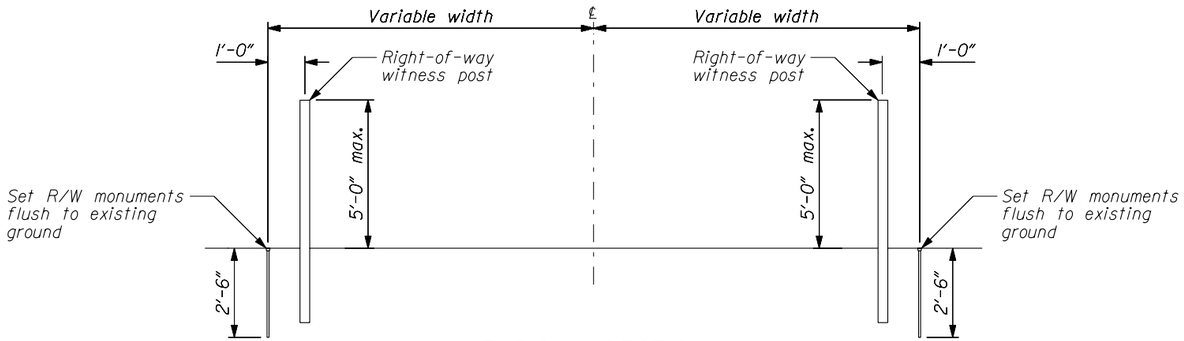
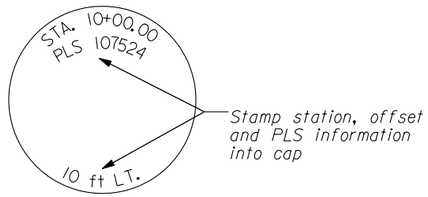
STATE	PROJECT	SHEET NUMBER



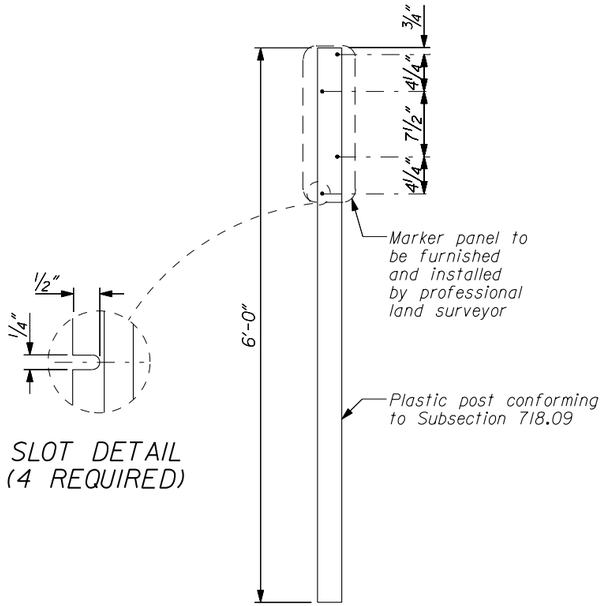
TYPICAL SECTION
RIGHT-OF-WAY MONUMENTATION



CAP DETAIL

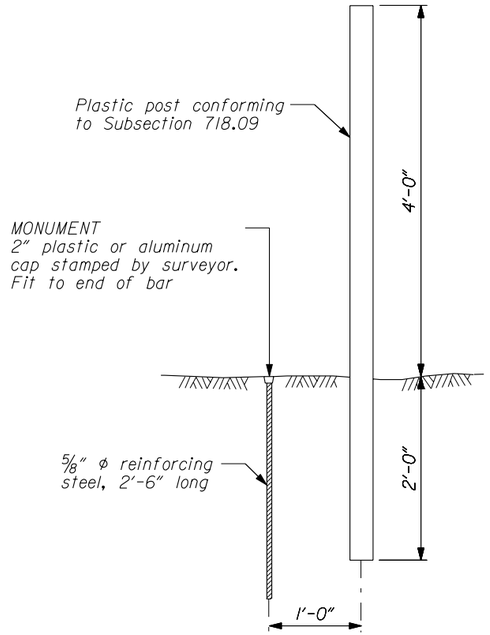
NOTE:

1. Right-of-Way Witness Post:
   Set a 6 ft long flexible plastic post. Right-of-Way witness posts should be brown, green or other suitable colors to match surroundings. Attach a "Survey Marker Witness" plaque to the post. Station, offset and PLS date of survey should be permanently attached to the front of the post facing the designed alignment.
2. Witness post to be used when Right-of-Way witness post assembly is required.
3. Set monuments using a professional land surveyor according to the requirements of the state code.
4. Station and distances based on Right-of-Way centerline.
5. Install markers so that the center of the cap is not more than 1/2" from the point established.

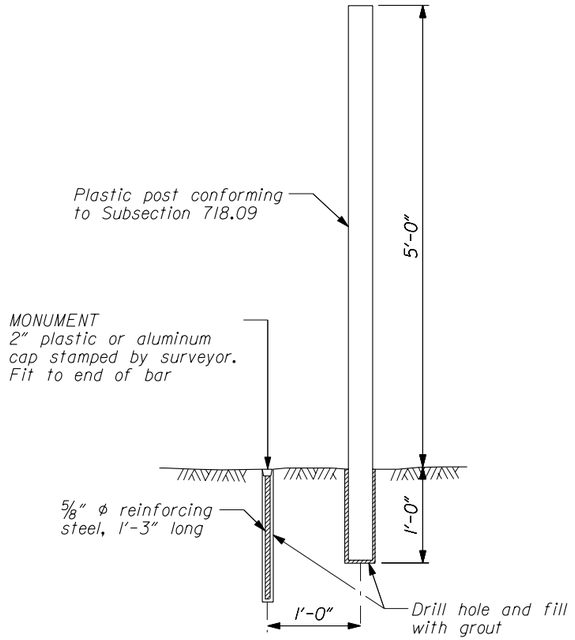


SLOT DETAIL
(4 REQUIRED)

RIGHT-OF-WAY WITNESS POST
ASSEMBLY DETAIL



RIGHT-OF-WAY MONUMENT
AND WITNESS POST
EARTH INSTALLATION



RIGHT-OF-WAY MONUMENT
AND WITNESS POST
SOLID ROCK INSTALLATION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

DETAIL

RIGHT-OF-WAY MONUMENTATION

DETAIL APPROVED FOR USE 5/2003	DETAIL
REVISED:	W621-1

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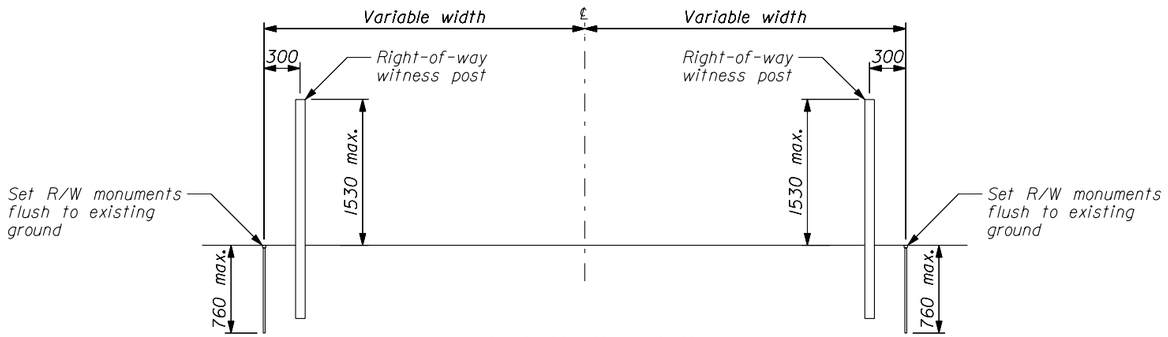
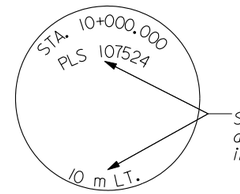
STATE	PROJECT	SHEET NUMBER



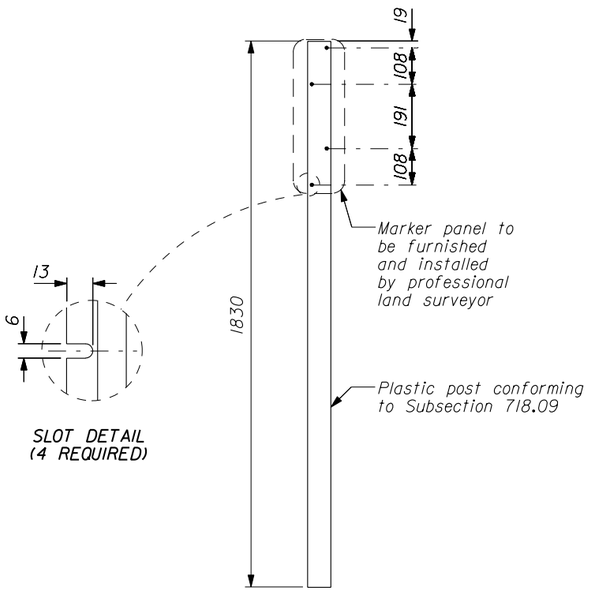
TYPICAL SECTION
RIGHT-OF-WAY MONUMENTATION



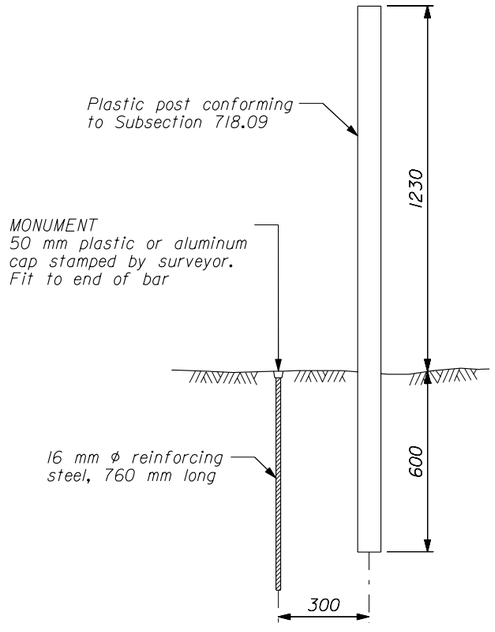
CAP DETAIL

NOTE:

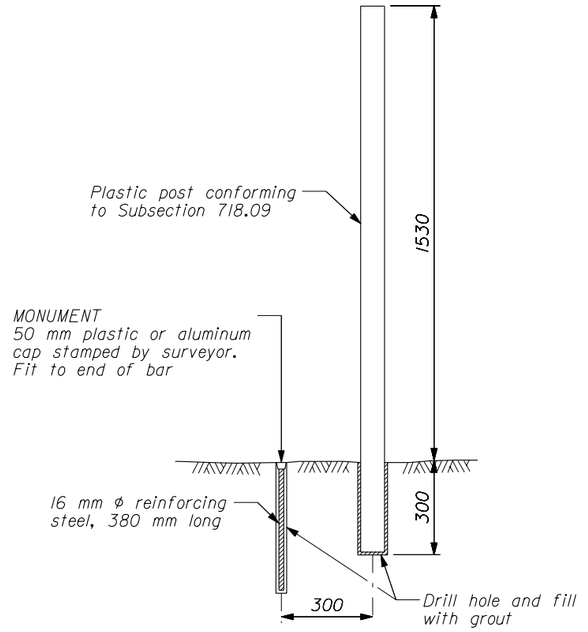
1. Right-of-Way Witness Post:
   Set a 1830 mm long flexible plastic post. Right-of-Way witness posts should be brown, green or other suitable colors to match surroundings. Attach a "Survey Marker Witness" plaque to the post. Station, offset and PLS date of survey should be permanently attached to the front of the post facing the designed alignment.
2. Witness post to be used when Right-of-Way witness post assembly is required.
3. Set monuments using a professional land surveyor according to the requirements of the state code.
4. Station and distances based on Right-of-Way centerline.
5. Install markers so that the center of the cap is not more than 13 mm from the point established.
6. Dimensions not labeled are in millimeters.



RIGHT-OF-WAY WITNESS POST
ASSEMBLY DETAIL



RIGHT-OF-WAY MONUMENT
AND WITNESS POST
EARTH INSTALLATION



RIGHT-OF-WAY MONUMENT
AND WITNESS POST
SOLID ROCK INSTALLATION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

METRIC DETAIL

RIGHT-OF-WAY MONUMENTATION

DETAIL APPROVED FOR USE 5/2003	DETAIL
REVISED:	WM621-1

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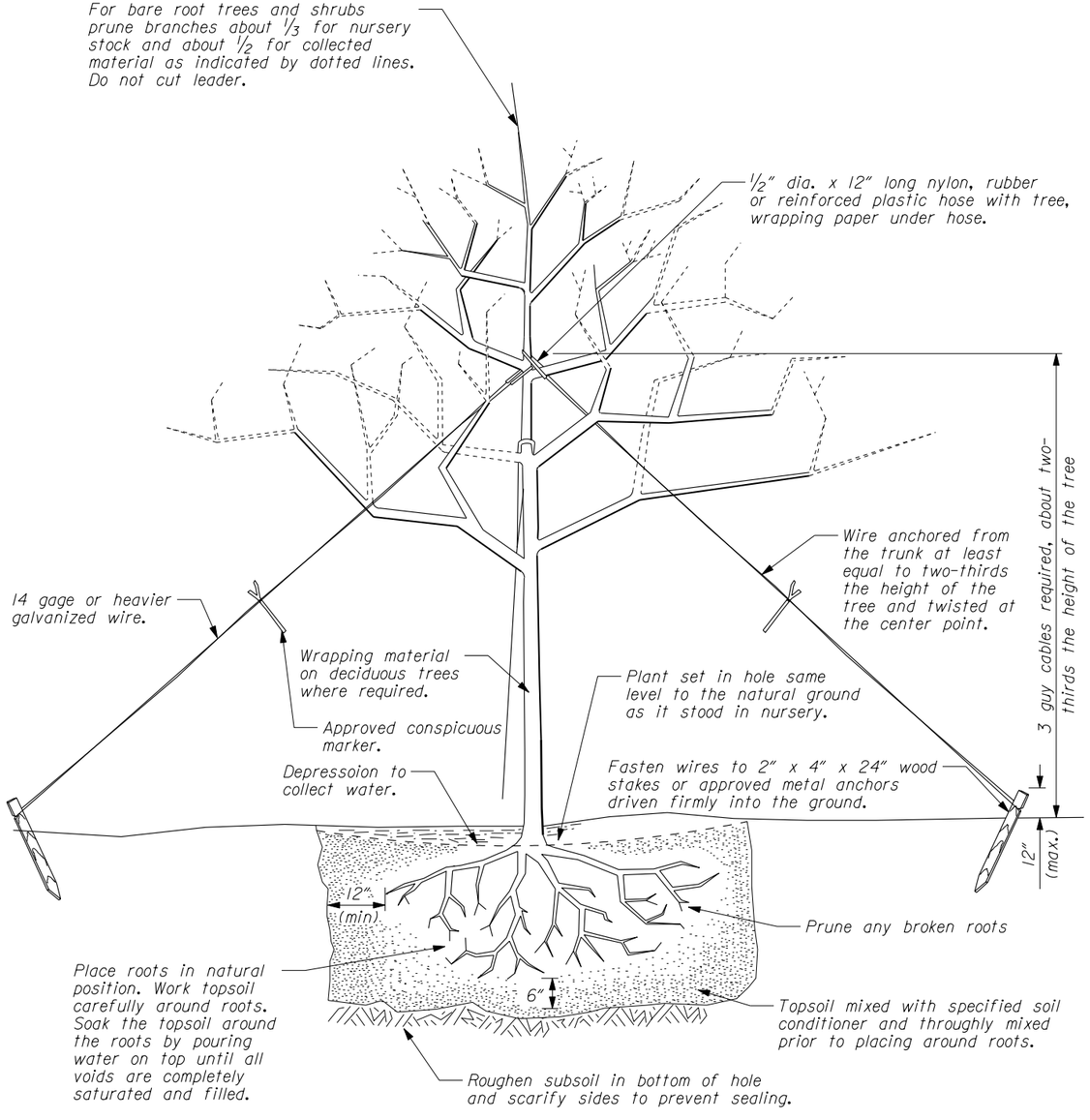
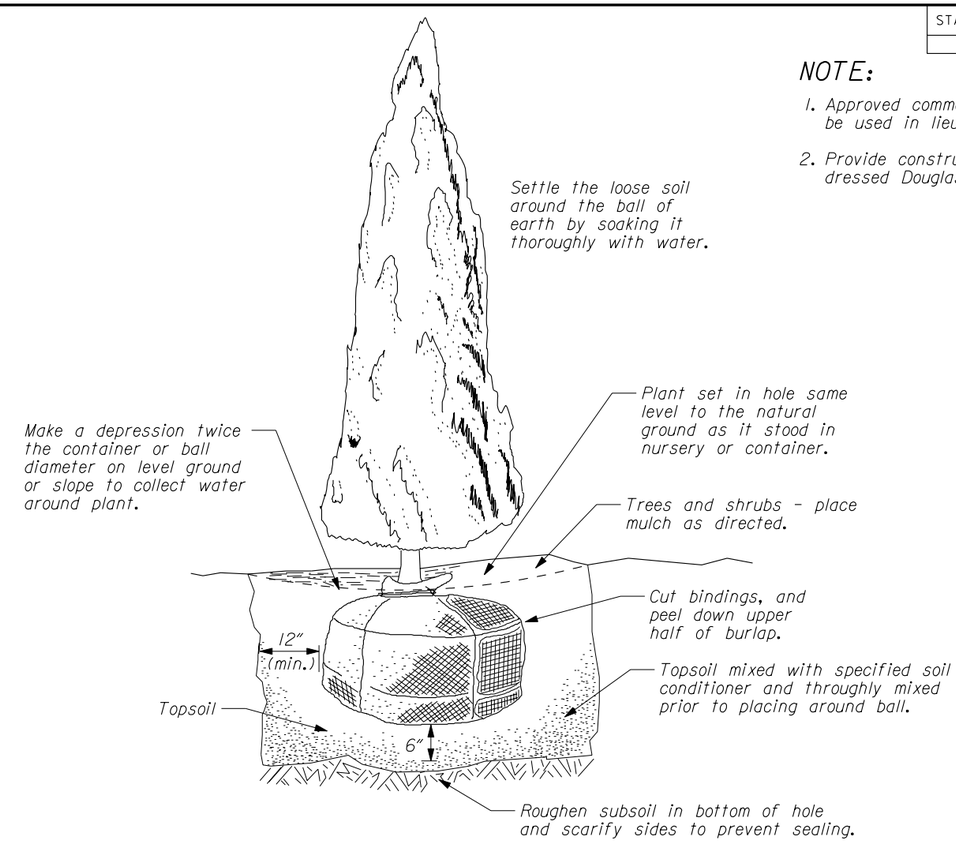
STATE	PROJECT	SHEET NUMBER



