

From: [Raezer, Connie](#)
To: [Turcott, Mike \(UTC\)](#)
Cc: [Young, Betty \(UTC\)](#)
Subject: RE: [EXTERNAL] FW: 848701J - SR-6
Date: Wednesday, May 25, 2022 10:15:15 AM
Attachments: [image001.png](#)
[image002.png](#)
[22026 Midvale Signal - 5-18-2022.pdf](#)
[WSDOT Standard Plans for RR Crossing Layout m11.10-03 2019.pdf](#)

External Email

Please see green highlights below and attachments.

Connie Raezer
Desk: 360-705-7459

Please visit the: [Highway-Railroad Coordination Informational Webpage](#)

From: Turcott, Mike (UTC) <mike.turcott@utc.wa.gov>
Sent: Wednesday, May 25, 2022 6:16 AM
To: Raezer, Connie <RaezerC@wsdot.wa.gov>
Cc: Young, Betty (UTC) <betty.young@utc.wa.gov>
Subject: [EXTERNAL] FW: 848701J - SR-6

WARNING: This email originated from outside of WSDOT. Please use caution with links and attachments.

Good morning Connie,

We need some additional information in order to assist the UTC in fully understanding and approving WSDOT's petition for the SR-6 crossing project.

- Will train detection circuitry be updated with this project? If so, what type of train detection circuitry will be installed? **The circuitry will be upgraded to a Siemens MS4000 redundant unit with a solid state crossing controller.**
- The petition attachment only covers signal design. Could you please provide design drawings that include the elements described in Section 8 of the petition form, including: **see attached plans**
 - Pavement – **There is no change to the pavement or crossing surface**
 - Pavement markings – **pavement markings will remain the same but be refreshed as needed (construction tends to tear them up). All markings will be in accordance with WSDOT standard plan attached.**
 - Guardrail – **see attached plans**
 - Signage. – **see below**
- Does "install new signs" include replacement of existing advance warning signs, crossbucks, and ENS? Any other signs? (These should be indicated on the sign plan.) **Existing signage will be replaced with new crossbucks and warning signs. Current field installed advanced warning signs will be replaced with new. New bungalow will be provided with new ENS signs as well.**
- It appears from the signal design drawings that 4-foot shoulders are being added on SR-6. **Shoulders currently exist and in general are about 4 feet. Please see photo below. There is no change to the roadway configuration.** Is this why new, longer cantilevers are needed? **On the plans it shows 4 ft shoulders but**

said actual dimension may vary and to field verify. Per the railroad, new cantilevers were not called out. The signage and led flashers will be upgraded in the existing cantilevers. New gates will be installed on the track side of the cantilevers.



- Is the crossing surface going to be asphalt, as it is now, or upgraded to concrete panels? If so, how long will the panels be? (The attached photo is from June 2020 and shows the existing narrow shoulders and patched asphalt crossing surface.) The crossing surface is not part of this project, shoulders in this area are already about 4 feet in most places and will not change.

Thank you,

Mike Turcott (he/him/his)

Transportation Planning Specialist - Rail Safety
Washington Utilities and Transportation Commission

360-664-1119

mike.turcott@utc.wa.gov

www.utc.wa.gov



This email states the informal opinion of commission staff, offered as technical assistance, and is not intended as legal advice. We reserve the right to amend these opinions should circumstances change or additional information be brought to our attention. Staff's opinions are not binding on the commission.

SPECIAL PROVISIONS

THE WORK ON THIS PROJECT SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION, 2021 EDITION, AS ISSUED BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT) AND THE AMERICAN PUBLIC WORKS ASSOCIATION (APWA), WASHINGTON STATE CURRENT EDITION. THE STANDARD SPECIFICATIONS, WSDOT/APWA CURRENT EDITION, SHALL BE MODIFIED OR SUPPLEMENTED BY THESE SPECIAL PROVISIONS, ALL OF WHICH ARE MADE A PART OF THE CONTRACT DOCUMENTS, SHALL GOVERN ALL OF THE WORK.

ALSO INCORPORATED INTO THE CONTRACT DOCUMENTS BY REFERENCE ARE:

- MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENTLY ADOPTED EDITION, WITH WASHINGTON STATE MODIFICATIONS, IF ANY
- STANDARD PLANS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION, WSDOT/APWA, CURRENT EDITION

CONTRACTOR SHALL OBTAIN COPIES OF THESE PUBLICATIONS, AT CONTRACTOR'S OWN EXPENSE.

PUBLIC CONVENIENCE AND SAFETY

CONSTRUCTION UNDER TRAFFIC THE SECOND PARAGRAPH OF SECTION 1-07.23(1) IS SUPPLEMENTED WITH THE FOLLOWING: THE CONTRACTOR SHALL LIMIT THE TOTAL DELAY TO THE PUBLIC, TO A MAXIMUM OF ***20*** MINUTES, DURING TRAVEL THROUGH THE PROJECT. IF THE DELAY BECOMES GREATER THAN ***20*** MINUTES, THE CONTRACTOR SHALL IMMEDIATELY BEGIN TO TAKE ACTION TO CEASE THE OPERATIONS THAT ARE CAUSING THE DELAYS. IF THE ***20*** MINUTE DELAY LIMIT HAS BEEN EXCEEDED, AS DETERMINED BY THE ENGINEER, THE CONTRACTOR SHALL IMMEDIATELY BEGIN TO TAKE ACTION TO CEASE THE OPERATIONS TO MEET THE ***20*** MINUTE LIMIT. THIS PROPOSAL SHALL BE APPROVED BY THE ENGINEER PRIOR TO RESUMING ANY WORK REQUIRING TRAFFIC CONTROL.

SECTION 1-07.23(1) IS SUPPLEMENTED WITH THE FOLLOWING:

THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING OF ANY IMPACTS FOR THE WEEK BY NOON WEDNESDAY THE WEEK PRIOR TO THE STATED IMPACTS EXCEPT FOR FULL LANE CLOSURES WHICH REQUIRE 10 DAY NOTIFICATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING OF ANY CHANGES TO THE STATED TRAFFIC IMPACTS A MINIMUM OF 48 HOURS PRIOR TO THE TRAFFIC IMPACTS.

WORK ZONE CLEAR ZONE

THE WORK ZONE CLEAR ZONE (WZCZ) APPLIES DURING WORKING AND NONWORKING HOURS. THE WZCZ APPLIES ONLY TO TEMPORARY ROADSIDE OBJECTS INTRODUCED BY THE CONTRACTOR'S OPERATIONS AND DOES NOT APPLY TO PREEXISTING CONDITIONS OR PERMANENT WORK. THOSE WORK OPERATIONS THAT ARE ACTIVELY IN PROGRESS SHALL BE IN ACCORDANCE WITH ADOPTED AND APPROVED TRAFFIC CONTROL PLANS, AND OTHER CONTRACT REQUIREMENTS.

DURING NONWORKING HOURS EQUIPMENT OR MATERIALS SHALL NOT BE WITHIN THE WZCZ UNLESS THEY ARE PROTECTED BY PERMANENT GUARDRAIL OR TEMPORARY CONCRETE BARRIER. THE USE OF TEMPORARY CONCRETE BARRIER SHALL BE PERMITTED ONLY IF THE ENGINEER APPROVES THE INSTALLATION AND LOCATION.

DURING ACTUAL HOURS OF WORK, UNLESS PROTECTED AS DESCRIBED ABOVE, ALL CONSTRUCTION EQUIPMENT, MATERIALS AND VEHICLES SHALL BE WITHIN THE WZCZ AND ONLY CONSTRUCTION VEHICLES ABSOLUTELY NECESSARY TO CONSTRUCTION SHALL BE ALLOWED WITHIN THE WZCZ OR ALLOWED TO STOP OR PARK ON THE SHOULDER OF THE ROADWAY.

THE CONTRACTOR'S NONESSENTIAL VEHICLES AND EMPLOYEES' PRIVATE VEHICLES SHALL NOT BE PERMITTED TO PARK WITHIN THE WZCZ AT ANY TIME UNLESS PROTECTED AS DESCRIBED ABOVE.

SUMMARY OF QUANTITIES			
ITEM NO.	TOTAL QUANTITY	STD. ITEM NO.	UNIT
PREPARATION			
1	LUMP SUM	0001	L.S.
2	0.01	0025	ACRE
3	110	0170	L.F.
4	2	0182	EACH
GRADING			
5	85	0470	C.Y.
SURFACING			
6	119	5100	TON
EROSION CONTROL AND PLANTING			
7	2	6403	DAY
8	335	6373	L.F.
TRAFFIC			
9	235	6757	L.F.
10	1	6650	EACH
11	3	6766	EACH
12	LUMP SUM	6971	L.S.

DEVIATION FROM THE ABOVE REQUIREMENTS SHALL NOT OCCUR UNLESS THE CONTRACTOR HAS REQUIRED THE DEVIATION IN WRITING AND THE ENGINEER HAS PROVIDED WRITTEN APPROVAL.

MINIMUM WZCZ DISTANCES ARE MEASURED FROM THE EDGE OF TRAVELED WAY AND WILL BE DETERMINED AS FOLLOWS:

REGULATORY POSTED SPEED	DISTANCE FROM TRAVELED WAY (FEET)
35 MPH OR LESS	10
40 MPH	15
45 TO 50 MPH	20
55 TO 60 MPH	30
65 MPH OR GREATER	35

MINIMUM WORK ZONE CLEAR ZONE DISTANCE

LANE CLOSURES ARE SUBJECT TO THE FOLLOWING RESTRICTION:

SR 6 MP 46.3 - BOTH DIRECTIONS

DURING THE FOLLOWING DATE RANGES, LANE CLOSURES ARE PROHIBITED BETWEEN 7:00 AM AND 9:00 AM AND BETWEEN 3:00 PM AND 5:00 PM.

- SEPTEMBER 6, 2021 TO JUNE 15, 2022
- SEPTEMBER 5, 2022 TO JUNE 10, 2023

THE CONTRACTOR SHALL COORDINATE WITH AFFECTED SCHOOL DISTRICTS PRIOR TO ALL EARLY RELEASE DAYS AND AVOID IMPACTING SCHOOL BUS TRAVEL TIME.

IF THE ENGINEER DETERMINES THE PERMITTED CLOSURE HOURS ADVERSELY AFFECT TRAFFIC, THE ENGINEER MAY ADJUST THE HOURS ACCORDINGLY. THE ENGINEER WILL NOTIFY THE CONTRACTOR IN WRITING OF ANY CHANGE IN THE CLOSURE HOURS.

