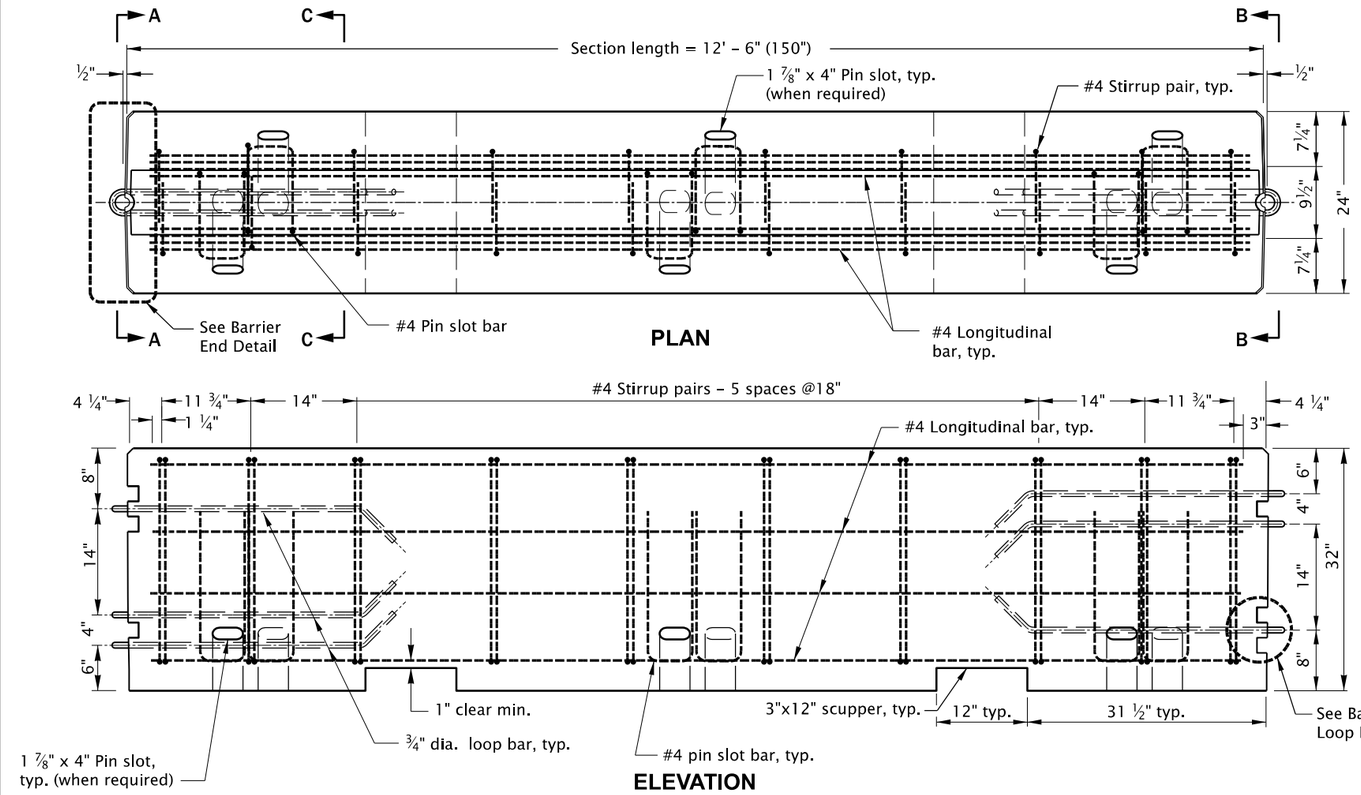
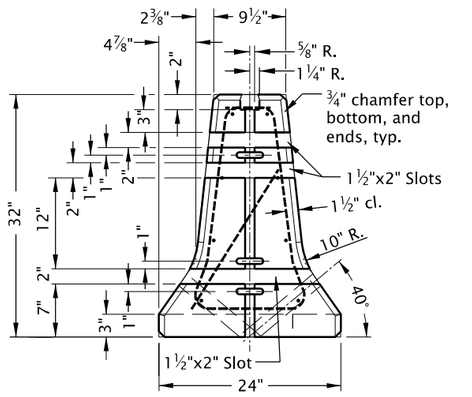
14-JUL-2023

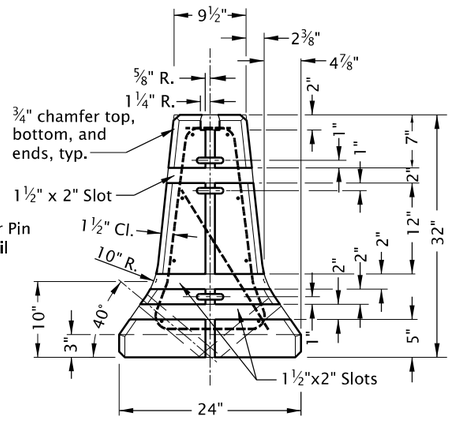
RD500.dgn



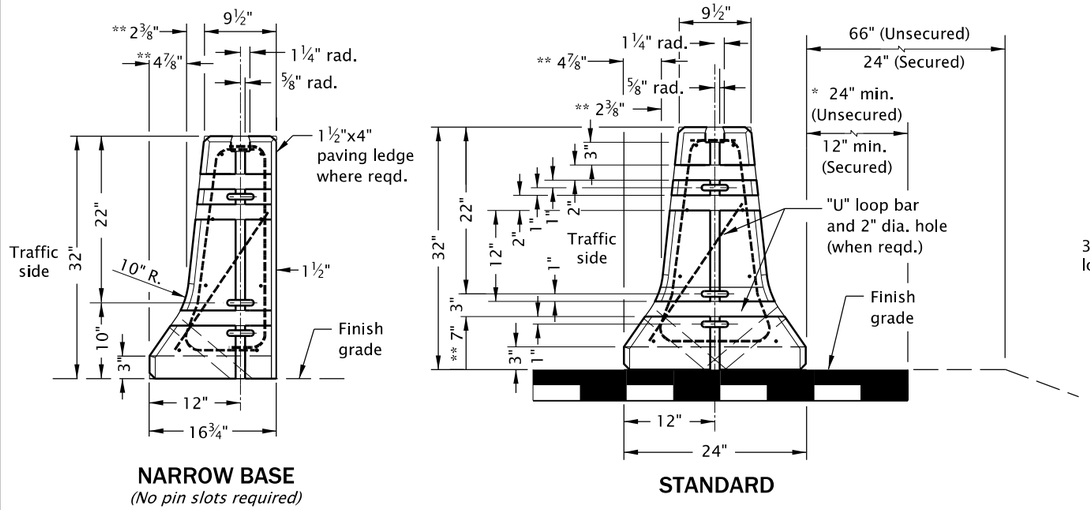
MEDIAN BARRIER



SECTION A-A



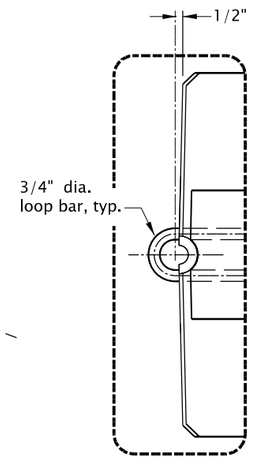
SECTION B-B



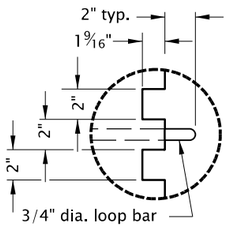
* Barrier used as shoulder barrier and placed in areas where these dimensions cannot be obtained shall be secured to roadway.

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

SHOULDER BARRIER



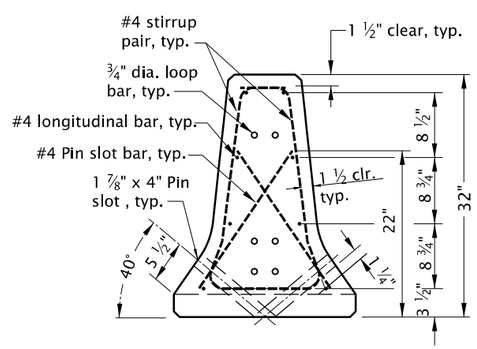
BARRIER END DETAIL



BARRIER PIN LOOP DETAIL

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. *See Std. Dwg. RD501 for details not shown. See Std. Dwg. RD502 for new permanent installations barrier anchoring details (when being anchored). See Std. Dwgs. Rd515 and RD516 for concrete barrier that is maintained for use in temporary installations.*
2. *Maximum chord length for curves with a 1425 foot radius or less shall be 12.5 feet. Maximum chord length for curves with radii exceeding 1425 feet shall be 25 feet.*
3. *Normal use of precast barrier units is restricted to curvatures with radii greater than 770 feet.*
4. *Narrow base shoulder barrier to be used only at locations with backfill behind barrier as shown on plans.*
5. *Temporary concrete barrier to be precast concrete median barrier with pin and loop assembly . See Std. Dwg. RD502.*
6. *Precast concrete barrier used in medians less than 8 feet in width shall be secured to roadway.*
7. *When scuppers are not required, plug them with a minimum 2 inches of grout, as directed.*
8. *All reinforcement shall be full length as shown and shall be 2 inches clear of nearest face of concrete, unless otherwise shown.*
9. *Concrete grout for grouting over pins, pinning holes or grouting of scuppers shall be portland cement grout, weak in strength and of thick consistency, as directed.*
10. *All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.*
11. *For temporary installations, provide a minimum of 18 inches of clear space behind the barrier if secured or 5.5 feet of clear space behind unsecured barrier. Place temporary barrier on smooth, solid surfacing. Maintain smooth, solid surfacing for the clear area behind temporary barrier.*



SECTION C-C

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

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

32" CONCRETE BARRIER TYPE "F" PRECAST

2024

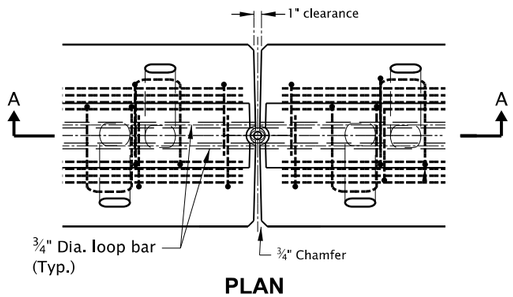
DATE	REVISION DESCRIPTION
01-2021	TITLE CHANGED, REVISED DETAILS AND NOTES
04-2021	REVISED DETAILS AND NOTES
12-2021	REVISED NOTES
06-2023	REVISED DETAILS AND NOTES

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **RD500**

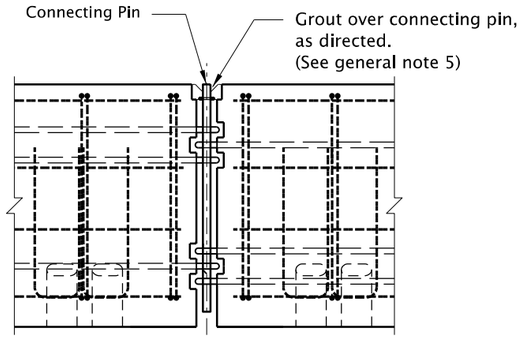
Effective Date: June 1, 2024 - November 30, 2024

19-JAN-2024

RD501.dgn

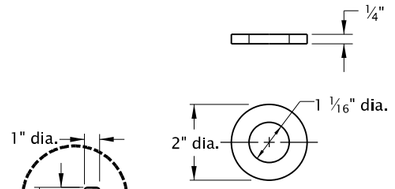


PLAN

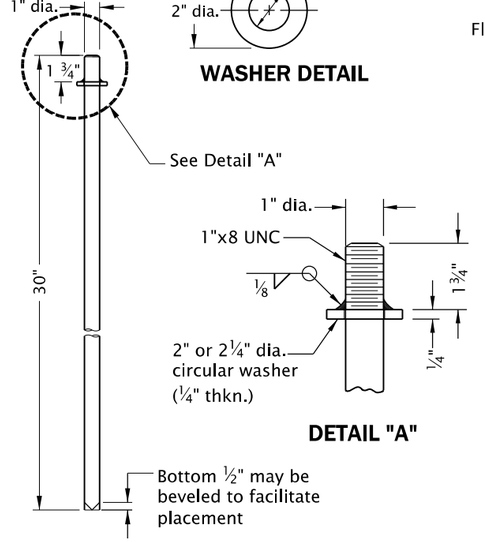


SECTION A-A

PIN AND LOOP CONNECTION

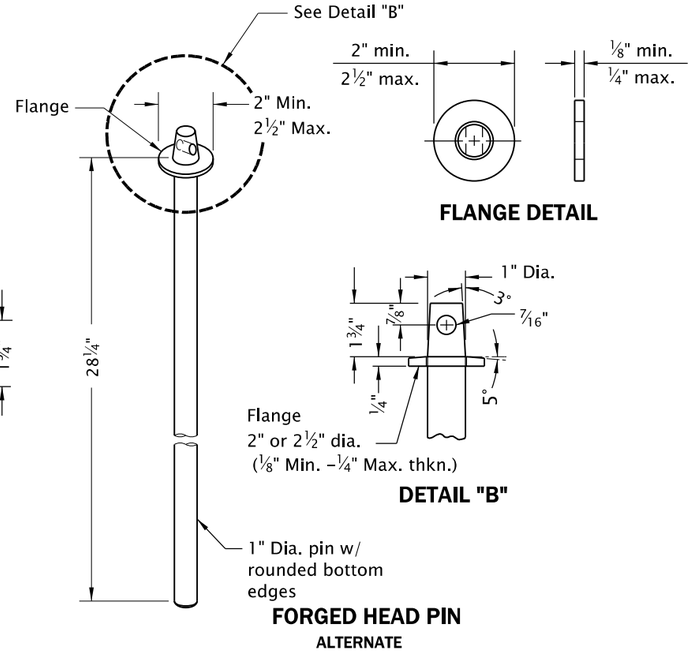


WASHER DETAIL



WELDED WASHER PIN

DETAIL "A"



FORGED HEAD PIN
ALTERNATE

FLANGE DETAIL

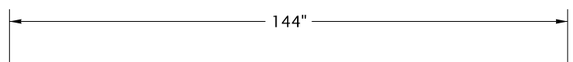
DETAIL "B"

CONNECTING PIN ASSEMBLY DETAIL

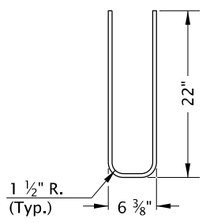
NOTE: Washer shall be forged as integral part of pin or shall be welded as shown.

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

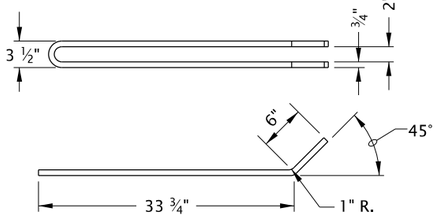
1. *See Std. Dwg. RD500 for details not shown. See Std. Dwg. RD502 for new permanent installations barrier anchoring details (when being anchored). See Std. Dwgs. RD515 and RD516 for concrete barrier that is maintained for use in temporary installations.*
2. *All reinforcement shall be full length as shown and shall be 2 inches clear of nearest face of concrete, unless otherwise shown.*
3. *Narrow base shoulder barrier to be used only at locations with backfill behind barrier as shown on plans.*
4. *Temporary concrete barrier to be precast concrete median barrier with pin and loop assembly. See Std. Dwg. RD502.*
5. *Concrete grout for grouting over pins, pinning holes or grouting of scuppers shall be portland cement grout, weak in strength and of thick consistency, as directed.*
6. *All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.*
7. *The reinforcing steel details for the "Narrow Base Shoulder Barrier" are the same as those shown for the 24 inch wide barrier except for the stirrup bars. See "Narrow Base Shoulder Barrier Stirrup" Detail.*
8. *Connecting pin head designs vary among different manufacturers. Pin designs that are shaped differently than those shown in the details are acceptable, if the bearing surface is within the minimum and maximum widths specified.*



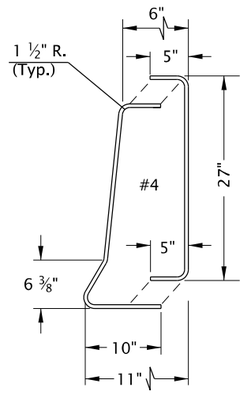
#4 LONGITUDINAL BAR



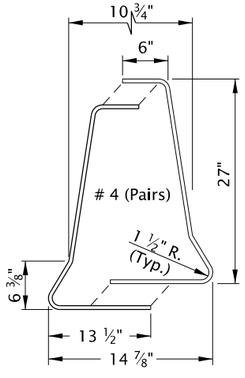
#4 PIN SLOT BAR
(When required)



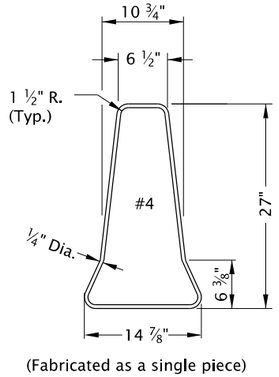
#4 LOOP BAR DETAIL



NARROW BASE
SHOULDER BARRIER STIRRUP "S"
(#4 Rebar)



ALTERNATE



(Fabricated as a single piece)

STANDARD

MEDIAN BARRIER STIRRUP "M"
(#4 Rebar)

REINFORCING STEEL BENDING DIAGRAM

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

32" CONCRETE BARRIER TYPE "F" PRECAST REINFORCING

2024

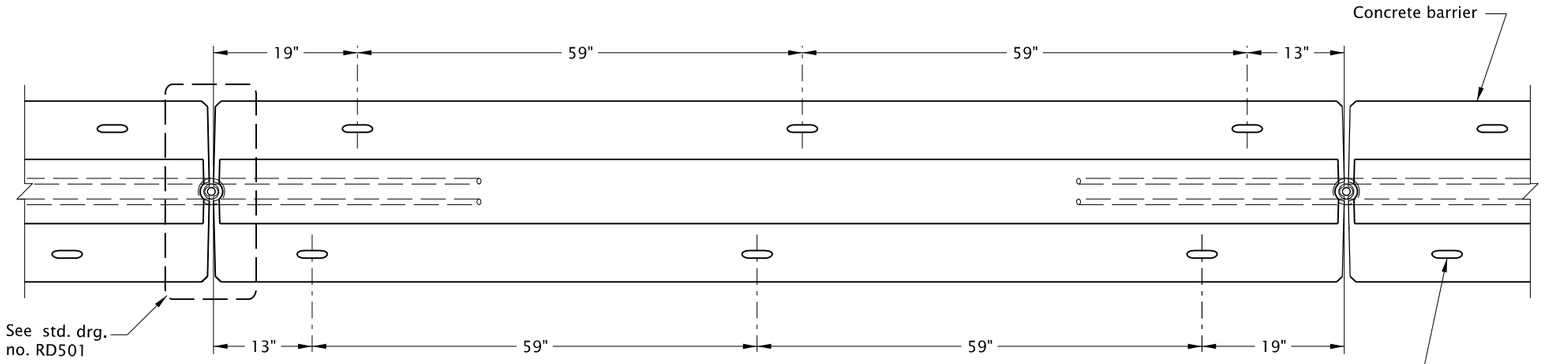
DATE	REVISION DESCRIPTION
01-2021	NEW DRAWING CREATED
07-2021	GENERAL ANNOTATION CLEANUP
06-2023	REVISED DETAILS AND NOTES
12-2023	GENERAL ANNOTATION CLEANUP

CALC. BOOK NO. N/A | SDR DATE 19-JAN-2024 | **RD501**

Effective Date: June 1, 2024 - November 30, 2024

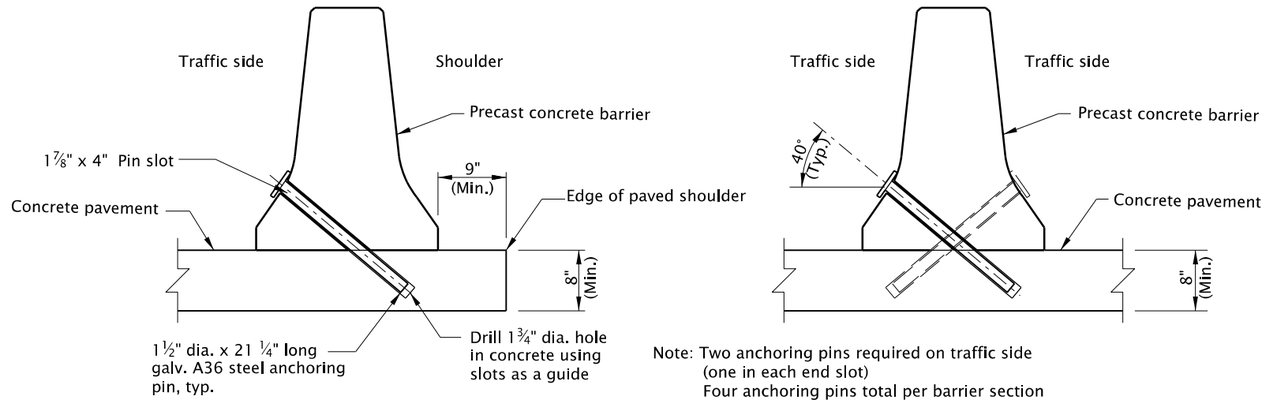
19-JAN-2024

RD502.dgn



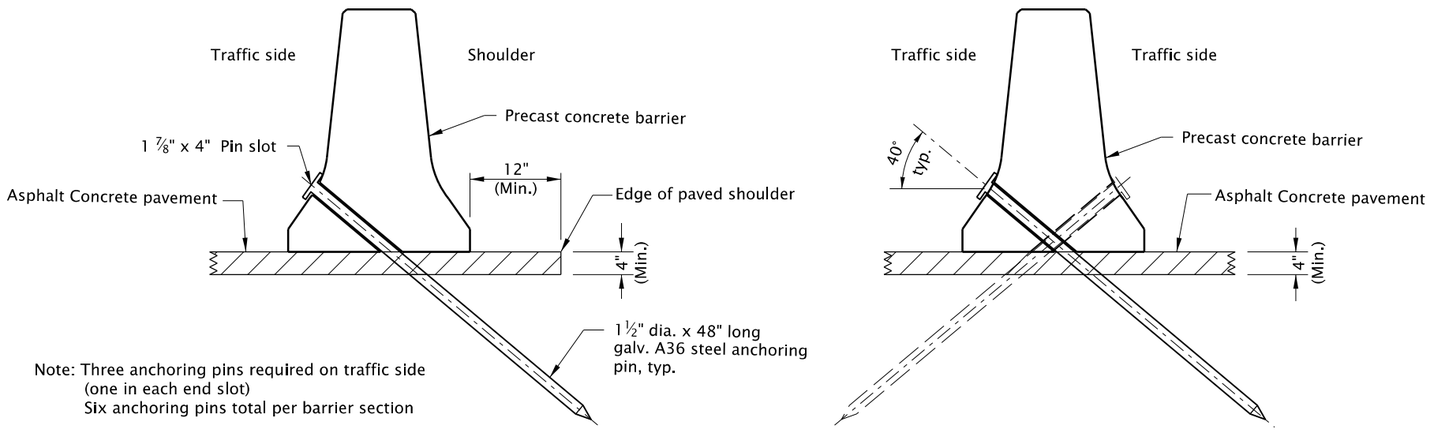
PLAN

CONCRETE BARRIER ANCHORING PIN LOCATIONS



Note: Two anchoring pins required on traffic side
(one in each end slot)
Four anchoring pins total per barrier section

CONCRETE ANCHORING PIN DETAILS



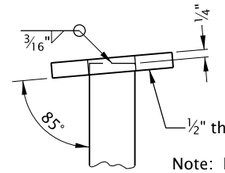
Note: Three anchoring pins required on traffic side
(one in each end slot)
Six anchoring pins total per barrier section

ASPHALT ANCHORING PIN DETAILS

METHODS OF SECURING CONCRETE BARRIER TO ROADWAY

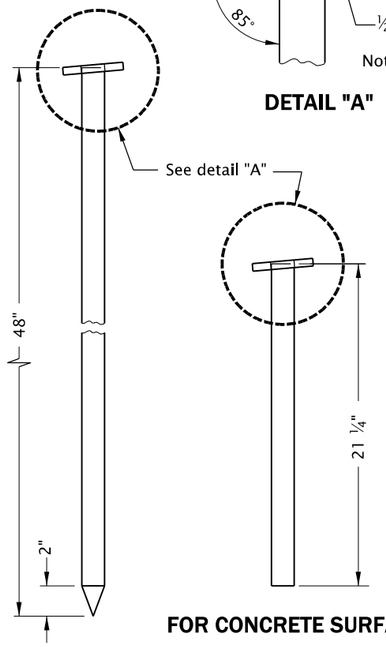
GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. *This drawing applies to new permanent installations of concrete barrier (when being anchored) to the roadway. See Std. Dwgs. RD515 and RD516 for concrete barrier that is maintained for use in temporary installations. See Std. Dwgs. RD500 and RD501 for details not shown.*
2. *Concrete grout for grouting over pins, pinning holes or grouting of scuppers shall be portland cement grout, weak in strength and of thick consistency, as directed.*
3. *All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.*



DETAIL "A"

Note: If desired, the plate may be welded top and bottom for applications where the pin will be pulled out later, such as in temporary installations.