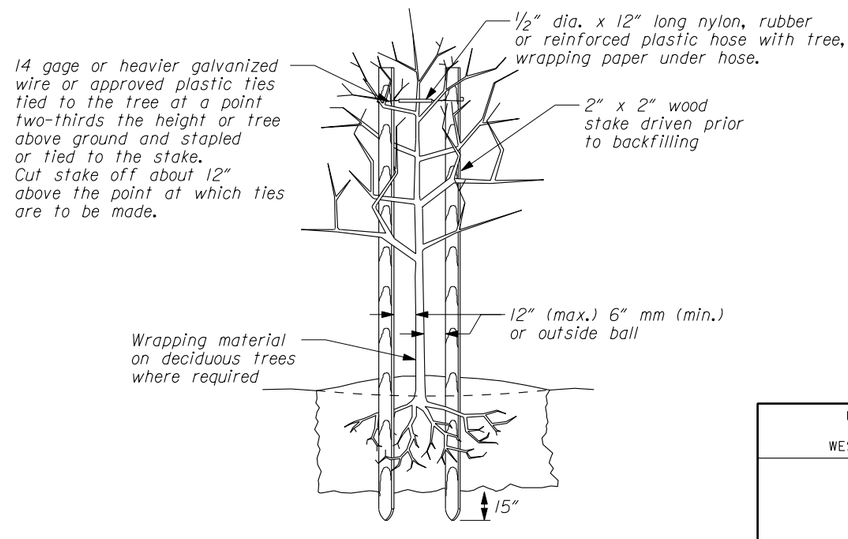
METHOD OF PLANTING BARE ROOT TREES AND SHRUBS AND METHOD OF GUYING DECIDUOUS TREES OVER 12' AND CONIFERS OVER 4'

NOTE:

1. Approved commerical plant ties may be used in lieu of hose and wire guying.
2. Provide construction grade, rough or dressed Douglas fir or pine stakes.



METHOD OF PLANTING CONTAINER OR BALLED AND BURLAPPED TREES AND SHRUBS



METHOD OF STAKING DECIDUOUS TREES UNDER 12'

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

DETAIL

TREES AND SHRUBS PLANTING METHODS

DETAIL APPROVED FOR USE 3/2003

REVISED:

DETAIL W626-50

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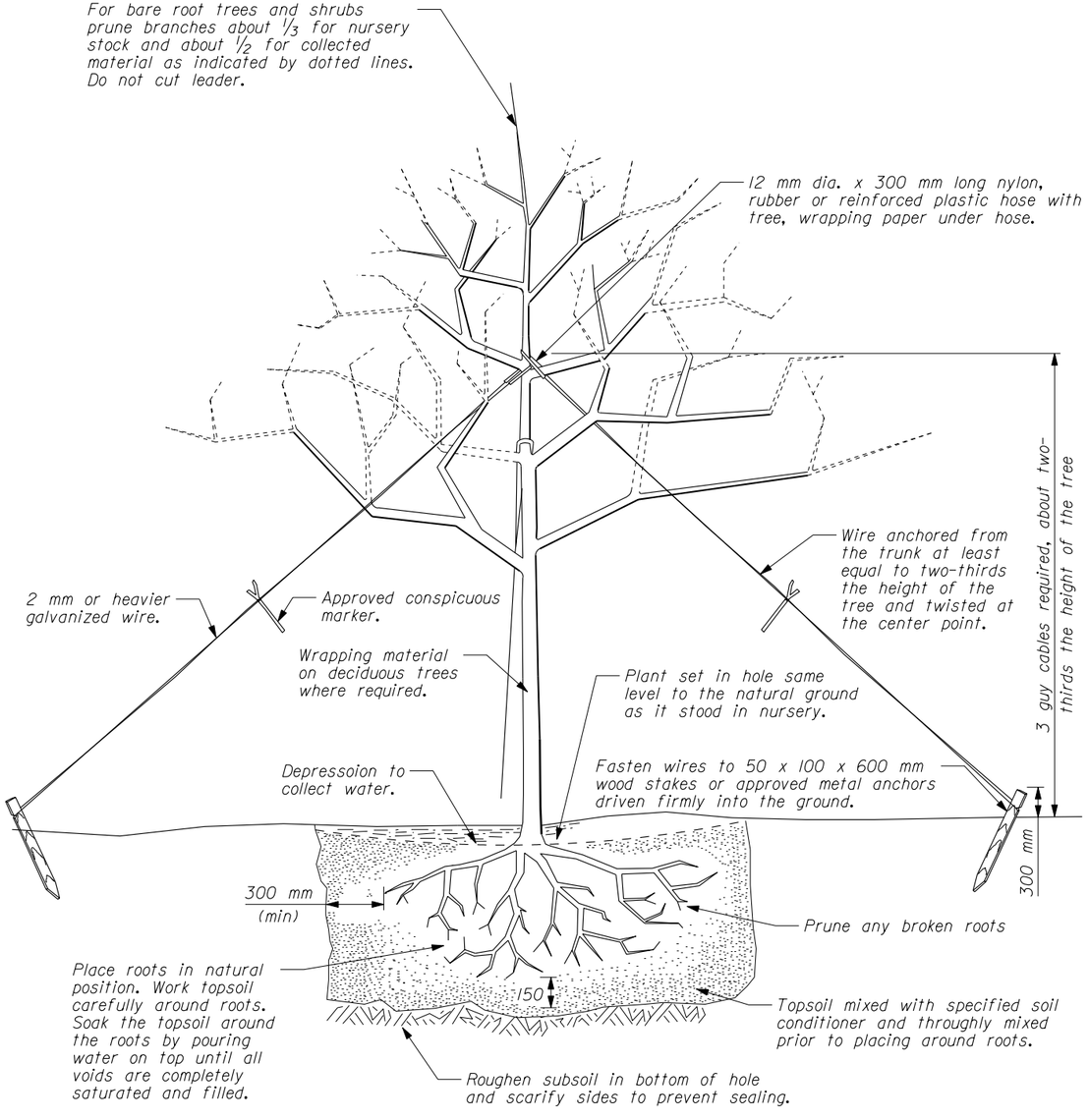
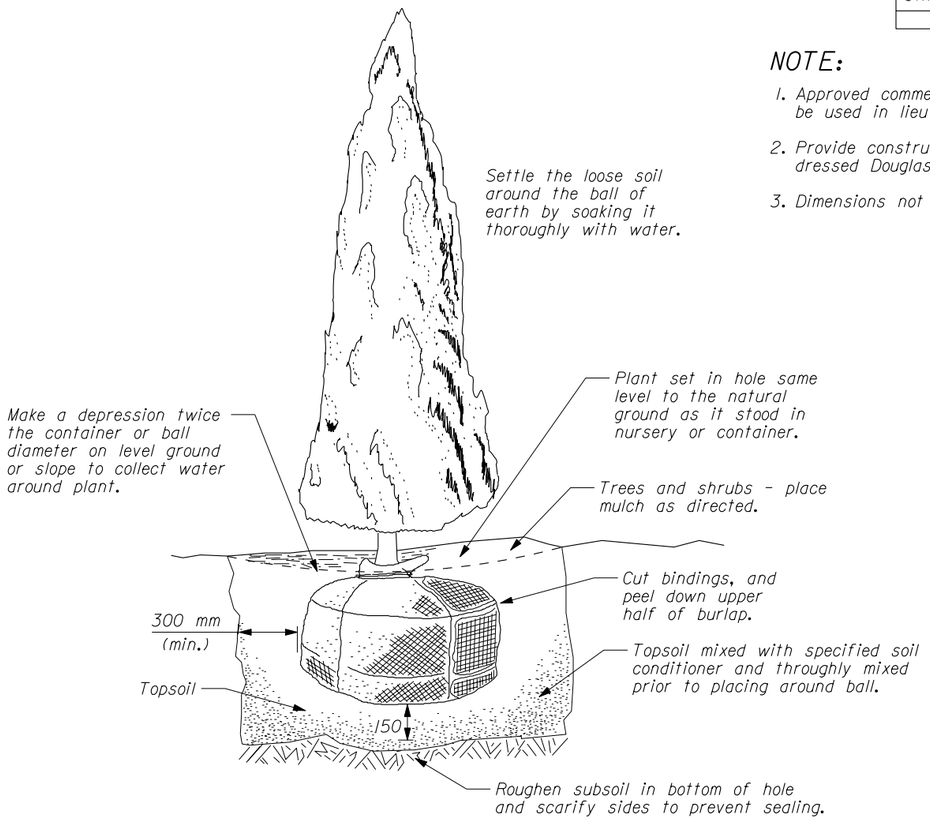
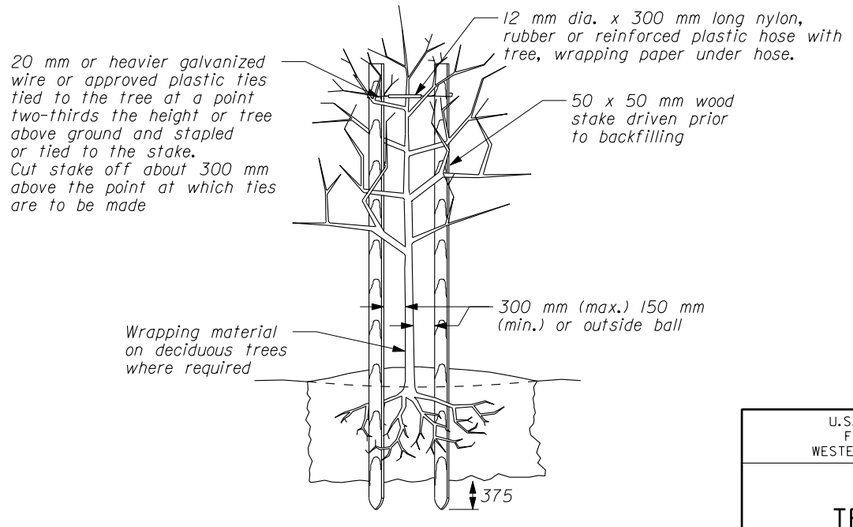
STATE	PROJECT	SHEET NUMBER



METHOD OF PLANTING BARE ROOT TREES AND SHRUBS AND METHOD OF GUYING DECIDUOUS TREES OVER 3.6 m AND CONIFERS OVER 1.2 m



METHOD OF PLANTING CONTAINER OR BALLED AND BURLAPPED TREES AND SHRUBS



METHOD OF STAKING DECIDUOUS TREES UNDER 3.6 m

NO SCALE

NOTE:

1. Approved commerical plant ties may be used in lieu of hose and wire guying.
2. Provide construction grade, rough or dressed Douglas fir or pine stakes.
3. Dimensions not labeled are in millimeters.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

METRIC DETAIL

TREES AND SHRUBS PLANTING METHODS

DETAIL APPROVED FOR USE 3/1996

REVISED: 3/2003

DETAIL WM626-50

3/19/2003

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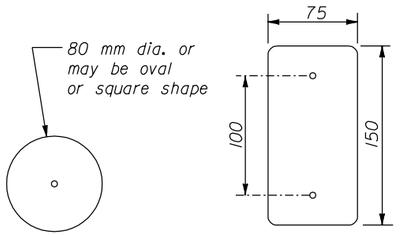
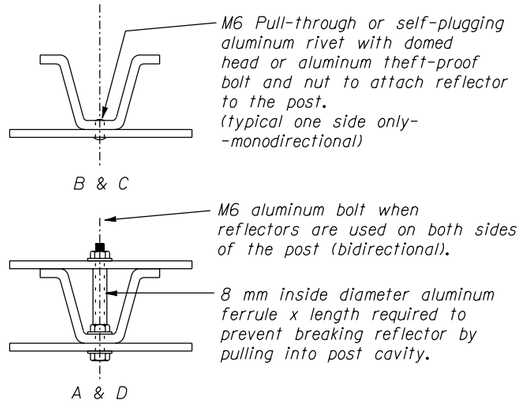
STATE	PROJECT	SHEET NUMBER

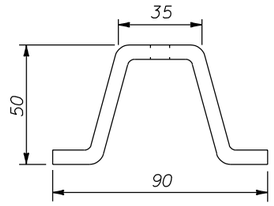


REFLECTOR DETAILS

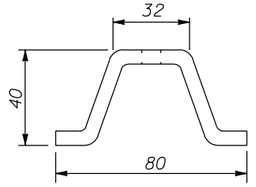
DELINEATION MARKER REFLECTOR		
TYPE	COLOR OF REFLECTOR	REFLECTORIZED
A	White	Front & Rear
B	White	Front
C	Yellow	Front
D	Yellow	Front & Rear



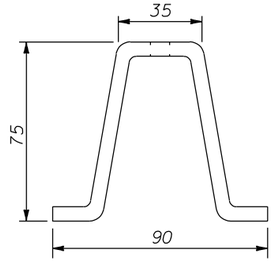
ATTACHMENT DETAIL



STEEL POST
3.95 kg/m

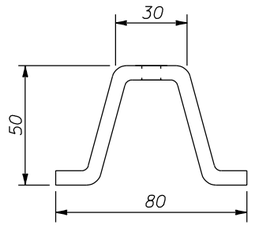


STEEL POST
2.97 kg/m



ALUMINUM POST
2.68 kg/m

HEAVY CHANNEL POSTS

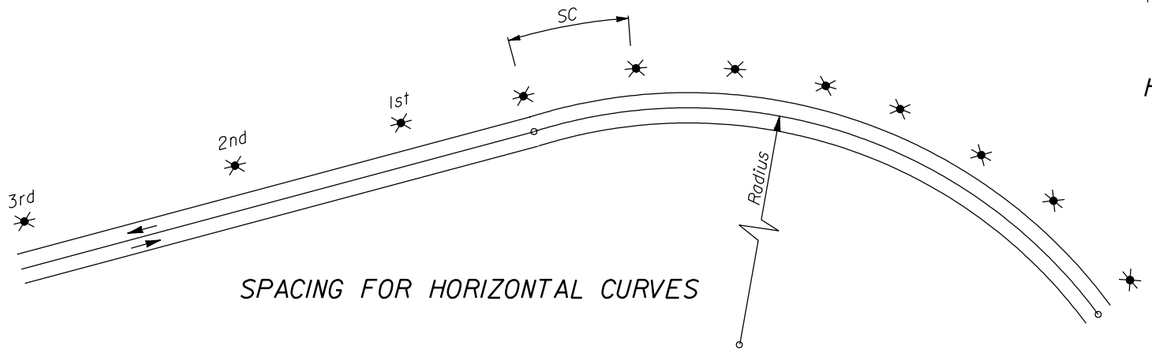


ALUMINUM POST
1.33 kg/m

LIGHT CHANNEL POSTS

NOTE:

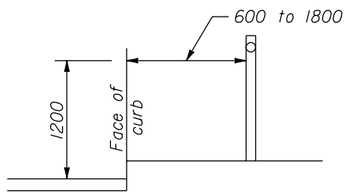
1. Dimensions not labeled are in millimeters.
2. Vary the post spacing up to 1/8 of the spacing shown to clear driveways, cross roads, intersections or ramps. Eliminate the post if the variation is exceeded.
3. Dimensions of channel posts shown indicate general design only and may vary slightly among the manufacturers.
4. Rectangular 75 x 150 mm reflectors may be used in lieu of double disk if required.
5. Offset delineators 600 mm unless otherwise shown.
6. Delineator reflector colors shall be as shown on the plans.
7. Spacing on tangents should be 150 m±. Maximum spacing is 160 m.
8. When the contract does not provide for the construction of the ultimate pavement, allow for the thickness of base and pavement to be placed later when establishing the elevation of the traffic delineators.
9. On two way roads, stagger markers on opposite sides of the road.
10. Furnish hardware in the metric sizes shown. Equivalent imperial sizes may be used when metric sizes are not available.