LANE CLOSURES ARE NOT ALLOWED ON ANY OF THE FOLLOWING:

1. A HOLIDAY
2. A HOLIDAY WEEKEND, HOLIDAYS THAT OCCUR ON FRIDAY, SATURDAY, SUNDAY, OR MONDAY ARE CONSIDERED A HOLIDAY WEEKEND. A HOLIDAY WEEKEND INCLUDES SATURDAY, SUNDAY, AND THE HOLIDAY.
3. AFTER *** 12:00 PM (NOON) *** ON THE DAY PRIOR TO A HOLIDAY OR HOLIDAY WEEKEND, AND
4. BEFORE *** 12:00 PM ON THE DAY AFTER THE HOLIDAY OR HOLIDAY WEEKEND.

HWY 6 - MIDVALE SIGNAL

SUMMARY OF QUANTITIES AND NOTES



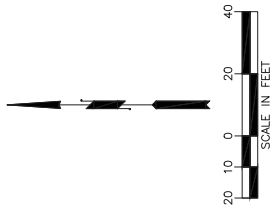
CHEHALIS
W81

DESIGNED BY: D. ROWLAND		DATE		REVISIONS	
NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION
1	5/19/22				
2	5/19/22				
3	5/19/22				
4	5/19/22				

5016 Lacey Boulevard SE Lacey, Washington 98503
(360) 491-3399 Fax (360) 491-3857

SKILLINGS
5016 Lacey Boulevard SE Lacey, Washington 98503
(360) 491-3399 Fax (360) 491-3857

DESIGNED BY: D. ROWLAND
ENTERED BY: J. HENRY
CHECKED BY: D. ROWLAND
PROJ. ENGR.: C. SMITH
Plotted By: David H. Rowland on 5/19/22 3:16 PM
Saved By: Rowland on 5/19/22 5:26 PM
© Project 102021 12026 Midvale Signal (DCN) SHEETS 1022 PLS 300.rvt

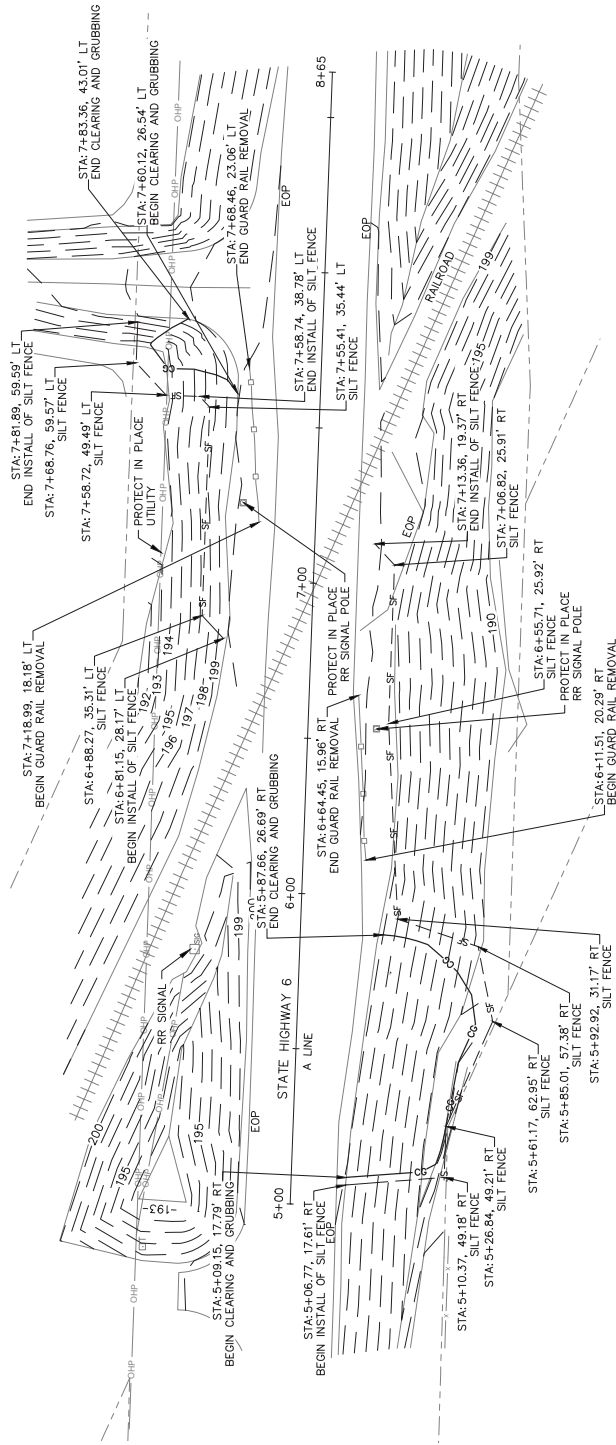


LEGEND

— SF —	SILT FENCE
— CO —	CLEARING AND GRUBBING
— O —	EXISTING GUARD RAIL
□	EXISTING RAILROAD SIGNAL
— — — — —	RIGHT OF WAY
	EXISTING RAILROAD
— — — — —	EXISTING EDGE OF PAVEMENT
x — x — x	EXISTING FENCE

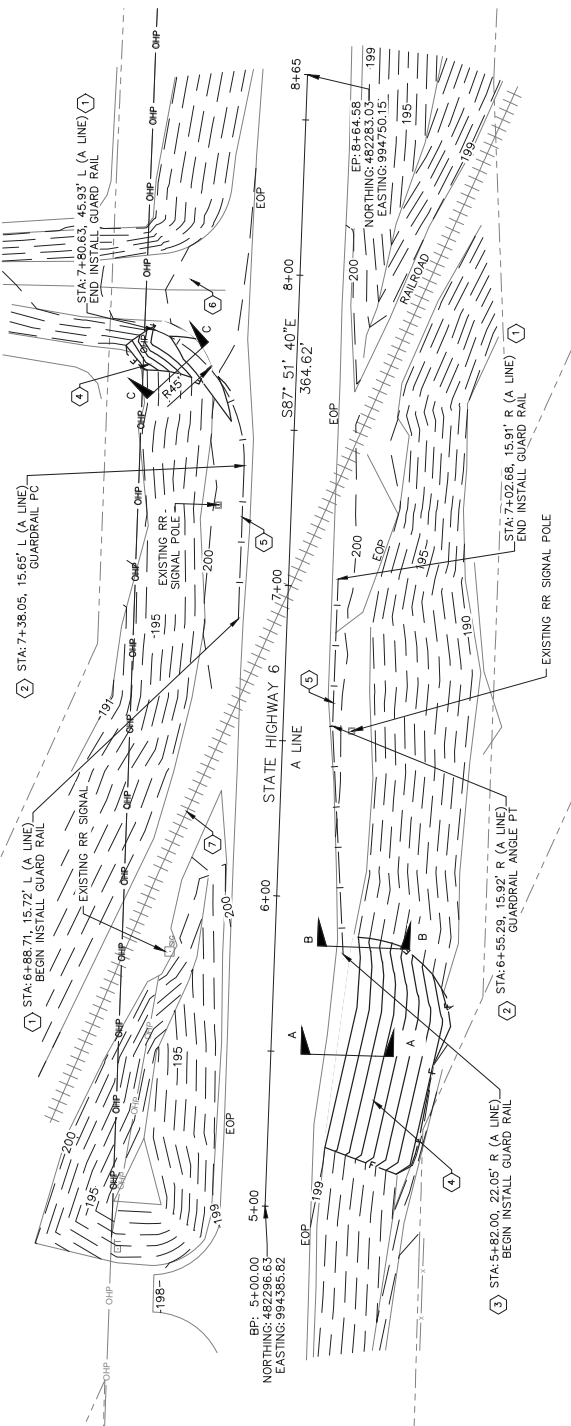
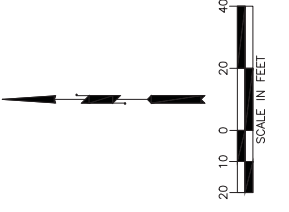
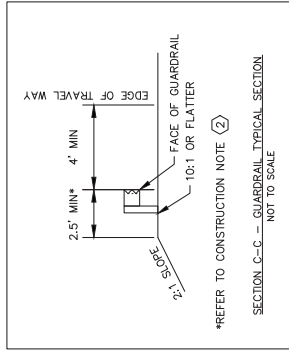
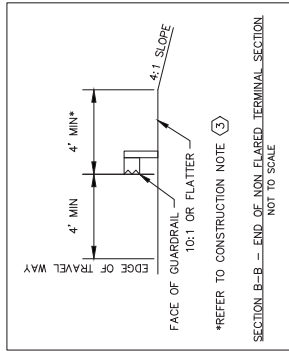
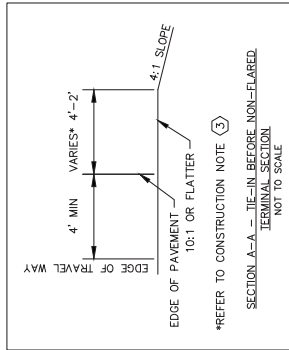
NOTES

- CONTRACTOR SHALL PROTECT EXISTING SIGN AND UTILITIES IN PLACE.
- INSTALL SILT FENCE PER WSDOT STD. PLAN 1-30.17-01.



