DRAWN BY: ELENA BRUNSTEIN

LONGITUDINAL BUFFER SPACE = B					
POSTED SPEED (MPH)	25	30	35	40	45
LENGTH **B** (FEET)	55	85	120	170	270

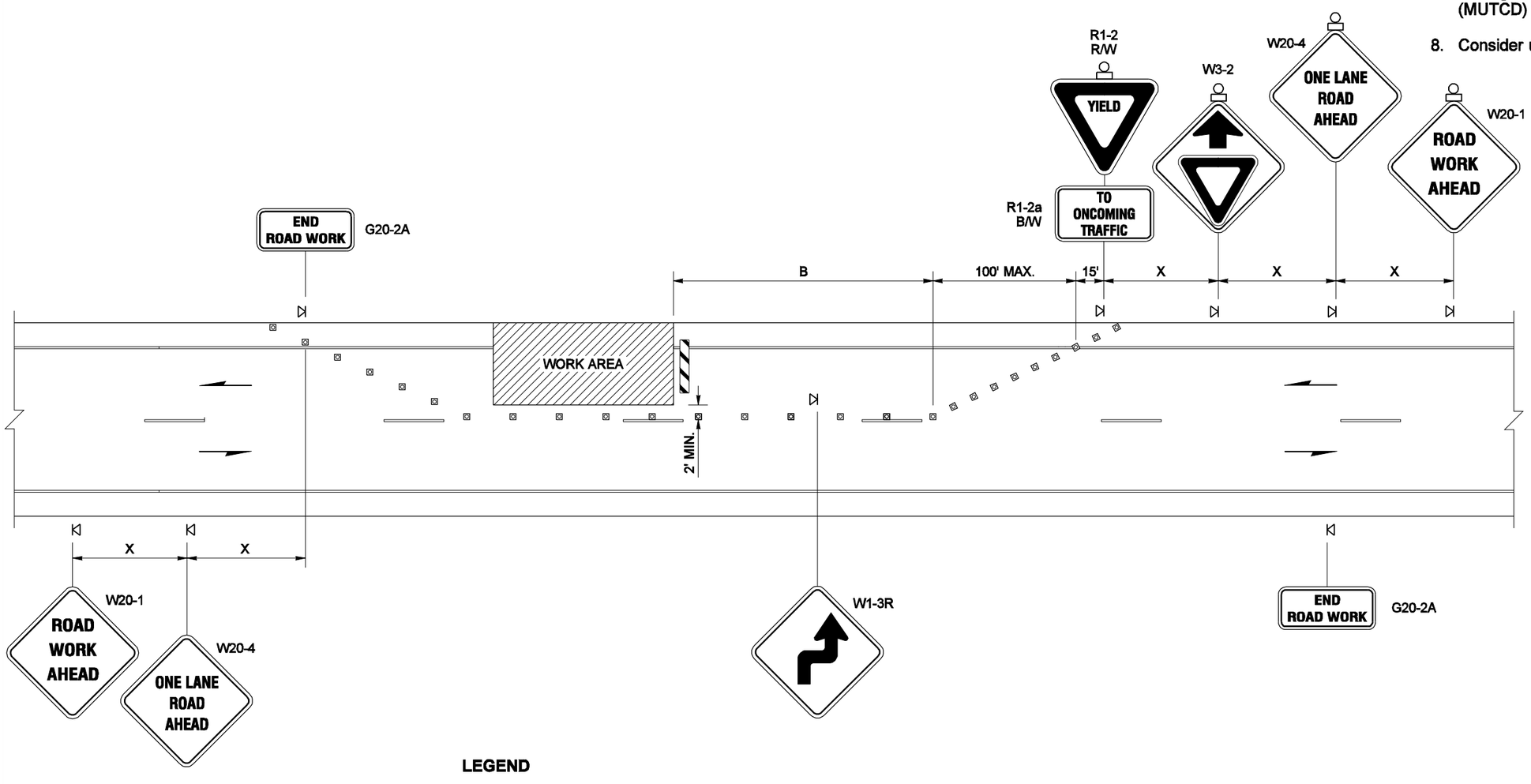
CHANNELIZING DEVICE SPACING		
POSTED SPEED (MPH)	IN TAPER (FEET)	IN TANGENT (FEET)
35 / 45	30	60
25 / 30	20	40

SIGN SPACING = X		
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' ±
URBAN STREETS	25 MPH OR LESS	100' ±
ALL SIGNS ARE BLACK ON ORANGE UNLESS DESIGNATED OTHERWISE		

ALL SIGN SPACING MAY BE ADJUSTED TO ACCOMMODATE AT-GRADE INTERSECTIONS AND DRIVEWAYS.

NOTES

1. This plan is intended for use on roadways when traffic volumes create sufficient gaps for motor vehicles to yield.
2. Steady Burning Warning Lights (Type C per MUTCD) shall be used to mark Channelizing Devices at night.
3. Adequate sight distance shall be provided for drivers to see opposing traffic, otherwise use flaggers and/or Temporary Signal.
4. Extend Channelizing Device taper across shoulder ~ recommended.
5. Post mount signs when in place for 3 days or longer.
6. For speed limit 35 mph or higher replace W1-3R with W1-4R.
7. For signs size refer to Manual on Uniform Traffic Control Devices (MUTCD) and WSDOT Sign Fabrication Manual M55-05.
8. Consider using a PCMS for additional advance warning.



LEGEND

- SIGN LOCATION
- CHANNELIZING DEVICES
- BARRICADE ~ TYPE 3 L
- FLASHING WARNING LIGHT

FOR LOCAL AGENCY USE ONLY
NOT FOR USE ON STATE ROUTES

THEODORE J. TREPANIER
STATE OF WASHINGTON
25335
REGISTERED
PROFESSIONAL ENGINEER

EXPIRES AUGUST 9, 2009

NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL, SIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