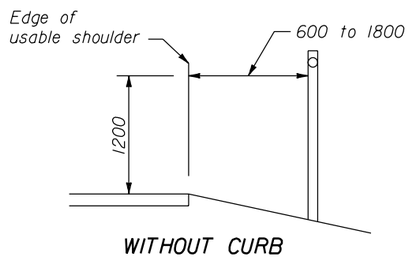
SPACING FOR HORIZONTAL CURVES

HORIZONTAL CURVES				
RADIUS OF CURVE IN METERS	SPACING ON EACH SIDE OF ROADWAY IN METERS			
	ON CURVE *	IN ADVANCE OF & BEYOND CURVE		
		1st SPACE	2nd SPACE	3rd SPACE
3000	90	90	90	90
1500	64	90	90	90
1200	57	90	90	90
900	49	90	90	90
600	40	80	90	90
300	28	56	84	90
270	26	52	78	90
240	25	50	75	90
210	23	46	69	90
180	22	44	66	90
150	19	38	57	90
120	17	34	51	90
90	14	28	42	84
75	13	26	39	78
60	11	22	33	66
45	9	18	27	54
30	6	12	18	36
25	6	12	18	36

* Spacing for specific radii not shown may be interpolated from the formula: Spacing = $1.65\sqrt{R-15}$.
The minimum spacing should be 6 m and not exceed 90 m.

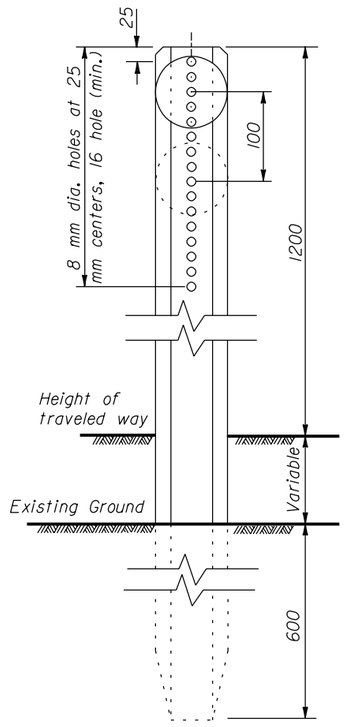


WITH CURB

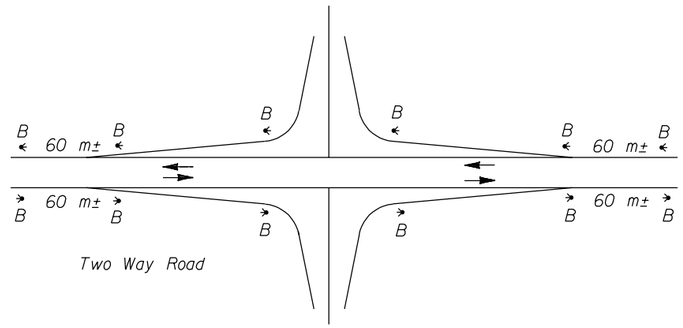


WITHOUT CURB

TYPICAL INSTALLATION



POST DETAIL



ROAD INTERSECTIONS

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

METRIC DETAIL

TRAFFIC DELINEATORS ALASKA PROJECTS

DETAIL APPROVED FOR USE 3/1996

REVISED:

DETAIL WM633-1

13 DEC 2000

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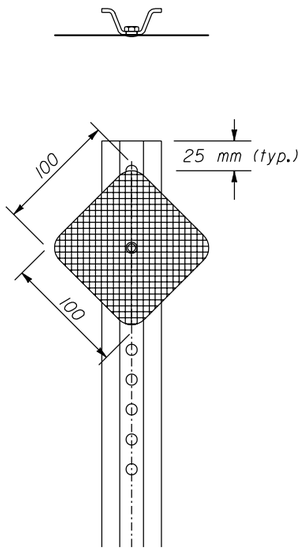
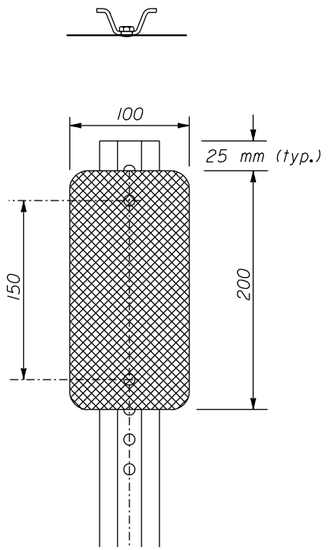
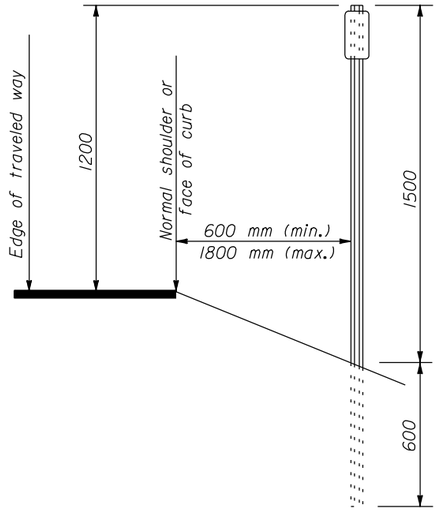
STATE	PROJECT	SHEET NUMBER



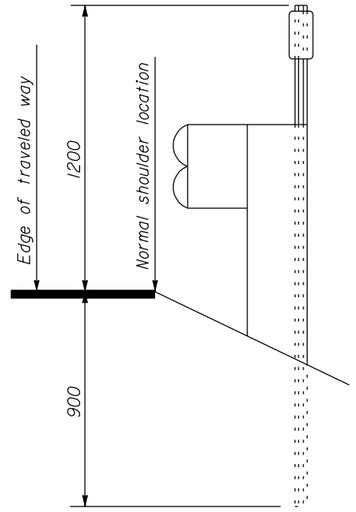
DESIGN A
(WHITE)



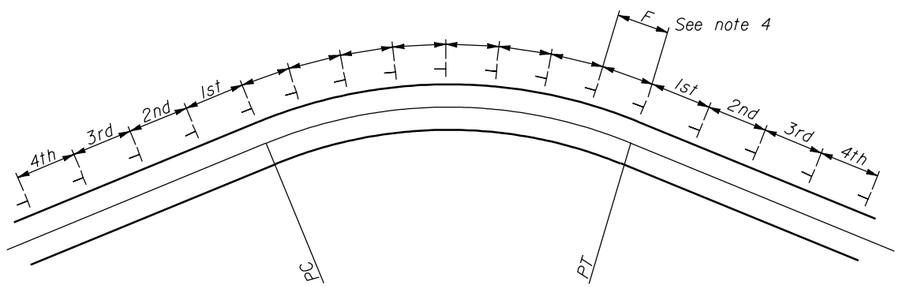
DESIGN B
(YELLOW)



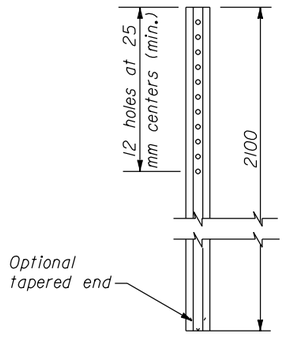
TYPICAL INSTALLATION

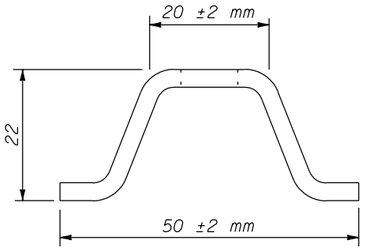


TYPICAL INSTALLATION WITH BEAM TYPE GUARD RAIL



HORIZONTAL CURVE
(SEE TABLE FOR SPACING VALUES)

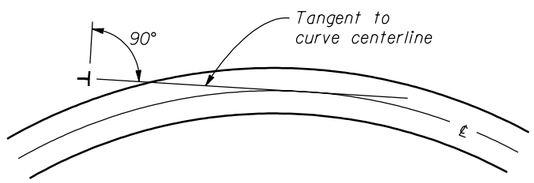




DELINEATOR POST DETAILS

RIGID STEEL OR ALUMINUM
(All holes 9.5 mm diameter)

HORIZONTAL CURVES					
RADIUS OF CURVE	SPACING ON OUTSIDE OF CURVE IN METERS				
	ON CURVE	IN ADVANCE OF & BEYOND CURVE			
		1st SPACE	2nd SPACE	3rd SPACE	4th SPACE
>3000	90	120	120	120	120
2000-3000	90	120	120	120	120
900-2000	69	120	120	120	120
600-900	49	100	120	120	120
450-600	40	40	80	120	120
290-450	34	34	65	120	120
220-290	27	27	55	120	120
140-220	23	23	45	90	120
90-140	18	18	35	90	120
<90	14	14	8	85	120



SIGN INSTALLATION ANGLE

NOTE:

1. Dimensions not labeled are in millimeters.
2. When the contract does not provide for the construction of the ultimate pavement, allow for the thickness of base and pavement to be placed later when establishing the elevation or the traffic delineators.
3. Mount delineators on metal posts with M5 cadmium plated bolt(s). Drill or punch a minimum of twelve 9.5 mm diameter holes on 25 mm centers from the top of the post. 9.5 mm square holes may be used with large-headed bolt or an appropriate washer. Jam threads after tightening the nut to prevent removal.
4. Place delineators at a constant clearance from the edge of pavement except where guardrail or other obstructions interfere. Line up delineators with the inside edge of obstruction. Install delineators located behind beam guard rail so that the delineator post is adjacent to the trailing edge of the nearest guard rail post. (See typical installation with beam type guard rail).
5. If "F" distance is greater than 6 meters add one regular delineator in at spacing on curve distance. Vary the post spacing up to 1/8 of the spacing shown to clear driveways, cross roads, intersections or ramps. Eliminate the post if the variation is exceeded.
6. All delineator reflectors have 20 mm corner radii.
7. Manufacture posts from flanged U-channel sections of steel meeting the requirements of ASTM A 36 and weighing not less than 1.86 kilograms per meter or aluminum meeting the requirements of ASTM B 221, Alloy 6061-T6, with a minimum thickness of 3.2 mm. After fabrication, galvanize steel posts in accordance with ASTM A 123.
8. Place the Design B delineators at the entrance of road approaches and the Design A delineators on the outside radius of the main roadway curves.
9. When a route has a current ADT of 900 or greater, continuously delineate the roadway along the shoulder by means of post mounted reflectors. Spacing on tangent sections is 120 meters.
10. Funish hardware in the metric sizes shown. Equivalent imperial sizes may be used when metric sizes are not available.

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

METRIC DETAIL

TRAFFIC DELINEATORS MONTANA PROJECTS

DETAIL APPROVED FOR USE 3/1996
REVISED: 3/2000

DETAIL
WM633-2

13 DEC 2000
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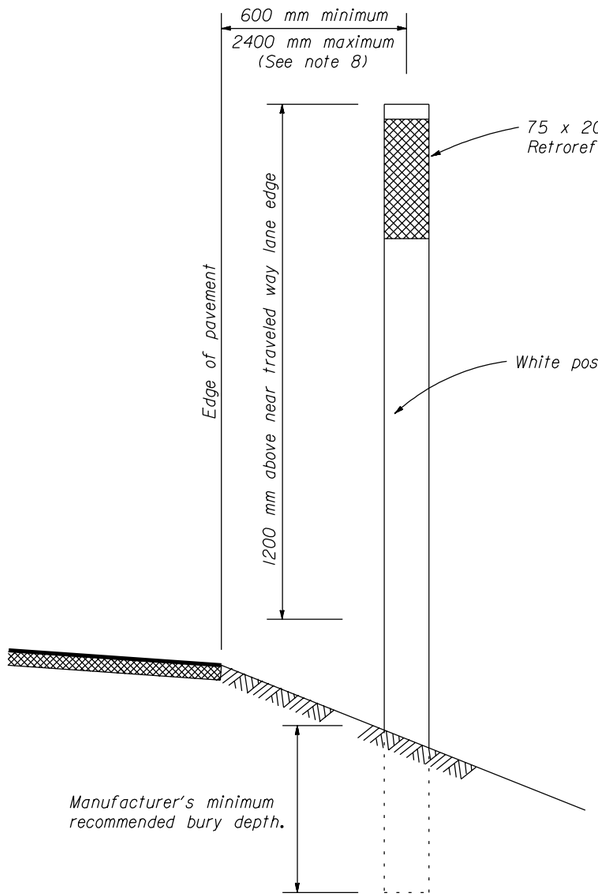
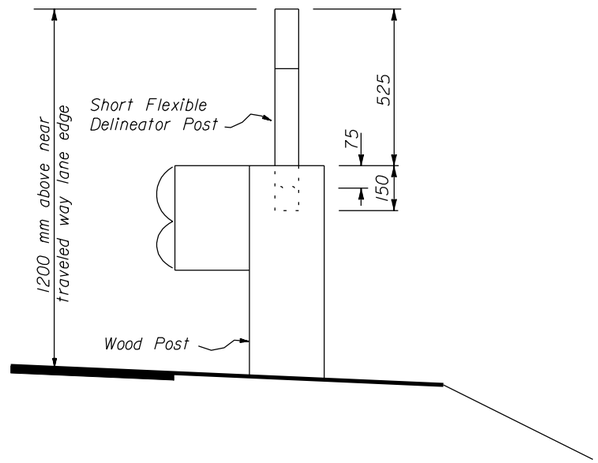
STATE	PROJECT	SHEET NUMBER



FLEXIBLE DELINEATOR
TYPICAL INSTALLATION



TYPE C-4 & CC-4
OPTIONAL INSTALLATION
WITH BEAM TYPE GUARDRAIL

Type C-3 = Flexible Post with 75 x 200 mm Silverwhite retroreflective sheeting.

Type D-3 = Flexible Post with 75 x 200 mm Yellow retroreflective sheeting.

Type CC-3 = Flexible Post with 75 x 200 mm Silverwhite retroreflective sheeting on both Front & Back of Post. Used on two-way, two-lane Highways on outside of Horizontal Curves and on Approaches to non-illuminated Intersections.

Type C-4 & CC-4 = Short version of Flexible Post that is attached to Timber Guardrail Posts.

HORIZONTAL CURVES				
RADIUS OF CURVE IN METERS	SPACING ON OUTSIDE OF CURVE IN METERS			
	ON CURVE	IN ADVANCE OF & BEYOND CURVE		
		1st SPACE	2nd SPACE	3rd SPACE
15	6	12	18	36
45	9	18	27	54
60	11	22	33	66
75	13	26	39	78
90	14	28	42	84
120	17	34	51	90
150	19	38	57	90
180	22	44	66	90
210	23	46	69	90
240	25	50	75	90
270	26	52	78	90
300	28	56	84	90

Spacing for specific radii not shown may be interpolated from the formula: Spacing = $1.65\sqrt{R-15}$.
The minimum spacing should be 6 meters and not exceed 90 meters.

NOTE:

1. Dimensions not labeled are in millimeters.
2. Vary the post spacing up to 1/8 of the spacing shown to clear driveways, cross roads, intersections or ramps. Eliminate the post if the variation is exceeded.
3. Install all delineators with reflectors facing adjacent to on-coming traffic.
4. Place delineators 600 mm from the edge of design shoulder unless otherwise specified.
5. Install delineators behind the rail at guardrail locations. Either drive the delineator post C-3 or CC-3 in line with the guardrail posts or install a post C-4 or CC-4.
6. Fasten delineator Post C-4 or CC-4 to the guardrail post with two 20d galvanized nails, or two M6 x 50 mm lag screws with washers, as near to the centerline of the, post as possible. Any approved method submitted by the guide post manufacturer is also acceptable.
7. When the contract does not provide for the construction of the ultimate pavement, allow for the thickness of base and pavement to be placed later when establishing the elevation of the traffic delineators.
8. Use the latest edition of the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD) as a guide for delineation layout.
9. Furnish hardware in the metric sizes shown. Equivalent imperial sizes may be used when metric sizes are not available.