PLAN
EROSION CONTROL AND DEMOLITION

DESIGNED BY: D. ROWLAND ENTERED BY: J. HENRY CHECKED BY: D. ROWLAND PROJ. ENGR.: G. SMITH Plotted By: David H. Rowland on 5/18/22 @ 4:47 PM Sheet By: Rowland on 5/19/22 @ 6:45 PM <small>(C:\Project\102021\10208 Midvale Signal\CAD\Sheets\10222.Plot File.dwg)</small>		REVISIONS <table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>		NO.	DATE	DESCRIPTION													JOB NUMBER 22026 30% DCN		SHEET 2 OF 11 SHEETS	
NO.	DATE	DESCRIPTION																				
SKILLINGS 5016 Lacey Boulevard SE Lacey, Washington 98503 (360) 491-3399 Fax (360) 491-3857				CHEHALIS M8		HWY 6 - MIDVALE SIGNAL DEMO AND TESC																
Washington State Department of Transportation				M8																		



PLAN
SITE PLAN

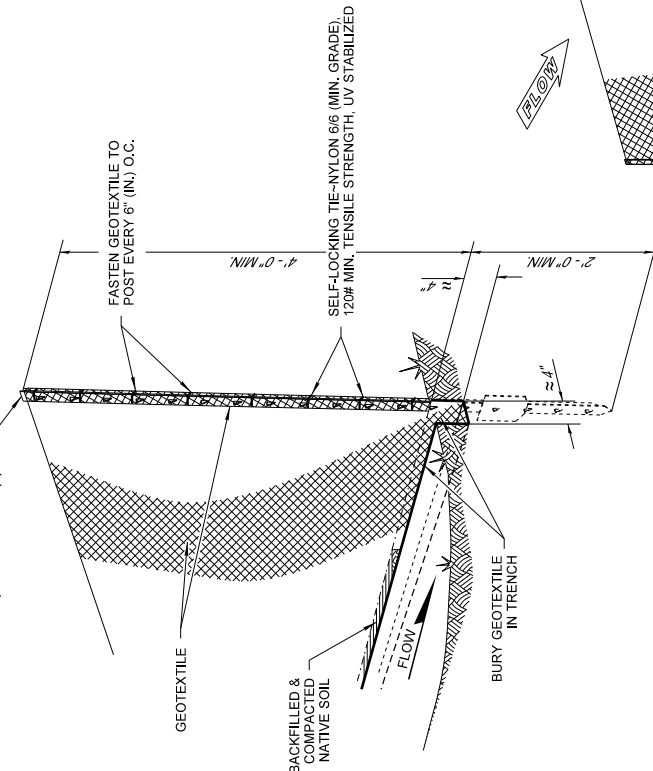
- LEGEND**
- PROP. ITEMS**
- PROPOSED GUARDRAIL
 - PROPOSED FILL EXTENTS
 - CRUSHED SURFACE BASE COARSE
- EX. ITEMS**
- OHP — EXISTING OVER HEAD POWER
 - — EXISTING SIGNAL
 - — — — — RIGHT OF WAY
 - ||||| — EXISTING RAILROAD
 - — — — — EXISTING EDGE OF PAVEMENT
 - — — — — EXISTING FENCE

CONSTRUCTION NOTES

- 1 INSTALL ANCHOR TYPE 10 PER WSDOT STD PLAN C-23.60-04.
- 2 INSTALL BEAM GUARDRAIL TYPE 31 PER WSDOT STD PLAN C-20.10-07.
- 3 INSTALL BEAM GUARDRAIL TYPE 31 NON-FLARED TERMINAL PER WSDOT STD PLAN C-22.40-06. FINISH AS SHOWN PER DRAWING.
- 4 COMPACTION: REFER TO STD. SPEC. 2-03.3(14)C METHOD B.
- 5 FOR INSTALLATION OF GUARDRAIL AT A RAIL ROAD CROSSING REFER TO CASE 3-31 OF WSDOT STD. PLAN C-20.14-04.
- 6 DRIVEWAY ACCESS SHALL BE ACCOMMODATED DURING ALL OPERATIONS.
- 7 MAINTENANCE SHALL BE RESPONSIBLE FOR MAINTAINING DRIVEWAY ACCESS THROUGHOUT THE DURATION OF CONSTRUCTION.

DESIGNED BY: D. ROWLAND		DATE	REVISIONS	
ENTERED BY: J. HENRY	5/19/22	NO.	DESCRIPTION	
CHECKED BY: D. ROWLAND	5/19/22			
PROJ. ENGR.: C. SMITH	5/19/22			
Plotted By: David H. Rowland on 5/19/22 10:43 AM Sheet By: Rowland on 5/19/22 10:39 AM (C:\Project\102021\10208 Midvale Signal\DAO\SHEETS\12008_P3_CD.dwg)				
Washington State Department of Transportation		SKILLINGS 5016 Lacey Boulevard SE Lacey, Washington 98503 (360) 491-3399 Fax (360) 491-3857		
HWY 6 - MIDVALE SIGNAL		CHEHALIS WA		
GUARDRAIL CONSTRUCTION PLAN		JOB NUMBER 22026 30% DCN		
SHEET 3 OF 11		SHEETS 12008_P3 OF 11		

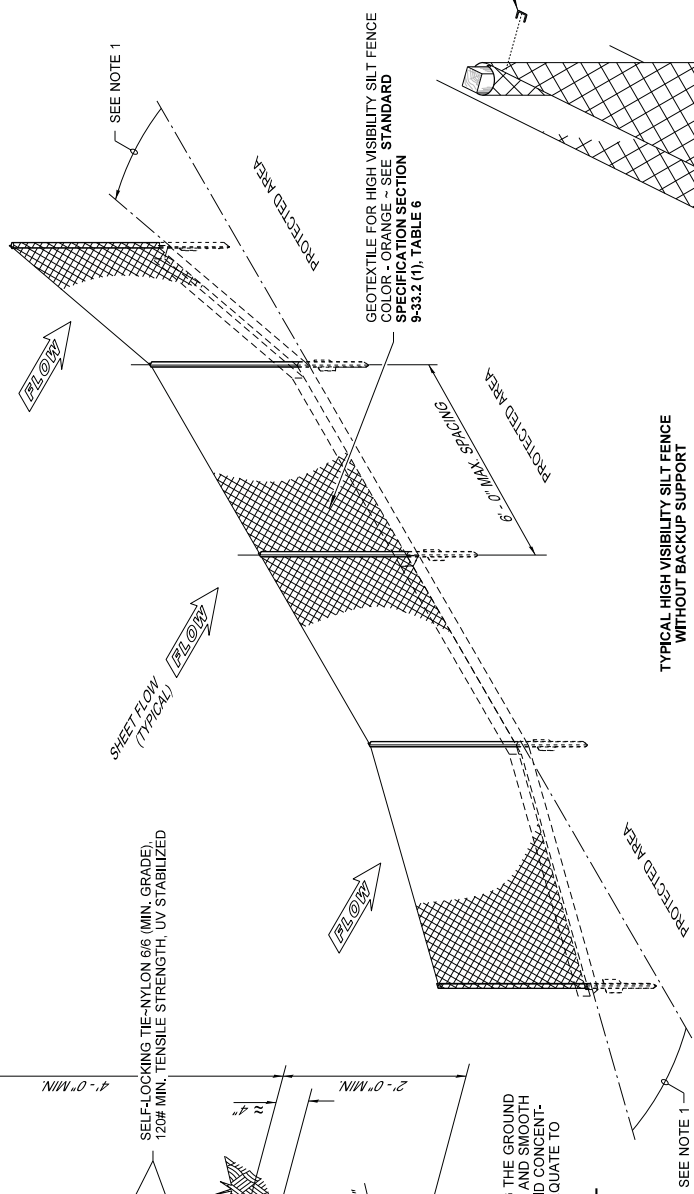
POST - SEE STANDARD SPECIFICATION, SECTION 8-01.3(9)A



NOTE

DURING EXCAVATION, MINIMIZE DISTURBING THE GROUND AROUND TRENCH AS MUCH AS IS FEASIBLE, AND SMOOTH SURFACE FOLLOWING EXCAVATION TO AVOID CONCENTRATING FLOWS. COMPACTION MUST BE ADEQUATE TO PREVENT UNDERCUTTING FLOWS.

TYPICAL INSTALLATION DETAIL
(STEEL POSTS SHOWN)



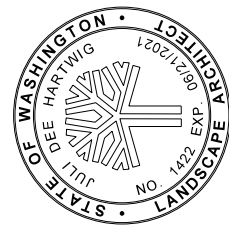
TYPICAL HIGH VISIBILITY SILT FENCE WITHOUT BACKUP SUPPORT ISOMETRIC
(STEEL POSTS SHOWN)

GEOTEXTILE FOR HIGH VISIBILITY SILT FENCE
COLOR - ORANGE ~ SEE STANDARD SPECIFICATION SECTION 9-33.2 (1), TABLE 6

FASTEN GEOTEXTILE TO POST EVERY 6" (IN.) O.C.

NOTES

1. Angle Terminal end uphill 24" (in) to 48" (in) to prevent flow around fence (Typical).
2. Perform maintenance in accordance with **Standard Specification, Sections 8-01.3(9)A and 8-01.3(15)**.
3. Splices shall never be placed in low spots or sump locations. If splices are located in low or sump areas, the fence may need to be reinstalled unless the Project Engineer approves the installation.
4. Install silt fencing parallel to mapped contour lines.



HIGH VISIBILITY SILT FENCE

STANDARD PLAN I-30.17-01

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

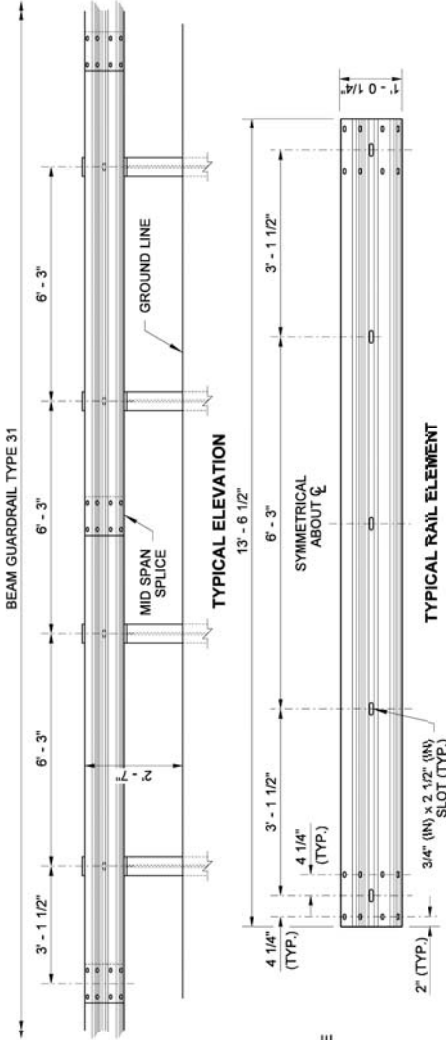


SPLICED FENCE SECTIONS SHALL BE CLOSE ENOUGH TOGETHER TO PREVENT SILT LADEN WATER FROM ESCAPING THROUGH THE FENCE AT THE OVERLAP. JOINING SECTIONS SHALL NOT BE PLACED IN LOW SPOTS OR IN SUMP LOCATIONS.