LANE CLOSURE WITHOUT FLAGGERS ~ LOW VOLUME ROAD STANDARD PLAN K-20.20-01

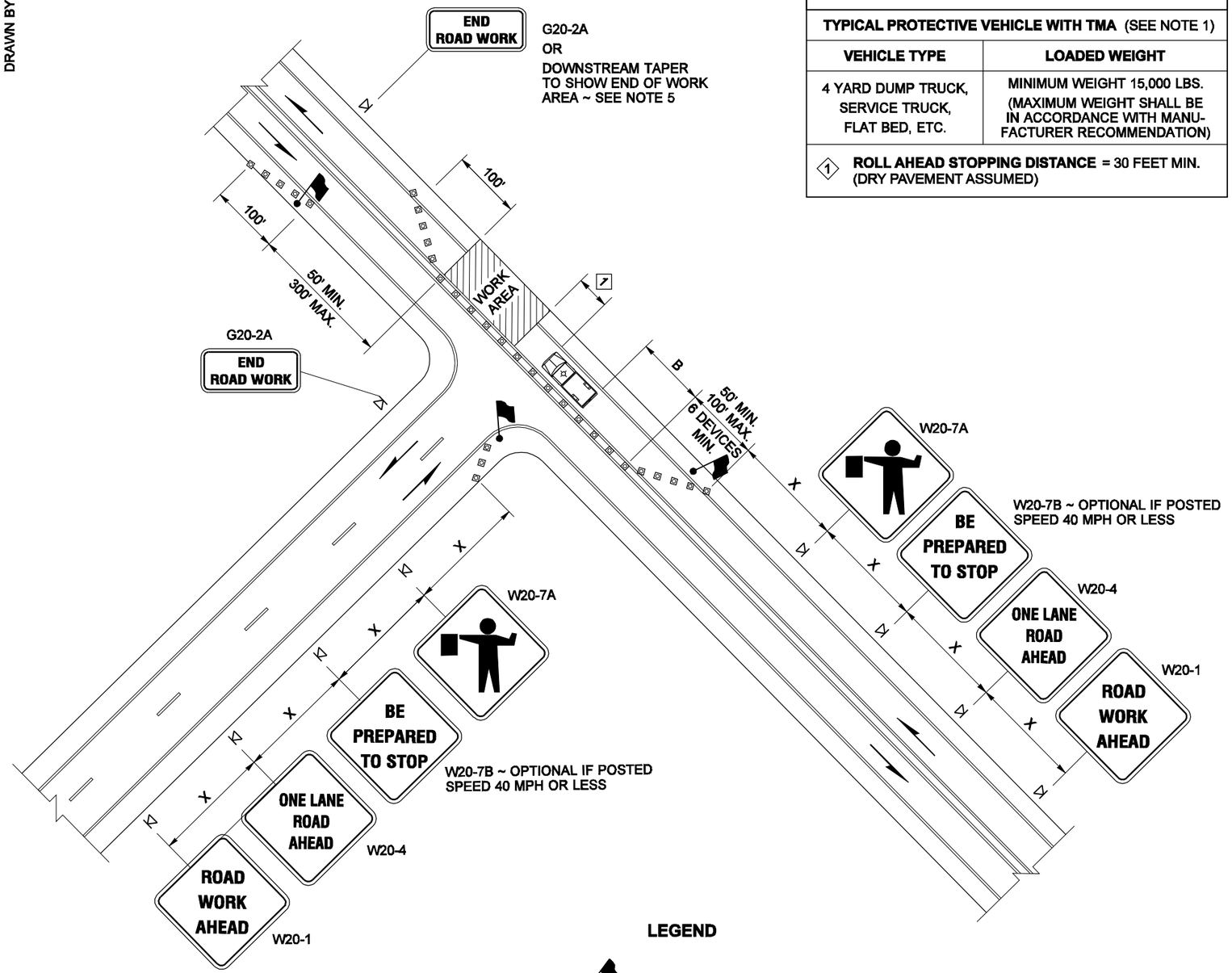
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

Pasco Bakotich III — STATE DESIGN ENGINEER
10-12-07 — DATE

Washington State Department of Transportation

DRAWN BY: ELENA BRUNSTEIN



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

BUFFER DATA	
TYPICAL PROTECTIVE VEHICLE WITH TMA (SEE NOTE 1)	
VEHICLE TYPE	**LOADED WEIGHT**
4 YARD DUMP TRUCK, SERVICE TRUCK, FLAT BED, ETC.	MINIMUM WEIGHT 15,000 LBS. (MAXIMUM WEIGHT SHALL BE IN ACCORDANCE WITH MANUFACTURER RECOMMENDATION)
◇1 **ROLL AHEAD STOPPING DISTANCE** = 30 FEET MIN. (DRY PAVEMENT ASSUMED)	

NOTES

1. A Protective Vehicle is recommended regardless if a Truck Mounted Attenuator (TMA) is available; a work vehicle may be used. When no TMA is used, the Protective Vehicle shall be strategically located to shield workers, with no specific Roll-Ahead distance.
2. Night work requires additional roadway lighting at flagging stations. See WSDOT Standard Specifications for additional details.
3. Extend Channelizing Device taper across shoulder ~ recommended.
4. Sign sequence is the same for both directions of travel on the roadway.
5. Channelizing Device spacing for the downstream taper option shall be 20' O.C.
6. For signs size refer to Manual on Uniform Traffic Control Devices (MUTCD) and WSDOT Sign Fabrication Manual M55-05.

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)
ALL SIGNS ARE BLACK ON ORANGE UNLESS DESIGNATED OTHERWISE		

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

(2) THIS SIGN SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

LEGEND

FLAGGING STATION

SIGN LOCATION

CHANNELIZING DEVICES

PROTECTIVE VEHICLE ~ RECOMMENDED

FOR LOCAL AGENCY USE ONLY
NOT FOR USE ON STATE ROUTES

THEODORE J. TREPANIER
STATE OF WASHINGTON
25335
REGISTERED
PROFESSIONAL ENGINEER

EXPIRES AUGUST 9, 2007

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LANE CLOSURE WITH FLAGGER CONTROL

STANDARD PLAN K-20.40-00

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

Ken L. Smith — STATE DESIGN ENGINEER

02-15-07 — DATE

Washington State Department of Transportation

DRAWN BY: ELENA BRUNSTEIN

LONGITUDINAL BUFFER SPACE = B								
POSTED SPEED (MPH)	25	30	35	40	45	50	55	60
LENGTH **B** (FEET)	155	200	250	305	360	425	495	570

BUFFER DATA	
TYPICAL PROTECTIVE VEHICLE WITH TMA (SEE NOTE 1)	
VEHICLE TYPE	**LOADED WEIGHT**
4 YARD DUMP TRUCK, SERVICE TRUCK, FLAT BED, ETC.	MINIMUM WEIGHT 15,000 LBS. (MAXIMUM WEIGHT SHALL BE IN ACCORDANCE WITH MANU-FACTURER RECOMMENDATION)
① **ROLL AHEAD STOPPING DISTANCE** = 30 FEET MIN. (DRY PAVEMENT ASSUMED)	

MINIMUM TAPER LENGTH = L (FEET)										
LANE WIDTH (FEET)	POSTED SPEED (MPH)									
	25	30	35	40	45	50	55	60	65	70
10	105	150	205	270	450	500	550	-	-	-
11	115	165	225	294	495	550	605	660	-	-
12	125	180	245	320	540	600	660	720	780	840

CHANNELIZING DEVICE SPACING		
POSTED SPEED (MPH)	**IN TAPER (FEET)**	**IN TANGENT (FEET)**
50 / 70	40	80
35 / 45	30	60
25 / 30	20	40

