

COLOR: LEGEND AND BORDER...WHITE (REFLECTORIZED)
 NO. 1.....RED (TRANSPARENT REFLECTORIZED)
 NO. 2.....BLUE (TRANSPARENT REFLECTORIZED)

COLOR: LEGEND AND BORDER...WHITE (REFLECTORIZED)
 NO. 1.....RED (TRANSPARENT REFLECTORIZED)
 NO. 2.....BLUE (TRANSPARENT REFLECTORIZED)

COLOR: LEGEND AND BORDER...WHITE (REFLECTORIZED)
 BACKGROUND.....GREEN (TRANSPARENT REFLECTORIZED)

COLOR: LEGEND AND BORDER...WHITE (REFLECTORIZED)
 BACKGROUND.....GREEN (TRANSPARENT REFLECTORIZED)

* OPTICALLY SPACE NUMERALS ABOUT VERTICAL CENTERLINE.
 COLOR: LEGEND AND BORDER.....BLACK (NON-REFLECTORIZED)
 BACKGROUND.....WHITE (REFLECTORIZED)

SIGN SIZE	DIMENSIONS (INCHES)										BLANK STD.
	A	B	C	D	E	F	G	H	J	K	
24" X 24"	24	24	2	2-1/2	1/2	2-1/2	100	6	7-13/16	5-9/64	B-24(M)
36" X 36"	36	36	3	3-3/4	3/4	2-1/4	150	9	11-11/16	7-5/32	B-36(M)

SIGN SIZE	DIMENSIONS (INCHES)										BLANK STD.
	A	B	C	D	E	F	G	H	J	K	
30" X 24"	30	24	2	2-1/2	1/2	1-1/2	100	6	7-13/16	5-9/64	B-30(24M)
45" X 36"	45	36	3	3-3/4	3/4	2-1/4	150	9	11-11/16	7-5/32	B-45(36M)

SIGN SIZE	DIMENSIONS (INCHES)										BLANK STD.
	A	B	C	D	E	F	G	H	J	K	
24" X 24"	24	24	2	2-1/2	1/2	1-1/2	100	6	6-15/16	2-9/32	B-24(M)
36" X 36"	36	36	3	3-3/4	3/4	2-1/4	150	9	9-19/32	3-15/32	B-36(M)
30" X 24"	30	24	2	2-1/2	1/2	1-1/2	100	6	6-15/16	2-9/32	B-30(24M)
45" X 36"	45	36	3	3-3/4	3/4	2-1/4	150	9	9-19/32	3-15/32	B-45(36M)

SIGN SIZE	DIMENSIONS (INCHES)										BLANK STD.
	A	B	C	D	E	F	G	H	J	K	
24" X 24"	24	24	2	2-1/2	1/2	1-1/2	100	6	6-15/16	2-7/16	B-24(M)
36" X 36"	36	36	3	3-3/4	3/4	2-1/4	150	9	9-19/32	3-11/16	B-36(M)
30" X 24"	30	24	2	2-1/2	1/2	1-1/2	100	6	6-15/16	2-7/16	B-30(24M)
45" X 36"	45	36	3	3-3/4	3/4	2-1/4	150	9	9-19/32	3-11/16	B-45(36M)

SIGN SIZE	DIMENSIONS (INCHES)										BLANK STD.
	A	B	C	D	E	F	G	H	J	K	
24" X 24"	24	24	2	5-1/2	1/2	6-1/2	1	5-1/2	2-1/2	7-1/2	7
36" X 36"	36	36	3	8-1/4	1/2	9-3/4	1-1/2	8-1/4	3-3/4	11-1/4	10-1/2

SIGN SIZE	DIMENSIONS (IN)			BLANK STD.
	L	M	N	
24" X 24"	5-1/2	4-1/2	1/2	B-24(S)
36" X 36"	8-1/4	6-3/4	3/4	B-36(S)

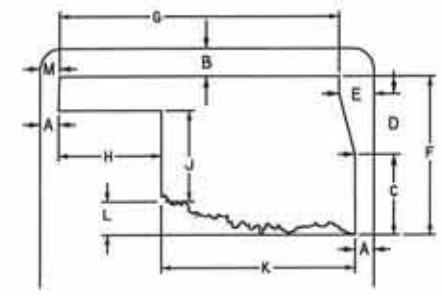
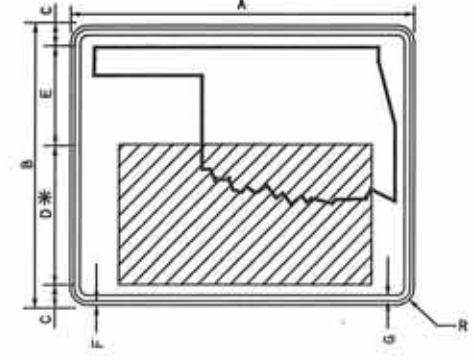
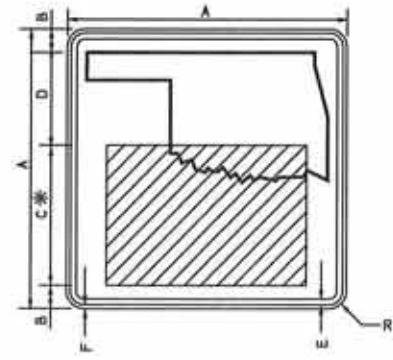
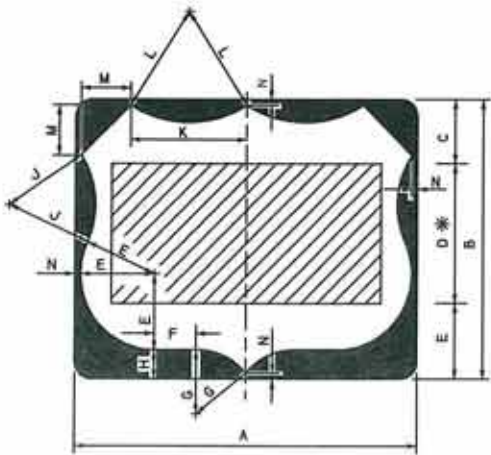
24" X 24" IM1-1(2) 4.00 SQ. FT.
 36" X 36" IM1-1E(2) 9.00 SQ. FT.

30" X 24" IM1-1(3) 5.00 SQ. FT.
 45" X 36" IM1-1E(3) 11.25 SQ. FT.

24" X 24" LM1-2(2) 4.00 SQ. FT.
 36" X 36" LM1-2E(2) 9.00 SQ. FT.
 30" X 24" LM1-2(3) 5.00 SQ. FT.
 40" X 36" LM1-2E(3) 11.25 SQ. FT.

24" X 24" LM1-3(2) 4.00 SQ. FT.
 36" X 36" LM1-3E(2) 9.00 SQ. FT.
 30" X 24" LM1-3(3) 5.00 SQ. FT.
 40" X 36" LM1-3E(3) 11.25 SQ. FT.

24" X 24" M1-4(2) 4.00 SQ. FT.
 36" X 36" M1-4E(2) 9.00 SQ. FT.



STATE OUTLINE

	1 & 2 DIGITS		3 DIGITS	
	12" NUMERALS	18" NUMERALS	12" NUMERALS	18" NUMERALS
24" X 24"	24	24	30	45
36" X 36"	36	36	30	45
BLANK STD.	B-24(S)	B-36(S)	B-30(24)	B-45(36)
A	2"	3"	2.5"	2.5"
B	3"	3"	3"	3"
C	6.5"	9.75"	8.1"	13"
D	4"	6.1"	5.1"	8.1"
E	2.3"	4.6"	3.8"	4.7"
F	11.7"	17.6"	14.7"	23.6"
G	18.8"	28.3"	23.5"	37.7"
H	6"	9"	7.5"	12"
J	5"	7.6"	6.4"	10.2"
K	14"	21"	17.5"	28"
L	3.3"	5"	4.2"	6.7"
M	2.1"	3.1"	2.6"	2.6"

STATE OUTLINE TABLE

* OPTICALLY SPACE NUMERALS ABOUT VERTICAL CENTERLINE.
 COLOR: LEGEND AND BORDER.....BLACK (NON-REFLECTORIZED)
 BACKGROUND.....WHITE (REFLECTORIZED)

* OPTICALLY SPACE NUMERALS ABOUT VERTICAL CENTERLINE.
 COLOR: LEGEND AND BORDER.....BLACK (NON-REFLECTORIZED)
 BACKGROUND.....WHITE (REFLECTORIZED)

* OPTICALLY SPACE NUMERALS ABOUT VERTICAL CENTERLINE.
 COLOR: LEGEND AND BORDER.....BLACK (NON-REFLECTORIZED)
 BACKGROUND.....WHITE (REFLECTORIZED)

SIGN SIZE	DIMENSIONS (INCHES)										BLANK STD.
	A	B	C	D	E	F	G	H	J	K	
30" X 24"	30	24	3	5-1/2	1/2	6-1/2	4	5-1/2	2-1/2	7-1/2	10
45" X 36"	45	36	3	8-1/4	1/2	9-3/4	5-1/2	8-1/4	3-3/4	11-1/4	15

SIGN SIZE	DIMENSIONS (INCHES)										STATE OUTLINE	BLANK STD.
	A	B	C	D	E	F	G	H	J	K		
24" X 24"	24	3	120	6	3/8	1/4	1-1/2	1			B-24(S)	
36" X 36"	36	3	180	12	3/4	3/8	2-1/4	1			B-36(S)	

SIGN SIZE	DIMENSIONS (INCHES)										STATE OUTLINE	BLANK STD.
	A	B	C	D	E	F	G	H	J	K		
30" X 24"	30	24	3	12B	6	1/4	3/8	1-1/2	1		B-30(24)	
45" X 36"	45	36	3	18B	12	3/8	3/4	2-1/4	1-1/4		B-45(36)	

SIGN SIZE	DIMENSIONS (IN)			BLANK STD.
	L	M	N	
30" X 24"	9-1/2	4-1/2	1/2	B-24(S)
45" X 36"	14-1/4	6-3/4	3/4	B-36(S)

30" X 24" M1-4(3) 5.00 SQ. FT.
 45" X 36" M1-4E(3) 11.25 SQ. FT.

24" X 24" M1-6(2) 4.00 SQ. FT.
 36" X 36" M1-6E(2) 9.00 SQ. FT.

30" X 24" M1-6(3) 5.00 SQ. FT.
 45" X 36" M1-6E(3) 11.25 SQ. FT.



STATE OUTLINE IS NOT TO COME WITHIN .3" OF TEXT.
 * STATE OUTLINE IS TO BE REMOVED FROM INSIDE OF TEXT.

TEXT GAP DETAIL

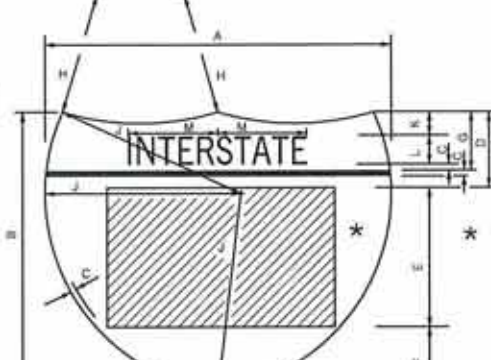
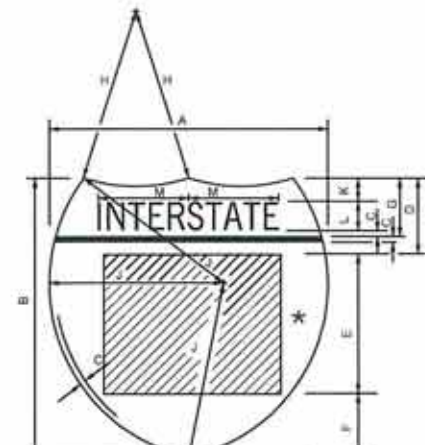
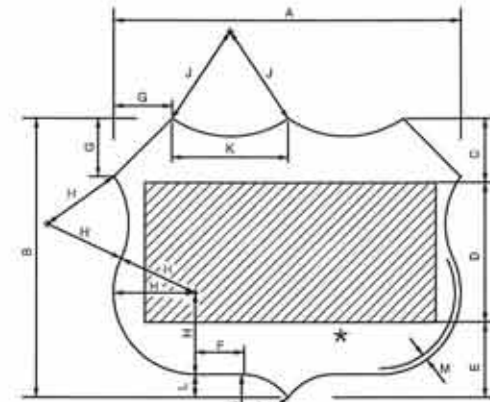
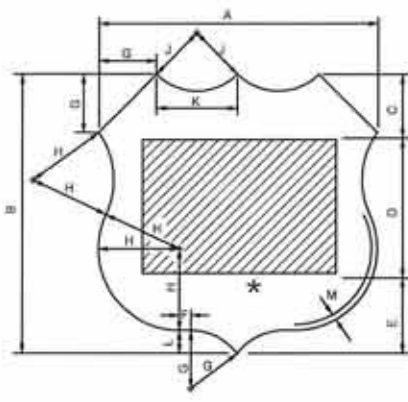
BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
850(A)	SHEET ALUMINUM SIGNS	SF



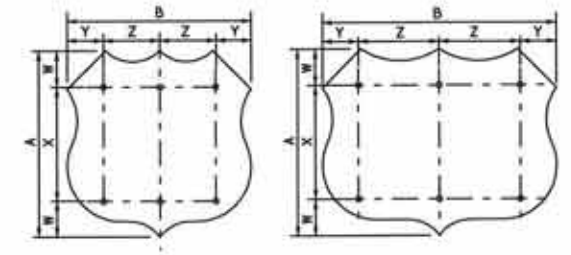
APPROVED BY TRAFFIC ENGINEER: *Handwritten Signature* DATE: 8/5/10

TRAFFIC STANDARD
 ROUTE MARKER SIGN DETAILS
 (ROUTE ASSEMBLY)