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

METRIC DETAIL

TRAFFIC DELINEATORS WASHINGTON PROJECTS

DETAIL APPROVED FOR USE 3/1996

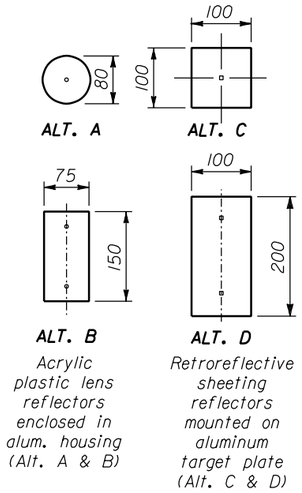
REVISED:

DETAIL WM633-3

13 DEC 2000

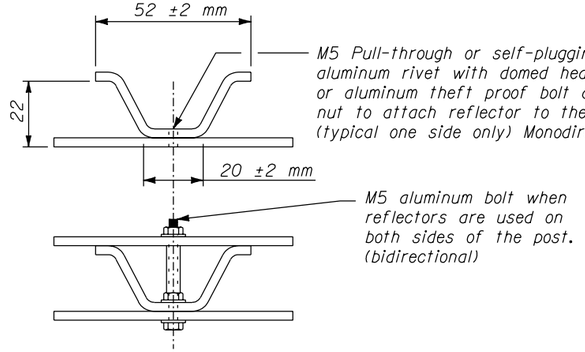
F:\standraw\metric\details\wm63303.dgn

STATE	PROJECT	SHEET NUMBER

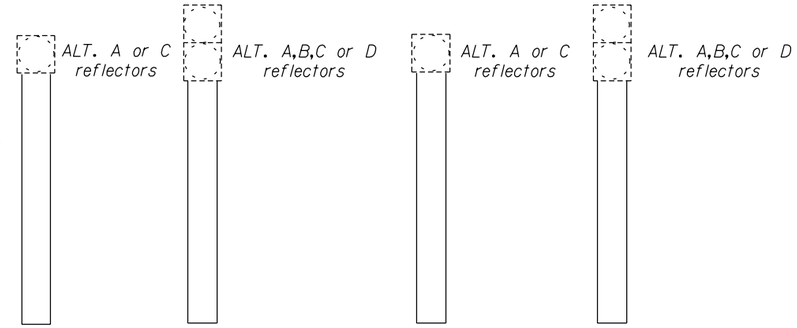


Acrylic plastic lens reflectors enclosed in alum. housing (Alt. A & B)

Retroreflective sheeting reflectors mounted on aluminum target plate (Alt. C & D)



ATTACHMENT DETAIL
For "R" post



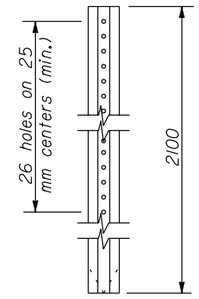
TYPE 1 MONODIRECTIONAL "R" or "F"

TYPE 2 MONODIRECTIONAL "R" or "F"

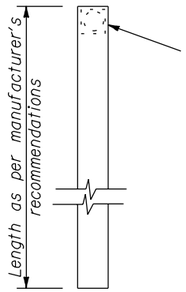
TYPE 3 BIDIRECTIONAL "R" or "F"

TYPE 4 BIDIRECTIONAL "R" or "F"

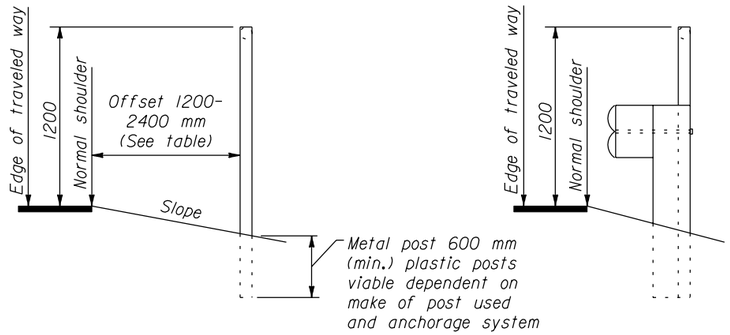
DELINEATORS



RIGID STEEL OR ALUMINUM
(ALL HOLES 6.5 mm DIAMETER)

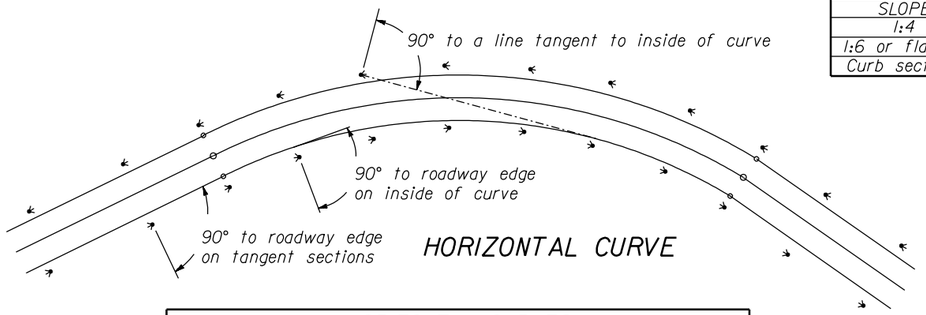


POST DETAIL "F"
FLEXIBLE, SELF ERECTING OR YIELDING



TYPICAL INSTALLATION

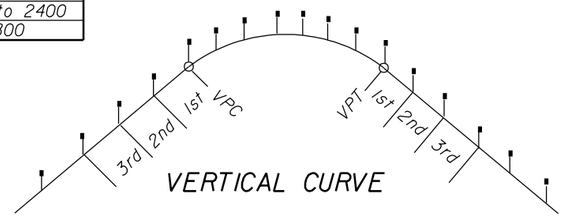
LATERAL PLACEMENT TABLE	
SLOPE	OFFSET
1:4	1200 to 1800
1:6 or flatter	1800 to 2400
Curb section	1800



HORIZONTAL CURVE

HORIZONTAL CURVES				
RADIUS OF CURVE	SPACING ON EACH SIDE OF ROADWAY IN METERS			
	ON CURVE	BEYOND PCS, PSC, PC or PT		
		1st SPACE	2nd SPACE	3rd SPACE
>2000	90	160	160	160
450-2000	45	90	160	160
150-445	30	60	90	160
75-145	25	45	60	160
<75	15	30	45	90

TYPICAL INSTALLATION WITH BEAM TYPE GUARD RAIL



VERTICAL CURVE

CREST VERTICAL CURVES						
K	SPACING ON EACH SIDE OF ROADWAY IN METERS					
	ON CURVE	BEYOND VPC or VPT				
		1st SPACE	2nd SPACE	3rd SPACE	4th SPACE	5th SPACE
OVER - 165	160	160	160	160	160	160
120 - 164	90	160	160	160	160	160
60 - 119	60	90	160	160	160	160
30 - 59	30	45	60	90	160	160
15 - 29	25	30	45	60	90	160
0 - 14	15	25	30	45	60	90

$K = \frac{L}{A}$ where: L=length of vertical curve in meters
A=Algebraic change of grade in percent

NO SCALE

NOTE:

1. Dimensions not labeled are in millimeters.
2. Where delineators is used only on curves, place three delineators before and after the circular portion of the curve.
3. Install delineators located behind beam guardrail so that the delineator post is adjacent to the trailing edge of the nearest guardrail post. (See typical installation with beam type guardrail).
4. If horizontal and vertical curves are combined, use the more restrictive spacing.
5. Where delineators are used on tangents, space the delineators at 160 meters. Begin the tangent spacing beyond the spacing requirements for horizontal and vertical curves.
6. The delineators shall be designated, example: Type IR or Type IF, etc.
   POST DETAIL:
   "R"= Rigid steel or aluminum
   "F"= Flexible, self erecting or yielding.
7. When the contract does not provide for the construction of the ultimate pavement, allow for the thickness of base and pavement to be placed later when establishing the elevation of the traffic delineators.
8. Vary the post spacing up to 1/8 of the spacing shown to clear driveways, cross roads, intersections or ramps. Eliminate the post if the variation is exceeded.
9. Furnish hardware in the metric sizes shown. Equivalent imperial sizes may be used when metric sizes are not available.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

METRIC DETAIL

TRAFFIC DELINEATORS IDAHO PROJECTS

DETAIL APPROVED FOR USE 3/1996

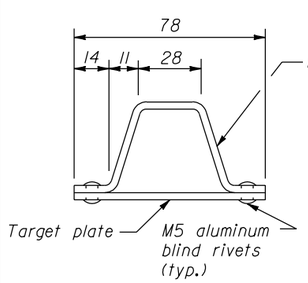
REVISED:

DETAIL WM633-4

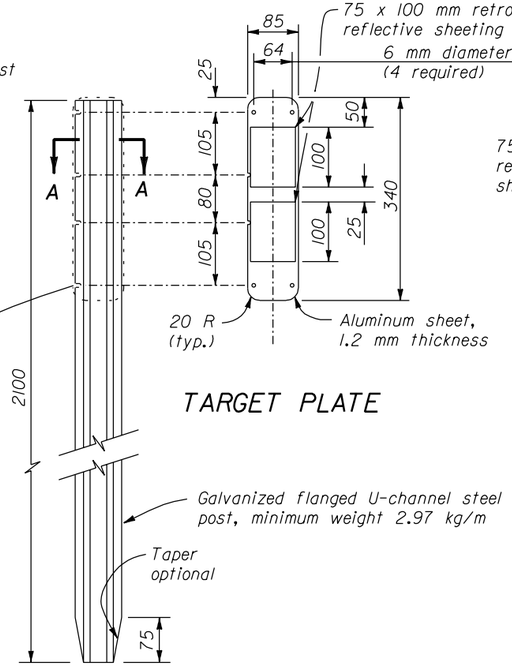
13 DEC 2000

f:\standraw\metric\details\wm63304.dgn

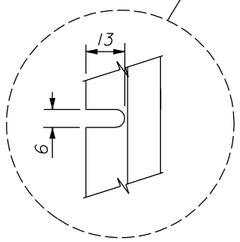
STATE	PROJECT	SHEET NUMBER



SECTION A-A



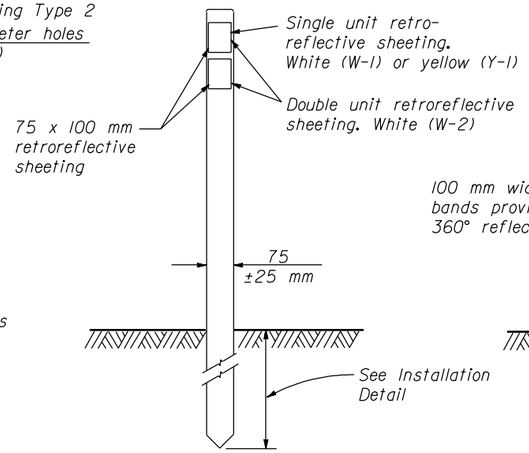
TARGET PLATE



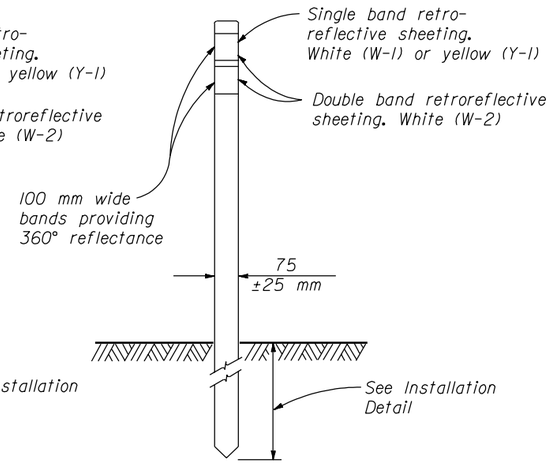
SLOT DETAIL
(4 REQUIRED)

TYPE 1

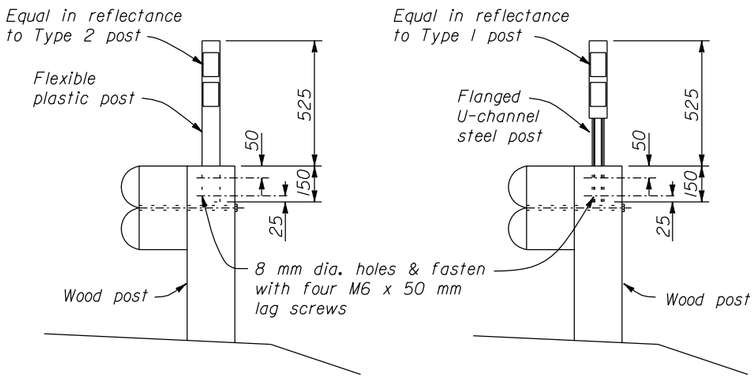
STEEL POST



TYPE 2

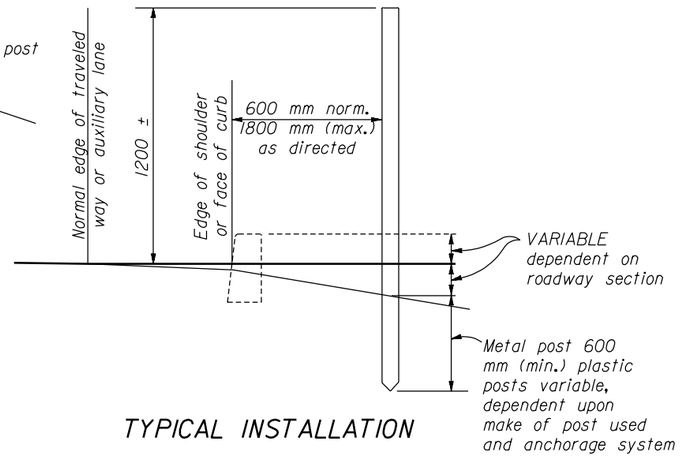


TYPE 3



ALTERNATE 1 ALTERNATE 2

TYPE 4
PLASTIC OR STEEL POST INSTALLATION
WITH BEAM TYPE GUARDRAIL



TYPICAL INSTALLATION

NOTE:

1. Dimensions not labeled are in millimeters.
2. Place delineators nearly opposite each other on horizontal curves.
3. Install all delineators with reflectors facing adjacent on-coming traffic.
4. Install delineators behind the rail at guardrail locations.
5. Offset delineators a minimum distance of 1200 mm in areas of heavy snow removal operations.
6. On roads with less than 500 ADT, use delineators only where situations such as sharp vertical or horizontal curves, or other undesirable geometrics exist.
7. Vary the post spacing up to 1/8 of the spacing shown to clear driveways, cross roads, intersections or ramps. Eliminate the post if the variation is exceeded.
8. When the contract does not provide for the construction of the ultimate pavement, allow for the thickness of base and pavement to be placed later when establishing the elevation of the traffic delineators.
9. If horizontal and vertical curves are combined, use the more restrictive spacing.
10. Furnish hardware in the metric sizes shown. Equivalent imperial sizes may be used when metric sizes are not available.

SPACING TABLE

REFLECTOR TYPE	HIGHWAY	SPACING EACH SIDE
W-1	Divided	* 120 m
W-1	Undivided	* 120 m
W-2	See channelized and flared plans	
Y-1	See interchange ramp plans	

* For variations on HORIZONTAL CURVE and CREST VERTICAL CURVES, See tables below.

REFLECTOR DETAILS

TYPE	COLOR OF REFLECTOR AND TARGET OR POST	NUMBER OF REFLECTORS
W-1	White	1
W-2	White	2
Y-1	Yellow	1

CREST VERTICAL CURVES

ALGEBRAIC DIFFERENCE IN GRADE (%)	VERTICAL CURVE LENGTH IN METERS											
	30	60	90	120	150	180	240	300	375	450	500	600
	SPACING EACH SIDE OF ROADWAY IN METERS											
0.5	65	90	120	120	120							
1.0	45	70	85	100	115	120						
1.5	35	55	70	80	90	100	120	120				
2.0	30	45	60	70	80	90	100	115	120			
2.5		40	50	60	70	75	90	100	115	120		
3.0		35	45	55	60	65	80	90	100	115	120	120
4.0		30	35	45	50	60	70	80	90	95	100	115
5.0			35	40	45	50	60	70	75	80	90	100
6.0			30	35	40	45	55	60	70	75	80	90
7.0				30	35	40	50	55	60	70	75	85
9.5					30	35	40	45	50	60	60	70
12.0						30	35	40	45	50	55	60

HORIZONTAL CURVES

RADIUS OF CURVE	SPACING ON EACH SIDE OF ROADWAY IN METERS		
	ON CURVE	IN ADVANCE OF & BEYOND CURVE	
		FIRST SPACE	SECOND SPACE
2000	90	120	120
900	65	115	120
600	50	95	120
450	45	80	120
350	40	70	120
290	35	60	105
220-250	30	55	90
175-200	25	50	80
145-160	25	45	75
100-135	20	40	65
70-95	18	35	55
65 & less	15	30	45

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

METRIC DETAIL

TRAFFIC DELINEATORS OREGON PROJECTS

DETAIL APPROVED FOR USE 3/1996

REVISED:

