2024 OREGON STANDARD DRAWINGS

Standard Distribution
Date of Issue: July 2023

William L. Woods 2023.08.01 11:11:25 -07'00'

William Lee Woods, PE
Senior Standards Engineer

This is the July 2023 release of the 2024 Oregon Standard Drawings.

For ODOT Projects the details in the standard drawings will be effective on the **Dec 1, 2023** bid opening where these drawings are called for in the project plans.

These drawings are for use with projects using the **2024 Oregon Standard Specifications.**

You will notice an "effective date" on the lower right bottom of each Standard Drawing. The bid opening date of a project should be in the effective date window of the drawings. This will ensure the correct drawings are being used on the projects.

Electronic PDF files with the effective date for each drawing are on the Web site at:

http://www.oregon.gov/ODOT/Engineering/Pages/Standards.aspx

The Standard Drawing Baseline Reports for the drawings contain useful information for the designer as well as updates that occur on the drawing. The link to the report is the title of the specific drawing on the webpage.

These Standard Drawings are the ones that have updates:

Drawing Number	Comment
RD471	Title Change
RD472	New Drawing
RD473	New Drawing
RD474	New Drawing
RD500	
RD501	
RD502	
RD503	Title Change
RD505	
RD510	Title Change
RD515	Title Change
RD516	Title Change
RD520	
RD526	
RD530	Title Change
RD535	

Drawing Number	Comment
RD536	
RD550	
RD570	Title Change
RD575	
RD576	
RD580	
RD581	
RD595	
RD596	
RD730	
TM450	
TM452	
TM453	
TM454	
TM456	
TM457	
TM485	
TM492	
TM493	
TM621	
TM821	
TM844	
TM845	New Drawing
TM854	

OREGON STANDARD DRAWINGS 2024
NUMBERS AND REVISION DATES

DRAWING NUMBER	REVISION DATE	DRAWING NUMBER	REVISION DATE	DRAWING NUMBER	REVISION DATE
RD100		RD344		RD420	
RD101		RD345		RD421	
RD110		RD346		RD435	
RD115		RD348		RD436	
RD120		RD350		RD437	
RD130		RD352		RD438	
RD140		RD354		RD440	
RD150		RD356		RD442	
RD160		RD358		RD443	
RD170		RD360		RD444	
RD250		RD362		RD445	
RD254		RD363		RD450	
RD255		RD364		RD451	
RD258		RD365		RD470	
RD262		RD366		RD471	
RD266		RD367		RD472	
RD270		RD368		RD473	
RD274		RD370		RD474	
RD278		RD371		RD481	
RD282		RD372		RD482	
RD286		RD373		RD500	
RD300		RD374		RD501	
RD302		RD376		RD502	
RD304		RD378		RD503	
RD306		RD380		RD505	
RD308		RD382		RD510	
RD310		RD384		RD515	
RD312		RD386		RD516	
RD316		RD388		RD520	
RD317		RD390		RD526	
RD318		RD391		RD530	
RD319		RD393		RD535	
RD320		RD398		RD536	
RD321		RD399		RD545	
RD322		RD400		RD546	
RD324		RD401		RD550	
RD325		RD402		RD560	
RD326		RD403		RD570	
RD327		RD404		RD575	
RD328		RD405		RD576	
RD330		RD406		RD580	
RD332		RD407		RD581	
RD334		RD408		RD590	
RD335		RD409		RD595	
RD336		RD410		RD596	
RD338		RD412		RD602	
RD339		RD415		RD610	
RD340		RD416		RD615	
RD342		RD417		RD700	
RD343		RD419		RD701	

OREGON STANDARD DRAWINGS 2024
NUMBERS AND REVISION DATES

DRAWING NUMBER	REVISION DATE	DRAWING NUMBER	REVISION DATE	DRAWING NUMBER	REVISION DATE
RD702		RD952		BR230	
RD705		RD960		BR233	
RD706		RD1000		BR236	
RD707		RD1005		BR240	
RD710		RD1006		BR241	
RD711		RD1010		BR242	
RD715		RD1015		BR245	
RD720		RD1030		BR246	
RD721		RD1031		BR250	
RD722		RD1032		BR253	
RD725		RD1033		BR256	
RD730		RD1040		BR260	
RD735		RD1045		BR263	
RD740		RD1050		BR266	
RD745		RD1055		BR270	
RD750		RD1060		BR273	
RD770		RD1065		BR285	
RD771		RD1070		BR286	
RD780		RD1140		BR290	
RD781				BR291	
RD782				BR300	
RD810		BR115		BR310	
RD815		BR133		BR321	
RD820		BR135		BR325	
RD825		BR136		BR330	
RD830		BR139		BR335	
RD832		BR140		BR340	
RD835		BR141		BR350	
RD840		BR145		BR360	
RD845		BR157		BR365	
RD900		BR165		BR375	
RD901		BR175		BR400	
RD902		BR182		BR405	
RD904		BR190		BR410	
RD905		BR191		BR415	
RD906		BR195		BR420	
RD908		BR200		BR422	
RD909		BR203		BR425	
RD910		BR206		BR430	
RD912		BR207		BR435	
RD913		BR208		BR440	
RD916		BR209		BR445	
RD920		BR212		BR500	
RD922		BR214		BR505	
RD930		BR216		BR520	
RD932		BR220		BR525	
RD936		BR221		BR550	
RD938		BR222		BR705	
RD940		BR223		BR706	
RD950		BR226		BR707	

OREGON STANDARD DRAWINGS 2024
NUMBERS AND REVISION DATES

DRAWING NUMBER	REVISION DATE
BR708	
BR709	
BR730	
BR740	
BR750	
BR751	
BR760	
BR800	
BR805	
BR820	
BR825	
BR830	
BR835	
BR840	
BR841	
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TM832	
TM833	
TM840	

OREGON STANDARD DRAWINGS 2024
NUMBERS AND REVISION DATES

DRAWING NUMBER	REVISION DATE	DRAWING NUMBER	REVISION DATE	DRAWING NUMBER	REVISION DATE
TM841					
TM842					
TM843					
TM844					
TM845					
TM850					
TM851					
TM852					
TM853					
TM854					
TM860					
TM861					
TM862					
TM870					
TM871					
TM880					

- A -

- B -

- C -

-G-

-M-

-P-

Pavement

Pavement Markings

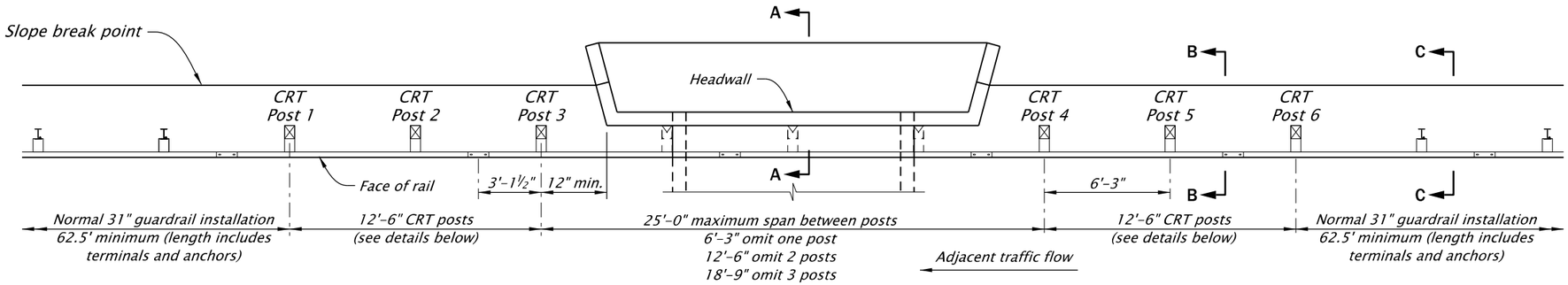
Pedestrian

Pipe

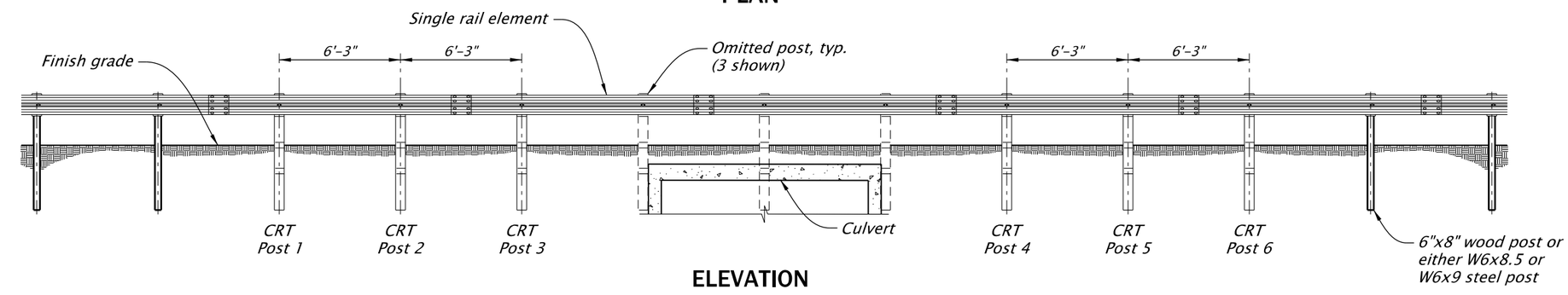
Pipe Fill Height Tables

14-JUL-2023

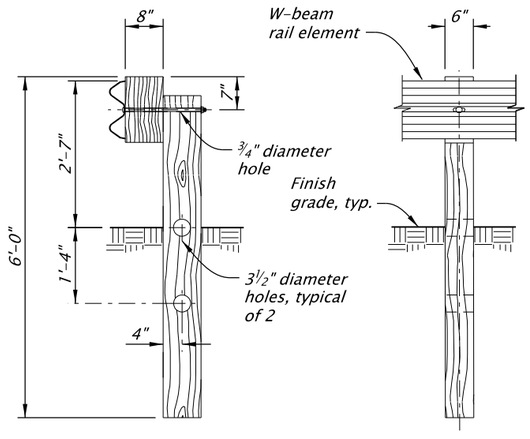
RD471.dgn



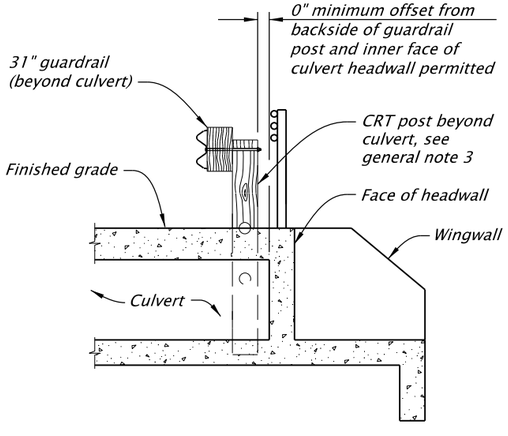
PLAN



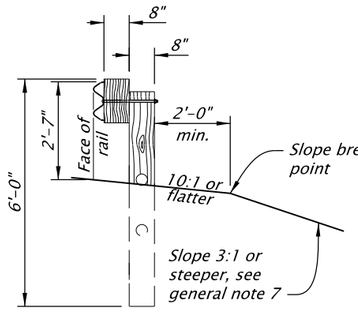
ELEVATION



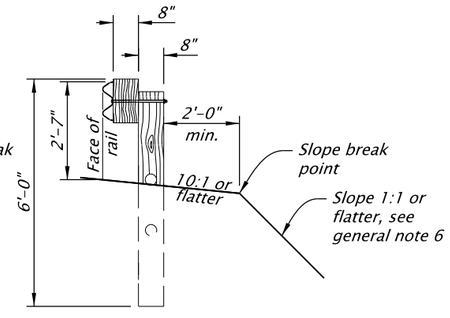
CONTROLLED RELEASING TERMINAL (CRT) POST DETAIL



SECTION A-A



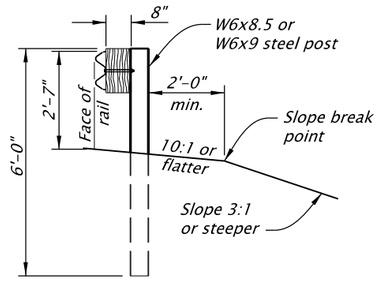
SPAN WITH HEADWALLS



SPAN WITHOUT HEADWALLS

SECTION B-B

(CRT post shown)



SECTION C-C

(Steel post shown)

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. *See appropriate guardrail standard drawing(s) for details not shown.*
2. *Only those posts required to span the obstacle shall be eliminated. A maximum of three posts may be eliminated within a 25 foot span of W-beam guardrail.*
3. *Controlled Releasing terminal (CRT) post to be wood only.*
4. *Guardrail shall be lapped in the direction of adjacent traffic.*
5. *Install at least 62.5 feet of tangent Type 31 guardrail from CRT Post 3 and CRT Post 4 before startinjg a taper or radius rail guardrail.*
6. *Grading requirements for spans without headwalls must begin at least 43.75 feet before CRT Post 3, extend through the obstruction area, and end at least 43.75 feet after CRT Post 4.*
7. *Grading requirements for spans with headwalls must extend 43.75 feet minimum upstream and downstream from CRT Post 3 and CRT Post 4.*

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 OVER LOW-FILL CULVERTS OMITTED POST

2024

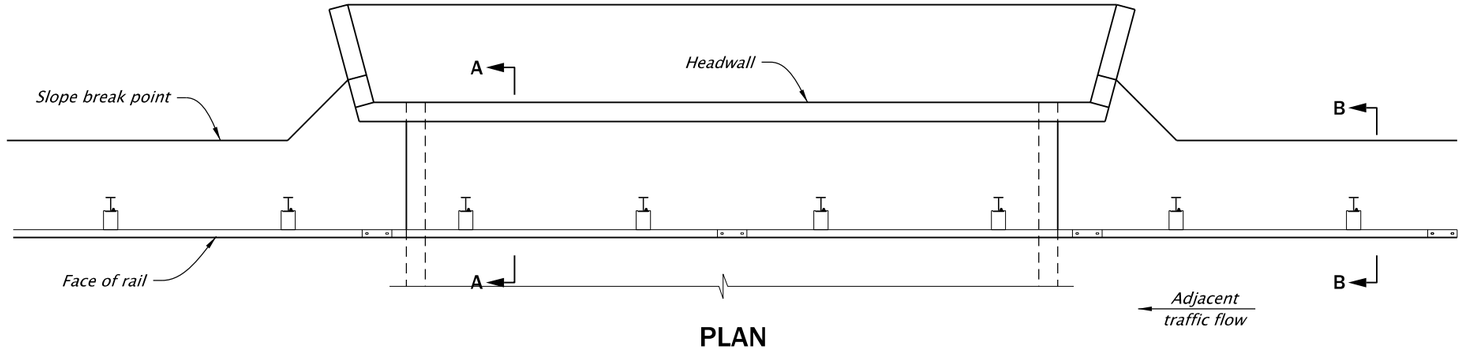
DATE	REVISION DESCRIPTION
06-2023	REVISED DETAILS AND NOTES, TITLE CHANGE

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **RD471**

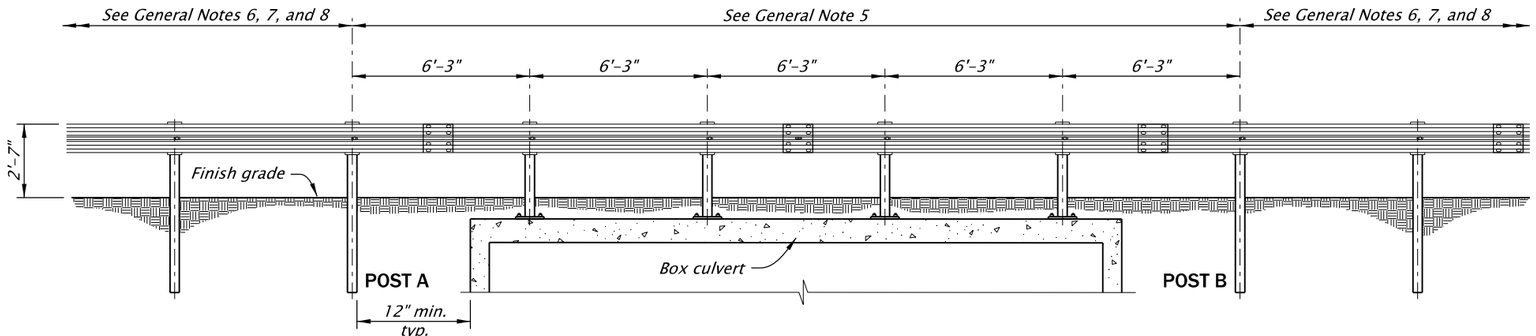
Effective Date: December 1, 2023 - May 31, 2024

14-JUL-2023

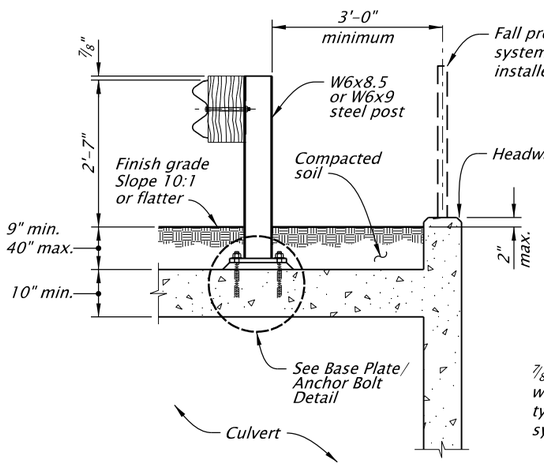
RD472.dgn



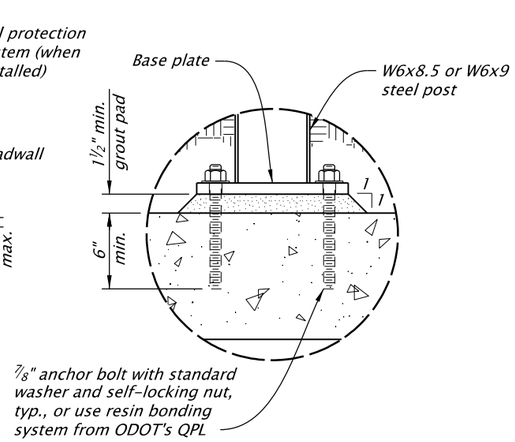
PLAN



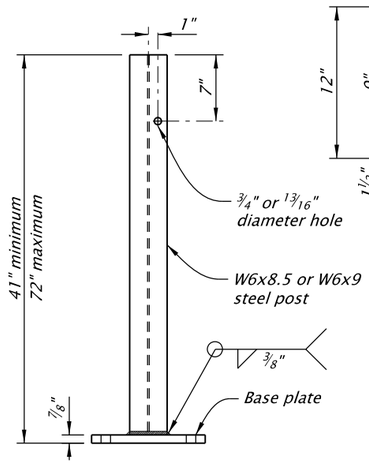
ELEVATION



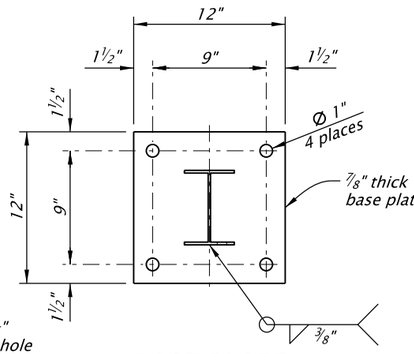
SECTION A-A
(EMBEDDED ANCHOR)



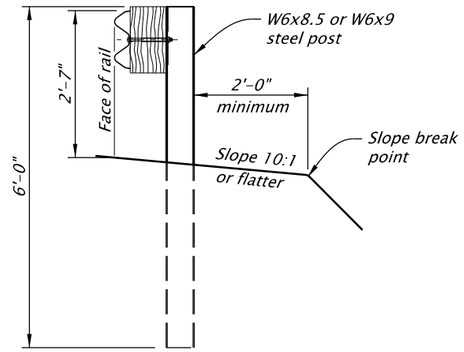
BASE PLATE / ANCHOR BOLT
DETAIL



BOX CULVERT POST ASSEMBLY



BASE PLATE



SECTION B-B

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. *See appropriate guardrail standard drawing(s) for details not shown.*
2. *It is acceptable to use a greater or lesser number of box culvert embedded guardrail anchor steel post to increase or decrease the length of system as needed.*
3. *Guardrail shall be lapped in the direction of adjacent traffic.*
4. *Attach Guardrail Post to Box Culvert with 7/8" diameter high-strength threaded rods 8½" in length with resin-bonded anchors.*
5. *Box culvert guardrail steel posts are not needed for fill depths greater than 40". Drive standard six foot length guardrail posts into compacted soil and install guardrail per Standard Drawing RD407.*
6. *Install at least 62'-6" of 31" guardrail upstream and downstream from posts A and B (terminals and anchors included in length).*
7. *Install at least 12'-6" of 31" guardrail from guardrail posts A and B before installing terminals and anchors.*
8. *Install at least 37'-6" of 31" guardrail upstream and downstream from guardrail posts A and B before starting a taper or radius rail guardrail system.*

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 BOX CULVERT EMBEDDED ANCHOR STEEL POST

2024

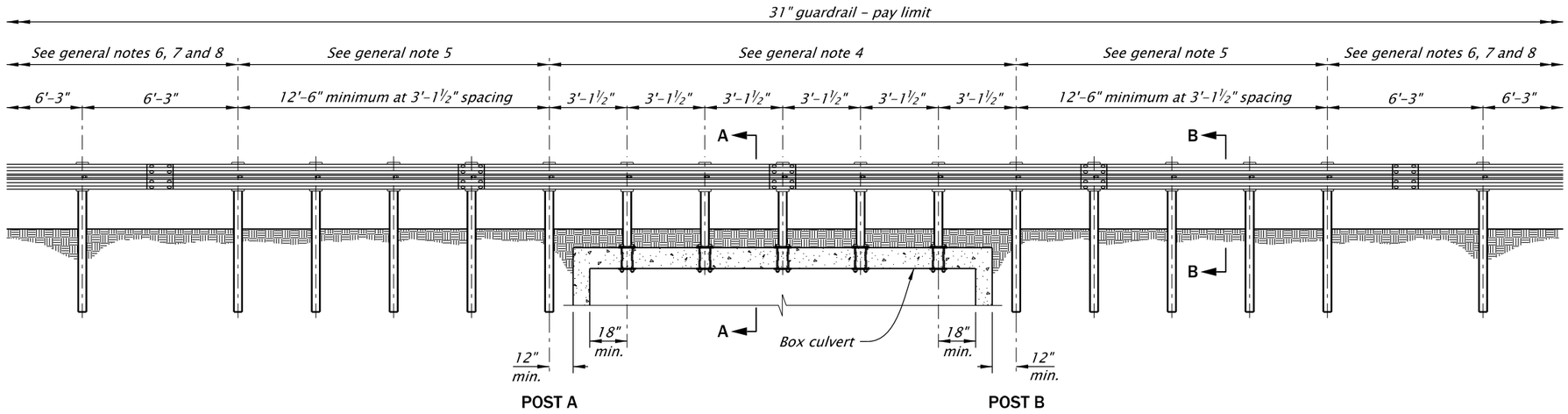
DATE	REVISION DESCRIPTION
05-2023	NEW DRAWING CREATED

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **RD472**

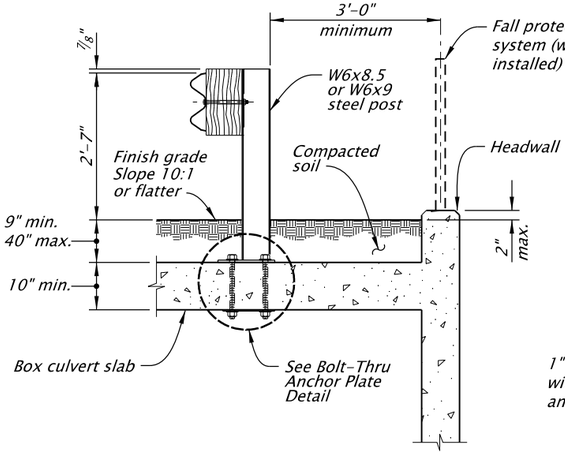
Effective Date: December 1, 2023 - May 31, 2024

14-JUL-2023

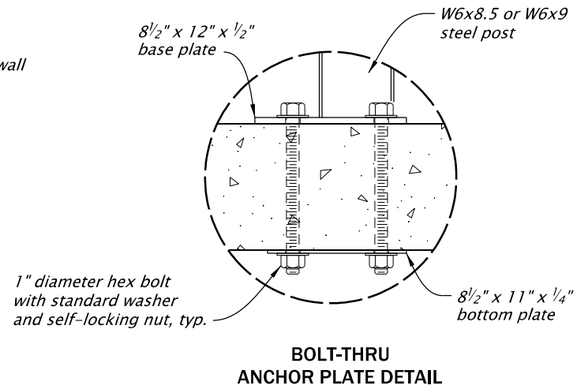
RD473.dgn



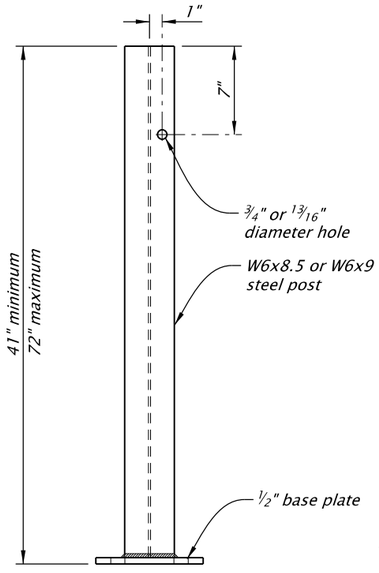
TYPICAL ELEVATION



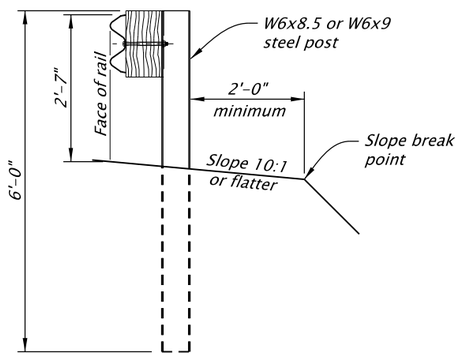
SECTION A-A
(BOLT-THRU ANCHOR)



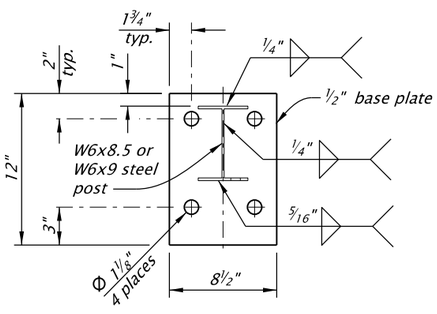
BOLT-THRU
ANCHOR PLATE DETAIL



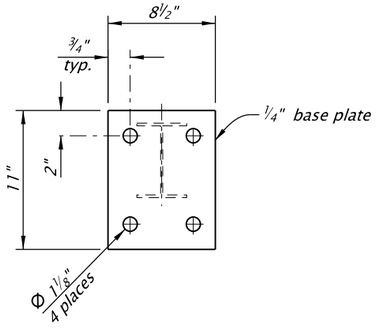
BOX CULVERT POST ASSEMBLY



SECTION B-B



BASE PLATE



BOTTOM PLATE

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. *See appropriate guardrail standard drawing(s) for details not shown.*
2. *It is acceptable to use a greater or lesser number of box culvert bolt-thru guardrail anchor steel post to increase or decrease the length of system as needed.*
3. *Guardrail shall be lapped in the direction of adjacent traffic.*
4. *Box culvert guardrail steel posts are not needed for fill depths greater than 40 inches. Drive standard 6 foot length guardrail posts into compacted soil and install guardrail per Standard Drawing RD407.*
5. *Install a minimum of 12 foot 6 inches of Type 31 guardrail at half-post spacing (3 foot 1½ inch) coming off edges of culvert.*
6. *Install at least 50 feet of Type 31 guardrail upstream and downstream from half-post spacing (3 foot 1½ inch) guardrail. Terminals and anchors included in length.*
7. *Install at least 12 foot 6 inches of Type 31 guardrail from end of half-post spacing (3 foot 1½ inch) guardrail before installing terminal or anchor.*
8. *Install at least 25 feet of Type 31 guardrail from end of half-post spacing (3 foot 1½ inch) guardrail before starting a taper or radius rail guardrail system.*

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 BOX CULVERT BOLT-THRU ANCHOR STEEL POST

2024

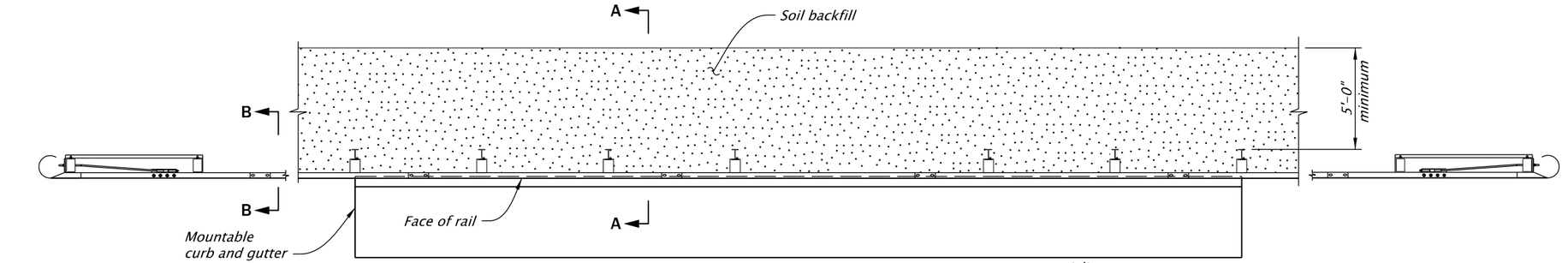
DATE	REVISION DESCRIPTION
05-2023	NEW DRAWING CREATED

CALC. BOOK NO. N/A

SDR DATE 14-JUL-2023

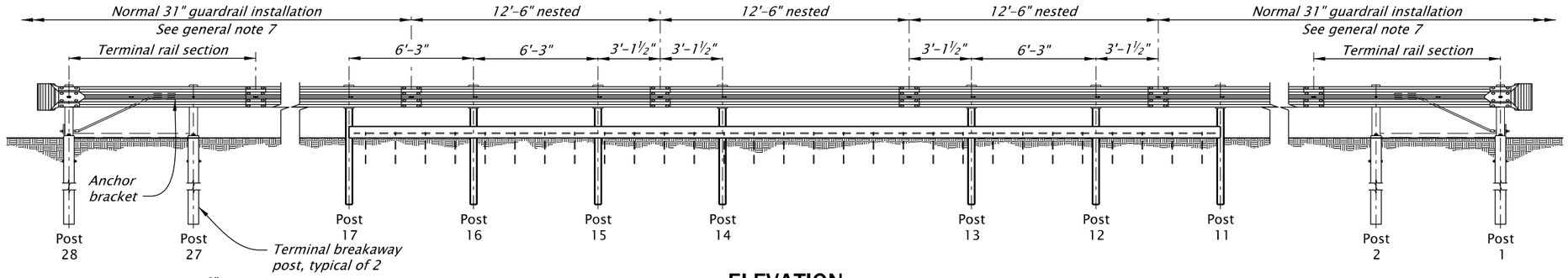
RD473

Effective Date: December 1, 2023 - May 31, 2024

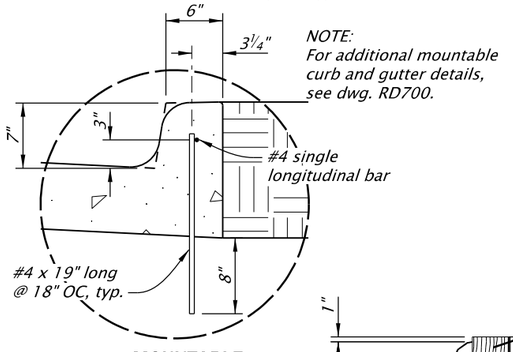


PLAN

Adjacent traffic flow

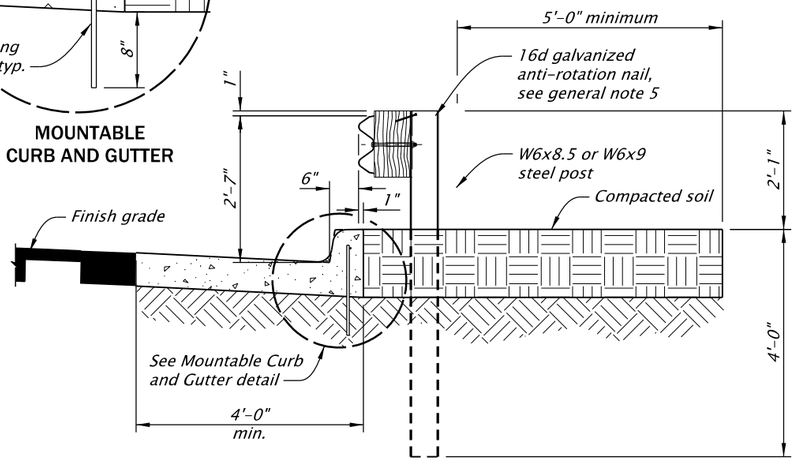


ELEVATION

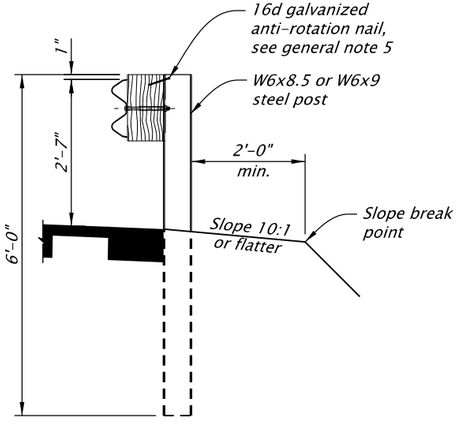


NOTE:
For additional mountable curb and gutter details, see dwg. RD700.