DESCRIPTION	REVISIONS	DATE
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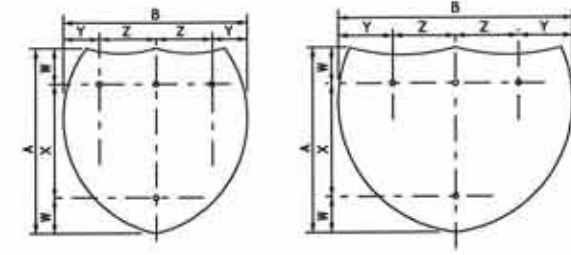
* OPTICALLY SPACE NUMERALS ABOUT VERT. CENTERLINE



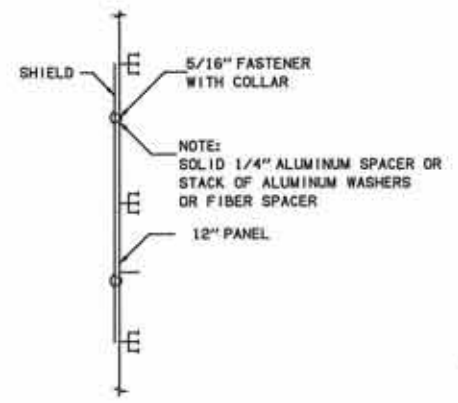
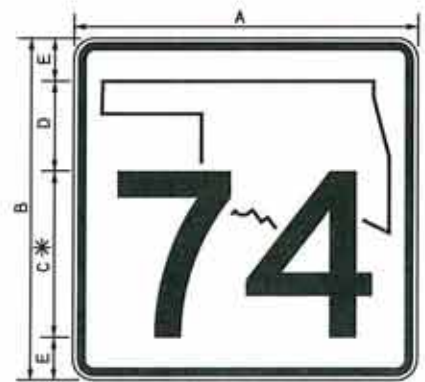
	24" X 24"	24" X 30"	36" X 36"	36" X 45"	48" X 48"	48" X 60"
A	24	24	36	36	48	48
B	24	30	36	45	48	60
W	4-1/2	4-1/2	7	7	9	9
X	15	15	22	22	30	30
Y	4-1/2	4-1/2	7	7	9	9
Z	7-1/2	10-1/2	11	15-1/2	15	21

SIGN DIMENSIONS (INCHES)											
	A	B	C	D	E	F	G	H	J	K	M
1 OR 2 DIGITS	24	24	5-1/2	120	6-1/2	1	5	7	5	7	2 1/2
1 OR 2 DIGITS	36	36	8-1/4	180	9-3/4	1-1/2	7-1/2	10-1/2	7-1/2	10-1/2	3 3/4
1 OR 2 DIGITS	48	48	11	240	13	2	10	14	10	14	4 1
3 DIGITS	30	24	5-1/2	120	6-1/2	4	5	7	9	10	2 1-2
3 DIGITS	45	36	8-1/4	180	9-3/4	5-1/2	7-1/2	10-1/2	13-1/2	15	3 3/4
3 DIGITS	60	48	11	240	13	8	10	14	18	20	4 1

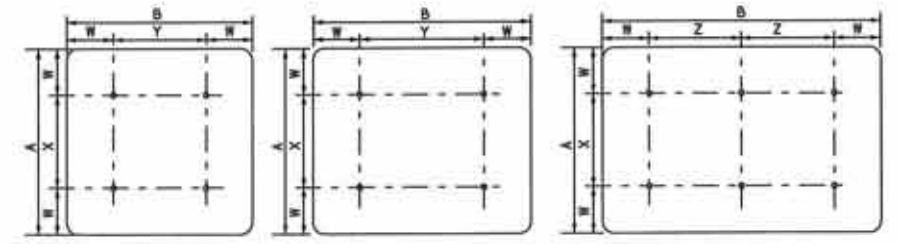
SIGN DIMENSIONS (INCHES)											
	A	B	C	D	E	F	G	H	J	K	M
1 OR 2 DIGITS	24	24	1/2	6-1/2	120	5-1/2	5	15	15	2	7-13/16
1 OR 2 DIGITS	36	36	3/4	9-3/4	180	8-1/4	7-1/2	22-1/2	22-1/2	3	11-11/16
1 OR 2 DIGITS	48	48	1	13	240	11	10	30	30	4	15-9/16
3 DIGITS	30	24	1/2	6-1/2	100	7-1/2	5	24	17	2	7-13/16
3 DIGITS	45	36	3/4	9-3/4	160	10-1/4	7-1/2	36	26-1/2	3	11-11/16
3 DIGITS	60	48	1	13	200	15	10	48	34	4	15-9/16



	24" X 24"	24" X 30"	36" X 36"	36" X 45"	48" X 48"	48" X 60"
A	24	24	36	36	48	48
B	24	30	36	45	48	60
W	4-1/2	4-1/2	7	7	9	9
X	15	15	22	22	30	30
Y	4-1/2	5	7	10-1/2	9	10
Z	7-1/2	10	11	12	15	20



TYPICAL MOUNTING DETAIL



	1 & 2 DIGITS		3 DIGITS		3 DIGITS WITH A "LETTER"	
	12" NUMERALS	18" NUMERALS	12" NUMERALS	18" NUMERALS	12" NUMERALS	18" NUMERALS
A	24	36	30	45	30	45
B	24	36	24	36	24	36
C	120	180	120	180	120	180
D	6	12	6	12	6	12
E	3	3	3	3	3	3
F	-	-	-	-	88	128

GENERAL CONSTRUCTION NOTES:

INTERSTATE, U.S., AND STATE ROUTE SHIELDS FOR USE ON GUIDE SIGNS SHALL BE CUT FROM 0.063" THICK ALUMINUM OR 16 GAUGE GALVANIZED STEEL SHEET TO THE DIMENSIONS SHOWN WITH 3/8" DIAMETER MOUNTING HOLES PUNCHED OR DRILLED PRIOR TO APPLICATION OF REFLECTIVE SHEETING SIGN FACE.

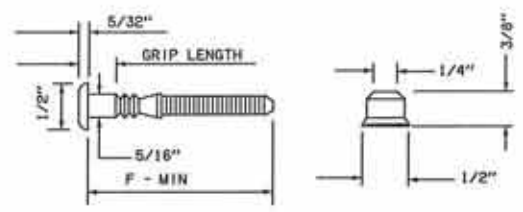
REFLECTIVE SHEETING FOR SIGN FACES SHALL BE TYPE III (OKLAHOMA STANDARD SPECIFICATIONS).

U.S. AND STATE SHIELD FACES SHALL HAVE A WHITE REFLECTIVE BACKGROUND WITH BLACK SCREENED NUMERALS.

INTERSTATE ROUTE SHIELDS SHALL BE REFLECTIVE RED, WHITE, AND BLUE AS SPECIFIED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (LATEST REVISION).

ALL PROCESS INKS USED FOR SCREENING FACES SHALL BE AS RECOMMENDED BY THE MANUFACTURER OF THE REFLECTIVE SHEETING.

ROUTE SHIELDS FOR GUIDE SIGNS SHALL BE PAID FOR IN PRICE BID FOR PANEL SIGNS UNLESS OTHERWISE NOTED IN PLANS.



GRIP LENGTH = .422" - .515"
F - MIN = 2"

5/16" ALUMINUM, GALVANIZED STEEL, STAINLESS STEEL OR CADMIUM PLATED BOLTS WITH COMPATIBLE SELF-LOCKING STOP NUTS MAY BE USED.

5/16" FASTENER AND COLLAR (TYPICAL)

	24" X 24"	30" X 30"	36" X 36"	24" X 30"	30" X 36"	36" X 42"	24" X 36-1/4"	30" X 45"	36" X 54"	24" X 43-1/2"	30" X 54"	36" X 66"
A	24	30	36	24	30	36	24	30	36	24	30	36
B	24	30	36	30	36	42	36-1/4	45	54	43-1/2	54	66
W	6	7-1/2	9	6	7-1/2	9	6	7-1/2	9	6	7-1/2	9
X	12	15	18	12	15	18	12	15	18	12	15	18
Y	12	15	18	18	21	24	-	-	-	-	-	-
Z	-	-	-	-	-	-	13-1/8	15	18	15-3/4	19-1/2	24

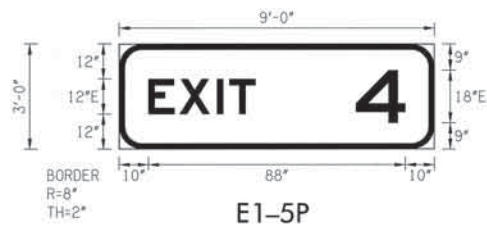
BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
850(A)	SHEET ALUMINUM SIGNS	SF



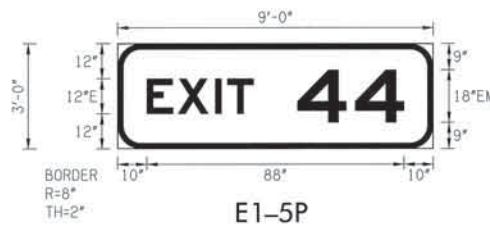
APPROVED BY TRAFFIC ENGINEER: *Harold Smith* DATE: 8/15/10

TRAFFIC STANDARD
ROUTE MARKER SIGN DETAILS
(GUIDE SIGN)

DESCRIPTION	REVISIONS	DATE
REVISED EXIT TABS		4/2/2013



BACKGROUND ----- GREEN REFLECTORIZED (TYPE III)
LEGEND & BORDER ----- WHITE (TYPE VIII)



BACKGROUND ----- GREEN REFLECTORIZED (TYPE III)
LEGEND & BORDER ----- WHITE (TYPE VIII)



BACKGROUND ----- GREEN REFLECTORIZED (TYPE III)
LEGEND & BORDER ----- WHITE (TYPE VIII)



BACKGROUND ----- GREEN REFLECTORIZED (TYPE III)
LEGEND & BORDER ----- WHITE (TYPE VIII)



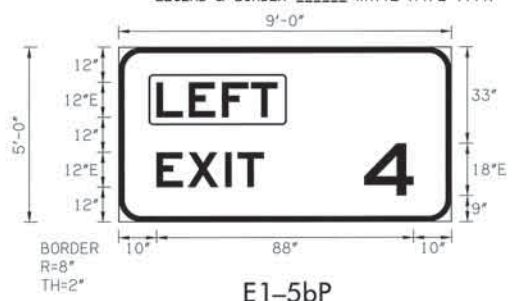
BACKGROUND ----- GREEN REFLECTORIZED (TYPE III)
LEGEND & BORDER ----- WHITE (TYPE VIII)



BACKGROUND ----- GREEN REFLECTORIZED (TYPE III)
LEGEND & BORDER ----- WHITE (TYPE VIII)



BACKGROUND ----- GREEN REFLECTORIZED (TYPE III)
LEGEND & BORDER ----- WHITE (TYPE VIII)



BACKGROUND ----- GREEN REFLECTORIZED (TYPE III)
LEGEND & BORDER ----- WHITE (TYPE VIII)
LEFT ----- FLUORESCENT YELLOW (TYPE VIII) BACKGROUND
BLACK (NON-REFLECTORIZED) WORD



BACKGROUND ----- GREEN REFLECTORIZED (TYPE III)
LEGEND & BORDER ----- WHITE (TYPE VIII)
LEFT ----- FLUORESCENT YELLOW (TYPE VIII) BACKGROUND
BLACK (NON-REFLECTORIZED) WORD



BACKGROUND ----- GREEN REFLECTORIZED (TYPE III)
LEGEND & BORDER ----- WHITE (TYPE VIII)
LEFT ----- FLUORESCENT YELLOW (TYPE VIII) BACKGROUND
BLACK (NON-REFLECTORIZED) WORD



BACKGROUND ----- GREEN REFLECTORIZED (TYPE III)
LEGEND & BORDER ----- WHITE (TYPE VIII)
LEFT ----- FLUORESCENT YELLOW (TYPE VIII) BACKGROUND
BLACK (NON-REFLECTORIZED) WORD



BACKGROUND ----- GREEN REFLECTORIZED (TYPE III)
LEGEND & BORDER ----- WHITE (TYPE VIII)
LEFT ----- FLUORESCENT YELLOW (TYPE VIII) BACKGROUND
BLACK (NON-REFLECTORIZED) WORD



BACKGROUND ----- GREEN REFLECTORIZED (TYPE III)
LEGEND & BORDER ----- WHITE (TYPE VIII)
LEFT ----- FLUORESCENT YELLOW (TYPE VIII) BACKGROUND
BLACK (NON-REFLECTORIZED) WORD



BACKGROUND ----- GREEN REFLECTORIZED (TYPE III)
LEGEND & BORDER ----- WHITE (TYPE VIII)
LEFT ----- FLUORESCENT YELLOW (TYPE VIII) BACKGROUND
BLACK (NON-REFLECTORIZED) WORD

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
850(B)	EXTRUDED ALUMINUM PANEL SIGNS	SF

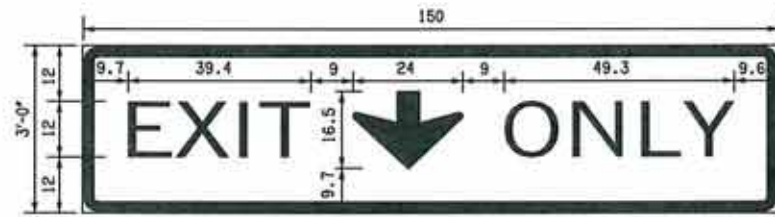


APPROVED BY: *David Conroy* DATE: 4/2/2013
TRAFFIC ENGINEER

TRAFFIC STANDARD
STANDARD INTERSTATE INFORMATIONAL SIGNS
(EXIT TABS)