DETAIL
WM633-5

13 DEC 2000

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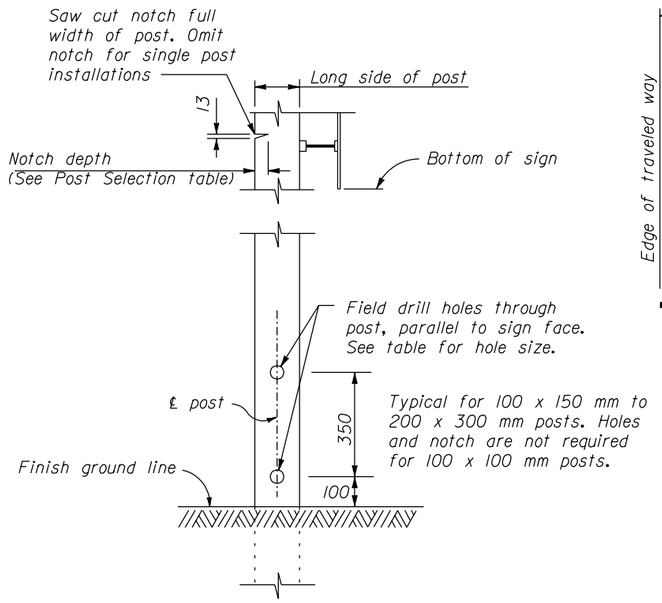
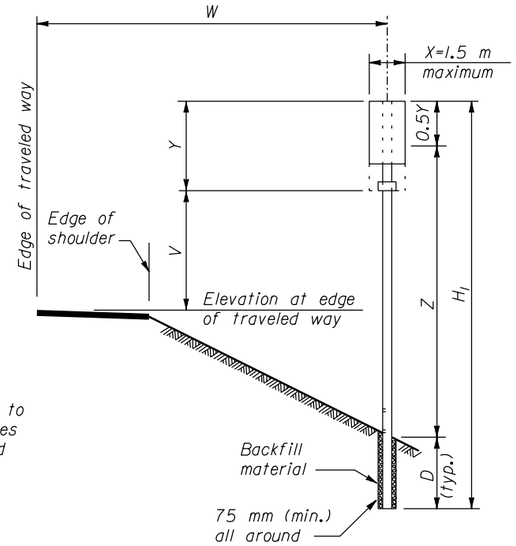
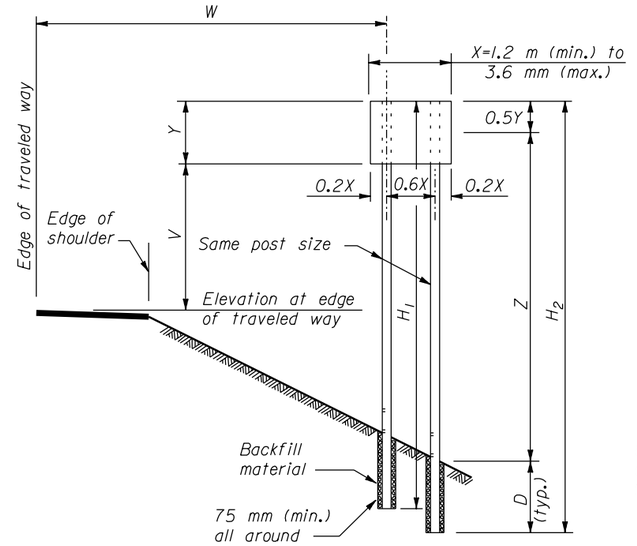
STATE	PROJECT	SHEET NUMBER



POST DETAIL



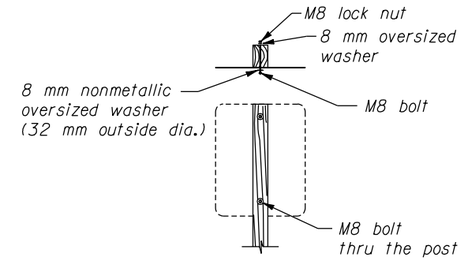
SINGLE POST SIGNS



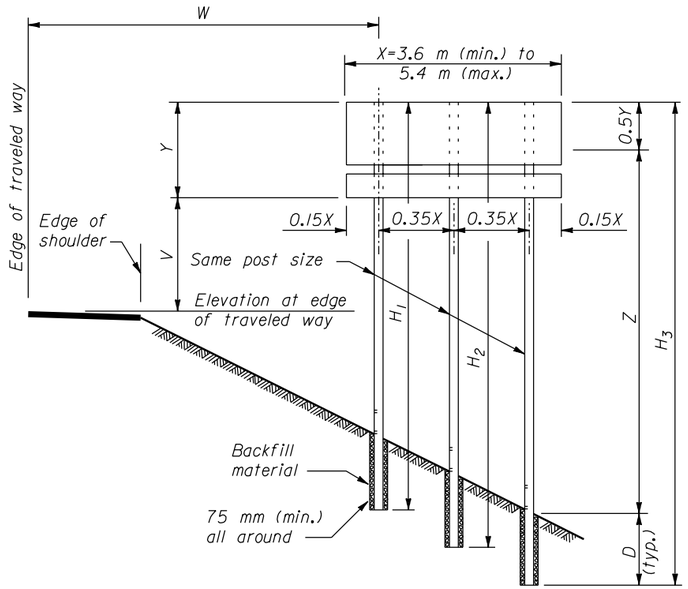
TWO POST SIGNS

NOTE:

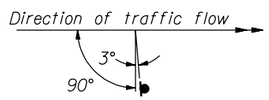
1. Dimensions not labeled are in millimeters.
2. Install signs in relation to the road: W= 3.7 m minimum; V= 1.6 m minimum.
3. H_1 thru H_4= Overall post length. Select post lengths to fit field conditions.
4. D= Minimum post embedment depth for average soil conditions. See wood post selection table below.
5. Z= the height from ground line to mid-height of sign at the longest post.



TYPICAL MOUNTING FOR SIGNS WITHOUT ANGLES

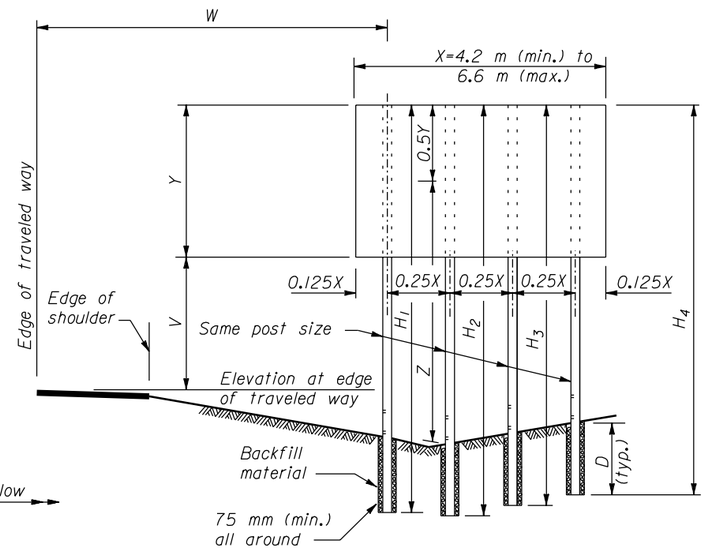


THREE POST SIGNS



For all retroreflectorized signs where W is more than 7500 mm.

SIGN INSTALLATION ANGLE



FOUR POST SIGNS

WOOD POST SELECTION TABLE

POST SIZE	NUMBER OF POSTS 1	2	3	4	D (m)	Notch depth & hole dia. (mm)
	Product of X-Y-Z (m3)					
100 x 100	2.2	4.3	6.6	18.7	0.9	-
100 x 150	5.0	10.8	15.3	20.3	1.2	45
150 x 150	6.6	13.3	19.9	26.6	1.2	45
150 x 200	8.4	23.8	35.8	47.6	1.2	65
* 150 x 250	10.8	33.0	49.6	66.1	1.5	-
* 200 x 250	16.1	45.1	67.5	90.0	1.5	-
* 200 x 300	21.7	64.7	97.0	129.4	1.8	-

Values shown are the maximum permitted. If the product of XYZ exceeds the limit for 200 x 300 mm posts, use steel post installation.

For the purpose of post selection- X and Y are as follows:

Single sign, or back to back signs- X and Y are the overall dimensions of the signs.

Multiple sign installations- X and Y are the dimensions of a rectangle enclosing all the signs.

* Traffic barrier protection is required when located within the clear zone or is vulnerable to being struck when placed outside the clear zone.

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

METRIC DETAIL

PERMANENT SIGN INSTALLATION WOOD POSTS

DETAIL APPROVED FOR USE 3/1996
REVISED: 3/1999

DETAIL WM633-7

13 DEC 2000

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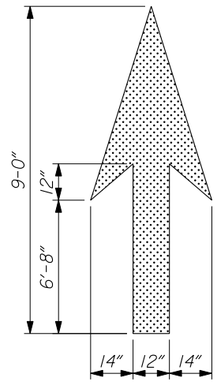
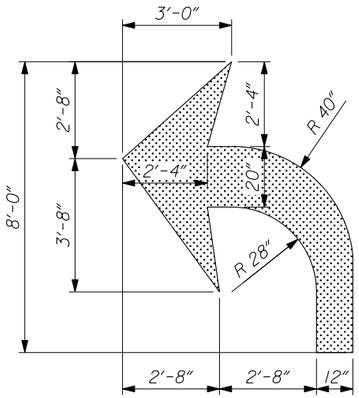
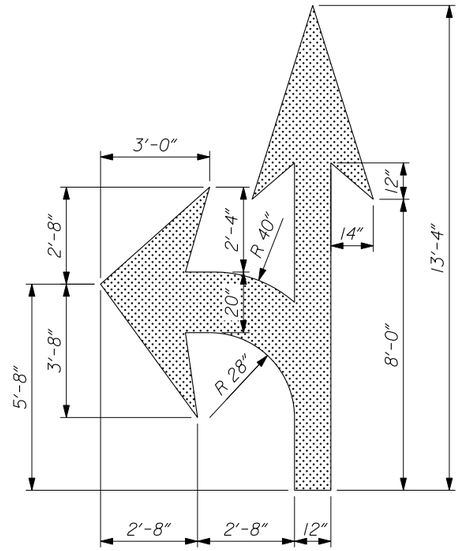
STATE	PROJECT	SHEET NUMBER



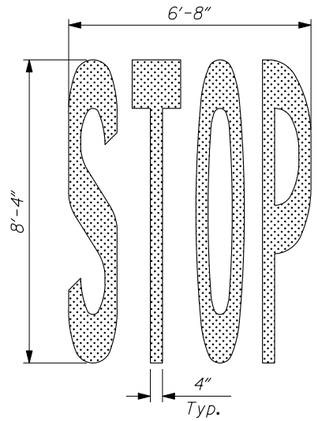
THROUGH LANE-USE ARROW



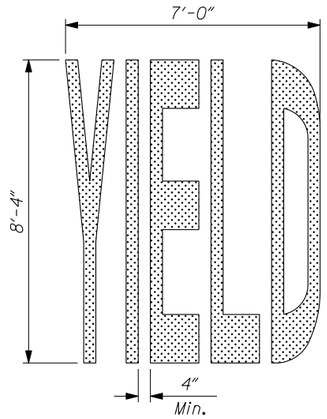
TURN LANE-USE ARROW



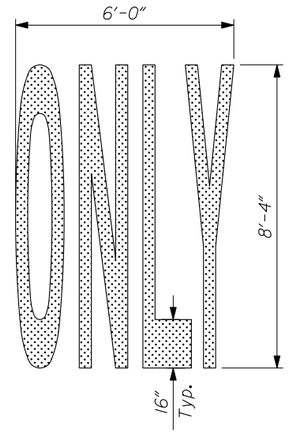
TURN AND THROUGH LANE-USE ARROW



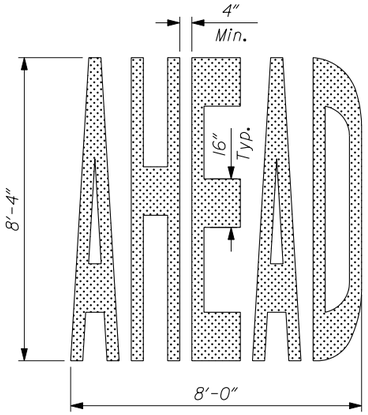
"STOP" WORD MARKING



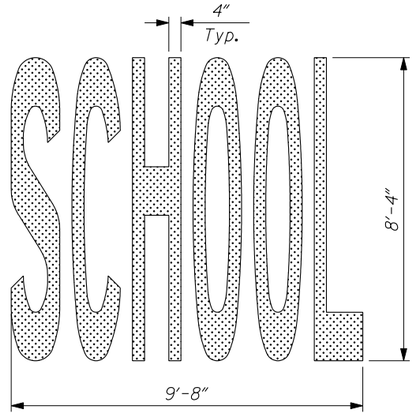
"YIELD" WORD MARKING



"ONLY" WORD MARKING



"AHEAD" WORD MARKING

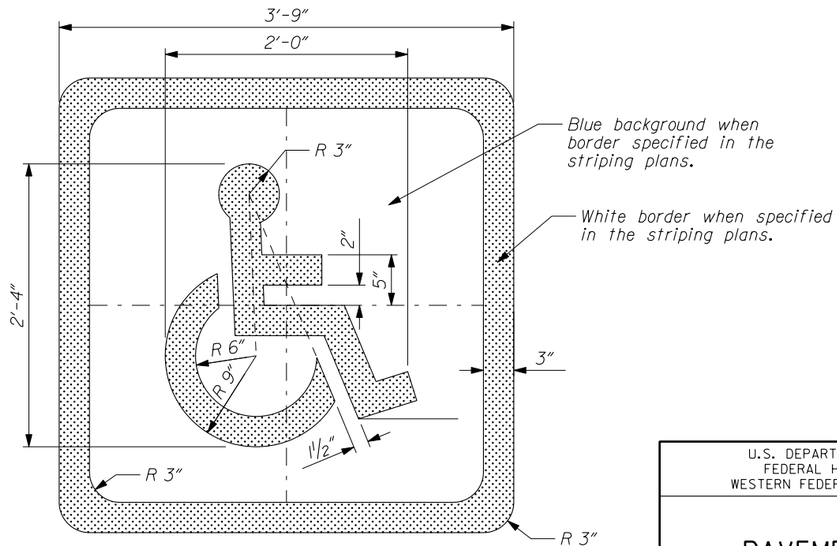


"SCHOOL" WORD MARKING

NOTE:

1. *Place pavement word and symbol markings in accordance with the "Manual on Uniform Traffic Control Devices" (MUTCD), current edition.*
2. *All letters, numerals and symbols shall conform with the "Standard Highway Signs", current edition.*
3. *The Accessibility Parking Space marking only includes the accessibility symbol unless a border is indicated in the striping plans.*

PAVEMENT MARKING AREAS	
TYPE	sqft
Through Lane-Use Arrow	11
Turn Lane-Use Arrow	17
Turn and Through Lane-Use Arrow	28
Accessibility Marking without border	2
Accessibility Marking with border	14
- blue background (included above)	9
AHEAD Word Marking	31
ONLY Word Marking	22
SCHOOL Word Marking	35
STOP Word Marking	23
YIELD Word Marking	24



ACCESSIBILITY PARKING SPACE MARKING

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

DETAIL

PAVEMENT MARKINGS SYMBOLS AND WORDS

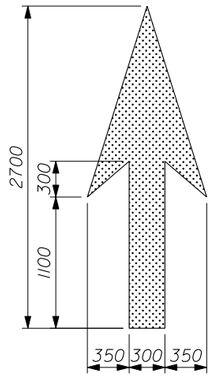
DETAIL APPROVED FOR USE 3/2003

REVISED:

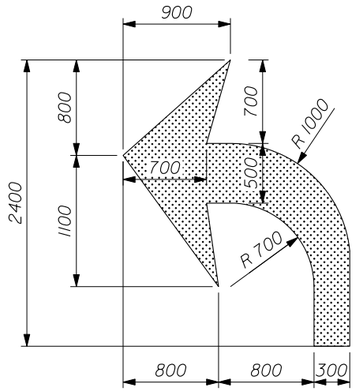
DETAIL W634-1

F:\StanDraw\Western\w634(1).dgn 3/26/2003

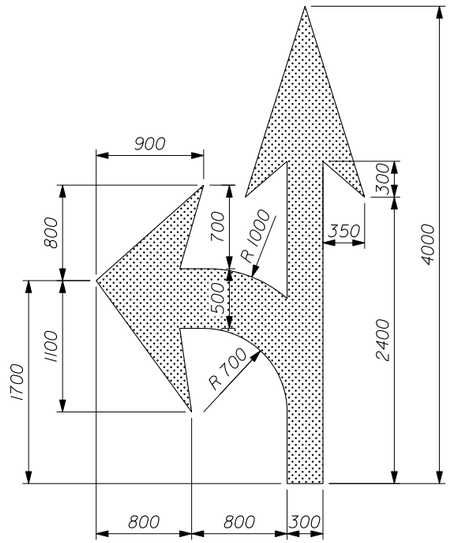
STATE	PROJECT	SHEET NUMBER



THROUGH LANE-USE ARROW



TURN LANE-USE ARROW

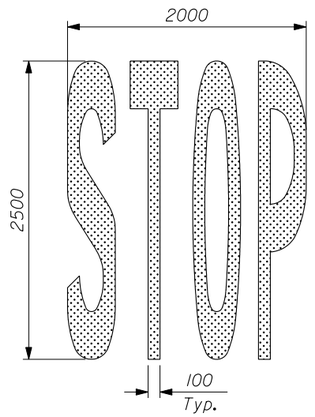


TURN AND THROUGH LANE-USE ARROW

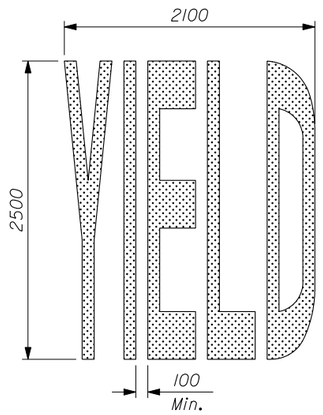
NOTE:

1. Place pavement word and symbol markings in accordance with the "Manual on Uniform Traffic Control Devices" (MUTCD), current edition.
2. All letters, numerals and symbols shall conform with the "Standard Highway Signs", current edition.
3. The Accessibility Parking Space marking only includes the accessibility symbol unless a border is indicated in the striping plans.
4. Dimensions not labeled are in millimeters.