FOR ASPHALT SURFACE

FOR CONCRETE SURFACE

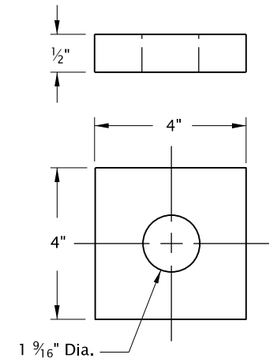


PLATE WASHER DETAIL

ANCHORING PIN ASSEMBLY DETAIL

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

SECURING 32" TYPE "F" AND TALL 42" PRECAST CONCRETE BARRIER TO THE ROADWAY

2024

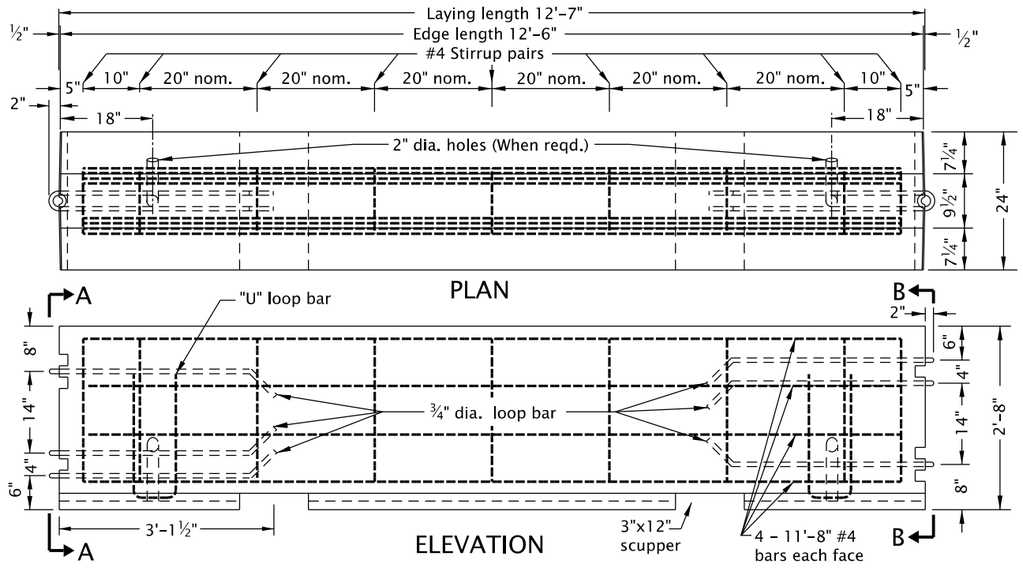
DATE	REVISION DESCRIPTION
10-2020	NEW DRAWING CREATED
01-2022	REVISED NOTES
01-2023	TITLE CHANGE
06-2023	REVISED NOTES AND DETAILS
12-2023	REVISED NOTES AND DETAILS

CALC. BOOK NO. N/A | SDR DATE 19-JAN-2024 | **RD502**

Effective Date: June 1, 2024 – November 30, 2024

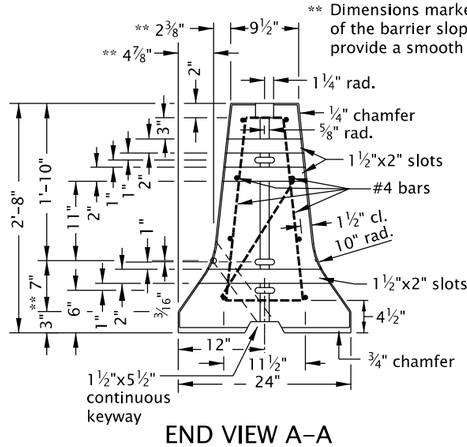
14-JUL-2023

RD503.dgn

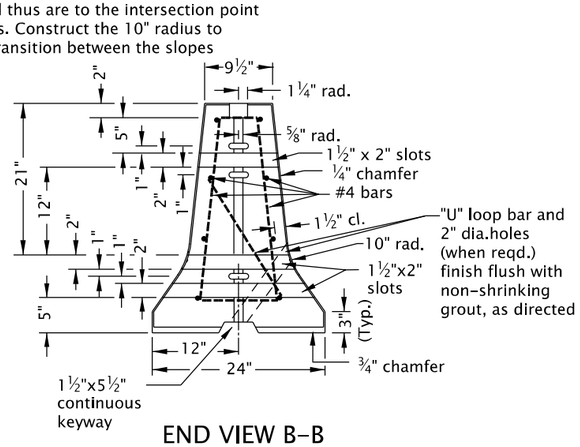


MEDIAN BARRIER

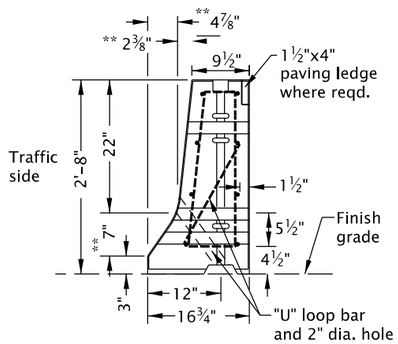
** Dimensions marked thus are to the intersection point of the barrier slopes. Construct the 10" radius to provide a smooth transition between the slopes



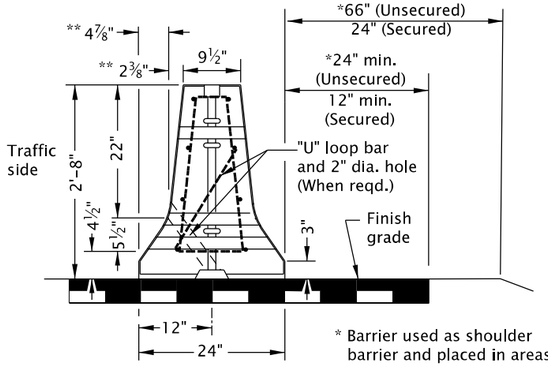
END VIEW A-A



END VIEW B-B



(NARROW BASE)



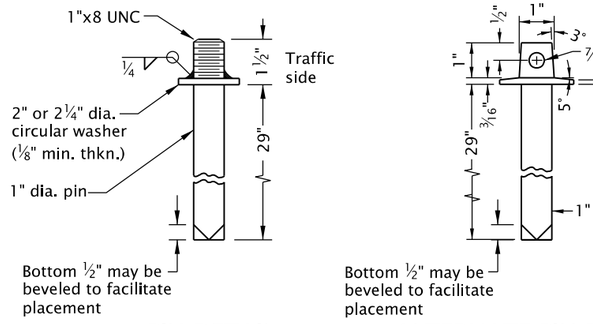
(STANDARD)

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

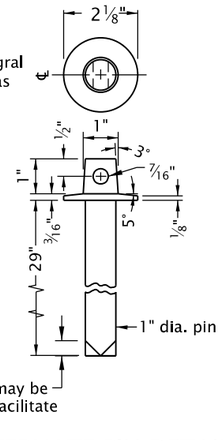
SHOULDER BARRIER

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

PIN NOTES:
1. Washer shall be forged as integral part of pin or shall be welded as shown.

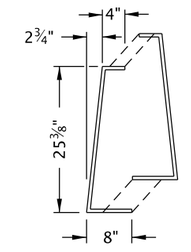


PIN DETAIL

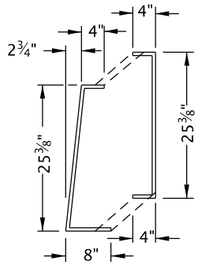


ALTERNATE PIN DETAIL

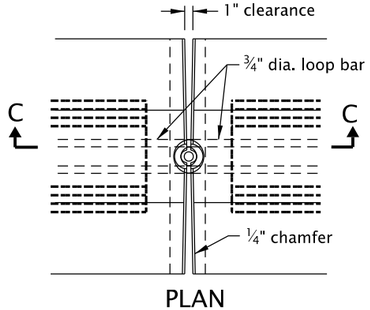
STANDARD BARRIER PIN



STIRRUP "M"
(MEDIAN BARRIER)
#4 Rebar

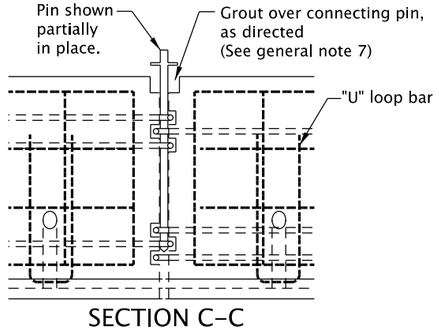


STIRRUP "S"
(SHOULDER BARRIER)
#4 Rebar



PLAN

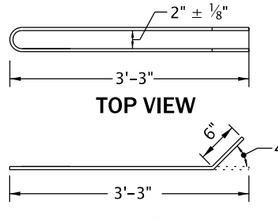
For details not shown, see End Views A-A and B-B



SECTION C-C

For details not shown, see End Views A-A and B-B

PIN AND LOOP CONNECTION

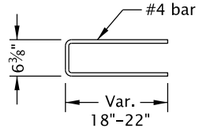


TOP VIEW

SIDE VIEW

LOOP BAR ¾" DIA.

LOOP BAR DETAIL



"U' LOOP BAR DETAIL

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. *THIS DRAWING IS RETAINED FOR TEMPORARY INSTALLATION AND MAINTENANCE PURPOSES ONLY. DO NOT USE FOR NEW PERMANENT INSTALLATIONS.*
2. *Maximum chord length for curves with a 1425 foot radius or less shall be 12.5 feet. Maximum chord length for curves with radii exceeding 1425 feet shall be 25 feet.*
3. *Normal use of precast barrier units is restricted to curvatures with radii greater than 770 feet.*
4. *Narrow base shoulder barrier to be used only at locations with backfill behind barrier as shown on plans.*
5. *Temporary concrete barrier to be precast concrete median barrier with pin and loop assembly.*
6. *When scuppers are not required, plug them with a minimum 2 inches of grout, as directed.*
7. *Concrete grout for grouting over pins, pinning holes or grouting of scuppers shall be Portland cement grout, weak in strength and of thick consistency, as directed.*
8. *Precast concrete barrier used in medians less than 8 feet in width shall be secured to roadway. See Std. Dwgs. RD515 and RD516 for details. See Std. Dwg. RD502 for new installations barrier anchoring details (when being anchored). See Std. Dwgs.RD515 and RD516 for concrete barrier that is maintained for use in temporary installations.*
9. *All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.*
10. *For temporary installations, provide a minimum of 18 inches of clear space behind the barrier if secured or 5.5 feet of clear space behind unsecured barrier. Place temporary barrier on smooth, solid surfacing. Maintain smooth, solid surfacing for the clear area behind temporary barrier.*
11. *All reinforcement shall be full length as shown and shall be 2 inches clear of nearest face of concrete, unless otherwise shown.*

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

PRECAST CONCRETE BARRIER PIN AND LOOP ASSEMBLY FOR TEMPORARY INSTALLATION AND MAINTENANCE PURPOSES ONLY

2024

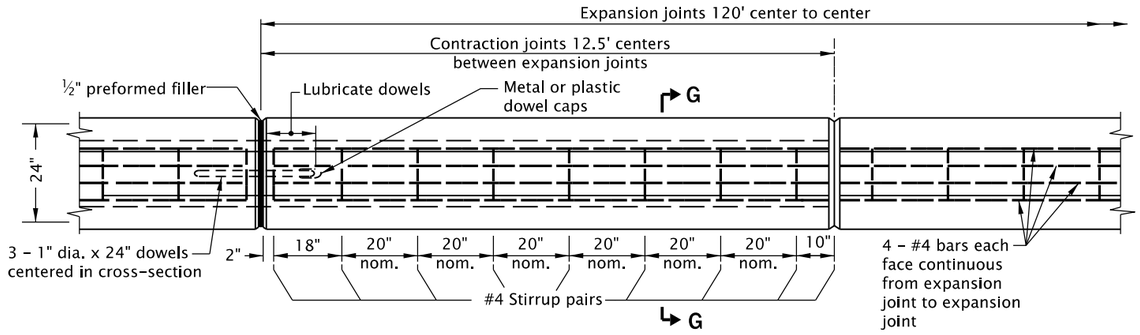
DATE	REVISION DESCRIPTION
04-2021	REVISED DETAILS AND NOTES
12-2021	REVISED NOTES
06-2023	REVISED NOTES, DETAILS AND TITLE CHANGE

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **RD503**

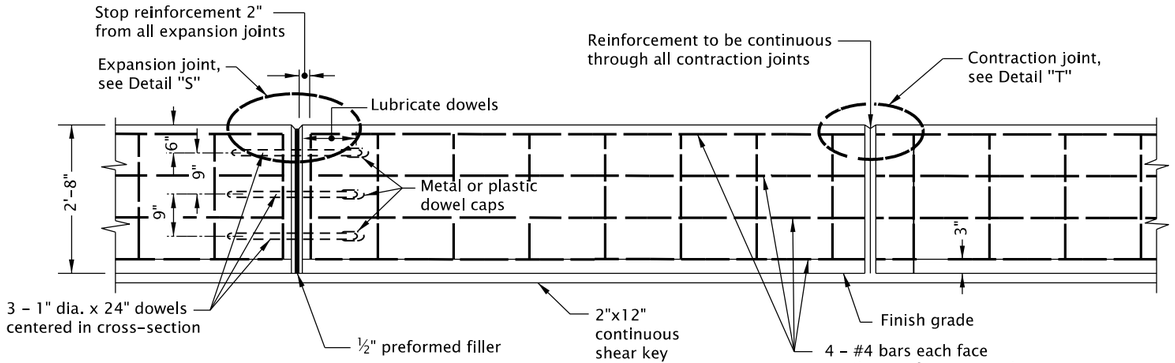
Effective Date: June 1, 2024 - November 30, 2024

14-JUL-2023

RD505.dgn



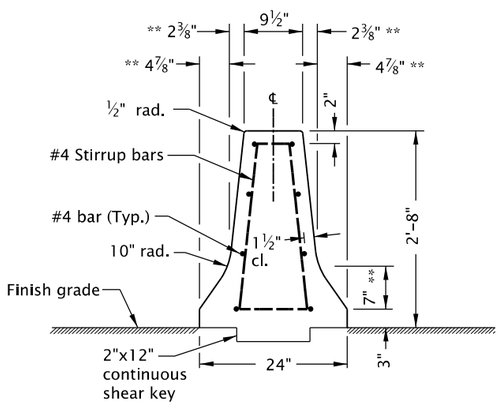
PLAN



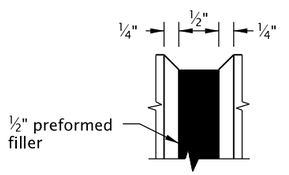
ELEVATION

MEDIAN BARRIER

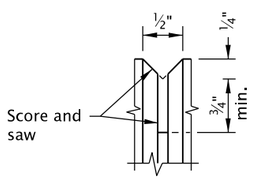
** Dimensions marked thus are to the intersection point of the barrier slopes. Const. the 10" radius to provide a smooth transition between the slopes.



SECTION G-G

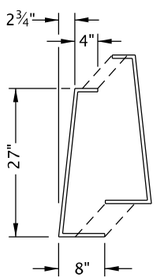


DETAIL "S"
(EXPANSION JOINT)



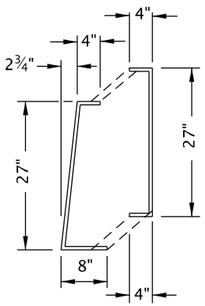
DETAIL "T"
(CONTRACTION JOINT)

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



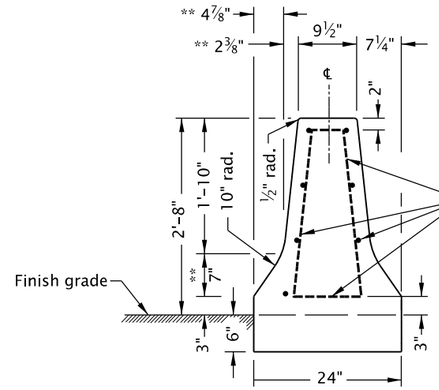
STIRRUP "M"

MEDIAN BARRIER
#4 Rebar

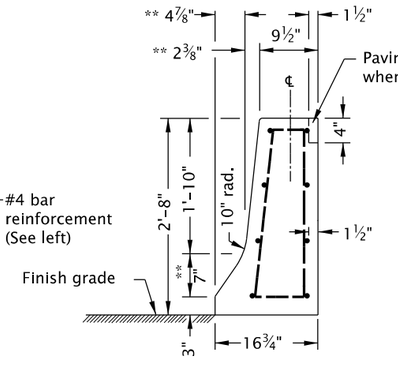


STIRRUP "S"

SHOULDER BARRIER
#4 Rebar



(STANDARD)



(NARROW BASE)

SHOULDER BARRIER

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. *All reinforcement shall be 2 inches clear of nearest face of concrete unless otherwise shown.*
2. *Narrow base shoulder barrier to be used only at locations with backfill behind barrier as shown on plans.*
3. *Reinforcement shown is the minimum required for all barriers in final position.*
4. *See Std. Dwg. RD502 for new permenent installations barrier anchoring details (when being anchored). See Std. Dwgs. RD515 and RD516 for concrete barrier that is maintained for use in temporary installations.*
5. *All pins, bolts, dowels, loop bars, and connectors when present shall be hot-dip galvanized after fabrication.*

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

CONCRETE BARRIER CAST-IN-PLACE

2024

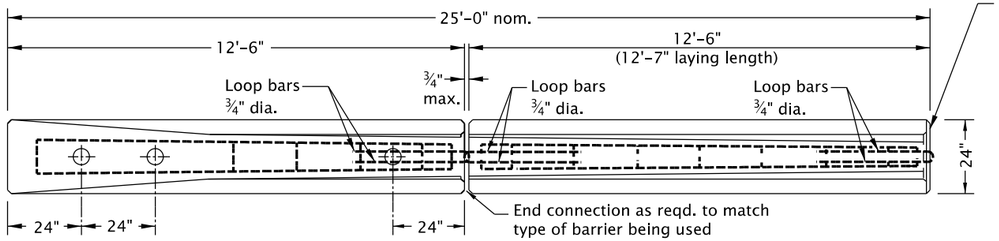
DATE	REVISION DESCRIPTION
06-2023	REVISED NOTES AND DETAILS

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **RD505**

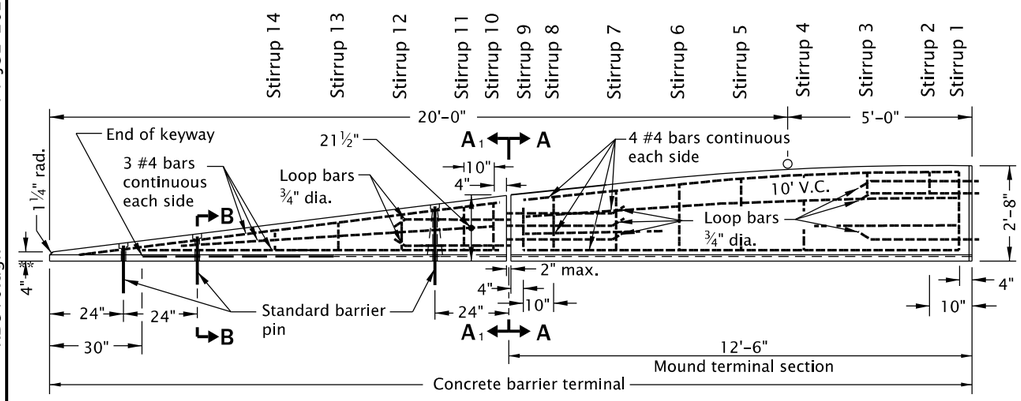
Effective Date: June 1, 2024 - November 30, 2024

14-JUL-2023

RD510.dgn

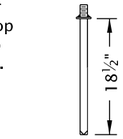


PLAN

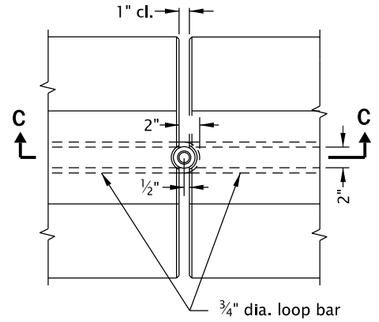


ELEVATION

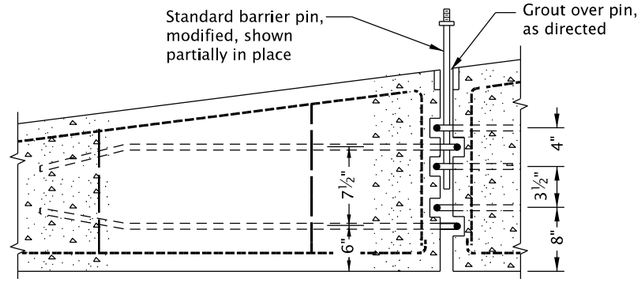
Space #4 Stirrup pairs at 21½" nom., unless otherwise shown.



MODIFIED BARRIER PIN

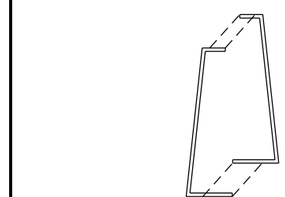


PLAN

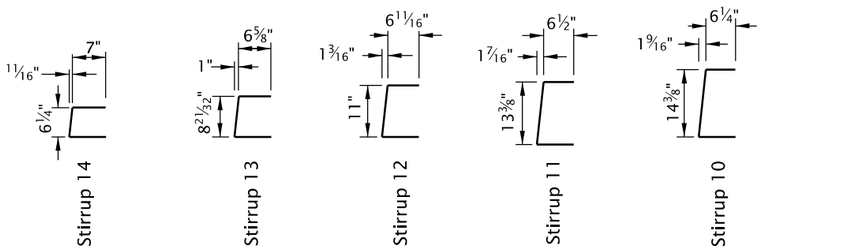


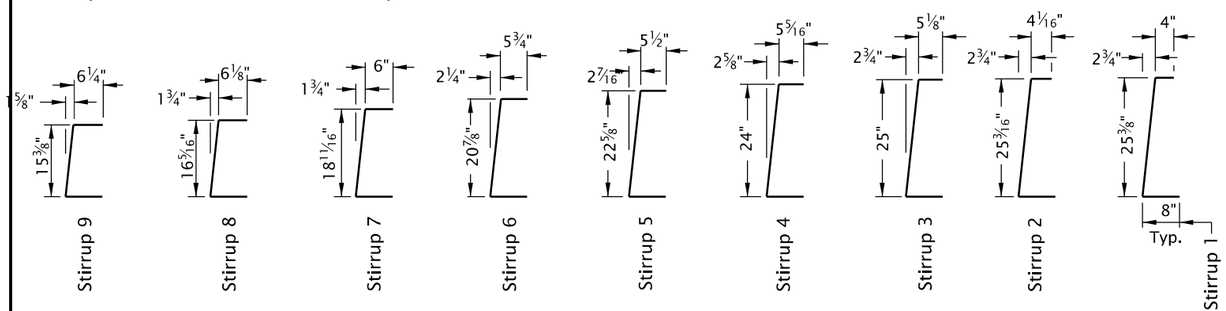
SECTION C-C

PIN AND LOOP CONNECTION



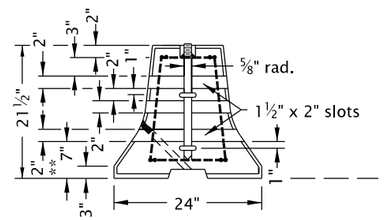
#4 STIRRUP PAIRS (DIMENSIONS VARIABLE)



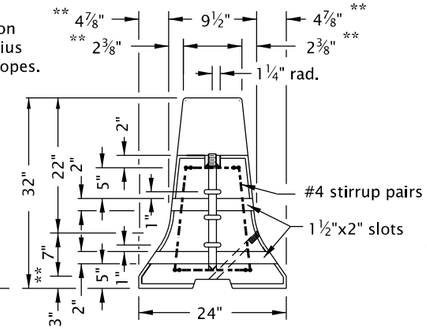


#4 STIRRUP DETAILS

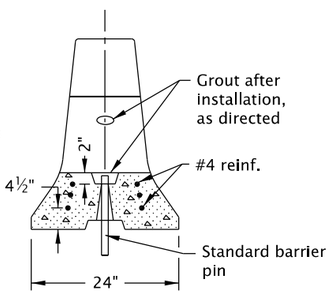
** Dimensions marked thus are to the intersection point of the barrier slopes. Const. the 10" radius to provide a smooth transition between the slopes.



