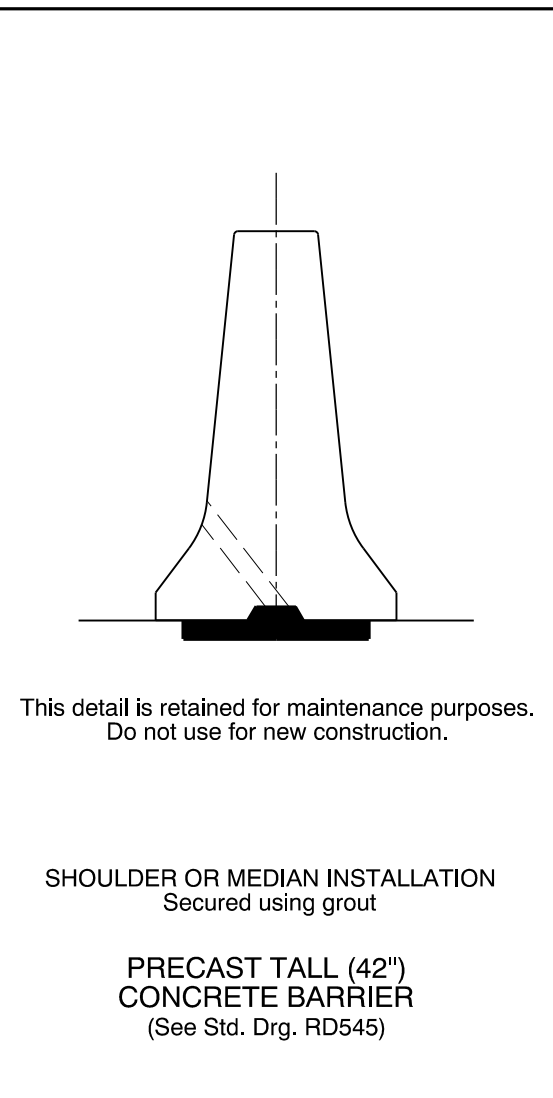
GROUTING HOLES PLAN

**GROUTING OPTION**  
(Dimensions between 2" dia. holes are nominal)  
This detail is retained for maintenance purposes.  
Do not use for new construction.

|                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                        |                                                                                                           |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|--|
| GENERAL NOTES FOR ALL DETAILS:<br><br>1. For use in medians with width less than 8' (as measured between nearest fog lines).<br>2. See Std. Drgs. RD500 & RD545 for reinforcement and other details not shown.<br>3. See Std. Drg. RD516 for securing concrete barrier to roadway.<br>4. All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.<br>5. S bars to be full length as shown. | CALC. BOOK NO.    _ _ N/A _ _ _ _ _ _ _ _                                                                                                                                                                                                                              | BASELINE REPORT DATE    _ _ _ 14-JAN-2011 _ _ _ _ _                                                       |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                     | <i>The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.</i> | NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                        | OREGON STANDARD DRAWINGS                                                                                  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                        | MEDIAN BARRIER ANCHORING DETAILS                                                                          |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                        | 2015                                                                                                      |  |
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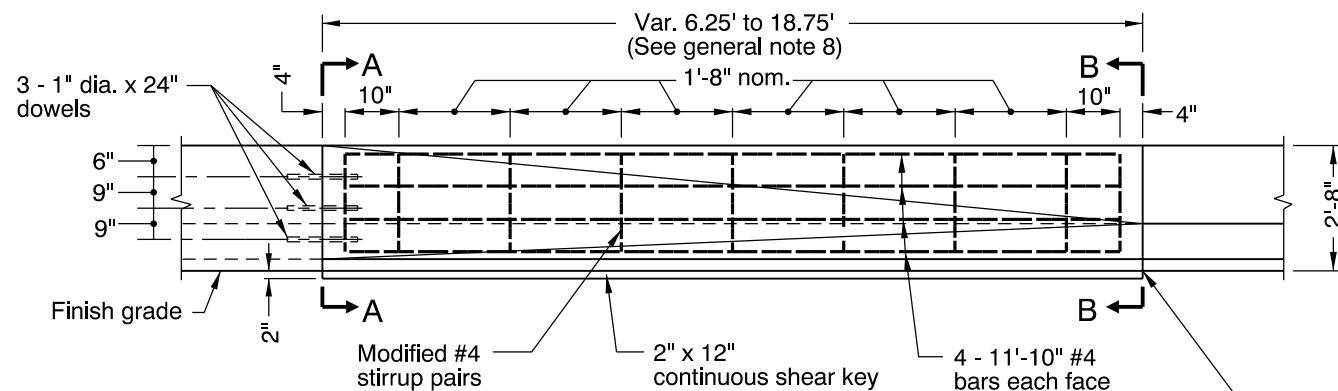
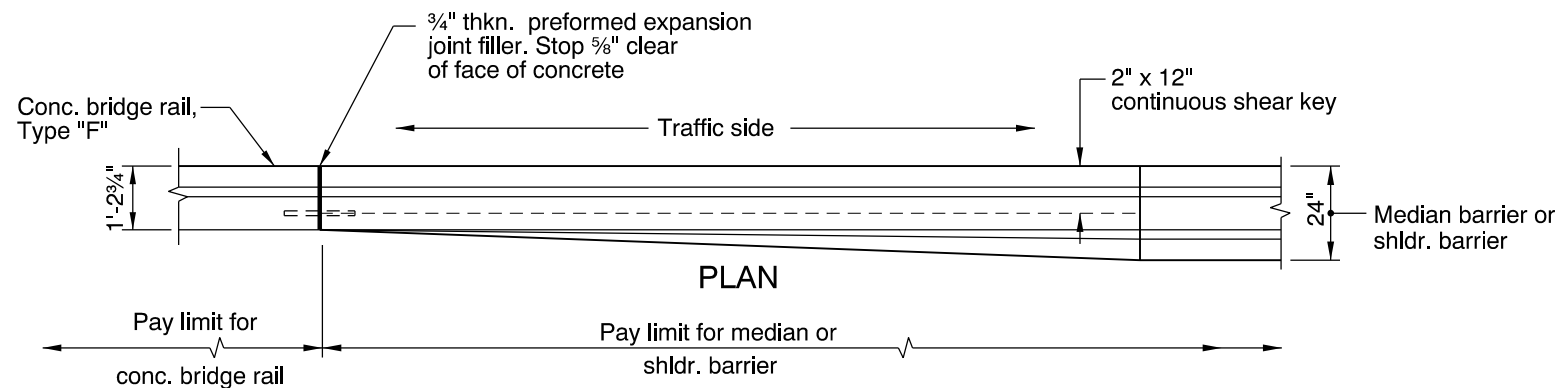
rd516.dgn 14-JUL-2014

RD516

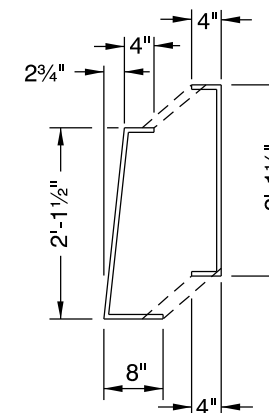
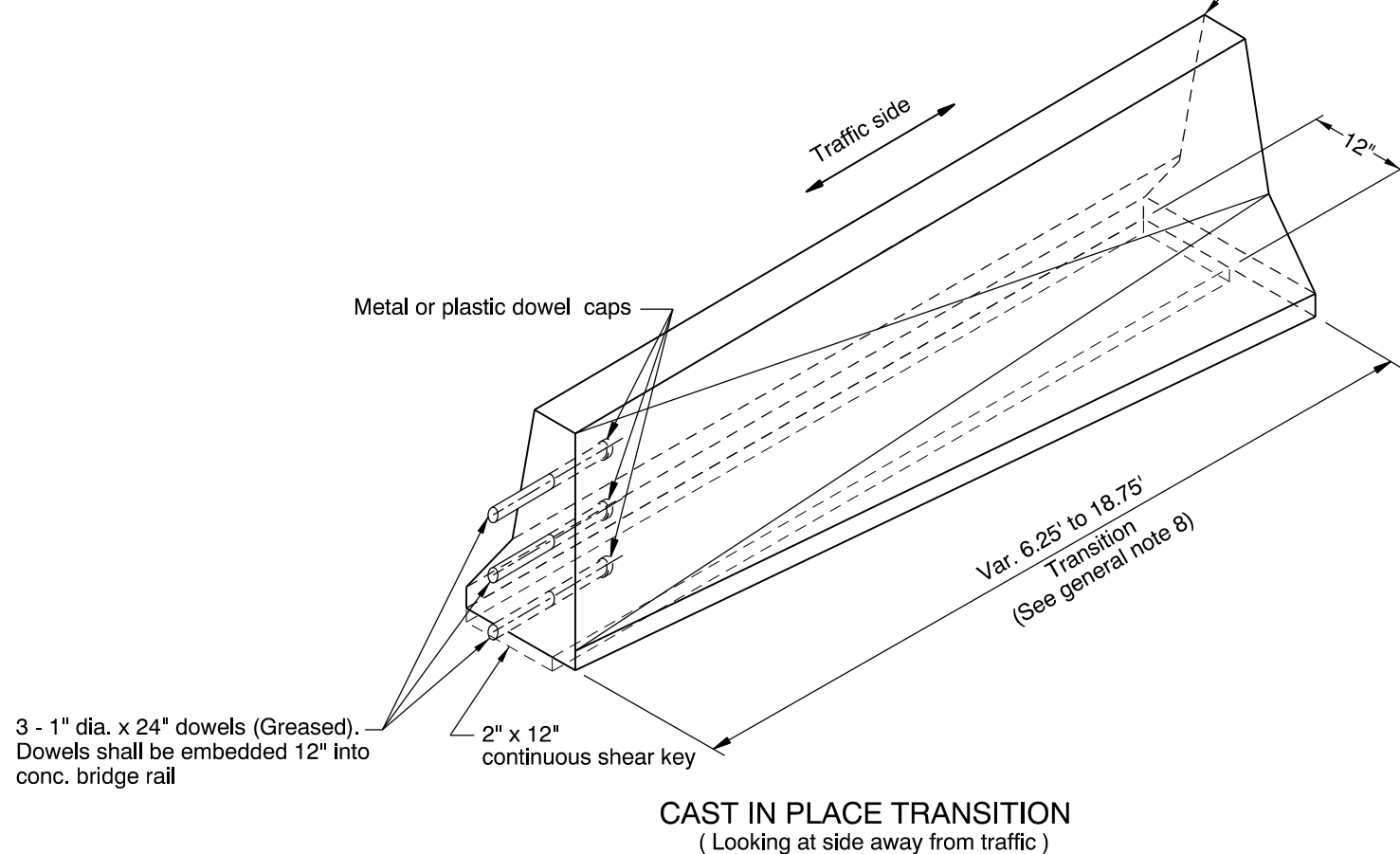
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| <div></div>                                                                                                                                                                           | <div><p>METHODS OF SECURING CONCRETE BARRIER TO ROADWAY</p></div>                              | <div></div>                                                                  | <div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                             |  |                                           |  |                                                                                                                                                                                                                                                                        |  |                                                                                                           |  |                          |  |                                      |  |      |  |      |          |             |  |  |  |
| <div></div>                                                                                                          | <div></div> | <div></div> | <div><p>GENERAL NOTES FOR ALL DETAILS:</p><ol style="list-style-type: none"><li>This standard drawing is intended to show acceptable methods of securing concrete barrier to roadway.</li><li>Secure concrete barrier to roadway when any of the following conditions exist:<ol style="list-style-type: none"><li>Barrier deflection requirements per Std. Drg. RD500 cannot be obtained, or</li><li>When required by plans, or</li><li>As directed by the Engineer.</li></ol></li><li>Select one of the securing methods shown.<br/>For details not shown, see the standard drawing(s) referenced for the selected method.</li><li>Securing concrete barrier to roadway is in addition to connections between adjacent concrete barrier sections, bridge rails, retaining walls, and similar existing or constructed objects.</li><li>Concrete median barrier is an acceptable alternate to wide base shoulder barrier.</li><li>Temporary concrete barrier to be precast concrete median barrier with pin and loop assembly.</li><li>Precast concrete barrier used in medians less than 8' in width (as measured between nearest fog lines) shall be secured to roadway to resist impacts from both sides.</li><li>Anchor rods are standard barrier pins, modified for shoulder installation, as shown.</li><li>Normal permanent installation of concrete barrier is on top of finish grade, to provide 3" vertical reveal. Modify placement when required by plans, or as directed.</li><li>All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.</li></ol></div> <table><tr><td colspan="2">CALC. BOOK NO. -- N/A -----</td><td colspan="2">BASELINE REPORT DATE -- 11-JAN-2010 -----</td></tr><tr><td colspan="2" rowspan="6"><p>The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.</p></td><td colspan="2">NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications</td></tr><tr><td colspan="2">OREGON STANDARD DRAWINGS</td></tr><tr><td colspan="2">SECURING CONCRETE BARRIER TO ROADWAY</td></tr><tr><td colspan="2">2015</td></tr><tr><td>DATE</td><td>REVISION</td><td>DESCRIPTION</td></tr><tr><td> </td><td> </td><td> </td></tr></table> | CALC. BOOK NO. -- N/A ----- |  | BASELINE REPORT DATE -- 11-JAN-2010 ----- |  | <p>The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.</p> |  | NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications |  | OREGON STANDARD DRAWINGS |  | SECURING CONCRETE BARRIER TO ROADWAY |  | 2015 |  | DATE | REVISION | DESCRIPTION |  |  |  |
| CALC. BOOK NO. -- N/A -----                                                                                                                                                                                                                                            |                                                                                                                                                                                  | BASELINE REPORT DATE -- 11-JAN-2010 -----                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |  |                                           |  |                                                                                                                                                                                                                                                                        |  |                                                                                                           |  |                          |  |                                      |  |      |  |      |          |             |  |  |  |
| <p>The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.</p> |                                                                                                                                                                                  | NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |  |                                           |  |                                                                                                                                                                                                                                                                        |  |                                                                                                           |  |                          |  |                                      |  |      |  |      |          |             |  |  |  |
|                                                                                                                                                                                                                                                                        |                                                                                                                                                                                  | OREGON STANDARD DRAWINGS                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |  |                                           |  |                                                                                                                                                                                                                                                                        |  |                                                                                                           |  |                          |  |                                      |  |      |  |      |          |             |  |  |  |
|                                                                                                                                                                                                                                                                        |                                                                                                                                                                                  | SECURING CONCRETE BARRIER TO ROADWAY                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |  |                                           |  |                                                                                                                                                                                                                                                                        |  |                                                                                                           |  |                          |  |                                      |  |      |  |      |          |             |  |  |  |
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rd520.dgn 14-JUL-2014