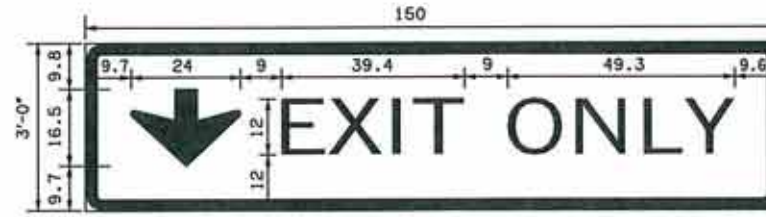
2009 SPECIFICATIONS

SIS3-1	01
T-127	



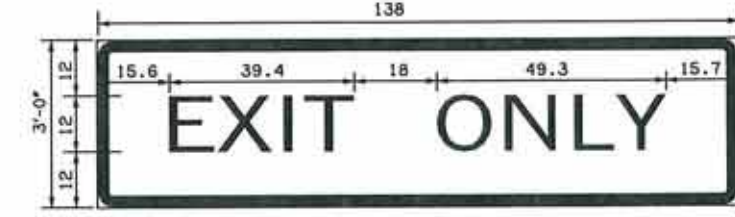
E11-1

RADIUS _____ 3"
 BORDER _____ 2"
 SQ. FT. _____ VAR.
 LEGEND & BORDER _____ BLACK NON-REFLECTORIZED
 BACKGROUND _____ FLUORESCENT YELLOW REFLECTORIZED



E11-1 (SPECIAL)

RADIUS _____ 3"
 BORDER _____ 2"
 SQ. FT. _____ 37.50"
 LEGEND & BORDER _____ BLACK NON-REFLECTORIZED
 BACKGROUND _____ FLUORESCENT YELLOW REFLECTORIZED



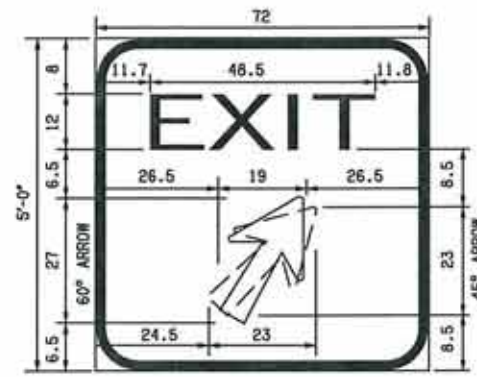
E11-1c

RADIUS _____ 3"
 BORDER _____ 2"
 SQ. FT. _____ 34.50"
 LEGEND & BORDER _____ BLACK NON-REFLECTORIZED
 BACKGROUND _____ FLUORESCENT YELLOW REFLECTORIZED



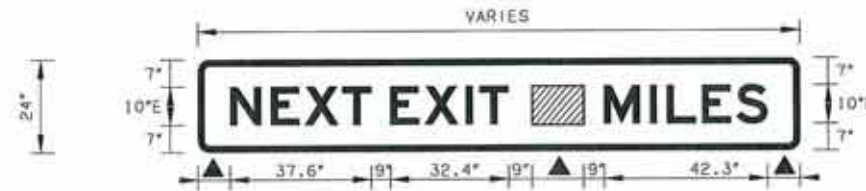
E5-1a

RADIUS _____ 6"
 BORDER _____ 2"
 SQ. FT. _____ VAR.
 BACKGROUND _____ GREEN REFLECTORIZED (TYPE IIII)
 LEGEND & BORDER _____ WHITE (TYPE VIIII)



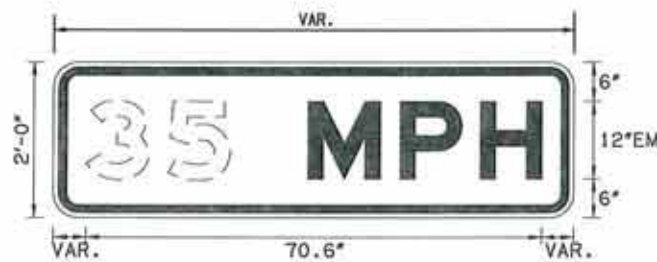
E5-1

RADIUS _____ 6"
 BORDER _____ 2"
 SQ. FT. _____ 33.00"
 BACKGROUND _____ GREEN REFLECTORIZED (TYPE IIII)
 LEGEND & BORDER _____ WHITE (TYPE VIIII)



II-17C

RADIUS _____ 3"
 BORDER _____ 1.75"
 SQ. FT. _____ VAR.
 BACKGROUND _____ GREEN REFLECTORIZED (TYPE IIII)
 LEGEND & BORDER _____ WHITE (TYPE VIIII)



E13-1

RADIUS _____ 3"
 BORDER _____ 2"
 SQ. FT. _____ VAR.
 BACKGROUND _____ FLUORESCENT YELLOW REFLECTORIZED
 LEGEND & BORDER _____ BLACK NON-REFLECTORIZED



II-17

RADIUS _____ 6"
 BORDER _____ 1-1/8"
 SQ. FT. _____ 32.00
 BACKGROUND _____ GREEN REFLECTORIZED (TYPE IIII)
 LEGEND & BORDER _____ WHITE (TYPE VIIII)

NOTES:

▲ DIMENSIONS VARY WITH THE NUMBER OF MILES AND SHOULD BE ADJUSTED TO BALANCE THE SPACE FROM THE BEGINNING AND END OF THE MESSAGE TO THE EDGE OF THE SIGN.

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
850(B)	EXTRUDED ALUMINUM PANEL SIGNS	SF

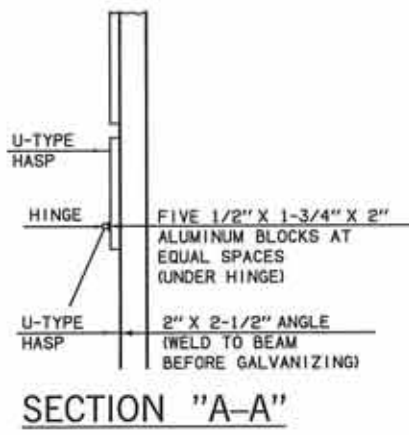
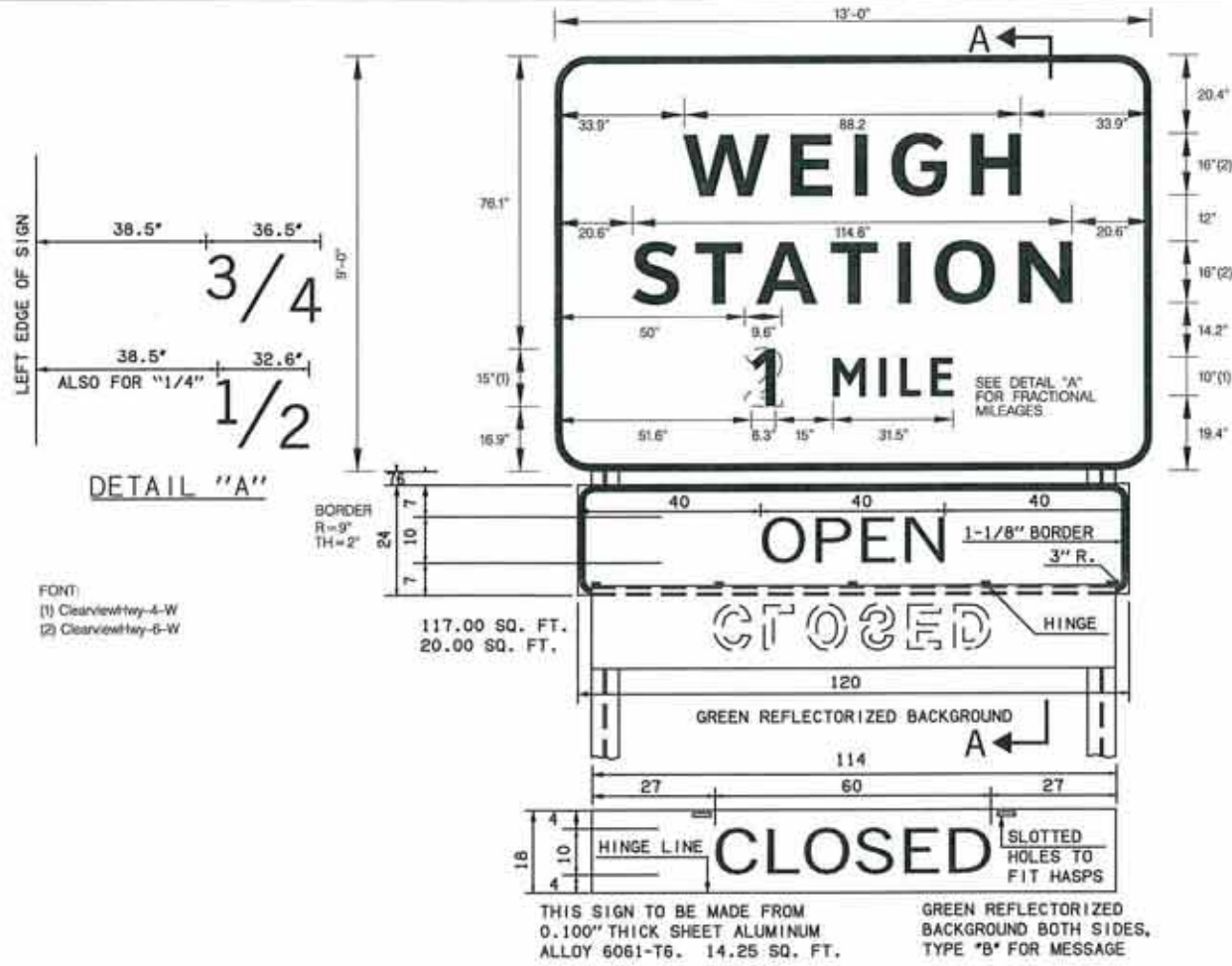


APPROVED BY
 TRAFFIC ENGINEER *[Signature]* DATE *8/1/10*

TRAFFIC STANDARD

STANDARD INTERSTATE INFORMATIONAL SIGNS
 (EXIT SIGNS)

DESCRIPTION	REVISIONS	DATE
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FONT:
 (1) ClearviewHwy-4-W
 (2) ClearviewHwy-6-W

117.00 SQ. FT.
 20.00 SQ. FT.

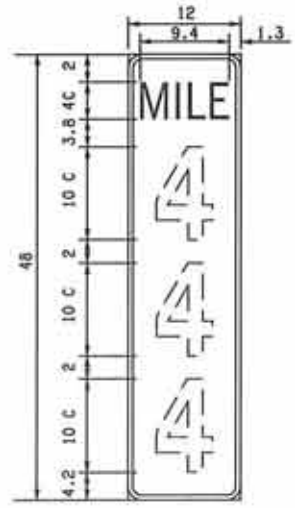
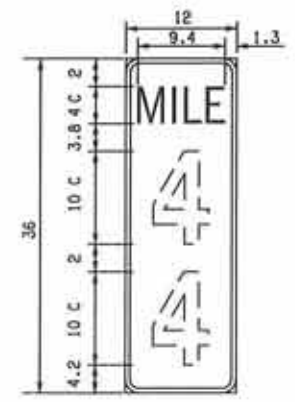
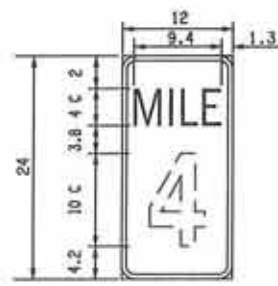
HINGES SHALL BE APPROXIMATELY 2" X 2" AND SHALL BE GALVANIZED.
 HASPS SHALL ALSO BE GALVANIZED AND OF SUFFICIENT SIZE AS COMPARED TO THE HINGES.
 BOTH HINGES AND HASPS ARE SUBJECT TO THE APPROVAL OF THE ENGINEER.
 HINGES, HASPS AND 1/2" ALUMINUM BLOCKS SHALL BE COMPLETELY CLEANED, PRIMED, AND THEN PAINTED WITH TWO (2) COATS OF A HIGH GRADE INTERSTATE GREEN ENAMEL.
 TWO (2) GOOD QUALITY HEAVY DUTY PAD-LOCKS, WITH TWO (2) KEYS FOR EACH LOCK, SHALL BE FURNISHED FOR EACH OF THIS TYPE SIGN REQUIRED.
 HINGES AND HASPS SHALL BE BLOCKED OUT FROM SIGN FACE 1/2" BY USE OF ALUMINUM BLOCKS TO ALLOW CLEARANCE OF CUTOUT, REFLECTORIZED LETTERS.
 ALL HINGES AND HASPS SHALL BE RIVETED TO SIGN WITH 3/16" MINIMUM DIAMETER COUNTER SUNK RIVETS.

BORDER
 R=9"
 TH=2"

FONT:
 (1) ClearviewHwy-6-W
 (2) ClearviewHwy-4-W
 104.00 SQ. FT.
 GREEN REFLECTORIZED BACKGROUND

D8-2

D8-1



RADIUS _____ 1-1/2"
 BORDER _____ 1/2"
 SQ. FT. _____ 2.00
 BACKGROUND _____ GREEN REFLECTORIZED (TYPE III)
 LEGEND & BORDER _____ WHITE (TYPE VIII)

RADIUS _____ 1-1/2"
 BORDER _____ 1/2"
 SQ. FT. _____ 3.00
 BACKGROUND _____ GREEN REFLECTORIZED (TYPE III)
 LEGEND & BORDER _____ WHITE (TYPE VIII)

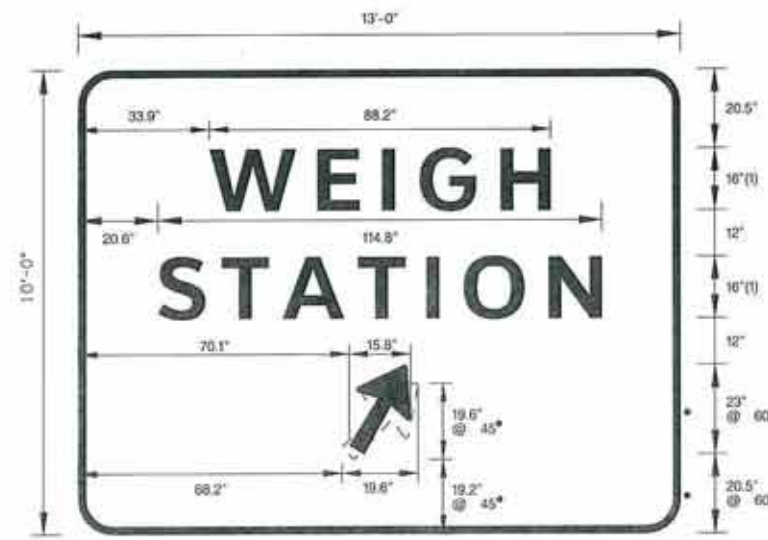
RADIUS _____ 1-1/2"
 BORDER _____ 1/2"
 SQ. FT. _____ 4.00
 BACKGROUND _____ GREEN REFLECTORIZED (TYPE III)
 LEGEND & BORDER _____ WHITE (TYPE VIII)

D10-1F

D10-2F

D10-3F

REFERENCE LOCATION SIGNS



BORDER
 R=9"
 TH=2"

D8-3

FONT:
 (1) ClearviewHwy-6-W
 130.00 SQ. FT.
 GREEN REFLECTORIZED BACKGROUND

NOTE: ALL PANEL SIGNS SHALL HAVE TYPE III BACKGROUND WITH TYPE VIII OR IX LETTERS AND BORDERS.