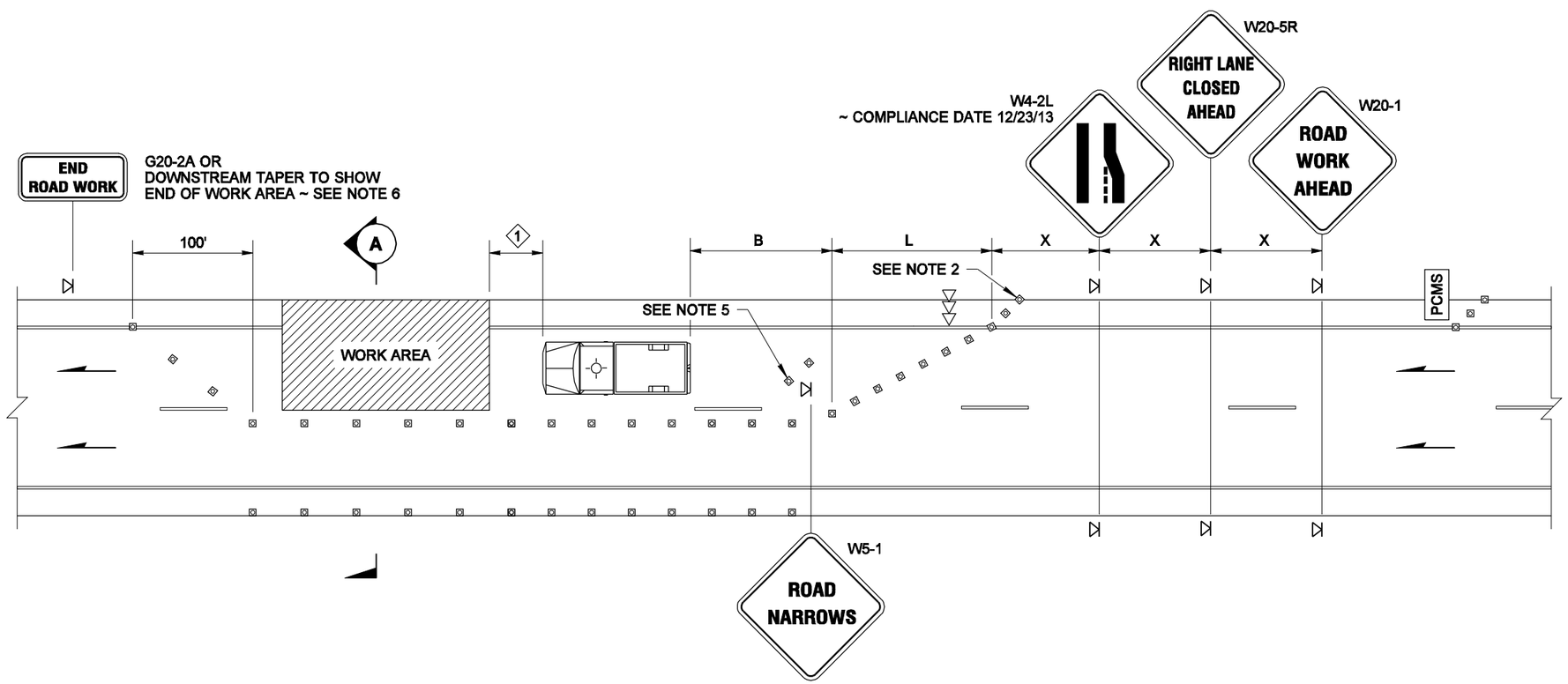
SIGN SPACING = X (1)		
RURAL HIGHWAYS	60 / 65 MPH	800' ±
RURAL ROADS	45 / 55 MPH	500' ±
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' ±
RURAL ROADS, URBAN ARTERIALS, RESIDENTIAL & BUSINESS DISTRICTS	25 / 30 MPH	200' ± (2)
URBAN STREETS	25 MPH OR LESS	100' ± (2)
ALL SIGNS ARE BLACK ON ORANGE UNLESS DESIGNATED OTHERWISE		

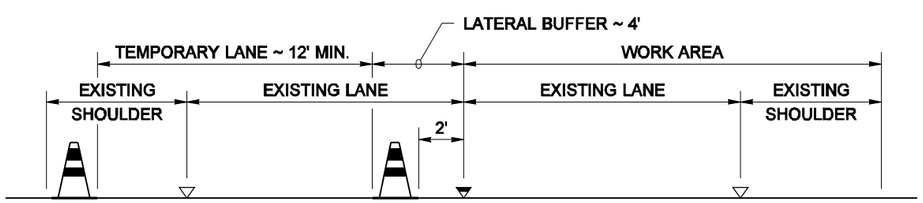
(1) ALL SIGN SPACING MAY BE ADJUSTED TO ACCOMMODATE AT-GRADE INTERSECTIONS, AND DRIVEWAYS.

(2) THIS SIGN SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

NOTES

1. A Protective Vehicle is recommended regardless if a Truck Mounted Attenuator (TMA) is available; a work vehicle may be used. When no TMA is used, the Protective Vehicle shall be strategically located to shield workers, with no specific Roll-Ahead Stopping Distance.
2. Extend device taper (L/3) across shoulder ~ recommended.
3. Portable Changeable Message Sign (PCMS) ~ recommended.
4. Traffic Safety Drums for all tapers on high speed roadway ~ recommended.
5. Transverse Devices in closed lane every 1000' ± ~ recommended.
6. Channelizing Device spacing for the downstream taper option shall be 20' O.C.
7. Use advanced notice for any overwidth loads prior to lane closure for altenative routes if applicable ~ recommended.
8. For signs size refer to Manual on Uniform Traffic Control Devices (MUTCD) and WSDOT Sign Fabrication Manual M55-05.





SECTION (A)

LEGEND

- SIGN LOCATION
- CHANNELIZING DEVICES
- PROTECTIVE VEHICLE ~ RECOMMENDED
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN
- ARROW PANEL
- EXISTING EDGE STRIPE
- EXISTING LANE STRIPE
- TEMPORARY TRAFFIC CONTROL DEVICE

FOR LOCAL AGENCY USE ONLY
NOT FOR USE ON STATE ROUTES

THEODORE J. TREPANIER — STATE OF WASHINGTON — 25335 — REGISTERED PROFESSIONAL ENGINEER

EXPIRES AUGUST 9, 2007

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SINGLE LANE CLOSURE WITH ENCROACHMENT

STANDARD PLAN K-24.20-00

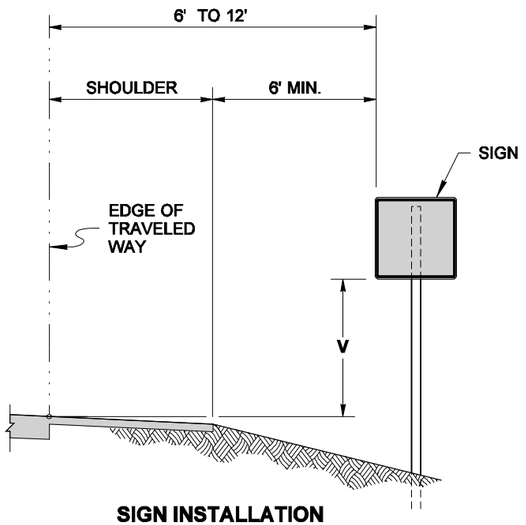
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

