STANDARD PLANS
for
ROAD CONSTRUCTION

New Hampshire
DOT
Department of Transportation

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION
2010

APPROVED: _____ 7/29/10
CHIEF ENGINEER — DATE

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JUNE 16, 2010

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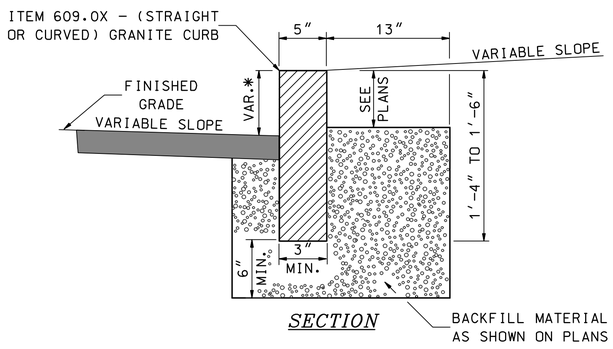


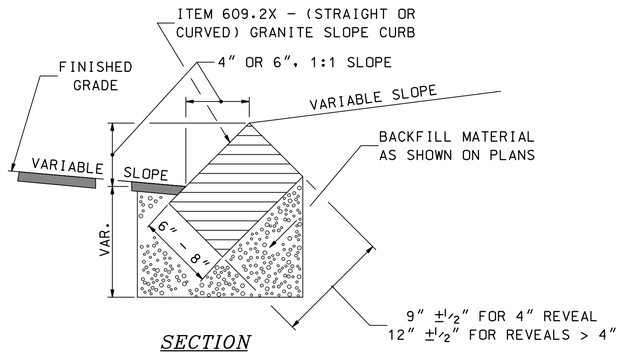
RADIUS	MAX. LENGTH
< 21′	USE CURVED CURB
21′	3′
22′ – 28′	4′
29′ – 35′	5′
36′ – 42′	6′
43′ – 49′	7′
50′ – 56′	8′
57′ – 60′	9′
OVER 60′	10′

NOTE: ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATELY THE SAME LENGTH.

* NORMALLY 7″ REVEAL, VARIES 9″ MAX. TO 2″ AT DRIVEWAYS AND 0″ AT PEDESTRIAN SIDEWALK RAMPS.

MINIMUM LENGTH OF STRAIGHT CURB STONES = 3′
MAXIMUM LENGTH OF STRAIGHT CURB STONES = 10′
MAXIMUM LENGTH OF STRAIGHT CURB STONES LAID ON CURVES – SEE CHART

NHDOT STANDARD PLANS	REV. DATE	PLATE
STRAIGHT OR CURVED GRANITE CURB	06-16-2010	1
		STANDARD CR-1

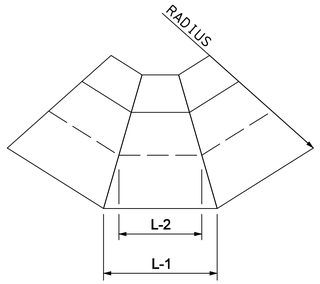


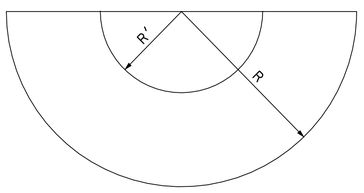
RADIUS FOR STONES WITH SQUARE JOINTS	MAXIMUM LENGTH
< 2′	USE CURVED CURB
2′ – 15′	USE RADIAL JOINTS
16′ – 28′	1′-6″
29′ – 41′	2′
42′ – 55′	3′
56′ – 68′	4′
69′ – 82′	5′
83′ – 96′	6′
97′ – 110′	7′
OVER 110′	8′

MINIMUM LENGTH OF STRAIGHT CURB STONES = 18″
MAXIMUM LENGTH OF STRAIGHT CURB STONES = 8′
MAXIMUM LENGTH OF STRAIGHT CURB STONES LAID ON CURVES – SEE CHART

NOTE: ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATELY THE SAME LENGTH.

NHDOT STANDARD PLANS	REV. DATE	PLATE
GRANITE SLOPE CURB	06-16-2010	2
		STANDARD CR-1



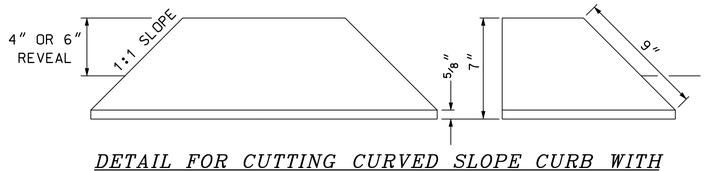


R′ = 5⅝″ FOR 1′ R

R′ = 11⅝″ FOR 1.5′ R

DETAIL FOR CUTTING SLOPE CURB WITH RADIAL JOINTS

NOTE: USE FOR 2′ TO 15′ RADIUS – SEE CHART ON PLATE 4.



DETAIL FOR CUTTING CURVED SLOPE CURB WITH 1′ OR 1.5′ RADIUS

NHDOT STANDARD PLANS	REV. DATE	PLATE
DETAILS FOR CUTTING STRAIGHT GRANITE SLOPE CURB	06-16-2010	3
		STANDARD CR-1

L-1	RADIUS (SEE DETAIL ON PLATE 3)											
	2′	2.5′	3′	3.5′	4′	5′	6′	8′	10′	12′	14′	15′
	L-2											
0′-9″	0′-6½″											
1′-0″	0′-8¾″	0′-9½″										
1′-1″	0′-9½″	0′-10¼″										
1′-2″	0′-10¼″	0′-11″	0′-11½″									
1′-3″	0′-11″	0′-11¾″	1′-0¼″									
1′-4″	0′-11¾″	1′-0½″	1′-1¼″	1′-1½″								
1′-5″	1′-0½″	1′-1½″	1′-2″	1′-2½″	1′-2¾″	1-3¼″	1′-3½″	1′-4″	1′-4″	1′-4¼″	1′-4¼″	1′-4¼″
1′-6″	1′-1¼″	1′-2¼″	1′-2¾″	1′-3¼″	1′-3½″	1′-4″	1′-4½″	1′-4¾″	1′-5″	1-5¼″	1′-5¼″	1′-5¼″
1′-7″	1′-2″	1′-3″	1′-3¾″	1′-4″	1′-4½″	1′-5″	1′-5¼″	1′-5¾″	1′-6″	1′-6¼″	1-6¼″	1-6¼″
1′-8″	1′-2¾″	1′-3¾″	1′-4½″	1′-5″	1′-5¼″	1′-6″	1′-6¼″	1′-6¾″	1′-7″	1′-7″	1′-7¼″	1′-7¼″
1′-9″							1′-7¼″	1′-7½″	1′-8″	1′-8″	1′-8¼″	1′-8¼″
1′-10″							1′-8″	1′-8½″	1′-8¾″	1′-9″	1′-9¼″	1′-9¼″
1′-11″							1′-9″	1′-9½″	1′-9¾″	1′-10″	1′-10¼″	1′-10¼″
2′-0″							1′-10″	1′-10½″	1-10¾″	1′-11″	1′-11″	1′-11″
2′-1″											2′-0″	2′-0″
2′-2″											2′-1″	2′-1″
2′-3″											2′-2″	2′-2″
2′-4″											2′-3″	2′-3″
2′-5″											2′-4″	2′-4″
2′-6″											2′-4¾″	2′-5″
2′-7″											2′-5¾″	2′-5¾″
2′-8″											2′-6¾″	2′-6¾″

NHDOT STANDARD PLANS	REV. DATE	PLATE
CHART FOR CUTTING STRAIGHT GRANITE SLOPE CURB WITH RADIAL JOINTS	06-16-2010	4
		STANDARD CR-1

STANDARD NO. CR-1

REVISION DATE
07-13-2001
06-16-2010

*.DGN FILE NAME
CR-1

STANDARD PLANS

New Hampshire DOT Department of Transportation

STANDARD NO. CR-1

STANDARD NO. CR-2

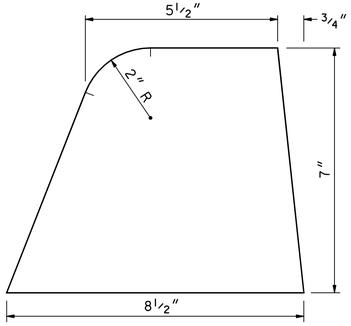
REVISION DATE
07-13-2001
06-16-2010

*.DGN FILE NAME
CR-2

STANDARD PLANS

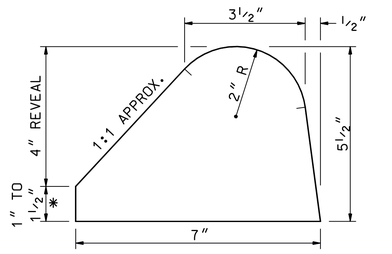
New Hampshire DOT Department of Transportation

STANDARD NO. CR-2



TYPE 'A'
ITEM 609.812

NOTE: TO BE USED ONLY WHEN CALLED FOR ON PLANS.

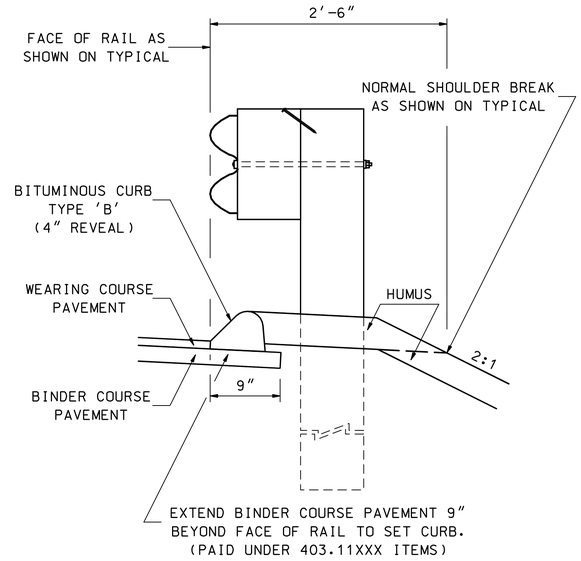


* MATCH DEPTH OF WEARING COURSE PAVEMENT

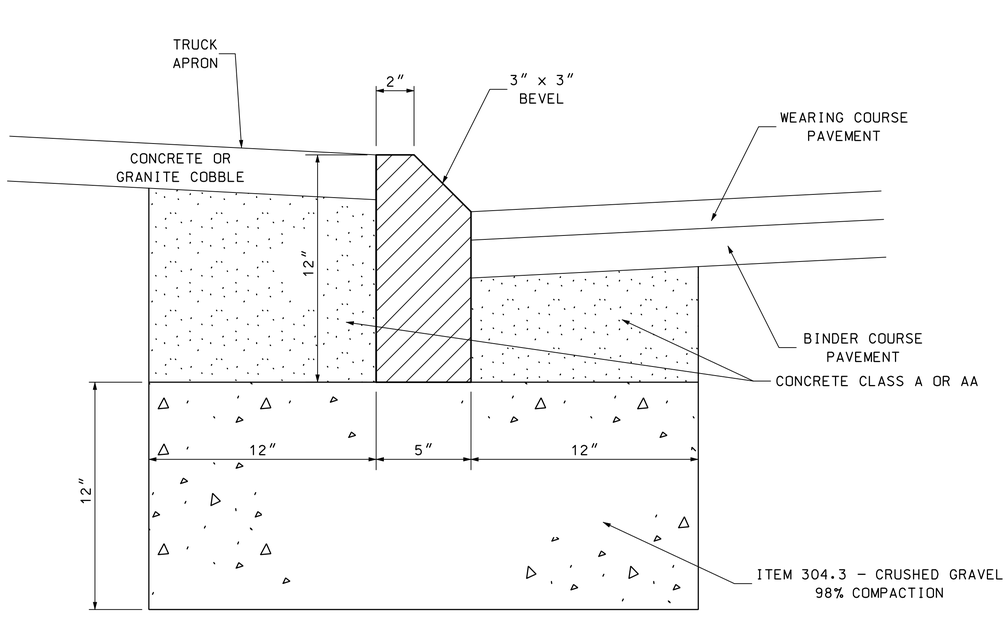
TYPE 'B' (4" REVEAL)
ITEM 609.811

NOTE: NORMALLY USED UNDER GUARDRAIL. SEE PLATE 2 FOR PLACEMENT DETAIL.

NHDOT STANDARD PLANS	REV. DATE		PLATE
BITUMINOUS CURB	06-16-2010		1
			STANDARD
			CR-2

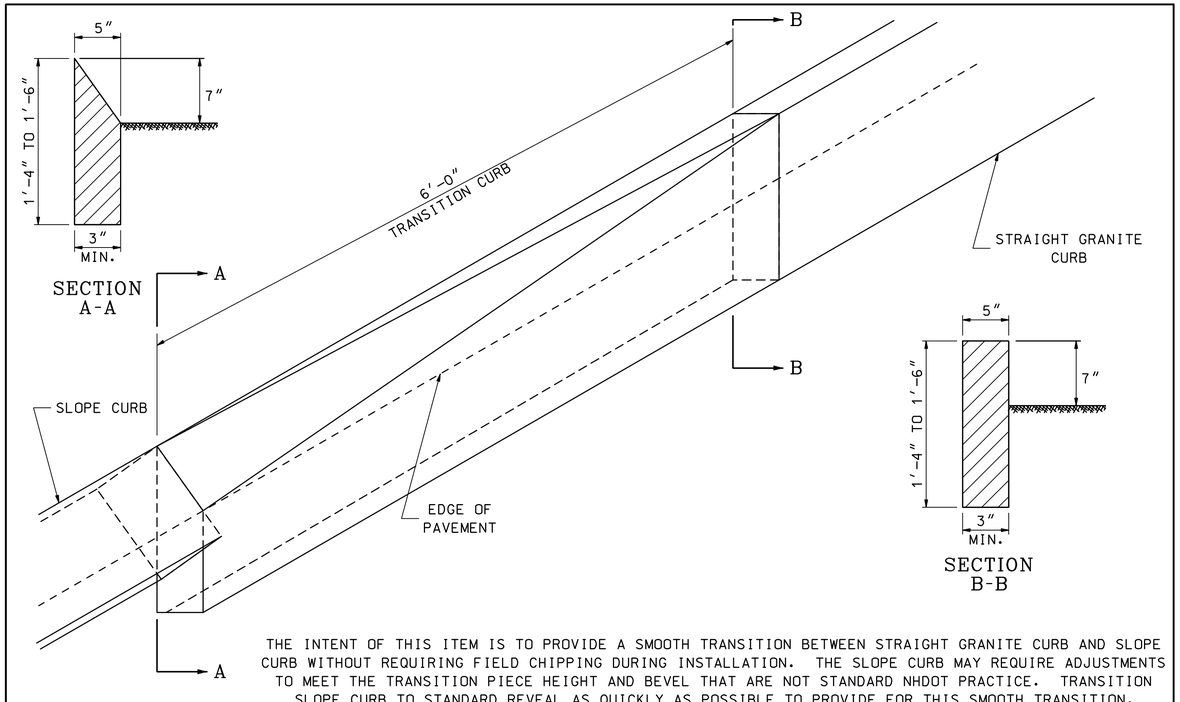


NHDOT STANDARD PLANS	REV. DATE		PLATE
BITUMINOUS CURB PLACEMENT UNDER BEAM GUARDRAIL	06-16-2010		2
			STANDARD
			CR-2



ITEM 609.01123 - STRAIGHT GRANITE CURB, 12" HIGH W/ 3" X 3" BEVELED MOUNTABLE EDGE

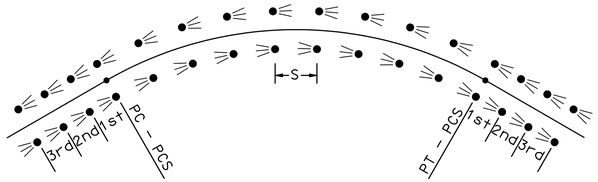
NHDOT STANDARD PLANS	REV. DATE		PLATE
ROUNDABOUT TRUCK APRON CURB	06-16-2010		3
			STANDARD
			CR-2



THE INTENT OF THIS ITEM IS TO PROVIDE A SMOOTH TRANSITION BETWEEN STRAIGHT GRANITE CURB AND SLOPE CURB WITHOUT REQUIRING FIELD CHIPPING DURING INSTALLATION. THE SLOPE CURB MAY REQUIRE ADJUSTMENTS TO MEET THE TRANSITION PIECE HEIGHT AND BEVEL THAT ARE NOT STANDARD NHDOT PRACTICE. TRANSITION SLOPE CURB TO STANDARD REVEAL AS QUICKLY AS POSSIBLE TO PROVIDE FOR THIS SMOOTH TRANSITION.

NHDOT STANDARD PLANS	REV. DATE		PLATE
STRAIGHT TO SLOPE CURB TRANSITION	06-16-2010		4
			STANDARD
			CR-2

DELINEATOR SPACING



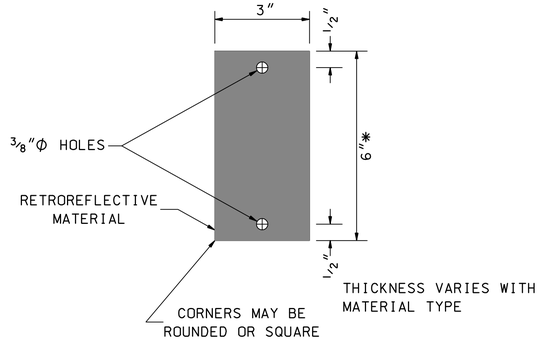
POST MOUNTED SPACING FOR HORIZONTAL CURVES

(SEE STD. NO. DL-2 FOR RAMPS AND LOOPS)

RADIUS OF CURVE (ft)	SPACING ON CURVE = S (ft)
OVER 7000	264
5501 – 7000	225
4001 – 5500	200
2901 – 4000	175
2101 – 2900	150
1501 – 2100	125
1151 – 1500	100
<1150	*

* SEE BEAM GUARDRAIL DELINEATOR SPACING

SPACING MAY BE COMPUTED BY THE FORMULA $S=3\sqrt{R-50}$. THE MINIMUM SPACING SHALL BE 20 FEET, WITH THE MAXIMUM NOT TO EXCEED 264 FEET. THE SPACING OF THE FIRST DELINEATOR BEYOND A CURVE IS 2S, THE SECOND IS 3S, AND THE THIRD IS 6S BUT NOT TO EXCEED 264 FEET.



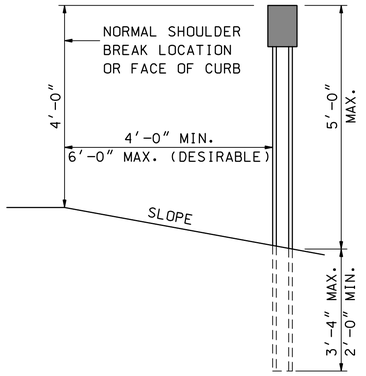
* 12″ SINGLE PIECE MAY BE USED FOR DOUBLE DELINEATOR

RETROREFLECTIVE DELINEATOR

(ITEM 621.3X, 621.4)

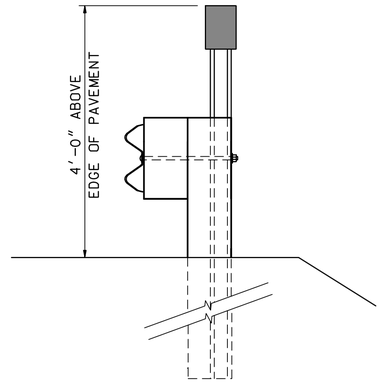
GENERAL NOTES

1. UNLESS OTHERWISE ORDERED, DELINEATORS SHALL BE MOUNTED ALONG THE RIGHT SIDE OF ALL ROADWAYS (SEE TYPICAL). DELINEATORS MAY ALSO BE USED ON THE LEFT SIDE OF DIVIDED HIGHWAYS WHERE NEEDED FOR CLEAR INDICATION OF THE ALIGNMENT.
2. DELINEATORS LOCATED BEHIND GUARDRAIL SHALL BE INSTALLED SO THAT THE DELINEATOR POST IS ADJACENT TO THE TRAILING EDGE OF THE NEAREST GUARDRAIL POST.
3. WHEN DELINEATION IS USED ONLY ON CURVES, THREE DELINEATORS SHALL BE PLACED BEFORE AND AFTER THE CIRCULAR PORTION OF THE CURVE.
4. WHEN DELINEATION IS USED ON TANGENTS, THE SPACING SHALL BE 264 FEET. THE TANGENT SPACING SHALL BEGIN BEYOND THE SPACING REQUIREMENTS FOR CURVES.
5. DELINEATOR COLORS SHALL IN ALL CASES CONFORM TO THE COLOR OF THE EDGELINES.
6. DELINEATORS WILL NOT BE PLACED BEHIND SIDEWALK.

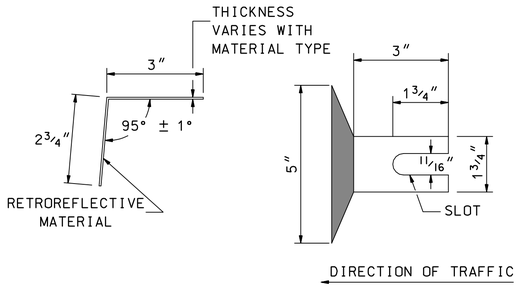


TYPICAL INSTALLATION

(ITEM 621.31)



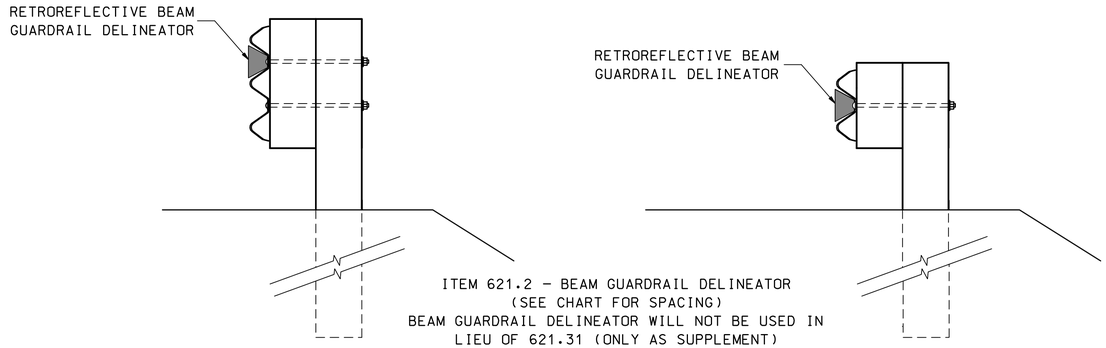
DELINEATOR WITHIN GUARDRAIL SECTION



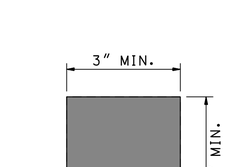
RETROREFLECTIVE BEAM GUARDRAIL DELINEATOR

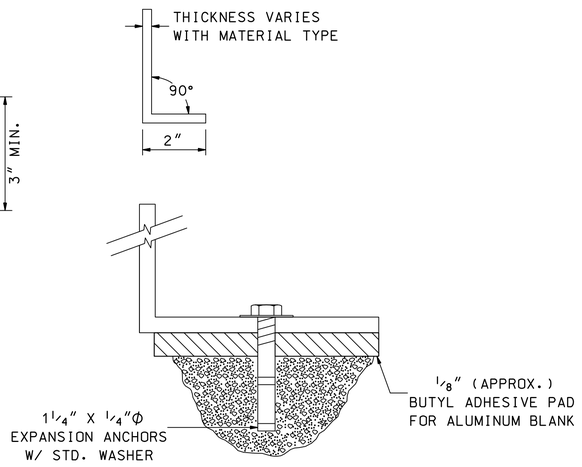
(ITEM 621.2)

SPACING FOR BEAM GUARDRAIL DELINEATORS SHALL BE 25′ MINIMUM AND 100′ MAXIMUM	
RADIUS OF CURVE (IN FEET)	ADJUSTED FOR POST SPACING (IN FEET)
50	25
150	25
200	37 1/2
250	37 1/2
300	50
400	50
500	62 1/2
600	62 1/2
700	75
800	75
900	87 1/2
1000	87 1/2



ITEM 621.2 – BEAM GUARDRAIL DELINEATOR
(SEE CHART FOR SPACING)
BEAM GUARDRAIL DELINEATOR WILL NOT BE USED IN LIEU OF 621.31 (ONLY AS SUPPLEMENT)





RETROREFLECTIVE CONCRETE MEDIAN BARRIER DELINEATOR

(ITEM 621.1)

GENERAL NOTES

A. THIS DELINEATOR IS TO BE PLACED ON TOP OF CONCRETE BARRIER.

B. IF GLARE SCREEN IS PLACED ON TOP OF THE CONCRETE BARRIER, THEN DELINEATORS ARE ATTACHED TO EITHER SIDE OF THE BARRIER AND DO NOT NEED TO BE RETRO-REFLECTORIZED ON BOTH SIDES.

C. YELLOW DELINEATOR FOR MEDIAN BARRIERS SHALL BE LOCATED ON THE LEFT SIDE OF THE ROADWAY FACING TRAFFIC IN BOTH DIRECTIONS, BEGINNING AT THE FIRST FULL HEIGHT OF THE CONCRETE MEDIAN BARRIER AND SPACED ACCORDING TO CHART FOR BEAM GUARDRAIL DELINEATORS.

DELINEATION STANDARD

ROADSIDE DELINEATION

STANDARD NO. DL-1

REVISION DATE
07-13-2001
06-16-2010

*.DGN FILE NAME
DL-1

STANDARD PLANS

New Hampshire DOT Department of Transportation

STANDARD NO. DL-1

STANDARD NO. DL-2

REVISION DATE
07-13-2001
06-16-2010

*.DGN FILE NAME
DL-2

STANDARD PLANS

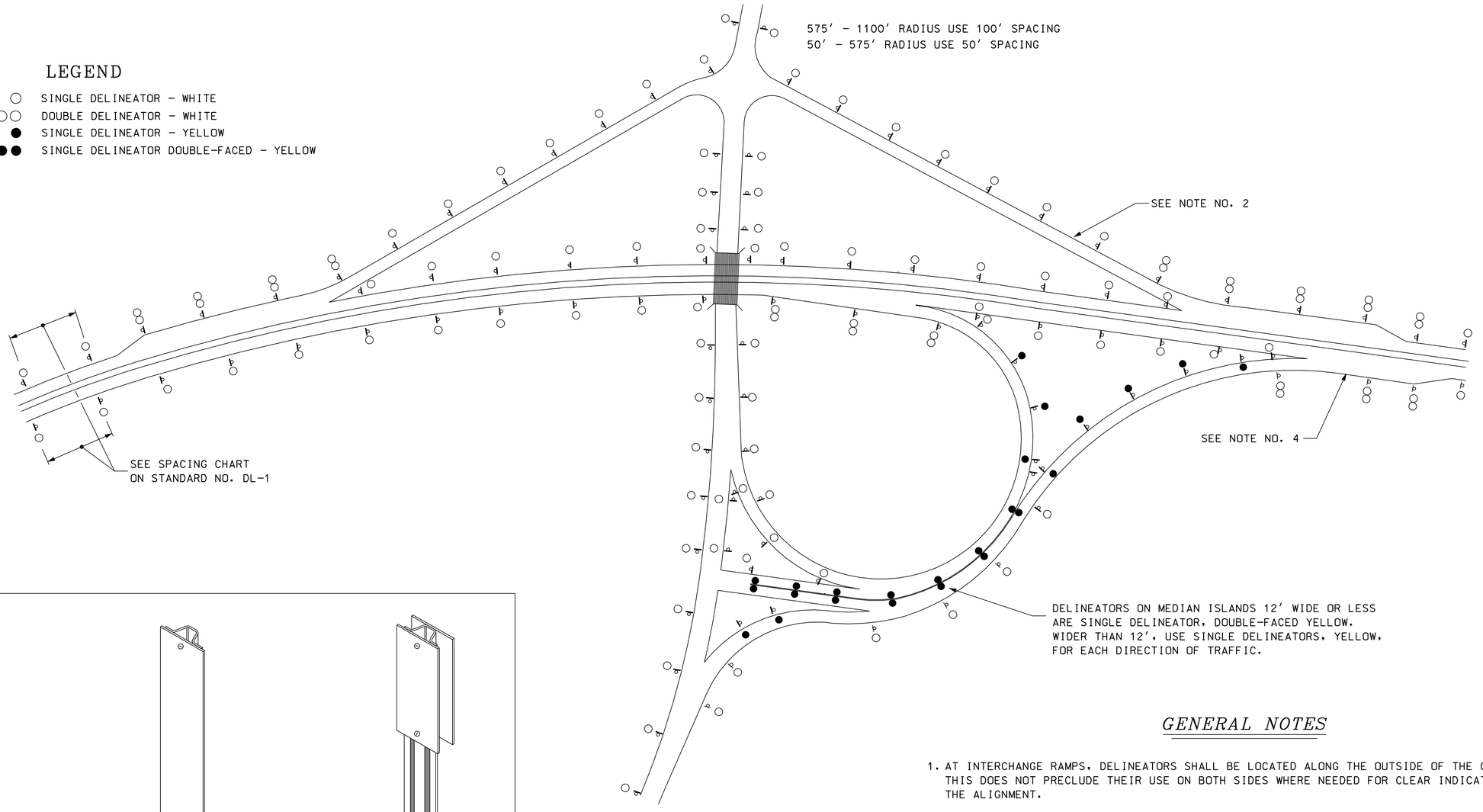
New Hampshire DOT Department of Transportation

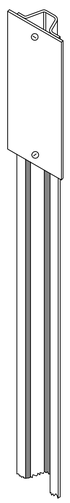
STANDARD NO. DL-2

DELINEATOR SPACING FOR RAMPS AND LOOPS
RADIUS 1100 FEET OR LESS

LEGEND

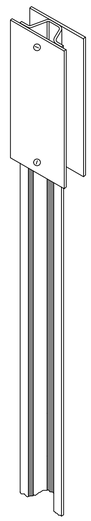
- ○ SINGLE DELINEATOR – WHITE
- ○○ DOUBLE DELINEATOR – WHITE
- ● SINGLE DELINEATOR – YELLOW
- ●● SINGLE DELINEATOR DOUBLE-FACED – YELLOW





SINGLE DELINEATOR
ITEM 621.31

DOUBLE DELINEATOR
ITEM 621.32



SINGLE DELINEATOR DOUBLE-FACED
ITEM 621.33

GENERAL NOTES

1. AT INTERCHANGE RAMPS, DELINEATORS SHALL BE LOCATED ALONG THE OUTSIDE OF THE CURVES. THIS DOES NOT PRECLUDE THEIR USE ON BOTH SIDES WHERE NEEDED FOR CLEAR INDICATION OF THE ALIGNMENT.

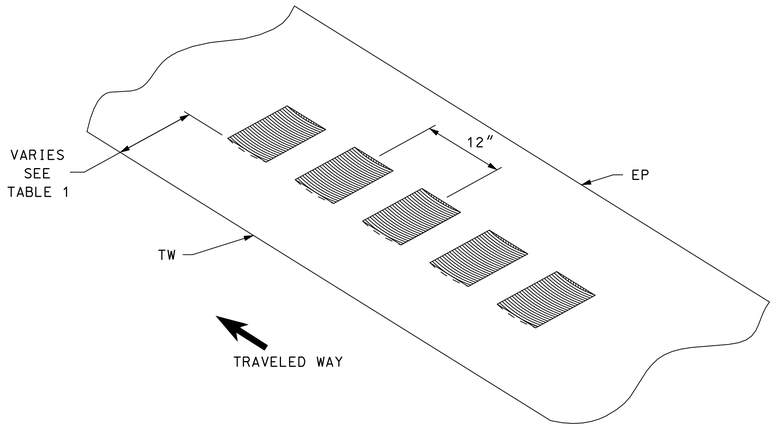
2. CONTINUE NORMAL DELINEATOR SPACING ON RIGHT SIDE OF RAMPS IF RADII OF CURVES ARE GREATER THAN 1000 FT OR TANGENT (SEE STD. NO. DL-1)

3. WHEN THE RADII OF RIGHT HAND CURVES ON RAMPS AND LOOPS ARE LESS THAN 1000 FT., DELINEATE THE LEFT SIDE (OUTSIDE OF CURVE) OF EACH RAMP OR LOOP FROM THE PC TO THE PT OR CARRY DELINEATION ON THE RIGHT SIDE FOR A MINIMUM OVERLAP OF 2 DELINEATORS. WHERE DELINEATION IS TERMINATED ON THE LEFT SIDE, BEGIN DELINEATION AGAIN ON THE RIGHT SIDE WITH A MINIMUM OVERLAP OF 2 DELINEATORS. WHEN THE GAP ON THE RIGHT SIDE IS LESS THAN 500 FT., CONTINUE THE DELINEATORS ON THE RIGHT SIDE THROUGH THE CURVE.

4. ON SPEED CHANGE LANES THE DELINEATORS SHALL BE INSTALLED ON THE RIGHT FOR RIGHT HAND CONNECTIONS, AND ON THE LEFT FOR LEFT HAND CONNECTIONS. DOUBLE DELINEATORS SHALL BE INSTALLED AT 100 FT. INTERVALS ALONG ACCELERATION AND DECELERATION LANES.

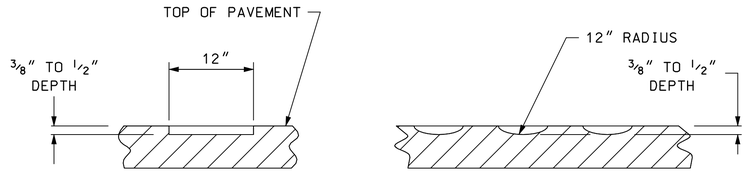
DELINEATION STANDARD

INTERCHANGE DELINEATION

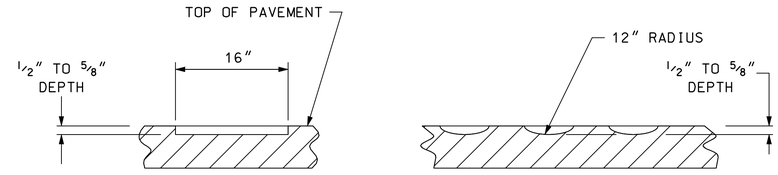


TYPICAL SHOULDER INSTALLATION
RIGHT SHOULDER DETAIL

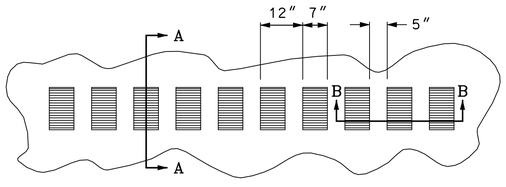
TABLE 1 LONGITUDINAL RUMBLE STRIP APPLICATION			
ROADWAY TYPE	SHOULDER WIDTH	MEDIAN SHOULDER TW OFFSET	RIGHT SHOULDER TW OFFSET
UNDIVIDED	≥ 8′	N/A	12″ OFFSET FROM TW
DIVIDED	> 6′	30″ OFFSET FROM TW	30″ OFFSET FROM TW
DIVIDED	≤ 6′	6″ OFFSET FROM TW	30″ OFFSET FROM TW



SECTION A-A SECTION B-B

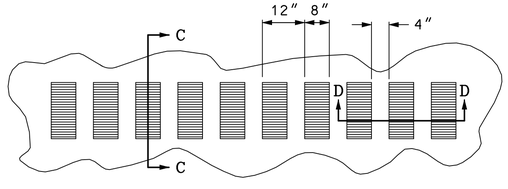


SECTION C-C SECTION D-D



PLAN

NON-INTERSTATE APPLICATION



PLAN

INTERSTATE APPLICATION

GENERAL NOTES

1. FOR ADDITIONAL GUIDANCE IN THE PROPER INSTALLATION OF MILLED RUMBLE STRIPS, REFER TO THE *DESIGN GUIDELINES FOR THE INSTALLATION OF RUMBLE STRIPS ON NEW HAMPSHIRE HIGHWAYS* (DATED FEBRUARY 15, 2008) FOUND ON THE NHDOT'S WEBSITE.
2. RUMBLE STRIPS SHALL NOT ENCROACH INTO EXISTING MAINTENANCE FACILITY DRIVEWAYS, SERVICE AREA RAMPS, MAINTENANCE MEDIAN CROSSOVERS, OR ACCELERATION OR DECELERATION LANES.
3. WHERE AT-GRADE BRIDGES ARE PRESENT, RUMBLE STRIPS SHALL END/BEGIN 30 FEET BEYOND THE EXISTING BRIDGE DECK ENDS.
4. RUMBLE STRIPS SHALL BE CONSTRUCTED ON ALL BREAKDOWN LANES AND MEDIAN SHOULDERS UNLESS OTHERWISE SPECIFIED HEREIN.
5. RUMBLE STRIPS SHALL NOT BE MILLED ON ANY PAVEMENT MARKINGS. REPLACEMENT OF PAVEMENT MARKINGS SHALL BE AT THE CONTRACTOR'S EXPENSE.
6. FOR INTERSTATE APPLICATIONS, RUMBLE STRIPS SHALL HAVE A FINISHED DIMENSION OF 7″ WIDE IN THE DIRECTION OF TRAVEL AND HAVE A MINIMUM DIMENSION OF 16″ LONG MEASURED PERPENDICULAR TO THE DIRECTION OF TRAVEL.
7. FOR NON-INTERSTATE APPLICATIONS, RUMBLE STRIPS SHALL HAVE A FINISHED DIMENSION OF 7″ WIDE IN THE DIRECTION OF TRAVEL AND HAVE A MINIMUM DIMENSION OF 12″ LONG MEASURED PERPENDICULAR TO THE DIRECTION OF TRAVEL.
8. FOR INTERSTATE APPLICATIONS, THE DEPRESSIONS SHALL HAVE A CONCAVE CIRCULAR SHAPE WITH A MINIMUM 1/2″ DEPTH AT THE CENTER (5/8″ MAXIMUM DEPTH).
9. FOR NON-INTERSTATE APLICATIONS, THE DEPRESSIONS SHALL HAVE A CONCAVE CIRCULAR SHAPE WITH A MINIMUM 3/8″ DEPTH AT THE CENTER (1/2″ MAXIMUM DEPTH).
10. MEDIAN CROSSOVERS:
    WHERE SHOULDER IS GREATER THAN 6 FEET, TERMINATE SRS 50 FEET BEFORE AND BEGIN 50 FEET AFTER.
    WHERE SHOULDER IS LESS THAN 6 FEET, TERMINATE 130 FEET BEFORE AND BEGIN SRS 50 FEET AFTER.
11. SHOULDER RUMBLE STRIPS WILL NOT BE PLACED ON SEGMENTS OF ROADWAY THAT HAVE MORE THAN 5 SIDE ROADS AND/OR MAJOR COMMERCIAL DRIVES IN A ONE-MILE SEGMENT

DELINEATION STANDARD

MILLED RUMBLE STRIPS (SHOULDERS)

STANDARD NO. DL-3

REVISION DATE
06-16-2010

*.DGN FILE NAME
DL-3

STANDARD PLANS

New Hampshire DOT Department of Transportation

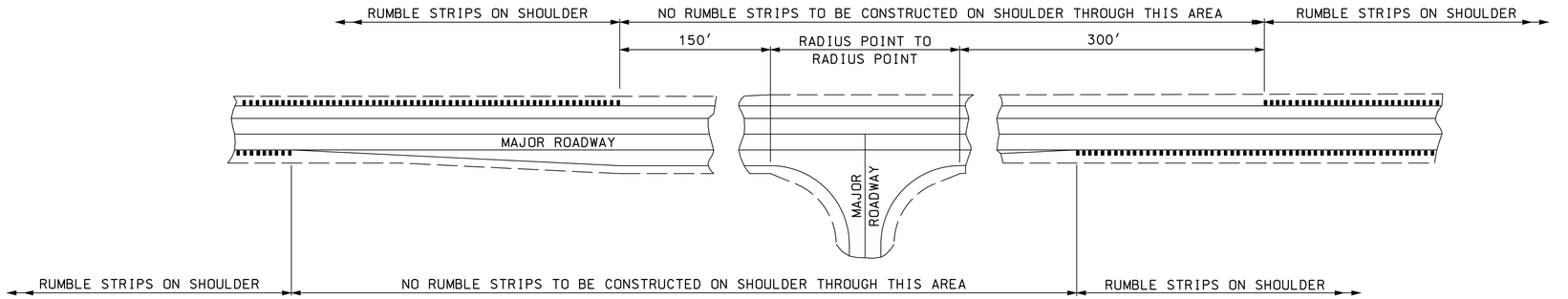
STANDARD NO. DL-3

STANDARD
NO. DL-4

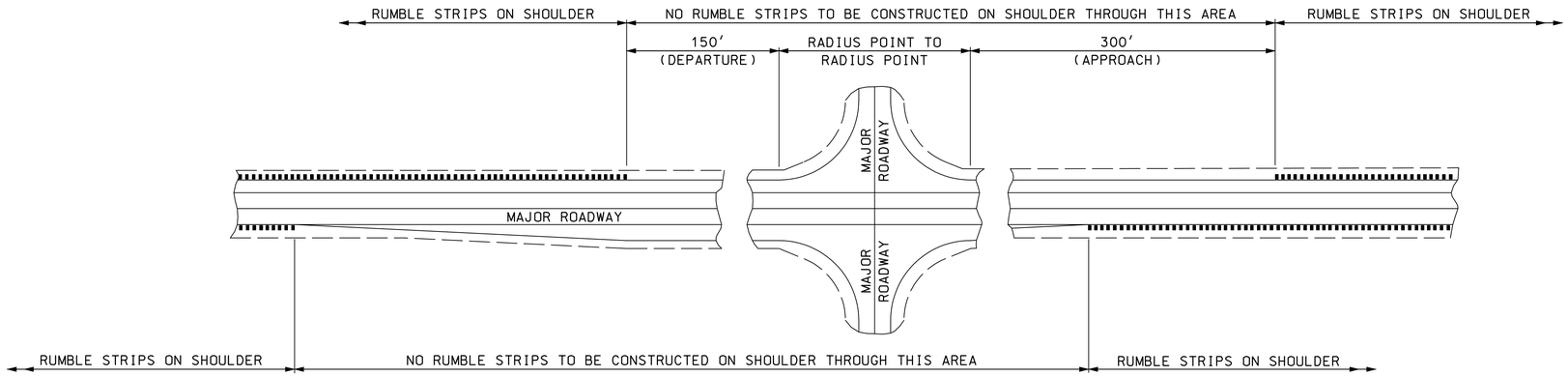
REVISION DATE
06-16-2010

*.DGN FILE NAME
DL-4

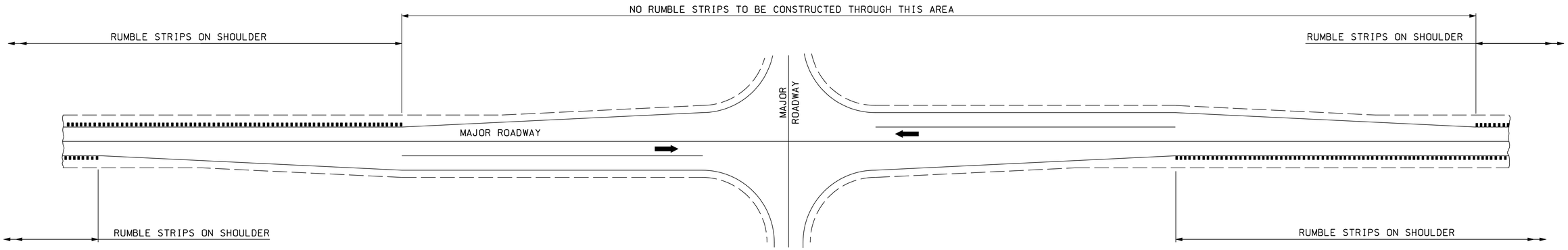
STANDARD PLANS



TYPICAL "T" INTERSECTION



TYPICAL INTERSECTION



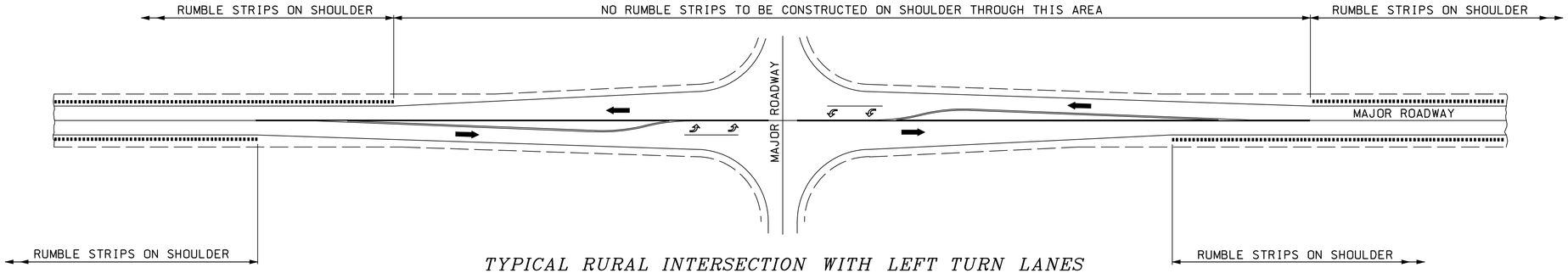
TYPICAL RURAL INTERSECTION WITH BYPASS LANES

New Hampshire DOT
Department of Transportation

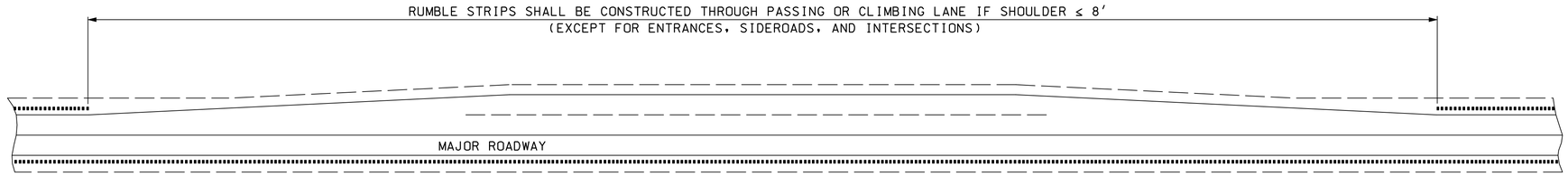
STANDARD
NO. DL-4

DELINEATION STANDARD

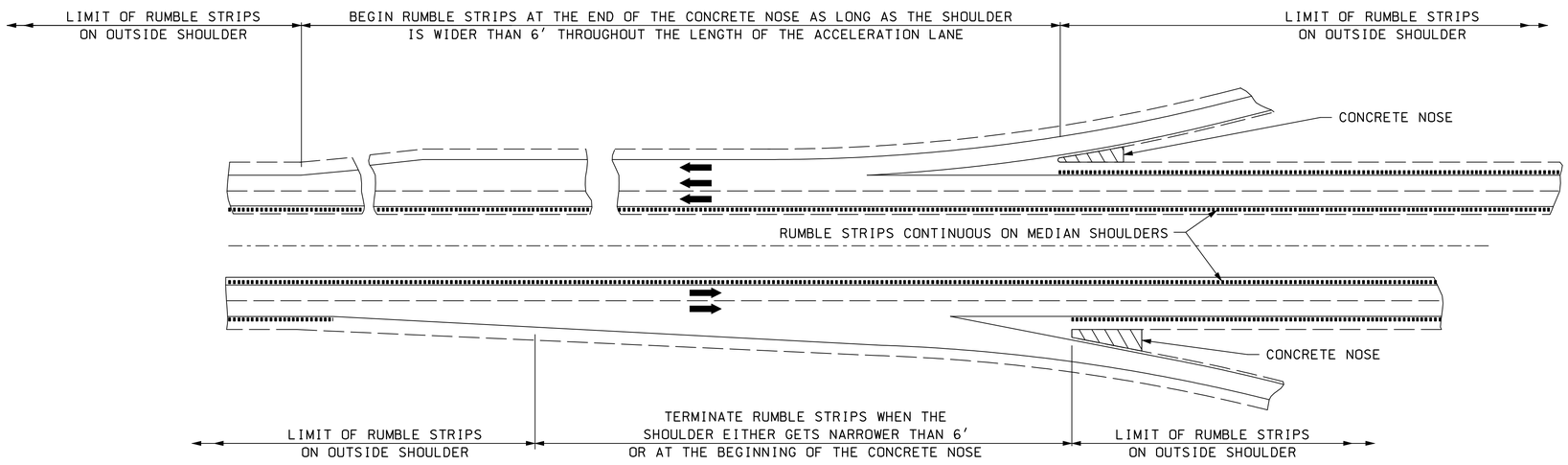
MILLED RUMBLE STRIPS (SHOULDERS)



TYPICAL RURAL INTERSECTION WITH LEFT TURN LANES



TYPICAL PASSING OR CLIMBING LANES



TYPICAL INTERCHANGE RAMP ENTRANCE & EXIT

DELINEATION STANDARD

MILLED RUMBLE STRIPS (SHOULDERS)

STANDARD NO. DL-5

REVISION DATE
06-16-2010

*.DGN FILE NAME
DL-5

STANDARD PLANS

New Hampshire DOT Department of Transportation

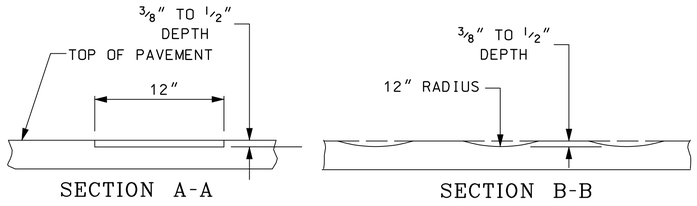
STANDARD NO. DL-5

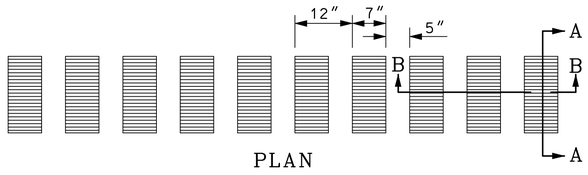
STANDARD NO. DL-6

REVISION DATE
06-16-2010

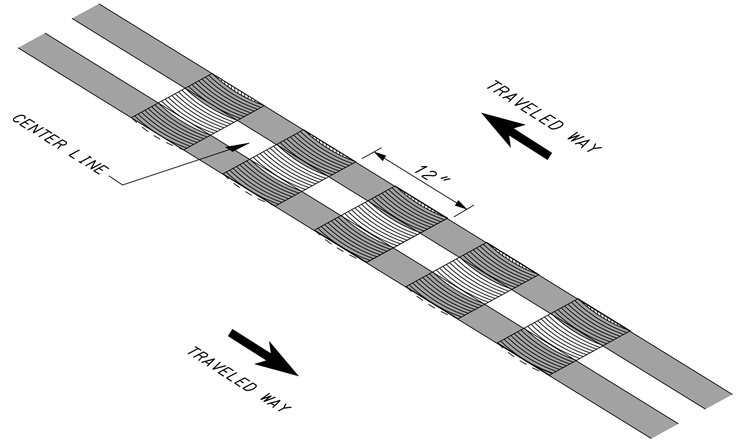
*.DGN FILE NAME
DL-6

STANDARD PLANS





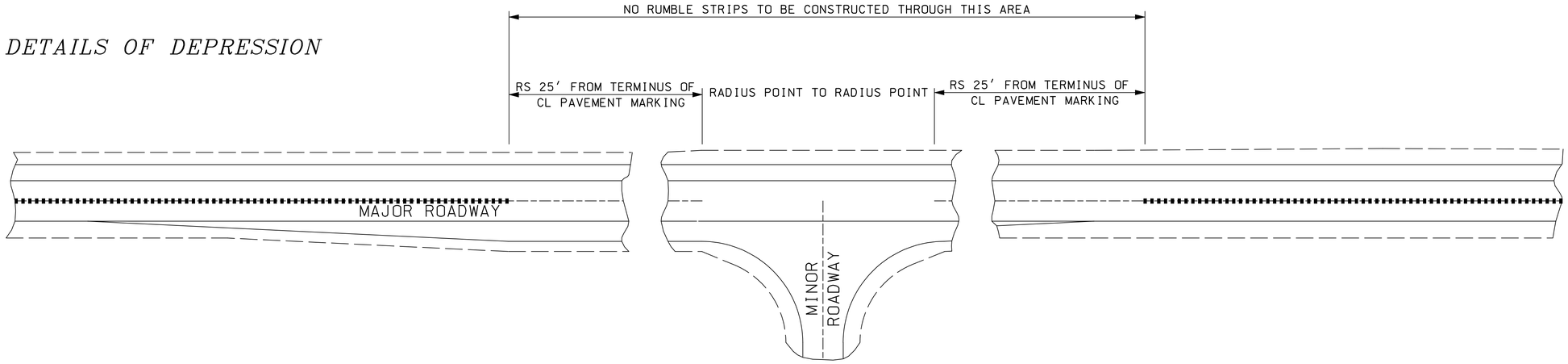
DETAILS OF DEPRESSION



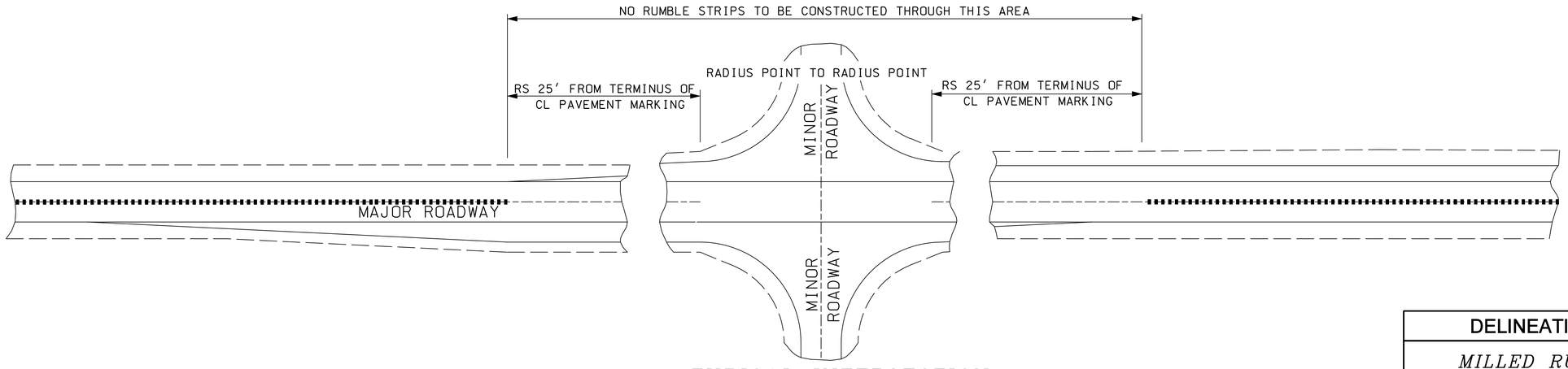
TYPICAL CENTERLINE INSTALLATION DETAIL

GENERAL NOTES

1. CENTERLINE RUMBLE STRIPS SHALL BE CONTINUED THROUGHOUT ALL PASSING ZONES.
2. WHERE AT-GRADE BRIDGES ARE PRESENT, RUMBLE STRIPS SHALL END/BEGIN 30 FEET BEYOND THE EXISTING BRIDGE DECK JOINTS.
3. RUMBLE STRIPS SHALL NOT BE MILLED ON ANY PAVEMENT MARKINGS. REPLACEMENT OF PAVEMENT MARKINGS SHALL BE AT THE CONTRACTOR'S EXPENSE.
4. RUMBLE STRIPS SHALL HAVE A FINISHED DIMENSION OF 7" WIDE IN THE DIRECTION OF TRAVEL AND HAVE A MINIMUM OF 12" LONG MEASURED PERPENDICULAR TO THE DIRECTION OF TRAVEL.
5. THE DEPRESSIONS SHALL GENERALLY HAVE A CONCAVE CIRCULAR SHAPE WITH A MINIMUM 3/8" DEPTH AT THE CENTER (1/2" MAXIMUM DEPTH).



TYPICAL "T" INTERSECTION



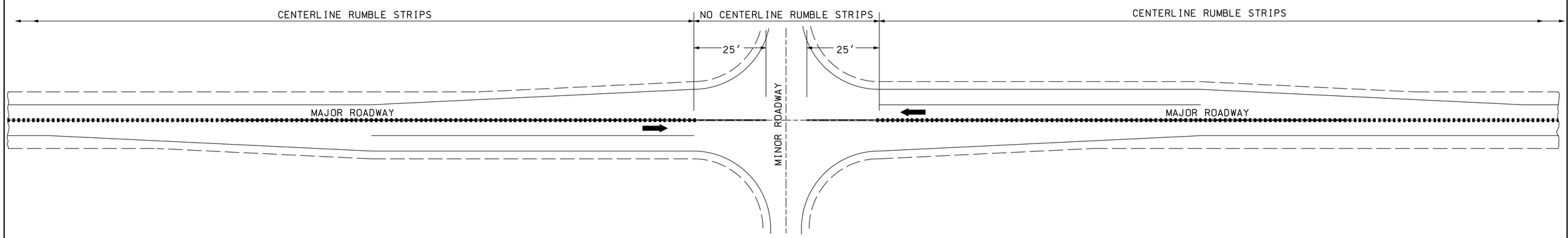
TYPICAL INTERSECTION

New Hampshire DOT Department of Transportation

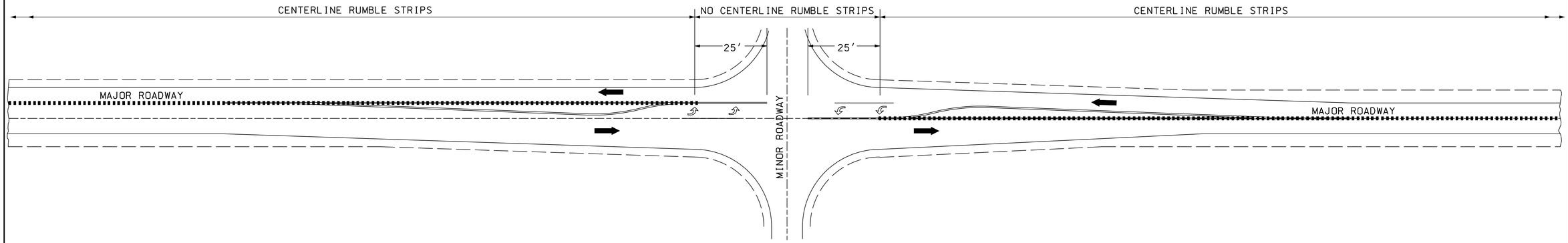
STANDARD NO. DL-6

DELINEATION STANDARD

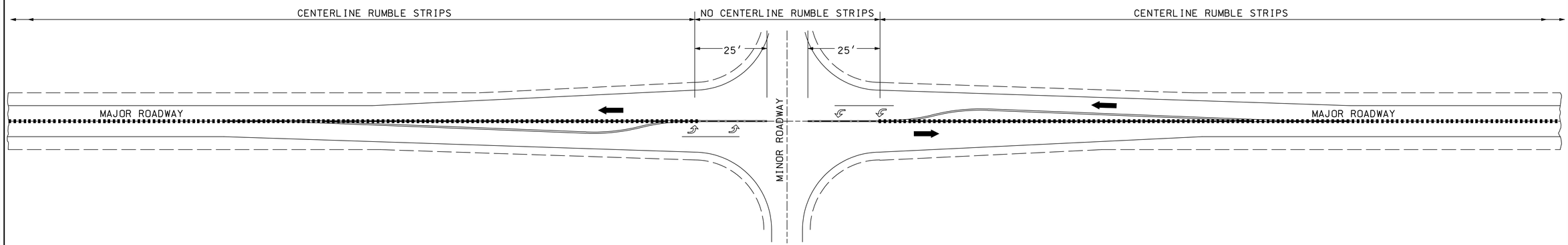
MILLED RUMBLE STRIPS (CENTERLINE)



TYPICAL RURAL INTERSECTION WITH BYPASS LANES



TYPICAL RURAL INTERSECTION WITH OPPOSING LEFT TURN LANES



TYPICAL RURAL INTERSECTION WITH OFFSET LEFT TURN LANES

DELINEATION STANDARD

MILLED RUMBLE STRIPS (CENTERLINE)

STANDARD NO. DL-7

REVISION DATE
06-16-2010

*.DGN FILE NAME
DL-7

STANDARD PLANS

New Hampshire DOT Department of Transportation

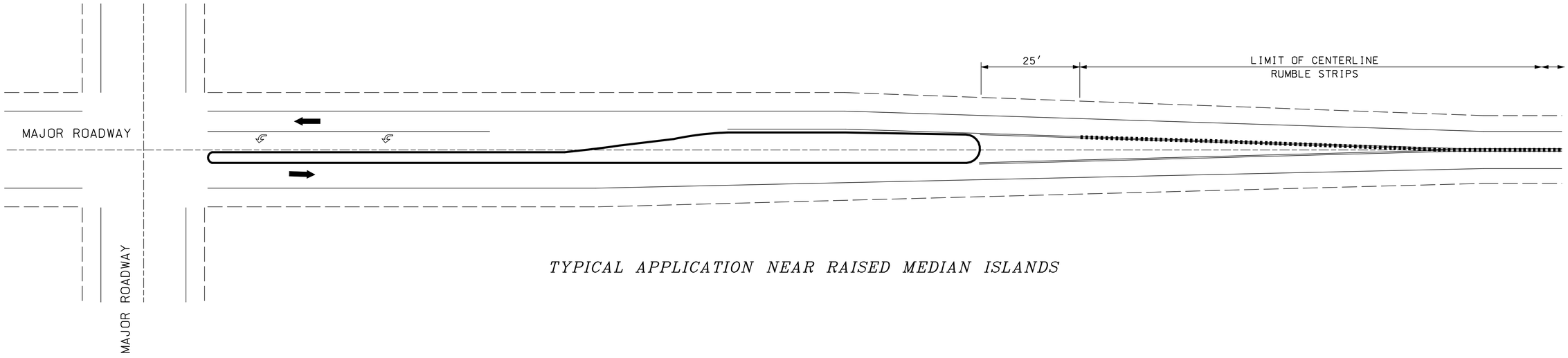
STANDARD NO. DL-7

STANDARD NO. DL-8

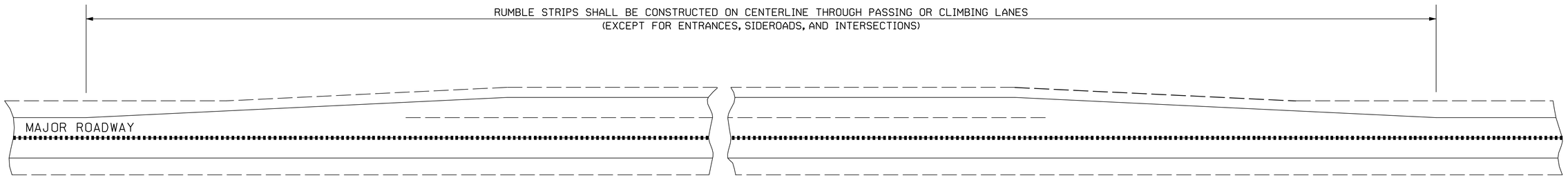
REVISION DATE
06-16-2010

*.DGN FILE NAME
DL-8

STANDARD PLANS



TYPICAL APPLICATION NEAR RAISED MEDIAN ISLANDS



TYPICAL PASSING OR CLIMBING LANES

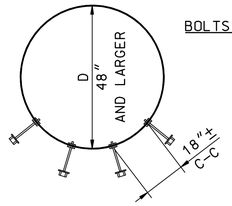
New Hampshire DOT Department of Transportation

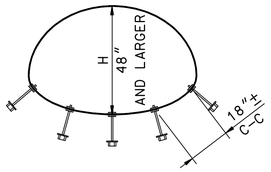
STANDARD NO. DL-8

DELINEATION STANDARD

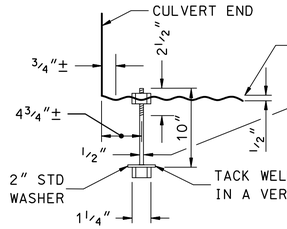
MILLED RUMBLE STRIPS (CENTERLINE)

BOLTS FOR USE WITH LOW HEADWALL STRUCTURES





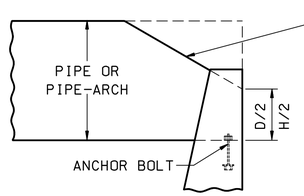
ELEVATIONS



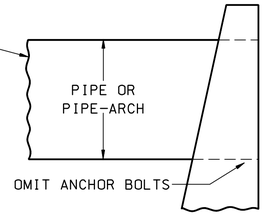
ALL HOLES 9/16" DIA. TO BE DRILLED OR PUNCHED PRIOR TO COATING PIPE, OR FIELD DRILLED IF CHANGES ORDERED.

BOLTS TO BE SPACED APPROX. 18" C-C.

ANCHOR BOLT & LOCATION

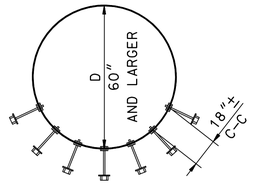


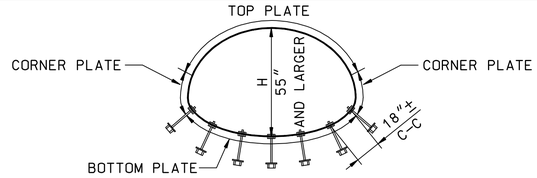
DESIGN WITH LOW HEADWALL



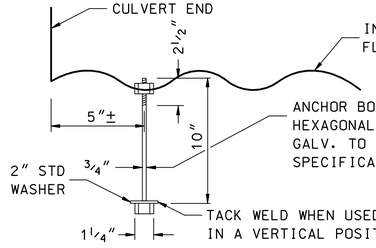
DESIGN WITH FULL HEADWALL

NHDOT STANDARD PLANS	REV. DATE		PLATE
ANCHOR BOLTS FOR CORRUGATED STEEL PIPE AND PIPE-ARCH	06-16-2010		1
			STANDARD
			DP-1





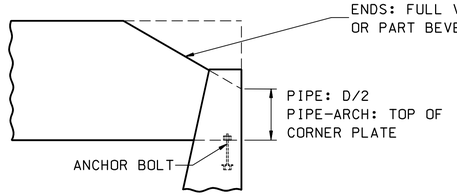
ELEVATIONS



ALL HOLES 7/8" DIA. TO BE DRILLED OR PUNCHED PRIOR TO COATING PIPE, OR FIELD DRILLED IF CHANGES ORDERED.

BOLTS TO BE SPACED APPROX. 18" C-C, EXCEPT ON SKEW CUT ENDS. SOME HOLES WILL NOT BE IN CORRUGATION VALLEY.

ANCHOR BOLT & LOCATION



DESIGN WITH LOW HEADWALL

NOTE: WITH FULL HEADWALL, ANCHOR BOLTS NOT REQUIRED, EXCEPT ON SKEWS GREATER THAN 20° WHERE FULL PERIPHERY ANCHOR BOLTS ARE TO BE USED.

NHDOT STANDARD PLANS	REV. DATE		PLATE
ANCHOR BOLTS FOR STRUCTURAL STEEL PLATE PIPE AND PIPE-ARCH	06-16-2010		2
			STANDARD
			DP-1

NHDOT STANDARD PLANS	REV. DATE		PLATE
			3
			STANDARD
			DP-1

NHDOT STANDARD PLANS	REV. DATE		PLATE
			4
			STANDARD
			DP-1

STANDARD NO. DP-1

REVISION DATE
07-13-2001
06-16-2010

*.DGN FILE NAME
DP-1

STANDARD PLANS

New Hampshire DOT Department of Transportation

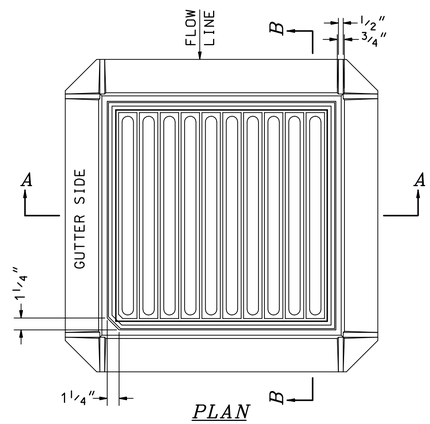
STANDARD NO. DP-1

STANDARD NO. DR-1

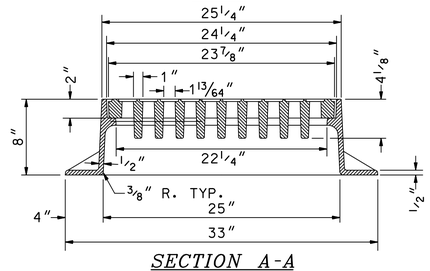
REVISION DATE
07-13-2001
06-16-2010

*.DGN FILE NAME
DR-1

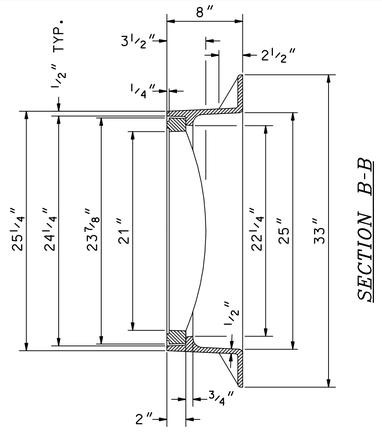
STANDARD PLANS



PLAN



SECTION A-A

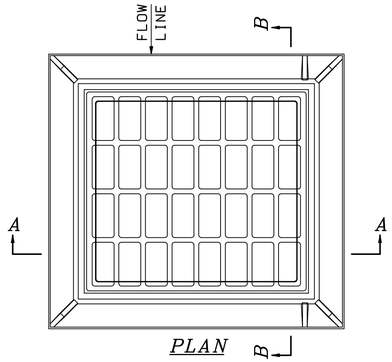


SECTION B-B

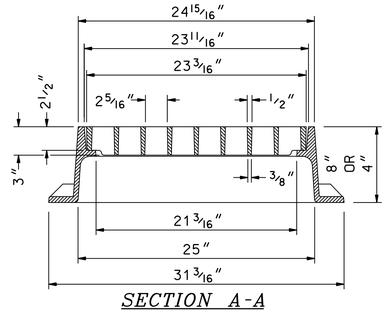
GENERAL NOTES

1. ALL DIMENSIONS ARE NOMINAL.
2. FREE OPEN AREA = 1.73 S.F.
3. NOT TO BE USED WHEN BICYCLE TRAFFIC IS ANTICIPATED.
4. USE 3-FLANGE FRAME IF INSTALLED ADJACENT TO GRANITE CURB.

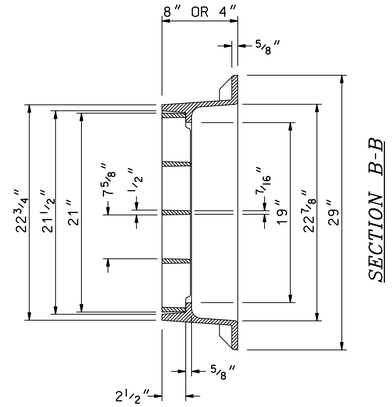
NHDOT STANDARD PLANS	REV. DATE		PLATE
TYPE "A" GRATE & FRAME	06-16-2010		1
			STANDARD
			DR-1



PLAN



SECTION A-A

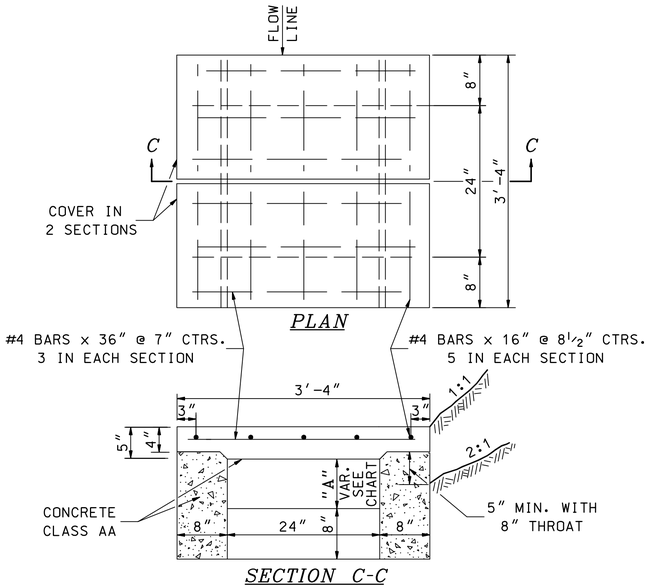


SECTION B-B

GENERAL NOTES

1. ALL DIMENSIONS ARE NOMINAL.
2. FRAME AVAILABLE IN 4" OR 8" HEIGHTS.
3. FREE OPEN AREA = 2.55 S.F.
4. USE 3-FLANGE FRAME IF INSTALLED ADJACENT TO GRANITE CURB.

NHDOT STANDARD PLANS	REV. DATE		PLATE
TYPE "B" GRATE & FRAME	06-16-2010		2
			STANDARD
			DR-1



PLAN

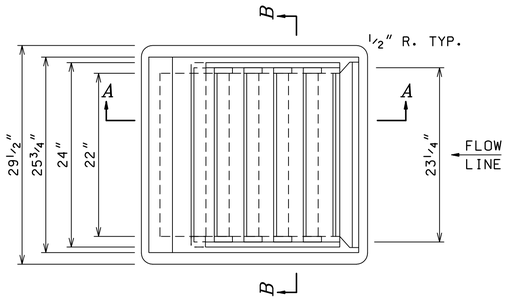
SECTION C-C

TO BE USED IN BERM DITCHES AND AT LOCATIONS INACCESSIBLE TO VEHICULAR TRAFFIC

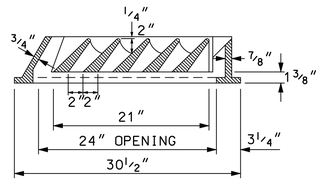
PIPE DIAMETER INCHES	THROAT DEPTH "A" INCHES	
	ONE THROAT	TWO THROAT
12"	8"	8"
15"	8"	8"
18"	16"	8"
24"	18"	16"

IN A SERIES OF CONNECTING C.B.'S OR D.I.'S, THE OUTLET PIPES MAY INCREASE IN DIAMETER, BUT THE SURFACE THROAT OPENINGS ARE NOT AFFECTED.

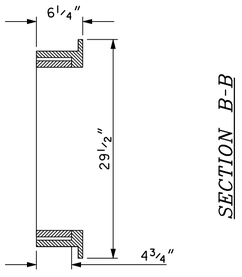
NHDOT STANDARD PLANS	REV. DATE		PLATE
TYPE "C" GRATE & FRAME	06-16-2010		3
			STANDARD
			DR-1



PLAN



SECTION A-A



SECTION B-B

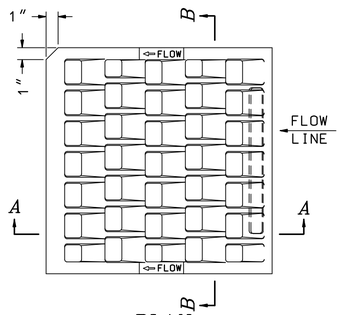
GENERAL NOTES

1. ALL DIMENSIONS ARE NOMINAL.
2. NOT TO BE USED WHEN BICYCLE TRAFFIC IS ANTICIPATED.
3. USE 3-FLANGE FRAME IF INSTALLED ADJACENT TO GRANITE CURB.
4. FREE OPEN AREA = 1.80 S.F.

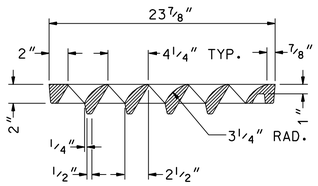
NHDOT STANDARD PLANS	REV. DATE		PLATE
TYPE "E" GRATE	06-16-2010		4
			STANDARD
			DR-1

New Hampshire DOT Department of Transportation

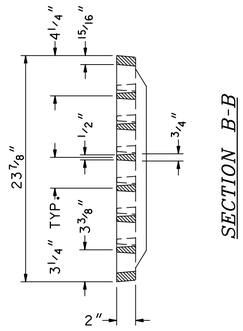
STANDARD NO. DR-1



PLAN



SECTION A-A

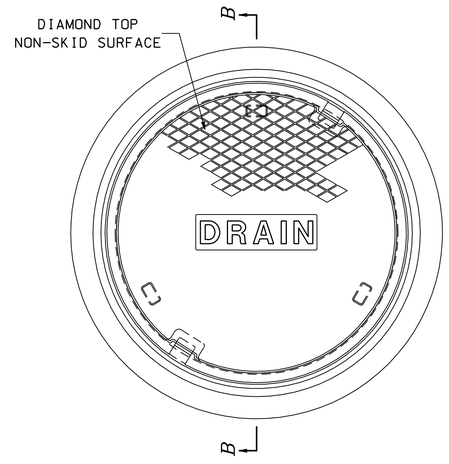


SECTION B-B

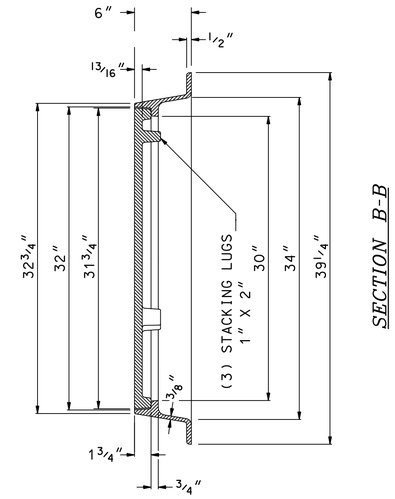
GENERAL NOTES

1. ALL DIMENSIONS ARE NOMINAL
2. USE WITH TYPE "A" FRAME
3. FREE OPEN AREA = 1.5 S.F.
4. TO BE USED ON STEEP GRADES WHERE HIGH CAPACITY IS NEEDED AND BICYCLE TRAFFIC IS ANTICIPATED.

NHDOT STANDARD PLANS	REV. DATE		PLATE
TYPE "F" GRATE	06-16-2010		1
			STANDARD
			DR-2



PLAN



SECTION B-B

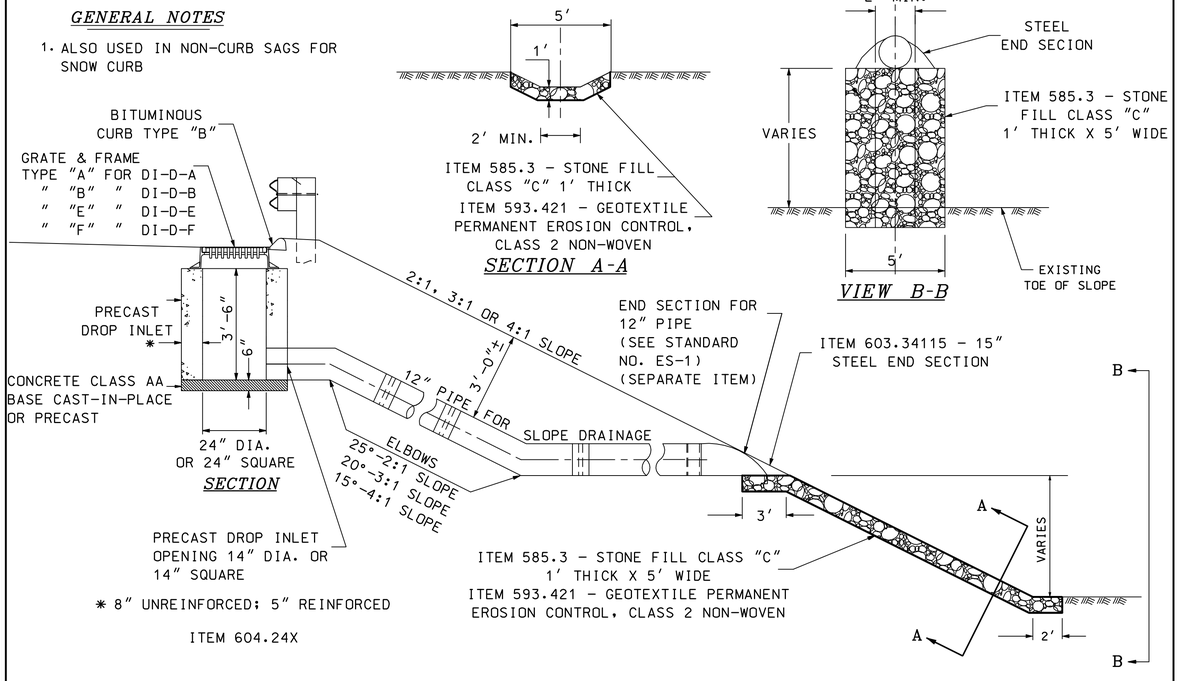
GENERAL NOTES

1. ALL DIMENSIONS ARE NOMINAL
2. LABEL TYPE OF MANHOLE WITH 3" HIGH LETTERS IN THE CENTER OF THE COVER

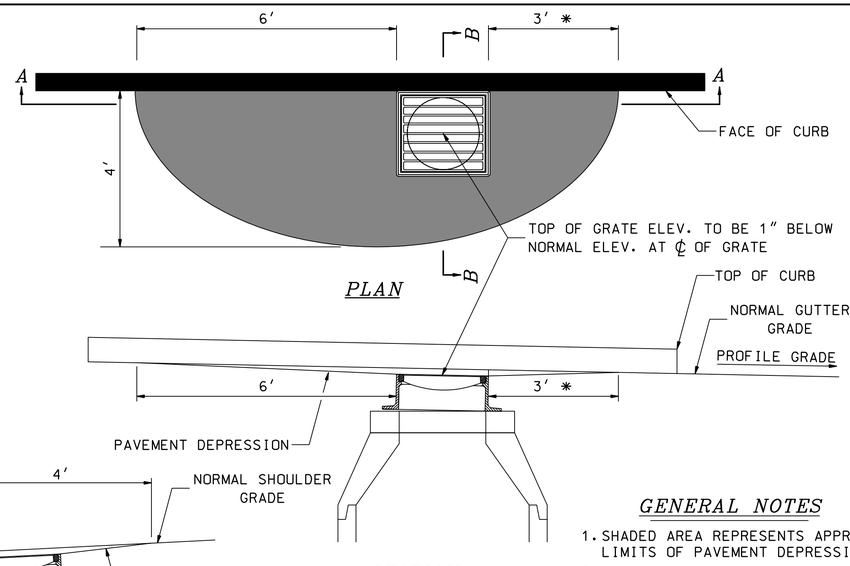
NHDOT STANDARD PLANS	REV. DATE		PLATE
MANHOLE COVER & FRAME	06-16-2010		2
			STANDARD
			DR-2

GENERAL NOTES

1. ALSO USED IN NON-CURB SAGS FOR SNOW CURB



NHDOT STANDARD PLANS	REV. DATE		PLATE
DROP INLET TYPE D & PIPE FOR SLOPE DRAINAGE	06-16-2010		3
			STANDARD
			DR-2



GENERAL NOTES

1. SHADED AREA REPRESENTS APPROXIMATE LIMITS OF PAVEMENT DEPRESSION
2. GRATE SHALL BE PLACED 1" BELOW AND PARALLEL TO THE NORMAL PAVEMENT GRADE
3. FRESHLY PLACED PAVEMENT SHALL BE REMOVED BEFORE COMPACTING DEPRESSED AREA

* 6' IN SAG VERTICAL CURVE

NHDOT STANDARD PLANS	REV. DATE		PLATE
PAVEMENT DEPRESSION DETAIL	06-16-2010		4
			STANDARD
			DR-2

STANDARD NO. DR-2

REVISION DATE
07-13-2001
06-16-2010

*.DGN FILE NAME
DR-2

STANDARD PLANS

New Hampshire DOT Department of Transportation

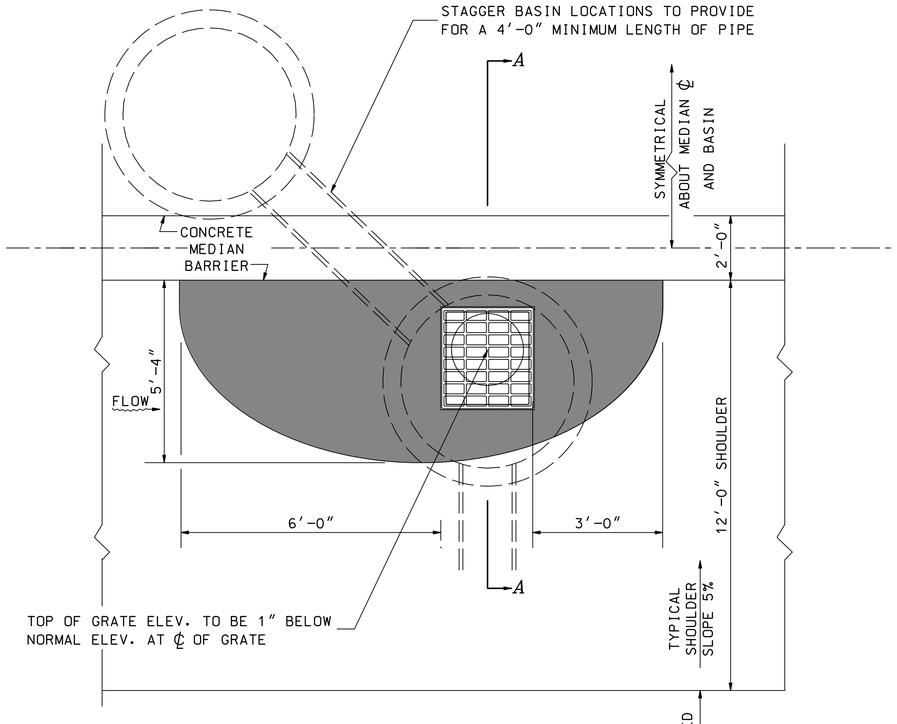
STANDARD NO. DR-2

STANDARD NO. DR-3

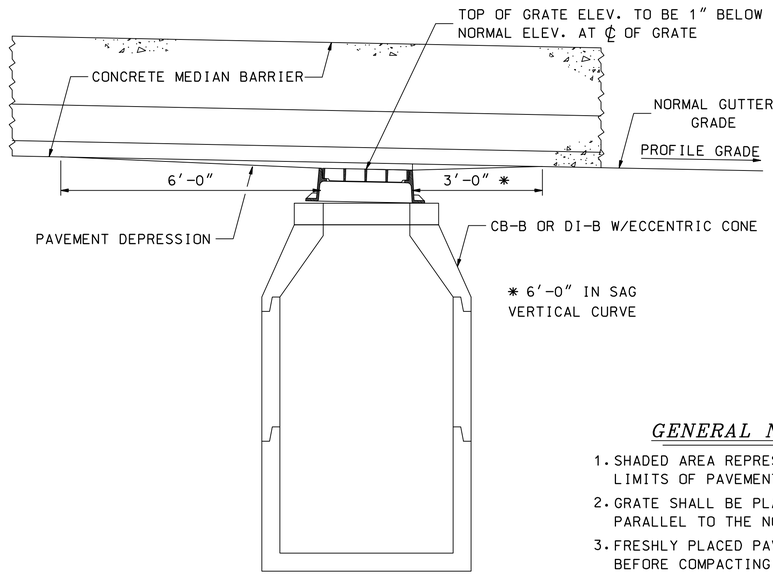
REVISION DATE
07-13-2001
06-16-2010

*.DGN FILE NAME
DR-3

STANDARD PLANS



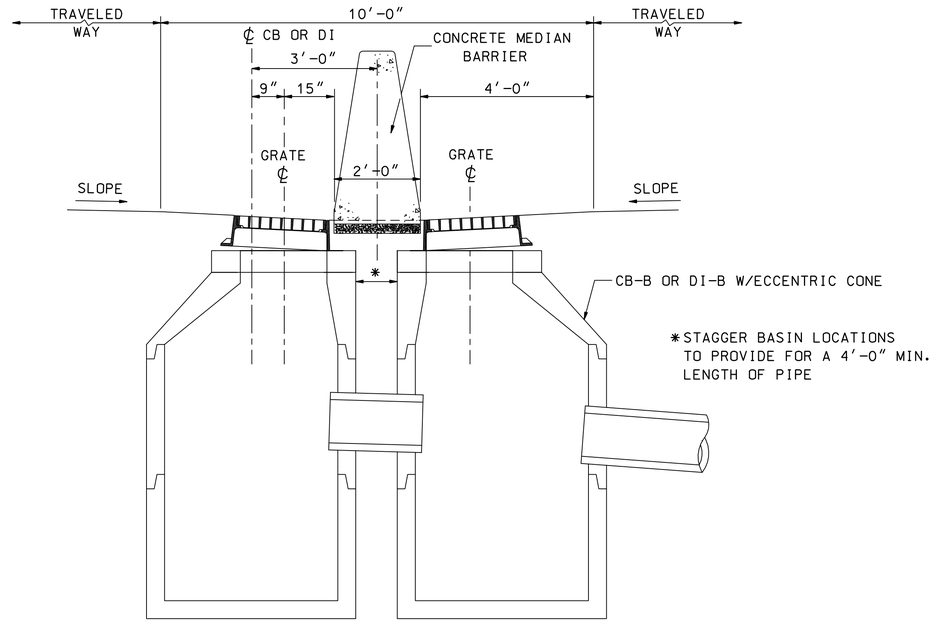
PLAN



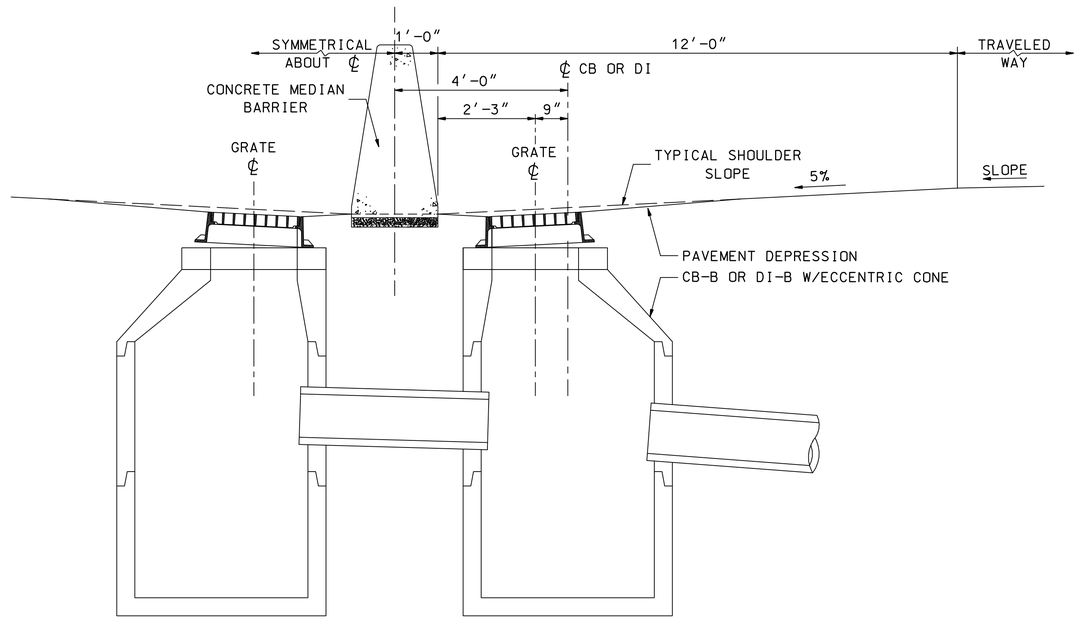
ELEVATION

GENERAL NOTES

1. SHADED AREA REPRESENTS APPROXIMATE LIMITS OF PAVEMENT DEPRESSION
2. GRATE SHALL BE PLACED 1″ BELOW AND PARALLEL TO THE NORMAL PAVEMENT GRADE
3. FRESHLY PLACED PAVEMENT SHALL BE REMOVED BEFORE COMPACTING DEPRESSED AREA



10′-0″ WIDE MEDIAN DRAINAGE DETAILS
(OR ALTERNATE DESIGN FOR SPECIAL CONDITIONS)



SECTION A-A

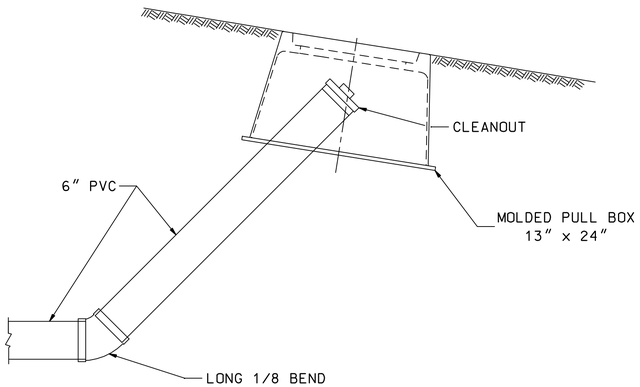
26′-0″ WIDE MEDIAN DRAINAGE DETAILS

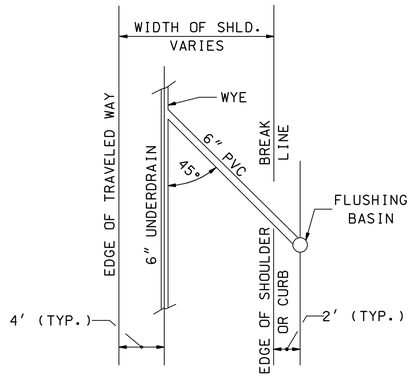
DRAINAGE STANDARD

CONCRETE MEDIAN BARRIER DRAINAGE DETAILS

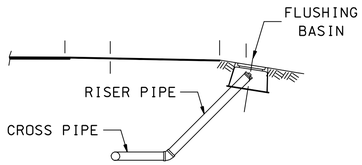
New Hampshire DOT Department of Transportation

STANDARD NO. DR-3





PLAN



CROSS SECTION

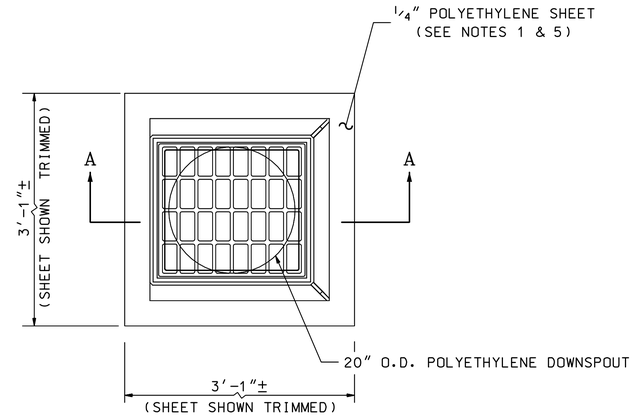
ITEM 605.79 – UNDERDRAIN FLUSHING BASIN SHALL INCLUDE ALL REQUIRED RISER PIPE, 45° WYE, LONG BEND, CROSS PIPE, CLEANOUT, PULL BOX AND BACKFILL MATERIAL AS REQUIRED.