MOUNTABLE CURB AND GUTTER



SECTION A-A



SECTION B-B

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. *See appropriate guardrail standard drawing(s) for details not shown. See project plans for details not shown.*
2. *Use details shown as a general guide since manufacturer's details may vary. Install a guardrail terminal system that meets MASH requirements per manufacturer's recommendations (post count varies). Ensure that guardrail terminal meets appropriate test level for the project.*
3. *On two way two lane highways, both ends of guardrail runs shall be provided with a terminal flared or non-flared. Provide guardrail terminal from ODOT's QPL and shop drawings to Engineer.*
4. *Wood routed blocks shown. Blocks of an approved alternate material may be used. See ODOT's QPL.*
5. *Blocks shall be routed when steel posts are used to prevent rotation, or anti-rotation holes and 16d galvanized nails shall be used instead of routing the blocks.*
6. *Install at least 37.5 feet of nested W-beam rail around the omitted post location. The two nested upstream rails shall be placed in front of the two nested downstream rails to increase the rail strength and prevent premature rail rupture.*
7. *Install at least 62.5 feet of 31 inch guardrail upstream and downstream from nested W-beam rail (terminals and anchors included in length).*

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 WITH CURB AND OMITTED POST (MASH, TL-3)

2024

DATE	REVISION DESCRIPTION
05-2023	NEW DRAWING CREATED

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **RD474**

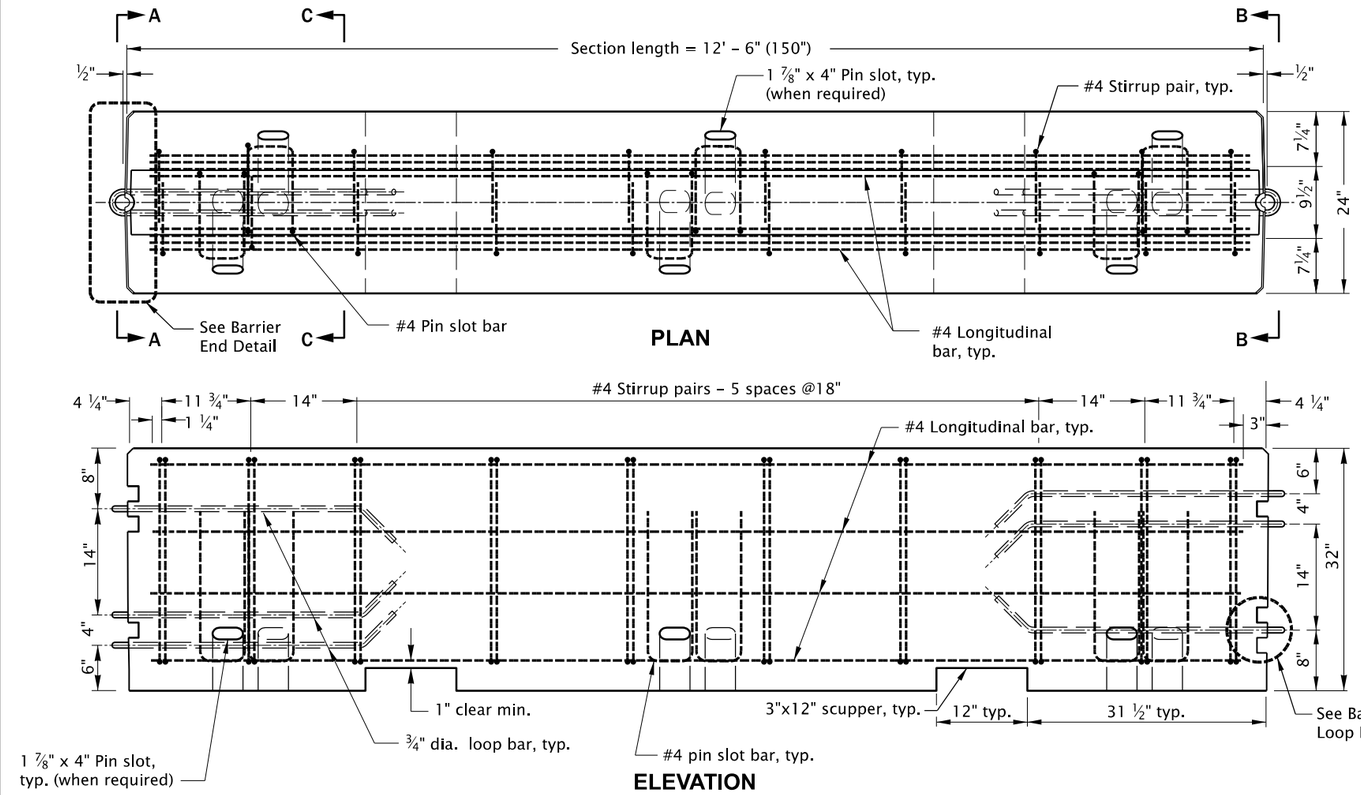
14-JUL-2023

RD474.dgn

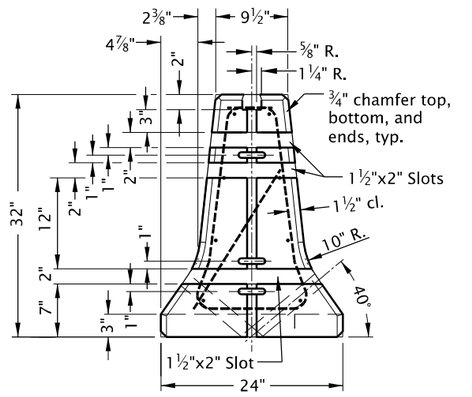
Effective Date: December 1, 2023 - May 31, 2024

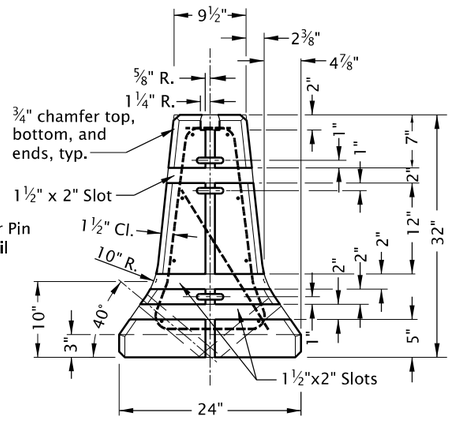
14-JUL-2023

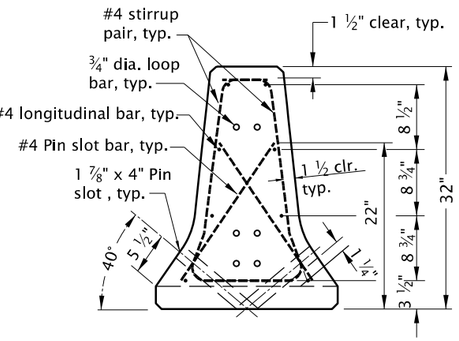
RD500.dgn

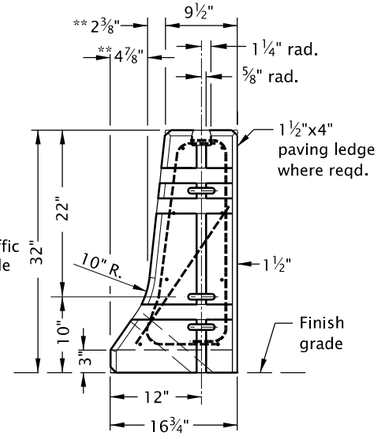


MEDIAN BARRIER



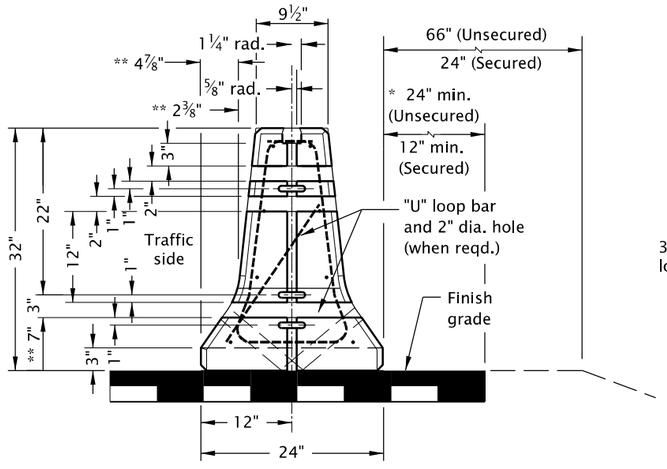






NARROW BASE

(No pin slots required)

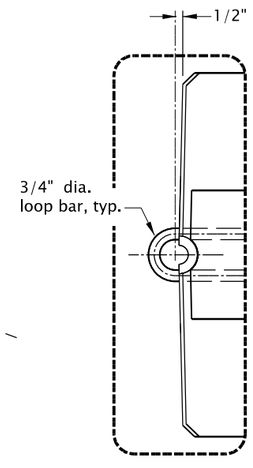


STANDARD

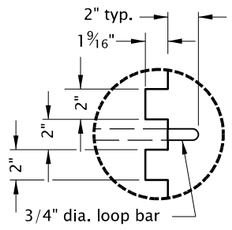
* Barrier used as shoulder barrier and placed in areas where these dimensions cannot be obtained shall be secured to roadway.

** 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.*

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

2024

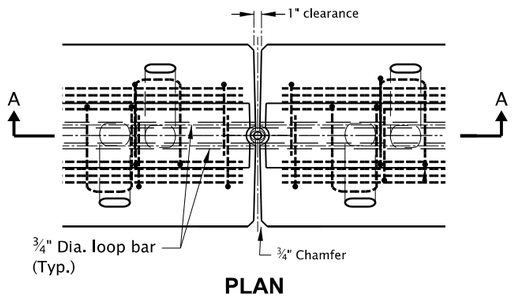
DATE	REVISION DESCRIPTION
01-2021	TITLE CHANGED, REVISED DETAILS AND NOTES
04-2021	REVISED DETAILS AND NOTES
12-2021	REVISED NOTES
06-2023	REVISED DETAILS AND NOTES

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

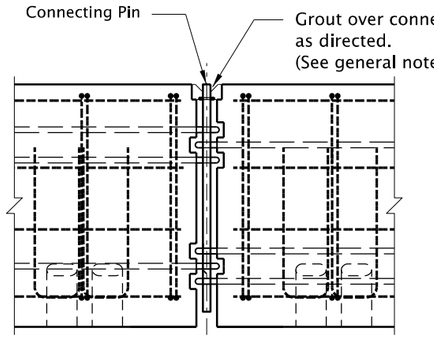
Effective Date: December 1, 2023 - May 31, 2024

14-JUL-2023

RD501.dgn

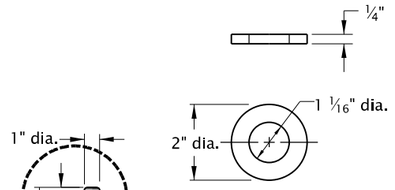


PLAN

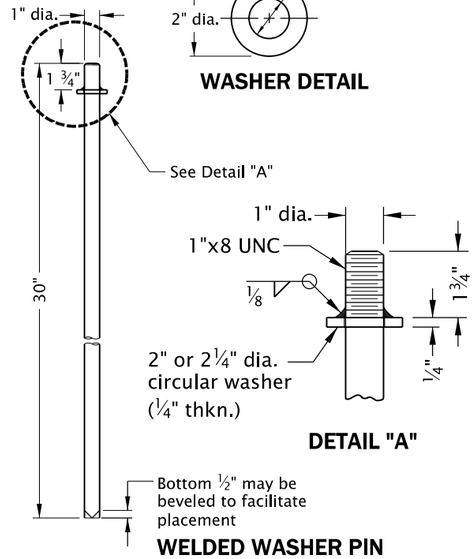


SECTION A-A

PIN AND LOOP CONNECTION

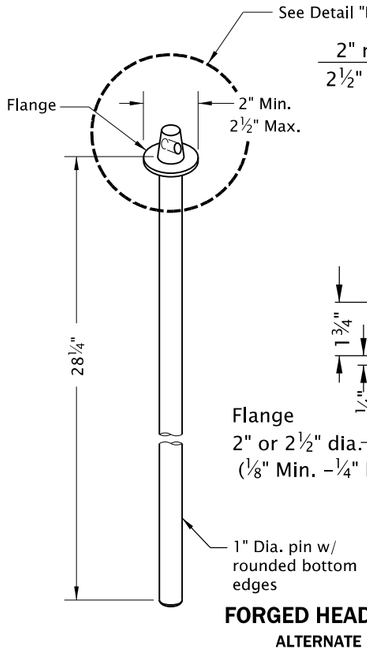


WASHER DETAIL

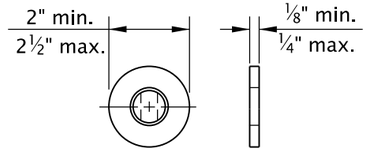


WELDED WASHER PIN

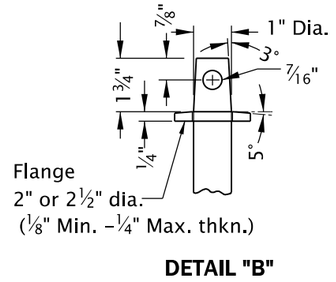
DETAIL "A"



FORGED HEAD PIN
ALTERNATE



FLANGE DETAIL



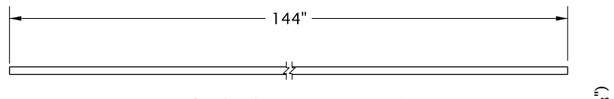
DETAIL "B"

CONNECTING PIN ASSEMBLY DETAIL

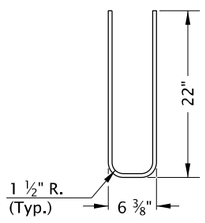
NOTE: Washer shall be forged as integral part of pin or shall be welded as shown.

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

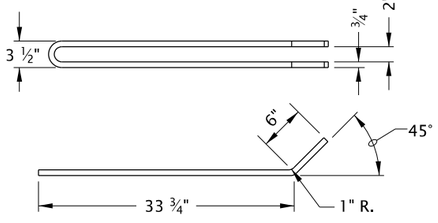
1. *See Std. Dwg. RD500 for details not shown. See Std. Dwg. RD502 for new permanent installations barrier anchoring details (when being anchored). See Std. Dwgs. RD515 and RD516 for concrete barrier that is maintained for use in temporary installations.*
2. *All reinforcement shall be full length as 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.*



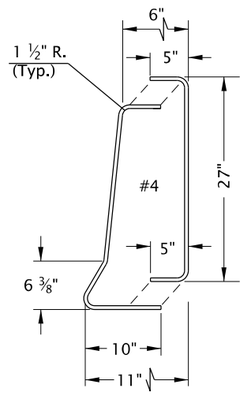
#4 LONGITUDINAL BAR



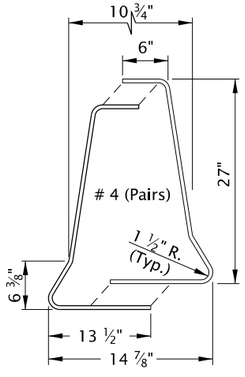
#4 PIN SLOT BAR
(When required)



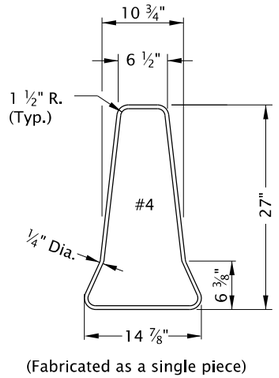
#4 LOOP BAR DETAIL



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

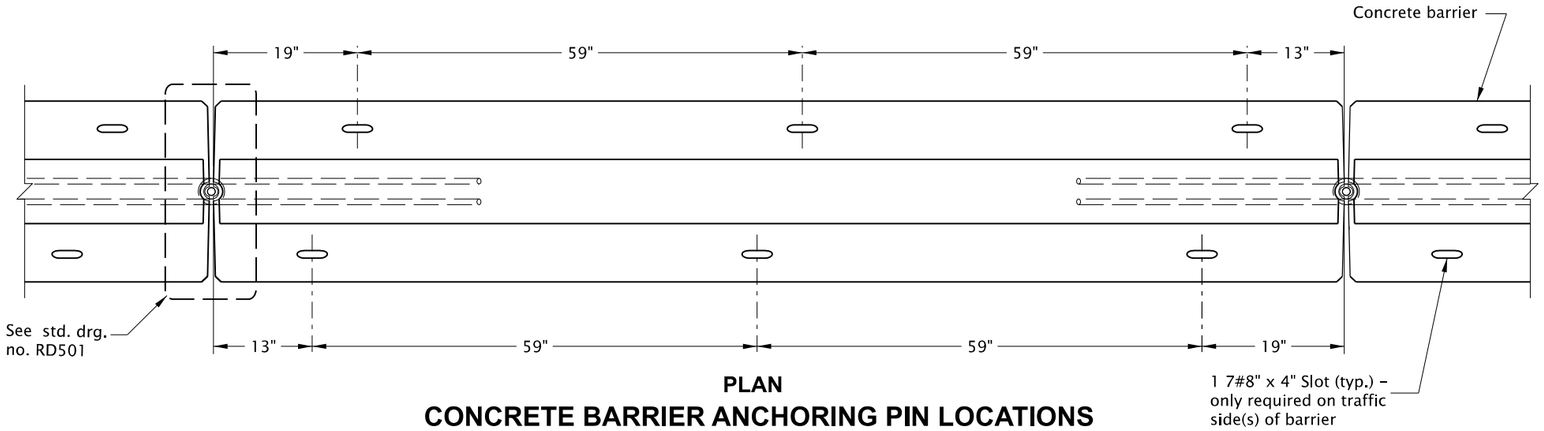
DATE	REVISION DESCRIPTION
01-2021	NEW DRAWING CREATED
07-2021	GENERAL ANNOTATION CLEANUP
06-2023	REVISED DETAILS AND NOTES

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **RD501**

Effective Date: December 1, 2023 - May 31, 2024

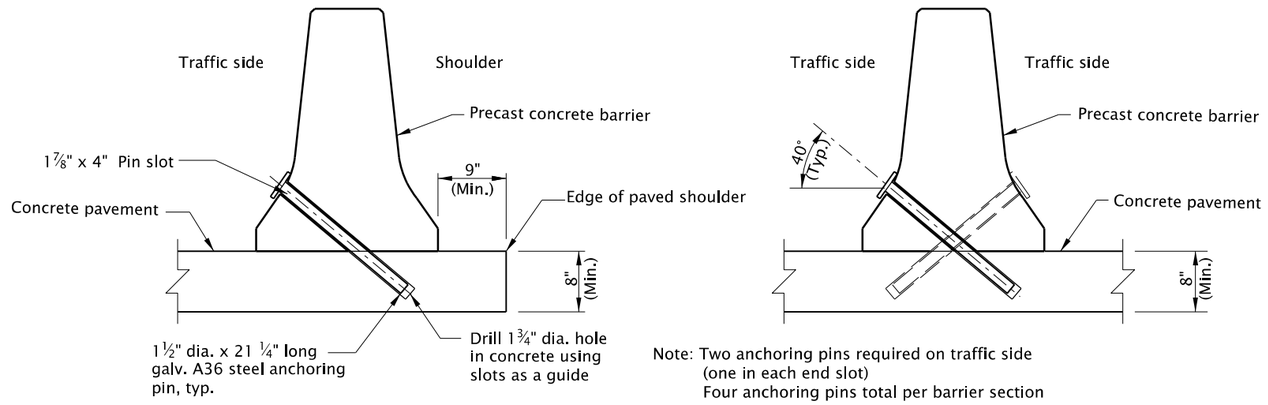
14-JUL-2023

RD502.dgn

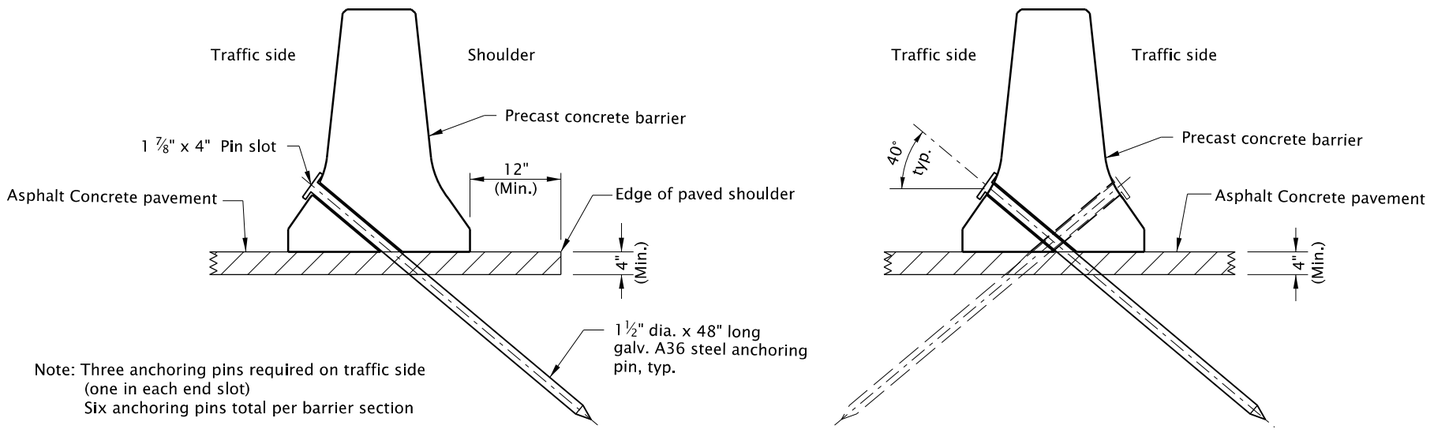


PLAN

CONCRETE BARRIER ANCHORING PIN LOCATIONS



CONCRETE ANCHORING PIN DETAILS

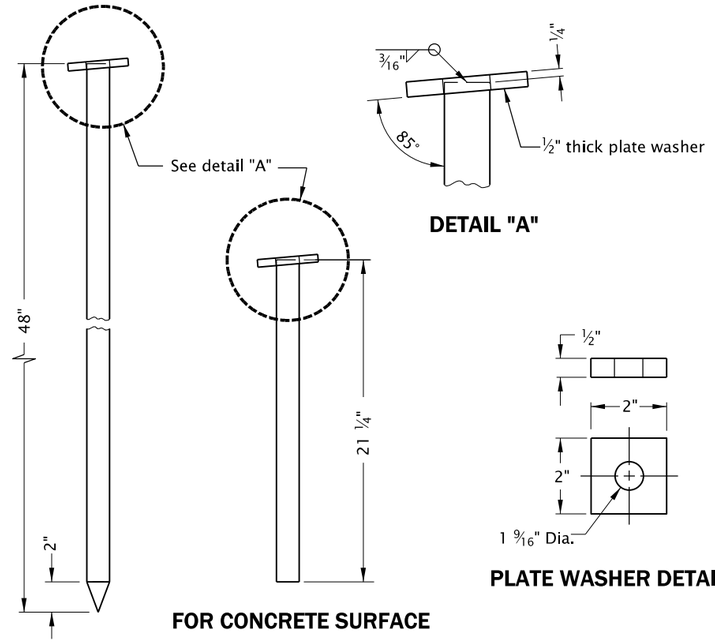


ASPHALT ANCHORING PIN DETAILS

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.*



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

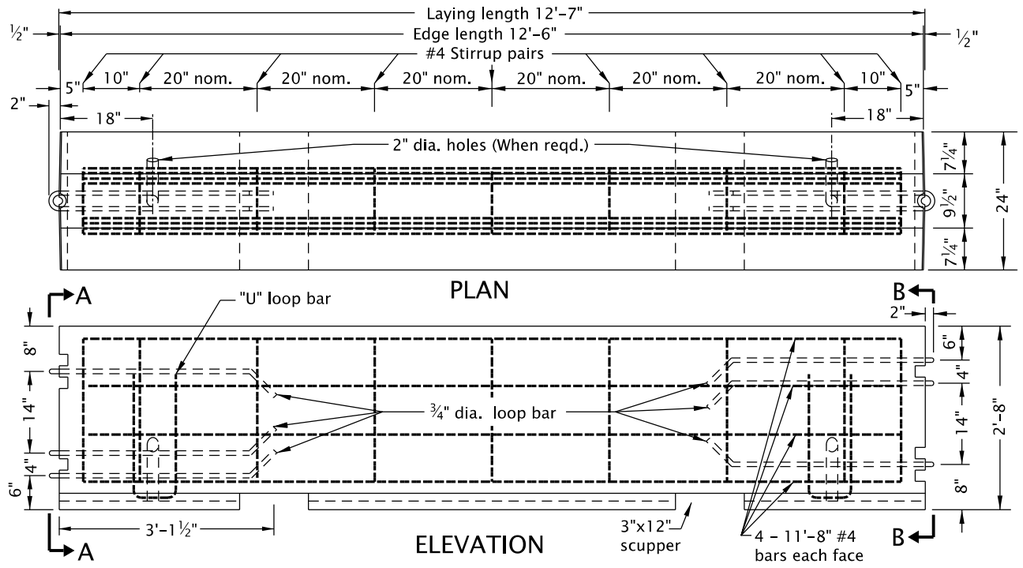
SECURING 32" TYPE "F" AND TALL 42" PRECAST CONCRETE BARRIER TO THE ROADWAY

2024

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

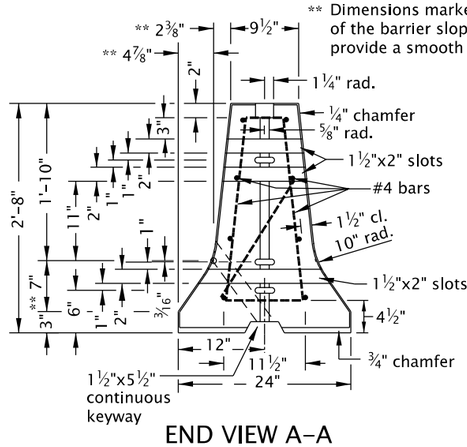
CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **RD502**

Effective Date: December 1, 2023 – May 31, 2024

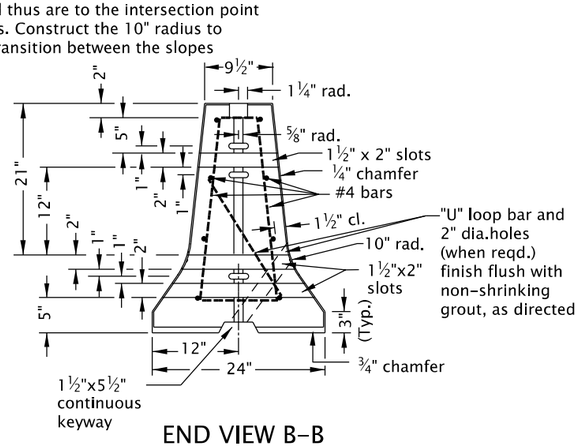


MEDIAN BARRIER

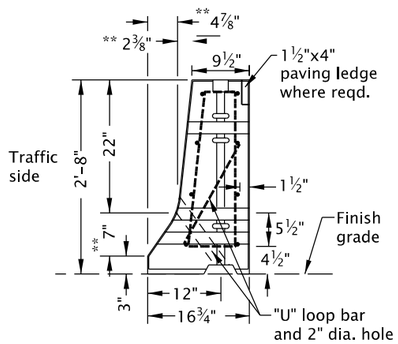
** Dimensions marked thus are to the intersection point of the barrier slopes. Construct the 10" radius to provide a smooth transition between the slopes



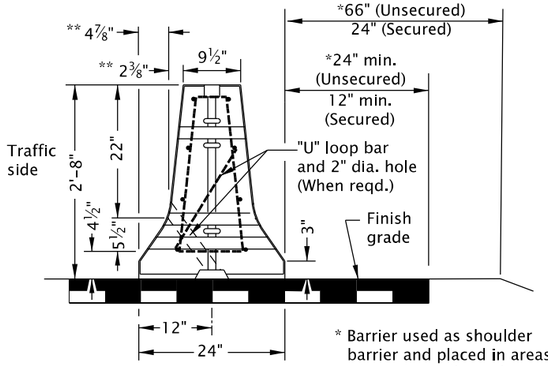
END VIEW A-A



END VIEW B-B



(NARROW BASE)



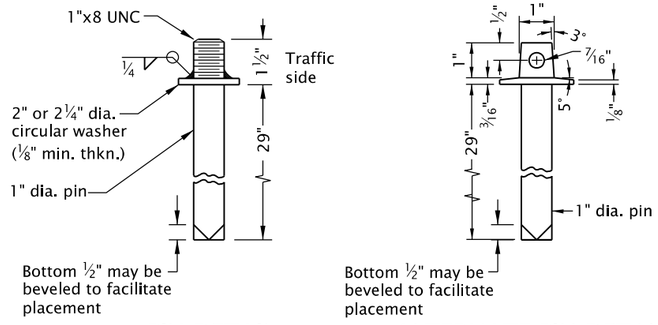
(STANDARD)

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

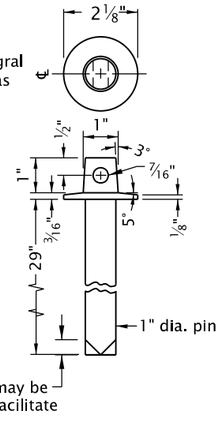
SHOULDER BARRIER

(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.

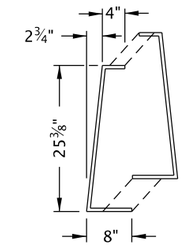


PIN DETAIL

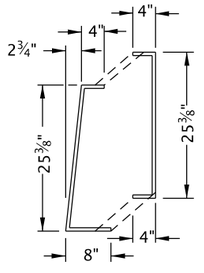


ALTERNATE PIN DETAIL

STANDARD BARRIER PIN



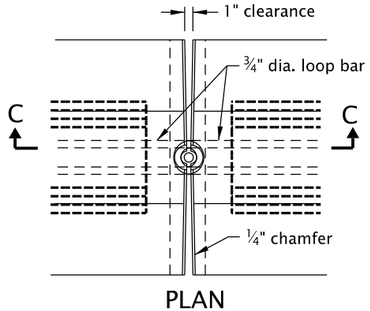
STIRRUP "M"
(MEDIAN BARRIER)
#4 Rebar



STIRRUP "S"
(SHOULDER BARRIER)
#4 Rebar

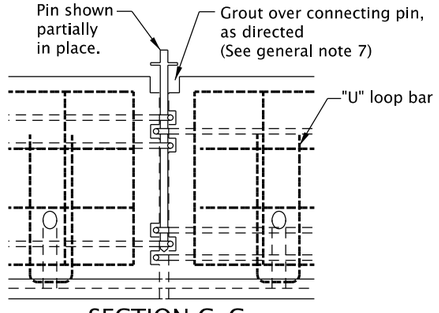
GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

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.*



PLAN

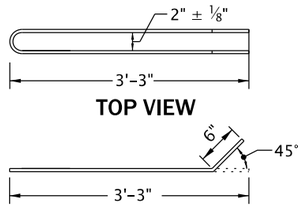
For details not shown, see End Views A-A and B-B



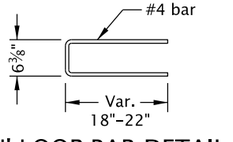
SECTION C-C

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

PIN AND LOOP CONNECTION



LOOP BAR ¾" DIA.



"U' LOOP BAR DETAIL

LOOP BAR 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

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**

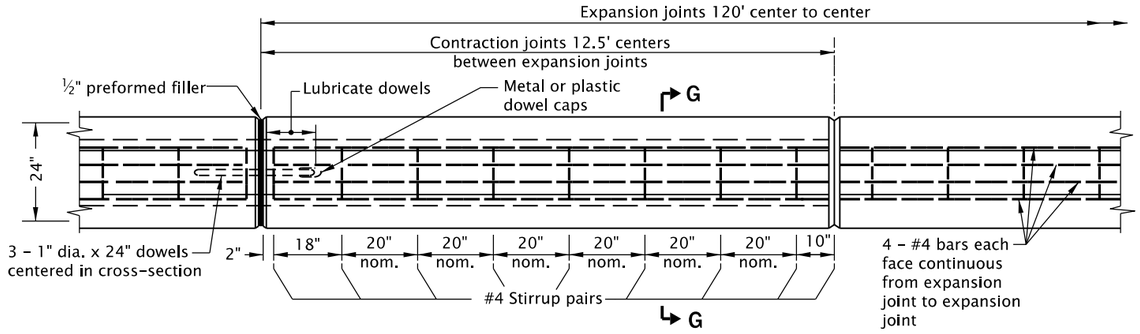
Effective Date: December 1, 2023 - May 31, 2024

14-JUL-2023

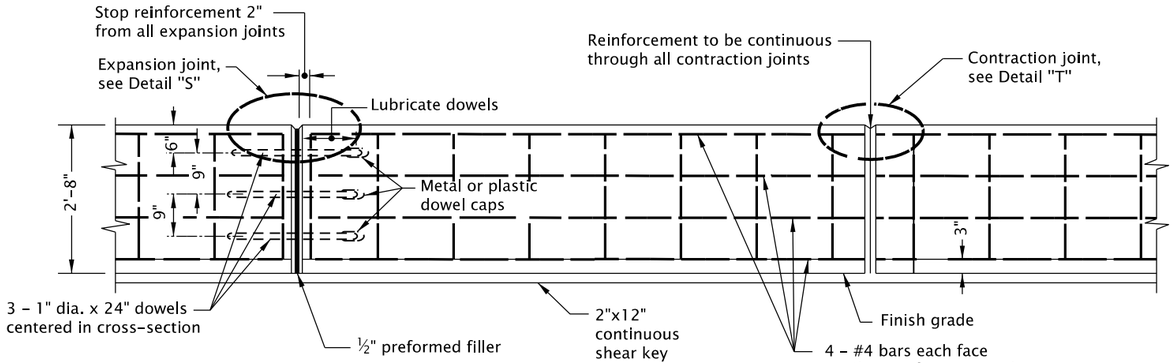
RD503.dgn

14-JUL-2023

RD505.dgn



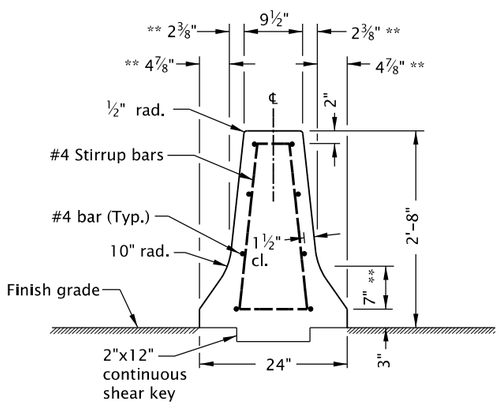
PLAN



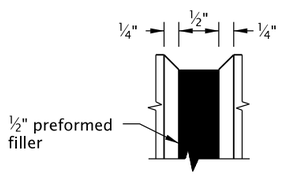
ELEVATION

MEDIAN BARRIER

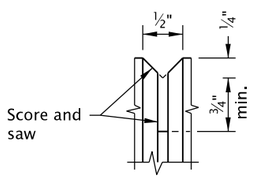
** Dimensions marked thus are to the intersection point of the barrier slopes. Const. the 10" radius to provide a smooth transition between the slopes.



SECTION G-G

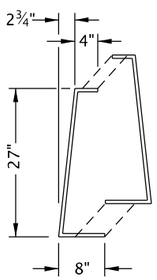


DETAIL "S"
(EXPANSION JOINT)



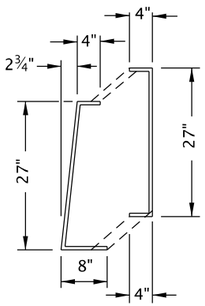
DETAIL "T"
(CONTRACTION JOINT)

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



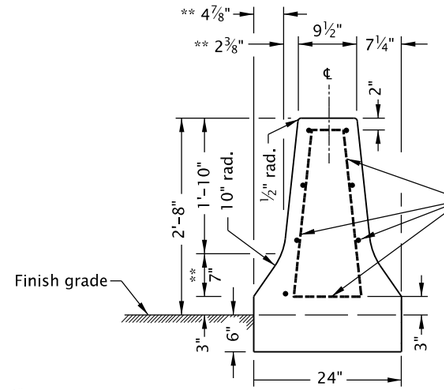
STIRRUP "M"

MEDIAN BARRIER
#4 Rebar

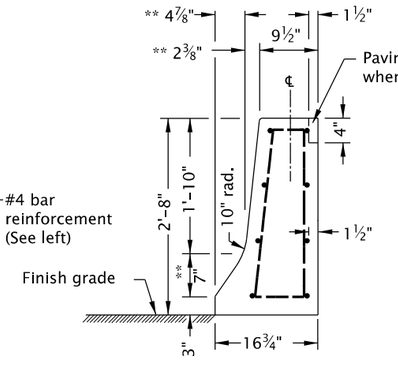


STIRRUP "S"

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

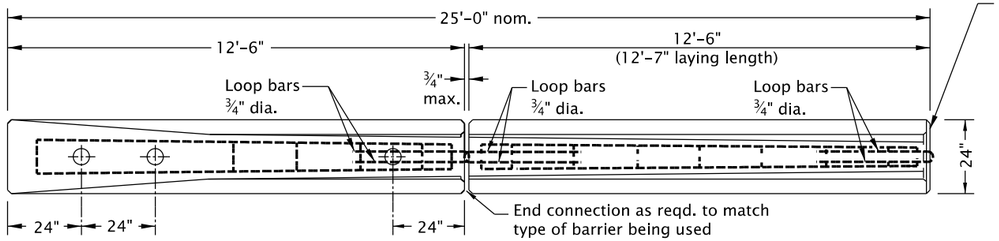
DATE	REVISION DESCRIPTION
06-2023	REVISED NOTES AND DETAILS

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

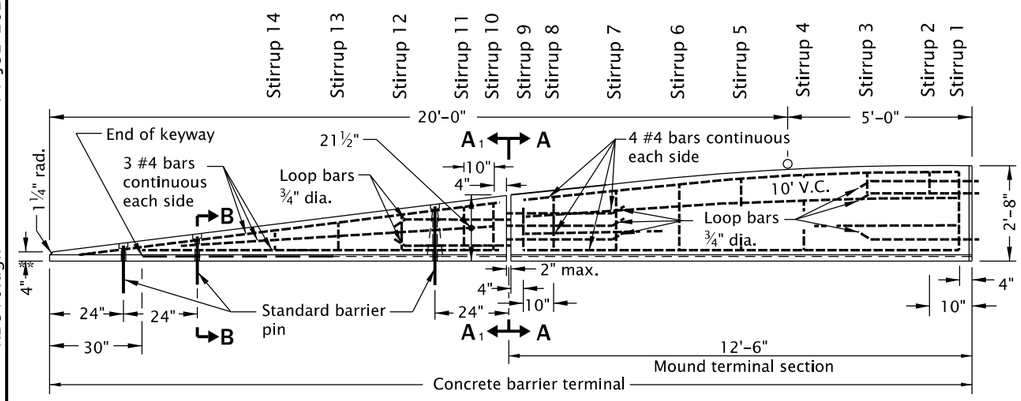
Effective Date: December 1, 2023 - May 31, 2024

14-JUL-2023

RD510.dgn

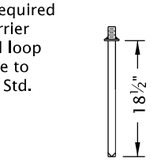


PLAN

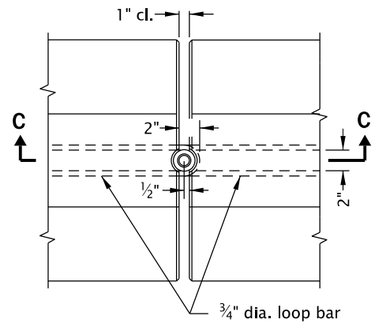


ELEVATION

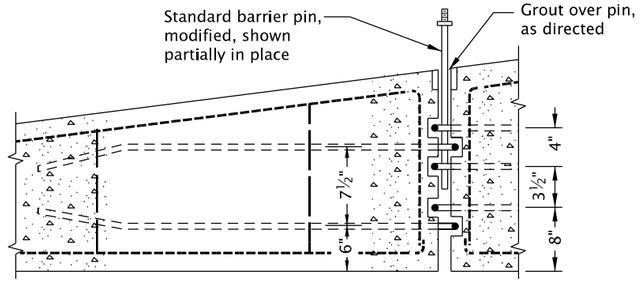
Space #4 Stirrup pairs at 21½" nom., unless otherwise shown.