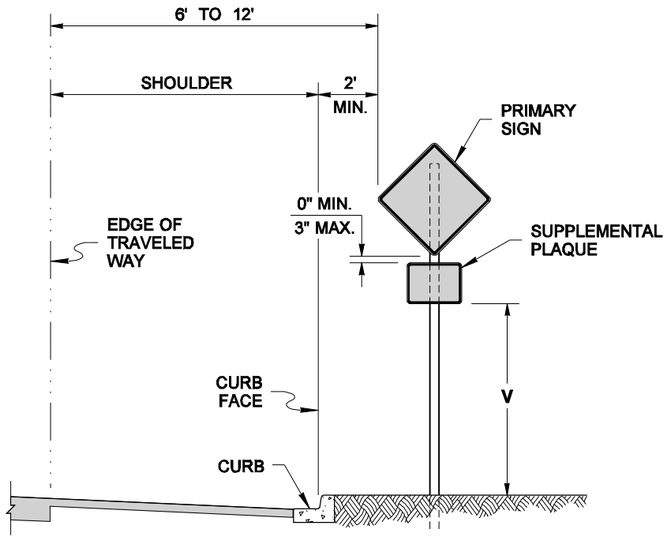
Ken L. Smith — STATE DESIGN ENGINEER — *02-15-07* — DATE

Washington State Department of Transportation

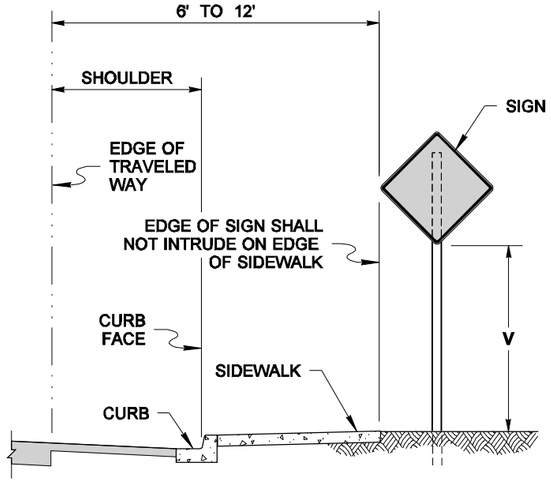
DRAWN BY: FERN LIDDELL



SIGN INSTALLATION (FILL SECTION)



SIGN INSTALLATION (CURB SECTION)

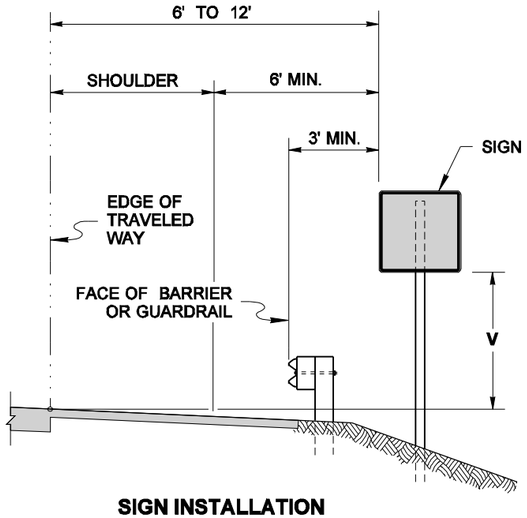


SIGN INSTALLATION (SIDEWALK AND CURB SECTION)

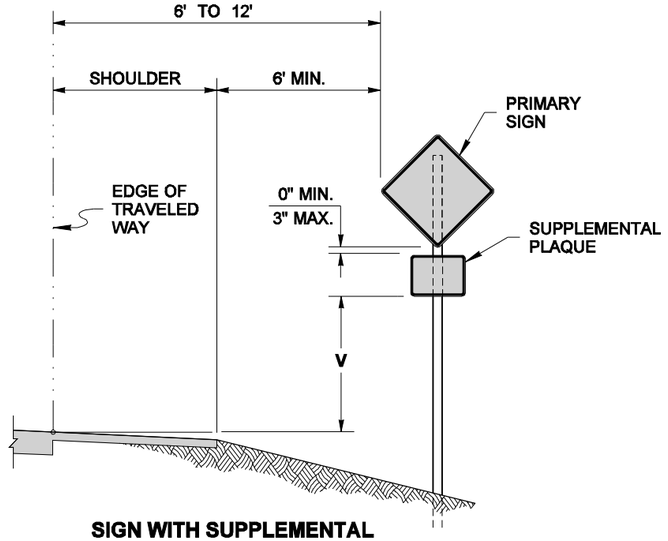
NOTES

1. For sign installation details, see Std. Plan G - series.
2. In rural areas, the "V" Height can be a minimum of 7 feet for primary signs and 6 feet for the supplemental plaques for greater visibility, as directed by the engineer.
3. The "V" height for signs, with an area of more than 50 square feet and two or more sign supports, is 7 feet in both rural and urban areas.

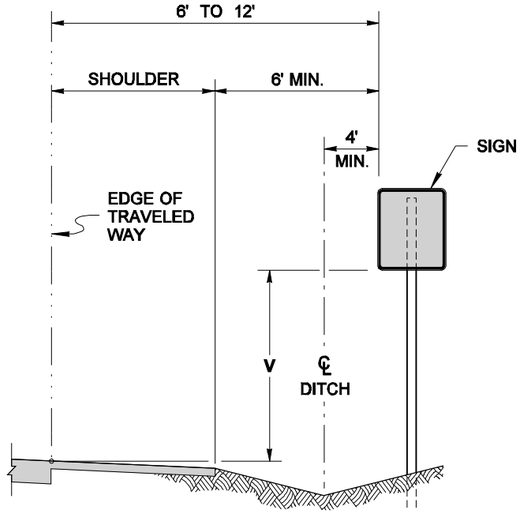
HEIGHT V		
	TO BOTTOM OF SIGN (NO SUPPLEMENTAL PLAQUE)	TO BOTTOM OF SUPPLEMENTAL PLAQUE (WHEN REQUIRED)
RURAL	5' MINIMUM	4' MINIMUM
URBAN	7' MINIMUM	6' MINIMUM



SIGN INSTALLATION (BEHIND TRAFFIC BARRIER)



SIGN WITH SUPPLEMENTAL PLAQUE INSTALLATION (FILL SECTION)



SIGN INSTALLATION (DITCH SECTION)