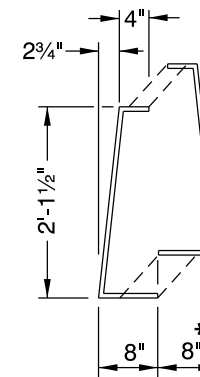
RD520



NOTE:  
End configuration and connection details shall be as detailed for the barrier specified. (See general note 7)



MODIFIED  
STIRRUP PAIR  
SECTION A-A  
#4 Rebar



MODIFIED  
STIRRUP PAIR  
SECTION B-B  
#4 Rebar

\* Dimension variable through transition section.

#### GENERAL NOTES FOR ALL DETAILS:

1. All reinf. shall be full length as shown and shall be 2" clear of nearest face of conc., unless otherwise shown.
2. See Std. Drgs. RD500 & RD505 for additional details.
3. See Std. Drgs. RD505 & RD516 for securing concrete barrier to roadway.
4. See Std. Drg. BR200 for Concrete Bridge Rail, Type "F".
5. All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.
6. Not for use on bridge end panel.
7. Field verify end configurations of connecting barriers prior to forming connections at transitions. Dowelled connection is an acceptable alternative. See Std. Drg. RD505 for details not shown.
8. Normal length for cast-in-place transition is 12'-6". Site conditions may require varying lengths between 6'-3" and 18"-9". Field verify transition length and end configurations of connecting barriers.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 12-JAN-2010

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

#### OREGON STANDARD DRAWINGS CAST-IN-PLACE CONCRETE BARRIER TRANSITION TO CONCRETE BRIDGE RAIL TYPE "F"

2015

| DATE | REVISION | DESCRIPTION |
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The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

Effective Date: February 1, 2015 - May 31, 2015

RD520

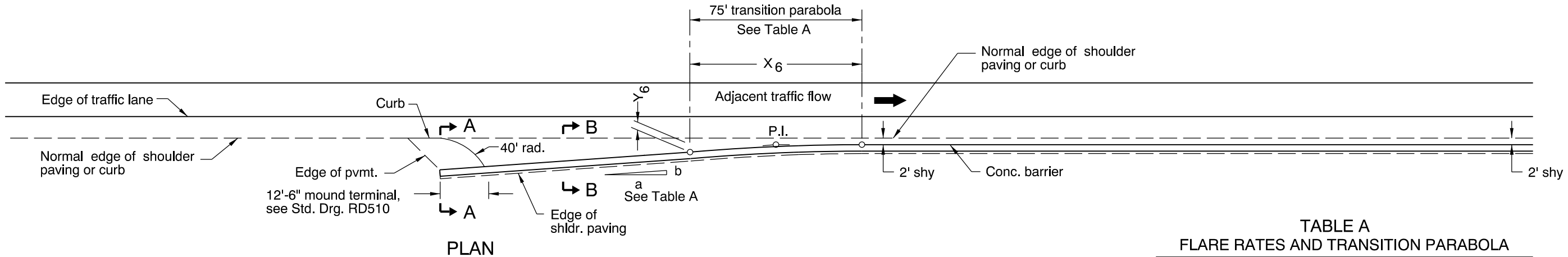
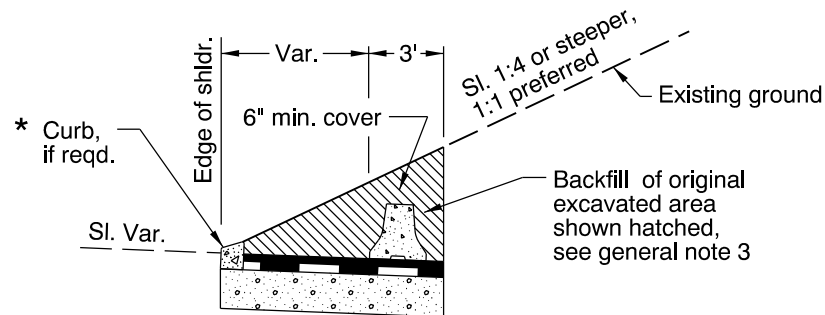


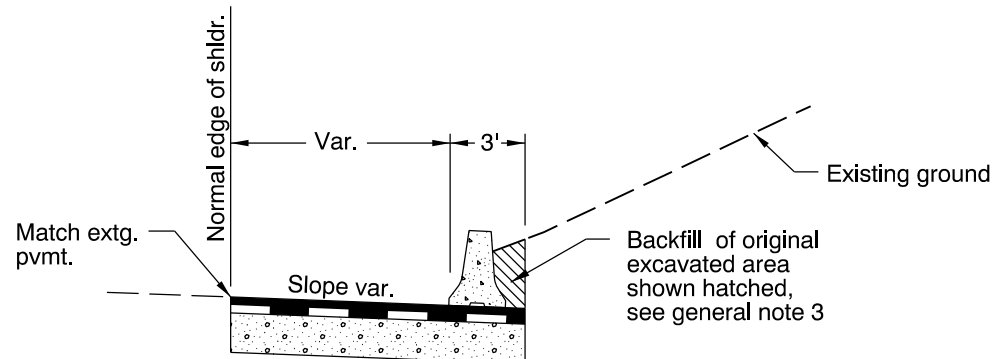
TABLE A  
FLARE RATES AND TRANSITION PARABOLA

| Flare Rate<br>a:b |        | Concrete Barrier Segment |      |      |      |      |      |
|-------------------|--------|--------------------------|------|------|------|------|------|
|                   |        | 1                        | 2    | 3    | 4    | 5    | 6    |
|                   | X (ft) | 12.5                     | 25   | 37.5 | 50   | 62.5 | 75   |
| 20:1              | Y (ft) | 0.10                     | 0.20 | 0.50 | 0.80 | 1.30 | 1.90 |

See Std. Drg. RD500 for details not shown.



NOTE: Surfacing details same as adjacent shldr.  
\* For curb type or ditch, see plans.



NOTE: Surfacing details same as adjacent shldr.

GENERAL NOTES FOR ALL DETAILS:

1. Normal use assumes an existing established slope. This detail is not intended for construction of new slope steeper than a slope of 1:2.
2. If the slope is flatter than 1:1 ensure that there is a clear recovery area behind the barrier, with no funneling effect to the back of the obstruction.
3. Provide drainage as required.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 18-JUN-2010