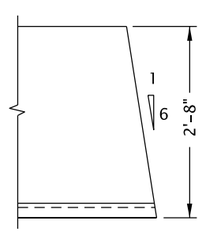
SECTION A1- A1



SECTION A-A



SECTION B-B



ALTERNATE ELEVATION TRAILING END TERMINAL

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 first consulting a Registered Professional Engineer.

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. *See appropriate concrete barrier standard drawings for details not shown. See Std. Dwg. RD502 for new permanent installations barrier anchoring details (when being anchored). See Std. Dwgs. RD515 and RD516 for concrete barrier that is maintained for use in temporaty installations.*
2. *All reinforcement shall be full length as shown and shall be 2 inches clear of nearest face of concrete, unless otherwise shown.*
3. *Reinforcing shown is the minimum required for all barriers in final position. Additional reinforcing may be used to facilitate production, handling and installation of "precast" units at the contractor's option and responsibility.*
4. *All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.*
5. *For use only where the design speed is less than 45 mph and the end is outside the required clear zone.*

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

CONCRETE BARRIER TERMINAL FOR POSTED SPEED 45 MPH AND BELOW

2024

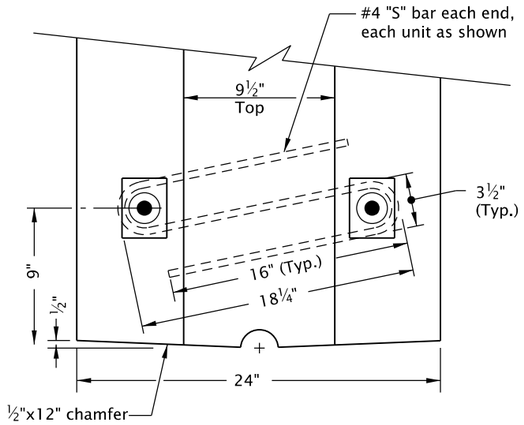
DATE	REVISION DESCRIPTION
12-2021	REVISED NOTES
06-2023	REVISED DETAILS, NOTES AND TITLE CHANGE

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **RD510**

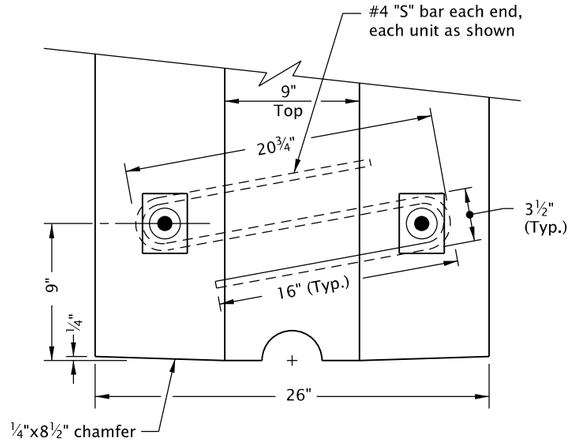
Effective Date: June 1, 2024 – November 30, 2024

MEDIAN CONCRETE BARRIER ANCHORING DETAILS

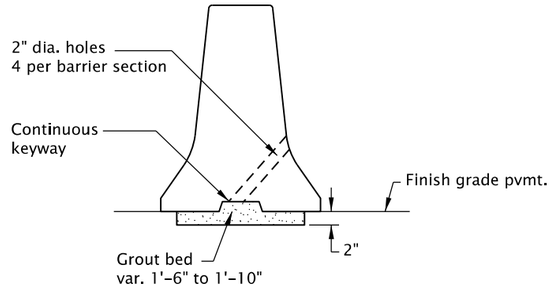
(See general note 1)



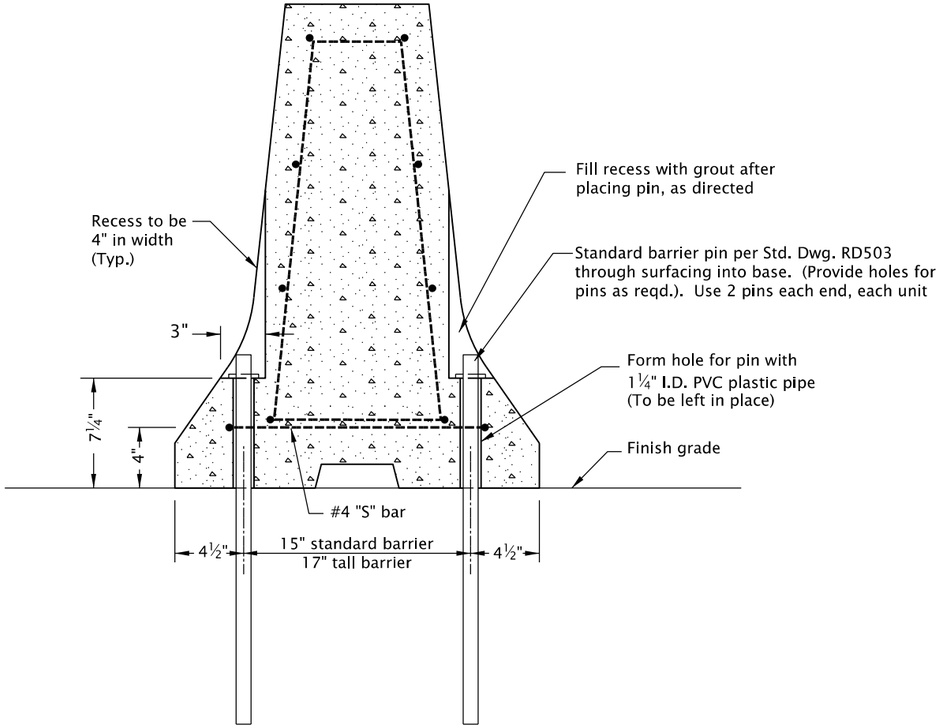
PLAN VIEW AT S BAR STANDARD BARRIER



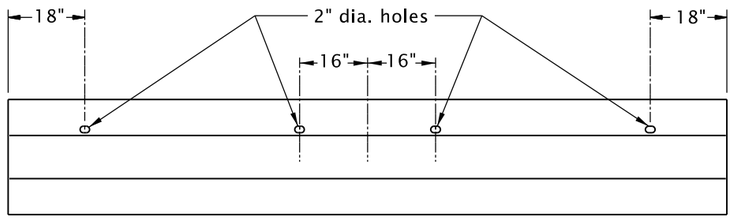
PLAN VIEW AT S BAR TALL BARRIER



GROUT DETAIL FOR PRECAST CONCRETE BARRIER



ELEVATION VIEW AT ANCHOR RODS SECURING TO PAVEMENT OPTION



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 ON THIS SHEET:

1. *THIS DRAWING IS RETAINED FOR TEMPORARY INSTALLATION AND MAINTENANCE PURPOSES ONLY. DO NOT USE FOR PERMANENT INSTALLATIONS.*
2. *All reinforcement shall be full length as shown and shall be 2 inches clear of nearest face of concrete, unless otherwise shown.*
3. *For use in medians with width less than 8 feet (as measured between nearest fog lines).*
4. *See Std. Dwgs. RD503 and RD546 for reinforcement and other details not shown. See Std. Dwg. RD516 for securing concrete barrier to roadway.*
5. *All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.*
6. *"S" bars to be full length as shown.*

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

MEDIAN BARRIER ANCHORING DETAILS FOR TEMPORARY INSTALLATION AND MAINTENANCE PURPOSES ONLY

2024

DATE	REVISION DESCRIPTION
07-2022	REVISED DETAILS AND NOTES
01-2023	REVISED NOTES
06-2023	REVISED NOTES AND TITLE CHANGE

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **RD515**

Effective Date: June 1, 2024 – November 30, 2024

14-JUL-2023

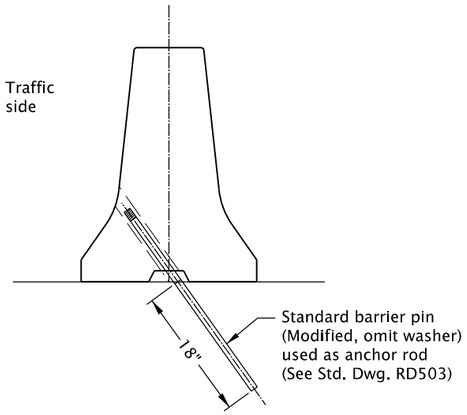
RD515.dgn

14-JUL-2023

RD516.dgn

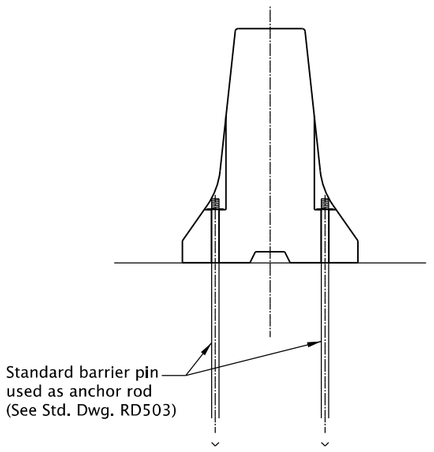
METHODS OF SECURING PRECAST CONCRETE BARRIER TO ROADWAY

(See general note 1)



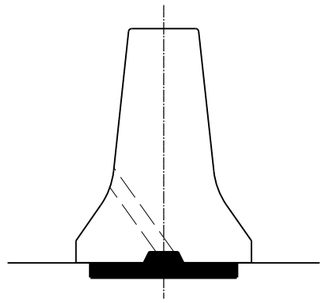
SHOULDER INSTALLATION
Secured using anchor rods (Angled)
Not allowed in narrow medians, see general notes 1 and 6

PRECAST CONCRETE BARRIER
(See Std. Dwg. RD503)



MEDIAN INSTALLATION
Secured using anchor rods (Vertical)
(See general note 1)

PRECAST CONCRETE BARRIER
(See Std. Dwgs. RD503 & RD515)



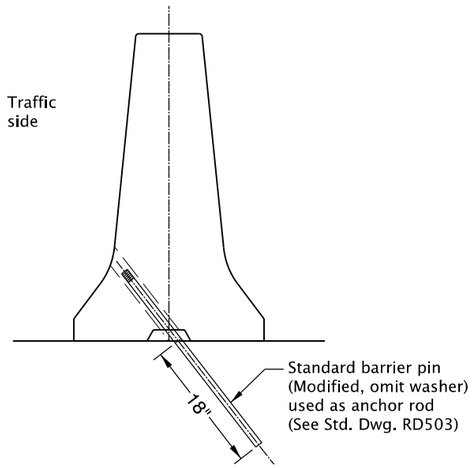
THIS DETAIL IS RETAINED FOR MAINTENANCE PURPOSES.

SHOULDER OR MEDIAN INSTALLATION
Secured using grout
(See general note 1)

PRECAST CONCRETE BARRIER
(See Std. Dwg. RD503)

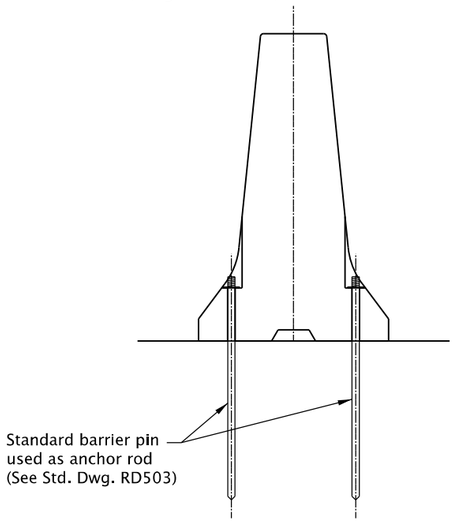
METHODS OF SECURING PRECAST TALL (42") CONCRETE BARRIER TO ROADWAY

(See general note 1)



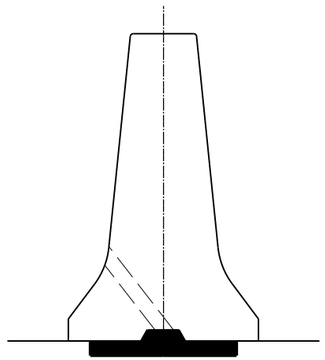
SHOULDER INSTALLATION
Secured using anchor rods (Angled) not allowed in narrow medians, see general notes 1 and 6

PRECAST TALL (42") CONCRETE BARRIER
(See Std. Dwgs. RD545 and RD546)



MEDIAN INSTALLATION
Secured using anchor rods (Vertical)
(See general note 1)

PRECAST TALL (42") CONCRETE BARRIER
(See Std. Dwgs. RD545 and RD515)



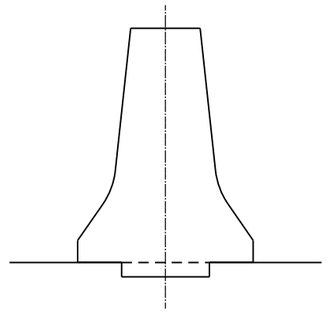
THIS DETAIL IS RETAINED FOR MAINTENANCE PURPOSES.

SHOULDER OR MEDIAN INSTALLATION
Secured using grout
(See general note 1)

PRECAST TALL (42") CONCRETE BARRIER
(See Std. Dwgs. RD545 and RD546)

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. *THIS STANDARD DRAWING IS INTENDED TO SHOW ACCEPTABLE METHODS OF SECURING CONCRETE BARRIER TO ROADWAY FOR TEMPORARY INSTALLATION AND MAINTENANCE PURPOSES ONLY. DO NOT USE FOR NEW PERMANENT INSTALLATIONS. See appropriate guardrail standard drawings) for details not shown.*
2. *Secure concrete barrier to roadway when any of the following conditions exist:*
   - *a) Barrier deflection requirements per Std. Dwg. RD503 cannot be obtained, or*
   - *b) When required by plans, or*
   - *c) As directed by the Engineer.*
3. *Select one of the securing methods shown. For details not shown, see the standard drawing(s) referenced for the selected method.*
4. *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.*
5. *Temporary concrete barrier to be precast concrete median barrier with pin and loop assembly.*
6. *Precast concrete barrier used in medians less than 8 feet in width (as measured between nearest fog lines) shall be secured to roadway to resist impacts from both sides.*
7. *Anchor rods are standard barrier pins, modified for shoulder installation, as shown.*
8. *Normal permanent installation of concrete barrier is on top of finish grade, to provide 3 inch vertical reveal. Modify placement when required by plans, or as directed.*
9. *All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.*



SHOULDER OR MEDIAN INSTALLATION
Secured by continuous shear key
(See general note 1)

METHODS OF SECURING CAST-IN-PLACE CONCRETE BARRIER TO ROADWAY
(See Std. Dwg. RD505)

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

SECURING CONCRETE BARRIER TO ROADWAY FOR TEMPORARY INSTALLATION AND MAINTENANCE PURPOSES ONLY

2024

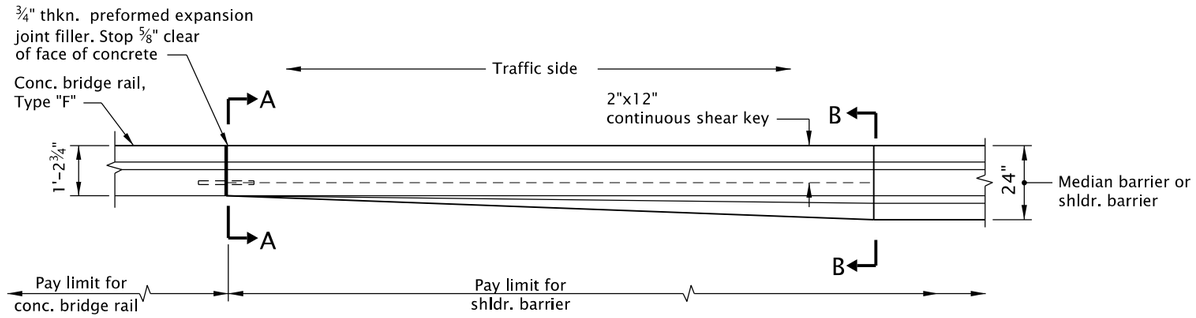
DATE	REVISION DESCRIPTION
01-2023	REVISED NOTES
06-2023	REVISED NOTES AND TITLE CHANGE

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **RD516**

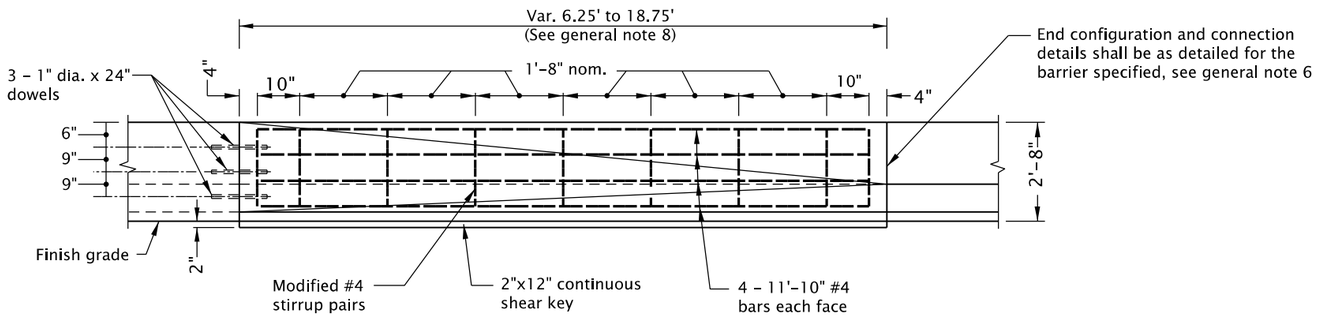
Effective Date: June 1, 2024 - November 30, 2024

14-JUL-2023

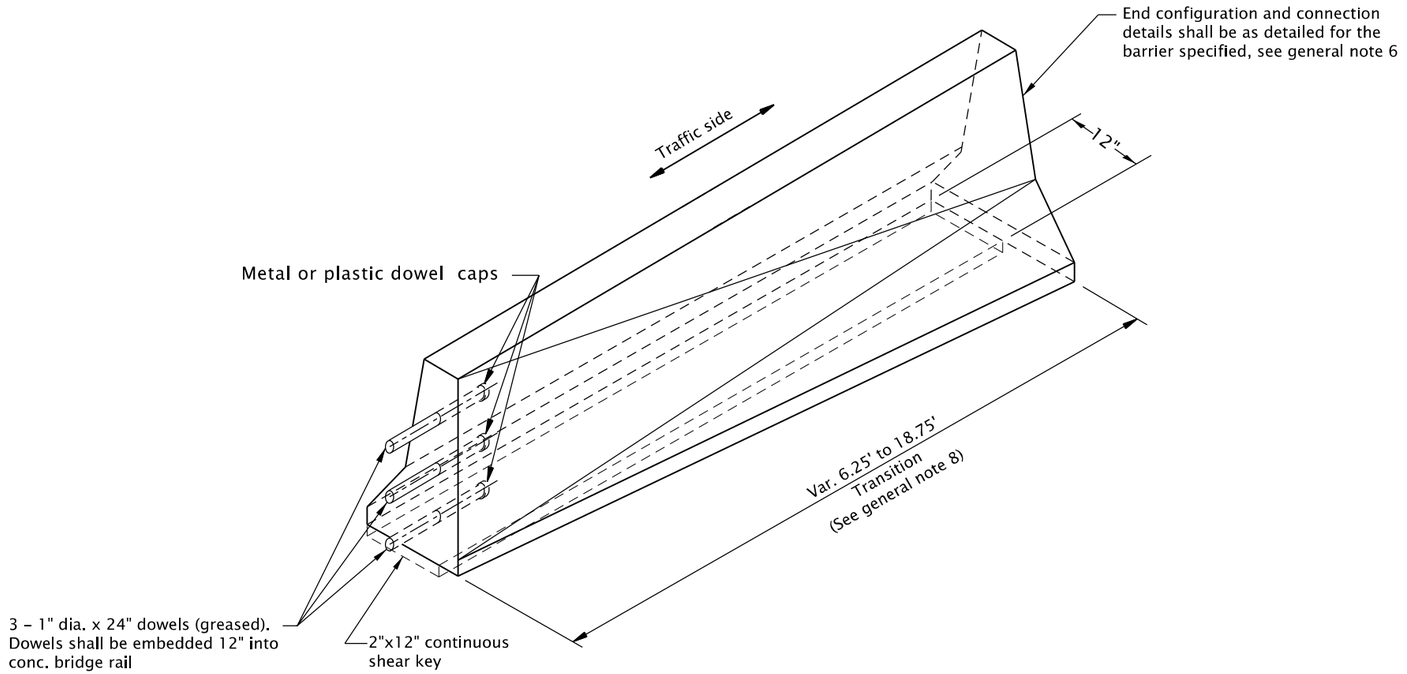
RD520.dgn



PLAN



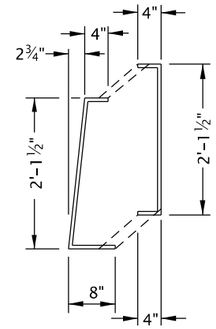
ELEVATION



CAST IN PLACE TRANSITION
(Looking at side away from traffic)

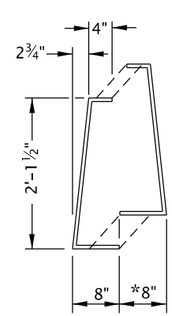
GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. *See Std. Dwgs. RD500 and RD505 for details not shown. See Std. Dwg. RD502 for new permanent installations barrier anchoring details (when being anchored). See Std. Dwgs. RD515 anad RD516 for securing concrete barrier that is maintained for use in temporary installations.*
2. *All reinforcing shall be full length as shown and shall be 2 inches clear of nearest face of concrete, unless otherwise shown.*
3. *See Std. Dwg. BR200 for Concrete Bridge Rail, Type "F".*
4. *All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.*
5. *Not for use on bridge end panel.*
6. *Field verify end configurations of connecting barriers prior to forming connections at transitions. Dowelled connection is an acceptable alternative. See Std. Dwg. RD505 for details not shown.*
7. *Normal length for cast-in-place transition is 12 foot 6 inches. Site conditions may require varying lengths between 6 foot 3 inch and 18 foot 9 inch. Field verify transition length and end configurations of connecting barriers.*



SECTION A-A
#4 Rebar

MODIFIED STIRRUP PAIR



SECTION B-B
#4 Rebar

MODIFIED STIRRUP PAIR

*Dimension variable through transition section.

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 first consulting a Registered Professional Engineer.