MODIFIED BARRIER PIN

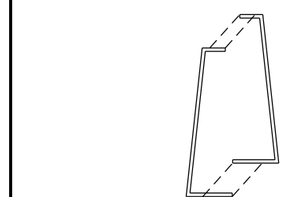


PLAN

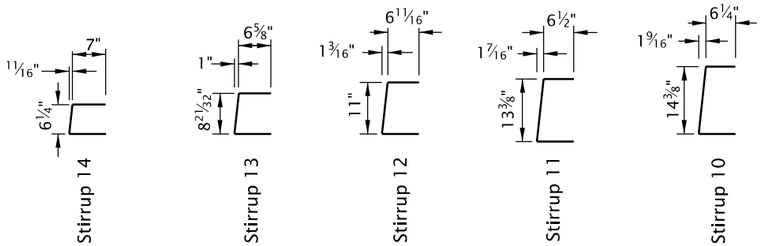


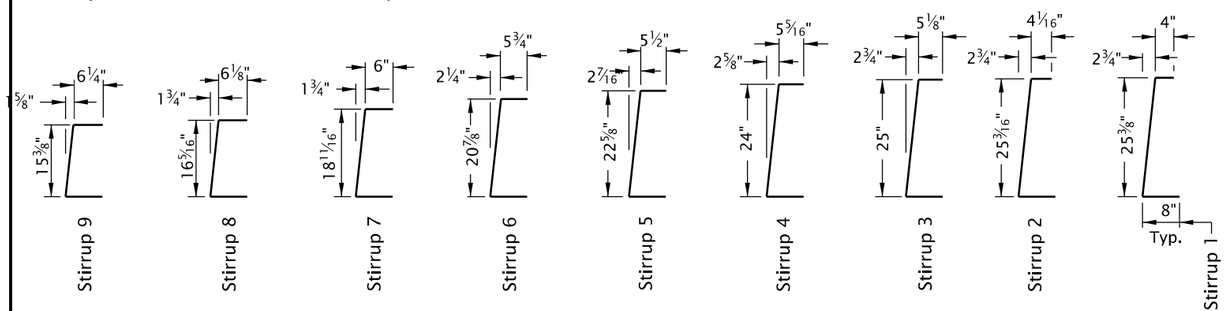
SECTION C-C

PIN AND LOOP CONNECTION



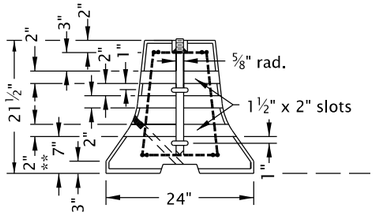
#4 STIRRUP PAIRS (DIMENSIONS VARIABLE)



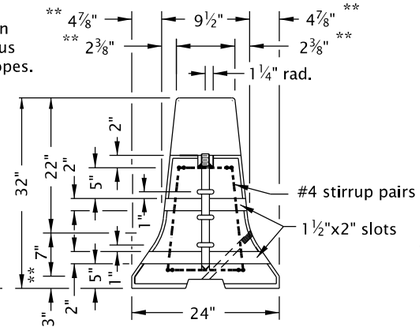


#4 STIRRUP DETAILS

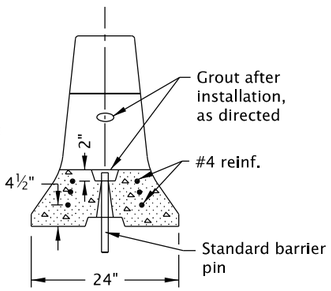
** Dimensions marked thus are to the intersection point of the barrier slopes. Const. the 10" radius to provide a smooth transition between the slopes.



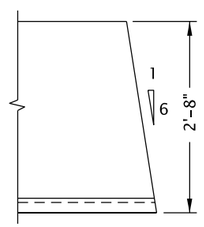
SECTION A1- A1



SECTION A-A



SECTION B-B



ALTERNATE ELEVATION TRAILING END TERMINAL

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.*

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 TERMINAL FOR POSTED SPEED 45 MPH AND BELOW

2024

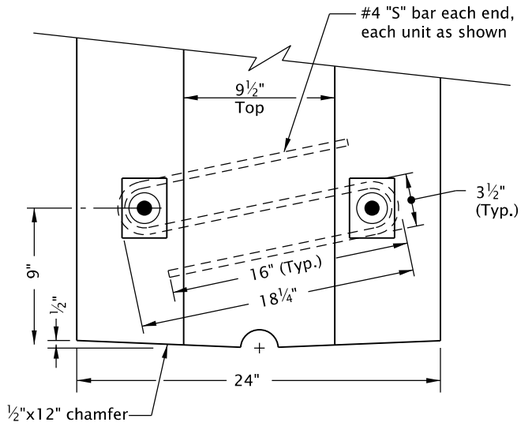
DATE	REVISION DESCRIPTION
12-2021	REVISED NOTES
06-2023	REVISED DETAILS, NOTES AND TITLE CHANGE

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

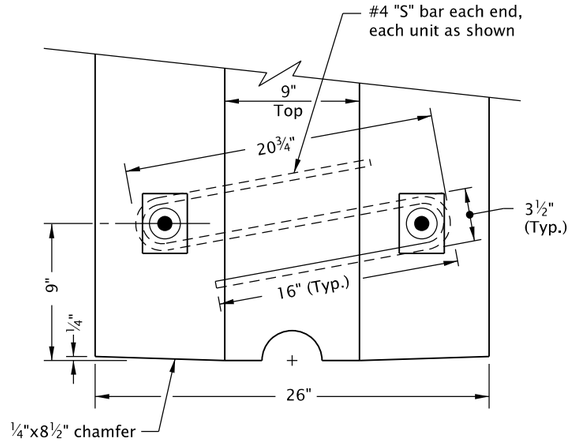
Effective Date: December 1, 2023 - May 31, 2024

MEDIAN CONCRETE BARRIER ANCHORING DETAILS

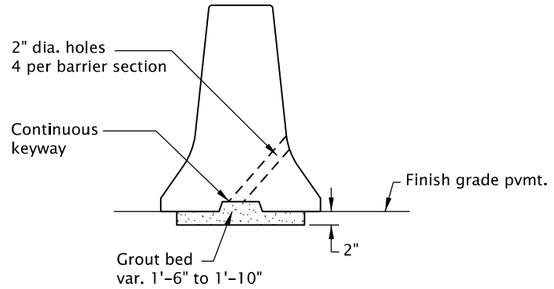
(See general note 1)



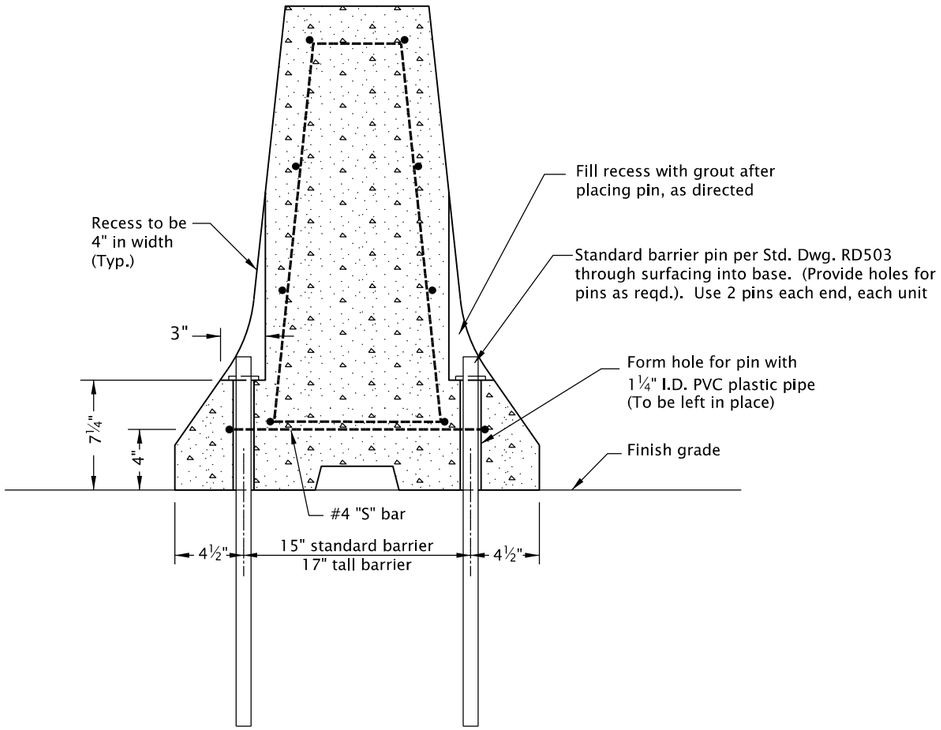
PLAN VIEW AT S BAR STANDARD BARRIER



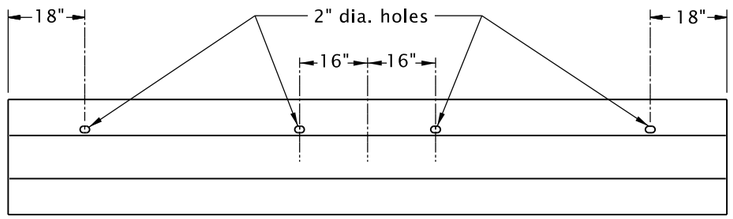
PLAN VIEW AT S BAR TALL BARRIER



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: December 1, 2023 - May 31, 2024

14-JUL-2023

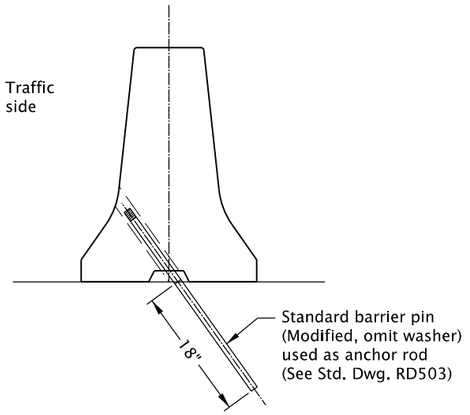
RD515.dgn

14-JUL-2023

RD516.dgn

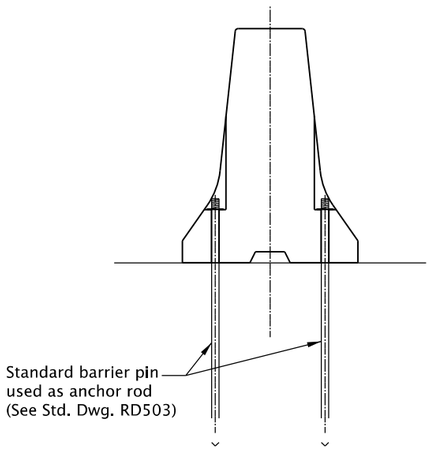
METHODS OF SECURING PRECAST CONCRETE BARRIER TO ROADWAY

(See general note 1)



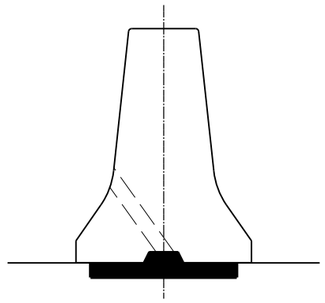
SHOULDER INSTALLATION
Secured using anchor rods (Angled)
Not allowed in narrow medians, see general notes 1 and 6

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)



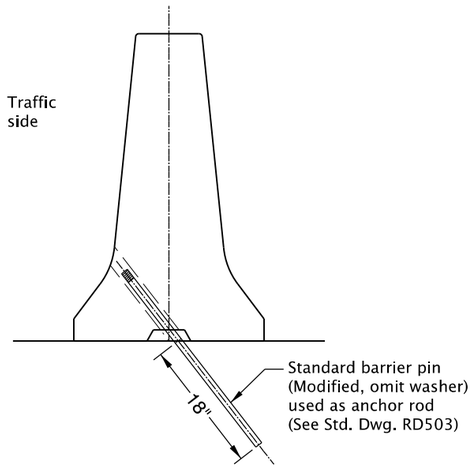
THIS DETAIL IS RETAINED FOR MAINTENANCE PURPOSES.

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

PRECAST CONCRETE BARRIER
(See Std. Dwg. RD503)

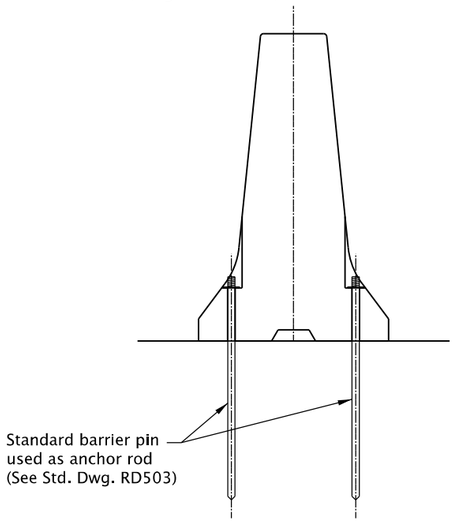
METHODS OF SECURING PRECAST TALL (42") CONCRETE BARRIER TO ROADWAY

(See general note 1)



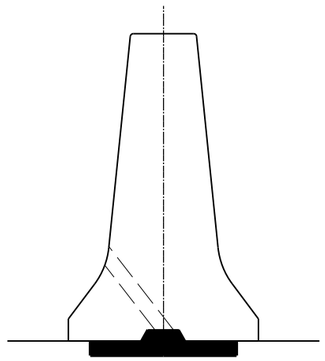
SHOULDER INSTALLATION
Secured using anchor rods (Angled) not allowed in narrow medians, see general notes 1 and 6

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)



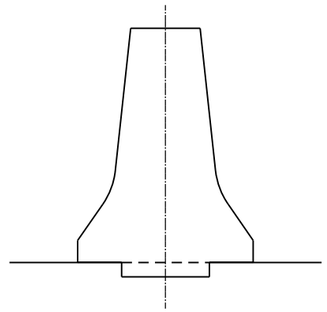
THIS DETAIL IS RETAINED FOR MAINTENANCE PURPOSES.

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

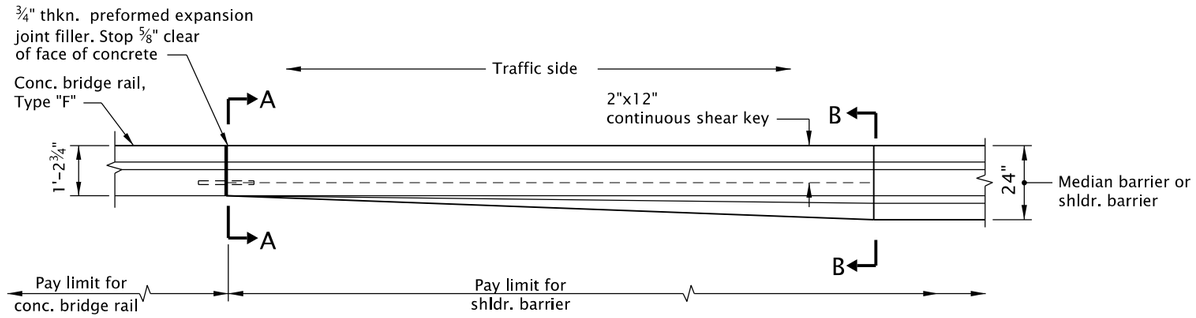
SECURING CONCRETE BARRIER TO ROADWAY FOR TEMPORARY INSTALLATION AND MAINTENANCE PURPOSES ONLY

2024

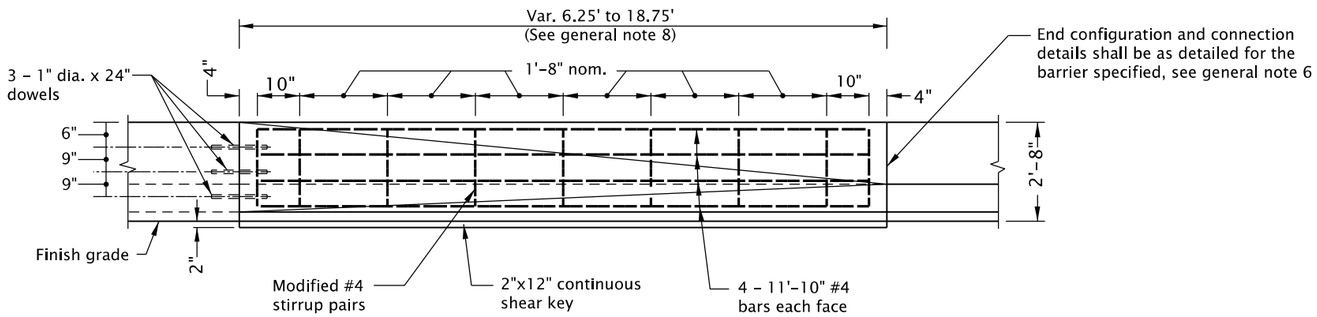
DATE	REVISION DESCRIPTION
01-2023	REVISED NOTES
06-2023	REVISED NOTES AND TITLE CHANGE

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

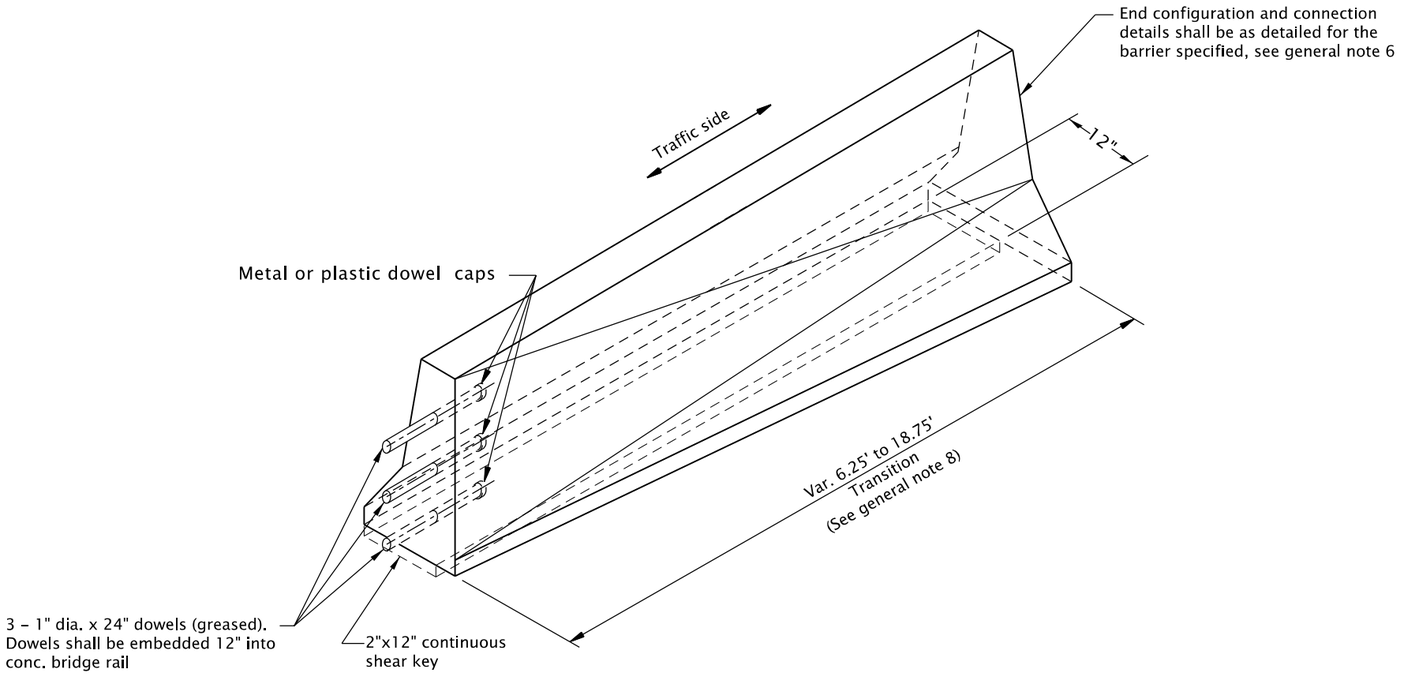
Effective Date: December 1, 2023 - May 31, 2024



PLAN



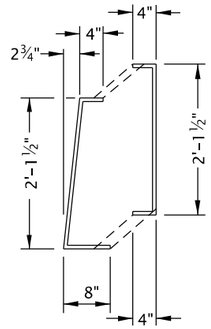
ELEVATION



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

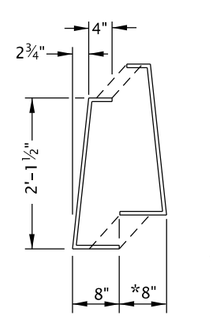
GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

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**

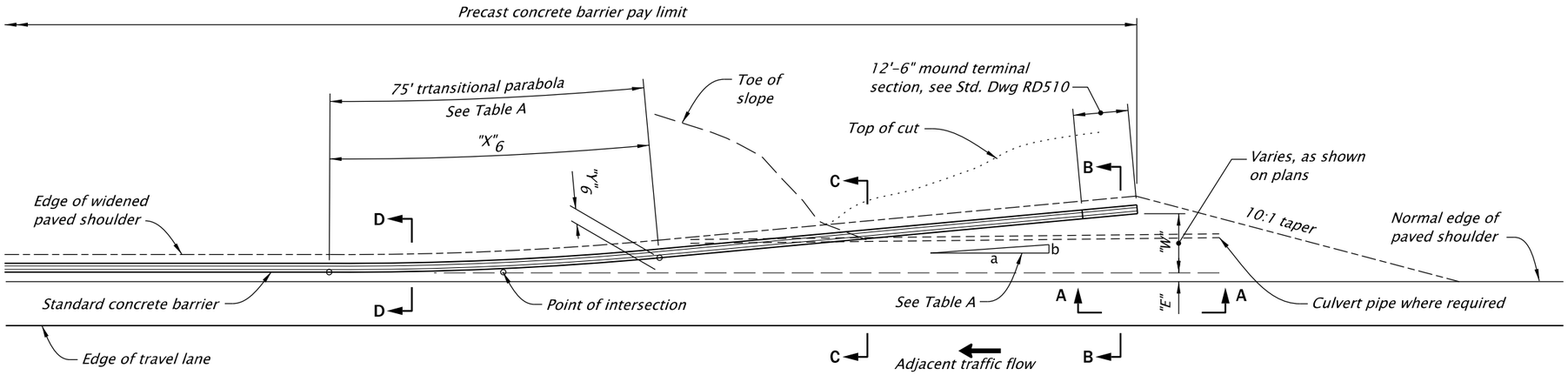
Effective Date: December 1, 2023 - May 31, 2024

14-JUL-2023

RD520.dgn

14-JUL-2023

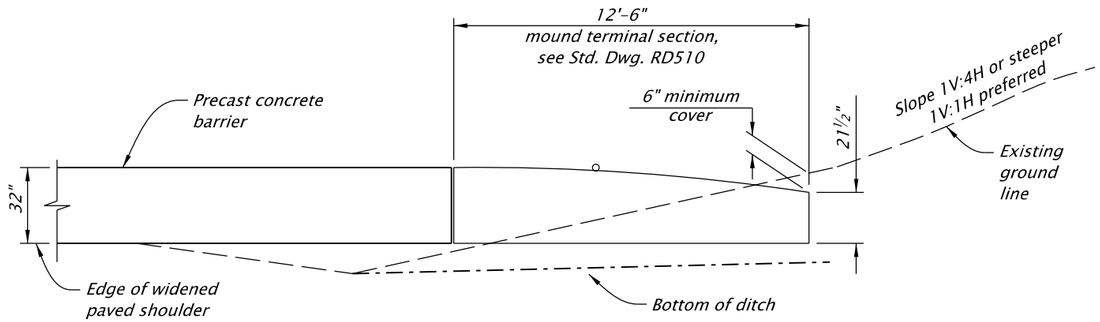
RD526.dgn



PLAN

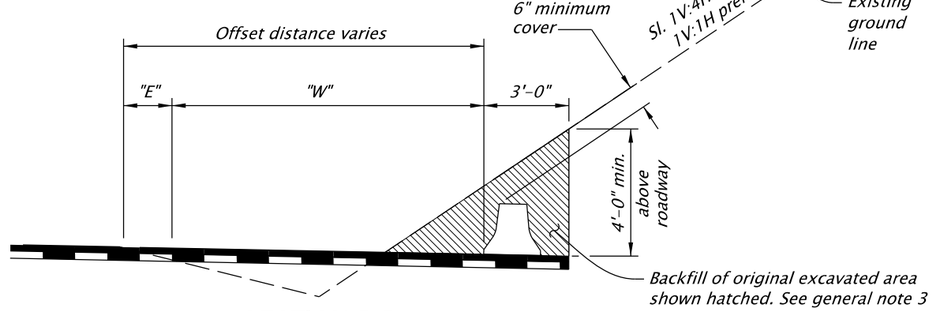
GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

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.*

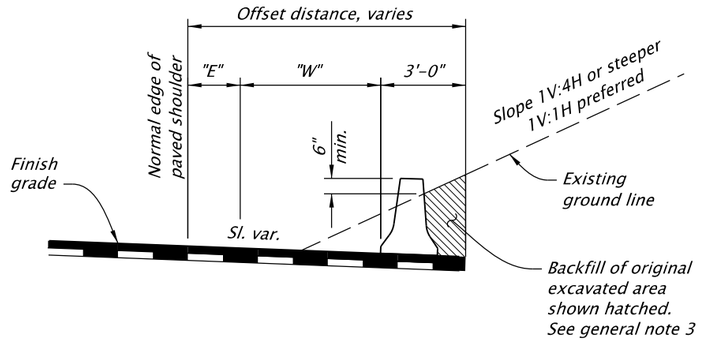


ELEVATION A-A

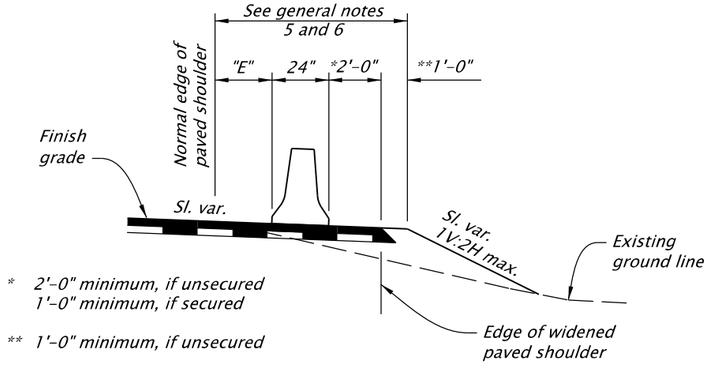
"W" = Width of flare
"E" = Shy distance



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		CONCRETE BARRIER SEGMENT					
		1	2	3	4	5	6
a:b	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

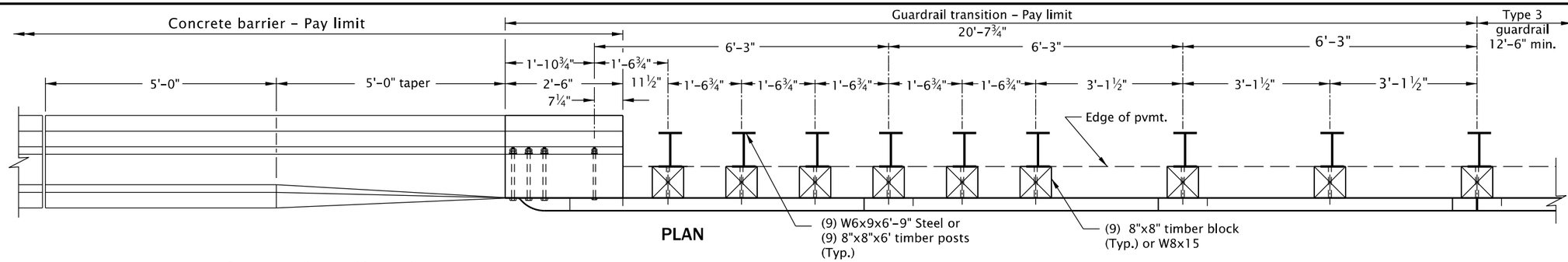
DATE	REVISION DESCRIPTION
07-2022	REVISED DETAILS AND NOTES
06-2023	REVISED NOTES

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

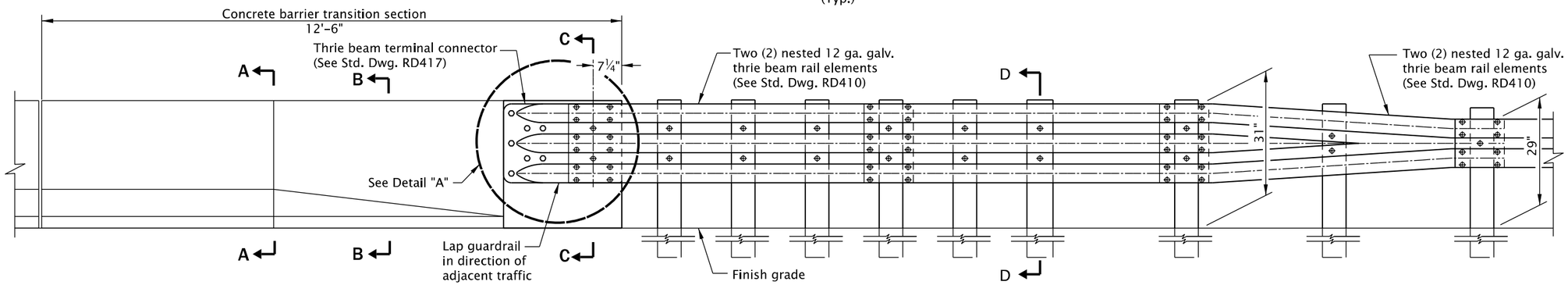
Effective Date: December 1, 2023 - May 31, 2024

14-JUL-2023

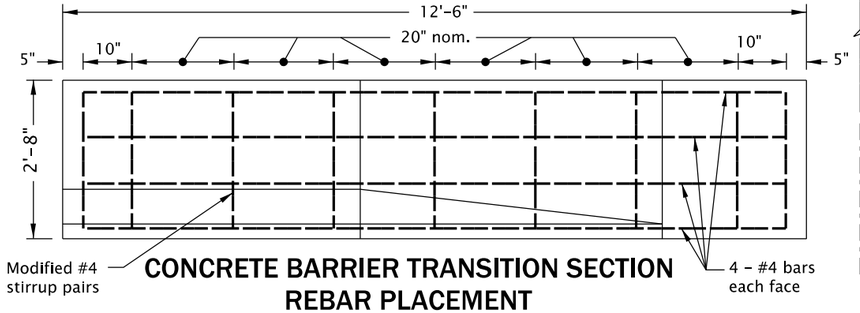
RD530.dgn



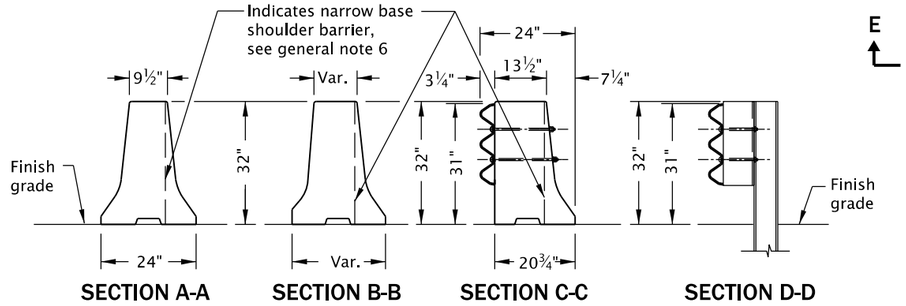
PLAN



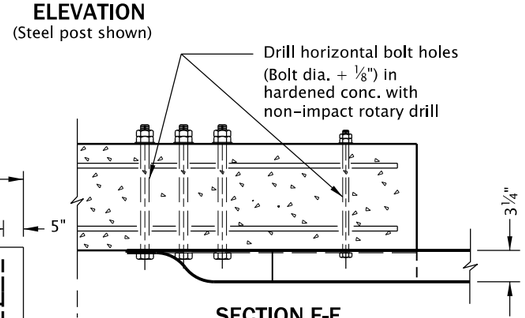
ELEVATION
(Steel post shown)



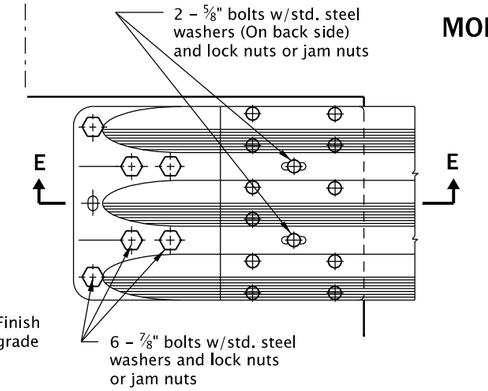
CONCRETE BARRIER TRANSITION SECTION REBAR PLACEMENT



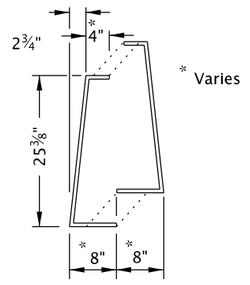
SECTION A-A **SECTION B-B** **SECTION C-C** **SECTION D-D**



SECTION E-E

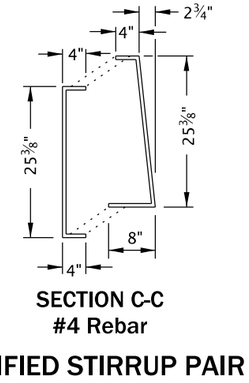


DETAIL "A"



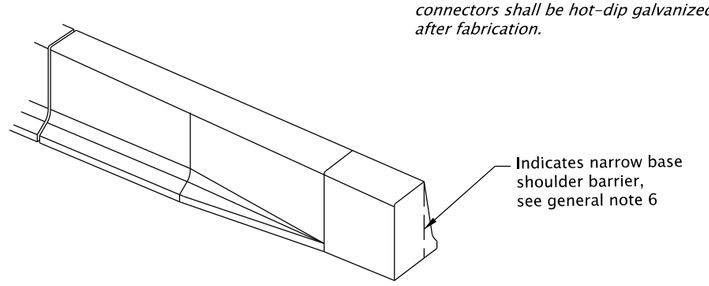
SECTION B-B
#4 Rebar

MODIFIED STIRRUP PAIR



SECTION C-C
#4 Rebar

MODIFIED STIRRUP PAIR



CONCRETE BARRIER TRANSITION ISOMETRIC VIEW

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.*

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

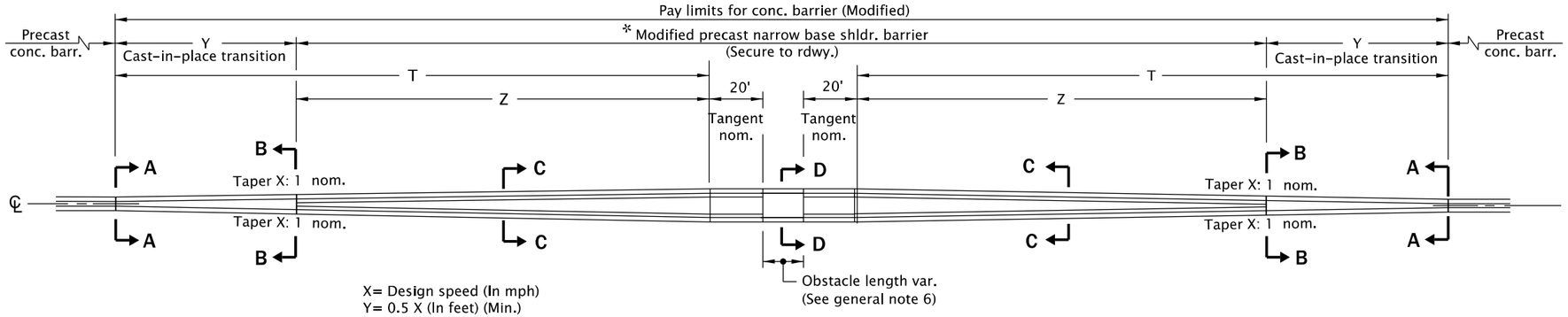
DATE	REVISION DESCRIPTION
12-2021	REVISED NOTES
06-2023	REVISED NOTES, DETAILS AND TITLE CHANGE

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

Effective Date: December 1, 2023 - May 31, 2024

14-JUL-2023

RD535.dgn



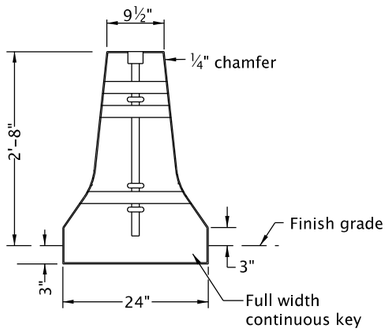
X= Design speed (In mph)
Y= 0.5 X (In feet) (Min.)
T= (½ obstacle width in feet + 0.40' + a) (X)
Z= T - Y

PLAN VIEW

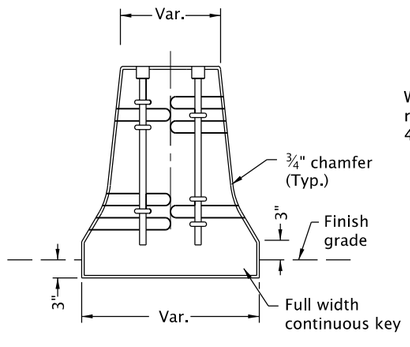
* Modification of barrier consists of providing 1½"x4" paving ledge as shown in Section C-C.