SPLICE DETAIL
(WOOD POSTS SHOWN)

NOTES

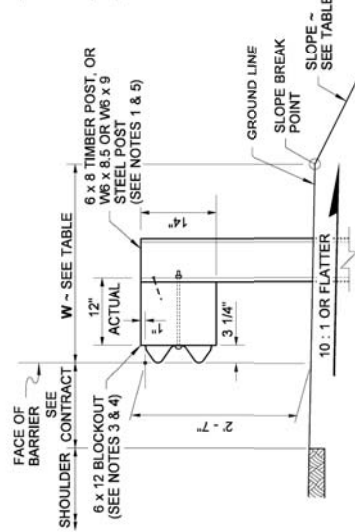
1. Refer to **Standard Plan C-1b** and **C-20.11** for additional details not shown on this plan.
2. Extend shoulder pavement to provide a base for the extruded curb. See **Contract Plans** for exceptions to distances shown.
3. Use a single block or combination of blocks (no more than two (2) to achieve the actual 12" (in) offset. See **Standard Specification, Section 9-16.3(2)**. Wood blocks shall be secured to the posts with anti-rotation nails. If combination blocks are used, the adjacent blocks shall be toenailed with two 16d galvanized nails to prevent block rotation.
4. Wood blocks are shown. Blocks of an approved alternative material may be used. See **Standard Specification, Section 9-16.3(2)**.
5. All posts for any standard barrier run shall be of the same type: timber or steel.
6. Attach blockouts to steel posts using bolt holes on approaching traffic side of post web.
7. Anti-rotation holes in steel posts are not required when using blocks with anti-rotation features (e.g., routed blocks).



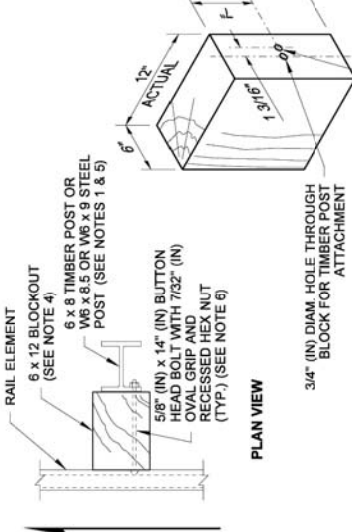
TYPICAL RAIL ELEMENT

POST LENGTH	SLOPE	W (FT)
6-FOOT	2H: 1V OR FLATTER	2.5 MIN.
6-FOOT	1H: 1V OR FLATTER	4.0 MIN.
8-FOOT	1H: 1V	2.5 MIN.
8-FOOT	2H: 1V	(FACE OF BARRIER AT SLOPE BREAK POINT)
* 9-FOOT	1.5H: 1V	(FACE OF BARRIER AT SLOPE BREAK POINT)
* 11-FOOT	1H: 1V	(FACE OF BARRIER AT SLOPE BREAK POINT)

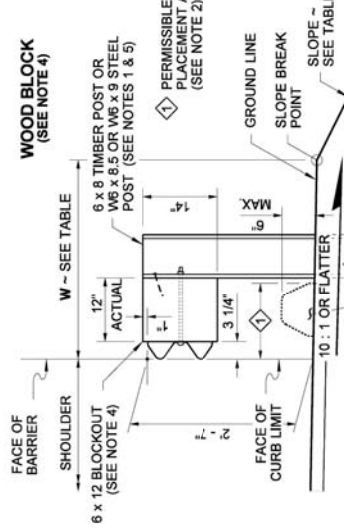
* MAY BE USED ONLY IF SHOWN IN CONTRACT DOCUMENTS



TYPICAL SECTION - WITHOUT CURB
(6'-0" POSTS)

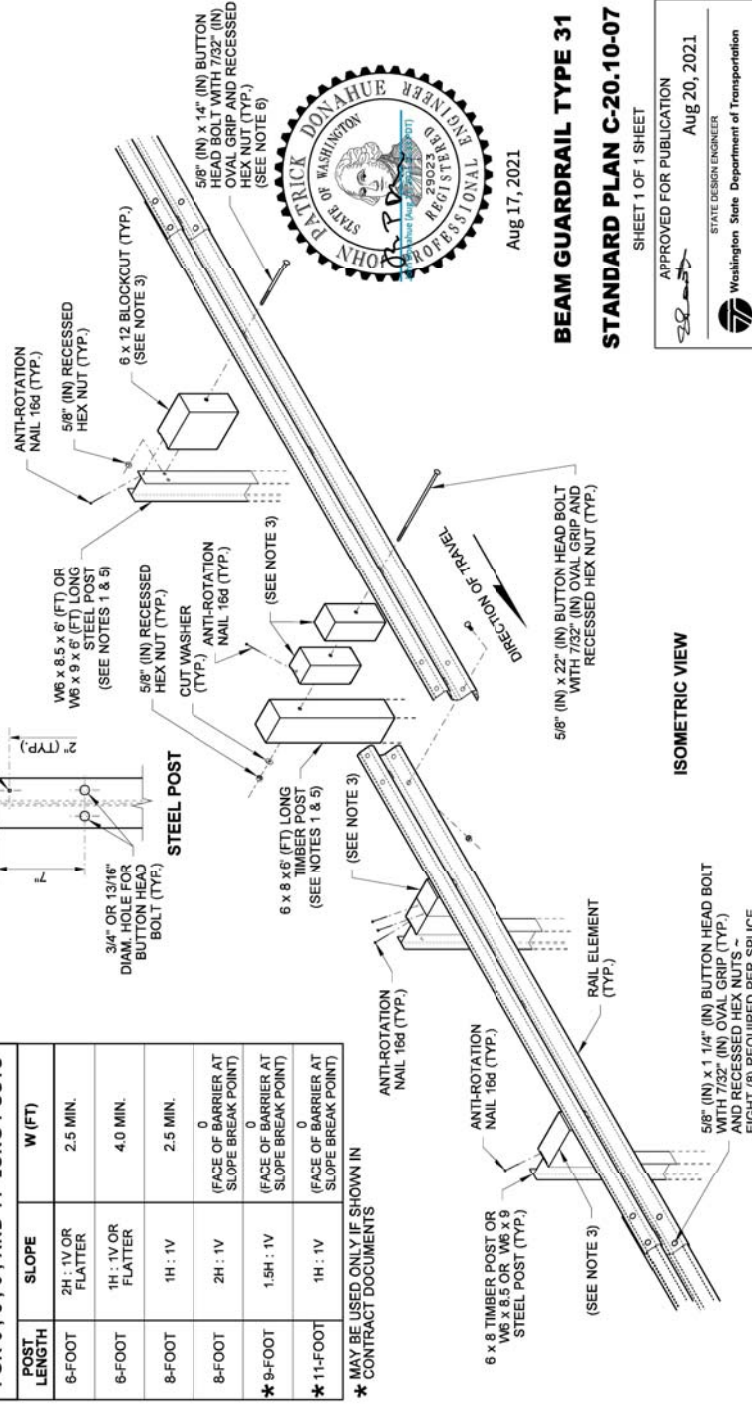


PLAN VIEW



TYPICAL SECTION - WITH CURB
(6'-0" LONG POSTS)

EXTRUDED CURB TYPE 1, 2, 3, 4, 5, OR 6. (SEE CONTRACT FOR TYPE). FOR EXTRUDED CURB DETAILS, SEE STANDARD PLAN F-10.42



ISOMETRIC VIEW



Aug 17, 2021

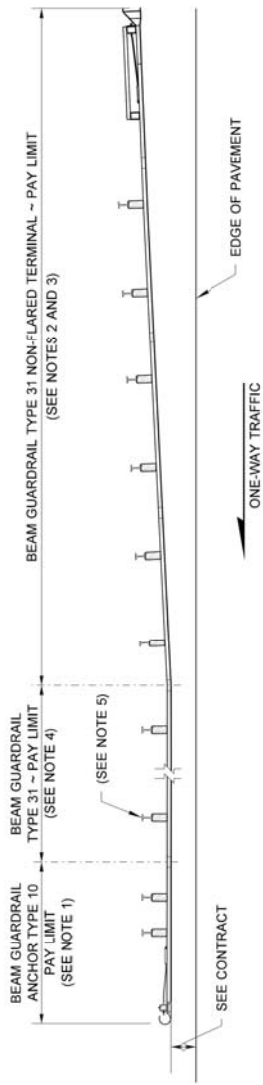
BEAM GUARDRAIL TYPE 31
STANDARD PLAN C-20.10-07

SHEET 1 OF 1 SHEET

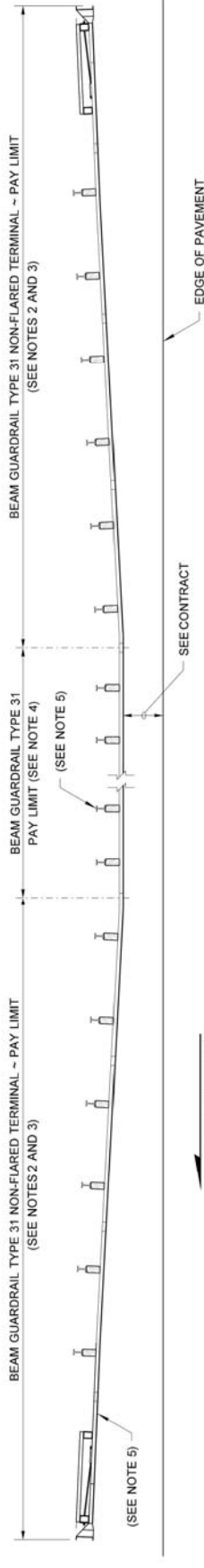
APPROVED FOR PUBLICATION
Aug 20, 2021
STATE DESIGN ENGINEER
Washington State Department of Transportation

NOTES

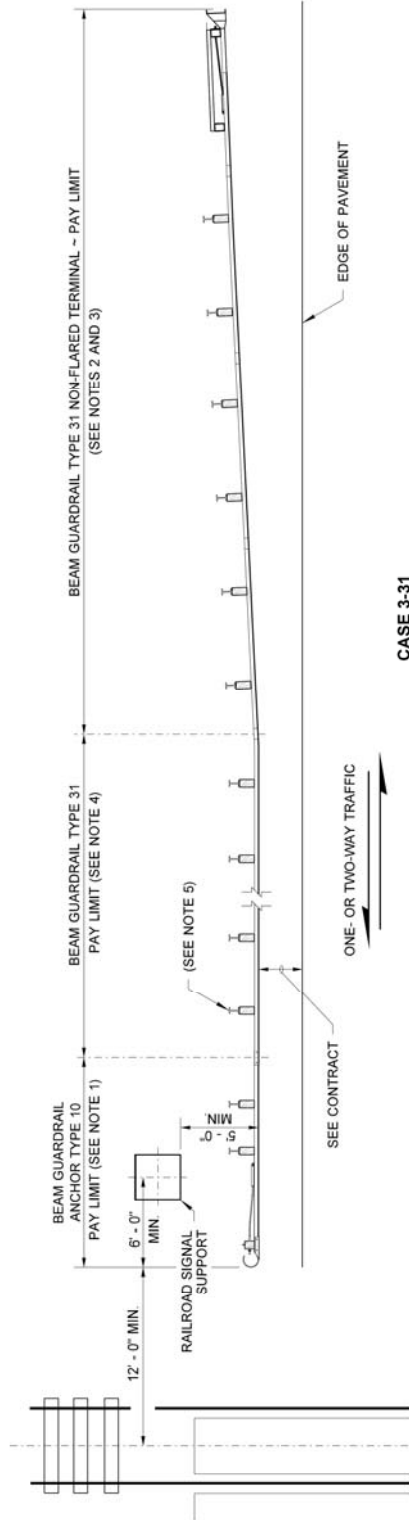
1. Where a crashworthy terminal is not required, use Beam Guardrail Type 10; see **Standard Plan C-23.60**.
2. Where a crashworthy terminal is required, use a Beam Guardrail Type 31 Non-Flared Terminal; see **Standard Plan C-22.40** or **C-22.45**.
3. For terminal type and details, see Contract Plans and applicable drawings.
4. For additional details not shown on this plan, refer to **Standard Plan C-20.10**.
5. Timber or steel post. Steel post shown.