All materials 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"

2024

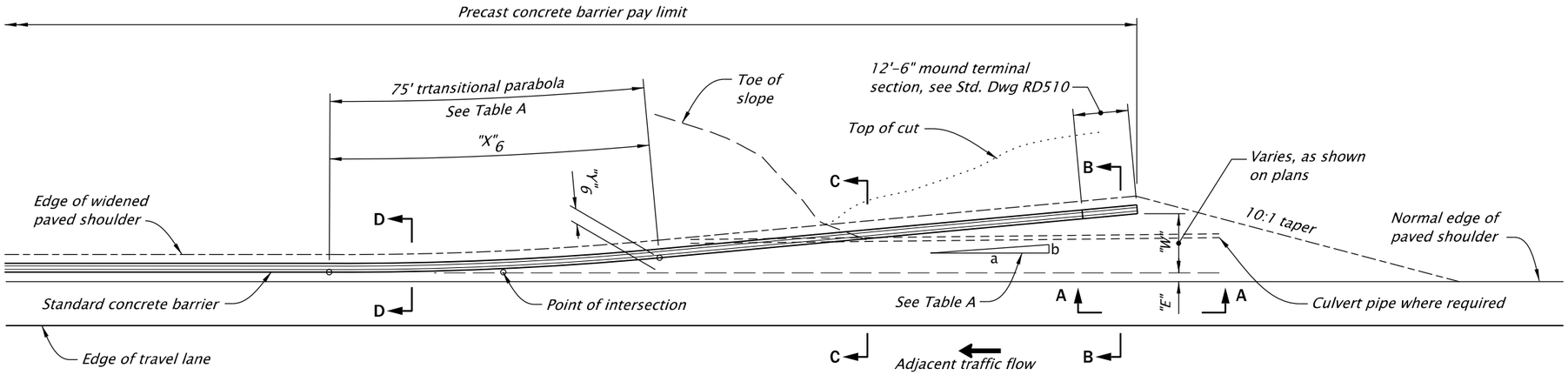
DATE	REVISION DESCRIPTION

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **RD520**

Effective Date: June 1, 2024 - November 30, 2024

14-JUL-2023

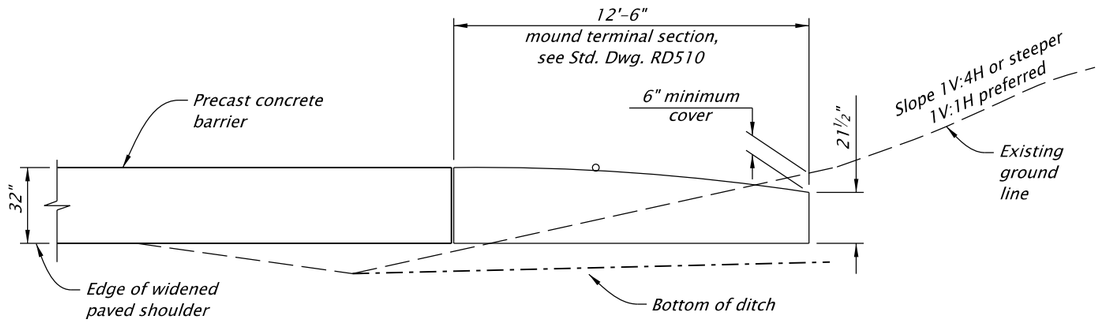
RD526.dgn



PLAN

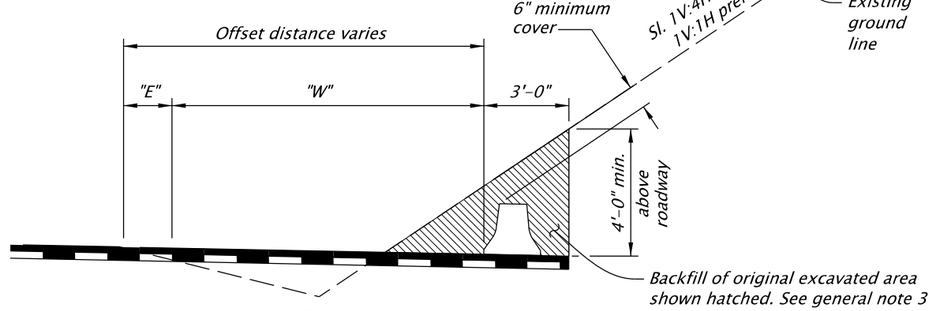
GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. *See appropriate concrete barrier standard drawings for details not shown. See Std. Dwg. RD502 for new permanent installations barrier anchoring details (when being anchored). See Std. Dwgs RD515 and RD516 for securing concrete barrier to roadway that is maintained for use in temporary installations.*
2. *If the slope is flatter than 1V:1H 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.*
4. *Normal use assumes an existing established slope. This detail is not intended for construction of new slope steeper than a slope of 1V:2H.*
5. *Surfacing details same as adjacent shoulder.*
6. *Barrier sections, connections and appurtenances that retain backslapped require stability design calculations stamped by an engineer.*

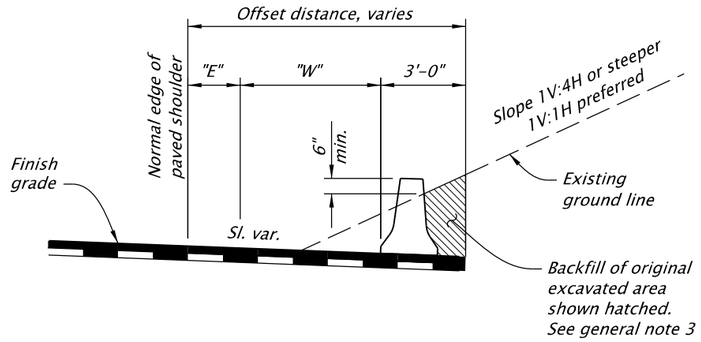


ELEVATION A-A

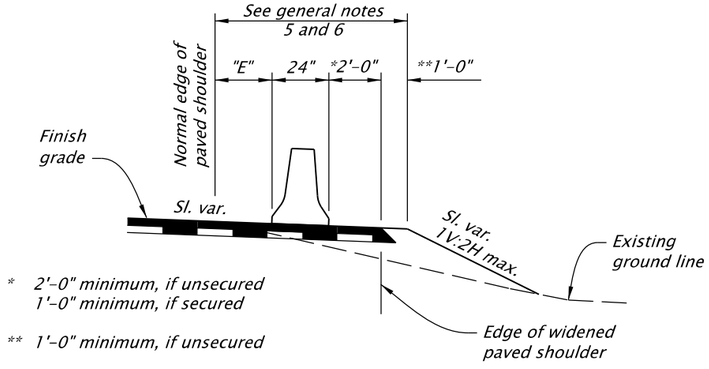
"W" = Width of flare
"E" = Shy distance



SECTION B-B



SECTION C-C



* 2'-0" minimum, if unsecured
1'-0" minimum, if secured

** 1'-0" minimum, if unsecured

SECTION D-D

TABLE A
FLARE RATES AND TRANSITION PARABOLA

FLARE RATE 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

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

STANDARD CONCRETE BARRIER BURIED IN SLOPE

2024

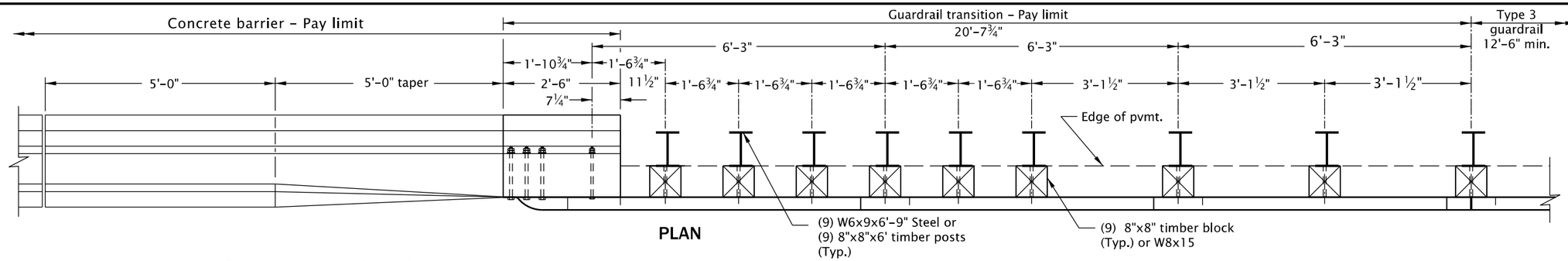
DATE	REVISION DESCRIPTION
07-2022	REVISED DETAILS AND NOTES
06-2023	REVISED NOTES

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **RD526**

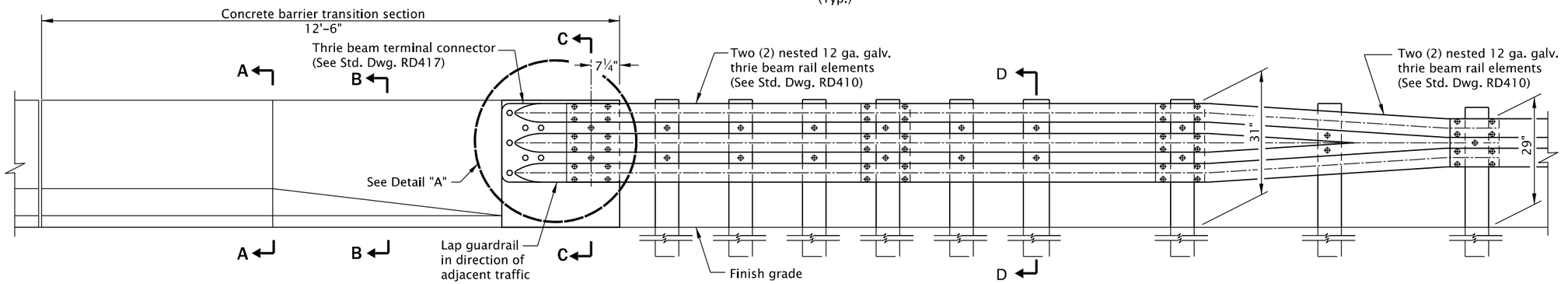
Effective Date: June 1, 2024 - November 30, 2024

14-JUL-2023

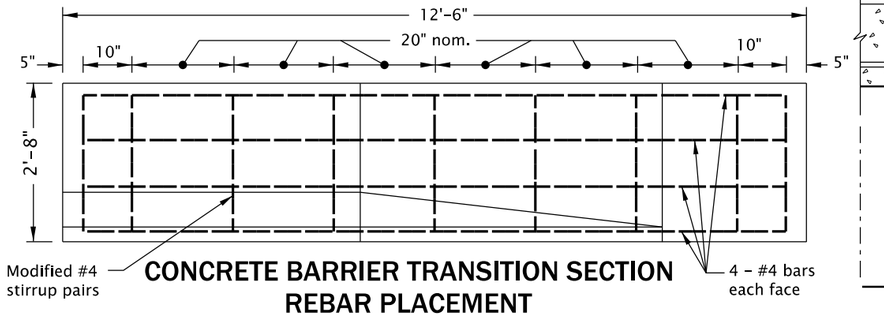
RD530.dgn



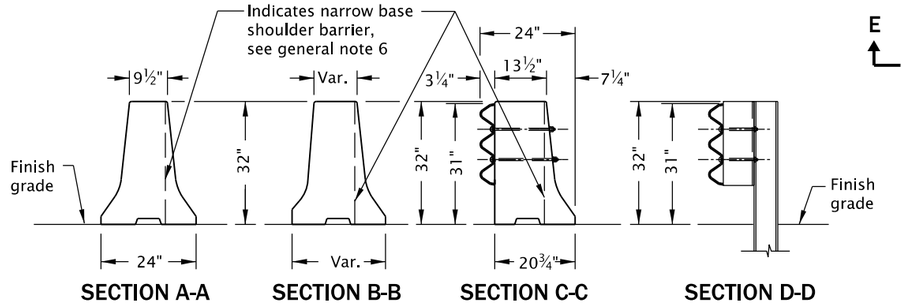
PLAN



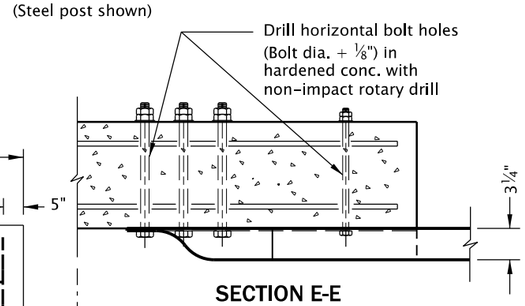
ELEVATION
(Steel post shown)



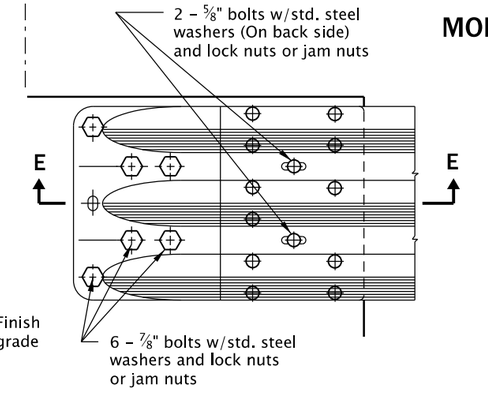
CONCRETE BARRIER TRANSITION SECTION REBAR PLACEMENT



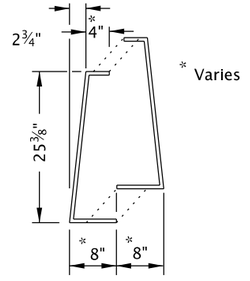
SECTION A-A **SECTION B-B** **SECTION C-C** **SECTION D-D**



SECTION E-E

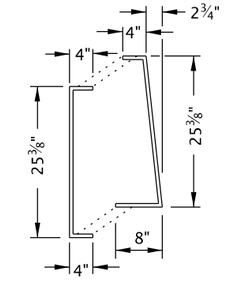


DETAIL "A"



SECTION B-B
#4 Rebar

MODIFIED STIRRUP PAIR

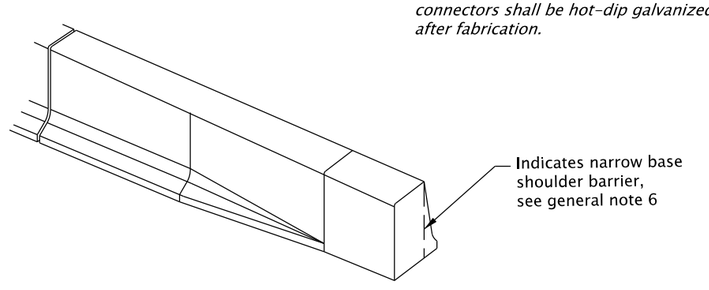


SECTION C-C
#4 Rebar

MODIFIED STIRRUP PAIR

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. *THIS DRAWING IS RETAINED FOR TEMPORARY INSTALLATION AND MAINTENANCE PURPOSES ONLY. DO NOT USE FOR NEW PERMANENT INSTALLATIONS. See appropriate guardrail and concrete barrier standard drawings for details not shown.*
2. *All reinforcing bars shall be full length as shown and shall be 2 inches clear of the nearest face of concrete unless shown otherwise. See Std. Dwgs. RD400, RD405, RD410, RD415, RD417, RD500, RD505 & BR203, for details not shown.*
3. *For trailing end guardrail connection see Std. Dwg. BR236, Detail A.*
4. *If trench method is used to install posts, ensure compaction according to 00810.41, second paragraph.*
5. *See Std. Dwg. RD502 for new permanent installations barrier anchoring details (when being anchored). See Std. Dwgs. RD515 and RD516 for securing concrete barrier to roadway that is maintained for use in temporary installations.*
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.*



CONCRETE BARRIER TRANSITION ISOMETRIC VIEW

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

GUARDRAIL TRANSITION TO CONCRETE BARRIER FOR TEMPORARY INSTALLATION AND MAINTENANCE PURPOSES ONLY

2024

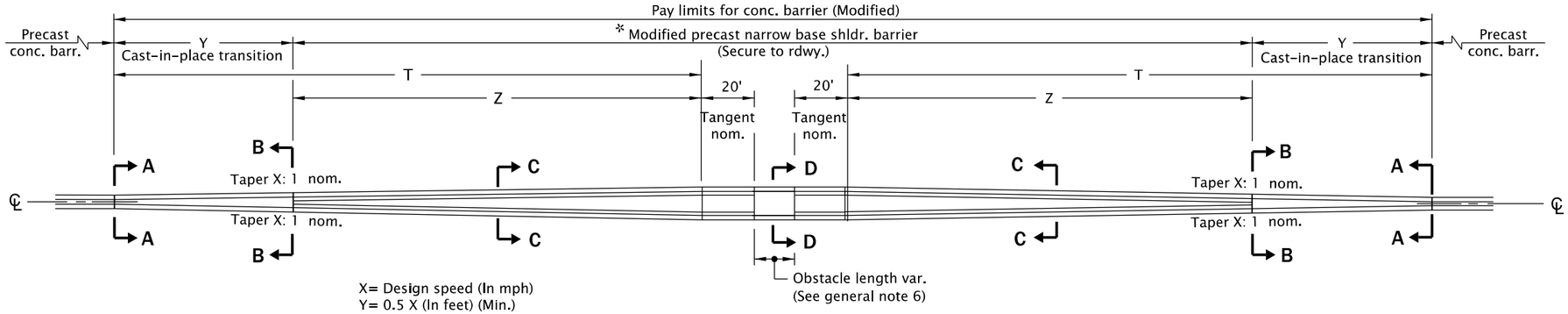
DATE	REVISION DESCRIPTION
12-2021	REVISED NOTES
06-2023	REVISED NOTES, DETAILS AND TITLE CHANGE

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **RD530**

Effective Date: June 1, 2024 - November 30, 2024

14-JUL-2023

RD535.dgn



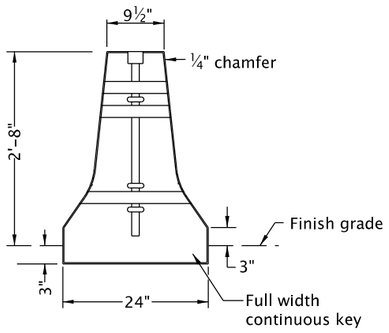
X= Design speed (In mph)
Y= 0.5 X (In feet) (Min.)
T= (½ obstacle width in feet + 0.40' + a) (X)
Z= T - Y

PLAN VIEW

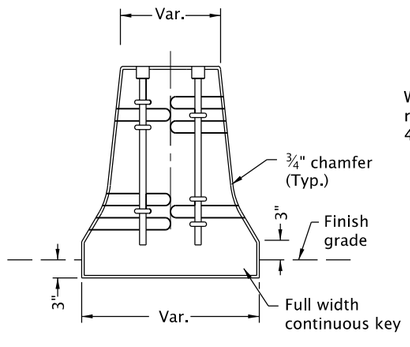
* Modification of barrier consists of providing 1½"x4" paving ledge as shown in Section C-C.

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

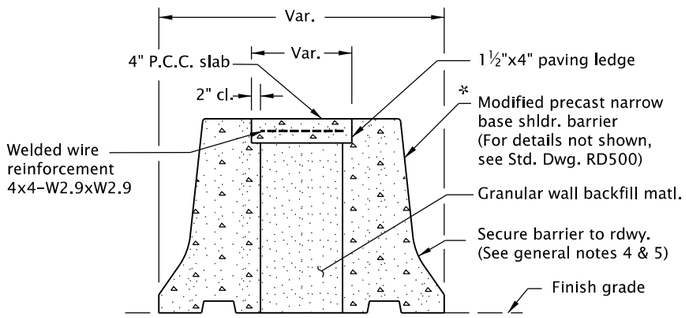
1. *Field verify end configurations of connecting barriers prior to forming connections at transitions.*
2. *All reinforcing bars shall be full length as shown and shall be placed 1-1/2 inch clear of the nearest face of concrete unless shown otherwise.*
3. *See Std. Dwgs. RD500 and RD505 for details not shown.*
4. *See Std. Dwg.RD502 for securing new permanent installations concrete barrier to roadway (when being anchored). See Std. Dwgs. RD515 and RD516 for securing concrete barrier to roadway that is maintained for use in temporary installations.*
5. *All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.*
6. *This barrier is not for use with bridge railing.*
7. *See Std. Dwg. RD536 for transition details.*



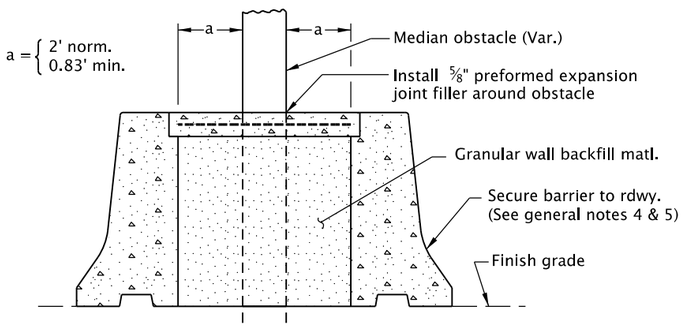
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D
(Precast option shown, see Section C-C for additional details not shown)

ISOMETRIC VIEW

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

CONCRETE BARRIER (MODIFIED) AROUND MEDIAN OBSTACLE

2024

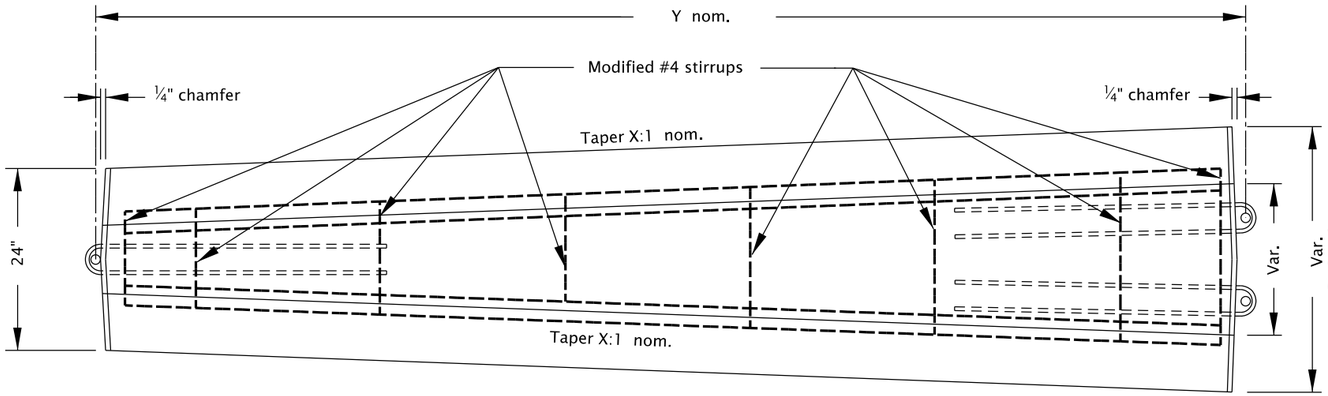
DATE	REVISION DESCRIPTION
05-2022	REVISED DETAILS AND NOTES
06-2023	REVISED NOTES

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **RD535**

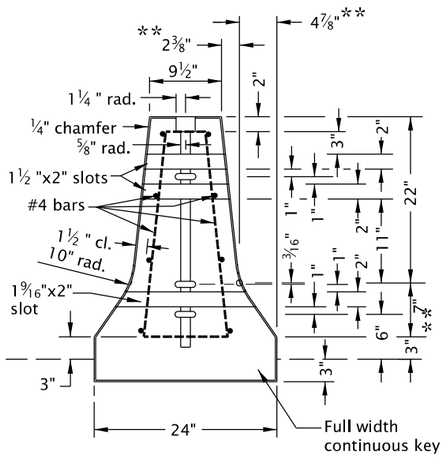
Effective Date: June 1, 2024 - November 30, 2024