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
850(A)	SHEET ALUMINUM SIGNS	SF
850(B)	EXTRUDED ALUMINUM PANEL SIGNS	SF

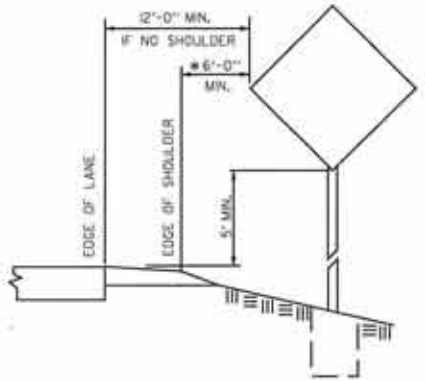


APPROVED BY
 TRAFFIC ENGINEER: *[Signature]* DATE: 8/5/10
 TRAFFIC STANDARD

STANDARD INTERSTATE INFORMATIONAL SIGNS
 (WEIGH STATION)

2009 SPECIFICATIONS

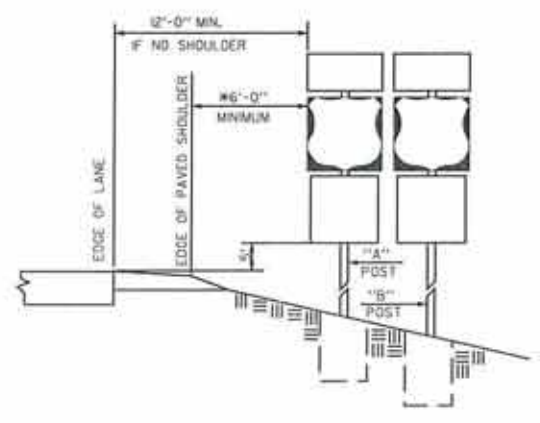
SISS-1	00
T-129	



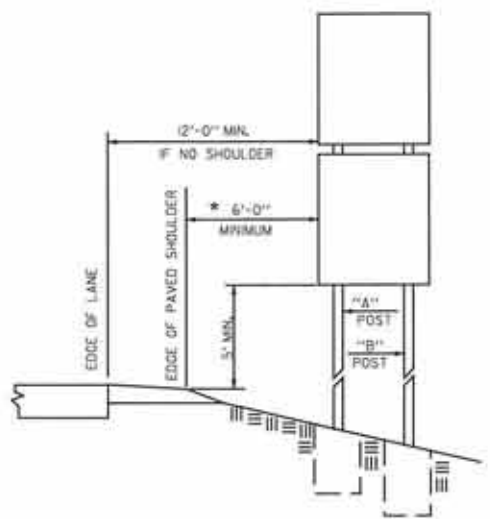
SINGLE POST (RURAL)



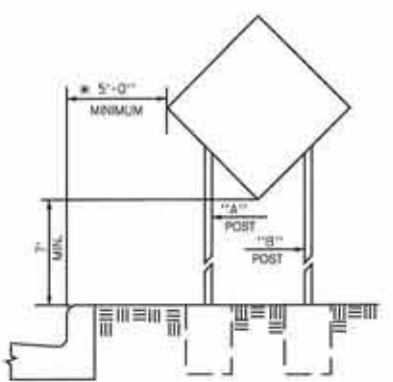
SINGLE POST WITH AUXILIARY SIGN (RURAL)



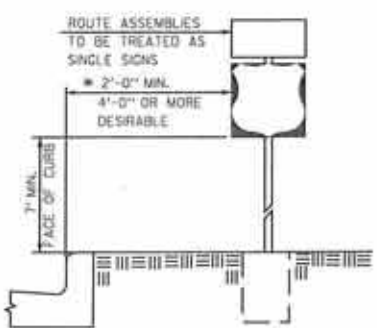
ROADSIDE ASSEMBLY (RURAL)



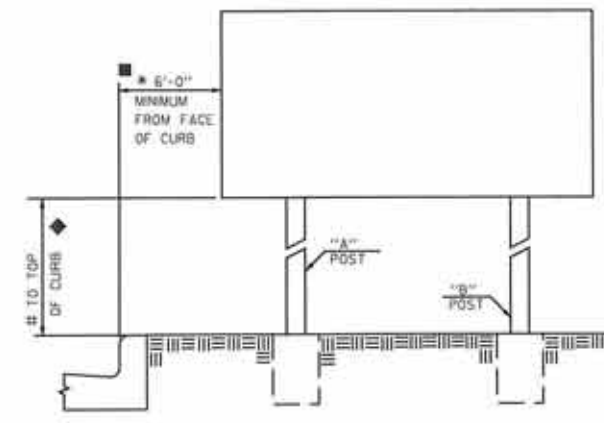
DOUBLE POST MAXIMUM & MINIMUM SPEED LIMIT SIGNS (RURAL)



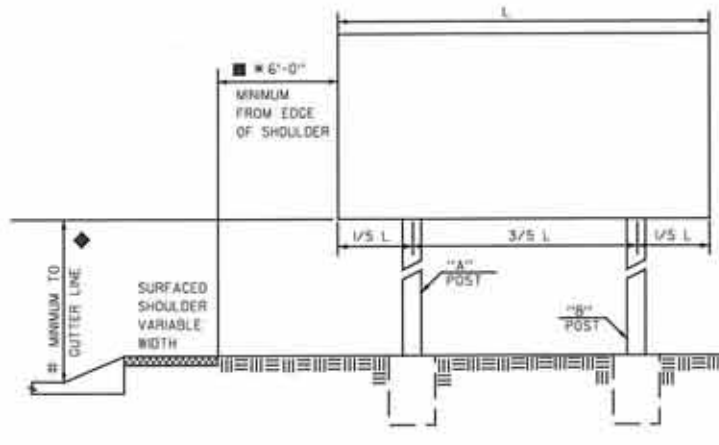
BUSINESS, COMMERCIAL OR RESIDENTIAL AREA



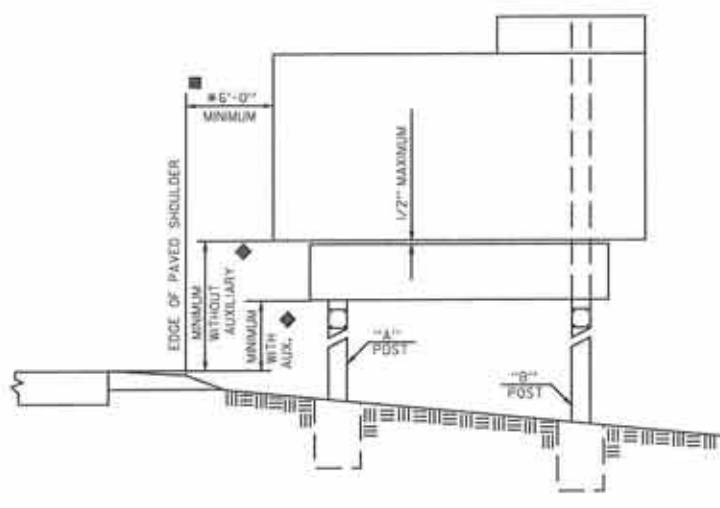
BUSINESS, COMMERCIAL OR RESIDENTIAL AREA



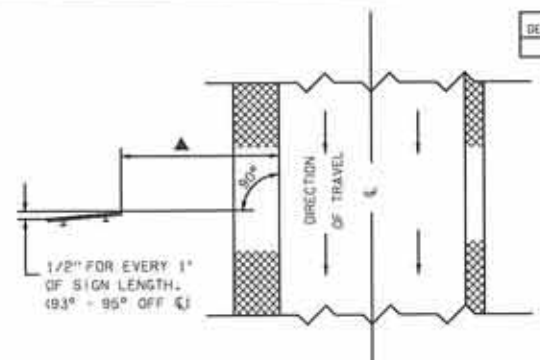
INFORMATION SIGN WITH NON-MOUNTABLE CURB



INFORMATION SIGN WITH MOUNTABLE CURB



FREEWAY OR EXPRESSWAY SIGN (WITH OR WITHOUT AUXILIARY SIGN)



SIGN POSITIONING DETAIL

*1 SIGNS SHALL BE SO POSITIONED TO ELIMINATE OR MINIMIZE SPECULAR REFLECTION, DUE TO THE NUMEROUS VARIATIONS IN ROAD CURVES AND GRADES, THIS GENERAL RULE MAY NOT ALWAYS BE APPLICABLE, AND SIGNS SHALL BE POSITIONED AS DETERMINED BY THE ENGINEER.

*2 IF FURTHER CLARIFICATION OF VERTICAL AND LATERAL CLEARANCES IS REQUIRED, SEE THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES LATEST REVISION.

◆ WHEN LATERAL CLEARANCE OF STANDARD OR SPECIAL INFORMATION GUIDE SIGNS IS 30' OR GREATER (AS REQUIRED BY CLEAR ZONE) FROM THE EDGE LINE, THE MINIMUM VERTICAL CLEARANCE IS 7'. IF AN AUXILIARY SIGN IS MOUNTED BELOW A STANDARD OR SPECIAL INFORMATION GUIDE SIGN, THE RECOMMENDED VERTICAL CLEARANCE FOR THE STANDARD OR SPECIAL INFORMATION GUIDE SIGN IS MINIMUM 8' AND THE AUXILIARY SIGN IS MINIMUM 5'.

◆ THE MINIMUM LATERAL CLEARANCE OF THE SIGN FROM THE EDGE OF SHOULDER OR FACE OF CURB SHALL BE AS SHOWN ON THIS STANDARD DRAWING UNLESS OTHERWISE SHOWN OR NOTED ON PLANS. WHEN SIGNS ARE NOTED TO BE PLACED 5' TO 9' FROM SHOULDER, THE TOLERANCE SHALL BE THE DISTANCE SHOWN +2'.

IN INSTANCES WHERE THE LATERAL CLEARANCE SHOWN CAUSES THE FOOTING TO BE LOCATED UNDESIRABLY, SUCH AS THE BOTTOM OF DITCHES, ETC., THE LOCATION MAY BE ADJUSTED OUTWARD FROM THE ROADWAY IF NECESSARY AT THE DISCRETION OF THE ENGINEER.

IN RURAL AREAS THERE SHALL BE A 12' MINIMUM FROM TRAVELWAY (EDGE LINE) TO THE EDGE OF THE SIGN IF NO SHOULDER EXISTS.

◆ NORMALLY, ON FREEWAY AND EXPRESSWAY MAINLINE, STANDARD OR SPECIAL INFORMATION SIGNS SHALL BE LOCATED WITH A LATERAL CLEARANCE OF 10' FROM THE FACE OF NON-MOUNTABLE CURBS OR GUARD RAILS, 20' FROM EDGE OF SHOULDER, IN ALL CASES EXCEPT WHEN SIGN SUPPORTS ARE PROTECTED BY BARRIERS, SIGNS SHALL HAVE A LATERAL CLEARANCE OF 30' OR GREATER (AS REQUIRED BY CLEAR ZONE) FROM EDGE OF DRIVING LANE.

ALONG INTERCHANGE RAMP THE LATERAL CLEARANCE SHALL NORMALLY BE 10' OR GREATER (AS REQUIRED BY CLEAR ZONE).

▲ WHEN LATERAL CLEARANCE IS 30'-0" OR GREATER FROM EDGE OF PAVEMENT, THE SIGN IS TO BE APPROXIMATELY PERPENDICULAR TO ROADWAY.