CASE 1-31



CASE 2-31



CASE 3-31



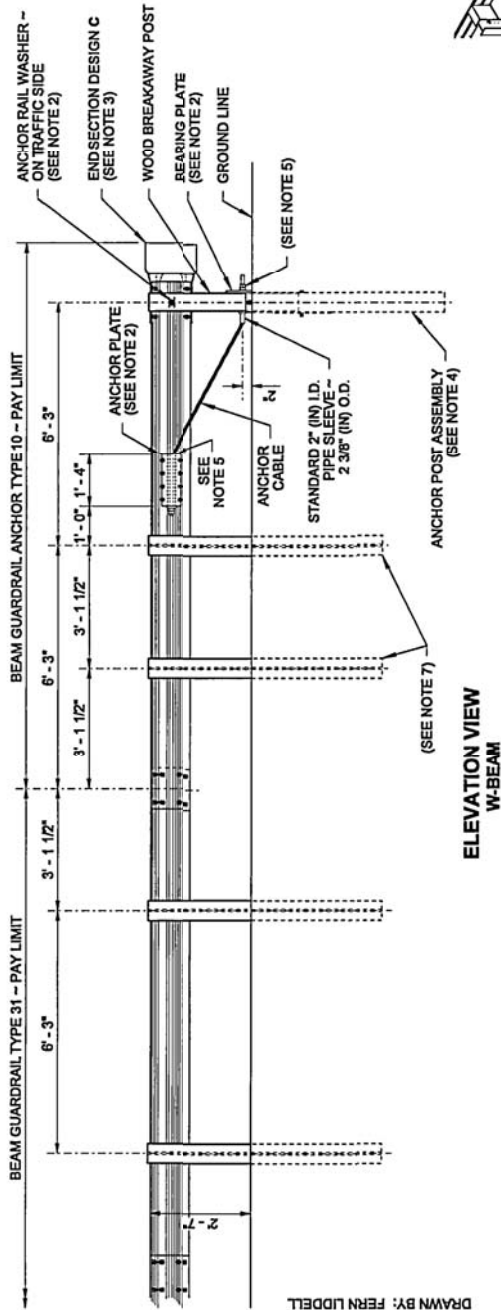
**BEAM GUARDRAIL TYPE 31
PLACEMENT
(CASES 1-31, 2-31 & 3-31)
STANDARD PLAN C-20.14-04**

John A. Donahue, P.E.
Aug 10 2019 1:47 PM

APPROVED FOR PUBLICATION
Randy Steve
Aug 12 2019 11:49 AM
STATE DESIGN ENGINEER
Washington State Department of Transportation

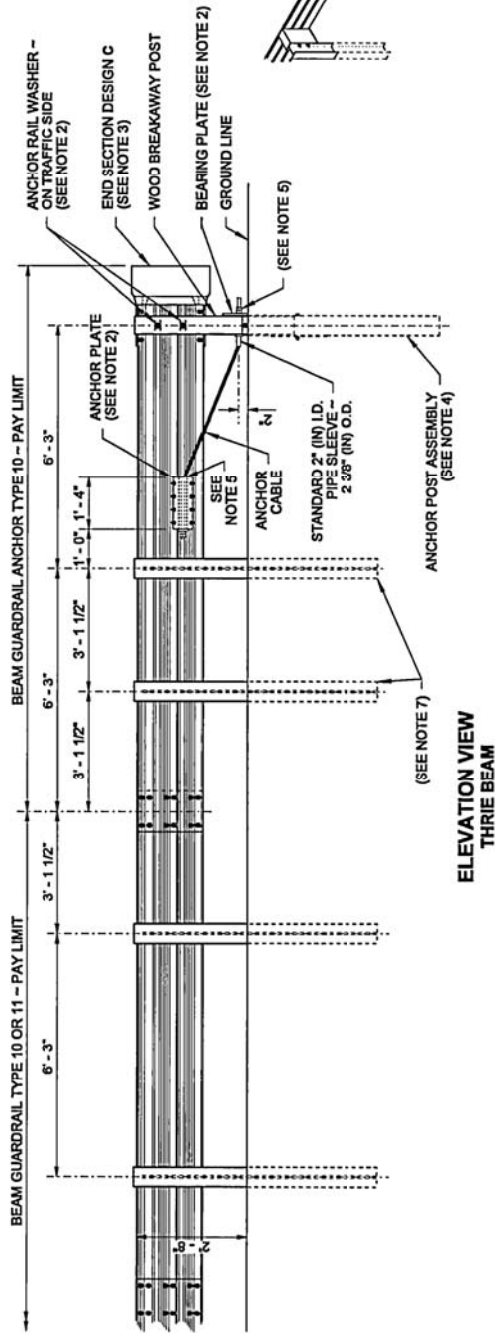
NOTES

1. For use on the end of guardrail runs when a crashworthy terminal is not required.
2. For additional details not shown, see **Sheet 2** of this Plan.
3. For end section details, see **Standard Plans C-7 and C-7a**.
4. Use details for **Wood Breakaway post** shown on this plan and components shown on **Standard Plan C-1b**.
5. Fasten the **Anchor Cable** using two 1" (in) nuts and washer, at both ends of cable. Outside nut shall be torqued against inside nut a minimum of 100 ft.-lbs.
6. Wood blocks shown. Blocks of alternate material may be used. See **Standard Specification, Section 9-16.3(2)**.
7. Posts shall match those of the connecting run: timber or steel.
8. Anchor plate may be constructed from 1/4" (in) plates welded to equal strength and dimensions as shown.
9. Eight 5/8" (in) x 1/2" (in) machine bolts with hex nut and washer. Place washer on face side of rail.

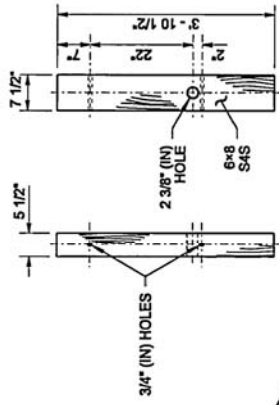


**ELEVATION VIEW
W-BEAM**

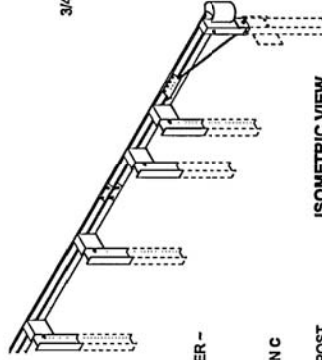
DRAWN BY: FERN LIDDELL



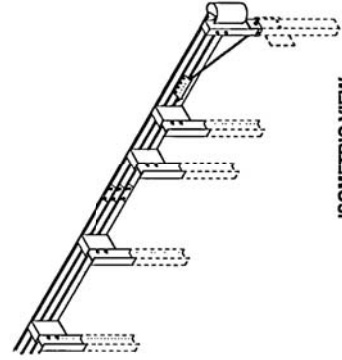
**ELEVATION VIEW
THRIE BEAM**



**WOOD BREAKAWAY
POST DETAIL**



ISOMETRIC VIEW



ISOMETRIC VIEW



Peterson, Jeff (JLO Design)
Jul 6 2017 3:15 PM

Jeff Peterson
**BEAM GUARDRAIL (TYPE 31)
ANCHOR TYPE 10**

STANDARD PLAN C-23.60-04

SHEET 1 OF 2 SHEETS

APPROVED FOR PUBLICATION

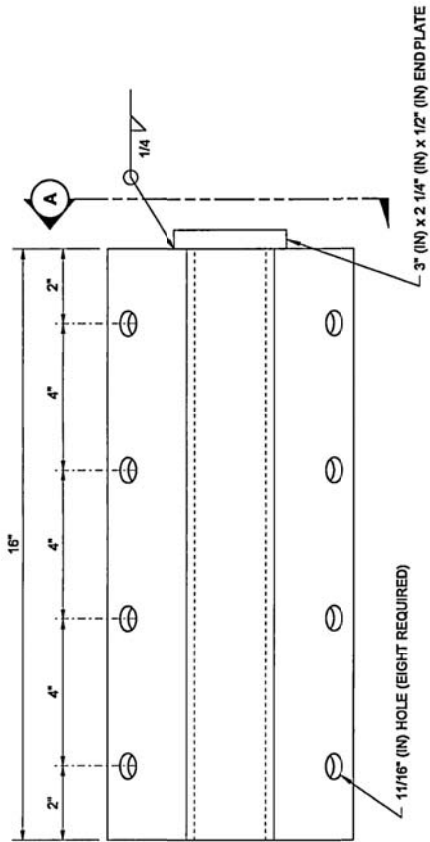
10/23/2018 12:52 AM

STATE DESIGN ENGINEER

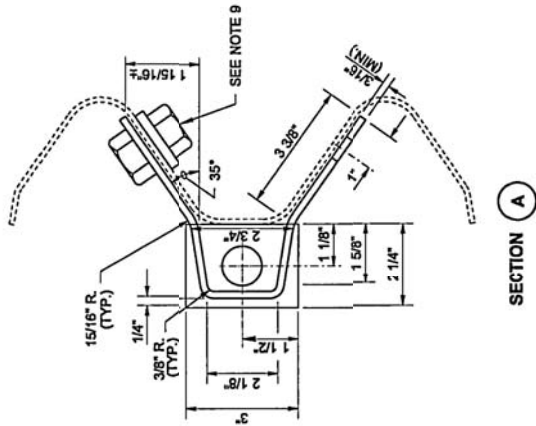
Washington State Department of Transportation