USE ITEM 622.1 – STEEL WITNESS MARKER TO MARK PULL BOX LOCATION.

TYPICAL DETAIL

TYPICAL LOCATION

NHDOT STANDARD PLANS	REV. DATE		PLATE
UNDERDRAIN FLUSHING BASIN	06-16-2010		1
			STANDARD
			DR-4



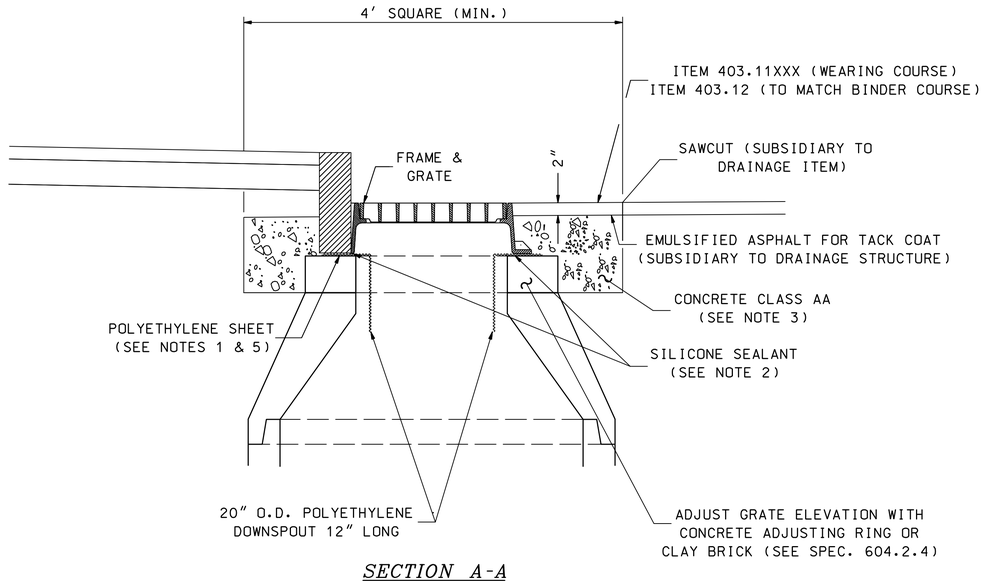
PLAN

NHDOT STANDARD PLANS	REV. DATE		PLATE
POLYETHYLENE LINER	06-16-2010		2
			STANDARD
			DR-4

GENERAL NOTES

1. POLYETHYLENE LINER (ITEM 604.0007) SHALL BE FABRICATED AT THE SHOP. DOWNSPOUT SHALL BE EXTRUSION FILLET WELDED TO THE POLYETHYLENE SHEET.
2. PLACE A CONTINUOUS BEAD OF AN APPROVED SILICONE SEALANT (SUBSIDIARY TO ITEM 604.0007) BETWEEN FRAME AND POLYETHYLENE SHEET (SEE SECTION A-A, PLATE 4).
3. PLACE CLASS AA CONCRETE TO 2" BELOW THE TOP OF GRATE ELEVATION (SUBSIDIARY TO DRAINAGE STRUCTURE).
4. USE ON DRAINAGE STRUCTURES 4' MIN. DIAMETER ONLY.
5. TRIM POLYETHYLENE SHEET A MAXIMUM OF 4" OUTSIDE THE FLANGE ON THE FRAME FOR THE CATCH BASIN BEFORE PLACING CONCRETE (EXCEPT AS SHOWN WHEN USED WITH 3-FLANGE FRAME AND CURB).
6. THE CENTER OF THE GRATE & FRAME MAY BE SHIFTED A MAXIMUM OF 6" FROM THE CENTER OF THE DOWNSPOUT IN ANY DIRECTION.
7. PLACED ONLY IN DRAINAGE STRUCTURES IN PAVEMENT.

NHDOT STANDARD PLANS	REV. DATE		PLATE
POLYETHYLENE LINER	06-16-2010		3
			STANDARD
			DR-4



SECTION A-A

NHDOT STANDARD PLANS	REV. DATE		PLATE
POLYETHYLENE LINER	06-16-2010		4
			STANDARD
			DR-4

STANDARD NO. DR-4

REVISION DATE
07-13-2001
06-16-2010

*.DGN FILE NAME
DR-4

STANDARD PLANS

New Hampshire DOT Department of Transportation

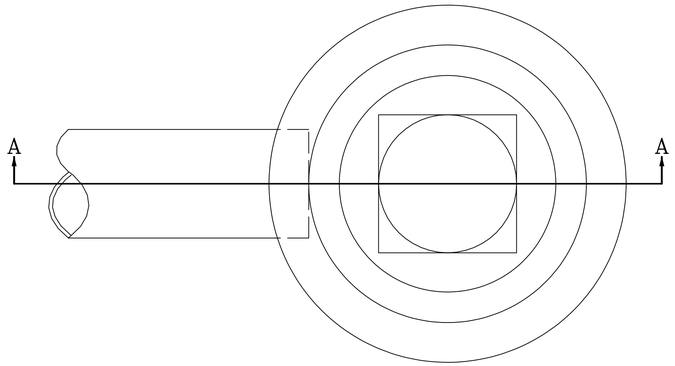
STANDARD NO. DR-4

STANDARD NO. DR-5

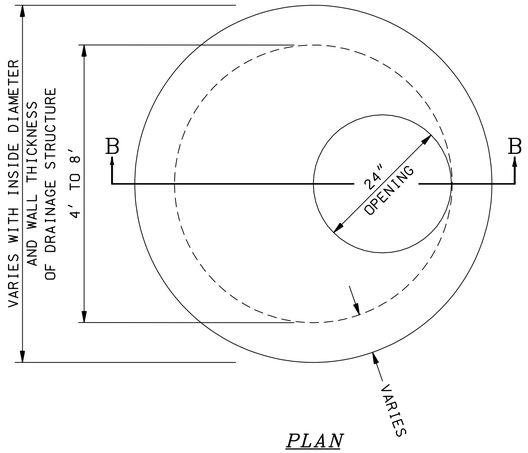
REVISION DATE
07-13-2001
06-16-2010

*.DGN FILE NAME
DR-5

STANDARD PLANS

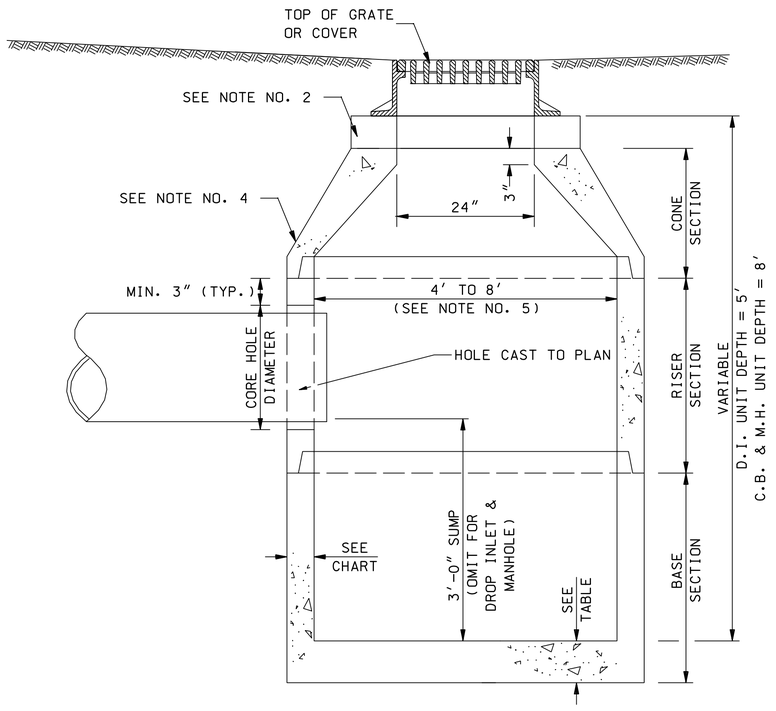


PLAN



PLAN

CORE HOLE SIZE				
PIPE SIZE	RCP CORE HOLE DIA.		PLASTIC CORE HOLE DIA.	
INCHES	INCHES	FEET	INCHES	FEET
6			7	0.6
12	18	1.5	18	1.5
15	22	1.8	20	1.7
18	26	2.2	24	2.0
24	34	2.8	32	2.7
30	42	3.5	42	3.5
36	48	4.0	48	4.0
42	54	4.5	54	4.5
48	64	5.3	64	5.3
54	72	6.0		
60	78	6.5		



SECTION A-A

* FOR >6'ϕ STRUCTURES
USE 16" & 12" DIMENSIONS

SECTION B-B

FLAT SLAB TOP

DIAMETER	WALL THICKNESS (MIN.)	FLOOR THICKNESS (MIN.)
4'	5"	6"
5'	6"	8"
6'	7"	8"
8'	9"	10"

GENERAL NOTES

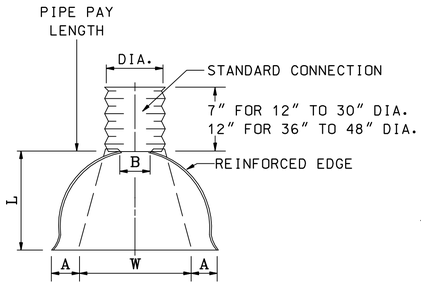
1. ITEM NUMBERS: C.B.= 604.1XXX, D.I.= 604.2XXX, M.H.= 604.32XX
2. FITTING FRAME TO GRADE MAY BE DONE WITH PREFABRICATED ADJUSTMENT RINGS OR CLAY BRICKS (2 COURSES MAX.).
3. CB & DI GRATES IN PAVED AREAS SHALL BE SET ACCORDING TO THE PAVEMENT DEPRESSION DETAIL SHOWN ON PLATE 4 OF STANDARD NO. DR-2.
4. CONE SECTIONS MAY BE EITHER CONCENTRIC OR ECCENTRIC, OR FLAT SLAB TOPS MAY BE USED WHERE PIPE WOULD OTHERWISE ENTER INTO THE CONE SECTION OF THE STRUCTURE AND WHERE PERMITTED.
5. FOR STRUCTURES WITH DIAMETERS GREATER THAN 4', THE DIAMETER MAY BE CONSTANT FROM TOP TO BOTTOM WITH A FLAT SLAB TOP, OR A RISER SECTION THAT TRANSITIONS FROM A STANDARD 4' CONE SECTION TO THE LARGER DIAMETER RISER OR BASE SECTION MAY BE USED.
6. PIPE ELEVATIONS SHOWN ON PLANS SHALL BE FIELD VERIFIED PRIOR TO PRECASTING.
7. OUTSIDE EDGES OF PIPES SHALL PROJECT NO MORE THAN 3" BEYOND INSIDE WALL OF STRUCTURE.
8. PRECAST SECTIONS SHALL HAVE A TONGUE AND GROOVE JOINT 4" HIGH AT AN 11° ANGLE CENTERED IN THE WIDTH OF THE WALL AND SHALL BE ASSEMBLED USING AN APPROVED FLEXIBLE SEALANT IN JOINTS.
9. ALL STRUCTURES WITH MULTIPLE PIPES SHALL HAVE A MINIMUM OF 12" OF INSIDE SURFACE BETWEEN HOLES, NO MORE THAN 75% OF A HORIZONTAL CROSS-SECTION SHALL BE HOLES, AND THERE SHALL BE NO HOLES CLOSER THAN 3" TO JOINTS.

New Hampshire DOT Department of Transportation

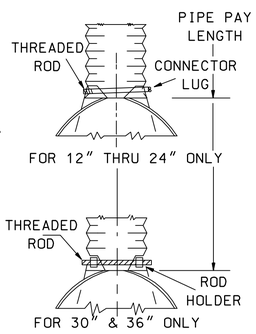
STANDARD NO. DR-5

DRAINAGE STANDARD

PRECAST REINFORCED CONCRETE C.B., D.I. AND M.H.

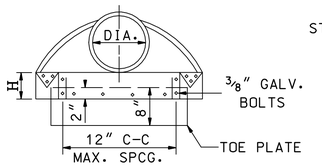


PLAN

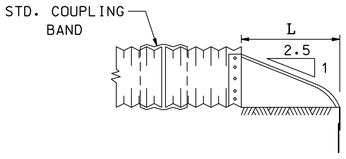


ALTERNATE CONNECTIONS

ITEM NO.	PIPE DIA.	METAL GAGE	DIMENSIONS A (1" TOL.)	B MAX.	H (1" TOL.)	L(1½" TOL.)	W (2" TOL.)
603.34112	12"	16	6"	6"	6"	21"	24"
603.34115	15"	16	7"	8"	6"	26"	30"
603.34118	18"	16	8"	13"	6"	31"	36"
603.34124	24"	16	10"	16"	6"	41"	48"
603.34130	30"	14	12"	16"	8"	51"	60"
603.34136	36"	14	14"	19"	9"	60"	72"
603.34142	42"	12	16"	22"	11"	69"	84"
603.34148	48"	12	18"	27"	12"	78"	90"



ELEVATION

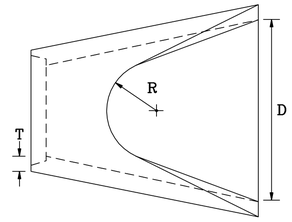


TYPICAL CROSS-SECTION

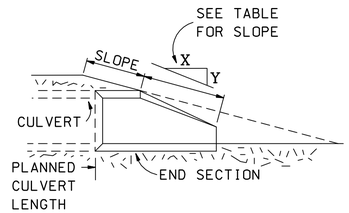
GENERAL NOTES

1. END SECTION FOR 12" TO 30" DIA. PIPE IN ONE PIECE, FOR 36" TO 48" DIA. PIPE TO BE MADE FROM TWO SHEETS JOINED BY RIVETING OR BOLTING ON CENTER LINE.
2. CONNECTOR SECTION, CORNER PLATE AND TOE PLATE TO BE SAME THICKNESS AS END SECTION AND EACH TO BE GALVANIZED.

NHDOT STANDARD PLANS	REV. DATE	PLATE
END SECTION FOR PLASTIC & CORRUGATED STEEL PIPE	06-16-2010	1
		STANDARD ES-1



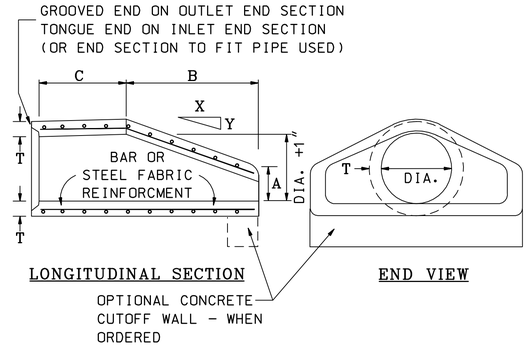
PLAN



SLOPE DETAIL

GENERAL NOTES

1. DESIGN OF END SECTION SHALL CONFORM TO STANDARD REIN-FORCED CONCRETE PIPE.
2. CUT OFF WALL TO BE POURED IN FIELD, IF NECESSARY, AS DIRECTED BY THE ENGINEER.
3. PAYMENT FOR THE CUT OFF WALL WILL BE MADE UNDER THE APPROPRIATE CONTRACT ITEMS.



ITEM NO.	PIPE DIA.	APPROX. SLOPE X to Y	A	B	C	D	R	T
603.30112	12"	3 TO 1	4"	24"	48⅞"	24"	9"	2"
603.30115	15"	3 TO 1	6"	27"	46"	30"	11"	2¼"
603.30118	18"	3 TO 1	9"	27"	46"	36"	12"	2½"
603.30124	24"	3 TO 1	9½"	43½"	30"	48"	14"	3"
603.30130	30"	3 TO 1	12"	54"	19¾"	60"	15"	3½"
603.30136	36"	3 TO 1	15"	63"	33"	72"	20"	4"
603.30142	42"	3 TO 1	21"	63"	33"	78"	22"	4½"
603.30148	48"	3 TO 1	24"	72"	24"	84"	22"	5"

NHDOT STANDARD PLANS	REV. DATE	PLATE
CONCRETE END SECTION FOR REINFORCED CONCRETE PIPE	06-16-2010	2
		STANDARD ES-1

NHDOT STANDARD PLANS	REV. DATE	PLATE
		3
		STANDARD ES-1

NHDOT STANDARD PLANS	REV. DATE	PLATE
		4
		STANDARD ES-1

STANDARD NO. ES-1

REVISION DATE
07-13-2001
06-16-2010

*.DGN FILE NAME
ES-1

STANDARD PLANS

New Hampshire DOT Department of Transportation

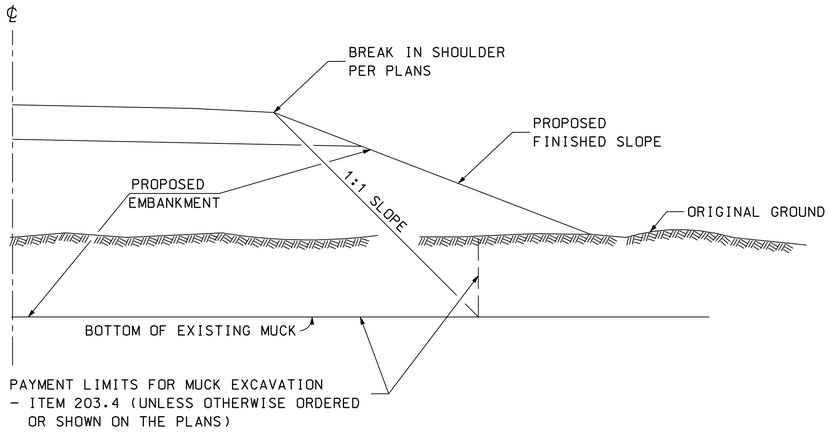
STANDARD NO. ES-1

STANDARD NO. EW-1

REVISION DATE
07-13-2001
06-16-2010

*.DGN FILE NAME
EW-1

STANDARD PLANS



TYPICAL HALF-SECTION SHOWING
MUCK TO BE REMOVED
PER SECTION 203.

NHDOT STANDARD PLANS	REV. DATE		PLATE
MUCK EXCAVATION	06-16-2010		1
			STANDARD
			EW-1

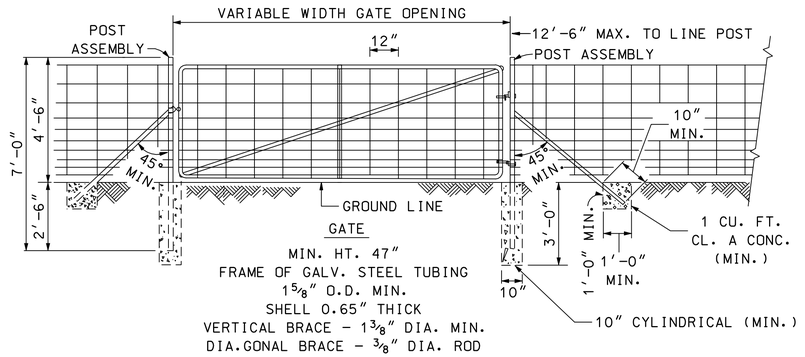
NHDOT STANDARD PLANS	REV. DATE		PLATE
			2
			STANDARD
			EW-1

NHDOT STANDARD PLANS	REV. DATE		PLATE
			3
			STANDARD
			EW-1

NHDOT STANDARD PLANS	REV. DATE		PLATE
			4
			STANDARD
			EW-1

New Hampshire DOT Department of Transportation

STANDARD NO. EW-1

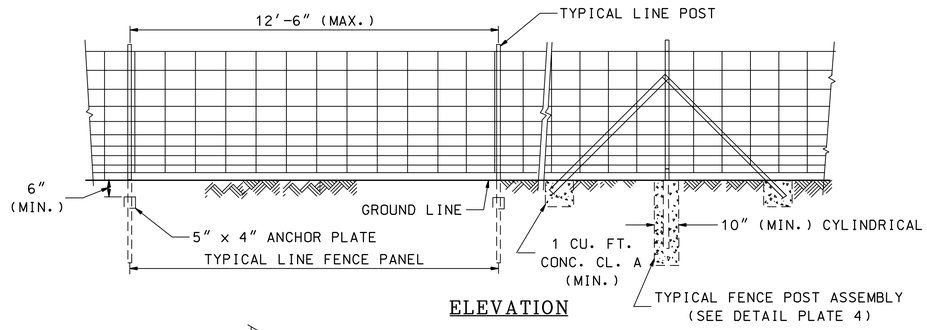


ELEVATION

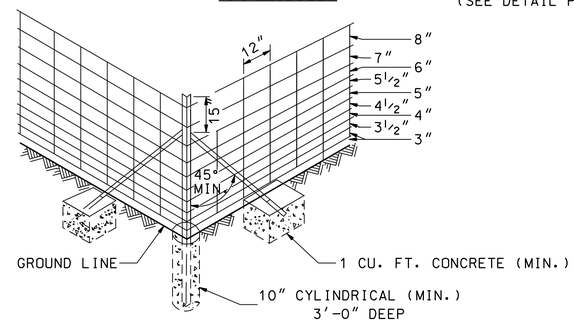
GENERAL NOTES

1. ALL END POSTS SHALL HAVE ONE BRACE, ALL CORNER AND INTERMEDIATE BRACE OR PULL POSTS SHALL HAVE TWO BRACES.
2. INTERMEDIATE OR LINE POSTS SHALL BE STANDARD STUDDED TEE POSTS.
3. END POSTS, CORNER POSTS AND PULL POSTS SHALL BE AN ANGLE POST DETAILED IN PLATE 3. BRACES SHALL BE AN ANGLE POST DETAILED IN PLATE 4.
4. WHERE GROUND CONDITION PERMITS, FORMS FOR FOOTING WILL NOT BE REQUIRED.
5. CONCRETE SHALL BE CLASS A.

NHDOT STANDARD PLANS	REV. DATE		PLATE
WOVEN WIRE FENCE (ITEM 607.1)	06-16-2010		1
			STANDARD
			FN-1

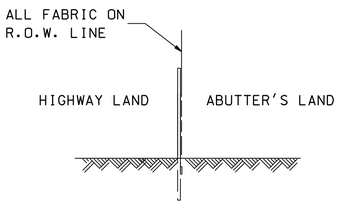


ELEVATION

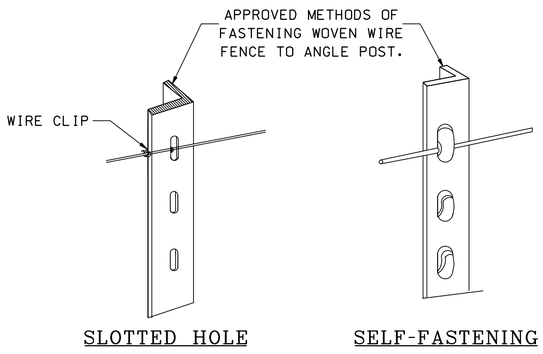


DETAIL OF CORNER BRACE - POST ASSEMBLY

NHDOT STANDARD PLANS	REV. DATE		PLATE
POST ASSEMBLIES FOR WOVEN WIRE FENCE (ITEM 607.41)	06-16-2010		2
			STANDARD
			FN-1



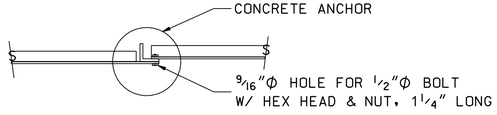
SECTION VIEW ON R.O.W. LINE



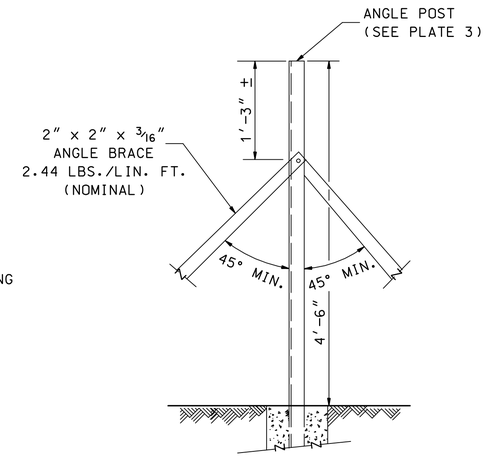
SLOTTED HOLE SELF-FASTENING

2 1/2" x 2 1/2" x 1/4" ANGLE POST
4.1 LBS./LIN. FT. (NOMINAL)

NHDOT STANDARD PLANS	REV. DATE		PLATE
POST ASSEMBLIES FOR WOVEN WIRE FENCE	06-16-2010		3
			STANDARD
			FN-1



PLAN



ELEVATION

TYPICAL FENCE POST ASSEMBLY

NHDOT STANDARD PLANS	REV. DATE		PLATE
ANGLE BRACES FOR WOVEN WIRE FENCE	06-16-2010		4
			STANDARD
			FN-1

STANDARD NO. FN-1

REVISION DATE
07-13-2001
06-16-2010

*.DGN FILE NAME
FN-1

STANDARD PLANS

New Hampshire DOT Department of Transportation

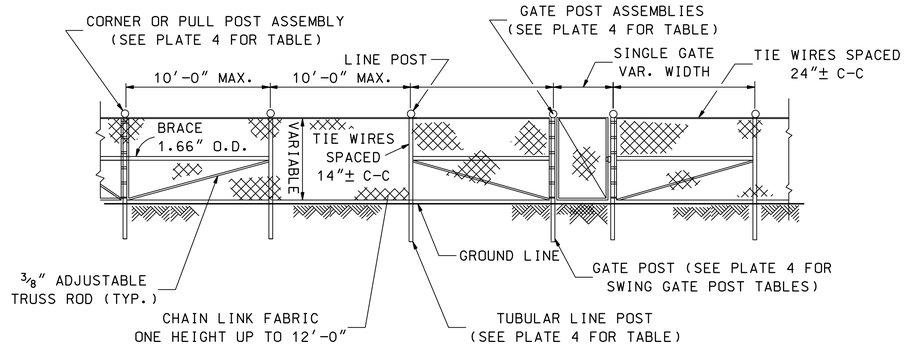
STANDARD NO. FN-1

STANDARD NO. FN-2

REVISION DATE
07-13-2001
06-16-2010

*.DGN FILE NAME
FN-2

STANDARD PLANS

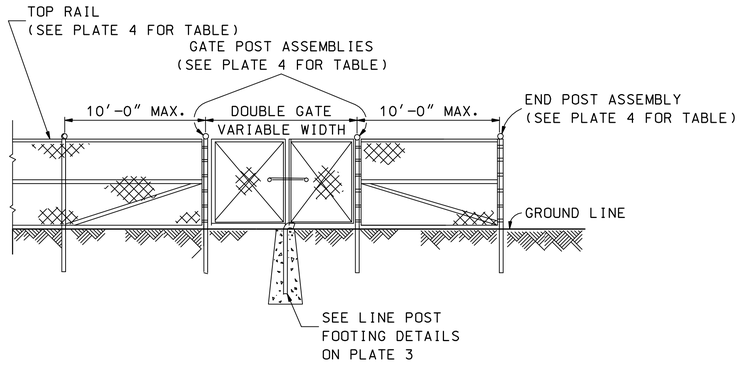


ELEVATION

GENERAL NOTES

1. ALL END POSTS SHALL HAVE ONE BRACE. (SEE DETAIL PLATE 2).
2. ALL CORNER AND INTERMEDIATE BRACE OR PULL POSTS SHALL HAVE TWO BRACES.
3. POST FOOTING DETAILS ARE SHOWN IN PLATE 3. FOR FENCE ERECTION ON THE RIGHT-OF-WAY LINE, SEE PLATE 3 OF STD. NO. FN-1.
4. FENCE DETAILS ARE FOR STEEL, ALUMINUM, OR VINYL COATED FENCING. FOR ADDITIONAL DETAILS AND NOTES, SEE PLATES 2, 3, & 4.

NHDOT STANDARD PLANS	REV. DATE		PLATE
CHAIN LINK FENCE	06-16-2010		1
			STANDARD FN-2

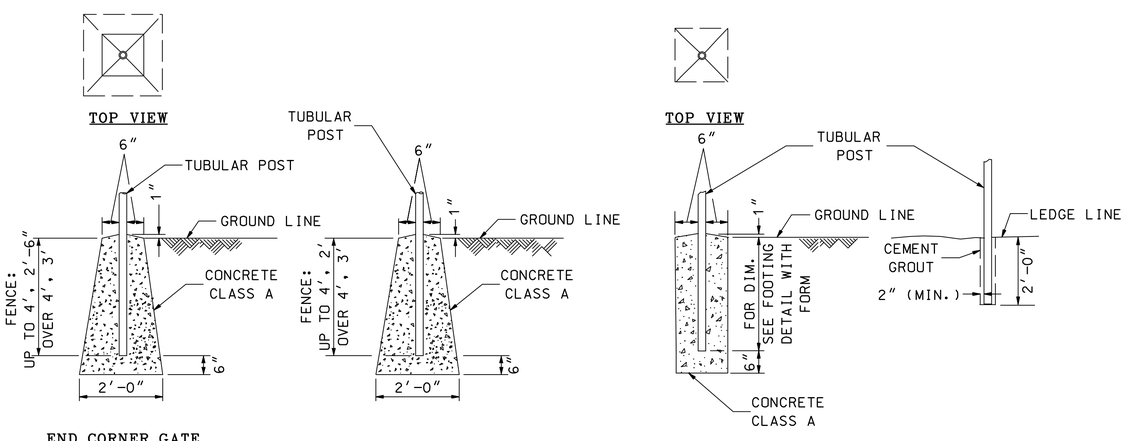


ELEVATION

GENERAL NOTES

1. FOR ADDITIONAL DETAILS AND NOTES SEE PLATES 1, 3 & 4.

NHDOT STANDARD PLANS	REV. DATE		PLATE
CHAIN LINK FENCE	06-16-2010		2
			STANDARD FN-2



FOOTING DETAIL (WITH FORM)

FOOTING DETAIL (WITHOUT FORM)

GENERAL NOTES

1. WHERE GROUND CONDITION PERMITS, FORMS FOR FOOTINGS WILL NOT BE REQUIRED.
2. ALUMINUM POSTS IN CONCRETE SHALL HAVE A PROTECTIVE COATING – 607.2.6

NHDOT STANDARD PLANS	REV. DATE		PLATE
CHAIN LINK FENCE	06-16-2010		3
			STANDARD FN-2

END, CORNER AND PULL POST

FENCE HEIGHT (ft)	TUBULAR			
	ROUND	lb/ft	SQUARE	lb/ft
STEEL				
UP TO 6′	2 3/8″ O.D.	3.65	2″ x 2″	3.60
OVER 6′	2 7/8″ O.D.	5.79	2 1/2″ x 2 1/2″	5.70
ALUMINUM				
UP TO 12′	2 7/8″ O.D.	2.00	3″ x 3″	1.76

TOP RAILS

FENCE HEIGHT (ft)	ROUND	lb/ft
STEEL		
ALL	2 7/8″ O.D.	5.79
ALUMINUM		
UP TO 12′	2 7/8″ O.D.	2.00

LINE POSTS

FENCE HEIGHT (ft)	TUBULAR	
	ROUND	lb/ft
STEEL		
UP TO 6′	1.90″ O.D.	2.72
OVER 6′	2 3/8″ O.D.	3.65
ALUMINUM		
UP TO 12′	2 3/8″ O.D.	1.264

STEEL SWING GATE AND POST TABLE

TYPE	GATE OPENING		GATE POST (TUBULAR)			
	SINGLE	DOUBLE	ROUND	lb/ft	SQUARE	lb/ft
A	UP TO 6′	UP TO 12′	2 7/8″ O.D.	5.79	2 1/2″ x 2 1/2″	5.70
B	OVER 6′ TO 13′	OVER 12′ TO 26′	4″ O.D.	9.11	3″ x 3″	7.55
C	OVER 13′ TO 18′	OVER 26′ TO 36′	6 5/8″ O.D.	18.97	–	–
D	OVER 18′	OVER 36′	8 5/8″ O.D.	28.55	–	–
GATE FRAME	UP TO 6′		1.660″ O.D.	2.27	1 1/2″ x 1 1/2″	1.90
	OVER 6′		1.90″ O.D.	2.72	2″x 2″	2.72

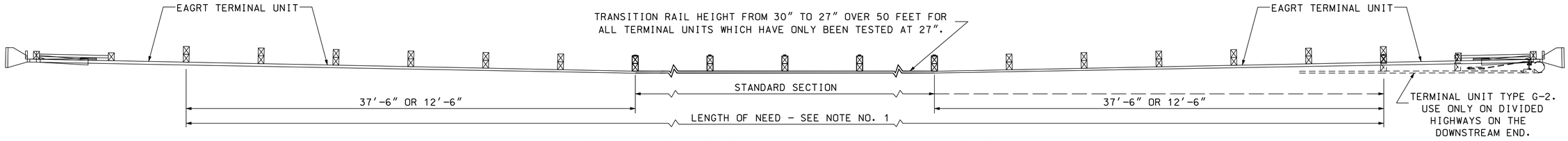
ALUMINUM SWING GATE AND POST TABLE

TYPE	GATE OPENING		GATE POST (TUBULAR)			
	SINGLE	DOUBLE ROUND	ROUND	lb/ft	SQUARE	lb/ft
A – A	UP TO 6′	UP TO 12′	2 7/8″ O.D.	2.004	3″ x 3″	1.76
B – A	OVER 6′ TO 12′	OVER 12′ TO 24′	4″ O.D.	3.151	–	–
C – A	OVER 12′ TO 18′	OVER 24′ TO 36′	6 5/8″ O.D.	6.564	–	–
D – A	OVER 18′ TO 32′	OVER 36′ TO 44′	8 5/8″ O.D.	9.878	–	–
GATE FRAME ALL			1.90″ O.D.	0.940	2″ x 2″	1.12

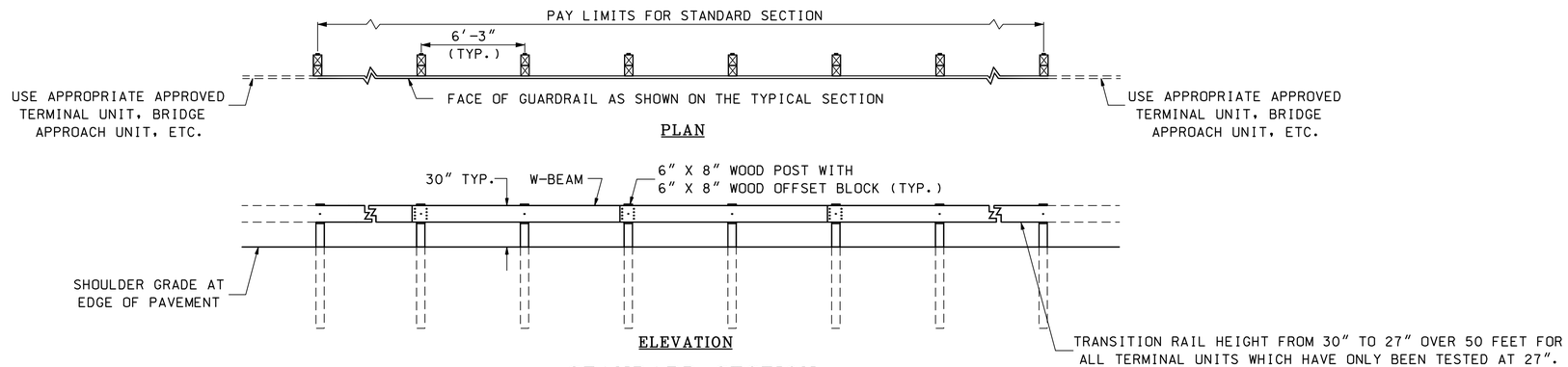
NHDOT STANDARD PLANS	REV. DATE		PLATE
POSTS FOR CHAIN LINK FENCE	06-16-2010		4
			STANDARD FN-2

New Hampshire DOT Department of Transportation

STANDARD NO. FN-2

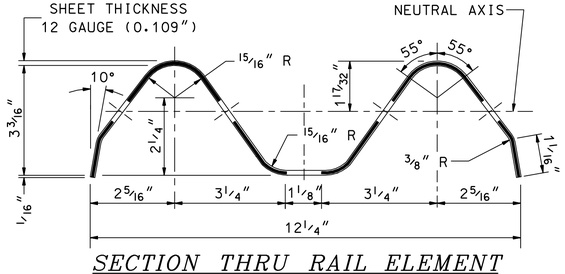


SAMPLE GUARDRAIL INSTALLATION LAYOUT

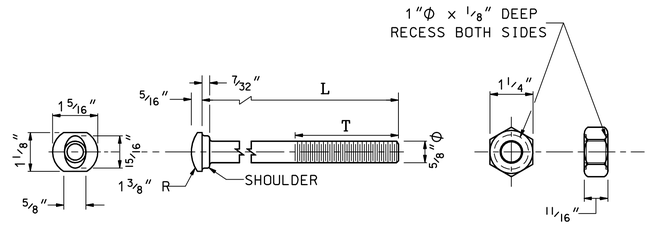


STANDARD SECTION

ITEM 606.140 - BEAM GUARDRAIL (STANDARD SECTION-WOOD POSTS)
PAID: LINEAR FOOT
USE: WHEREVER GUARDRAIL IS REQUIRED

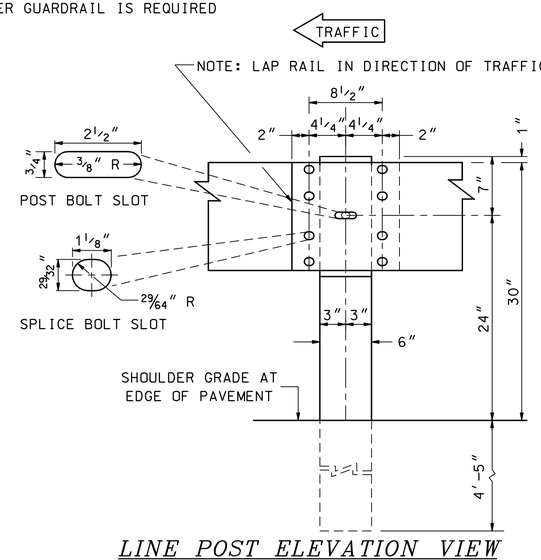


SECTION THRU RAIL ELEMENT
[RWM02a (12'-6") OR RWM22a (25'-0")]

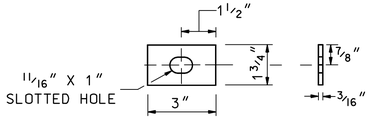


DESIGNATOR	L	T	INTENDED USE
FBB01	1 1/4"	FULL LENGTH THREAD	RAIL SPLICE BOLTS
FBB02	2"	1 3/4" MIN. THREAD LENGTH	POST BOLT (STEEL POSTS)
FBB03	10"	4" MIN. THREAD LENGTH	POST BOLT
FBB04	18"	4" MIN. THREAD LENGTH	POST BOLT (WOOD POSTS)

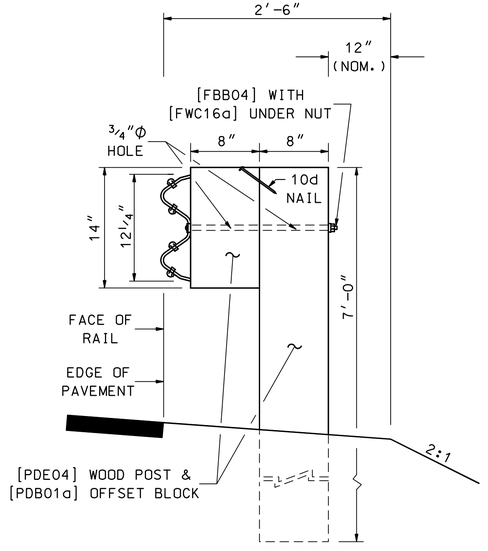
5/8" BUTTON HEAD BOLT AND RECESSED NUT
[FBB01-04]



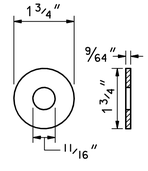
LINE POST ELEVATION VIEW AT BEAM SPLICE
(SHOWN WITHOUT FASTENERS)



RECTANGULAR PLATE WASHER
[FWR03] (6 REQ'D)
(SEE NOTE NO. 3)



TYPICAL SIDE VIEW
(SHOWN WITH FASTENERS)



WASHER
[FWC16a]

GENERAL NOTES

1. LENGTH OF NEED IS THE TOTAL LENGTH OF A LONGITUDINAL BARRIER NEEDED TO SHIELD AN AREA OF CONCERN. TO DETERMINE THE LENGTH OF NEED, REFER TO THE *"ROADSIDE DESIGN GUIDE"* - AASHTO, LATEST ADOPTED VERSION.
2. DESIGNATIONS PROVIDED IN BRACKETS [ ] REFERENCE STANDARD ELEMENTS DETAILED IN *"A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE"*, LATEST ADOPTED VERSION, AASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.
3. THE RECTANGULAR PLATE WASHER [FWR03] IS USED ONLY FOR 37'-6" OF STANDARD SECTION UPSTREAM OF A TERMINAL UNIT TYPE G-2 (SEE STANDARD NO. GR-10).
4. USE 12'-6" LENGTH RAIL ELEMENT IN CURVES OF LESS THAN 300' RAIL RADIUS.
5. WHEN GUARDRAIL IS INSTALLED BEHIND CURB, EITHER 6'-0" BEHIND SLOPE CURB ON A CURBED RAMP OR AT THE BACK OF SIDEWALK WITH BARRIER CURB, THE RAIL HEIGHT SHALL BE SET FROM THE GRADE AT THE FACE OF RAIL.
6. POSTS SHORTER THAN THE 7-' 0" INDICATED ON THE DETAIL, BUT NOT LESS THAN 6'-0", MAY ONLY BE USED WHEN
   A) THE SLOPE BEHIND THE GUARDRAIL IS NO STEEPER THAN 4:1
   B) WHERE THE DISTANCE FROM THE BACK OF THE POST TO THE BREAK OF THE SLOPE IS A MINIMUM OF 2'-0"
   C) AND THEN ONLY AS APPROVED OR SPECIFICALLY SHOWN ON THE PLANS.
7. TO INSTALL THE 7' 0" POSTS IN ROCK FILL AREAS AND IN AREAS OF OTHER DIFFICULT SITE CONDITIONS, METHODS SUCH AS AUGURING, EXCAVATING, AND OTHER MORE UNUSUAL METHODS MAY BE REQUIRED FOR INSTALLING POSTS. THOSE CONDITIONS AND THE REQUIREMENT FOR UNUSUAL METHODS OF POST INSTALLATION ARE NOT CONSIDERED JUSTIFICATION FOR REDUCING THE EMBEDMENT DEPTH OF THE POSTS AND WILL NOT BE APPROVED AS SUCH.

GUARDRAIL STANDARD

BEAM GUARDRAIL STANDARD SECTION-WOOD POSTS & HARDWARE DETAILS

STANDARD NO. GR-1

REVISION DATE
07-13-2001
06-16-2010

*.DGN FILE NAME
GR-1

STANDARD PLANS

New Hampshire DOT Department of Transportation

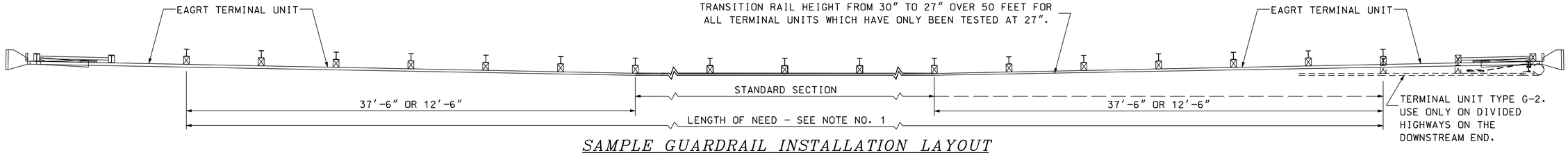
STANDARD NO. GR-1

STANDARD NO. GR-2

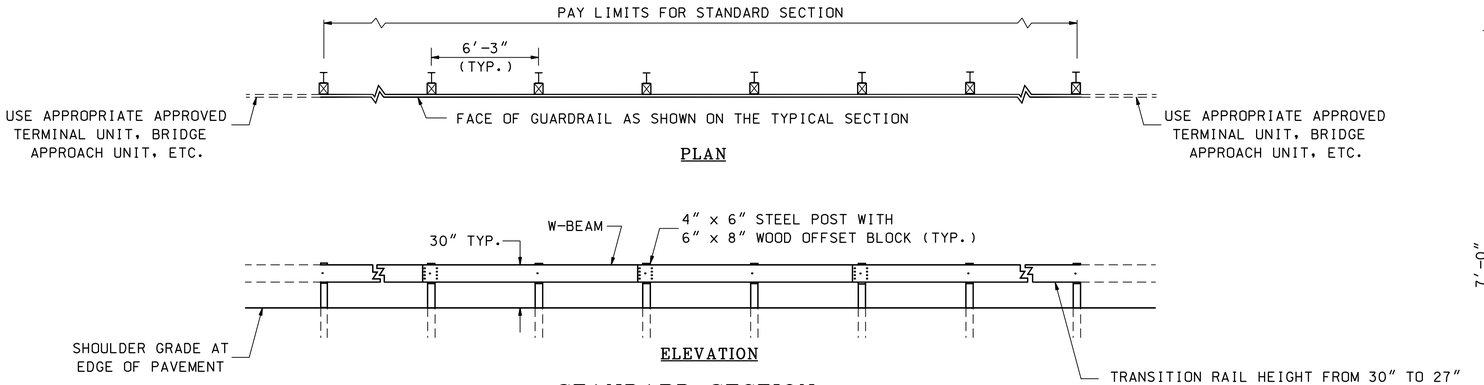
REVISION DATE
07-13-2001
06-16-2010

*.DGN FILE NAME
GR-2

STANDARD PLANS

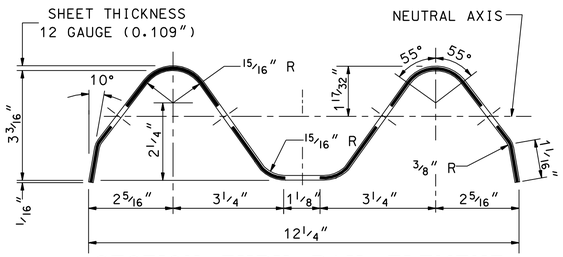


SAMPLE GUARDRAIL INSTALLATION LAYOUT



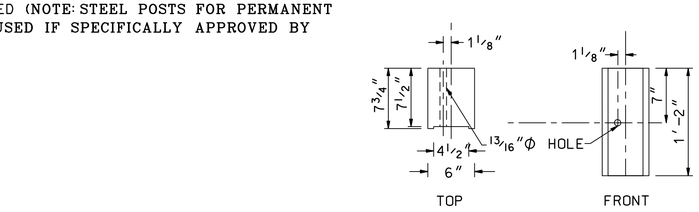
STANDARD SECTION

ITEM 606.120 - BEAM GUARDRAIL (STANDARD SECTION-STEEL POSTS)
PAID: LINEAR FOOT
USE: WHEREVER GUARDRAIL IS REQUIRED (NOTE: STEEL POSTS FOR PERMANENT INSTALLATIONS MAY ONLY BE USED IF SPECIFICALLY APPROVED BY THE CHIEF ENGINEER.)

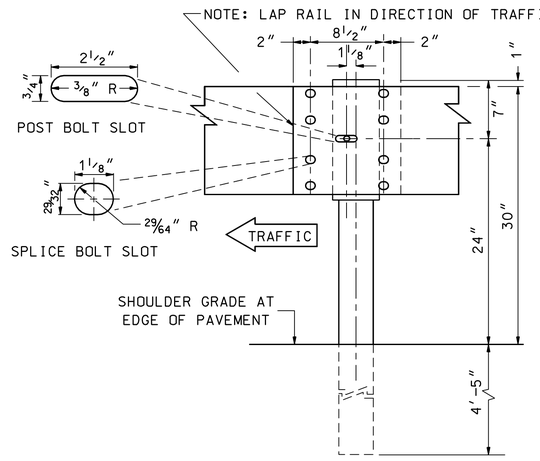


SECTION THRU RAIL ELEMENT

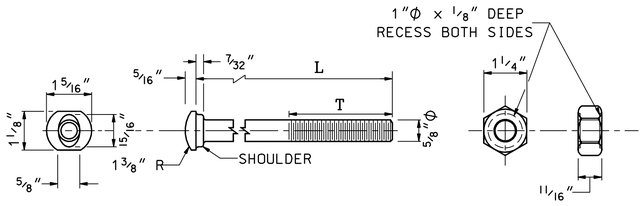
[RWM02a (12'-6") OR RWM22a (25'-0")]



SYNTHETIC OFFSET BLOCK



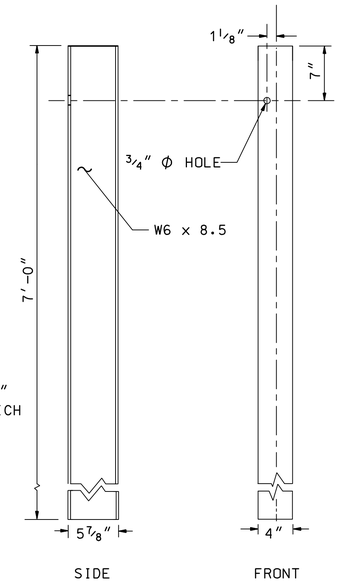
LINE POST ELEVATION VIEW AT BEAM SPLICE



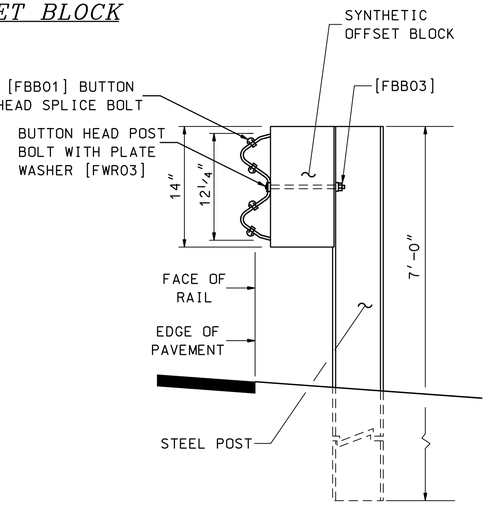
DESIGNATOR	L	T	INTENDED USE
FBB01	1 1/4"	FULL LENGTH THREAD	RAIL SPLICE BOLTS
FBB02	2"	1 3/4" MIN. THREAD LENGTH	POST BOLT (STEEL POSTS)
FBB03	10"	4" MIN. THREAD LENGTH	POST BOLT

5/8" BUTTON HEAD BOLT AND RECESSED NUT

[FBB01-03]



STRUCTURAL SHAPE STEEL POST



TYPICAL SIDE VIEW

(SHOWN WITH FASTENERS)

GENERAL NOTES

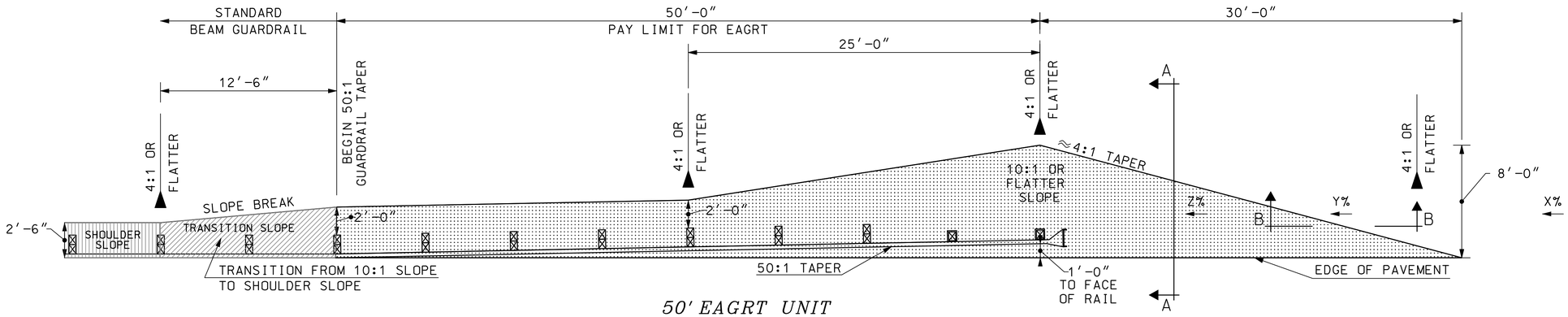
1. LENGTH OF NEED IS THE TOTAL LENGTH OF A LONGITUDINAL BARRIER NEEDED TO SHIELD AN AREA OF CONCERN. TO DETERMINE THE LENGTH OF NEED, REFER TO THE *"ROADSIDE DESIGN GUIDE"* - LATEST ADOPTED VERSION.
2. DESIGNATIONS PROVIDED IN BRACKETS [ ] REFERENCE STANDARD ELEMENTS DETAILED IN *"A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE"* , LATEST ADOPTED VERSION, AASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.
3. THE RECTANGULAR PLATE WASHER [FWR03] IS USED ONLY FOR 37'-6" OF STANDARD SECTION UPSTREAM OF A TERMINAL UNIT TYPE G-2 (SEE STANDARD NO. GR-10).
4. USE 12'-6" LENGTH RAIL ELEMENT IN CURVES OF LESS THAN 300' RAIL RADIUS.
5. WHEN GUARDRAIL IS INSTALLED BEHIND CURB, EITHER 6'-0" BEHIND SLOPE CURB ON A CURBED RAMP OR AT THE BACK OF SIDEWALK WITH BARRIER CURB, THE RAIL HEIGHT SHALL BE SET FROM THE GRADE AT THE FACE OF RAIL.
6. POSTS SHORTER THAN THE 7'-0" INDICATED ON THE DETAIL, BUT NOT LESS THAN 6'-0", MAY ONLY BE USED WHEN
   A) THE SLOPE BEHIND THE GUARDRAIL IS NO STEEPER THAN 4:1
   B) WHERE THE DISTANCE FROM THE BACK OF THE POST TO THE BREAK OF THE SLOPE IS A MINIMUM OF 2'-0"
   C) AND THEN ONLY AS APPROVED OR SPECIFICALLY SHOWN ON THE PLANS.
7. TO INSTALL THE 7'-0" POSTS IN ROCK FILL AREAS AND IN AREAS OF OTHER DIFFICULT SITE CONDITIONS, METHODS SUCH AS AUGURING, EXCAVATING, AND OTHER MORE UNUSUAL METHODS MAY BE REQUIRED FOR INSTALLING POSTS. THOSE CONDITIONS AND THE REQUIREMENT FOR UNUSUAL METHODS OF POST INSTALLATION ARE NOT CONSIDERED JUSTIFICATION FOR REDUCING THE EMBEDMENT DEPTH OF THE POSTS AND WILL NOT BE APPROVED AS SUCH.
8. THE FHWA ADMINISTRATION HAS APPROVED THE USE OF OFFSET BLOCKS WITH DIMENSIONS THAT VARY MORE THAN WOULD BE CONSIDERED WITHIN THE NORMAL CONTEXT OF NOMINAL DIMENSIONS. IN ORDER TO PROPOSE THE USE OF ANY OFFSET BLOCKS THAT HAVE OTHER THAN THE NOMINAL DIMENSIONS SHOWN ON THE DETAILS, THE FOLLOWING CRITERION APPLIES:
   A) THE OFFSET BLOCKS BE SHOWN TO BE APPROVED BY THE FHWA ADMINISTRATION AS MEETING THE TL-3 CRITERIA AS DESCRIBED IN THE NCHRP 350 TESTING,
   B) THE FACE OF RAIL MUST REMAIN AT THE EDGE OF PAVEMENT OR AT THE INDICATED OFFSET, PER THE DESIGN PLANS, AND
   C) THERE MUST NOT BE A DECREASE IN THE DISTANCE FROM THE BACK OF THE POST TO THE BREAK IN THE SLOPE AS SHOWN ON THE DESIGN PLANS. AN INCREASE IN THE DISTANCE FROM THE BACK OF THE POST TO THE BREAK IN THE SLOPE IS ACCEPTABLE.
   D) ALL OTHER REQUIREMENTS OF THE PERTINENT SPECIFICATIONS AND DETAILS REMAIN IN FORCE.

New Hampshire DOT Department of Transportation

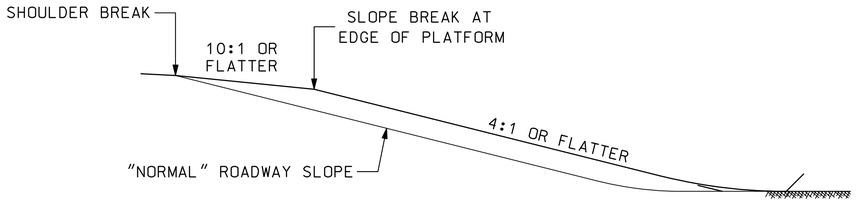
STANDARD NO. GR-2

GUARDRAIL STANDARD

BEAM GUARDRAIL STANDARD SECTION-STEEL POSTS & HARDWARE DETAILS

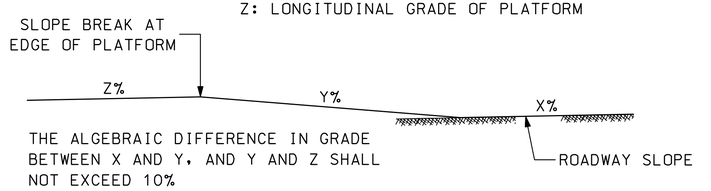


50′ EAGRT UNIT



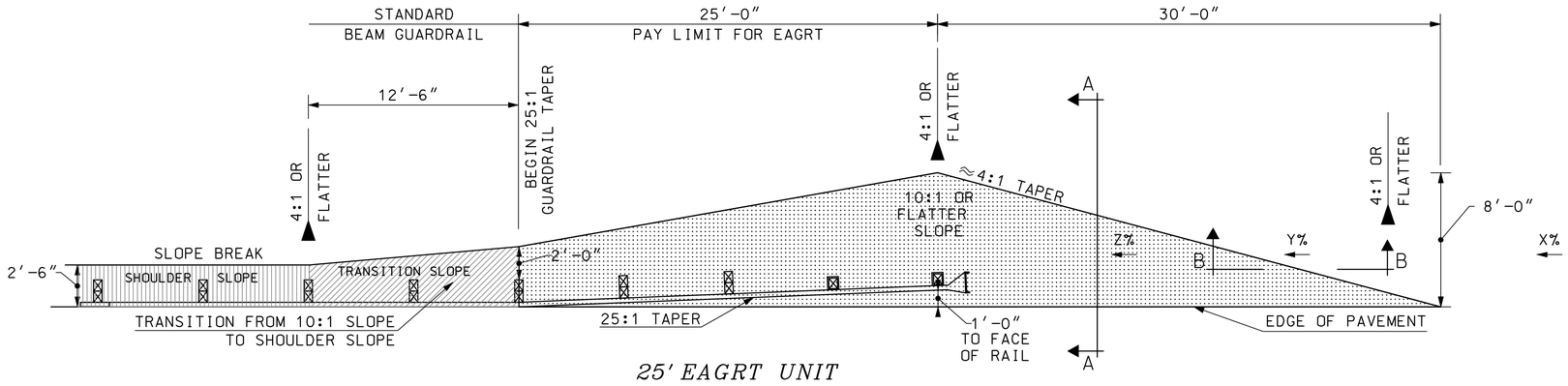
SECTION A-A
PLATFORM SLOPE GRADING

X: LONGITUDINAL GRADE OF ROADWAY SLOPE IN ADVANCE OF PLATFORM
Y: LONGITUDINAL GRADE OF PLATFORM APPROACH
Z: LONGITUDINAL GRADE OF PLATFORM



THE ALGEBRAIC DIFFERENCE IN GRADE BETWEEN X AND Y, AND Y AND Z SHALL NOT EXCEED 10%

SECTION B-B
PLATFORM APPROACH GRADING



25′ EAGRT UNIT

GUARDRAIL STANDARD

PREFERRED PLATFORM FOR ENERGY ABSORBING GUARDRAIL TERMINAL (EAGRT)

STANDARD NO. GR-3

REVISION DATE
06-07-2005
06-16-2010

*.DGN FILE NAME
GR-3

STANDARD PLANS

New Hampshire DOT Department of Transportation

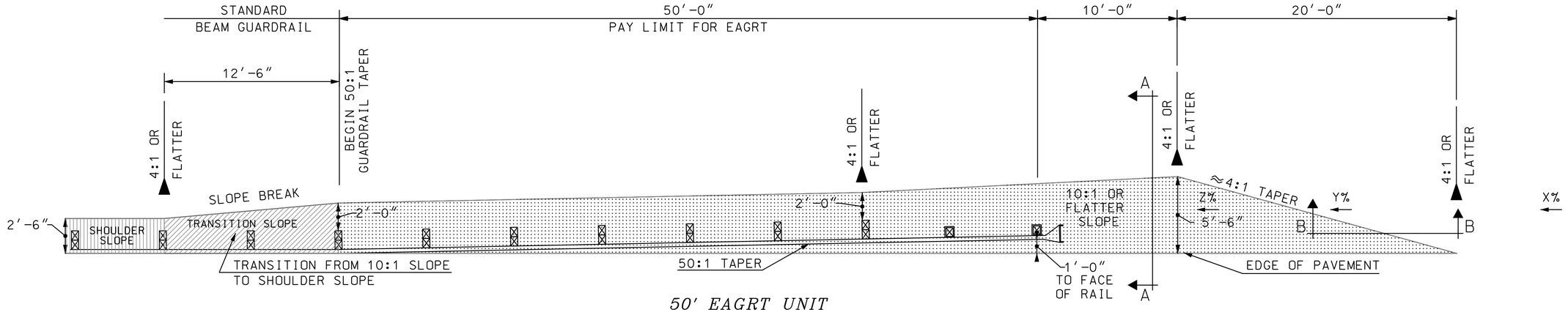
STANDARD NO. GR-3

STANDARD NO.

REVISION DATE
06-07-2005
06-16-2010

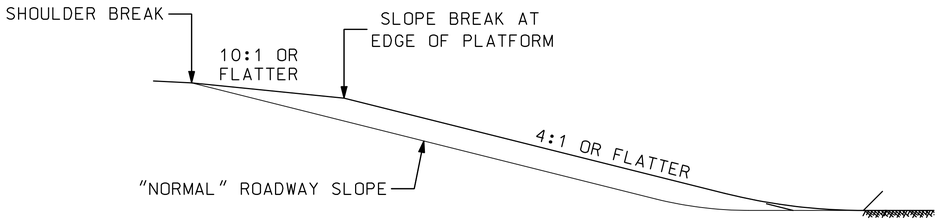
*.DGN FILE NAME
GR-4

STANDARD PLANS

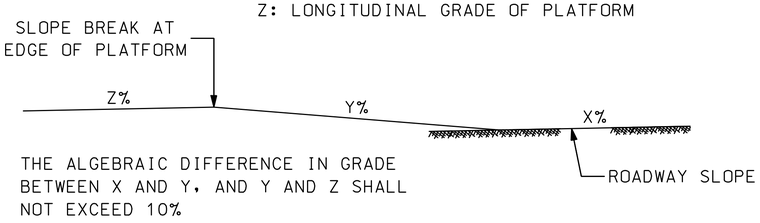


50′ EAGRT UNIT

X: LONGITUDINAL GRADE OF ROADWAY SLOPE IN ADVANCE OF PLATFORM
Y: LONGITUDINAL GRADE OF PLATFORM APPROACH
Z: LONGITUDINAL GRADE OF PLATFORM

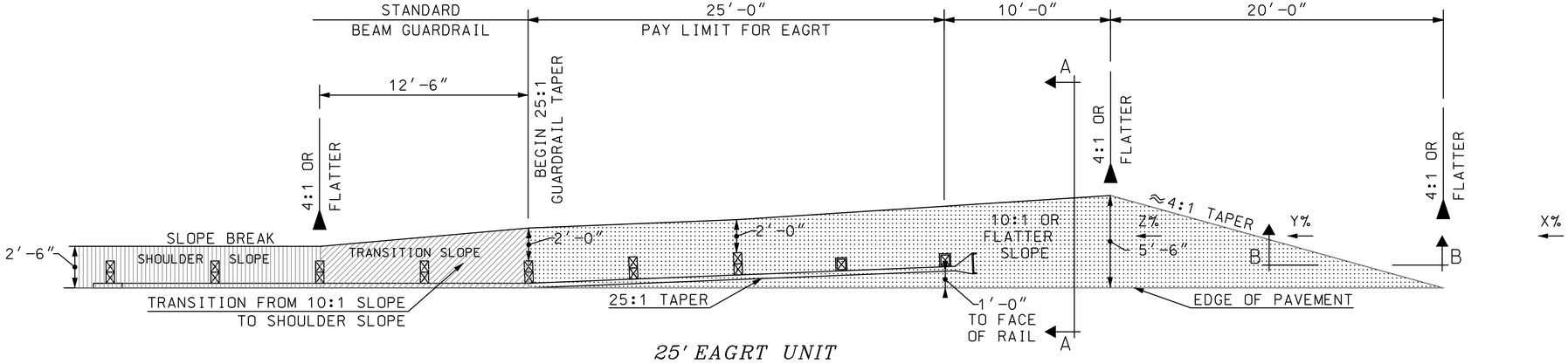


SECTION A-A
PLATFORM SLOPE GRADING



THE ALGEBRAIC DIFFERENCE IN GRADE BETWEEN X AND Y, AND Y AND Z SHALL NOT EXCEED 10%

SECTION B-B
PLATFORM APPROACH GRADING



25′ EAGRT UNIT

STANDARD NO. GR-4

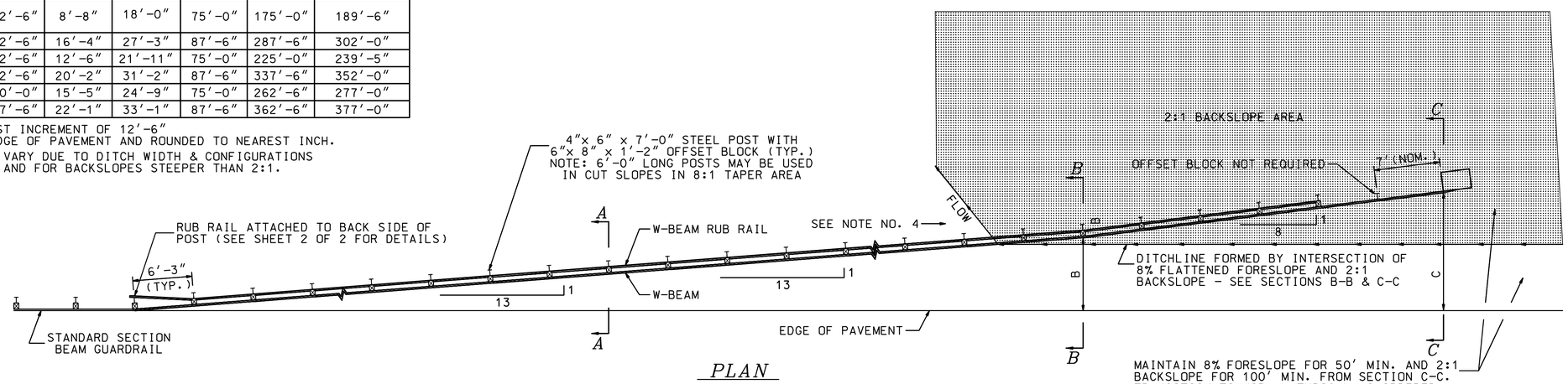
New Hampshire DOT Department of Transportation

GUARDRAIL STANDARD

ALTERNATIVE PLATFORM FOR ENERGY ABSORBING GUARDRAIL TERMINAL (EAGRT)

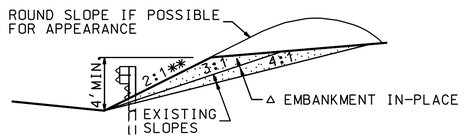
TYPICAL SECTION	TYPICAL DITCH WIDTH	L	B*	C*	8:1 RAIL LENGTH	RUB RAIL LENGTH	CALCULATED LENGTH ITEM 606.1496
11-4-4 (EARTH) 12-4-4 (EARTH)	6'-0"	112'-6"	8'-8"	18'-0"	75'-0"	175'-0"	189'-6"
12-10-10 (EARTH)	12'-0"	212'-6"	16'-4"	27'-3"	87'-6"	287'-6"	302'-0"
12-10-10 (ROCK)	10'-0"	162'-6"	12'-6"	21'-11"	75'-0"	225'-0"	239'-5"
12-10-12 (EARTH)	14'-6"	262'-6"	20'-2"	31'-2"	87'-6"	337'-6"	352'-0"
12-10-12 (ROCK)	12'-0"	200'-0"	15'-5"	24'-9"	75'-0"	262'-6"	277'-0"
12-10-12 (ROCK)	18'-0"	287'-6"	22'-1"	33'-1"	87'-6"	362'-6"	377'-0"

RAIL LENGTHS ROUNDED TO NEAREST INCREMENT OF 12'-6"
* OFFSETS ARE MEASURED FROM EDGE OF PAVEMENT AND ROUNDED TO NEAREST INCH.
NOTE: LENGTHS AND OFFSETS MAY VARY DUE TO DITCH WIDTH & CONFIGURATIONS OTHER THAN AS INDICATED AND FOR BACKSLOPES STEEPER THAN 2:1.



PLAN

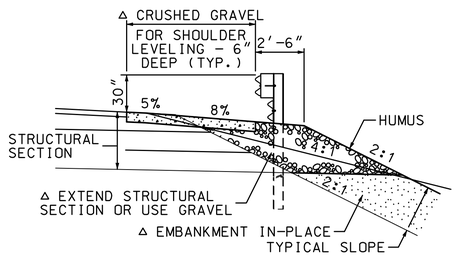
ELEVATION



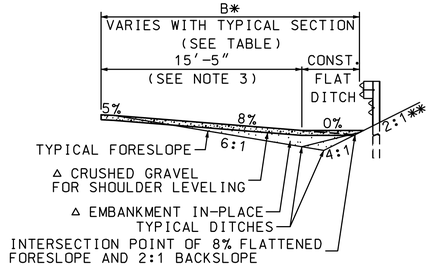
SLOPE STEEPENING DETAIL
(WHERE REQUIRED)

TERMINAL SECTION TYPE E-2

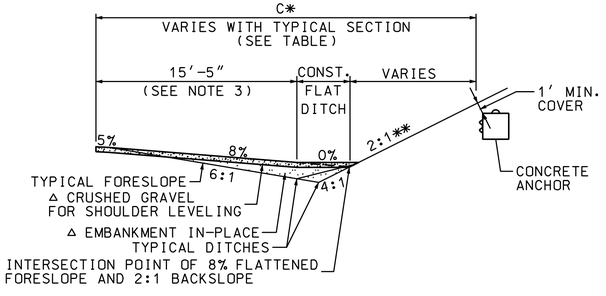
ITEM 606.1496 - BEAM GUARDRAIL TERMINAL SECTION, TYPE E-2
PAID: LINEAR FOOT (INCLUDES RUB RAIL AND ANCHOR)
USE: AT BEGINNING OR END OF STANDARD SECTION GUARDRAIL



SECTION A-A



SECTION B-B



SECTION C-C

△ SEE NOTE 6 FOR ALL HATCHED AREAS

** THE BACK SLOPE SHALL BE 2:1 OR STEEPER APPROACHING THE ANCHOR. IT IS NOT THE INTENT TO FLATTEN AN EXISTING BACKSLOPE THAT IS STEEPER THAN 2:1 UNLESS SO NOTED ON THE PLANS OR PROPOSAL.

GENERAL NOTES

1. THIS TERMINAL IS DESIGNED FOR USE PRIMARILY AT SITES WHERE THE TERRAIN CHANGES ABRUPTLY FROM A CUT TO A STEEP FILL, AND WHERE THEORETICAL LENGTH OF NEED WOULD EXTEND INTO THE CUT SECTION FOR A CONSIDERABLE DISTANCE. THIS TERMINAL IS PRIMARILY FOR TYPICALS REFLECTING NEW CONSTRUCTION AND FOR SPEEDS OF 50 MPH OR GREATER. FOR LOWER SPEEDS SEE THE DETAIL FOR BEAM GUARDRAIL TERMINAL SECTION TYPE E-2 MODIFIED.
2. SEE STANDARD NO. GR-6 FOR E-2 HARDWARE DETAILS. SEE STANDARDS NO. GR-1 OR GR-2 FOR ADDITIONAL DETAILS OF COMMON HARDWARE.
3. A RUB RAIL IS REQUIRED WHEN THE BOTTOM OF THE W-BEAM IS GREATER THAN 18" HIGH ABOVE THE GROUND. A MAXIMUM OFFSET FROM THE E.P. OF 15'-5" MAINTAINS A SINGLE RUB RAIL HEIGHT. FOR ANY PORTION OF A DITCH OFFSET GREATER THAN 15'-5" CONSTRUCT A FLAT BOTTOMED DITCH TO THE 2:1 BACK SLOPE.
4. CONSTRUCT OUTLET DITCH TO FIT SITE CONDITIONS OR USE DROP INLET AND PIPE IF LARGE FLOWS ARE ANTICIPATED OR IF DITCHLINE BECOMES FLATTER THAN 0.4% (PAY UNDER BID ITEMS).
5. FOR INSTALLATIONS IN ROCK CUT EARTH BERMS, EXCAVATE A SUFFICIENT QUANTITY OF ROCK TO PERMIT POST DRIVING, AND ANCHOR THE TERMINAL BY ONE OF THE FOLLOWING METHODS:
   A) EXCAVATE ROCK TO PERMIT INSTALLATION OF PRECAST ANCHOR
   B) CONSTRUCT CAST-IN-PLACE ANCHOR WITH SAME MASS AS PRECAST ANCHOR AND 4 S.F. CROSS-SECTIONAL AREA TO FACE OF ANCHOR (SUBSIDIARY TO ITEM 606.1496).
   C) ATTACH W-BEAM TERMINAL CONNECTOR DIRECTLY TO ROCK FACE BY AN APPROVED ROCK BOLT METHOD (SUBSIDIARY TO ITEM 606.1496).
6. ANY COMMON EXCAVATION, EMBANKMENT IN-PLACE, AND CRUSHED GRAVEL FOR SHOULDER LEVELING REQUIRED WILL BE PAID UNDER ITEM 203.5596 - GUARDRAIL E-2 PLATFORMS. ROCK EXCAVATION WILL BE PAID AS ITEM 206.2 - ROCK STRUCTURE EXCAVATION.

GUARDRAIL STANDARD

BEAM GUARDRAIL TERMINAL UNIT TYPE E-2

STANDARD NO. GR-5

REVISION DATE
03-01-2006
06-16-2010

*.DGN FILE NAME
GR-5

STANDARD PLANS

New Hampshire DOT Department of Transportation

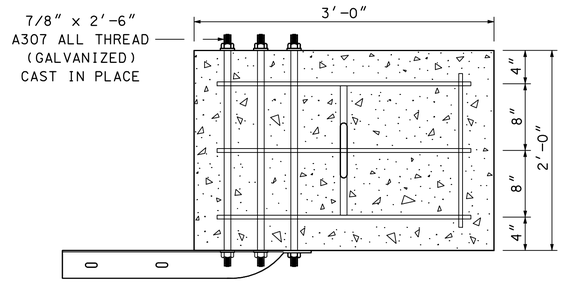
STANDARD NO. GR-5

STANDARD NO. GR-6

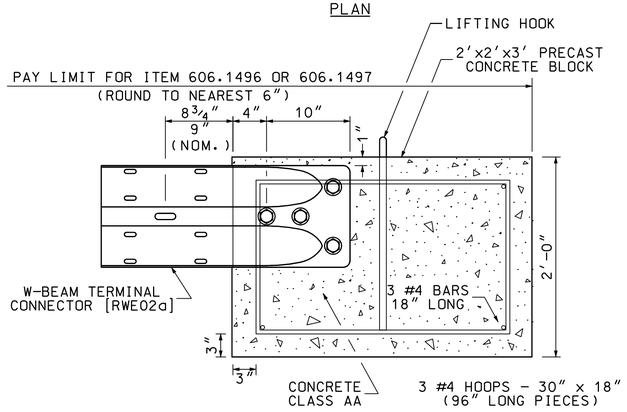
REVISION DATE
03-01-2006
06-16-2010

*.DGN FILE NAME
GR-6

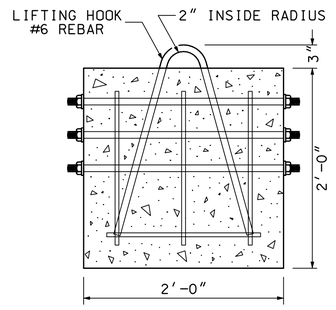
STANDARD PLANS



PLAN

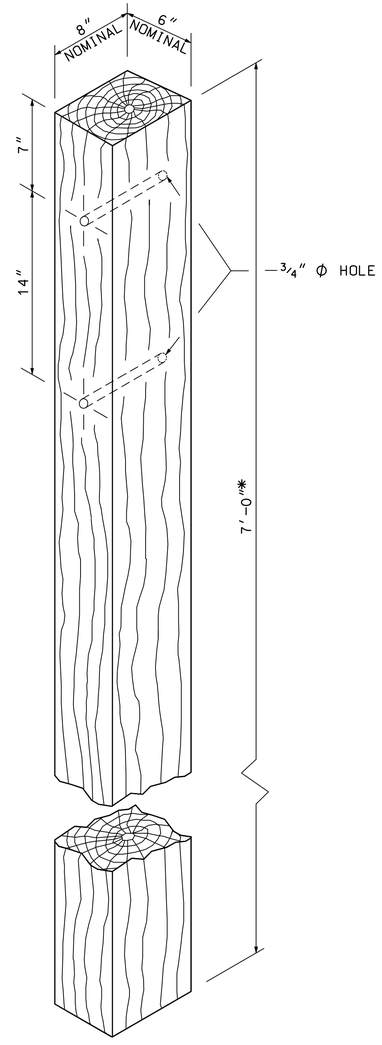


ELEVATION



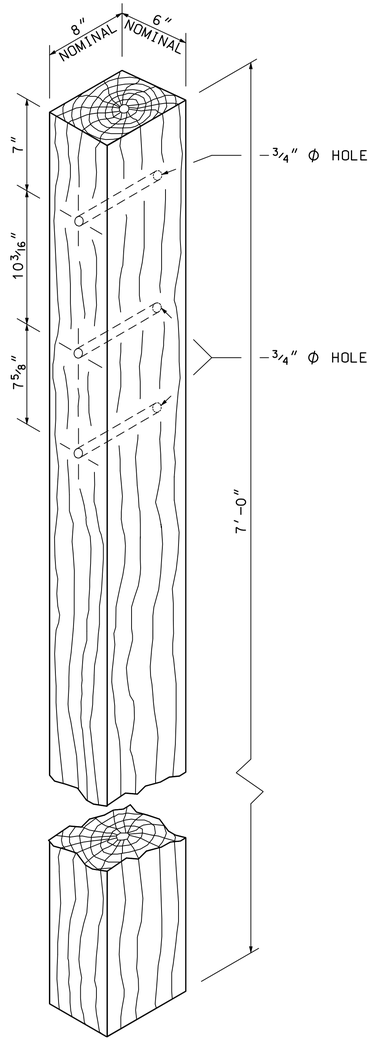
END VIEW

PRECAST CONCRETE BLOCK ANCHOR



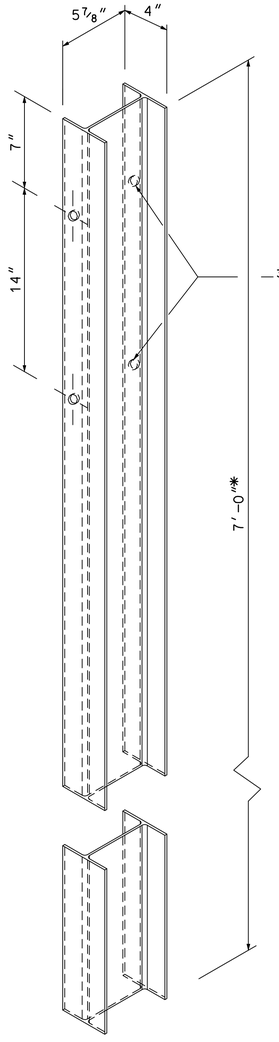
RUB RAIL LINE POST

[PDE04] MODIFIED
* 6'-0" POSTS MAY BE USED IN CUT SLOPES IN 8:1 TAPER AREA



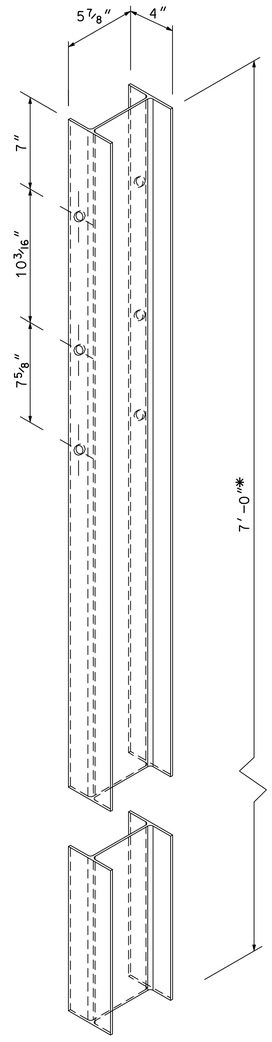
SPECIAL POST FOR DOWNSTREAM END OF RUB RAIL

[PDE04] MODIFIED (1 REQ'D)



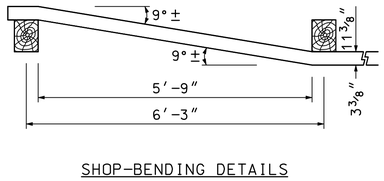
RUB RAIL LINE POST

[PWE02] MODIFIED
* 6'-0" POSTS MAY BE USED IN CUT SLOPES IN 8:1 TAPER AREA



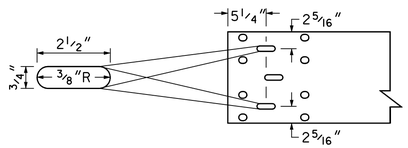
SPECIAL POST FOR DOWNSTREAM END OF RUB RAIL

[PWE02] MODIFIED (1 REQ'D)



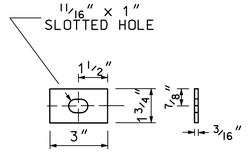
SHOP-BENDING DETAILS

MODIFICATIONS TO DOWNSREAM END OF RUB RAIL



SPECIAL POST BOLT SLOTS

NOTE: USE FWC16A WASHER UNDER BOLT HEAD AND NUT



RECTANGULAR PLATE WASHER

[FWR03] (4 REQ'D)

GENERAL NOTES

1. ALL DIMENSIONS SUBJECT TO MANUFACTURER'S TOLERANCES.
2. DESIGNATIONS PROVIDED IN BRACKETS [ ] RELATE TO STANDARD ELEMENTS IN *"A GUIDE TO STANDARD HIGHWAY BARRIER RAIL HARDWARE"*, LATEST ADOPTED VERSION, AASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.