APPROVED BY TRAFFIC ENGINEER *David Smalley* DATE 8/5/10
TRAFFIC STANDARD

TYPICAL INSTALLATIONS OF GROUND MOUNTED SIGNS

DESCRIPTION	REVISIONS	DATE
MODIFIED GENERAL NOTE 4.		7/08/2011
REISSUED		4/10/2012

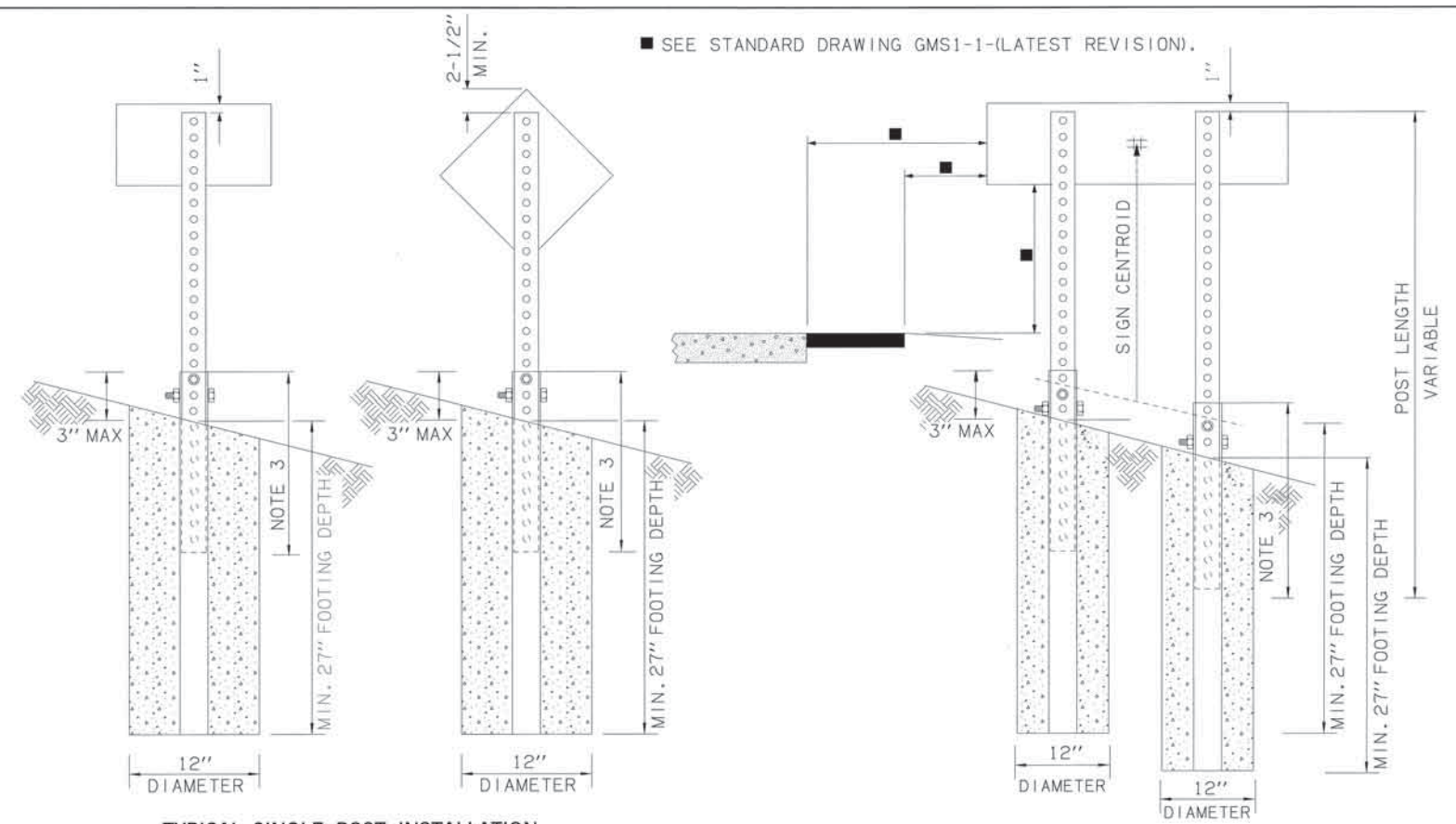
WINDLOAD COORDINATES FOR SQUARE POST AT 90 MPH

SIGN CENTROID	ALLOWABLE SIGN AREA (FT ²) PER SINGLE POST *							
	FHWA APPROVED FOR: 2 POST PER SIGN				FHWA APPROVED FOR: 1 POST PER SIGN			
	1 1/2"x12ga perf.	1 3/4"x14ga perf.	1 3/4"x12ga perf.	2"x14ga perf.	2"x12ga perf.	2 1/4"x14ga perf.	2 1/4"x12ga perf.	2 1/2"x12ga perf.
16.5'	3.46	3.90	4.85	5.19	6.48	6.67	8.34	10.44
16'	3.57	4.02	5.00	5.36	6.68	6.88	8.60	10.76
15.5'	3.68	4.15	5.17	5.53	6.90	7.11	8.88	11.11
15'	3.81	4.29	5.34	5.71	7.13	7.34	9.17	11.48
14.5'	3.94	4.44	5.52	5.91	7.37	7.60	9.49	11.87
14'	4.08	4.59	5.72	6.12	7.64	7.87	9.83	12.30
13.5'	4.23	4.76	5.93	6.35	7.92	8.16	10.19	12.75
13'	4.39	4.95	6.16	6.59	8.22	8.47	10.59	13.24
12.5'	4.57	5.15	6.41	6.86	8.55	8.81	11.01	13.77
12'	4.76	5.36	6.67	7.14	8.91	9.18	11.47	14.35
11.5'	4.96	5.59	6.96	7.45	9.30	9.58	11.97	14.97
11'	5.19	5.85	7.28	7.79	9.72	10.01	12.51	15.65
10.5'	5.44	6.13	7.63	8.16	10.18	10.49	13.11	16.40
10'	5.71	6.43	8.01	8.57	10.69	11.01	13.76	17.22
9.5'	6.01	6.77	8.43	9.02	11.25	11.59	14.49	18.12
9'	6.34	7.15	8.90	9.52	11.88	12.24	15.29	19.13
8.5'	6.72	7.57	9.42	10.08	12.58	12.96	16.19	20.26
8'	7.14	8.04	10.01	10.71	13.36	13.77	17.20	21.52

* USE A MULTIPLIER OF 2 OR 3 FOR 2 & 3 POST INSTALLATIONS.

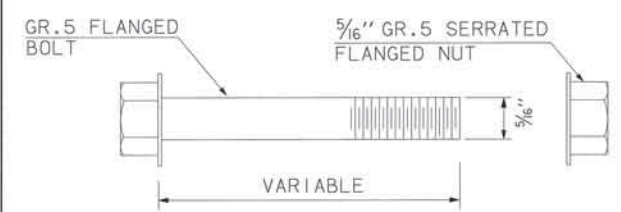
GENERAL NOTES

- POST TUBE SHALL MEET ASTM A1011 GRADE 50. POST TUBE GALVANIZED AS PER ASTM A653 GRADE 90.
- HEAVY DUTY ANCHOR TUBE SHALL MEET ASTM A500 GRADE B STRUCTURAL TUBE AND STEEL SHALL BE HOT DIP GALVANIZED PER ASTM A123.
- THE UPPER SIGN POST SHALL TELESCOPE INSIDE THE ANCHOR TUBE A MINIMUM OF 12". ANCHOR TUBE SHALL BE MINIMUM OF 30" WITH 3" MAXIMUM AS SHOWN IN DETAILS.
- THE CONCRETE FOOTING SHALL BE CLASS "C" CONCRETE OR AS DIRECTED BY THE ENGINEER. CONCRETE INCLUDED IN THE COST OF SQUARE TUBE POST.
- THE NON-REINFORCED CIRCULAR CONCRETE FOOTING, ANCHOR TUBE AND HARDWARE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE SQUARE TUBE POST.
- SEE STANDARD DRAWINGS SSA1-1, MSD5-1, MSD6-1, SBS1-1, SBS2-1, AND SBS3-1 (LATEST REVISION) FOR PROPER BRACKET PLACEMENT ON THE SIGN AND POST SPACING FOR TWO POST INSTALLATION.
- FOR VERTICAL AND LATERAL CLEARANCE, SEE STANDARD DRAWING GMS1-1, AND GMS2-1-(LATEST REVISION).
- SIGNS SHALL BE ATTACHED TO THE POSTS WITH BOLTS AS SHOWN ON STANDARD DRAWING SSA1-1-(LATEST REVISION).

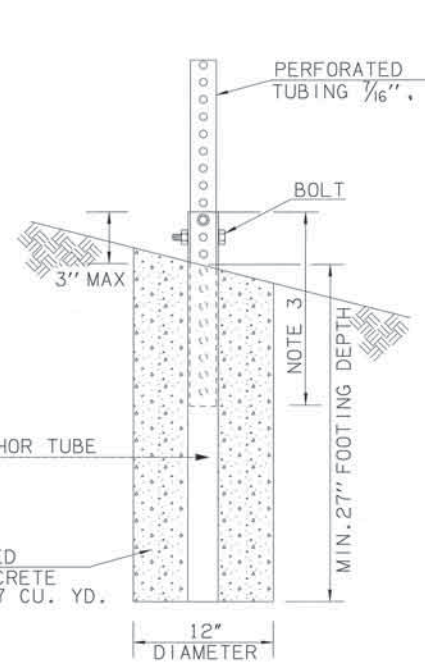
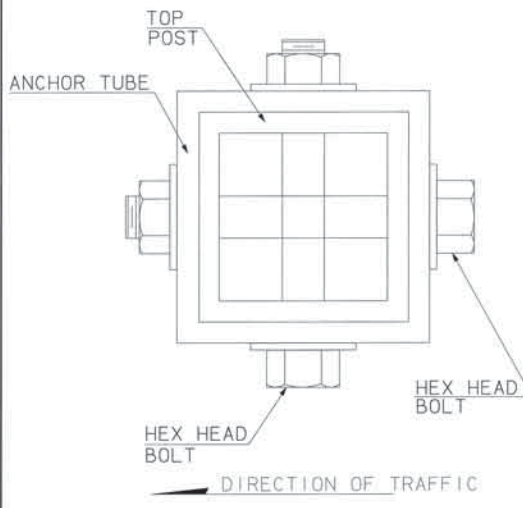


TYPICAL SINGLE POST INSTALLATION

TYPICAL DOUBLE POST INSTALLATION

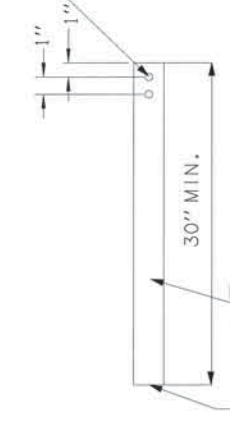


BOLT DESIGN



ANCHOR TUBE DETAILS WITH CONCRETE FOOTING

NON-PERFORATED ANCHOR TUBE SHALL HAVE TWO (2) 1/16" DIAMETER HOLES SPACED 1" ON CENTER ALONG THE CENTERLINE OF EACH OF THE FOUR SIDES.



HEAVY DUTY ANCHOR TUBE

- DRAWING NOT TO SCALE -

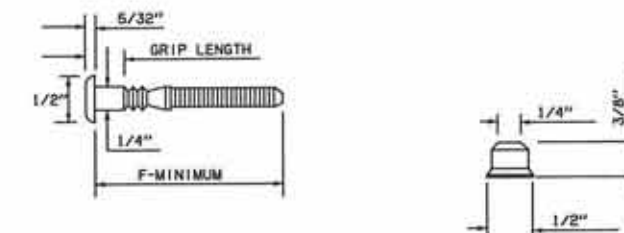
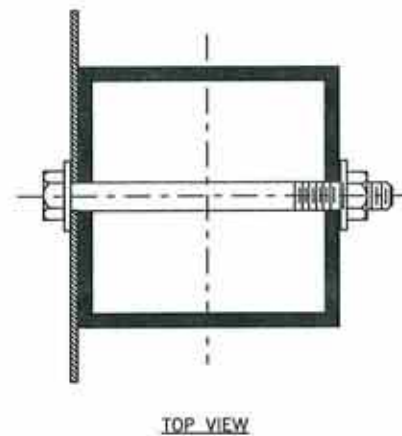
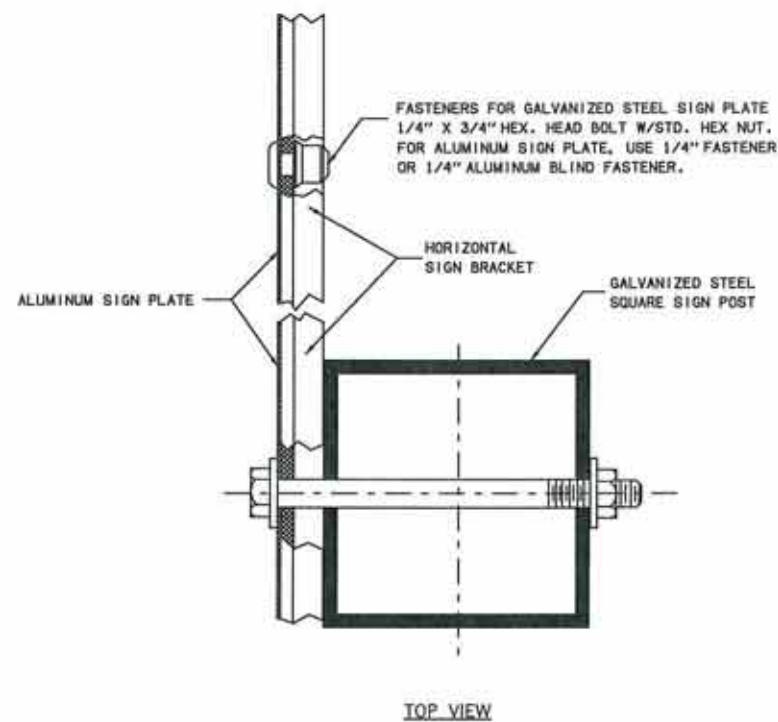
BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
851(C)	SQUARE TUBE POST	LF