WSDOT

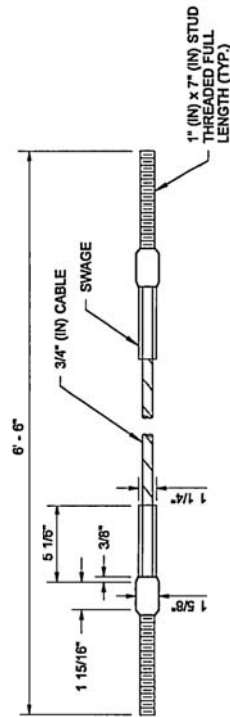
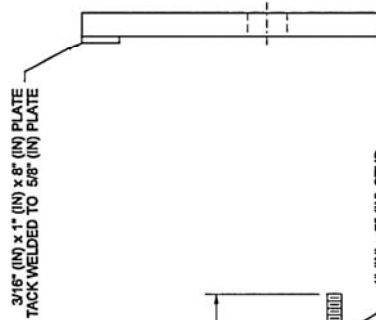
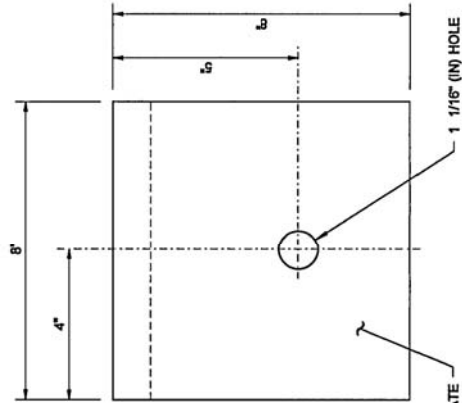
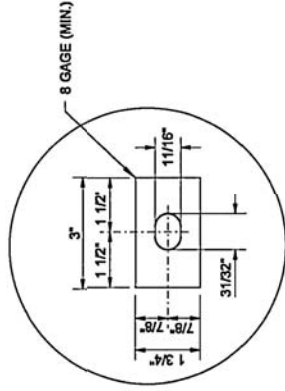
DRAWN BY: FERN LIDDELL



ANCHOR PLATE
(SEE NOTE 8)



ANCHOR RAIL WASHER



ANCHOR CABLE



Jeffrey K. Petterson
 Petterson, Jeff (HQ Design)
 Jul 6 2017 3:15 PM

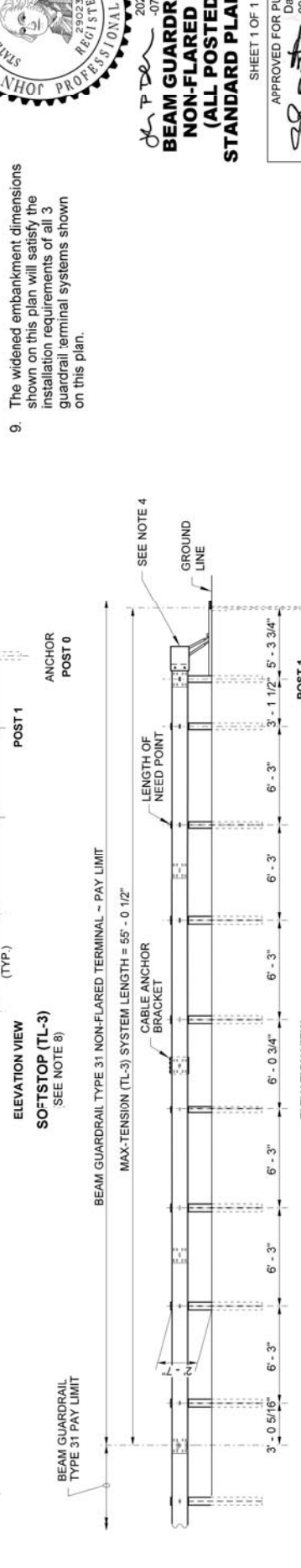
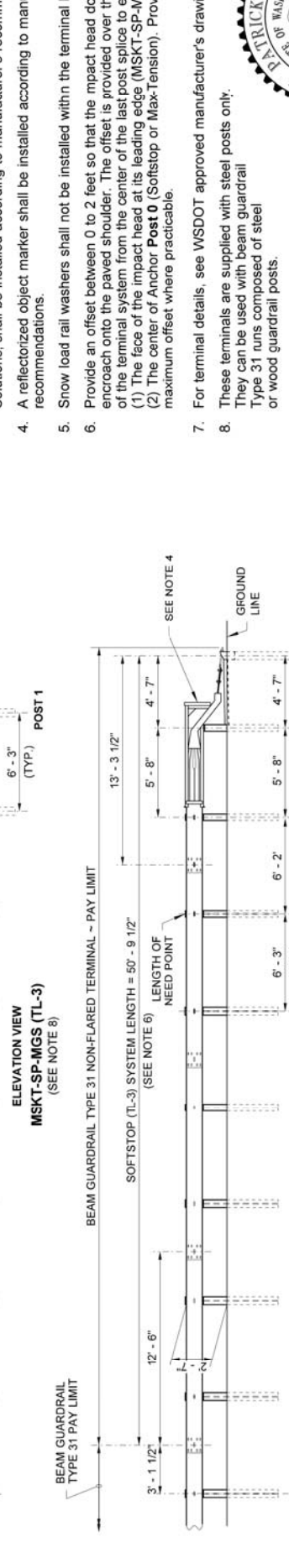
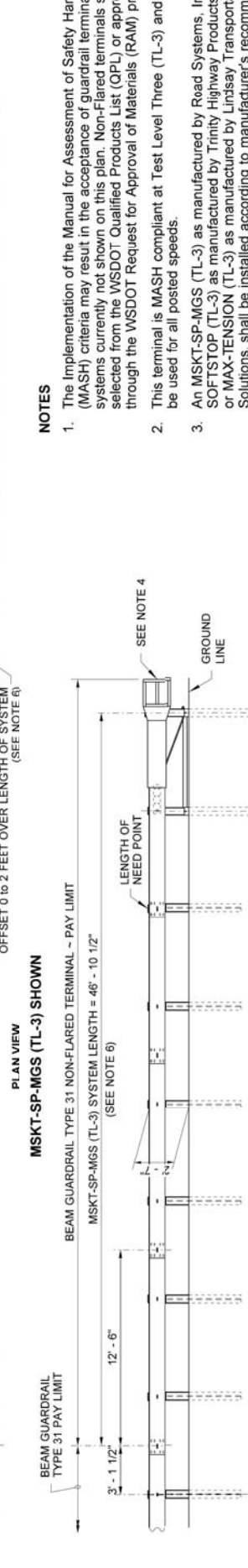
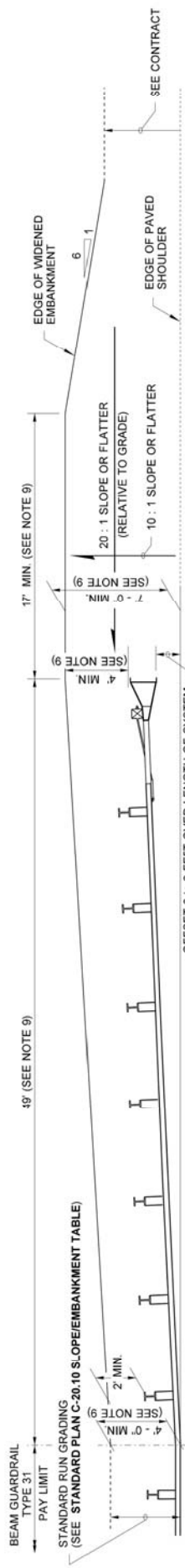
**BEAM GUARDRAIL (TYPE 31)
 ANCHOR TYPE 10**

STANDARD PLAN C-23.60-04

SHEET 2 OF 2 SHEETS

APPROVED FOR PUBLICATION
 Christine Jeff
 Jul 21 2017 12:55 AM





- NOTES**
1. The Implementation of the Manual for Assessment of Safety Hardware (MASH) criteria may result in the acceptance of guardrail terminal systems currently not shown on this plan. Non-Flared terminals shall be selected from the WSDOT Qualified Products List (QPL) or approved through the WSDOT Request for Approval of Materials (RAM) process.
 2. This terminal is MASH compliant at Test Level Three (TL-3) and may be used for all posted speeds.
 3. An MSKT-SP-MGS (TL-3) as manufactured by Road Systems, Inc., SOFTSTOP (TL-3) as manufactured by Trinity Highway Products, LLC, or MAX-TENSION (TL-3) as manufactured by Lindsay Transportation Solutions, shall be installed according to manufacturer's recommendations.
 4. A reflectorized object marker shall be installed according to manufacturer's recommendations.
 5. Snow load rail washers shall not be installed within the terminal limits.
 6. Provide an offset between 0 to 2 feet so that the impact head does not encroach onto the paved shoulder. The offset is provided over the length of the terminal system from the center of the last post splice to either:
 - (1) The face of the impact head at its leading edge (MSKT-SP-MGS), or
 - (2) The center of Anchor Post 0 (Softstop or Max-Tension). Provide maximum offset where practicable.
 7. For terminal details, see WSDOT approved manufacturer's drawings.
 8. These terminals are supplied with steel posts only. They can be used with beam guardrail Type 31 turns composed of steel or wood guardrail posts.
 9. The widened embankment dimensions shown on this plan will satisfy the installation requirements of all 3 guardrail terminal systems shown on this plan.