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.*

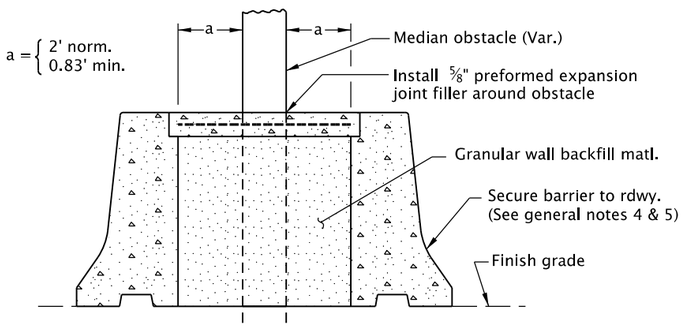


SECTION A-A

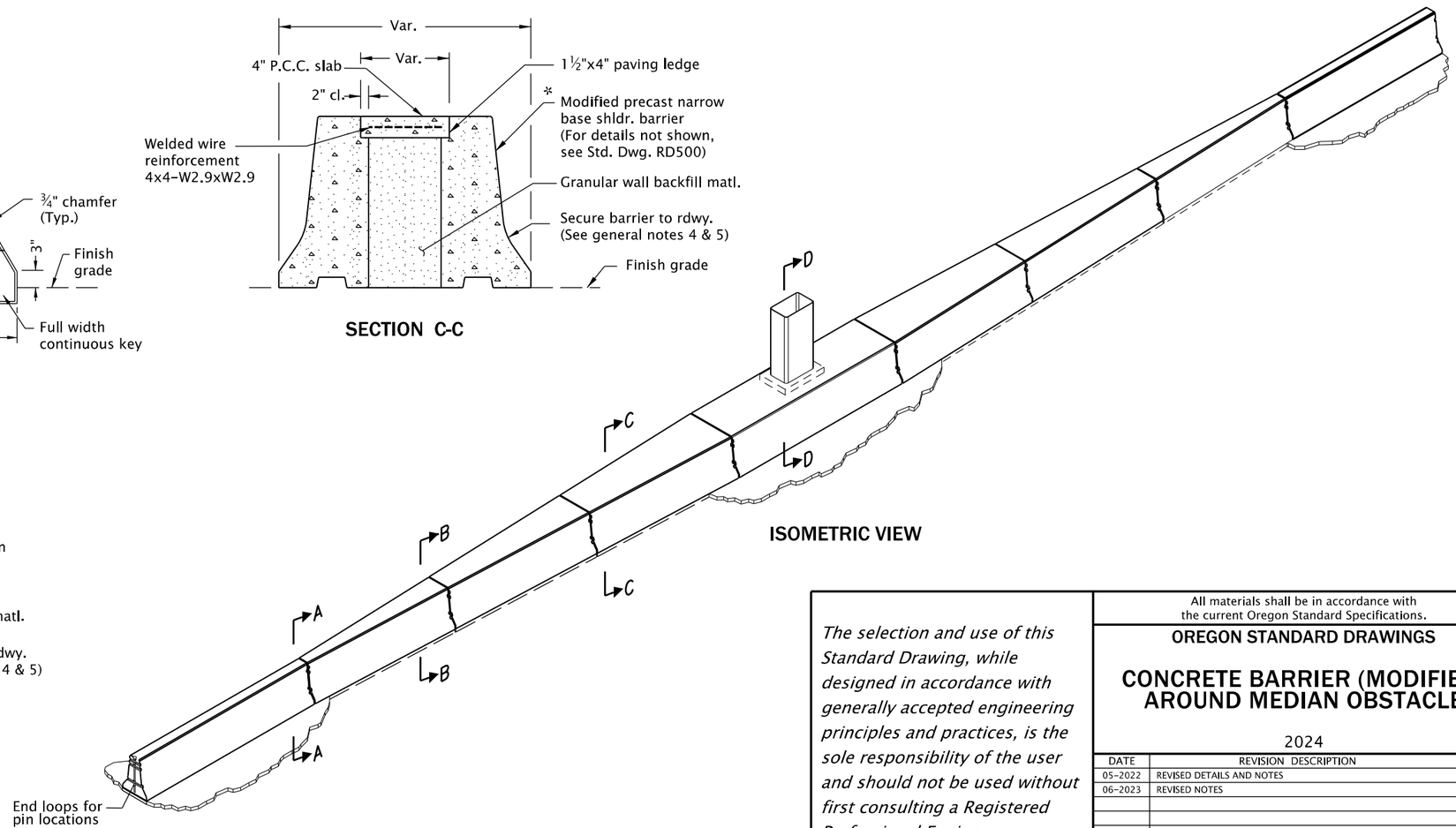


SECTION B-B

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**

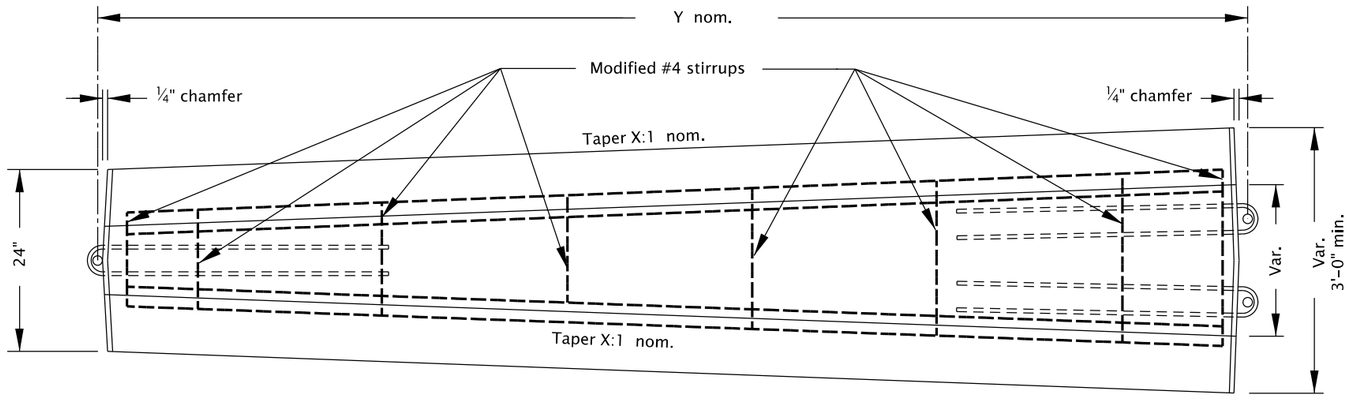
Effective Date: December 1, 2023 - May 31, 2024

14-JUL-2023

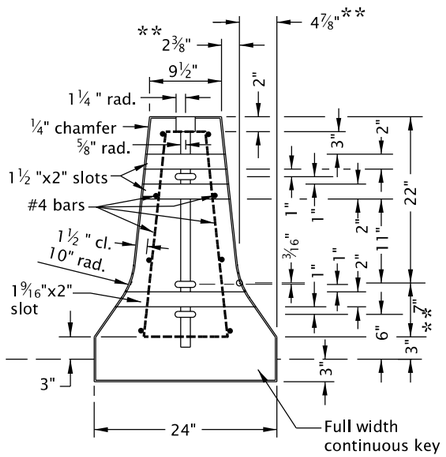
RD536.dgn

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

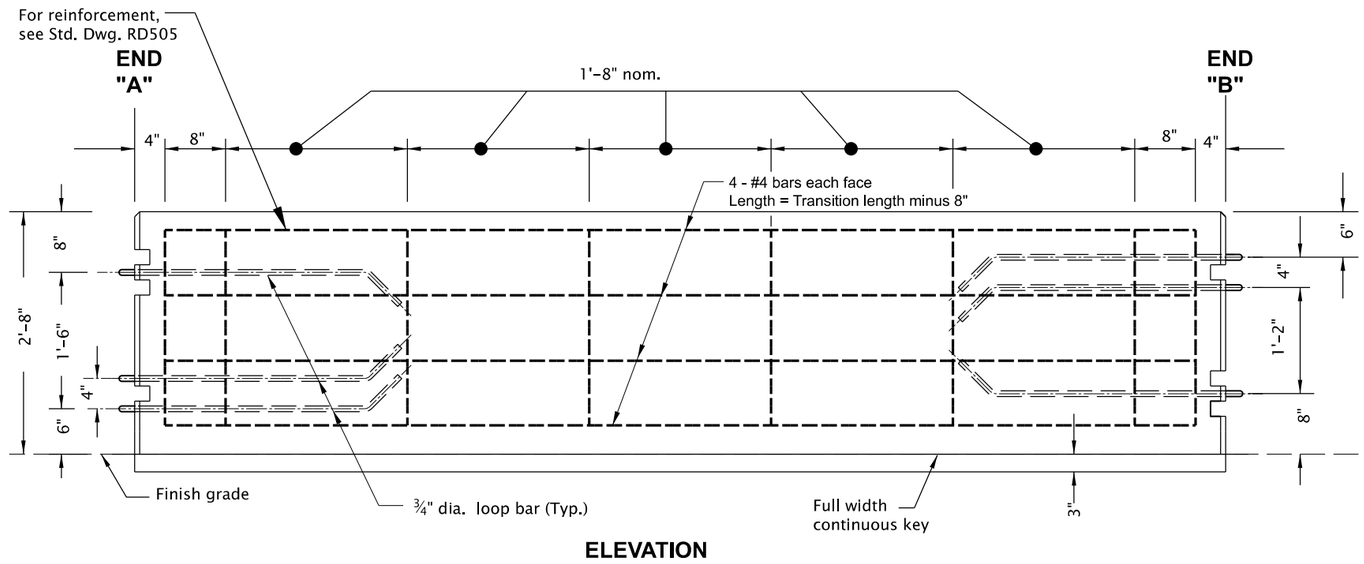
1. *Field verify end configurations of connecting barriers prior to forming connections at transitions.*
2. *All reinforcing bars shall be full length as shown and shall be placed 1-1/2 inch clear of the nearest face of concrete unless shown otherwise.*
3. *See Std. Dwgs. RD500, RD501 and RD502 for details 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.*



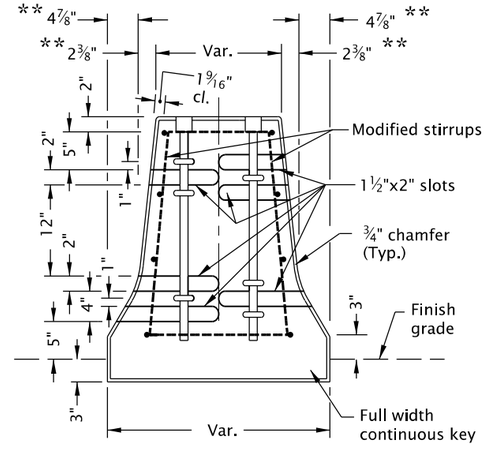
PLAN



END VIEW A
(See general note 2)

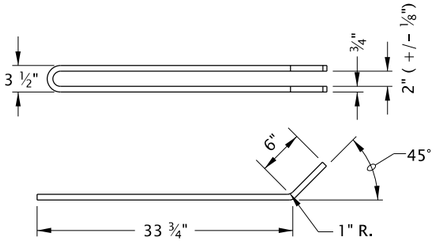


ELEVATION

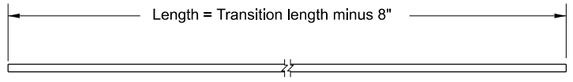


END VIEW B
(See general note 2)

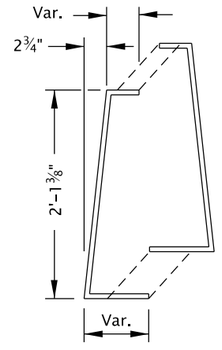
CAST-IN-PLACE TRANSITION



#4 LOOP BAR DETAIL



#4 LONGITUDINAL BAR



MODIFIED STIRRUP PAIRS
#4 Rebar

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

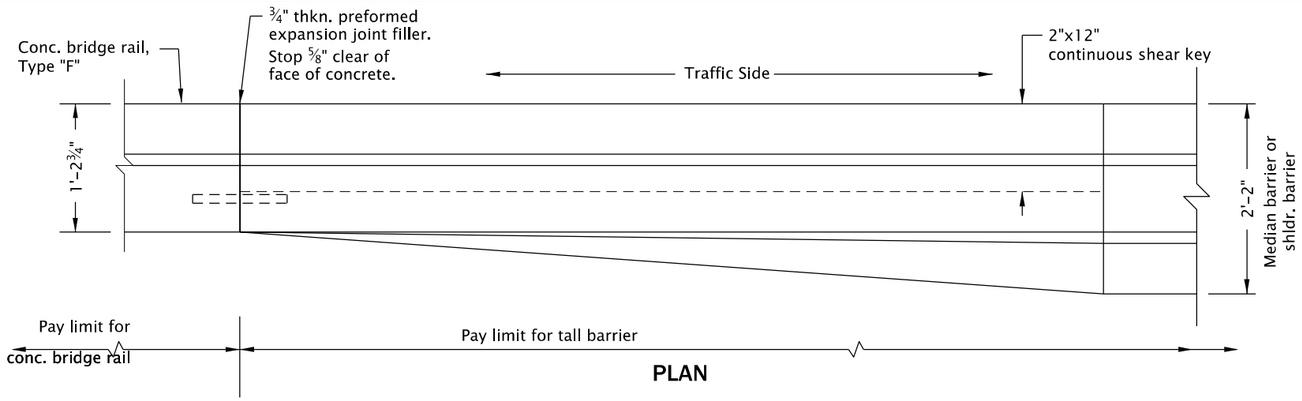
DATE	REVISION DESCRIPTION
07-2022	NEW DRAWING CREATED
06-2023	REVISED NOTES

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

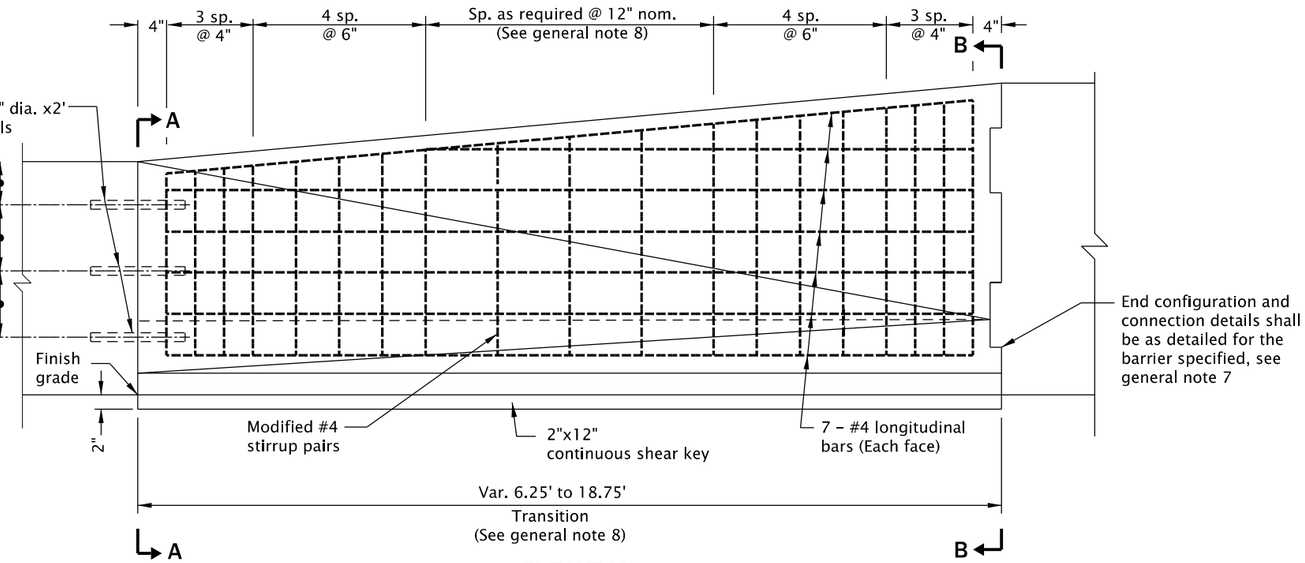
Effective Date: December 1, 2023 - May 31, 2024

14-JUL-2023

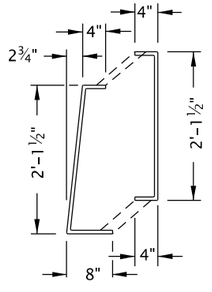
RD550.dgn



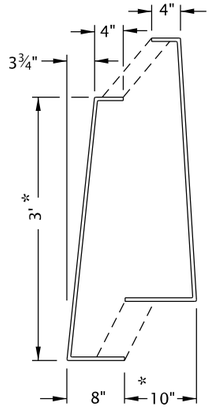
PLAN



ELEVATION



MODIFIED STIRRUP PAIR
SECTION A-A
#4 Rebar

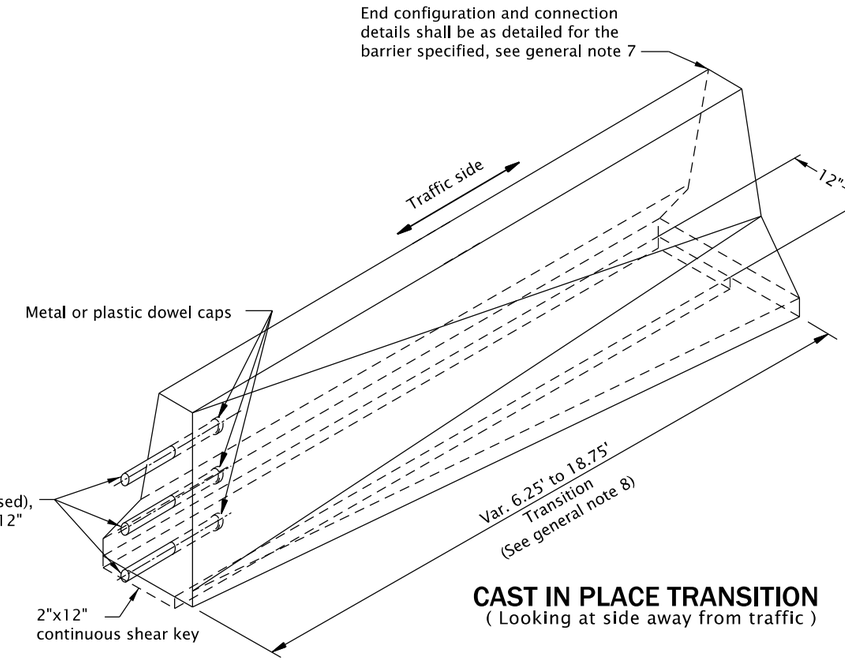


MODIFIED STIRRUP PAIR
SECTION B-B
#4 Rebar

* 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

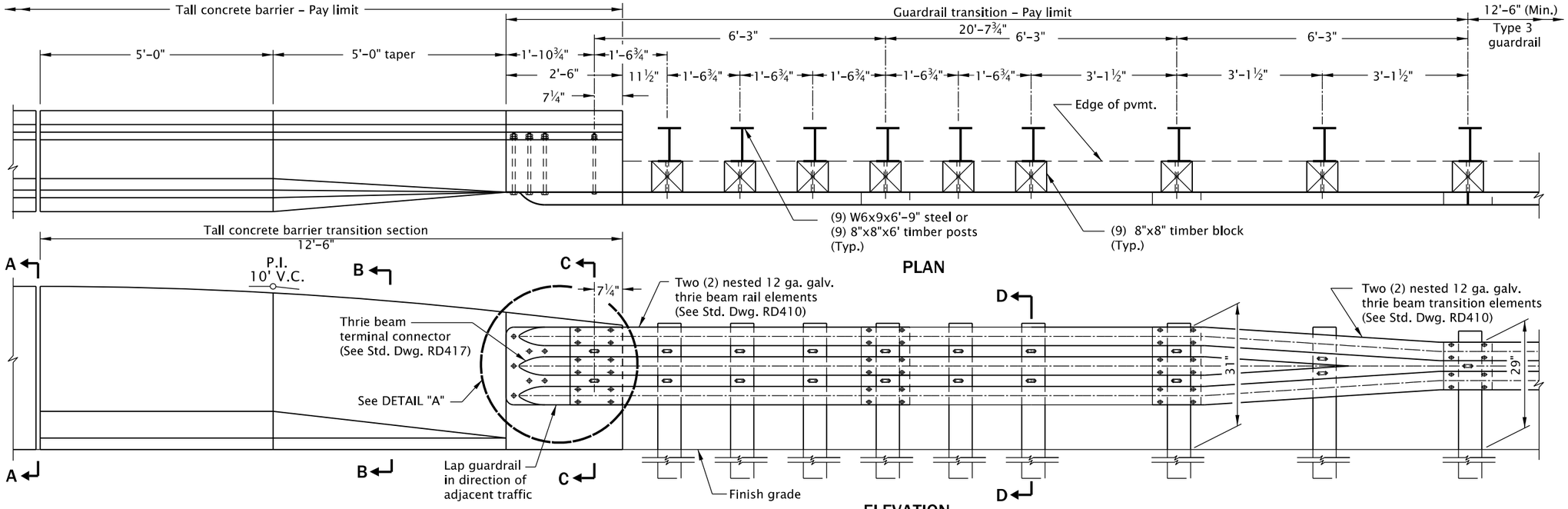
DATE	REVISION DESCRIPTION
06-2023	REVISED NOTES AND DETAILS

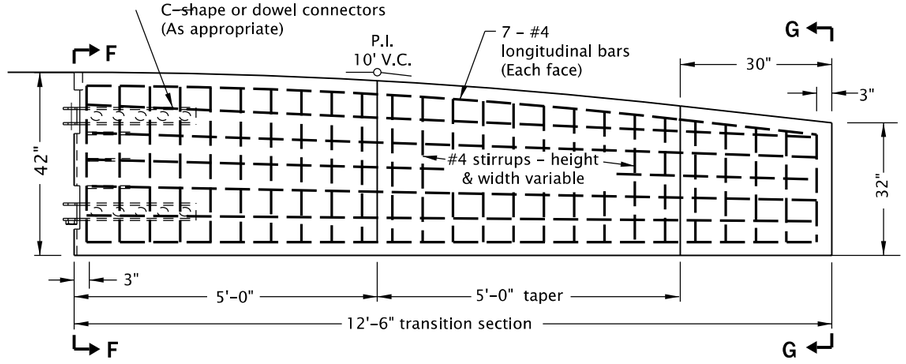
CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **RD550**

Effective Date: December 1, 2023 - May 31, 2024

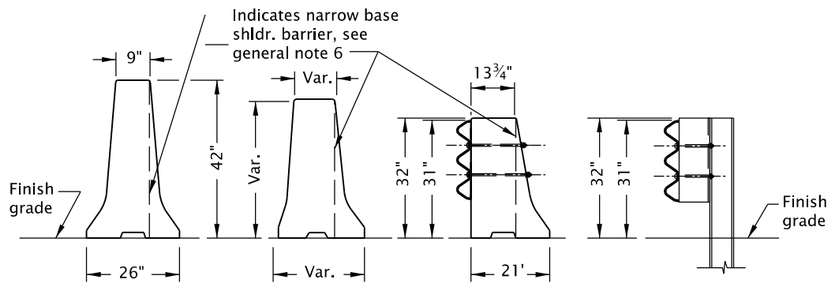
14-JUL-2023

RD570.dgn

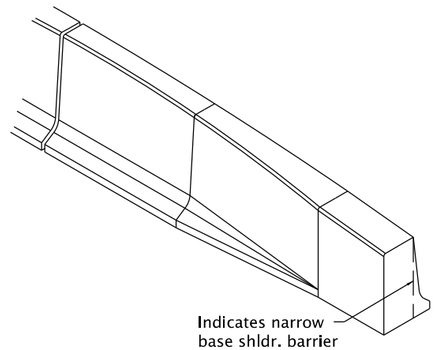




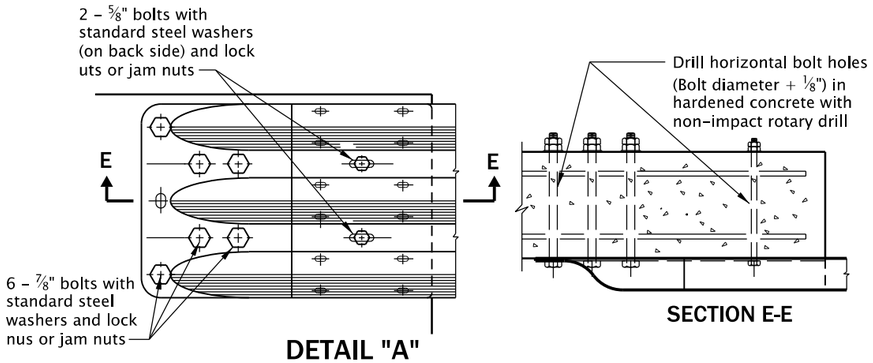
TALL CONCRETE BARRIER TRANSITION SECTION REBAR PLACEMENT



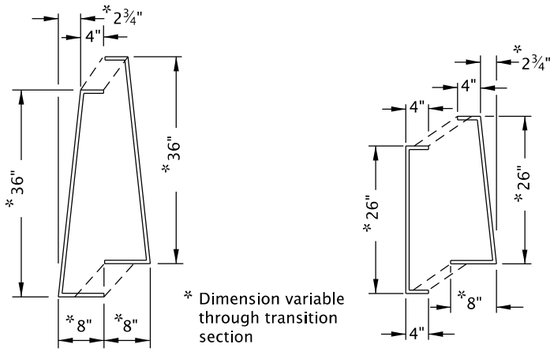
SECTION A-A | SECTION B-B | SECTION C-C | SECTION D-D



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

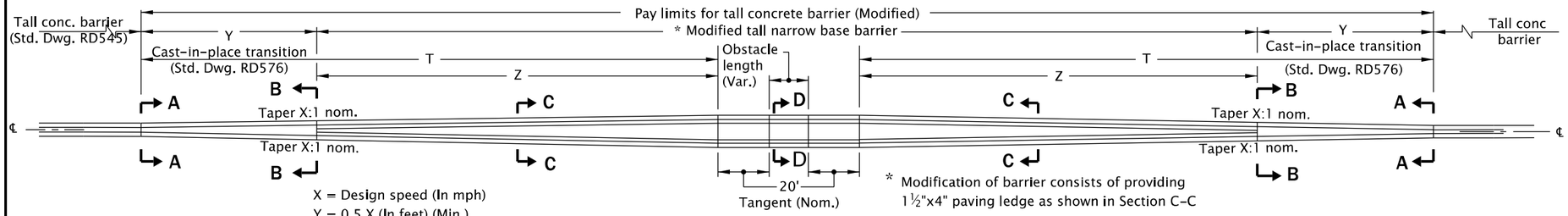
DATE	REVISION DESCRIPTION
12-2021	REVISED NOTES
06-2023	REVISED NOTES, DETAILS AND TITLE CHANGE

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

Effective Date: December 1, 2023 - May 31, 2024

14-JUL-2023

RD575.dgn



X = Design speed (In mph)

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

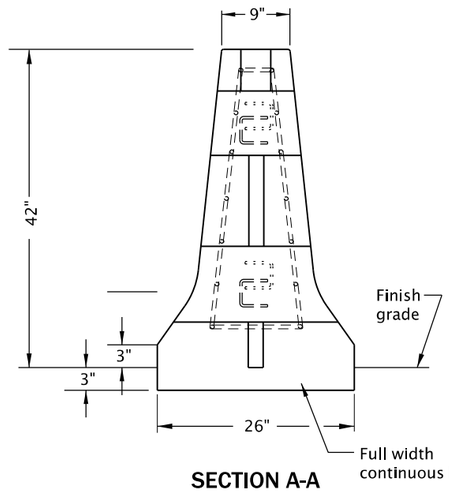
T = (½ obstacle width in feet + 0.40' + a) (X)

Z = T - Y

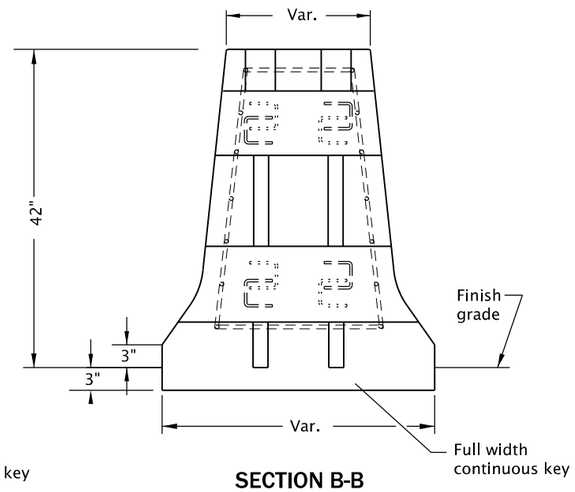
* Modification of barrier consists of providing 1½"x4" paving ledge as shown in Section C-C

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

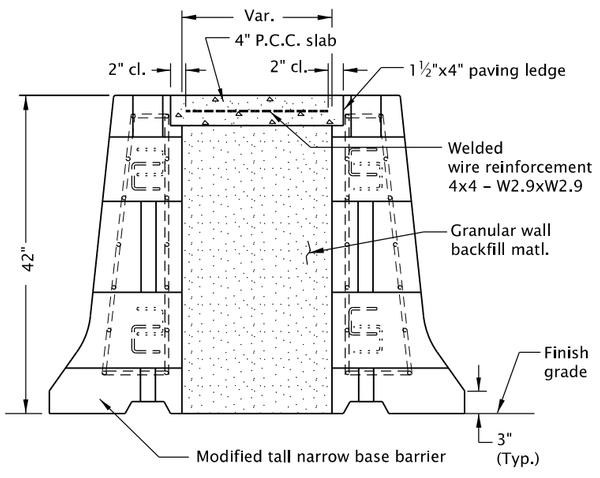
1. *Field verify end configurations of connecting barriers prior to forming connections at transitions.*
2. *All reinforcing bars shall be full length as shown and shall be placed 1-1/2 inch clear of the nearest face of concrete unless shown otherwise.*
3. *See Std. Dwg. RD545 for details not shown.*
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.*



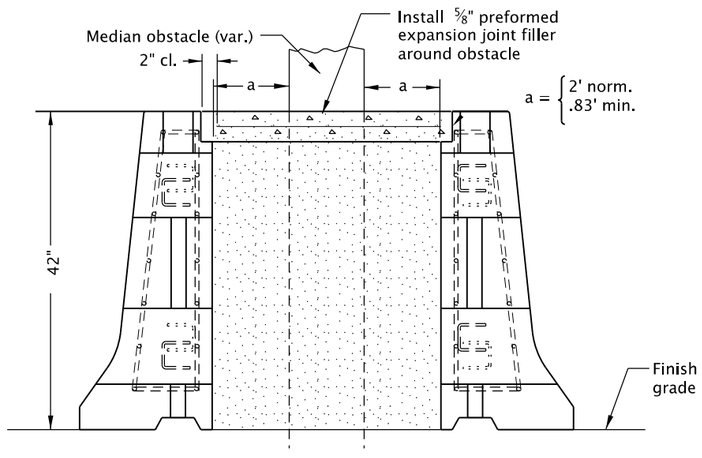
SECTION A-A



SECTION B-B



SECTION C-C

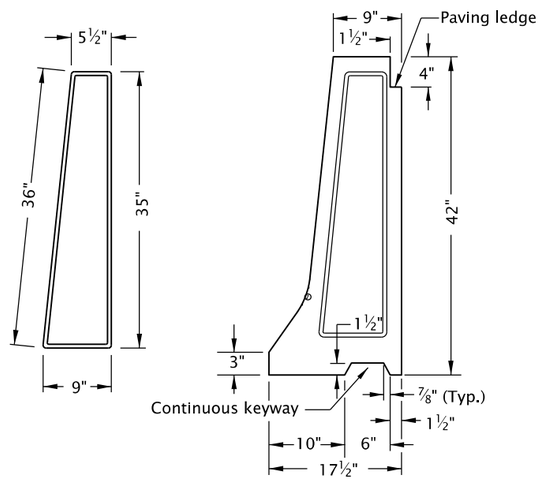


(Precast option shown, See Section C-C for additional details not shown)

SECTION D-D

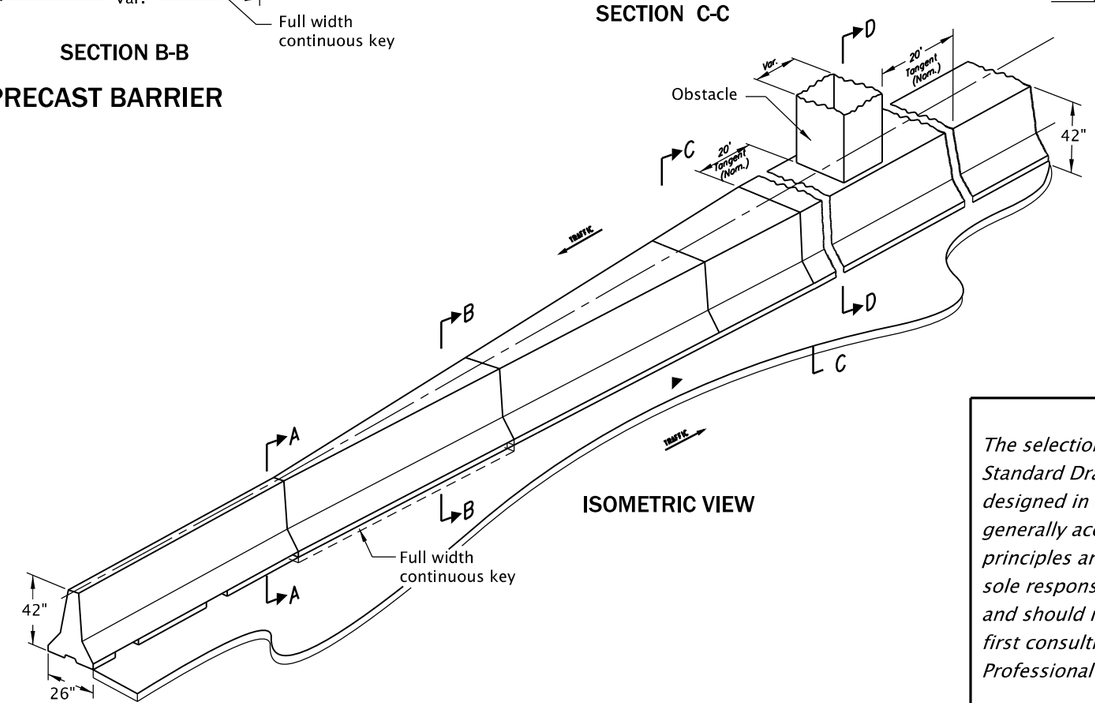
DETAIL WHEN CONNECTING TO PRECAST BARRIER

(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

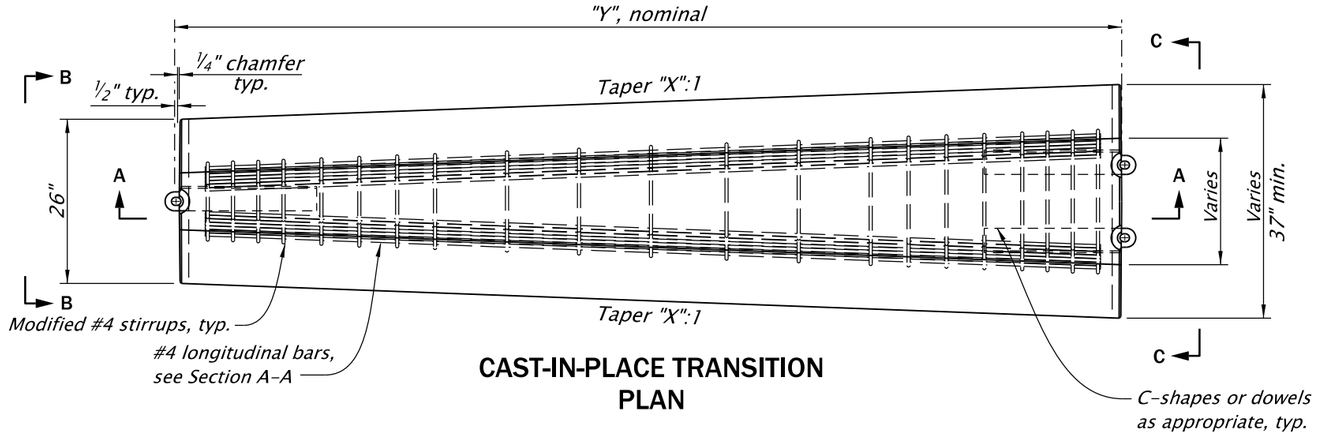
DATE	REVISION DESCRIPTION
07-2022	REVISED DETAILS AND NOTES
06-2023	REVISED DETAILS AND NOTES

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

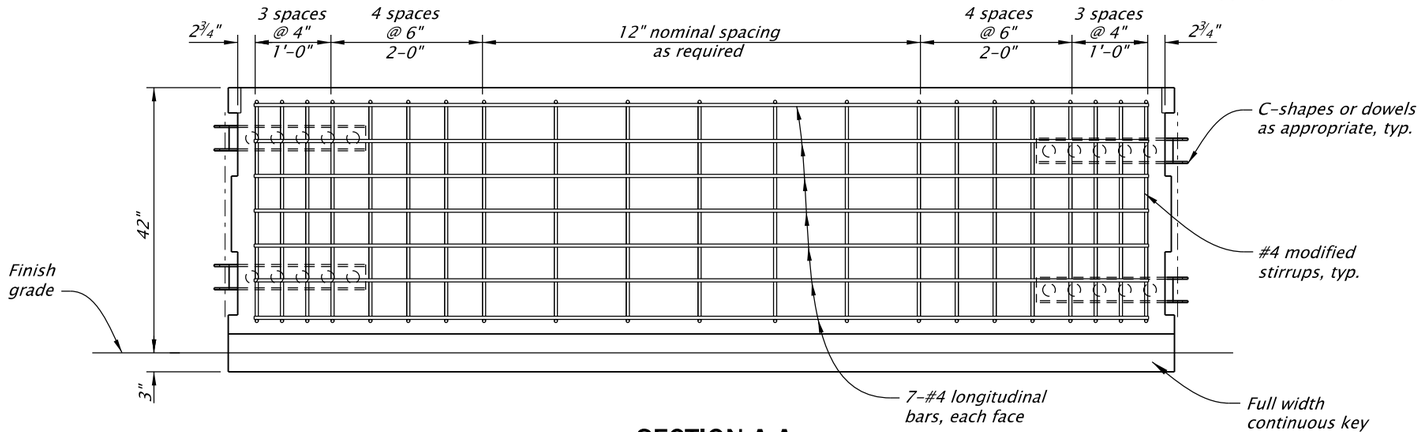
Effective Date: December 1, 2023 - May 31, 2024