New Hampshire DOT Department of Transportation

STANDARD NO. GR-6

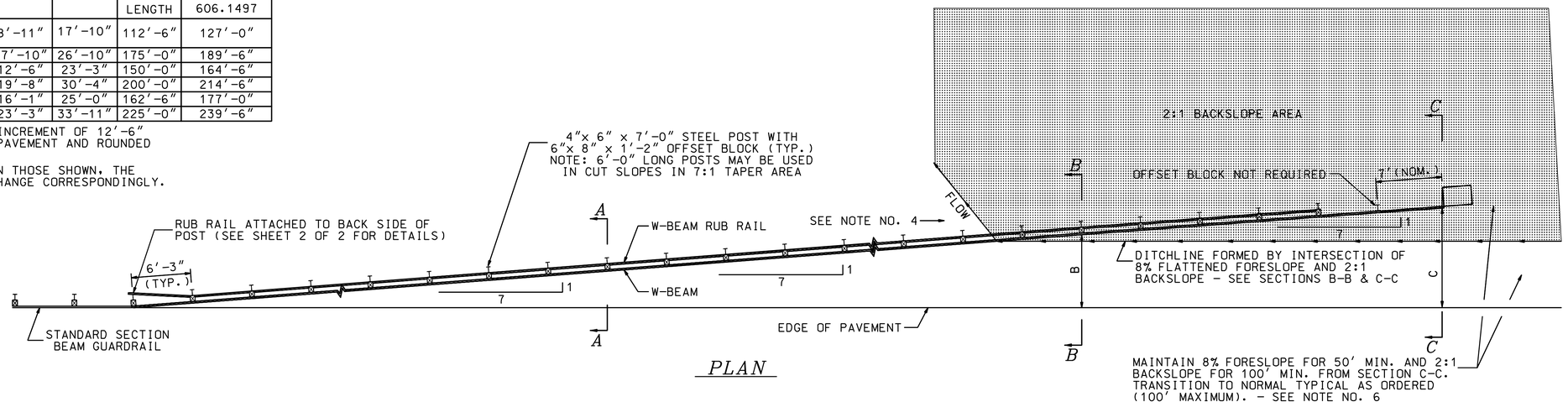
GUARDRAIL STANDARD

BEAM GUARDRAIL TERMINAL SECTION TYPE E-2 AND E-2MOD HARDWARE DETAILS

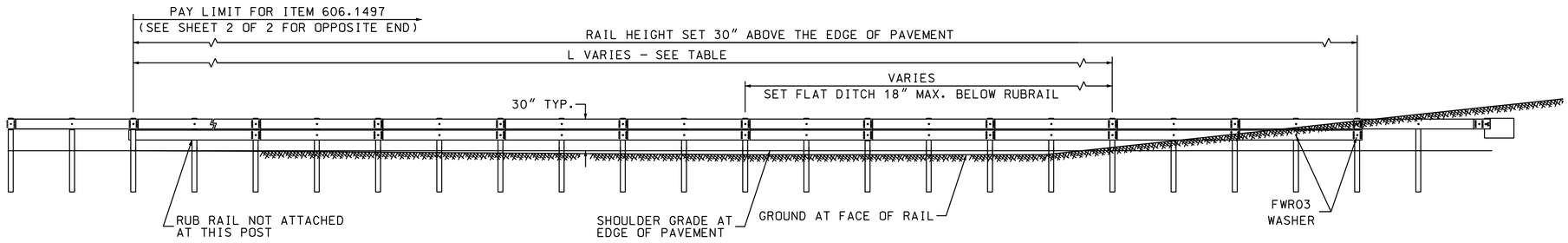
TYPICAL SECTION	TYPICAL DITCH WIDTH	L	B*	C*	RUB RAIL LENGTH	CALCULATED LENGTH ITEM 606.1497
11-4-4 (EARTH) 12-4-4 (EARTH)	6'-0"	62'-6"	8'-11"	17'-10"	112'-6"	127'-0"
12-10-10 (EARTH)	12'-0"	125'-0"	17'-10"	26'-10"	175'-0"	189'-6"
12-10-10 (ROCK)	10'-0"	87'-6"	12'-6"	23'-3"	150'-0"	164'-6"
12-10-12 (EARTH)	14'-6"	137'-6"	19'-8"	30'-4"	200'-0"	214'-6"
12-10-12 (ROCK)	12'-0"	112'-6"	16'-1"	25'-0"	162'-6"	177'-0"
12-10-12 (ROCK)	18'-0"	162'-6"	23'-3"	33'-11"	225'-0"	239'-6"

RAIL LENGTHS ROUNDED TO NEAREST INCREMENT OF 12'-6"
* OFFSETS MEASURED FROM EDGE OF PAVEMENT AND ROUNDED TO NEAREST INCH

NOTE: FOR DITCH WIDTHS OTHER THAN THOSE SHOWN, THE LENGTHS AND OFFSETS WILL CHANGE CORRESPONDINGLY.

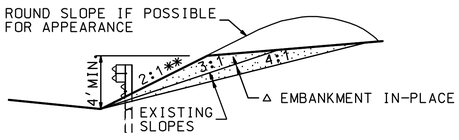


PLAN



ELEVATION

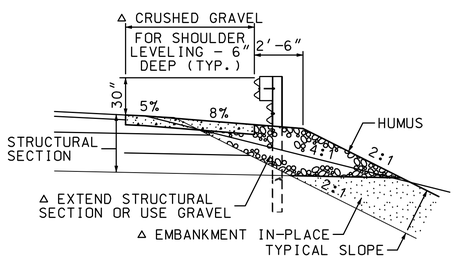
30 MPH - 7:1 TAPER RATE



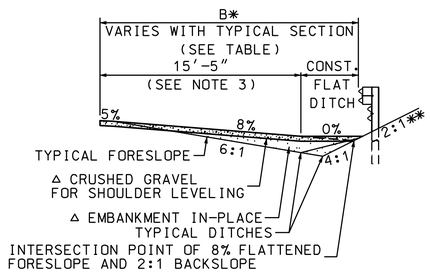
SLOPE STEEPENING DETAIL
(WHERE REQUIRED)

TERMINAL SECTION TYPE E-2 MODIFIED

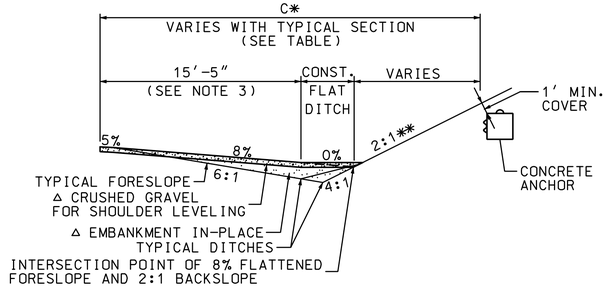
ITEM 606.1497 - BEAM GUARDRAIL TERMINAL SECTION, TYPE E-2 MODIFIED
PAID: LINEAR FOOT (INCLUDES RUB RAIL AND ANCHOR)
USE: AT BEGINNING OR END OF STANDARD SECTION GUARDRAIL



SECTION A-A



SECTION B-B



SECTION C-C

△ SEE NOTE 6 FOR ALL HATCHED AREAS

** THE BACK SLOPE SHALL BE 2:1 OR STEEPER APPROACHING THE ANCHOR. IT IS NOT THE INTENT TO FLATTEN AN EXISTING BACKSLOPE THAT IS STEEPER THAN 2:1 UNLESS SO NOTED ON THE PLANS OR PROPOSAL.

GENERAL NOTES

1. THIS TERMINAL IS DESIGNED FOR USE PRIMARILY AT SITES WHERE THE TERRAIN CHANGES ABRUPTLY FROM A CUT TO A STEEP FILL, AND WHERE THEORETICAL LENGTH OF NEED WOULD EXTEND INTO THE CUT SECTION FOR A CONSIDERABLE DISTANCE. THE DESIGN SPEED FOR THIS TERMINAL IS 30 MPH.
2. SEE STANDARD NO. GR-6 FOR E-2 HARDWARE DETAILS. SEE STANDARDS NO. GR-1 OR GR-2 FOR ADDITIONAL DETAILS OF COMMON HARDWARE.
3. A RUB RAIL IS REQUIRED WHEN THE BOTTOM OF THE W-BEAM IS GREATER THAN 18" HIGH ABOVE THE GROUND. A MAXIMUM OFFSET FROM THE E.P. OF 15'-5" MAINTAINS A SINGLE RUB RAIL HEIGHT. FOR ANY PORTION OF A DITCH OFFSET GREATER THAN 15'-5" CONSTRUCT A FLAT BOTTOMED DITCH TO THE 2:1 BACK SLOPE.
4. CONSTRUCT OUTLET DITCH TO FIT SITE CONDITIONS OR USE DROP INLET AND PIPE IF LARGE FLOWS ARE ANTICIPATED OR IF DITCHLINE BECOMES FLATTER THAN 0.4% (PAY UNDER BID ITEMS).
5. FOR INSTALLATIONS IN ROCK CUT EARTH BERMS, EXCAVATE A SUFFICIENT QUANTITY OF ROCK TO PERMIT POST DRIVING, AND ANCHOR THE TERMINAL BY ONE OF THE FOLLOWING METHODS:
   A) EXCAVATE ROCK TO PERMIT INSTALLATION OF PRECAST ANCHOR
   B) CONSTRUCT CAST-IN-PLACE ANCHOR WITH SAME MASS AS PRECAST ANCHOR AND 4 S.F. CROSS-SECTIONAL AREA TO FACE OF ANCHOR (SUBSIDIARY TO ITEM 606.1497).
   C) ATTACH W-BEAM TERMINAL CONNECTOR DIRECTLY TO ROCK FACE BY AN APPROVED ROCK BOLT METHOD (SUBSIDIARY TO ITEM 606.1497).
6. ANY COMMON EXCAVATION, EMBANKMENT IN-PLACE, AND CRUSHED GRAVEL FOR SHOULDER LEVELING REQUIRED WILL BE PAID UNDER ITEM 203.5596 - GUARDRAIL E-2 PLATFORMS. ROCK EXCAVATION WILL BE PAID AS ITEM 206.2 - ROCK STRUCTURE EXCAVATION.

GUARDRAIL STANDARD

BEAM GUARDRAIL TERMINAL SECTION TYPE E-2 MODIFIED 30

STANDARD NO. GR-7

REVISION DATE
03-01-2006
06-16-2010

*.DGN FILE NAME
GR-7

STANDARD PLANS

New Hampshire DOT Department of Transportation

STANDARD NO. GR-7

STANDARD NO. GR-8

REVISION DATE
03-01-2006
06-16-2010

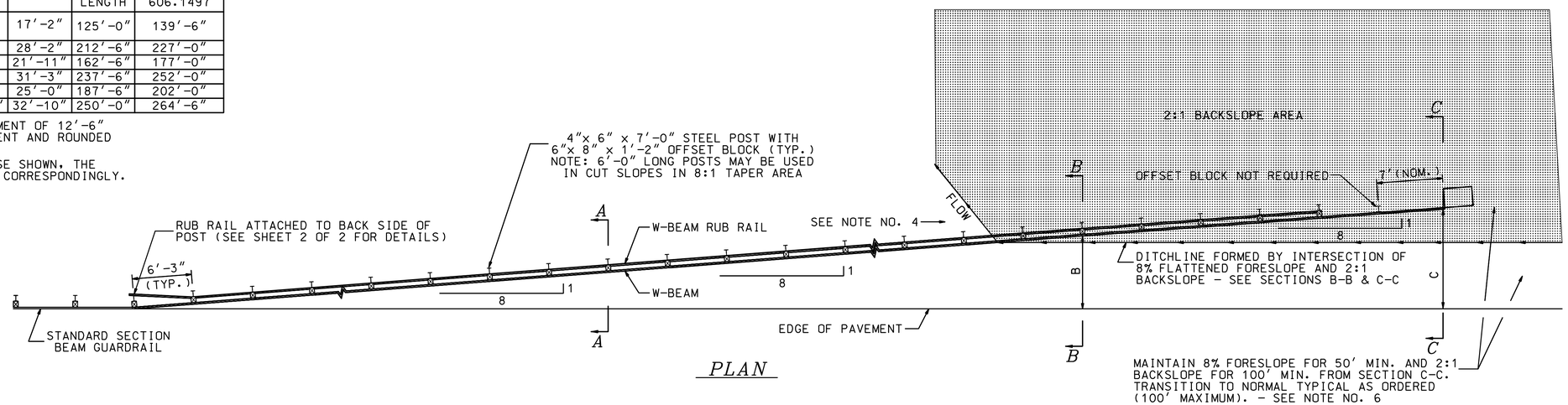
*.DGN FILE NAME
GR-8

STANDARD PLANS

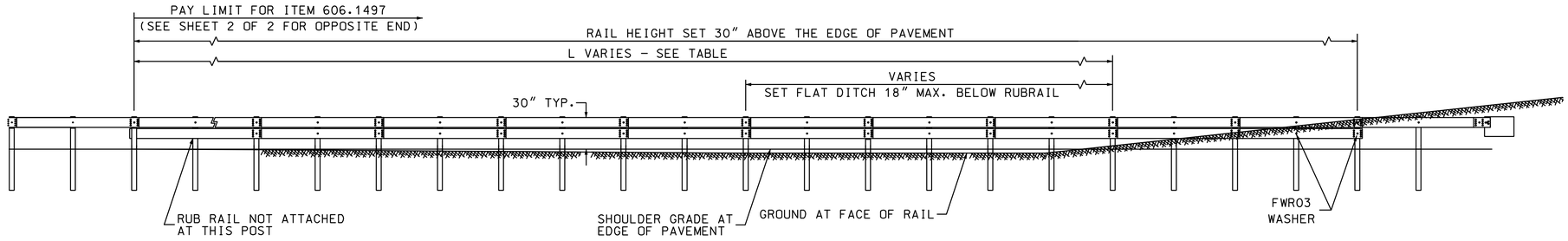
TYPICAL SECTION	TYPICAL DITCH WIDTH	L	B*	C*	RUB RAIL LENGTH	CALCULATED LENGTH ITEM 606.1497
11-4-4 (EARTH) 12-4-4 (EARTH)	6′-0″	75′-0″	9′-5″	17′-2″	125′-0″	139′-6″
12-10-10 (EARTH)	12′-0″	137′-6″	17′-2″	28′-2″	212′-6″	227′-0″
12-10-10 (ROCK)	10′-0″	100′-0″	12′-6″	21′-11″	162′-6″	177′-0″
12-10-12 (EARTH)	14′-6″	162′-6″	20′-4″	31′-3″	237′-6″	252′-0″
12-10-12 (ROCK)	12′-0″	125′-0″	15′-8″	25′-0″	187′-6″	202′-0″
12-10-12 (ROCK)	18′-0″	175′-0″	21′-10″	32′-10″	250′-0″	264′-6″

RAIL LENGTHS ROUNDED TO NEAREST INCREMENT OF 12′-6″
* OFFSETS MEASURED FROM EDGE OF PAVEMENT AND ROUNDED TO NEAREST INCH

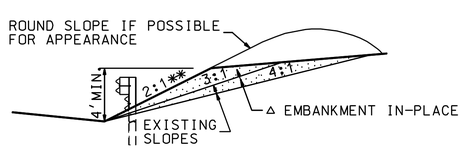
NOTE: FOR DITCH WIDTHS OTHER THAN THOSE SHOWN, THE LENGTHS AND OFFSETS WILL CHANGE CORRESPONDINGLY.



PLAN



ELEVATION

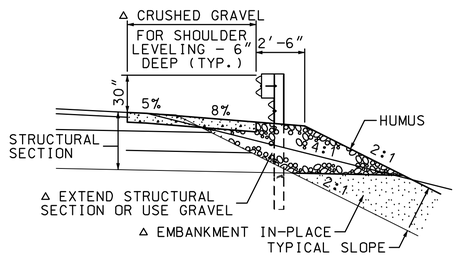


SLOPE STEEPENING DETAIL
(WHERE REQUIRED)

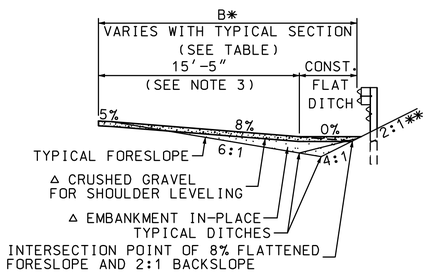
40 MPH - 8:1 TAPER RATE

TERMINAL SECTION TYPE E-2 MODIFIED

ITEM 606.1497 – BEAM GUARDRAIL TERMINAL SECTION, TYPE E-2 MODIFIED
PAID: LINEAR FOOT (INCLUDES RUB RAIL AND ANCHOR)
USE: AT BEGINNING OR END OF STANDARD SECTION GUARDRAIL

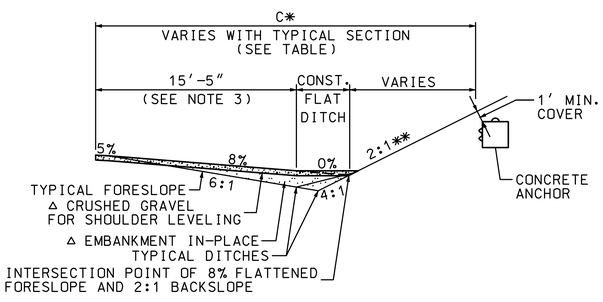


SECTION A-A



SECTION B-B

△ SEE NOTE 6 FOR ALL HATCHED AREAS



SECTION C-C

** THE BACK SLOPE SHALL BE 2:1 OR STEEPER APPROACHING THE ANCHOR. IT IS NOT THE INTENT TO FLATTEN AN EXISTING BACKSLOPE THAT IS STEEPER THAN 2:1 UNLESS SO NOTED ON THE PLANS OR PROPOSAL.

GENERAL NOTES

1. THIS TERMINAL IS DESIGNED FOR USE PRIMARILY AT SITES WHERE THE TERRAIN CHANGES ABRUPTLY FROM A CUT TO A STEEP FILL, AND WHERE THEORETICAL LENGTH OF NEED WOULD EXTEND INTO THE CUT SECTION FOR A CONSIDERABLE DISTANCE. THE DESIGN SPEED FOR THIS TERMINAL IS 40 MPH.
2. SEE STANDARD NO. GR-6 FOR E-2 HARDWARE DETAILS. SEE STANDARDS NO. GR-1 OR GR-2 FOR ADDITIONAL DETAILS OF COMMON HARDWARE.
3. A RUB RAIL IS REQUIRED WHEN THE BOTTOM OF THE W-BEAM IS GREATER THAN 18″ HIGH ABOVE THE GROUND. A MAXIMUM OFFSET FROM THE E.P. OF 15′-5″ MAINTAINS A SINGLE RUB RAIL HEIGHT. FOR ANY PORTION OF A DITCH OFFSET GREATER THAN 15′-5″ CONSTRUCT A FLAT BOTTOMED DITCH TO THE 2:1 BACK SLOPE.
4. CONSTRUCT OUTLET DITCH TO FIT SITE CONDITIONS OR USE DROP INLET AND PIPE IF LARGE FLOWS ARE ANTICIPATED OR IF DITCHLINE BECOMES FLATTER THAN 0.4% (PAY UNDER BID ITEMS).
5. FOR INSTALLATIONS IN ROCK CUT EARTH BERMS, EXCAVATE A SUFFICIENT QUANTITY OF ROCK TO PERMIT POST DRIVING, AND ANCHOR THE TERMINAL BY ONE OF THE FOLLOWING METHODS:
   A) EXCAVATE ROCK TO PERMIT INSTALLATION OF PRECAST ANCHOR
   B) CONSTRUCT CAST-IN-PLACE ANCHOR WITH SAME MASS AS PRECAST ANCHOR AND 4 S.F. CROSS-SECTIONAL AREA TO FACE OF ANCHOR (SUBSIDIARY TO ITEM 606.1497).
   C) ATTACH W-BEAM TERMINAL CONNECTOR DIRECTLY TO ROCK FACE BY AN APPROVED ROCK BOLT METHOD (SUBSIDIARY TO ITEM 606.1497).
6. ANY COMMON EXCAVATION, EMBANKMENT IN-PLACE, AND CRUSHED GRAVEL FOR SHOULDER LEVELING REQUIRED WILL BE PAID UNDER ITEM 203.5596 – GUARDRAIL E-2 PLATFORMS. ROCK EXCAVATION WILL BE PAID AS ITEM 206.2 – ROCK STRUCTURE EXCAVATION.

New Hampshire DOT Department of Transportation

STANDARD NO. GR-8

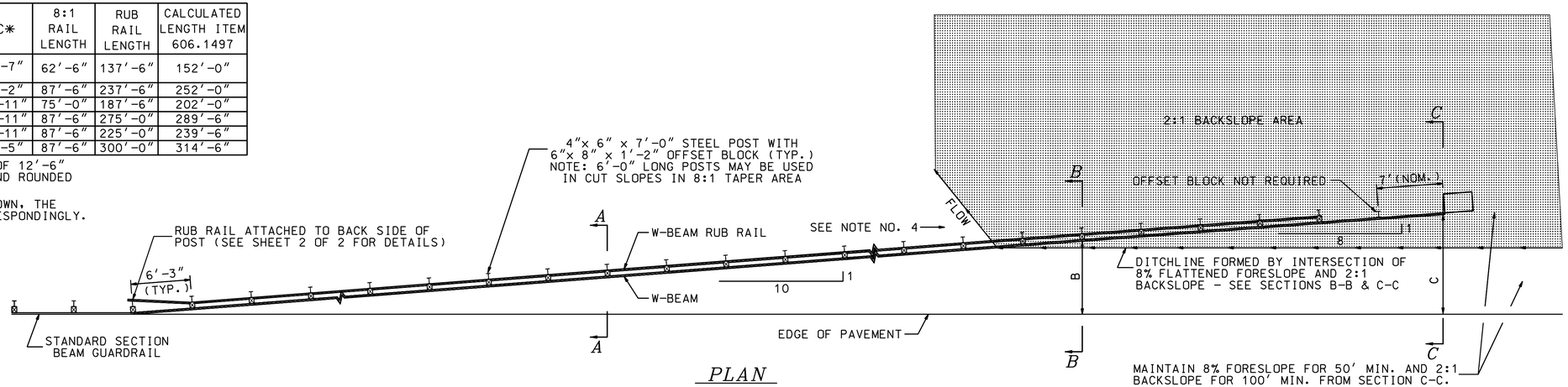
GUARDRAIL STANDARD

BEAM GUARDRAIL TERMINAL SECTION TYPE E-2 MODIFIED 40

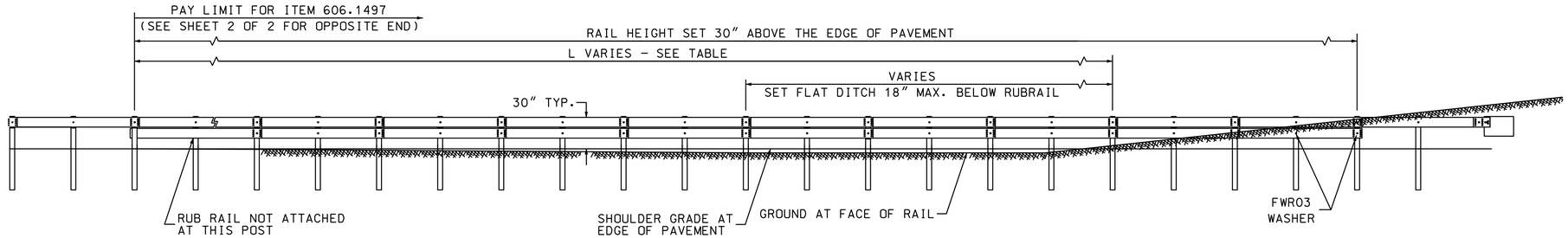
TYPICAL SECTION	TYPICAL DITCH WIDTH	L	B*	C*	8:1 RAIL LENGTH	RUB RAIL LENGTH	CALCULATED LENGTH ITEM 606.1497
11-4-4 (EARTH) 12-4-4 (EARTH)	6'-0"	87'-6"	8'-9"	16'-7"	62'-6"	137'-6"	152'-0"
12-10-10 (EARTH)	12'-0"	162'-6"	16'-3"	27'-2"	87'-6"	237'-6"	252'-0"
12-10-10 (ROCK)	10'-0"	125'-0"	12'-6"	21'-11"	75'-0"	187'-6"	202'-0"
12-10-12 (EARTH)	14'-6"	200'-0"	20'-0"	30'-11"	87'-6"	275'-0"	289'-6"
12-10-12 (ROCK)	12'-0"	150'-0"	15'-0"	25'-11"	87'-6"	225'-0"	239'-6"
12-10-12 (ROCK)	18'-0"	225'-0"	22'-6"	33'-5"	87'-6"	300'-0"	314'-6"

RAIL LENGTHS ROUNDED TO NEAREST INCREMENT OF 12'-6"
* OFFSETS MEASURED FROM EDGE OF PAVEMENT AND ROUNDED TO NEAREST INCH

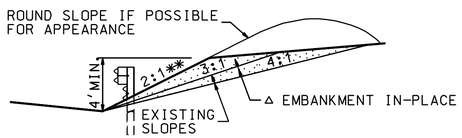
NOTE: FOR DITCH WIDTHS OTHER THAN THOSE SHOWN, THE LENGTHS AND OFFSETS WILL CHANGE CORRESPONDINGLY.



PLAN



ELEVATION

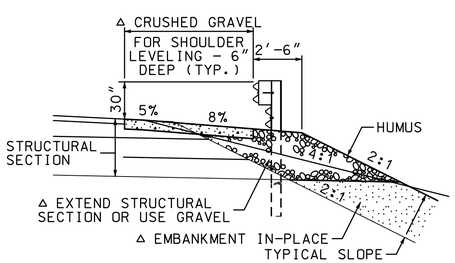


SLOPE STEEPENING DETAIL
(WHERE REQUIRED)

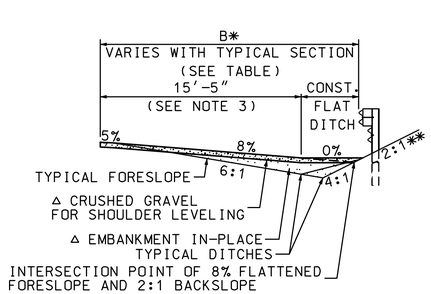
45 MPH - 10:1 TAPER RATE

TERMINAL SECTION TYPE E-2 MODIFIED

ITEM 606.1497 - BEAM GUARDRAIL TERMINAL SECTION, TYPE E-2 MODIFIED
PAID: LINEAR FOOT (INCLUDES RUB RAIL AND ANCHOR)
USE: AT BEGINNING OR END OF STANDARD SECTION GUARDRAIL

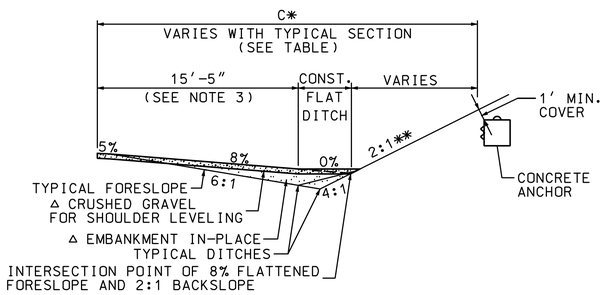


SECTION A-A



SECTION B-B

△ SEE NOTE 6 FOR ALL HATCHED AREAS



SECTION C-C

** THE BACK SLOPE SHALL BE 2:1 OR STEEPER APPROACHING THE ANCHOR. IT IS NOT THE INTENT TO FLATTEN AN EXISTING BACKSLOPE THAT IS STEEPER THAN 2:1 UNLESS SO NOTED ON THE PLANS OR PROPOSAL.

GENERAL NOTES

1. THIS TERMINAL IS DESIGNED FOR USE PRIMARILY AT SITES WHERE THE TERRAIN CHANGES ABRUPTLY FROM A CUT TO A STEEP FILL, AND WHERE THEORETICAL LENGTH OF NEED WOULD EXTEND INTO THE CUT SECTION FOR A CONSIDERABLE DISTANCE. THE DESIGN SPEED FOR THIS TERMINAL IS 45 MPH.
2. SEE STANDARD NO. GR-6 FOR E-2 HARDWARE DETAILS. SEE STANDARDS NO. GR-1 OR GR-2 FOR ADDITIONAL DETAILS OF COMMON HARDWARE.
3. A RUB RAIL IS REQUIRED WHEN THE BOTTOM OF THE W-BEAM IS GREATER THAN 18" HIGH ABOVE THE GROUND. A MAXIMUM OFFSET FROM THE E.P. OF 15'-5" MAINTAINS A SINGLE RUB RAIL HEIGHT. FOR ANY PORTION OF A DITCH OFFSET GREATER THAN 15'-5" CONSTRUCT A FLAT BOTTOMED DITCH TO THE 2:1 BACK SLOPE.
4. CONSTRUCT OUTLET DITCH TO FIT SITE CONDITIONS OR USE DROP INLET AND PIPE IF LARGE FLOWS ARE ANTICIPATED OR IF DITCHLINE BECOMES FLATTER THAN 0.4% (PAY UNDER BID ITEMS).
5. FOR INSTALLATIONS IN ROCK CUT EARTH BERMS, EXCAVATE A SUFFICIENT QUANTITY OF ROCK TO PERMIT POST DRIVING, AND ANCHOR THE TERMINAL BY ONE OF THE FOLLOWING METHODS:
   A) EXCAVATE ROCK TO PERMIT INSTALLATION OF PRECAST ANCHOR
   B) CONSTRUCT CAST-IN-PLACE ANCHOR WITH SAME MASS AS PRECAST ANCHOR AND 4 S.F. CROSS-SECTIONAL AREA TO FACE OF ANCHOR (SUBSIDIARY TO ITEM 606.1497).
   C) ATTACH W-BEAM TERMINAL CONNECTOR DIRECTLY TO ROCK FACE BY AN APPROVED ROCK BOLT METHOD (SUBSIDIARY TO ITEM 606.1497).
6. ANY COMMON EXCAVATION, EMBANKMENT IN-PLACE, AND CRUSHED GRAVEL FOR SHOULDER LEVELING REQUIRED WILL BE PAID UNDER ITEM 203.5596 - GUARDRAIL E-2 PLATFORMS. ROCK EXCAVATION WILL BE PAID AS ITEM 206.2 - ROCK STRUCTURE EXCAVATION.

GUARDRAIL STANDARD

BEAM GUARDRAIL TERMINAL SECTION TYPE E-2 MODIFIED 45

STANDARD NO. GR-9

REVISION DATE
03-01-2006
06-16-2010

*.DGN FILE NAME
GR-9

STANDARD PLANS

New Hampshire DOT Department of Transportation

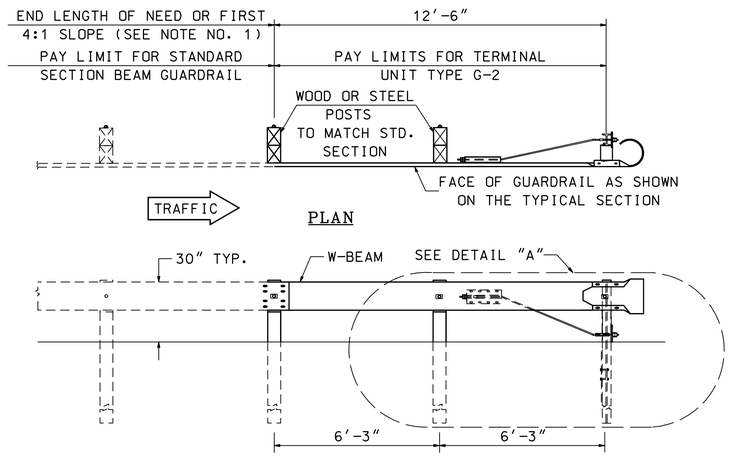
STANDARD NO. GR-9

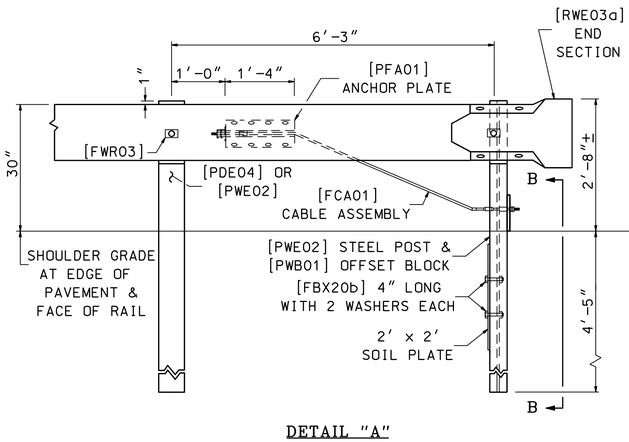
STANDARD NO. GR-10

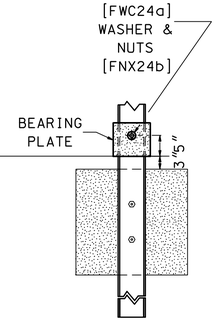
REVISION DATE
07-13-2001
06-16-2010

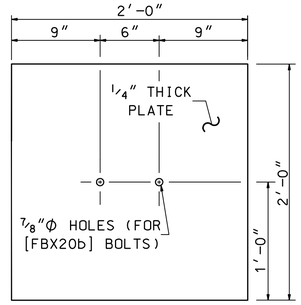
*.DGN FILE NAME
GR-10

STANDARD PLANS







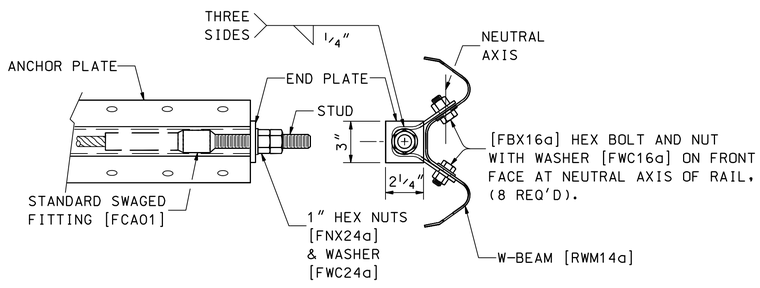


SOIL PLATE
(2 REQ'D–POSTS A)

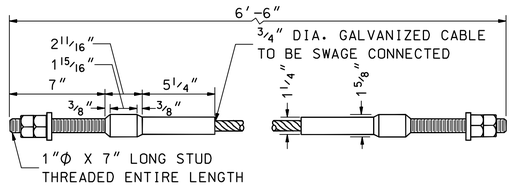
TERMINAL UNIT TYPE G-2

ITEM PAID: 606.147– BEAM GUARDRAIL (TERMINAL UNIT TYPE G-2) UNIT

USE: ON DIVIDED HIGHWAYS ONLY WITH DIRECTION OF TRAFFIC AS INDICATED

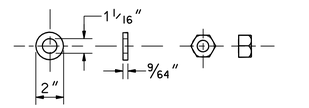


ANCHOR PLATE ASSEMBLY DETAILS

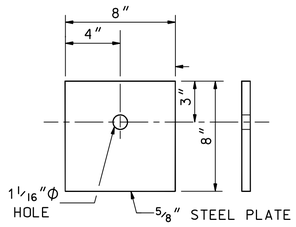


NOTE: TIGHTEN CABLE ASSEMBLY TO TAUT TENSION & DOUBLE-NUT BOTH ENDS

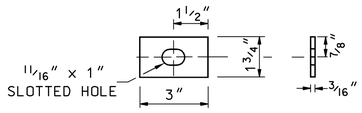
CABLE ASSEMBLY
[FCA01]



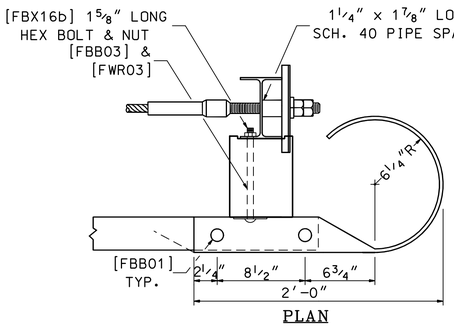
1" HEX NUT & WASHER
[FNX24a] AND [FWC24a]



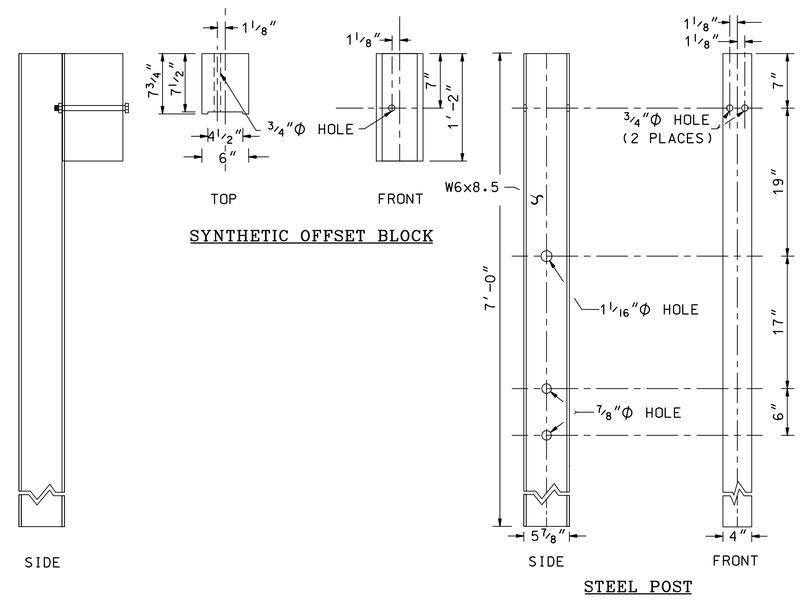
BEARING PLATE
[FPB01]



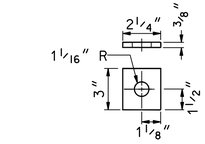
RECTANGULAR PLATE WASHER
[FWR03] (3 REQ'D)



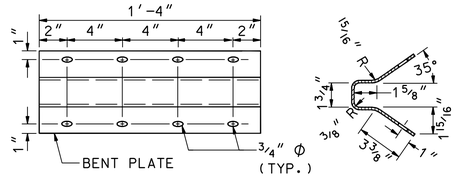
END SECTION
[RWE03a]



STRUCTURAL SHAPE STEEL POST & BLOCK
[PWE02] MODIFIED



END PLATE
[FPA01]



ANCHOR PLATE
[FPA01]

GENERAL NOTES

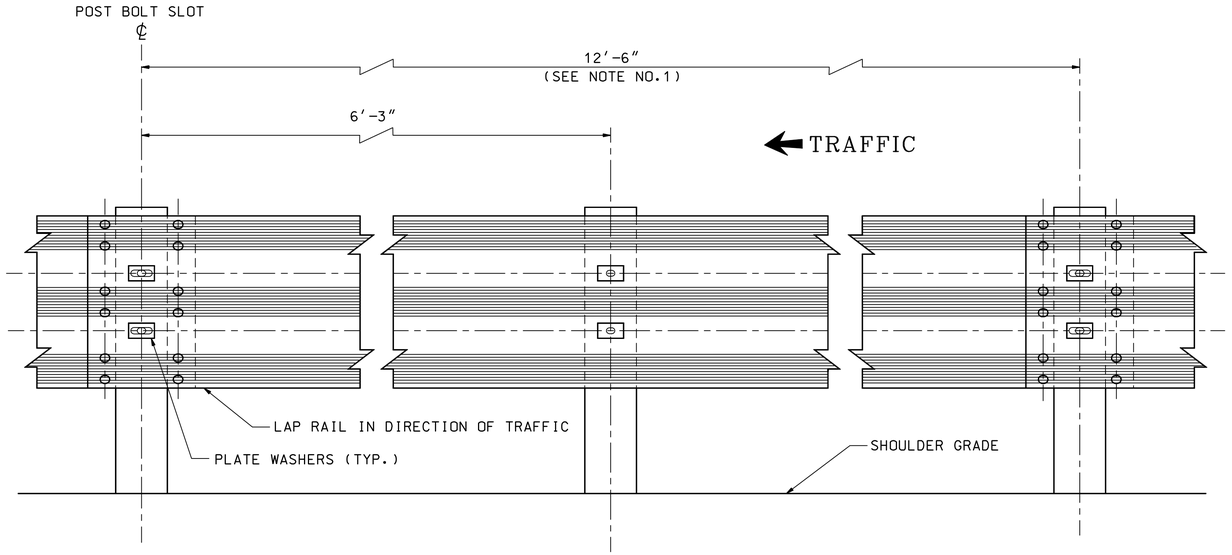
1. THE LENGTH OF NEED IS THE TOTAL LENGTH OF A LONGITUDINAL BARRIER NEEDED TO SHIELD AN AREA OF CONCERN. TO DETERMINE THE LENGTH OF NEED, REFER TO *THE ROADSIDE DESIGN GUIDE* – AASHTO, LATEST ADOPTED VERSION, THE G-2 UNIT SHALL TERMINATE IN A 4:1 OR FLATTER SLOPE.
2. DESIGNATIONS PROVIDED IN BRACKETS [ ] REFERENCE STANDARD ELEMENTS DETAILED IN *A GUIDE TO STANDARDIZED HIGHWAY BARRIER RAIL HARDWARE* , LATEST ADOPTED VERSION, AASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.
3. ALL DIMENSIONS SUBJECT TO MANUFACTURER'S TOLERANCES.
4. STANDARDS NO. GR-1 (OR GR-2), SHALL BE USED IN CONJUNCTION WITH THIS STANDARD. SEE THESE STANDARDS FOR ADDITIONAL DETAILS OF COMMON HARDWARE.
5. TIGHTEN CABLE ASSEMBLY TO TAUT TENSION AND DOUBLE-NUT BOTH ENDS.
6. DIMENSIONS OF PLASTIC AND SYNTHETIC BLOCKOUTS ARE AS SHOWN ON MANUFACTURER'S DRAWINGS.

New Hampshire DOT Department of Transportation

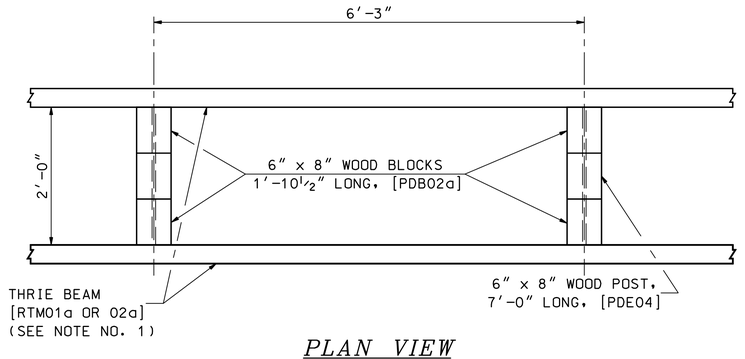
STANDARD NO. GR-10

GUARDRAIL STANDARD

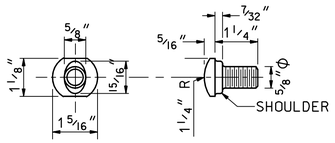
BEAM GUARDRAIL TERMINAL UNIT TYPE G-2



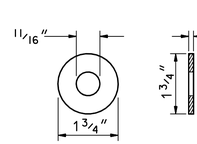
ELEVATION VIEW



PLAN VIEW



SPLICE BOLT
[FBB01]
(12 REQ'D PER SPLICE)



ROUND WASHER
[FWC16a]

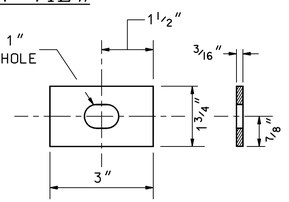
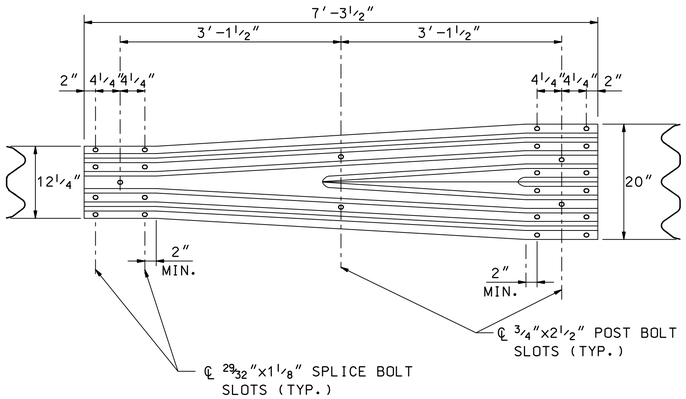
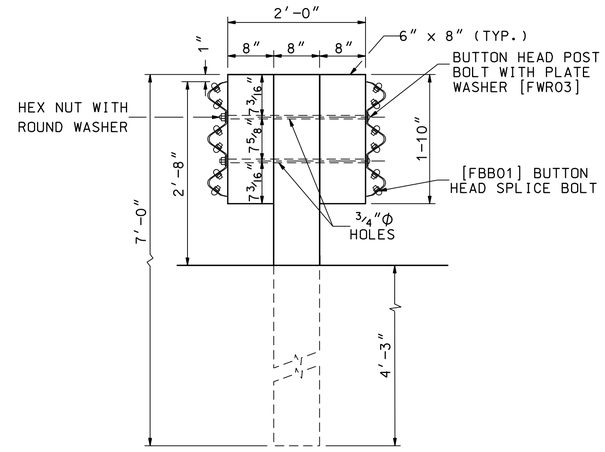


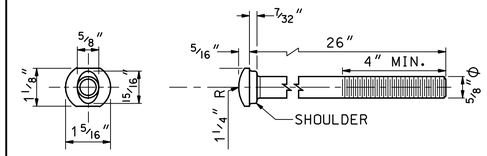
PLATE WASHER
[FWR03]



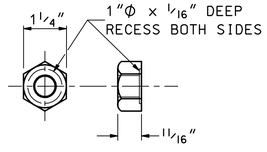
W-THRIE BEAM TRANSITION SECTION
[RWT01a]



SIDE VIEW AT SPLICE POST

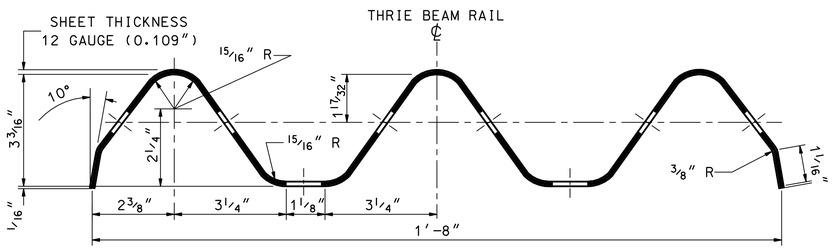


POST BOLT
(2 REQ'D PER POST)

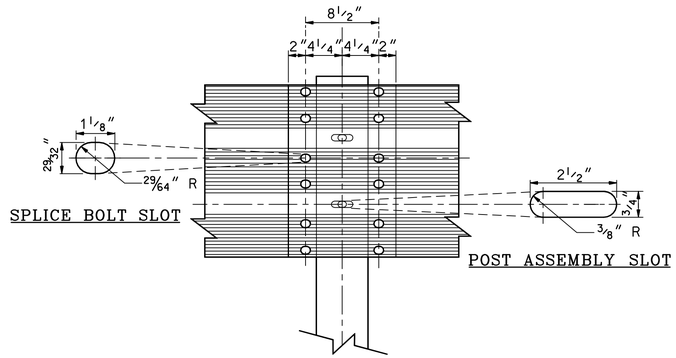


NUT FOR SPLICE & POST BOLTS

NOTE: LONGER ERECTION BOLTS MAY BE REQUIRED.
IF THE BOLT EXTENDS MORE THAN 1/4″ FROM
THE NUT, THE BOLT SHOULD BE TRIMMED BACK.



THRIE BEAM RAIL SECTION
[RTM01a & RTM02a]



BEAM SPLICE

GENERAL NOTES

1. 25′-0″ RAIL PANELS MAY BE USED IN PLACE OF 12′-6″ PANELS, EXCEPT ON CURVES WITH A RAIL RADIUS OF LESS THAN 300 FT.
2. GUARDRAIL HEIGHT SHALL BE SET FROM THE GRADE AT THE FACE OF RAIL.
3. DESIGNATIONS PROVIDED IN BRACKETS [ ] REFERENCE STANDARD ELEMENTS DETAILED IN *A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE*, LATEST ADOPTED VERSION, AASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.
4. SEE STD. NO. DL-1 FOR BEAM GUARDRAIL DELINEATORS.
5. ITEM 606.21403 - DOUBLE-FACED BEAM GUARDRAIL (THRIE BEAM) INCLUDING TRANSITION SECTIONS.
6. POSTS SHORTER THAN THE 7′-0″ INDICATED ON THE DETAIL, BUT NOT LESS THAN 6′-0″, MAY ONLY BE USED WHEN
   A) THE SLOPE BEHIND THE GUARDRAIL IS NO STEEPER THAN 4:1
   B) WHERE THE DISTANCE FROM THE BACK OF THE POST TO THE BREAK OF THE SLOPE IS A MINIMUM OF 2′-0″
   C) AND THEN ONLY AS APPROVED OR SPECIFICALLY SHOWN ON THE PLANS.

GUARDRAIL STANDARD

BEAM GUARDRAIL THRIE BEAM DOUBLE-FACED (WOOD)

STANDARD NO. GR-11

REVISION DATE
07-13-2001
06-16-2010

*.DGN FILE NAME
GR-11

STANDARD PLANS

New Hampshire DOT Department of Transportation

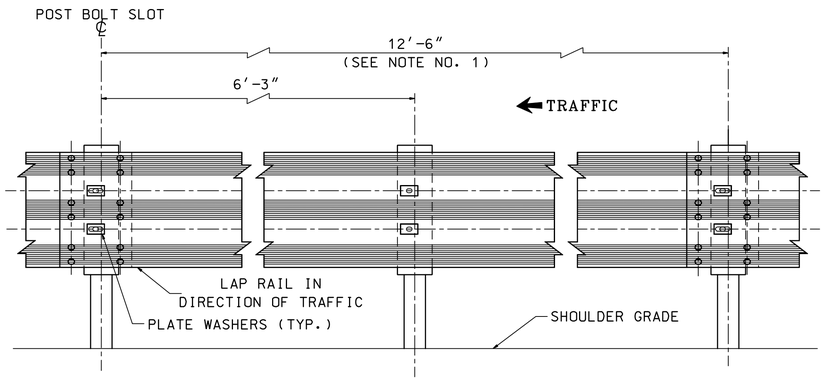
STANDARD NO. GR-11

STANDARD NO. GR-12

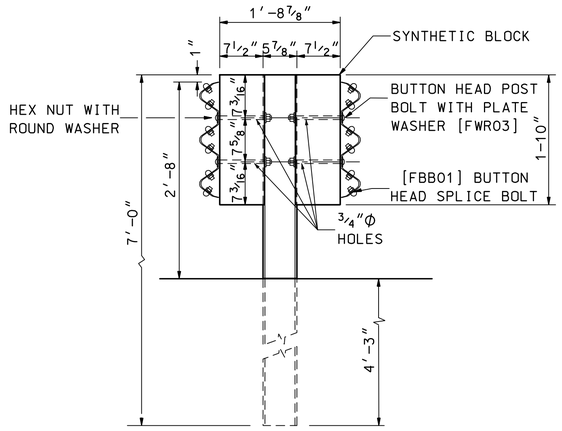
REVISION DATE
06-16-2010

*.DGN FILE NAME
GR-12

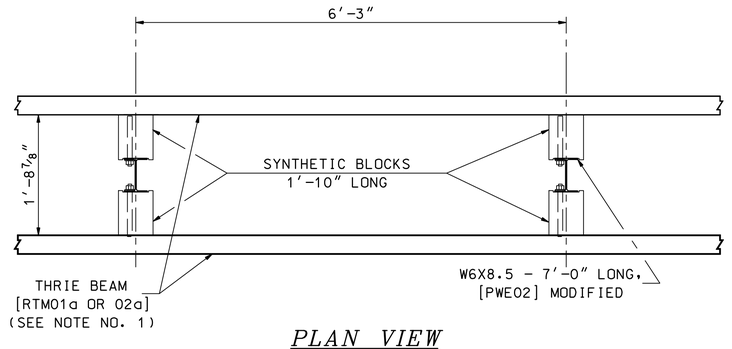
STANDARD PLANS



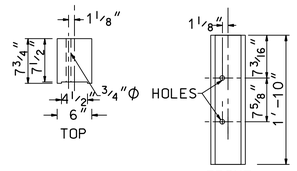
ELEVATION VIEW



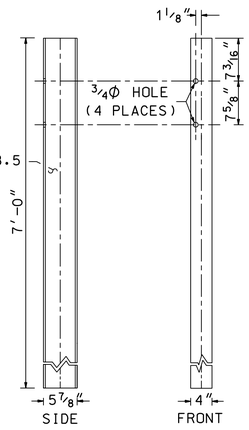
SIDE VIEW AT SPLICE POST



PLAN VIEW

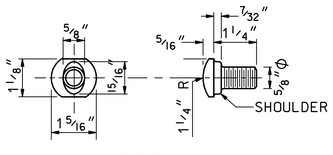


SYNTHETIC OFFSET BLOCK

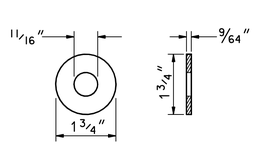


STEEL POST

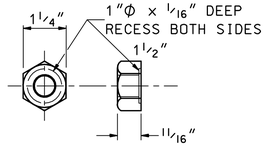
STRUCTURAL SHAPE STEEL POST & BLOCK



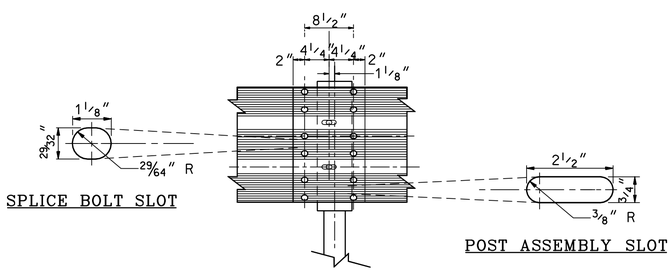
SPLICE BOLT
[FBB01]
(12 REQ'D PER SPLICE)



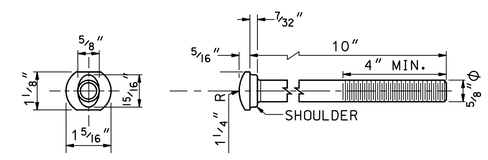
ROUND WASHER
[FWC16a]



NUT FOR SPLICE & POST BOLTS
[FBB01 & 05]



BEAM SPLICE



POST BOLT
[FBB03]
(2 REQ'D PER POST)
NOTE: LONGER ERECTION BOLTS MAY BE REQUIRED

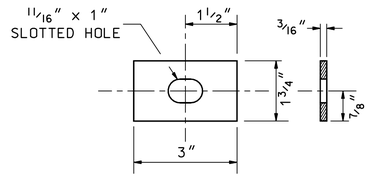
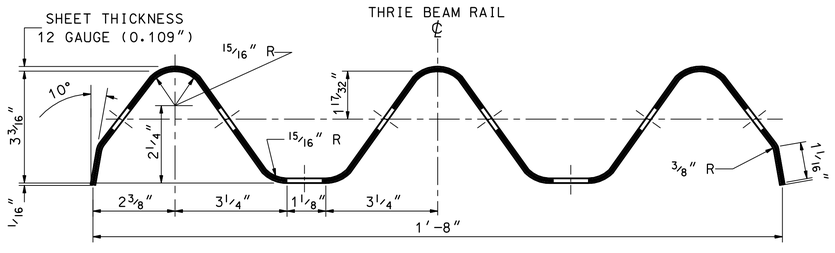
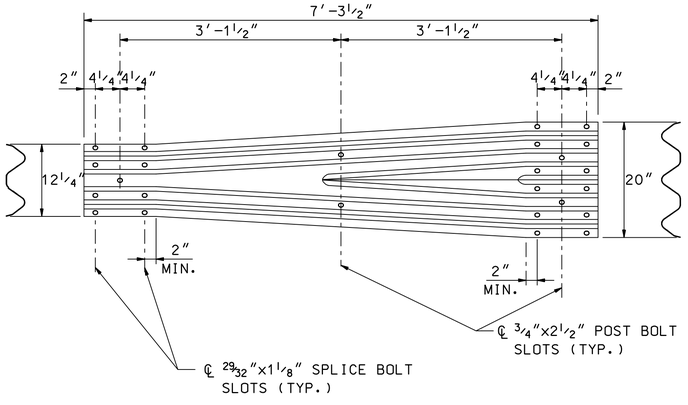


PLATE WASHER
[FWR03]



THRIE BEAM RAIL SECTION
[RTM01a & RTM02a]



W-THRIE BEAM TRANSITION SECTION
[RWT01a]

GENERAL NOTES

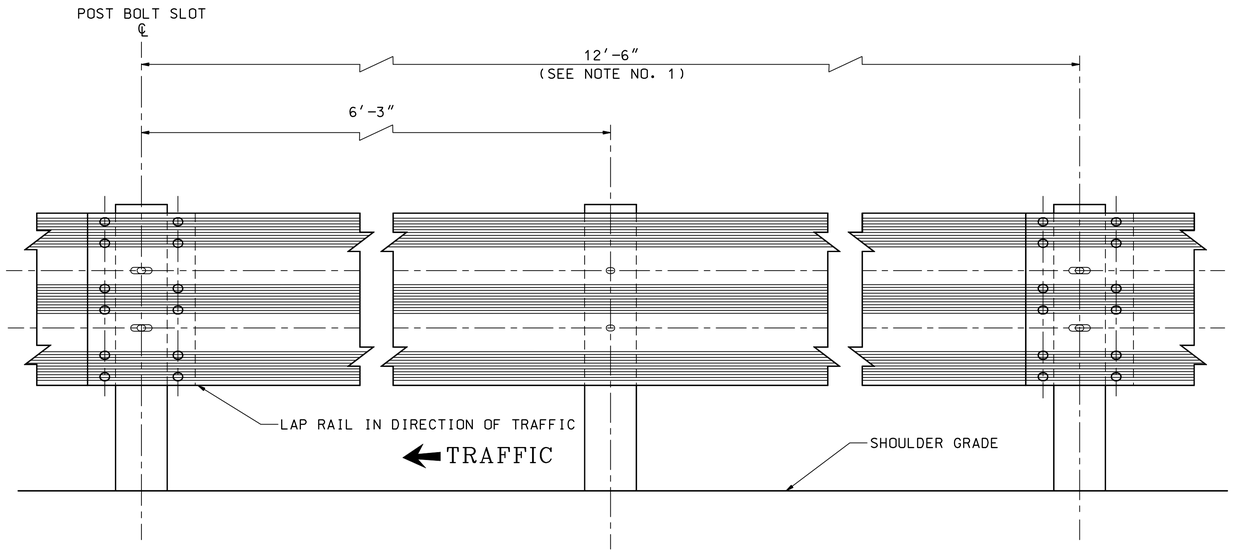
1. 25′-0″ RAIL PANELS MAY BE USED IN PLACE OF 12′-6″ PANELS, EXCEPT ON CURVES WITH A RAIL RADIUS OF LESS THAN 300 FT.
2. GUARDRAIL HEIGHT SHALL BE SET FROM THE GRADE AT THE FACE OF RAIL.
3. DESIGNATIONS PROVIDED IN BRACKETS [ ] REFERENCE STANDARD ELEMENTS DETAILED IN *A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE*, LATEST ADOPTED VERSION, AASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.
4. SEE STD. NO. DL-1 FOR BEAM GUARDRAIL DELINEATORS.
5. ITEM 606.21203 - DOUBLE-FACED BEAM GUARDRAIL (THRIE BEAM-STEEL POSTS) INCLUDING TRANSITION SECTIONS.
6. DIMENSIONS OF PLASTIC AND SYNTHETIC BLOCKOUTS ARE AS SHOWN ON MANUFACTURER'S DRAWINGS.
7. POSTS SHORTER THAN THE 7′-0″ INDICATED ON THE DETAIL, BUT NOT LESS THAN 6′-0″, MAY ONLY BE USED WHEN
   A) THE SLOPE BEHIND THE GUARDRAIL IS NO STEEPER THAN 4:1
   B) WHERE THE DISTANCE FROM THE BACK OF THE POST TO THE BREAK OF THE SLOPE IS A MINIMUM OF 2′-0″
   C) AND THEN ONLY AS APPROVED OR SPECIFICALLY SHOWN ON THE PLANS.

New Hampshire DOT Department of Transportation

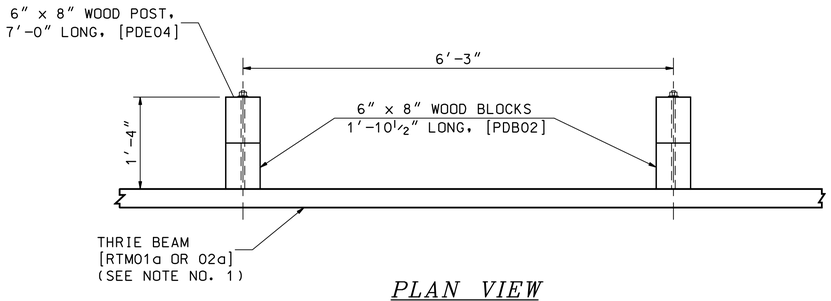
STANDARD NO. GR-12

GUARDRAIL STANDARD

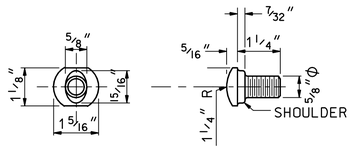
BEAM GUARDRAIL THRIE BEAM DOUBLE-FACED (STEEL)



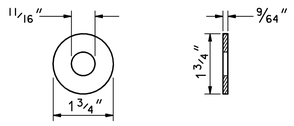
ELEVATION VIEW



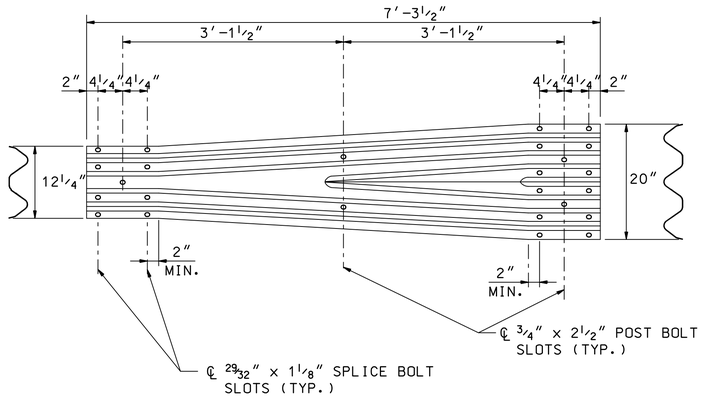
PLAN VIEW



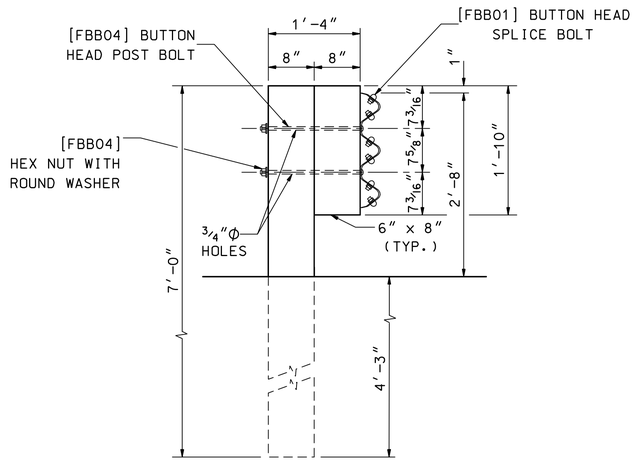
SPLICE BOLT
[FBB01]
(12 REQ'D PER SPLICE)



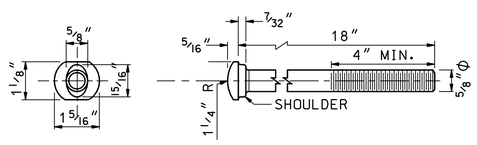
ROUND WASHER
[FWC16a]



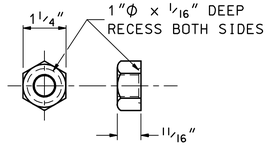
W-THRIE BEAM TRANSITION SECTION
[RWT01a]



SIDE VIEW AT SPLICE POST

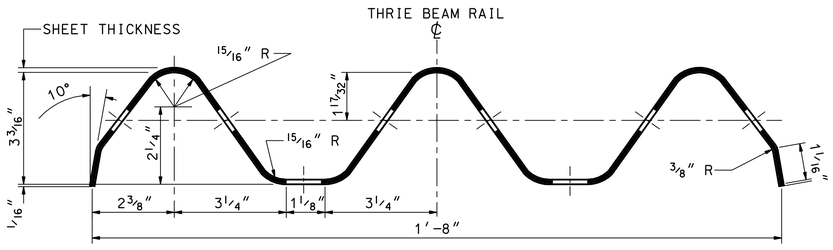


POST BOLT
[FBB05]
(2 REQ'D PER POST)

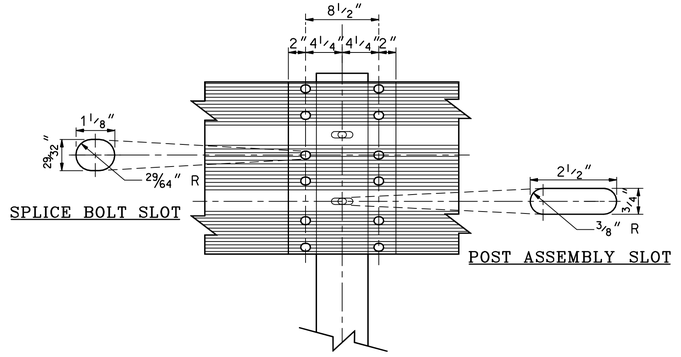


NUT FOR SPLICE & POST BOLTS
[FBB01 & 05]

NOTE: LONGER ERECTION BOLTS MAY BE REQUIRED



THRIE BEAM RAIL SECTION
[RTM01a & RTM02a]



BEAM SPLICE

GENERAL NOTES

1. 25′-0″ RAIL PANELS MAY BE USED IN PLACE OF 12′-6″ PANELS, EXCEPT ON CURVES WITH A RAIL RADIUS OF LESS THAN 300 FT.

2. GUARDRAIL HEIGHT SHALL BE SET FROM THE GRADE AT THE FACE OF RAIL.

3. DESIGNATIONS PROVIDED IN BRACKETS [ ] REFERENCE STANDARD ELEMENTS DETAILED IN *A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE*, LATEST ADOPTED VERSION, AASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.

4. SEE STD. NO. DL-1 FOR BEAM GUARDRAIL DELINEATORS.

5. ITEM 606.1403 - SINGLE-FACED BEAM GUARDRAIL (THRIE BEAM) INCLUDING TRANSITION SECTIONS.

6. POSTS SHORTER THAN THE 7′-0″ INDICATED ON THE DETAIL, BUT NOT LESS THAN 6′-0″, MAY ONLY BE USED WHEN
   A) THE SLOPE BEHIND THE GUARDRAIL IS NO STEEPER THAN 4:1
   B) WHERE THE DISTANCE FROM THE BACK OF THE POST TO THE BREAK OF THE SLOPE IS A MINIMUM OF 2′-0″
   C) AND THEN ONLY AS APPROVED OR SPECIFICALLY SHOWN ON THE PLANS.

GUARDRAIL STANDARD

BEAM GUARDRAIL
THRIE BEAM SINGLE-FACED

STANDARD NO. GR-13

REVISION DATE
07-13-2001
06-16-2010

*.DGN FILE NAME
GR-13

STANDARD PLANS

New Hampshire DOT Department of Transportation

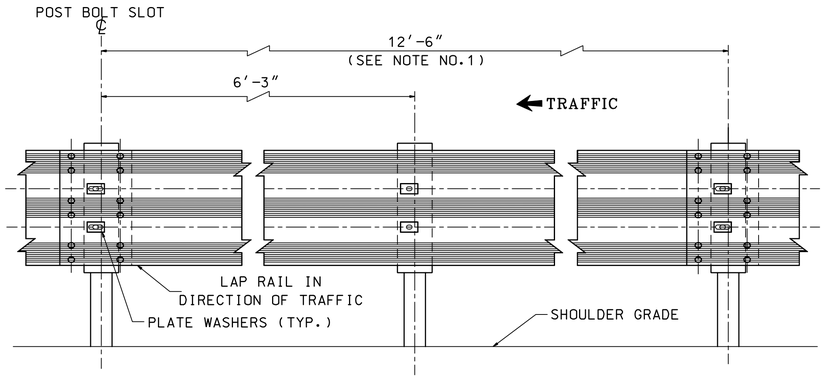
STANDARD NO. GR-13

STANDARD NO. GR-14

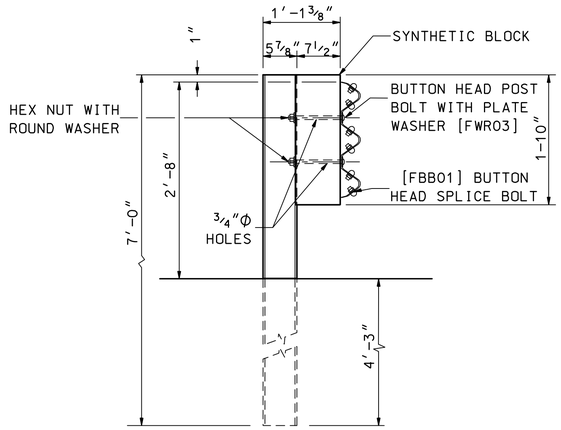
REVISION DATE
06-16-2010

*.DGN FILE NAME
GR-14

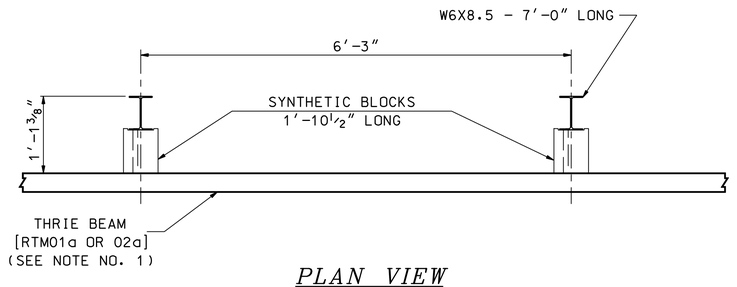
STANDARD PLANS



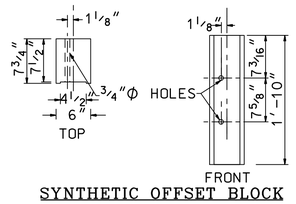
ELEVATION VIEW



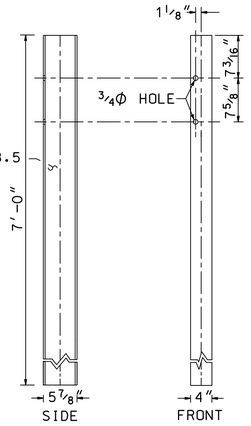
SIDE VIEW AT SPLICE POST



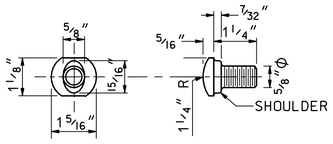
PLAN VIEW



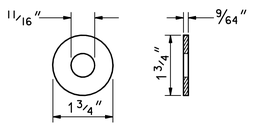
SYNTHETIC OFFSET BLOCK



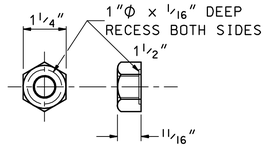
STEEL POST



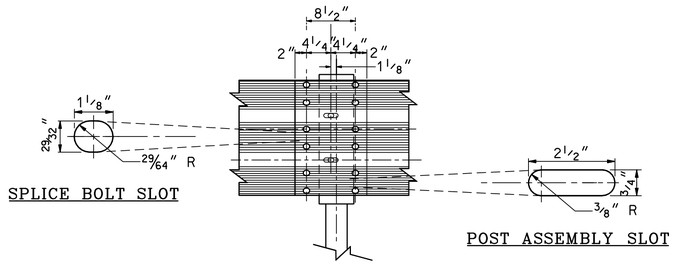
SPLICE BOLT
[FBB01]
(12 REQ'D PER SPLICE)



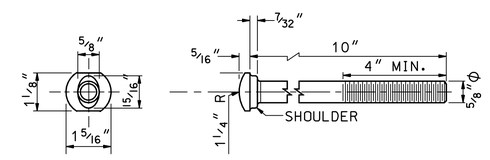
ROUND WASHER
[FWC16a]



NUT FOR SPLICE & POST BOLTS
[FBB01]



BEAM SPLICE



POST BOLT

NOTE: LONGER ERECTION BOLTS MAY BE REQUIRED.

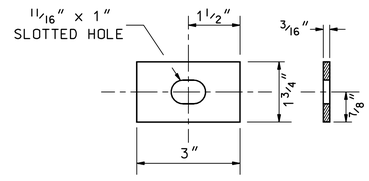
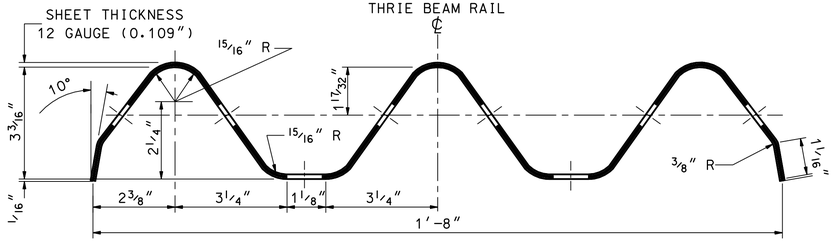
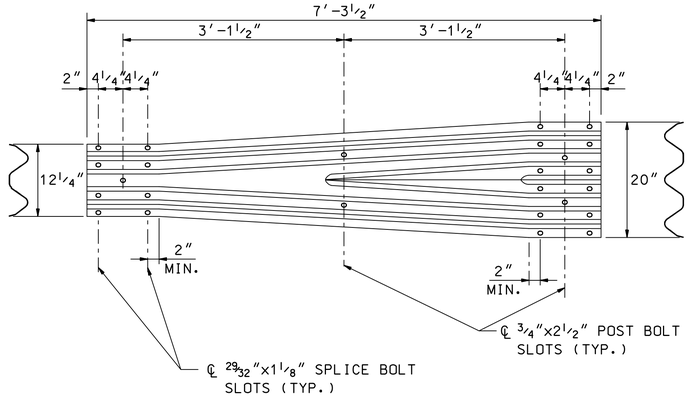


PLATE WASHER
[FWR03]



THRIE BEAM RAIL SECTION
[RTM01a & RTM02a]



W-THRIE BEAM TRANSITION SECTION
[RWT01a]

STRUCTURAL SHAPE STEEL POST & BLOCK

GENERAL NOTES

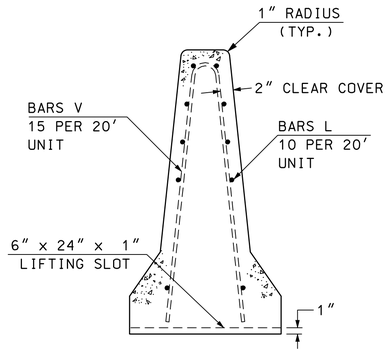
1. 25′-0″ RAIL PANELS MAY BE USED IN PLACE OF 12′-6″ PANELS, EXCEPT ON CURVES WITH A RAIL RADIUS OF LESS THAN 300 FT.
2. GUARDRAIL HEIGHT SHALL BE SET FROM THE GRADE AT THE FACE OF RAIL.
3. DESIGNATIONS PROVIDED IN BRACKETS [ ] REFERENCE STANDARD ELEMENTS DETAILED IN *A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE*, LATEST ADOPTED VERSION, AASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.
4. SEE STD. NO. DL-1 FOR BEAM GUARDRAIL DELINEATORS.
5. ITEM 606.1203 - SINGLE-FACED BEAM GUARDRAIL (THRIE BEAM-STEEL POSTS) INCLUDING TRANSITION SECTIONS.
6. DIMENSIONS OF PLASTIC AND SYNTHETIC BLOCKOUTS ARE AS SHOWN ON MANUFACTURER'S DRAWINGS.
7. POSTS SHORTER THAN THE 7′-0″ INDICATED ON THE DETAIL, BUT NOT LESS THAN 6′-0″, MAY ONLY BE USED WHEN
   A) THE SLOPE BEHIND THE GUARDRAIL IS NO STEEPER THAN 4:1
   B) WHERE THE DISTANCE FROM THE BACK OF THE POST TO THE BREAK OF THE SLOPE IS A MINIMUM OF 2′-0″
   C) AND THEN ONLY AS APPROVED OR SPECIFICALLY SHOWN ON THE PLANS.

New Hampshire DOT Department of Transportation

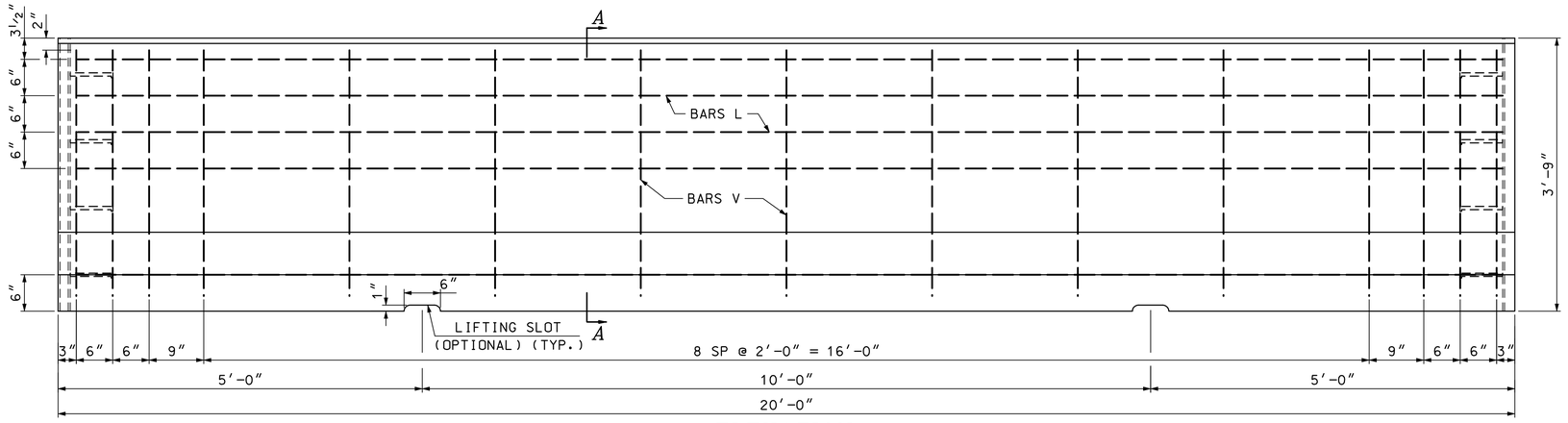
STANDARD NO. GR-14

GUARDRAIL STANDARD

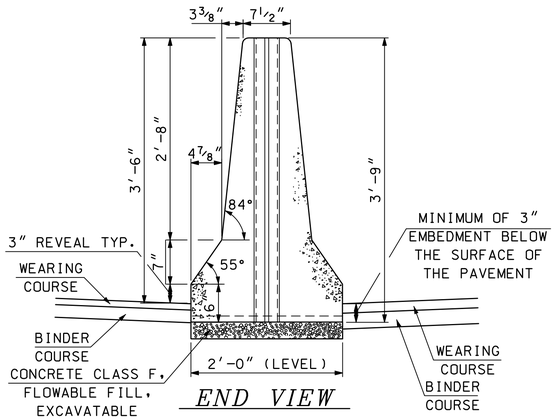
BEAM GUARDRAIL THRIE BEAM SINGLE-FACED (STEEL)



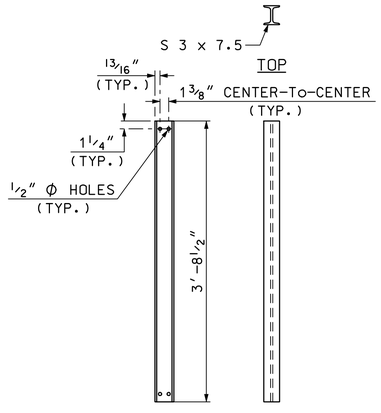
ITEM 606.4XX - CONCRETE BARRIER, DOUBLE-FACED, PRECAST SECTION A-A



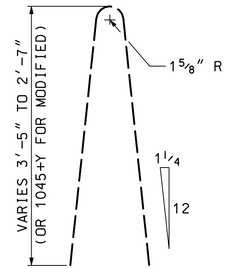
ELEVATION



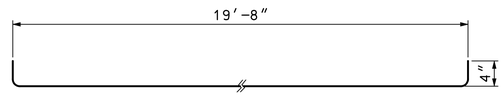
END VIEW



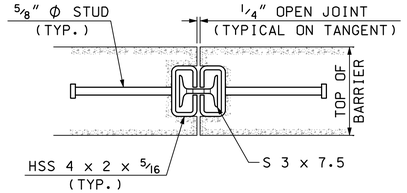
I-BEAM DETAILS



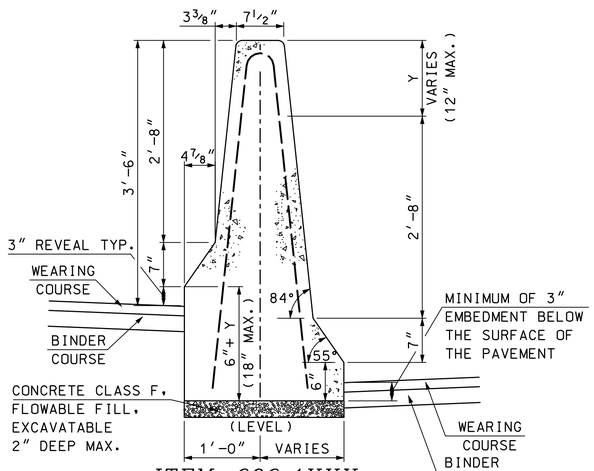
BAR V DETAIL (#4)



BAR L DETAIL (#4)

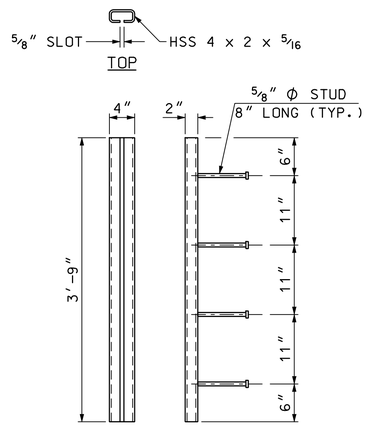


BARRIER CONNECTION DETAIL

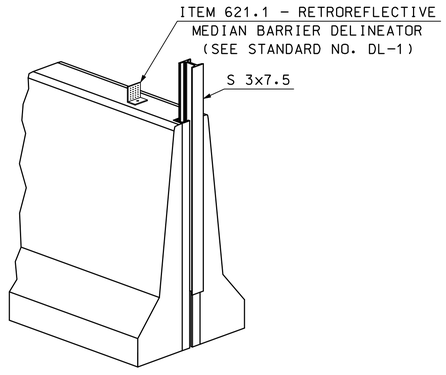


ITEM 606.4XXX - MODIFIED CONCRETE MEDIAN BARRIER, PRECAST SECTION

NOTE: Y = ELEVATION DIFFERENTIAL BETWEEN BARRELS AT FACE OF BARRIER



STRUCTURAL TUBE DETAILS



PERSPECTIVE VIEW

GENERAL NOTES

1. THE CONCRETE BARRIER DETAILS, AS SHOWN ON THIS SHEET, ARE IN COMPLIANCE WITH THE REQUIREMENTS OF NCHRP REPORT 350, TL 4.
2. I-BEAMS AND STRUCTURAL TUBES SHALL BE GALVANIZED AFTER FABRICATION.
3. STUD WELDING SHALL BE IN ACCORDANCE WITH ITEM 547.
4. SLOT IN STRUCTURAL TUBE SHALL BE CUT WITH MECHANICALLY GUIDED MEANS TO A SMOOTH, UNIFORM SURFACE MEETING A SURFACE ROUGHNESS OF 1000 MICROINCHES OR BETTER (ANSI B46.1).

MATERIAL NOTES

1. THE BARRIERS SHALL BE LIGHT COLORED CLASS "AA" CONCRETE HAVING A MINIMUM 28 DAY COMPRESSION STRENGTH OF 4,000 PSI. BARRIERS SHALL HAVE A SMOOTH UNIFORM SURFACE FREE OF DEFECTS AND IRREGULARITIES. CASTING DATE SHALL BE SHOWN ON BARRIER. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4", UNLESS NOTED OTHERWISE.
2. ALL REINFORCING STEEL SHALL BE AASHTO M31 (ASTM-A615) GRADE 60, EPOXY COATED. REINFORCEMENT SHOWN IS THE MINIMUM REQUIRED.
3. EACH BARRIER UNIT SHALL INCLUDE ONE S 3 x 7.5 AS SHOWN ON THIS PLAN SHEET.
4. SHOP DRAWINGS, SHALL INCLUDE REINFORCING SCHEDULE.
5. LEVELING PADS OR SHIMMIN.G MATERIAL SHALL BE SUBSIDIARY TO THE BARRIER ITEM.

GUARDRAIL STANDARD

PRECAST CONCRETE BARRIER 42" F-SHAPE (DOUBLE-FACED)

STANDARD NO. GR-15

REVISION DATE
06-16-2010

*.DGN FILE NAME
GR-15

STANDARD PLANS

New Hampshire DOT Department of Transportation

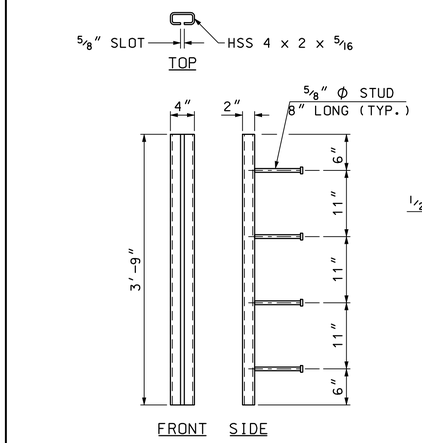
STANDARD NO. GR-15

STANDARD NO. GR-16

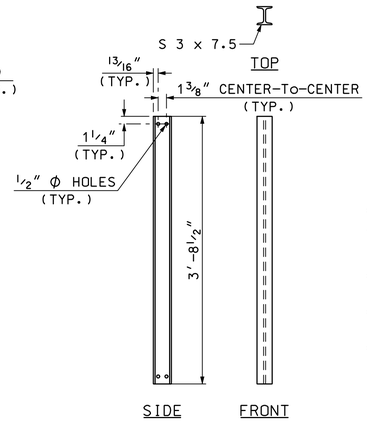
REVISION DATE

*.DGN FILE NAME
GR-16

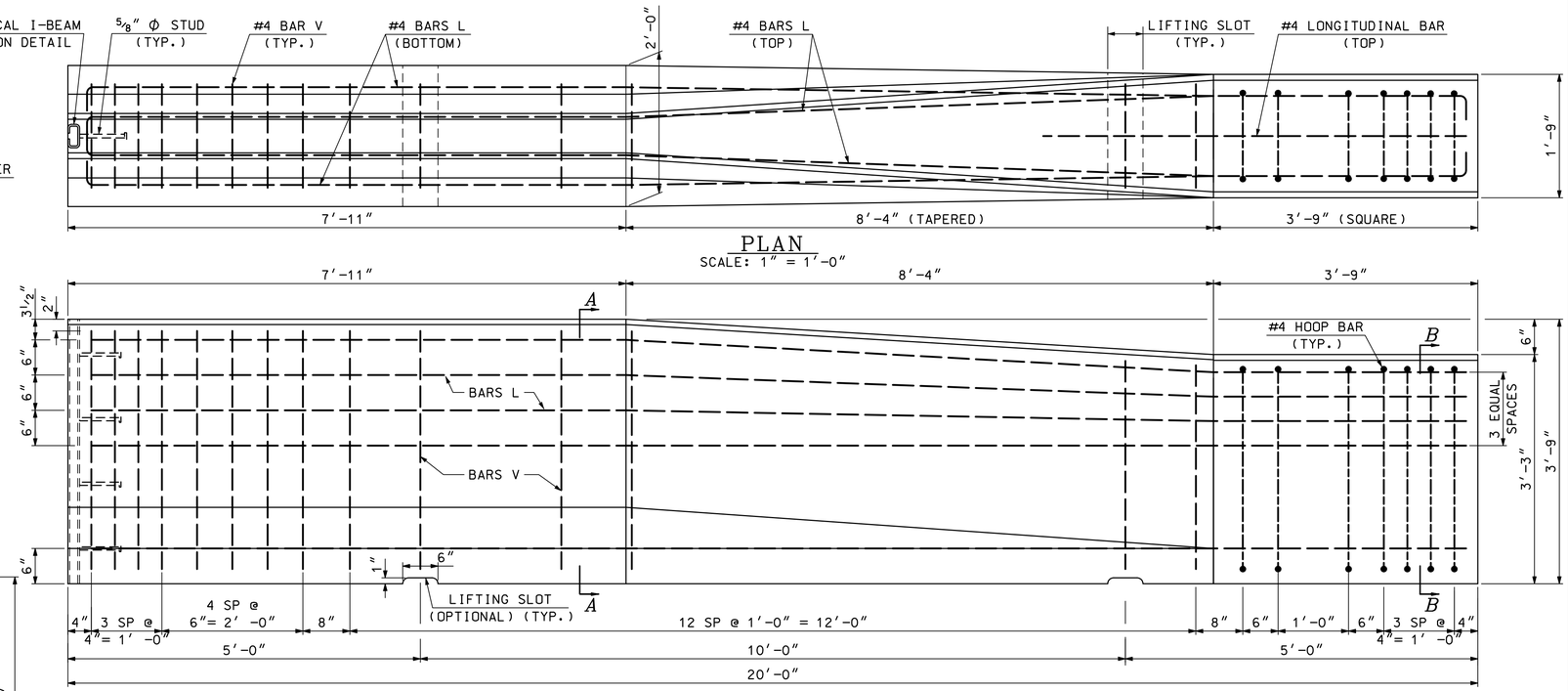
STANDARD PLANS

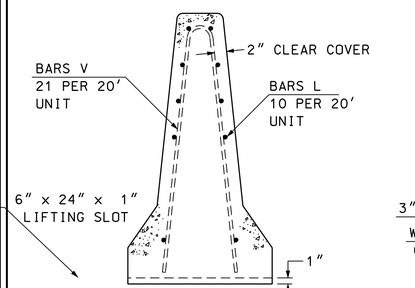


STRUCTURAL TUBE DETAILS



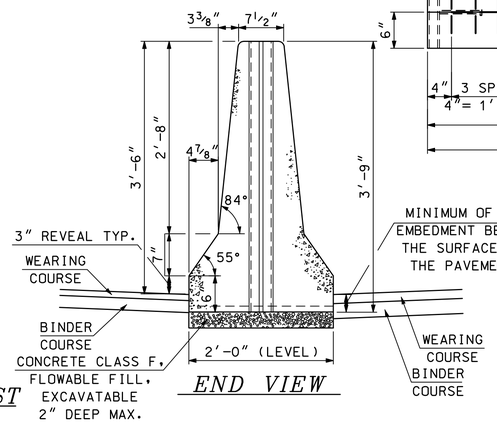
I-BEAM DETAILS



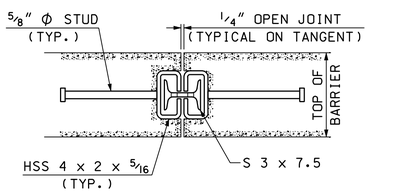


ITEM 606.4XXXX - TRANSITION MEDIAN CONCRETE BARRIER, PRECAST

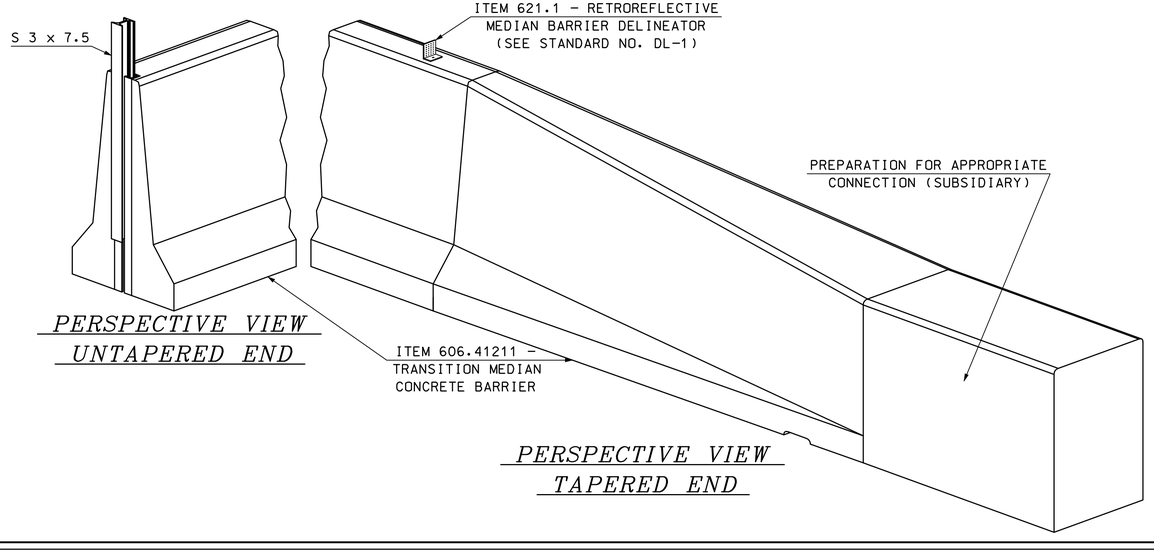
SECTION A-A



END VIEW



BARRIER CONNECTION DETAIL



PERSPECTIVE VIEW UNTAPERED END

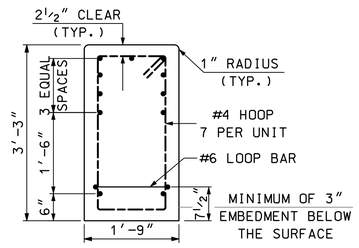
PERSPECTIVE VIEW TAPERED END

GENERAL NOTES

1. THE CONCRETE BARRIER DETAILS, AS SHOWN ON THIS SHEET, ARE IN COMPLIANCE WITH THE REQUIREMENTS OF NCHRP REPORT 350, TL 4.
2. I-BEAMS AND STRUCTURAL TUBES SHALL BE GALVANIZED AFTER FABRICATION.
3. STUD WELDING SHALL BE IN ACCORDANCE WITH ITEM 547.
4. SLOT IN STRUCTURAL TUBE SHALL BE CUT WITH MECHANICALLY GUIDED MEANS TO A SMOOTH, UNIFORM SURFACE MEETING A SURFACE ROUGHNESS OF 1000 MICROINCHES OR BETTER (ANSI B46.1).