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

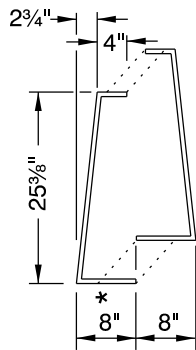
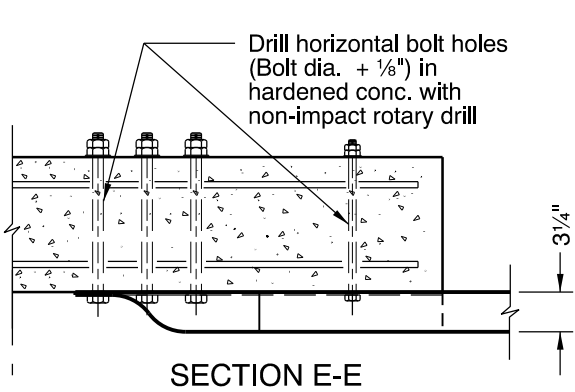
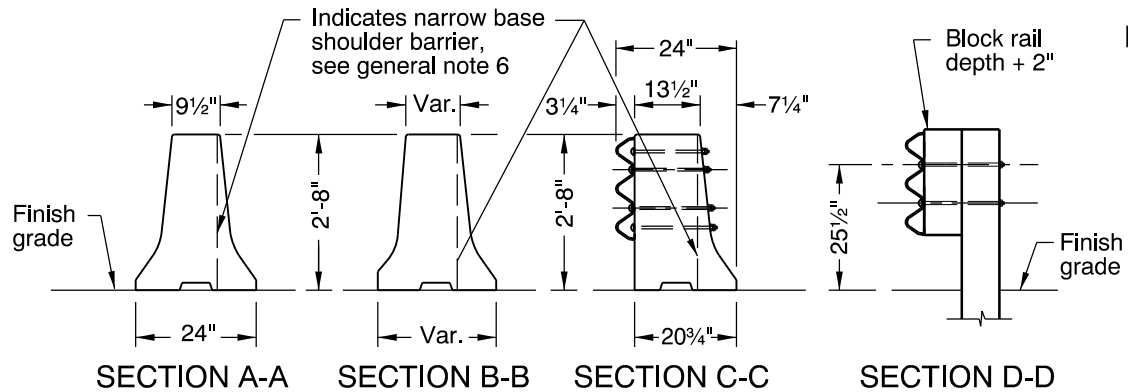
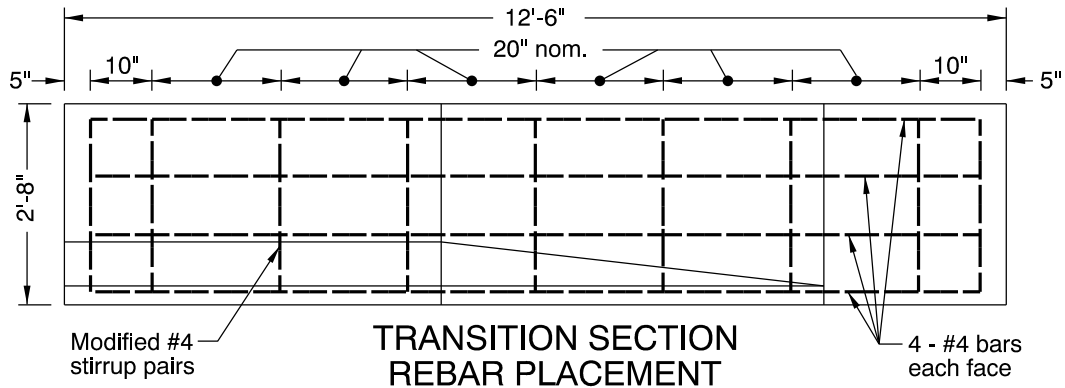
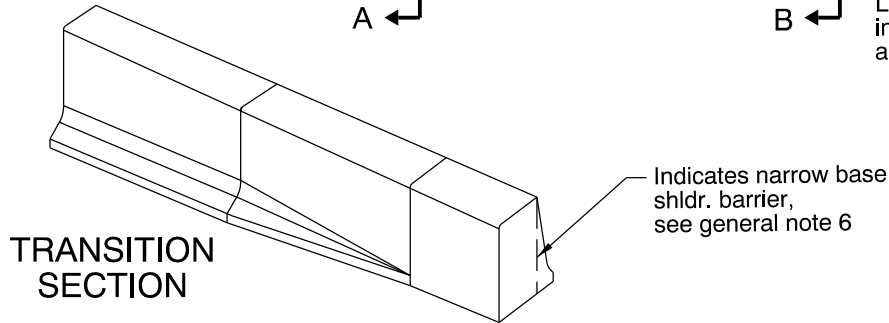
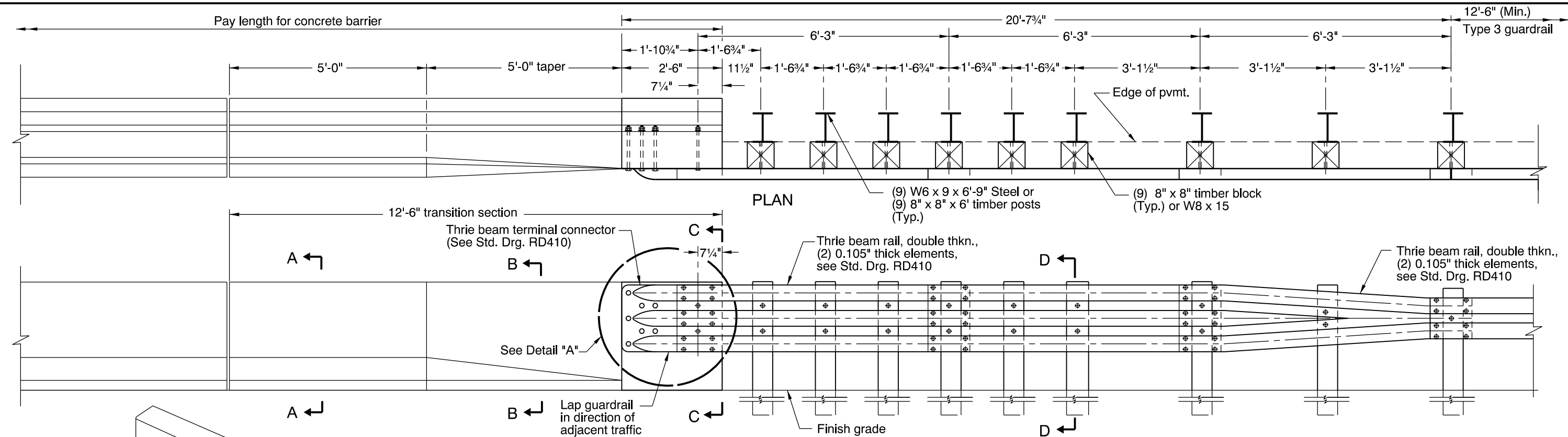
OREGON STANDARD DRAWINGS

STANDARD CONCRETE BARRIER  
BURIED IN BACKSLOPE

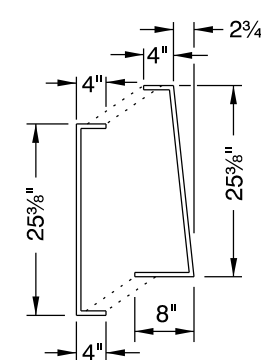
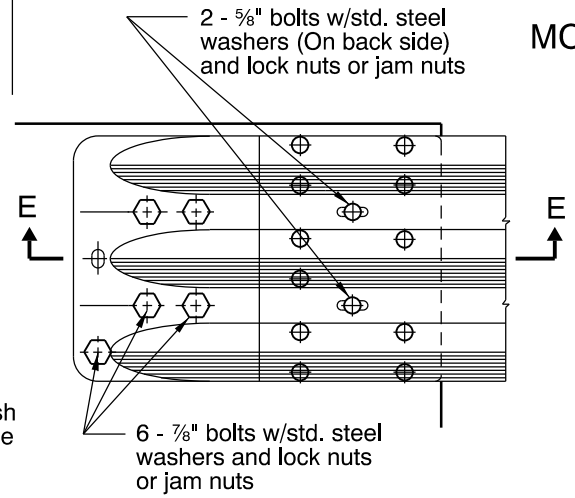
2015

| DATE | REVISION | DESCRIPTION |
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The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.



**MODIFIED STIRRUP PAIR**



**MODIFIED STIRRUP PAIR**

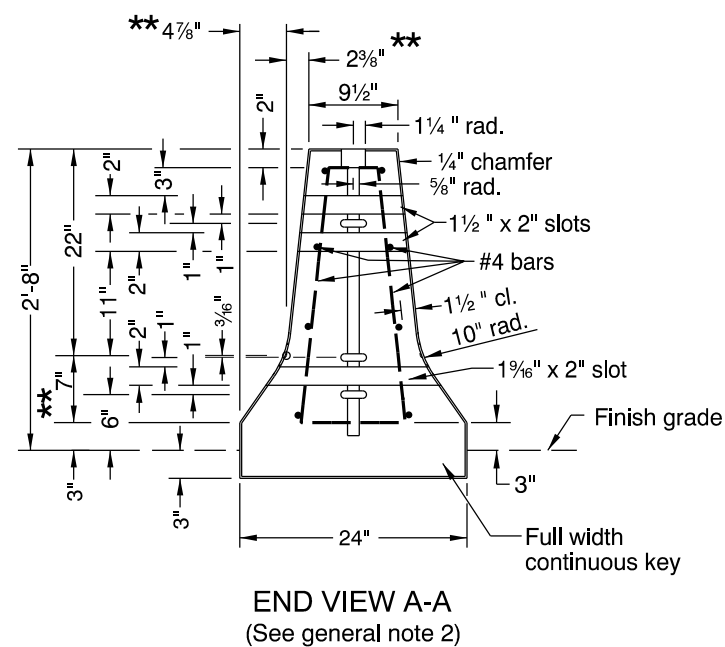
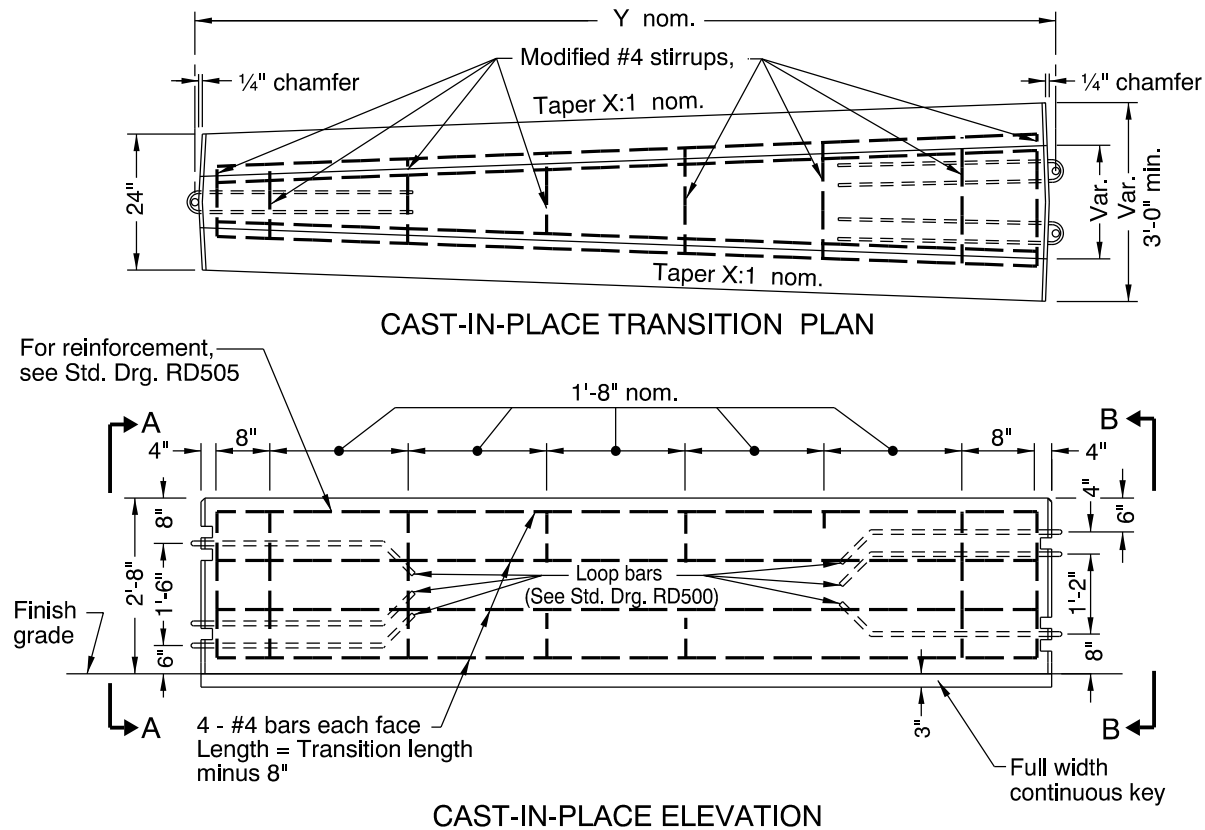
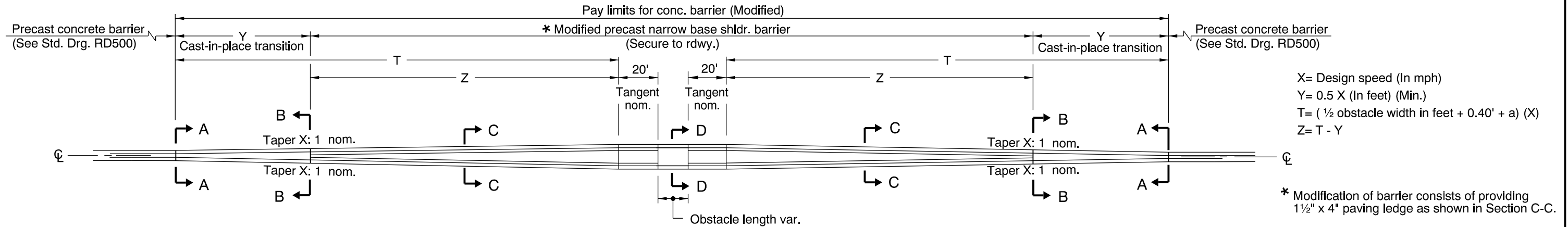
- GENERAL NOTES FOR ALL DETAILS:**
1. All reinforcing bars shall be full length as shown and shall be 2" clear of the nearest face of concrete unless shown otherwise.
  2. See Std. Drgs. RD400, RD405, RD410, RD415, RD500, RD505 & BR203, for details not shown.
  3. For trailing end guardrail connection see Std. Drg. BR236, Detail A.
  4. If trench method is used to install posts, ensure compaction according to 00810.41 2nd paragraph.
  5. See Std. Drg. RD516 for securing concrete barrier to roadway.
  6. Narrow base shoulder barrier to be used only at locations with backfill behind barrier as shown on plans.
  7. All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.