APPROVED BY TRAFFIC ENGINEER: *Theresa Gray* DATE: 4/17/12

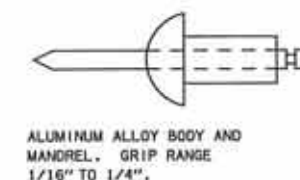
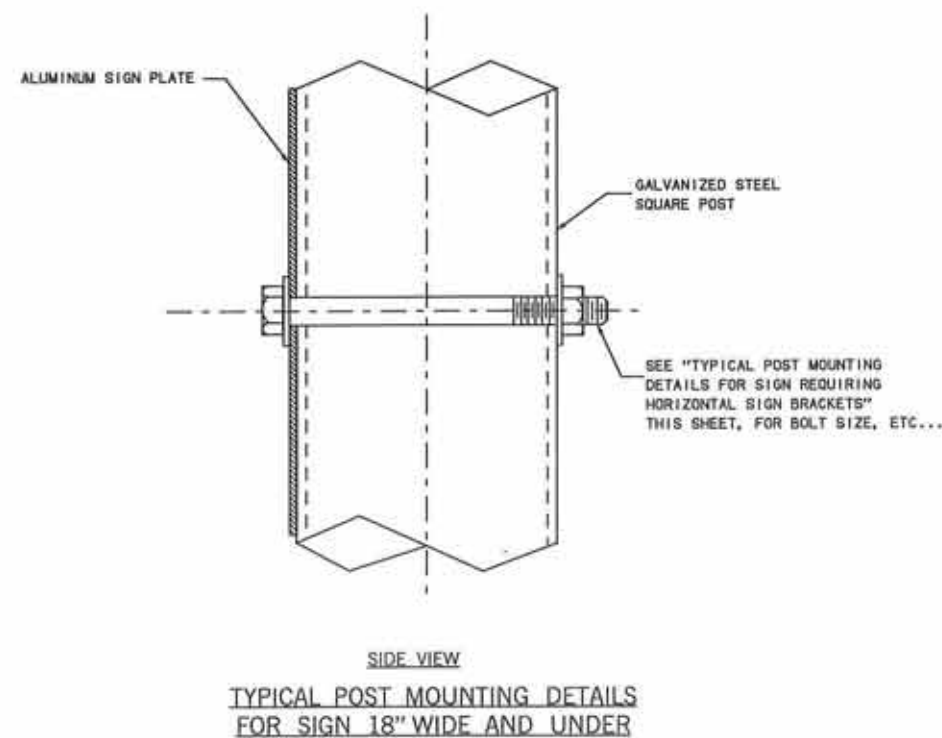
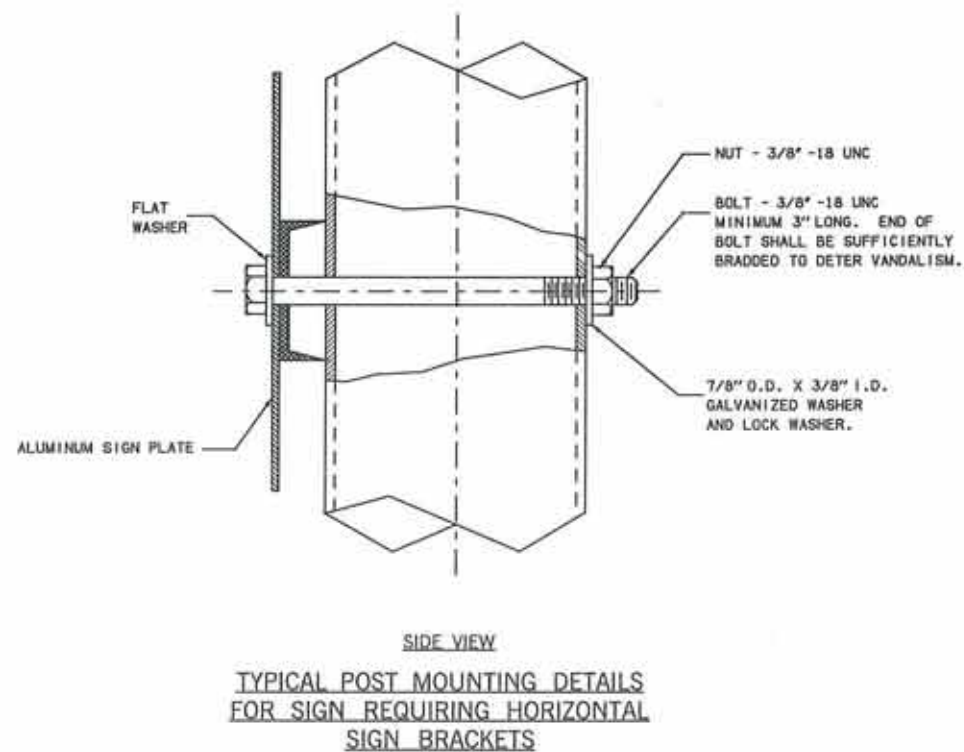
TRAFFIC STANDARD

SQUARE TUBE POST DETAILS



1/4" FASTENER AND 1/4" COLLAR
(TYPICAL)

GRIP NO.	GRIP LENGTH (INCHES)	F-MIN. (INCHES)
2	0.094 - 0.156	1-7/16"
3	0.157 - 0.218	1-1/2"
4	0.219 - 0.281	1-9/16"
5	0.282 - 0.343	1-5/8"
6	0.344 - 0.406	1-11/16"
17	0.407 - 1.093	2-3/8"



1/4" BLIND
FASTENERS

NOTE: ALL NUTS SHALL
BE SELF-LOCKING.

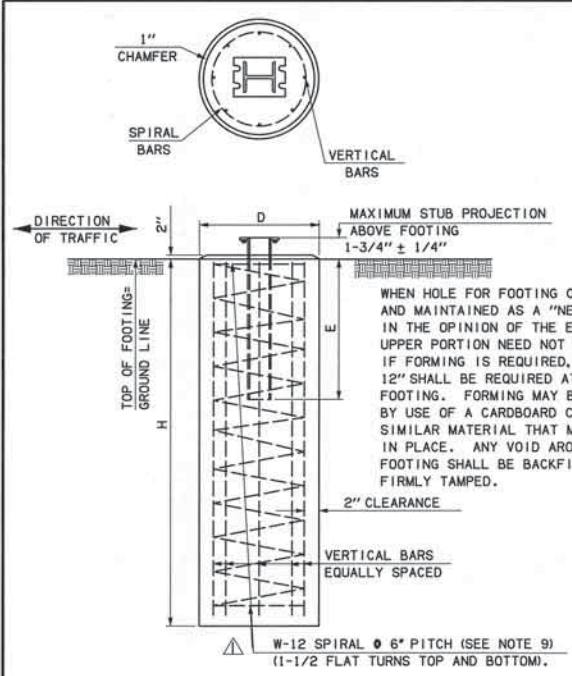


APPROVED BY
TRAFFIC ENGINEER: *David Smith* DATE: 8/15/10

TRAFFIC STANDARD

SHEET SIGN ASSEMBLY DETAILS
(SQUARE TUBE)

DESCRIPTION	REVISIONS	DATE
UPDATED NOTE		11/8/13



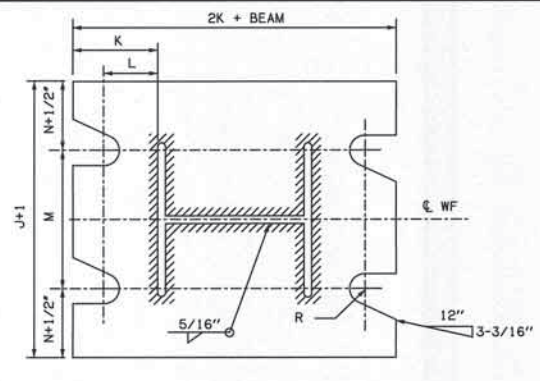
TYPICAL "KC" FOOTING DETAILS WITH LEVEL GROUND LINE

ALL FUSE PLATE NUTS SHALL BE TIGHTENED IN THE SHOP TO PRODUCE THE REQUIRED MINIMUM BOLT TENSION IN CONFORMANCE WITH ASTM-A325 OR THE EQUIVALENT TORQUE AS SHOWN IN THE TABLE BELOW. AFTER POSTS ARE SHIPPED AND ERECTED AT THEIR SITES, THE NUTS SHALL BE LOOSENEED AND RE-TORQUED TO THEIR PROPER VALUE.

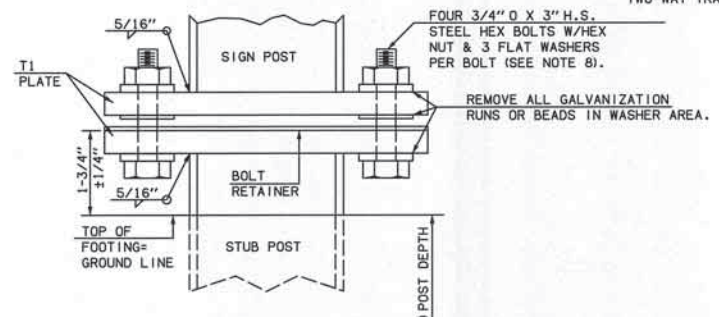
AFTER BEING RE-TORQUED TO THE SATISFACTION OF THE ENGINEER, THE NUTS, BOLTS AND WASHERS SHALL BE FREED OF RUST, CLEANED AND GIVEN A HEAVY AND THOROUGH COAT OF ZINC-RICH PAINT.

BOLT SIZE	TORQUE	MINIMUM RESIDUAL TENSION
1/2"	100 FT LBS	12,050 LBS
5/8"	200 FT LBS	19,200 LBS
3/4"	355 FT LBS	28,400 LBS
7/8"	526 FT LBS	39,250 LBS
1"	789 FT LBS	51,500 LBS
1-1/8"	1,350 FT LBS	56,450 LBS.

FOOTING DESIGN NO.	SIZE OF POST REQUIRED	FOOTING DIMENSIONS				STRUCTURAL CONCRETE	REINFORCING STEEL
		D	H	E	HORIZONTAL BARS		
KC-0	4" WF # 13	18"	5'-6"	2'-6"	SPIRAL W-12 (48'-6" LONG)	.36 CU. YD.	65 LBS
KC-1	6" WF # 15	24"	6'-6"	2'-6"	SPIRAL W-12 (79'-3" LONG)	.76 CU. YD.	106 LBS
KC-1A	6" WF # 20	24"	6'-6"	2'-6"	SPIRAL W-12 (79'-3" LONG)	.76 CU. YD.	129 LBS
KC-2	6" WF # 25	24"	7'-0"	2'-6"	SPIRAL W-12 (84'-4" LONG)	.82 CU. YD.	174 LBS
KC-3	8" WF # 31	24"	8'-6"	3'-0"	SPIRAL W-12 (100'-3" LONG)	.99 CU. YD.	316 LBS
KC-4	8" WF # 35	24"	9'-0"	3'-0"	SPIRAL W-12 (106'-0" LONG)	1.05 CU. YD.	338 LBS
KC-5	8" WF # 40	24"	9'-6"	3'-0"	SPIRAL W-12 (111'-4" LONG)	1.11 CU. YD.	428 LBS
KC-6	10" WF # 45	30"	10'-0"	3'-6"	SPIRAL W-12 (151'-3" LONG)	1.82 CU. YD.	465 LBS
KC-7	10" WF # 49	30"	10'-6"	3'-6"	SPIRAL W-12 (158'-0" LONG)	1.91 CU. YD.	490 LBS



STEEL WF POST BASE PLATE FOR FOOTING DESIGN "KC"



STEEL WF POST BASE CONNECTION FOR FOOTING DESIGN "KC"

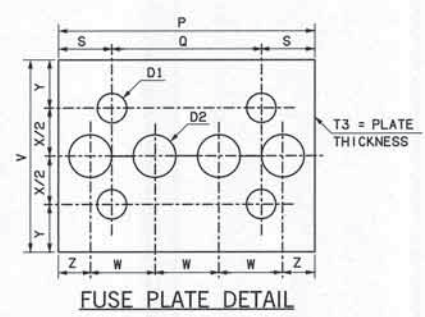
SHEET METAL BOLT RETAINER



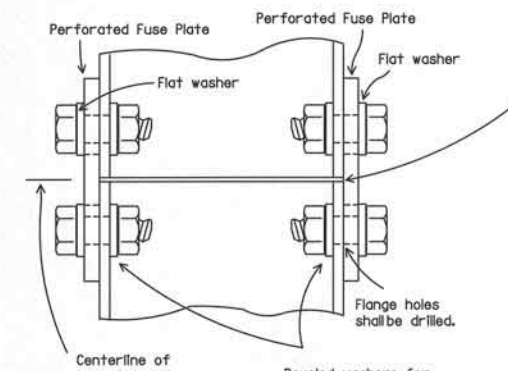
LEFT HAND SLOTS RIGHT HAND SLOTS

PROCEDURE FOR ASSEMBLY OF BASE CONNECTION

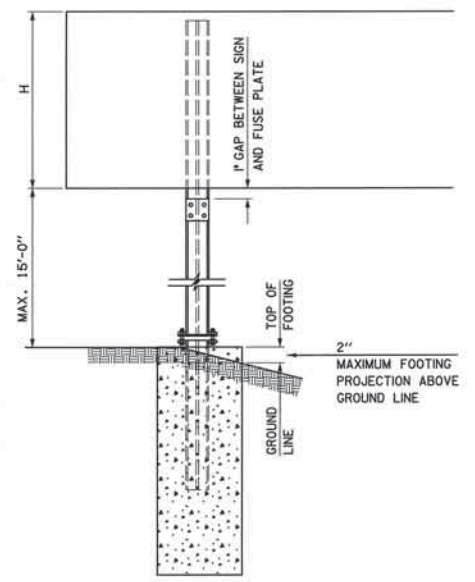
- ASSEMBLE POST TO STUB WITH BOLTS AND WASHERS AND WITH ONE FLAT WASHER ON EACH BOLT AND BOLT RETAINER BETWEEN BASE PLATES.
- SHIM AS REQUIRED TO PLUMB AND ALIGN POST(S) BEFORE OR IMMEDIATELY AFTER POURING CONCRETE FOOTING.
- TIGHTEN ALL BOLTS, IN A SYSTEMATIC ORDER, TO THE PRESCRIBED TORQUE TO BED WASHERS AND SHIMS AND CLEAN BOLT THREADS.
- LOOSEN AND RETIGHTEN TO PRESCRIBED TORQUE IN THE SAME ORDER AS INITIAL TIGHTENING. DO NOT OVER TIGHTEN.