EXPIRES AUGUST 9, 2007

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CLASS A CONSTRUCTION SIGNING INSTALLATION

STANDARD PLAN K-80.10-00

SHEET 1 OF 1 SHEET

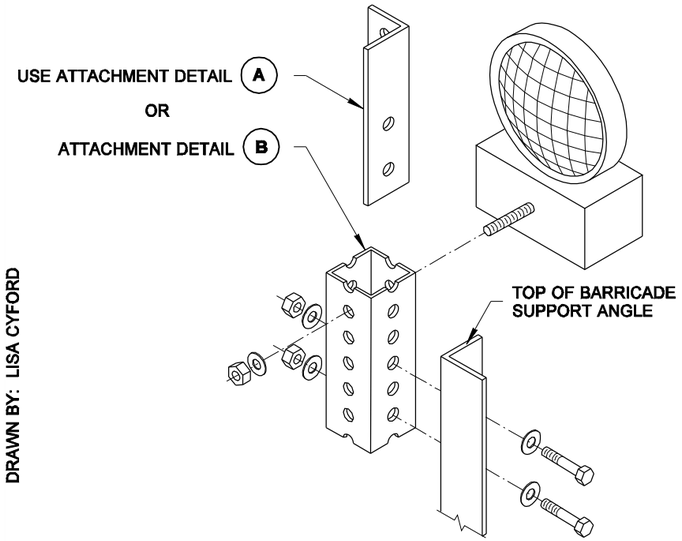
APPROVED FOR PUBLICATION

Ken L. Smith — STATE DESIGN ENGINEER

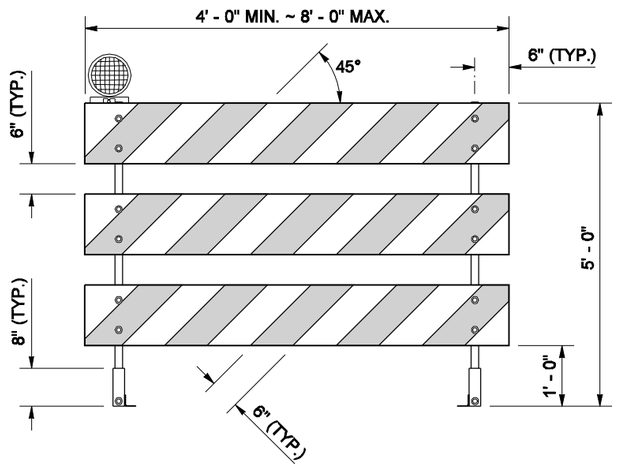
02-21-07 — DATE

Washington State Department of Transportation

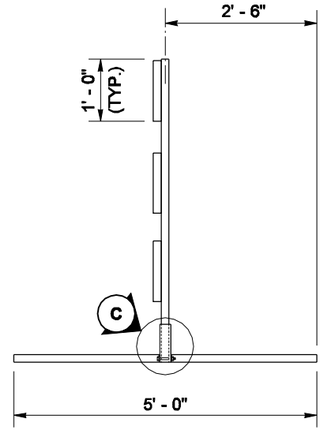
DRAWN BY: LISA CYFORD



WARNING LIGHT ATTACHMENT DETAIL



ELEVATION

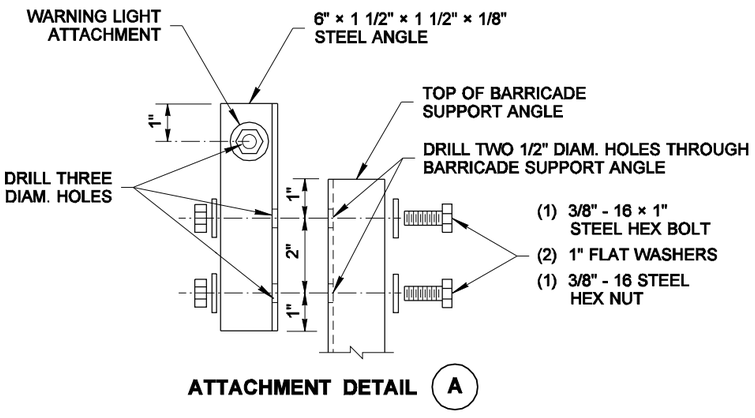


SIDE

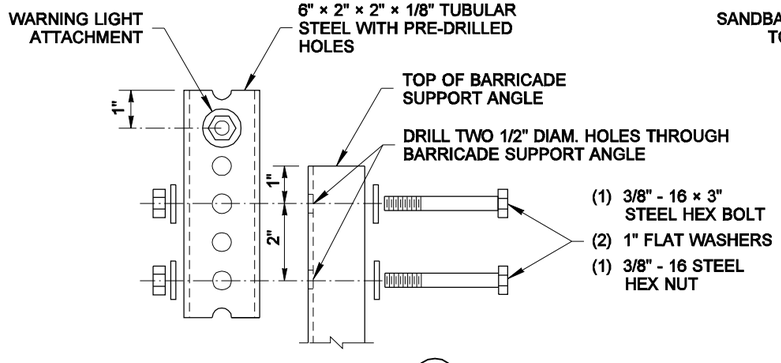
TYPE 3 BARRICADE

NOTES

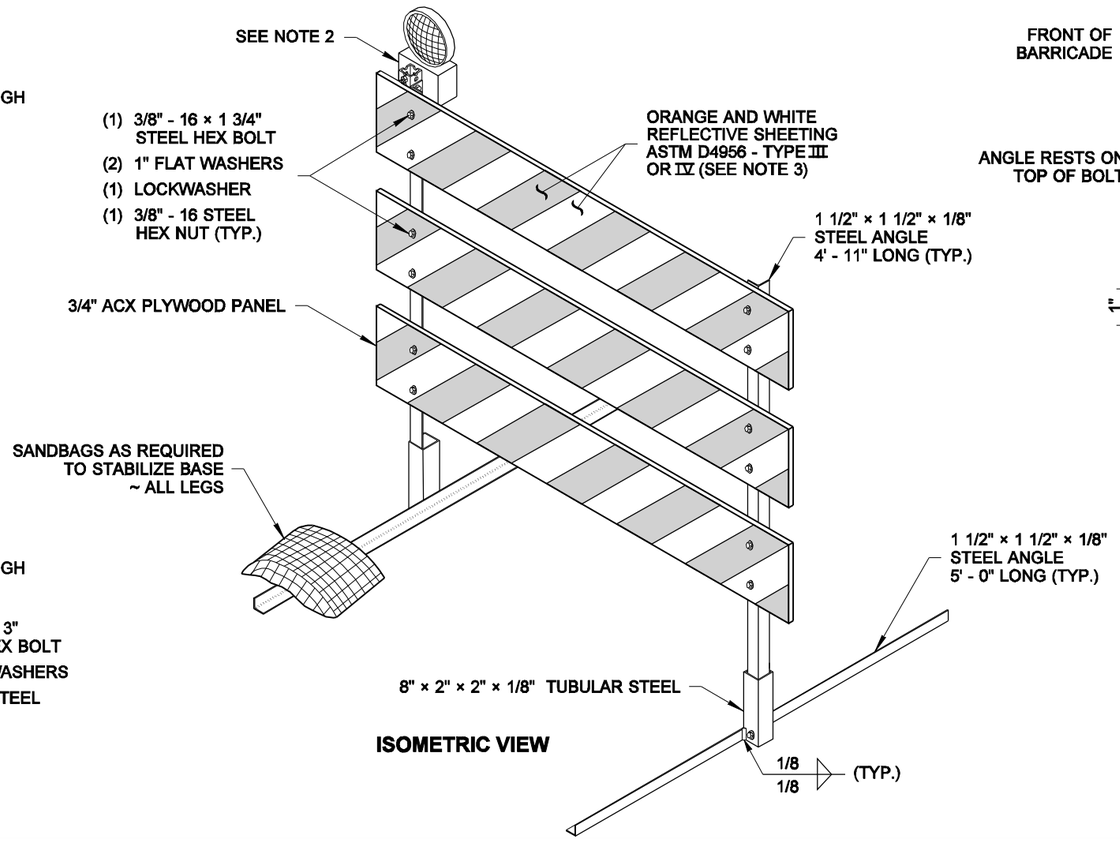
1. All fasteners may be zinc plated, galvanized or stainless steel. All steel angle and tubular steel shall be hot-rolled, high carbon steel, painted or galvanized.
2. Install one lightweight Type A Low-Intensity flashing warning light on the traffic side of the barricade. Install two Type A Low-Intensity flashing warning lights per barricade when the barricades are used to close a roadway. Attach the light to the barricade according to the light manufacturer's recommendations or use the details shown on this plan.