14-JUL-2023

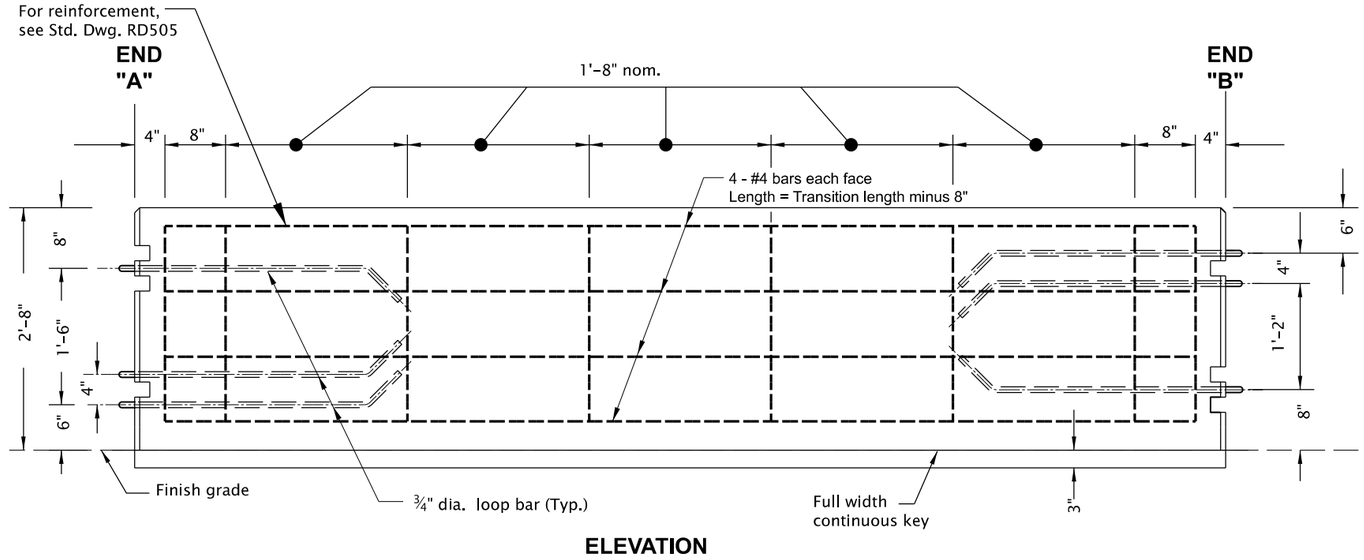
RD536.dgn



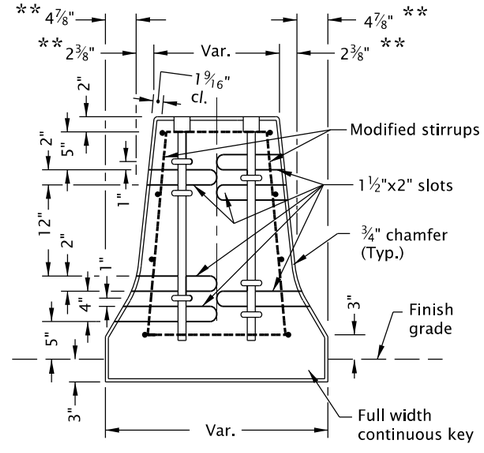
PLAN



END VIEW A
(See general note 2)

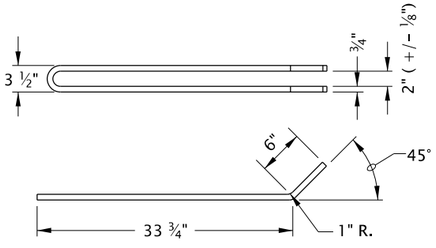


ELEVATION

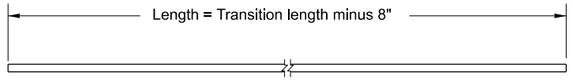


END VIEW B
(See general note 2)

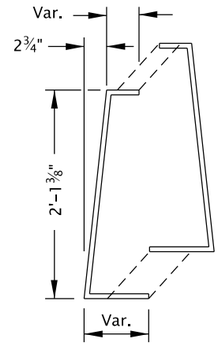
CAST-IN-PLACE TRANSITION



#4 LOOP BAR DETAIL



#4 LONGITUDINAL BAR



MODIFIED STIRRUP PAIRS
#4 Rebar

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. *Field verify end configurations of connecting barriers prior to forming connections at transitions.*
2. *All reinforcing bars shall be full length as shown and shall be placed 1-1/2 inch clear of the nearest face of concrete unless shown otherwise.*
3. *See Std. Dwgs. RD500, RD501 and RD502 for details not shown.*
4. *Secure precast concrete barrier to roadway. See Std. Dwg. RD502 for new permenent installations barrier anchoring details (when being anchored). See Std. Dwgs, RD515 and RD516 for securing concrete barrier to roadway that is maintained for use in temporary installations.*
5. *All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.*
6. *This barrier is not for use with bridge railing.*

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

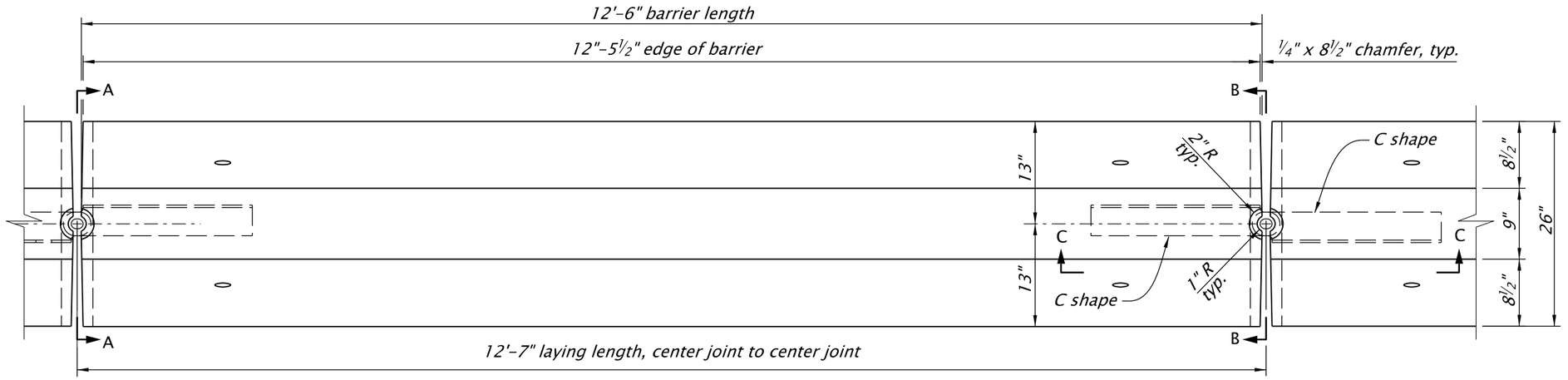
CONCRETE BARRIER (MODIFIED) AROUND MEDIAN OBSTACLE

2024

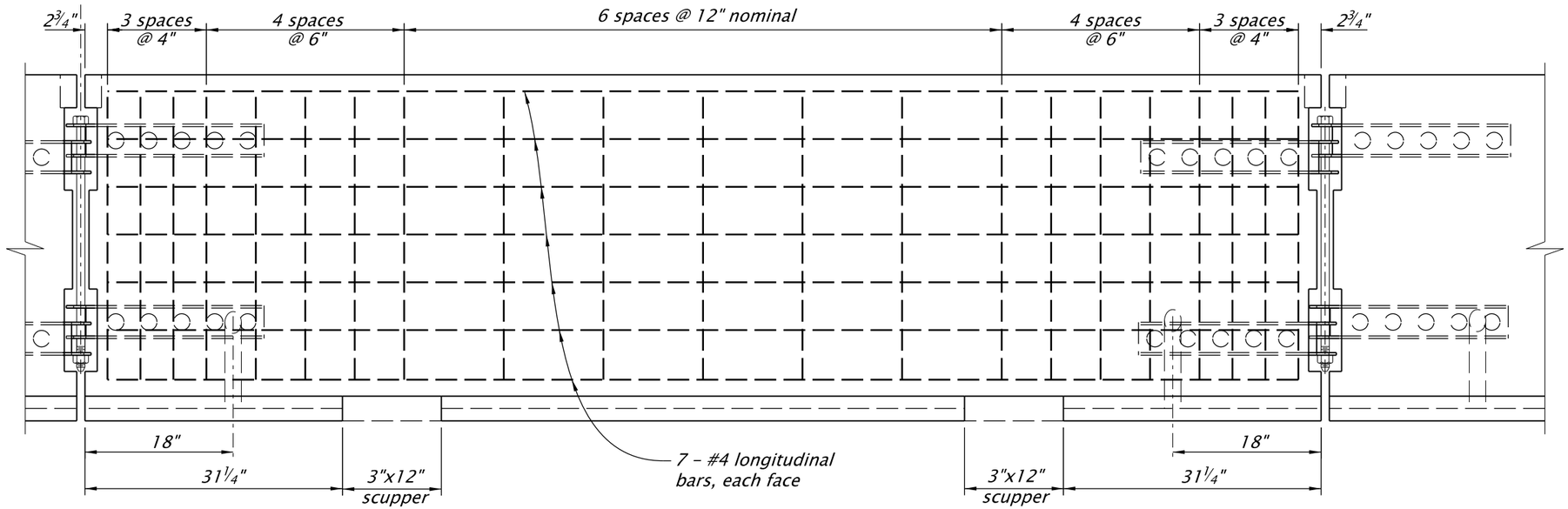
DATE	REVISION DESCRIPTION
07-2022	NEW DRAWING CREATED
06-2023	REVISED NOTES

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **RD536**

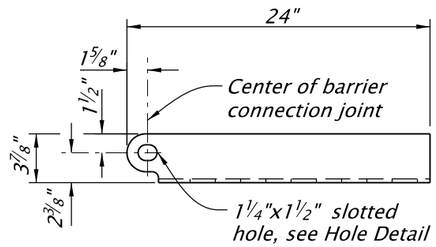
Effective Date: June 1, 2024 - November 30, 2024



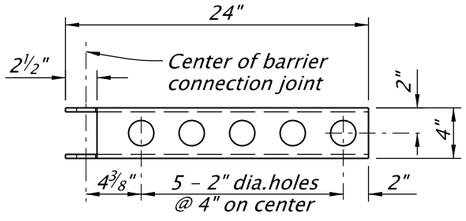
PLAN



ELEVATION

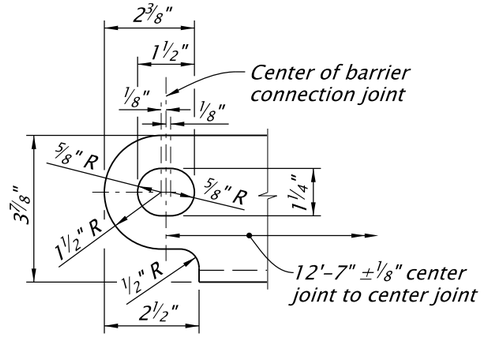


PLAN
Cut from 5/16" thick steel plate
(See note 5 for casting instructions)



ELEVATION
Perforated C-shape

C-SHAPE DETAIL



HOLE DETAIL

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. *All reinforcing bars shall be full length as shown and shall be 2 inches 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 ¾ inch , typical.*
5. *Perforated C-shape shall be placed in location shown to a tolerance of 3/32 inch.*
6. *Estimated barrier weight is 8070 pounds per 12.5 foot unit length, estimated narrow base barrier weight is 6550 pounds.*
7. *To anchor median barrier see Std. Dwg. RD502.*
8. *Narrow base shoulder barrier to be used only at locations with backfill behind barrier as shown on plans.*
9. *For barrier location details, see Std. Dwg. RD500.*
10. *When scuppers are not required, plug them with a minimum 2" of grout, as directed.*
11. *ALL EXISTING 42" BARRIER IN GOOD CONDITION IS ASSUMED TO BE MASH TL-3 COMPLIANT AND IS APPROVED FOR USE ON ODOT PROJECTS.*

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

PRECAST TALL (42") CONCRETE BARRIER

2024

DATE	REVISION DESCRIPTION
07-2022	UPDATED DRAWING TO CONNECT
01-2023	REVISED NOTES
06-2024	REVISED NOTES

CALC. BOOK NO. N/A | SDR DATE 20-JAN-2023 | **RD545**

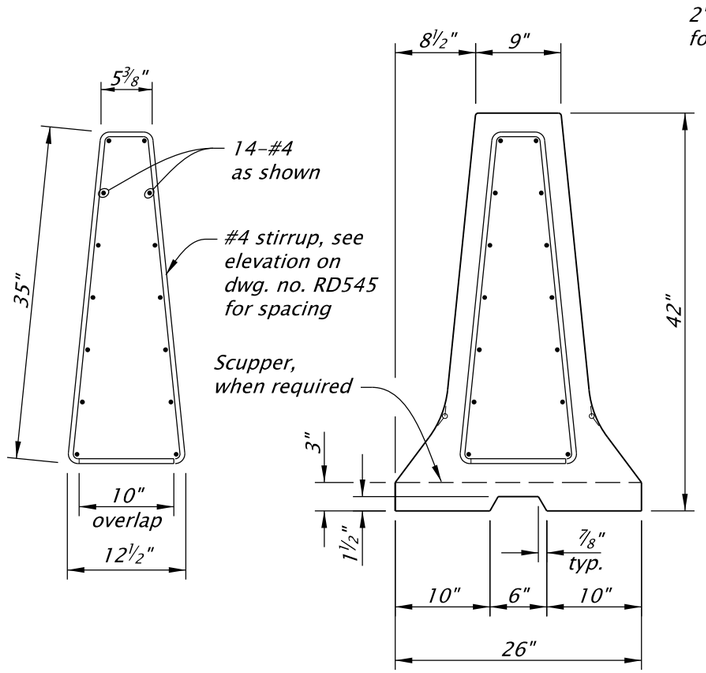
26-JUN-2024

RD545.dgn

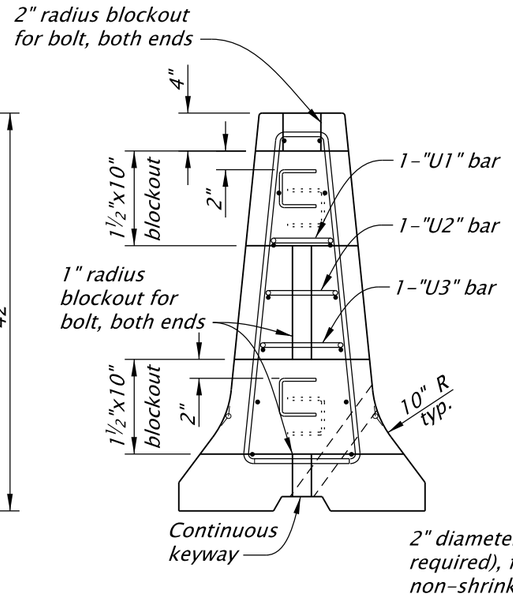
Effective Date: June 1, 2024 - November 30, 2024

26-JUN-2024

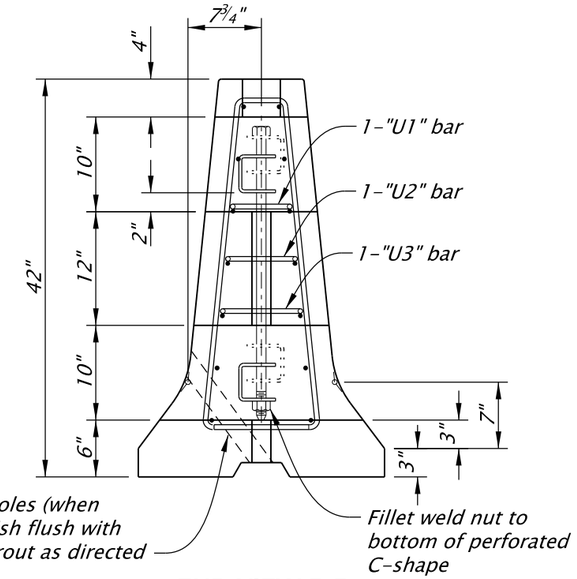
RD546.dgn



TYPICAL SECTION



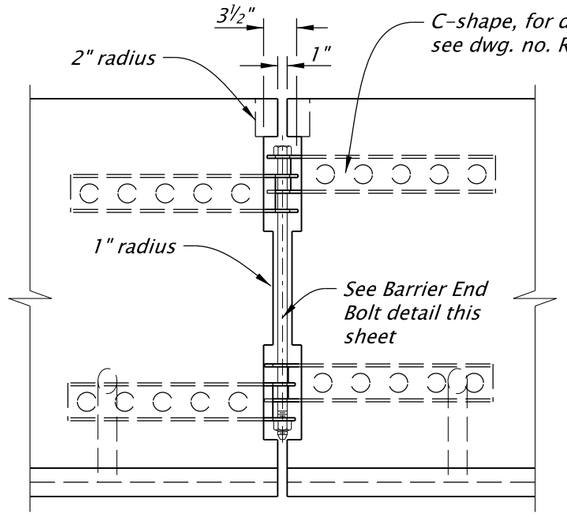
END VIEW A-A



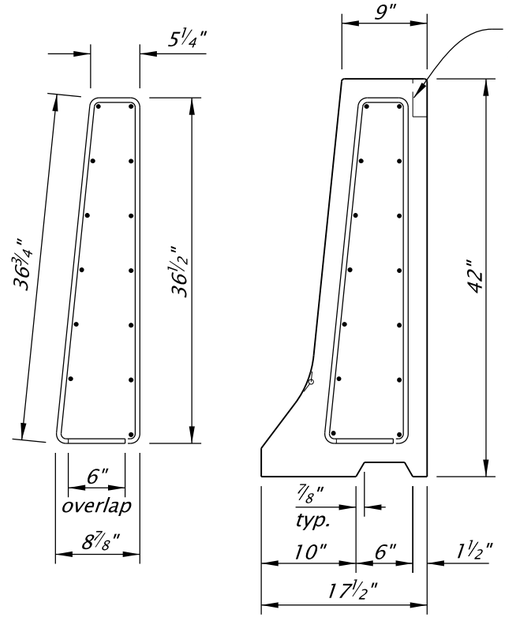
END VIEW B-B

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

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 3/4 inch, typical.
5. Perforated C-shape shall be placed in location shown to a tolerance of 3/32 inch.
6. Estimated barrier weight is 8070 pounds per 12.5 foot unit length, estimated narrow base barrier weight is 6,550 pounds.
7. To anchor median barrier see Std. Dwg RD502.
8. Narrow base shoulder barrier to be used only at locations with backfill behind barrier as shown on plans.
9. For barrier location details, see Std. Dwg. RD500.
10. When scuppers are not required, plug them with a minimum 2" of grout, as directed.
11. ALL EXISTING 42" BARRIER IN GOOD CONDITION IS ASSUMED TO BE MASH TL-3 COMPLIANT AND IS APPROVED FOR USE ON ODOT PROJECTS.

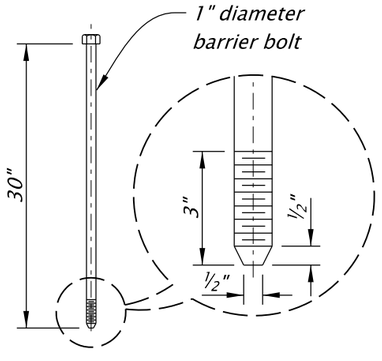


SECTION C-C

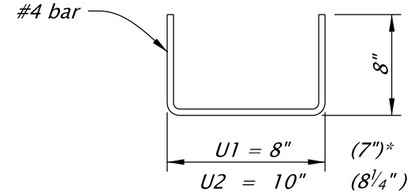


TALL NARROW BASE SHOULDER BARRIER

Only use against retaining walls or as directed. For details not shown, see other barrier details on this drawing and on dwg. no. RD545.



BARRIER END BOLT



U-BAR

** Vertical back barrier*

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

PRECAST TALL (42") CONCRETE BARRIER

2024

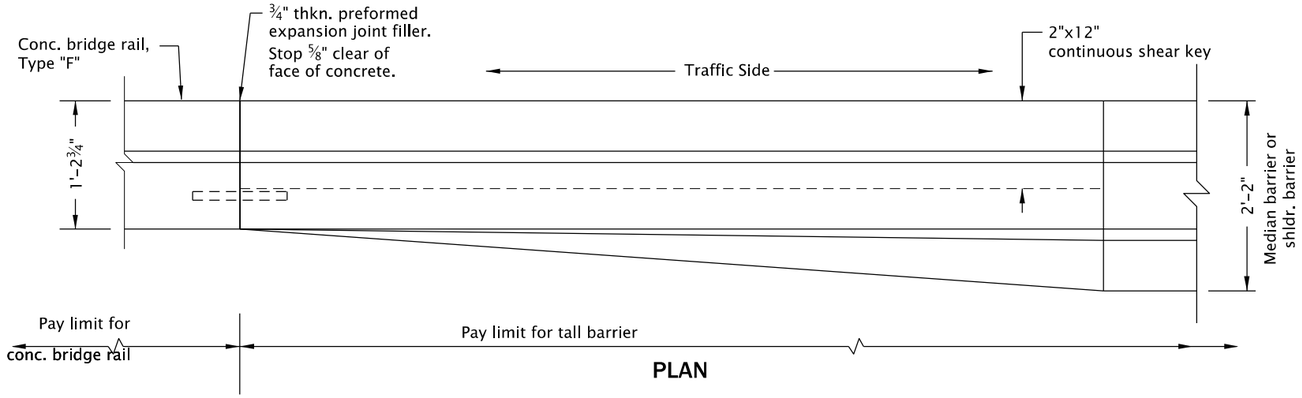
DATE	REVISION DESCRIPTION
07-2022	CREATED NEW DRAWING
01-2023	REVISED NOTES
06-2024	REVISED NOTES

CALC. BOOK NO. N/A | SDR DATE 20-JAN-2023 | **RD546**

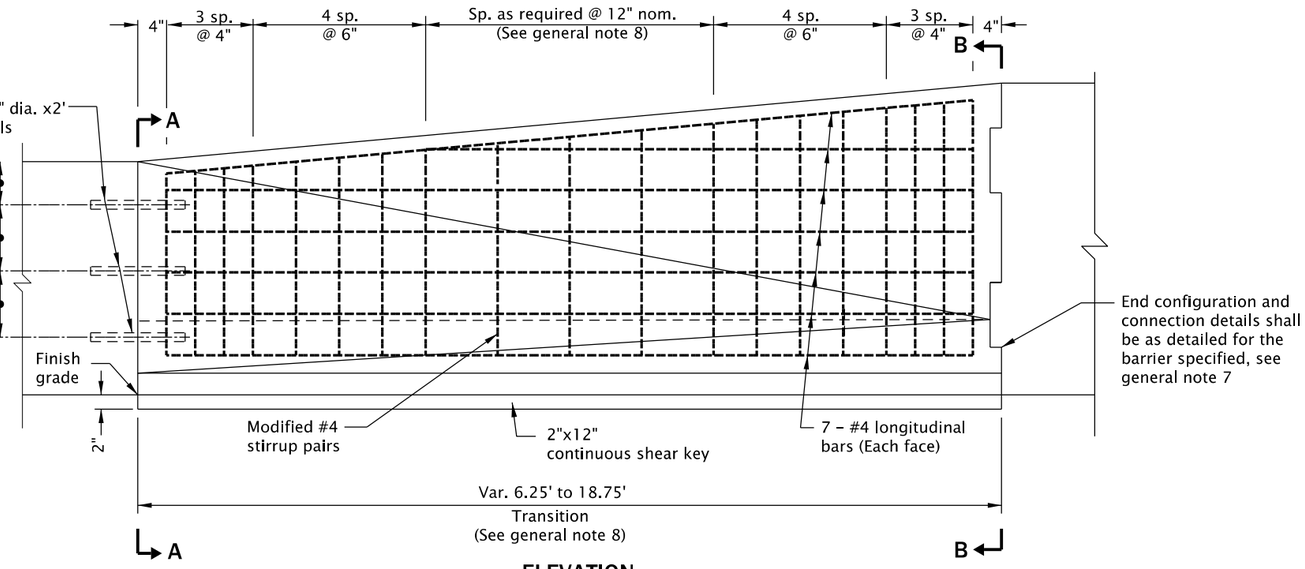
Effective Date: June 1, 2024 - November 30, 2024

14-JUL-2023

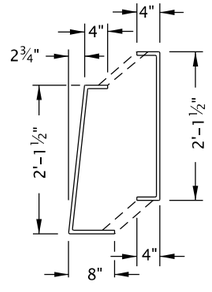
RD550.dgn



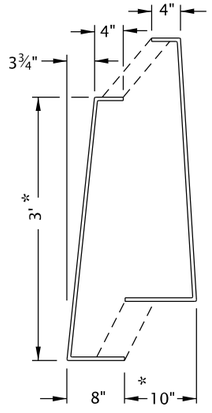
PLAN



ELEVATION



MODIFIED STIRRUP PAIR
SECTION A-A
#4 Rebar

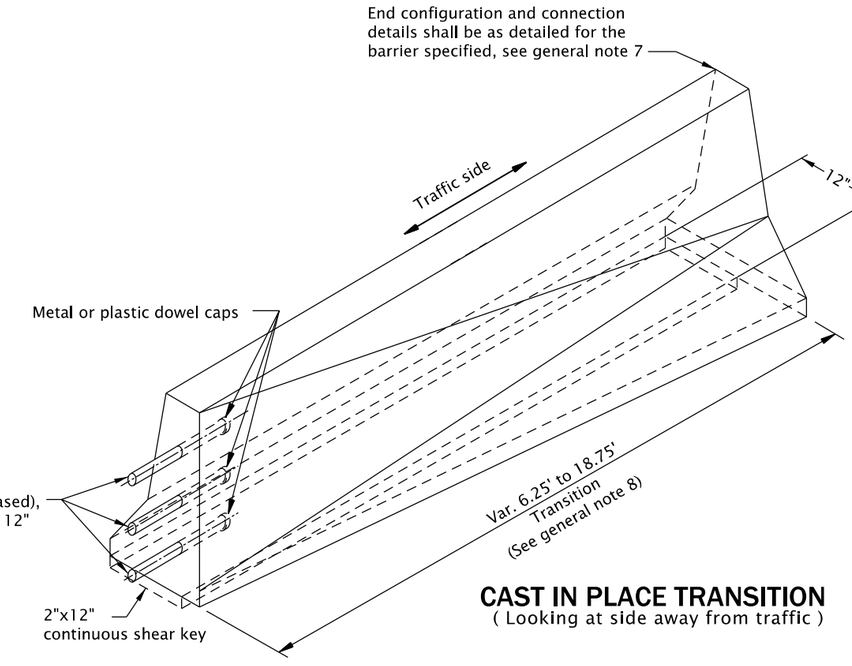


MODIFIED STIRRUP PAIR
SECTION B-B
#4 Rebar

* Dimension variable through transition section.