**BEAM GUARDRAIL TYPE 31
NON-FLARED TERMINAL
(ALL POSTED SPEEDS)
STANDARD PLAN C-22.40-08**

2020.08.27 09:46:51
-0700

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION
Date: 2020.09.16
09:53:50 -0700

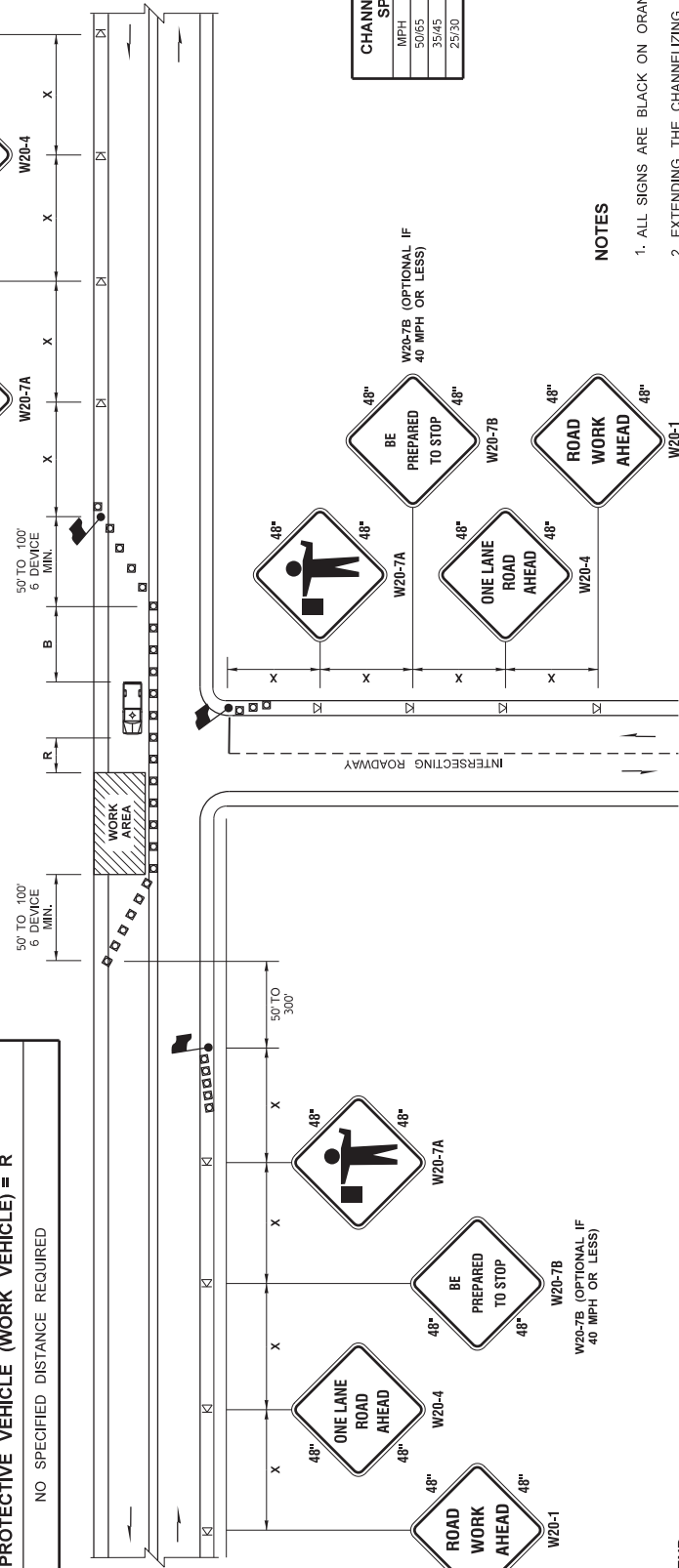
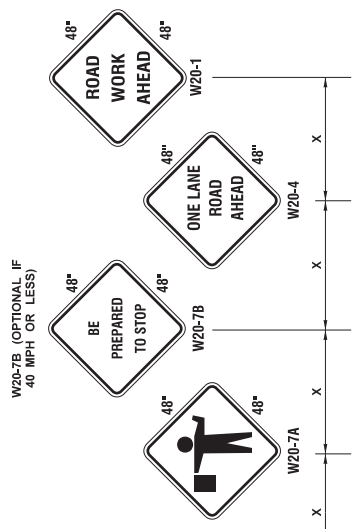
STATE DESIGN ENGINEER

Washington State Department of Transportation

BUFFER DATA											
LONGITUDINAL BUFFER SPACE = B			HOST VEHICLE WEIGHT > 22,000 lbs.								
SPEED (MPH)	25	30	35	40	45	50	55	60	65	70	
LENGTH (feet)	155	200	250	305	360	425	495	570	645	730	
TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R						HOST VEHICLE WEIGHT > 22,000 lbs.					
< 45 MPH	45-55 MPH	> 55 MPH	< 45 MPH	45-55 MPH	> 55 MPH						
100'	123'	172'	74'	100'	150'						
PROTECTIVE VEHICLE (WORK VEHICLE) = R						NO SPECIFIED DISTANCE REQUIRED					

SIGN SPACING = X (1)		
RURAL HIGHWAYS	60 / 65 MPH	800 ±
RURAL ROADS	45 / 55 MPH	500 ±
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350 ±
RURAL ROADS, URBAN ARTERIALS, RESIDENTIAL & BUSINESS DISTRICTS	25 / 30 MPH	200 ± (2)
URBAN STREETS	25 MPH OR LESS	100 ± (2)

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERSECTIONS AND DRIVEWAYS.
 (2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.



CHANNELIZING DEVICE SPACING (FEET)		
MPH	TAPER	TANGENT
50/65	10 TO 20	80
35/45	10 TO 20	60
25/30	10 TO 20	40

- NOTES**
1. ALL SIGNS ARE BLACK ON ORANGE.
 2. EXTENDING THE CHANNELIZING DEVICE TAPER ACROSS SHOULDER IS RECOMMENDED.
 3. NIGHT WORK REQUIRES ADDITIONAL ROADWAY LIGHTING AT FLAGGING STATIONS. SEE THE STANDARD SPECIFICATIONS FOR ADDITIONAL DETAILS.
 4. SEE SPECIAL PROVISIONS FOR WORK HOUR RESTRICTIONS.

ONE-LANE, TWO-WAY TRAFFIC CONTROL WITH FLAGGERS

NOT TO SCALE

- LEGEND**
- FLAGGING STATION
 - TEMPORARY SIGN LOCATION
 - CHANNELIZING DEVICES
 - PROTECTIVE VEHICLE

FILE NAME	S:\Desktop R_P_E\Std\Std\Std3-Plan Sheet Library\01-Published PSL\TC Work Zone Traffic Control\TC-1 One Lane Two Way Traffic Control with Flaggers\TC-1.dgn
DATE	3/25/14 PM
DESIGNED BY	illdef
CHECKED BY	
PROJECT ENGINEER	
REGIONAL ADM.	
NO.	
REGION	WASH
STATE	
FED-AID PROJ.NO.	
JOB NUMBER	
CONTRACT NO.	
LOCATION NO.	
DATE	
BY	
REVISION	

FIG. 1	PLAN REF. NO.
TC1	
SHEET	OF
	SHEETS



TRAFFIC CONTROL PLAN

MINIMUM SHOULDER TAPER LENGTH = L/3 (feet)	
Shoulder Width (feet)	Posted Speed (mph)
25	30 35 40 45 50 55 60 65 70
8'	- - - - - 120 130 150 160 170 190
10'	- - - - - 150 170 190 200 220 240

USE A MINIMUM 3 DEVICES TAPER FOR SHOULDER LESS THEN 8'.

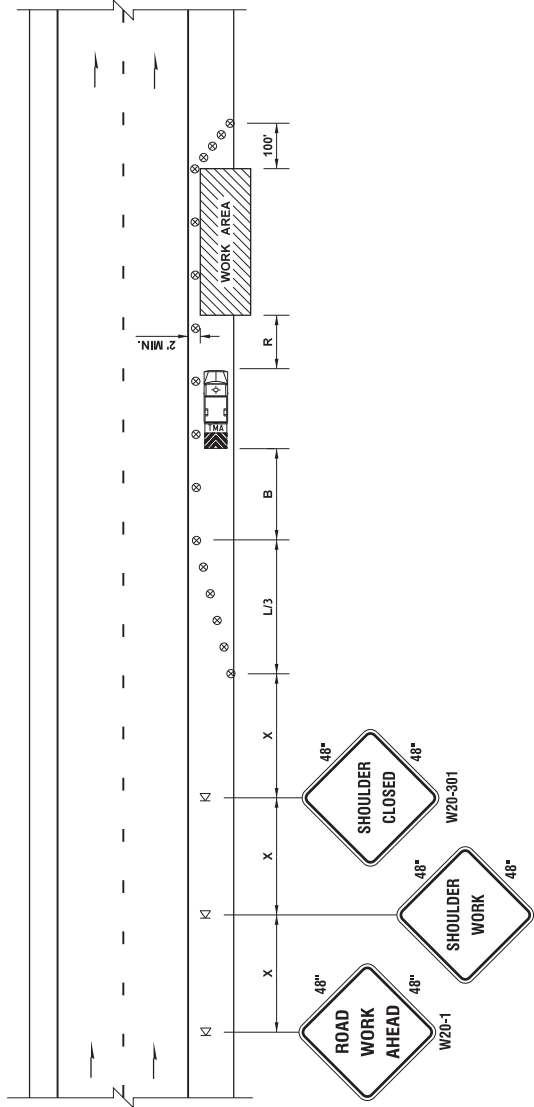
SIGN SPACING = X (1)	
FREeways & EXPRESSWAYS	55 / 70 MPH 1500'±
RURAL HIGHWAYS	60 / 65 MPH 800'±
RURAL ROADS	45 / 55 MPH 500'±

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMP, AT-GRADE INTERSECTIONS AND DRIVEWAYS.

CHANNELIZATION DEVICE SPACING (feet)	
MPH	TAPER
50/70	40
35/45	30
	60

BUFFER DATA										
LONGITUDINAL BUFFER SPACE = B										
SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (feet)	155	200	250	305	360	425	495	570	645	730

TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R			
HOST VEHICLE WEIGHT		HOST VEHICLE WEIGHT	
9,900 TO 22,000 lbs.		> 22,000 lbs.	
< 45 MPH	45-55 MPH	> 55 MPH	< 45 MPH
100'	123'	172'	74'
			100'
			150'



- LEGEND**
- KI TEMPORARY SIGN LOCATION
 - ⊗ TRAFFIC SAFETY DRUM
 - ▭ TRANSPORTABLE ATTENUATOR

NOTES

1. NO ENCROACHMENT IN TRAVELED LANE, IF ENCROACHMENT IS NECESSARY, LANE SHALL BE CLOSED.
2. DEVICE SPACING FOR THE DOWNSTREAM TAPER SHALL BE 20'(FT) O.C.
3. ALL SIGNS ARE BLACK ON ORANGE.