3. Stripes on barricade rails shall be alternating orange and white retroreflective stripes (sloping downward at an angle of 45 degrees in the direction traffic is to pass).
4. The Type 3 barricade design shown on this plan meets the crash test requirements of NCHRP 350. Alternative designs may be approved if they conform to the NCHRP 350 crash test criteria and the MUTCD.
5. When a sign is mounted on the barricade, it shall be securely bolted to at least two plywood panels. The top of the sign shall not be higher than the top panel of the barricade.
6. When sandbags are used in freezing weather, Urea fertilizer shall be mixed with the sand in a quantity to prevent the sand from freezing.



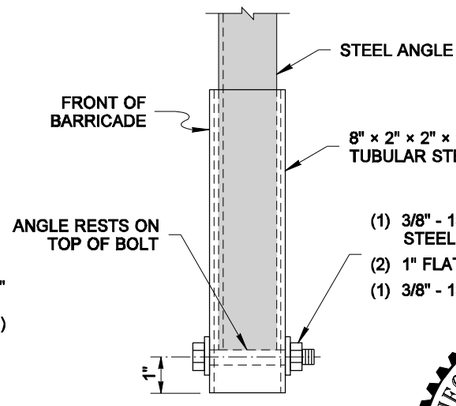
ATTACHMENT DETAIL A



ATTACHMENT DETAIL B



ISOMETRIC VIEW



DETAIL C

THEODORE J. TREPANIER
STATE OF WASHINGTON
25335
REGISTERED
PROFESSIONAL ENGINEER

EXPIRES AUGUST 9, 2007

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TYPE 3 BARRICADE

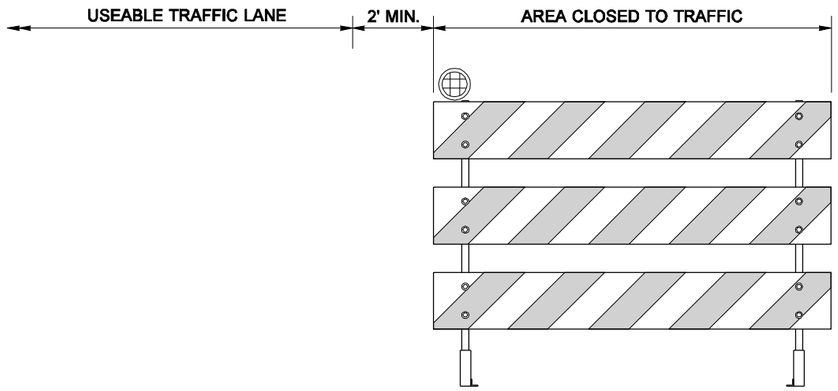
STANDARD PLAN K-80.20-00

SHEET 1 OF 2 SHEETS

APPROVED FOR PUBLICATION

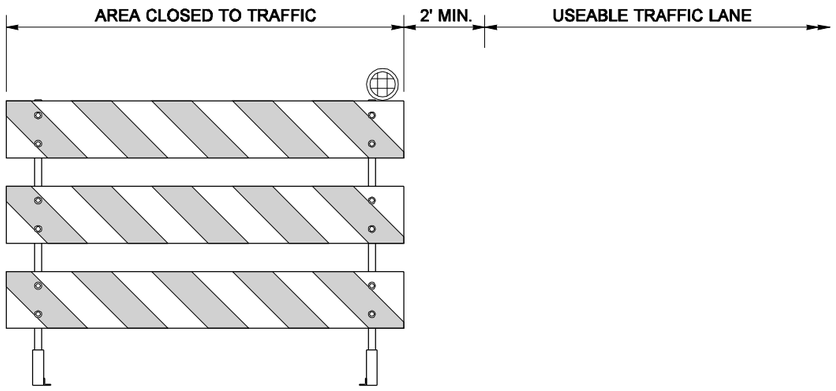
Kevin J. Dayton — STATE DESIGN ENGINEER — *12-20-06* — DATE