14-JUL-2023

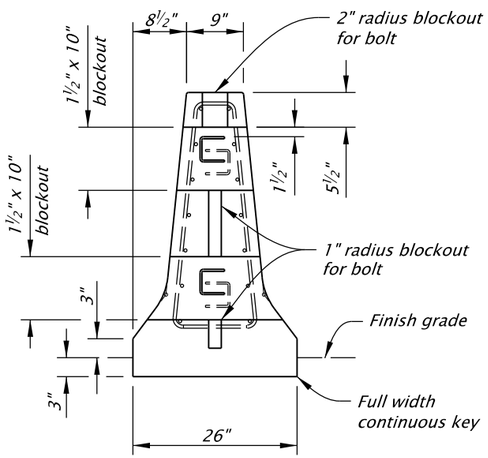
RD576.dgn



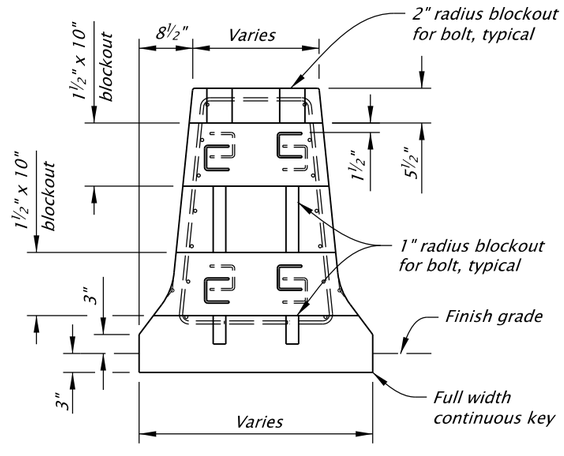
CAST-IN-PLACE TRANSITION PLAN



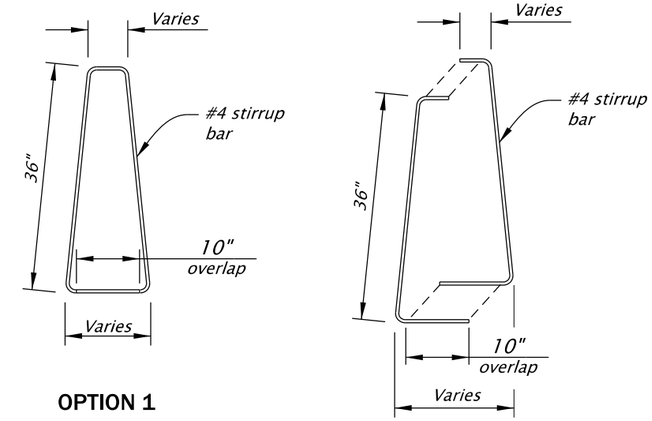
SECTION A-A



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

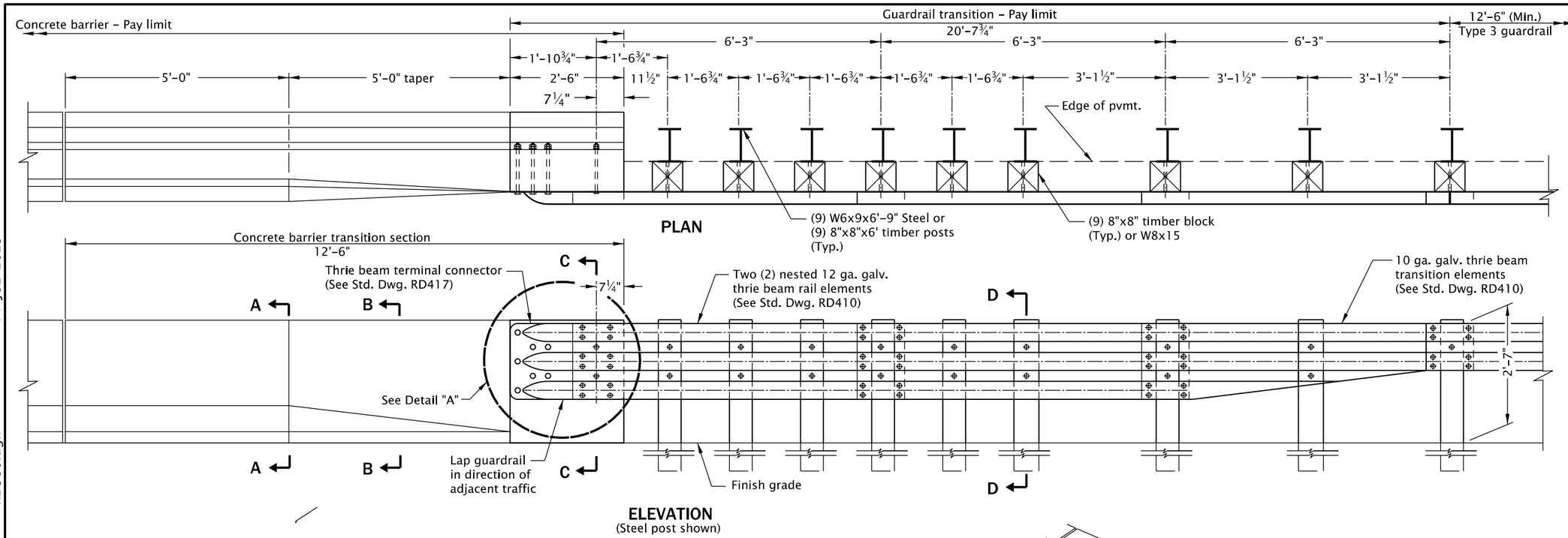
DATE	REVISION DESCRIPTION
07-2022	CREATED NEW DRAWING
06-2023	REVISED NOTES

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

Effective Date: December 1, 2023 - May 31, 2024

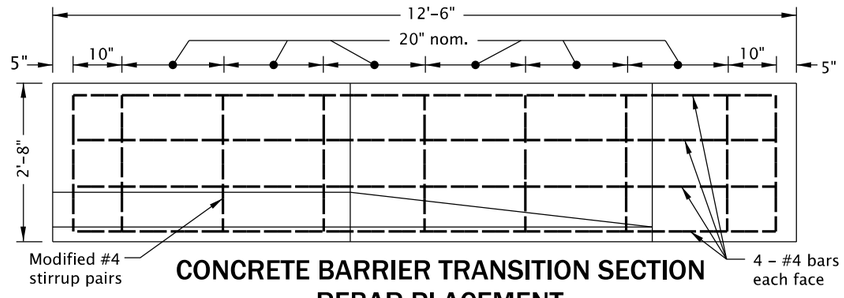
14-JUL-2023

RD580.dgn

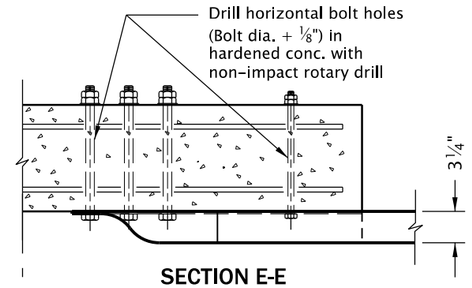


GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

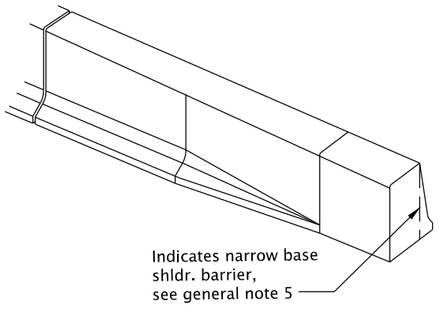
1. *All reinforcing bars shall be full length as shown and shall be 2 inches clear of the nearest face of concrete unless shown otherwise.*
2. *See Std. Dwgs. RD405, RD410, RD415, RD417, RD480, RD481, RD482 and RD545 for details not shown.*
3. *If trench method is used to install posts, ensure compaction 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.*



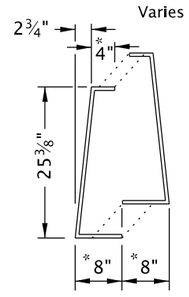
CONCRETE BARRIER TRANSITION SECTION REBAR PLACEMENT



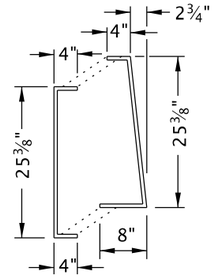
SECTION E-E



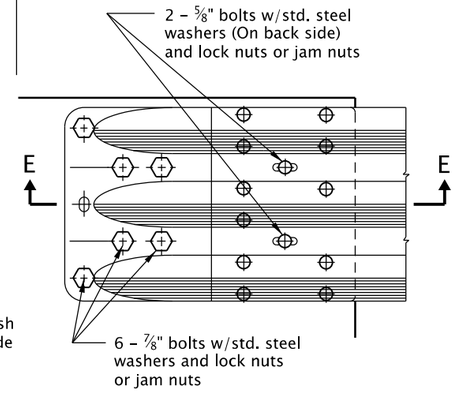
CONCRETE BARRIER TRANSITION SECTION



SECTION B-B
#4 Rebar

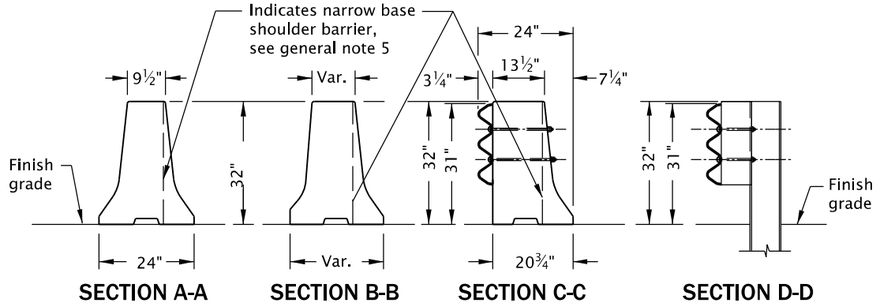


SECTION C-C
#4 Rebar



DETAIL "A"

MODIFIED STIRRUP PAIR **MODIFIED STIRRUP PAIR**



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

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

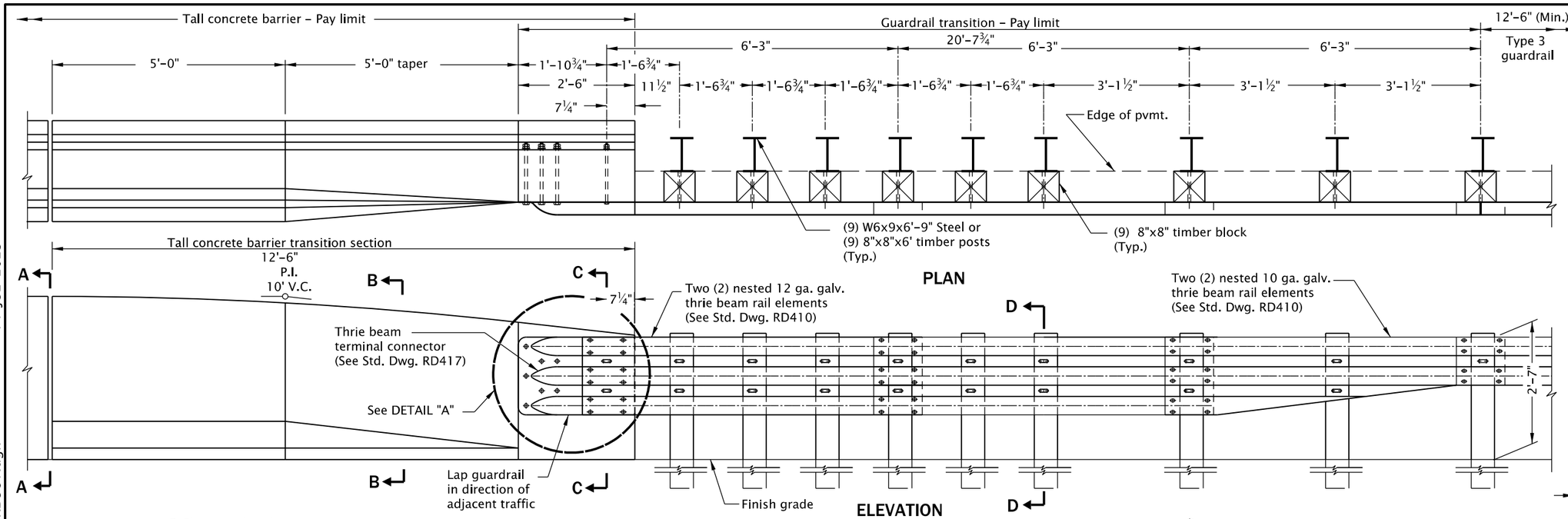
DATE	REVISION DESCRIPTION

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

Effective Date: December 1, 2023 - May 31, 2024

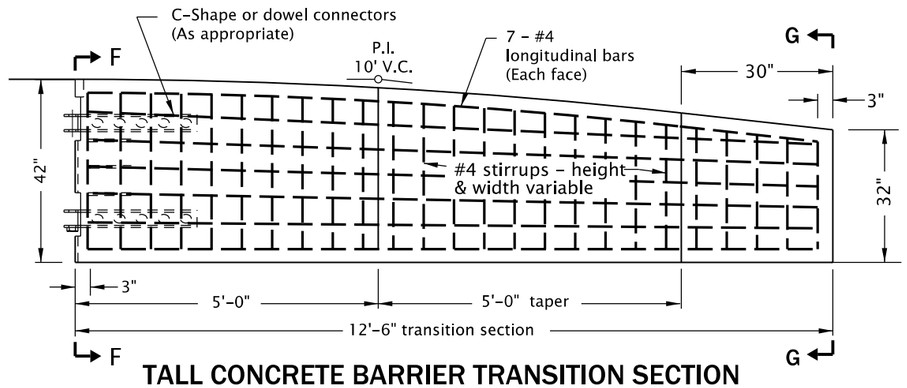
14-JUL-2023

RD581.dgn

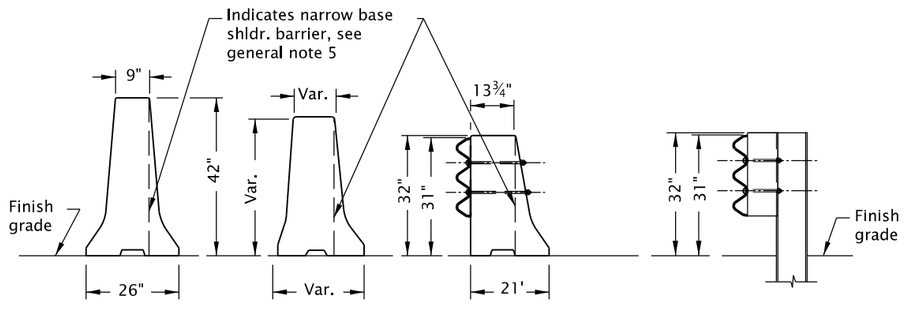


GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

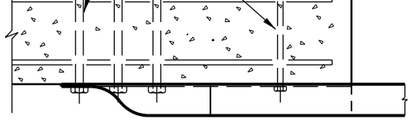
1. *All reinforcing bars shall be full length as shown and shall be 2 inches clear of the nearest face of concrete unless shown otherwise.*
2. *See Std. Dwgs. RD405, RD410, RD415, RD417, RD480, RD481, RD482 and RD545 for details not shown.*
3. *If trench method is used to install posts, ensure compaction 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.*



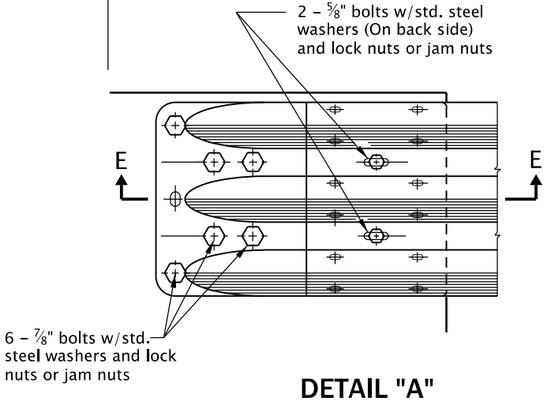
TALL CONCRETE BARRIER TRANSITION SECTION REBAR PLACEMENT



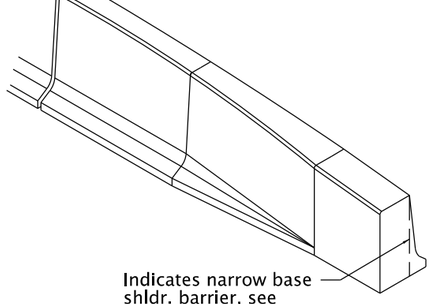
SECTION A-A SECTION B-B SECTION C-C SECTION D-D



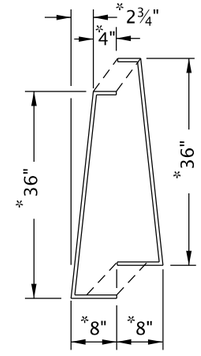
SECTION E-E



DETAIL "A"

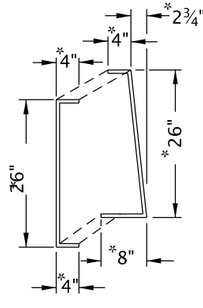


TALL CONCRETE BARRIER TRANSITION SECTION ISOMETRIC VIEW



SECTION F-F #4 Rebar

MODIFIED STIRRUP PAIR



SECTION G-G #4 Rebar

MODIFIED STIRRUP PAIR

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

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

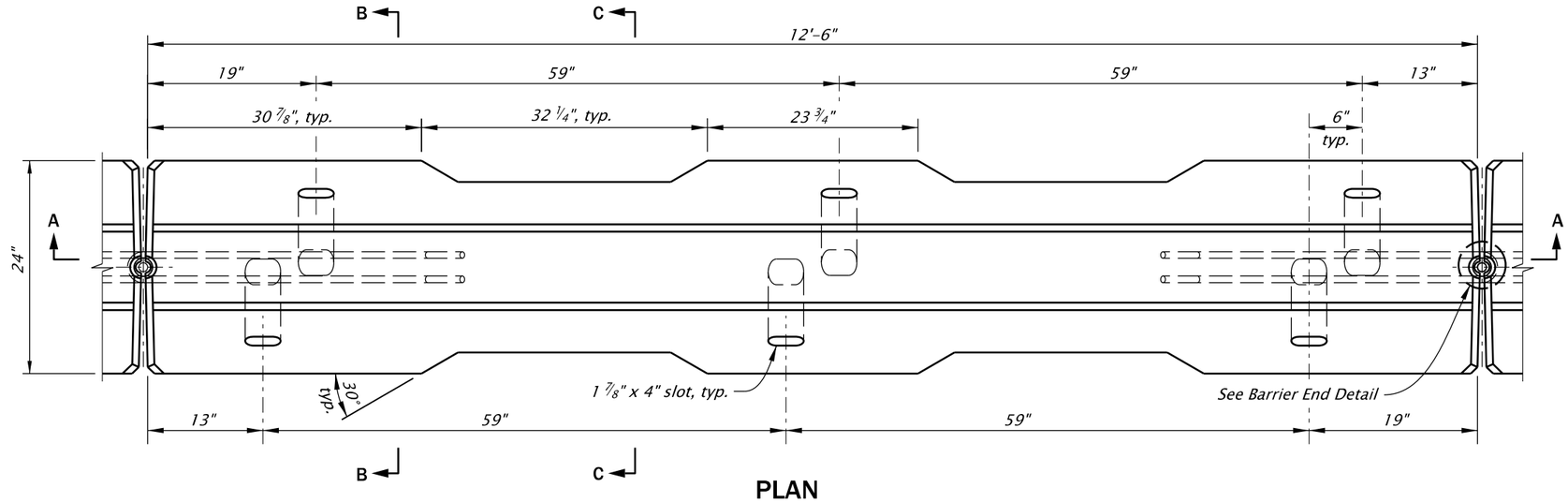
MIDWEST GUARDRAIL SYSTEM TRANSITION TO TALL CONCRETE BARRIER

2024

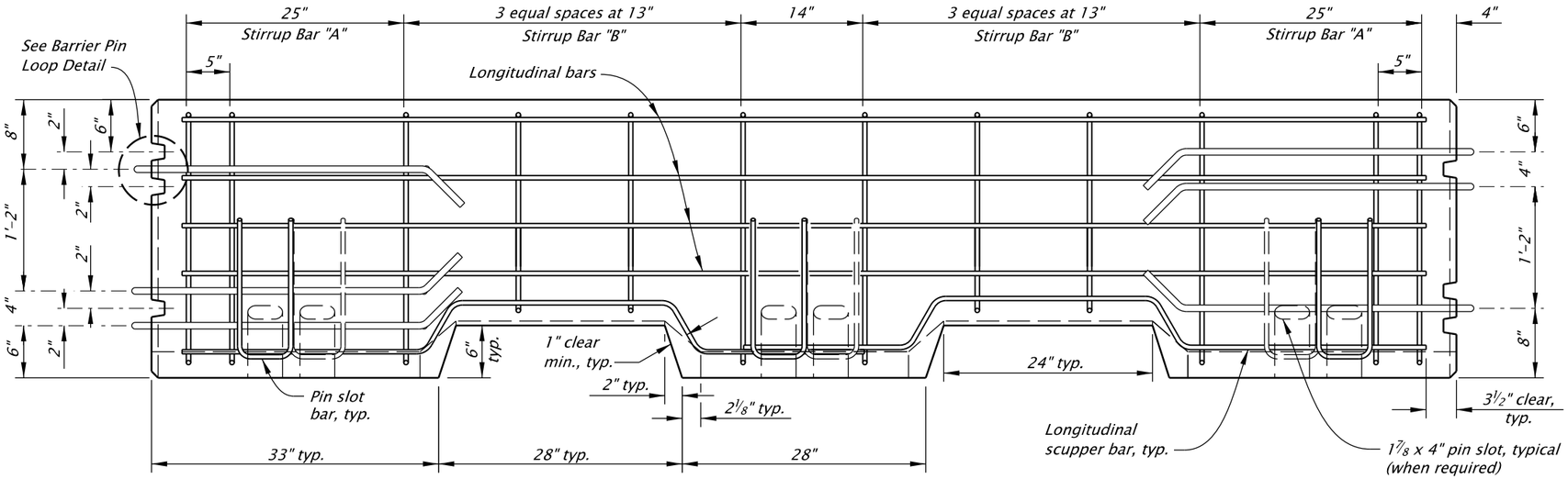
DATE	REVISION DESCRIPTION

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

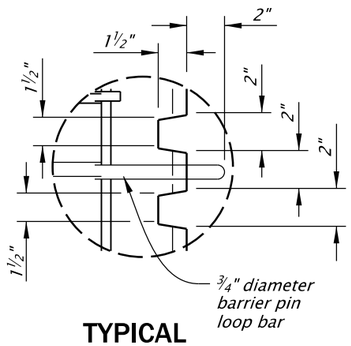
Effective Date: December 1, 2023 - May 31, 2024



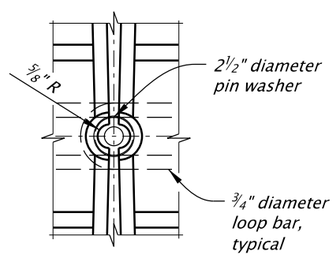
PLAN



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

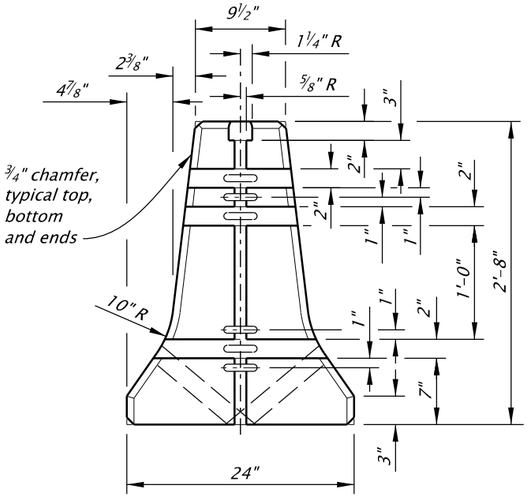
14-JUL-2023

RD595.dgn

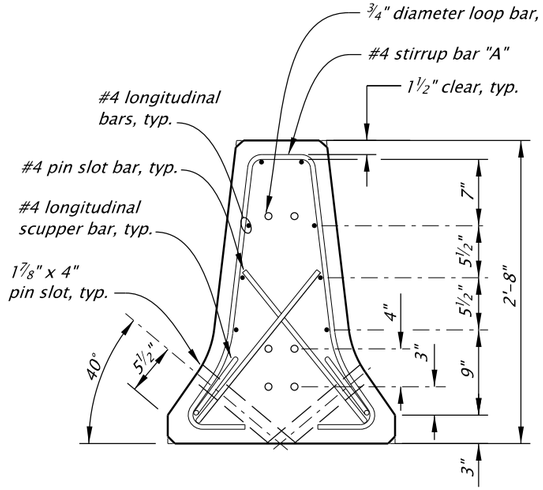
Effective Date: December 1, 2023 - May 31, 2024

14-JUL-2023

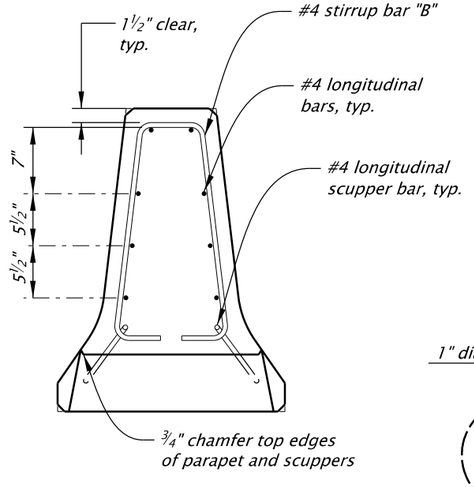
RD596.dgn



END VIEW

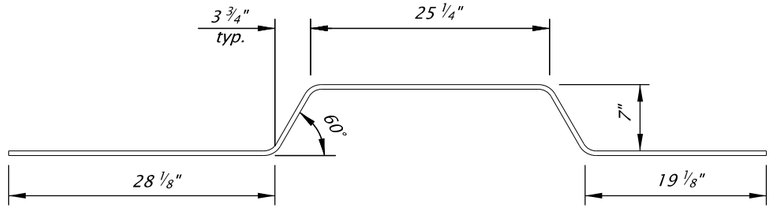


SECTION B-B

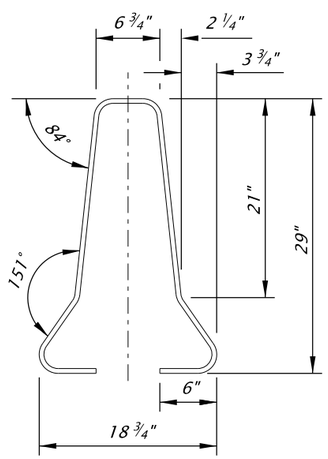


SECTION C-C

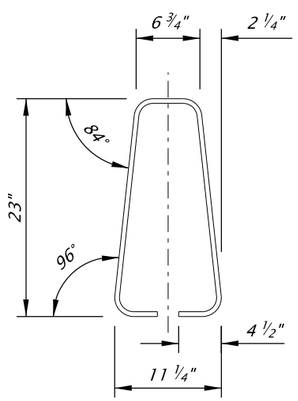
LONGITUDINAL BAR



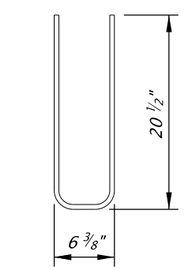
LONGITUDINAL SCUPPER BAR



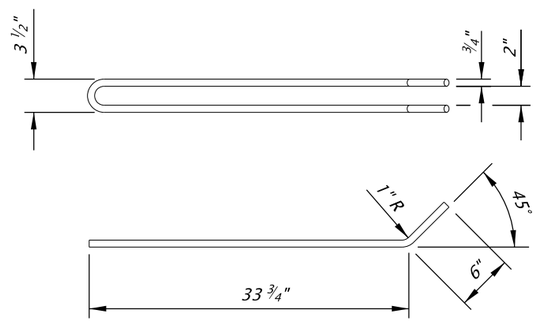
STIRRUP BAR "A"



STIRRUP BAR "B"

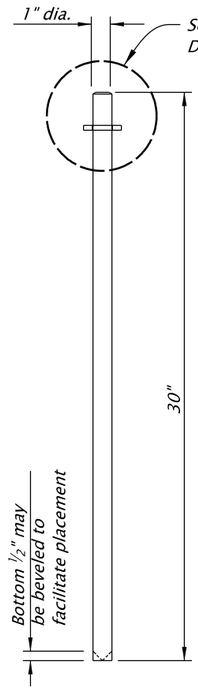


PIN SLOT BAR
(When required)

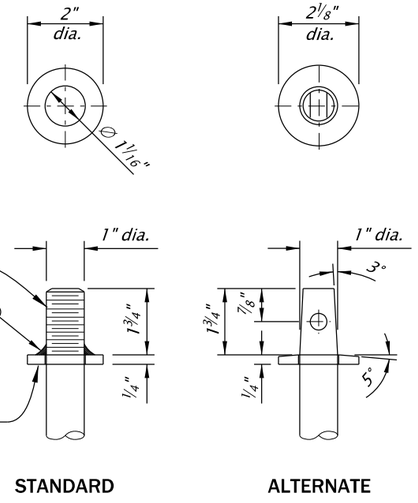


LOOP BAR

REINFORCING STEEL BENDING DIAGRAM



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

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.*

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

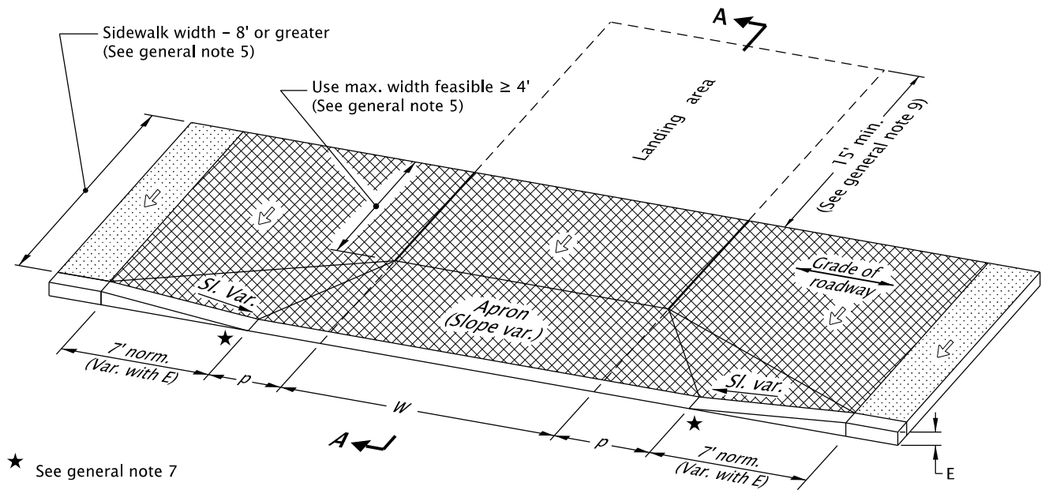
32" PRECAST TYPE "F" CONCRETE BARRIER WITH SCUPPERS REINFORCING

2024

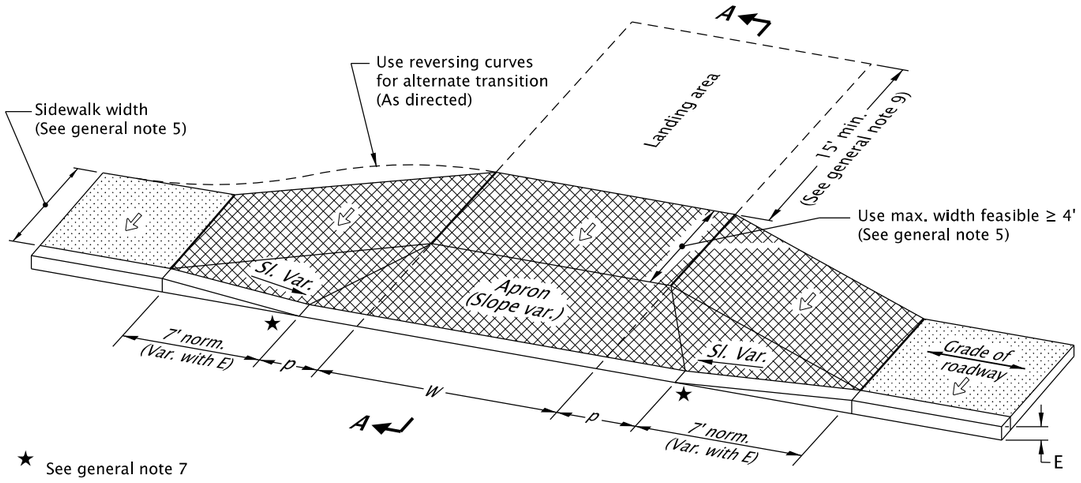
DATE	REVISION DESCRIPTION
07-2022	NEW DRAWING CREATED
06-2023	REVISED NOTES

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

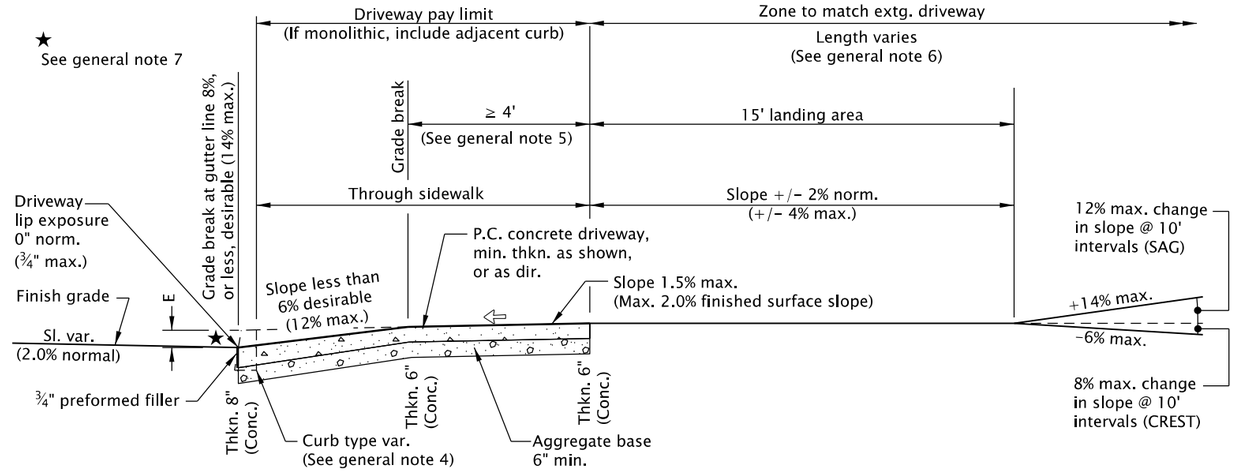
Effective Date: December 1, 2023 - May 31, 2024



OPTION D
DRIVEWAY IN WIDE (8' OR GREATER) SIDEWALK



OPTION E
SIDEWALK WRAPPED AROUND DRIVEWAY



SECTION A-A

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Details are based on applicable ODOT Standards.
2. Only use details allowed by jurisdiction.
3. The following dimensions are as shown on plans, or as directed: driveway width, driveway slope, sidewalk width, curb exposure, driveway lip exposure, landing area length and width. See project plans for details not shown.
4. Curb, gutter, and sidewalk types varies, see plans.
   See Std. Dwgs. RD700 & RD701 for curb details.
   See Std. Dwg. RD720 for sidewalk details.
   See Std. Dwg. RD722 for joint details.
5. A greater than or equal 4' unobstructed clear passage with cross slope 1.5% max. (Max. 2.0% finished surface slope) is required behind driveway apron.
6. Where existing driveway is in good condition, and meets slope requirements, construct only as much landing area as required for satisfactory connection with new work.
7. Check the gutter flow depth at driveway locations to assure that the design flood does not overtop the back of sidewalk at driveway. If overtopping occurs place an inlet at upstream side of driveway or perform other approved design mitigation.
8. Construct a full deph expansion joints with 1#2" (In) preformed joint filler at ends of each driveway. Tooled joints are required at all driveway slope break lines.
9. 15' min. of the driveway behind the sidewalk should be surfaced to prevent tracking of gravel onto the sidewalk.
10. Monolithic curb & sidewalk shall retain thickened edge through lowered profile, to accommodate driveway use. See Std. Dwg. RD720 for details.

LEGEND:

	Sidewalk
	Driveway pay limit (If monolithic, include adjacent curb) (See project plans for details not shown)
⇦	Cross slope 1.5% max. (Max. 2.0% finished surface slope) (Normal sidewalk cross slope)
W	Width of driveway
E	Curb exposure
p	7.0' in commercial land use types 3.5' in residential land use types

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

CURB LINE SIDEWALK DRIVEWAYS OR ALLEYS (OPTIONS D & E) ODOT HIGHWAYS

2024

DATE	REVISION DESCRIPTION
07-2023	CORRECTED SECTION A-A

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **RD730**

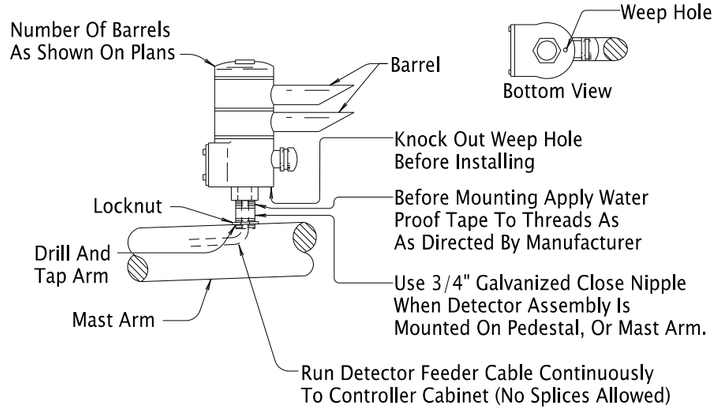
14-JUL-2023

RD730.dgn

Effective Date: December 1, 2023 – May 31, 2024

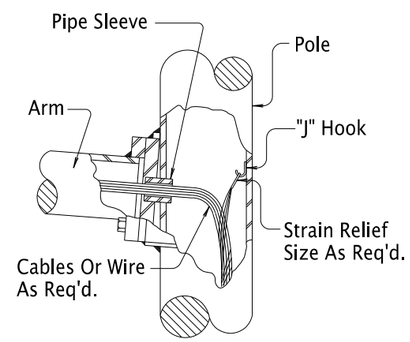
14-JUL-2023

TM450.dgn



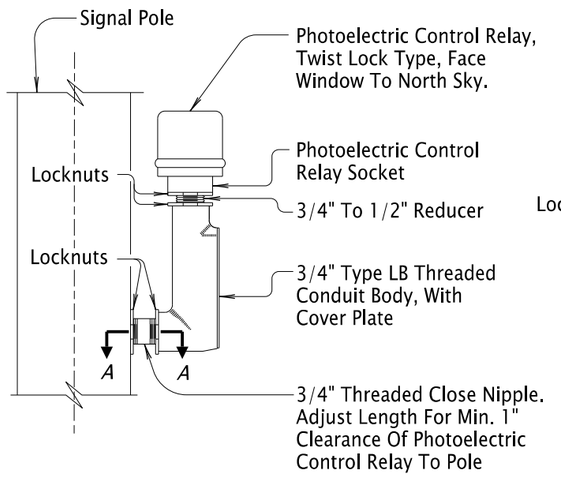
DETAIL "A" FIRE PREEMPTION INSTALLATION

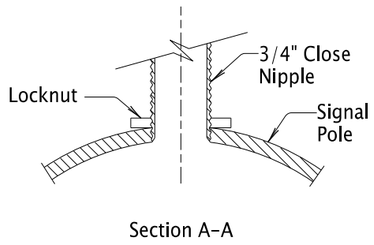
Emitter Units For Vehicles Provided By Others



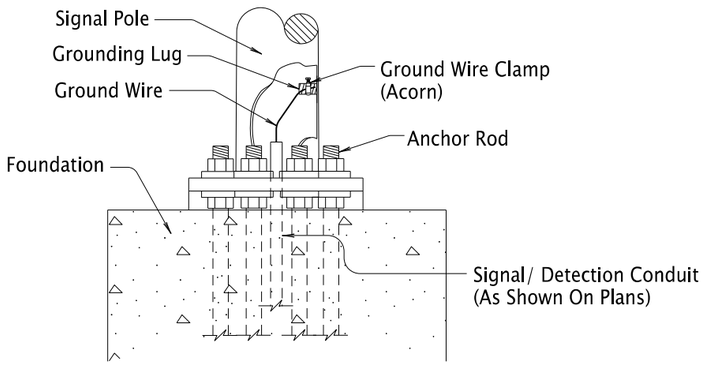
DETAIL "B" MAST ARM CONNECTION

Preinstalled "J" Hooks In Poles For Wire Compression Strain Relief Devices (Cable Grips) At All Access Entrances For Luminaire & Signal Arms.