|                                                                                                           |                                  |
|-----------------------------------------------------------------------------------------------------------|----------------------------------|
| CALC. BOOK NO. N/A                                                                                        | BASELINE REPORT DATE 14-JUL-2014 |
| NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications |                                  |
| <b>OREGON STANDARD DRAWINGS</b>                                                                           |                                  |
| <b>GUARDRAIL TRANSITION TO CONCRETE BARRIER</b>                                                           |                                  |
| 2015                                                                                                      |                                  |
| DATE                                                                                                      | REVISION DESCRIPTION             |
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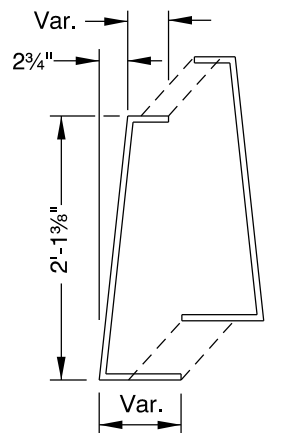
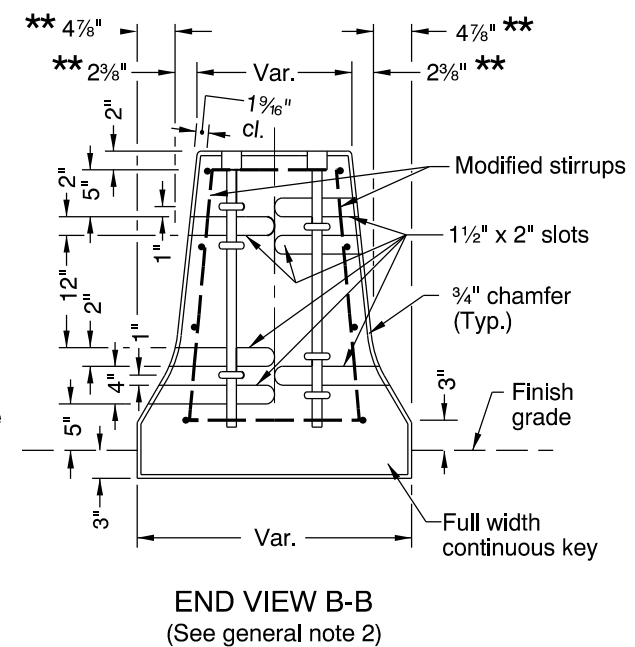
The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

rd535.dgn 14-JUL-2014

RD535

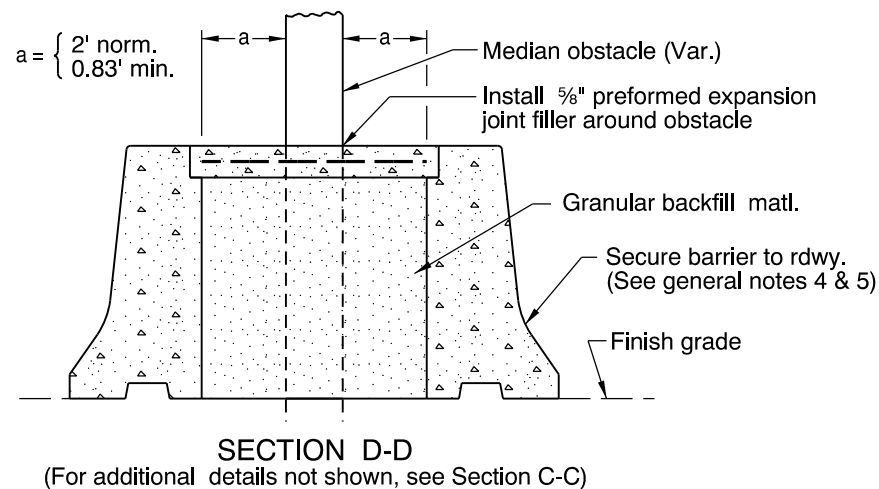
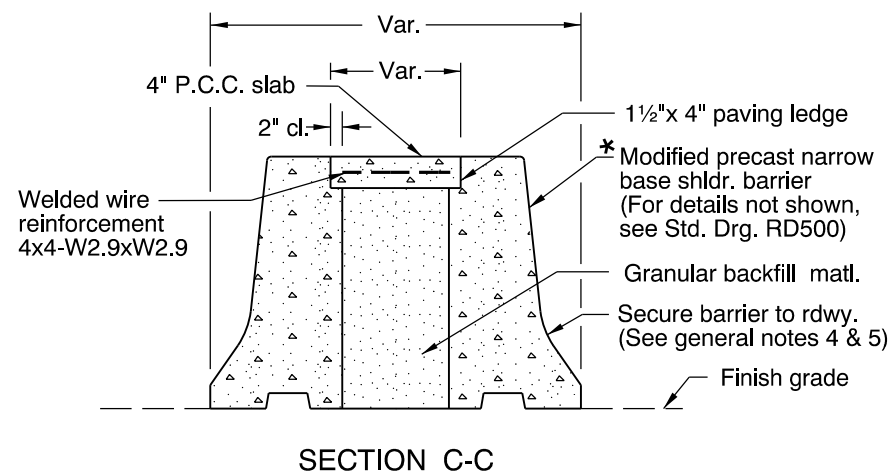


\*\* Dimensions marked thus are to the intersection point of the barrier slopes. Construct the 10" radius to provide a smooth transition between the slopes.



#### GENERAL NOTES FOR ALL DETAILS:

1. See Std. Drgs. RD500 & RD505 for details not shown.
2. Field verify end configurations of connecting barriers prior to forming connections at transitions. Dowelled connection is an acceptable alternative. See Std. Drg. RD505 for details not shown.
3. All reinf. shall be 1 1/2" (Min.) clear of nearest face of conc., unless otherwise shown.
4. Anchored barrier - 2 holes and pins reqd. (Per section). Applies only if barrier is precast.
5. See Std. Drg. RD516 for securing concrete barrier to roadway.
6. All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.



|                                                                                                           |                                  |
|-----------------------------------------------------------------------------------------------------------|----------------------------------|
| CALC. BOOK NO. N/A                                                                                        | BASELINE REPORT DATE 07-JAN-2013 |
| NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications |                                  |
| OREGON STANDARD DRAWINGS                                                                                  |                                  |
| CONCRETE BARRIER (MODIFIED) AROUND MEDIAN OBSTACLE                                                        |                                  |
| 2015                                                                                                      |                                  |
| DATE                                                                                                      | REVISION DESCRIPTION             |
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The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