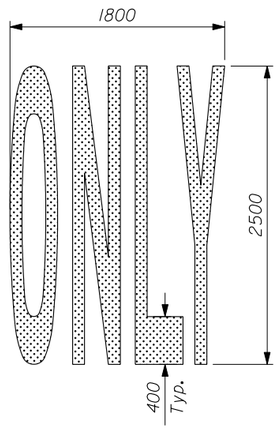
PAVEMENT MARKING AREAS	
TYPE	m2
Through Lane-Use Arrow	1.0
Turn Lane-Use Arrow	1.5
Turn and Through Lane-Use Arrow	2.6
Accessibility Marking without border	0.1
Accessibility Marking with border	1.3
- blue background (included above)	0.8
AHEAD Word Marking	2.8
ONLY Word Marking	2.0
SCHOOL Word Marking	3.1
STOP Word Marking	2.1
YIELD Word Marking	2.2



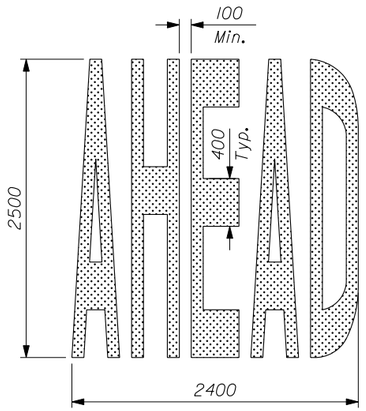
"STOP" WORD MARKING



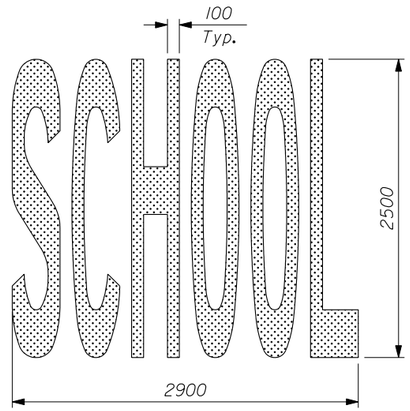
"YIELD" WORD MARKING



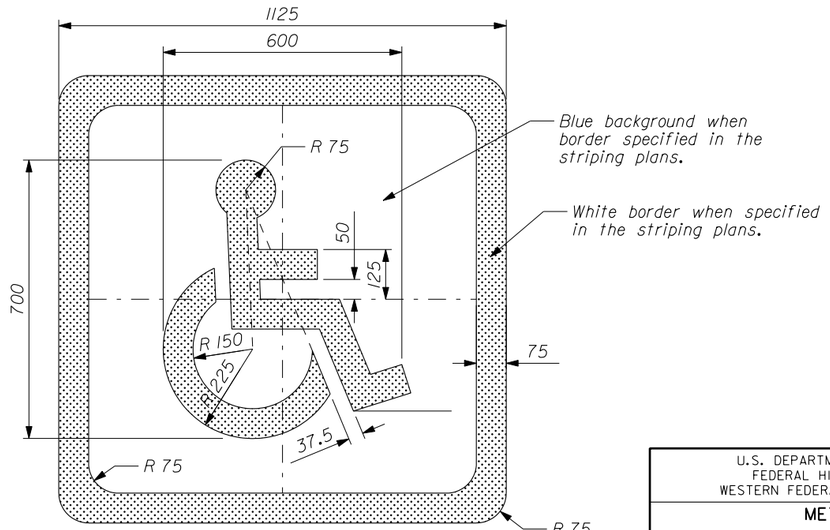
"ONLY" WORD MARKING



"AHEAD" WORD MARKING



"SCHOOL" WORD MARKING



ACCESSIBILITY PARKING SPACE MARKING

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

METRIC DETAIL

PAVEMENT MARKINGS SYMBOLS AND WORDS

DETAIL APPROVED FOR USE 3/1996	DETAIL
REVISED: 3/2003	WM634-1

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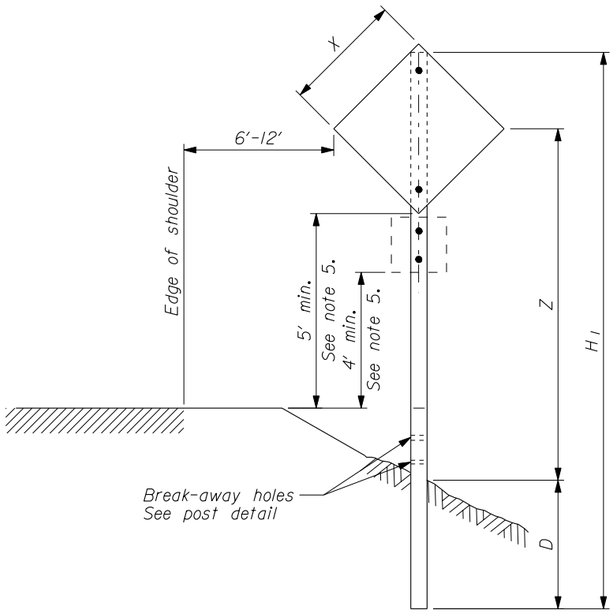
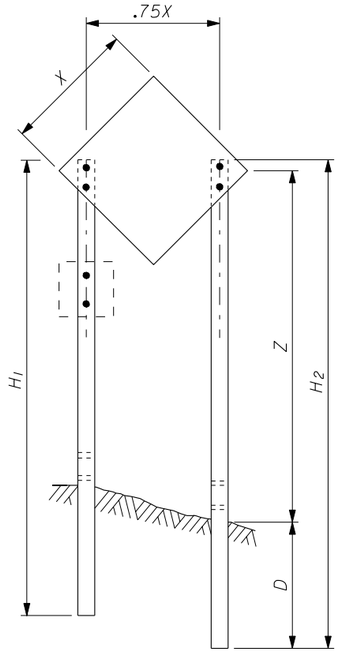
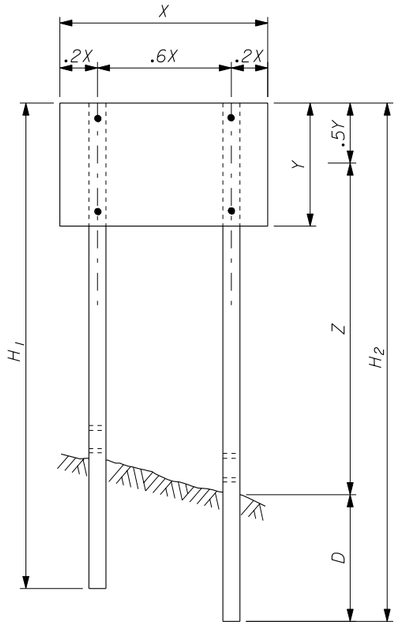
STATE	PROJECT	SHEET NUMBER



SINGLE POST SIGN

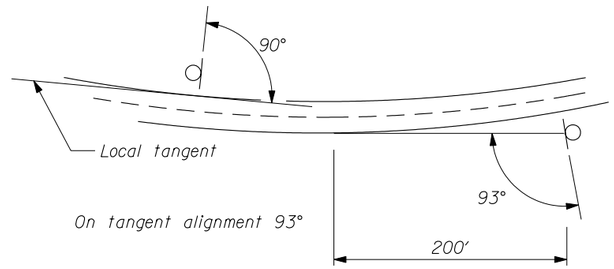


TWO POST SIGN



NOTE:

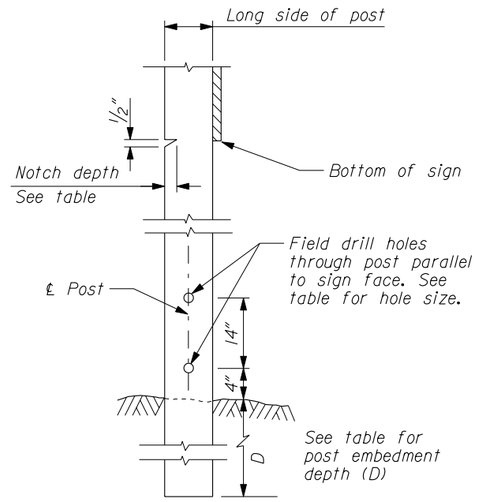
1. Attach sign panels with a minimum of 2 - 1/4" diameter bolts per post.
2. Mount signs smaller than listed on a single 4" x 4" post. For signs not shown, use next largest size.
3. H_1 and H_2 = Overall post length. Select post lengths to fit field conditions.
4. D = Post embedment depth for average soil conditions.
5. When pedestrians are present, or in areas where the view is obstructed, use 7' minimum mounting height.



SIGN INSTALLATION ANGLE

WOOD POST SELECTION TABLE

SIGN SHAPE	X x Y	GROUNDLINE TO CENTER OF SIGN HEIGHT (Z)									
		Z IS 10' OR LESS					Z IS GREATER THAN 10'				
		NUMBER OF POSTS	POST SIZE	D	HOLE SIZE	NOTCH DEPTH	NUMBER OF POSTS	POST SIZE	D	HOLE SIZE	NOTCH DEPTH
◇ ⬡	30" x 30"	1	4" x 4"	36"	0	0	1 or 2	4" x 6" 4" x 4"	48" 36"	1 1/2" 0	0 0
◇ ⬡ ○	36" x 36"	1 or 2	4" x 6" 4" x 4"	48" 36"	1 1/2" 0	0 0	1 or 2	4" x 6" 4" x 4"	48" 36"	1 1/2" 0	0 0
◇ ⬡	48" x 48"	1	4" x 6"	48"	1 1/2"	0	1 or 2	6" x 8" 4" x 6"	48" 48"	3" 1 1/2"	0 1 3/4"
▭	60" x 30"	2	4" x 4"	36"	0	0	2	4" x 6"	48"	1 1/2"	1 3/4"
▭	78" x 42"	2	4" x 6"	48"	1 1/2"	1 3/4"	2	4" x 6"	48"	1 1/2"	1 3/4"
▭	96" x 48"	2	4" x 6"	48"	1 1/2"	1 3/4"	2	6" x 8"	48"	3"	2 1/4"



POST DETAIL

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

DETAIL

CONSTRUCTION SIGN INSTALLATION WOOD POSTS

DETAIL APPROVED FOR USE 8/2003

REVISED:

DETAIL W635-2

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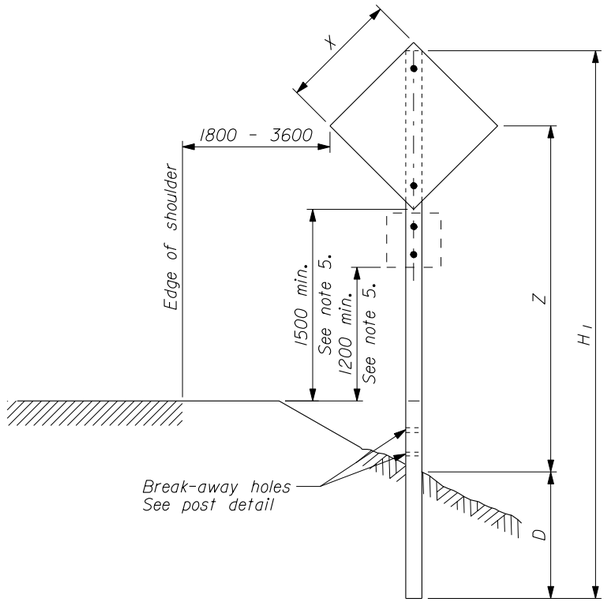
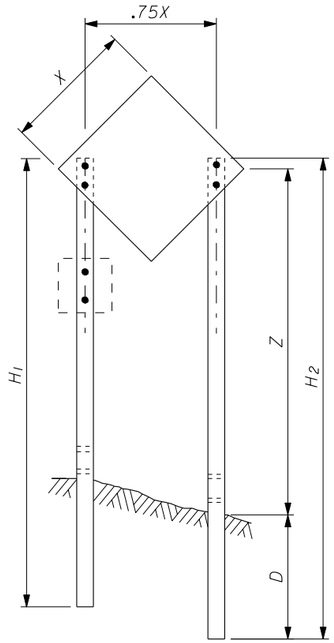
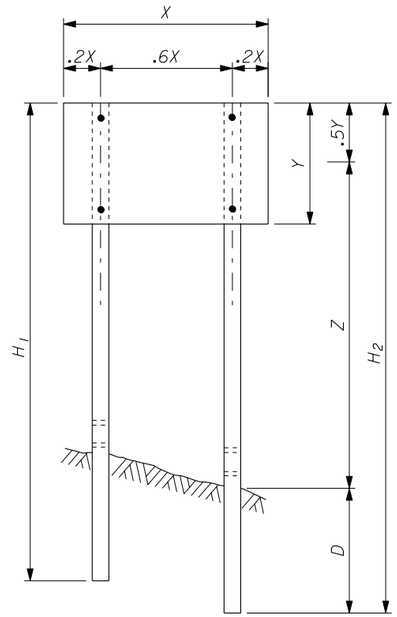
STATE	PROJECT	SHEET NUMBER



SINGLE POST SIGN

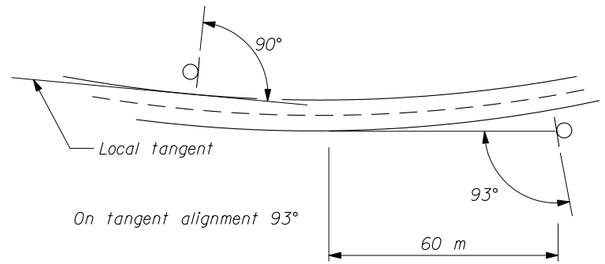


TWO POST SIGN



NOTE:

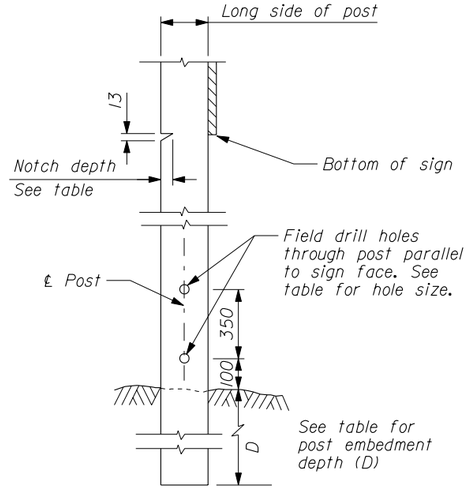
1. Attach sign panels with a minimum of 2 - M6 bolts per post.
2. Mount signs smaller than listed on a single 100 x 100 post. For signs not shown, use next largest size.
3. H_1 and H_2 = Overall post length. Select post lengths to fit field conditions.
4. D = Post embedment depth for average soil conditions.
5. When pedestrians are present, or in areas where the view is obstructed, use 2.1 m minimum mounting height.
6. Furnish hardware in the metric sizes shown. Equivalent US Customary sizes may be used when metric sizes are not available.
7. Dimensions not labeled are in millimeters.