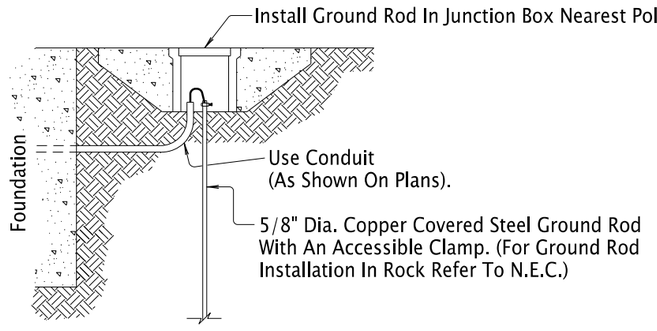




DETAIL "C" PHOTOELECTRIC CONTROL INSTALLATION



DETAIL "D" INTERIOR GROUND INSTALLATION

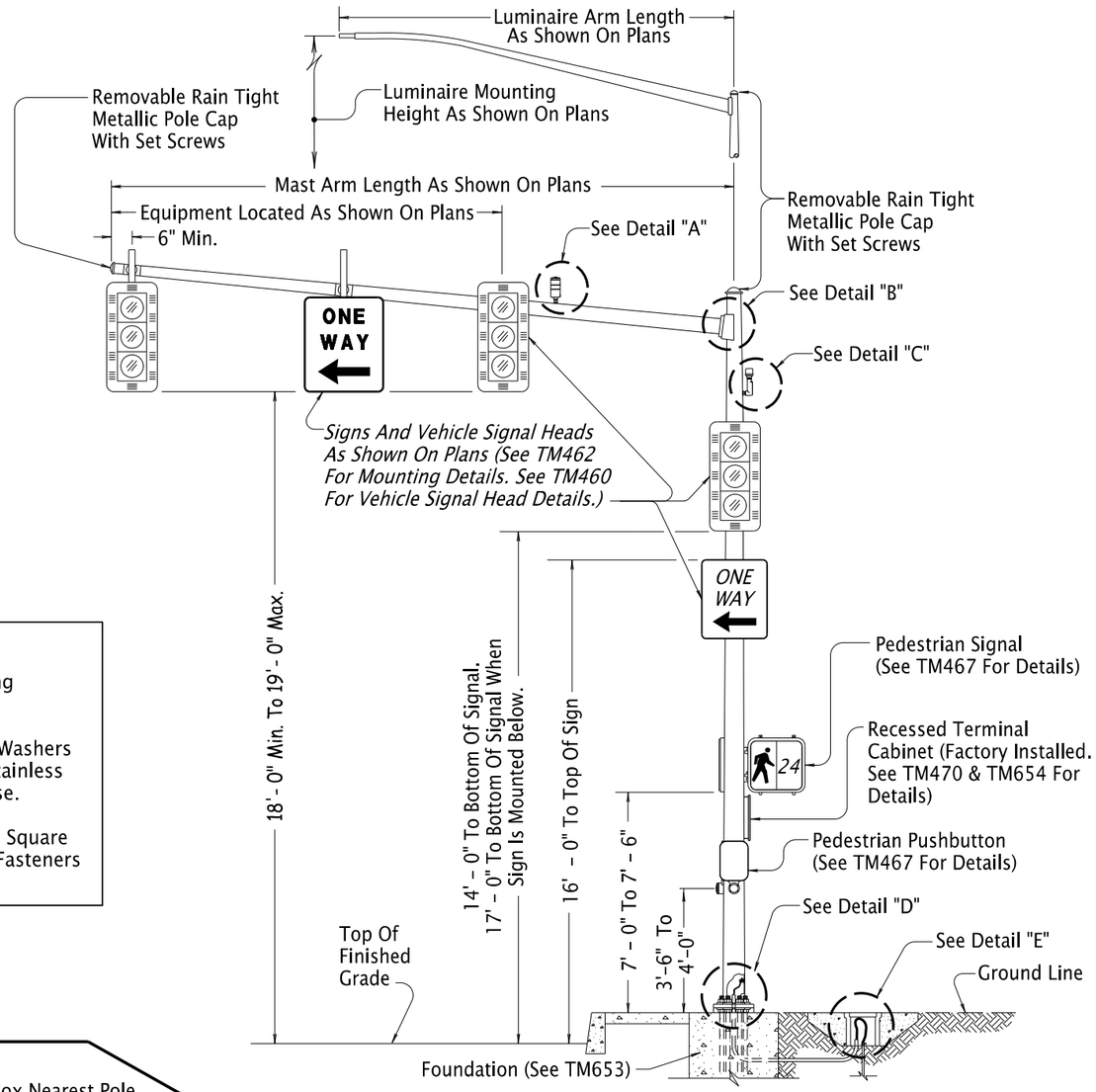


DETAIL "E" GROUND ROD INSTALLATION

Not Applicable For Structure Mounted Poles. See Specifications.

General Notes:

1. All Pole Entrances Containing Wiring Shall Be Smooth.
2. All Screws, Bolts, Nuts And Washers Shall Be Type 304 Or 316 Stainless Steel Unless Noted Otherwise.
3. Bolts And Screws Shall Have Square Or Hex Heads. Allen Head Fasteners Not Allowed.



MAST ARM POLE

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

MAST ARM POLE DETAILS

2024

DATE	REVISION DESCRIPTION
01-2021	CORRECTED STD. DWG. REFERENCE
07-2023	ADDED STD. DWG. REFERENCE

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **TM450**

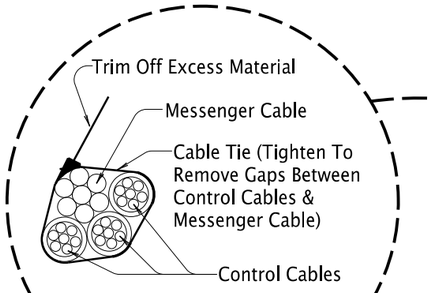
Effective Date: December 1, 2023 - May 31, 2024

14-JUL-2023

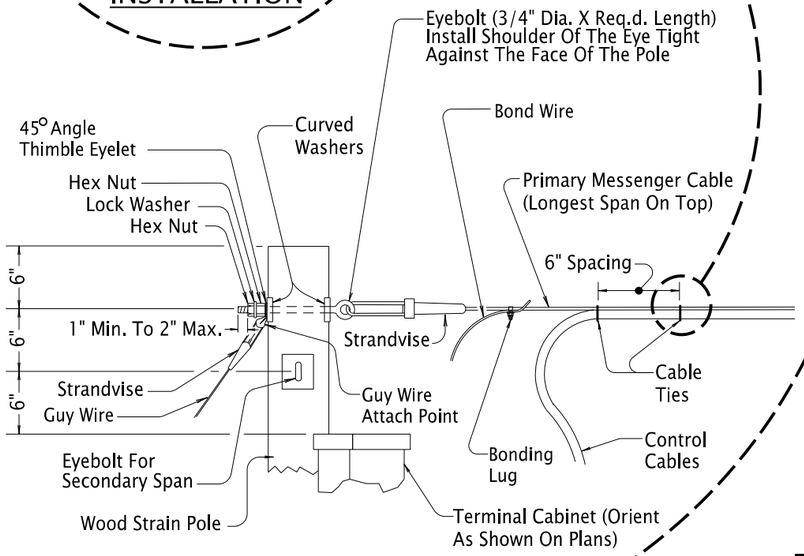
TM452.dgn

General Notes:

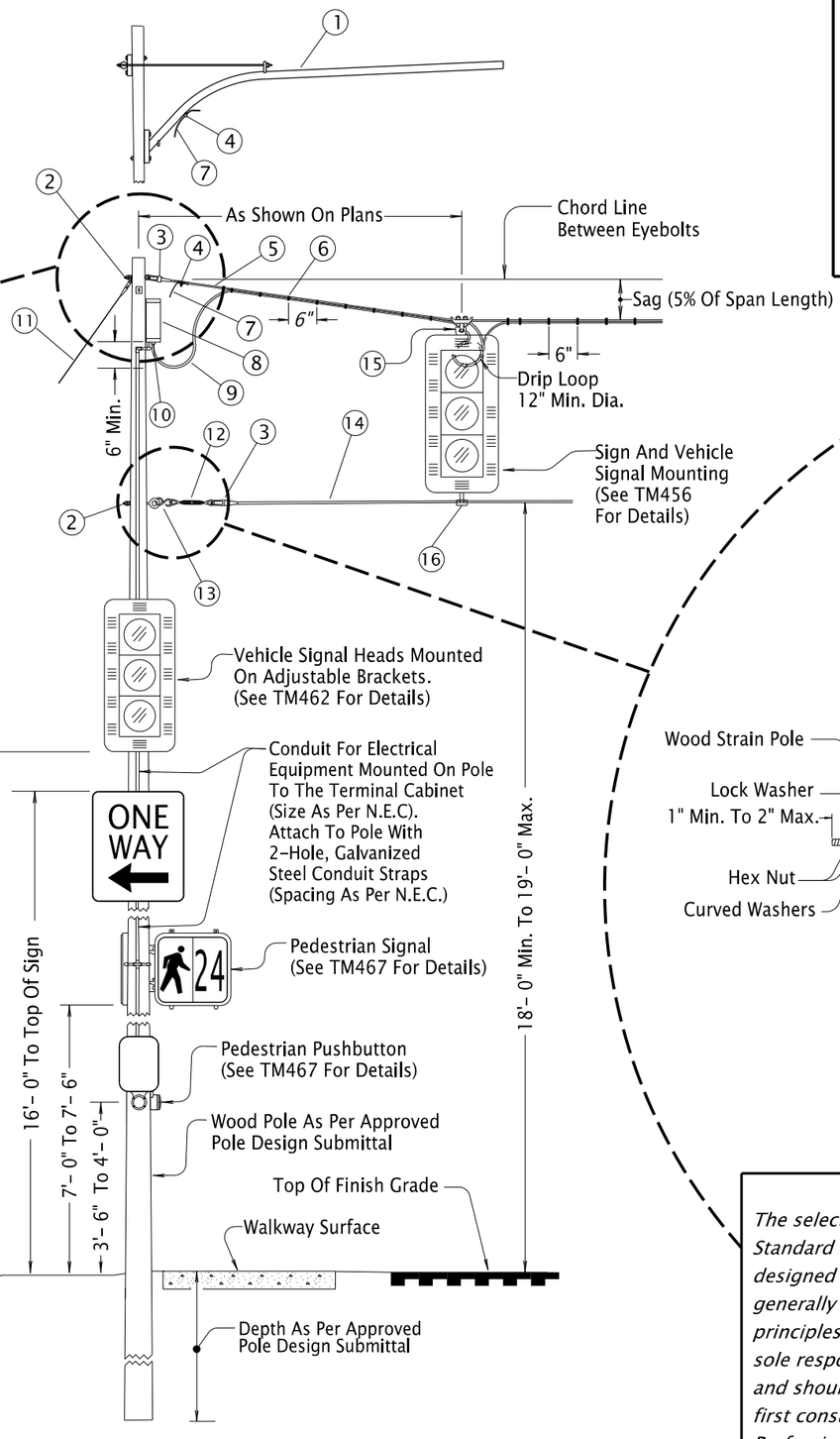
1. The Bottom Of Signal Heads Shall Be At The Same Vertical Elevation Above The Roadway. Eyebolts For Span Need Not Be At The Same Elevation.
2. All Screws, Bolts, Nuts And Washers Shall Be Type 304 Or 316 Stainless Steel Or Galvanized Unless Noted Otherwise.
3. Bolts And Screws Shall Have Square Or Hex Heads. Allen Head Fasteners Not Allowed.
4. Conduit Mounted On Wood Poles/Posts May Be Liquid Tight Flex Conduit.



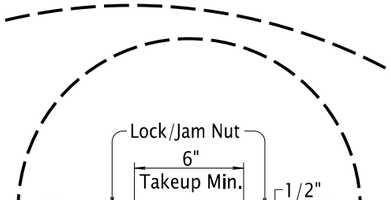
CABLE TIE INSTALLATION



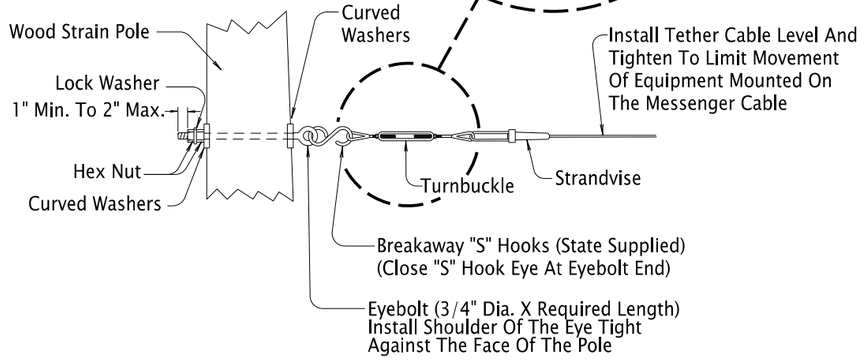
MESSENGER CABLE CONNECTION



TEMPORARY WOOD STRAIN POLE



TURNBUCKLE



TETHER CABLE CONNECTION

LEGEND

1. Luminaire Arm (See TM453 For Details)
2. Eyebolt
3. Strandvise
4. Bonding Lug (See TM454 For Details)
5. Messenger cable
6. Cable Ties
7. Bond Wire (See TM454 For Details)
8. Terminal Cabinet (See TM454 For Details)
9. Control Cable
10. Watertight Compression Entrance Fitting
11. Guy Wire (See TM453 For Details)
12. Turnbuckle
13. "S" Hook (State Supplied)
14. Tether Cable
15. Spanwire Hanger (See TM456 For Details)
16. Tether Clamp (See TM456 For Details)

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

TEMPORARY WOOD STRAIN POLE DETAILS

2024

DATE	REVISION DESCRIPTION
07-2023	ADDED POLE DESIGN SUBMITTAL INFO. CHANGED NOTE 2. DRAFTING CLEAN-UP.

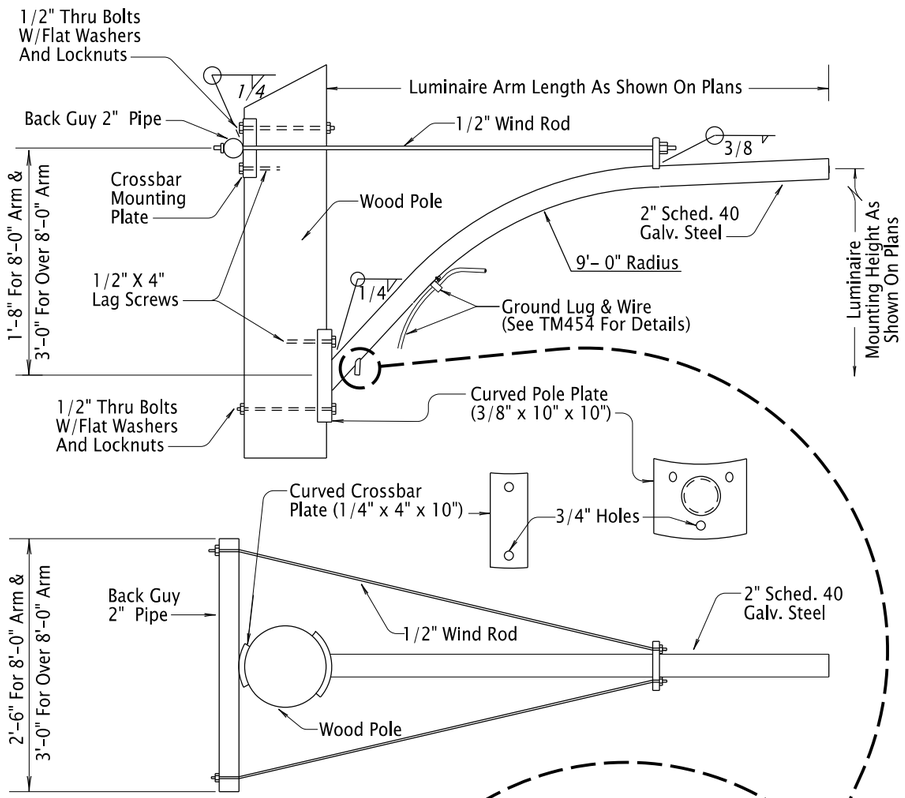
CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | TM452

Effective Date: December 1, 2023 - May 31, 2024

14-JUL-2023

TM453.dgn

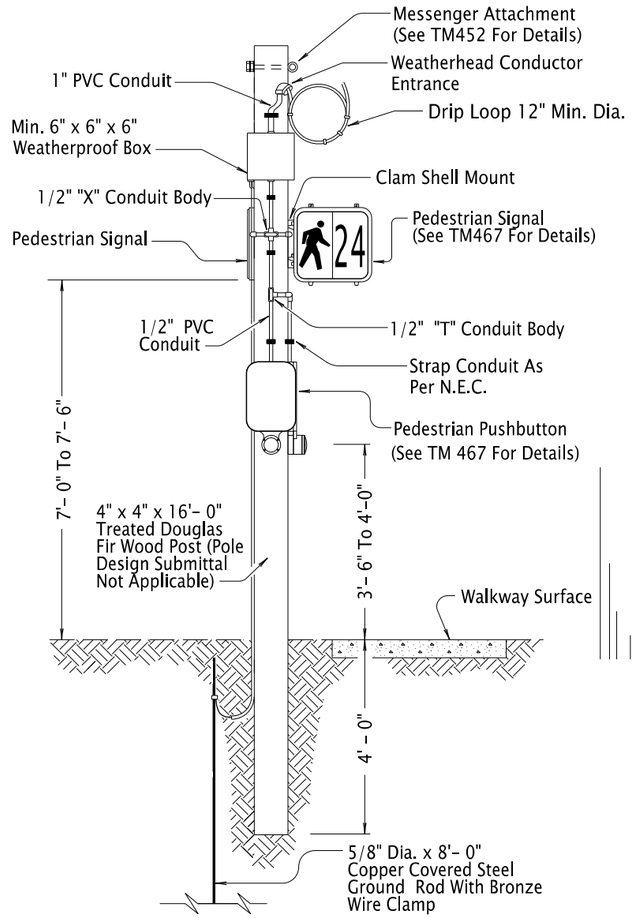
ARM LENGTH	LUM. MAX. WT.	MAX. PROJ. AREA
8'- 0" thru 20'- 0"	65 lbs.	2 sq. ft.



NOTES:

1. Bolts Shall Conform To ASTM Specification A307
2. Steel Sheet And Plate Shall Be Merchant Quality
3. All Structural Steel, Including Washers And Nuts, Shall Be Hot Dip Galvanized After Fabrication

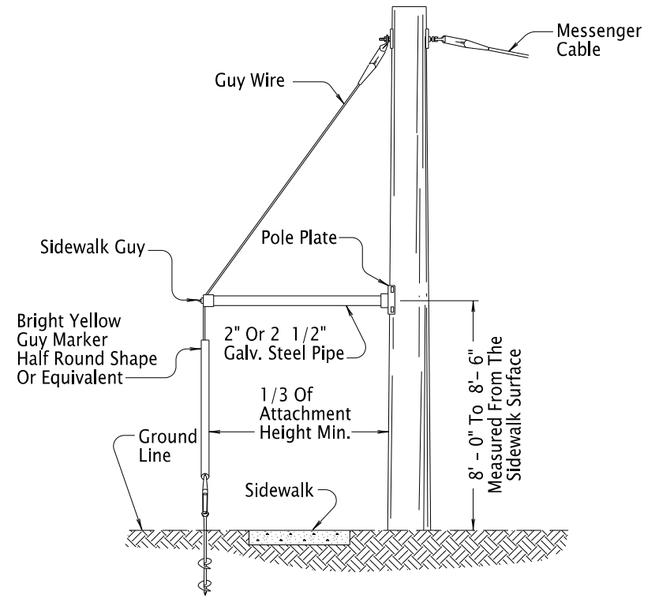
LUMINAIRE ARM INSTALLATION ON WOOD POLE



PEDESTRIAN WOOD POST INSTALLATION OVERHEAD CONDUCTORS

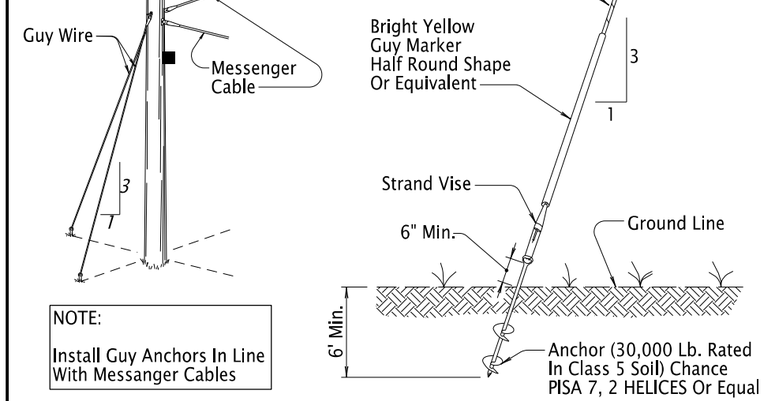
GENERAL NOTES:

1. All Screws, Bolts, Nuts And Washers Shall Be Type 304 or 316 Stainless Steel Or Galvanized Unless Noted Otherwise.
2. Bolts And Screws Shall Have Hex Or Square Heads. Allen Head Fasteners Not Allowed.
3. Conduit Mounted On Wood Poles/Posts May Be Liquid Tight Flex Conduit.



TYPICAL SIDEWALK GUY ANCHOR ASSEMBLY

Install As Per Approved Pole Design Submittal



NOTE:

Install Guy Anchors In Line With Messanger Cables

TYPICAL GUY ANCHOR ASSEMBLY

Install As Per Approved Pole Design Submittal

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

TEMPORARY PEDESTRIAN WOOD POST, GUY WIRE/ANCHOR, & LUMINAIRE ARM DETAILS

2024

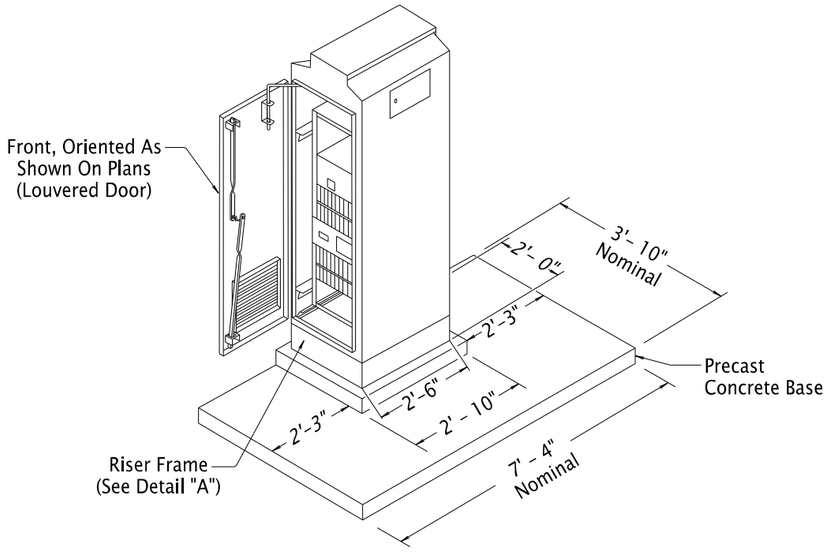
DATE	REVISION DESCRIPTION
07-2023	ADDED POLE DESIGN SUBMITTAL INFO. ADDED POST INFO. CHANGED NOTE 1.

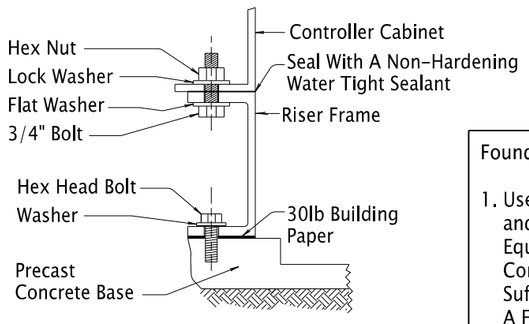
CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **TM453**

Effective Date: December 1, 2023 - May 31, 2024

14-JUL-2023

TM454.dgn

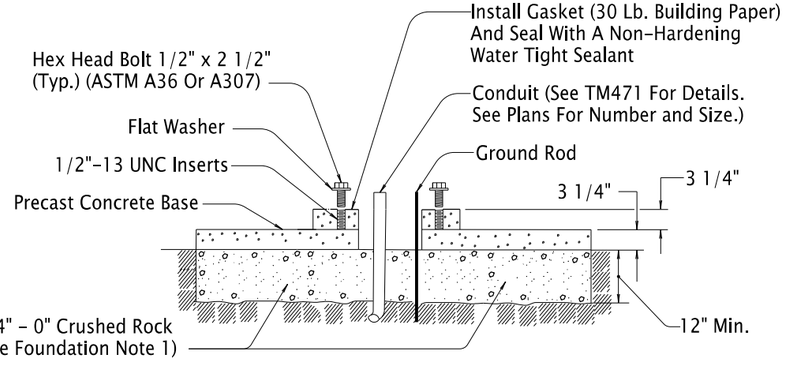




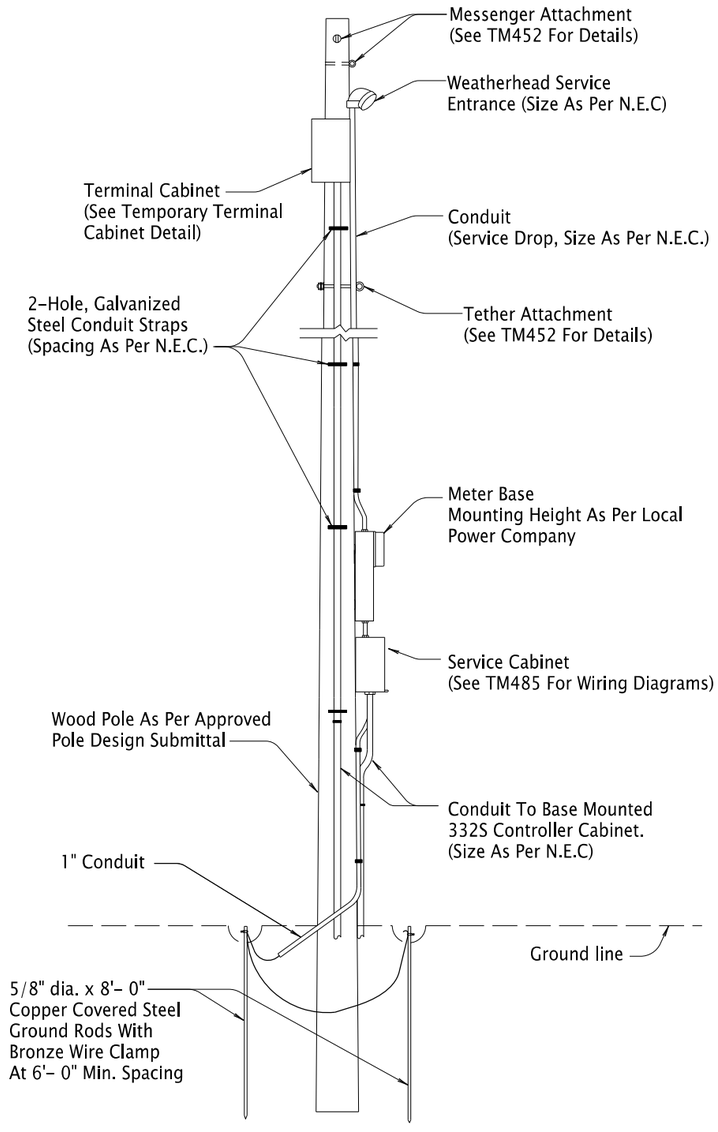
DETAIL "A"
RISER FRAME CONNECTION

Foundation Note:

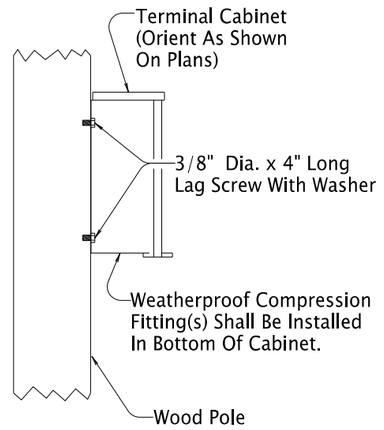
1. Use Materials According To 00640.10 and 00640.16. Use Compaction Equipment Suitable For Area And Compact Each Six Inch Layer With Sufficient Coverages To Produce A Firm Unyielding Surface.



TEMPORARY CONTROLLER CABINET FOUNDATION
(Model 332, 334, And 340 Cabinets)



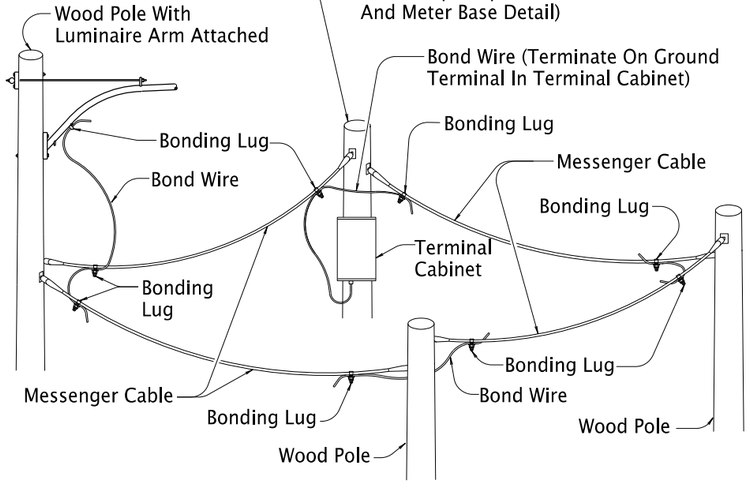
TEMPORARY SERVICE CABINET AND METER BASE



Terminal Cabinet General Notes:

1. Install The Number Of Terminal Blocks Needed For The Circuits. Evenly Distribute All The Terminal Blocks Among The Mounting Brackets.
2. Terminate Only One Wire In Each Termination Point. Use Additional Terminals With A Factory Jumper Between The Terminals If Additional Taps Are Necessary.
3. Label The Marking Strip In The Terminal Cabinet With The Wire Number And/Or Letter As Coded In The Controller Cabinet Terminal Block. Use Only Mechanically Printed Labels.

TEMPORARY TERMINAL CABINET



TEMPORARY GROUNDING/BONDING

General Notes:

1. All Screws, Bolts, Nuts And Washers Shall Be Type 304 Or 316 Stainless Steel Or Galvanized Unless Noted Otherwise.
2. Bolts And Screws Shall Have Hex Or Square Heads. Allen Head Fasteners Not Allowed.
3. Conduit Mounted On Wood Poles/Posts May Be Liquid Tight Flex Conduit.

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
TEMPORARY CONTROLLER CABINET, SERVICE CABINET, METER BASE, & TERMINAL CABINET
2024

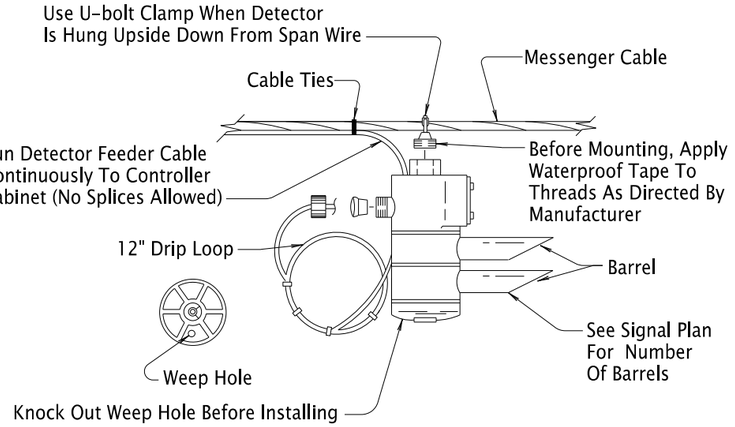
DATE	REVISION DESCRIPTION
07-2023	ADDED POLE DESIGN SUBMITTAL INFO. DRAFTING REVISIONS. CHANGED NOTE 1.