FUSE PLATE DETAIL



DETAIL "A"

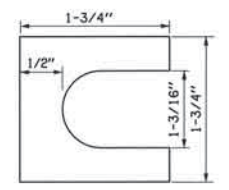


"KC" FOOTING DETAILS WITH SLOPING GROUND LINE

- CONSTRUCTION NOTES:**
- ALL PIPE AND WIDE FLANGE BEAM POSTS SHALL CONFORM TO REQUIREMENTS OF THE 2009 STANDARD SPECIFICATIONS.
 - FUSE PLATE SHALL CONFORM TO THE REQUIREMENTS OF ASTM-A441, A572 GRADE 50 OR A588. ALL HOLES SHALL BE DRILLED. ALL PLATE CUTS SHALL BE PREFERABLY SAW CUTS, HOWEVER, FLAME CUTTING WILL BE PERMITTED PROVIDED ALL EDGES ARE GROUND. METAL PROJECTING BEYOND THE PLANE OF THE PLATE FACE WILL NOT BE TOLERATED.
 - ALL BOLTS, NUTS, AND WASHERS SHALL NOT BE GALVANIZED OR PLATED, BUT SHALL BE PAINTED AFTER INSTALLATION, WITH A ZINC RICH PAINT.
 - STRUCTURAL STEEL TO BE GALVANIZED AFTER FABRICATION, EXCEPT AS NOTED, IN ACCORDANCE WITH THE 2009 STANDARD SPECIFICATIONS.
 - POST LENGTHS AS SHOWN ON THE PLANS INCLUDE BOTH SIGN POST & STUB POST WHICH IS SET IN THE CONCRETE FOOTING.
 - ALL WELDING MATERIALS AND METHODS, INCLUDING QUALIFICATION OF WELDERS, SHALL CONFORM TO THE REQUIREMENTS OF THE 2009 STANDARD SPECIFICATIONS.
 - STRUCTURAL EXCAVATION TO BE PAID FOR IN OTHER ITEMS OF WORK.
 - TOP AND BOTTOM WASHERS ON BASE PLATE SHALL BE 1/4" THICK. WASHERS MAY BE ROUND OR SQUARE. USE STANDARD ROUND WASHERS BETWEEN BASE PLATES. REMOVE ALL GALVANIZING RUNS OR BEADS IN THE WASHER AREA.
 - USE W-12 SPIRAL BAR IN ACCORDANCE WITH 723.07 OF THE STANDARD SPECIFICATIONS, CONTRACTOR MAY SUBSTITUTE #3 SPIRAL BAR IN ACCORDANCE WITH AASHTO M31

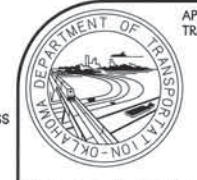
**TABLE 2
"KC" POST DATA**

FOOTING DESIGN NO.	SIZE POST REQUIRED.	BASE PLATE BOLT DIA.	BOLT TORQUE		BASE CONNECTION TABLE																H (MAX)			
			MIN.	MAX.	J	K	L	M	N	T1	R	P	Q	S	V	W	X	Y	Z	T3				
			FT LBS	FT LBS																				
KC=0	4" WF # 13	3/4" X 3"	67.5	88.27	6"	2-1/8"	1-1/4"	3-1/2"	1-1/4"	3/4"	13/16"	4"	2-1/4"	7/8"	4-1/2"	1"	2-1/4"	1-1/8"	1/2"	1/2"	1/2"	9/16"	11/16"	10'
KC=1	6" WF # 15	3/4" X 3"	67.5	88.27	6"	2-1/8"	1-1/4"	3-1/2"	1-1/4"	3/4"	13/16"	6"	3-1/2"	1-1/4"	4-1/2"	1-1/2"	2-1/4"	1-1/8"	3/4"	1/2"	5/8"	11/16"	1"	10'
KC=1A	6" WF # 20	3/4" X 3"	67.5	88.27	6"	2-1/8"	1-1/4"	3-1/2"	1-1/4"	3/4"	13/16"	6"	3-1/2"	1-1/4"	4-1/2"	1-1/2"	2-1/4"	1-1/8"	3/4"	1/2"	5/8"	11/16"	1"	10'
KC=2	6" WF # 25	3/4" X 3"	67.5	88.27	6"	2-1/8"	1-1/4"	3-1/2"	1-1/4"	3/4"	13/16"	6"	3-1/2"	1-1/4"	5"	1-1/2"	2-1/2"	1-1/4"	3/4"	1/2"	3/4"	13/16"	1"	10'
KC=3	8" WF # 31	1" X 3-1/4"	77.1	118.21	8"	2-3/4"	1-5/8"	4-1/2"	1-3/4"	3/4"	1-1/16"	8"	5-1/2"	1-1/4"	6"	2"	3"	1-1/2"	1"	1/2"	7/8"	15/16"	1"	15'
KC=4	8" WF # 35	1" X 3-1/4"	77.1	118.21	8"	2-3/4"	1-5/8"	4-1/2"	1-3/4"	3/4"	1-1/16"	8"	5-1/2"	1-1/4"	6"	2"	3"	1-1/2"	1"	1/2"	7/8"	15/16"	1"	15'
KC=5	8" WF # 40	1" X 3-1/4"	77.1	118.21	8"	2-3/4"	1-5/8"	4-1/2"	1-3/4"	3/4"	1-1/16"	8"	5-1/2"	1-1/4"	7"	2"	3-1/2"	1-3/4"	1"	3/4"	1"	1-1/16"	1-1/4"	15'
KC=6	10" WF # 45	1-1/8" X 4"	87.46	137.97	10"	3"	1-3/4"	6"	2"	1"	1-3/16"	8"	5-1/2"	1-1/4"	7"	2"	3-1/2"	1-3/4"	1"	3/4"	1"	1-1/16"	1"	15'
KC=7	10" WF # 49	1-1/8" X 4"	87.46	137.97	10"	3"	1-3/4"	6"	2"	1"	1-3/16"	10"	5-1/2"	2-1/4"	8"	2-1/2"	4"	2"	1-1/4"	3/4"	1-1/8"	1-3/16"	1-1/2"	15'



SHIM DETAIL

ITEM NO.	ITEM	UNIT
804(A)	STRUCTURAL CONCRETE	CY
804(B)	REINFORCING STEEL	LB
851(A)	GALV. STEEL WIDE FLANGE BEAM POST	LF

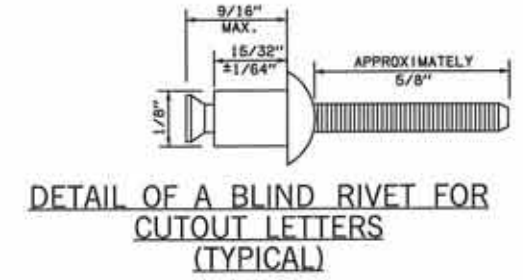
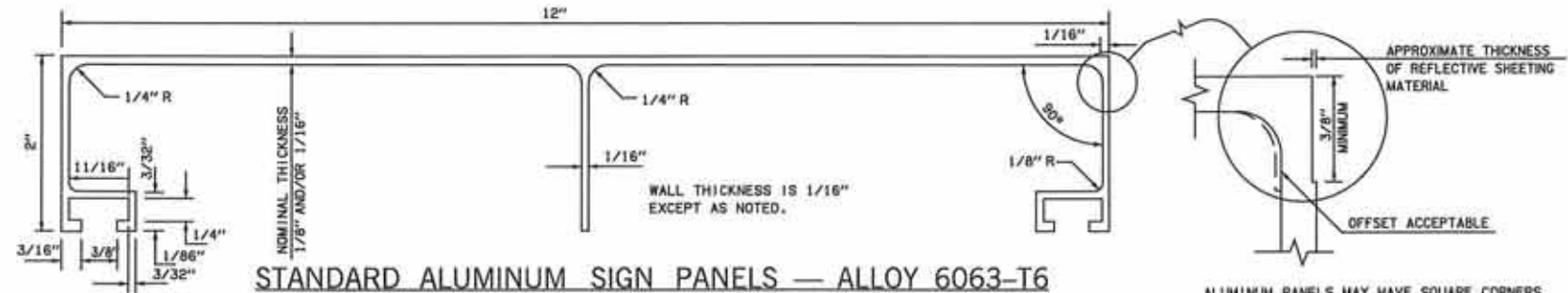


APPROVED BY
TRAFFIC ENGINEER: *[Signature]* DATE: 11/17/2013

**TRAFFIC STANDARD
STANDARD FOOTINGS FOR
GROUND MOUNTED SIGNS
(GALVANIZED WIDE FLANGE)**

2009 SPECIFICATIONS

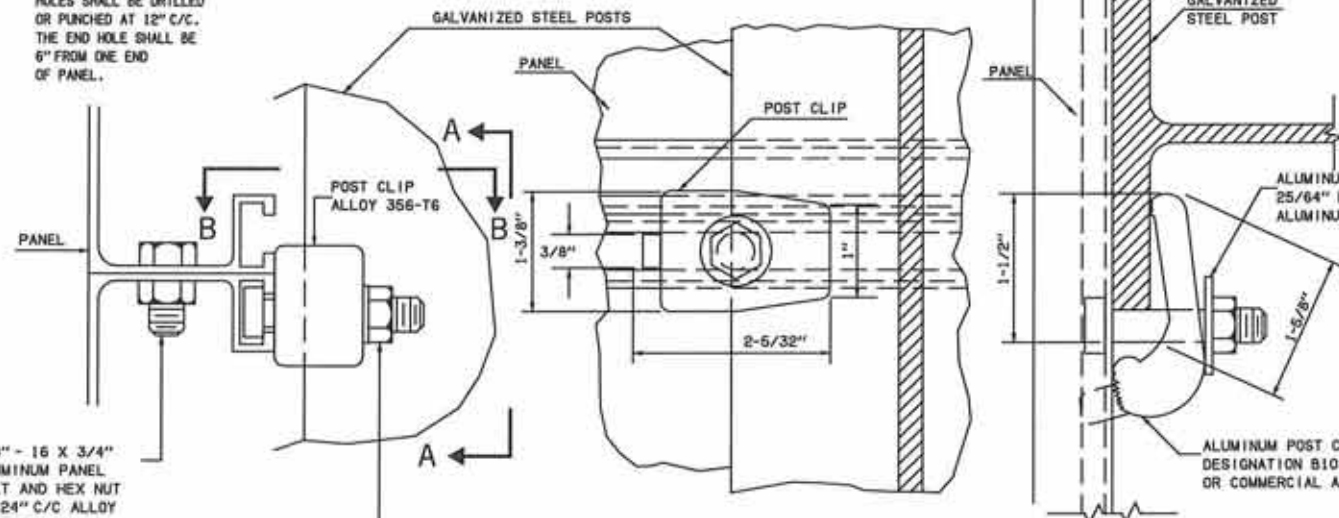
DESCRIPTION	REVISIONS	DATE
DETAIL TYPE 'A' EDGE STRIP		8/2/02



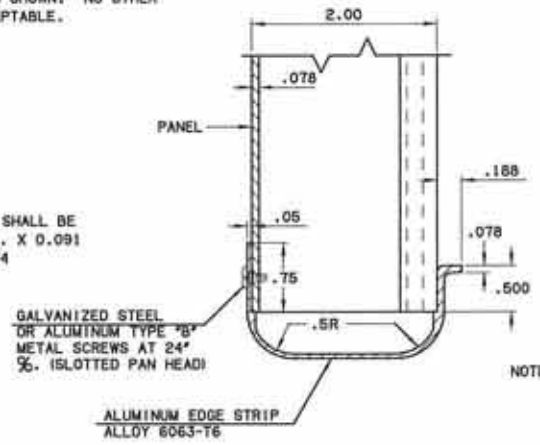
7/16" X 7/8" SLOTTED HOLES SHALL BE DRILLED OR PUNCHED AT 12" C/C. THE END HOLE SHALL BE 6" FROM ONE END OF PANEL.

STANDARD ALUMINUM SIGN PANELS — ALLOY 6063-T6

ALUMINUM PANELS MAY HAVE SQUARE CORNERS OR NOTCHED CORNERS AS SHOWN. NO OTHER TYPE CORNERS ARE ACCEPTABLE.

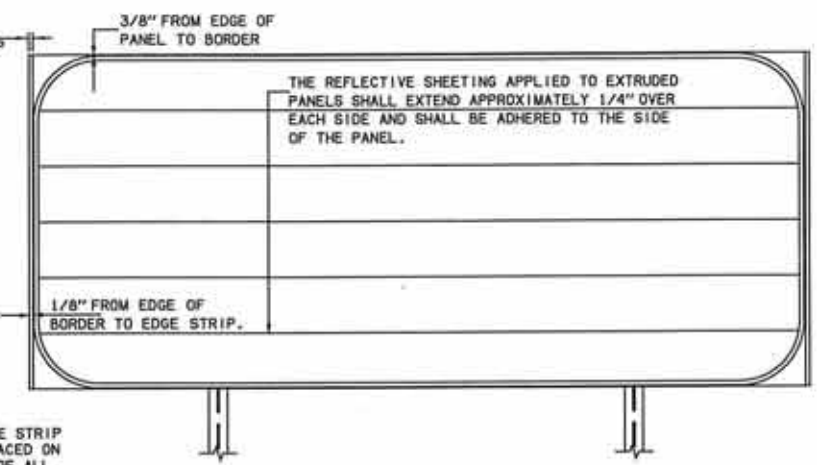


SECTION "A-A" SECTION "B-B"
DETAILS FOR ASSEMBLING PANEL TYPE "A"



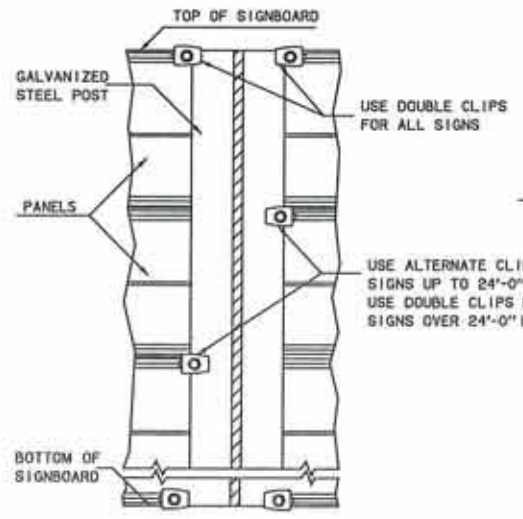
DETAIL OF TYPE "A" EDGE STRIP

NOTE: TYPE "A" EDGE STRIP SHALL BE PLACED ON BOTH SIDES OF ALL EXTRUDED PANEL SIGNS.