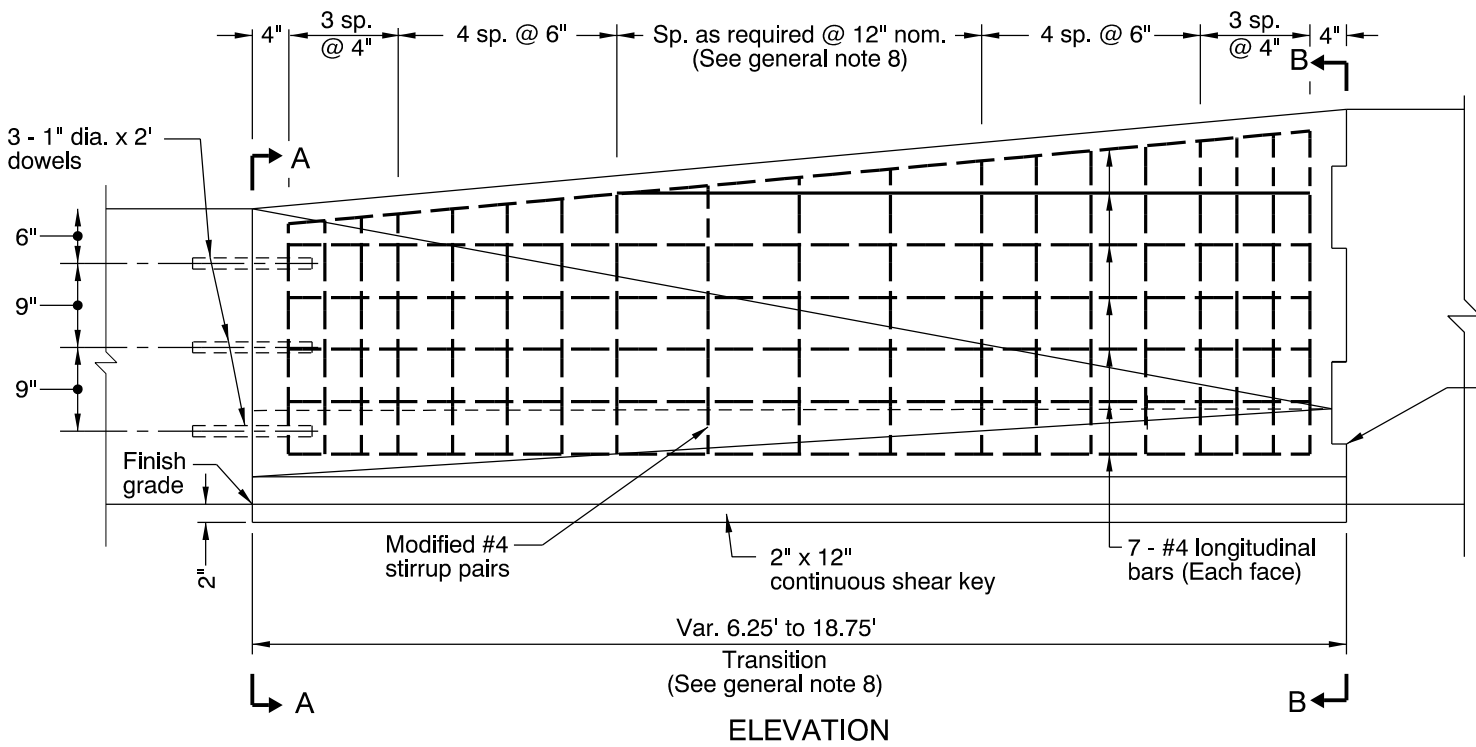
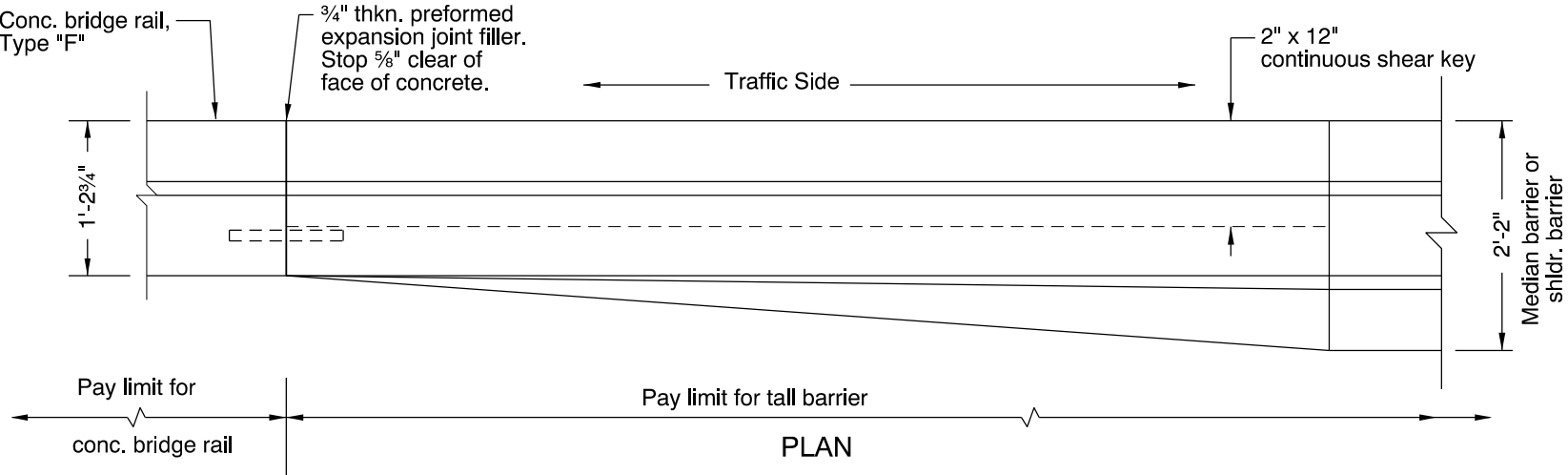


1. All reinforcing bars shall be full length as shown and shall be 2" clear of the nearest face of concrete unless shown otherwise.
2. All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.
3. Normal use of precast tall median barrier is restricted to curves with radii greater than 770'.
4. Chamfer all edges  $\frac{3}{4}$ " (Typical).
5. Perforated C-shape shall be placed in location shown to a tolerance of  $\frac{3}{32}$ ".
6. Estimated barrier weight is 8070 lb per 12.5' unit length, estimated narrow base barrier weight is 6550 lb.
7. To anchor median barrier see Std. Drgs. RD515 & RD516.
8. See Std. Drg. RD516 for securing concrete barrier to roadway.
9. Narrow base shldr. barrier to be used only at locations with backfill behind barrier as shown on plans.
10. For barrier location details, see Std. Drg. RD500.
11. When scuppers are not required, plug them with a minimum 2" of grout, as directed.

|                                                                                                                                                                                                                                                                               |                                                                                                                                           |                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| CALC. BOOK NO. <u>      N/A      </u>                                                                                                                                                                                                                                         | BASELINE REPORT DATE <u>      08-JUL-2013      </u>                                                                                       |                         |
| <p><i>The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.</i></p> | NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications                                 |                         |
|                                                                                                                                                                                                                                                                               | <div style="text-align: center;"> <h2>OREGON STANDARD DRAWINGS</h2> <h1>PRECAST TALL (42")<br/>CONCRETE BARRIER</h1> <h3>2015</h3> </div> |                         |
|                                                                                                                                                                                                                                                                               | DATE                                                                                                                                      | REVISION    DESCRIPTION |
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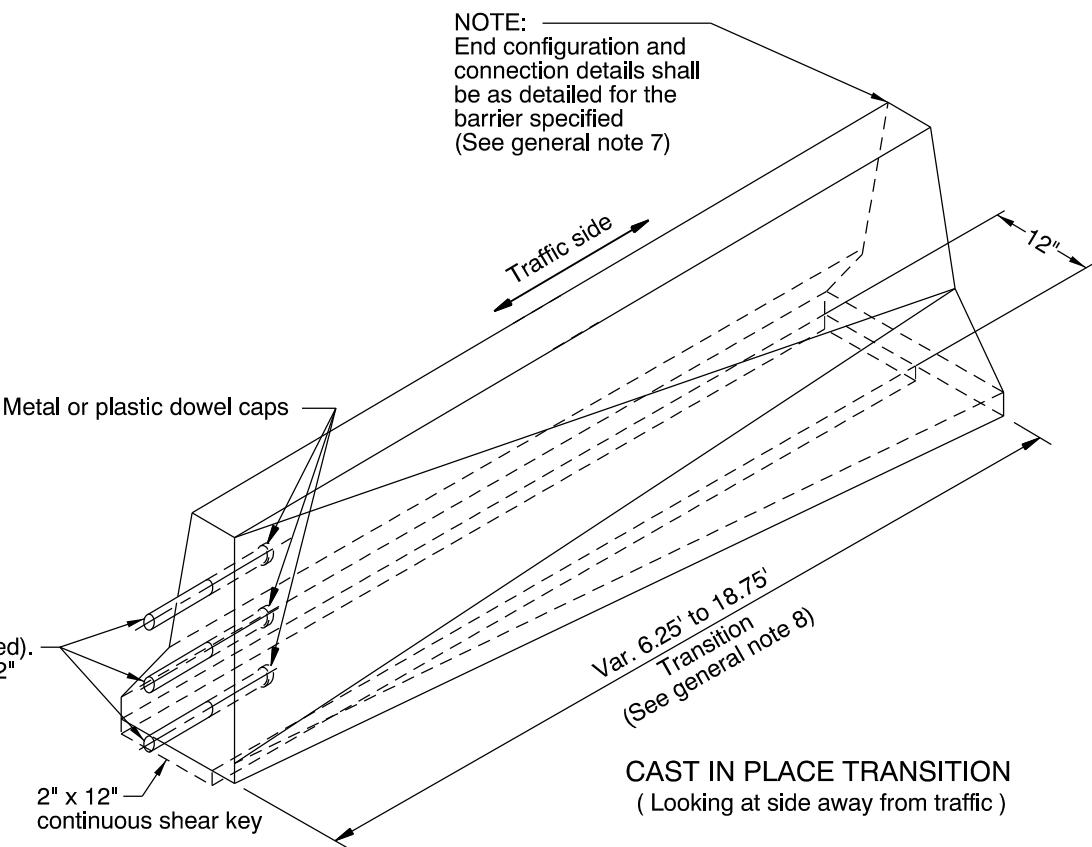
rd550.dgn 14-JUL-2014

RD550



NOTE:  
End configuration and connection details shall be as detailed for the barrier specified (See general note 7)

3 - 1" dia. x 2' dowels (Greased). Dowels shall be embedded 12" into conc. bridge rail



NOTE:  
End configuration and connection details shall be as detailed for the barrier specified (See general note 7)

GENERAL NOTES FOR ALL DETAILS:

1. All reinf. shall be full length as shown and shall be 1 $\frac{1}{2}$ " clear of nearest face of conc., unless otherwise shown.
2. See Std. Drg. RD545 for additional details.
3. See Std. Drgs. RD516 & RD545 for securing concrete barrier to roadway.
4. See Std. Drg. BR200 for Conc. Bridge Rail, Type "F".
5. All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.
6. Not for use on bridge end panel.
7. Field verify end configurations of connecting barriers prior to forming connections at transitions. Dowelled connection is an acceptable alternative. See Std. Drg. RD505 for details not shown.
8. Normal length for cast-in-place transition is 12'-6". Site conditions may require varying lengths between 6'-3" and 18"-9". Field verify transition length and end configurations of connecting barriers.

CALC. BOOK NO. N/A BASELINE REPORT DATE 19-JAN-2010

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS

CAST-IN-PLACE TALL CONCRETE BARRIER TRANSITION TO CONCRETE BRIDGE RAIL TYPE "F"