SIGN INSTALLATION ANGLE

WOOD POST SELECTION TABLE

SIGN SHAPE	X x Y	GROUNDLINE TO CENTER OF SIGN HEIGHT (Z)									
		Z IS 3 m OR LESS					Z IS GREATER THAN 3 m				
		NUMBER OF POSTS	POST SIZE	D	HOLE SIZE	NOTCH DEPTH	NUMBER OF POSTS	POST SIZE	D	HOLE SIZE	NOTCH DEPTH
◇ ⬡	750 x 750	1	100 x 100	900	0	0	1 or 2	100 x 150 100 x 100	1200 900	40 0	0 0
◇ ⬡ ○	900 x 900	1 or 2	100 x 150 100 x 100	1200 900	40 0	0 0	1 or 2	100 x 150 100 x 100	1200 900	40 0	0 0
◇ ⬡	1200 x 1200	1	100 x 150	1200	40	0	1 or 2	150 x 200 100 x 150	1200 1200	75 40	0 45
▭	1500 x 750	2	100 x 100	900	0	0	2	100 x 150	1200	40	45
▭	1950 x 1050	2	100 x 150	1200	40	45	2	100 x 150	1200	40	45
▭	2400 x 1200	2	100 x 150	1200	40	45	2	150 x 200	1200	75	60



POST DETAIL

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

METRIC DETAIL

CONSTRUCTION SIGN INSTALLATION WOOD POSTS

DETAIL APPROVED FOR USE 3/1996

REVISED: 3/1999 8/2003

DETAIL WM635-2

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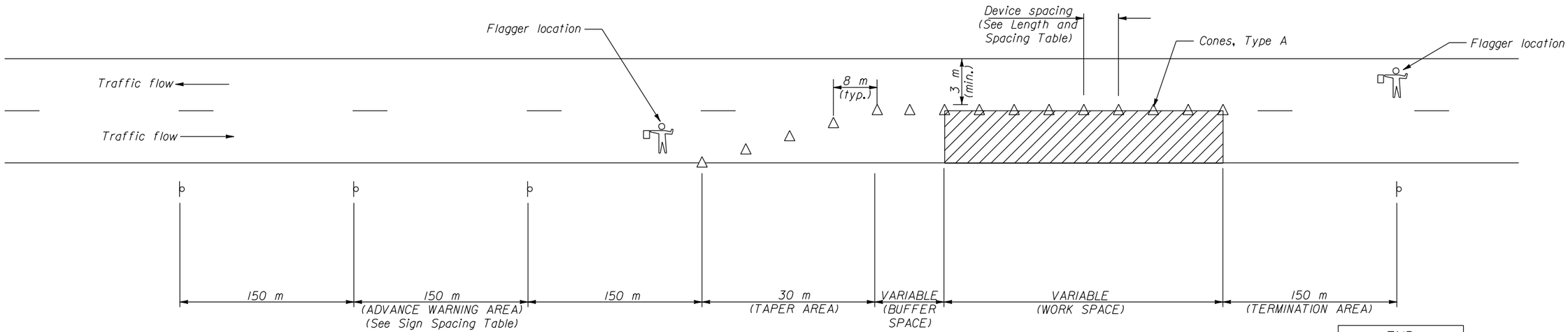
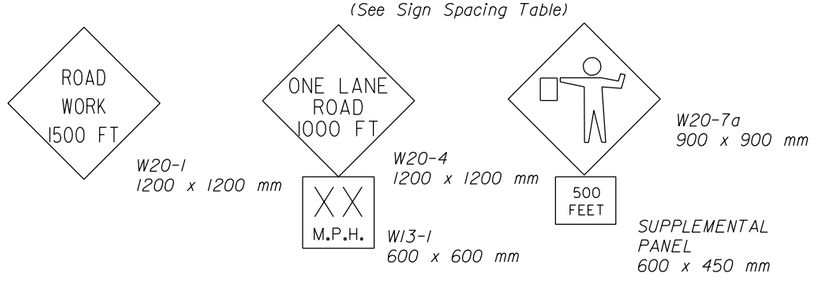
STATE	PROJECT	SHEET NUMBER

LENGTH AND SPACING TABLE				
APPROACH SPEED		LENGTH OF BUFFER SPACE IN METERS	DEVICE SPACING	
			BUFFER SPACE	WORK SPACE
MILES PER HOUR	KILOMETERS PER HOUR		SPACING IN METERS	
25	40	20	15	15
30	50	25	18	18
35	55	35	21	21
40	65	50	24	24
45	70	60	27	27
50	80	85	30	30
55	90	105	30	30

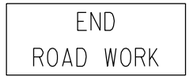
NOTE:

1. Dimensions not labeled are in millimeters.
2. Final location and spacing of signs and devices may be changed to fit field conditions as approved by the CO.
3. Signs shown are for one direction only. Repeat the signing for the opposite direction.





LANE CLOSURE USING FLAGGERS FOR TWO LANE ROADWAY (TWO WAY TRAFFIC)



G20-2A
1200 x 600 mm

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

METRIC DETAIL

CONSTRUCTION TRAFFIC CONTROL SINGLE LANE CLOSURE LAYOUT (WITH FLAGGERS)

DETAIL APPROVED FOR USE 3/1996

REVISED: 3/1999

DETAIL WM635-3

13 DEC 2000

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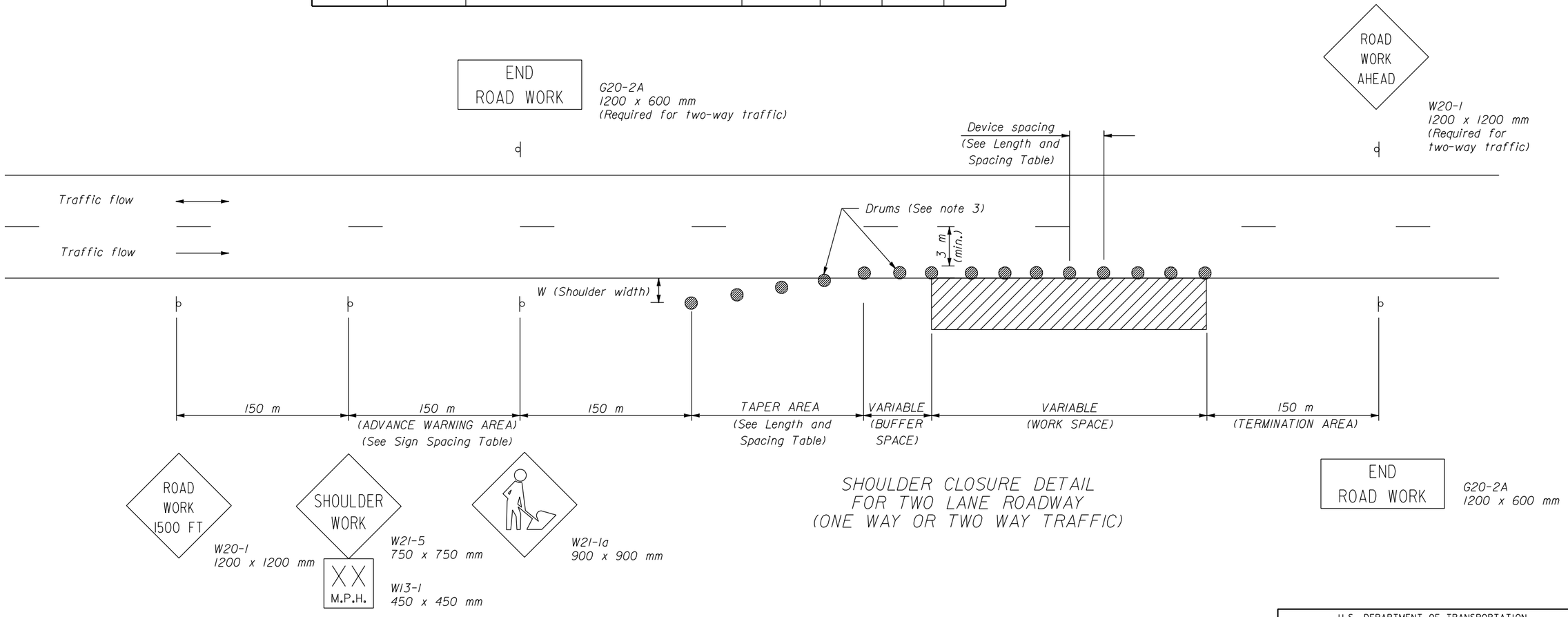
STATE	PROJECT	SHEET NUMBER

LENGTH AND SPACING TABLE

APPROACH SPEED		MINIMUM TAPER LENGTH IN METERS	LENGTH OF BUFFER SPACE IN METERS	CHANNELIZING DEVICE SPACING		
				TAPER AREA	BUFFER SPACE	WORK SPACE
MILES PER HOUR	KILOMETERS PER HOUR			SPACING IN METERS		
25	40	Taper formula: $L=\frac{WS^2}{450}$ for speeds of 65 km/h or less	20	8	15	15
30	50		25	9	18	18
35	55	$L=\frac{WxS}{5}$ for speeds of 70 km/h or greater	35	10	21	21
40	65	Where:	50	12	24	24
45	70	L= Minimum length of taper W= Width of offset in meters	60	14	27	27
50	80	S= Numerical value of posted speed limit prior to work area or 85 percentile speed in kilometers per hour	85	15	30	30
55	90		105	16	30	30

NOTE:

1. Dimensions not labeled are in millimeters.
2. Final location and spacing of signs and devices may be changed to fit field conditions as approved by the CO.
3. For operations that require a shoulder closure for a day or less, drums may be substituted with cones, Type A.



NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

METRIC DETAIL

CONSTRUCTION TRAFFIC CONTROL SHOULDER CLOSURE LAYOUT

DETAIL APPROVED FOR USE 3/1996	DETAIL
REVISED: 3/1999	WM635-4

13 DEC 2000

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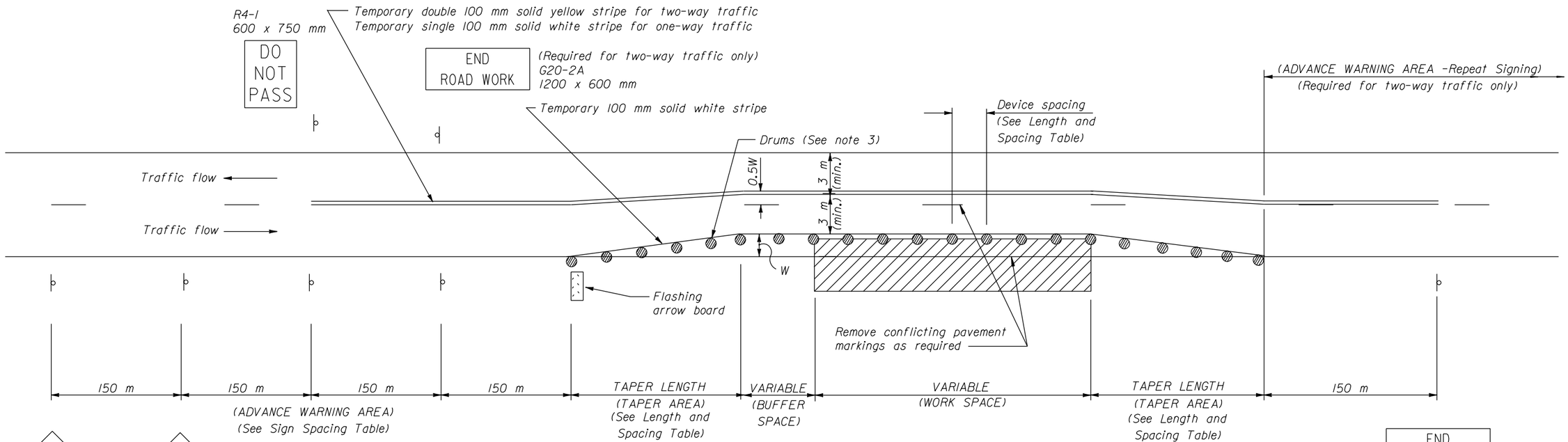
STATE	PROJECT	SHEET NUMBER

LENGTH AND SPACING TABLE

APPROACH SPEED		MINIMUM TAPER LENGTH IN METERS	LENGTH OF BUFFER SPACE IN METERS	CHANNELIZING DEVICE SPACING		
				TAPER AREA	BUFFER SPACE	WORK SPACE
MILES PER HOUR	KILOMETERS PER HOUR			SPACING IN METERS		
25	40	Taper formula: $L=\frac{WS^2}{450}$ for speeds of 65 km/h or less	20	8	15	15
30	50		25	9	18	18
35	55	$L=\frac{WxS}{5}$ for speeds of 70 km/h or greater	35	10	21	21
40	65		50	12	24	24
45	70	Where: L= Minimum length of taper W= Width of offset in meters S= Numerical value of posted speed limit prior to work area or 85 percentile speed in kilometers per hour	60	14	27	27
50	80		85	15	30	30
55	90		105	16	30	30

NOTE:

1. Dimensions not labeled are in millimeters.
2. Final location and spacing of signs and devices may be changed to fit field conditions as approved by the CO.
3. For operations that require a shoulder closure for a day or less, drums may be substituted with cones, Type A.
4. For one-way traffic, repeat signs on both sides of the roadway.



PARTIAL LANE WIDTH AND SHOULDER CLOSURE DETAIL FOR TWO LANE ROADWAYS (ONE WAY OR TWO WAY TRAFFIC)

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

METRIC DETAIL

CONSTRUCTION TRAFFIC CONTROL PART LANE WIDTH AND SHOULDER CLOSURE LAYOUT

DETAIL APPROVED FOR USE 3/1996
REVISED: 3/1999

DETAIL WM635-5

13 DEC 2000
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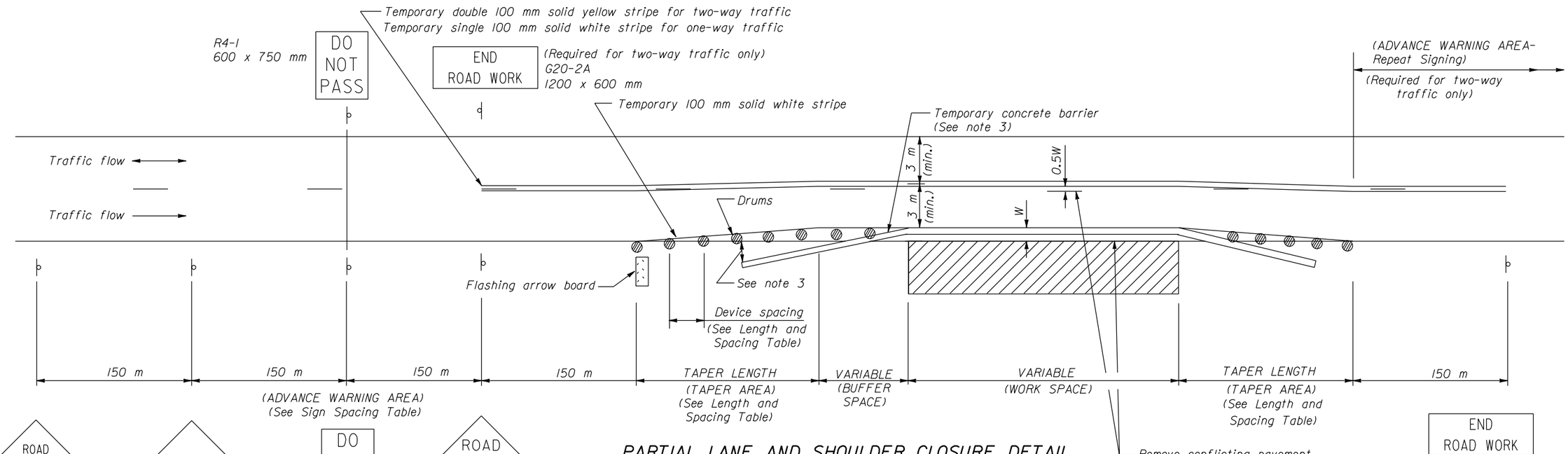
STATE	PROJECT	SHEET NUMBER

LENGTH AND SPACING TABLE

APPROACH SPEED		MINIMUM TAPER LENGTH IN METERS	LENGTH OF BUFFER SPACE IN METERS	CHANNELIZING DEVICE SPACING			CONCRETE BARRIER FLARE RATE
MILES PER HOUR	KILOMETERS PER HOUR			TAPER AREA	BUFFER SPACE	WORK SPACE	
				SPACING IN METERS			
25	40	Taper formula: $L=\frac{WS^2}{450}$ for speeds of 65 km/h or less; $L=\frac{WxS}{5}$ for speeds of 70 km/h or greater. Where: L= Minimum length of taper, W= Width of offset in meters, S= Numerical value of posted speed limit prior to work area or 85 percentile speed in kilometers per hour	20	8	15	15	1:6.5
30	50		25	9	18	18	1:8
35	55		35	10	21	21	1:9.3
40	65		50	12	24	24	1:10.3
45	70		60	14	27	27	1:12
50	80		85	15	30	30	1:14
55	90		105	16	30	30	1:16

NOTE:

1. Dimensions not labeled are in millimeters.
2. Final location and spacing of signs and devices may be changed to fit field conditions as approved by the CO.
3. Barrier placement is in accordance with the Roadside Design Guide, January 1996, by the American Association of State Highway and Transportation Officials (AASHTO). Terminate barrier ends outside the clear zone or protect the ends of the barrier with an impact attenuator.
4. For one-way traffic, repeat signs on both sides of the roadway.