MATERIAL NOTES

1. THE BARRIERS SHALL BE LIGHT COLORED CLASS "AA" CONCRETE HAVING A MINIMUM 28 DAY COMPRESSION STRENGTH OF 4,000 PSI. BARRIERS SHALL HAVE A SMOOTH UNIFORM SURFACE FREE OF DEFECTS AND IRREGULARITIES. CASTING DATE SHALL BE SHOWN ON BARRIER. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4", UNLESS NOTED OTHERWISE.
2. ALL REINFORCING STEEL SHALL BE AASHTO M31 (ASTM-A615) GRADE 60, EPOXY COATED. REINFORCEMENT SHOWN IS THE MINIMUM REQUIRED.
3. EACH BARRIER UNIT SHALL INCLUDE ONE S 3x7.5 AS SHOWN ON THIS PLAN SHEET.
4. SHOP DRAWINGS, SHALL INCLUDE REINFORCING SCHEDULE.



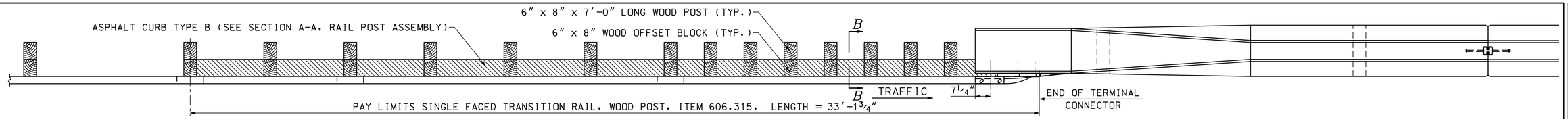
SECTION B-B (MASONRY & REINFORCEMENT)

GUARDRAIL STANDARD

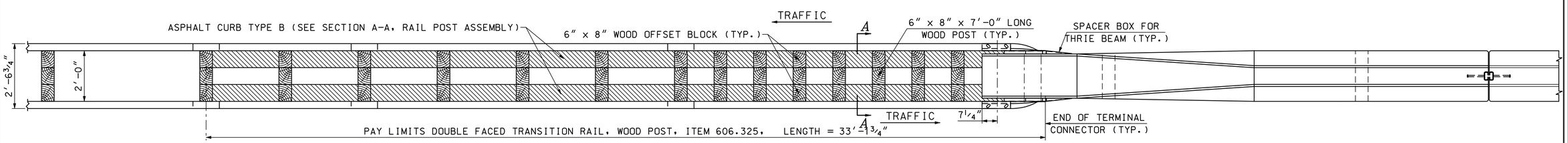
TRANSITION F-SHAPE BARRIER

New Hampshire DOT Department of Transportation

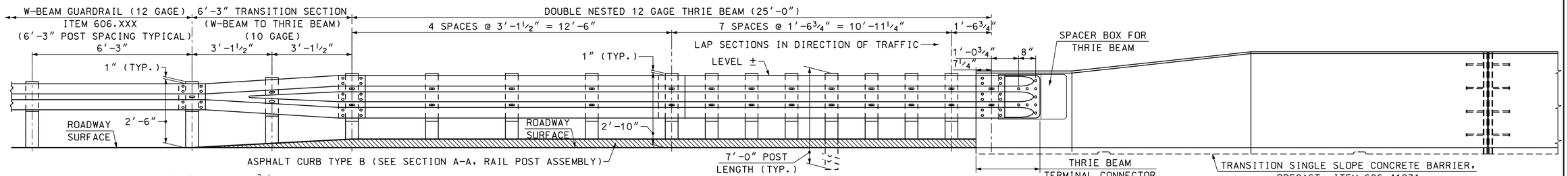
STANDARD NO. GR-16



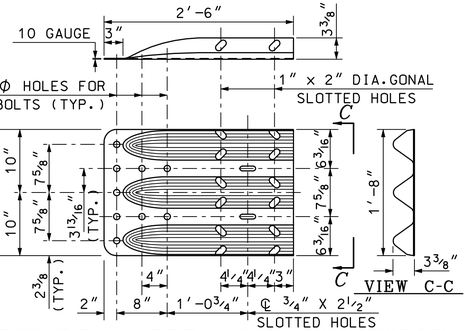
PLAN VIEW - CONCRETE BARRIER TO GUARDRAIL CONNECTION DETAIL (SINGLE RAIL)



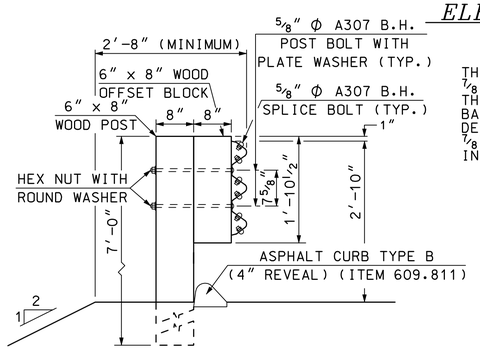
PLAN VIEW - CONCRETE BARRIER TO GUARDRAIL CONNECTION DETAIL (MEDIAN DOUBLE RAIL)



ELEVATION - APPROACH RAIL

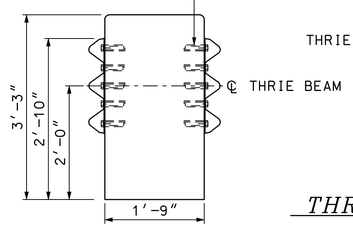


THRIE BEAM TERMINAL CONNECTOR



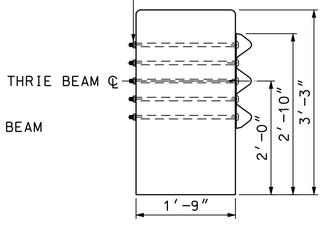
SECTION B-B (POST RAIL ASSEMBLY)

THRIE BEAM SHALL BE FASTENED WITH 7/8" Φ ASTM A325 BOLTS IN EPOXY THREADED INSERTS SET INTO CONCRETE BARRIER. INSERTS SHALL BE CAPABLE OF DEVELOPING THE FULL STRENGTH OF A 7/8" Φ HIGH STRENGTH BOLT. ALL COSTS INCLUDED IN ITEM 606.325 (TYP.).

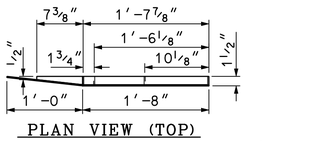


MEDIAN THRIE BEAM ATTACHMENT

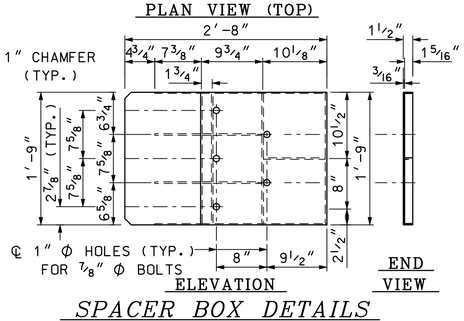
THRIE BEAM SHALL BE FASTENED WITH 7/8" Φ ASTM A325 BOLTS, NUTS AND WASHERS, (EPOXY THREADED INSERTS ARE OPTIONAL). ALL COSTS INCLUDED IN ITEM 606.315 (TYP.).



THRIE BEAM ATTACHMENT

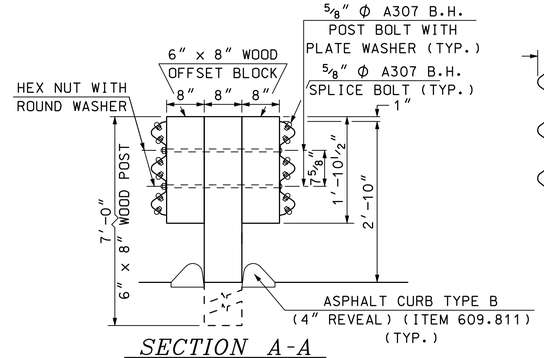


PLAN VIEW (TOP)

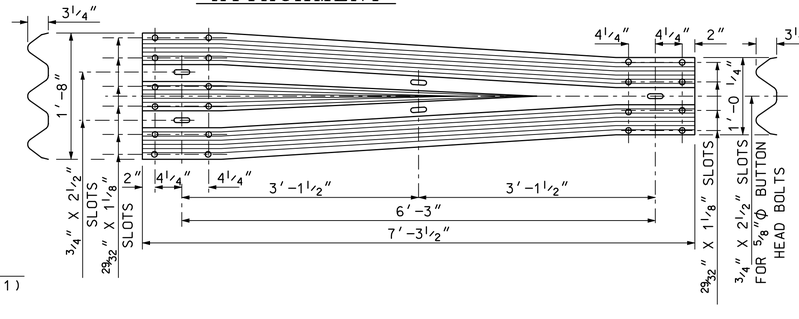


SPACER BOX DETAILS

3/16" GALVANIZED STEEL PLATES (TYP.)
ASTM A709 GRADE 36 (AASHTO M270 GRADE 36)



SECTION A-A (POST RAIL ASSEMBLY)



THRIE BEAM TO W-BEAM TRANSITION SECTION

GENERAL NOTES

1. ALL THRIE BEAM RAIL, INCLUDING TRANSITION SECTION, SHALL BE GALVANIZED 12 GAUGE. ALL TERMINAL CONNECTORS SHALL BE GALVANIZED 10 GAUGE.
2. CONNECTIONS TO CONCRETE BARRIER SHALL BE APPROVED 7/8" Φ GALVANIZED HIGH STRENGTH THROUGH BOLTS IN CORE DRILLED HOLES. CHECK ACTUAL HOLE SPACING BEFORE CORING BOLT HOLES.
3. ALL CONNECTIONS FOR THE THRIE BEAM RAIL AND TERMINAL CONNECTOR SHALL LAP IN THE DIRECTION OF TRAFFIC.
4. ALL STEEL PLATES FOR SPACER BOXES SHALL BE 3/16" GALVANIZED STEEL PLATES (TYP.), ASTM A709 GRADE 36 (AASHTO M270 GRADE 36), ALL STIFFENER PLATES SHALL BE 1/4" GALVANIZED STEEL PLATES (TYP.).
5. ALL HOLE DIAMETERS FOR SPACER BOXES SHALL BE 1" Φ.
6. STIFFENERS LOCATED ON THE OUTSIDE EDGES OF COVER PLATES SHALL BE WELDED AS FOLLOWS: 3 3/16" CONTINUOUS BACK WELD ON EXTERNAL SIDES AND 3 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.
7. STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS: 3 3/16" FILLET WELD BY 1" LONG SPACED AT 2".
8. RECTANGULAR AND TRIANGULAR COVER PLATES SHALL BE WELDED TOGETHER WITH A 3 3/16" CONTINUOUS BACK WELD ON BOTH SIDES.
9. ITEM 606.315 - SINGLE FACED TRANSITION RAIL, WOOD POST & ITEM 606.325 - DOUBLE FACED TRANSITION RAIL, WOOD POST

GUARDRAIL STANDARD

TRANSITION F-SHAPE BARRIER AND GUARDRAIL (WOOD)

STANDARD NO. GR-17

REVISION DATE
06-16-2010

*.DGN FILE NAME
GR-17

STANDARD PLANS

New Hampshire DOT Department of Transportation

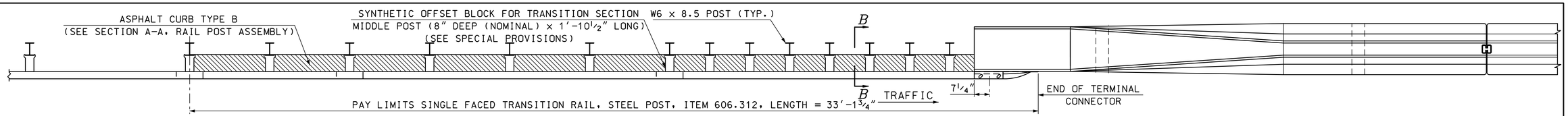
STANDARD NO. GR-17

STANDARD NO. GR-18

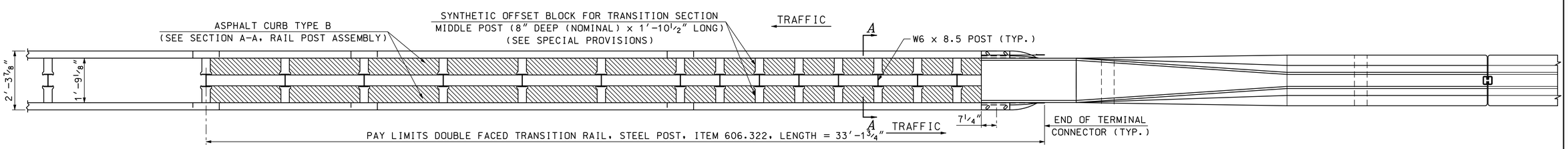
REVISION DATE
06-16-2010

*.DGN FILE NAME
GR-18

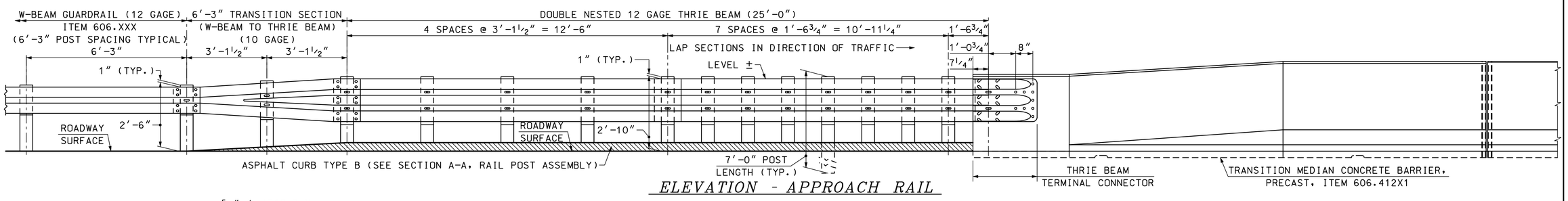
STANDARD PLANS



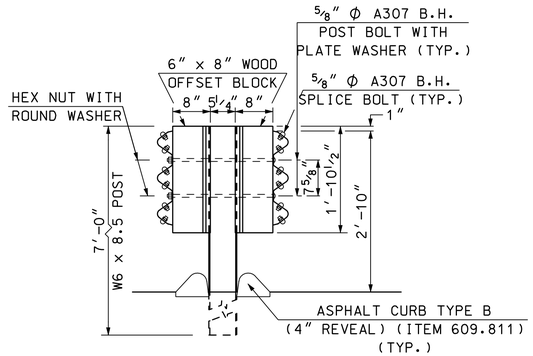
PLAN VIEW - CONCRETE BARRIER TO GUARDRAIL CONNECTION DETAIL (SINGLE RAIL)



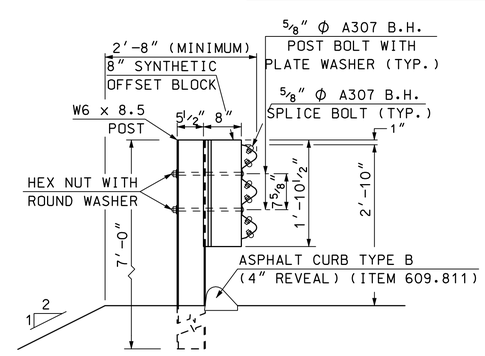
PLAN VIEW - CONCRETE BARRIER TO GUARDRAIL CONNECTION DETAIL (MEDIAN DOUBLE RAIL)



ELEVATION - APPROACH RAIL

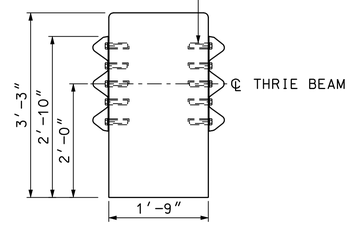


SECTION A-A (POST RAIL ASSEMBLY)



SECTION B-B (POST RAIL ASSEMBLY)

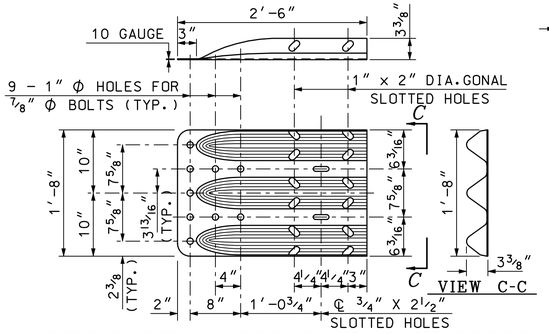
THRIE BEAM SHALL BE FASTENED WITH 7/8" Φ ASTM A325 BOLTS IN EPOXY THREADED INSERTS SET INTO CONCRETE BARRIER. INSERTS SHALL BE CAPABLE OF DEVELOPING THE FULL STRENGTH OF A 7/8" Φ HIGH STRENGTH BOLT. ALL COSTS INCLUDED IN ITEM 606.325 (TYP.).



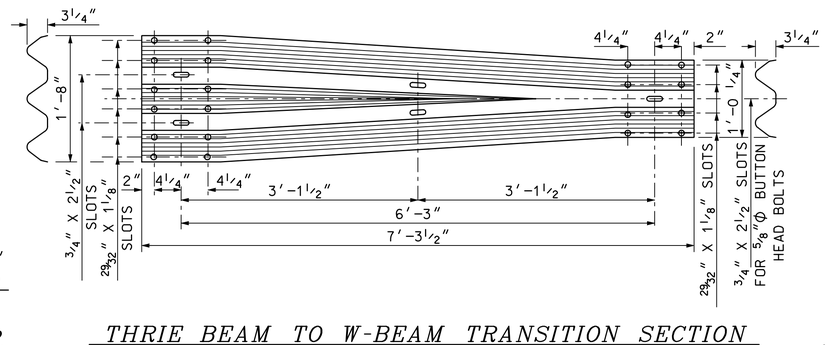
MEDIAN THRIE BEAM ATTACHMENT

GENERAL NOTES

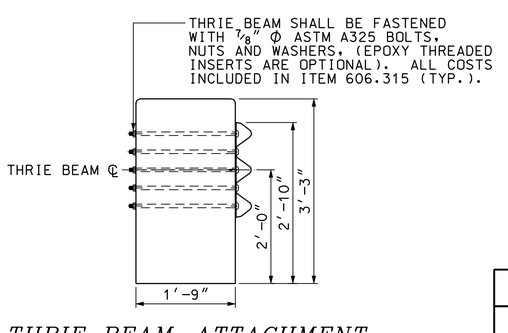
1. ALL THRIE BEAM RAIL, INCLUDING TRANSITION SECTION, SHALL BE GALVANIZED 12 GAUGE. ALL TERMINAL CONNECTORS SHALL BE GALVANIZED 10 GAUGE.
2. CONNECTIONS TO CONCRETE BARRIER SHALL BE APPROVED 7/8" Φ GALVANIZED HIGH STRENGTH THROUGH BOLTS IN CORE DRILLED HOLES. CHECK ACTUAL HOLE SPACING BEFORE CORING BOLT HOLES.
3. ALL CONNECTIONS FOR THE THRIE BEAM RAIL AND TERMINAL CONNECTOR SHALL LAP IN THE DIRECTION OF TRAFFIC.
4. ITEM 606.312 - SINGLE FACED TRANSITION RAIL, STEEL POST & ITEM 606.322 - DOUBLE FACED TRANSITION RAIL, STEEL POST



THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM TO W-BEAM TRANSITION SECTION



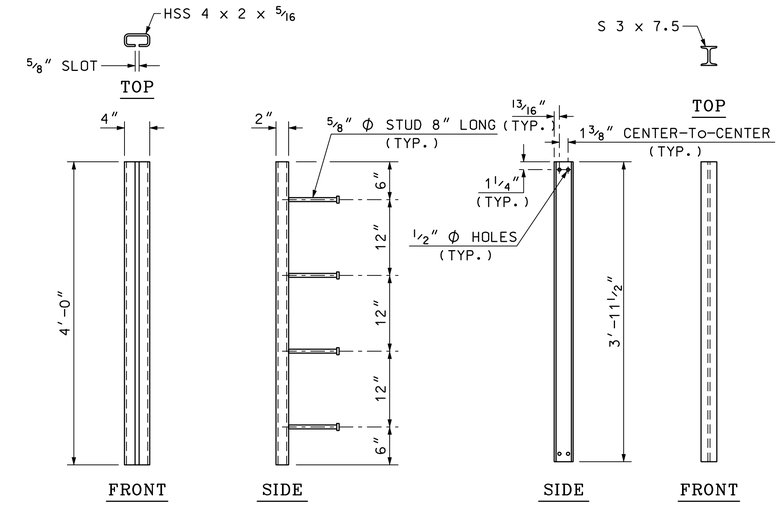
THRIE BEAM ATTACHMENT

GUARDRAIL STANDARD

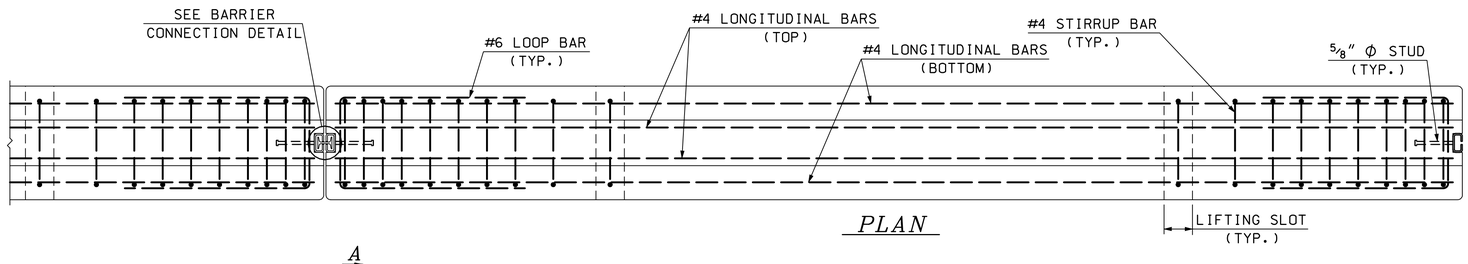
TRANSITION F-SHAPE BARRIER AND GUARDRAIL (STEEL)

STANDARD NO. GR-18

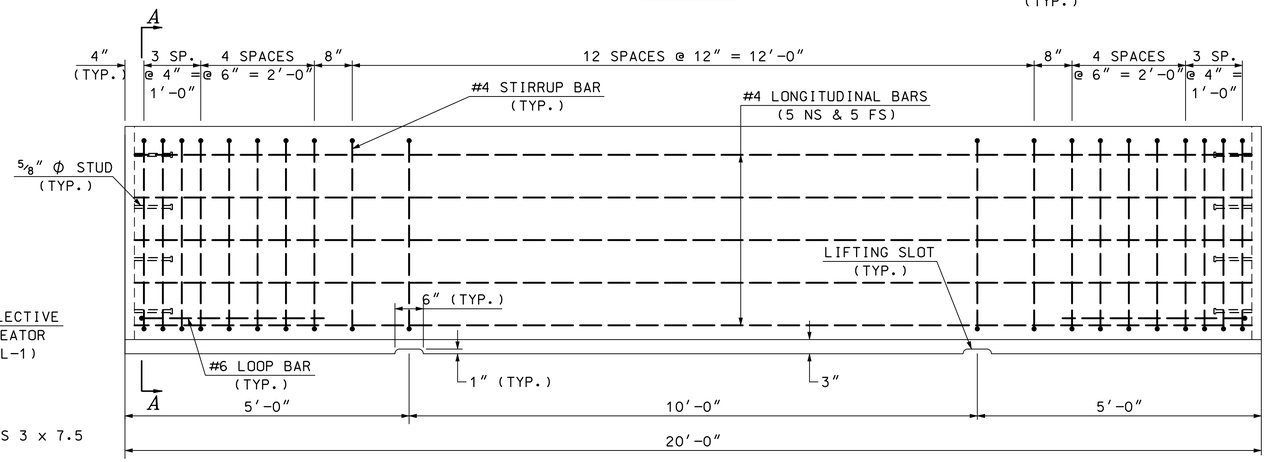
New Hampshire DOT Department of Transportation



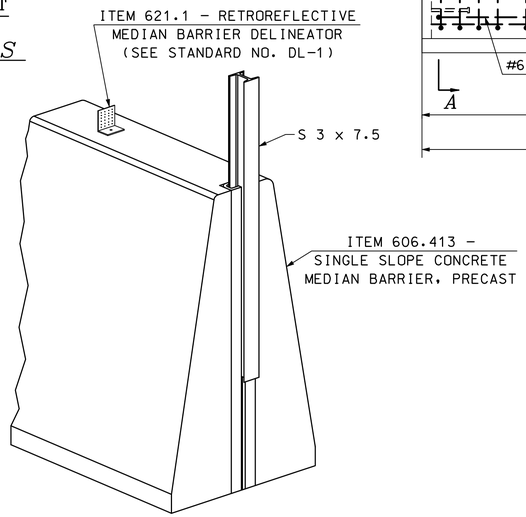
STRUCTURAL TUBE DETAILS *I-BEAM DETAILS*



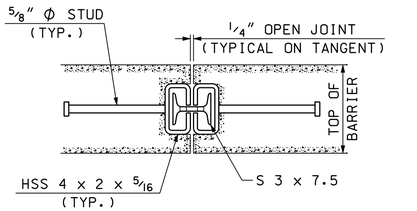
PLAN



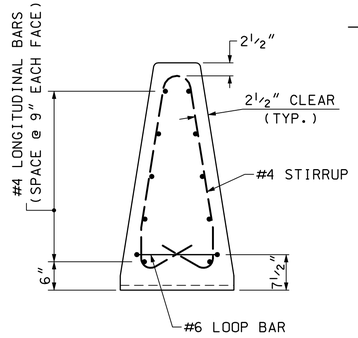
ELEVATION



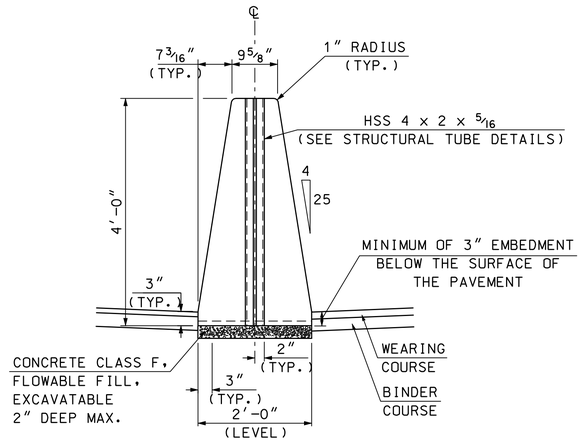
PERSPECTIVE VIEW



BARRIER CONNECTION DETAIL
SCALE: 2" = 1'-0"



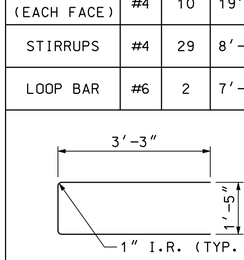
SECTION A-A (REINFORCEMENT)



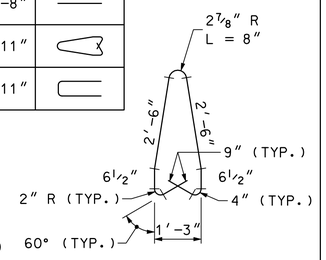
END VIEW (MASONRY)

CONCRETE BARRIER REINFORCING SCHEDULE

DESCRIPTION	SIZE	NO.	UNBENT LENGTH	TYPE
LONGITUDINAL (EACH FACE)	#4	10	19'-8"	
STIRRUPS	#4	29	8'-11"	
LOOP BAR	#6	2	7'-11"	



#6 LOOP BAR (TOP VIEW)



#4 STIRRUP BAR

GENERAL NOTES

1. THE CONCRETE BARRIER DETAILS, AS SHOWN ON THIS SHEET, ARE IN COMPLIANCE WITH THE REQUIREMENTS OF NCHRP REPORT 350, TL 4.
2. CONCRETE BARRIER SHALL BE FURNISHED BY THE CONTRACTOR AND PAID AS ITEM 606.413 - SINGLE SLOPE CONCRETE MEDIAN BARRIER, PRECAST. END TREATMENTS AND CONNECTIONS TO EXISTING BARRIERS, WHEN REQUIRED, SHALL BE SUBSIDIARY TO ITEM 606.413.
3. I-BEAMS AND STRUCTURAL TUBES SHALL BE GALVANIZED AFTER FABRICATION.
4. STUD WELDING SHALL BE IN ACCORDANCE WITH ITEM 547.
5. SLOTS IN STRUCTURAL TUBES SHALL BE CUT WITH MECHANICALLY GUIDED MEANS TO A SMOOTH, UNIFORM SURFACE MEETING A SURFACE ROUGHNESS OF 25 u OR BETTER (ANSI B46.1).

MATERIAL NOTES

1. THE BARRIERS SHALL BE LIGHT COLORED CLASS "AA" CONCRETE HAVING A MINIMUM 28 DAY COMPRESSION STRENGTH OF 4,000 PSI. BARRIERS SHALL HAVE A SMOOTH UNIFORM SURFACE FREE OF DEFECTS AND IRREGULARITIES. CASTING DATE SHALL BE SHOWN ON BARRIER. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4", UNLESS NOTED OTHERWISE.
2. ALL REINFORCING STEEL SHALL BE AASHTO M31 (ASTM-A615) GRADE 60, EPOXY COATED. REINFORCEMENT SHOWN IS THE MINIMUM REQUIRED.
3. EACH BARRIER UNIT SHALL INCLUDE ONE S 3 x 7.5 AS SHOWN ON THIS PLAN SHEET.
4. SHOP DRAWINGS, SHALL INCLUDE REINFORCING SCHEDULE.
5. LEVELING PADS OR SHIMMIN.G MATERIAL SHALL BE SUBSIDIARY TO THE BARRIER ITEM.

GUARDRAIL STANDARD

SINGLE SLOPE BARRIER

STANDARD NO. GR-19

REVISION DATE
06-16-2010

*.DGN FILE NAME
GR-19

STANDARD PLANS

New Hampshire DOT Department of Transportation

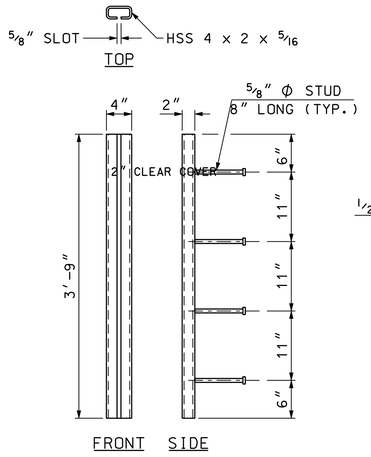
STANDARD NO. GR-19

STANDARD NO. GR-20

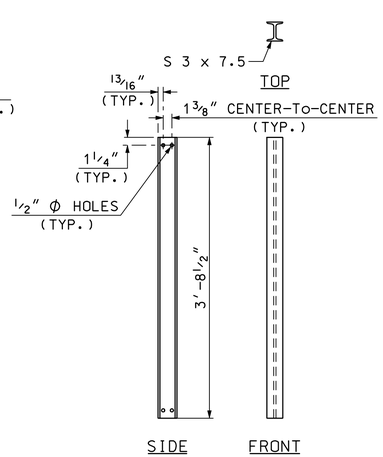
REVISION DATE
02-26-2010

*.DGN FILE NAME
GR-20

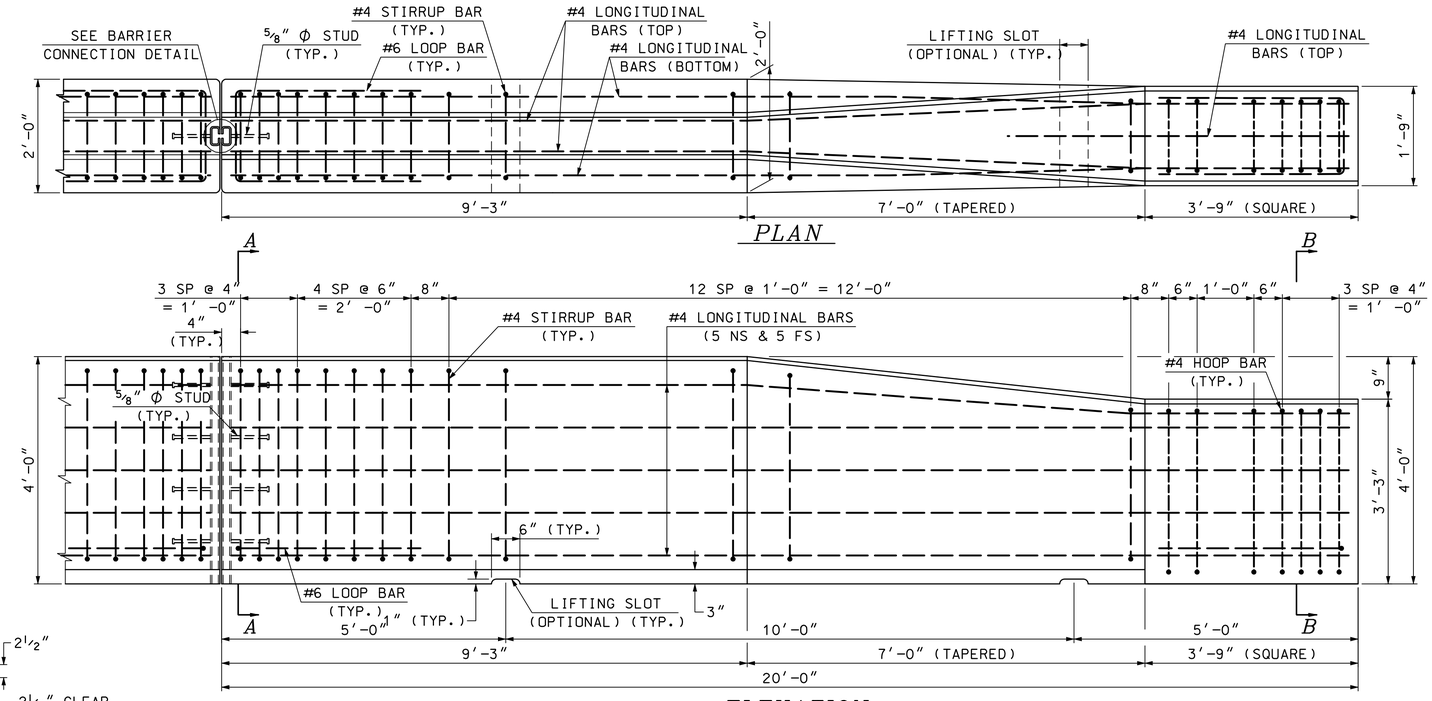
STANDARD PLANS

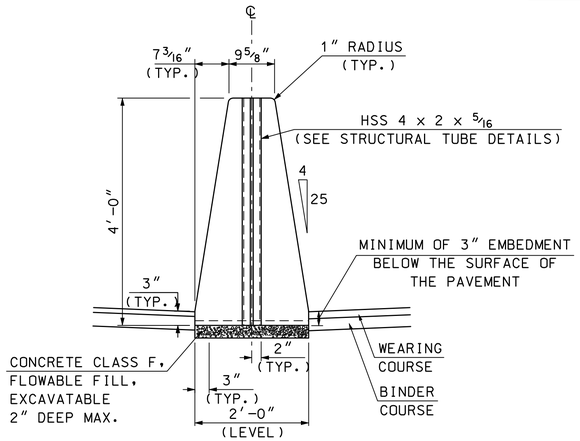


STRUCTURAL TUBE DETAILS

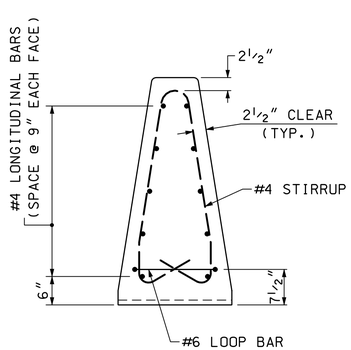


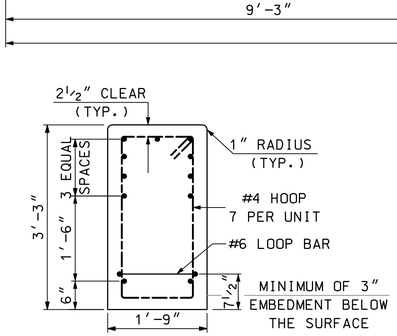
I-BEAM DETAILS



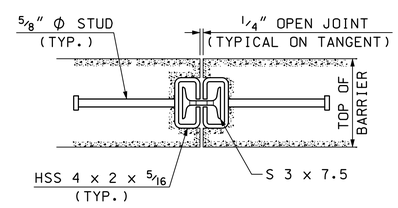


END VIEW (MASONRY)

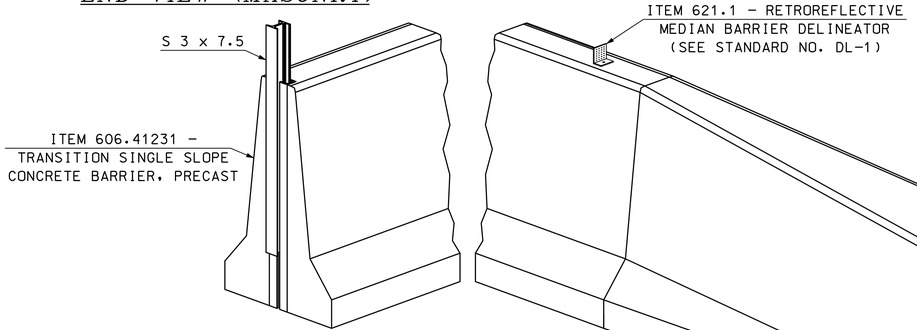




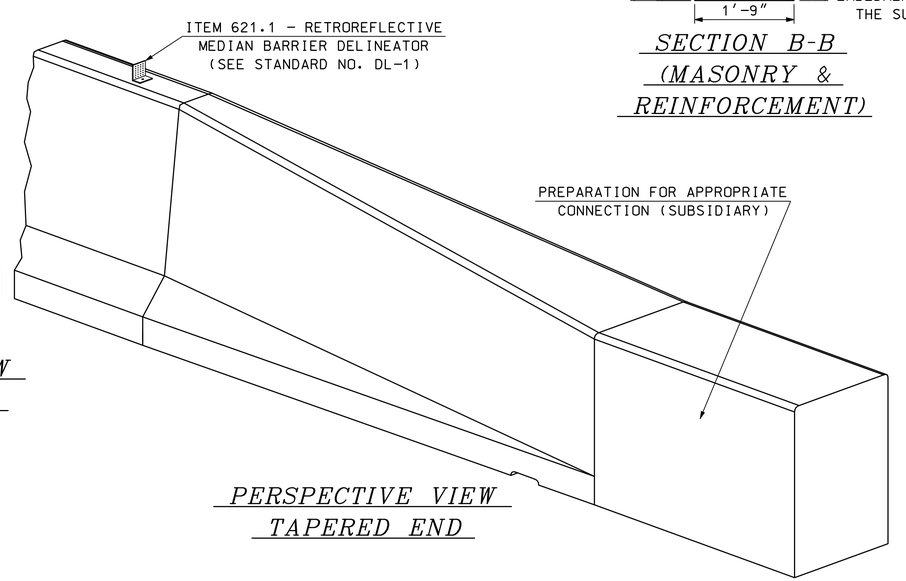
SECTION B-B (MASONRY & REINFORCEMENT)



BARRIER CONNECTION DETAIL



PERSPECTIVE VIEW UNTAPERED END



PERSPECTIVE VIEW TAPERED END

GENERAL NOTES

1. THE CONCRETE BARRIER DETAILS, AS SHOWN ON THIS SHEET, ARE IN COMPLIANCE WITH THE REQUIREMENTS OF NCHRP REPORT 350, TL 4.
2. CONCRETE BARRIER SHALL BE FURNISHED BY THE CONTRACTOR AND PAID AS ITEM 606.413 – SINGLE SLOPE CONCRETE MEDIAN BARRIER, PRECAST. END TREATMENTS AND CONNECTIONS TO EXISTING BARRIERS, WHEN REQUIRED, SHALL BE SUBSIDIARY TO ITEM 606.413.
3. I-BEAMS AND STRUCTURAL TUBES SHALL BE GALVANIZED AFTER FABRICATION.
4. STUD WELDING SHALL BE IN ACCORDANCE WITH ITEM 547.
5. SLOTS IN STRUCTURAL TUBES SHALL BE CUT WITH MECHANICALLY GUIDED MEANS TO A SMOOTH, UNIFORM SURFACE MEETING A SURFACE ROUGHNESS OF 25 u OR BETTER (ANSI B46.1).

MATERIAL NOTES

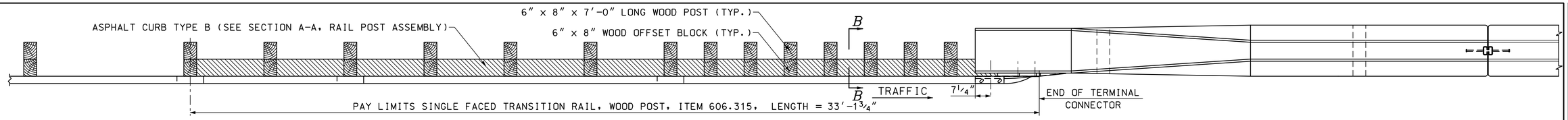
1. THE BARRIERS SHALL BE LIGHT COLORED CLASS "AA" CONCRETE HAVING A MINIMUM 28 DAY COMPRESSION STRENGTH OF 4,000 PSI. BARRIERS SHALL HAVE A SMOOTH UNIFORM SURFACE FREE OF DEFECTS AND IRREGULARITIES. CASTING DATE SHALL BE SHOWN ON BARRIER. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4", UNLESS NOTED OTHERWISE.
2. ALL REINFORCING STEEL SHALL BE AASHTO M31 (ASTM-A615) GRADE 60, EPOXY COATED. REINFORCEMENT SHOWN IS THE MINIMUM REQUIRED.
3. EACH BARRIER UNIT SHALL INCLUDE ONE S 3 x 7.5 AS SHOWN ON THIS PLAN SHEET.
4. SHOP DRAWINGS, SHALL INCLUDE REINFORCING SCHEDULE.
5. LEVELING PADS OR SHIMMING MATERIAL SHALL BE SUBSIDIARY TO THE BARRIER ITEM.

New Hampshire DOT Department of Transportation

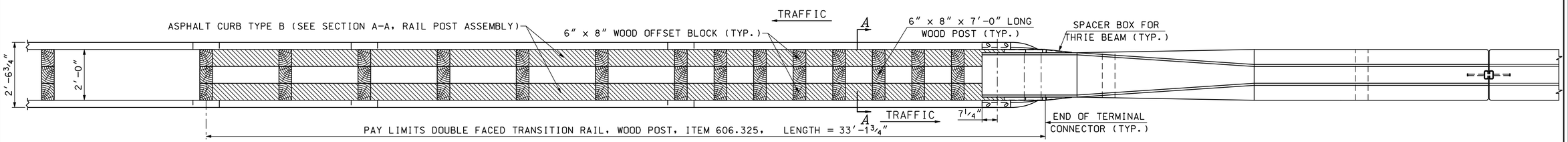
STANDARD NO. GR-20

GUARDRAIL STANDARD

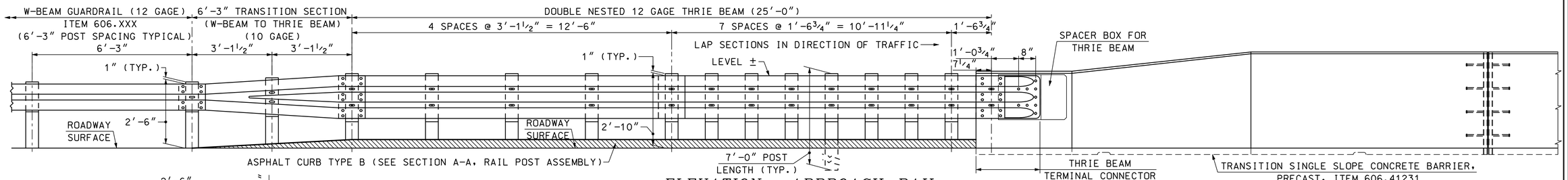
TRANSITION SINGLE SLOPE CONCRETE BARRIER, PRECAST



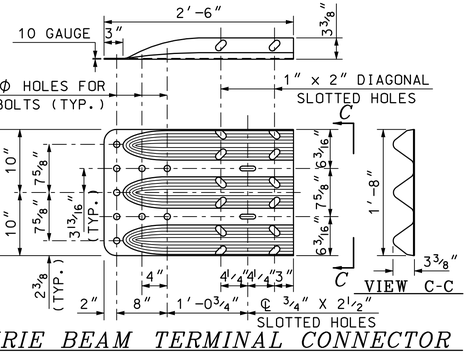
PLAN VIEW - CONCRETE BARRIER TO GUARDRAIL CONNECTION DETAIL (SINGLE RAIL)



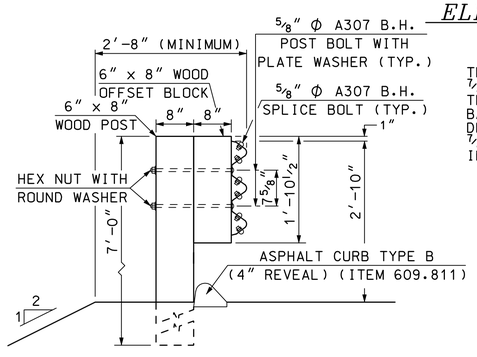
PLAN VIEW - CONCRETE BARRIER TO GUARDRAIL CONNECTION DETAIL (MEDIAN DOUBLE RAIL)



ELEVATION - APPROACH RAIL

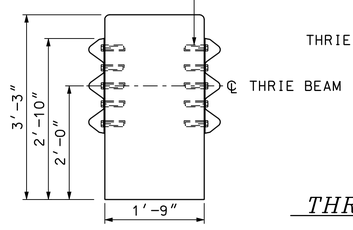


THRIE BEAM TERMINAL CONNECTOR



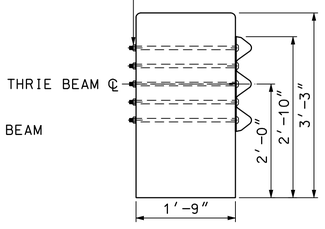
SECTION B-B
(POST RAIL ASSEMBLY)

THRIE BEAM SHALL BE FASTENED WITH 7/8" Φ ASTM A325 BOLTS IN EPOXY THREADED INSERTS SET INTO CONCRETE BARRIER. INSERTS SHALL BE CAPABLE OF DEVELOPING THE FULL STRENGTH OF A 7/8" Φ HIGH STRENGTH BOLT. ALL COSTS INCLUDED IN ITEM 606.325 (TYP.)



MEDIAN THRIE BEAM ATTACHMENT

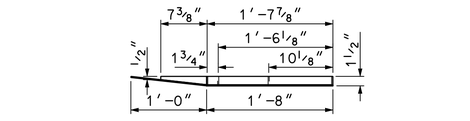
THRIE BEAM SHALL BE FASTENED WITH 7/8" Φ ASTM A325 BOLTS, NUTS AND WASHERS. (EPOXY THREADED INSERTS ARE OPTIONAL). ALL COSTS INCLUDED IN ITEM 606.315 (TYP.).



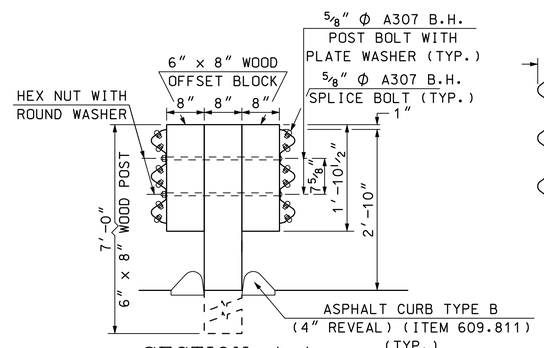
THRIE BEAM ATTACHMENT

GENERAL NOTES

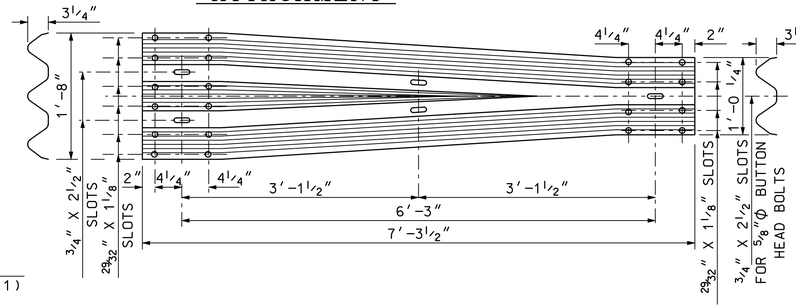
1. ALL THRIE BEAM RAIL, INCLUDING TRANSITION SECTION, SHALL BE GALVANIZED 12 GAUGE. ALL TERMINAL CONNECTORS SHALL BE GALVANIZED 10 GAUGE.
2. CONNECTIONS TO CONCRETE BARRIER SHALL BE APPROVED 7/8" Φ GALVANIZED HIGH STRENGTH THROUGH BOLTS IN CORE DRILLED HOLES. CHECK ACTUAL HOLE SPACING BEFORE CORING BOLT HOLES.
3. ALL CONNECTIONS FOR THE THRIE BEAM RAIL AND TERMINAL CONNECTOR SHALL LAP IN THE DIRECTION OF TRAFFIC.
4. ALL STEEL PLATES FOR SPACER BOXES SHALL BE 3/16" GALVANIZED STEEL PLATES (TYP.), ASTM A709 GRADE 36 (AASHTO M270 GRADE 36), ALL STIFFENER PLATES SHALL BE 1/4" GALVANIZED STEEL PLATES (TYP.).
5. ALL HOLE DIAMETERS FOR SPACER BOXES SHALL BE 1" Φ.
6. STIFFENERS LOCATED ON THE OUTSIDE EDGES OF COVER PLATES SHALL BE WELDED AS FOLLOWS: 3 3/16" CONTINUOUS BACK WELD ON EXTERNAL SIDES AND 3 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.
7. STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS: 3 3/16" FILLET WELD BY 1" LONG SPACED AT 2".
8. RECTANGULAR AND TRIANGULAR COVER PLATES SHALL BE WELDED TOGETHER WITH A 3 3/16" CONTINUOUS BACK WELD ON BOTH SIDES.



SPACER BOX DETAILS
3/16" GALVANIZED STEEL PLATES (TYP.)
ASTM A709 GRADE 36 (AASHTO M270 GRADE 36)



SECTION A-A
(POST RAIL ASSEMBLY)



THRIE BEAM TO W-BEAM TRANSITION SECTION

GUARDRAIL STANDARD

TRANSITION SINGLE SLOPE CONCRETE BARRIER AND GUARDRAIL (WOOD)

STANDARD NO. GR-21

REVISION DATE
06-16-2010

*.DGN FILE NAME
GR-21

STANDARD PLANS

New Hampshire DOT Department of Transportation

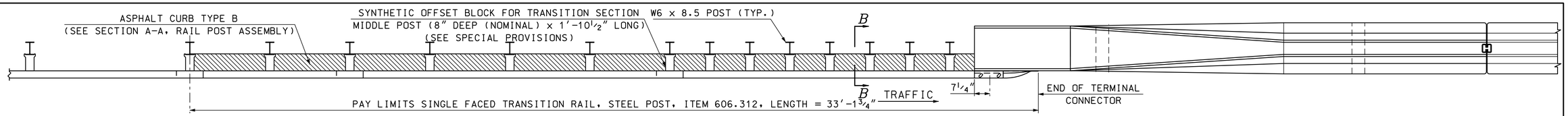
STANDARD NO. GR-21

STANDARD NO. GR-22

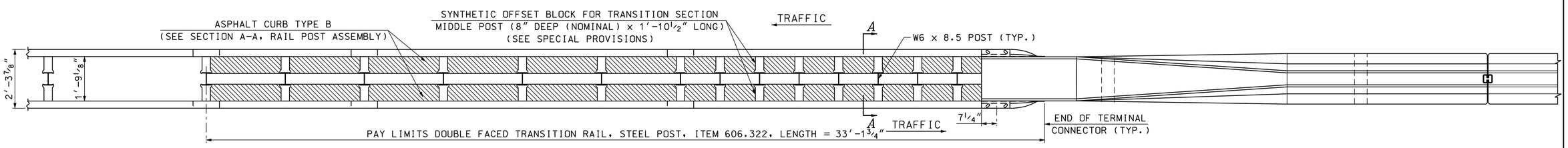
REVISION DATE
06-16-2010

*.DGN FILE NAME
GR-22

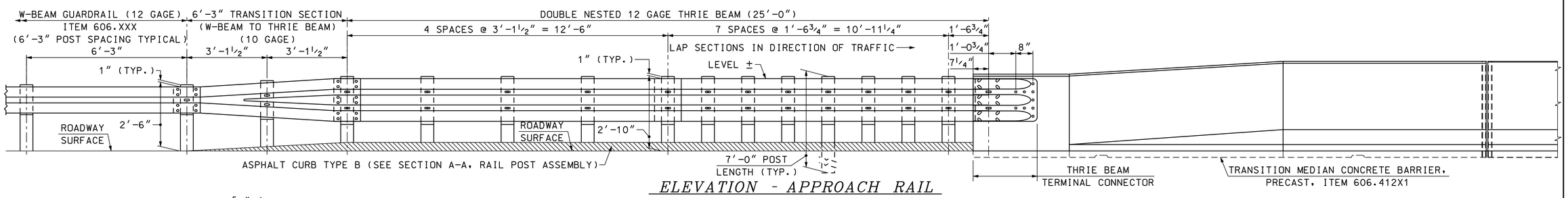
STANDARD PLANS



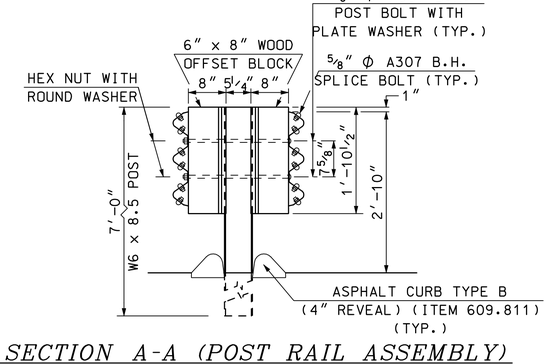
PLAN VIEW - CONCRETE BARRIER TO GUARDRAIL CONNECTION DETAIL (SINGLE RAIL)



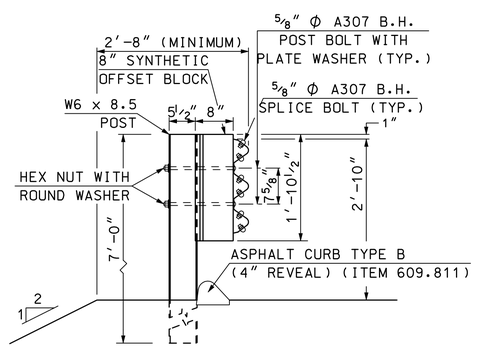
PLAN VIEW - CONCRETE BARRIER TO GUARDRAIL CONNECTION DETAIL (MEDIAN DOUBLE RAIL)



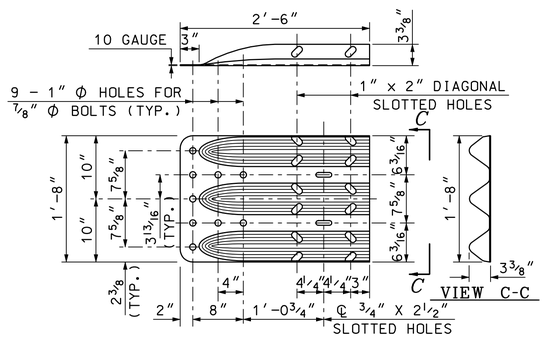
ELEVATION - APPROACH RAIL



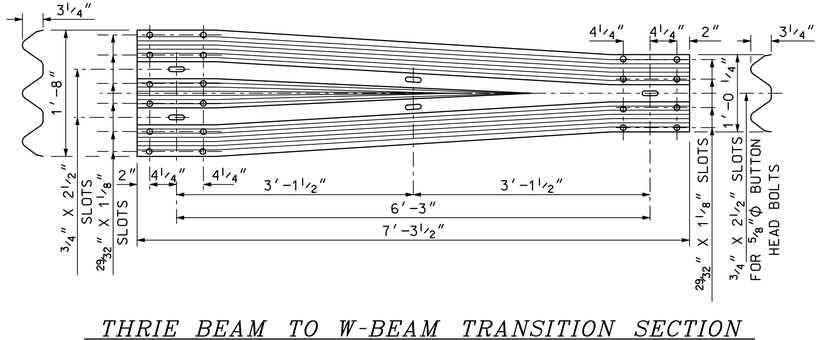
SECTION A-A (POST RAIL ASSEMBLY)



SECTION B-B (POST RAIL ASSEMBLY)

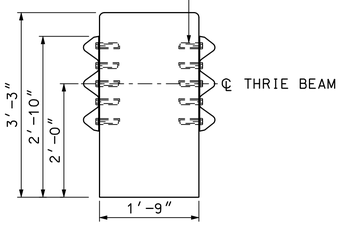


THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM TO W-BEAM TRANSITION SECTION

THRIE BEAM SHALL BE FASTENED WITH 7/8" Φ ASTM A325 BOLTS IN EPOXY THREADED INSERTS SET INTO CONCRETE BARRIER. INSERTS SHALL BE CAPABLE OF DEVELOPING THE FULL STRENGTH OF A 7/8" Φ HIGH STRENGTH BOLT. ALL COSTS INCLUDED IN ITEM 606.325 (TYP.).

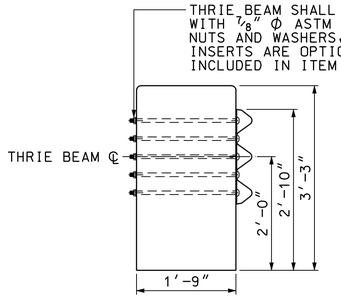


MEDIAN THRIE BEAM ATTACHMENT

GENERAL NOTES

1. ALL THRIE BEAM RAIL, INCLUDING TRANSITION SECTION, SHALL BE GALVANIZED 12 GAUGE. ALL TERMINAL CONNECTORS SHALL BE GALVANIZED 10 GAUGE.
2. CONNECTIONS TO CONCRETE BARRIER SHALL BE APPROVED 7/8" Φ GALVANIZED HIGH STRENGTH THROUGH BOLTS IN CORE DRILLED HOLES. CHECK ACTUAL HOLE SPACING BEFORE CORING BOLT HOLES.
3. ALL CONNECTIONS FOR THE THRIE BEAM RAIL AND TERMINAL CONNECTOR SHALL LAP IN THE DIRECTION OF TRAFFIC.

THRIE BEAM SHALL BE FASTENED WITH 7/8" Φ ASTM A325 BOLTS, NUTS AND WASHERS, (EPOXY THREADED INSERTS ARE OPTIONAL). ALL COSTS INCLUDED IN ITEM 606.315 (TYP.).



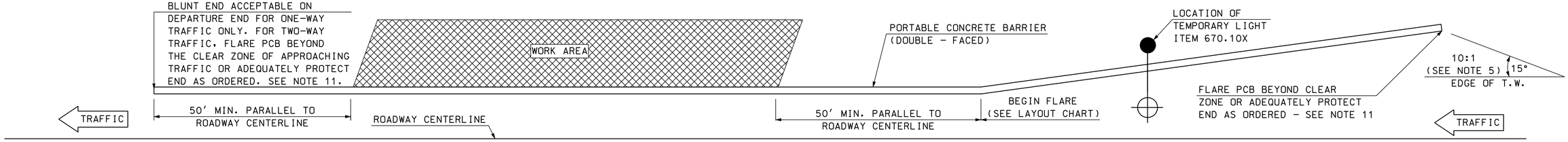
THRIE BEAM ATTACHMENT

STANDARD NO. GR-22

New Hampshire DOT Department of Transportation

GUARDRAIL STANDARD

TRANSITION SINGLE SLOPE CONCRETE BARRIER AND GUARDRAIL (STEEL)

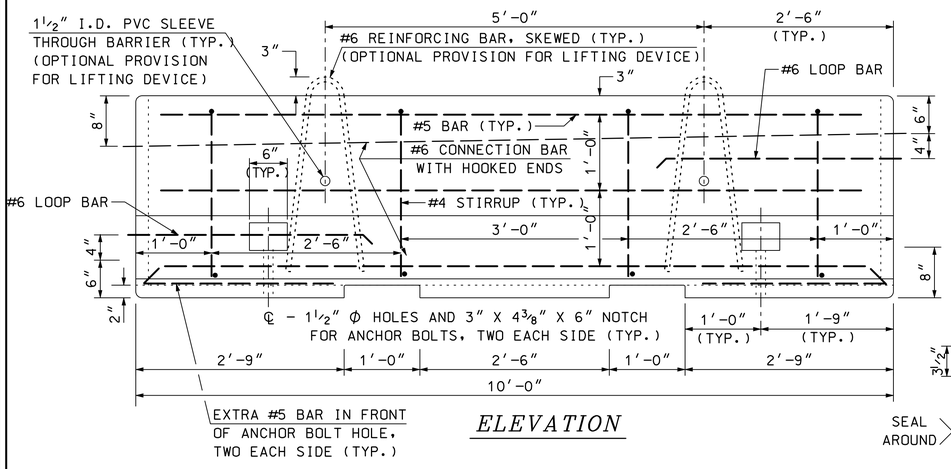


TRAFFIC OR TRAFFIC

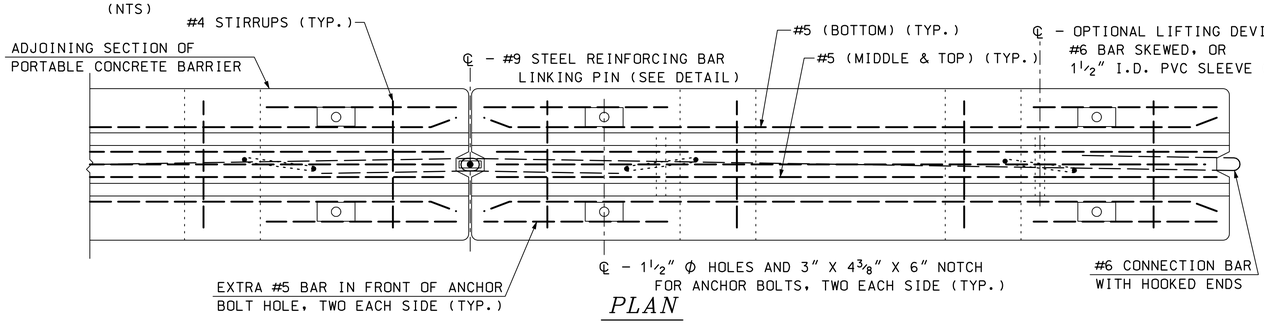
(SEE NOTE ABOVE)

LAYOUT OF PORTABLE CONCRETE BARRIER

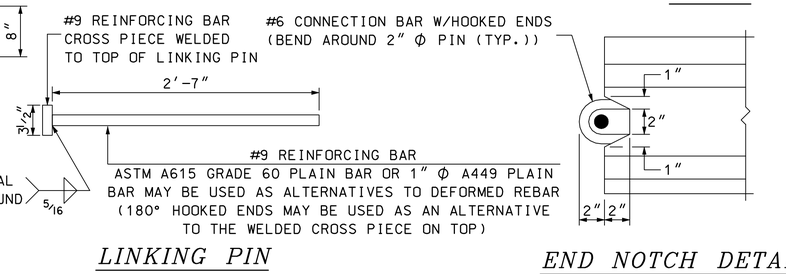
(NTS)



ELEVATION

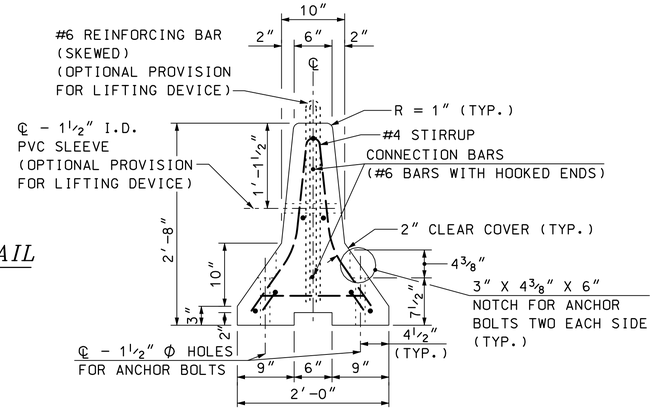


PLAN



LINKING PIN

END NOTCH DETAIL



TYPICAL SECTION

GENERAL NOTES

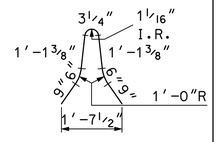
1. THE PORTABLE CONCRETE BARRIER DETAILS, AS SHOWN ON THIS SHEET, ARE IN COMPLIANCE WITH THE REQUIREMENTS OF NCHRP REPORT 350.
2. CONCRETE BARRIER SHALL BE FURNISHED BY THE CONTRACTOR AND PAID AS ITEM 606.417 - PORTABLE CONCRETE BARRIER FOR TRAFFIC CONTROL. CONNECTIONS TO EXISTING BARRIERS, WHEN REQUIRED, SHALL BE SUBSIDIARY TO ITEM 606.417.
3. THE CONTRACTOR SHALL FURNISH AND INSTALL APPROVED RETROREFLECTIVE DELINEATORS AT 25-FOOT INTERVALS ALONG THE TOP AND/OR ONE FOOT DOWN THE SIDE OF THE PORTABLE CONCRETE BARRIER, SUBSIDIARY TO ITEM 606.417. THE COLOR OF DELINEATORS SHALL, IN ALL CASES, CONFORM TO THE COLOR OF EDGE LINE MARKINGS. DELINEATORS SUPPLEMENT, BUT DO NOT REPLACE, THE NEED FOR RETROREFLECTIVE SOLID EDGE LINE MARKINGS.
4. UNPROTECTED OPENINGS IN PORTABLE CONCRETE BARRIER WILL NOT BE PERMITTED, UNLESS SPECIFICALLY AUTHORIZED BY THE ENGINEER.
5. A 10:1 OR FLATTER FORESLOPE (SUBSIDIARY TO ITEM 606.417) SHALL BE PROVIDED IN ADVANCE OF ALL PORTABLE CONCRETE BARRIER SYSTEMS WITHIN THE CLEAR ZONE. REFER TO THE ROADSIDE DESIGN GUIDE AASHTO, 2006, FOR CLEAR ZONE WIDTHS AND ADDITIONAL INFORMATION.
6. WHEN PORTABLE CONCRETE BARRIER IS INSTALLED ON BOTH SIDES OF TRAFFIC, THE BEGINNINGS OF THE BARRIER SHALL BE STAGGERED BY AT LEAST 50 FEET.
7. OTHER BARRIER CONFIGURATIONS AND END CONNECTIONS ARE SUBJECT TO APPROVAL BY THE ENGINEER. BARRIERS OF DIFFERENT GEOMETRIC SHAPES SHALL NOT BE MIXED ON THE SAME RUN.
8. PLACE RETROREFLECTORIZED DRUMS OR BARRICADES IN ACCORDANCE WITH 6C-2 OF THE MUTCD IN ADVANCE OF PORTABLE CONCRETE BARRIER TO WARN AND ALERT DRIVERS.
9. DETAILS FOR ANCHOR BOLTS ARE SHOWN ONLY FOR USE AS REQUIRED OR DIRECTED.
10. TEMPORARY LIGHTING SHALL BE PAID UNDER ITEM 670.10X.
11. ADEQUATE PROTECTION SHALL BE MEASURES AS DESCRIBED IN THE MOST CURRENT EDITION OF THE ROADSIDE DESIGN GUIDE AS ADOPTED BY THE DEPARTMENT. PLACING GRANULAR MATERIAL AT THE END(S) OF THE BARRIER SHALL NOT BE CONSIDERED ADEQUATE PROTECTION.

MATERIAL NOTES

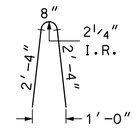
1. BARRIERS SHALL BE LIGHT COLORED CLASS "AA" CONCRETE HAVING A MINIMUM 28 DAY COMPRESSION STRENGTH OF 4,000 PSI. BARRIERS SHALL HAVE A SMOOTH UNIFORM SURFACE FREE OF DEFECTS AND IRREGULARITIES. CASTING DATE SHALL BE SHOWN ON BARRIER. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED ¾" UNLESS OTHERWISE NOTED.
2. ALL REINFORCING STEEL SHALL BE AASHTO M31 (ASTM-A615) GRADE 60. REINFORCEMENT SHOWN IS THE MINIMUM REQUIRED.
3. EACH BARRIER UNIT SHALL INCLUDE ONE LINKING PIN.
4. LIFTING OPTIONS SHOWN ARE ADVISORY ONLY. IT SHALL BE THE CONTRACTORS' RESPONSIBILITY TO PROVIDE ADEQUATE LIFTING POINTS ON EACH BARRIER.
5. CONNECTING DEVICES SHALL BE COMPATIBLE WITH OTHER UNITS AND SHALL ALLOW PLACEMENT ON A 110' RADIUS.
6. DELINEATORS SHALL BE ATTACHED TO THE BARRIER USING AN APPROVED ADHESIVE MATERIAL OR BY BOLTS AND ANCHORS AS SHOWN ON STANDARD NO. DL-1.

PORTABLE CONCRETE BARRIER REINFORCING SCHEDULE

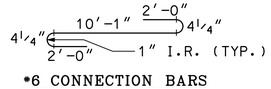
DESCRIPTION	SIZE	NO.	UNBENT LENGTH	TYPE
CONNECTION BARS	#6	2	14'-9½"	
BOTTOM LONGITUDINAL	#5	2	9'-10"	
CENTER & TOP LONGITUDINAL	#5	3	9'-4"	
BOTTOM TRANSVERSE	#5	4	1'-4"	
STIRRUPS	#4	4	5'-0"	
EXTRA ANCHOR HOLE BARS	#5	4	2'-5"	
LIFTING DEVICE (OPTIONAL)	#6	2	5'-4"	
LOOP BAR	#6	2	6'-10¼"	



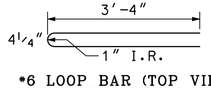
*4 STIRRUP BARS



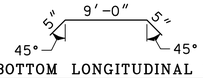
*6 LIFTING DEVICES (OPTIONAL)



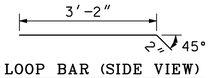
*6 CONNECTION BARS



*6 LOOP BAR (TOP VIEW)



*5 BOTTOM LONGITUDINAL BARS



*6 LOOP BAR (SIDE VIEW)

PORTABLE CONCRETE BARRIER LAYOUT

OPERATING SPEED	DESIRABLE LATERAL OFFSET FROM T.W. **	MAXIMUM FLARE RATE * (FREE-STANDING)	MINIMUM LENGTH OF PCB SYSTEM
≤30 MPH	2'	7:1	
40 MPH	5'	9:1	
50 MPH	6.5'	11:1	
60 MPH	8'	13:1	
70 MPH	10'	15:1	
ALL SPEEDS	15' MAX. ***		100'

* MEASURE FLARE FROM A LINE PARALLEL TO THE ROADWAY T.W., WHETHER ON A CURVE OR A TANGENT.

** FOR RESTRICTED SITE CONDITIONS, LESSER OFFSETS MAY BE PERMITTED BY THE ENGINEER.

*** TO REDUCE POTENTIAL FOR HIGH-ANGLE IMPACTS (> 15°)

GUARDRAIL STANDARD

PORTABLE CONCRETE BARRIER

STANDARD NO. GR-23

REVISION DATE
06-16-2010

*.DGN FILE NAME
GR-23

STANDARD PLANS

New Hampshire DOT Department of Transportation

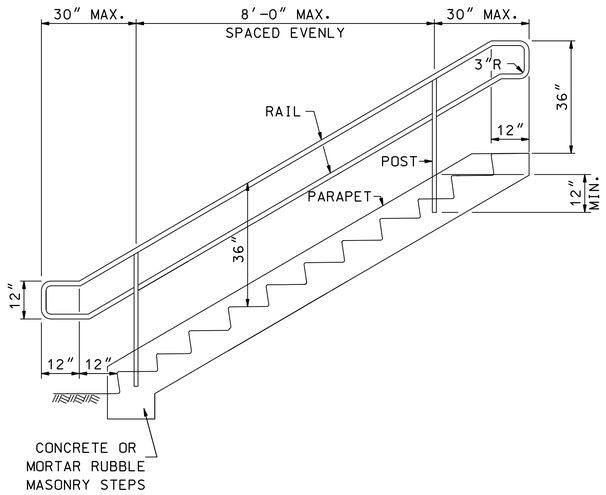
STANDARD NO. GR-23

STANDARD NO. HR-1

REVISION DATE
07-13-2001
06-16-2010

*.DGN FILE NAME
HR-1

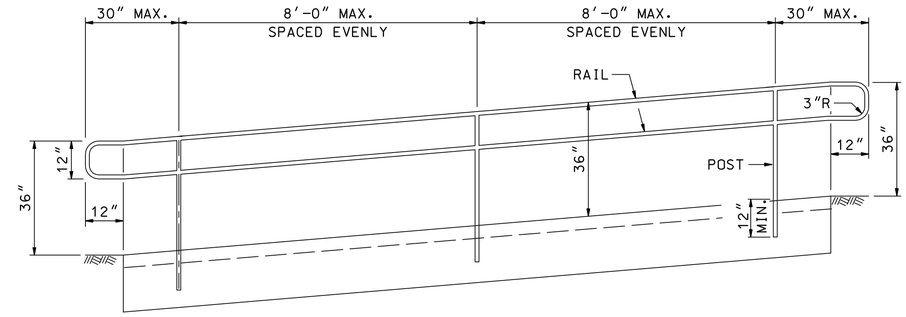
STANDARD PLANS



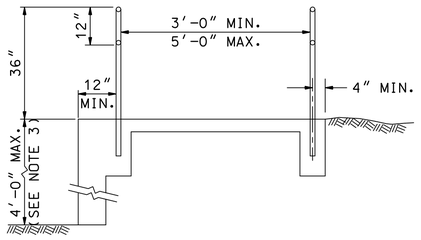
GENERAL NOTES

1. RAIL SHALL BE 1¼" TO 1½" O.D.
2. POSTS SHALL BE 1¼" NOMINAL.
3. POSTS SHALL BE CENTERED IN PARAPET OF STEPS.
4. HANDRAILS SHALL BE INSTALLED ON BOTH SIDES OF STEPS.
5. THE MINIMUM SPACING BETWEEN HANDRAILS IS 3'-0", MAXIMUM 5'-0".
6. ITEM 606.610X - STEP HANDRAIL, (MATERIAL).

NHDOT STANDARD PLANS	REV. DATE		PLATE
STEP HANDRAIL	06-16-2010		1
			STANDARD
			HR-1



ELEVATION

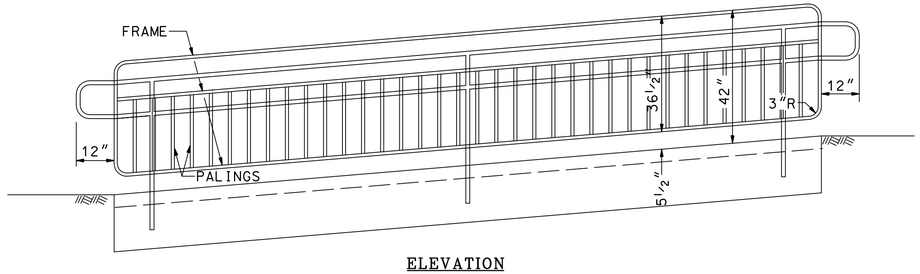


CROSS-SECTION

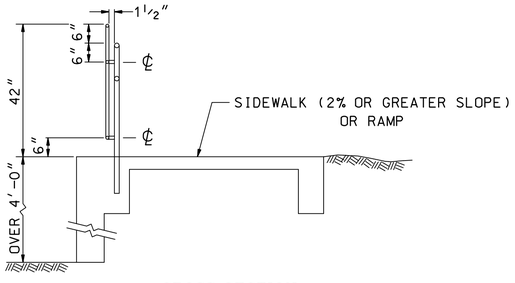
GENERAL NOTES

1. RAIL SHALL BE 1¼" TO 1½" O.D.
2. POSTS SHALL BE 1¼" NOMINAL.
3. WHEN THIS DIMENSION EXCEEDS 4'-0" A GUARD IS REQUIRED (SEE PLATE 3).
4. ITEM 606.620X - RAMP HANDRAIL, (MATERIAL).

NHDOT STANDARD PLANS	REV. DATE		PLATE
RAMP HANDRAIL	06-16-2010		2
			STANDARD
			HR-1



ELEVATION

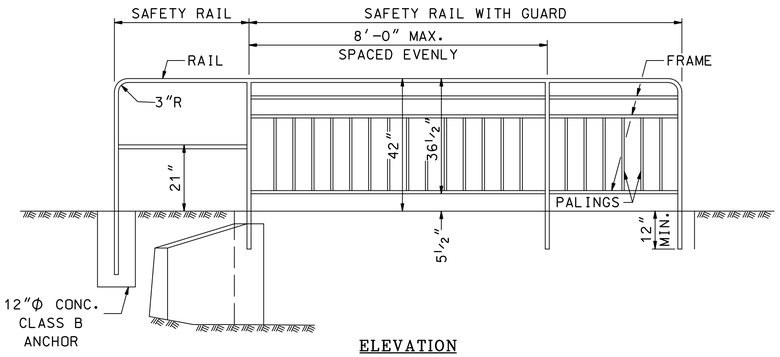


CROSS-SECTION

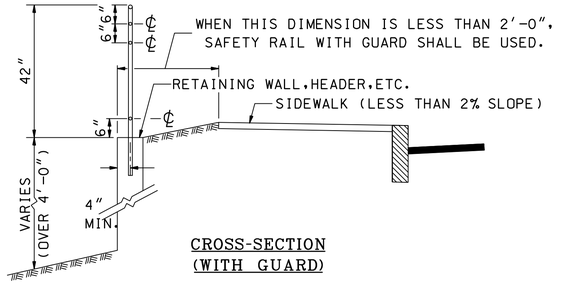
GENERAL NOTES

1. FOR DETAILS OF HANDRAIL, SEE PLATE 2.
2. FRAME AND CONNECTORS TO HANDRAIL SHALL BE 1" NOMINAL.
3. PALINGS SHALL BE ¾" NOMINAL SPACED 6" ON CENTER.
4. ITEM 606.611X - STEP HANDRAIL W/ GUARD, (MATERIAL); 606.621X - RAMP HANDRAIL W/ GUARD, (MATERIAL).

NHDOT STANDARD PLANS	REV. DATE		PLATE
GUARD FOR HANDRAIL	06-16-2010		3
			STANDARD
			HR-1



ELEVATION



CROSS-SECTION
(WITH GUARD)

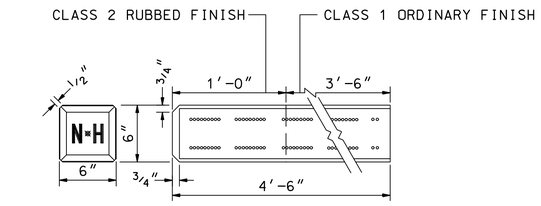
GENERAL NOTES

1. RAIL, POSTS, AND HORIZONTAL MEMBER OF SAFETY RAIL WITHOUT GUARD SHALL BE 1¼" NOMINAL.
2. FRAME SHALL BE 1" NOMINAL.
3. PALINGS SHALL BE ¾" NOMINAL SPACED 6" ON CENTER.
4. ITEM 606.630X - SAFETY RAIL, (MATERIAL); 606.631X - SAFETY RAIL W/ GUARD, (MATERIAL).

NHDOT STANDARD PLANS	REV. DATE		PLATE
SAFETY RAIL & SAFETY RAIL WITH GUARD	06-16-2010		4
			STANDARD
			HR-1

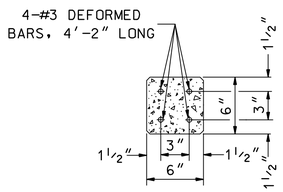
New Hampshire DOT Department of Transportation

STANDARD NO. HR-1

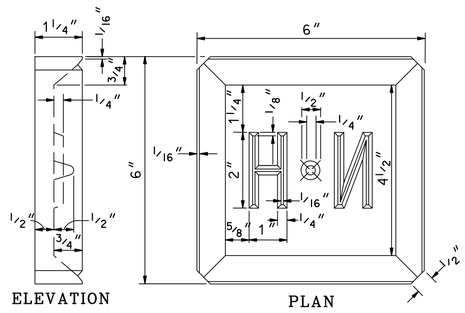


TOP

DETAIL OF CONCRETE BOUND



SECTION



ELEVATION PLAN

DETAIL OF METAL FORM

GENERAL NOTES

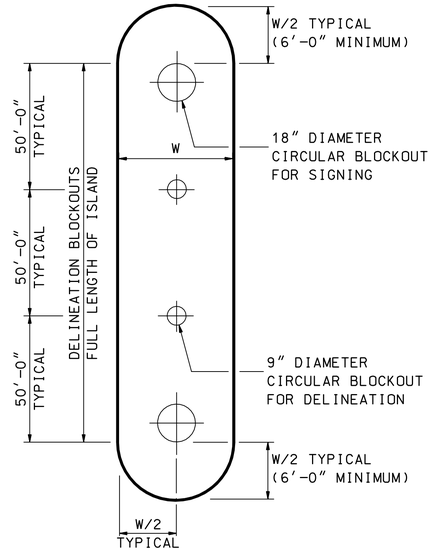
1. CONCRETE SHALL BE CLASS A.
2. BOUNDS TO BE SET IN GRAVEL, 9" ON ALL SIDES OF AND UNDER BOUND.
3. WHEN BOUNDING NON-STATE RIGHT-OF-WAY FOR CITIES AND TOWNS, USE ITEM 622.4 - STONE BOUNDS.
4. ITEM 622.2 - CONCRETE BOUNDS.

NHDOT STANDARD PLANS	REV. DATE		PLATE
CONCRETE BOUND	06-16-2010		1
			STANDARD
			HR-2

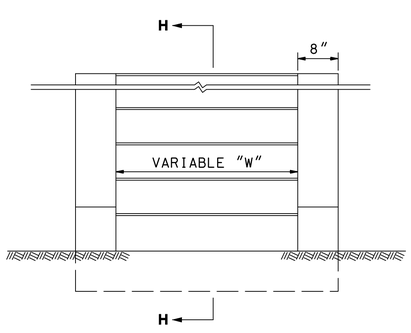
TYPICAL TREATMENT OF RAISED ISLAND TO PROVIDE BLOCKOUTS FOR SIGNING AND DELINEATION

GENERAL NOTES

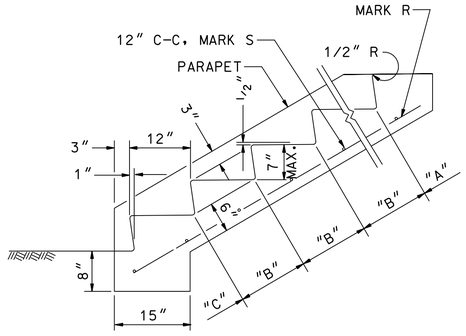
1. ISLANDS LESS THAN 16'-0" LONG REQUIRE ONLY ONE 18" CIRCULAR BLOCKOUT LOCATED AT THE MIDPOINT.
2. ADDITIONAL SIGNING BLOCKOUTS SHALL BE PROVIDED OPPOSITE ALL DRIVEWAYS AND SIDE ROAD APPROACHES.
3. BLOCKOUTS SHALL BE BACKFILLED WITH 2" OF COLD PATCH. BLOCKOUTS AND COLD PATCH ARE SUBSIDIARY TO THE RAISED ISLAND CONSTRUCTION.
4. IT MAY BE NECESSARY TO ADJUST THE LOCATION OF BLOCKOUTS TO AVOID UTILITY STRUCTURES OR PEDESTRIAN CROSSWALK OPENINGS.



NHDOT STANDARD PLANS	REV. DATE		PLATE
RAISED ISLAND BLOCKOUTS	06-16-2010		2
			STANDARD
			HR-2



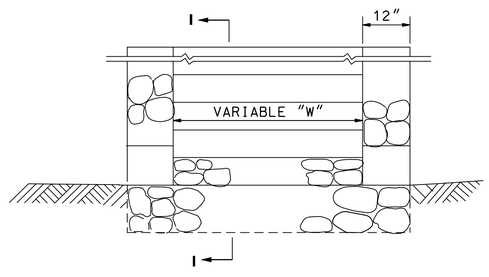
ELEVATION



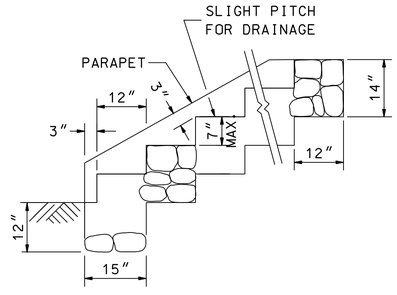
SECTION H-H

REINFORCING STEEL			
MARK	SIZE	NUMBER	LENGTH (EACH)
R	#5 1.043#/FT.	1 EA. PARAPET 1 EA. FT. OF WIDTH "W"	8" FOR "A" +13" EACH "B" +16" FOR "C"
S	#4 0.668#/FT.	1 FOR "A" 1 FOR "B" 2 FOR "C"	6" EA. PARAPET +12"/FT. OF WIDTH "W"

NHDOT STANDARD PLANS	REV. DATE		PLATE
CONCRETE STEPS	06-16-2010		3
			STANDARD
			HR-2



ELEVATION



SECTION I-I

NHDOT STANDARD PLANS	REV. DATE		PLATE
MORTAR RUBBLE MASONRY STEPS	06-16-2010		4
			STANDARD
			HR-2

STANDARD NO. HR-2

REVISION DATE
07-13-2001
06-16-2010

*.DGN FILE NAME
HR-2

STANDARD PLANS

New Hampshire DOT Department of Transportation

STANDARD NO. HR-2

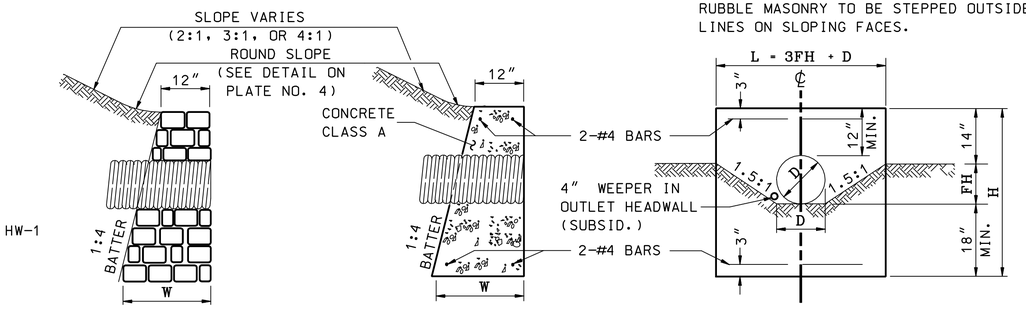
STANDARD NO. HW-1

REVISION DATE
07-13-2001
06-16-2010

*.DGN FILE NAME

STANDARD PLANS

DIMENSIONS SHOWN ARE TO PAYMENT LINES. MORTAR RUBBLE MASONRY TO BE STEPPED OUTSIDE PAYMENT LINES ON SLOPING FACES.