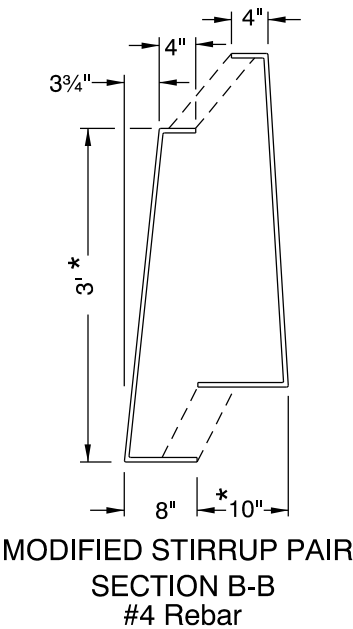
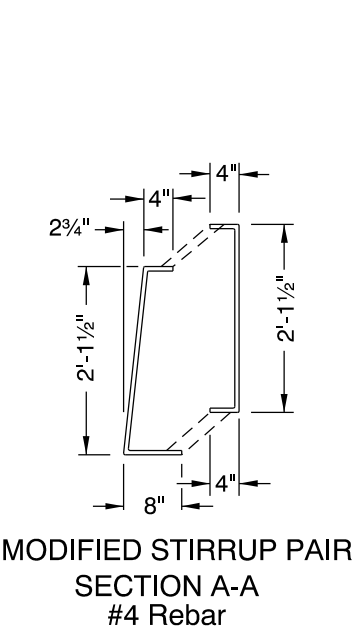
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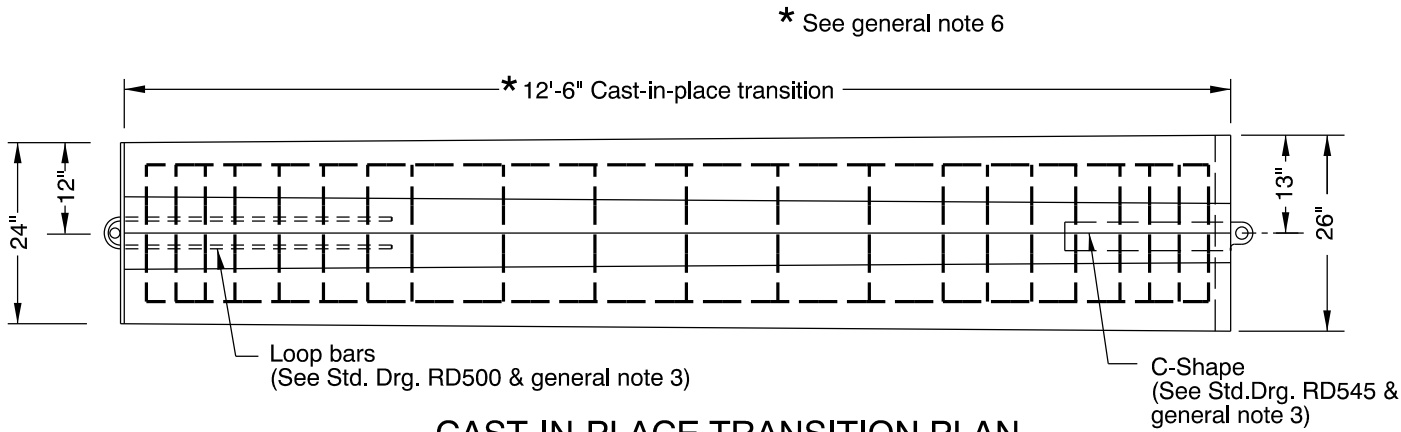
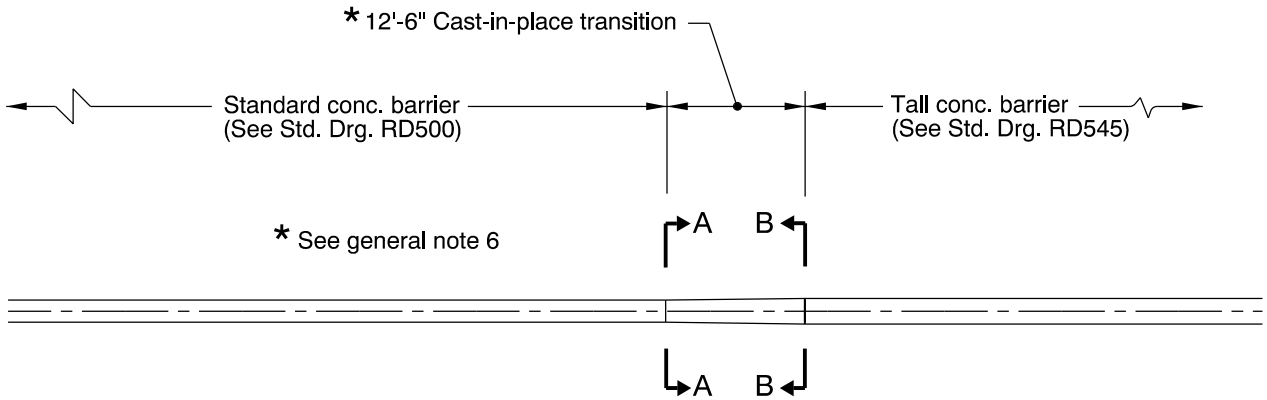
The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

Effective Date: February 1, 2015 - May 31, 2015

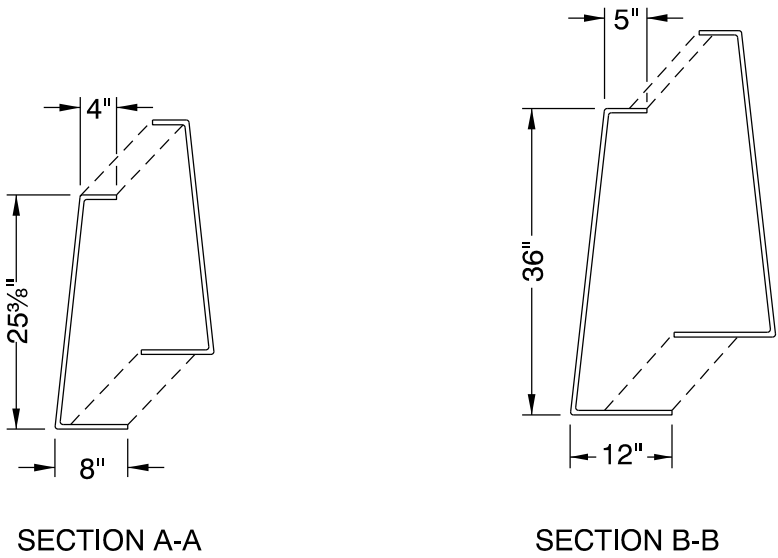
RD550



\* Dimension variable through transition section.

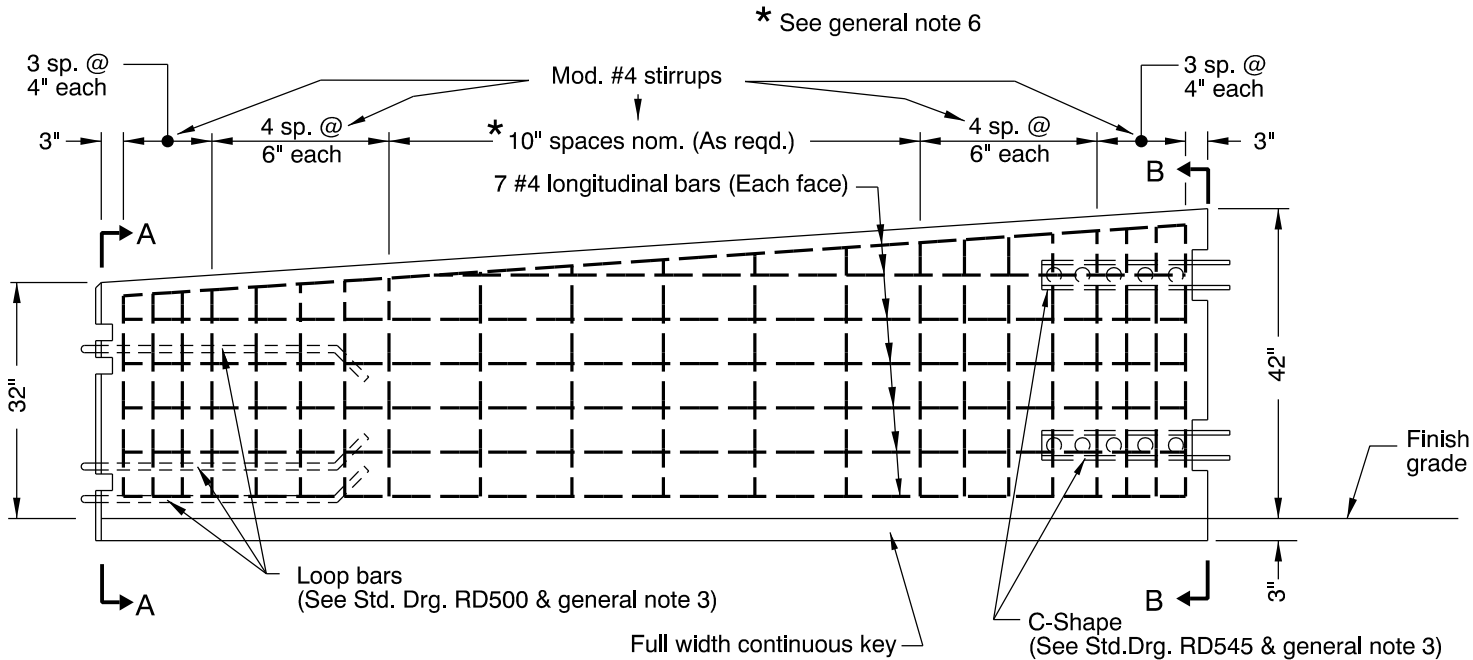
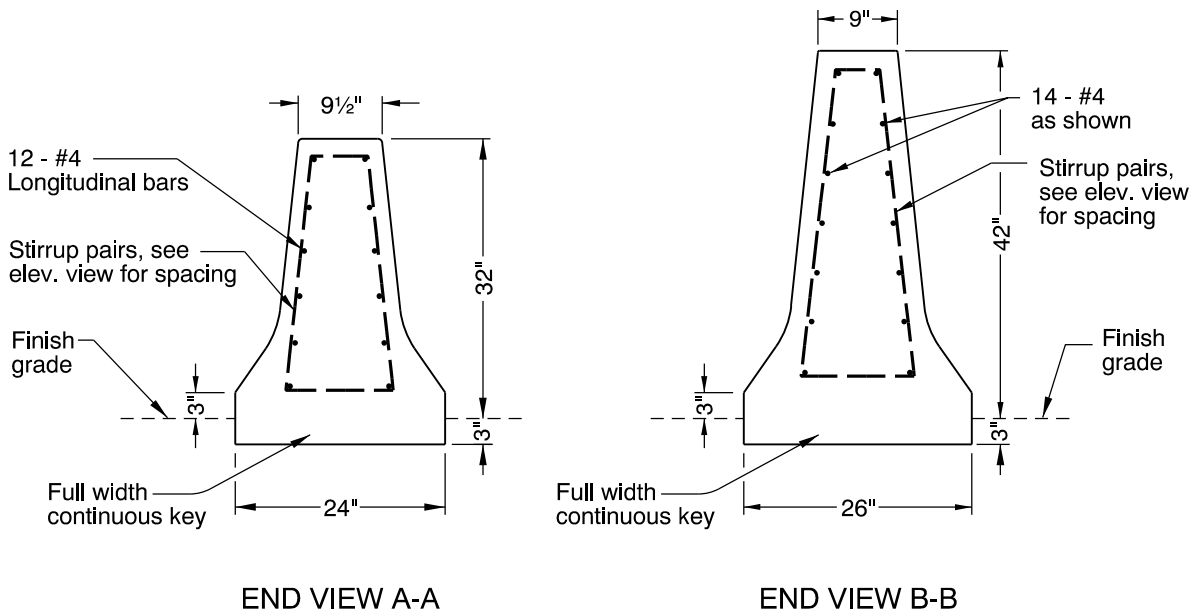


CAST-IN-PLACE TRANSITION PLAN



MODIFIED #4 STIRRUPS

(Dimensions shown will be variable throughout transition from A-A to B-B. See general note 6)



CAST-IN-PLACE TRANSITION ELEVATION

GENERAL NOTES FOR ALL DETAILS:

1. All reinforcing bars shall be full length as shown and shall be placed 1 1/2" clear of the nearest face of concrete unless shown otherwise.
2. Chamfer all edges 3/4".
3. Field verify end configurations of connecting barriers prior to forming connections at transitions. Dowelled connection is an acceptable alternative. See Std. Drg. RD505 for details not shown.
4. See Std. Drgs. RD500, RD505 & RD545 for details not shown.
5. All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.
6. Normal length for cast-in-place transition is 12'-6". Site conditions may require varying lengths between 6'-3" and 18"-9". Field verify transition length and end configurations of connecting barriers.