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. *All reinforving shall be full length as shown and shall be 1-1/2 inch clear of nearest face of concrete, unless otherwise shown.*
2. *See Std. Dwg. RD545 for additional details.*
3. *See Std. Dwg. RD502 for new permanent installations barrier anchoring details (when being anchored). See Std. Dwgs. RD515 and RD516 for securing concrete barrier to roadway that is maintained for use in temporary installations.*
4. *See Std. Dwg. 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. Dwg. RD505 for details not shown.*
8. *Normal length for cast-in-place transition is 12 foot 6 inches. Site conditions may require varying lengths between 6 foot 3 inches and 18 foot 9 inches. Field verify transition length and end configurations of connecting barriers.*



CAST IN PLACE TRANSITION
(Looking at side away from traffic)

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 first consulting a Registered Professional Engineer.

All materials 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"

2024

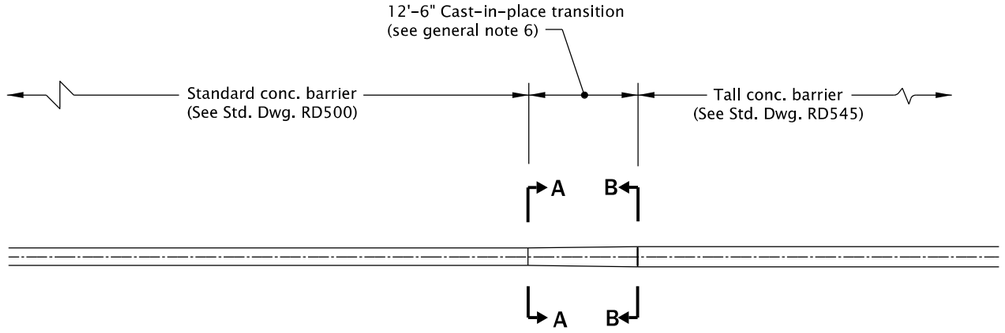
DATE	REVISION DESCRIPTION
06-2023	REVISED NOTES AND DETAILS

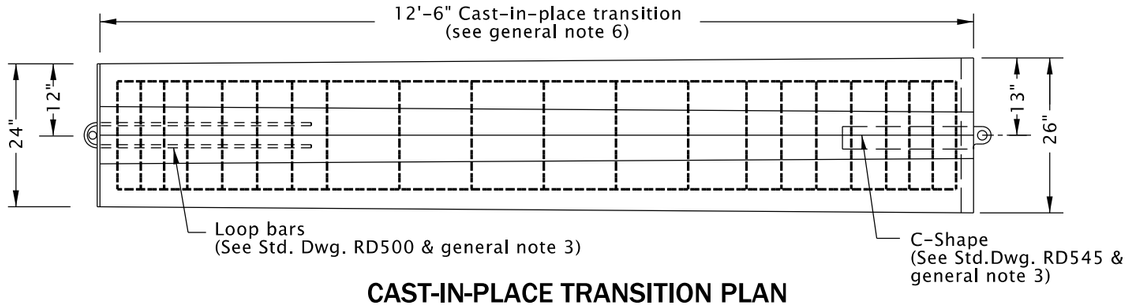
CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **RD550**

Effective Date: June 1, 2024 - November 30, 2024

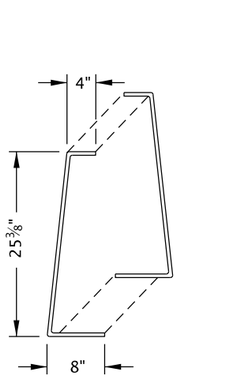
14-JAN-2022

RD560.dgn

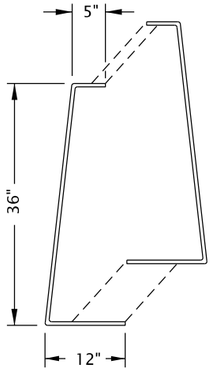




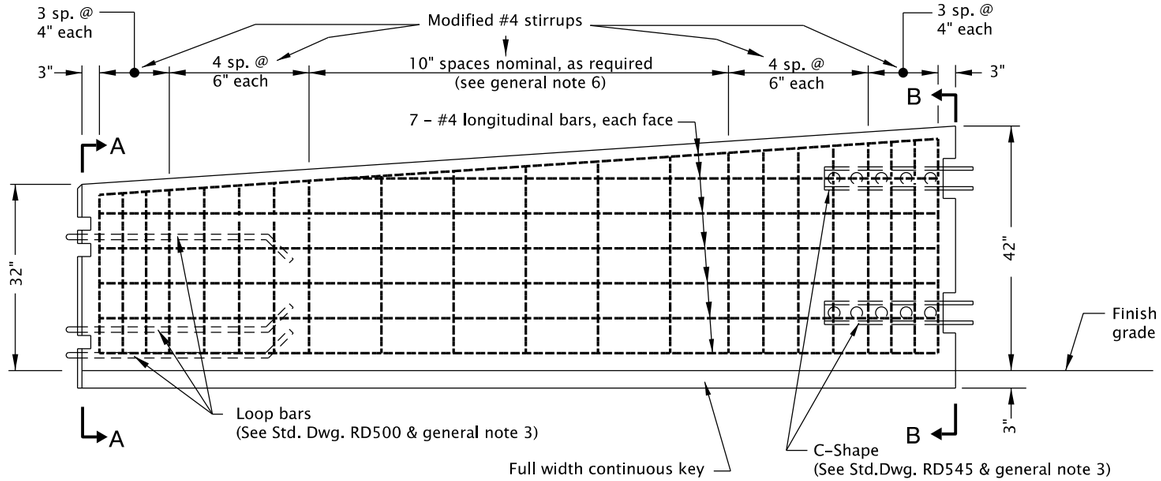
CAST-IN-PLACE TRANSITION PLAN



SECTION A-A



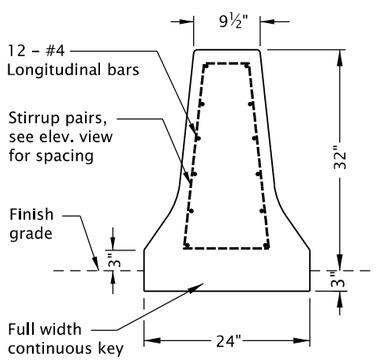
SECTION B-B



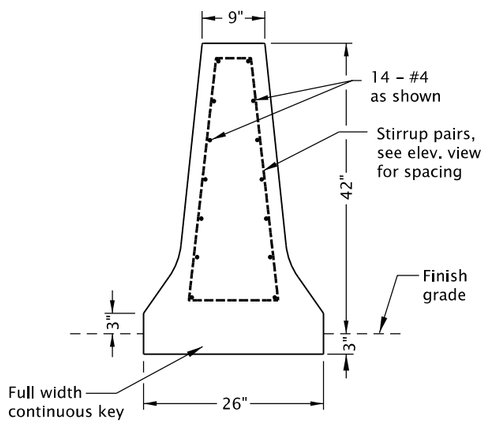
CAST-IN-PLACE TRANSITION ELEVATION

MODIFIED #4 STIRRUPS

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



END VIEW A-A



END VIEW B-B

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. All reinforcing bars shall be full length as shown and shall be placed 1½" clear of the nearest face of concrete unless shown otherwise.
2. Chamfer all edges ¾".
3. Field verify end configurations of connecting barriers prior to forming connections at transitions. Dowelled connection is an acceptable alternative. See Std. Dwg. RD505 for details not shown.
4. See Std. Dwgs. 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.

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

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

2024

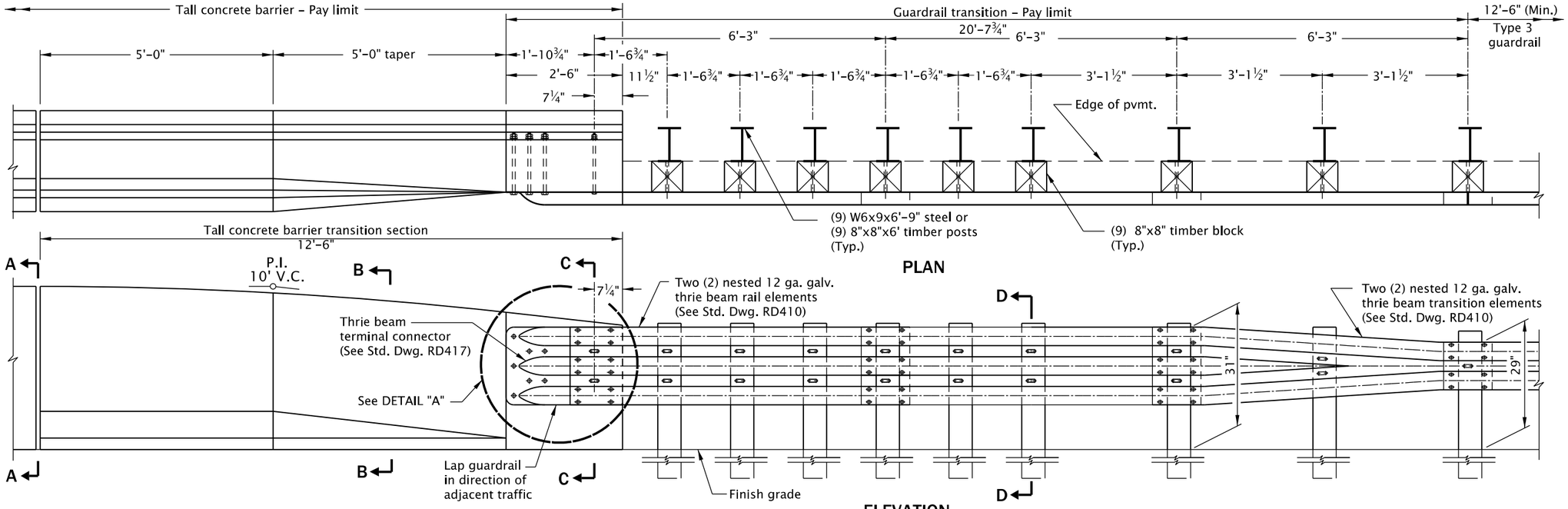
DATE	REVISION DESCRIPTION
12-2021	REVISED NOTES

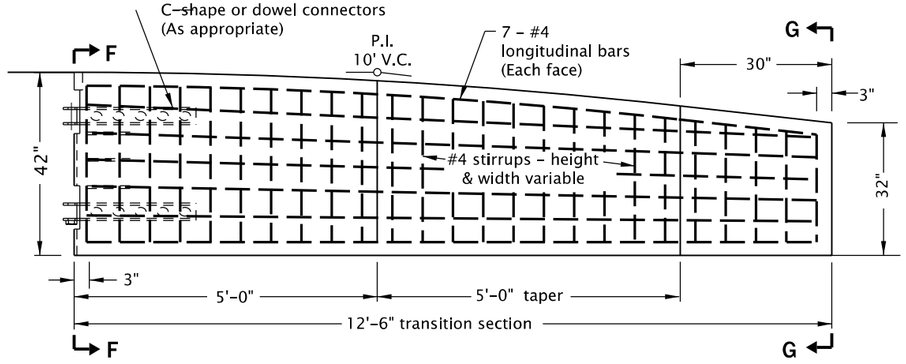
CALC. BOOK NO. N/A | SDR DATE 15-JUL-2022 | **RD560**

Effective Date: June 1, 2024 - November 30, 2024

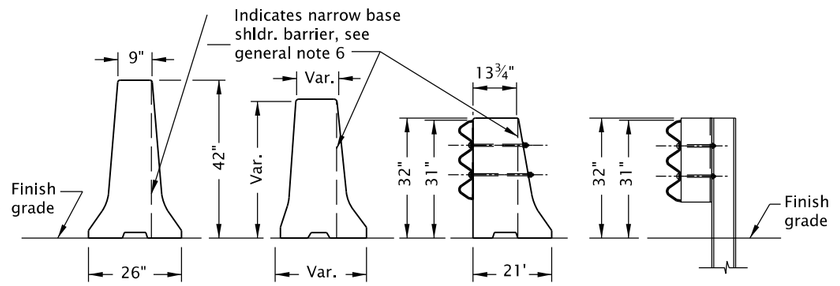
14-JUL-2023

RD570.dgn

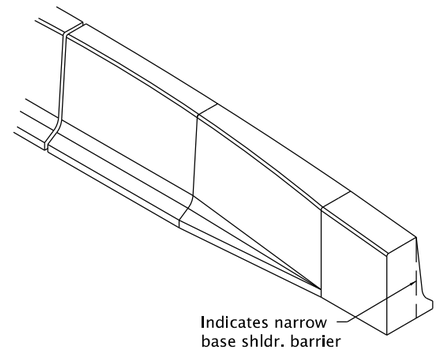




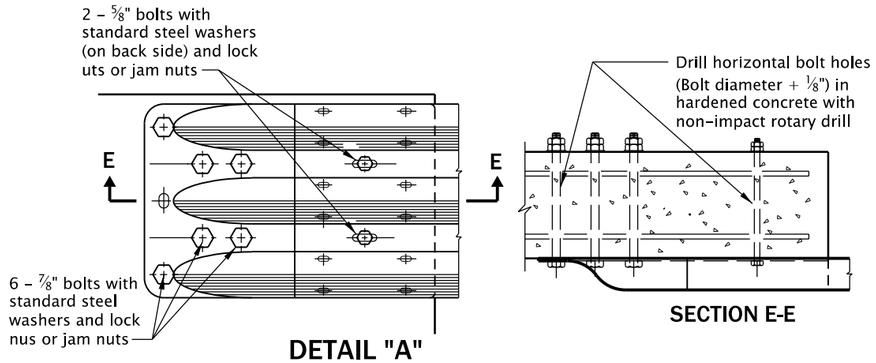
TALL CONCRETE BARRIER TRANSITION SECTION
REBAR PLACEMENT



SECTION A-A SECTION B-B SECTION C-C SECTION D-D

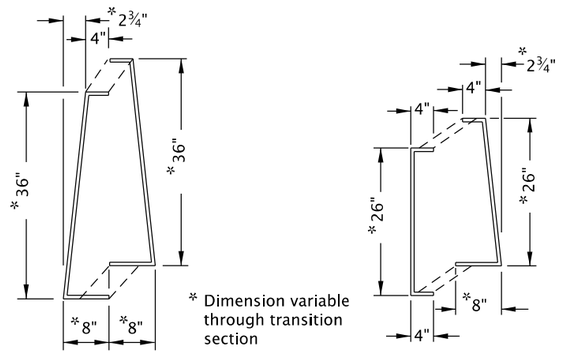


TALL CONCRETE BARRIER TRANSITION SECTION
ISOMETRIC VIEW



DETAIL "A"

SECTION E-E



SECTION F-F
#4 Rebar
MODIFIED STIRRUP PAIR

SECTION G-G
#4 Rebar
MODIFIED STIRRUP PAIR

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. *THIS DRAWING IS RETAINED FOR TEMPORARY INSTALLATION AND MAINTENANCE PURPOSES ONLY. DO NOT USE FOR NEW PERMANENT INSTALLATIONS. See Std. Dwgs. RD400, RD405, RD410, RD415, RD417 and RD545 for details not shown.*
2. *All reinforcing bars shall be full length as shown and shall be 2 inches clear of the nearest face of concrete unless shown otherwise.*
3. *For trailing end guardrail connection, See Std. Dwg. BR236, Detail A.RD545 for details not shown.*
4. *If trench method is used to install posts, ensure compaction according to 00810.41, second paragraph.*
5. *See Std. Dwg. RD502 for new permanent installations barrier anchoring details (when being anchored). See Std. Dwgs. RD515 and RD516 for securing concrete barrier to roadway that is maintained for use in temporary installations.*
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.*

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

GUARDRAIL TRANSITION TO TALL CONCRETE BARRIER FOR TEMPORARY INSTALLATION AND MAINTENANCE PURPOSES ONLY

2024

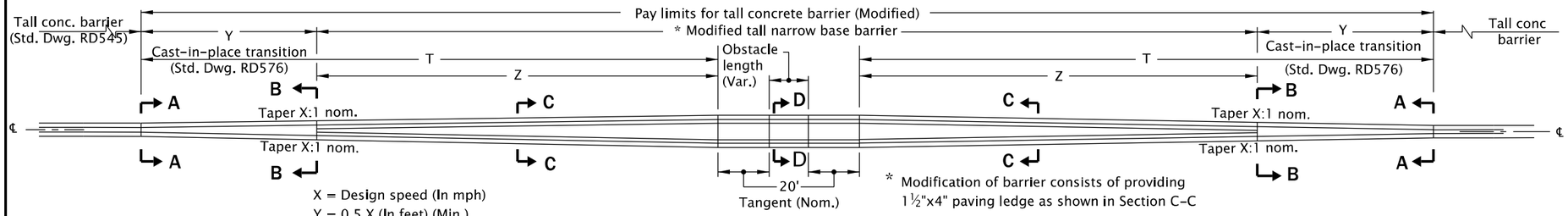
DATE	REVISION DESCRIPTION
12-2021	REVISED NOTES
06-2023	REVISED NOTES, DETAILS AND TITLE CHANGE

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | RD570

Effective Date: June 1, 2024 - November 30, 2024

14-JUL-2023

RD575.dgn



X = Design speed (In mph)

Y = 0.5 X (In feet) (Min.)

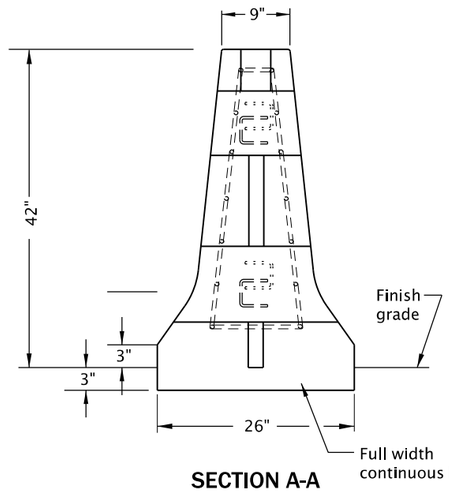
T = (½ obstacle width in feet + 0.40' + a) (X)

Z = T - Y

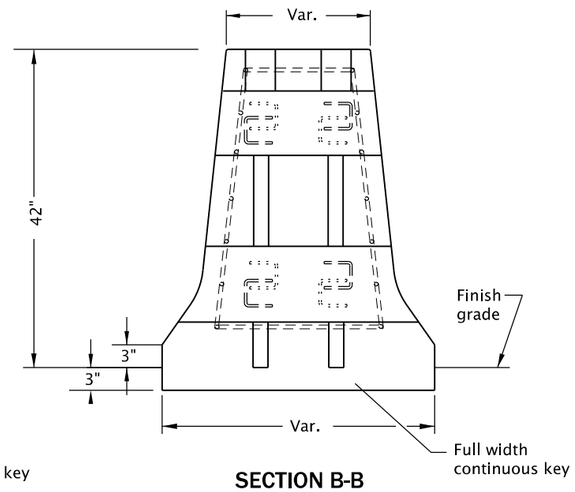
* Modification of barrier consists of providing 1½"x4" paving ledge as shown in Section C-C

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

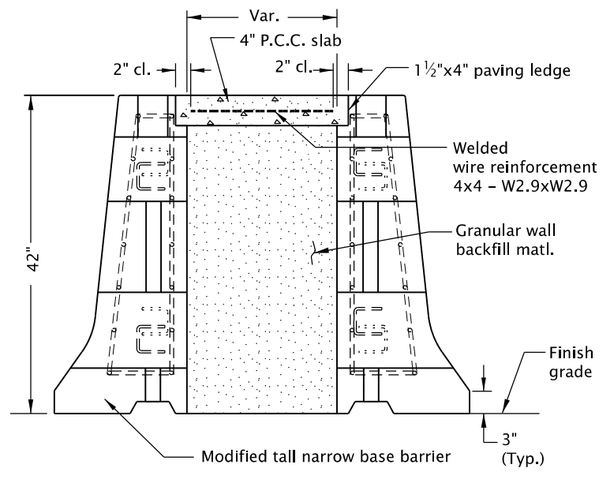
1. *Field verify end configurations of connecting barriers prior to forming connections at transitions.*
2. *All reinforcing bars shall be full length as shown and shall be placed 1-1/2 inch clear of the nearest face of concrete unless shown otherwise.*
3. *See Std. Dwg. RD545 for details not shown.*
4. *See Std. Dwg. RD502 for new permanent installations barrier anchoring details (when being anchored). See Std. Dwgs. RD515 and RD516 for sewcuring concrete barrier to roadway that is maintained for use in temporary installations.*
5. *All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.*



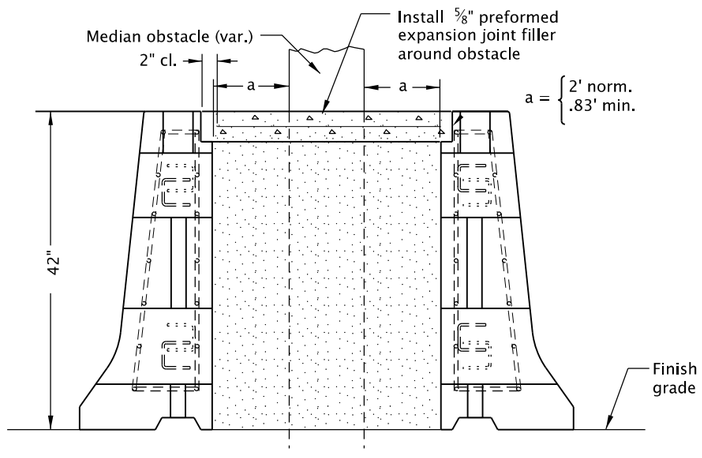
SECTION A-A



SECTION B-B



SECTION C-C

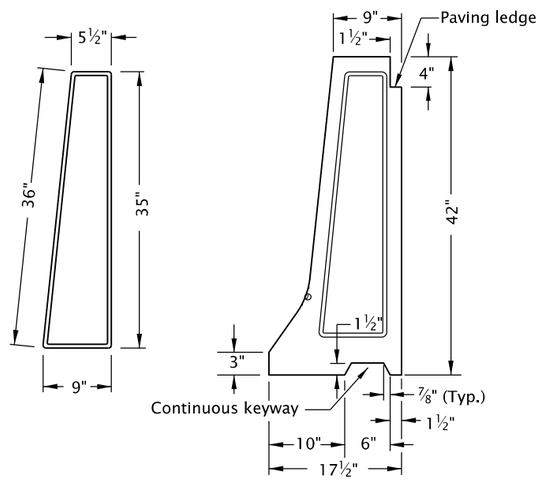


(Precast option shown, See Section C-C for additional details not shown)