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **TM454**

Effective Date: December 1, 2023 - May 31, 2024

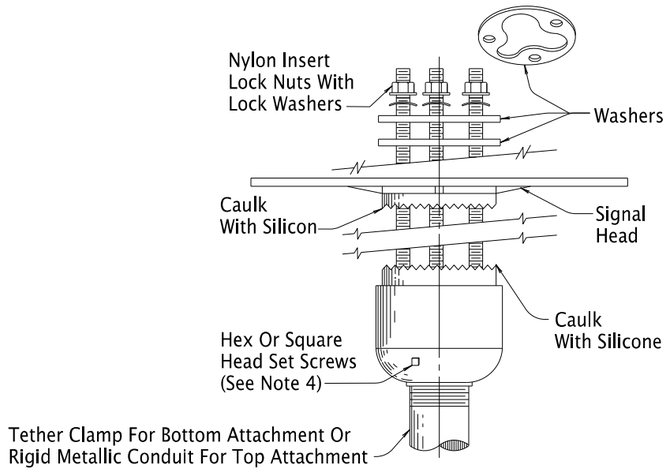
14-JUL-2023

TM456.dgn



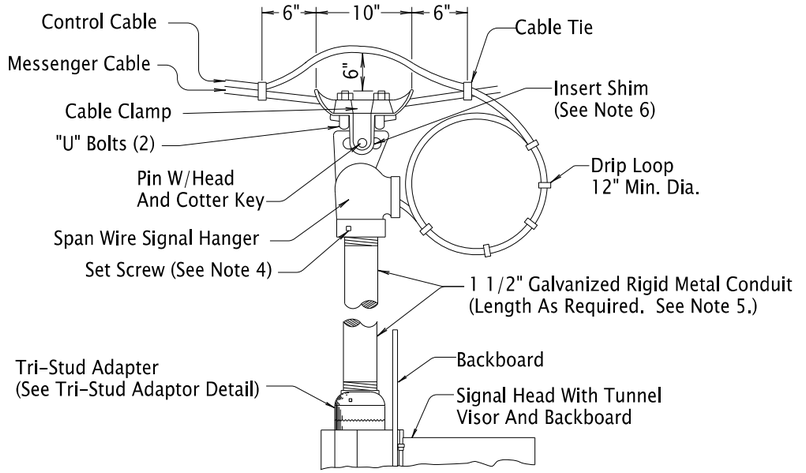
FIRE PREEMPTION INSTALLATION

(Emitter Units For Vehicles Provided By Others)

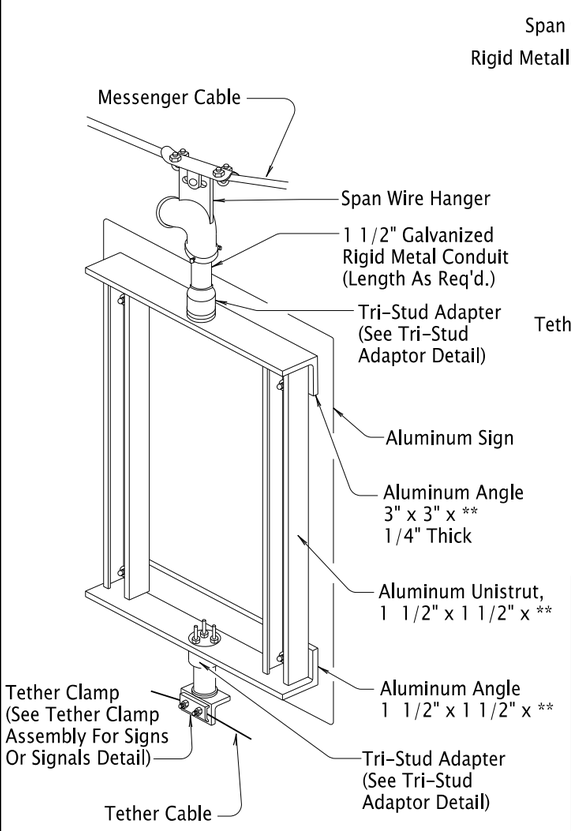


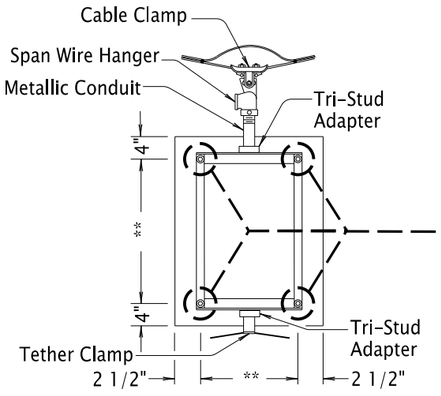
TRI-STUD ADAPTOR DETAIL

(Bottom Attachment Shown, Rotate180 Degrees For Top Attachment)



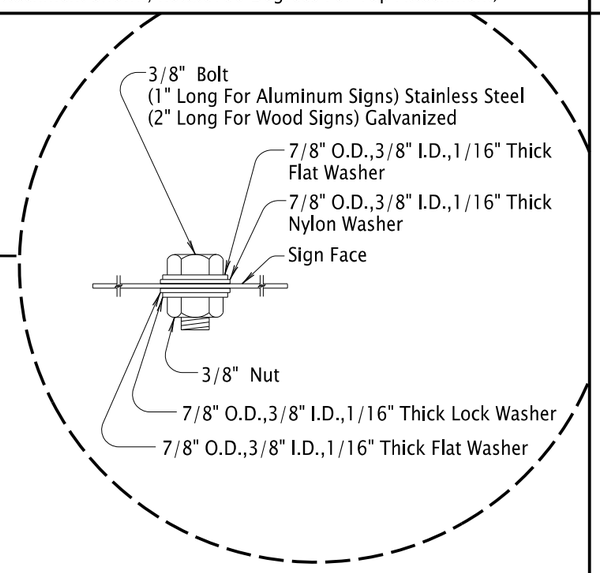
MESSENGER CABLE ATTACHMENT FOR SIGNAL OR SIGNS



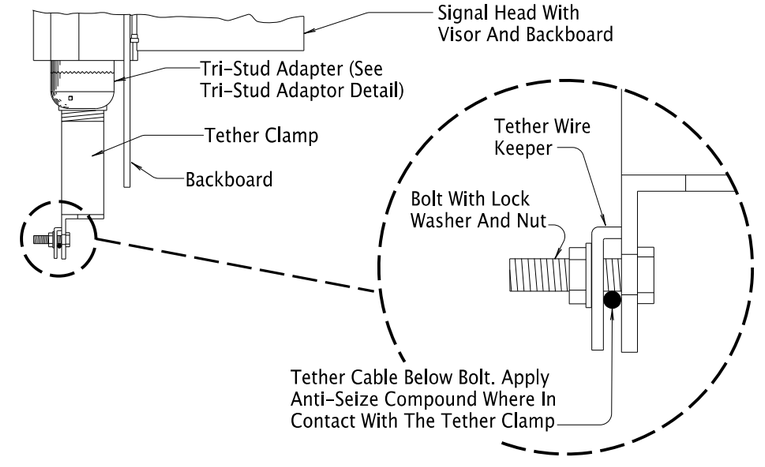


NOTE:

** = Length As Required For Sign Size



SIGN BRACKET (TYPE "A", SPANWIRE INSTALLATION)



TETHER CLAMP ASSEMBLY FOR SIGNALS OR SIGNS

GENERAL NOTES:

1. Galvanize All Steel Parts After Fabrication.
2. All Screws, Bolts, "U" Bolts, Pins, Nuts And Washers Shall Be Type 304 Or 316 Stainless Steel Or Galvanized Unless Noted Otherwise.
3. Bolts And Screws Shall Have Square Or Hex Heads. Allen Head Fasteners Not Allowed.
4. All Set Screws Shall Be Drilled And Tapped Through The First Wall Of Conduit/Tether Clamp. Set Screw Shall Not Extend More Than 5/8 " Inside Conduit And Be Installed With Anti-Seize Compound.
5. Threaded End Of Conduit Shall Extend A Minimum Of 5/8" Into Span Wire Signal Hanger.
6. Install Shim Between Cable Clamp And Span Wire Hanger To Eliminate Excess Movement Yet Allow For Moderate Sway.

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

TEMPORARY SPANWIRE MOUNTING DETAILS FOR VEHICLE SIGNALS, SIGNS, & FIRE PREEMPTION

2024

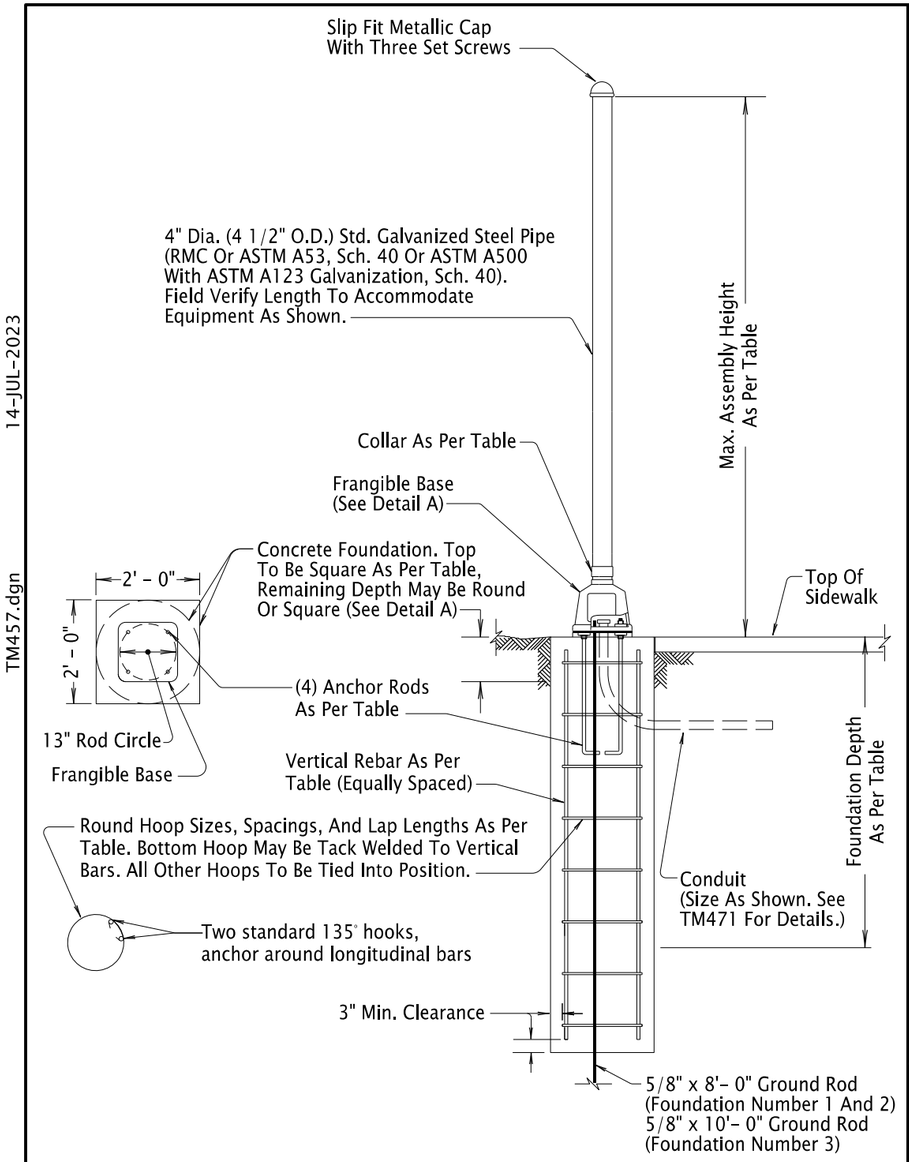
DATE	REVISION DESCRIPTION
07-2023	CHANGED TO ANTI-SEIZE COMPOUND FOR TETHER CLAMP. CHANGED NOTE 2.

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **TM456**

Effective Date: December 1, 2023 - May 31, 2024

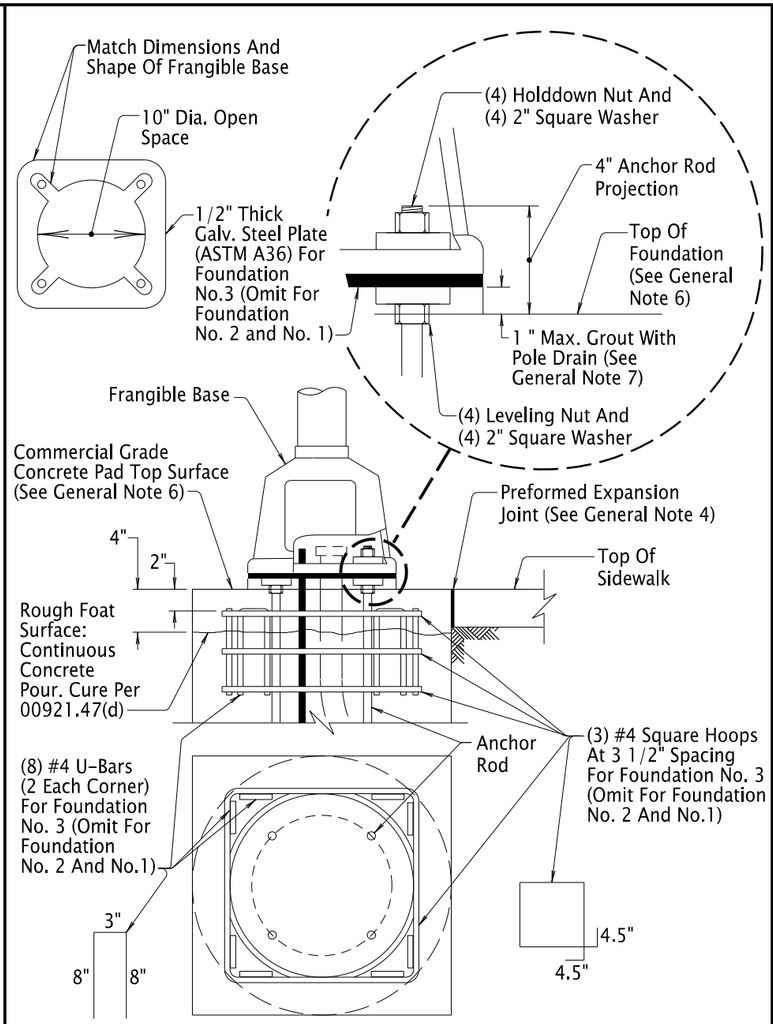
14-JUL-2023

TM457.dgn



Pedestal Foundation Number	Max. Assembly Height	Foundation Depth	Depth of Square Foundation	Anchor Rods (ASTM F 1554 Grade 36)	Reinforcing Steel			Collar
					Vertical Rebar	Hoop Size & Spacing	Hoop Lap Length	
1	6' - 0"	2' - 0"	4"	3/4" x 18" x 4" (6" Thread)	N/A	N/A	N/A	N/A
2	10' - 0"	3' - 0"	4"					
3	20' - 6"	8' - 0"	12"	1" x 36" x 4" (6" Thread)	8-#6	#4-12"	6" with 2 hooks	Req'd

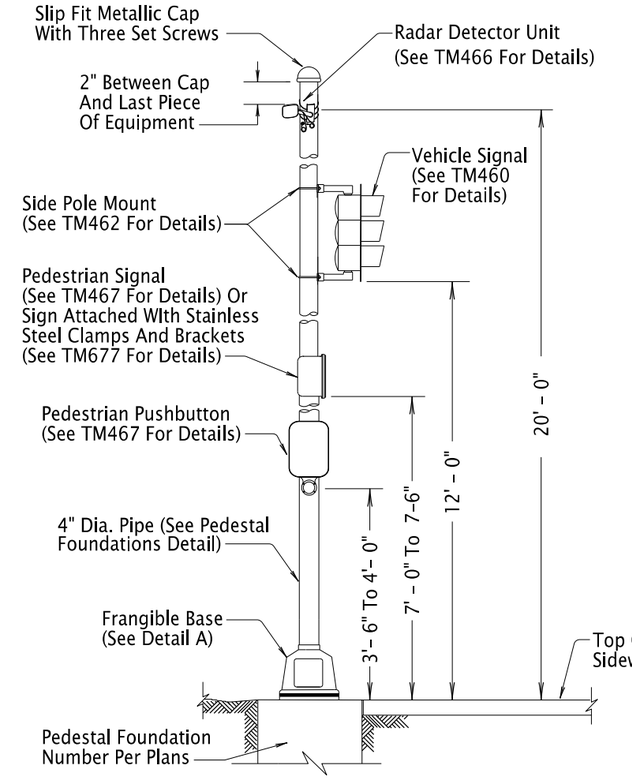
PEDESTAL FOUNDATIONS



DETAIL A - FRANGIBLE BASE

General Notes:

1. All Bolts, Nuts And Washers To Conform To 02560.20 And Be Galvanized Steel According To 02560.40 Unless Noted Otherwise.
2. All Anchor Rods To Be Galvanized Steel Conforming To 02560.30.
3. All Pole Entrances Containing Wiring To Be Smooth.
4. Install 1/4" Thick Preformed Expansion Joint Filler Around Footing In Sidewalk Areas.
5. The Entire Foundation To Be Located On A Single Plane With Less Than 2% Slope. The Flat Edge(s) Of The Foundation May Be Adjacent To The Turn Space, Back Of Walk, Or A Curb Ramp Grade Break Line.
6. Install Commercial Grade Concrete Pad Above Rough Float Surface With Top Surface Matching Sidewalk Grade And Less Than 1/4 " Vertical Exposure From Adjacent Grade. Clean Rough Float Surface Prior To Placing Fresh Concrete By Removing All Scum, Laitance, Loose Gravel, And Sediment. Pour During Sidewalk Installation After Installing Pipe And Appurtenances.
7. Non-Shrink High Early Strength Grout (Non-Ferrous) with 3/4" Diameter Pole Drain And A Minimum Strength of 5000 psi. Do Not Use Footing Concrete.



Notes:

1. Equipment Shown In the Assembly Detail Is An Example Of The Equipment That May Be Mounted. Install Equipment As Shown.
2. See TM492 For Ramp Meter Pedestal Mounting Details.
3. See TM493 For RRFB Pedestal Mounting Details.

TRAFFIC SIGNAL PEDESTAL ASSEMBLY

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

PEDESTAL FOUNDATION AND TRAFFIC SIGNAL ASSEMBLY

2024

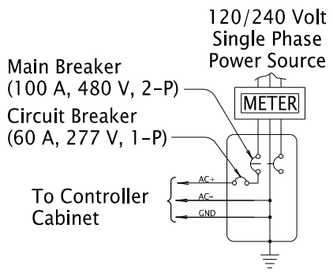
DATE	REVISION DESCRIPTION
01-2021	UPDATED ALL ANCHOR ROD DETAILS, CORRECTED STD. DWG. REFERENCE
07-2022	COMPLETE REDESIGN OF FOUNDATION AND INSTALLATION PROCEDURE
07-2023	NOTE 5 - CHANGED TO 2% SLOPE. ADDED RMC AS PIPE OPTION. MINOR TEXT CHANGES FOR CLARITY.

CALC BOOK NO. N/A | SDR DATE 14-JUL-2023 | **TM457**

Effective Date: December 1, 2023 - May 31, 2024

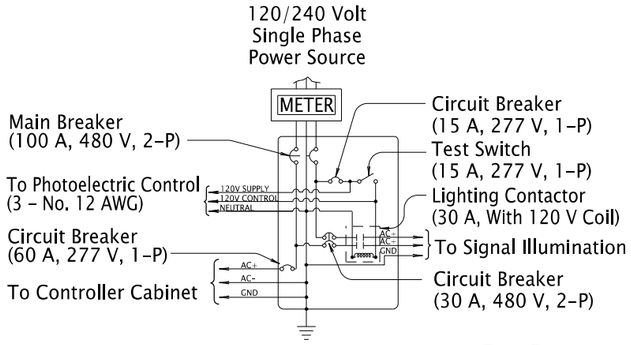
14-JUL-2023

TM485.dgn



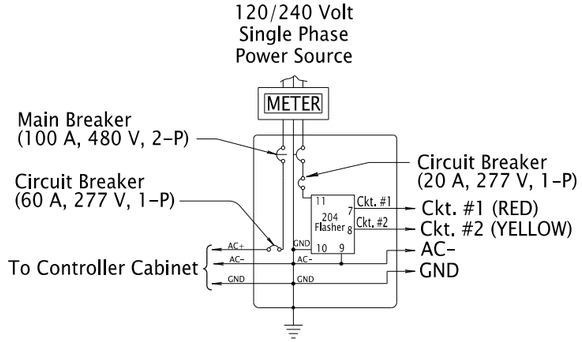
SERVICE CABINET WIRING: (BMC) (SC)

(Signal System)



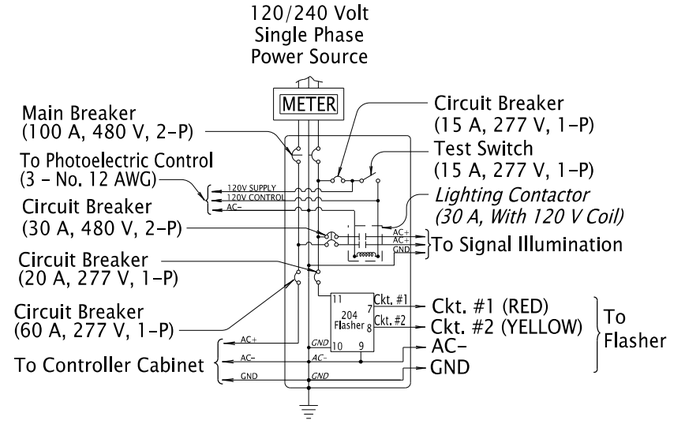
SERVICE CABINET WIRING: (BMCL) (SCL)

(Signal + Illumination System)



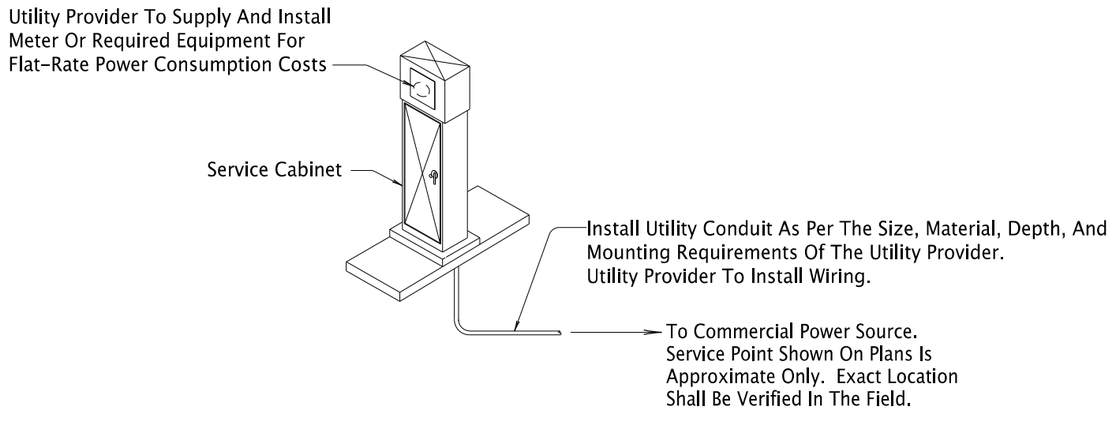
SERVICE CABINET WIRING: (BMCF)

(Signal + Flashing Beacon System)



SERVICE CABINET WIRING: (BMC) (FL)

(Signal + Flashing Beacon + Illumination System)



UTILITY PROVIDER DETAILS

General Notes:

1. Notify Utility Before Making Any Connections To Utility Poles.
2. Service Cabinet Shall Have A Solid Copper Neutral Bus And The Number And Size Of Switches Or Circuit Breakers As Shown. Service Cabinet Can Accommodate A Maximum Of 10 Circuit Breakers.
3. Wiring Connections To The Terminal Screws On The Circuit Breakers And Contactors Shall Make Full Contact Under The Screw Head.
4. Circuit Breakers Shall Be UL489 Listed, Unenclosed, Molded Case Bolt-On Type With End Conductor Terminals Suitable For Surface Mounting In The Cabinet On A False Back Or Bracket.
5. Label Circuit Breakers And Equipment With An Engraved Permanent Label On The Dead Front Panel To Indicate The Circuit Controlled.
6. Fill Out Manufacturer Provided Arc Flash Stickers Using A Permanent Handheld Labeler (Brady IDXPERT with XC-1500-580-WT-BK Tags Or Approved Equal).

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OREGON STANDARD DRAWINGS

SERVICE CABINET WIRING DETAILS

2024

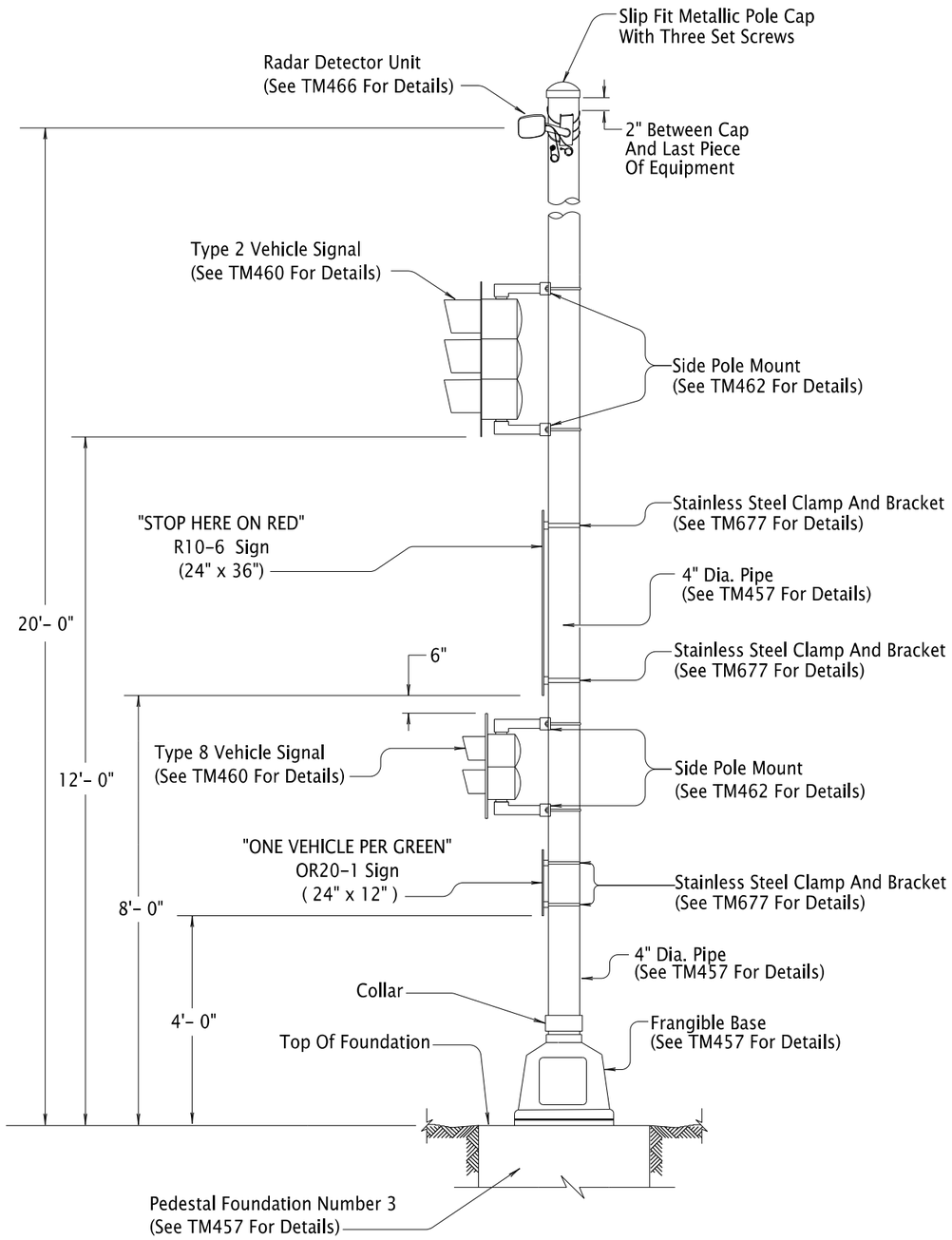
DATE	REVISION DESCRIPTION
07-2023	REVISED SERVICE CABINET WIRING TITLES, ADDED NOTE 6.

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **TM485**

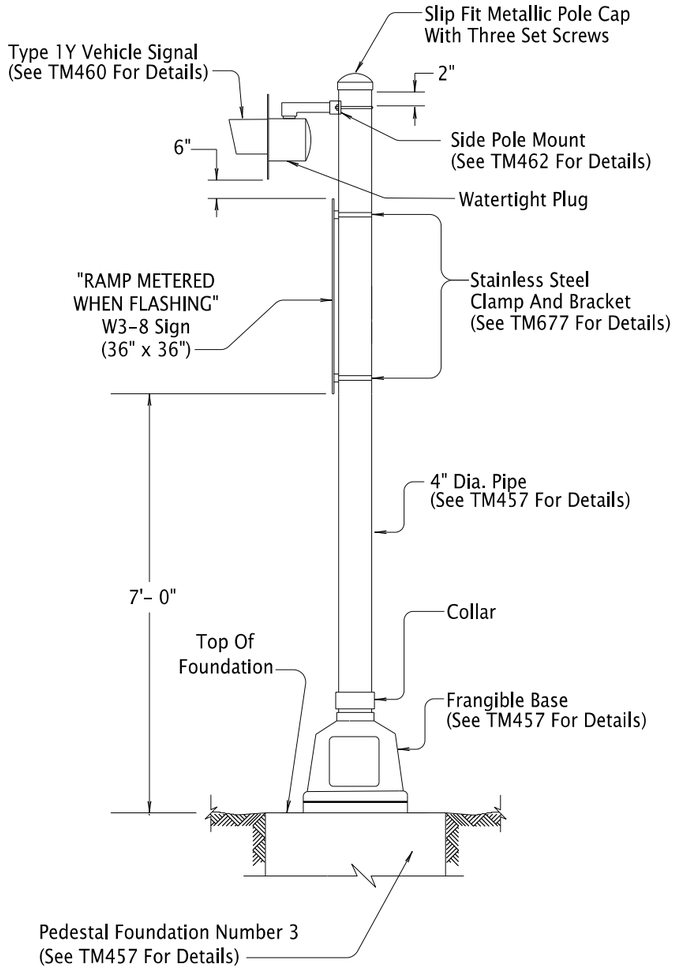
Effective Date: December 1, 2023 - May 31, 2024

14-JUL-2023

TM492.dgn



RAMP METER SIGNAL ASSEMBLY



RAMP METER ADVANCE WARNING SIGN ASSEMBLY

General Notes:

1. Equipment Shown In the Assembly Details Is An Example Of The Equipment That May Be Mounted. Install Equipment As Shown.
2. Do NOT Install Assemblies Within Paved Gore Area.
3. Locate Ramp Meter Signal Assembly 25'- 0" Beyond Stop Line Or 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

RAMP METER ASSEMBLIES

2024

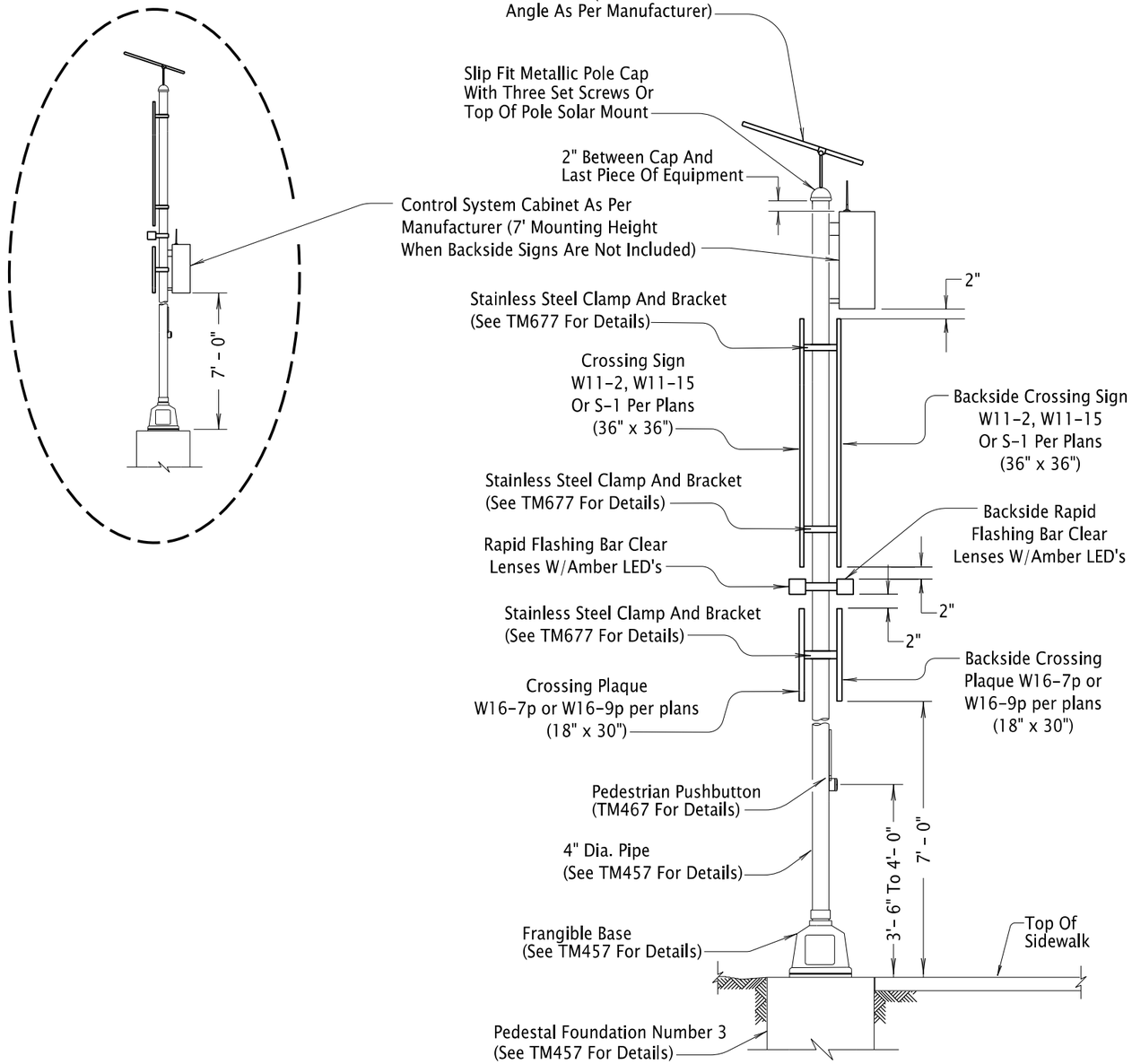
DATE	REVISION DESCRIPTION
01-2021	REVISED DRAFTING, ADDED RADAR MOUNT REFERENCE, ADDED SLOPED
	GROUND DETAILS, CHANGED NOTE 2 FROM 10 TO 25 FEET.
01-2022	REFERENCED TM457 FOR ALL PIPE INFO
07-2022	REVISED TO MATCH TM457 REVISIONS/FORMAT
07-2023	MINOR TEXT CHANGES FOR CLARITY

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **TM492**

Effective Date: December 1, 2023 - May 31, 2024

14-JUL-2023

TM493.dgn

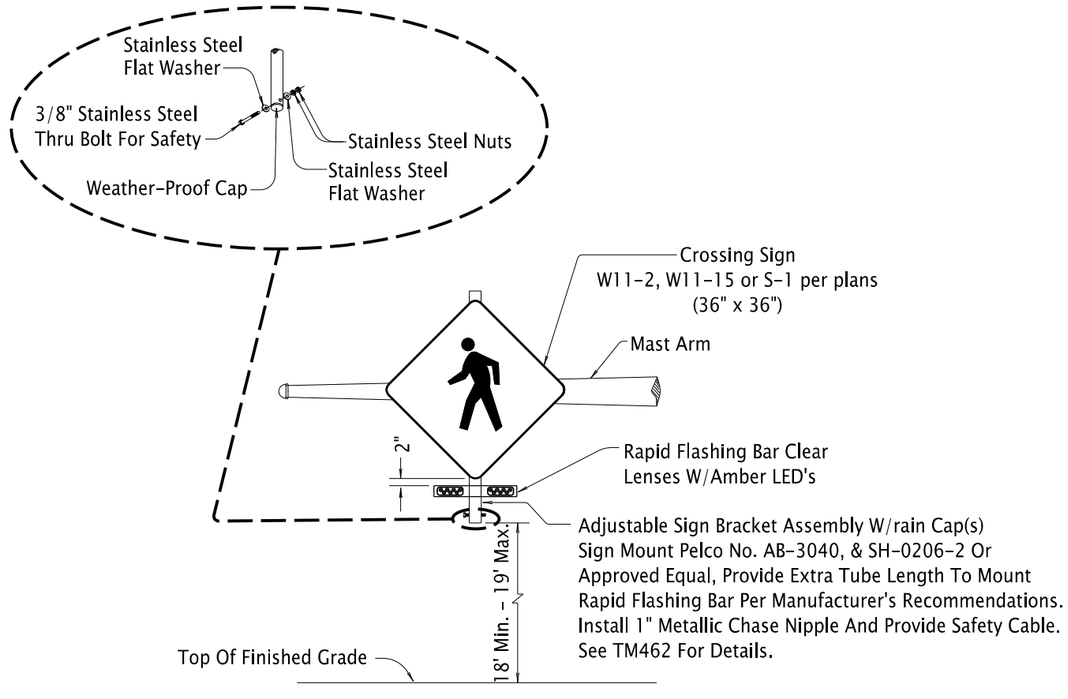


Note:

1. Equipment Shown In The Assembly Detail Is An Example Of The Equipment That May Be Mounted. Install Equipment As Shown.

2. Equipment Mounting Details Shown Are Also Applicable When Mounting Equipment To A Large Signal Pole.

RECTANGULAR RAPID FLASHING BEACON PEDESTAL ASSEMBLY
(Use Green Sheet Listed Items Only)



RECTANGULAR RAPID FLASHING BEACON MAST ARM ASSEMBLY
(Use Green Sheet Listed Items Only)

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

RECTANGULAR RAPID FLASHING BEACON (RRFB) ASSEMBLIES

2024

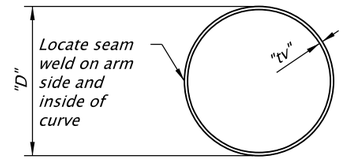
DATE	REVISION DESCRIPTION
07-2022	NEW DRAWING
07-2023	MINOR TEXT CHANGES FOR CLARITY

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **TM493**

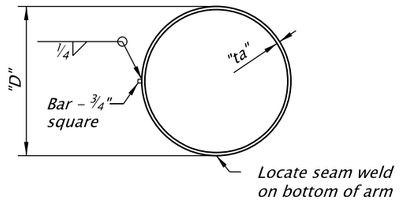
Effective Date: December 1, 2023 - May 31, 2024

14-JUL-2023

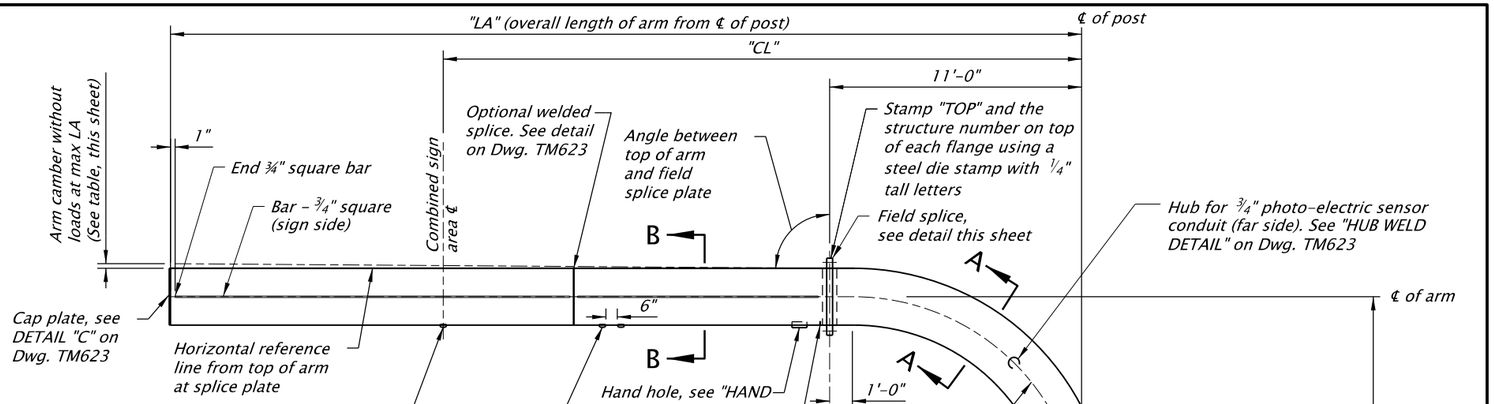
TM621.dgn

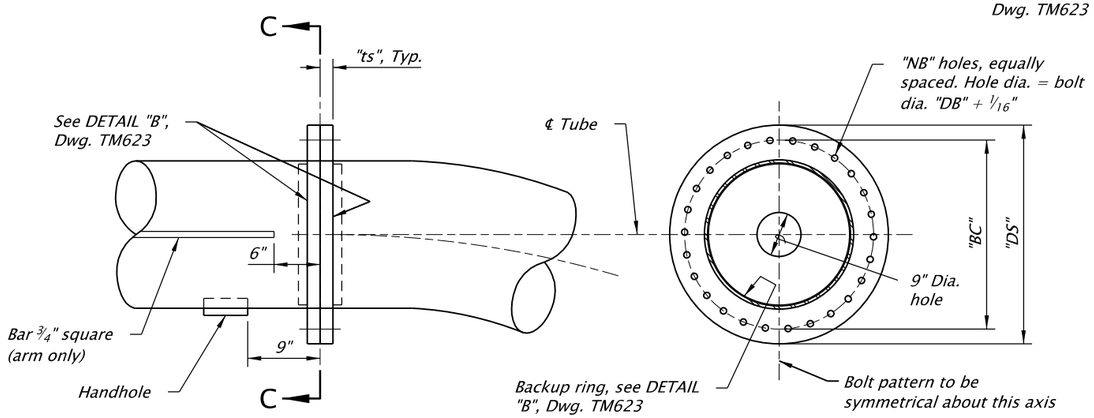


SECTION A-A
(TYPICAL POST SECTION)
No Scale



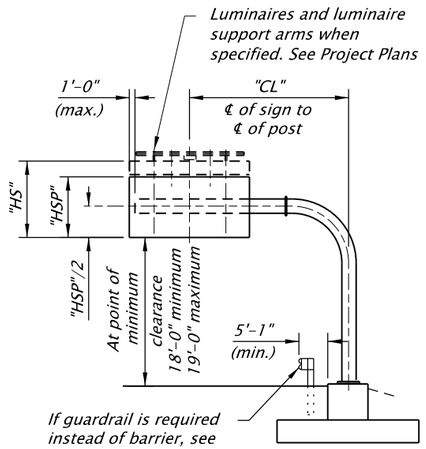
SECTION B-B
(TYPICAL ARM SECTION)
No Scale



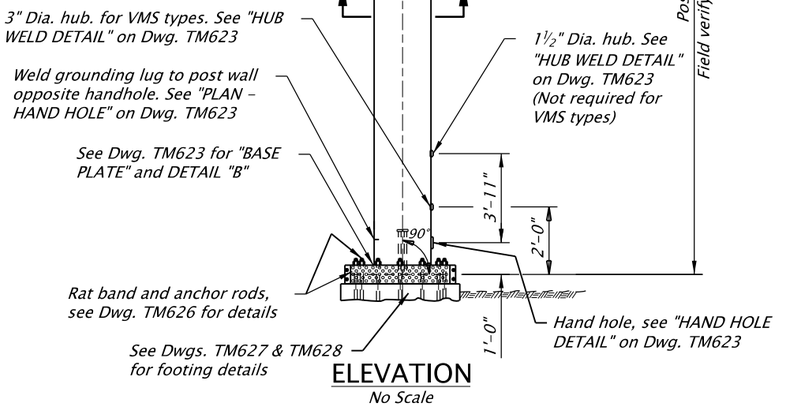


FIELD SPLICE
No Scale

SECTION C-C
No Scale



ELEVATION
No Scale



ELEVATION
No Scale

See Dwgs. TM622 through TM628

Advisory Note: This standard applies only if total sign area is less than or equal to "maximum sign area", and actual arm length, measured from center of sign to centerline of post, is less than or equal to "CL" in the Table and if actual height of post is less than or equal to 30'-0". VMS signs may not exceed the dimensions and weights in the table.