CALC. BOOK NO. N/A

BASELINE REPORT DATE 14-JAN-2010

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

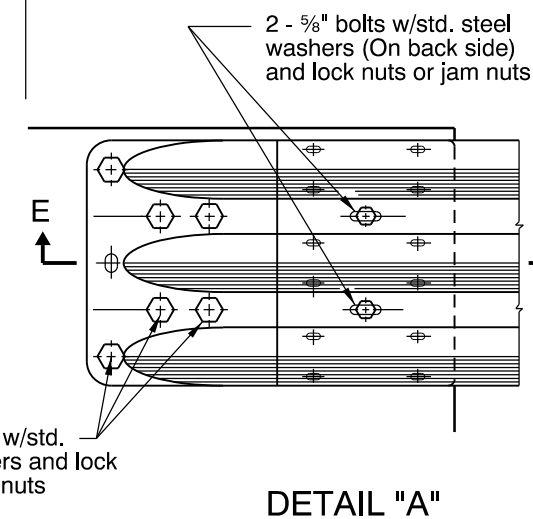
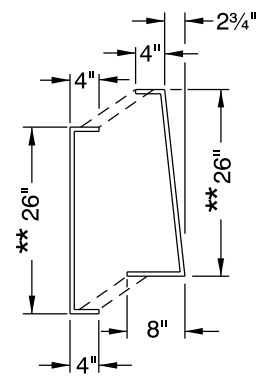
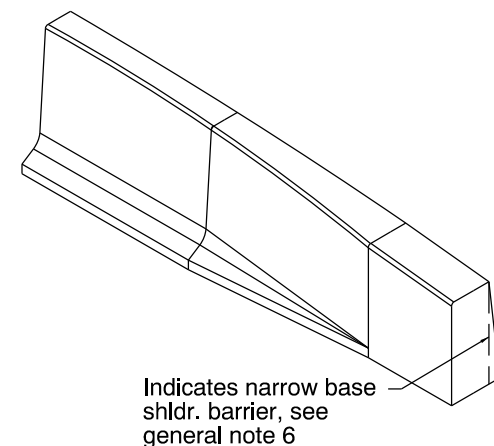
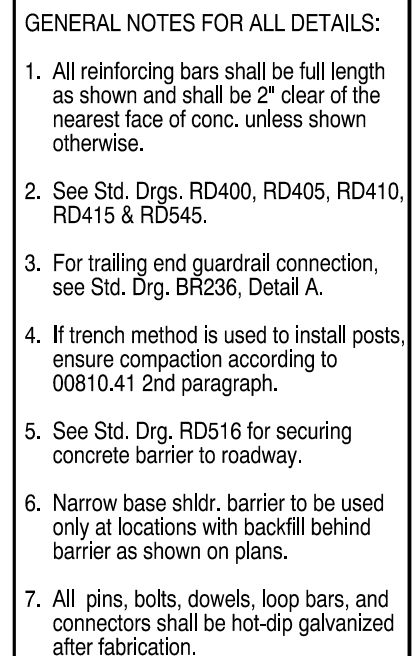
OREGON STANDARD DRAWINGS

**CAST-IN-PLACE  
TALL CONCRETE BARRIER TRANSITION  
TO STANDARD CONCRETE BARRIER**

2015

| DATE | REVISION | DESCRIPTION |
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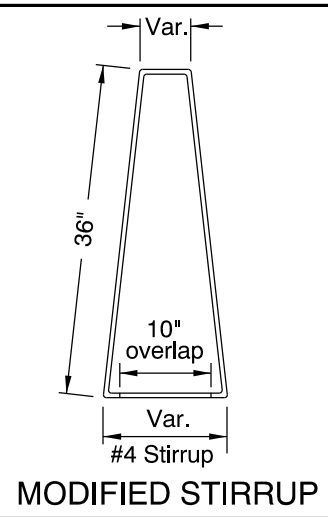
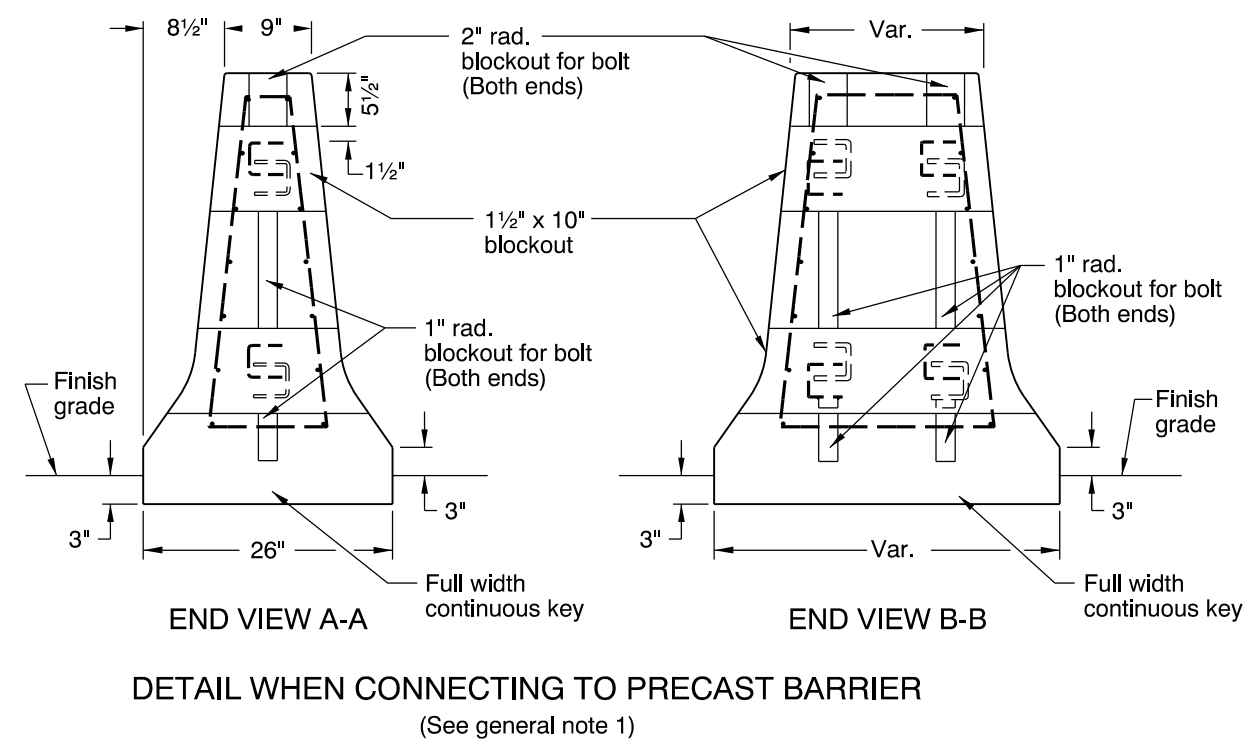
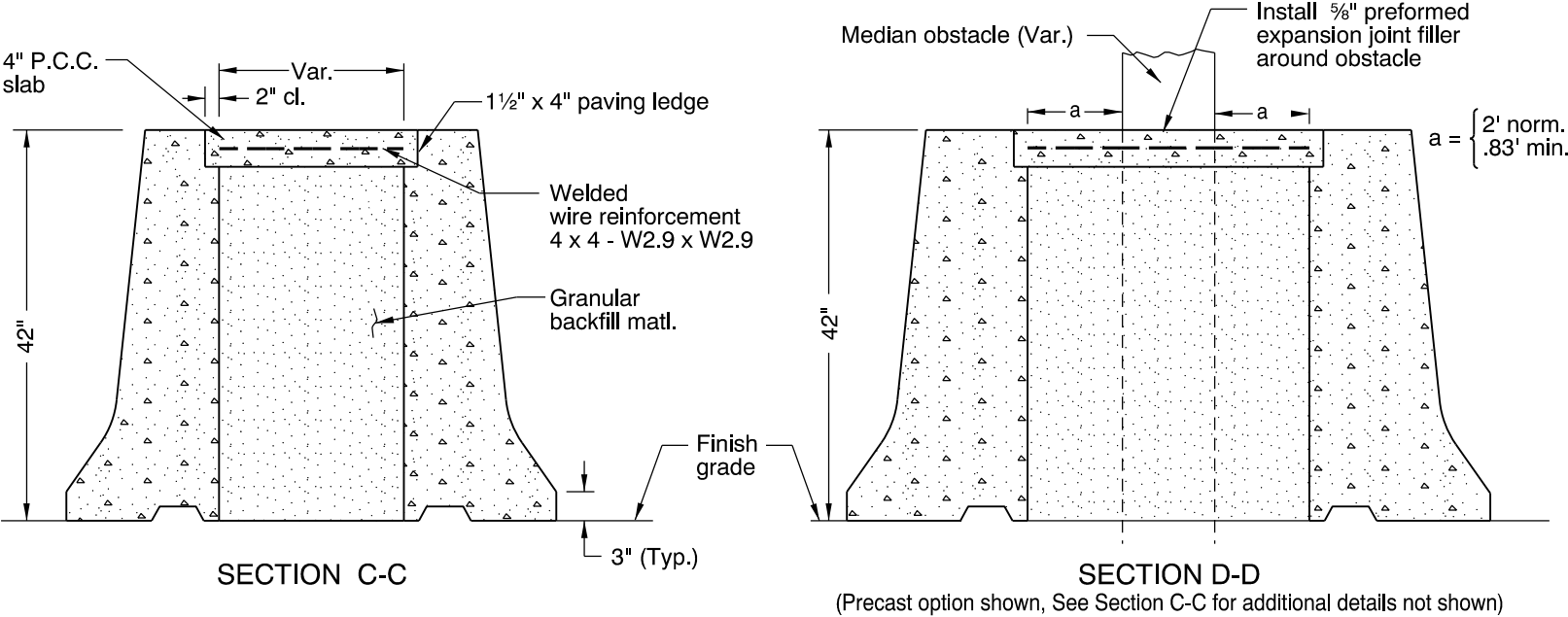
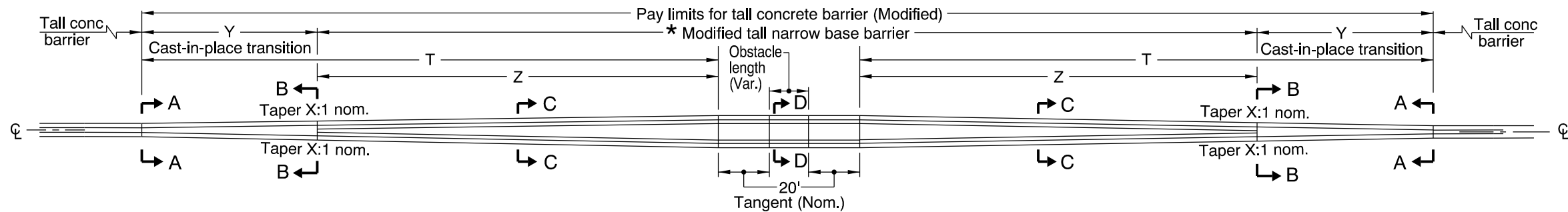
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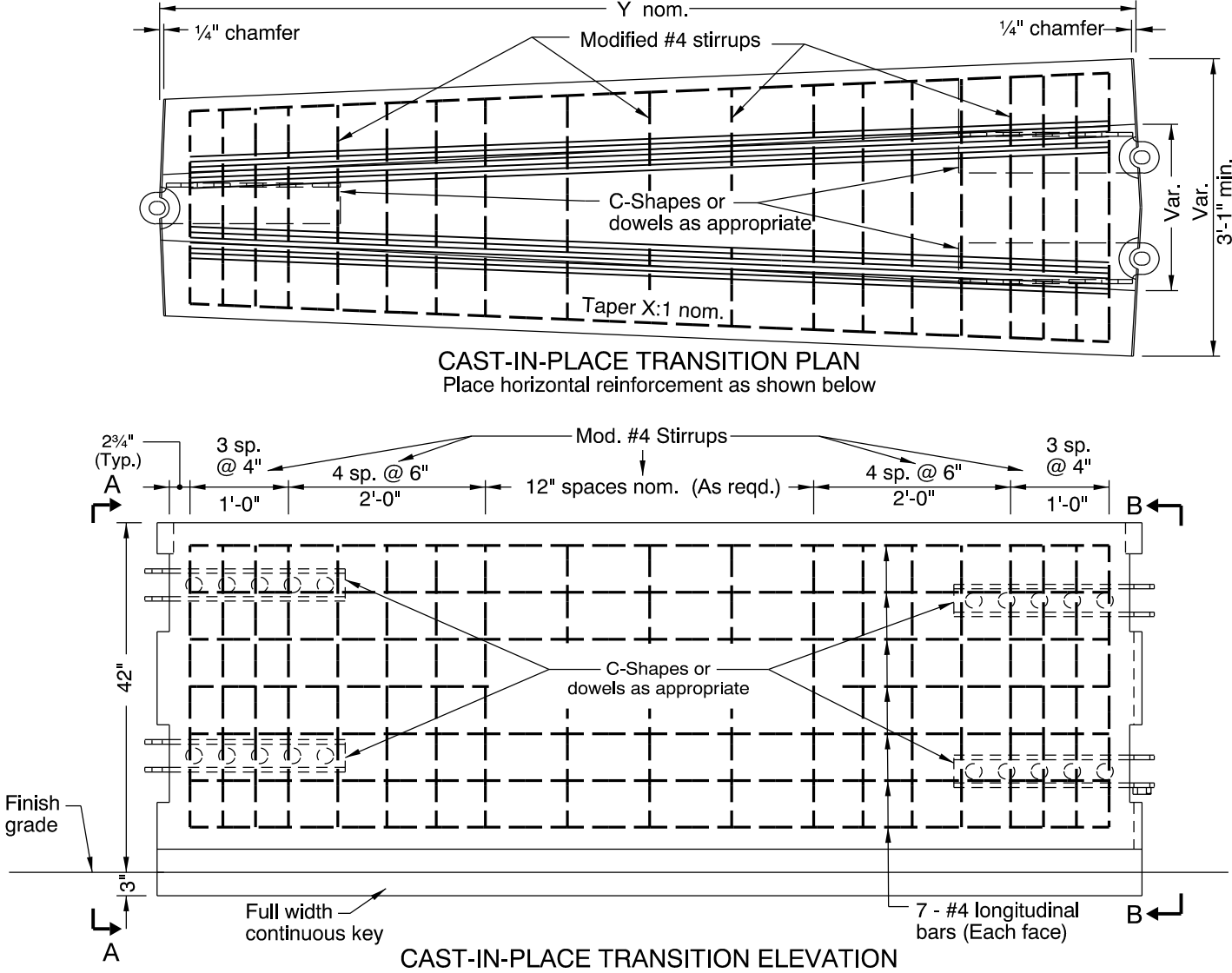
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| CALC. BOOK NO. <u>      </u> <b>N/A</b> <u>      </u>                                                                                                                                                                                                                         | BASELINE REPORT DATE <u>      </u> <b>10-JAN-2012</b> <u>      </u>                                       |                      |
| <p><i>The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.</i></p> | NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications |                      |
|                                                                                                                                                                                                                                                                               | <h2 style="text-align: center;">OREGON STANDARD DRAWINGS</h2>                                             |                      |
|                                                                                                                                                                                                                                                                               | <h1 style="text-align: center;">GUARDRAIL TRANSITION TO TALL CONCRETE BARRIER</h1>                        |                      |
|                                                                                                                                                                                                                                                                               | <h3 style="text-align: center;">2015</h3>                                                                 |                      |
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rd575.dgn 14-JUL-2014