Washington State Department of Transportation

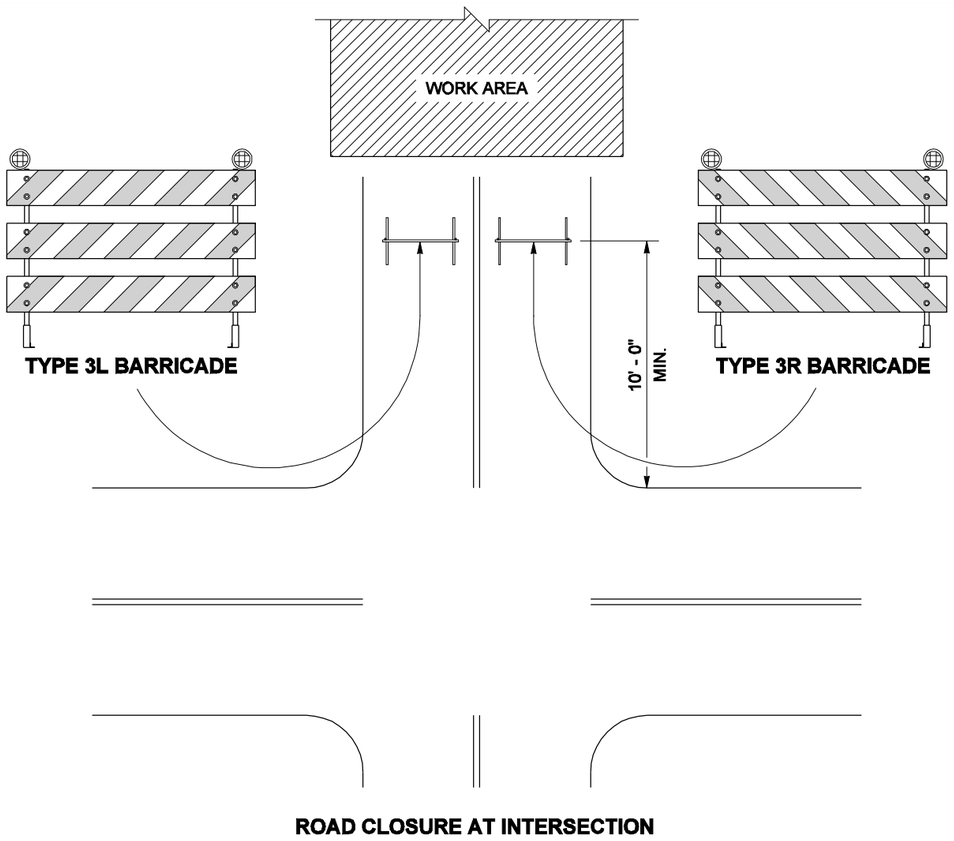


TYPE 3L BARRICADE

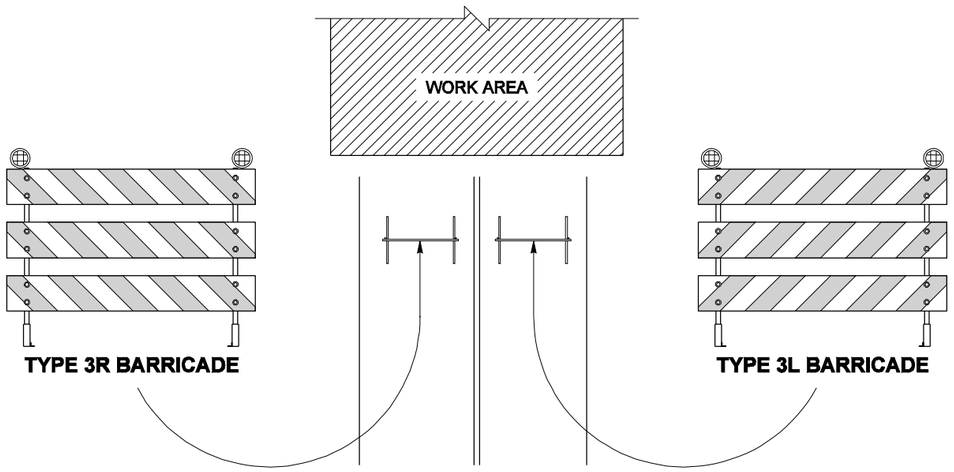
STRIPES ON THE BARRICADES SHALL SLOPE DOWNWARD IN THE DIRECTION TRAFFIC IS TO PASS



TYPE 3R BARRICADE



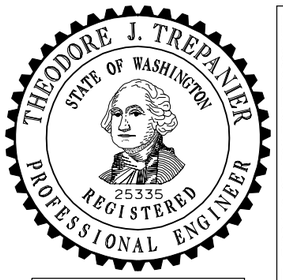
ROAD CLOSURE AT INTERSECTION



ROAD CLOSURE AT OTHER LOCATIONS

BARRICADE PLACEMENT

DRAWN BY: LISA CYFORD



EXPIRES AUGUST 9, 2007

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TYPE 3 BARRICADE

STANDARD PLAN K-80.20-00

SHEET 2 OF 2 SHEETS

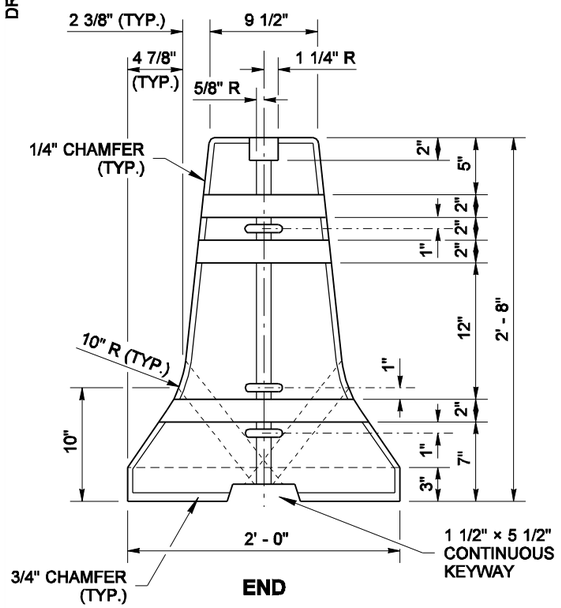
APPROVED FOR PUBLICATION

Kevin J. Dayton — STATE DESIGN ENGINEER

12-20-06 — DATE

Washington State Department of Transportation

DRAWN BY: MARK SUJKA



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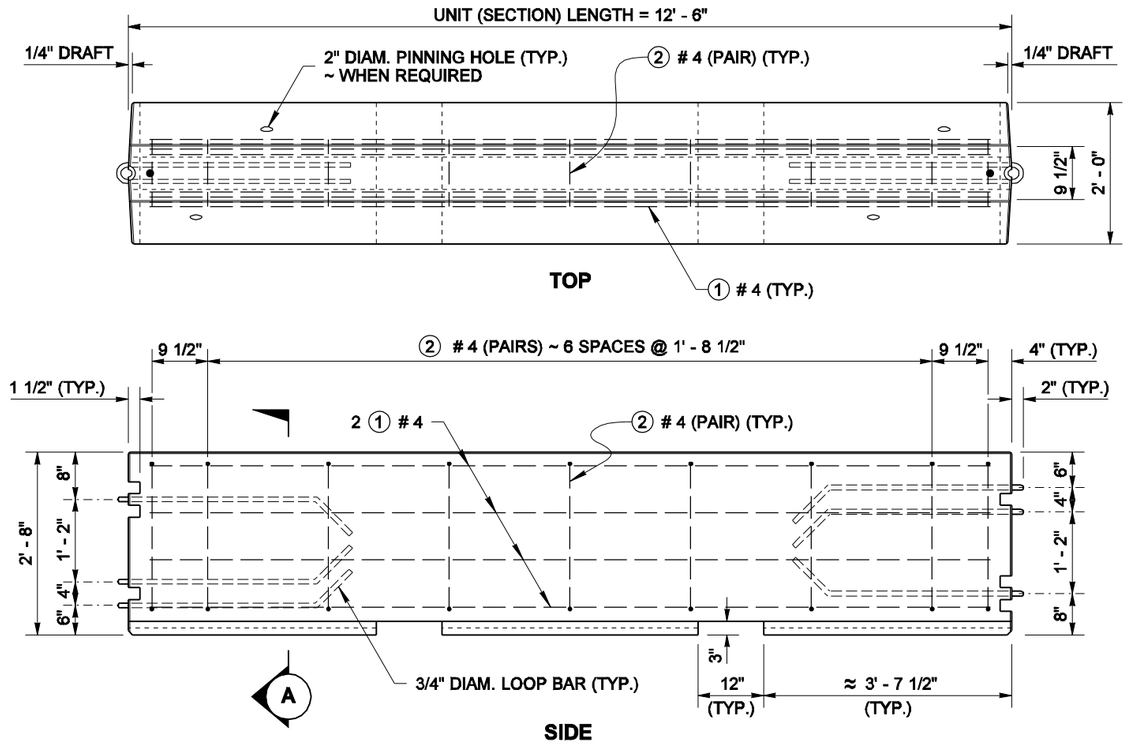