HW-1

SECTION ON CENTERLINE *ELEVATION*

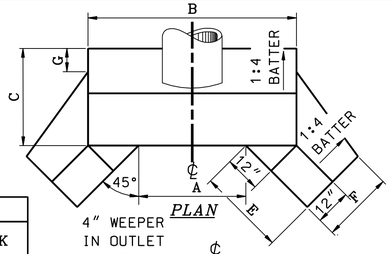
NOTE: STEEL QUANTITIES ARE FOR CONCRETE HEADWALLS ONLY.

DIAMETER D INCHES	MASONRY PER FOOT OF WALL CU. YD	MASONRY PER STANDARD HEADER CU. YD.	STEEL PER STANDARD HEADER LB.	LENGTH OF BARS	EXC. FOR 1' DEPTH CU. YD.	HEADER LENGTH L	HEADER HEIGHT H	FILL HEIGHT FH	WIDTH AT BOTTOM OF HEADER W	"L" HEADWALL	
										MASONRY IN CORNER FRUSTUM CU. YD.	EXC. FOR 1' DEPTH CU. YD.
12	0.186	0.61	9	3'-2"	0.789	3'-6"	3'-6"	0'-10"	0'-10 1/2"	0.28	1.057
15	0.202	0.85	11	3-10	0.947	4-6	3-9	1-1	1-11 1/4	0.31	1.232
18	0.222	1.13	14	5-2	1.111	5-6	4-0	1-4	2-0	0.35	1.406
24	0.260	1.78	20	7-2	1.451	7-6	4-6	1-10	2-1 1/2	0.42	1.776
30	0.301	2.58	25	9-2	1.810	9-6	5-0	2-4	2-3	0.51	2.164
36	0.344	3.53	31	11-2	2.187	11-6	5-6	2-10	2-4 1/2	0.61	2.572
42	0.389	4.65	36	13-2	2.581	13-6	6-0	3-4	2-6	0.72	3.000
48	0.436	5.95	42	15-2	3.000	15-6	6-6	3-10	2-7 1/2	0.84	3.447
54	0.486	7.44	47	17-2	3.432	17-6	7-0	4-4	2-9	0.98	3.914
60	0.538	9.13	52	19-2	3.882	19-6	7-6	4-10	2-10 1/2	1.12	4.401
66	0.593	11.04	58	21-2	4.350	21-6	8-0	5-4	3-0	1.28	4.907
72	0.649	13.17	63	23'-2"	4.638	23'-6"	8'-6"	5'-10"	3'-1 1/2"	1.46	5.433

NOTE: FOR PLAN OF "L" HEADWALL SEE PLATE NO. 1 OF STD. NO. HW-2

NHDOT STANDARD PLANS	REV. DATE	PLATE
HEADWALLS FOR PIPES OTHER THAN R.C.: CONCRETE P.C.-1	06-16-2010	1
MORTAR RUBBLE MASONRY P.C.-2		STANDARD HW-1

DIMENSIONS SHOWN ARE TO PAYMENT LINES. MORTAR RUBBLE MASONRY TO BE STEPPED OUTSIDE PAYMENT LINES ON SLOPING FACES.



2:1 SLOPE

DIAMETER D INCHES	QUANTITIES PER HEADER		DIMENSIONS									
	M.R.M. CU. YD.	EXC. FOR 1' DEPTH CU. YD.	A	B	C	E	F	G	H	I	J	K
24	2.45	1.89	2'-6"	5'-4"	2'-3"	2'-11"	1'-11"	0'-6"	5'-0"	4'-6"	3'-10"	1'-6"
30	3.19	2.28	3-1	5-11	2-5	3-6	2-0	0-5	5-6	5-0	4-1	1-6
36	4.03	2.57	3-8	6-6	2-6	4-1	2-1	0-4	6-0	5-6	4-4	1-6
42	5.50	3.09	4-3	7-1	2-8	5-0	2-2	0-3	6-9	6-3	4-10	1-9
48	6.68	3.53	4-10	7-8	2-10	5-8	2-3	0-2	7-3	6-9	5-1	1-9
54	7.92	3.95	5-5	8-3	2-11	6-3	2-4	0-1	7-9	7-3	5-4	1-9
60	9.39	4.40	6-0	8-10	3-1	6-10	2-5	0-1	8-3	7-9	5-8	1-9
66	10.90	4.81	6-7	9-5	3-2	7-5	2-6	0-0	8-9	8-3	5-11	1-9
72	12.66	5.22	7'-2"	10'-0"	3'-4"	8'-1"	2'-7"	0'-1"	9'-3"	8'-9"	6'-3"	1'-9"

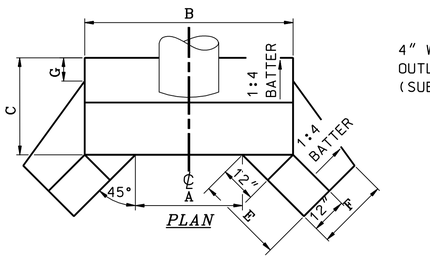
3:1 SLOPE

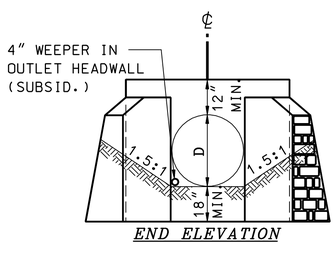
24	2.81	2.09	2'-6"	5'-4"	2'-3"	3'-6"	2'-0"	0'-6"	5'-0"	4'-8"	4'-1"	1'-6"
30	3.73	2.51	3-1	5-11	2-5	4-3	2-1	0-6	5-6	5-2	4-5	1-6
36	4.69	2.90	3-8	6-6	2-6	4-11	2-2	0-4	6-0	5-8	4-9	1-6
42	6.47	3.46	4-3	7-1	2-8	6-0	2-4	0-3	6-9	6-5	5-3	1-9
48	7.85	3.93	4-10	7-8	2-10	6-8	2-5	0-3	7-3	6-11	5-7	1-9
54	9.37	4.37	5-5	8-3	2-11	7-5	2-6	0-2	7-9	7-5	5-11	1-9
60	11.10	4.85	6-0	8-10	3-1	8-1	2-7	0-1	8-3	7-11	6-3	1-9
66	12.95	5.36	6-7	9-5	3-2	8-10	2-8	0-0	8-9	8-5	6-7	1-9
72	15.03	5.86	7'-2"	10'-0"	3'-4"	9'-6"	2'-9"	0'-0"	9'-3"	8'-11"	6'-11"	1'-9"

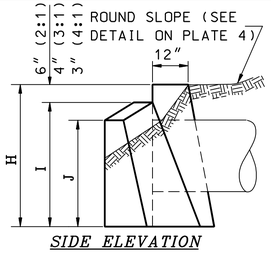
4:1 SLOPE

24	3.05	2.21	2'-6"	5'-4"	2'-3"	3'-10"	2'-1"	0'-6"	5'-0"	4'-9"	4'-3"	1'-6"
30	4.02	2.62	3-1	5-11	2-5	4-7	2-2	0-6	5-6	5-3	4-7	1-6
36	5.10	3.03	3-8	6-6	2-6	5-4	2-3	0-4	6-0	5-9	5-0	1-6
42	7.03	3.65	4-3	7-1	2-8	6-6	2-5	0-3	6-9	6-6	5-6	1-9
48	8.60	4.14	4-10	7-8	2-10	7-3	2-6	0-3	7-3	7-0	5-11	1-9
54	10.28	4.62	5-5	8-3	2-11	8-1	2-7	0-2	7-9	7-6	6-3	1-9
60	12.18	5.16	6-0	8-10	3-1	8-10	2-8	0-1	8-3	8-0	6-7	1-9
66	14.24	5.67	6-7	9-5	3-2	9-7	2-9	0-1	8-9	8-6	7-0	1-9
72	16.54	6.21	7'-2"	10'-0"	3'-4"	10'-5"	2'-10"	0'-0"	9'-3"	9'-0"	7'-4"	1'-9"

NHDOT STANDARD PLANS	REV. DATE	PLATE
MORTAR RUBBLE MASONRY HEADWALLS WITH 45° WINGS FOR R.C. PIPE P.C.-8	06-16-2010	2
		STANDARD HW-1







2:1 SLOPE

DIAMETER D INCHES	QUANTITIES PER HEADER		DIMENSIONS								
	M.R.M. CU. YD.	EXC. FOR 1' DEPTH CU. YD.	A	B	C	E	F	G	H	I	J
24	1.89	1.65	2'-3"	5'-1"	2'-2"	2'-4"	1'-11"	0'-7"	4'-6"	4'-0"	3'-6"
30	2.54	1.94	2-9	5-7	2-3	2-11	1-11	0-6	5-0	4-6	3-10
36	3.31	2.29	3-3	6-1	2-5	3-7	2-0	0-6	5-6	5-0	4-1
42	4.17	2.63	3-9	6-7	2-6	4-2	2-1	0-5	6-0	5-6	4-5
48	5.33	3.00	4-4	7-2	2-8	4-9	2-2	0-4	6-6	6-0	4-8
60	7.63	3.76	5-4	8-2	2-11	6-0	2-4	0-2	7-6	7-0	5-3
72	10.59	4.60	6'-5"	9'-3"	3'-2"	7'-2"	2'-5"	0'-1"	8'-6"	8'-0"	5'-10"

3:1 SLOPE

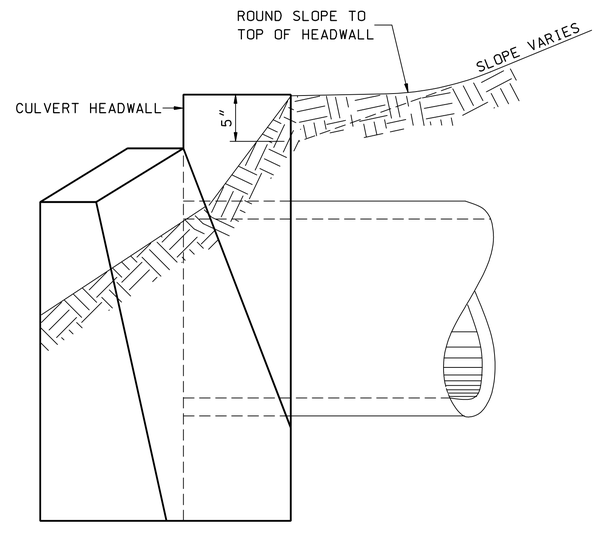
24	2.18	1.79	2'-3"	5'-1"	2'-2"	2'-10"	1'-11"	0'-7"	4'-6"	4'-2"	3'-9"
30	2.94	2.18	2-9	5-7	2-3	3-7	2-0	0-6	5-0	4-8	4-1
36	3.81	2.55	3-3	6-1	2-5	4-3	2-1	0-6	5-6	5-2	4-5
42	4.86	2.93	3-9	6-7	2-6	5-0	2-2	0-4	6-0	5-8	4-9
48	6.04	3.36	4-4	7-2	2-8	5-8	2-3	0-4	6-6	6-2	5-1
60	8.90	4.24	5-4	8-2	2-11	7-1	2-5	0-3	7-6	7-2	5-9
72	12.46	5.13	6'-5"	9'-3"	3'-2"	8'-6"	2'-7"	0'-1"	8'-6"	8'-2"	6'-5"

DIMENSIONS SHOWN ARE TO PAYMENT LINES. MORTAR RUBBLE MASONRY TO BE STEPPED OUTSIDE PAYMENT LINES ON SLOPING FACES.

4:1 SLOPE

24	2.36	1.91	2'-3"	5'-1"	2'-2"	3'-2"	2'-0"	0'-7"	4'-6"	4'-3"	3'-10"
30	3.18	2.27	2-9	5-7	2-3	3-11	2-1	0-6	5-0	4-9	4-3
36	4.18	2.67	3-3	6-1	2-5	4-8	2-2	0-6	5-6	5-3	4-7
42	5.28	3.08	3-9	6-7	2-6	5-6	2-3	0-4	6-0	5-9	5-0
48	6.65	3.55	4-4	7-2	2-8	6-3	2-4	0-4	6-6	6-3	5-4
60	9.78	4.46	5-4	8-2	2-11	7-9	2-6	0-3	7-6	7-3	6-1
72	14.81	5.86	6'-5"	9'-3"	3'-2"	9'-4"	2'-8"	0'-1"	8'-6"	8'-3"	6'-9"

NHDOT STANDARD PLANS	REV. DATE	PLATE
MORTAR RUBBLE MASONRY HEADWALLS WITH 45° WINGS FOR PIPES OTHER THAN R.C. P.C.-6	06-16-2010	3
		STANDARD HW-1

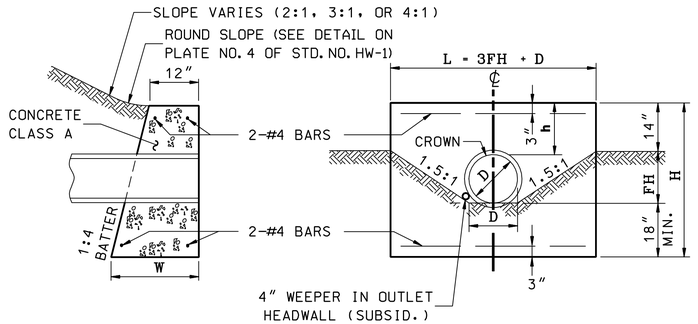


SIDE ELEVATION

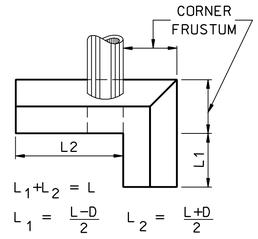
NHDOT STANDARD PLANS	REV. DATE	PLATE
SLOPE ROUNDING AT TOP OF CULVERT HEADWALL	06-16-2010	4
		STANDARD HW-1

New Hampshire DOT Department of Transportation

STANDARD NO. HW-1



SECTION ON CENTERLINE *ELEVATION*



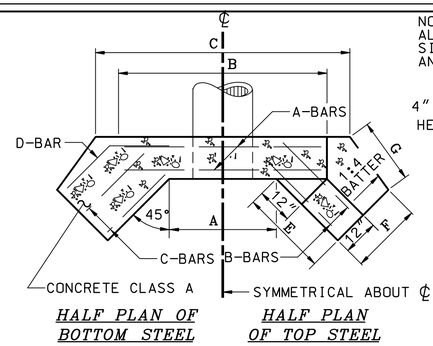
PLAN OF L HEADWALL

SECTIONS ON CENTERLINE FOR PC-4 SIMILAR TO PC-2.

DIAMETER D INCHES	MASONRY PER FOOT OF WALL CU. YD	MASONRY PER STANDARD HEADER CU. YD.	STEEL PER STANDARD HEADER LB.	LENGTH OF BARS	EXC. FOR 1' DEPTH CU. YD.	HEADER LENGTH L	HEADER HEIGHT H	FILL HEIGHT FH	"h"	WIDTH AT BOTTOM OF HEADER W	"L" HEADWALL	
											MASONRY IN CORNER FRUSTUM CU. YD.	EXC. FOR 1' DEPTH CU. YD.
12	0.204	0.80	11	3'-10"	0.911	4'-3"	3'-9"	1'-1"	1'-3"	1'-11 1/4"	0.31	1.195
15	0.240	1.32	16	5-8	1.204	6-0	4-3	1-7	1-6	2-0 3/4	0.38	1.588
18	0.260	1.66	16	5-8	1.375	7-0	4-6	1-10	1-6	2-1 1/2	0.42	1.700
24	0.301	2.41	24	8-8	1.731	9-0	5-0	2-4	1-6	2-3	0.51	2.086
30	0.344	3.32	29	10-8	2.106	11-0	5-6	2-10	1-6	2-4 1/2	0.61	2.491
36	0.389	4.43	35	12-8	2.500	13-0	6-0	3-4	1-6	2-6	0.72	2.917
42	0.461	6.28	42	15-2	3.082	15-9	6-9	4-1	1-9	2-8 1/4	0.94	3.549
48	0.512	7.77	47	17-2	3.520	17-9	7-3	4-7	1-9	2-9 3/4	1.05	4.019
54	0.565	9.46	52	19-2	3.977	19-9	7-9	5-1	1-9	2-11 1/4	1.20	4.522
60	0.621	11.42	58	21-2	4.451	21-9	8-3	5-7	1-9	3-0 3/4	1.37	5.024
66	0.689	13.68	63	23-2	4.947	23-9	8-9	6-1	1-9	3-2 1/4	1.55	5.559
72	0.740	15.79	69	25'-2"	5.460	25'-9"	9'-3"	6'-7"	1'-9"	3'-3 3/4"	1.75	6.108

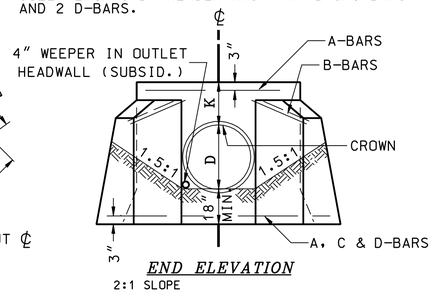
NOTE: STEEL QUANTITIES ARE FOR CONCRETE HEADWALLS ONLY

NHDOT STANDARD PLANS	REV. DATE	PLATE
HEADWALLS FOR R.C. PIPE: CONCRETE P.C.-3	06-16-2010	1
MORTAR RUBBLE MASONRY P.C.-4		STANDARD HW-2

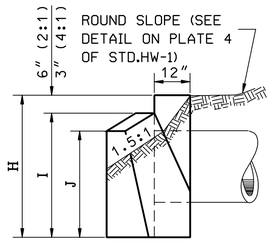


HALF PLAN OF BOTTOM STEEL *HALF PLAN OF TOP STEEL*

NOTE:
ALL LIKE BARS IN EACH HEADWALL ARE THE SAME SIZE. EACH STD. HEADER HAS 4 A, B & C-BARS, AND 2 D-BARS.



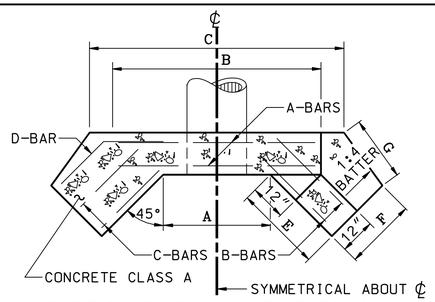
END ELEVATION



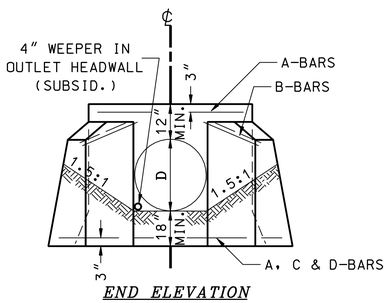
SIDE ELEVATION

DIAMETER D INCHES	QUANTITIES PER HEADER CONC. CU. YD.	STEEL LB.	EXC. FOR 1' DEPTH CU. YD.	DIMENSIONS A	B	C	E	F	G	H	I	J	K	REINFORCING STEEL SIZE	LENGTH A BARS	B BARS	C BARS	D BARS	D-BARS, a	D-BARS, b
24	1.97	36	1.58	2'-6"	5'-4"	6'-7"	3'-0"	1'-11"	2'-3"	5'-0"	4'-6"	3'-10"	1'-6"	#4	5'-0"	3'-2"	3'-0"	4'-8"	2'-5"	2'-3"
30	2.57	42	1.80	3-1	5-11	7-6	3-7	2-0	2-9	5-6	5-0	4-1	1-6	#4	5-7	3-9	3-7	5-3	2-6	2-9
36	3.24	47	2.12	3-8	6-6	8-5	4-2	2-1	3-3	6-0	5-6	4-4	1-6	#4	6-2	4-3	4-1	5-10	2-8	3-2
42	4.46	125	2.55	4-3	7-1	9-6	5-1	2-2	4-0	6-9	6-3	4-10	1-9	#6	6-9	5-3	4-11	7-10	3-10	4-0
48	5.38	139	2.88	4-10	7-8	10-5	5-9	2-3	4-6	7-3	6-9	5-1	1-9	#6	7-4	5-11	5-7	8-5	3-10	4-7
54	6.46	151	3.15	5-5	8-3	11-3	6-4	2-4	5-0	7-9	7-3	5-4	1-9	#6	7-11	6-7	6-1	9-2	4-1	5-1
60	7.55	162	3.51	6-0	8-10	12-2	6-11	2-5	5-6	8-3	7-9	5-8	1-9	#6	8-6	7-1	6-8	9-9	4-1	5-8
66	8.80	176	3.80	6-7	9-5	13-2	7-6	2-6	6-0	8-9	8-3	5-11	1-9	#6	9-1	7-8	7-3	10-5	4-2	6-3
72	10.29	188	4.12	7'-2"	10'-0"	14'-0"	8'-2"	2'-7"	6'-6"	9'-3"	8'-9"	6'-3"	1'-9"	#6	9'-8"	8'-3"	7'-10"	11'-0"	4'-3"	6'-9"
4:1 SLOPE																				
24	2.58	43	1.90	2'-6"	5'-4"	6'-9"	3'-11"	2'-1"	3'-2"	5'-0"	4'-9"	4'-3"	1'-6"	#4	5'-0"	4'-3"	4'-0"	5'-6"	2'-6"	3'-0"
30	3.31	49	2.22	3-1	5-11	7-8	4-8	2-2	3-9	5-6	5-3	4-7	1-6	#4	5-7	5-0	4-8	6-3	2-8	3-7
36	4.33	56	2.58	3-8	6-6	8-7	5-5	2-3	4-5	6-0	5-9	5-0	1-6	#4	6-2	5-9	5-4	7-1	2-10	4-3
42	5.99	149	3.11	4-3	7-1	9-9	6-7	2-5	5-4	6-9	6-6	5-6	1-9	#6	6-9	6-11	6-5	9-3	4-0	5-3
48	7.28	163	3.48	4-10	7-8	10-7	7-4	2-6	6-0	7-3	7-0	5-11	1-9	#6	7-4	7-8	7-1	10-1	4-2	5-11
54	8.78	179	3.89	5-5	8-3	11-6	8-2	2-7	6-9	7-9	7-6	6-3	1-9	#6	7-11	8-6	7-10	10-11	4-3	6-8
60	10.35	194	4.29	6-0	8-10	12-5	8-11	2-8	7-4	8-3	8-0	6-7	1-9	#6	8-6	9-3	8-8	11-9	4-4	7-5
66	12.10	210	4.70	6-7	9-5	13-3	9-8	2-9	8-0	8-9	8-6	7-0	1-9	#6	9-1	10-0	9-5	12-8	4-7	8-1
72	14.14	222	5.16	7'-2"	10'-0"	14'-3"	10'-6"	2'-10"	8'-8"	9'-3"	9'-0"	7'-4"	1'-9"	#6	9'-8"	10'-10"	9'-9"	13'-5"	4'-8"	8'-9"

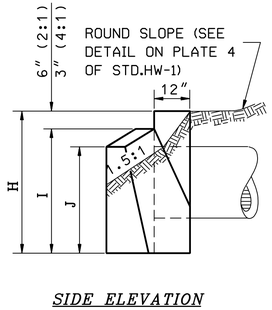
NHDOT STANDARD PLANS	REV. DATE	PLATE
CONCRETE HEADWALLS WITH 45° WINGS FOR R.C. PIPE P.C.-7	06-16-2010	2
		STANDARD HW-2



HALF PLAN OF BOTTOM STEEL *HALF PLAN OF TOP STEEL*



END ELEVATION



SIDE ELEVATION

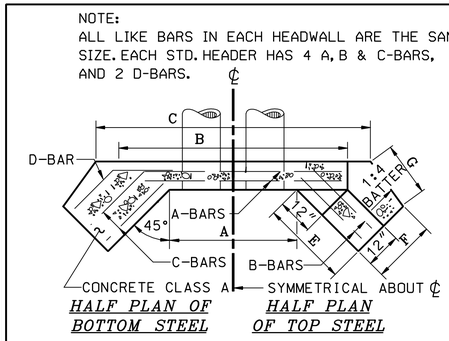
NOTE:
ALL LIKE BARS IN EACH HEADWALL ARE THE SAME SIZE.
EACH STD. HEADER HAS 4 A, B & C-BARS, AND 2 D-BARS.

2:1 SLOPE

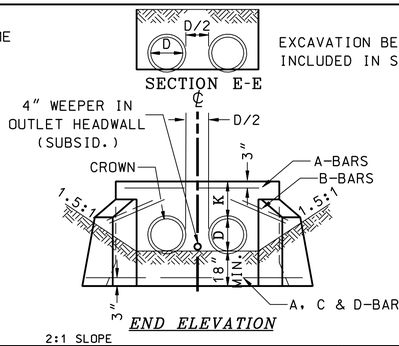
DIAMETER D INCHES	QUANTITIES PER HEADER CONC. CU. YD.	STEEL LB.	EXC. FOR 1' DEPTH CU. YD.	DIMENSIONS A	B	C	E	F	G	H	I	J	REINFORCING STEEL SIZE	LENGTH A BARS	B BARS	C BARS	D BARS	D-BARS, a	D-BARS, b
24	1.50	32	1.36	2'-3"	5'-1"	6'-0"	2'-5"	1'-11"	1'-9"	4'-6"	4'-0"	3'-6"	#4	4'-9"	2'-7"	2'-5"	3'-11"	2'-4"	1'-7"
30	2.01	37	1.63	2-9	5-7	6-10	3-0	1-11	2-3	5-0	4-6	3-10	#4	5-3	3-3	3-1	4-7	2-7	2-0
36	2.62	42	1.88	3-3	6-1	7-8	3-7	2-0	2-9	5-6	5-0	4-1	#4	5-9	3-10	3-6	5-2	2-8	2-6
42	3.31	47	2.18	3-9	6-7	8-6	4-2	2-1	3-3	6-0	5-6	4-4	#4	6-3	4-5	4-1	5-10	2-10	3-0
48	4.11	123	2.42	4-4	7-2	9-5	4-10	2-2	3-9	6-6	6-0	4-8	#6	6-10	5-1	4-8	7-8	4-0	3-8
60	5.98	146	3.04	5-4	8-2	11-0	6-0	2-4	4-8	7-6	7-0	5-3	#6	7-10	6-3	5-8	8-11	4-6	4-5
72	8.33	171	3.69	6'-5"	9'-3"	12'-9"	7'-3"	2'-5"	5'-8"	8'-6"	8'-0"	5'-10"	#6	8'-11"	7'-6"	6'-9"	10'-4"	4'-10"	5'-6"
4:1 SLOPE																			
24	1.93	37	1.60	2'-3"	5'-1"	6'-2"	3'-2"	2'-0"	2'-6"	4'-6"	4'-3"	3'-10"	#4	4'-9"	3'-6"	3'-2"	4'-10"	2'-7"	2'-3"
30	2.62	44	1.93	2-9	5-7	7-0	3-11	2-1	3-2	5-0	4-9	4-3	#4	5-3	4-3	3-10	5-9	2-10	2-11
36	3.44	50	2.25	3-3	6-1	7-10	4-8	2-2	3-10	5-6	5-3	4-7	#4	5-9	5-1	4-7	6-5	2-10	3-7
42	4.39	56	2.60	3-9	6-7	8-8	5-6	2-3	4-5	6-0	5-9	5-0	#4	6-3	5-10	5-3	7-4	3-0	4-4
48	5.49	144	2.96	4-4	7-2	9-7	6-3	2-4	5-1	6-6	6-3	5-4	#6	6-10	6-6	6-0	9-2	4-1	5-1
60	8.10	172	3.70	5-4	8-2	11-3	7-9	2-6	6-5	7-6	7-3	6-1	#6	7-10	8-0	7-6	10-8	4-3	6-5
72	11.36	202	4.51	6'-5"	9'-3"	13'-0"	9'-4"	2'-8"	7'-8"	8'-6"	8'-3"	6'-9"	#6	8'-11"	9'-6"	9'-1"	12'-3"	4'-6"	7'-9"

NHDOT STANDARD PLANS	REV. DATE	PLATE
CONCRETE HEADWALLS WITH 45° WINGS FOR PIPES OTHER THAN R.C. P.C.-5	06-16-2010	3
		STANDARD HW-2

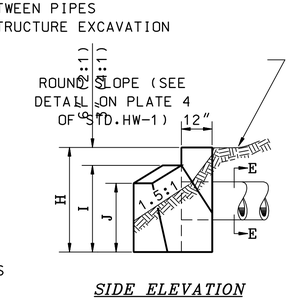
NOTE:
ALL LIKE BARS IN EACH HEADWALL ARE THE SAME SIZE. EACH STD. HEADER HAS 4 A, B & C-BARS, AND 2 D-BARS.



HALF PLAN OF BOTTOM STEEL *HALF PLAN OF TOP STEEL*



END ELEVATION



SIDE ELEVATION

2:1 SLOPE

DIA. D INCHES	QUANTITIES PER HEADER CONC. CU. YD.	STEEL LB.	EXC. FOR 1' DEPTH CU. YD.	DIMENSIONS A	B	C	E	F	G	H	I	J	K	D/2	REINFORCING STEEL SIZE	LENGTH A BARS	B BARS	C BARS	D BARS	D-BARS, a	D-BARS, b
24	2.44	46	1.96	6'-0"	8'-10"	10'-0"	3'-0"	1'-11"	2'-3"	5'-0"	4'-6"	3'-10"	1'-6"	1'-0"	#4	8'-6"	3'-2"	3'-0"	4'-8"	2'-5"	2'-3"
30	3.18	53	2.28	7-5	10-3	11-9	3-7	2-0	2-9	5-6	5-0	4-1	1-6	1-3	#4	9-11	3-9	3-7	5-3	2-6	2-9
36	3.99	61	2.69	8-10	11-8	13-7	4-2	2-1	3-3	6-0	5-6	4-4	1-6	1-6	#4	11-4	4-3	4-1	5-10	2-8	3-2
42	5.43	161	3.22	10-3	13-1	15-6	5-1	2-2	4-0	6-9	6-3	4-10	1-9	1-9	#6	12-9	5-3	4-11	7-10	3-10	4-0
48	6.53	180	3.64	11-8	14-6	17-3	5-9	2-3	4-6	7-3	6-9	5-1	1-9	2-0	#6	14-2	5-11	5-7	8-5	3-10	4-7
54	7.76	197	4.00	13-1	15-11	19-1	6-4	2-4	5-0	7-9	7-3	5-4	1-9	2-3	#6	15-7	6-7	6-1	9-2	4-1	5-1
60	9.10	214	4.45	14-6	17-4	20-10	6-11	2-5	5-6	8-3	7-9	5-8	1-9	2-6	#6	17-0	7-1	6-8	9-9	4-1	5-8
66	10.56	232	4.84	15-11	18-9	22-5	7-6	2-6	6-0	8-9	8-3	5-11	1-9	2-9	#6	18-5	7-8	7-3	10-5	4-2	6-3
72	12.28	249	5.25	17'-4"	20'-2"	24'-2"	8'-2"	2'-7"	6'-6"	9'-3"	8'-9"	6'-3"	1'-9"	3'-0"	#6	19'-10"	8'-3"	7'-10"	11'-0"	4'-3"	6'-9"
4:1 SLOPE																					
24	3.05	53	2.29	6'-0"	8'-10"	10'-0"	3'-11"	2'-1"	3'-2"	5'-0"	4'-9"	4'-3"	1'-6"	1'-0"	#4	8'-6"	4'-3"	4'-0"	5'-6"	2'-6"	3'-0"
30	3.92	61	2.70	7-5	10-3	11-9	4-8	2-2	3-9	5-6	5-3	4-7	1-6	1-3	#4	9-11	5-0	4-8	6-3	2-8	3-7
36	5.09	70	3.15	8-10	11-8	13-7	5-5	2-3	4-5	6-0	5-9	5-0	1-6	1-6	#4	11-4	5-9	5-4	7-1	2-10	4-3
42	6.97	185	3.78	10-3	13-1	15-6	6-7	2-5	5-4	6-9	6-6	5-6	1-9	1-9	#6	12-9	6-11	6-5	9-3	4-0	5-3
48	8.44	204	4.24	11-8	14-6	17-3	7-4	2-6	6-0	7-3	7-0	5-11	1-9	2-0	#6	14-2	7-8	7-1	10-1	4-2	5-11
54	10.13	225	4.74	13-1	15-11	19-1	8-2	2-7	6-9	7-9	7-6	6-3	1-9	2-3	#6	15-7	8-6	7-10	10-11	4-3	6-8
60	11.90	245	5.23	14-6	17-4	20-10	8-11	2-8	7-4	8-3	8-0	6-7	1-9	2-6	#6	17-0	9-3	8-8	11-9	4-4	7-5
66	13.87	266	5.75	15-11	18-9	22-5	9-8	2-9	8-0	8-9	8-6	7-0	1-9	2-9	#6	18-5	10-0	9-5	12-8	4-7	8-1
72	16.13	283	6.29	17'-4"	20'-2"	24'-2"	10'-6"	2'-10"	8'-8"	9'-3"	9'-0"	7'-4"	1'-9"	3'-0"	#6	19'-10"	10'-10"	9'-9"	13'-5"	4'-8"	8'-9"

NHDOT STANDARD PLANS	REV. DATE	PLATE
CONCRETE HEADWALLS WITH 45° WINGS FOR TWIN R.C. PIPE P.C.-9	06-16-2010	4
		STANDARD HW-2

STANDARD NO. HW-2

REVISION DATE
07-13-2001
06-16-2010

*.DGN FILE NAME
HW-2

STANDARD PLANS

New Hampshire DOT Department of Transportation

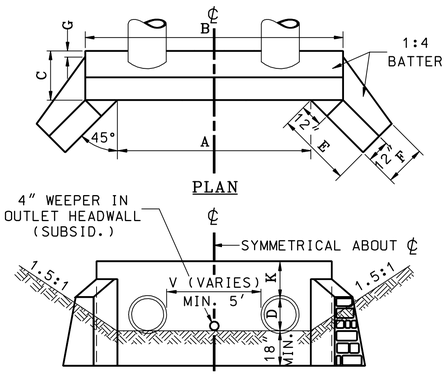
STANDARD NO. HW-2

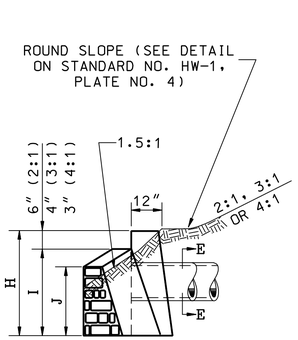
STANDARD NO. HW-3

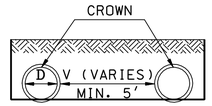
REVISION DATE
07-13-2001
06-16-2010

*.DGN FILE NAME
HW-3

STANDARD PLANS







SECTION E-E

EXCAVATION BETWEEN PIPES INCLUDED IN STRUCTURE EXCAVATION

DIMENSIONS SHOWN ARE TO PAYMENT LINES. MASONRY TO BE STEPPED OUTSIDE PAYMENT LINES ON SLOPING FACES.

2:1 SLOPE (FOR 3:1 AND 4:1 SLOPES SEE PLATE 2)

DIAMETER D INCHES	QUANTITIES IN CUBIC YARDS, PER HEADER				DIMENSIONS									
	M.R.M. V=5′	M.R.M. PER FOOT ADD. LENGTH V=5′	EXC. FOR 1′ DEPTH V=5′	EXC. PER FOOT ADD. LENGTH 1 FOOT DEPTH	A V=5′	B V=5′	C	E	F	G	H	I	J	K
24	4.40	0.300	3.08	0.157	10′-0″	12′-10″	2′-3″	2′-11″	1′-11″	0′-6″	5′-0″	4′-6″	3′-10″	1′-6″
30	5.56	0.348	3.60	0.163	11-2	14-0	2-5	3-6	2-0	0-5	5-6	5-0	4-1	1-6
36	6.71	0.389	4.03	0.167	12-4	15-2	2-6	4-1	2-1	0-4	6-0	5-6	4-4	1-6
42	8.75	0.458	4.68	0.173	13-6	16-4	2-8	5-0	2-2	0-3	6-9	6-3	4-10	1-9
48	10.43	0.515	5.29	0.179	14-8	17-6	2-10	5-8	2-3	0-2	7-3	6-9	5-1	1-9
54	12.07	0.562	5.85	0.182	15-10	18-8	2-11	6-3	2-4	0-1	7-9	7-3	5-4	1-9
60	14.09	0.624	6.47	0.188	17-0	19-10	3-1	6-10	2-5	0-1	8-3	7-9	5-8	1-9
66	16.05	0.675	7.03	0.191	18-2	21-0	3-2	7-5	2-6	0-0	8-9	8-3	5-11	1-9
72	18.41	0.742	7.63	0.198	19′-4″	22′-2″	3′-4″	8′-1″	2′-7″	-0′-1″	9′-3″	8′-9″	6′-3″	1′-9″

NHDOT STANDARD PLANS	REV. DATE	PLATE
MORTAR RUBBLE MASONRY HEADWALLS WITH 45° WINGS FOR TWIN R. C. PIPES P.C.-10	06-16-2010	1
		STANDARD HW-3

3:1 SLOPE

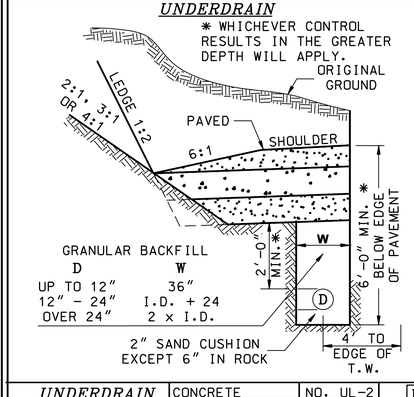
DIAMETER D INCHES	QUANTITIES IN CUBIC YARDS, PER HEADER				DIMENSIONS									
	M.R.M. V=1.5	M.R.M. PER FOOT ADD. LENGTH V=5′	EXC. FOR 1′ DEPTH V=5′	EXC. PER FOOT ADD. LENGTH 1 FOOT DEPTH	A V=5′	B V=5′	C	E	F	G	H	I	J	K
24	4.77	0.300	3.27	0.157	10′-0″	12′-10″	2′-3″	3′-6″	2′-0″	0′-6″	5′-0″	4′-8″	4′-1″	1′-6″
30	6.08	0.348	3.83	0.163	11-2	14-0	2-5	4-3	2-1	0-6	5-6	5-2	4-5	1-6
36	7.38	0.389	4.34	0.167	12-4	15-2	2-6	4-11	2-2	0-4	6-0	5-8	4-9	1-6
42	9.72	0.458	5.06	0.173	13-6	16-4	2-8	6-0	2-4	0-3	6-9	6-5	5-3	1-9
48	11.59	0.515	5.69	0.179	14-8	17-6	2-10	6-8	2-5	0-3	7-3	6-11	5-7	1-9
54	13.52	0.562	6.27	0.182	15-10	18-8	2-11	7-5	2-6	0-2	7-9	7-5	5-11	1-9
60	15.80	0.624	6.92	0.188	17-0	19-10	3-1	8-1	2-7	0-1	8-3	7-11	6-3	1-9
66	18.10	0.675	7.58	0.191	18-2	21-0	3-2	8-10	2-8	0-0	8-9	8-5	6-7	1-9
72	20.80	0.742	8.26	0.198	19′-4″	22′-2″	3′-4″	9′-6″	2′-9″	0-0	9′-3″	8′-11″	6′-11″	1′-9″

4:1 SLOPE

DIAMETER D INCHES	QUANTITIES IN CUBIC YARDS, PER HEADER				DIMENSIONS									
	M.R.M. V=1.5	M.R.M. PER FOOT ADD. LENGTH V=5′	EXC. FOR 1′ DEPTH V=5′	EXC. PER FOOT ADD. LENGTH 1 FOOT DEPTH	A V=5′	B V=5′	C	E	F	G	H	I	J	K
24	5.01	0.300	3.39	0.157	10′-0″	12′-10″	2′-3″	3′-10″	2′-1″	0′-6″	5′-0″	4′-9″	4′-3″	1′-6″
30	6.37	0.348	3.94	0.163	11-2	14-0	2-5	4-7	2-2	0-6	5-6	5-3	4-7	1-6
36	7.79	0.389	4.47	0.167	12-4	15-2	2-6	5-4	2-3	0-4	6-0	5-9	5-0	1-6
42	10.30	0.458	5.25	0.173	13-6	16-4	2-8	6-6	2-5	0-3	6-9	6-6	5-6	1-9
48	12.34	0.515	5.90	0.179	14-8	17-6	2-10	7-3	2-6	0-3	7-3	7-0	5-11	1-9
54	14.46	0.562	6.52	0.182	15-10	18-8	2-11	8-1	2-7	0-2	7-9	7-6	6-3	1-9
60	16.85	0.624	7.23	0.188	17-0	19-10	3-1	8-10	2-8	0-1	8-3	8-0	6-7	1-9
66	19.41	0.675	7.89	0.191	18-2	21-0	3-2	9-7	2-9	0-0	8-9	8-6	7-0	1-9
72	22.26	0.742	8.62	0.198	19′-4″	22′-2″	3′-4″	10′-5″	2′-10″	0-0	9′-3″	9′-0″	7′-4″	1′-9″

NHDOT STANDARD PLANS	REV. DATE	PLATE
MORTAR RUBBLE MASONRY HEADWALLS WITH 45° WINGS FOR TWIN R. C. PIPES P.C.-10	06-16-2010	2
		STANDARD HW-3

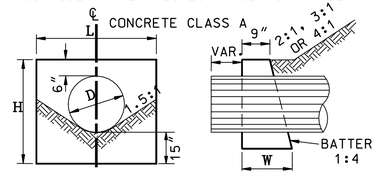
UNDERDRAIN



UNDERDRAIN HEADWALL

CONCRETE	NO. UH-1
MOR. RUB. MAS.	NO. UH-2

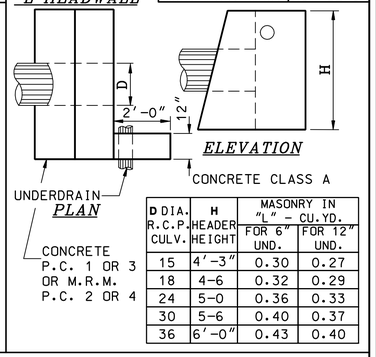
DIMENSIONS SHOWN ARE TO PAYMENT LINES. MORTAR RUBBLE MASONRY TO BE STEPPED OUTSIDE PAYMENT LINES ON SLOPING FACE.



D (in) UND. DIA.	PER HEADER MAS'RY C.Y.	PER HEADER EXC. PER 1′ DEPTH C.Y.	L	H	W
6	0.17	0.49	2′-0″	2′-3″	15¾″
12	0.32	0.66	3-2	2-9	17¼″
15	0.43	0.76	3′-10″	3′-0″	18″

UNDERDRAIN "L"HEADWALL

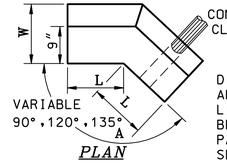
CONCRETE	NO. UL-1
MOR. RUB. MAS.	NO. UL-3



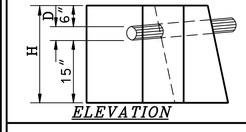
D DIA. R.C.P. CULV.	H HEADER HEIGHT	MASONRY IN "L" - CU.YD. FOR 6″ UND.	MASONRY IN "L" - CU.YD. FOR 12″ UND.
15	4′-3″	0.30	0.27
18	4-6	0.32	0.29
24	5-0	0.36	0.33
30	5-6	0.40	0.37
36	6′-0″	0.43	0.40

UNDERDRAIN "L" HEADWALL

CONCRETE	NO. UL-2
MOR. RUB. MAS.	NO. UL-4

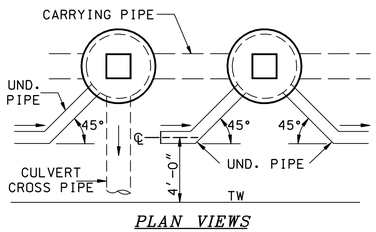


DIMENSIONS SHOWN ARE TO PAYMENT LINES. M.R.M. TO BE STEPPED OUTSIDE PAYMENT LINES ON SLOPING FACES.



D (in) UND. DIA.	A	PER HEADER MAS'RY C.Y.	PER HEADER EXC. PER 1′ DEPTH C.Y.	L	H	W
6	90°	0.30	0.71	1′-3″	2′-3″	15¾″
6	120°	0.26	0.65	1-3	2-3	15¾
6	135°	0.25	0.62	1-3	2-3	15¾
12	90°	0.54	0.95	2-0	2-9	17¼
12	120°	0.49	0.87	2-0	2-9	17¼
12	135°	0.47	0.84	2-0	2-9	17¼
15	90°	0.72	1.10	2-6	3-0	18
15	120°	0.66	1.02	2-6	3-0	18
15	135°	0.64	0.99	2-6	3-0	18
18	90°	0.85	1.20	2-9	3-3	18¾
18	120°	0.79	1.11	2-9	3-3	18¾
18	135°	0.77	1.07	2-9	3-3	18¾
24	90°	1.25	1.46	3-6	3-9	20¼
24	120°	1.18	1.37	3-6	3-9	20¼
24	135°	1.14	1.32	3′-6″	3′-9″	20¼″

C.B. (OR HEADER) *C.B.*



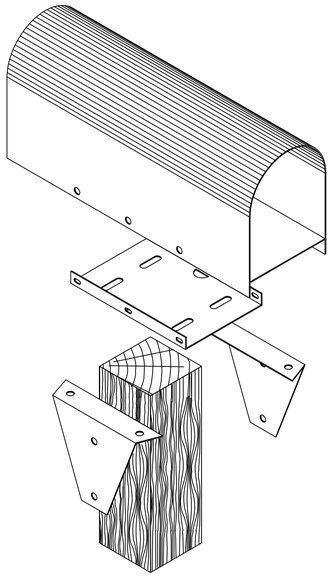
SKETCHES FOR 45° BENDS AND PLACEMENT IN SHOULDER FOR UNDERDRAIN PIPES

NHDOT STANDARD PLANS	REV. DATE	PLATE
UNDERDRAIN HEADWALLS & UNDERDRAIN "L" HEADWALLS	06-16-2010	3
		STANDARD HW-3

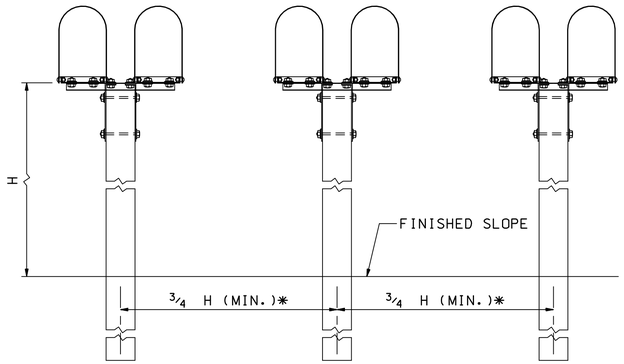
NHDOT STANDARD PLANS	REV. DATE	PLATE
	06-16-2010	4
		STANDARD HW-3

New Hampshire DOT Department of Transportation

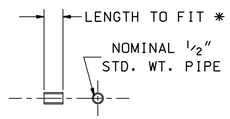
STANDARD NO. HW-3



EXPLODED VIEW
(SEE NOTE NO. 1)

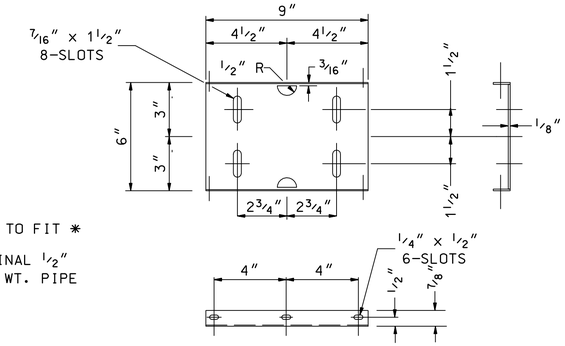


SPACING FOR MULTIPLE POST INSTALLATION
* FULL HEIGHT PREFERABLE

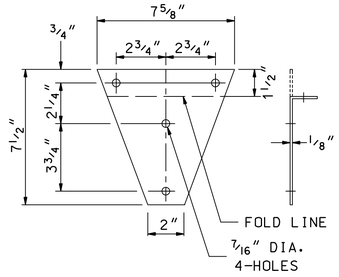


SPACER

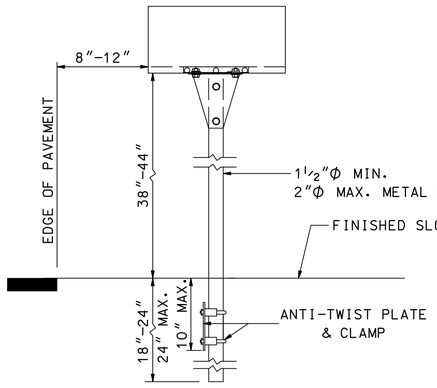
* STANDARD MAILBOX WIDTHS ARE 6 1/2", 8", AND 11 1/2"



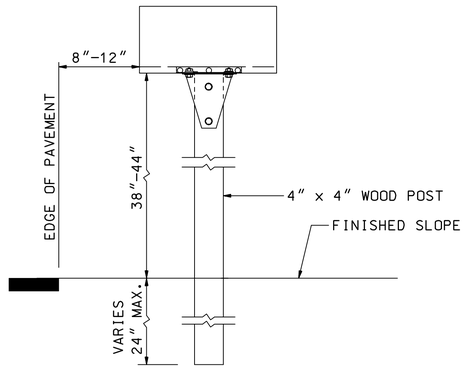
PLATFORM
(SEE NOTE NO. 1)



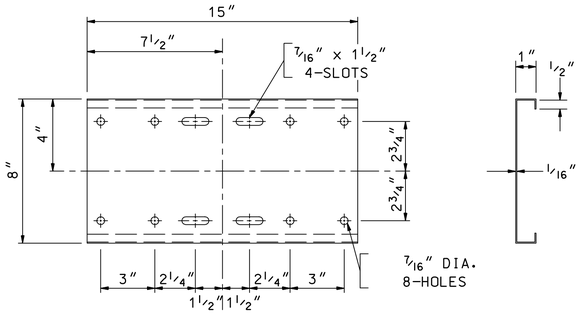
BRACKET
(SEE NOTE NO. 1)



METAL POST



WOOD POST



SHELF
(SEE NOTE NO. 1)

GENERAL NOTES

1. THE MAILBOX SUPPORT ASSEMBLY SHOWN ON THIS SHEET IS AN EXAMPLE OF AN ACCEPTABLE NON-PROPRIETARY DESIGN.

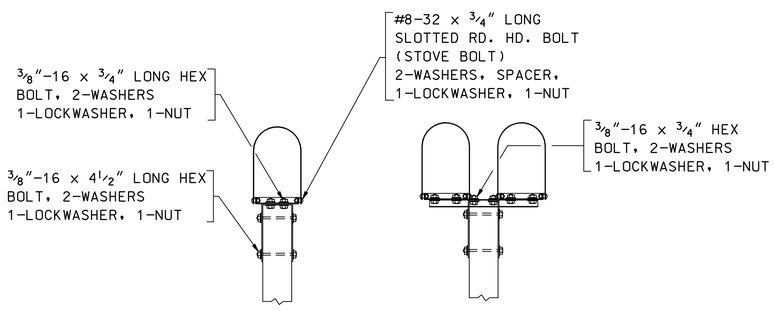
2. NO MORE THAN TWO MAILBOXES MAY BE MOUNTED ON A SUPPORT STRUCTURE UNLESS THE SUPPORT STRUCTURE AND MAILBOX ARRANGEMENT HAVE BEEN SHOWN TO BE SAFE BY CRASH TESTING. HOWEVER, LIGHTWEIGHT NEWSPAPER BOXES MAY BE MOUNTED BELOW THE MAILBOX ON THE SIDE OF THE MAILBOX SUPPORT.

3. MAILBOX SUPPORTS SHALL NOT BE SET IN CONCRETE UNLESS THE SUPPORT DESIGN HAS BEEN SHOWN TO BE SAFE BY CRASH TESTS WHEN SO INSTALLED.

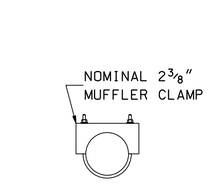
4. A SINGLE 4" x 4" SQUARE* OR 4" DIAMETER* WOOD POST OR A METAL POST WITH A STRENGTH NO GREATER THAN A 2" DIAMETER STANDARD STRENGTH STEEL PIPE AND EMBEDDED NO MORE THAN 24" INTO THE GROUND WILL BE ACCEPTABLE AS A MAILBOX SUPPORT. A METAL POST SHALL NOT BE FITTED WITH AN ANCHOR PLATE, BUT IT SHALL HAVE AN ANTI-TWIST DEVICE THAT EXTENDS NO MORE THAN 10" BELOW THE GROUND SURFACE.
   * THESE DIMENSIONS ARE BOTH MAXIMUM AND MINIMUM

5. IN AREAS OF HIGH SNOWFALL, CANTILEVER DESIGNS MAY BE ADVANTAGEOUS. CANTILEVER SUPPORTS PERMIT WINDSHIELD CONTACT WITH THE MAILBOX WITHOUT THE VEHICLE FIRST CONTACTING THE POST, THEREFORE, AN APPROVED BREAKAWAY SUPPORT MUST BE USED.

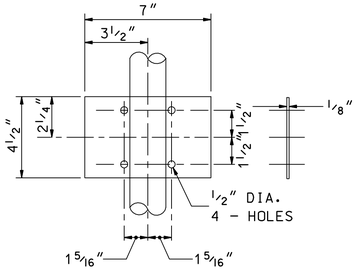
6. FOR ADDITIONAL INFORMATION, REFER TO *ROADSIDE DESIGN GUIDE – CHAPTER 11, ERECTING MAILBOXES ON STREETS AND HIGHWAYS* – AASHTO, 2006.



ASSEMBLY HARDWARE



CLAMP
(FOR METAL POSTS ONLY)



ANTI-TWIST PLATE
(FOR METAL POSTS ONLY)

MAILBOX STANDARD

MAILBOX SUPPORT ASSEMBLY DETAILS

STANDARD NO. MB-1

REVISION DATE
07-13-2001
06-16-2010

*.DGN FILE NAME
MB-1

STANDARD PLANS

New Hampshire DOT Department of Transportation

STANDARD NO. MB-1

STANDARD NO. PL-1

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
PL-1

STANDARD PLANS

NOTE:
NEVER CUT LEADER

GUY MATERIAL AT TREE
$^{1}/_{2}$UP TREE OR TO FIRST
BRANCH, WHICHEVER IS LOWER

GUY MATERIAL

VERTICAL STAKES

HUB STAKE

STAKE TO BE 18" BELOW TREE
PIT IN UNDISTURBED GROUND

NOTE:
GUYING AND STAKING TO BE DETERMINED IN THE FIELD BY THE ENGINEER. LOCAL FIELD CONDITIONS AS WELL AS PLANT CHARACTERISTICS WILL DETERMINE THE NECESSITY OF GUYING AND STAKING

4" x 12" PLASTIC FLAG
SECURED TO GUY MATERIAL
WITH TWISTED WIRE AT
EACH END (FOR MOWED
AREAS ONLY)

HUB STAKE

DECIDUOUS TREE PLANTING

NOTE:
REMOVE ALL DAMAGED AND DEAD BRANCHES, RETAINING NORMAL PLANT SHAPE; THINNING NOT REQUIRED ON EVERGREENS.

REMOVE BURLAP FROM TOP 1/3 OF BALL OR AS DIRECTED BY THE ENGINEER. REMOVE CONTAINERIZED PLANTS FROM THEIR CONTAINERS.

EXISTING SLOPE

SHRUB PLANTING

BURLAP AND ROPE CUT AWAY FROM TOP OF BALL. REMOVE SYNTHETIC BURLAP AND STRING ENTIRELY AND TOP 8"-16" OF WIRE BASKET. LOOSEN AND/OR SLASH ANY COMPACTED ROOTS.

ROOT COLLAR SHALL BE AT THE SAME LEVEL AS THE EXISTING GRADE

ROOT COLLAR

MOUND AND TAMP PIT EXCAVATION 4" ABOVE LEVEL OF ROOT COLLAR FOR SAUCER

4" DEEP BARK MULCH

EXISTING SLOPE

VARIES

LOAM BACKFILL

UNDISTURBED GROUND

VARIES

2X ROOTBALL
DIAMETER MIN.

TYPICAL PLANTING PIT ON LEVEL

MAXIMUM 3 STAKES PER TREE

TIE INDIVIDUAL GUYED STEMS TOGETHER WITH SINGLE GUY MATERIAL

NOTE:
STAKE AND GUY 3 LARGEST STEMS, IF TREE HAS MORE THAN 3 LEADERS.
NEVER CUT LEADERS.

$\pm$ $^{1}/_{2}$ OF TREE HEIGHT

GUY MATERIAL

VERTICAL STAKES

DRIVE STAKES TO 18" BELOW BOTTOM OF TREE PIT IN UNDISTURBED GROUND

MULTI-STEM TREE PLANTING

NOTE:
GUYING AND STAKING TO BE DETERMINED IN THE FIELD BY THE ENGINEER. LOCAL FIELD CONDITIONS AS WELL AS PLANT CHARACTERISTICS WILL DETERMINE THE NECESSITY OF GUYING AND STAKING

GUY MATERIAL AT TREE
$^{1}/_{2}$UP TREE

GUY MATERIAL

VERTICAL STAKES

45°

45°

FLAGS AS SPECIFIED ABOVE

EXISTING SLOPE

HUB STAKE

HUB STAKE

DRIVE STAKES TO 18" BELOW BOTTOM OF TREE PIT IN UNDISTURBED GROUND

EVERGREEN TREE PLANTING

BURLAP AND ROPE CUT AWAY FROM TOP OF BALL. REMOVE SYNTHETIC BURLAP AND STRING ENTIRELY AND TOP 8"-16" OF WIRE BASKET. LOOSEN AND/OR SLASH ANY COMPACTED ROOTS.

ROOT COLLAR SHALL BE AT THE SAME LEVEL AS THE EXISTING GRADE

MOUND AND TAMP PIT EXCAVATION 4" ABOVE LEVEL OF ROOT COLLAR FOR SAUCER

ROOT COLLAR KEEP SAUCER LEVEL

4" DEEP BARK MULCH

EXISTING SLOPE

HUMUS AND SEED

LOAM BACKFILL

VARIES

UNDISTURBED GROUND

VARIES

2X ROOTBALL
DIAMETER MIN.

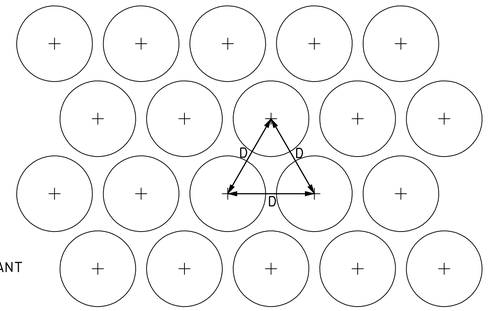
TYPICAL PLANTING PIT ON SLOPE 4:1 OR GREATER

New Hampshire DOT Department of Transportation

STANDARD NO. PL-1

PLANTING STANDARD

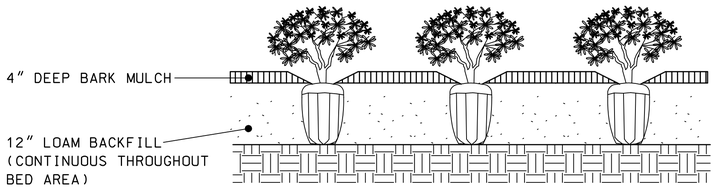
PLANTING DETAILS



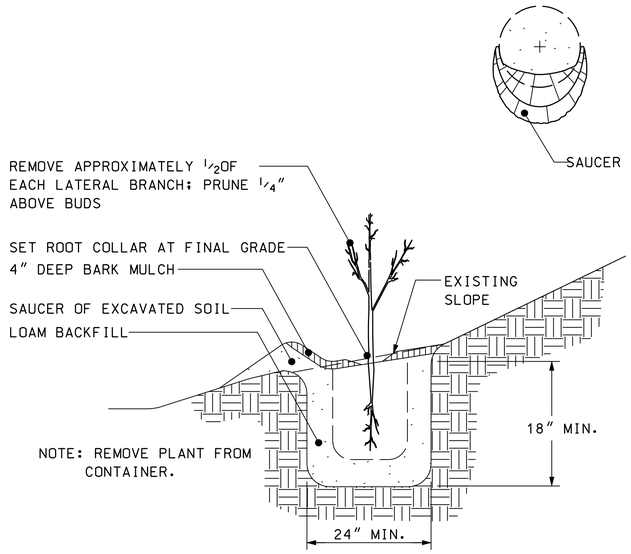
NOTE:

D=DIMENSION OF PLANT SPACING (SHRUB OR GROUND COVER AS INDICATED ON PLANS)

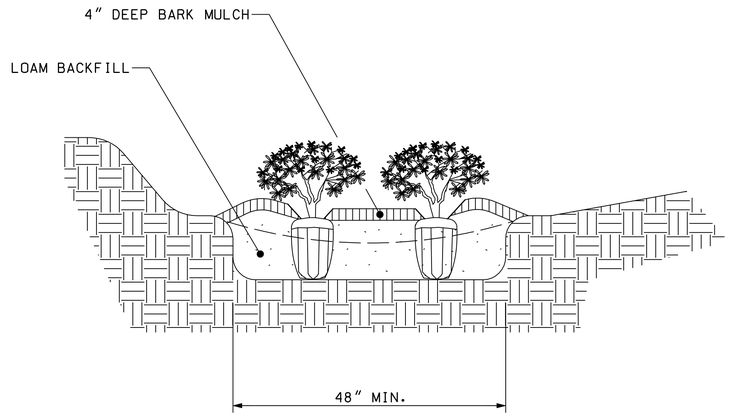
TYPICAL BED PLANT SPACING



GROUNDCOVER BED PLANTING



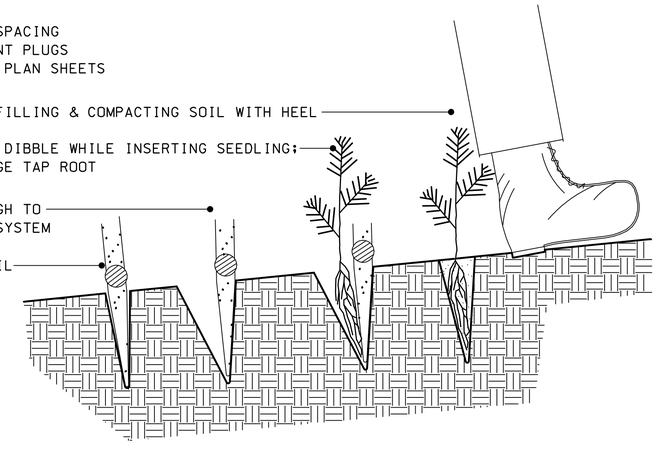
LINER PLANTING (DECIDUOUS)



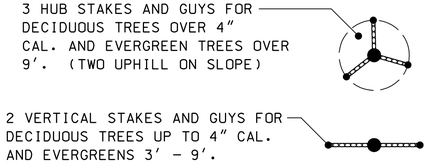
TRENCH NARROW MEDIAN PLANTING

NOTE:

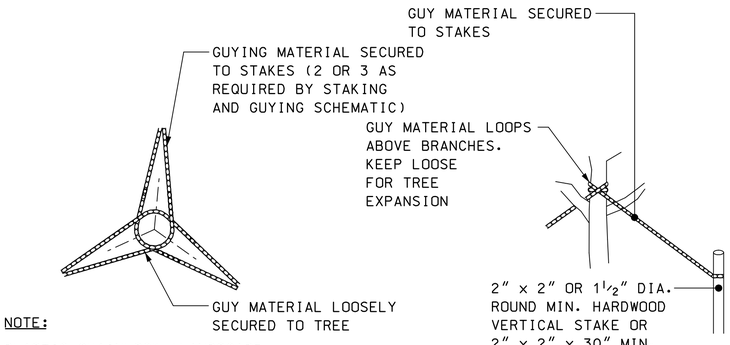
LOCATION, SIZE AND SPACING OF SEEDLINGS OR PLANT PLUGS ARE AS INDICATED ON PLAN SHEETS



SEEDLINGS (EVERGREEN) OR WETLAND PLUG PLACEMENT



STAKING AND GUYING PLAN SCHEMATIC



NOTE:

PLASTIC CHAINLOCK (LANDSCAPE QUALITY AND SUITABLE STRENGTH FOR GUYING TREES) OR EQUIVALENT GUYING MATERIAL

GUYING DETAILS

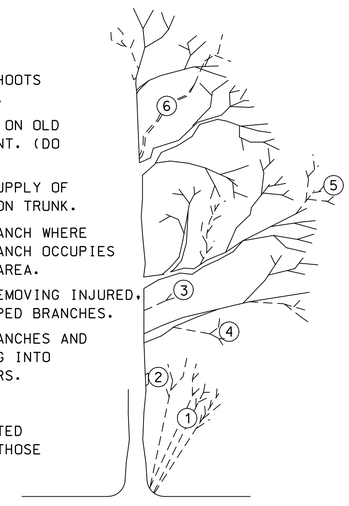
TREE STAKING AND GUYING

NOTE:

1. REMOVE SUCKER SHOOTS AT BASE OF TREE.
2. MAKE CLEAN CUTS ON OLD STUBS, IF PRESENT. (DO NOT FLUSH CUT)
3. REMOVE ENTIRE SUPPLY OF TWIGS AND BUDS ON TRUNK.
4. REMOVE LOWER BRANCH WHERE AN OVERLYING BRANCH OCCUPIES ABOUT THE SAME AREA.
5. SHAPE TREE BY REMOVING INJURED, DEAD AND MISSHAPED BRANCHES.
6. REMOVE CROSS BRANCHES AND THOSE DEVELOPING INTO SECONDARY LEADERS.

NOTE:

BRANCHES IN DOTTED LINES INDICATE THOSE TO BE REMOVED.



TREE PRUNING

STANDARD NO. PL-2

REVISION DATE
07-13-2001
06-16-2010

*.DGN FILE NAME
PL-2

STANDARD PLANS

New Hampshire DOT Department of Transportation

PLANTING STANDARD

PLANTING DETAILS

STANDARD NO. PL-2

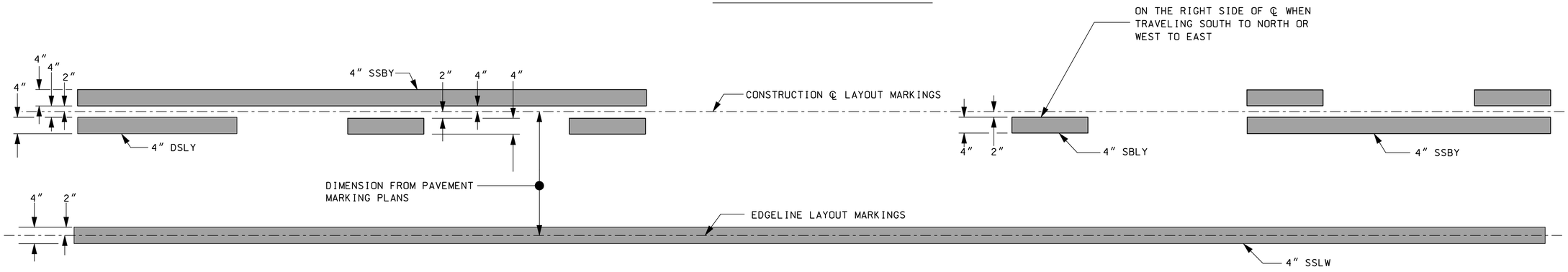
STANDARD
NO. PM-1

REVISION DATE
07-13-2001
02-26-2010

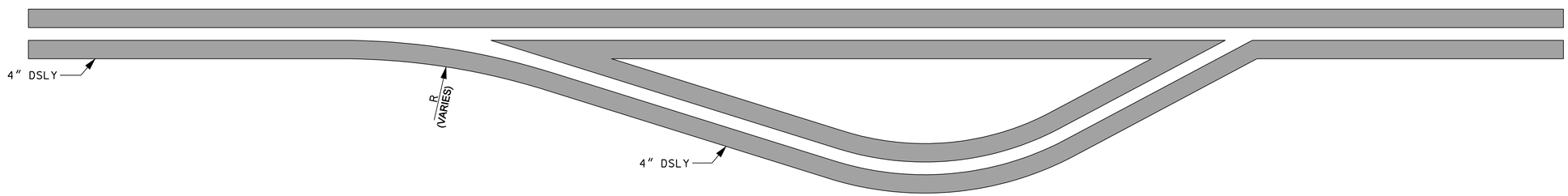
*.DGN FILE NAME
PM-1

STANDARD PLANS

DOUBLE LINES



TWO-LANE ROADWAY STRIPING LAYOUT



DIVERGING (OR CONVERGING) LINES FOR PAINTED ISLANDS

LEGEND

{}SSL()* = {SIZE IN INCHES} SINGLE SOLID LINE (COLOR W=WHITE, Y=YELLOW)
{}DSL()* = {SIZE IN INCHES} DOUBLE SOLID LINE (COLOR W=WHITE, Y=YELLOW)
{}SSB()* = {SIZE IN INCHES} SINGLE SOLID W/ BROKEN LINE (COLOR W=WHITE, Y=YELLOW)
{}SBL()* = {SIZE IN INCHES} SINGLE BROKEN LINE (COLOR W=WHITE, Y=YELLOW)
{}DBL()* = {SIZE IN INCHES} DOUBLE BROKEN LINE (COLOR W=WHITE, Y=YELLOW)

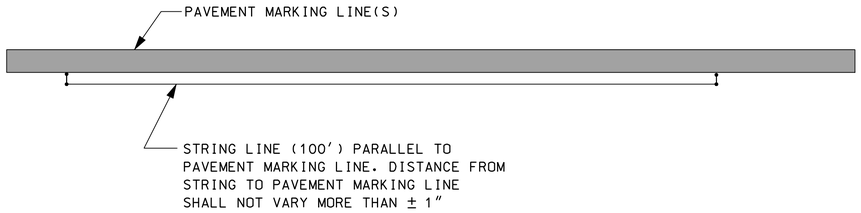
*EXAMPLE: A 4" SINGLE SOLID LINE WHITE = 4" SSLW

New Hampshire DOT
Department of Transportation

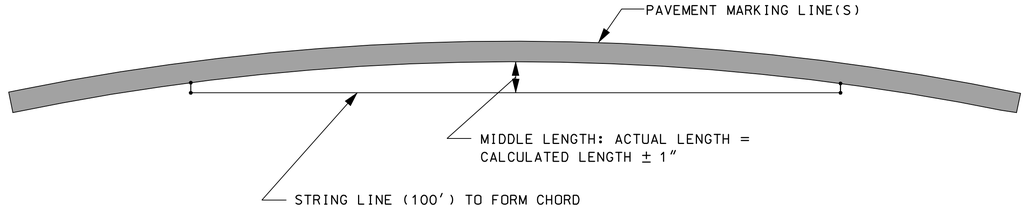
STANDARD
NO. PM-1

PAVEMENT MARKING STANDARD

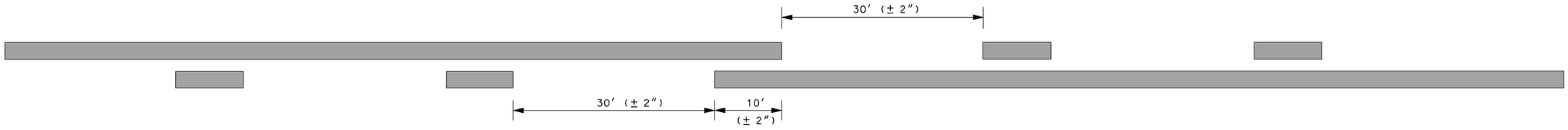
LAYOUT DETAILS



TANGENT SECTION

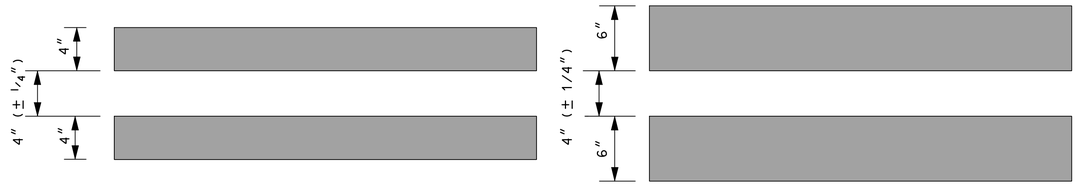


CURVED SECTION



TYPICAL "CROSS-SWITCH" PASSING ZONE

TYPICAL BROKEN LINE



4″ DOUBLE LINES

6″ DOUBLE LINES

GENERAL NOTES

1. ALL PAVEMENT MARKINGS SHALL BE IN CONFORMANCE WITH THESE STANDARDS AND THE CURRENT EDITION OF THE MUTCD.
2. WIDTH OF LINES SHALL VARY NO MORE THAN ± 1/4″ FROM THAT SPECIFIED.
3. THE WET FILM THICKNESS OF A PAINTED LINE SHALL BE A MINIMUM OF 20 MIL THROUGHOUT THE ENTIRE WIDTH AND LENGTH OF LINE SPECIFIED.
4. BROKEN LINES SHALL BEGIN AND END WITH THE NEAREST FULL CYCLE OF BROKEN LINE.
5. SOLID LONGITUDINAL LINES SHALL BEGIN AND END WITHIN 2″ OF A LAYOUT SYMBOL INDICATING THE END OF THE LINE OR WITH A FULL CYCLE OF BROKEN LINE (IF APPROPRIATE).

PAVEMENT MARKING STANDARD

TOLERANCES FOR PAVEMENT MARKING LINES

STANDARD NO. PM-2

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
PM-2

STANDARD PLANS

New Hampshire DOT Department of Transportation

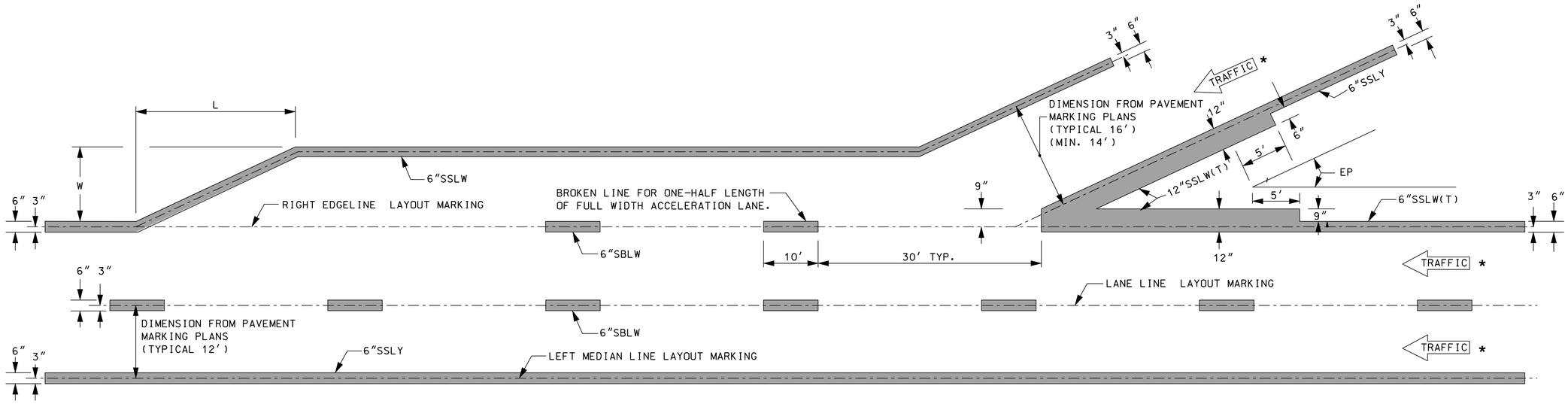
STANDARD NO. PM-2

STANDARD NO. PM-3

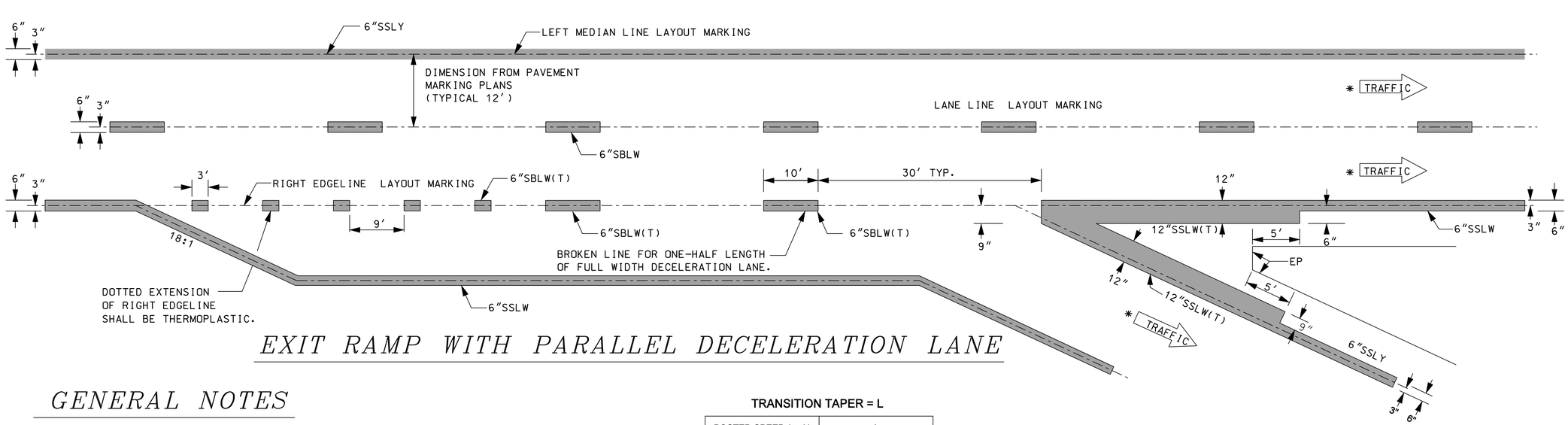
REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
PM-3

STANDARD PLANS



ENTRANCE RAMP WITH PARALLEL ACCELERATION LANE



EXIT RAMP WITH PARALLEL DECELERATION LANE

GENERAL NOTES

1. ALL RAMPS WITH A MINIMUM ROADWAY WIDTH OF 20' SHALL RECEIVE BOTH WHITE EDGELINE AND YELLOW MEDIAN LINE WHETHER THE RAMP HAS RAISED CURBING OR NOT.
2. THE EDGE AND MEDIAN LINE MARKINGS FOR RAMPS WILL BE A MINIMUM OF 30" FROM THE CURB OR EDGE OF PAVEMENT.
3. THE MINIMUM DISTANCE BETWEEN THE LINES FOR RAMPS SHOULD BE 14'. THE MEDIAN LINE ON A RAMP SHALL CONNECT WITH THE GORE MARKING. THE EDGELINE SHALL CONNECT WITH THE MAINLINE EDGELINE TO PROVIDE A CONTINUOUS LINE.
4. (T) = THERMOPLASTIC.

TRANSITION TAPER = L

POSTED SPEED (mph)	L
≤ 40	$WS^2/60$
≥ 45	WS

W = WIDTH OF OFFSET (FEET)
S = POSTED SPEED LIMIT (MPH)

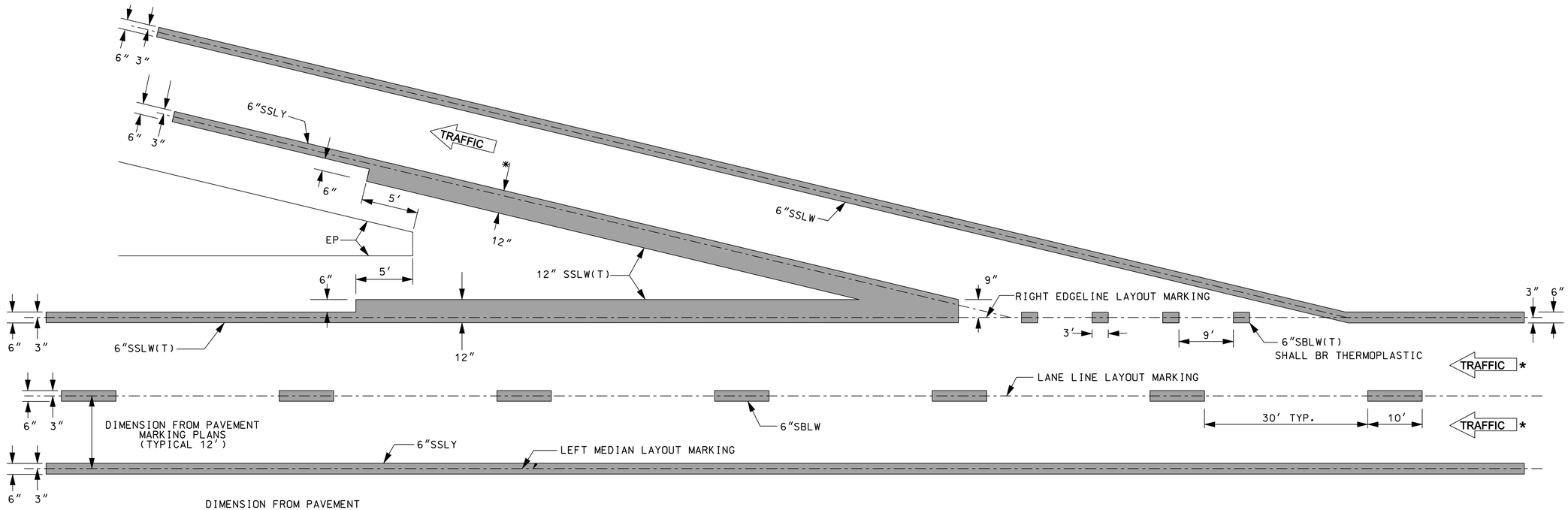
*ARROWS SHOWN ON THIS SHEET INDICATE DIRECTION OF TRAFFIC ONLY.

PAVEMENT MARKING STANDARD

DIVIDED HIGHWAY, MULTI-LANE RAMP STRIPING LAYOUT

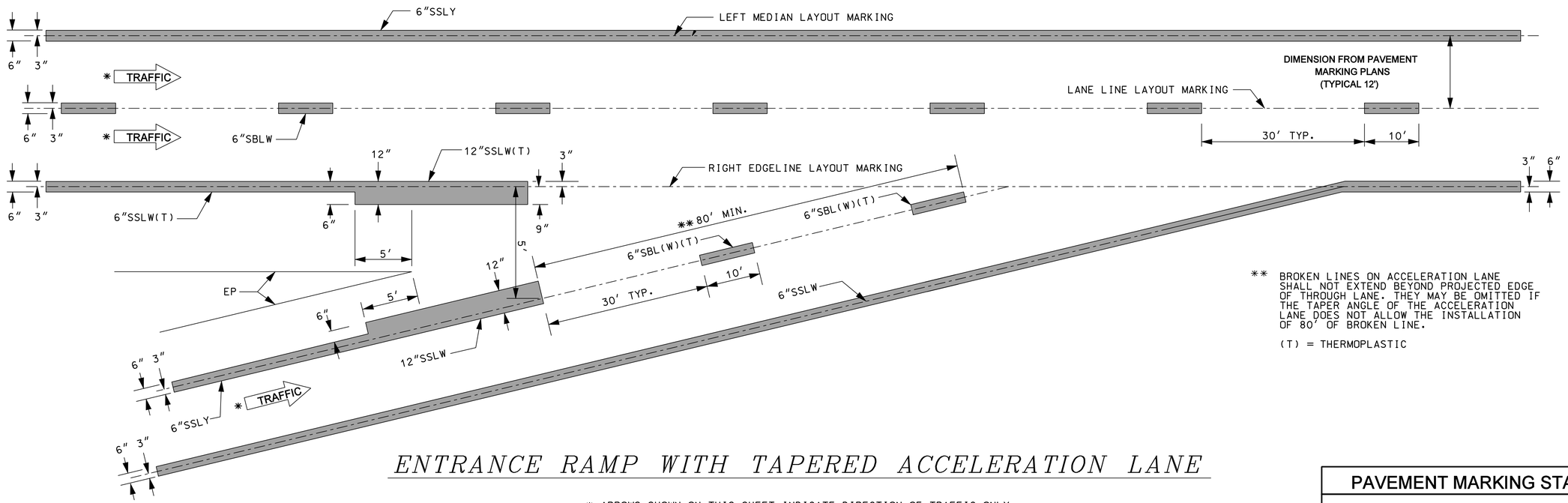
New Hampshire DOT Department of Transportation

STANDARD NO. PM-3



DIMENSION FROM PAVEMENT MARKING PLANS

EXIT RAMP WITH TAPERED DECELERATION LANE



** BROKEN LINES ON ACCELERATION LANE SHALL NOT EXTEND BEYOND PROJECTED EDGE OF THROUGH LANE. THEY MAY BE OMITTED IF THE TAPER ANGLE OF THE ACCELERATION LANE DOES NOT ALLOW THE INSTALLATION OF 80' OF BROKEN LINE.

(T) = THERMOPLASTIC

ENTRANCE RAMP WITH TAPERED ACCELERATION LANE

* ARROWS SHOWN ON THIS SHEET INDICATE DIRECTION OF TRAFFIC ONLY.

PAVEMENT MARKING STANDARD

DIVIDED HIGHWAY, MULTI-LANE RAMP STRIPING LAYOUT

STANDARD NO. PM-4

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
PM-4

STANDARD PLANS

New Hampshire DOT Department of Transportation

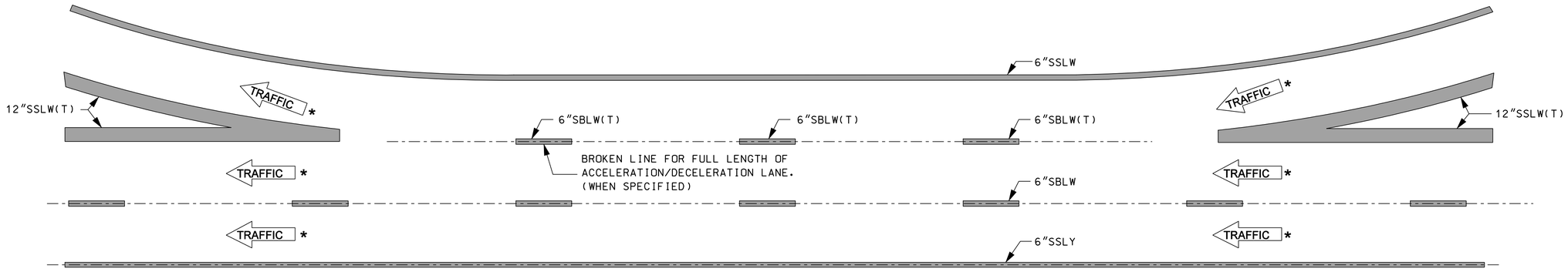
STANDARD NO. PM-4

STANDARD NO. PM-5

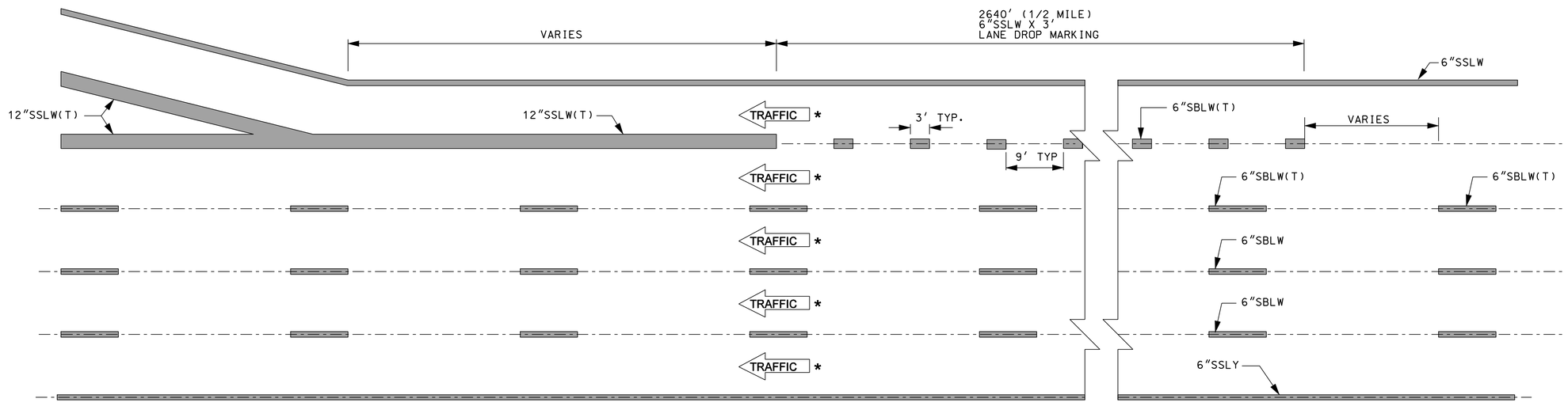
REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
PM-5

STANDARD PLANS



ENTRANCE AND EXIT RAMP CLOVERLEAF MARKINGS



EXIT RAMPS WITH LANE DROP AT EXIT

* ARROWS SHOWN ON THIS SHEET INDICATE DIRECTION OF TRAFFIC ONLY.