SECTION D-D

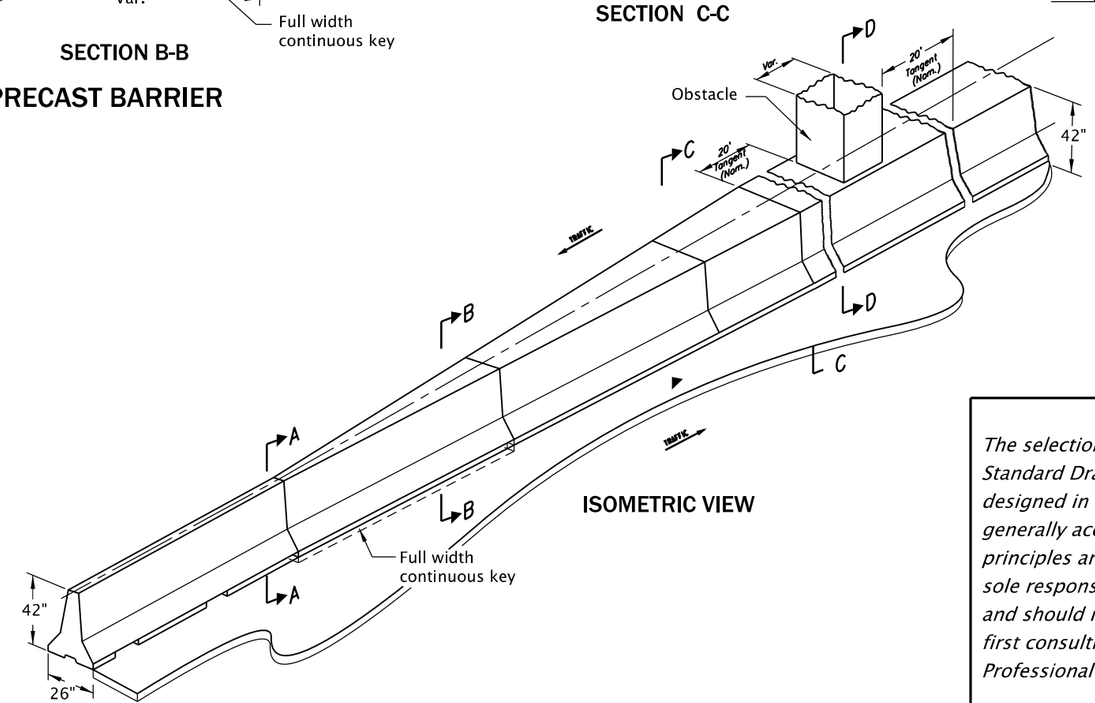
DETAIL WHEN CONNECTING TO PRECAST BARRIER

(See general note 1)



MOD. TALL NARROW BASE SHLDR. BARRIER

NOTE: Only use against retaining walls or as directed.
(For details not shown, see Std. Dwg. No. RD545)



ISOMETRIC VIEW

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

TALL CONCRETE BARRIER (MODIFIED) AROUND MEDIAN OBSTACLE

2024

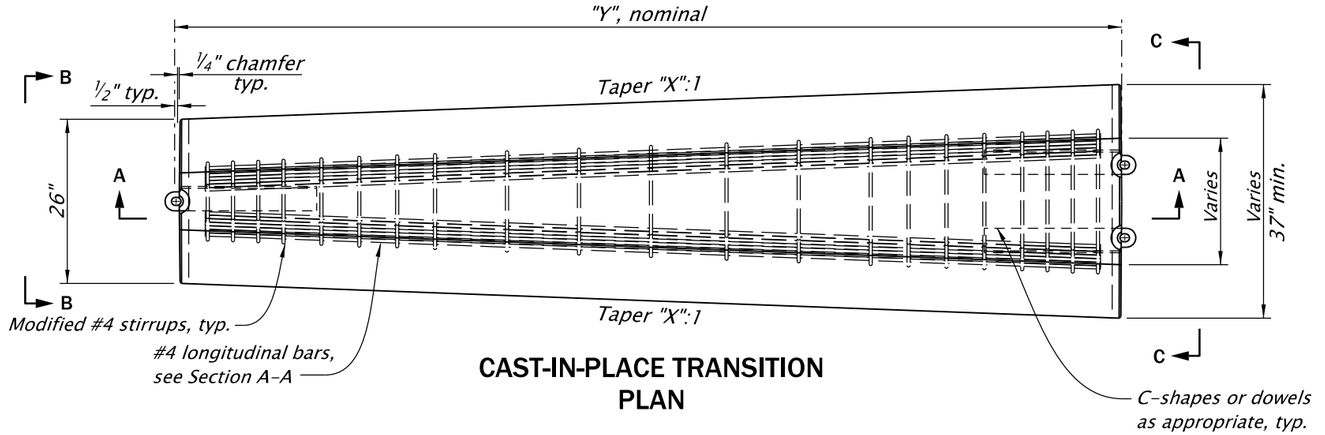
DATE	REVISION DESCRIPTION
07-2022	REVISED DETAILS AND NOTES
06-2023	REVISED DETAILS AND NOTES

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **RD575**

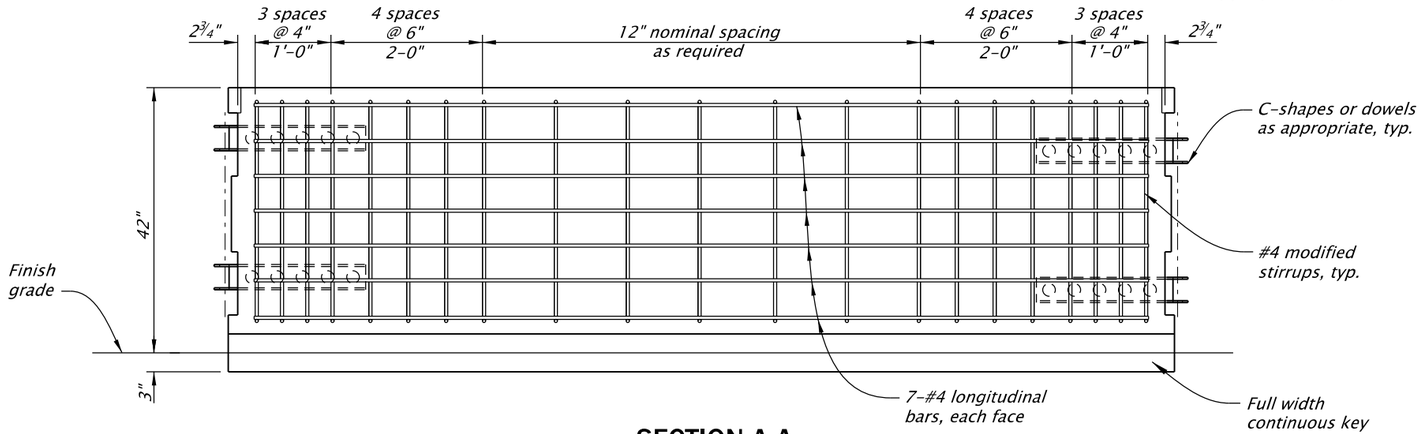
Effective Date: June 1, 2024 - November 30, 2024

14-JUL-2023

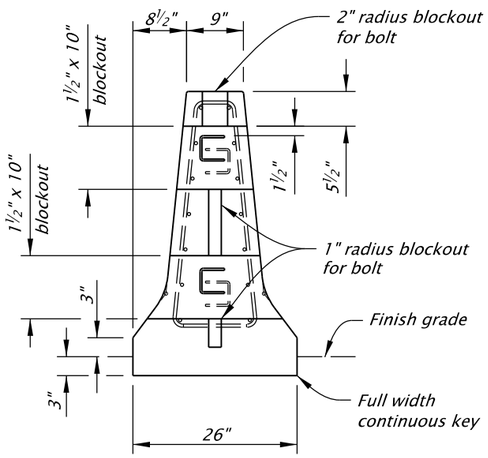
RD576.dgn



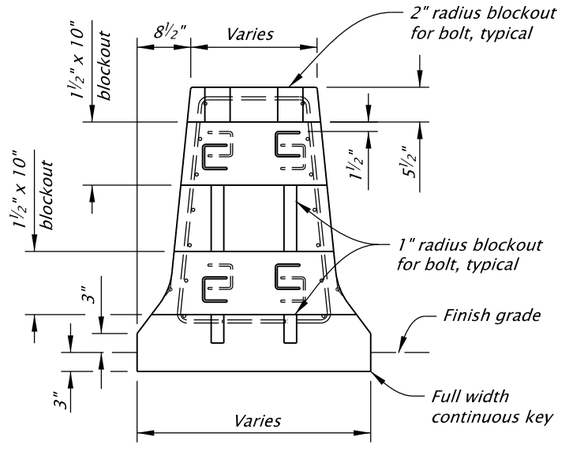
CAST-IN-PLACE TRANSITION PLAN



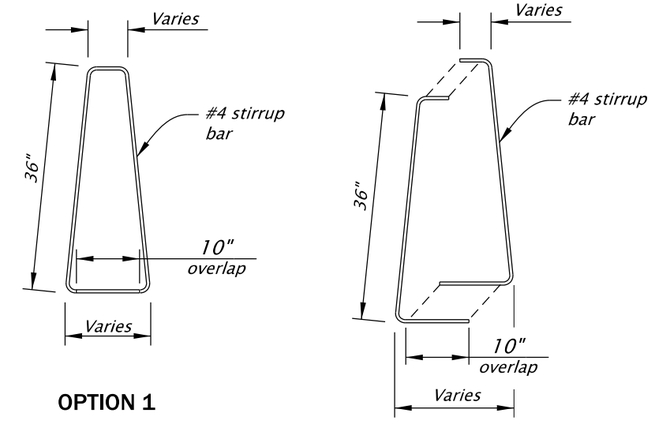
SECTION A-A



VIEW B-B



VIEW C-C



OPTION 1

OPTION 2

MODIFIED STIRRUP

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. *Field verify end configurations of connecting barriers prior to forming connections at transitions.*
2. *All reinforcing bars shall be full length as shown and shall be placed 1-1/2 inches clear of the nearest face of concrete unless shown otherwise.*
3. *See Std. Dwg. RD545 for details not shown.*
4. *Secure precast concrete barrier to roadway, see Std. Dwg. RD516.*
5. *All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.*

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

TALL CONCRETE BARRIER (MODIFIED) AROUND MEDIAN OBSTACLE

2024

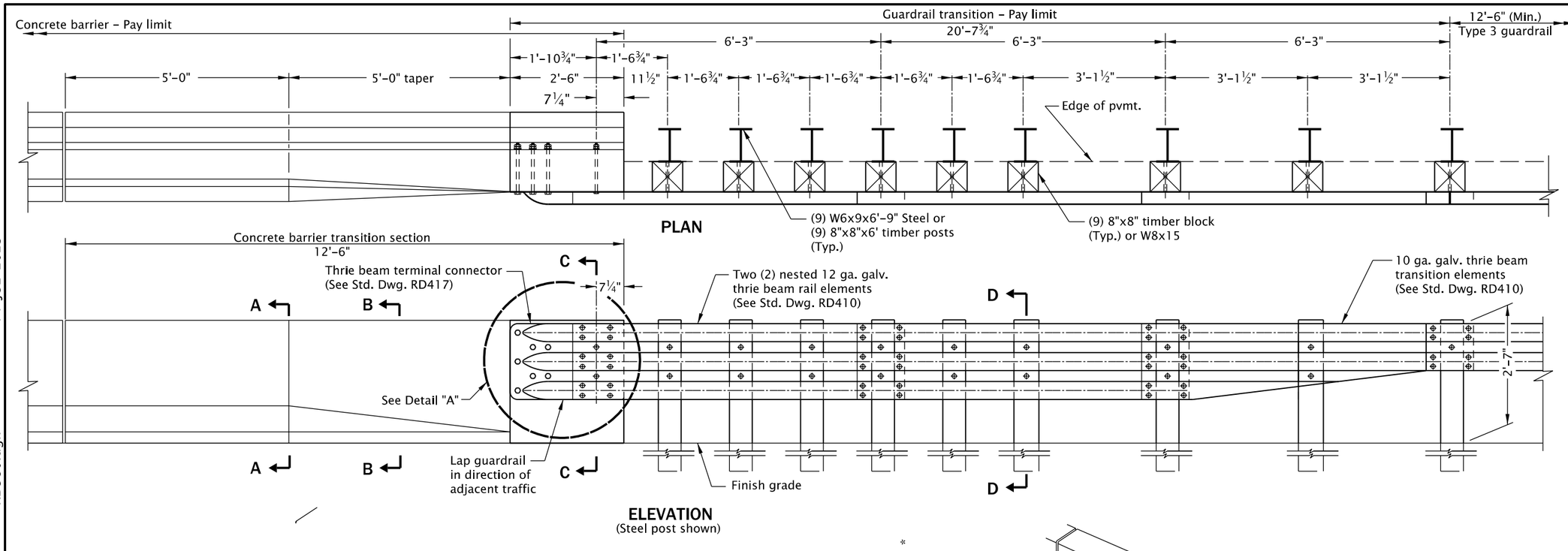
DATE	REVISION DESCRIPTION
07-2022	CREATED NEW DRAWING
06-2023	REVISED NOTES

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **RD576**

Effective Date: June 1, 2024 - November 30, 2024

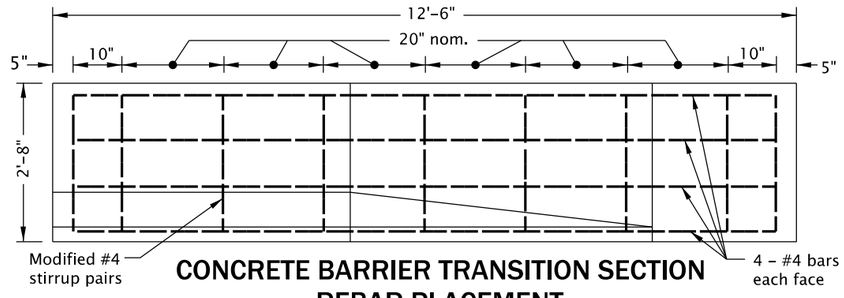
14-JUL-2023

RD580.dgn

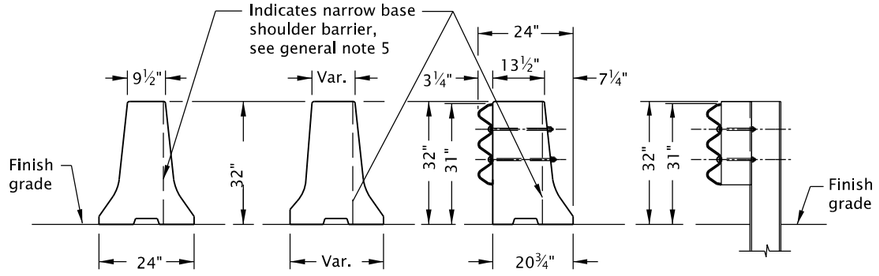


GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

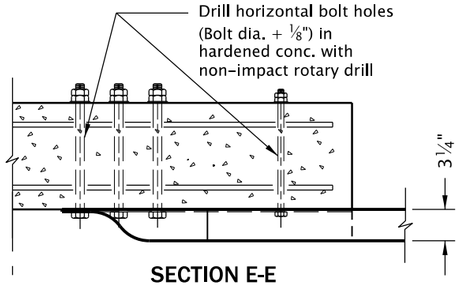
1. *All reinforcing bars shall be full length as shown and shall be 2 inches clear of the nearest face of concrete unless shown otherwise.*
2. *See Std. Dwgs. RD405, RD410, RD415, RD417, RD480, RD481, RD482 and RD545 for details not shown.*
3. *If trench method is used to install posts, ensure compaction according to 00810.41, second paragraph.*
4. *See Std. Dwg. RD502 for securing new permanent installations concrete barrier to roadway (when being anchored). See Std. Dwg. RD516 for securing concrete barrier to roadway that is maintained for use in temporary installations.*
5. *Narrow base shoulder barrier to be used only at locations with backfill behind barrier as shown on plans.*
6. *All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.*



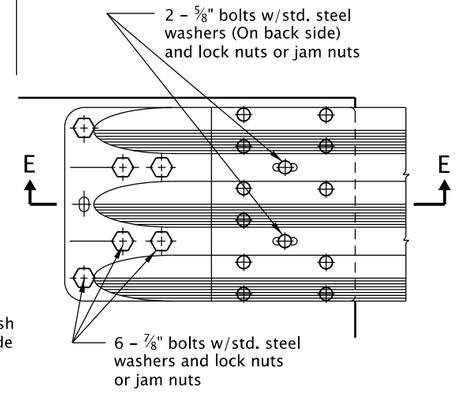
CONCRETE BARRIER TRANSITION SECTION REBAR PLACEMENT



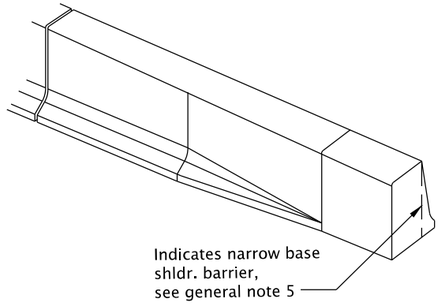
SECTION A-A **SECTION B-B** **SECTION C-C** **SECTION D-D**



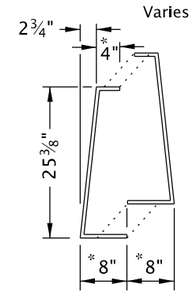
SECTION E-E



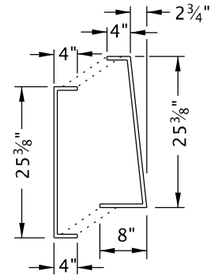
DETAIL "A"



CONCRETE BARRIER TRANSITION SECTION



SECTION B-B
#4 Rebar



SECTION C-C
#4 Rebar

MODIFIED STIRRUP PAIR **MODIFIED STIRRUP PAIR**

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

MIDWEST GUARDRAIL SYSTEM TRANSITION TO CONCRETE BARRIER

2024

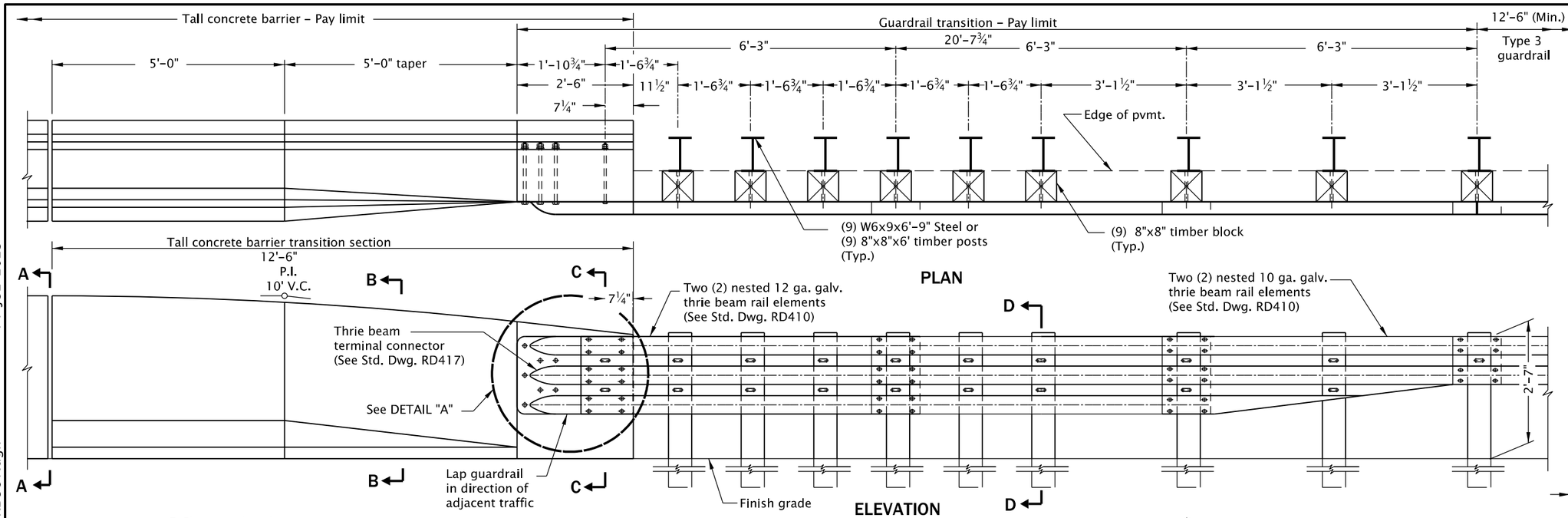
DATE	REVISION DESCRIPTION

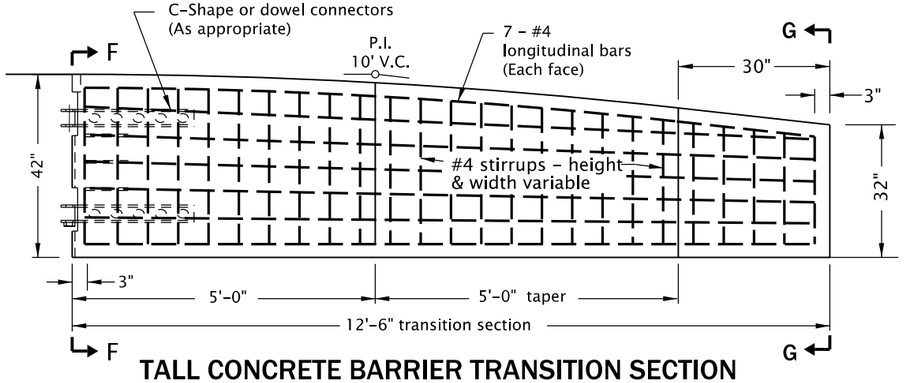
CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **RD580**

Effective Date: June 1, 2024 - November 30, 2024

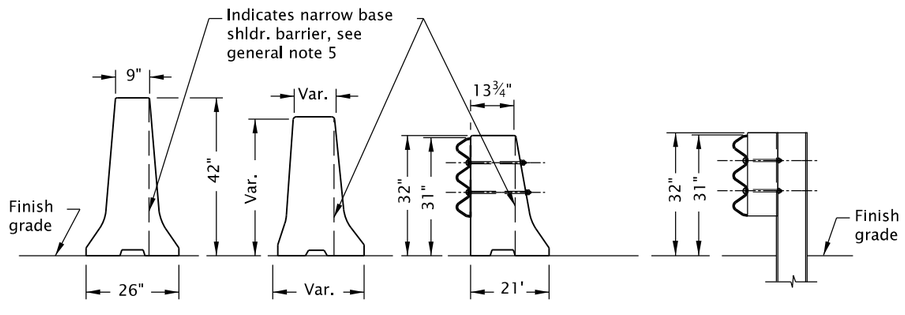
14-JUL-2023

RD581.dgn

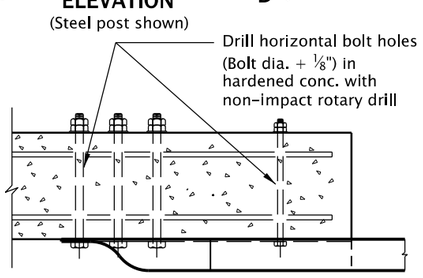




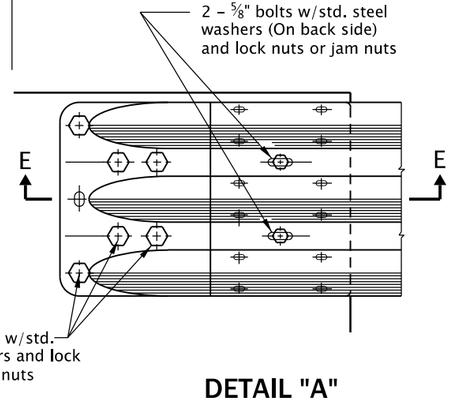
TALL CONCRETE BARRIER TRANSITION SECTION REBAR PLACEMENT



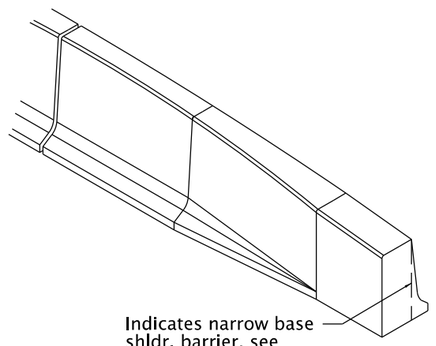
SECTION A-A SECTION B-B SECTION C-C SECTION D-D