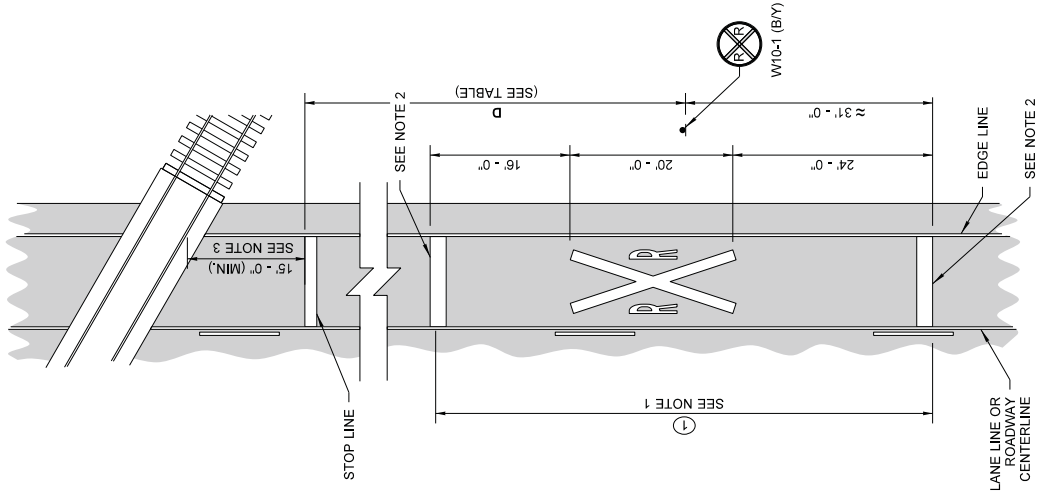
SHOULDER CLOSURE - HIGH SPEED

NOT TO SCALE

FILE NAME: S:\Design_R_P8_S14-Standard3-Plan_Sheet_Library\01-Published_PSL\TC Work_Zone_Traffic_Control\TC-6) Shoulder Closure - High Speed\TC-6.dgn TIME: 9:37:41 AM DATE: 1/29/19 PLOTTED BY: illdef DESIGNED BY: ENTERED BY: CHECKED BY: PROJECT ENGINEER: REGIONAL ADM.	REGION: WASH STATE: FED.AID PROJ.NO. CONTRACT NO.: LOCATION NO.: DATE:	REVISION: _____ DATE: _____ BY: _____ _____ _____ _____	P.E. STAMP BOX P.E. STAMP BOX	P.E. STAMP BOX P.E. STAMP BOX
<p>Washington State Department of Transportation</p>		TRAFFIC CONTROL PLAN		
PLAN REF NO TC6		SHEET OF SHEETS		

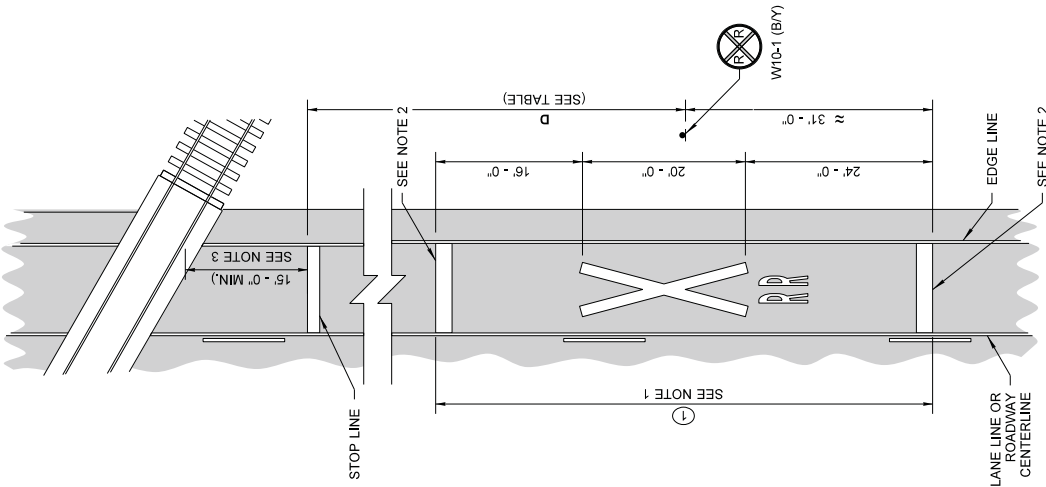
GENERAL NOTES

1. Bid Item "Railroad Crossing Symbol" includes "X" symbol, letters, and two 24" (in) white transverse lines.
2. 24" (in) white transverse line.
3. Place Stop Line 15' (ft) minimum from nearest rail. If gate is present, place stop line approximately 8' (ft) from RR gate.
4. See contract for location, material requirements, and W10-1 sign information



MPH	D*
25	50 Ft.
30	100 Ft.
35	150 Ft.
40	225 Ft.
45	300 Ft.
50	375 Ft.
55	450 Ft.
60	550 Ft.
65	650 Ft.

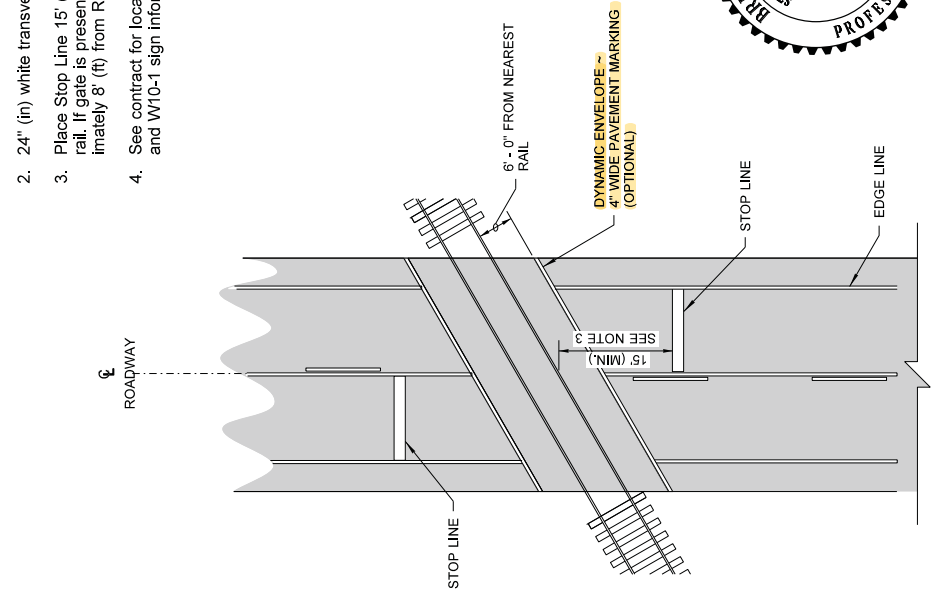
* DIMENSIONS SHOWN ARE APPROXIMATE (SEE CONTRACT)



① TOTAL MARKING AREA (PER 12' (FT) WIDE LANE) = 109.75 SQ.FT.

LAYOUT

STANDARD SYMBOL



RR CROSSING DETAIL
(TRACKS OMITTED FOR CLARITY)



RAILROAD CROSSING LAYOUT

STANDARD PLAN M-11.10-03

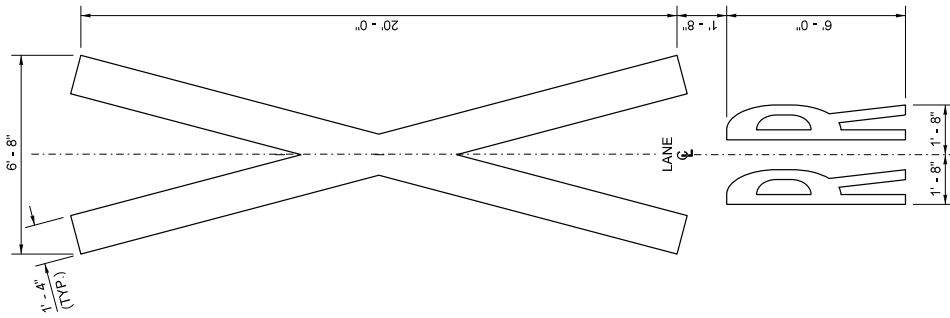
SHEET 1 OF 2 SHEETS

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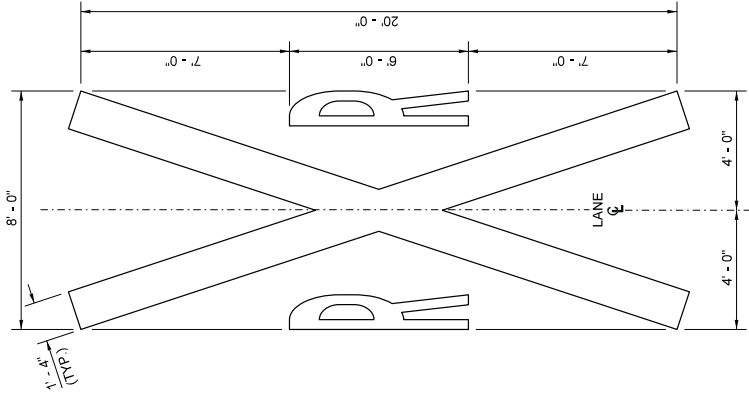


① TOTAL MARKING AREA (PER 12' (FT) WIDE LANE) = 111.59 SQ.FT.

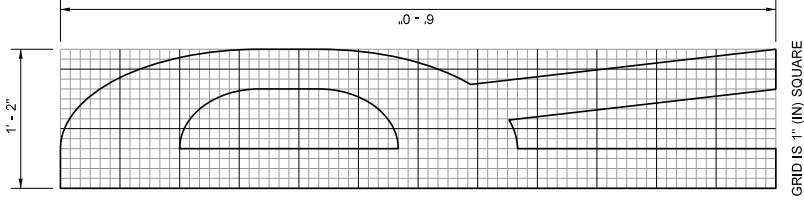
ALTERNATIVE LAYOUT



SYMBOL DETAIL



ALTERNATIVE SYMBOL DETAIL



"R" DETAIL



RAILROAD CROSSING LAYOUT

STANDARD PLAN M-11.10-03

SHEET 2 OF 2 SHEETS

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STATE DESIGN ENGINEER

Washington State Department of Transportation

STANDARD SYMBOL DETAILS