PARTIAL LANE AND SHOULDER CLOSURE DETAIL USING TEMPORARY BARRIER ON TWO LANE ROADWAYS (ONE WAY OR TWO WAY TRAFFIC)

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

METRIC DETAIL

CONSTRUCTION TRAFFIC CONTROL PART LANE WIDTH AND SHOULDER CLOSURE LAYOUT

DETAIL APPROVED FOR USE 3/1996

REVISED: 3/1999

DETAIL WM635-6

13 DEC 2000

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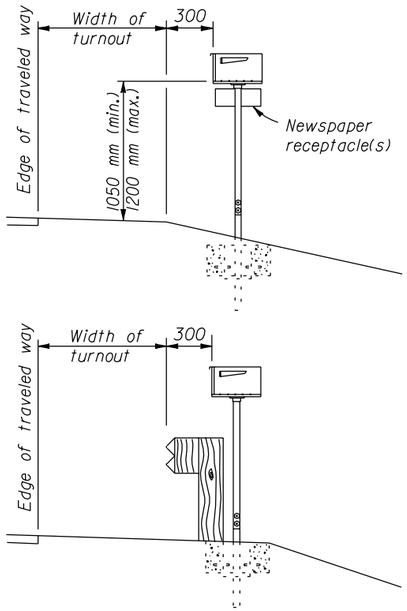
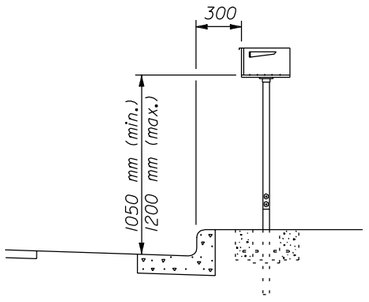
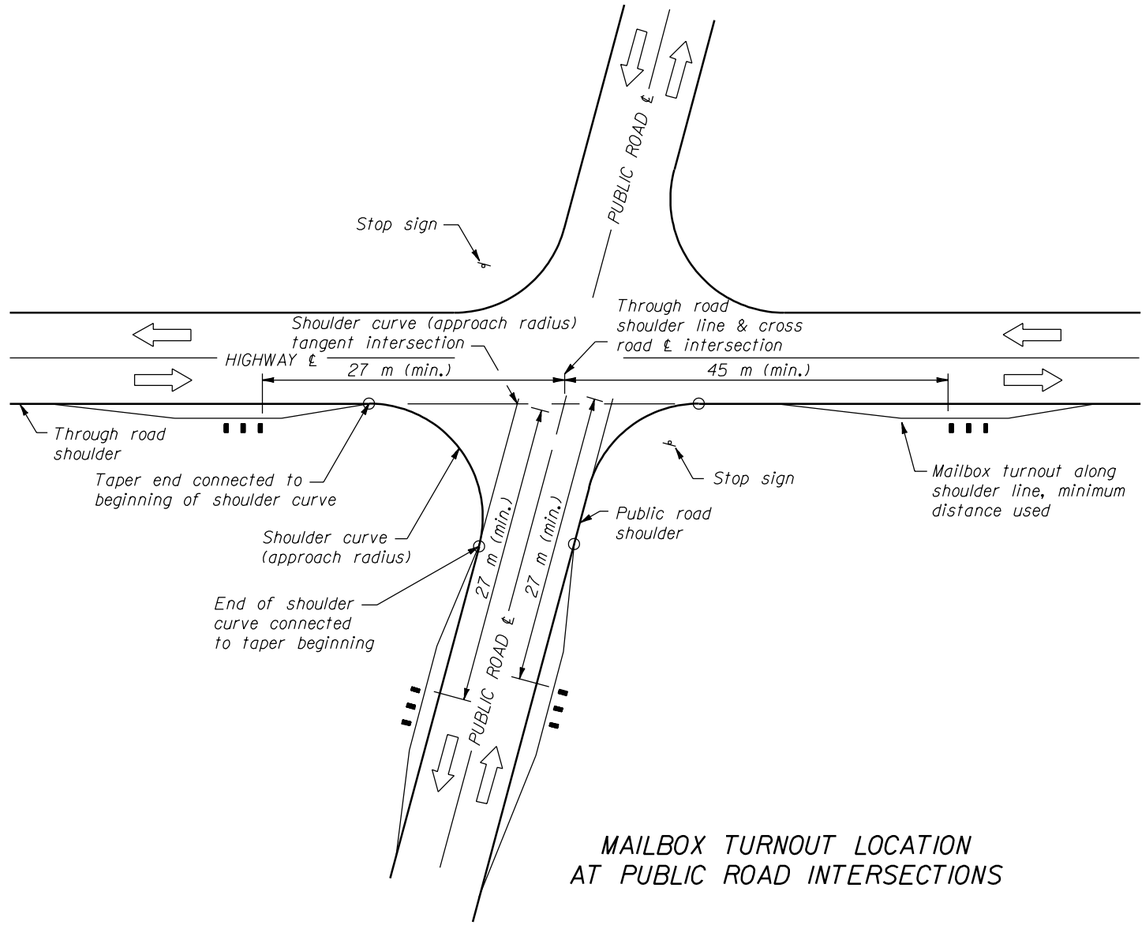
STATE	PROJECT	SHEET NUMBER



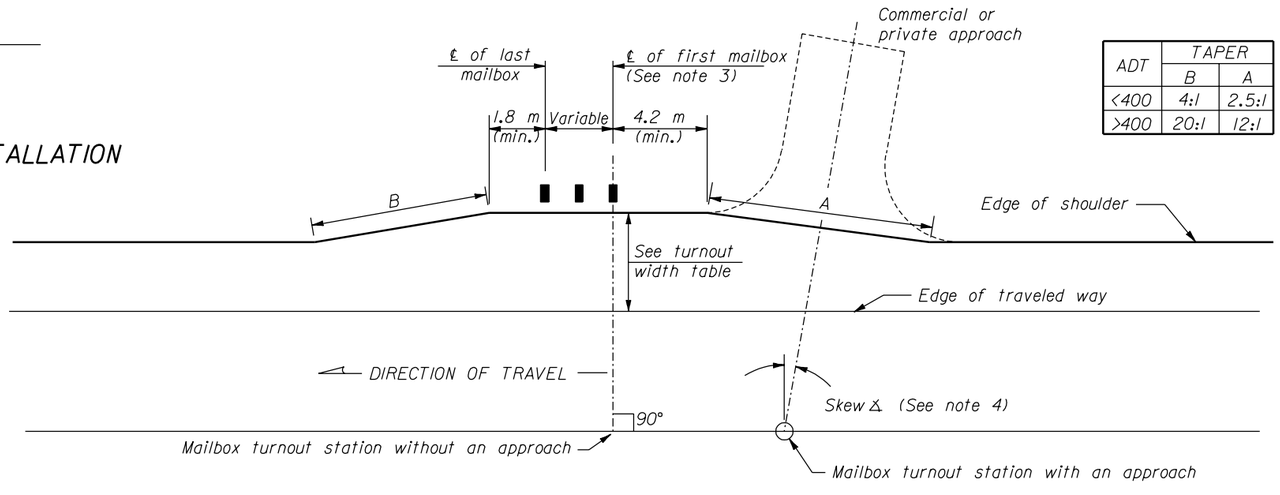
WOOD POST (RURAL) INSTALLATIONS



METAL POST (URBAN) INSTALLATION



MAILBOX TURNOUT LOCATION
AT PUBLIC ROAD INTERSECTIONS



MAILBOX TURNOUT

ADT	TAPER	
	B	A
<400	4:1	2.5:1
>400	20:1	12:1

TURNOUT WIDTH TABLE
For rural installations

ADT	PREFERRED	MINIMUM
>10000	>3.6 m	3.6 m
1500-10000	3.6 m	3.0 m
100-1500	3.0 m	2.4 m
<100	2.4 m	1.8 m

NOTE:

1. Dimensions not labeled are in millimeters.
2. Either the front or back taper end of a mailbox turnout may connect to the shoulder curve (approach radius) P.C. or P.T., otherwise the turnout shall be shifted along the roadway shoulder to meet the minimum distance requirement.
3. Only commercial and private approaches qualify for mailbox turnouts installed adjacent to and as part of the approach. For public road approaches and intersections use the location method as shown on the Mailbox Turnout Location at Public Road Intersections Detail. When mailbox turnouts are used at public road intersections, measure to/from the first mailbox centerline parallel to the roadway centerline.
4. Do not skew mailbox turnouts, however, the adjacent approach may be skewed as shown. Blend the approach radius from the roadway shoulder to the turnout shoulder as shown in the Mailbox Turnout Detail. Place mail boxes on the far side of approach road entrances unless the minimum distances cannot be obtained.
5. The set back and required support also apply to mailbox receptacles. When the newspaper receptacles and mailboxes are mounted in combinations, mount the newspaper receptacle below the bottom surface of the mailbox.
6. Use the same pavement structure for mailbox turnouts as for the adjacent roadway section.
7. See Detail WM670-51 for further mailbox installation details.

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

METRIC DETAIL

MAILBOX TURNOUT AND INSTALLATION

DETAIL APPROVED FOR USE 3/1996

REVISED:

DETAIL WM670-50

13 DEC 2000

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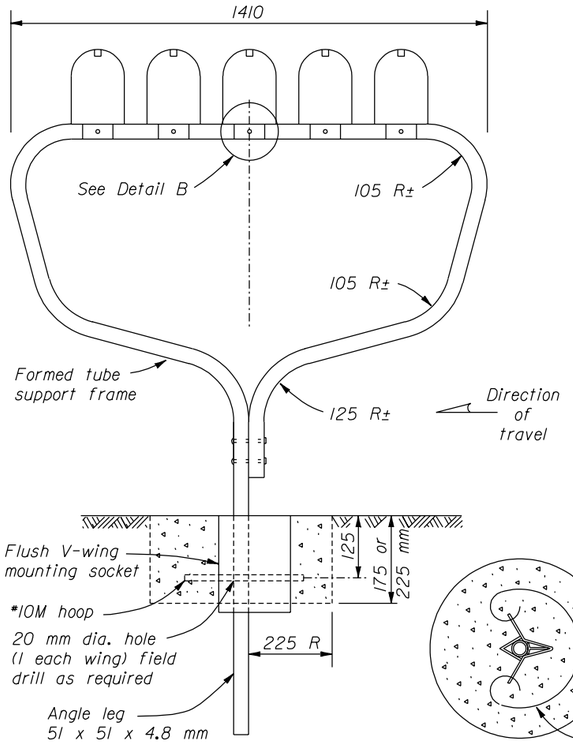
STATE	PROJECT	SHEET NUMBER



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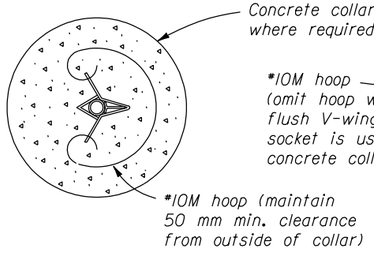
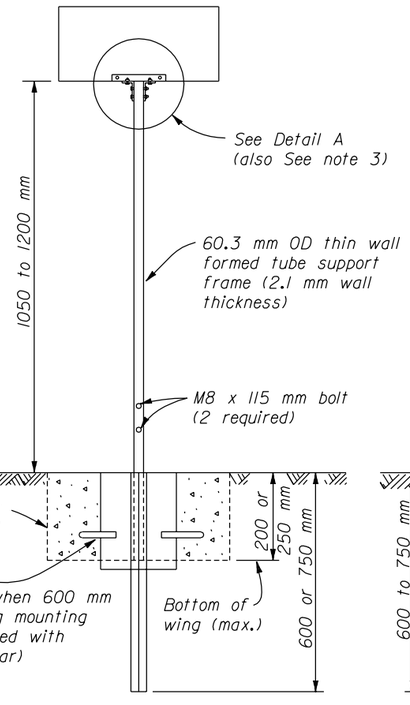


MULTIPLE SUPPORT



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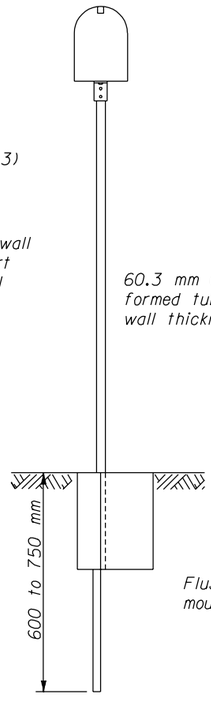

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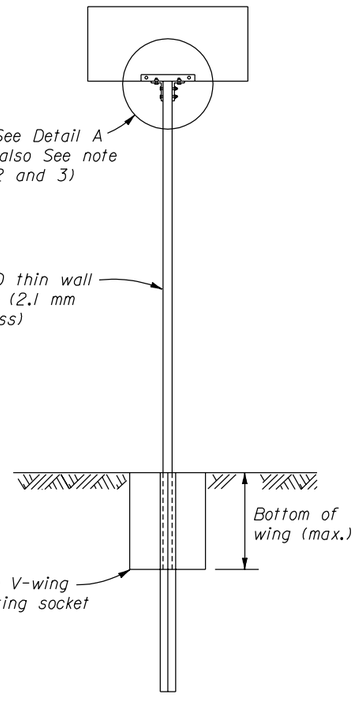
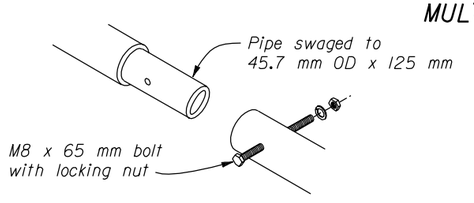
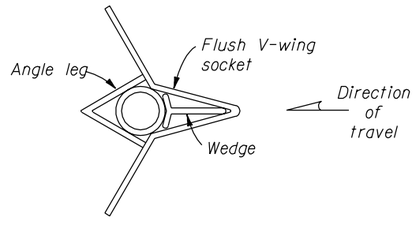


SIDE

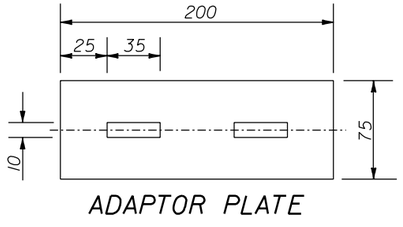
SINGLE SUPPORT



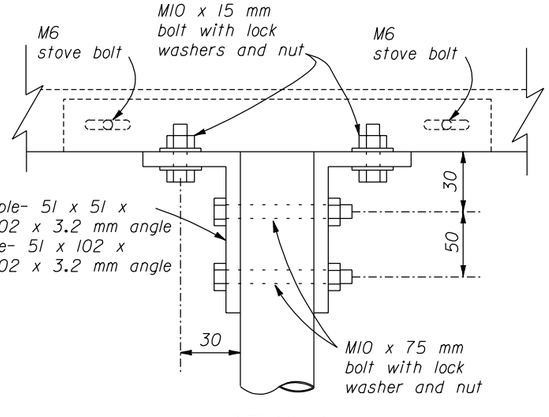
DETAIL B



POST MOUNTING SOCKET

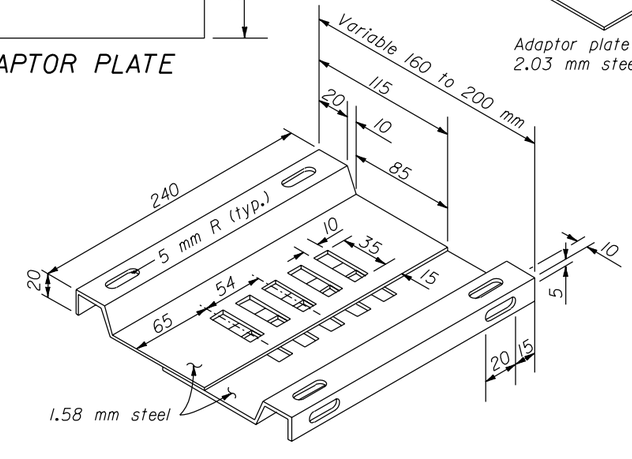


ADAPTOR PLATE



DETAIL A

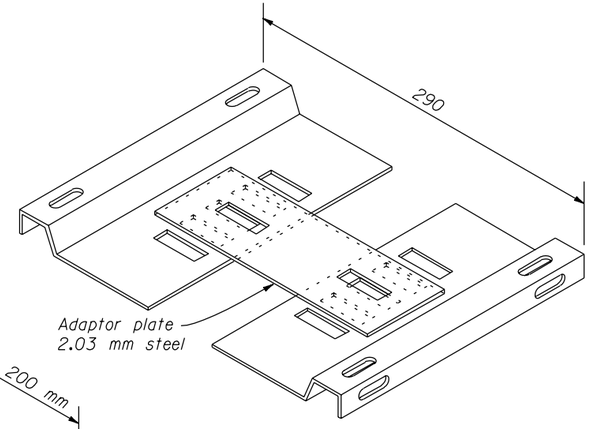
FLUSH V-WING SOCKET USE CHART		
MAILBOX LOCATION	SINGLE SUPPORT	MULTIPLE SUPPORT
Through new or existing pavement	600	600
Through well consolidated material	600 (750 mm with size 2)	750
Through new rock surfacing and subgrade	750	600 mm with conc. collar
Through new rock surfacing and subgrade, subject to saturated soils or freeze/ thaw conditions	750 (600 mm with conc. collar)	750 mm with conc. collar



SIZES 1 AND 1½

MOUNTING BRACKET

NO SCALE



SIZE 2 WITH ADAPTOR PLATE

MOUNTING BRACKET

NOTE:

1. Dimensions not labeled are in millimeters.
2. Install angle connections parallel to traffic flow for size 2 mailbox mounted on single posts.
3. Size 2 mailbox mounted on a multiple support requires 2 each, M10 x 15 mm bolts with lock washers and nuts to attach the adapter plate to the mounting bracket. The unit will then require 4 angle connections to attach to the formed tube support frame. See Detail A.
4. Pour concrete collar, if required, in place after flush V-wing socket has been installed, level and plumb. Do not excavate below bottom of wing.
5. Space multiple support frames a minimum of 1200 mm apart. Space single support frames a minimum of 900 mm apart. Do not place more than five no. 1 mailboxes, three no. 2 mailboxes, or four on any combination of no's. 1, 1-A and 2 mailboxes on a multiple support frame.
6. Approved alternate mailbox assemblies may be used.
7. Furnish hardware in the metric sizes shown. Equivalent imperial sizes may be used when sizes are not available.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WESTERN FEDERAL LANDS HIGHWAY DIVISION

METRIC DETAIL

MAILBOX ASSEMBLY

DETAIL APPROVED FOR USE 3/1996

REVISED:

DETAIL WM670-51

13 DEC 2000

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