RD575



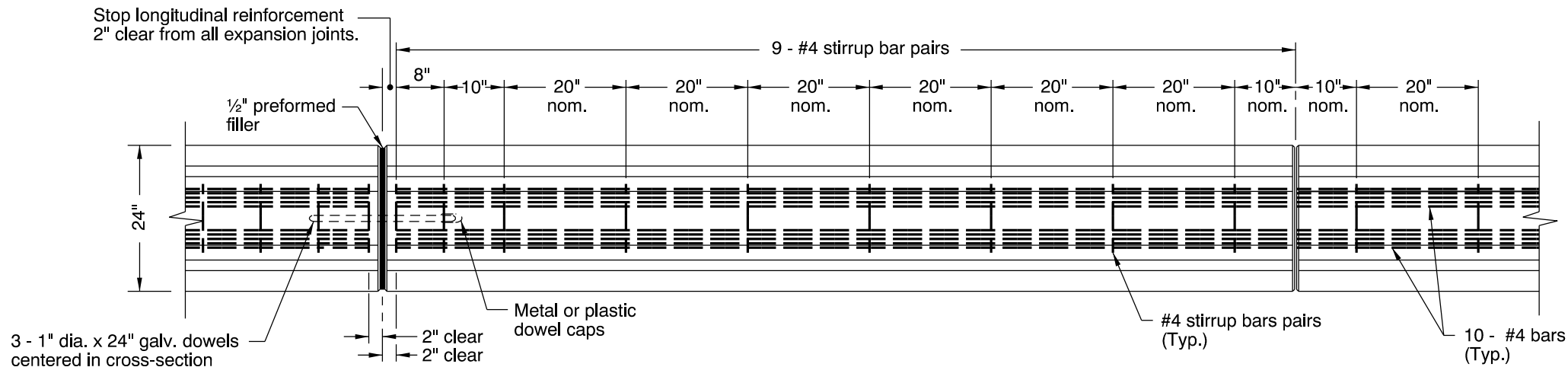
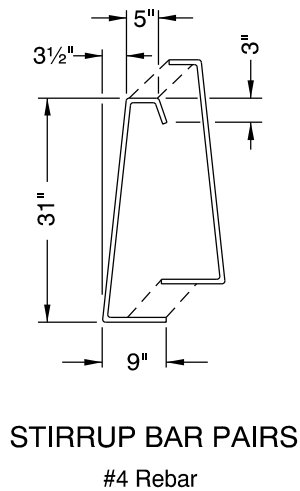
- GENERAL NOTES FOR ALL DETAILS:
- Field verify end configurations of connecting barriers prior to forming connections at transitions.
  - All reinforcing bars shall be full length as shown and shall be placed 1 1/2" clear of the nearest face of concrete unless shown otherwise.
  - See Std. Drg. RD545 for details not shown.
  - See Std. Drg. RD516 for securing concrete barrier to roadway.
  - All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.



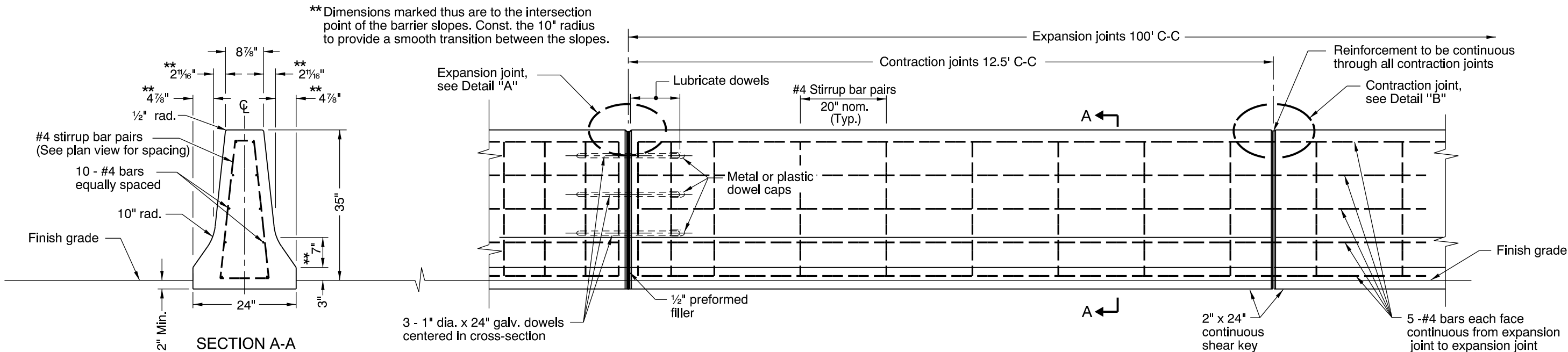
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| CALC. BOOK NO. N/A                                                                                        | BASELINE REPORT DATE 21-JUN-2010 |
| NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications |                                  |
| OREGON STANDARD DRAWINGS                                                                                  |                                  |
| TALL CONCRETE BARRIER (MODIFIED) AROUND MEDIAN OBSTACLE                                                   |                                  |
| 2015                                                                                                      |                                  |
| DATE                                                                                                      | REVISION DESCRIPTION             |
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rd590.dgn 14-JUL-2014

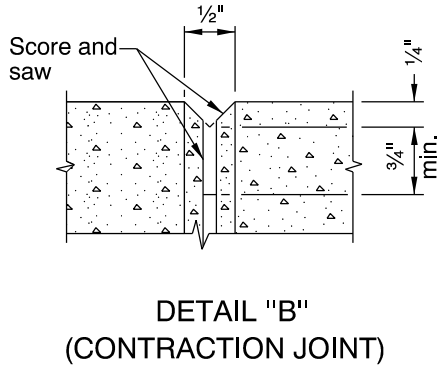
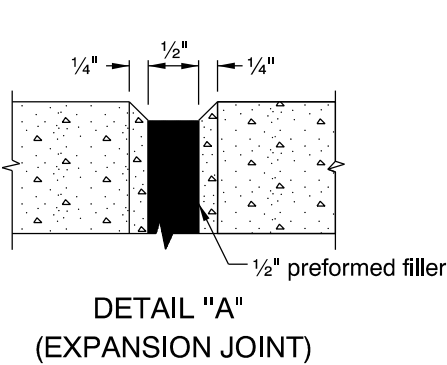
RD590



PLAN



ELEVATION



GENERAL NOTES FOR ALL DETAILS:

1. All reinforcement shall be 2" clear of nearest face of conc., unless otherwise shown.
  2. Reinforcement shown is the min. reqd. for all barriers in final position.
  3. Use of this barrier on ODOT facilities requires approval by the State Roadway Engineer.
  4. For slip-formed process:  
In addition to the reinforcement shown herein add cross-bracing both longitudinally and transversely, to keep the cage from moving during concrete placement.
- Tie all intersections of reinforcing bars.

To aid in holding the steel reinforcing bars in place, prior to slip-forming, place small amounts of concrete, each 2-cubic feet maximum, at 10-foot maximum intervals into the center of the reinforcing cage.  
Maintain the required 2-inches of reinforcement to the slip-form clearance.

CALC. BOOK NO. RD09-02

BASELINE REPORT DATE 19-JAN-2010

NOTE: All material and workmanship shall be in accordance with the current Oregon Standard Specifications

OREGON STANDARD DRAWINGS  
35" CONCRETE MEDIAN BARRIER  
CAST-IN-PLACE

2015

DATE REVISION DESCRIPTION

Effective Date: February 1, 2015 - May 31, 2015

RD590