VMS Type	Access	VMS Height (ft)	VMS Length (ft)	Max. VMS Area (ft^2)	VMS Depth	Weight (lbs)
1W	Walk-In	8	30	240	4'-0"	3950
2F	Front	8	30	240	1'-4"	2290
3F	Front	8	21	168	1'-4"	1680
4F	Front	6	15	90	1'-4"	900

Note: Use TM690 and TM691 for walk-in access VMS. Use TM695 and TM696 for front access VMS with a walkway.

Structure Design No.	Max. "LA" (ft)	* Max. "CL"	* Max. Sign Area (ft^2)	VMS Type	Arm and Post Dimensions			Field Splice					*** Arm Camber without walkway	*** Arm Camber with walkway
					"D"	"ta"	"tv"	"DB"	"NB"	"DS"	"BC"	"ts"		
1	42	28'-6"	350	–	2'-6"	1/2"	5/8"	7/8"	26	3'-8"	3'-2"	2¾"	3¾"	–
2	50	40'-0"	253	3F, 4F	2'-6"	1/2"	5/8"	7/8"	26	3'-8"	3'-2"	2¾"	6¼"	8¾"
3	40	30'-0"	253	–	2'-6"	3/8"	1/2"	7/8"	20	3'-8"	3'-2"	2½"	3½"	–
4	50 **	42'-6"	153	4F	2'-6"	3/8"	1/2"	7/8"	20	3'-8"	3'-2"	2½"	6"	7"
5	40	32'-6"	153	–	2'-6"	3/8"	1/2"	7/8"	20	3'-8"	3'-2"	2"	3½"	–
6	30	22'-6"	153	–	2'-0"	3/8"	1/2"	7/8"	18	3'-2"	2'-8"	2½"	2¾"	–
7	50	46'-6"	54	–	2'-0"	3/8"	3/8"	7/8"	16	3'-2"	2'-8"	2½"	10¼"	–
8	30	26'-6"	54	–	1'-6"	3/8"	3/8"	7/8"	12	2'-8"	2'-2"	2½"	4¾"	–
9	45	–	–	1W, 2F, 3F, 4F	2'-6"	1/2"	5/8"	7/8"	26	3'-8"	3'-2"	2¾"	–	7"

* Limits do not apply to VMS Signs

** "LA" is limited to 45 ft. for Design No. 4 when a walkway is used.

*** Arm Camber for VMS types according to Project Plans

Accompanied by dwgs. TM621, TM623, TM624, TM625, TM626, TM627, TM628, TM690, TM691, TM694, TM695 and TM696

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OREGON STANDARD DRAWINGS

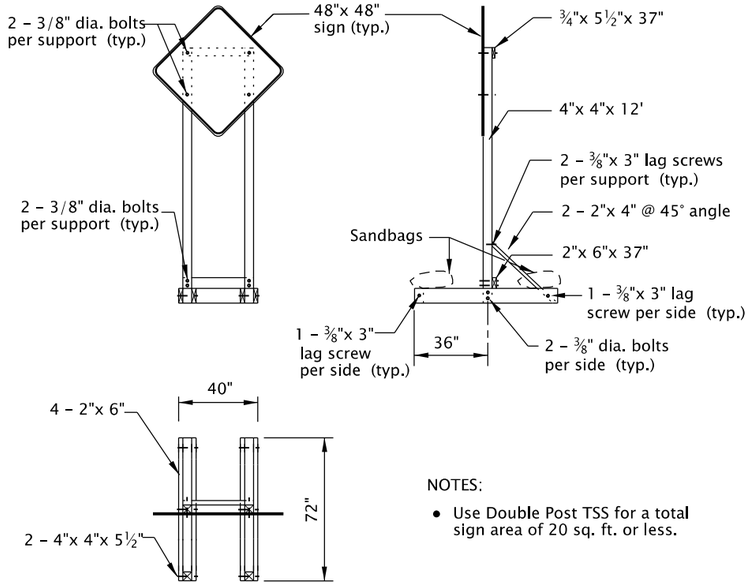
STD. MONOTUBE SIGN/VMS CANTILEVER GENERAL DESIGN CRITERIA

2024

DATE	REVISION DESCRIPTION
07-2020	HUB LOCATION WAS AT 2', ADDED VMS CAMBER ASTERISK AND ADDED CAMBER AT MAXIMUM LA
01-2021	REVISED CAMBER VALUES AND REMOVED CAMBER VALUES NOT USED
07-2023	REMOVED FIELD SPLICE NO. 2, REMOVED HANDHOLE, ADDED TM694, TM695 AND TM696 ACCOMPANIED BY DRAWINGS, AND ADDED VMS WALKWAY NOTE

CALC. BOOK NO. 6921-6930, 6974 | SDR DATE 14-JUL-2023 | **TM621**

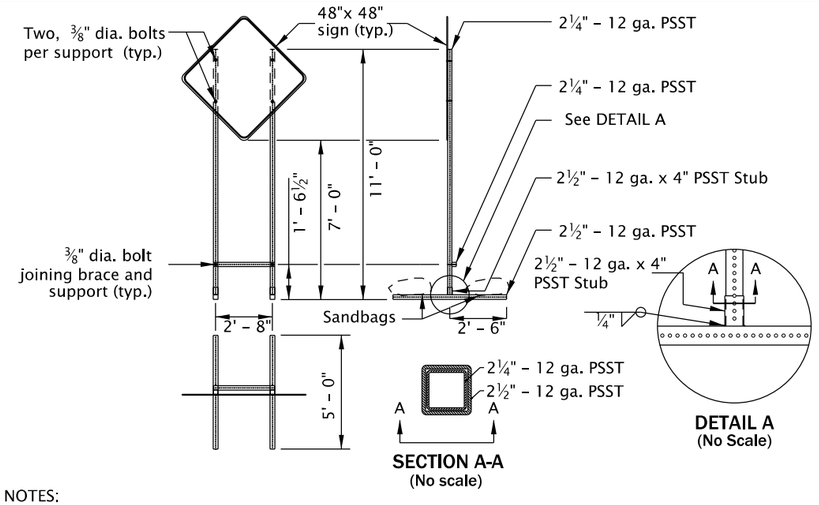
Effective Date: December 1, 2023 – May 31, 2024



NOTES:

- Use Double Post TSS for a total sign area of 20 sq. ft. or less.

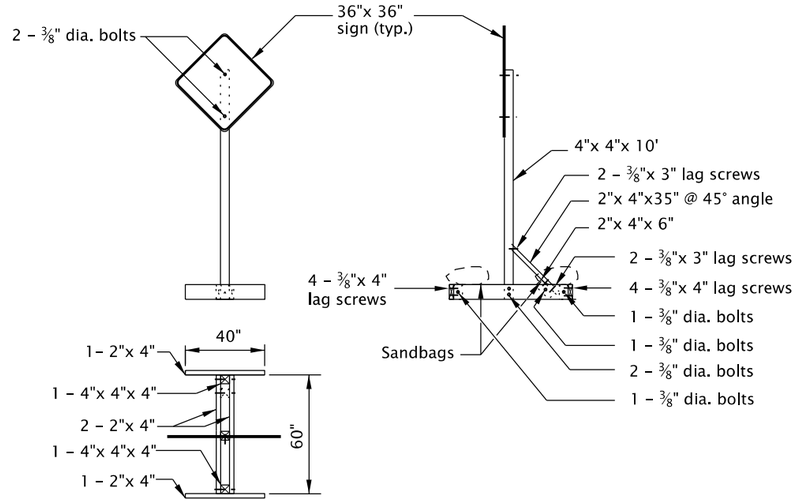
DOUBLE POST DETAIL



NOTES:

- Use PSST TSS's for a total sign area of 16 sq. ft. or less.
- All members shall have a minimum yield stress of 50 ksi.
- Galvanize steel according to ASTM A653 with coating designation G90. Remove Galvanizing from steel before welding. Repair Galvanizing according to ASTM A780.
- Use A325 Bolts or equivalent.
- 2¼" - 12 ga. PSST to extend entire length inside of the 2½" - 12 ga. x 4" PSST Stub.
- Do not use bolt to secure 2¼" PSST inside of the 2½" - 12 ga. x 4" PSST Stub.
- Weld steel according to American Welding Society (AWS) D.1.1.

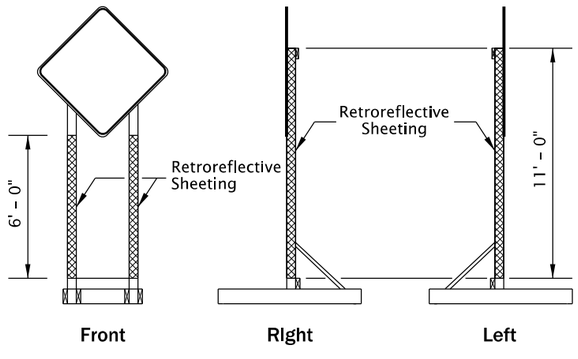
PERFORATED STEEL SQUARE TUBE (PSST) DETAIL



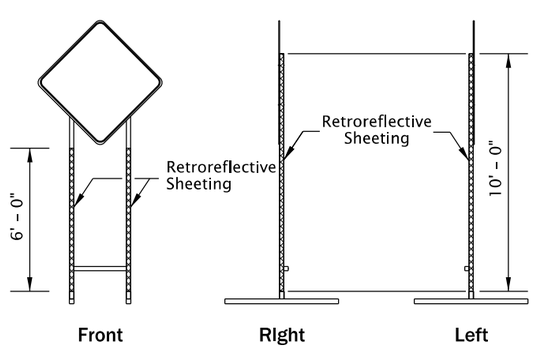
NOTES:

- Use Single Post TSS for a total sign area of 12 sq. ft. or less.
- Use Single Post TSS for mounting "Business Access" (CG20-11) signs. Do not mount signs on Type II or III Barricades.

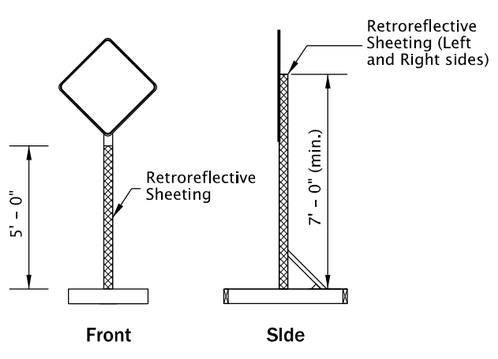
SINGLE POST DETAIL



Double Post



Perforated Steel Square Tube (PSST)



Single Post

TEMPORARY SIGN SUPPORT GENERAL NOTES:

- Do not tip over TSS at any time.
- Do not locate TSS's in locations that block pedestrian or bicycle traffic.
- For wooden TSS's, use either Douglas Fir or Hem Fir, which is surfaced four sides (S4S) and free of heart center (FOHC).
- See "Temporary Sign Placement" detail on TM822 for sign installation heights.
- Do not place or stack ballast more than 24" above the ground.
- When not in use, locate TSS as far from Public Traffic as practicable and turn away from traffic, or cover the sign. Do not cover reflective sheeting on the TSS posts.
- Place a minimum of 50 lbs of sandbags on each of the four TSS supports legs. (25 lb. max per bag) (min. 100 lbs per side of each TSS).
- See Dwg. No. TM204 for flag board mounting detail.

NOTES:

- Apply fluorescent orange, ANSI Type VIII or IX retroreflective sheeting to TSS posts, as shown, for all temporary signs, except "STOP" and "DO NOT ENTER". For "STOP" and "DO NOT ENTER" signs, used red ANSI Type III or IV retroreflective sheeting on the TSS posts.
- Apply sign post retroreflectivity to each TSS post facing front; and to the left and right sides of the TSS, as shown. Use 3" wide sheeting for wood post TSS's. Use 2" wide sheeting for PSST TSS's.
- Sheeting may be applied directly to post material; or applied to a rigid, lightweight substrate, then securely attached to the posts.

SIGN POST REFLECTIVE SHEETING PLACEMENT

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OREGON STANDARD DRAWINGS

TEMPORARY SIGN SUPPORTS

2024

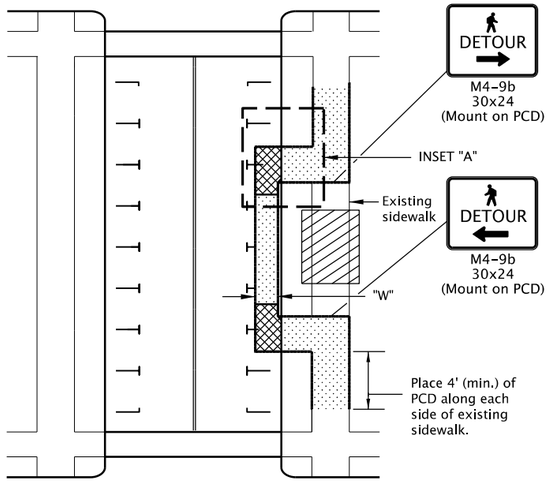
DATE	REVISION DESCRIPTION

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | TM821

Effective Date: December 1, 2023 – May 31, 2024

14-JUL-2023

TM844.dgn



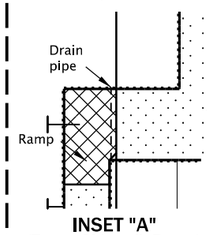
Within Roadway
SIDEWALK DIVERSION

NOTES:

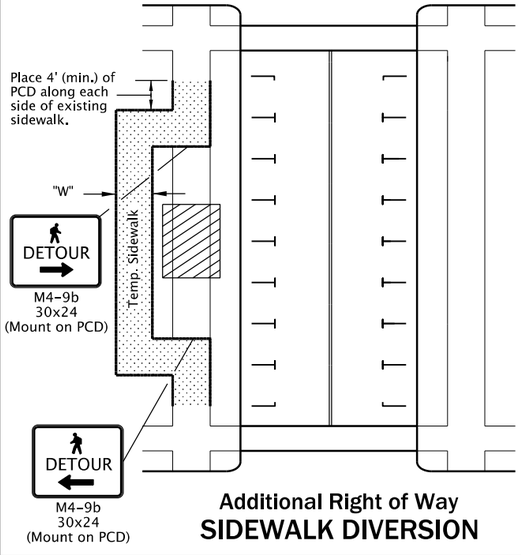
- Place or construct temp. sidewalk ramp, as needed.
- For roadways with a pre-construction posted speed of 40 mph or less.
- See inset "A" for Temp. Sidewalk Ramp details.
- "W" = 60", or, where 60" width cannot be maintained through the entire route, provide 48" min. width with 60" x 60" passing spaces every 200 ft.
- Use temporary ADA compliant surfaces to cross planter strips or other non-traversable surfaces.

NOTES:

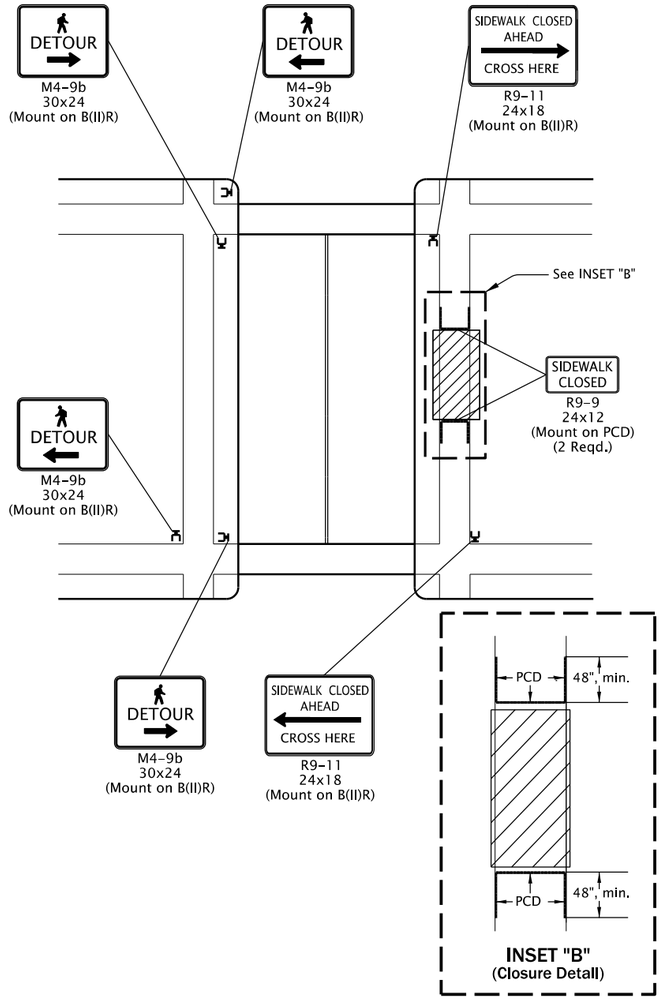
- Ramp size will vary. Ramp must meet ADA requirements incl. max. finished surf. slope of 8.3% and max. finished cross slope of 2.0%.



INSET "A"
(Temp. Sidewalk Ramp)



Additional Right of Way
SIDEWALK DIVERSION

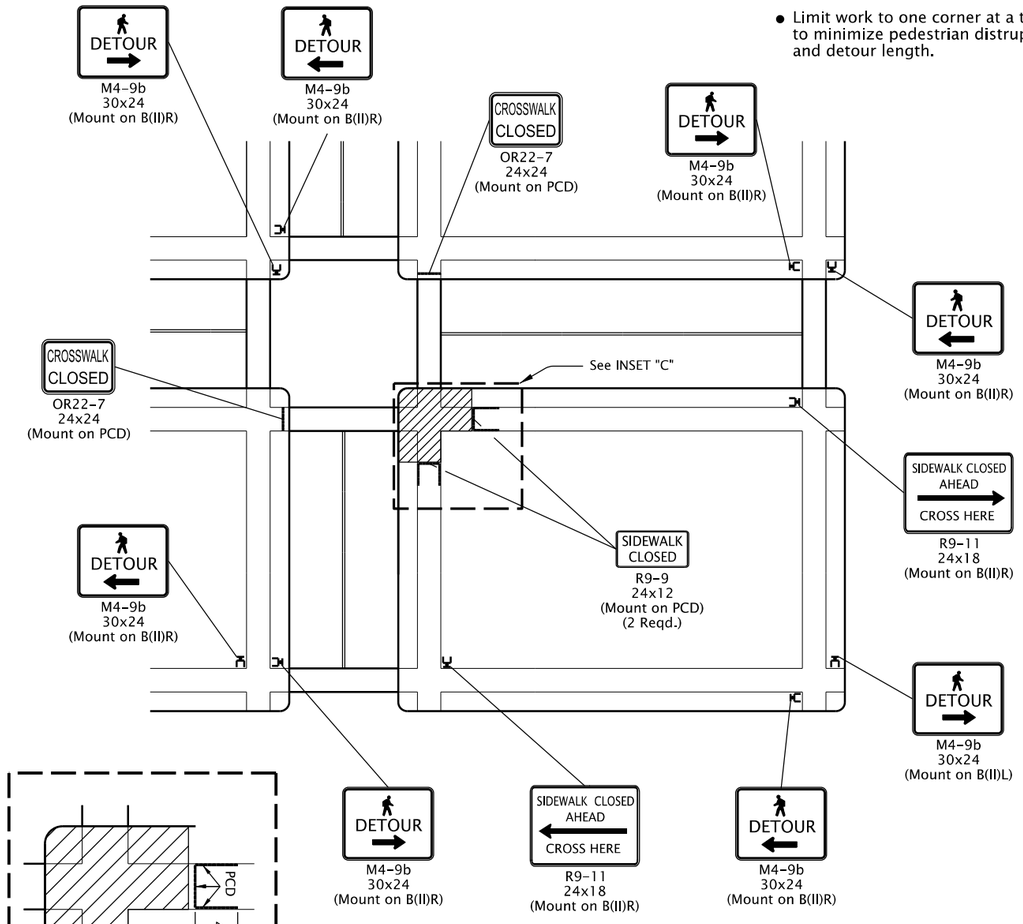


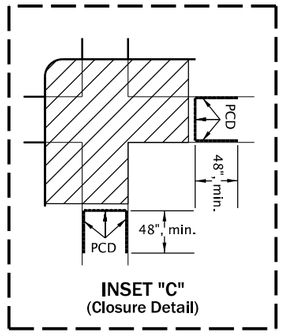
INSET "B"
(Closure Detail)

SIDEWALK CLOSURE, MIDBLOCK

NOTE:

- Limit work to one corner at a time to minimize pedestrian distruption and detour length.





INSET "C"
(Closure Detail)

SIDEWALK CLOSURE, CORNER

GENERAL NOTES FOR ALL DETAILS:

- When closing or relocating crosswalks or other pedestrian facilities provide ADA compliant facilities. Include accessibility features consistent with existing pedestrian facilities by providing adequate slope transitions and surfacing.
- Provide non-slip, 60 inch minimum wide surface through entire pedestrian route. If not possible, provide 48" min. width with 60" x 60" passing spaces every 200 feet along the route.
- Only TCD for pedestrians are shown. Other devices may be necessary to control vehicular traffic.
- Stage work, as necessary, to provide a temporary pedestrian access route at all times. For roadways with no available detours, maintain one open sidewalk at all times.
- Minimize pedestrian out-of-direction travel.
- To be accompanied by Dwg. Nos. TM820 & TM821.

UNDER PEDESTRIAN TRAFFIC

UNDER CONSTRUCTION

PEDESTRIAN CHANNELIZING DEVICE (PCD)

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OREGON STANDARD DRAWINGS

TEMPORARY PEDESTRIAN ACCESSIBLE ROUTES

2024

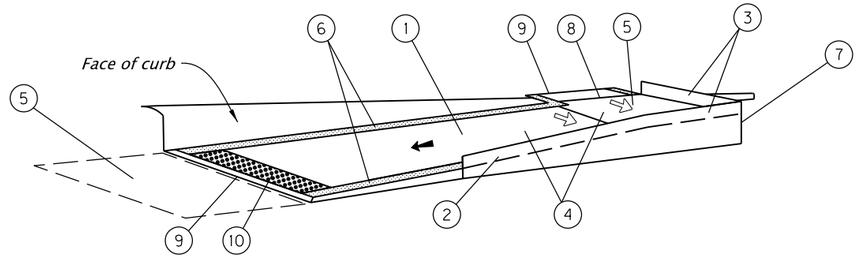
DATE	REVISION DESCRIPTION
DATE	REVISION DESCRIPTION
01-2022	Revised notes for temporary sidewalk ramp.
07-2023	OR22-8 signs were replaced with OR22-7 signs.

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **TM844**

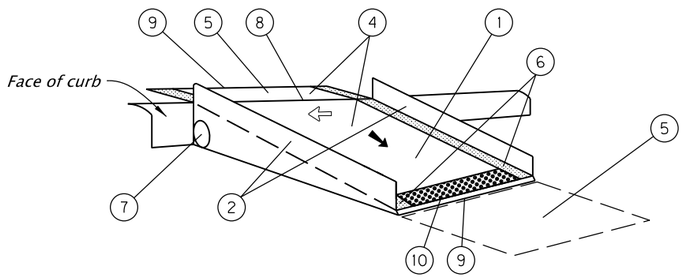
Effective Date: December 1, 2023 - May 31, 2024

14-JUL-2023

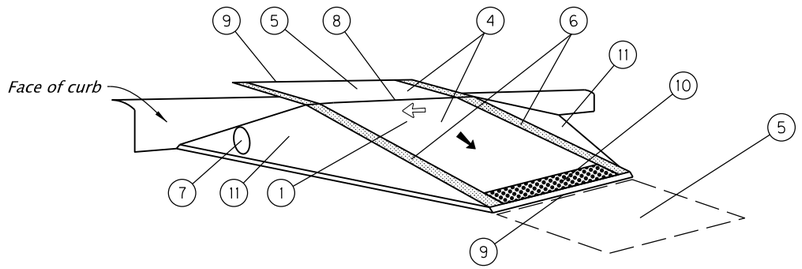
TM845.dgn



TEMPORARY CURB RAMP, PARALLEL TO CURB



WITH PROTECTIVE EDGE



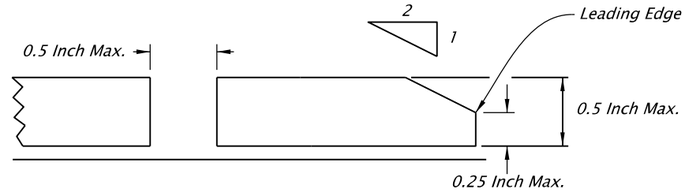
WITH SIDE FLARES

TEMPORARY CURB RAMP, PERPENDICULAR TO CURB

GENERAL CONSTRUCTION NOTES:

1. *Clear width shall be greater than or equal to 48 inches. The curb ramp surface shall be firm, stable and slip-resistant. The ramp surface shall have a 8.3% max. finished surface slope.*
2. *Detectable edging with a min. 6 inch height shall be placed along the ramp run when there is a vertical drop exceeding 6 inches or is adjacent to a slope exceeding 1:3 (v:h).*
3. *Detectable edging with 6 inch min. height and contrasting color shall be placed on all turning spaces where the walkway changes direction.*
4. *Curb ramps and turning spaces shall have a 2.0% max. finished cross slope.*
5. *Clear space of 48 inch x 48 inch or greater shall be provided above and below the curb ramp.*
6. *The curb ramp walkway edge shall be marked with a contrasting color, 4 inch wide stripe. The marking is optional where contrasting detectable edging is used.*
7. *Provide an approved means to prevent water from accumulating at the bottom of the ramp, or overflowing onto the ramp surface.*
8. *Lateral joints or gaps between surfaces shall be less than 0.5 inch wide. Surface slopes that meet at grade break shall be flush. See edge treatment detail.*
9. *Changes between surface heights shall not exceed 0.5 inch. Lateral edges should be vertical up to 0.25 inch high, and beveled at 1:2 (v:h) between 0.25 inch and 0.5 inch height. See edge treatment detail.*
10. *Install a min. 2 ft wide detectable warning surface at pedestrian street crossings. Omit detectable warning surfaces at end of sidewalk transitions that are not at a crosswalk.*
11. *Side flares where provided shall have 10% max. slope.*
12. *The curb ramp surface shall be capable of supporting a min. surface load of approximately 800 pounds.*
13. *The curb ramp shall be either self-balasting or include an anchoring system capable of keeping the platform stationary under pedestrians traffic including motorized wheelchairs.*
14. *The curb ramp platform shall be free of sharp or rough edges or abrasive elements that may harm pedestrians.*

Max. 8.3% surface slope | *Max. 2.0% surface slope* | *Detectable warning surface*



EDGE TREATMENT DETAIL

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OREGON STANDARD DRAWINGS

TEMPORARY SIDEWALK RAMPS

2024

DATE	REVISION DESCRIPTION
07-2023	NEW DRAWING CREATED

CALC. BOOK NO. N/A | SDR DATE 14-JUL-2023 | **TM845**

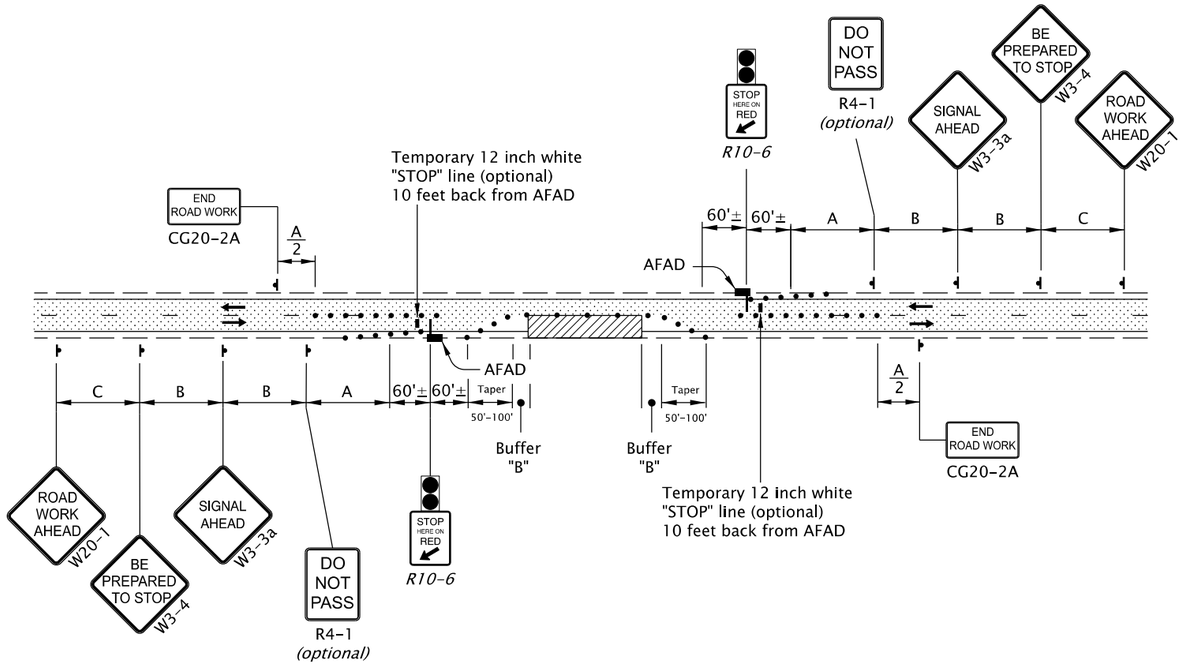
Effective Date: December 1, 2023 - May 31, 2024

14-JUL-2023

TM854.dgn

NOTES:

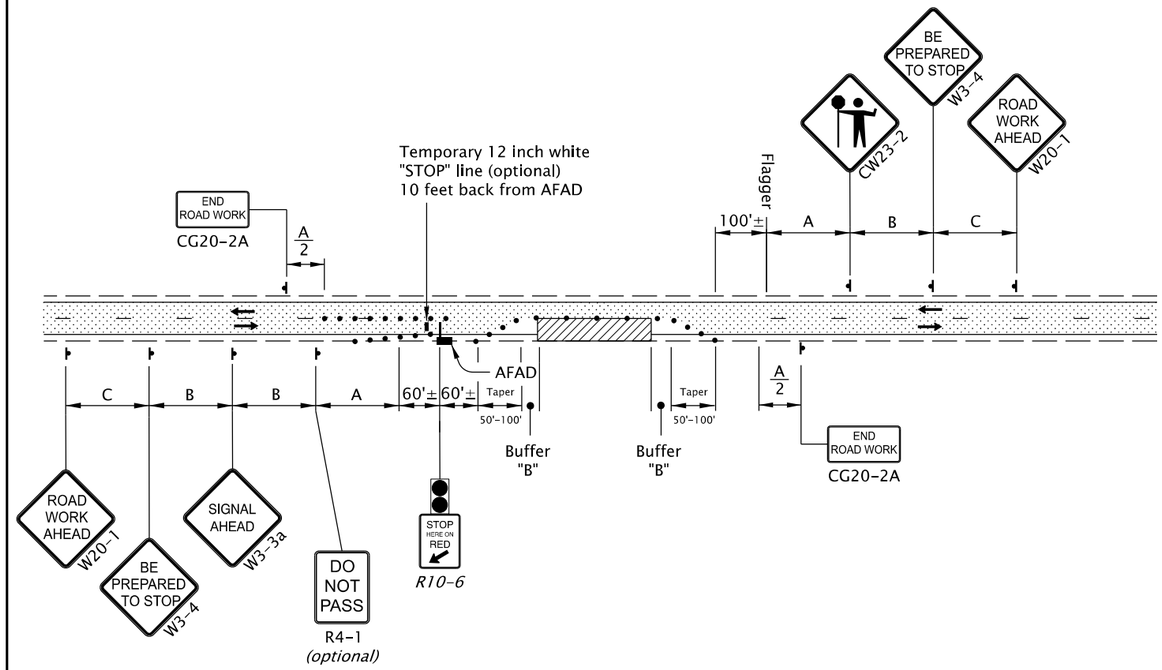
- An AFAD operator shall be provided for each AFAD. A single operator may not simultaneously operate two AFADs.



2-Lane, 2-Way Roadway
ONE LANE CLOSURE, TWO AFADs

NOTES:

- The AFAD operator shall not flag traffic and operate an AFAD at the same time.



2-Lane, 2-Way Roadway
ONE LANE CLOSURE, ONE AFAD & ONE FLAGGER

GENERAL NOTES FOR ALL DETAILS:

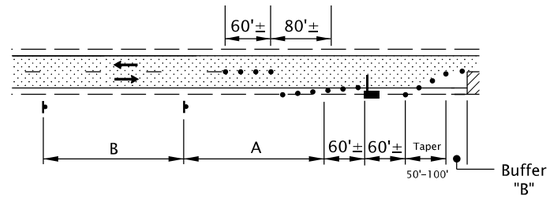
- Flagger station shall be delineated according to "FLAGGER STATION" detail shown on Standard Drawing TM800
- Bottom of lens housing shall be a minimum of 7 ft. above surface when mounted on shoulder and at least 17 ft. above any portion of the travel lane.
- The gate arm shall cover at least one half of the approaching vehicle travel lane.
- Signing and other TCD installed in conjunction with the work area, shall move with the work area.
- Use 1/3 "L" taper for shoulder closure, where necessary.
- For Taper Length ("L") and Buffer Length ("B") shown on this sheet, use the "MINIMUM LENGTHS TABLE" shown on Drg. No. TM800.
- The AFAD operator shall be a certified flagger who has been trained in the operation of the AFAD in use.
- Operator shall operate AFAD from a designated area. Designated area should maintain visual presence of the AFAD and should be at least 50' away from the AFAD and have an escape route available for the operator.
- Remove existing striping and install temporary striping as required.
- See "TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE" on Drg. TM800 for sign spacing A, B, and C.
- Cover existing passing lane signing (as directed)
- When extended traffic queues develop during AFAD operations, protect traffic by providing advance flaggers(s) and signing according to the "Extended Traffic Queues Detail" shown on Standard Drawing TM850.
- When AFAD is not in use for less than one work shift, turn off AFAD, or switch YELLOW lens to flashing mode, and cover or remove all accompanying signing.
- When AFAD is not in use for longer than one work shift, remove AFAD and all accompanying signing from the roadway.
- Do not use the AFAD to control more than one lane of approaching traffic.
- Use temporary pavement markings or a white portable rumble strip for temporary stop line. Remove temporary stop line when AFAD is no longer in use.
- Tubular markers along centerline placed in advance of AFAD to first sign are optional, unless the DO NOT PASS sign is used.

L Automated Flagger Assistance Device (AFAD)

• • • • • 28" Tubular Markers
See TCD spacing table on TM800 for max. spacing.

UNDER TRAFFIC

UNDER CONSTRUCTION



OVER-DIMENSIONAL VEHICLE ACCOMMODATION DETAIL

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OREGON STANDARD DRAWINGS

2-LANE, 2-WAY ROADWAYS

2024

DATE	REVISION DESCRIPTION

CALC. BOOK NO.	SDR DATE	
N/A	14-JUL-2023	**TM854**

Effective Date: December 1, 2023 - May 31, 2024