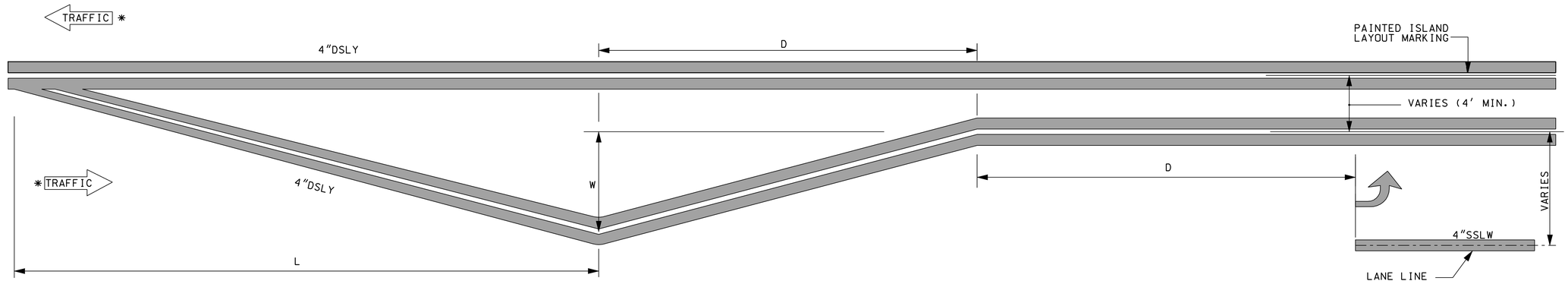
(T) = THERMOPLASTIC.

New Hampshire DOT Department of Transportation

STANDARD NO. PM-5

PAVEMENT MARKING STANDARD

DIVIDED HIGHWAY, MULTI-LANE RAMP STRIPING LAYOUT



TRANSITION TAPER = L

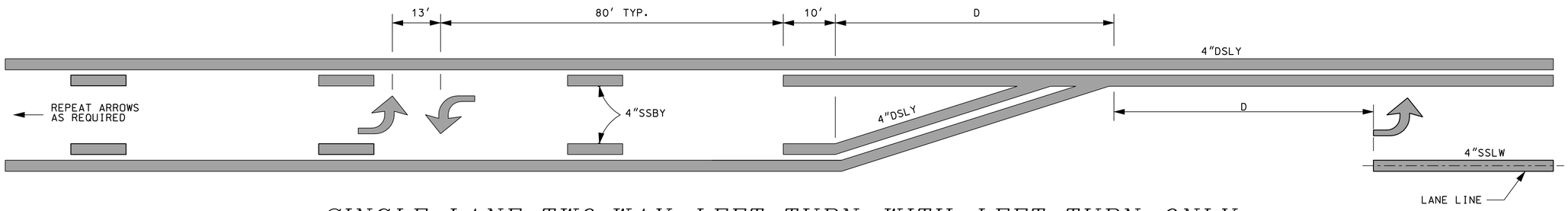
POSTED SPEED (mph)	L
≤ 40	$WS^2/60$
≥ 45	WS

W = WIDTH OF OFFSET (feet)
S = POSTED SPEED LIMIT (mph)

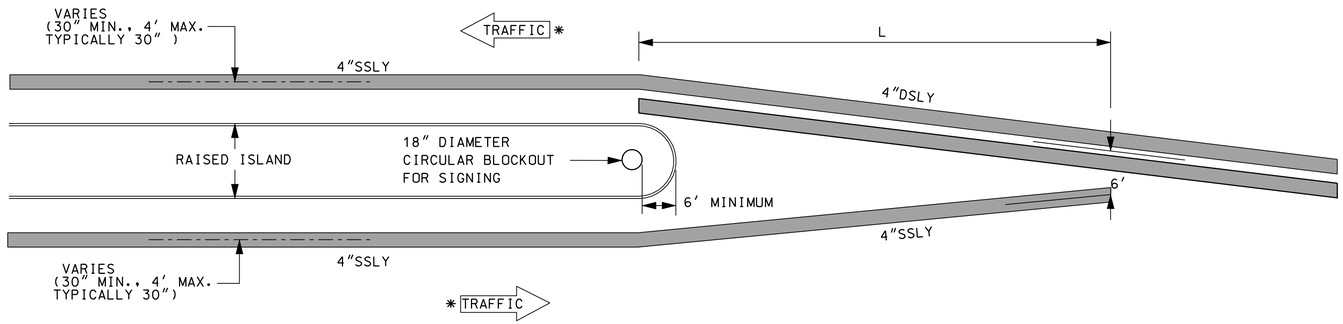
PAINTED ISLAND WITH LEFT TURN LANE

DECELERATION TRANSITION TAPER = D

POSTED SPEED (mph)	LENGTH (ft)
≤ 40	75
≥ 45	100



SINGLE LANE, TWO-WAY LEFT TURN WITH LEFT TURN ONLY



STRIPING AT ENDS OF RAISED ISLANDS

GENERAL NOTES

1. SEE STANDARD NO. PM-8 FOR LAYOUT OF WORDS AND SYMBOLS WITHIN TURN LANES.
2. SEE RAISED ISLAND BLOCKOUTS ON STANDARD HR-2

* ARROWS SHOWN ON THIS SHEET INDICATE DIRECTION OF TRAFFIC ONLY.

PAVEMENT MARKING STANDARD

PAINTED ISLAND DETAILS

STANDARD NO. PM-6

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
PM-6

STANDARD PLANS

New Hampshire DOT Department of Transportation

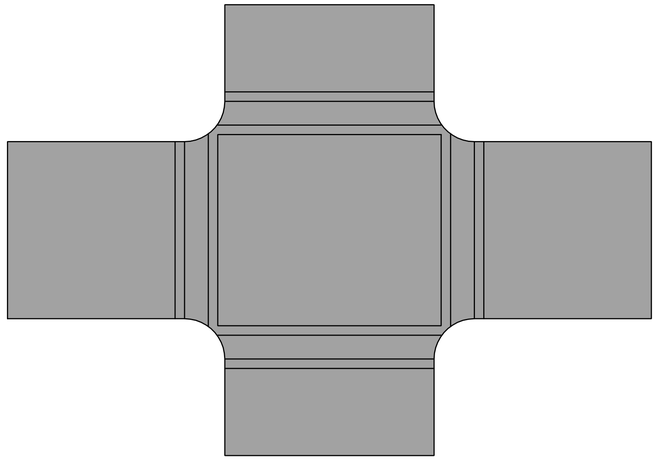
STANDARD NO. PM-6

STANDARD NO. PM-7

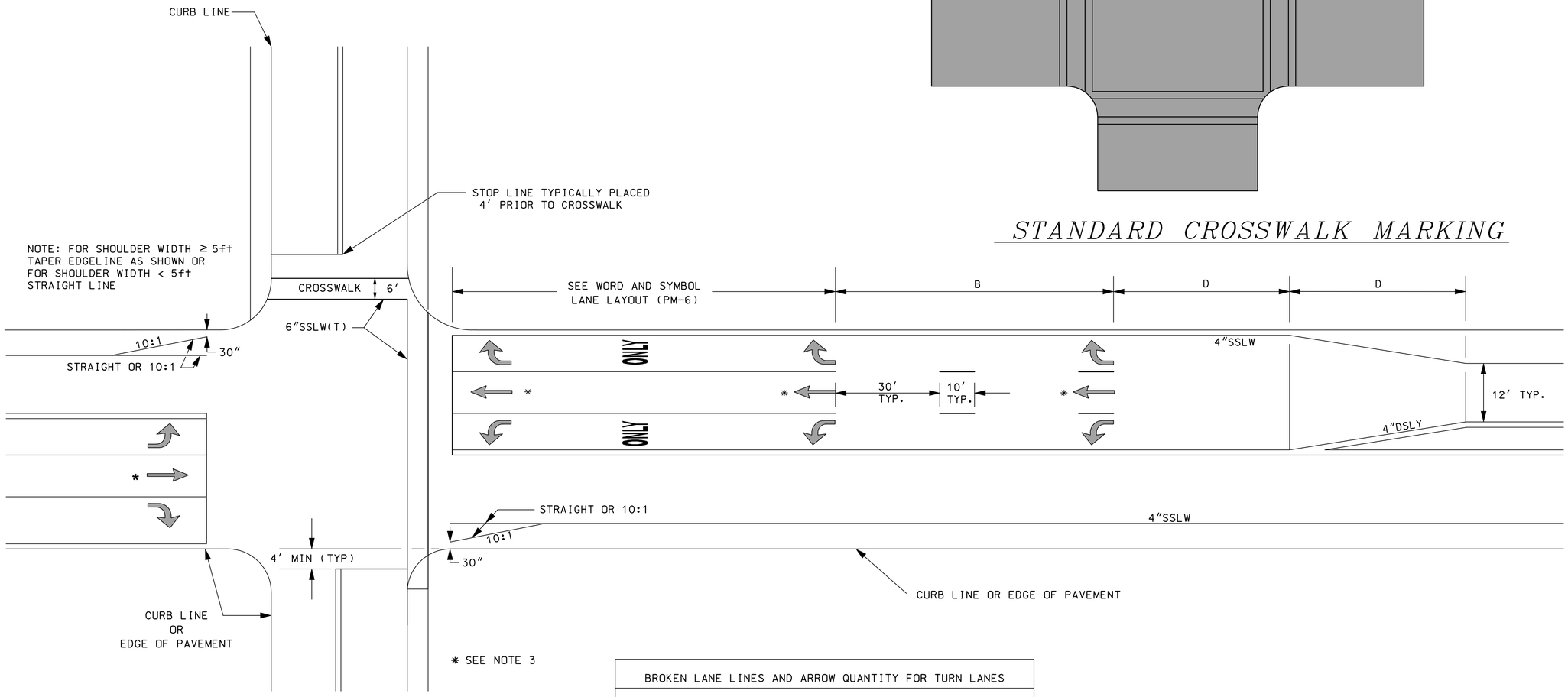
REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
PM-7

STANDARD PLANS



STANDARD CROSSWALK MARKING



GENERAL NOTES

1. PAINTED EDGELINE REQUIRED ON CURBED SHOULDERS GREATER THAN 24".
2. STOP LINES ARE 18" WIDE SSLW(T).
3. STRAIGHT THROUGH ARROWS AS REQUIRED, SEE THE PAVEMENT MARKING PLANS FOR THE APPROPRIATE LAYOUT.
4. TRANSVERSE CROSSWALK LINES SHALL BE THERMOPLASTIC, NOT LESS THAN 6" WIDE AND NOT LESS THAN 6' APART.

BROKEN LANE LINES AND ARROW QUANTITY FOR TURN LANES		
TYPICAL B LAYOUT		
POSTED SPEED (mph)	BROKEN LINES	ARROWS
≥ 30	2	1
≥ 40	4	1
≥ 45	6	2

DECELERATION TRANSITION TAPER = D	
POSTED SPEED (mph)	LENGTH (ft)
≤ 40	75
≥ 45	100

New Hampshire DOT Department of Transportation

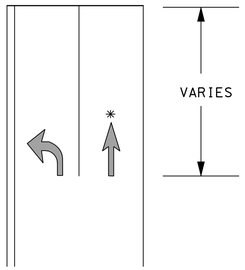
STANDARD NO. PM-7

PAVEMENT MARKING STANDARD

INTERSECTION DETAILS

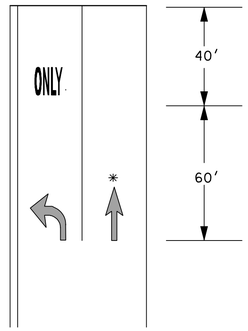
WORD AND SYMBOL LAYOUT

40 ft TO 75 ft LANE LINE

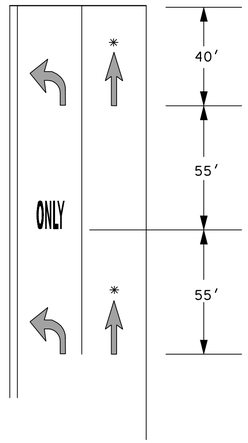


* SEE NOTE NO. 5

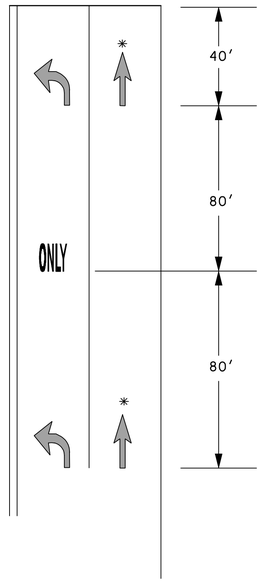
100 ft LANE LINE



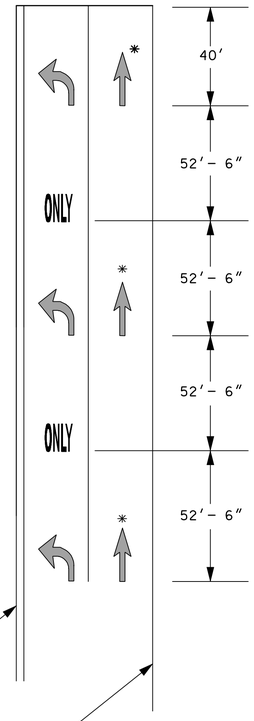
150 ft LANE LINE



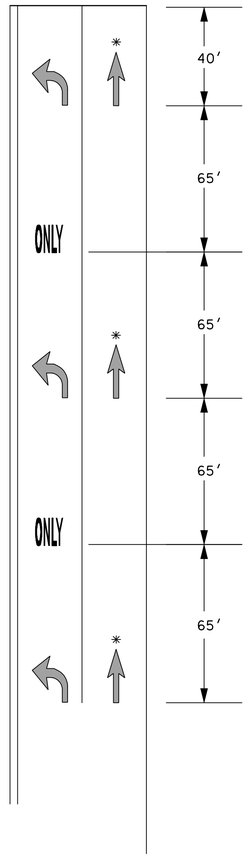
200 ft LANE LINE



250 ft LANE LINE



300 ft LANE LINE



TYPICAL:
CENTERLINE OR ISLAND

TYPICAL:
LANE LINE, EDGELINE
OR CURB LINE.

GENERAL NOTES

1. WORDS AND SYMBOLS SHALL BE CENTERED LATERALLY WITHIN THE LANE. THE LONGITUDINAL DIMENSION SHALL BE PARALLEL TO THE LANE.
2. LONGITUDINAL SPACING BETWEEN SUCCESSIVE WORDS AND/OR SYMBOLS IN TURN LANES SHOULD BE AT LEAST 4 TIMES AND NO GREATER THAN 10 TIMES THE HEIGHT OF THE LARGEST CHARACTER.
3. THE STOP LINE MAY NOT BE PRESENT.
4. SEE WORDS AND SYMBOLS, PM-10A, FOR WORDS AND SYMBOL DETAILS.
5. STRAIGHT THROUGH ARROWS AS REQUIRED, SEE THE PAVEMENT MARKING PLANS FOR THE APPROPRIATE LAYOUT.
6. TO COMPLETE ARROW AND "ONLY" LAYOUT FOR LANE LENGTHS NOT SHOWN: (LENGTH OF LANE LINE -40′) / NUMBER OF INCREMENTS.
7. WORDS, LANE LINES AND SYMBOLS SHALL BE THERMOPLASTIC (T).

PAVEMENT MARKING STANDARD

WORD AND SYMBOL LAYOUT

STANDARD NO. PM-8

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
PM-8

STANDARD PLANS

New Hampshire DOT Department of Transportation

STANDARD NO. PM-8

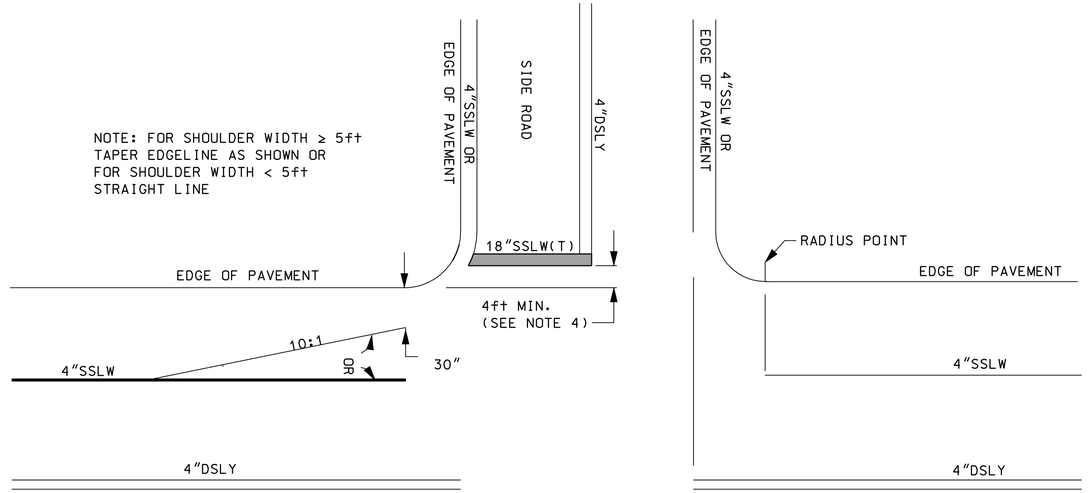
STANDARD NO. PM-9

REVISION DATE
07-13-2001
02-26-2010

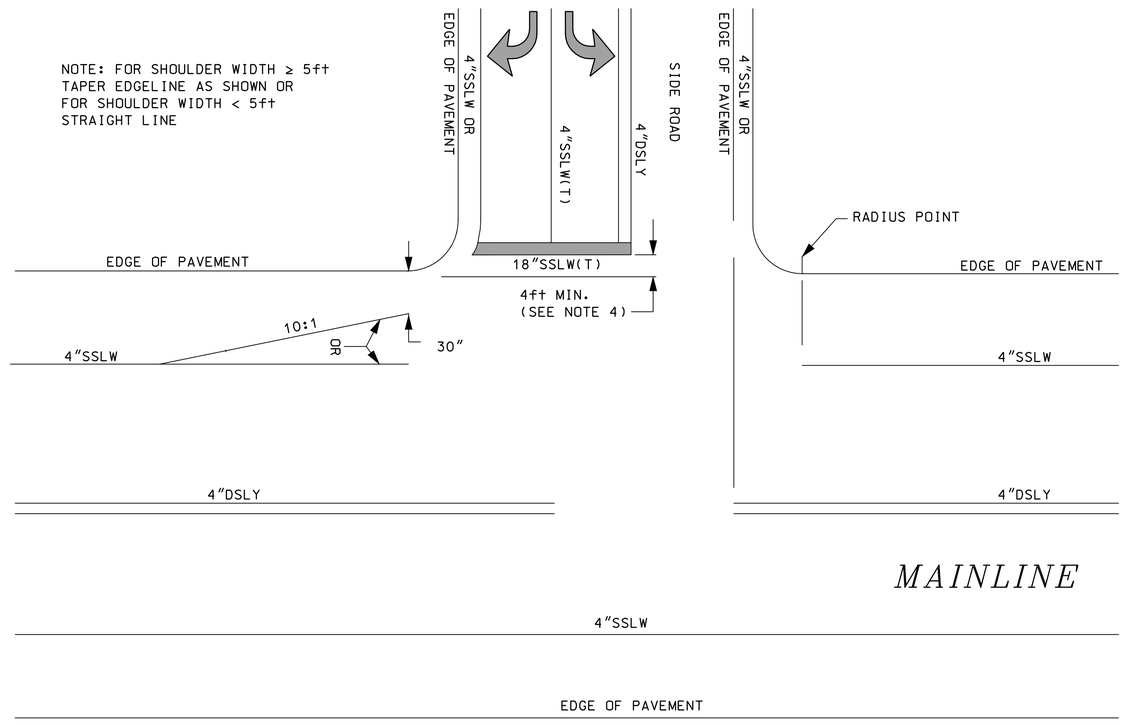
*.DGN FILE NAME
PM-9

STANDARD PLANS

CENTERLINE AND EDGELINE "CUTS" AT SIDE ROAD



CENTERLINE AND EDGELINE "CUTS" AT SIDE ROAD W/ TURN LANES



GENERAL NOTES

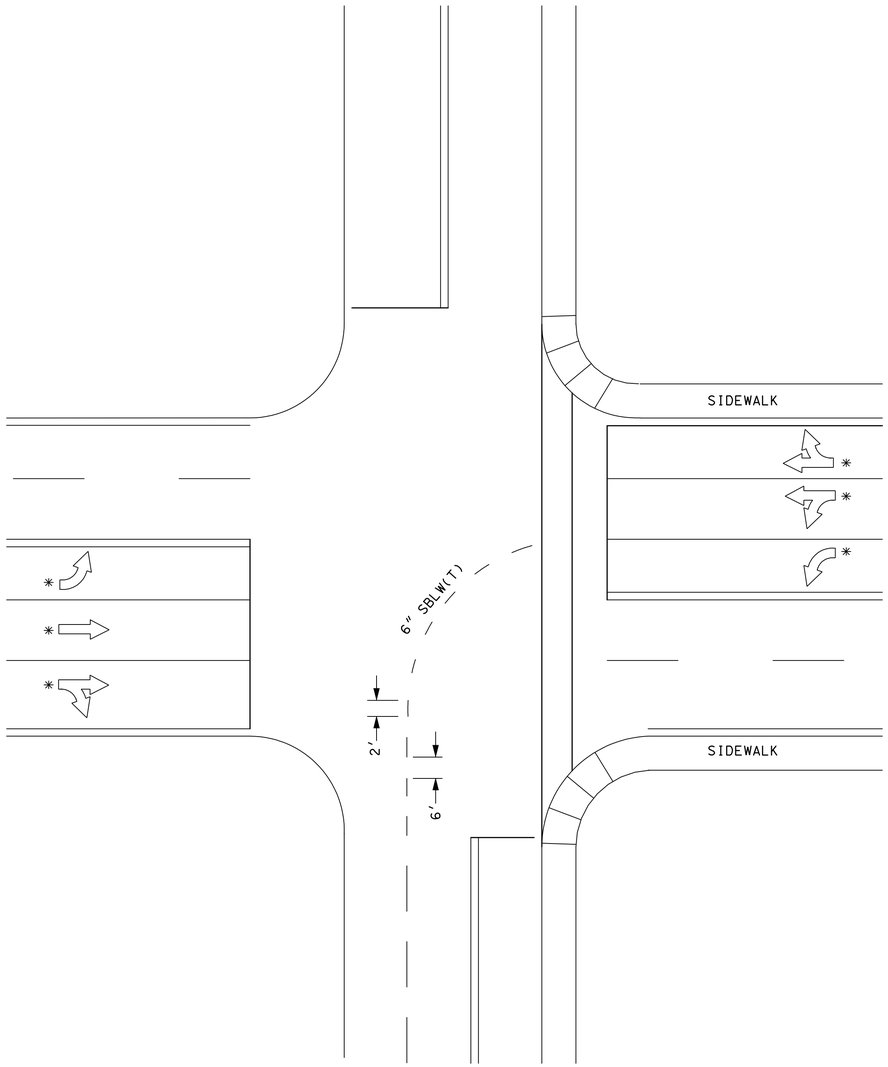
1. EDGELINE DETAILS SHOWN ARE FOR MAINLINE ROADWAYS WITHOUT TURN LANES. THE PRESENCE OF TURN LANES MAY REQUIRE DIFFERENT EDGELINE TREATMENTS.
2. EDGELINES ON SIDE ROADS, WHEN CALLED FOR, SHALL FOLLOW THE ABOVE MAINLINE TYPICALS. EDGELINES SHALL NOT BE CONTINUOUS AROUND THE MAINLINE/ SIDE ROAD RADIUS. EDGELINES SHALL END AT STOP BARS.
3. CENTERLINE AND EDGELINE SHALL BE CONTINUOUS PAST RESIDENTIAL DRIVEWAYS. CENTERLINE AND EDGELINE SHALL BREAK FOR COMMERCIAL DRIVES W/TRAFFIC CONTROLS, MINOR SIDE ROADS OR PRIVATE ROAD INTERSECTIONS.
4. LOCATION OF THE STOP LINE MAY VARY DUE TO INTERSECTION SIGHT DISTANCE AND VEHICLE TURNING RADUIS, AND MAY NOT ALWAYS COINCIDE WITH THE LOCATION OF THE STOP SIGN.
5. IF THERE IS NO EDGELINE, END STOP BAR 12" FROM EDGE OF PAVEMENT.
6. STOP BARS, WORDS, LANE LINES, SYMBOLS AND ARROWS SHALL BE THERMOPLASTIC (T).

New Hampshire DOT Department of Transportation

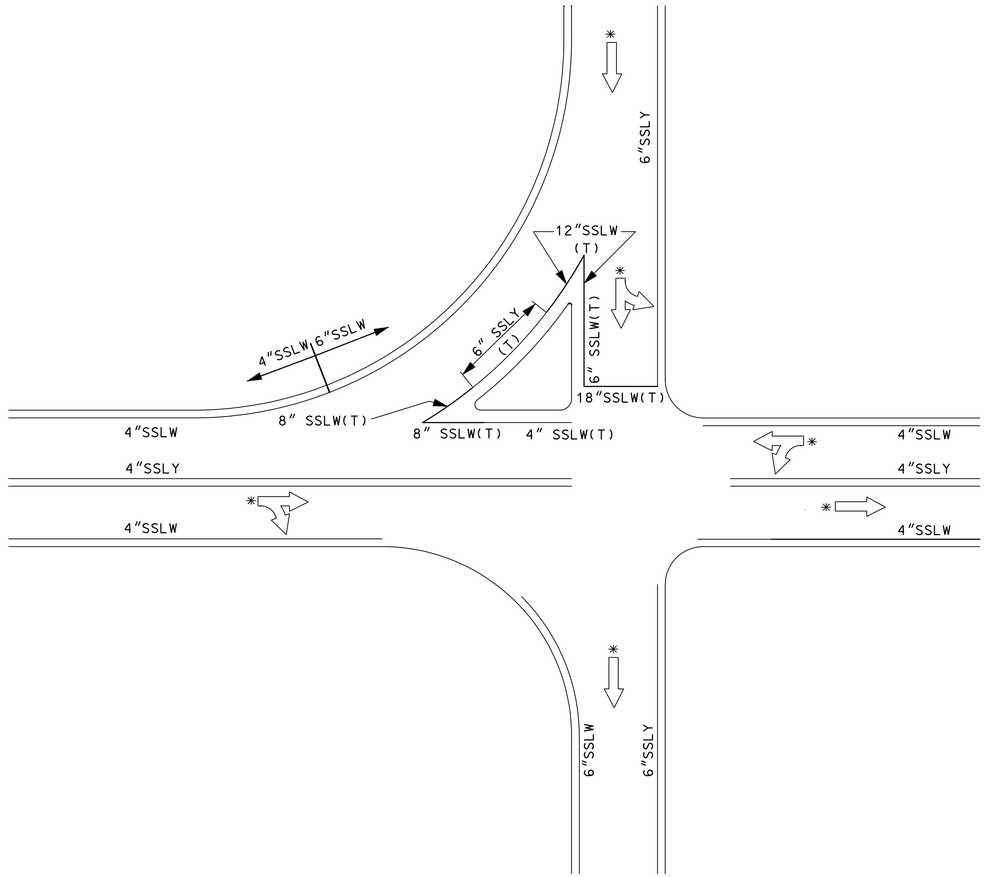
STANDARD NO. PM-9

PAVEMENT MARKING STANDARD

PAVEMENT MARKINGS AT MINOR INTERSECTIONS



TURNING LANE EXTENSION DETAIL



RAMP LAYOUT

* ARROWS SHOWN ON THIS SHEET
INDICATE DIRECTION OF TRAFFIC ONLY.

(T) = THERMOPLASTIC

STANDARD
NO. PM-10

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
PM-10

STANDARD PLANS

New Hampshire DOT Department of Transportation

STANDARD
NO. PM-10

PAVEMENT MARKING STANDARD

TURN LANE EXTENSION DETAIL
& INTERSTATE OFF RAMP

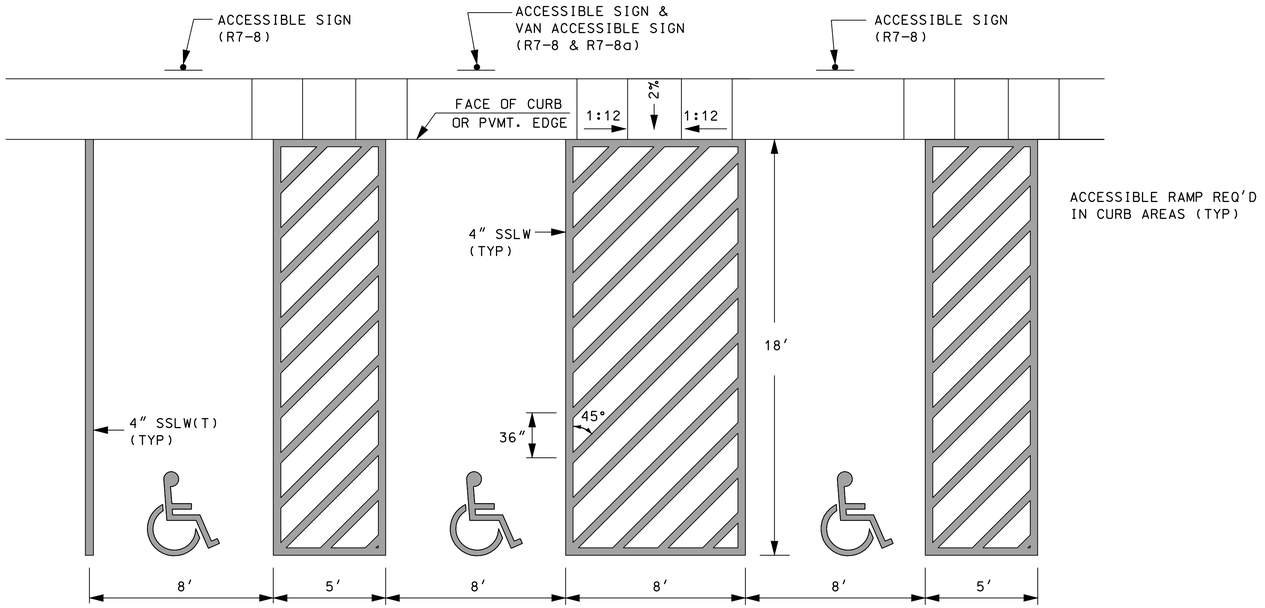
STANDARD NO. PM-11

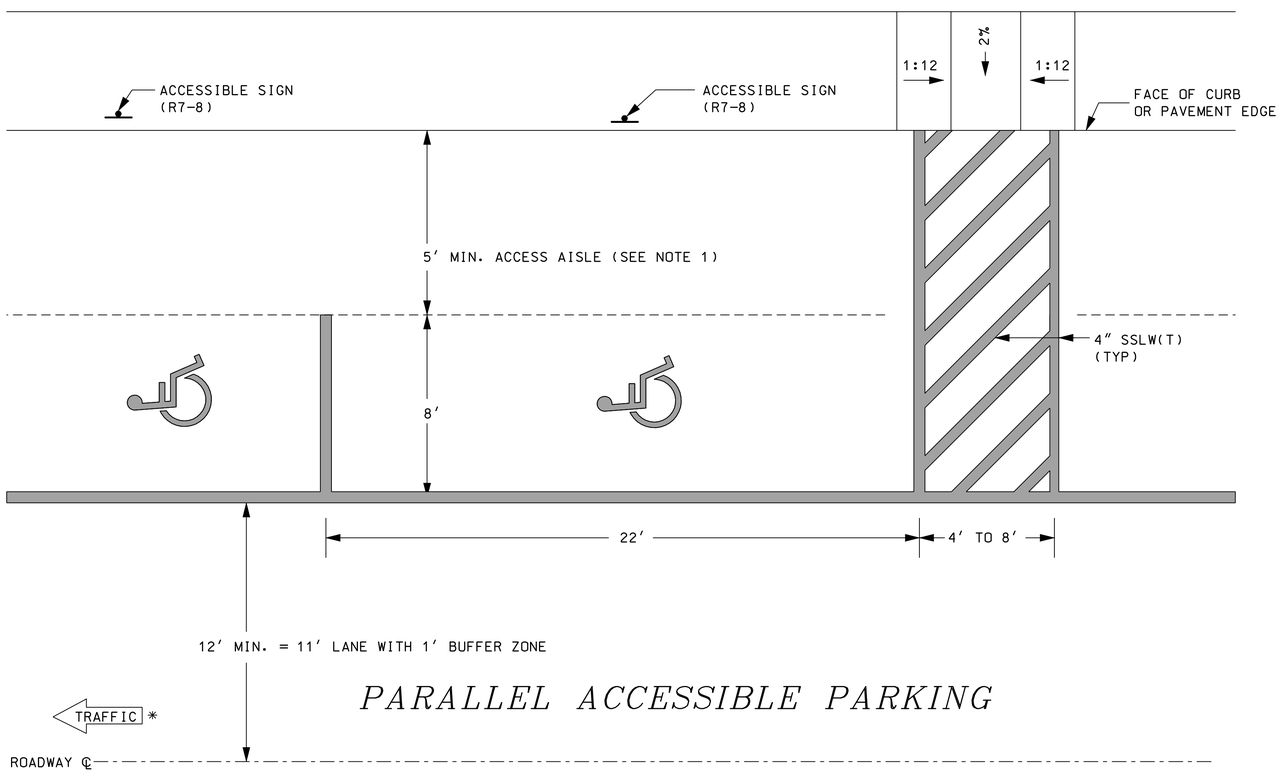
REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
PM-11

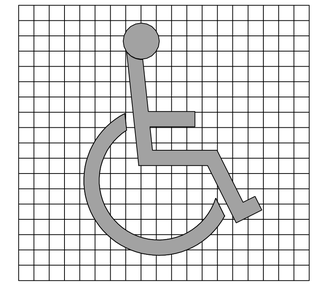
STANDARD PLANS

PERPENDICULAR ACCESSIBLE PARKING





PARALLEL ACCESSIBLE PARKING



INTERNATIONAL SYMBOL OF ACCESSIBILITY

PAY QUANTITY FOR EACH ACCESSIBLE PAVEMENT MARKING SYMBOL 2.58ft².

GENERAL NOTES

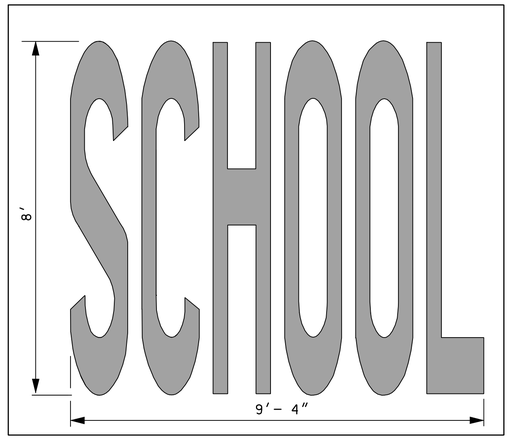
1. VAN ACCESS AISLE SHALL BE A MINIMUM 8' WIDE. R7-8a SIGN WILL BE ADDED TO VAN ACCESSIBLE PARKING SIGN R7-8.
2. ARROW ON THIS SHEET INDICATE DIRECTION OF TRAFFIC ONLY.
3. (T) = THERMOPLASTIC PAVEMENT MARKING.

New Hampshire DOT Department of Transportation

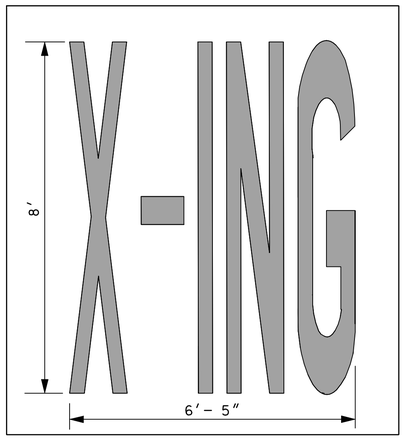
STANDARD NO. PM-11

PAVEMENT MARKING STANDARD

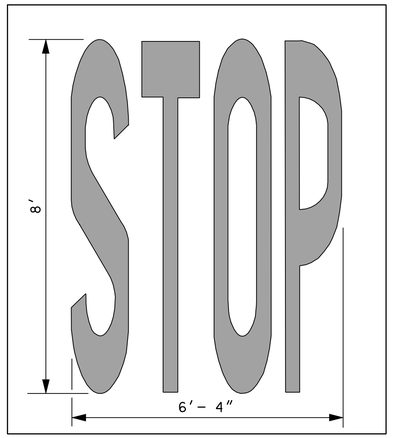
ACCESSIBLE PARKING DETAIL



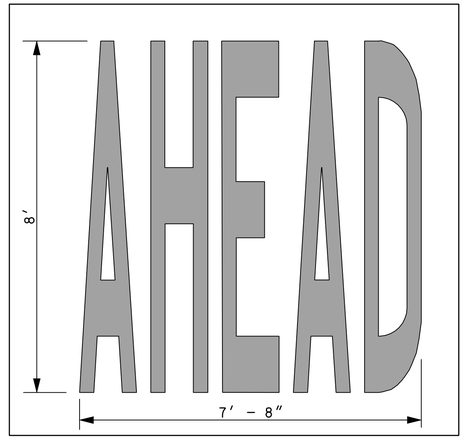
SCHOOL
PAY QUANTITY = 34.7 FT²



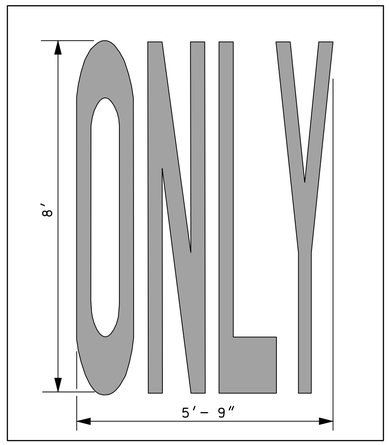
X-ING
PAY QUANTITY = 20.8 FT²



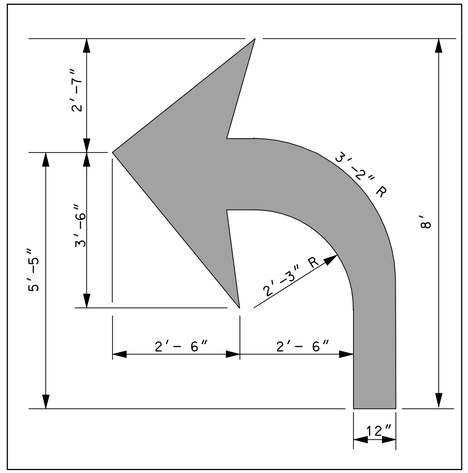
STOP
PAY QUANTITY = 22.2 FT²



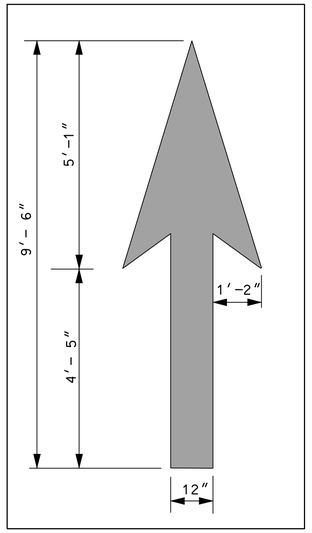
AHEAD
PAY QUANTITY = 31.3 FT²



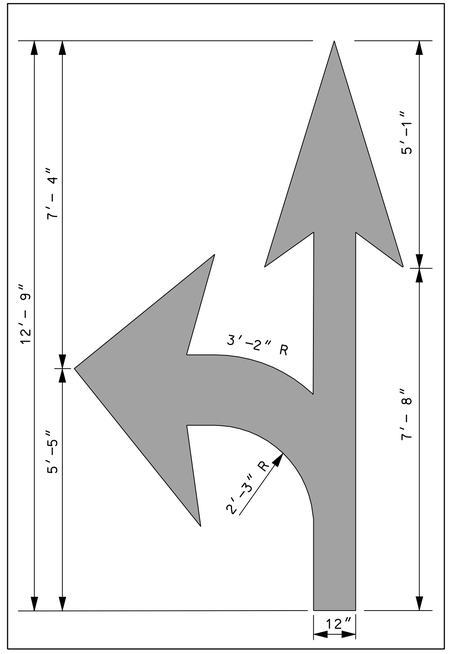
ONLY
PAY QUANTITY = 22.3 FT²



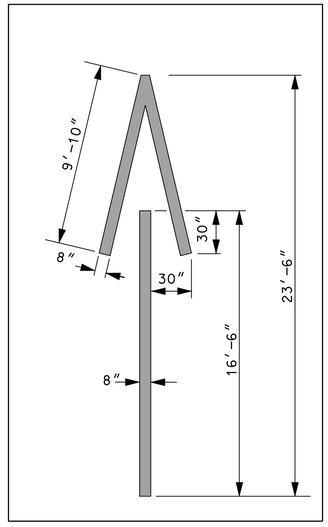
TURN ARROW
(RIGHT TURN OPPOSITE IN KIND)
PAY QUANTITY = 17.0 FT²



THROUGH (STRAIGHT ARROW)
PAY QUANTITY = 12.5 FT²



COMBINATION ARROW
PAY QUANTITY = 28.8 FT²



WRONG-WAY ARROW
PAY QUANTITY = 24.1 FT²

GENERAL NOTES

1. ALL WORDS AND SYMBOLS SHALL BE RETROREFLECTIVE WHITE AND SHALL CONFORM TO THE LATEST VERSION OF THE MUTCD.
2. MULTI-WORD MESSAGES SHALL READ "UP"; THAT IS, THE FIRST WORD SHALL BE NEAREST THE APPROACHING DRIVER.
3. THE WORD "ONLY" SHALL NOT BE USED WITH THROUGH OR COMBINATION ARROWS, AND SHALL NOT BE USED ADJACENT TO A BROKEN LANE LINE. A WORD/SYMBOL SHALL PRECEED THE WORD "ONLY".
4. COMBINATION ARROWS MAY BE COMPRISED OF 2 SINGLE ARROWS (e.g. TURN AND THROUGH ARROWS). HOWEVER, THE SHAFTS OF THE ARROWS SHALL COINCIDE AS SHOWN.
5. PREFORMED WORDS AND SYMBOLS SHALL BE PRE-CUT BY THE MANUFACTURER.
6. WRONG-WAY ARROWS SHALL NOT BE SUBSTITUTED FOR THROUGH ARROWS.
7. ALL STOP BARS, WORDS, SYMBOLS AND ARROWS SHALL BE THERMOPLASTIC.

PAVEMENT MARKING STANDARD

WORDS AND SYMBOLS

STANDARD NO. PM-12

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
PM-12

STANDARD PLANS

New Hampshire DOT Department of Transportation

STANDARD NO. PM-12

STANDARD NO. PM-13

REVISION DATE
07-13-2001
02-26-2010

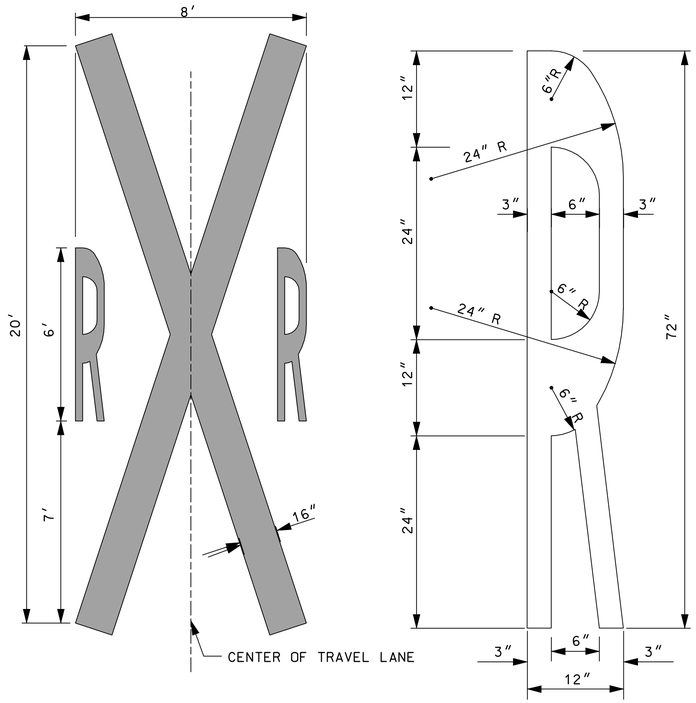
*.DGN FILE NAME
PM-13

STANDARD PLANS

New Hampshire DOT Department of Transportation

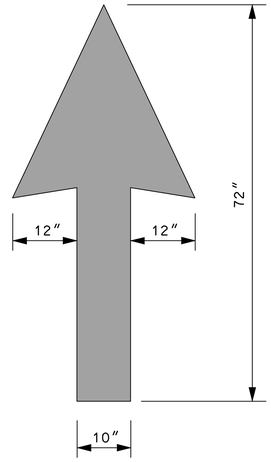
STANDARD NO. PM-13

PAY QUANTITIES FOR STANDARD (8 FT) LETTERS AND NUMERALS (SQUARE FEET)			
A	5.8	S	6.1
B	7.7	T	4.0
C	5.3	U	6.6
D	6.8	V	5.0
E	6.3	W	7.0
F	5.0	X	4.3
G	6.3	Y	4.2
H	6.6	Z	5.7
I	2.0	1	2.0
J	3.9	2	5.8
K	6.4	3	5.8
L	4.1	4	5.1
M	9.0	5	6.4
N	7.7	6	6.8
O	6.3	7	3.8
P	5.8	8	7.0
Q	6.7	9	6.8
R	6.8	0	6.3
		–	0.5



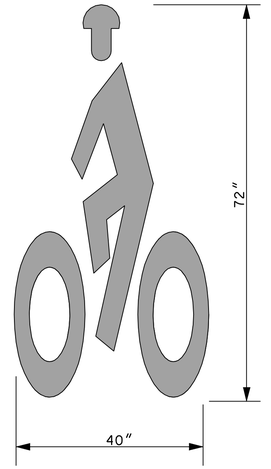
RAILROAD CROSSING SYMBOL

PAY QUANTITY = 63.6 ft² (SEE NOTE 3)



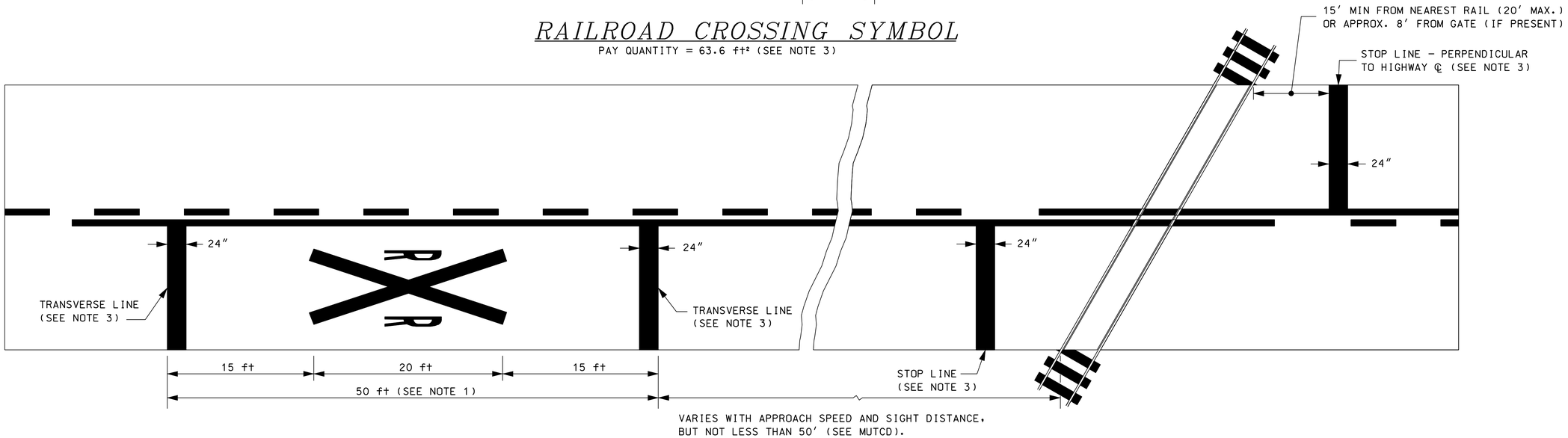
BICYCLE LANE DIRECTIONAL ARROW

PAY QUANTITY = 6.0 FT²



BICYCLE LANE SYMBOL

PAY QUANTITY = 8.1 FT²

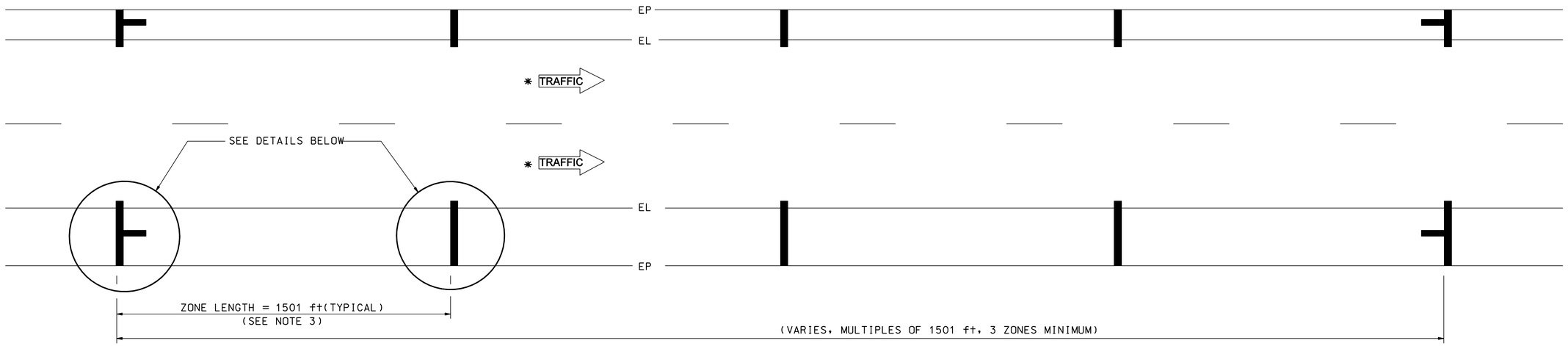


PAVEMENT MARKINGS AT RAILROAD-HIGHWAY GRADE CROSSINGS

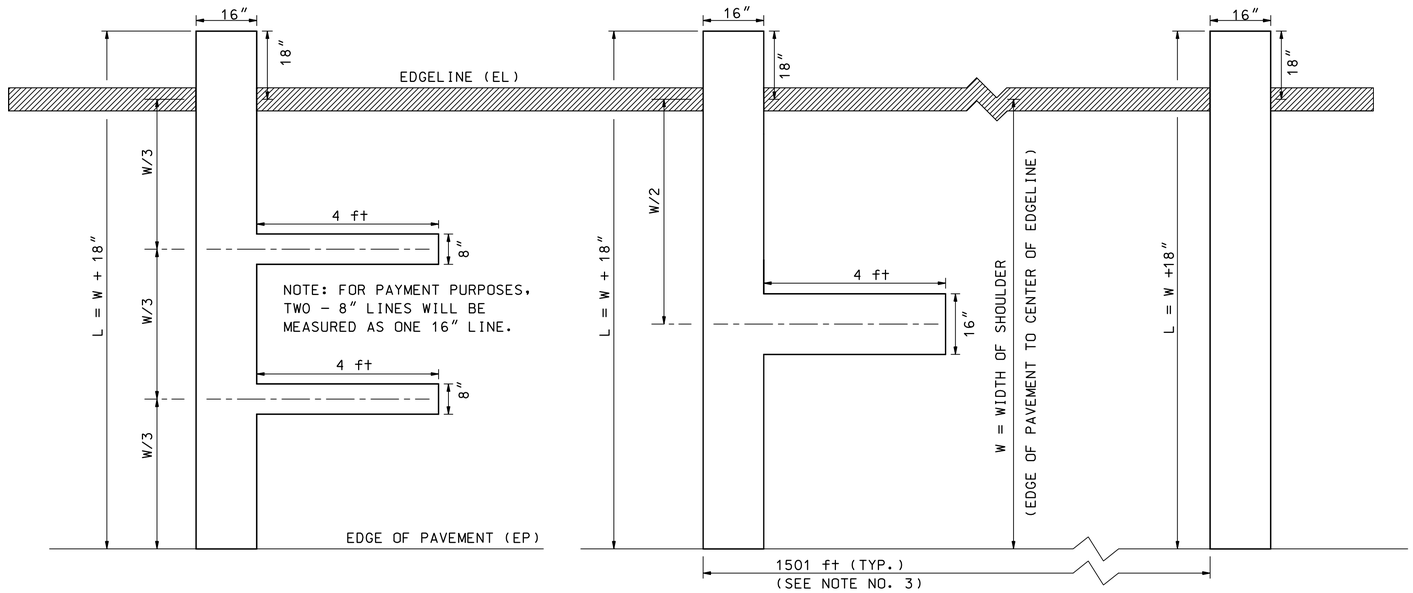
1. A PORTION OF THE PAVEMENT MARKING RXR SYMBOL SHOULD BE DIRECTLY OPPOSITE THE ADVANCE WARNING SIGN (W10-1, NOT SHOWN).
2. ON MULTI-LANE ROADS THE TRANSVERSE LINES SHOULD EXTEND ACROSS ALL APPROACH LANES, AND INDIVIDUAL RXR SYMBOLS SHOULD BE USED IN EACH APPROACH LANE.
3. RXR SYMBOL WILL BE PAID FOR BY THE SQUARE FOOT, TRANSVERSE LINES AND STOP BARS (24″WIDE) WILL BE PAID FOR BY THE LINEAR FOOT.

PAVEMENT MARKING STANDARD

WORDS AND SYMBOLS



LAYOUT DETAILS



APPROACH END PATTERN – ALTERNATE
(DEPARTURE END OPPOSITE IN KIND)
(SEE NOTE NO. 2)

APPROACH END PATTERN – STANDARD
(DEPARTURE END OPPOSITE IN KIND)

INTERMEDIATE PATTERN

PAVEMENT MARKING DETAILS

RIGHT SHOULDER SHOWN – LEFT SHOULDER OPPOSITE IN KIND (SEE NOTE NO. 2)

GENERAL NOTES

1. ALL SPEED ZONE MARKINGS SHALL BE SOLID WHITE.
2. ALTERNATE APROACH END PATTERN SHALL BE USED FOR 3 ZONE LAYOUT ONLY, STANDARD PATTERN SHALL BE USED IN LIEU OF ALTERNATE PATTERN FOR LEFT SHOULDER WIDTHS LESS THAN 8 ft.
3. LONGITUDINAL DISTANCES SHALL BE MEASURED BY NHDOT SURVEY PERSONNEL. A COPY OF SURVEY NOTES SHALL BE FORWARDED TO BUREAU OF TRAFFIC.
4. FOR LEGAL REASONS, STATE POLICE SHALL BE PRESENT DURING THE INSTALLATION OF THESE MARKINGS. (TEL. 603-271-3678).
5. STATE POLICE SHOULD BE NOTIFIED WHEN ANY EXISTING MARKINGS ARE REMOVED DUE TO CONSTRUCTION.

*ARROWS SHOWN ON THIS SHEET INDICATE DIRECTION OF TRAFFIC ONLY

STANDARD NO. PM-14

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
PM-14

STANDARD PLANS

New Hampshire DOT Department of Transportation

PAVEMENT MARKING STANDARD

SPEED ZONE PAVEMENT MARKINGS

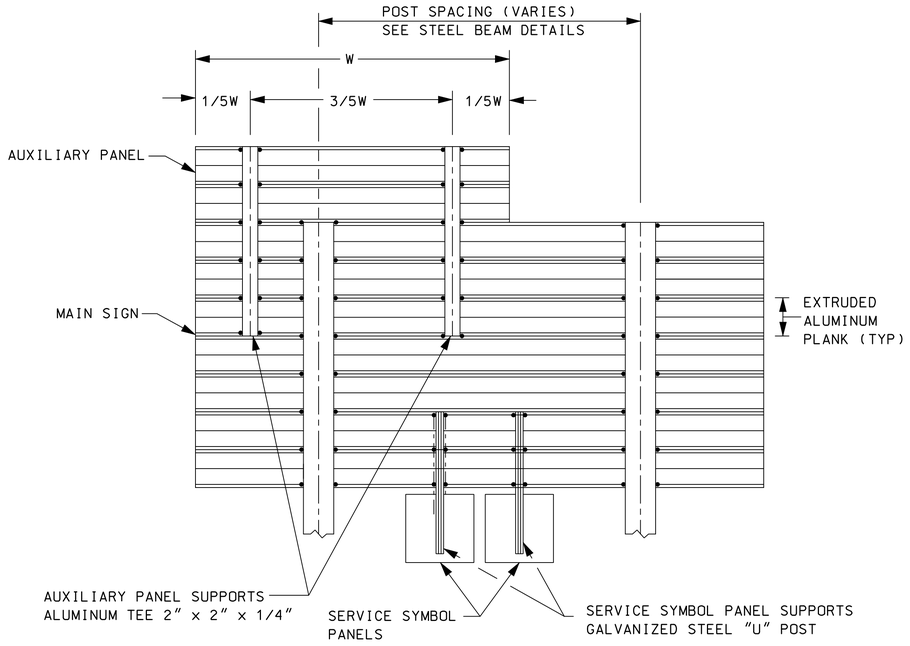
STANDARD NO. PM-14

STANDARD NO. PS-1

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
PS-1

STANDARD PLANS

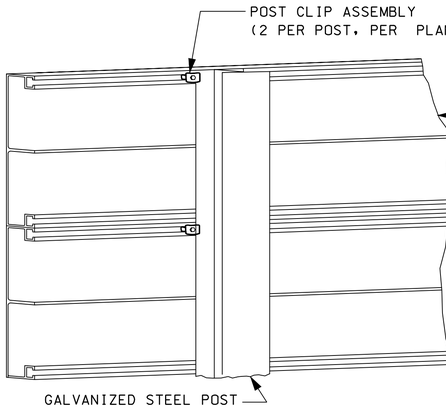


ATTACHMENT OF AUXILIARY PANELS AND SERVICE SYMBOL PANELS (BACK VIEW)

1. AUXILIARY PANELS SHALL BE MOUNTED TO THE RIGHT SIDE OF THE MAIN SIGN FOR RIGHT-HAND EXIT RAMPS, OR TO THE LEFT FOR LEFT-HAND EXIT RAMPS. SUPPORTS SHALL EXTEND TO THE TOP OF THE AUXILIARY PANEL AND SHALL OVERLAP THE MAIN SIGN BY A MINIMUM OF 3 FULL PLANKS AS SHOWN.

2. SERVICE SYMBOL PANELS , WHEN NOT ON A SEPARATE SIGN, SHALL BE MOUNTED IMMEDIATELY BELOW THE MAIN SIGN AND CENTERED LATERALLY WITHIN THE WIDTH OF THE SIGN. SUPPPORTS SHALL OVERLAP THE MAIN SIGN BY A MINIMUM OF 2 FULL PLANKS AS SHOWN.

3. POST CLIP ASSEMBLIES SHALL BE INSTALLED ON BOTH SIDES OF EACH AUXILIARY PANEL SUPPORT AND SERVICE SYMBOL SUPPORT AT EACH PLANK, AS WELL AS EACH END OF BOTH SUPPORTS.

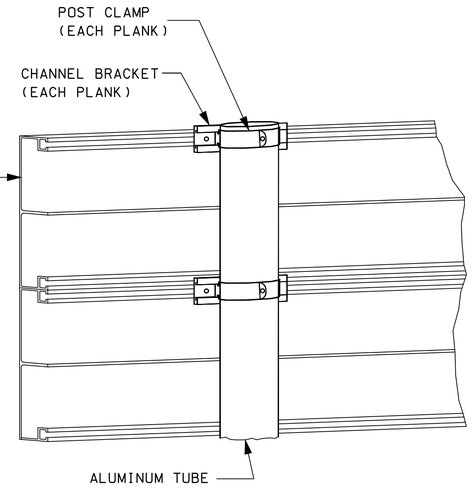


PLANK MOUNTED ON STEEL BEAM

1. POST CLIP ASSEMBLIES SHALL BE INSTALLED ON BOTH SIDES OF EACH POST AT EACH PLANK AS WELL AS AT THE TOP AND BOTTOM OF THE SIGN.

2. STEEL BEAM SHALL BE FLUSH WITH TOP OF SIGN AND SHALL NOT EXTEND ONTO AUXILIARY PANELS.

3. STEEL BEAMS SHALL NOT BE USED AS AUXILIARY PANEL SUPPORTS.



PLANK MOUNTED ON TUBING

1. POST CLAMP ASSEMBLIES SHALL BE INSTALLED AT EACH PLANK, AS WELL AS AT THE TOP AND BOTTOM OF THE SIGN.

2. TUBING SHALL NOT BE USED AS AUXILIARY PANEL SUPPORTS.

GENERAL NOTES

1. GAP BETWEEN ANY TWO ASSEMBLED PLANK SECTIONS SHALL NOT EXCEED 3/32".

2. ALLOWABLE LATERAL BOW SHALL NOT EXCEED ± 1/16".

3. ALL PLANK SECTIONS SHALL BE ONE PIECE FOR THE ENTIRE WIDTH OF SIGN SPECIFIED, AND SHALL NOT EXCEED ± 1/8" FROM THE LENGTH & WIDTH SPECIFIED.

4. ALL PLANK SECTIONS SHALL BE 12" WIDE UNLESS OTHERWISE SPECIFIED.

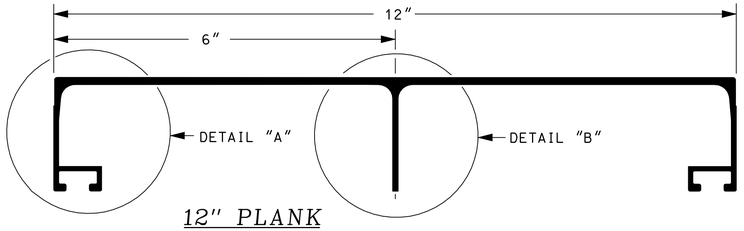
5. SIGNS 8' AND GREATER IN WIDTH SHALL BE MOUNTED ON STEEL BEAM.

New Hampshire DOT Department of Transportation

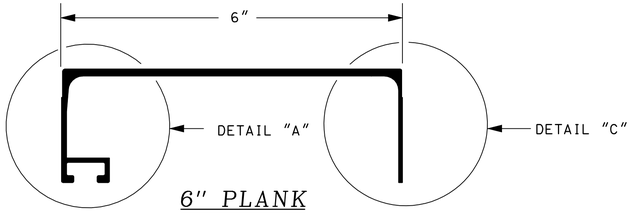
STANDARD NO. PS-1

SIGNING STANDARD

ALUMINUM PLANK DETAILS

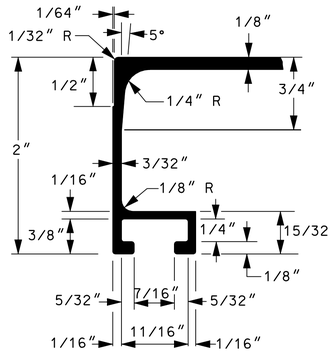


12" PLANK

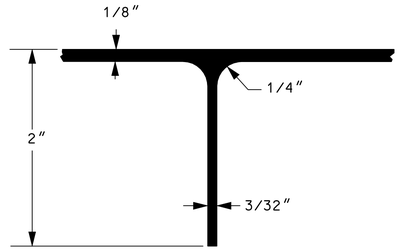


6" PLANK

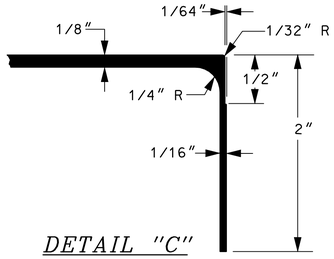
EXTRUDED ALUMINUM SIGN PLANK



DETAIL "A"

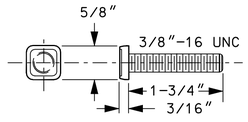


DETAIL "B"

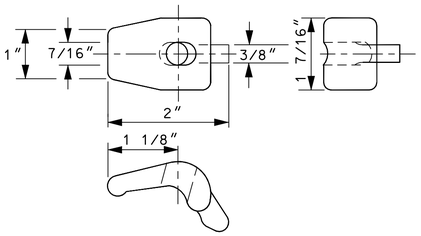


DETAIL "C"

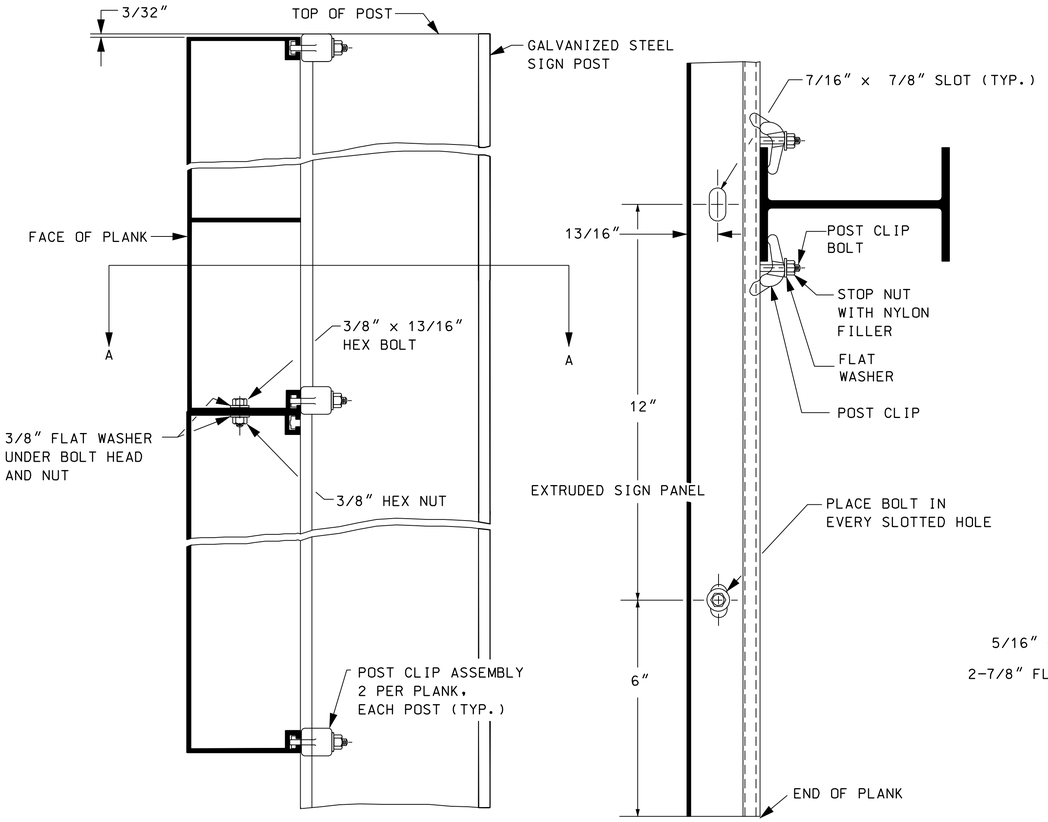
STIFFENER DETAILS



POST CLIP BOLT

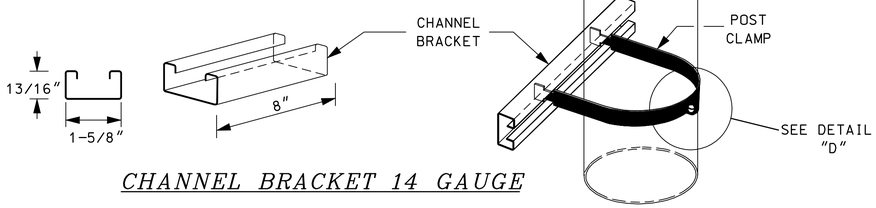


POST CLIP



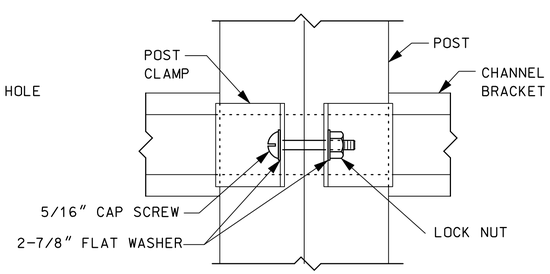
END VIEW

SECTION A-A



CHANNEL BRACKET 14 GAUGE

POST CLAMP 4" DIA. 11 GAUGE



DETAIL "D"

POST CLAMP ASSEMBLIES

1. SEE SPECIFICATION 615.2.7.3 FOR ADDITIONAL INFORMATION REGARDING THE CHANNEL BRACKET AND POST CLAMP.
2. USE 5/16" CAP SCREW WITH 2-7/8" O.D. WASHERS AND LOCKNUT FOR CLAMP CONNECTION.
3. ALL HARDWARE SHALL BE STAINLESS STEEL.

SIGNING STANDARD

ALUMINUM PLANK DETAILS

STANDARD NO. PS-2

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
PS-2

STANDARD PLANS

New Hampshire DOT Department of Transportation

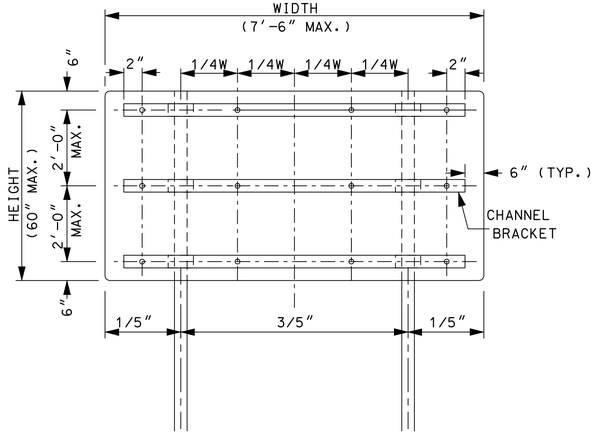
STANDARD NO. PS-2

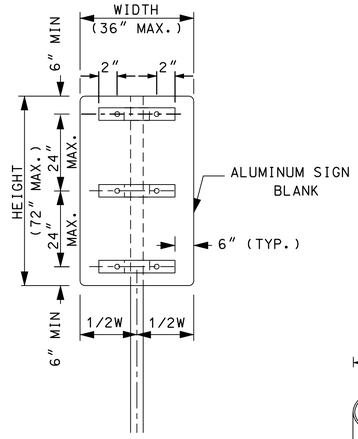
STANDARD NO. PS-3

REVISION DATE
07-13-2001
02-26-2010

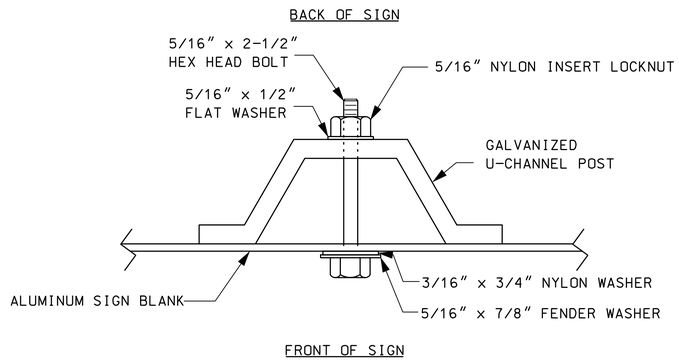
*.DGN FILE NAME
PS-3

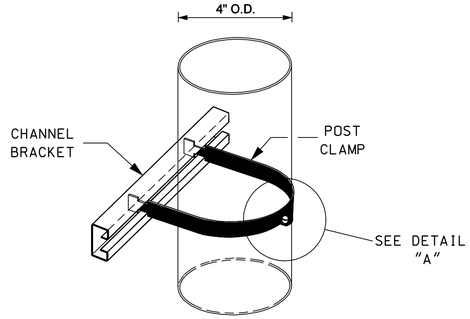
STANDARD PLANS



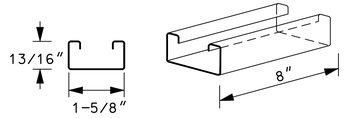


ALUMINUM POST SPACING

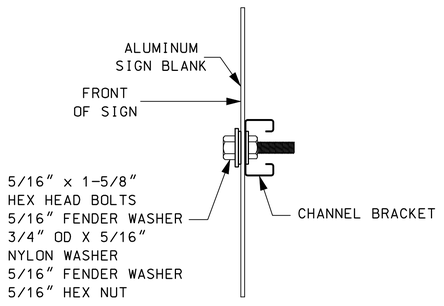




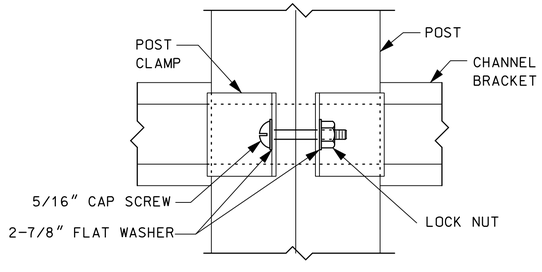
POST CLAMP 4" DIA. 11 GAUGE



CHANNEL BRACKET 14 GAUGE



SIGN BLANK ATTACHMENT DETAIL



DETAIL A

POST CLAMP ASSEMBLIES

1. SEE SPECIFICATION 615.2.7.3 FOR ADDITIONAL INFORMATION REGARDING THE CHANNEL BRACKET AND POST CLAMP.
2. USE 5/16" STAINLESS STEEL CAP SCREW WITH 2-7/8" O.D. WASHERS & LOCKNUT FOR CLAMP CONNECTION.

SIGN AND U-CHANNEL POST ASSEMBLY DETAIL

1. FOR GALVANIZED U-CHANNEL POST, SEE NHDOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION BOOK, SECTION 615.
2. THE STAINLESS STEEL HEX HEAD BOLT LENGTH SHALL BE INCREASED TO ACCOMMODATE A THICKER SIGN MATERIAL.
3. THE POST SHALL BE SET A MINIMUM OF 3 INCHES TO A MAXIMUM OF 6 INCHES BELOW THE TOP OF SIGN.
4. U-CHANNEL POSTS SHALL NOT BE SPLICED AND DO NOT REQUIRE CHANNEL BRACKETS.
5. U-CHANNEL POSTS SHALL BE INSTALLED 36" OR GREATER BELOW EXISTING GROUND.

GENERAL NOTES

1. BRACKETS: ALL SIGNS TO BE FASTENED TO POSTS WITH POST CLAMP ASSEMBLIES AS SHOWN.
2. SIGN WIDTH 36" OR LESS MAY BE MOUNTED ON ONE (1) U-CHANNEL POST.
3. RECTANGULAR SIGNS 72" x 48" OR LESS MAY BE MOUNTED ON DUAL U-CHANNEL POST. DIAMOND SHAPE SIGNS GREATER THAN 36" SHALL BE MOUNTED ON ALUMINUM TUBING (INTERSTATE).
4. SIGN HEIGHT 48" OR LESS, CENTER CHANNEL BRACKET MAY BE OMITTED.
5. DIAMOND SHAPE SIGNS 48" OR LARGER REQUIRE TWO CHANNEL BRACKETS.
6. SIGNS 72" x 72" OR GREATER SHALL BE ALUMINUM PLANK.

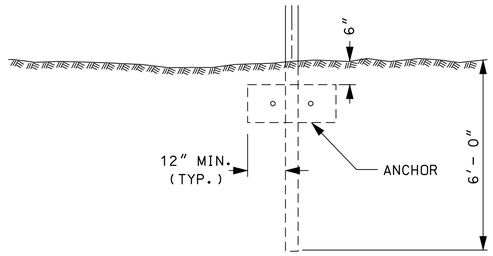
New Hampshire DOT Department of Transportation

STANDARD NO. PS-3

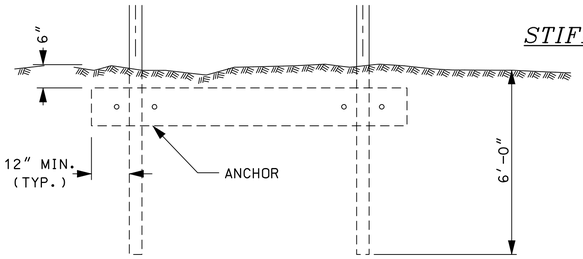
SIGNING STANDARD

ALUMINUM SHEET DETAILS FOR TUBING & U-CHANNEL POSTS

DIRECT BURIED



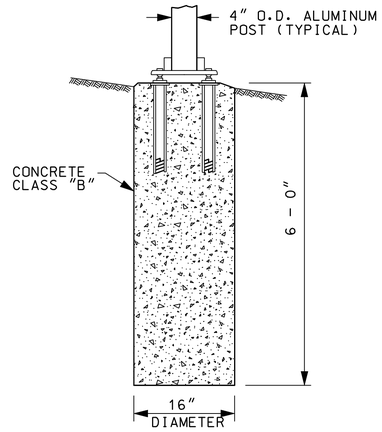
SINGLE POST



STIFFENER DETAILS

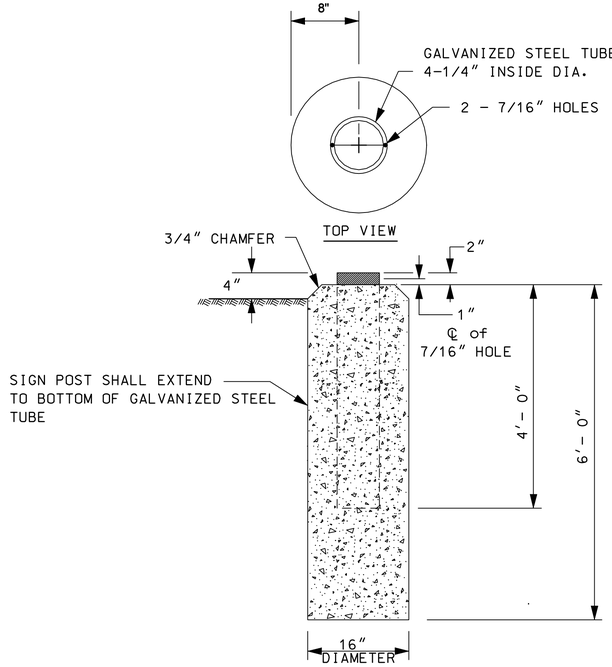
DOUBLE POST

BREAKAWAY

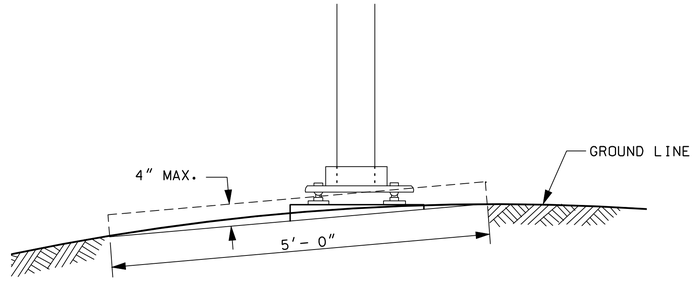


FOOTING DETAIL

CONCRETE BASE

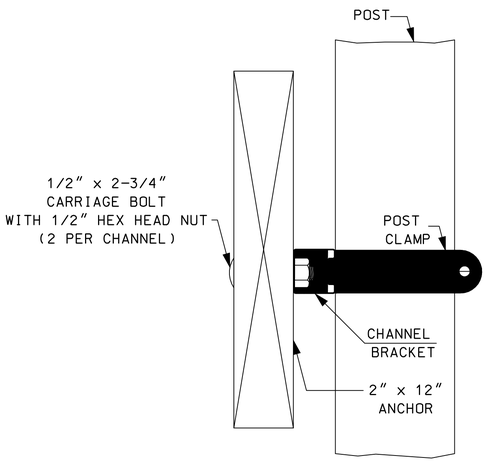


SIDE VIEW



MAXIMUM BREAKAWAY STUB HEIGHT

BREAKAWAY SUPPORTS PLACED ON ROADSIDE SLOPES SHALL NOT ALLOW IMPACTING VEHICLES TO SNAG ON EITHER THE FOUNDATION OR ANY SUBSTANTIAL REMAINS OF THE SUPPORT. SURROUNDING TERRAIN SHALL BE GRADED TO PERMIT VEHICLES TO PASS OVER ANY NON-BREAKAWAY PORTION OF THE SIGN INSTALLATION WHICH REMAINS IN THE GROUND OR RIGIDLY ATTACHED TO THE FOUNDATION.



ANCHOR DETAIL

ANCHORS: USE 1 PIECE OF 2″ x 12″ PLANK (PRESSURE TREATED) CLAMPED TO POST WITH A MINIMUM OF 12″ OVERHANG, TO BE PARALLEL WITH GROUND LINE. PLACE 2″ x 12″ PLANK BEHIND SIGN POST.

GENERAL NOTES

1. MULTIPLE POST SIGNS MUST BE PROTECTED BY GUARDRAIL OR OTHER POSITIVE BARRIER, UNLESS BREAKAWAY MOUNTED.
2. THE MINIMUM HORIZONTAL CLEARANCE TO THE NEAR EDGE OF THE SIGN OF ANY MULTIPLE POST NON-BREAKAWAY MOUNT SIGN SHALL BE 7′-0″ MIN. FROM FACE OF BEAM GUARDRAIL. OTHER TYPES OF GUARDRAIL OR BARRIER MAY REQUIRE A DIFFERENT OFFSET.
3. ALL HARDWARE SHALL BE STAINLESS STEEL UNLESS OTHERWISE NOTED.

CONCRETE BASE NOTES:

1. GALVANIZED STEEL TUBE 4-1/4″ I.D. X 4′-2″
2. CONCRETE CLASS B.
3. TOP SHALL HAVE TROWEL FINISH.
4. USE 5/16″ x 5-1/2″ LONG STAINLESS STEEL BOLT WITH STAINLESS STEEL NYLON INSERT NUT FOR SECURING POST.
5. ALUMINUM CAP SHALL BE INSTALLED ON THE TOP OF THE SIGN POST WITH THIS INSTALLATION.

SIGNING STANDARD

ALUMINUM TUBING DETAILS

STANDARD NO. PS-4

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
PS-4

STANDARD PLANS

New Hampshire DOT Department of Transportation

STANDARD NO. PS-4

STANDARD NO. PS-5

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
PS-5

STANDARD PLANS

New Hampshire DOT Department of Transportation

STANDARD NO. PS-5

PROCEDURE FOR SELECTING BEAM SECTIONS

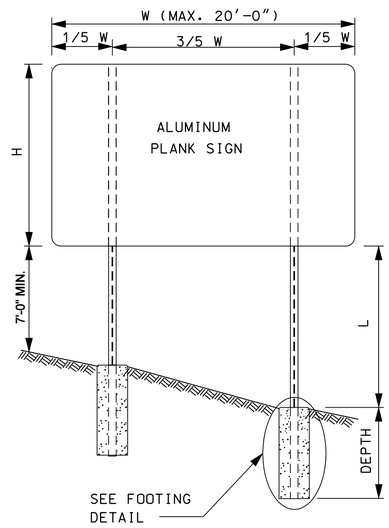
- DETERMINE VALUES FOR W, H, & L AS INDICATED IN DRAWING
  W = MAXIMUM WIDTH OF REQUIRED SIGN
  H = MAXIMUM HEIGHT OF REQUIRED SIGN INCLUDING AUXILIARY SIGNS AND SERVICE SYMBOLS.
  L = MAXIMUM DISTANCE BETWEEN TOP OF FOOTING AND BOTTOM OF REQUIRED SIGN.
  (SEE GENERAL NOTE NO. 4)

- FOR SIGN SIZES BETWEEN THOSE VALUES IN THE TABLE, USE NEXT HIGHEST FOOT VALUE.

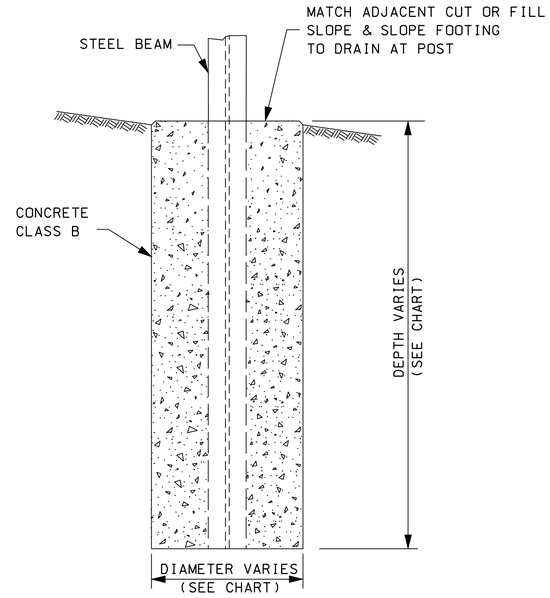
- ENTER TABLE WITH MAXIMUM VALUE OF "L" AND REQUIRED VALUES OF "W" AND "H" FOR SELECTION OF APPROPRIATE BEAM SELECTION.

2 POST SIGN

W	L	H											
		4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'	15'
6'	8'	S4x7.7	S4x7.7	S4x7.7	S4x7.7	W6x9	W6x9	W6x9	W6x12	W6x12	W6x12	W6x15	W6x15
	10'	S4x7.7	S4x7.7	S4x7.7	W6x9	W6x9	W6x9	W6x12	W6x12	W6x15	W6x15	W6x15	W6x15
	12'	S4x7.7	S4x7.7	W6x9	W6x9	W6x9	W6x12	W6x12	W6x15	W6x15	W6x15	W8x18	W8x18
8'	8'	S4x7.7	S4x7.7	W6x9	W6x9	W6x9	W6x12	W6x12	W6x15	W6x15	W6x15	W8x18	W8x18
	10'	S4x7.7	W6x9	W6x9	W6x9	W6x12	W6x12	W6x15	W6x15	W6x15	W8x18	W8x18	W8x18
	12'	S4x7.7	W6x9	W6x9	W6x12	W6x12	W6x15	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18
10'	8'	S4x7.7	W6x9	W6x9	W6x9	W6x12	W6x12	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18
	10'	W6x9	W6x9	W6x12	W6x12	W6x15	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18	W8x18
	12'	W6x9	W6x9	W6x12	W6x12	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18	W8x18	W8x18
	14'	W6x9	W6x12	W6x12	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18	W8x18	W8x18	W8x21
	16'	W6x9	W6x12	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18	W8x18	W8x18	W8x21	W8x21
12'	8'	W6x9	W6x9	W6x12	W6x12	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18	W8x18	W8x18
	10'	W6x9	W6x9	W6x12	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18	W8x18	W8x18	W8x21
	12'	W6x9	W6x12	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18	W8x18	W8x18	W8x21	W8x21
	14'	W6x12	W6x12	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22
	16'	W6x12	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22	W10x22
14'	8'	W6x12	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22
	10'	W6x12	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22	W10x22
	12'	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22	W10x22	W10x26
	14'	W6x15	W8x18	W8x18	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22	W10x22	W10x26	W10x26
	16'	W6x15	W8x18	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22	W10x22	W10x26	W10x26	W10x26
16'	8'	W6x12	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22	W10x22
	10'	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x22	W10x26
	12'	W6x15	W8x18	W8x18	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x22	W10x26	W10x26
	14'	W6x15	W8x18	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x22	W10x26	W10x26	W12x26
	16'	W8x18	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22	W10x22	W10x26	W10x26	W12x26	W12x26
	18'	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22	W10x22	W10x26	W10x26	W12x26	W12x26	W12x26
18'	8'	W6x12	W6x15	W8x18	W8x18	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x22	W10x26
	10'	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x22	W10x26	W10x26
	12'	W6x15	W8x18	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x22	W10x26	W10x26	W12x26
	14'	W8x18	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x22	W10x26	W10x26	W12x26	W12x26
	16'	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22	W10x22	W10x26	W10x26	W12x26	W12x26	W12x26
	18'	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x26	W10x26	W12x26	W12x26	W12x26	–
20'	8'	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x22	W10x26	W10x26
	10'	W6x15	W8x18	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x26	W10x26	W10x26	W12x26
	12'	W8x18	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x26	W10x26	W12x26	W12x26	W12x26
	14'	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22	W10x26	W10x26	W12x26	W12x26	W12x26	–
	16'	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x26	W10x26	W12x26	W12x26	–	–
	18'	W8x18	W8x18	W8x21	W10x22	W10x22	W10x26	W10x26	W12x26	W12x26	W12x26	–	–
	20'	W8x18	W8x18	W8x21	W10x22	W10x26	W10x26	W12x26	W12x26	W12x26	–	–	–



POST SPACING DETAIL



FOOTING DETAIL

GENERAL NOTES

1. SIGNS SHALL BE PROVIDED FOR LOCATIONS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. SEE SIGN TEXT LAYOUT SHEETS AND PLANS FOR SIGN SIZES AND APPROXIMATE LOCATIONS.

2. DIMENSIONS, ELEVATIONS, SLOPES, AND SITUATIONS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY. ACTUAL CASES WILL DEPEND ON FIELD CONDITIONS.

3. WHEN TWO OR MORE INDEPENDENT SIGNS ARE MOUNTED AS A SINGLE INSTALLATION, THE POST SUPPORTS SHALL BE CALCULATED WITH THE TOTAL AREA OF THE SIGNS BEING CONSIDERED AS ONE UNIT, INCLUDING AN ALLOWANCE FOR A 6" VERTICAL SPACE BETWEEN THE SIGNS.

4. POST LENGTH TO BE DETERMINED BY SIGN SIZE AND LOCATION. EXACT FIELD LOCATION TO BE DETERMINED BY THE ENGINEER.

5. THE MINIMUM HORIZONTAL CLEARANCE TO THE NEAR EDGE OF THE SIGN OF ANY MULTIPLE POST NON-BREAKAWAY MOUNT SIGN SHALL BE 7'-0" MIN. FROM FACE OF BEAM GUARDRAIL. OTHER TYPES OF GUARDRAIL OR BARRIER MAY REQUIRE A DIFFERENT OFFSET.