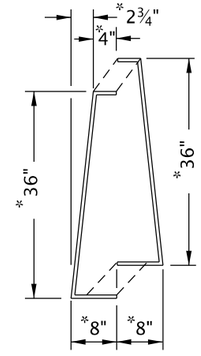
SECTION E-E



DETAIL "A"

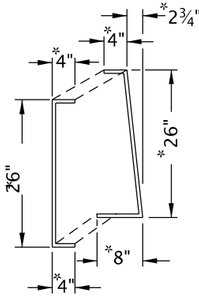


TALL CONCRETE BARRIER TRANSITION SECTION ISOMETRIC VIEW



SECTION F-F #4 Rebar

MODIFIED STIRRUP PAIR



SECTION G-G #4 Rebar

MODIFIED STIRRUP PAIR

*Dimension variable through transition section. (4" min. overlap)

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. *All reinforcing bars shall be full length as shown and shall be 2 inches clear of the nearest face of concrete unless shown otherwise.*
2. *See Std. Dwgs. RD405, RD410, RD415, RD417, RD480, RD481, RD482 and RD545 for details not shown.*
3. *If trench method is used to install posts, ensure compaction according to 00810.41, second paragraph.*
4. *See Std. Dwg. RD502 for securing new permanent installations concrete barrier to roadway (when being anchored). See Std. Dwg. RD516 for securing concrete barrier to roadway that is maintained for use in temporary installations.*
5. *Narrow base shoulder barrier to be used only at locations with backfill behind barrier as shown on plans.*
6. *All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.*

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

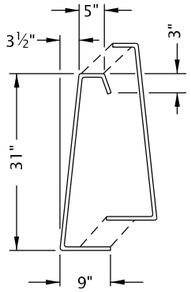
MIDWEST GUARDRAIL SYSTEM TRANSITION TO TALL CONCRETE BARRIER

2024

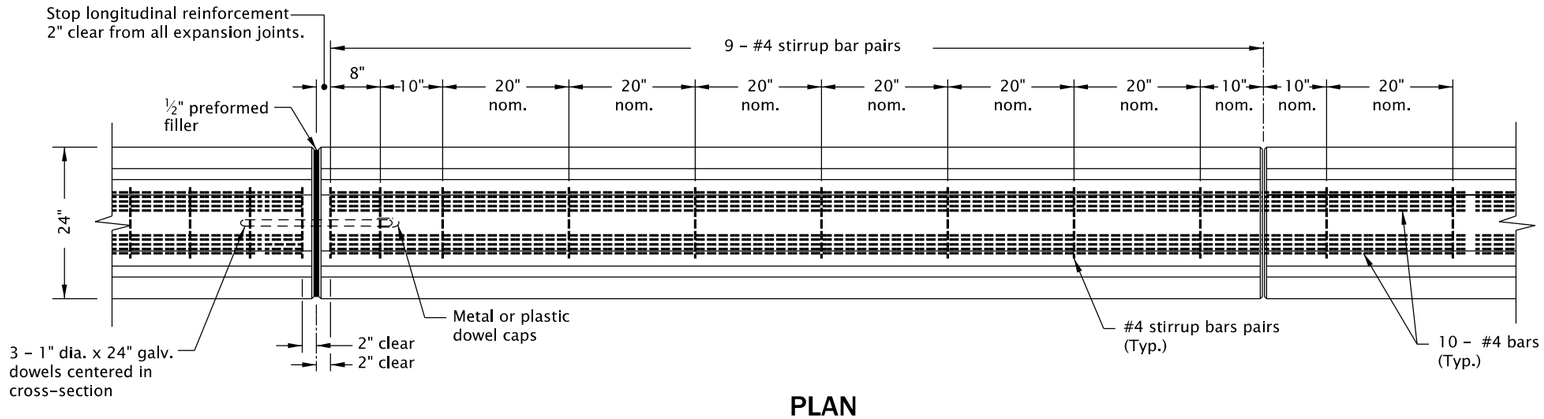
DATE	REVISION DESCRIPTION

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **RD581**

Effective Date: June 1, 2024 - November 30, 2024

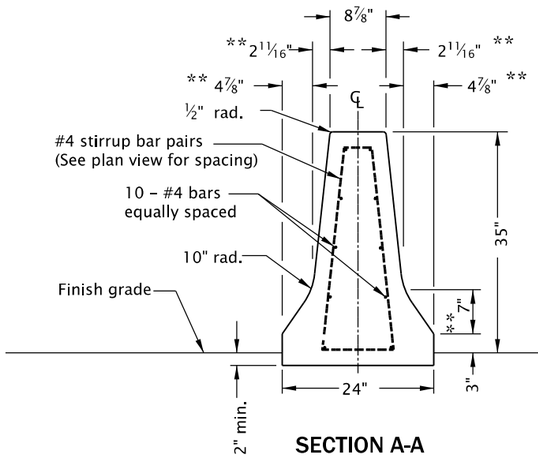


STIRRUP BAR PAIRS
#4 Rebar

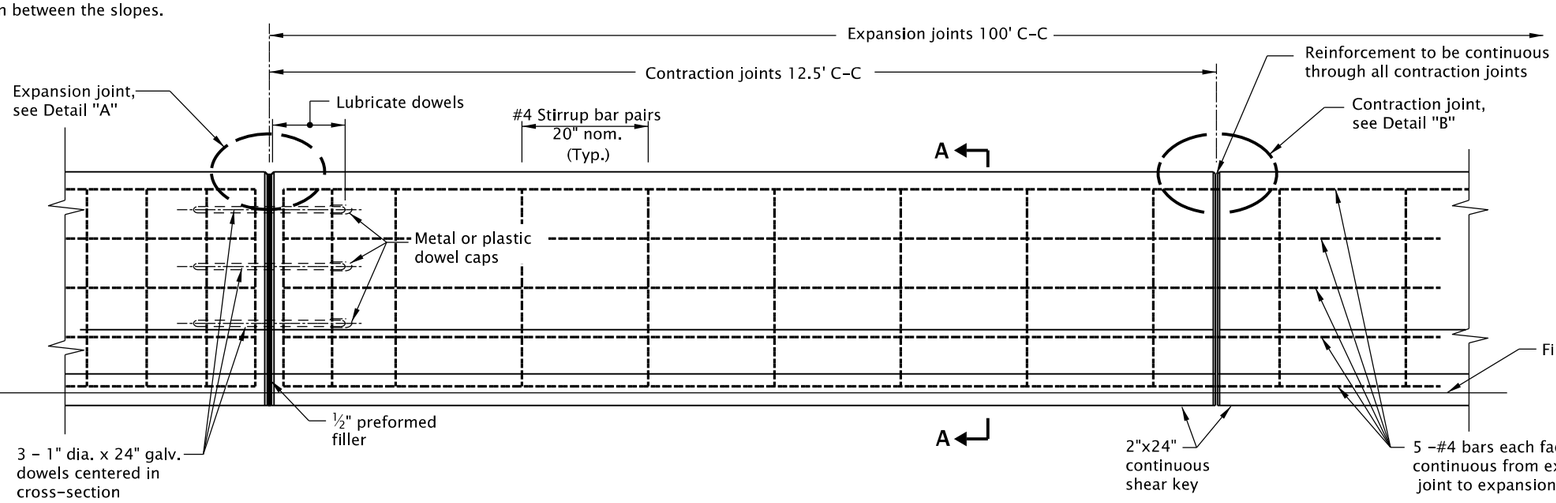


PLAN

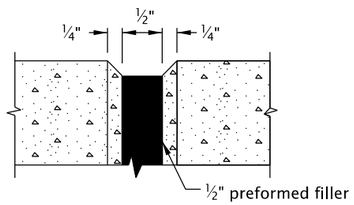
** Dimensions marked thus are to the intersection point of the barrier slopes. Const. the 10" radius to provide a smooth transition between the slopes.



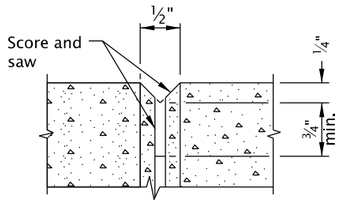
SECTION A-A



ELEVATION



DETAIL "A"
(EXPANSION JOINT)



DETAIL "B"
(CONTRACTION JOINT)

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

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.

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

35" CONCRETE MEDIAN BARRIER CAST-IN-PLACE

2024

DATE	REVISION DESCRIPTION

CALC. BOOK NO.	SDR DATE	
N/A	~~19-JAN-2010~~	**RD590**

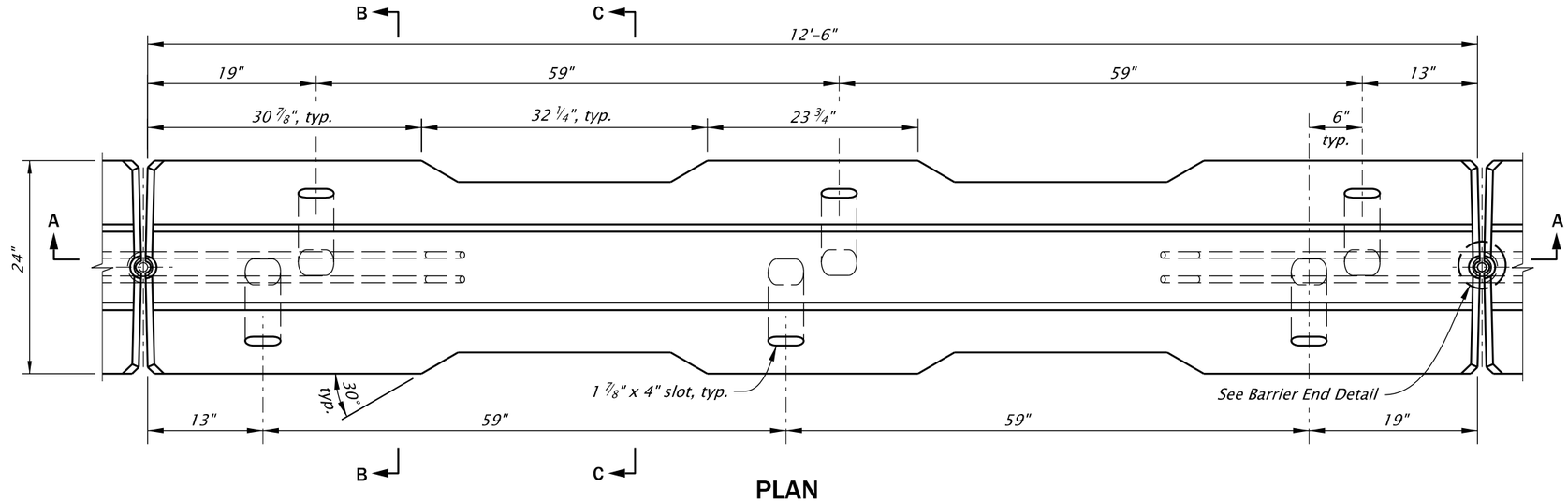
Effective Date: June 1, 2024 – November 30, 2024

20-JUL-2020

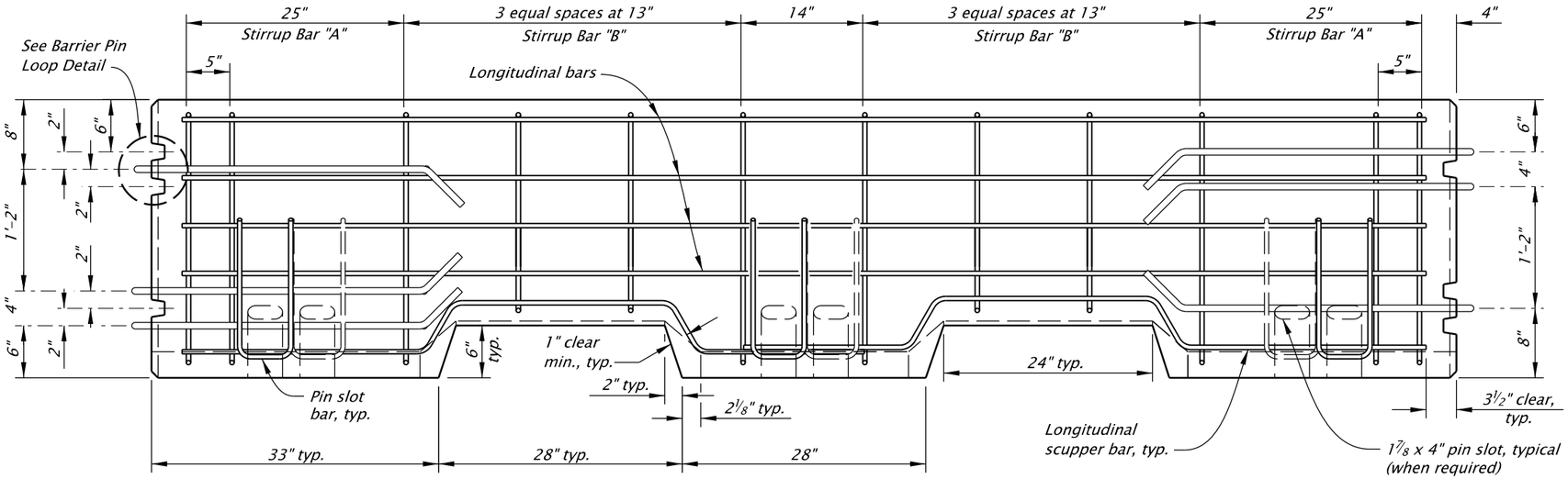
RD590.dgn

14-JUL-2023

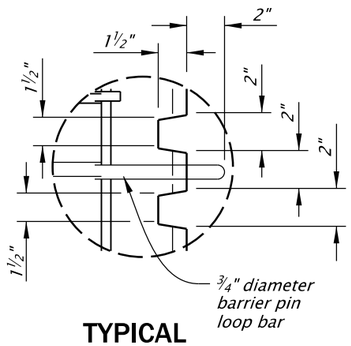
RD595.dgn



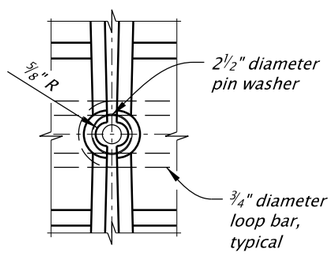
PLAN



SECTION A-A



TYPICAL BARRIER PIN LOOP



BARRIER END

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. *All reinforcement shall be full length as shown and shall be 2 inches clear of nearest face of concrete, unless otherwise shown.*
2. *Maximum chord length for curves with a 1425 foot radius or less shall be 12.5 feet. Maximum chord length for curves with radii exceeding 1425' feet shall be 25 feet.*
3. *Normal use of precast barrier units is restricted to curvatures with radii greater than 770 feet.*
4. *Concrete grout for grouting over pins, pinning holes or grouting of scuppers shall be Portland cement grout, weak in strength and of thick consistency, as directed.*
5. *Precast concrete barrier used in medians less than 8 feet in width shall be secured to roadway. See Std. Dwgs. RD515 and RD516 for details.*
6. *See Std. Dwg. RD501 for details not shown. See Std. Dwg. RD502 for securing new permsnent installations concrete barrier to roadway (when being anchored). See Std. Dwg. RD516 for securing concrete barrier to roadway that is maintained for use in temporary installations.*
7. *All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.*

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

32" PRECAST TYPE "F" CONCRETE BARRIER WITH SCUPPERS

2024

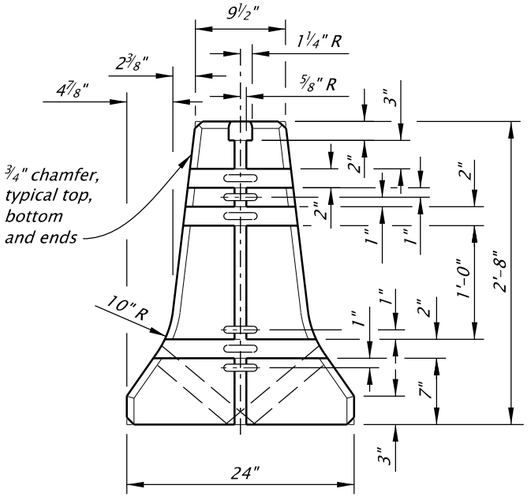
DATE	REVISION DESCRIPTION
07-2022	REVISED DETAILS AND NOTES
06-2023	REVISED NOTES

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **RD595**

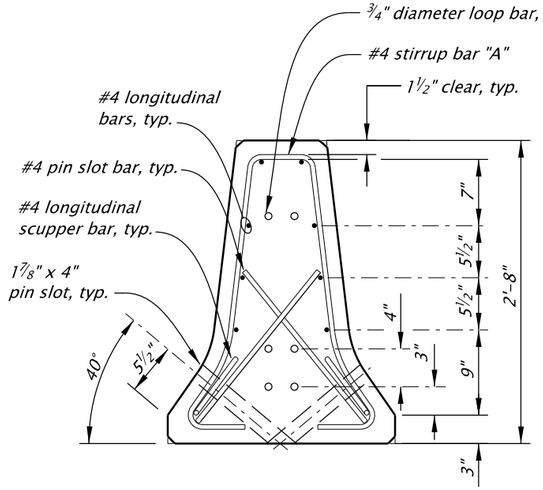
Effective Date: June 1, 2024 - November 30, 2024

14-JUL-2023

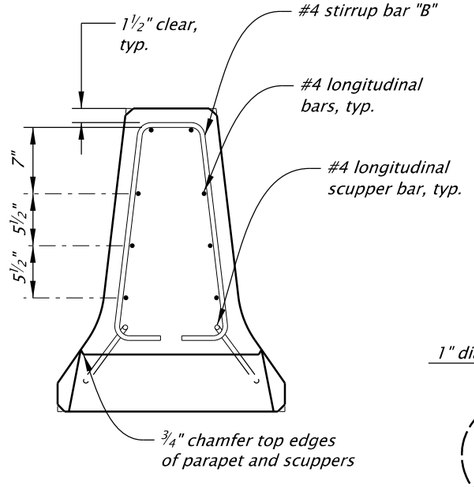
RD596.dgn



END VIEW



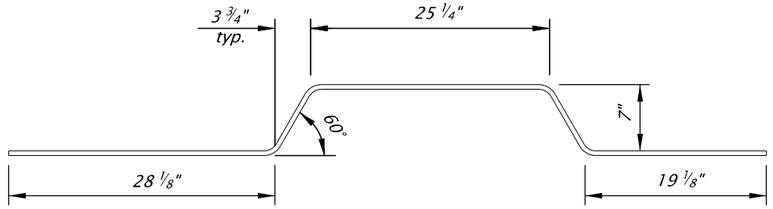
SECTION B-B



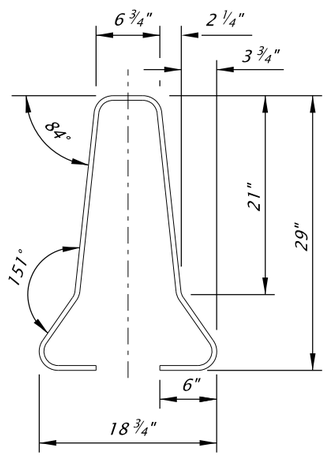
SECTION C-C



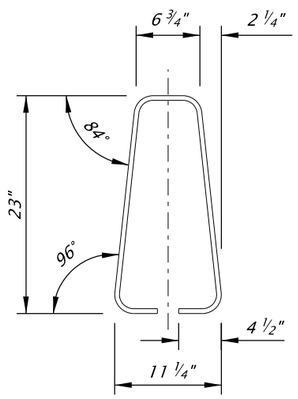
LONGITUDINAL BAR



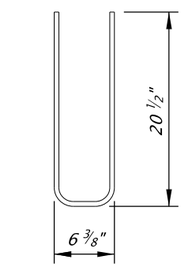
LONGITUDINAL SCUPPER BAR



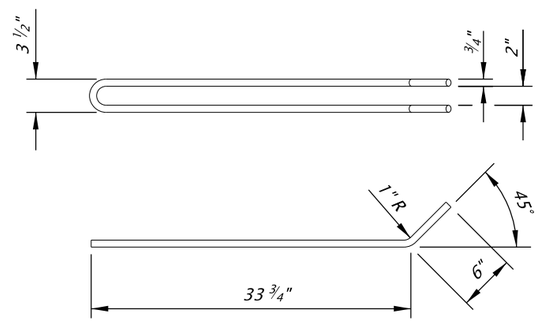
STIRRUP BAR "A"



STIRRUP BAR "B"



PIN SLOT BAR
(When required)

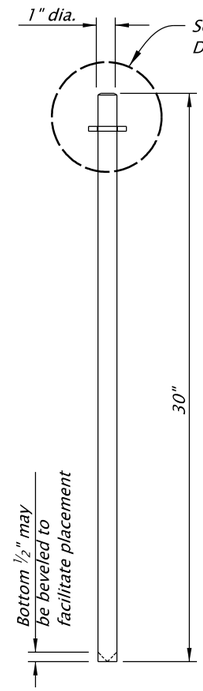


LOOP BAR

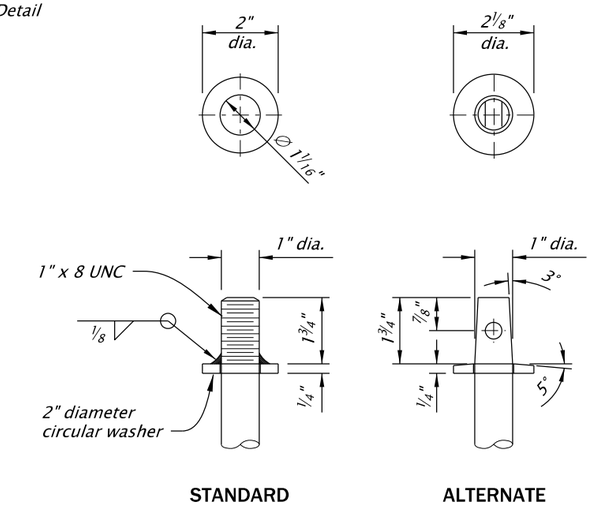
REINFORCING STEEL BENDING DIAGRAM

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. *All reinforcement shall be full length as shown and shall be 2 inches clear of nearest face of concrete, unless otherwise shown.*
2. *Concrete grout for grouting over pins, pinning holes or grouting of scuppers shall be portland cement grout, weak in strength and of thick consistency, as directed.*
3. *See Std. Dwg. RD502 for securing new permanent installations concrete barrier for roadway (when being anchored). See Std. Dwg. RD516 for securing concrete barrier to roadway that is maintained for use in temporary installations.*
4. *All pins, bolts, dowels, loop bars, and connectors shall be hot-dip galvanized after fabrication.*



PIN DETAIL



STANDARD ALTERNATE

WASHER DETAIL

PIN NOTE:
Washer shall be forged as integral part of pin or shall be welded as shown.

CONNECTING PIN ASSEMBLY DETAIL

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 first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

32" PRECAST TYPE "F" CONCRETE BARRIER WITH SCUPPERS REINFORCING

2024

DATE	REVISION DESCRIPTION
07-2022	NEW DRAWING CREATED
06-2023	REVISED NOTES

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **RD596**

Effective Date: June 1, 2024 - November 30, 2024