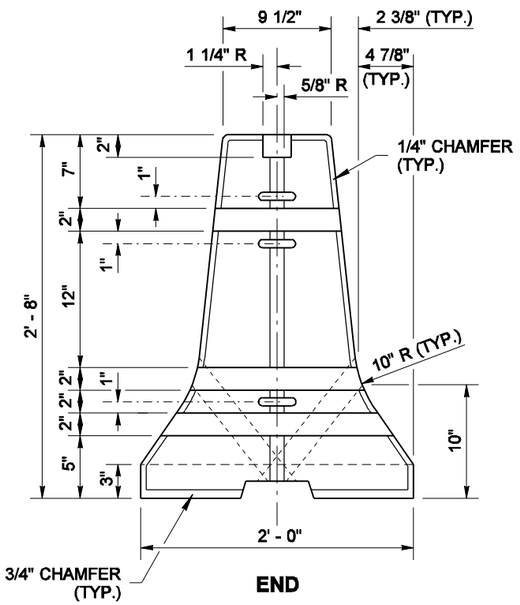
TOP

SIDE

NOTES

1. The reinforcing steel details for the NARROW BASE barrier are the same as those shown for the 2' wide barrier except that the bars along the vertical face run vertically with a 1 1/2" clearance.

2. The vertical dimensions for the slots and loop bar locations on the NARROW BASE barrier are the same as those shown on the END views of the 2' wide barrier.



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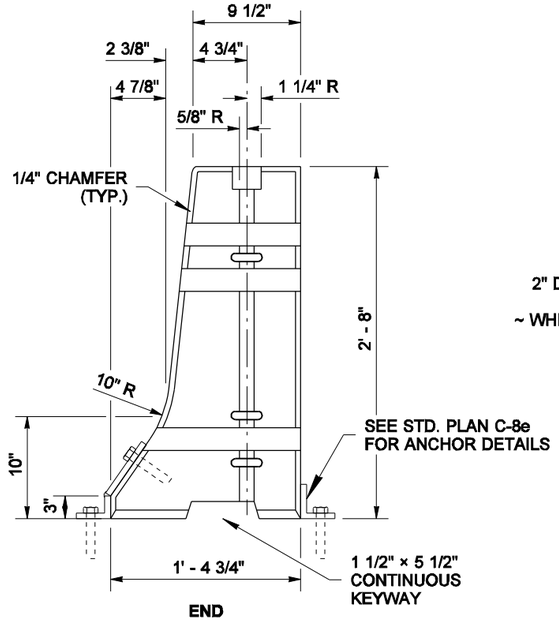
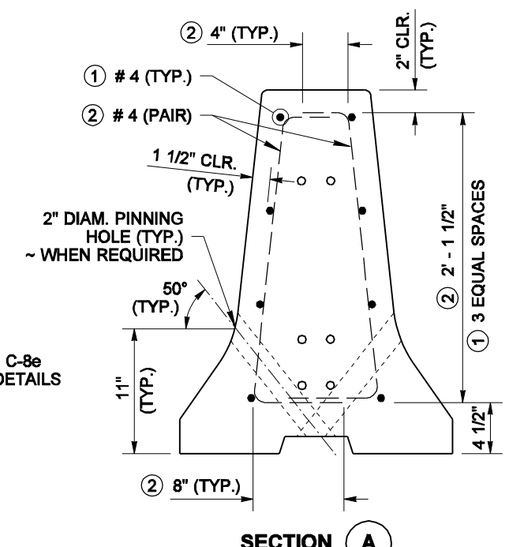
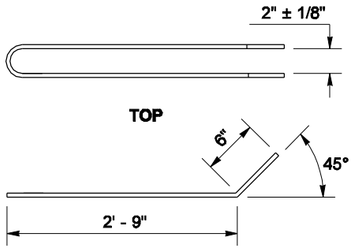


END

NARROW BASE



SECTION (A)



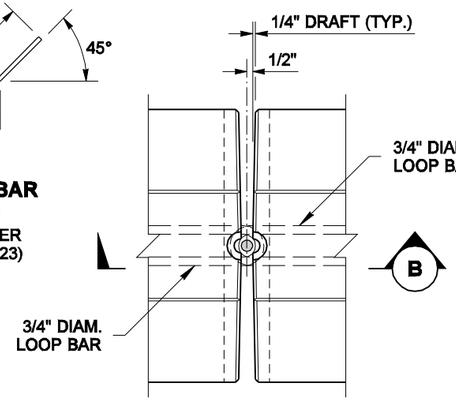
TOP

SIDE

ALTERNATIVE LOOP BAR

3/4" DIAM. (ASTM A 36)

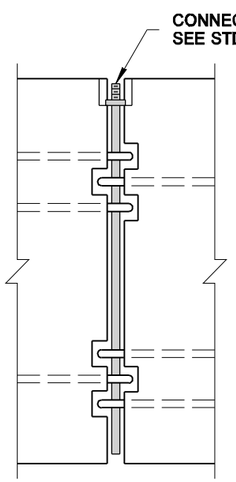
HOT DIP GALVANIZE AFTER FABRICATION (ASTM A 123)



TOP

END DETAIL

JOINING TWO BARRIER SEGMENTS



SECTION (B)

RICHARD BARSTOW ALBIN
STATE OF WASHINGTON
34042
REGISTERED
PROFESSIONAL ENGINEER

EXPIRES JULY 24, 2008

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ALTERNATIVE TEMPORARY CONC. BARRIER (F-SHAPE)

STANDARD PLAN K-80.30-00

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

Ken L. Smith — STATE DESIGN ENGINEER

02-21-07 — DATE

Washington State Department of Transportation