6. SEE STANDARD NO. PS-1 & PS-2 FOR ADDITIONAL INFORMATION.

POST	FOOTING	
SIZE	DEPTH	DIAMETER
S4x7.7	6'	24"
W6x9	6'	24"
W6x12	6'	24"
W6x15	7'-6"	24"
W8x18	7'-6"	30"
W8x21	8'-6"	30"
W10x22	8'-6"	36"
W10x26	8'-6"	36"
W12x26	8'-6"	36"

SIGNING STANDARD

STEEL BEAM DETAILS
NON-BREAKAWAY

PROCEDURE FOR SELECTING BEAM SECTIONS

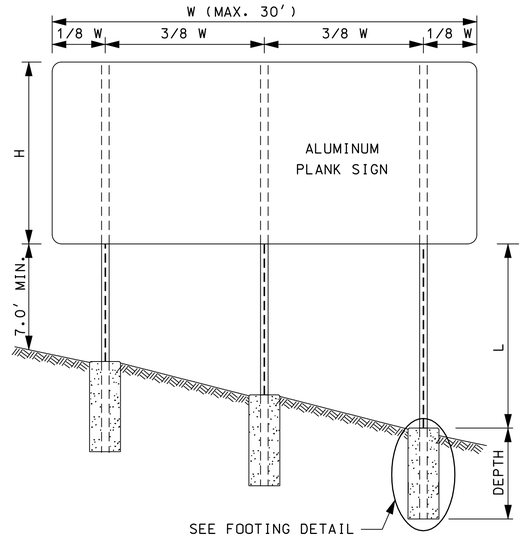
- DETERMINE VALUES FOR W, H, & L AS INDICATED IN DRAWING
  W = MAXIMUM WIDTH OF REQUIRED SIGN
  H = MAXIMUM HEIGHT OF REQUIRED SIGN INCLUDING AUXILIARY SIGNS AND SERVICE SYMBOLS.
  L = MAXIMUM DISTANCE BETWEEN TOP OF FOOTING AND BOTTOM OF REQUIRED SIGN.
  (SEE GENERAL NOTE NO. 4)

- FOR SIGN SIZES BETWEEN THOSE VALUES IN THE TABLE, USE NEXT HIGHEST FOOT VALUE.

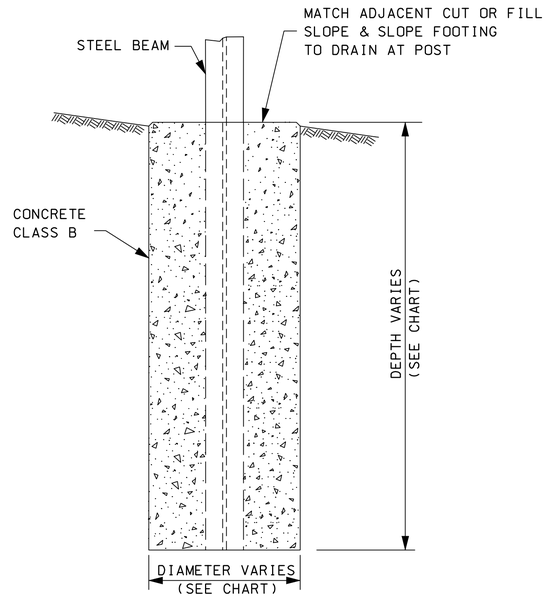
- ENTER TABLE WITH MAXIMUM VALUE OF "L" AND REQUIRED VALUES OF "W" AND "H" FOR SELECTION OF APPROPRIATE BEAM SELECTION.

3 POST SIGN

W	L	H											
		4′	5′	6′	7′	8′	9′	10′	11′	12′	13′	14′	15′
22′	8′	W6x12	W6x12	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22
	10′	W6x12	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x22
	12′	W6x12	W6x15	W8x18	W8x18	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x22	W10x26
	14′	W6x15	W8x18	W8x18	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x22	W10x26	W10x26
	16′	W6x15	W8x18	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x22	W10x26	W10x26	W12x26
	18′	W6x15	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22	W10x22	W10x26	W10x26	W12x26	W12x26
	20′	W8x18	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x26	W10x26	W12x26	W12x26	W12x26
	22′	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22	W10x22	W10x26	W10x26	W12x26	W12x26	W12x26
24′	8′	W6x12	W6x12	W6x15	W8x18	W8x18	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22	W10x22
	10′	W6x12	W6x15	W8x18	W8x18	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x22	W10x26
	12′	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x22	W10x26	W10x26
	14′	W6x15	W8x18	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22	W10x22	W10x26	W10x26	W12x26
	16′	W6x15	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22	W10x22	W10x26	W10x26	W12x26	W12x26
	18′	W8x18	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x26	W10x26	W12x26	W12x26	W12x26
	20′	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22	W10x26	W10x26	W12x26	W12x26	W12x26	–
	22′	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x26	W10x26	W12x26	W12x26	W12x26	–
26′	8′	W6x12	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22	W10x22	W10x26
	10′	W6x12	W6x15	W8x18	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22	W10x22	W10x26	W10x26
	12′	W6x15	W8x18	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22	W10x22	W10x26	W10x26	W12x26
	14′	W6x15	W8x18	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x26	W10x26	W12x26	W12x26
	16′	W8x18	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x26	W10x26	W12x26	W12x26	W12x26
	18′	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22	W10x26	W10x26	W12x26	W12x26	W12x26	–
	20′	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x26	W10x26	W12x26	W12x26	–	–
	22′	W8x18	W8x18	W8x21	W10x22	W10x22	W10x26	W10x26	W12x26	W12x26	W12x26	–	–
	24′	W8x18	W8x18	W8x21	W10x22	W10x22	W10x26	W12x26	W12x26	W12x26	–	–	–
28′	8′	W6x12	W6x15	W8x18	W8x18	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x26	W10x26
	10′	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x26	W10x26	W12x26
	12′	W6x15	W8x18	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x26	W10x26	W12x26	W12x26
	14′	W6x15	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x26	W10x26	W12x26	W12x26	W12x26
	16′	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22	W10x22	W10x26	W12x26	W12x26	W12x26	–
	18′	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x26	W10x26	W12x26	W12x26	–	–
	20′	W8x18	W8x18	W8x21	W8x21	W10x22	W10x26	W10x26	W12x26	W12x26	–	–	–
	22′	W8x18	W8x18	W8x21	W10x22	W10x22	W10x26	W12x26	W12x26	W12x26	–	–	–
	24′	W8x18	W8x18	W8x21	W10x22	W10x26	W10x26	W12x26	W12x26	–	–	–	–
30′	8′	W6x12	W6x15	W8x18	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22	W10x22	W10x26	W10x26
	10′	W6x15	W8x18	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22	W10x22	W10x26	W10x26	W12x26
	12′	W6x15	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22	W10x22	W10x26	W10x26	W12x26	W12x26
	14′	W8x18	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x26	W10x26	W12x26	W12x26	–
	16′	W8x18	W8x18	W8x18	W8x21	W10x22	W10x22	W10x26	W10x26	W12x26	W12x26	–	–
	18′	W8x18	W8x18	W8x21	W8x21	W10x22	W10x26	W10x26	W12x26	W12x26	W12x26	–	–
	20′	W8x18	W8x18	W8x21	W10x22	W10x22	W10x26	W12x26	W12x26	W12x26	–	–	–
	22′	W8x18	W8x18	W8x21	W10x22	W10x26	W10x26	W12x26	W12x26	–	–	–	–
	24′	W8x18	W8x21	W10x22	W10x22	W10x26	W12x26	W12x26	–	–	–	–	–



POST SPACING DETAIL



FOOTING DETAIL

GENERAL NOTES

1. SIGNS SHALL BE PROVIDED FOR LOCATIONS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. SEE SIGN TEXT LAYOUT SHEETS AND PLANS FOR SIGN SIZES AND APPROXIMATE LOCATIONS.

2. DIMENSIONS, ELEVATIONS, SLOPES, AND SITUATIONS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY. ACTUAL CASES WILL DEPEND ON FIELD CONDITIONS.

3. WHEN TWO OR MORE INDEPENDENT SIGNS ARE MOUNTED AS A SINGLE INSTALLATION, THE POST SUPPORTS SHALL BE CALCULATED WITH THE TOTAL AREA OF THE SIGNS BEING CONSIDERED AS ONE UNIT, INCLUDING AN ALLOWANCE FOR A 6" VERTICAL SPACE BETWEEN THE SIGNS.

4. POST LENGTH TO BE DETERMINED BY SIGN SIZE AND LOCATION. EXACT FIELD LOCATION TO BE DETERMINED BY THE ENGINEER.

5. THE MINIMUM HORIZONTAL CLEARANCE TO THE NEAR EDGE OF THE SIGN OF ANY MULTIPLE POST NON-BREAKAWAY MOUNT SIGN SHALL BE 7′-0" MIN. FROM FACE OF BEAM GUARDRAIL. OTHER TYPES OF GUARDRAIL OR BARRIER MAY REQUIRE A DIFFERENT OFFSET.

6. SEE STANDARD NO. PS-1 & PS-2 FOR ADDITIONAL INFORMATION.

POST SIZE	FOOTING DEPTH	FOOTING DIAMETER
S4x7.7	6′	24"
W6x9	6′	24"
W6x12	6′	24"
W6x15	7′-6"	24"
W8x18	7′-6"	30"
W8x21	8′-6"	30"
W10x22	8′-6"	36"
W10x26	8′-6"	36"
W12x26	8′-6"	36"

STANDARD NO. PS-6

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
PS-6

STANDARD PLANS

New Hampshire DOT Department of Transportation

SIGNING STANDARD

STEEL BEAM DETAILS
NON-BREAKAWAY

STANDARD NO. PS-6

STANDARD NO. PS-7

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
PS-7

STANDARD PLANS

New Hampshire DOT Department of Transportation

STANDARD NO. PS-7

PROCEDURE FOR SELECTING BEAM SECTIONS

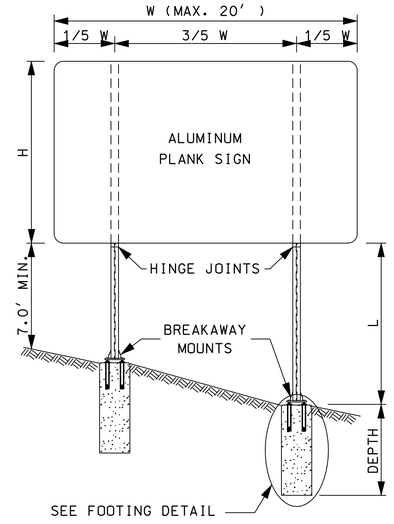
- DETERMINE VALUES FOR W, H, & L AS INDICATED IN DRAWING
  W = MAXIMUM WIDTH OF REQUIRED SIGN
  H = MAXIMUM HEIGHT OF REQUIRED SIGN INCLUDING AUXILIARY SIGNS AND SERVICE SYMBOLS.
  L = MAXIMUM DISTANCE BETWEEN TOP OF FOOTING AND BOTTOM OF REQUIRED SIGN.
  (SEE GENERAL NOTE NO. 4)

- FOR SIGN SIZES BETWEEN THOSE VALUES IN THE TABLE, USE NEXT HIGHEST FOOT VALUE.

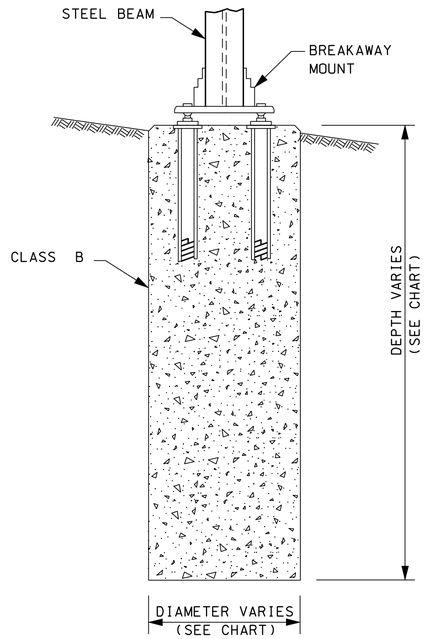
- ENTER TABLE WITH MAXIMUM VALUE OF "L" AND REQUIRED VALUES OF "W" AND "H" FOR SELECTION OF APPROPRIATE BEAM SELECTION.

2 POST SIGN

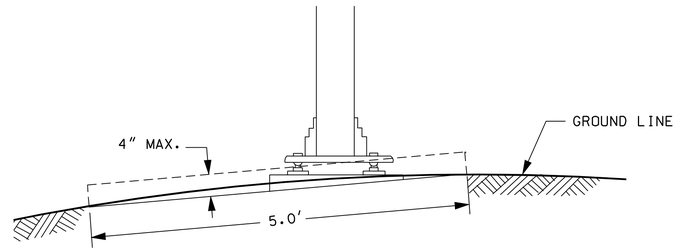
W	L	H											
		4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'	15'
6'	8'	W6x9	W6x9	W6x9	W6x9	W6x9	W6x9	W6x9	W6x9	W6x12	W6x12	W8x18	W8x18
	10'	W6x9	W6x9	W6x9	W6x9	W6x12	W6x12	W6x12	W6x15	W6x15	W8x18	W8x18	W8x18
	12'	W6x9	W6x12	W6x12	W6x12	W6x15	W6x15	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18
	14'	W6x12	W6x12	W6x12	W6x15	W6x15	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18	W8x21
	16'	W6x12	W6x15	W6x15	W6x15	W6x15	W6x15	W8x18	W8x18	W8x18	W8x21	W8x21	W8x21
8'	8'	W6x9	W6x9	W6x9	W6x9	W6x9	W6x9	W6x12	W6x12	W6x12	W6x15	W8x18	W8x18
	10'	W6x9	W6x9	W6x12	W6x12	W6x12	W6x12	W6x15	W8x18	W8x18	W8x18	W8x18	W8x18
	12'	W6x12	W6x12	W6x15	W6x15	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18	W8x18	W8x21
	14'	W6x12	W6x15	W6x15	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18	W8x21	W8x21	W8x21
	16'	W6x15	W6x15	W6x15	W8x18	W8x18	W8x18	W8x21	W8x21	W8x21	W8x21	W10x26	W10x26
10'	8'	W6x9	W6x9	W6x9	W6x9	W6x12	W6x12	W6x12	W6x15	W8x18	W8x18	W8x18	W10x22
	10'	W6x9	W6x12	W6x12	W6x12	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18	W8x18	W10x22
	12'	W6x12	W6x12	W6x15	W6x15	W6x18	W8x18	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22
	14'	W6x15	W6x15	W6x15	W8x18	W8x18	W8x18	W8x21	W8x21	W8x21	W8x21	W10x26	W10x26
	16'	W6x15	W6x15	W6x18	W8x18	W8x21	W8x21	W8x21	W8x21	W10x26	W10x26	W10x26	W10x26
12'	8'	W6x9	W6x9	W6x9	W6x12	W6x12	W6x15	W8x18	W8x18	W8x18	W8x18	W10x22	W12x26
	10'	W6x9	W6x12	W6x12	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18	W10x22	W10x22	W12x26
	12'	W6x12	W6x12	W6x15	W8x18	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22	W10x22	W12x26
	14'	W6x15	W6x15	W8x18	W8x18	W8x18	W8x21	W8x21	W10x22	W10x26	W10x26	W10x26	W12x26
	16'	W6x15	W6x18	W8x18	W8x21	W8x21	W8x21	W10x26	W10x26	W10x26	W10x26	W12x26	W12x26
14'	8'	W6x9	W6x9	W6x12	W6x12	W6x15	W8x18	W8x18	W8x18	W8x18	W8x21	W12x26	W14x30
	10'	W6x12	W6x12	W6x15	W6x15	W8x18	W8x18	W8x18	W8x18	W10x22	W12x26	W12x26	W14x30
	12'	W6x12	W6x15	W8x18	W8x18	W8x18	W8x21	W8x21	W8x21	W10x22	W12x26	W12x26	W14x30
	14'	W6x15	W6x15	W8x18	W8x18	W8x21	W8x21	W10x22	W10x26	W10x26	W12x26	W12x26	W14x30
	16'	W6x15	W6x18	W8x21	W8x21	W10x22	W10x26	W10x26	W10x26	W12x26	W14x30	–	–
16'	8'	W6x9	W6x9	W6x12	W6x12	W8x18	W8x18	W8x18	W8x18	W8x18	W10x22	W14x30	–
	10'	W6x12	W6x12	W6x15	W8x18	W8x18	W8x18	W8x18	W10x22	W10x26	W12x26	W14x30	–
	12'	W6x15	W6x15	W8x18	W8x18	W8x21	W8x21	W8x21	W10x26	W10x26	W12x26	W14x30	–
	14'	W6x15	W8x18	W8x18	W8x21	W8x21	W10x26	W10x26	W10x26	W10x26	W12x26	W14x30	–
	16'	W8x18	W8x18	W8x21	W8x21	W10x26	W10x26	W10x26	W12x26	–	–	–	–
18'	8'	W6x9	W6x12	W6x12	W6x15	W8x18	W8x18	W8x18	W8x18	W10x22	W12x26	–	–
	10'	W6x12	W6x15	W6x15	W8x18	W8x18	W8x18	W8x21	W10x22	W12x26	W14x30	–	–
	12'	W6x15	W6x15	W8x18	W8x18	W8x21	W8x21	W10x26	W10x26	W12x26	W14x30	–	–
	14'	W6x15	W8x18	W8x21	W8x21	W10x22	W10x26	W10x26	W10x26	W12x26	–	–	–
	16'	W8x18	W8x21	W8x21	W10x26	W10x26	W10x26	W12x26	–	–	–	–	–
20'	8'	W6x9	W6x12	W6x15	W8x18	W8x18	W8x18	W8x18	W10x22	W10x26	W12x26	–	–
	10'	W6x12	W6x15	W8x18	W8x18	W8x18	W8x18	W10x22	W12x26	W14x30	–	–	–
	12'	W6x15	W6x15	W8x18	W8x21	W8x21	W10x22	W10x26	W12x26	W14x30	–	–	–
	14'	W8x18	W8x18	W8x21	W8x21	W10x26	W10x26	W10x26	W12x26	–	–	–	–
	16'	W8x18	W8x21	W10x26	W10x26	W10x26	W12x26	–	–	–	–	–	–



POST SPACING DETAIL



FOOTING DETAIL



MAXIMUM BREAKAWAY STUB HEIGHT

BREAKAWAY SUPPORTS PLACED ON ROADSIDE SLOPES SHALL NOT ALLOW IMPACTING VEHICLES TO SNAG ON EITHER THE FOUNDATION OR ANY SUBSTANTIAL REMAINS OF THE SUPPORT. SURROUNDING TERRAIN SHALL BE GRADED TO PERMIT VEHICLES TO PASS OVER ANY NON-BREAKAWAY PORTION OF THE SIGN INSTALLATION WHICH REMAINS IN THE GROUND OR RIGIDLY ATTACHED TO THE FOUNDATION.

POST	FOOTING	
SIZE	DEPTH	DIAMETER
W6x9	6'	24"
W6x12	6'	24"
W6x15	7'-6"	24"
W8x18	7'-6"	30"
W8x21	8'-6"	30"
W10x22	8'-6"	36"
W10x26	8'-6"	36"
W12x26	8'-6"	36"
W14x30	9'	36"

GENERAL NOTES

1. SIGNS SHALL BE PROVIDED FOR LOCATIONS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. SEE SIGN TEXT LAYOUT SHEETS AND PLANS FOR SIGN SIZES AND APPROXIMATE LOCATIONS.

2. DIMENSIONS, ELEVATIONS, SLOPES, AND SITUATIONS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY. ACTUAL CASES WILL DEPEND ON FIELD CONDITIONS.

3. WHEN TWO OR MORE INDEPENDENT SIGNS ARE MOUNTED AS A SINGLE INSTALLATION, THE POST SUPPORTS SHALL BE CALCULATED WITH THE TOTAL AREA OF THE SIGNS BEING CONSIDERED AS ONE UNIT, INCLUDING AN ALLOWANCE FOR A 6" VERTICAL SPACE BETWEEN THE SIGNS.

4. POST LENGTH TO BE DETERMINED BY SIGN SIZE AND LOCATION. EXACT FIELD LOCATION TO BE DETERMINED BY THE ENGINEER.

5. THE MINIMUM HORIZONTAL CLEARANCE TO THE NEAR EDGE OF THE SIGN OF ANY MULTIPLE POST NON-BREAKAWAY MOUNT SIGN SHALL BE 7'-0" MIN. FROM FACE OF BEAM GUARDRAIL. OTHER TYPES OF GUARDRAIL OR BARRIER MAY REQUIRE A DIFFERENT OFFSET.

6. SEE STANDARD NO. PS-1 & PS-2 FOR ADDITIONAL INFORMATION.

SIGNING STANDARD

STEEL BEAM DETAILS
BREAKAWAY

PROCEDURE FOR SELECTING BEAM SECTIONS

- DETERMINE VALUES FOR W, H, & L AS INDICATED IN DRAWING
  W = MAXIMUM WIDTH OF REQUIRED SIGN
  H = MAXIMUM HEIGHT OF REQUIRED SIGN
  L = MAXIMUM DISTANCE BETWEEN TOP OF FOOTING AND BOTTOM OF REQUIRED SIGN.

- FOR SIGN SIZES BETWEEN THOSE VALUES IN THE TABLE, USE NEXT HIGHEST

- ENTER TABLE WITH MAXIMUM VALUE OF "L" AND REQUIRED VALUES OF "W" AND "H" FOR SELECTION OF APPROPRIATE BEAM SELECTION.

GENERAL NOTES

1. SIGNS SHALL BE PROVIDED FOR LOCATIONS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. SEE SIGN TEXT LAYOUT SHEETS AND PLANS FOR SIGN SIZES AND APPROXIMATE LOCATIONS.

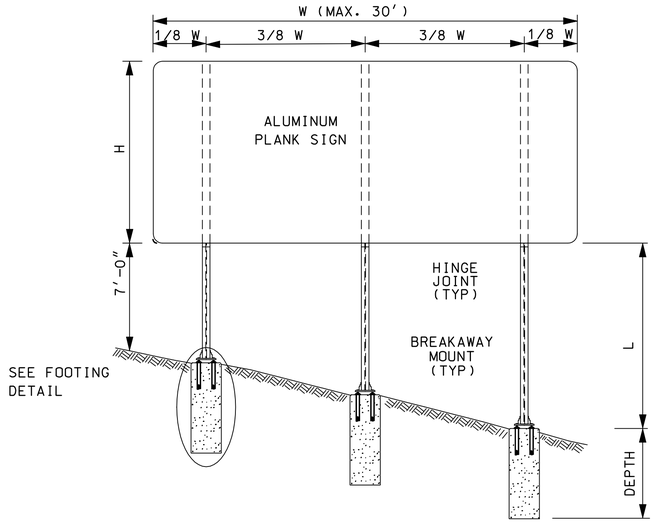
2. DIMENSIONS, ELEVATIONS, SLOPES, AND SITUATIONS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY. ACTUAL CASES WILL DEPEND ON FIELD CONDITIONS.

3. WHEN TWO OR MORE INDEPENDENT SIGNS ARE MOUNTED AS A SINGLE INSTALLATION, THE POST SUPPORTS SHALL BE CALCULATED WITH THE TOTAL AREA OF THE SIGNS BEING CONSIDERED AS ONE UNIT, INCLUDING AN ALLOWANCE FOR A 6" VERTICAL SPACE BETWEEN THE SIGNS.

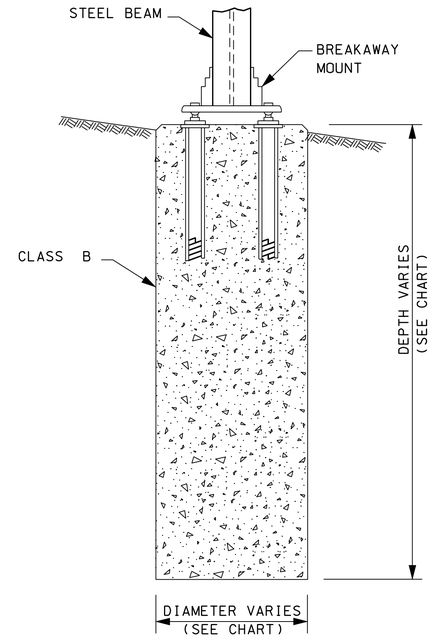
4. POST LENGTH TO BE DETERMINED BY SIGN SIZE AND LOCATION. EXACT FIELD LOCATION TO BE DETERMINED BY THE ENGINEER.

5. THE MINIMUM HORIZONTAL CLEARANCE TO THE NEAR EDGE OF THE SIGN OF ANY MULTIPLE POST NON-BREAKAWAY MOUNT SIGN SHALL BE 7'-0" MIN. FROM FACE OF BEAM GUARDRAIL. OTHER TYPES OF GUARDRAIL OR BARRIER MAY REQUIRE A DIFFERENT OFFSET.

6. SEE STANDARD NO. PS-1 & PS-2 FOR ADDITIONAL INFORMATION.



POST SPACING DETAIL



FOOTING DETAIL

3 POST SIGN

W	L	H											
		4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'	15'
22'	8'	W6x9	W6x9	W6x12	W6x12	W6x15	W8x18	W8x18	W8x18	W8x18	W10x22	W14x30	–
	10'	W6x12	W6x12	W6x15	W6x15	W8x18	W8x18	W8x18	W8x21	W10x22	W12x26	W14x30	–
	12'	W6x12	W6x15	W8x18	W8x18	W8x18	W8x21	W8x21	W8x21	W10x26	W12x26	W14x30	–
	14'	W6x15	W8x18	W8x18	W8x21	W8x21	W8x21	W10x26	W10x26	W10x26	W12x26	W14x30	–
	16'	W8x18	W8x18	W8x21	W8x21	W10x26	W10x26	W10x26	W12x26	W12x26	–	–	–
24'	8'	W6x9	W6x9	W6x12	W6x12	W8x18	W8x18	W8x18	W8x18	W8x21	W10x22	W14x30	–
	10'	W6x12	W6x12	W6x15	W8x18	W8x18	W8x18	W8x18	W10x22	W10x26	W12x26	W14x30	–
	12'	W6x15	W6x15	W8x18	W8x18	W8x21	W8x21	W8x21	W10x26	W10x26	W12x26	W14x30	–
	14'	W6x15	W8x18	W8x18	W8x21	W8x21	W10x26	W10x26	W10x26	W10x26	W12x26	W14x30	–
	16'	W8x18	W8x18	W8x21	W8x21	W10x26	W10x26	W10x26	W12x26	–	–	–	–
26'	8'	W6x9	W6x12	W6x12	W6x12	W8x18	W8x18	W8x18	W8x18	W10x22	W12x26	–	–
	10'	W6x12	W6x15	W6x15	W8x18	W8x18	W8x18	W8x21	W10x22	W12x26	W14x30	–	–
	12'	W6x15	W6x15	W8x18	W8x18	W8x21	W8x21	W8x21	W10x26	W12x26	W14x30	–	–
	14'	W6x15	W8x21	W8x21	W8x21	W8x21	W10x26	W10x26	W10x26	W12x26	W14x30	–	–
	16'	W8x18	W8x21	W8x21	W10x26	W10x26	W10x26	W12x26	W14x30	–	–	–	–
28'	8'	W6x9	W6x12	W6x12	W8x18	W8x18	W8x18	W8x18	W8x18	W10x22	W12x26	–	–
	10'	W6x12	W6x15	W8x18	W8x18	W8x18	W8x18	W10x22	W10x22	W12x26	W14x30	–	–
	12'	W6x15	W6x15	W8x18	W8x18	W8x21	W8x21	W10x26	W10x26	W12x26	W14x30	–	–
	14'	W8x18	W8x18	W8x21	W10x26	W10x26	W10x26	W10x26	W12x26	W12x26	–	–	–
	16'	W8x18	W8x21	W8x21	W10x26	W10x26	W10x26	W12x26	–	–	–	–	–
30'	8'	W6x9	W6x12	W6x15	W8x18	W8x18	W8x18	W8x18	W10x22	W10x26	W12x26	–	–
	10'	W6x12	W6x15	W8x18	W8x18	W8x18	W8x18	W10x22	W12x26	W14x30	–	–	–
	12'	W6x15	W8x18	W8x18	W8x21	W8x21	W10x22	W10x26	W12x26	W14x30	–	–	–
	14'	W8x18	W8x18	W8x21	W8x21	W10x26	W10x26	W10x26	W12x26	–	–	–	–
	16'	W8x18	W8x21	W10x26	W10x26	W10x26	W12x26	–	–	–	–	–	–

POST	FOOTING	
SIZE	DEPTH	DIAMETER
W6x9	6'	24"
W6x12	6'	24"
W6x15	7'-6"	24"
W8x18	7'-6"	30"
W8x21	8'-6"	30"
W10x22	8'-6"	36"
W10x26	8'-6"	36"
W12x26	8'-6"	36"
W14x30	9'	36"

SIGNING STANDARD

STEEL BEAM DETAILS
BREAKAWAY

STANDARD NO. PS-8

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
PS-8

STANDARD PLANS

New Hampshire DOT Department of Transportation

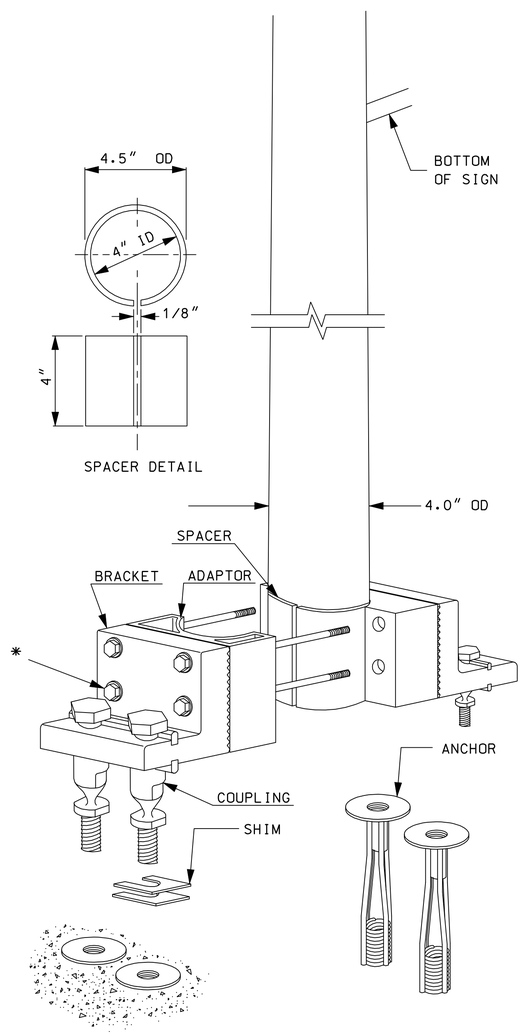
STANDARD NO. PS-8

STANDARD
NO. PS-9

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
PS-9

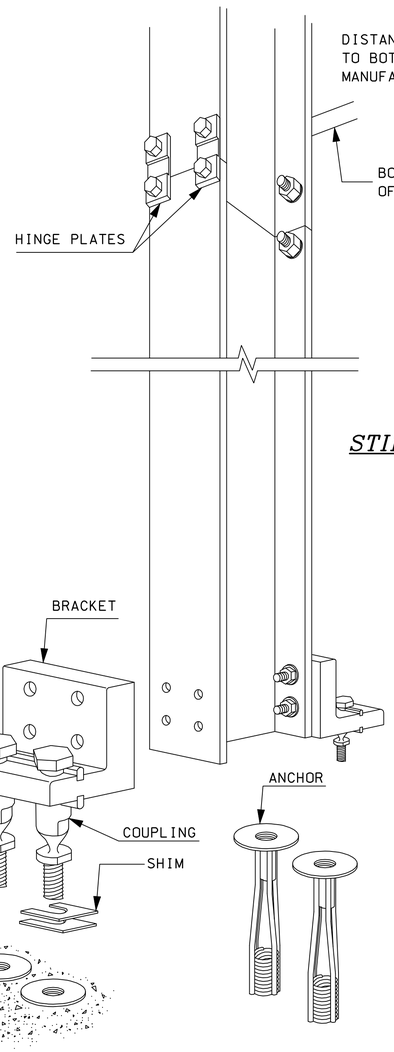
STANDARD PLANS



TRANSPO TYPE APx4.5 (S/B) (OR EQUAL)

USE FOR 4 " DIAMETER ALUMINUM TUBE

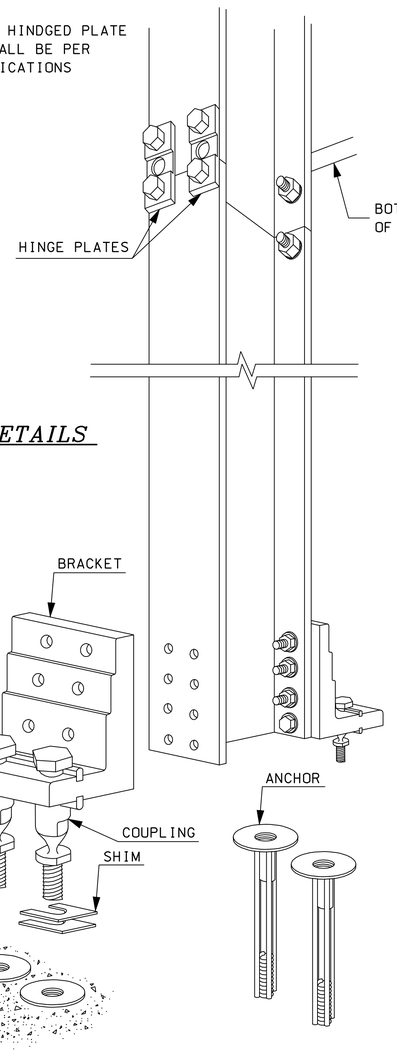
* BOLT HEAD SHALL FACE TRAFFIC



TRANSPO TYPE AI6-LP (OR EQUAL)

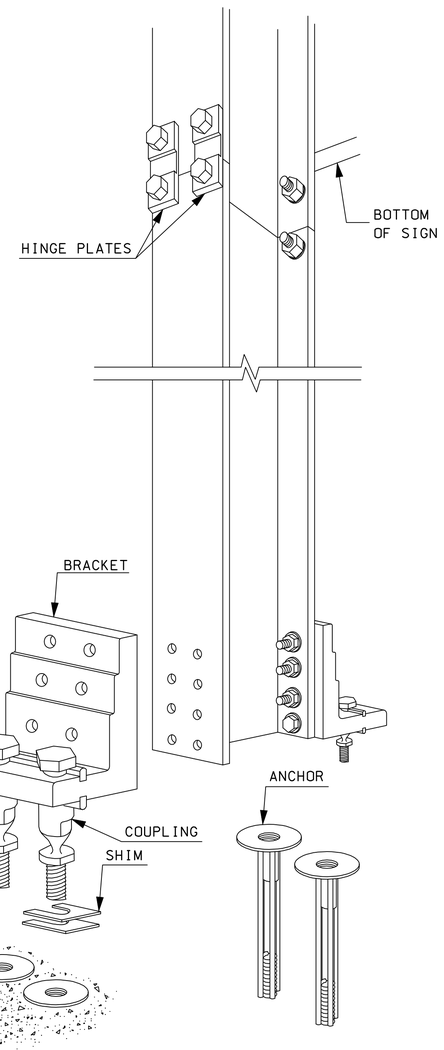
USE FOR W6x9 STEEL BEAM

STIFFENER DETAILS



TRANSPO TYPE B-525-LP (OR EQUAL)

USE FOR W6x12, W6x15, W8x18,
OR W8x21 STEEL BEAMS



TRANSPO TYPE B-650-LP (OR EQUAL)

USE FOR W10x22, W10x26, W12x26,
OR W14x30 STEEL BEAMS

GENERAL NOTES

1. ASSEMBLE ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
2. SEE PS-7 OR PS-8 FOR STEEL BEAM SIZES.
3. SEE PS-10 FOR BRACKET SELECTION TABLES FOR TYPE B525-LP & B-650-LP.

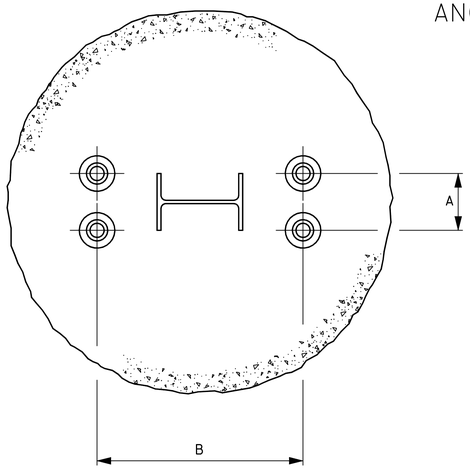
New Hampshire DOT Department of Transportation

STANDARD
NO. PS-9

SIGNING STANDARD

BREAKAWAY MOUNTS

ANCHOR INSTALLATION & BRACKET SELECTION



TRAFFIC

A = LATERAL SPACING OF ANCHORS

3" FOR B-525 USED ON 6" & 8" WIDE FLANGE POSTS

4" FOR B-650 USED ON 10", 12" & 14" WIDE FLANGE POSTS

4-1/4" FOR AI6 USED ON W6x9 WIDE FLANGE POSTS

3-1/4" FOR AP x 4-1/2" USED ON 4" DIAMETER ALUMINUM TUBE.

B = LONGITUDINAL SPACING OF ANCHORS

* BRACKET #1 - DEPTH OF POST SECTION PLUS 7-15/16"

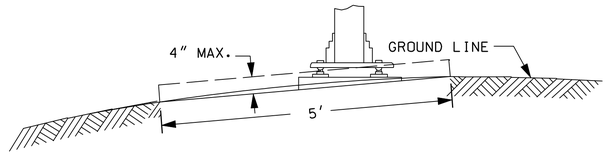
* BRACKET #2 - DEPTH OF POST SECTION PLUS 8-1/16"

* BRACKET #3 - DEPTH OF POST SECTION PLUS 8-1/8"
DEPTH OF POST SECTION PLUS 3-3/4" FOR AI6

* FOR B-525 & B-650 MOUNTS, SEE BRACKET TABLES

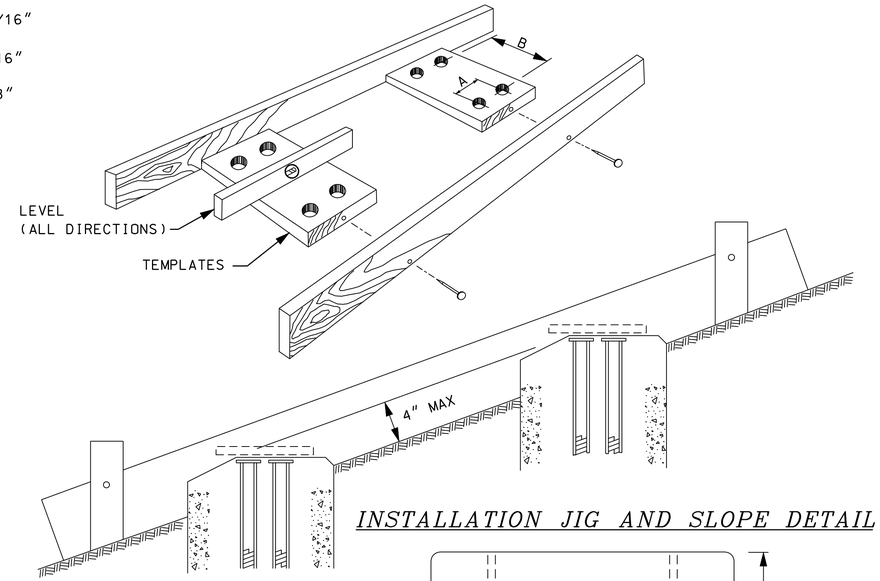
PLAN VIEW OF FOOTINGS

(SEE PS-3, PS-5A, OR PS-5B FOR FOOTING SIZES)



MAXIMUM BREAKAWAY STUB HEIGHT

BREAKAWAY SUPPORTS PLACED ON ROADSIDE SLOPES SHALL NOT ALLOW IMPACTING VEHICLES TO SNAG ON EITHER THE FOUNDATION OR ANY SUBSTANTIAL REMAINS OF THE SUPPORT. SURROUNDING TERRAIN SHALL BE GRADED TO PERMIT VEHICLES TO PASS OVER ANY NON-BREAKAWAY PORTION OF THE SIGN INSTALLATION WHICH REMAINS IN THE GROUND OR RIGIDLY ATTACHED TO THE FOUNDATION.



INSTALLATION JIG AND SLOPE DETAIL

6" POST

POST LENGTH = L+ H(FT)

SIGN HEIGHT = H(FT)	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
3																
4																
5																
6												1				
7																
8																
9																
10							2									
11																
12																
13			3													
14																
15																

8" POST

POST LENGTH = L+ H(FT)

SIGN HEIGHT = H(FT)	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
3																
4																
5																
6													1			
7																
8																
9								2								
10																
11																
12																
13			3													
14																
15																

BRACKET TABLES FOR B-525-LP MOUNTS

10" POST

POST LENGTH = L+ H(FT)

SIGN HEIGHT = H(FT)	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
3																
4																
5														1		
6																
7																
8									2							
9																
10																
11																
12																
13			3													
14																
15																

12" POST

POST LENGTH = L+ H(FT)

SIGN HEIGHT = H(FT)	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
3																
4																
5														1		
6																
7																
8									2							
9																
10																
11																
12			3													
13																
14																
15																

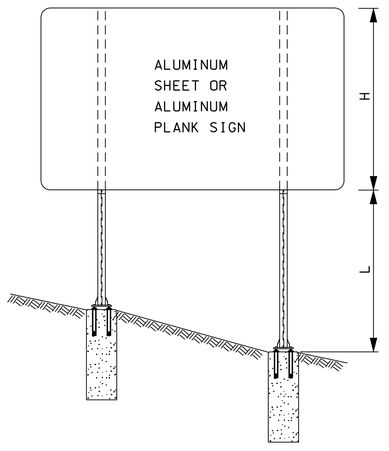
14" POST

POST LENGTH = L+ H(FT)

SIGN HEIGHT = H(FT)	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
3																
4																
5														1		
6																
7																
8											2					
9																
10																
11																
12					3											
13																
14																
15																

BRACKET TABLES FOR B-650-LP MOUNTS

SELECT CORRECT BRACKET NUMBER BY LOCATING THE INTERSECTION OF SIGN HEIGHT AND POST LENGTH IN THE BRACKET SELECTION MATRIX. THE INTERSECTION WILL BE EITHER ZONE 1, 2, OR 3 WHICH CORRESPONDS TO BRACKET NUMBERS 1, 2, OR 3.



SIGNING STANDARD

BREAKAWAY MOUNTS

STANDARD NO. PS-10

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
PS-10

STANDARD PLANS

New Hampshire DOT Department of Transportation

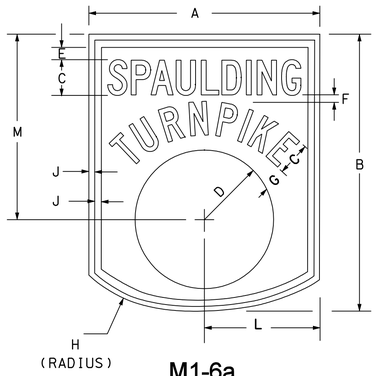
STANDARD NO. PS-10

STANDARD NO. SG-1

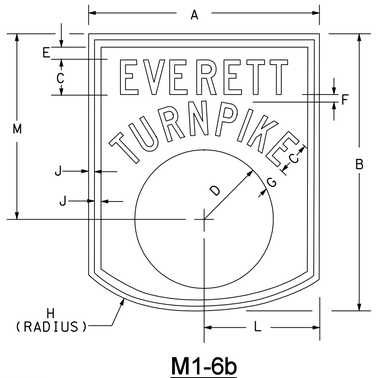
REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
SG-1

STANDARD PLANS



M1-6a

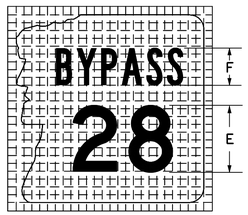


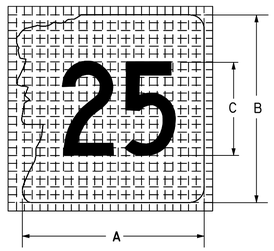
M1-6b

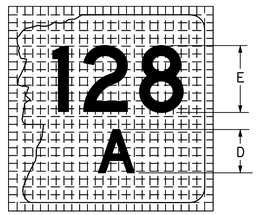
N.H. TURNPIKE ROUTE MARKERS

(FOR GUIDE SIGN USE)

DIMENSIONS (inches)/LETTER FONTS										
A	B	C	D	E	F	G	H	J	L	M
15	18	2 1/4 C	4 1/2	3/4	1/2	1	12 3/4	3/8	7 1/2	12
20	24	3C	6	1	3/4	1 1/4	17	1/2	10	16
30	36	4 1/2 C	9	1 1/2	1	2	25 1/2	3/4	15	24

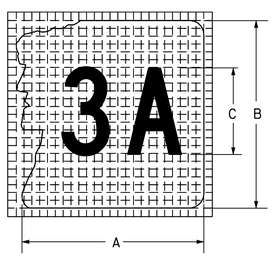






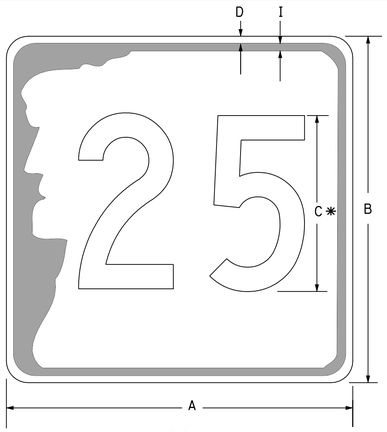
SIGN	DIMENSIONS (inches)/LETTER FONTS					
	A	B	C	D	E	F
1 DIGIT	18	18	10E	–	8D	4B
2 DIGIT	18	18	10C	4D	8D	4B
3 DIGIT	18	18	10B	4D	8B	4B
1 DIGIT	24	24	14E	–	11D	6B
2 DIGIT	24	24	14C	6D	11D	6B
3 DIGIT	24	24	12B	6D	11B	6B
1 DIGIT	36	36	18E	_	16D	8B
2 DIGIT	36	36	18C	8D	16D	8B
3 DIGIT	36	36	18B	8D	16B	8B
1 DIGIT	48	48	24E	–	20D	11B
2 DIGIT	48	48	24C	12D	20D	11B
3 DIGIT	48	48	24B	12D	20B	11B

NH STATE ROUTE MARKER PATTERN FOR GUIDE SIGN USE

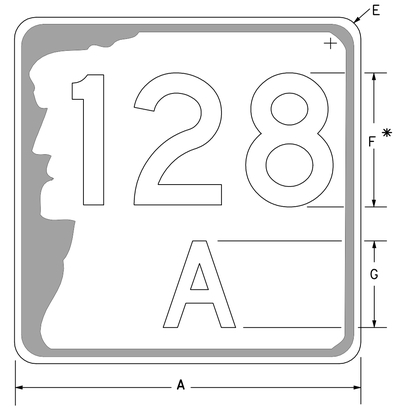


NOTES:

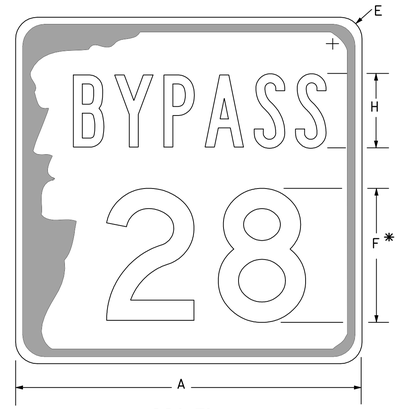
1. OPTICALLY PLACE NUMERALS WITHIN SHIELD.
2. ANY 2 DIGIT ROUTE WITH ONE OR MORE #1's IN THE COPY WILL BE A "D" SERIES.
3. ANY 3 DIGIT ROUTE WITH TWO #1's IN THE COPY WILL BE WILL BE A "C" SERIES.
4. ANY 3 DIGIT ROUTE WITH THREE #1's IN THE COPY WILL BE WILL BE A "D" SERIES.



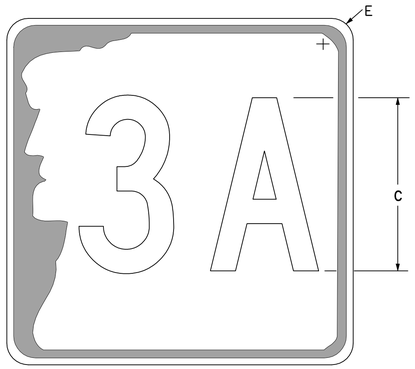
M1-5



M1-5a



M1-5b



M1-5c

N.H. STATE ROUTE MARKER

(FOR INDEPENDENT USE)

SIGN	DIMENSIONS (inches)/LETTER FONTS								
	A	B	C	D	E	F	G	H	I
1,2 DIGITS	24	24	12D	1/2	1 1/2	9D	6D	5B	1/2
3 DIGITS	24	24	12B	1/2	1 1/2	9C	6D	5B	1/2
1,2 DIGITS	36	36	18D	3/4	2 1/4	14D	9D	9B	3/4
3 DIGITS	36	36	18B	3/4	2 1/4	14C	9D	9B	3/4

* OPTICALLY PLACE NUMERALS WITHIN SHIELD

GENERAL NOTES

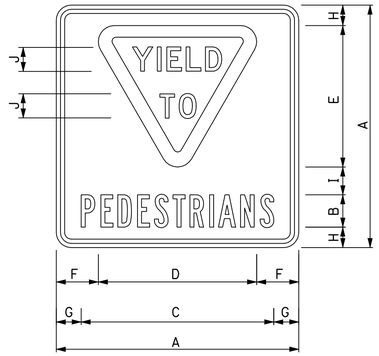
1. BACKGROUND FOR ALL SHIELDS FOR C & CC SIGNS SHALL BE WHITE TYPE III. BACKGROUND FOR ALL SHIELDS ON OVERHEAD STRUCTURES SHALL BE TYPE VII, VIII, IX OR X.
2. SHEET ALUMINUM USED FOR DEMOUNTABLE ROUTE MARKERS SHALL CONFORM TO THE OUTLINE OF THE SHIELD.
3. NEW HAMPSHIRE STATE ROUTE MARKERS SHALL UTILIZE "THE OLD MAN" IMAGE OR OUTLINE AS FOLLOWS:
   - INDEPENDENT ROUTE MARKERS SHALL HAVE BLACK TEXT INSIDE A BLACK "OLD MAN" IMAGE AS SHOWN ABOVE.
   - GUIDE SIGN ROUTE MARKERS SHALL HAVE BLACK TEXT ON A CUT OUT WHITE "OLD MAN" OUTLINE AS SHOWN LEFT.
4. NEW HAMPSHIRE TURNPIKE ROUTE MARKERS SHALL UTILIZE THE FOLLOWING DESIGN:
   - SPAULDING TURNPIKE GUIDE SIGN ROUTE MARKERS SHALL HAVE BLUE TEXT, BORDER, AND DISK ON A WHITE BACKGROUND,
   - EVERETT TURNPIKE GUIDE SIGN ROUTE MARKERS SHALL HAVE GREEN TEXT, BORDER, AND DISK ON A WHITE BACKGROUND.
5. INTERSTATE AND U.S. ROUTE MARKERS SHALL CONFORM TO THE MUTCD AND STANDARD HIGHWAY SIGNS MANUAL.
6. DIMENSIONS OF ROUTE MARKERS NOT SHOWN ON THIS SHEET SHALL BE DIRECTLY PROPORTIONAL TO THOSE SHOWN.

New Hampshire DOT Department of Transportation

STANDARD NO. SG-1

SIGNING STANDARD

ROUTE MARKER DETAILS



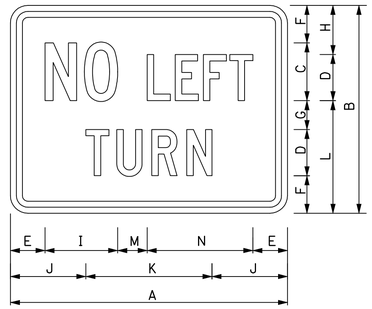
1.88" RADIUS, 0.50" BORDER, 0.50" INDENT
BLACK ON WHITE,
"YIELD", "TO" & SHIELD BORDER ARE RED.

R1-2B1

DIMENSIONS (inches)/LETTER FONTS									
A	B	C	D	E	F	G	H	I	J
30	4B	23 3/4	19 1/2	17 1/2	5 1/4	3 1/8	2 1/2	3 1/2	2 1/2 B

REGULATORY SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
YIELD TO PEDESTRAINS	07-13-2001		1
	02-26-2010		STANDARD
			SG-2



1.50" RADIUS, 0.50" BORDER, 0.50" INDENT
BLACK ON WHITE

R3-3LB1

DIMENSIONS (inches)/LETTER FONTS													
A	B	C	D	E	F	G	H	I	J	K	L	M	N
24	18	5C	4C	3	3 1/4	2 1/2	4 1/4	6 1/4	6 1/2	11	9 3/4	2 5/8	9 1/8

REGULATORY SIGN

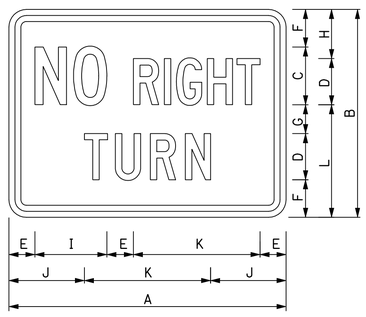
NHDOT STANDARD PLANS	REV. DATE		PLATE
	07-13-2001		2
	02-26-2010		STANDARD
			SG-2

STANDARD
NO. SG-2

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
SG-2

STANDARD PLANS



1.50" RADIUS, 0.50" BORDER, 0.50" INDENT
BLACK ON WHITE

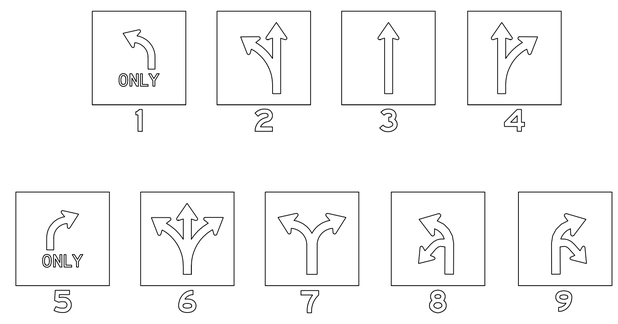
R3-3RB1

DIMENSIONS (inches)/LETTER FONTS											
A	B	C	D	E	F	G	H	I	J	K	L
24	18	5C	4C	2 1/4	3 1/4	2 1/2	4 1/4	6 1/4	6 1/2	11	9 3/4

REGULATORY SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
NO RIGHT TURN	07-13-2001		3
	02-26-2010		STANDARD
			SG-2

R3-8 SERIES
LANE USE CONTROL SIGNS



EXAMPLE:
R3-8(12)

MODIFY THE R3-8 SIGN TO REFLECT THE ACTUAL LANE USE COMBINATIONS

REGULATORY SIGN

SIGNING STANDARD

NHDOT STANDARD PLANS	REV. DATE		PLATE
LANE USE CONTROL SIGNS	07-13-2001		4
	02-26-2010		STANDARD
			SG-2

New Hampshire DOT Department of Transportation

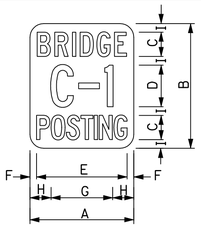
STANDARD
NO. SG-2

STANDARD NO. SG-3

REVISION DATE
07-13-2001
02-26-2010

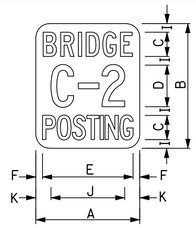
*.DGN FILE NAME
SG-3

STANDARD PLANS



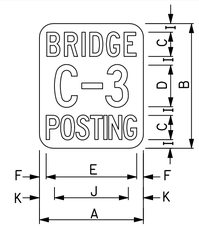
R4-5cB1

2.0" RADIUS, NO BORDER, WHITE;
"BRIDGE" BLACK C 85% SPACING;
"C-1" BLACK C 75% SPACING;
"POSTING" BLACK C 30% SPACING



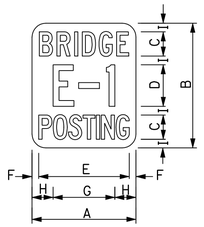
R4-5bB1

2.0" RADIUS, NO BORDER, WHITE;
"BRIDGE" BLACK C 85% SPACING;
"C-2" BLACK C 65% SPACING;
"POSTING" BLACK C 30% SPACING



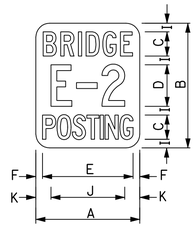
R4-5B1

2.0" RADIUS, NO BORDER, WHITE;
"BRIDGE" BLACK C 85% SPACING;
"C-3" BLACK C 65% SPACING;
"POSTING" BLACK C 30% SPACING



R4-5dB1

2.0" RADIUS, NO BORDER, WHITE;
"BRIDGE" BLACK C 85% SPACING;
"E-1" BLACK C 100% SPACING;
"POSTING" BLACK C 30% SPACING



R4-5eB1

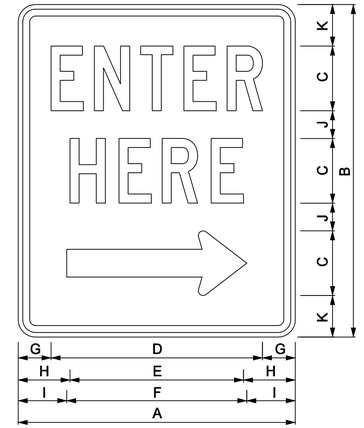
2.0" RADIUS, NO BORDER, WHITE;
"BRIDGE" BLACK C 85% SPACING;
"E-2" BLACK C 100% SPACING;
"POSTING" BLACK C 30% SPACING

DIMENSIONS (inches)/LETTER FONTS						
A	B	C	D	E	F	G
15	18	$3\frac{1}{2}$C	6C	13	1	9

DIMENSIONS (inches)/ LETTER FONTS			
H	I	J	K
3	$1\frac{1}{4}$	$10\frac{5}{8}$	$2\frac{3}{16}$

REGULATORY SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
BRIDGE RESTRICTIONS	07-13-2001		1
	02-26-2010		STANDARD
			SG-3



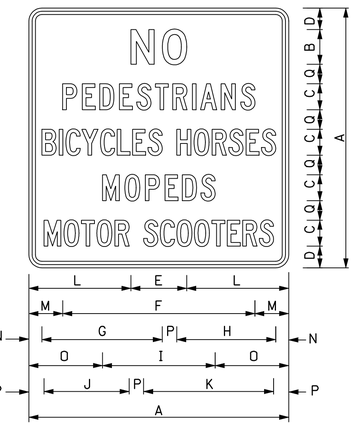
1.88" RADIUS, 0.75" BORDER, 0.50" INDENT, BLACK ON WHITE
ARROW: 19.50" X 7.00"

R4-7B1

DIMENSIONS (inches)/LETTER FONTS										
A	B	C	D	E	F	G	H	I	J	K
30	36	7C	23	$18\frac{3}{4}$	$19\frac{1}{2}$	$3\frac{1}{2}$	$5\frac{5}{8}$	$5\frac{1}{4}$	3	$4\frac{1}{2}$

REGULATORY SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
ENTER HERE	07-13-2001		2
	02-26-2010		STANDARD
			SG-3



1.88" RADIUS, 0.50" BORDER, 0.50" INDENT, BLACK ON WHITE

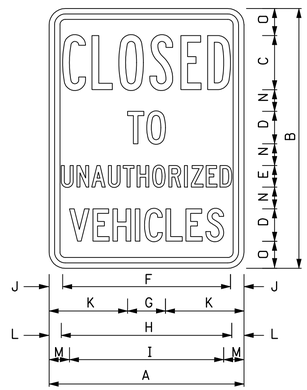
R5-10a(M)

DIMENSIONS (inches)/LETTER FONTS										
A	B	C	D	E	F	G	H	I	J	K
30	4D	3C	$2\frac{1}{2}$	$6\frac{3}{8}$	$22\frac{1}{4}$	$13\frac{7}{8}$	$11\frac{3}{8}$	13	$9\frac{3}{4}$	15

DIMENSIONS (inches)/LETTER FONTS					
L	M	N	O	P	Q
$11\frac{3}{4}$	$3\frac{7}{8}$	$1\frac{1}{2}$	$8\frac{1}{2}$	$1\frac{3}{4}$	$2\frac{1}{4}$

REGULATORY SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
NO PEDESTRIANS	07-13-2001		3
	02-26-2010		STANDARD
			SG-3



1.50" RADIUS, 0.50" BORDER, 0.50" INDENT, BLACK ON WHITE

R5-10B1

DIMENSIONS (inches)/LETTER FONTS										
A	B	C	D	E	F	G	H	I	J	K
18	24	5B	3C	2C	$15\frac{1}{2}$	$3\frac{1}{2}$	$15\frac{3}{4}$	$14\frac{1}{4}$	$1\frac{1}{4}$	$7\frac{1}{4}$

DIMENSIONS (inches)/ LETTER FONTS			
L	M	N	O
$1\frac{1}{8}$	$1\frac{7}{8}$	2	$2\frac{1}{2}$

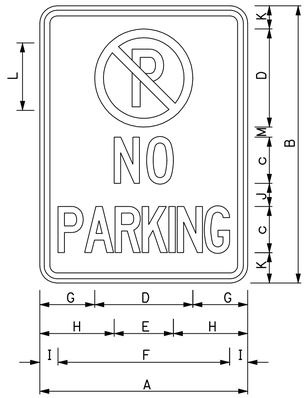
REGULATORY SIGN

SIGNING STANDARD

NHDOT STANDARD PLANS	REV. DATE		PLATE
CLOSED TO UNAUTHORIZED VEHICLES	07-13-2001		4
	02-26-2010		STANDARD
			SG-3

New Hampshire DOT Department of Transportation

STANDARD NO. SG-3



1.50" RADIUS, 0.50" BORDER, 0.38" INDENT,
SEE COLOR CHART

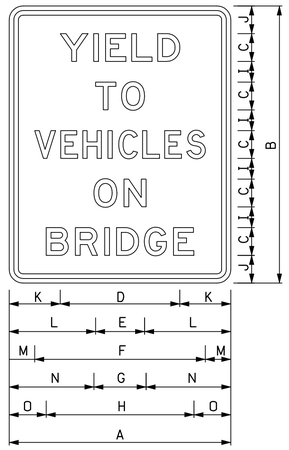
R7-2B1

COLOR CHART	
BORDER	RED
P	BLACK
	RED
NO PARKING	RED
BACKGROUND	WHITE

DIMENSIONS (inches)/LETTER FONTS												
A	B	C	D	E	F	G	H	I	J	K	L	M
18	24	3B	10	5	14 3/4	4	6 1/2	1 5/8	2 3/8	2 1/4	6EM	2

REGULATORY SIGN

NHDOT STANDARD PLANS	REV. DATE	PLATE
NO PARKING	07-13-2001	1
	02-26-2010	STANDARD SG-4



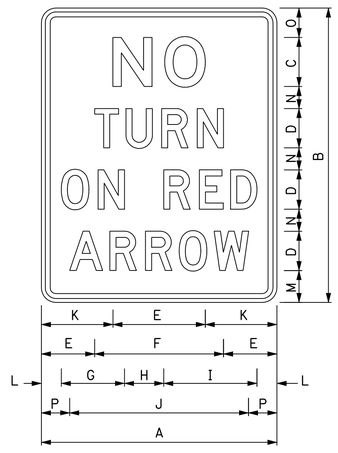
DIMENSIONS (inches)/LETTER FONTS														
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
24	30	3E	13	5 1/4	18 1/2	5 3/4	16	2 1/4	3	5 1/2	9 3/8	2 3/4	9 1/8	4

1.50" RADIUS, 0.50" BORDER, 0.50" INDENT,
BLACK ON WHITE

R10-9

REGULATORY SIGN

NHDOT STANDARD PLANS	REV. DATE	PLATE
YIELD TO VEHICLES ON BRIDGE	07-13-2001	2
	02-26-2010	STANDARD SG-4



DIMENSIONS (inches)/LETTER FONTS									
A	B	C	D	E	F	G	H	I	J
24	30	5E	4D	9 1/2	13 1/4	6 1/2	4	9 1/2	18 1/4

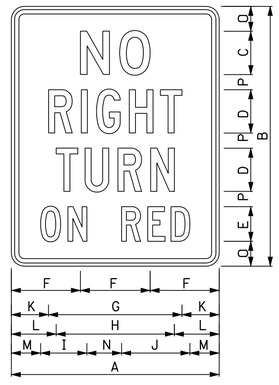
DIMENSIONS (inches)/LETTER FONTS					
K	L	M	N	O	P
7 1/4	2	3 1/4	2 1/4	3	2 7/8

1.50" RADIUS, 0.50" BORDER, 0.38" INDENT,
BLACK ON WHITE

R10-11A(M)

REGULATORY SIGN

NHDOT STANDARD PLANS	REV. DATE	PLATE
NO TURN ON RED ARROW	07-13-2001	3
	02-26-2010	STANDARD SG-4



DIMENSIONS (inches)/LETTER FONTS									
A	B	C	D	E	F	G	H	I	J
24	30	5E	4D	4C	8	15 1/2	13 3/4	5 3/8	7 7/8

DIMENSIONS (inches)/LETTER FONTS					
K	L	M	N	O	P
4 1/4	5 1/8	3 1/4	4	3	1 3/4

1.50" RADIUS, 0.50" BORDER, 0.38" INDENT,
BLACK ON WHITE

R10-11B1

REGULATORY SIGN

NHDOT STANDARD PLANS	REV. DATE	PLATE
NO RIGHT TURN ON RED	07-13-2001	4
	02-26-2010	STANDARD SG-4

SIGNING STANDARD

STANDARD NO. SG-4

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
SG-4

STANDARD PLANS

New Hampshire DOT Department of Transportation

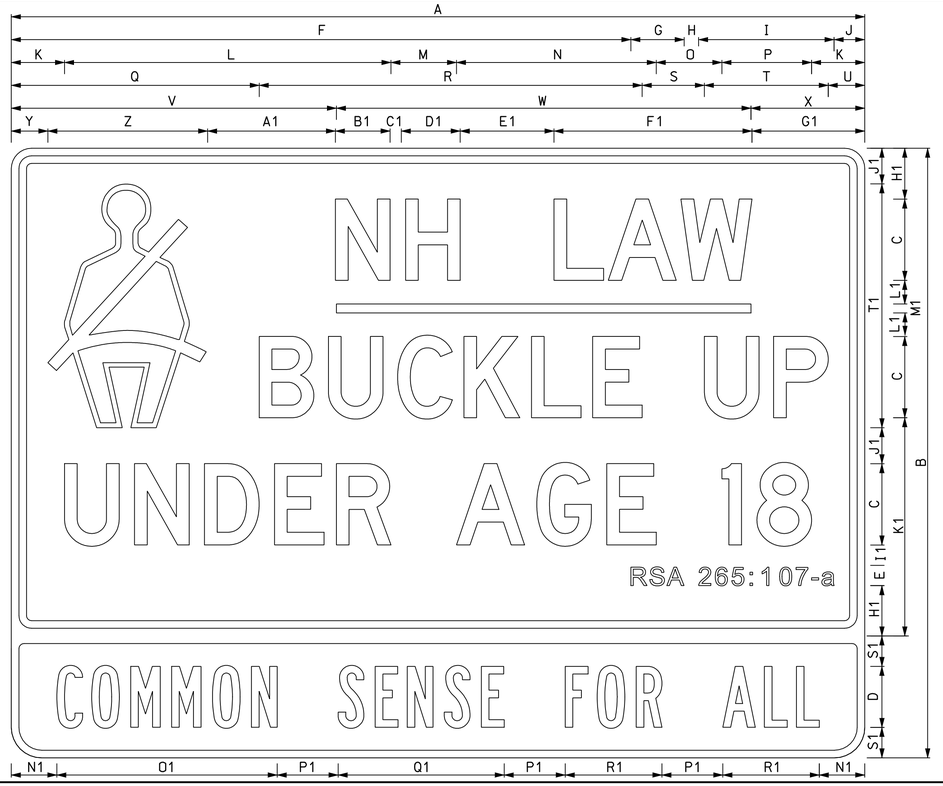
STANDARD NO. SG-4

STANDARD NO. SG-5

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
SG-5

STANDARD PLANS



R16-1B1

DIMENSIONS (inches)/LETTER FONTS																
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
60	48	6C	5B	1 1/2	42 3/8	3 7/8	1	9 5/8	3 1/8	4 3/4	20 7/8	5 3/4	12 3/8	5 3/4	5 3/4	19 3/8	23 3/8
84	60	8D	6B	2	61	5 1/8	1 1/2	13 3/8	3	5 1/4	32 1/4	6 1/4	19 3/4	6 3/8	8 7/8	24 3/8	37 3/4

DIMENSIONS (inches)/LETTER FONTS																			
S	T	U	V	W	X	Y	Z	A1	B1	C1	D1	E1	F1	G1	H1	I1	J1	K1	L1
6	7 5/8	3 5/8	23 7/8	28	8 1/8	3 5/8	11 3/4	8 3/4	5 3/8	1	5 3/8	7 3/8	12 1/8	8 3/8	3	2 1/2	2	17	1 1/2
6 1/8	12 1/4	3 1/2	32	40 7/8	11 1/8	3 5/8	15 3/4	12 1/2	5 3/8	2 1/4	5 3/8	7 5/8	19 1/2	11	5	2	3 1/2	21 1/2	2 5/16

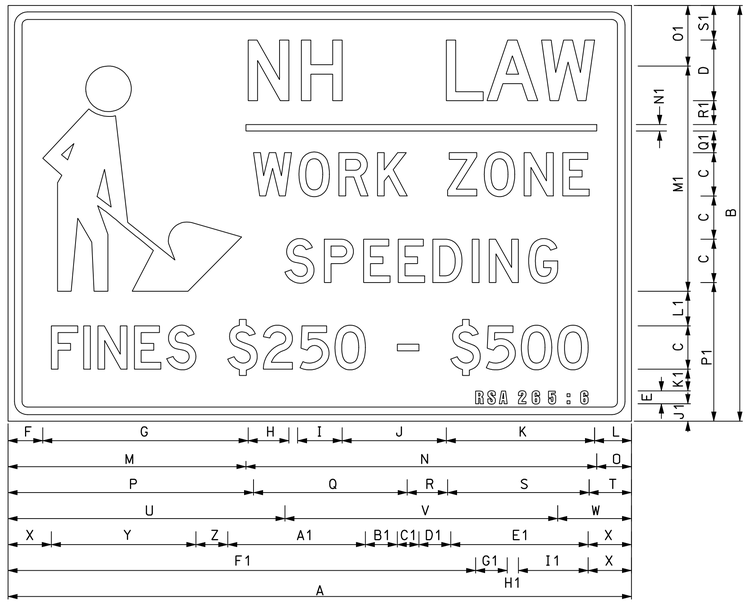
DIMENSIONS (inches)/LETTER FONTS							
M1	N1	O1	P1	Q1	R1	S1	T1
1	1 3/8	17 5/8	3 5/8	13 1/4	7 3/4	3 1/2	18
7/8	4 1/2	21 3/4	6	16 1/4	9 1/2	3	24

60" x 48"
Symbol RG015; 1.25" RADIUS, 0.75" BORDER, 0.75" INDENT, BLACK ON WHITE
"RSA 256:107-a" Triumvirate Compressed; "COMMON SENSE FOR ALL", WHITE ON BLUE

84" x 60"
Symbol RG015; 1.25" RADIUS, 0.75" BORDER, 0.75" INDENT, BLACK ON WHITE
"RSA 256:107-a" Triumvirate Compressed; "COMMON SENSE FOR ALL", WHITE ON BLUE

REGULATORY SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
NH LAW BUCKLE UP	07-13-2001		1
	02-26-2010		STANDARD
			SG-5



R50-1

DIMENSIONS (inches)/LETTER FONTS																						
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
48	36	4D	5D	1 1/2	3	15	3 3/8	3 1/4	6 3/4	12 3/8	3 1/4	18	27	3	18 1/2	12 3/4	1 1/2	11 3/4	3 1/2	21	21	6	3 1/2
72	48	5D	7D	1 1/2	4 1/4	23	6	6	10 5/8	17 1/2	4 1/4	27 3/4	40	4 1/4	28 7/8	17 3/4	4 5/8	16 1/4	5	32	31 1/2	8 1/2	5

DIMENSIONS (inches)/LETTER FONTS																					
Y	Z	A1	B1	C1	D1	E1	F1	G1	H1	I1	J1	K1	L1	M1	N1	O1	P1	Q1	R1	S1
12	1 1/4	11 3/4	1 1/8	2	1 1/4	11 3/4	35 1/2	3 3/4	5/8	4 5/8	2 3/8	1 1/2	3	17	1/2	6 3/8	13 1/8	1 1/2	1 1/2	2 3/8
16 3/4	3 3/4	16 7/8	3 1/4	2 1/2	3 5/8	15 7/8	54	4 1/4	1	4	2	1 1/2	4	26	3/4	7	16	2 1/2	2 3/4	4

48" x 36"
Symbol RG015; 1.25" RADIUS, 0.75" BORDER, 0.75" INDENT,
BLACK ON WHITE
"RSA 265:6" Triumvirate Compressed;
BB GRADE PLYWOOD

72" x 48"
Symbol RG015; 1.25" RADIUS, 0.75" BORDER, 0.75" INDENT,
BLACK ON WHITE
"RSA 265:6" Triumvirate Compressed;
BB GRADE PLYWOOD

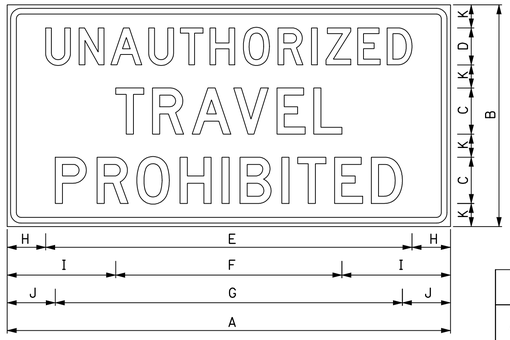
REGULATORY SIGN

SIGNING STANDARD

NHDOT STANDARD PLANS	REV. DATE		PLATE
NH WORK ZONE SPEEDING	07-13-2001		2
	02-26-2010		STANDARD
			SG-5

STANDARD NO. SG-5

New Hampshire DOT Department of Transportation



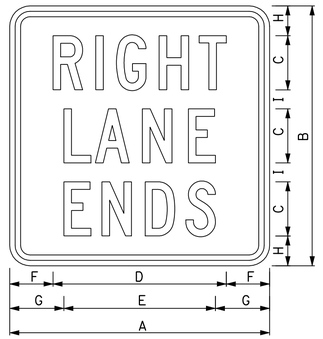
1.50" RADIUS. 0.68" BORDER, 0.375" INDENT,
BLACK ON WHITE; BB GRADE PLYWOOD SIGN

DIMENSIONS (inches)/LETTER FONTS										
A	B	C	D	E	F	G	H	I	J	K
48	24	5D	4D	39 3/4	24 1/2	37 1/2	4 1/8	12 3/4	5 1/4	2 1/2

R200-S

REGULATORY SIGN

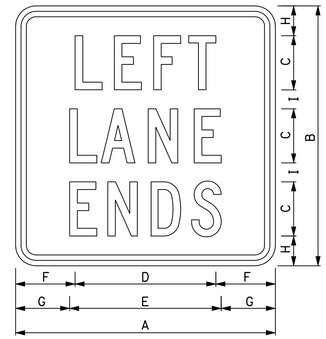
NHDOT STANDARD PLANS	REV. DATE		PLATE
UNAUTHORIZED TRAVEL	07-13-2001		1
	02-26-2010		STANDARD
			SG-6



1.50" RADIUS. 0.50" BORDER, 0.375" INDENT,
BLACK ON YELLOW;

W4-2a(R)

DIMENSIONS (inches)/LETTER FONTS								
A	B	C	D	E	F	G	H	I
24	24	5C	16	14	4	5	2 3/4	1 3/4



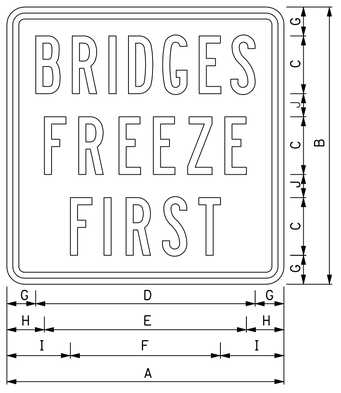
1.50" RADIUS. 0.50" BORDER, 0.375" INDENT,
BLACK ON YELLOW;

W4-2a(L)

DIMENSIONS (inches)/LETTER FONTS								
A	B	C	D	E	F	G	H	I
24	24	5C	13	14	5 1/2	5	2 3/4	1 3/4

WARNING SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
RIGHT / LEFT LANE ENDS	07-13-2001		2
	02-26-2010		STANDARD
			SG-6



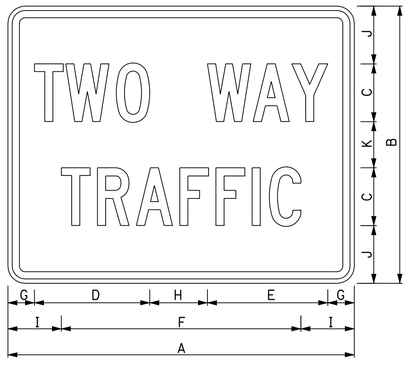
1.50" RADIUS. 0.50" BORDER, 0.375" INDENT,
BLACK ON YELLOW;

W5-B2

DIMENSIONS (inches)/LETTER FONTS									
A	B	C	D	E	F	G	H	I	J
24	24	5B	19	17 1/2	13	2 1/2	3 1/4	5 1/2	2

WARNING SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
BRIDGES FREEZE FIRST	07-13-2001		3
	02-26-2010		STANDARD
			SG-6



1.50" RADIUS. 0.63" BORDER, 0.375" INDENT,
BLACK ON YELLOW;

W6-3b

DIMENSIONS (inches)/LETTER FONTS										
A	B	C	D	E	F	G	H	I	J	K
24	18	4C	8	8 1/4	16 1/2	1 3/8	4	3 3/4	3 3/4	2 1/2
30	24	5C	10	10 1/2	20 3/4	2 1/4	5	4 5/8	5	4

WARNING SIGN

SIGNING STANDARD

NHDOT STANDARD PLANS	REV. DATE		PLATE
TWO WAY TRAFFIC	07-13-2001		4
	02-26-2010		STANDARD
			SG-6

STANDARD NO. SG-6

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
SG-6

STANDARD PLANS

New Hampshire DOT Department of Transportation

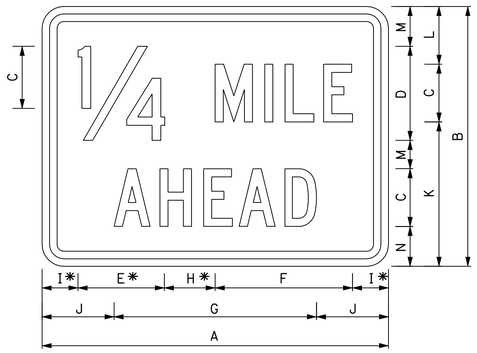
STANDARD NO. SG-6

STANDARD NO. SG-7

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
SG-7

STANDARD PLANS



1.50" RADIUS. 0.50" BORDER, 0.375" INDENT, BLACK ON YELLOW;

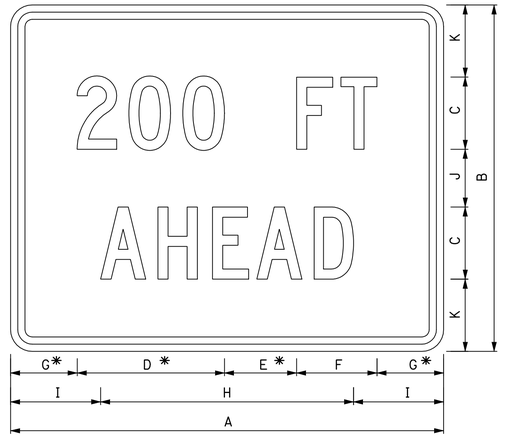
W7-B7

DIMENSIONS (inches)/LETTER FONTS												
A	B	C	D	E	F *	G	H	I *	J *	K	L	M	N
24	18	4C	6 1/2	6	9 1/2	14	3 1/2	2 1/2	5	10	4	2 3/4	2
30	24	5C	8 1/2	7 3/4	11 7/8	17 1/2	3 5/8	3 3/8	6 1/4	13 3/4	5 1/4	4	2 1/2

* DIMENSION VARIES WITH DIFFERENT NUMBERS

WARNING SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
1/4, 1/2, 3/4 MILE AHEAD	07-13-2001		1
	02-26-2010		STANDARD
			SG-7



DIMENSIONS (inches)/LETTER FONTS										
A	B	C	D*	E*	F	G*	H	I	J	K
24	18	4C	8 1/8	4	4 3/8	3 3/4	14	5	3	3 1/2
30	24	5C	10 1/4	5	5 1/2	4 5/8	17 1/2	6 1/4	4	5

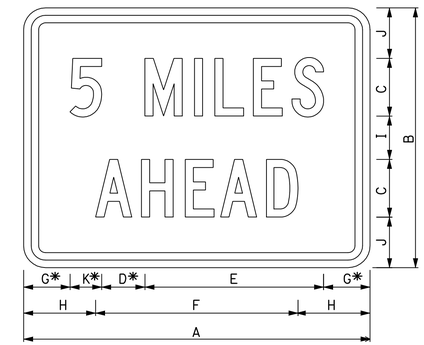
* DIMENSION VARIES WITH DIFFERENT NUMBERS

1.50" RADIUS. 0.50" BORDER, 0.375" INDENT, BLACK ON YELLOW;

W7-B2

WARNING SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
XXX FT AHEAD	07-13-2001		2
	02-26-2010		STANDARD
			SG-7



1.50" RADIUS. 0.50" BORDER, 0.375" INDENT, BLACK ON YELLOW;

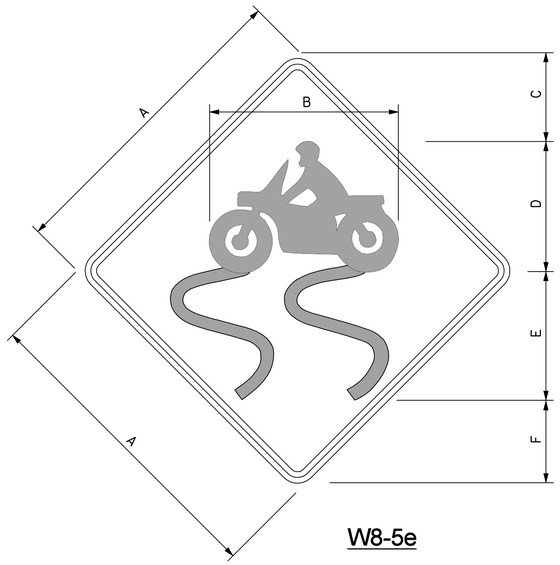
W7-B3

DIMENSIONS (inches)/LETTER FONTS										
A	B	C	D*	E	F	G*	H	I	J	K*
24	18	4C	3	12 1/2	14	3 1/4	5	3	3 1/2	2 1/4
30	24	5C	4	15 1/2	17 1/2	3 7/8	6 1/4	4	5	2 3/4

* DIMENSION VARIES WITH DIFFERENT NUMBERS

WARNING SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
X MILES AHEAD	07-13-2001		3
	02-26-2010		STANDARD
			SG-7

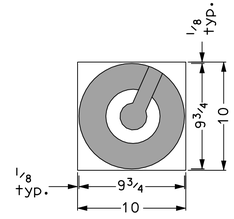


W8-5e

3.0" RADIUS, 1.25" BORDER, 0.75" INDENT, BLACK ON YELLOW

THE SLIPPERY SYMBOL IS FROM W8-5

FOR SCALING PURPOSES SEE BELOW



DIMENSIONS (inches)/ LETTER FONTS					
A	B	C	D	E	F
48	29 1/8	12 3/4	20	19 7/8	12 3/4

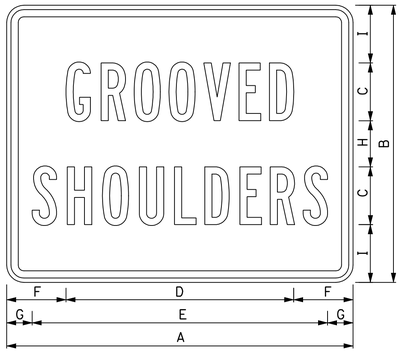
WARNING SIGN

SIGNING STANDARD

NHDOT STANDARD PLANS	REV. DATE		PLATE
MOTORCYCLE CAUTION	07-13-2001		4
	02-26-2010		STANDARD
			SG-7

New Hampshire DOT Department of Transportation

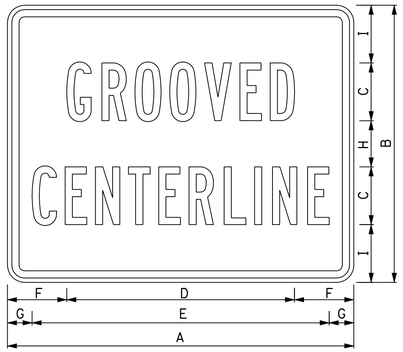
STANDARD NO. SG-7



1.50" RADIUS, 0.63" BORDER, 0.375" INDENT,
BLACK ON YELLOW;

W8-5F

DIMENSIONS (inches)/LETTER FONTS								
A	B	C	D	E	F	G	H	I
30	24	5B	19 3/4	25 1/2	5 1/8	2 1/4	4	5



1.50" RADIUS, 0.63" BORDER, 0.375" INDENT,
BLACK ON YELLOW;

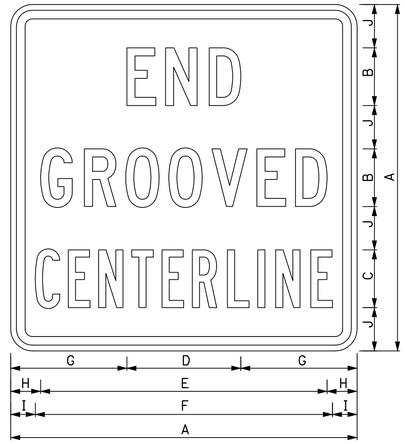
W8-5G

DIMENSIONS (inches)/LETTER FONTS								
A	B	C	D	E	F	G	H	I
30	24	5B	19 3/4	25 3/4	5 1/8	2 1/8	4	5

WARNING SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
GROOVED PAVEMENT	07-13-2001		1
	02-26-2010		STANDARD
			SG-8

DIMENSIONS (inches)/LETTER FONTS									
A	B	C	D	E	F	G	H	I	J
30	5C	5B	9 3/4	24 3/4	25 3/4	10 1/8	2 5/8	2 1/8	3 3/4

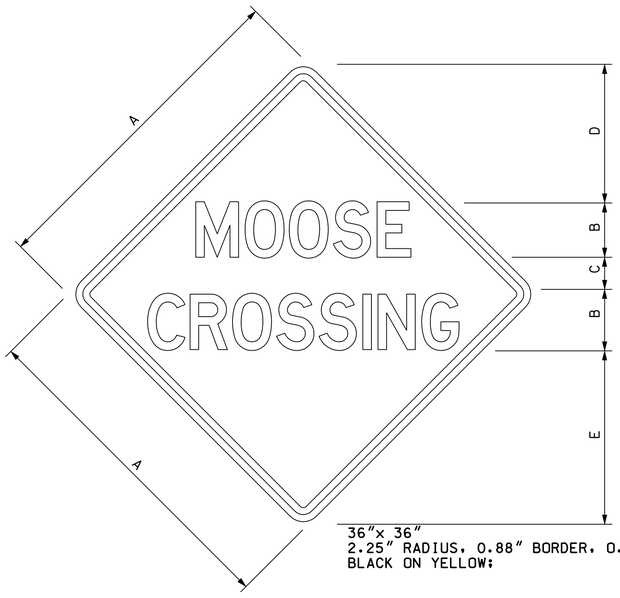


1.88" RADIUS, 0.75 BORDER, 0.375 INDENT,
BLACK ON YELLOW;

W8-5H

WARNING SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
END GROOVED CENTERLINE	07-13-2001		2
	02-26-2010		STANDARD
			SG-8



DIMENSIONS (inches) /LETTER FONTS				
A	B	C	D	E
36	6D	4	14 5/8	18 5/8
48	8D	5	20	25

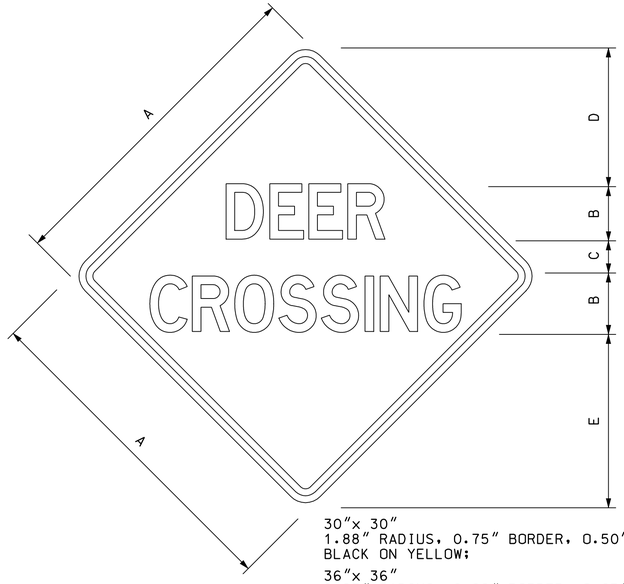
36"x 36"
2.25" RADIUS, 0.88" BORDER, 0.63" INDENT,
BLACK ON YELLOW;

W11-B5

48"x 48"
3.0" RADIUS, 1.25" BORDER, 0.75" INDENT,
BLACK ON YELLOW;

WARNING SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
MOOSE CROSSING	07-13-2001		3
	02-26-2010		STANDARD
			SG-8



DIMENSIONS (inches) /LETTER FONTS				
A	B	C	D	E
30	5C	3	12 3/8	15 1/2
36	6C	4	14 1/2	18 1/2
48	8C	5	20	25

30"x 30"
1.88" RADIUS, 0.75" BORDER, 0.50" INDENT,
BLACK ON YELLOW;

36"x 36"
2.25" RADIUS, 0.88" BORDER, 0.63" INDENT,
BLACK ON YELLOW;

48"x 48"
3.0" RADIUS, 1.25" BORDER, 0.75" INDENT,
BLACK ON YELLOW;

W11B-6

WARNING SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
DEER CROSSING	07-13-2001		4
	02-26-2010		STANDARD
			SG-8

STANDARD NO. SG-8

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
SG-8

STANDARD PLANS

SIGNING STANDARD

New Hampshire DOT Department of Transportation

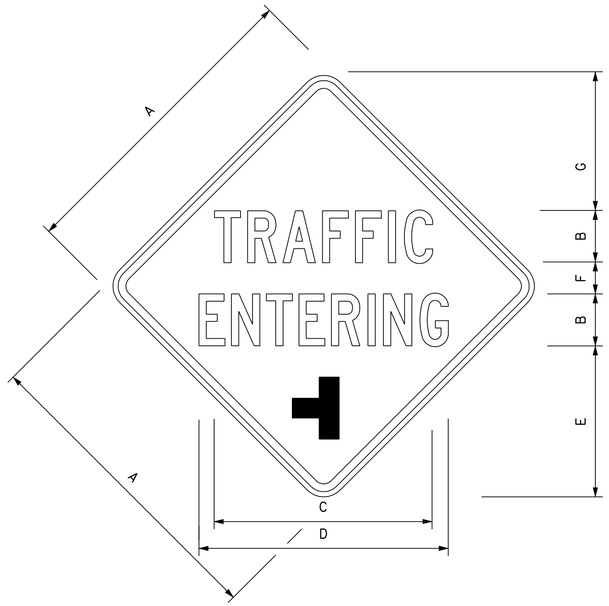
STANDARD NO. SG-8

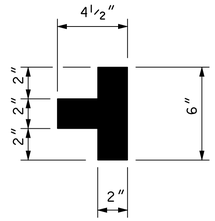
STANDARD NO. SG-9

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
SG-9

STANDARD PLANS





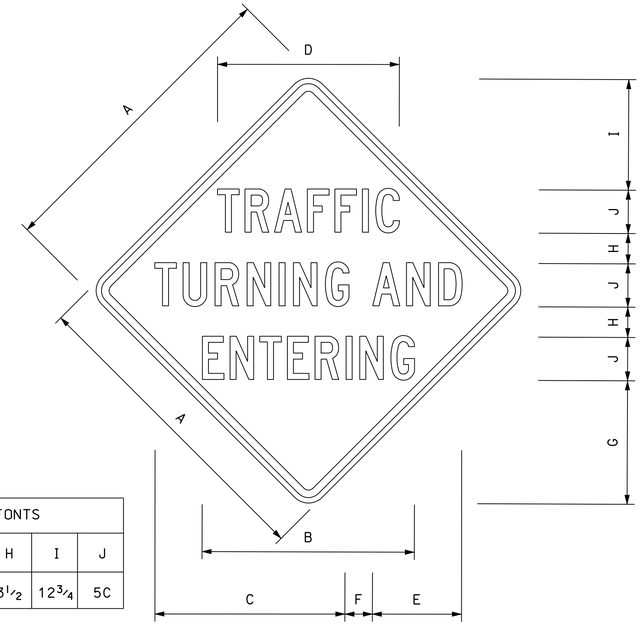
DIMENSIONS (inches)/LETTER FONTS						
A	B	C	D	E	F	G
30	5C	21	24	14 1/2	3	13

1.88" RADIUS, 0.75" BORDER, 0.50" INDENT,
BLACK ON YELLOW;

W14-B1

WARNING SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
TRAFFIC ENTERING	07-13-2001		1
	02-26-2010		STANDARD
			SG-9



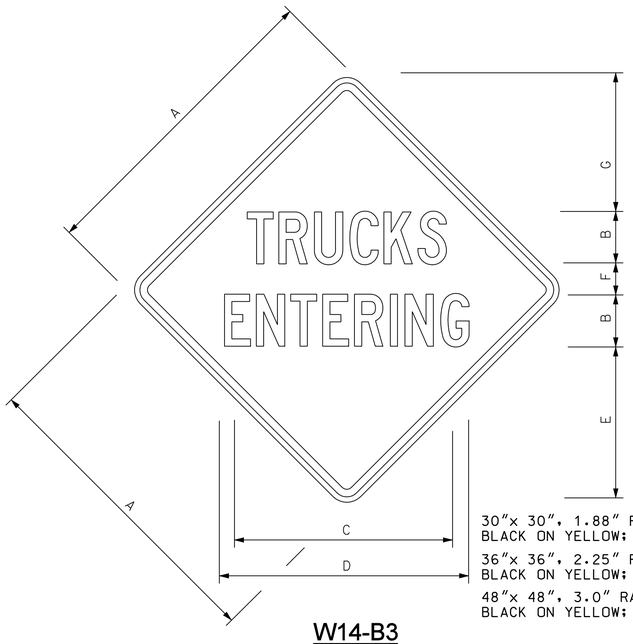
DIMENSIONS (inches)/LETTER FONTS									
A	B	C	D	E	F	G	H	I	J
36	24 1/2	22 1/2	21	10 1/4	2 3/4	14 1/4	3 1/2	12 3/4	5C

36"x 36", 2.25" RADIUS, 0.88" BORDER, 0.63" INDENT,
BLACK ON YELLOW;

W14-B2

WARNING SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
TRUCKS TURNING AND ENTERING	07-13-2001		2
	02-26-2010		STANDARD
			SG-9



DIMENSIONS (inches)/LETTER FONTS						
A	B	C	D	E	F	G
30	5C	20 3/4	25 5/8	15	3	12 1/2
36	6C	23	28 1/4	18	3 1/2	15 1/2
48	8C	26	40	25	4	19 1/2

30"x 30", 1.88" RADIUS, 0.75" BORDER, 0.50" INDENT,
BLACK ON YELLOW;

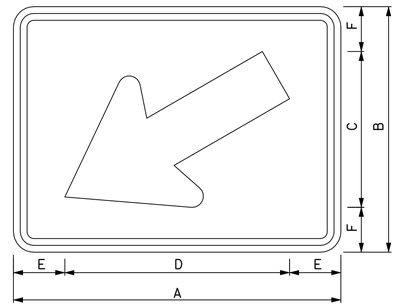
36"x 36", 2.25" RADIUS, 0.88" BORDER, 0.63 INDENT,
BLACK ON YELLOW;

48"x 48", 3.0" RADIUS, 1.25" BORDER, 0.75" INDENT,
BLACK ON YELLOW;

W14-B3

WARNING SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
TRUCKS ENTERING	07-13-2001		3
	02-26-2010		STANDARD
			SG-9



1.50" RADIUS, 0.60" BORDER, 0.375 INDENT,
BLACK ON YELLOW OR BLACK ON FLUORESCENT YELLOW GREEN
STANDARD ARROW CUSTOM 13.4"x 8.1" @ 210°

W16-7pL(M)

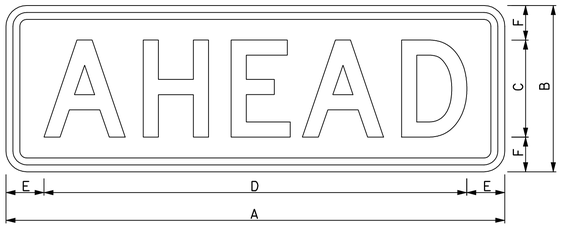
DIMENSIONS (inches)/ LETTER FONTS					
A	B	C	D	E	F
24	12	8 1/2	12 1/2	5 3/4	1 3/4

WARNING SIGN

SIGNING STANDARD

NHDOT STANDARD PLANS	REV. DATE		PLATE
DOWNWARD ARROW	07-13-2001		4
	02-26-2010		STANDARD
			SG-9

STANDARD NO. SG-9



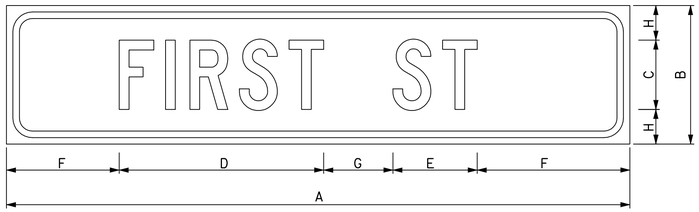
1.50" RADIUS, 0.50" BORDER, 0.375" INDENT,
BLACK ON YELLOW OR FLUORESCENT YELLOW GREEN

W16-9p(M)

DIMENSIONS (inches)/ LETTER FONTS					
A	B	C	D	E	F
36	12	7D	30 1/2	2 3/4	2 1/2

WARNING SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
AHEAD PLAQUE	07-13-2001		1
	02-26-2010		STANDARD
			SG-10



1.50" RADIUS, 0.38" BORDER, 0.375" INDENT,
BLACK ON YELLOW, BB GRADE PLYWOOD SIGN

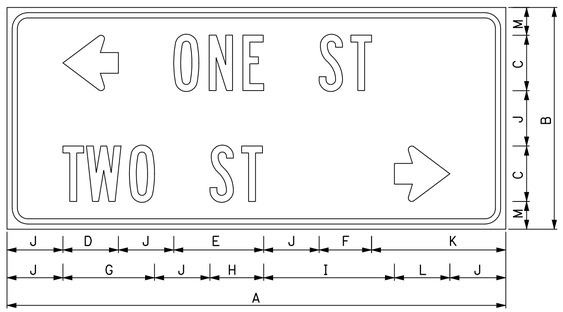
W16-8(M)

DIMENSIONS (inches)/LETTER FONTS							
A	B	C	D	E	F	G	H
36	8	4C	*	*	*	4	2

*VARIES DEPENDING ON LENGTH OF WORD.

WARNING SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
ADVANCE STREET NAME PLAQUE	07-13-2001		2
	02-26-2010		STANDARD
			SG-10



1.50" BORDER RADIUS, 0.38" BORDER, 0.375" INDENT,
BLACK ON YELLOW; BB GRADE PLYWOOD SIGN
STANDARD CUSTOM ARROW 4.0" X 4.0"

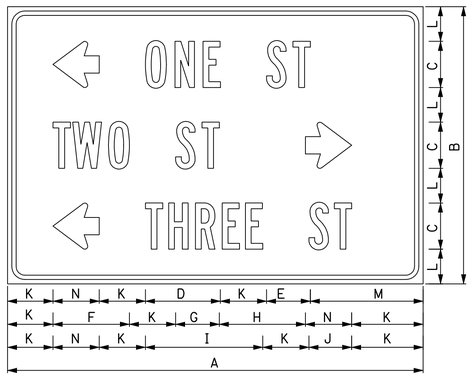
W16-8b(M)

DIMENSIONS (inches)/LETTER FONTS												
A	B	C	D	E	F	G	H	I	J	K	L	M
36	16	4B	4	*	*	*	*	*	4	*	4	2

*VARIES DEPENDING ON LENGTH OF WORD.

WARNING SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
ADVANCE STREET NASME PLAQUE (TWO STREETS)	07-13-2001		3
	02-26-2010		STANDARD
			SG-10



1.50" RADIUS, 0.38" BORDER, 0.375" INDENT,
BLACK ON YELLOW; BB GRADE PLYWOOD SIGN
STANDARD CUSTOM ARROW 4.0" X 4.0"

W16-8c(M)

DIMENSIONS (inches)/LETTER FONTS													
A	B	C	D	E	F	G	H	I	J	K	L	M	N
36	24	4B	*	*	*	*	*	*	*	*	3	*	4

* VARIES DEPENDING ON LENGTH OF WORD.

WARNING SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
ADVANCE STREET NAME PLAQUE (THREE STREETS)	07-13-2001		4
	02-26-2010		STANDARD
			SG-10

SIGNING STANDARD

STANDARD NO. SG-10

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
SG-10

STANDARD PLANS

New Hampshire DOT Department of Transportation

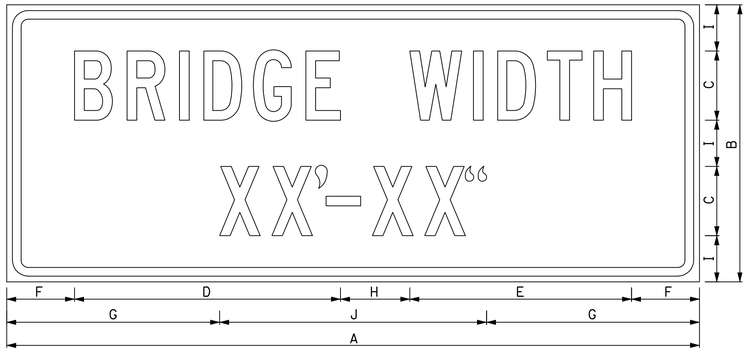
STANDARD NO. SG-10

STANDARD NO. SG-11

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
SG-11

STANDARD PLANS



1.88" RADIUS, 1.00" BORDER, 0.75" INDENT,
BLACK ON ORANGE; BB GRADE PLYWOOD SIGN

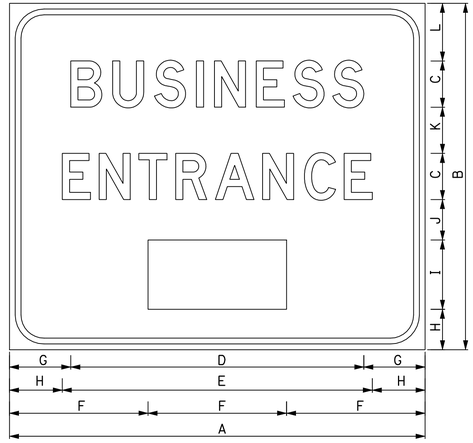
W5-3a

DIMENSIONS (inches)/LETTER FONTS									
A	B	C	D	E	F	G	H	I	J
60	24	6C	23	$19\frac{1}{4}$	$5\frac{7}{8}$	*	6	4	*

* VARIES

CONSTRUCTION SIGN

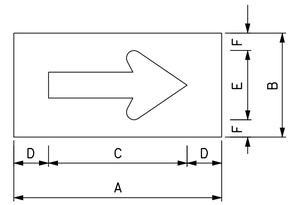
NHDOT STANDARD PLANS	REV. DATE		PLATE
BRIDGE WIDTH	07-13-2001		1
	02-26-2010		STANDARD
			SG-11



3.0" RADIUS, 0.875" BORDER, 0.625" INDENT,
BLACK ON ORANGE;
BB GRADE PLYWOOD SIGN

W14-B4

DIMENSIONS (inches)/LETTER FONTS											
A	B	C	D	E	F	G	H	I	J	K	L
36	30	4D	$25\frac{1}{2}$	$26\frac{3}{4}$	12	$5\frac{1}{4}$	$4\frac{5}{8}$	6	$3\frac{1}{2}$	4	5



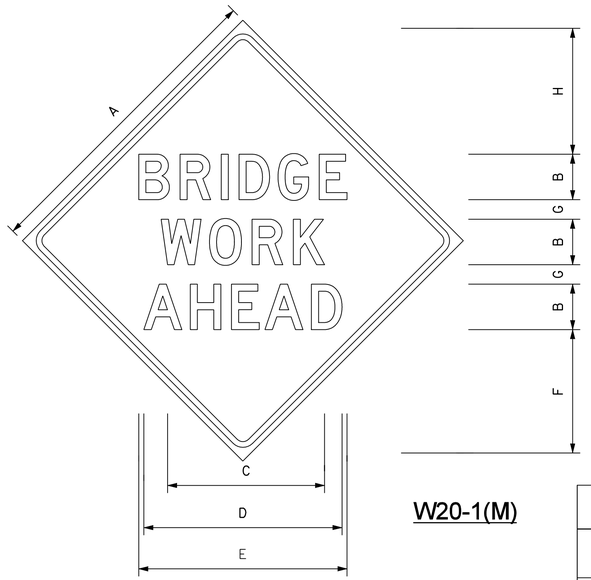
NO BORDER, BLACK ON ORANGE;
BB GRADE PLYWOOD SIGN

W14-B5

DIMENSIONS (inches)/LETTER FONTS					
A	B	C	D	E	F
12	6	8	2	4	1

CONSTRUCTION SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
BUSINESS ENTRANCE	07-13-2001		2
	02-26-2010		STANDARD
			SG-11



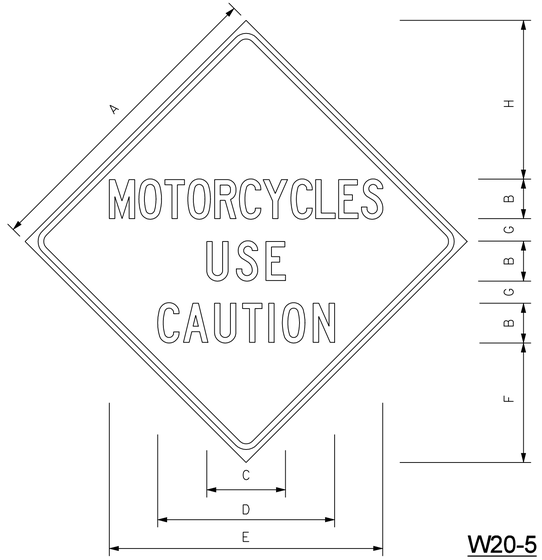
W20-1(M)

DIMENSIONS (inches)/LETTER FONTS							
A	B	C	D	E	F	G	H
48	7D	25	$30\frac{1}{2}$	32	19	3	$19\frac{1}{2}$

48"x 48",
3.0" RADIUS, 1.25" BORDER, 0.75" INDENT,
BLACK ON ORANGE,
BB GRADE PLYWOOD SIGN

CONSTRUCTION SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
BRIDGE WORK AHEAD	07-13-2001		3
	02-26-2010		STANDARD
			SG-11



W20-5

48" x 48"
3.0" RADIUS, 1.25" BORDER, 0.75" INDENT,
BLACK ON ORANGE,
BB GRADE PLYWOOD

DIMENSIONS (inches)/LETTER FONTS							
A	B	C	D	E	F	G	H
48	6C	$12\frac{1}{8}$	$27\frac{1}{8}$	42	$17\frac{1}{8}$	$3\frac{1}{2}$	$23\frac{1}{4}$

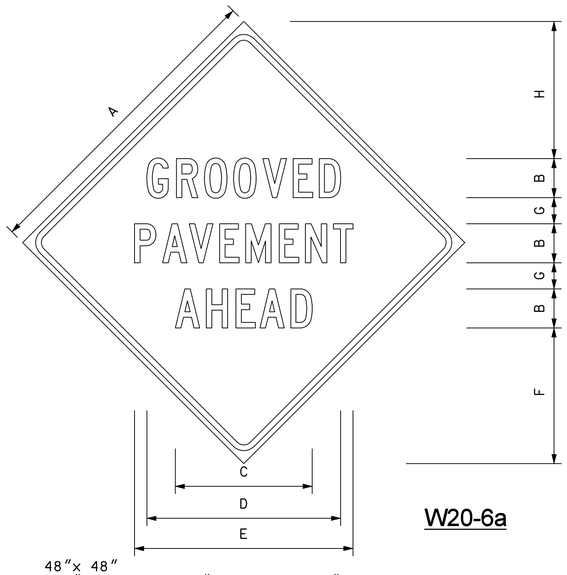
CONSTRUCTION SIGN

SIGNING STANDARD

NHDOT STANDARD PLANS	REV. DATE		PLATE
MOTORCYCLES USE CAUTION	07-13-2001		4
	02-26-2010		STANDARD
			SG-11

New Hampshire DOT Department of Transportation

STANDARD NO. SG-11



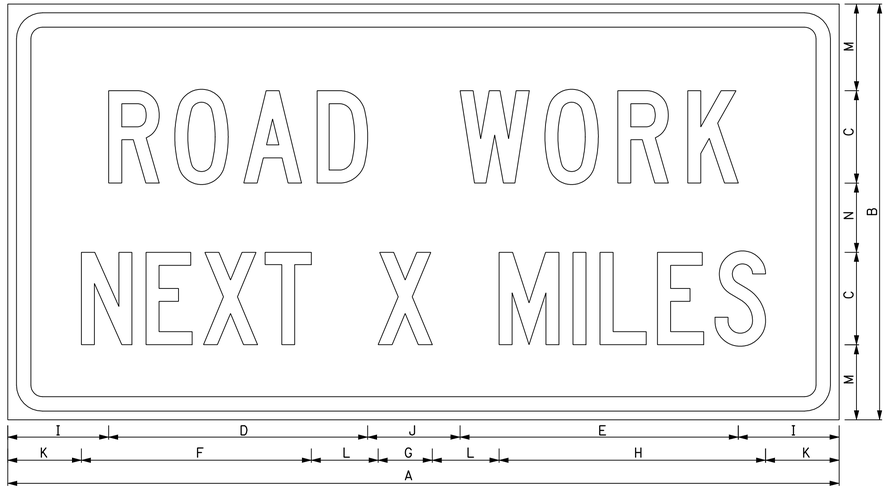
W20-6a

DIMENSIONS (inches)/LETTER FONTS							
A	B	C	D	E	F	G	H
48	6C	21 1/8	29 5/8	33 5/8	20 1/8	3 1/2	20 1/4

48″x 48″
3.0″ RADIUS, 1.25″ BORDER, 0.75″ INDENT,
BLACK ON ORANGE, BB GRADE PLYWOOD

CONSTRUCTION SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
GROOVED PAVEMENT	07-13-2001		1
	02-26-2010		STANDARD
			SG-12



3.0″ RADIUS, 1.25″ BORDER, 0.75″ INDENT,
BLACK ON ORANGE, BB GRADE PLYWOOD SIGN

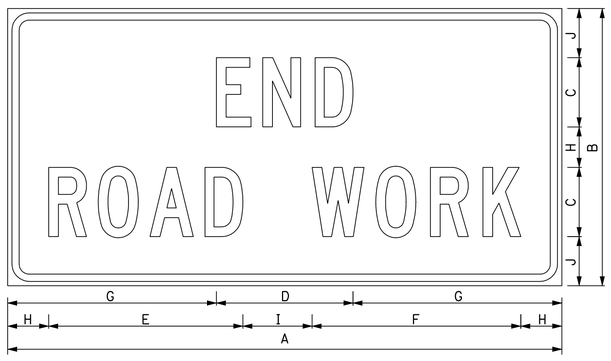
G20-1(M)

DIMENSIONS (inches)/LETTER FONTS													
A	B	C	D	E	F	G	H	I	J	K	L	M	N
72	36	8C	22 1/4	24 1/4	21	*	24 3/4	8 3/4	8	*	*	7 1/2	5

* VARIES DEPENDING ON
NUMBER OF MILES (X)

CONSTRUCTION SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
ROAD WORK NEXT X-MILES	07-13-2001		2
	02-26-2010		STANDARD
			SG-12



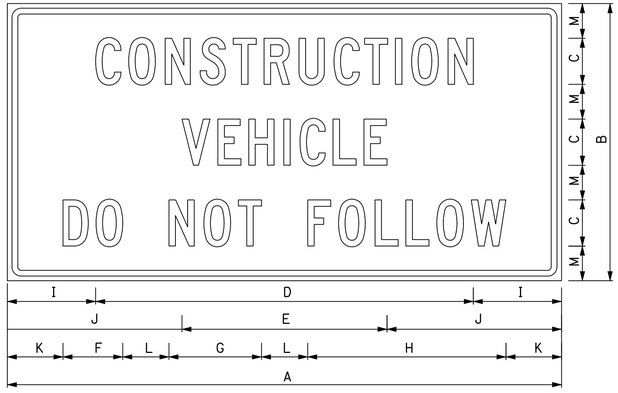
1.88″ RADIUS, 1.25″ BORDER, 0.75″ INDENT,
BLACK ON ORANGE, BB GRADE PLYWOOD SIGN

G20-2a

DIMENSIONS (inches)/LETTER FONTS									
A	B	C	D	E	F	G	H	I	J
48	24	6C	11 3/4	16 7/8	18 1/8	18 1/8	3 1/2	6	4 1/4

CONSTRUCTION SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
END ROAD WORK	07-13-2001		3
	02-26-2010		STANDARD
			SG-12



1.50″ RADIUS, 1.25″ BORDER, 0.75″ INDENT,
BLACK ON ORANGE, BB GRADE PLYWOOD SIGN

G20-4a

DIMENSIONS (inches)/LETTER FONTS												
A	B	C	D	E	F	G	H	I	J	K	L	M
60	30	5C	40 7/8	22 1/4	6 1/2	10	21 1/2	9 9/16	19	6	5	3 3/4

CONSTRUCTION SIGN

NHDOT STANDARD PLANS	REV. DATE		PLATE
CONSTRUCTION VEHICLE DO NOT FOLLOW	07-13-2001		4
	02-26-2010		STANDARD
			SG-12

STANDARD
NO. SG-12

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
SG-12

STANDARD PLANS

SIGNING STANDARD

New Hampshire DOT Department of Transportation

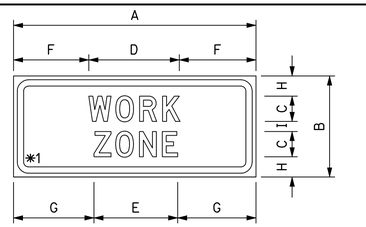
STANDARD
NO. SG-12

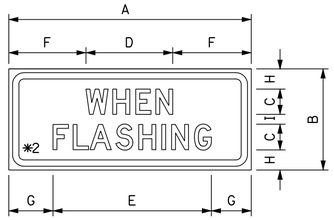
STANDARD NO. SG-13

REVISION DATE
07-13-2001
02-26-2010

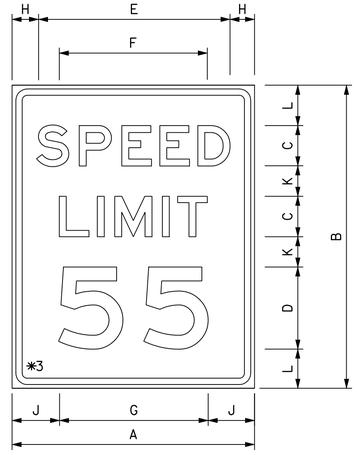
*.DGN FILE NAME
SG-13

STANDARD PLANS





AS SHOWN IN THE FIELD

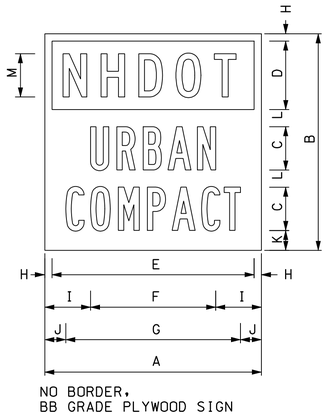


*1 – 1.25" BORDER, 0.75" INDENT,
BLACK ON ORANGE; BB GRADE PLYWOOD SIGN
*2 – 1.25" BORDER, 0.75" INDENT,
BLACK ON WHITE; BB GRADE PLYWOOD SIGN
*3 – 1.25" BORDER, 0.75" INDENT,
BLACK ON WHITE; BB GRADE PLYWOOD SIGN

	DIMENSIONS (inches)/LETTER FONTS											
	A	B	C	D	E	F	G	H	I	J	K	L
*1	48	20	5D	18 1/8	16 5/8	14 7/8	15 5/8	4	2	N/A	N/A	N/A
*2	48	20	5D	17 1/4	31 3/8	15 1/2	8 1/4	4	2	N/A	N/A	N/A
*3	48	60	8E	16E	38 1/4	29 1/4	29 1/2	4 7/8	9 3/8	9 1/4	8	6

CONSTRUCTION SIGN/REGULATORY SIGNS

NHDOT STANDARD PLANS	REV. DATE	PLATE
TRAILER MOUNTED CONSTRUCTION ZONE SPEED LIMIT SIGN	07-13-2001	1
	02-26-2010	STANDARD
		SG-13



NO BORDER,
BB GRADE PLYWOOD SIGN

D1-7B1

COLOR CHART	
NHDOT	WHITE TEXT GREEN BACKGROUND
URBAN	GREEN TEXT WHITE BACKGROUND
COMPACT	GREEN TEXT WHITE BACKGROUND

DIMENSIONS (inches)/LETTER FONTS												
A	B	C	D	E	F	G	H	I	J	K	L	M
15	15	3B	4 3/4	14	8 3/4	12	1/2	3 1/8	1 1/2	1 1/4	1 1/4	3D

NHDOT STANDARD PLANS	REV. DATE	PLATE
NHDOT URBAN COMPACT	07-13-2001	2
	02-26-2010	STANDARD
		SG-13

I-14

DIMENSIONS (inches)/LETTER FONTS												
A	B	C	D	E	F	G	H	I	J	K	L	
30	24	3C	6 3/4	1 3/8	3/4 C	17 3/4	9 3/4	25 1/2	16 1/8	21 1/8	24	

DIMENSIONS (inches)/LETTER FONTS												
M	N	O	P	Q	R	S	T	U	V	W	X	Y
4 1/4	2 1/2	2 1/4	10 1/2	3 3/8	5 1/2	1 7/8	1 3/4	1	3 3/4	1 1/8	1 1/4	1 1/2

1.5" RADIUS, 0.75" BORDER, 0.50" INDENT
GREEN ON WHITE;
"KEEP NEW HAMPSHIRE" 1.375"
AVANT GARDE MD BT, GREEN;
"CLEAN AND SCENIC" 5.5" BRUSH SCRIPT, GREEN;
"SPONSOR" C, WHITE;
"A HIGHWAY" C, WHITE;
"NHDOT' C, WHITE;

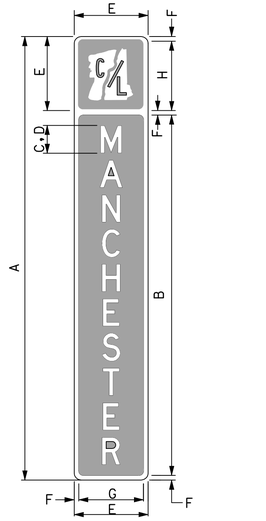
NHDOT STANDARD PLANS	REV. DATE	PLATE
SPONSOR A HIGHWAY	07-13-2001	3
	02-26-2010	STANDARD
		SG-13

SIGNING STANDARD

NHDOT STANDARD PLANS	REV. DATE	PLATE
		4
		STANDARD
		SG-13

New Hampshire DOT Department of Transportation

STANDARD NO. SG-13



	DIMENSIONS (inches)/LETTER FONTS							
	A	B	C	D*	E	F	G	H
10 CHARACTERS OR LESS	48	39	3D	4D	8	1/2"	7"	7 1/2"
OVER 10 CHARACTERS	60	51	3D	–	8	1/2"	7"	7 1/2"

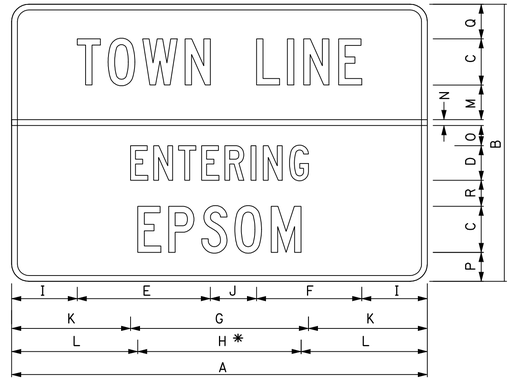
IF THE TOWN OR CITY NAME IS SMALL, CENTER THE TEXT ON THE SIGN.

* UNDER 8 CHARACTERS USE 1" FOR VERTICAL SPACING BETWEEN CHARACTERS.

0.75" RADIUS, 0.5" BORDER
WHITE ON GREEN

I-20

NHDOT STANDARD PLANS	REV. DATE		PLATE
VERTICAL TOWN/CITY LINE	07-13-2001		1
	02-26-2010		STANDARD
			SG-14



1.50" RADIUS, 0.75" BORDER, WHITE ON GREEN

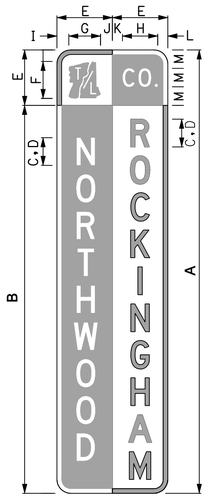
I-21

INTERSTATE SIGN

DIMENSIONS (inches)/LETTER FONTS																
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
36	24	4D	3D	13 3/4	10 3/4	18 3/4	*	3 3/4	4	8 3/4	*	3	1/2	1 3/4	2 1/2	3	2 1/4

* VARIES DEPENDING ON TOWN NAME

NHDOT STANDARD PLANS	REV. DATE		PLATE
HORIZONTAL TOWN/CITY LINE	07-13-2001		2
	02-26-2010		STANDARD
			SG-14



	DIMENSIONS (inches)/LETTER FONTS											
	A	B	C	D*	E	F	G	H	I	J	K	L	M
10 CHARACTERS OR LESS	48	42	3D	4D	6	4	3 1/2	3 3/4	1 1/2	1	7/8	1 1/4	2
OVER 10 CHARACTERS	60	54	3D	–	6	4	3 1/2	3 3/4	1 1/2	1	7/8	1 1/4	2

* UNDER 8 CHARACTERS USE 1" FOR VERTICAL SPACING BETWEEN CHARACTERS.

1.50" RADIUS, 0.50" BORDER.
WHITE ON GREEN, GREEN ON WHITE

I-22

NHDOT STANDARD PLANS	REV. DATE		PLATE
VERTICAL TOWN/CITY/COUNTY LINE	07-13-2001		3
	02-26-2010		STANDARD
			SG-14

SIGNING STANDARD

NHDOT STANDARD PLANS	REV. DATE		PLATE
			4
			STANDARD
			SG-14

STANDARD NO. SG-14

REVISION DATE
07-13-2001
02-26-2010

*.DGN FILE NAME
SG-14

STANDARD PLANS

New Hampshire DOT Department of Transportation

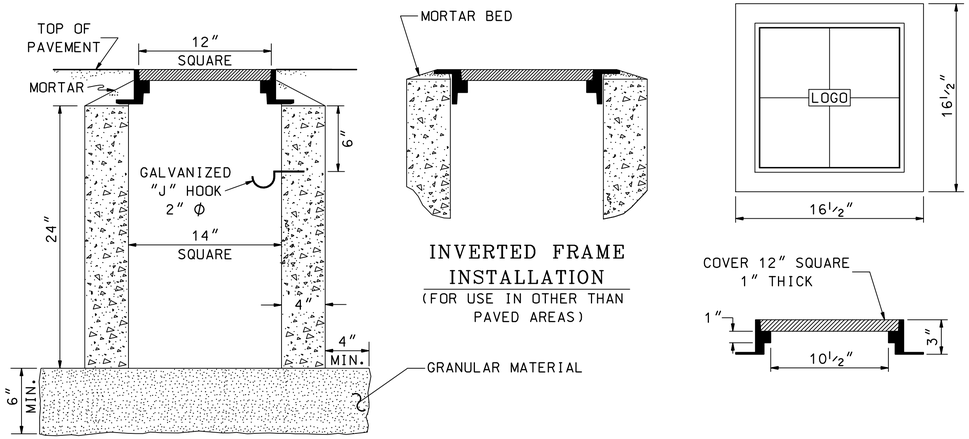
STANDARD NO. SG-14

STANDARD NO. SL-1

REVISION DATE
07-13-2001
06-16-2010

*.DGN FILE NAME
SL-1

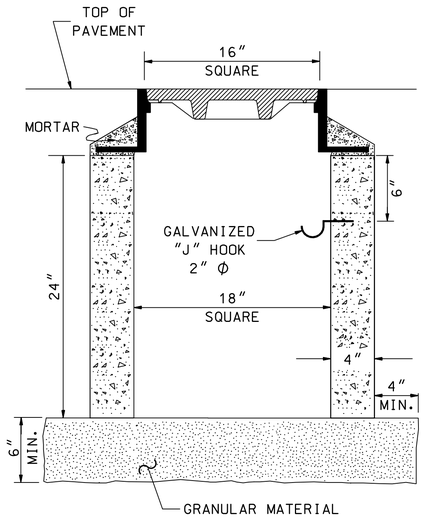
STANDARD PLANS



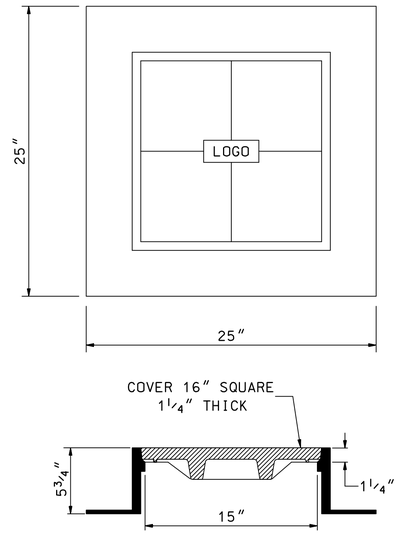
FOR USE IN PAVED AREAS
(SIDEWALKS AND PAVED ISLANDS ONLY)

INVERTED FRAME INSTALLATION
(FOR USE IN OTHER THAN PAVED AREAS)

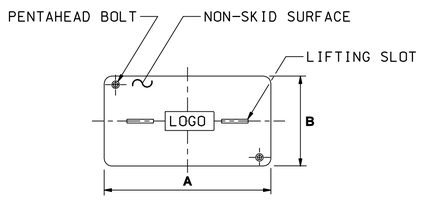
CONCRETE PULL BOX 14″ x 14″
ITEM 614.511

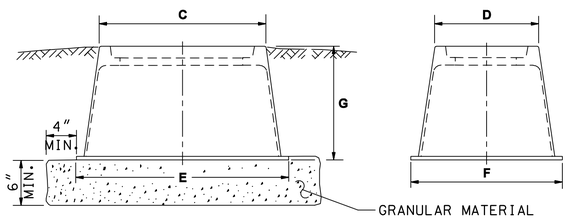


FOR USE IN PAVED AREAS
(SIDEWALKS AND PAVED ISLANDS ONLY)



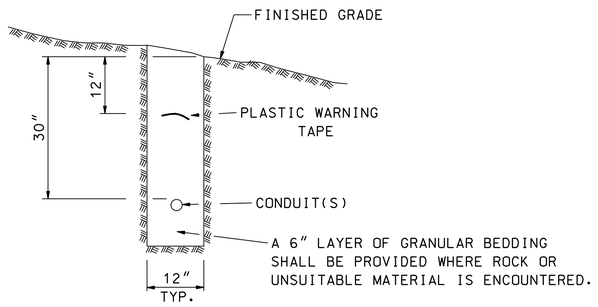
CONCRETE PULL BOX 18″ x 18″
ITEM 614.512





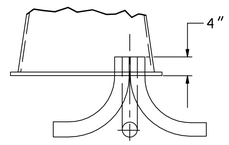
	A	B	C	D	E	F	G
ITEM NO 614.522	24″	13″	26″	15″	31″	22″	16″– 18″
ITEM NO 614.523	30″	17″	32″	19″	39″	26″	26″

MOLDED PULL BOXES
(FOR USE IN OTHER THAN PAVED AREAS)



NOTE: BACKFILL ABOVE CONDUIT SHALL BE IN ACCORDANCE WITH 614.

TRENCH DETAIL FOR CONDUIT INSTALLATION



90° ELBOWS – NUMBER, SIZE & TYPE AS REQUIRED IN PLANS OR SPECIAL PROVISIONS. USE STEEL ELBOWS WITH GROUNDING BUSHINGS WHEN CONDUIT RUN EXCEEDS 200′.

CONDUIT ARRANGEMENT ALL TYPES

GENERAL NOTES

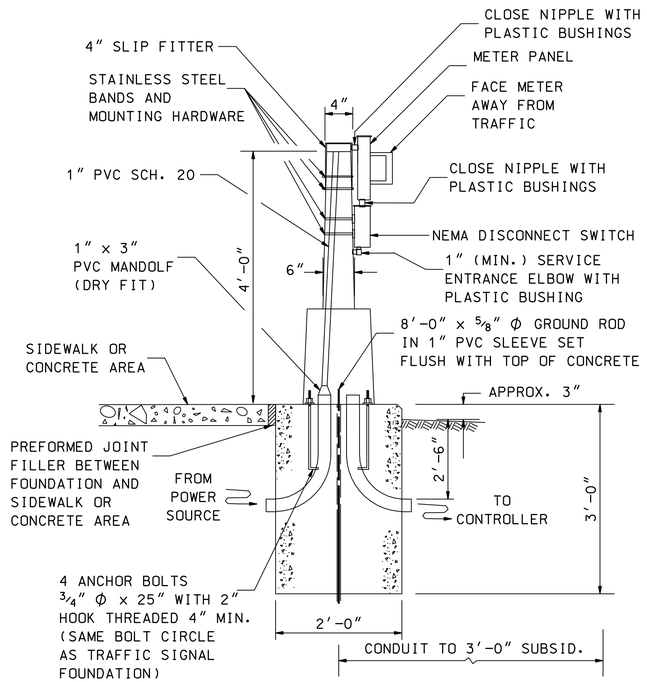
1. DIMENSIONS SHOWN ARE NOMINAL. MOLDED PULL BOXES MAY VARY BY ½″.
2. ADJUST FRAMES & COVERS SO THAT DRAINAGE WILL BE AWAY FROM PULL BOX.
3. LOGO = SIGNAL, ITS, DRAIN OR POWER AS REQUIRED, ON CENTER OF COVER.

SIGNAL & LIGHTING STANDARD

PULL BOXES & CONDUIT TRENCH DETAIL

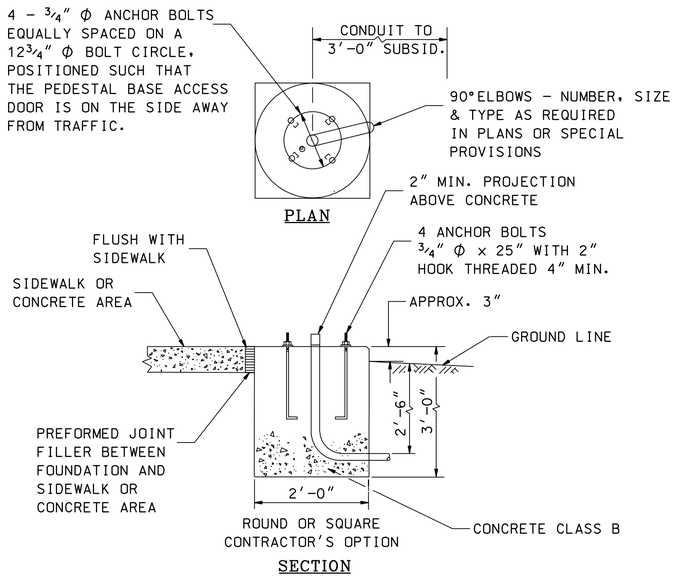
New Hampshire DOT Department of Transportation

STANDARD NO. SL-1



BASE AND POST TO BE P & K
CP 314 OR APPROVED EQUAL

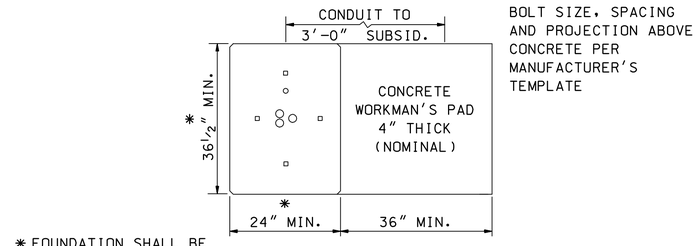
TRAFFIC SIGNAL METER PEDESTAL AND FOUNDATION



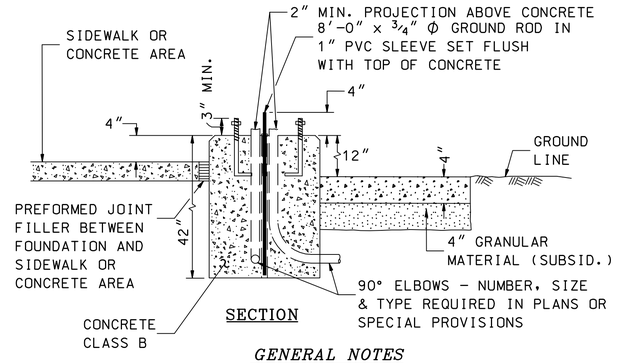
1. SIZE OF FOUNDATION MAY BE CHANGED IN THE PLANS OR SPECIAL PROVISIONS, OR IN THE FIELD AS DIRECTED BY THE ENGINEER.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
3. OPEN ENDS OF ALL CONDUITS INTO FOUNDATION SHALL BE CAPPED UNTIL CABLES ARE INSTALLED.

CONCRETE FOUNDATION FOR PEDESTALS

(TRAFFIC OR PEDESTRIAN SIGNAL)



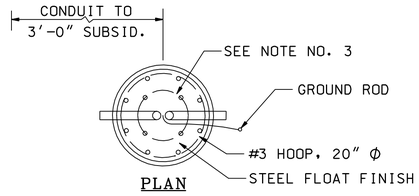
* FOUNDATION SHALL BE 6" WIDER AND LONGER THAN CABINET BASE TO BE INSTALLED

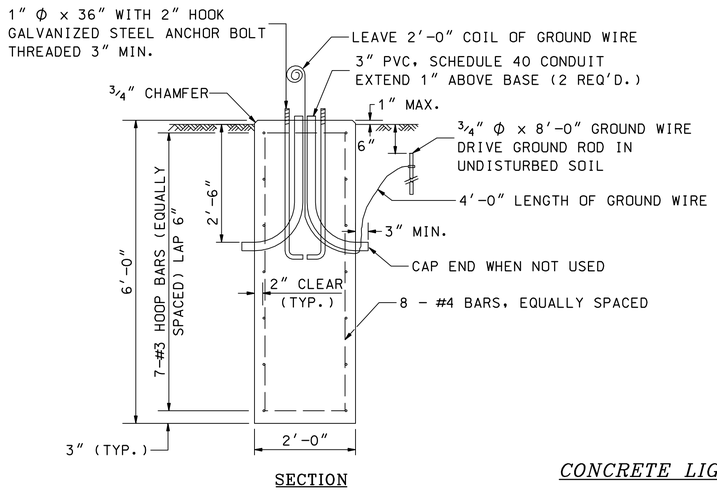


GENERAL NOTES

1. WORKMAN'S PAD MAY BE ELIMINATED IF CONTROLLER CABINET IS IN SIDEWALK SECTION.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
3. WORKMAN'S PAD (AND CABINET DOOR) SHOULD BE ORIENTED TO PERMIT MAXIMUM VIEW OF SIGNAL INSTALLATION (AWAY FROM TRAFFIC, IF POSSIBLE).

CONCRETE FOUNDATION FOR CONTROLLER CABINET

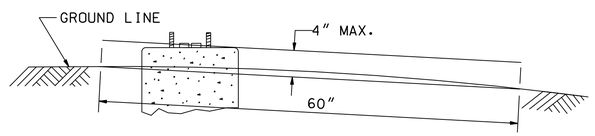




GENERAL NOTES

1. ALL LIGHT POLES, LUMINAIRES, AND WIRE TO BE FURNISHED AND INSTALLED BY THE POWER COMPANY, UNLESS OTHERWISE DIRECTED.
2. ANCHOR BOLTS, GROUND ROD & GROUND WIRE TO BE FURNISHED BY THE POWER COMPANY AND INSTALLED BY THE CONTRACTOR, UNLESS OTHERWISE DIRECTED.
3. BOLT CIRCLE DIAMETER SHALL BE VERIFIED WITH THE POWER COMPANY.
4. ALL BASES SHALL BE LOCATED 10'-0" (TO CENTER) FROM FACE OF CURB OR EDGE OF PAVED SHOULDER, UNLESS OTHERWISE NOTED.
5. REINFORCEMENT SHALL CONFORM TO SECTION 544 OF THE STANDARD SPECIFICATIONS.
6. ANY ANCHOR BOLTS DAMAGED DURING INSTALLATION SHALL BE REPARIED OR REPLACED AS DIRECTED BY THE ENGINEER.
7. UPON INSTALLATION, ANCHOR BOLT THREADS SHALL BE CLEANED WITH A WIRE BRUSH.
8. TERRAIN SURROUNDING BASE MUST BE GRADED AS SHOWN IN DETAIL "A" TO PREVENT IMPACTING VEHICLES FROM SNAGGING ON BASE.

CONCRETE LIGHT POLE BASE TYPE B



DETAIL "A"

SIGNAL & LIGHTING STANDARD

CONCRETE FOUNDATIONS & LIGHT POLE BASE, TYPE B

STANDARD NO. SL-2

REVISION DATE
07-13-2001
06-16-2010

*.DGN FILE NAME
SL-2

STANDARD PLANS

New Hampshire DOT Department of Transportation

STANDARD NO. SL-2

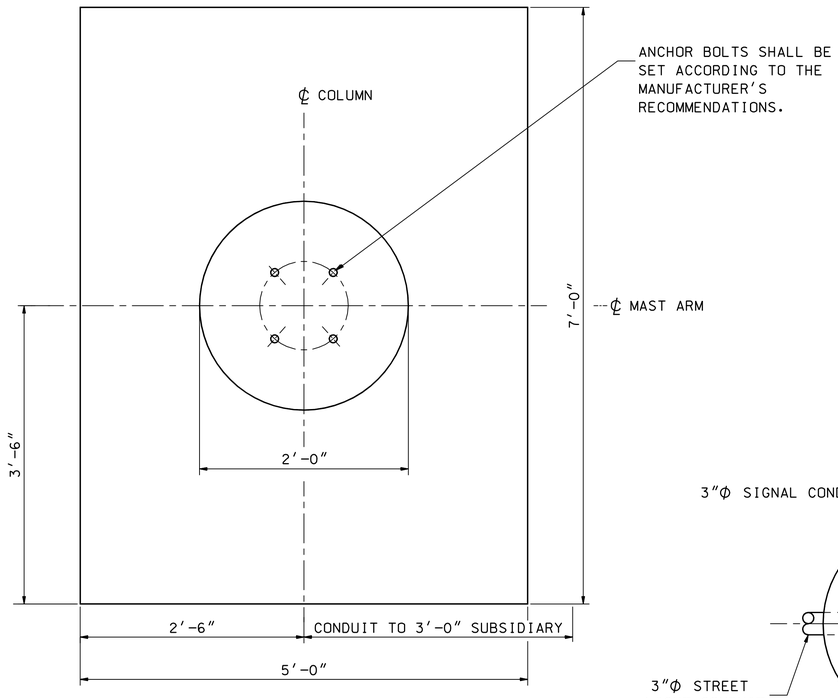
STANDARD NO. TS-1

REVISION DATE
07-13-01
02-26-10

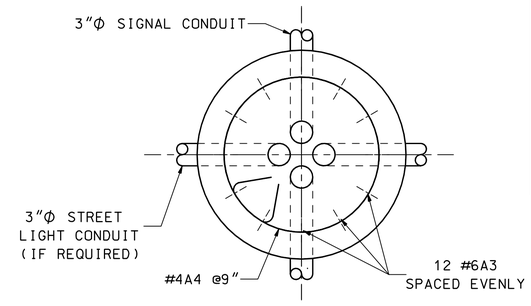
*.DGN FILE NAME
TS-1

STANDARD PLANS

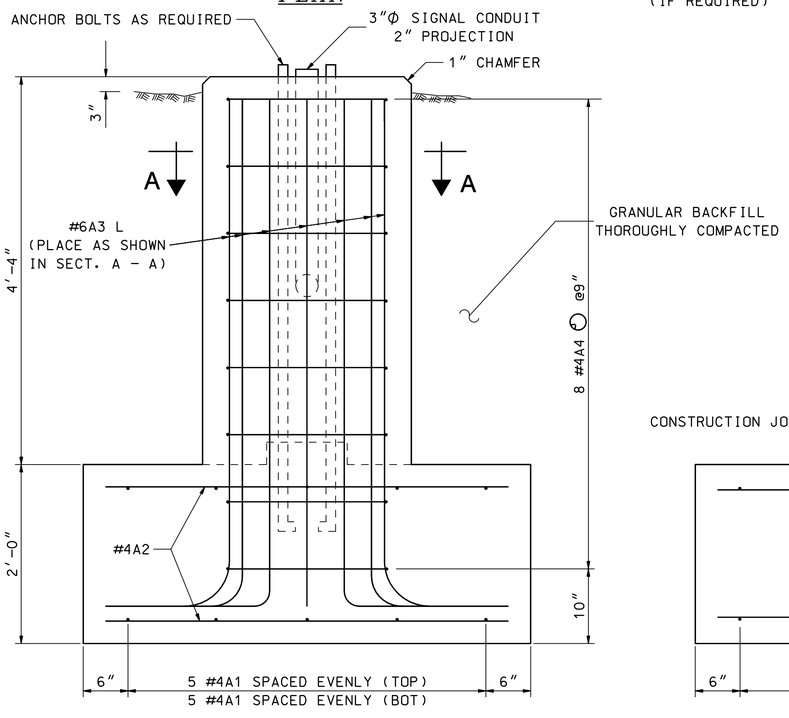
TRAFFIC SIGNAL MAST ARM FOUNDATION - TYPE 1A



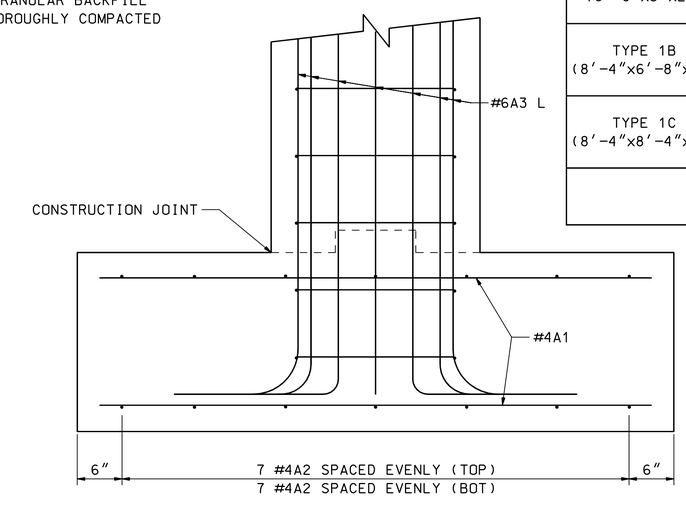
PLAN



SECTION A - A



ELEVATION



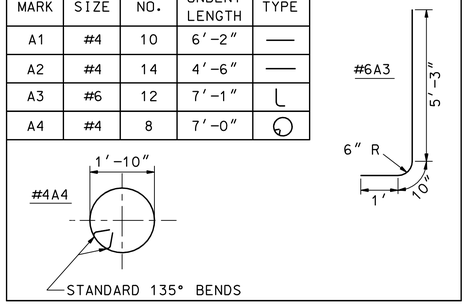
END ELEVATION

GENERAL NOTES (TYPE 1 FOOTING)

1. SEE SHEET 2 OF 2 FOR DETAILS OF TYPE 1B & TYPE 1C FOOTINGS.
2. ALL REINFORCING STEEL SHALL BE EITHER GRADE 40 OR 60.
3. ALL REINFORCING STEEL SHALL BE A MINIMUM 3" CLEAR.
4. THE TYPE 1 SPREAD FOOTING SHALL BE POURED IN PLACE ON UNDISTURBED MATERIAL. THE MAXIMUM DESIGN SOIL PRESSURE IS 1 1/2 TONS/SF. IF THE SOIL IS NOT CAPABLE OF A BEARING PRESSURE OF 1 1/2 TONS/SF, THE ENGINEER SHALL ORDER REMOVAL OF THE WEAK FOUNDATION MATERIAL AND PLACEMENT OF STRUCTURAL FILL, ITEM 508. COST OF ITEM 508 SHALL BE PAID AS EXTRA WORK. IF SUITABLE SOILS ARE NOT FOUND WITHIN A REASONABLE DISTANCE BELOW THE BOTTOM OF THE FOOTING, THE ENGINEER SHALL REQUEST A REDESIGN.
5. WHERE LEDGE IS ENCOUNTERED, EXCAVATION SHALL STILL EXTEND TO LIMITS SHOWN.

REINFORCING SCHEDULE

MARK	SIZE	NO.	UNBENT LENGTH	TYPE
A1	#4	10	6'-2"	—
A2	#4	14	4'-6"	—
A3	#6	12	7'-1"	L
A4	#4	8	7'-0"	○



TYPICAL QUANTITIES PER BASE

ITEM NO.	DESCRIPTION	QUANTITY
520.21 *	CONCRETE CLASS B (FTGS)	3.1 CY
544 *	REINFORCING STEEL	249 LB
206.1 *	COMMON STRUCTURE EXCAVATION	14.2 CY

* ITEM NUMBERS SHOWN ARE FOR SPECIFICATION REFERENCE ONLY. NO SEPARATE PAYMENT WILL BE MADE FOR THESE ITEMS.

STANDARD SPREAD FOOTINGS FOR TRAFFIC SIGNALS

DETERMINATION OF REQUIRED FOOTING SIZE

FOOTING SIZE	CASE 1 (MAX. h=40'-0", MAX. h1=22'-0")			CASE 2 (MAX. h1=22'-0")		
	SHAPE	MAX. LENGTH OF ONE MAST ARM WITH ONE LUMINAIRE ON THE SAME POLE (L)	MAX. NUMBER OF SIGNALS FOR CASE 1	SHAPE	MAX. LENGTH OF ONE MAST ARM WITH NO LUMINAIRE (L)	MAX. NUMBER OF SIGNALS FOR CASE 2
TYPE 1A (6'-8"x5'x2')	h, h1, L	20'	2	h1, L	30'	3
TYPE 1B (8'-4"x6'-8"x2')	h, h1, L	30'	3	h1, L	50'	4
TYPE 1C (8'-4"x8'-4"x2')	h, h1, L	50'	3			

NOTE: COMBINATIONS OTHER THAN THOSE SHOWN IN THE ABOVE CHART SHALL NOT BE USED WITHOUT DESIGN APPROVAL.

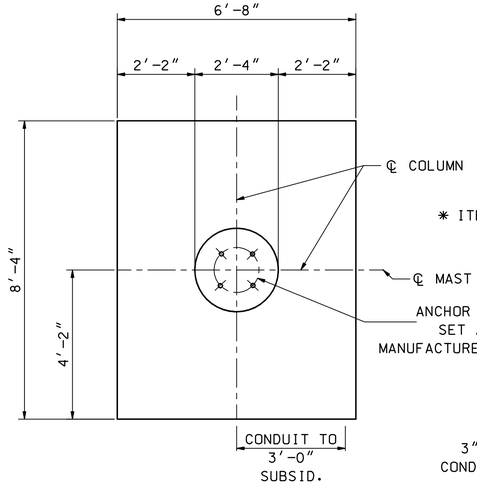
New Hampshire DOT Department of Transportation

STANDARD NO. TS-1

TRAFFIC SIGNAL STANDARD

TRAFFIC SIGNAL MAST ARM FOUNDATION - TYPE 1A

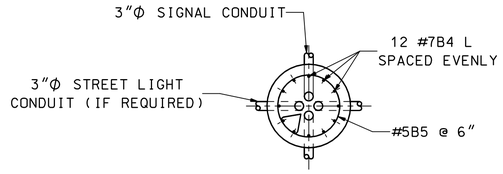
TRAFFIC SIGNAL MAST ARM FOUNDATION - TYPE 1B



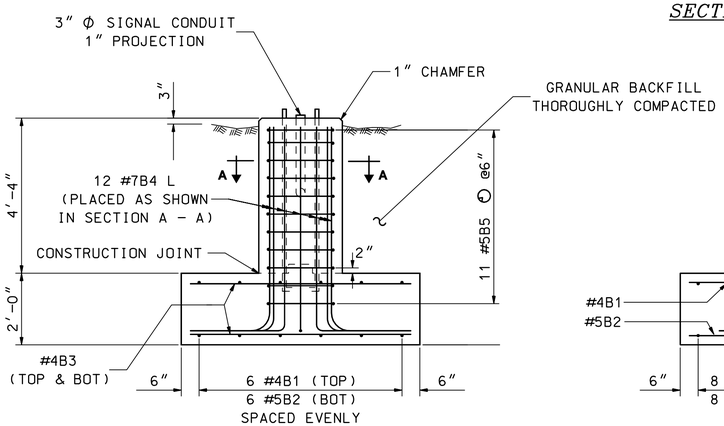
PLAN

TYPICAL QUANTITIES PER BASE		
ITEM NO.	DESCRIPTION	QUANTITY
520.21 *	CONCRETE CLASS B (FTGS)	4.8 CY
544 *	REINFORCING STEEL	419 LB
206.1 *	COMMON STRUCTURE EXCAVATION	20.2 CY

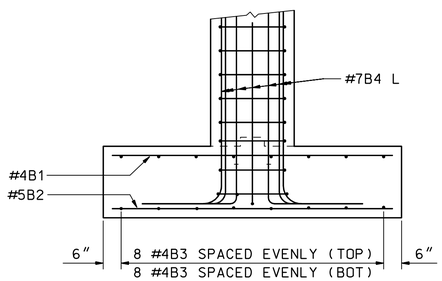
* ITEM NUMBERS SHOWN ARE FOR SPECIFICATION REFERENCE ONLY. NO SEPARATE PAYMENT WILL BE MADE FOR THESE ITEMS.



SECTION A - A

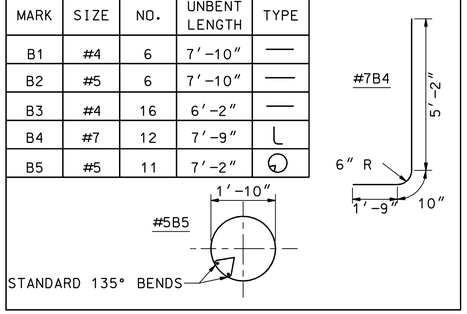


ELEVATION

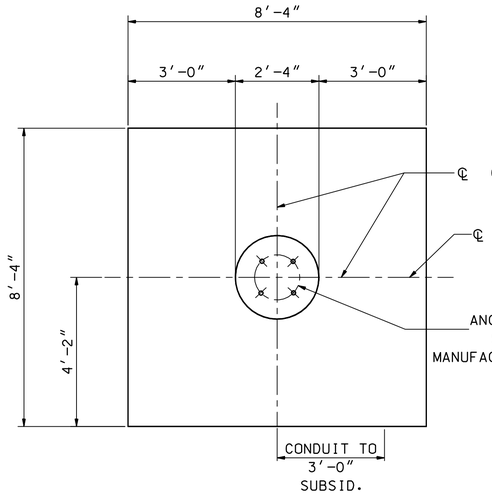


END ELEVATION

REINFORCING SCHEDULE				
MARK	SIZE	NO.	UNBENT LENGTH	TYPE
B1	#4	6	7′-10″	—
B2	#5	6	7′-10″	—
B3	#4	16	6′-2″	—
B4	#7	12	7′-9″	L
B5	#5	11	7′-2″	○



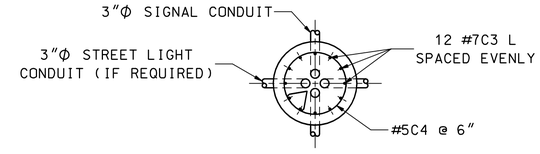
TRAFFIC SIGNAL MAST ARM FOUNDATION - TYPE 1C



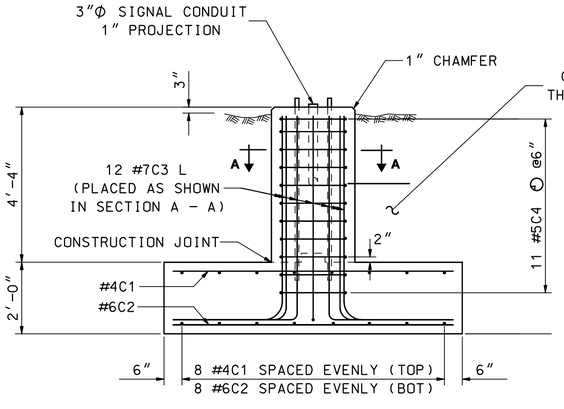
PLAN

TYPICAL QUANTITIES PER BASE		
ITEM NO.	DESCRIPTION	QUANTITY
520.21 *	CONCRETE CLASS B (FTGS)	5.8 CY
544 *	REINFORCING STEEL	565 LB
206.1 *	COMMON STRUCTURE EXCAVATION	18.4 CY

* ITEM NUMBERS SHOWN ARE FOR SPECIFICATION REFERENCE ONLY. NO SEPARATE PAYMENT WILL BE MADE FOR THESE ITEMS.



SECTION A - A



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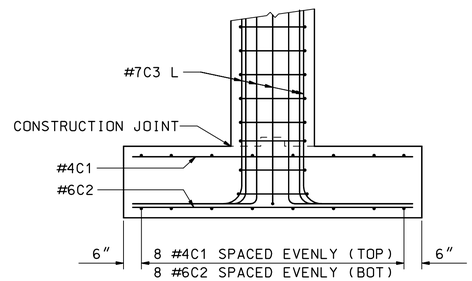
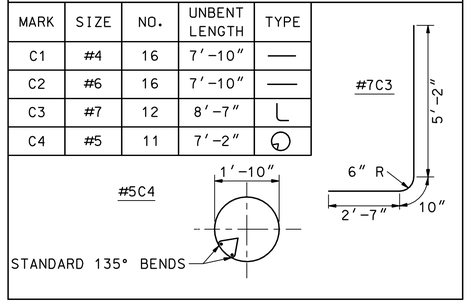


END ELEVATION

REINFORCING SCHEDULE				
MARK	SIZE	NO.	UNBENT LENGTH	TYPE
C1	#4	16	7′-10″	—
C2	#6	16	7′-10″	—
C3	#7	12	8′-7″	L
C4	#5	11	7′-2″	○



TRAFFIC SIGNAL STANDARD

TRAFFIC SIGNAL MAST ARM FOUNDATIONS - TYPE 1B & 1C

STANDARD NO. TS-2

REVISION DATE
07-13-01
02-26-10

*.DGN FILE NAME
TS-2

STANDARD PLANS

New Hampshire DOT Department of Transportation

STANDARD NO. TS-2

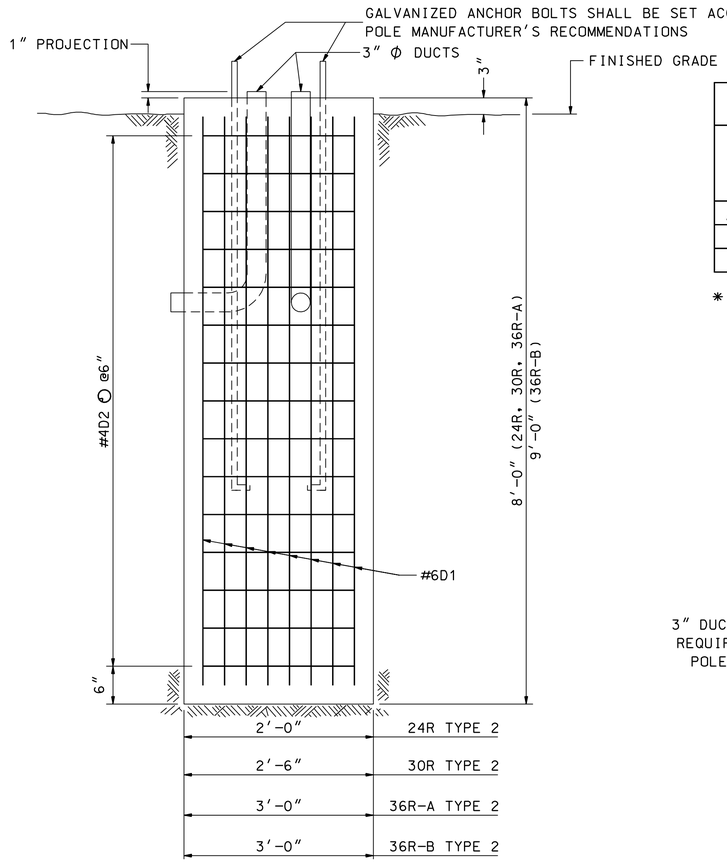
STANDARD NO. TS-3

REVISION DATE
07-13-01
02-26-10

*.DGN FILE NAME
TS-3

STANDARD PLANS

TRAFFIC SIGNAL MAST ARM FOUNDATION - TYPE 2 - 24R, 30R, 36R-A, 36R-B



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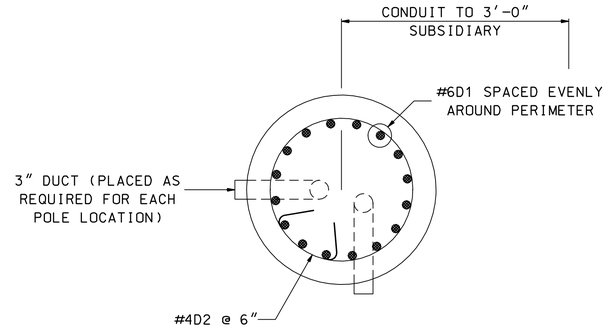


PLAN

TYPICAL QUANTITIES PER BASE

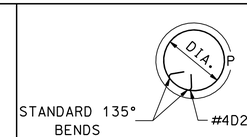
ITEM NUMBER	ITEM	UNIT	QUANTITY FOR FOOTING SIZE			
			24R	30R	36R-A	36R-B
▲ 508*	STRUCTURAL FILL	CY	25	26	29	32
520.21*	CONCRETE CLASS B, FOOTINGS	CY	1.0	1.5	2.1	2.4
544*	REINFORCING STEEL	LB	195	256	317	359

* ITEM NUMBERS ARE FOR SPECIFICATION REFERENCE ONLY. NO SEPARATE PAYMENT WILL BE MADE FOR THESE ITEMS, EXCEPT AS PROVIDED IN NOTE NO. 1 OF THE GENERAL NOTES, AND NOTE NO. 4 FOR THE EXCAVATED HOLES.

REINFORCING SCHEDULE

MARK	SIZE	NO.	UNBENT LENGTH	TYPE
D1	#6	"X"	"Z"	——
D2	#4	"W"	"Y"	○

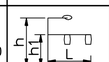
FOUNDATION SIZE	"W"	"X"	"Y"	"Z"
24R	15	12	5'-11"	7'-6"
30R	15	16	7'-6"	7'-6"
36R-A	15	20	9'-1"	7'-6"
36R-B	17	20	9'-1"	8'-6"



FOUNDATION SIZE	DIMENSION	
	D	P
24R	1'-6"	4'-8"
30R	2'-0"	6'-3"
36R-A	2'-6"	7'-10"
36R-B	2'-6"	7'-10"

STANDARD ROUND TRAFFIC SIGNAL FOUNDATION

DETERMINATION OF REQUIRED FOOTING SIZE

FOOTING SIZE	CASE 1 MAX. h=40'-0" MAX. h1=22'-0"			CASE 2 MAX. h1=22'-0"		
	SHAPE	MAX. LENGTH OF ONE MAST ARM WITH ONE LUMINAIRE ON THE SAME POLE (L)	MAX. NUMBER OF SIGNALS FOR CASE 1	SHAPE	MAX. LENGTH OF ONE MAST ARM WITH NO LUMINAIRE (L)	MAX. NUMBER OF SIGNALS FOR CASE 2
24R TYPE 2 (2'-0" x 8'-0")		20'	2		25'	3
30R TYPE 2 (2'-6" x 8'-0")		25'	3		35'	4
36R-A TYPE 2 (3'-0" x 8'-0")		35'	3		45'	4
36R-B TYPE 2 (3'-0" x 9'-0")		50'	4		50'	4

NOTE: COMBINATIONS OTHER THAN THOSE SHOWN IN THE ABOVE CHART SHALL NOT BE USED WITHOUT DESIGN APPROVAL.

GENERAL NOTES (TYPE 2 FOOTING)

1. THE ROUND TYPE 2 FOOTING SHALL BE POURED IN DRILLED HOLES AGAINST UNDISTURBED MATERIAL. THE MAXIMUM DESIGN SOIL PRESSURE IS 1½ TONS/SF (BOTH HORIZONTALLY AND VERTICALLY). IF THE SOIL IS NOT CAPABLE OF A BEARING PRESSURE OF 1½ TONS/SF OR WILL NOT STAND VERTICALLY, THE ENGINEER SHALL REQUEST AN EXCAVATED HOLE AS DESCRIBED BELOW.
2. THE DRILLED HOLES FOR THE ROUND TYPE 2 FOOTING SHALL BE MADE WITH THE PROPER SIZE AUGER DRILLED TO THE PROPOSED BOTTOM OF FOOTING (7'-9" BELOW THE FINISHED GROUND SURFACE FOR 24R, 30R AND 36R-A, AND 8'-9" FOR 36R-B).
3. TRENCHES FOR THE CONDUITS SHALL BE HAND DUG WITHIN 5'-0" OF THE PROPOSED FOOTING SURFACE, DISTURBING AS LITTLE SOIL AS POSSIBLE IN PLACING OF THE CONDUITS (APPROXIMATELY 2'-6" MAXIMUM DOWN FROM THE EXISTING GROUND SURFACE). THE RESULTING TRENCHES SHALL BE BACKFILLED WITH STRUCTURAL FILL. THE HORIZONTAL LIMIT SHALL BE 5'-0" FROM THE FOOTING SURFACE.
4. THE ENGINEER SHALL REQUEST A BORING AT ANY LOCATION WHERE HE DEEMS THE SOILS TO BE QUESTIONABLE BEFORE PROCEEDING WITH THE DRILLING OPERATION IF AFTER THE DRILLING OPERATION THE SOILS ARE NOT FOUND UNSUITABLE, THE ENGINEER SHALL REQUEST AN EXCAVATED HOLE AS DETERMINED BELOW OR THE USE OF A TYPE 1 SPREAD FOOTING.
5. WHERE LEDGE IS ENCOUNTERED THE DRILL SHALL PENETRATE THE LEDGE A MINIMUM OF 3'-0" AND IN ALL CASES A MINIMUM FOOTING LENGTH OF 5'-0" SHALL BE OBTAINED. MAXIMUM DRILL PENETRATION SHALL ALL BE 7'-9" FOR 24R, 30R AND 36R-A, AND 8'-9" FOR 36R-B.
6. ALL REINFORCING STEEL SHALL BE EITHER GRADE 40 OR GRADE 60.
7. ALL REINFORCING STEEL SHALL BE A MINIMUM 3" CLEAR.

▲ *EXCAVATED HOLES*

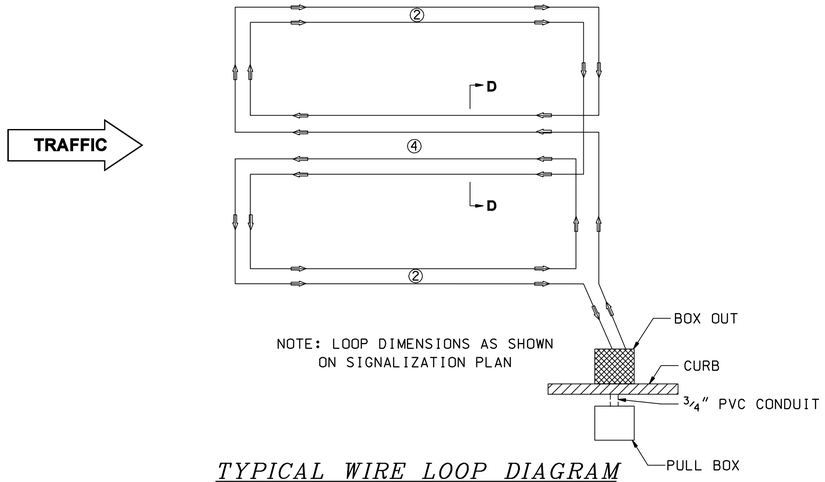
1. AS AN ALTERNATIVE TO THE ABOVE DRILLED HOLES, THE ROUND TYPE 2 FOOTINGS MAY BE POURED IN EXCAVATED HOLES, USING THE PROPER FORMS WHICH MUST BE REMOVED, OR PRECAST AND PLACED IN THE EXCAVATED HOLES.
2. THE EXCAVATED HOLES SHALL BE AT LEAST 3'-0" CLEAR OF THE FOOTING SIDES AND 1'-0" DEEPER THAN THE FOOTING. CARE SHALL BE TAKEN TO AVOID OVER-EXCAVATING AROUND THE TOP OF THE FOOTING.
3. ANY LEDGE ENCOUNTERED SHALL BE REMOVED TO THE ABOVE LIMITS IF POSSIBLE OR THE ENGINEER SHALL REQUEST A REDESIGN.
4. THE TOTAL EXCAVATED HOLE FOR EACH FOOTING SHALL BE COMPLETELY BACKFILLED WITH STRUCTURAL FILL. NO PAYMENT SHALL BE MADE FOR STRUCTURAL FILL, EXCEPT AS PROVIDED IN NOTE NO. 1 OF THE GENERAL NOTES.

New Hampshire DOT Department of Transportation

STANDARD NO. TS-3

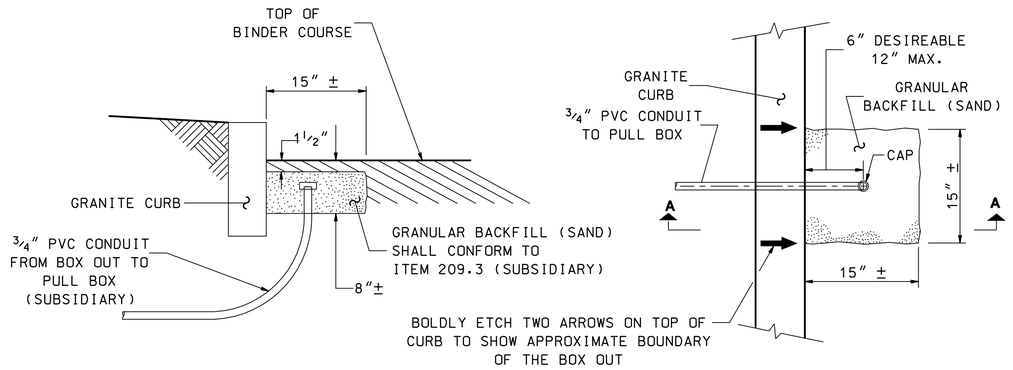
TRAFFIC SIGNAL STANDARD

TRAFFIC SIGNAL MAST ARM FOUNDATION - TYPE 2



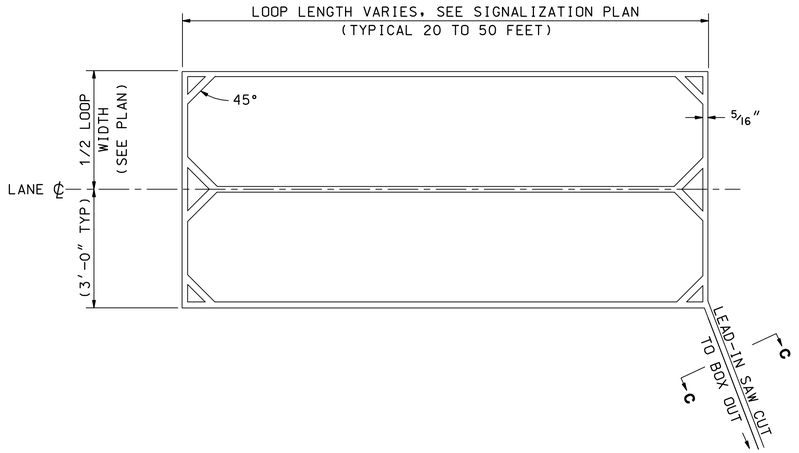
TYPICAL WIRE LOOP DIAGRAM

NOT TO SCALE



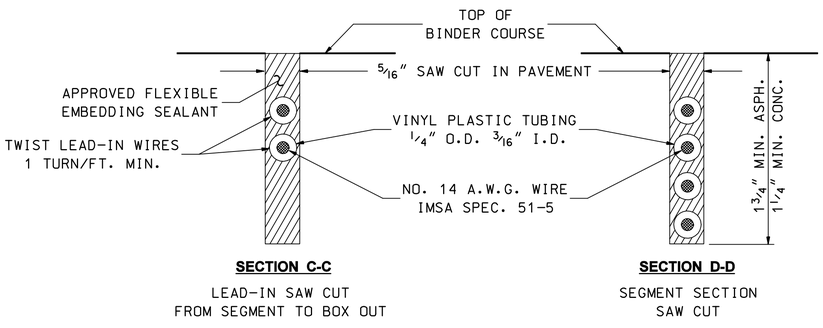
DETECTOR BOX OUT DETAIL STAGE 1: AT PAVING

NOT TO SCALE



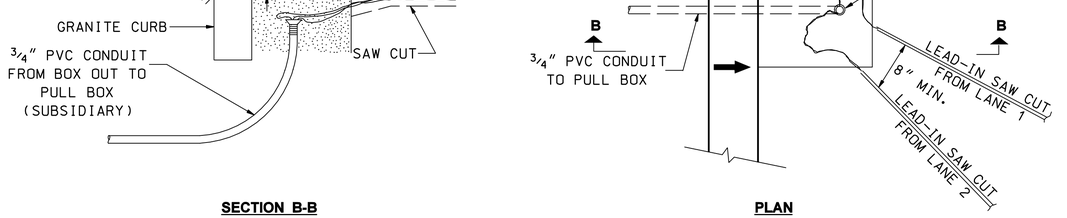
QUADRUPOLE LOOP INSTALLATION SAW CUT DETAIL

NOT TO SCALE



LOOP DETECTOR SEGMENT DETAIL

NOT TO SCALE



DETECTOR BOX OUT DETAIL STAGE 2: AT LOOP INSTALLATION

NOT TO SCALE

GENERAL NOTES

1. MAXIMUM OF TWO LEAD-IN PAIRS PER 3/4" CONDUIT.
2. TAPE TUBING 3" ON EACH SIDE OF THE SAW CUT BOX OUT BOUNDARY WITH ELECTRICAL TAPE.
3. AFTER TUBING IS INSTALLED, FILL CONDUIT WITH CRUMPLED PAPER AND SEAL WITH PLIABLE DUCT SEALANT.
4. USE ITEM 209.3 - GRANULAR BACKFILL (SAND) (SUBSIDIARY) TO COVER AND SUPPORT THE VINYL PLASTIC TUBING.

TRAFFIC SIGNAL STANDARD

QUADRUPOLE LOOP DETECTOR
2-4-2 TURNS

STANDARD
NO. TS-4

REVISION DATE
07-13-01
02-26-10

*.DGN FILE NAME
TS-4

STANDARD PLANS

New Hampshire DOT Department of Transportation

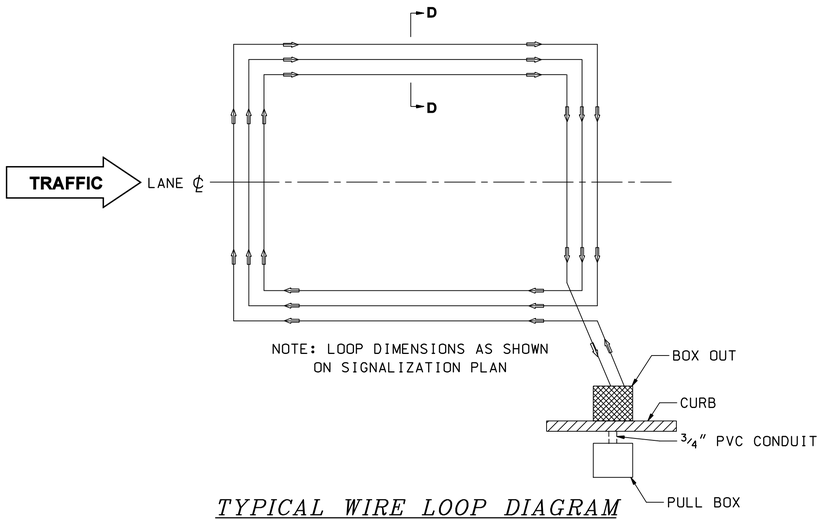
STANDARD
NO. TS-4

STANDARD NO. TS-5

REVISION DATE
07-13-01
02-26-10

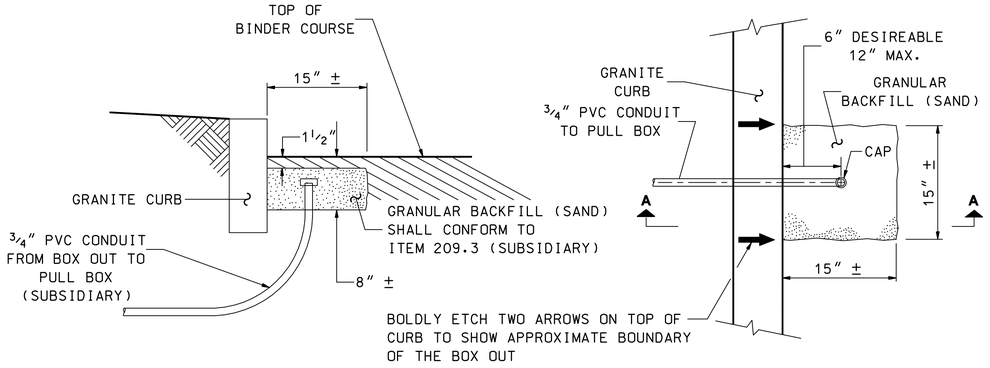
*.DGN FILE NAME
TS-5

STANDARD PLANS



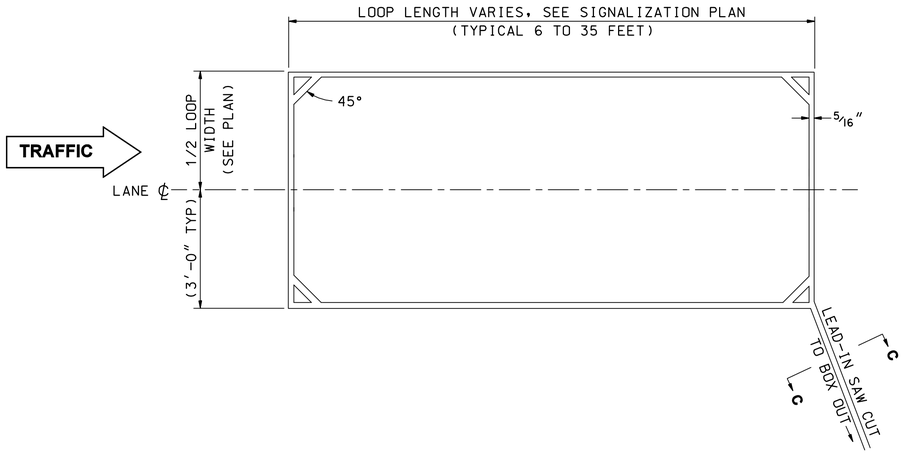
TYPICAL WIRE LOOP DIAGRAM

NOT TO SCALE



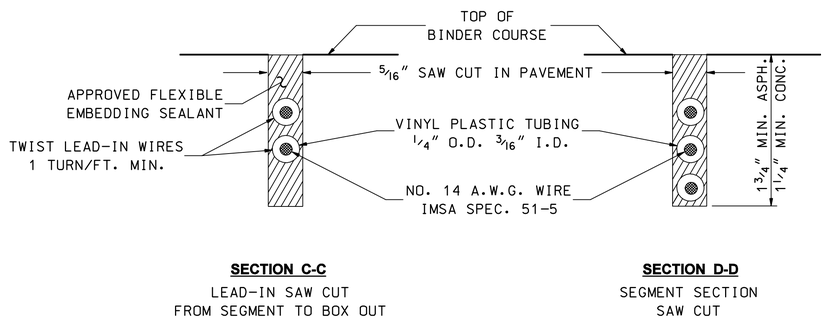
DETECTOR BOX OUT DETAIL STAGE 1: AT PAVING

NOT TO SCALE



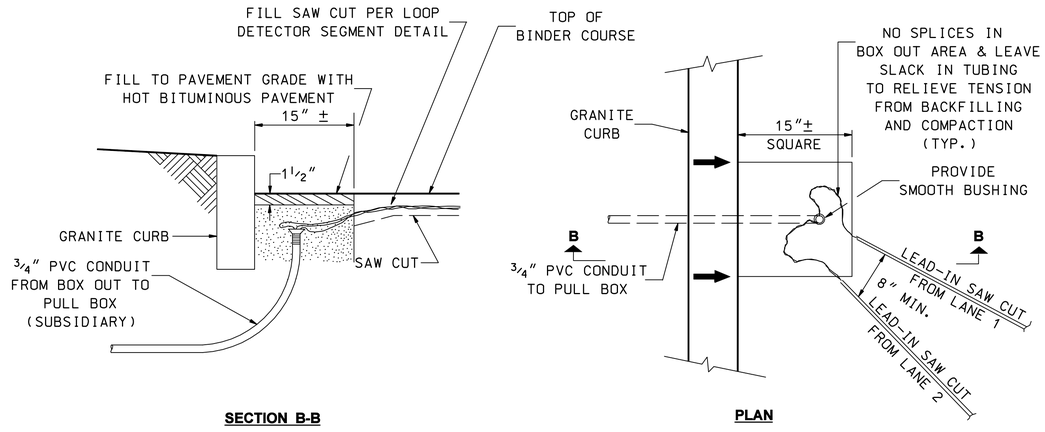
RECTANGULAR LOOP INSTALLATION SAW CUT DETAIL

NOT TO SCALE



LOOP DETECTOR SEGMENT DETAIL

NOT TO SCALE



DETECTOR BOX OUT DETAIL STAGE 2: AT LOOP INSTALLATION

NOT TO SCALE

GENERAL NOTES

1. MAXIMUM OF TWO LEAD-IN PAIRS PER 3/4" CONDUIT.
2. TAPE TUBING 3" ON EACH SIDE OF THE SAW CUT BOX OUT BOUNDARY WITH ELECTRICAL TAPE.
3. AFTER TUBING IS INSTALLED, FILL CONDUIT WITH CRUMPLED PAPER AND SEAL WITH PLIABLE DUCT SEALANT.
4. USE ITEM 209.3 - GRANULAR BACKFILL (SAND) (SUBSIDIARY) TO COVER AND SUPPORT THE VINYL PLASTIC TUBING.

New Hampshire DOT Department of Transportation

STANDARD NO. TS-5

TRAFFIC SIGNAL STANDARD

RECTANGULAR LOOP DETECTOR 3 TURNS