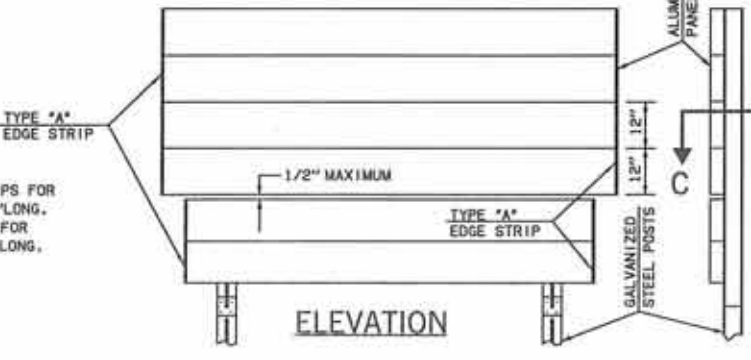


TYPICAL ASSEMBLY OF BORDER AND REFLECTIVE BACKGROUND

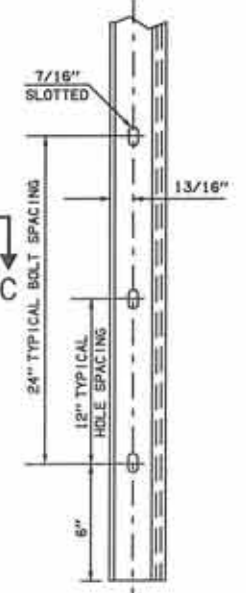
3/8" - 16 X 1-3/4" ALUMINUM POST CLIP BOLT, STOP NUT, AND FLAT WASHER ALLOY 2024-T4



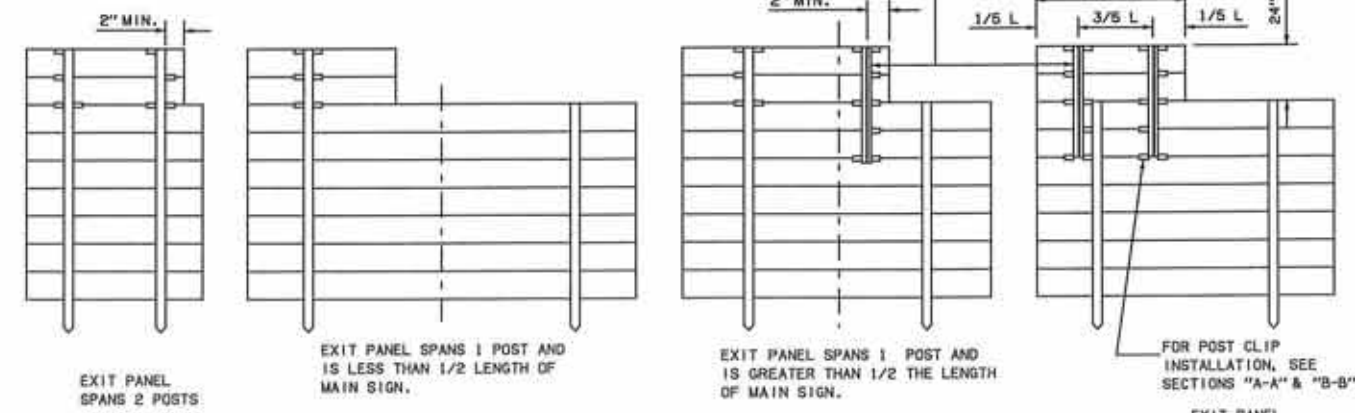
DETAIL OF POST CLIP LOCATION



TYPICAL ERECTION OF SIGN PANELS AND DETAILS OF AUXILIARY SIGN



SECTION "C-C"



TYPICAL DETAILS FOR MOUNTING EXIT PANEL SIGNS

NOTE: ALL NUTS SHALL BE SELF-LOCKING.

NOTES:
EXIT NUMBER SIGNS SHALL BE MOUNTED ON THE EXTREME RIGHT OF GUIDE SIGNS FOR RIGHT EXITS OR EXTREME LEFT FOR LEFT EXITS.
EXIT NUMBER SIGN PANEL SHALL BE BOLTED TO MAIN SIGN -- SEE SECTION "C-C" THIS SHEET.
EDGE OF EXIT NUMBER SIGN SHOULD NOT EXTEND BEYOND EDGE OF MAIN SIGN.
"T" BRACES AND POST CLIPS SHALL BE PAID FOR IN PRICE BID FOR OTHER ITEMS OF WORK.
GALVANIZED STEEL "T" BRACES MAY BE SUBSTITUTED FOR ALUMINUM.

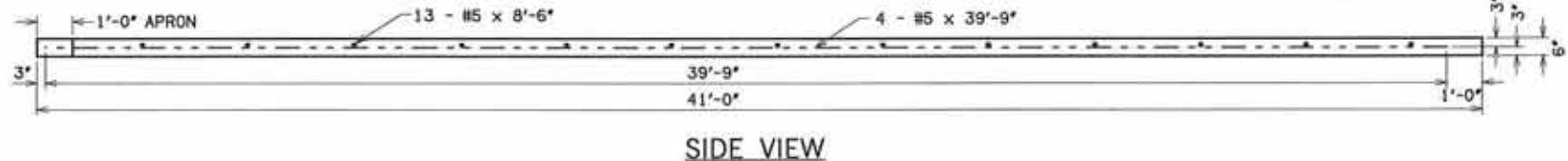
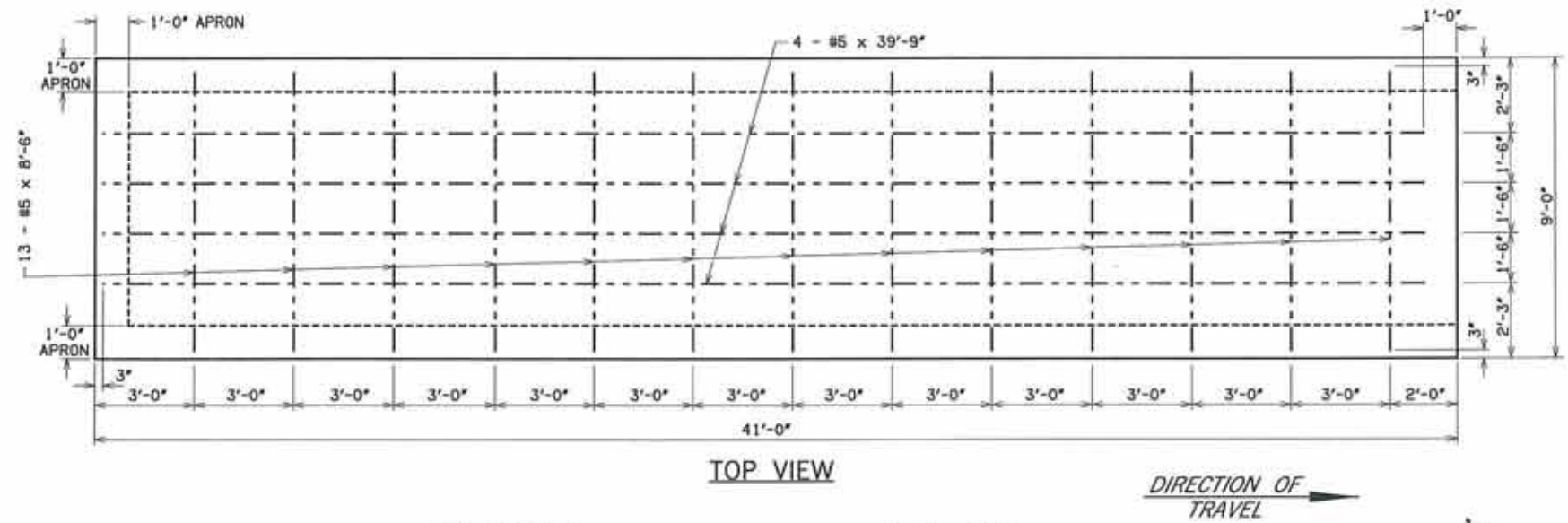
BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
850(B)	EXTRUDED ALUMINUM PANEL SIGNS	SF



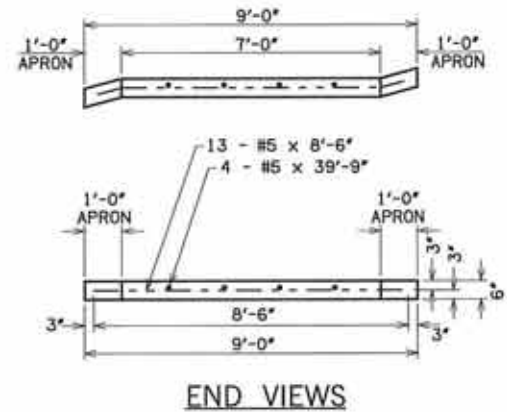
APPROVED BY TRAFFIC ENGINEER: *Thad Smith* DATE: 8/2/10

TRAFFIC STANDARD
ALUMINUM SIGN PANELS AND ASSEMBLY DETAILS

DESCRIPTION	REVISIONS	DATE
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IMPACT ATTENUATOR PAD DETAIL



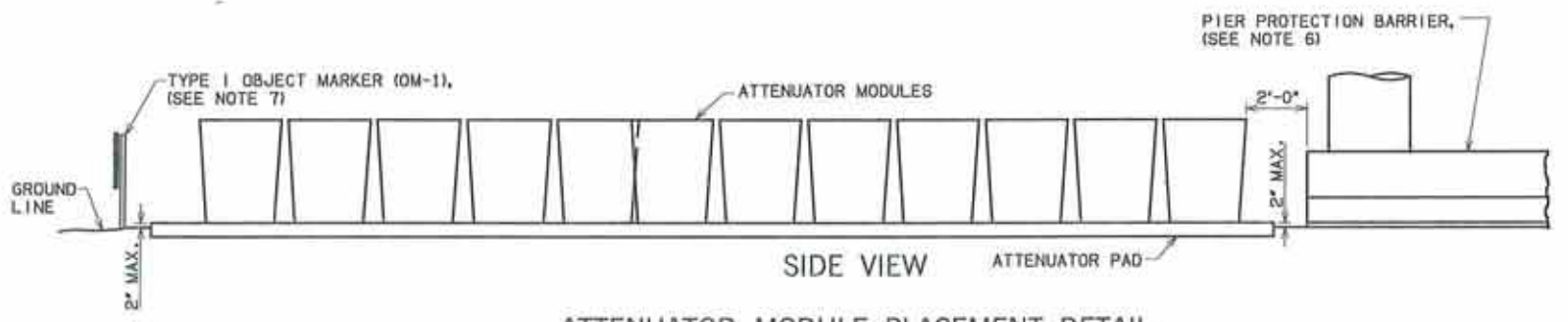
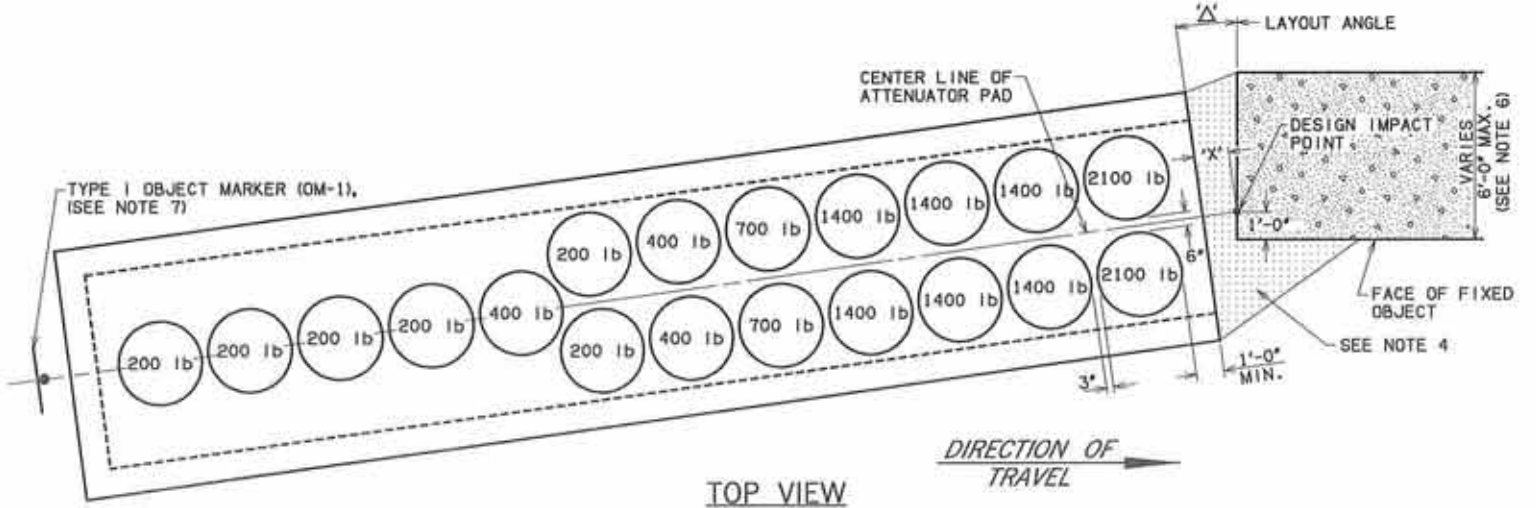
END VIEWS

GENERAL NOTES

1. THE ATTENUATOR PAD MAY BE SLOPED $\frac{1}{2}$ " PER FOOT PERPENDICULAR TO THE DIRECTION OF TRAVEL TO AVOID UNDESIRABLE EXCAVATION OF MEDIAN SLOPE.
2. APRON AREA MAY BE PLACED INTEGRAL OR SEPARATE FROM THE PAD AND MAY BE SLOPED TO FIT EXISTING GROUND CONTOUR.
3. ALL WORK SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.
4. THE AREA BETWEEN THE FIXED OBJECT AND THE ATTENUATOR PAD SHALL BE BACKFILLED WITH ASPHALT OR CLASS "C" CONCRETE IN A MANNER APPROVED BY THE ENGINEER. NO ADDITIONAL PAYMENT WILL BE MADE FOR THIS WORK.
5. THE MEDIAN OR BACK SLOPE AT AN ATTENUATOR LOCATION MAY REQUIRE RESHAPING FOR PROPER INSTALLATION. THIS WORK, IF REQUIRED, SHALL BE PERFORMED IN A MANNER APPROVED BY THE ENGINEER. THE COST FOR MATERIALS AND LABOR SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CLASS "C" CONCRETE.
6. DESIGN IMPACT POINT SHOWN FOR FIXED OBJECTS 3'-3" TO 6'-0" WIDE. WHEN FIXED OBJECT IS LESS THAN 3'-3" WIDE THE LEFT SIDE OF THE MODULES SHOULD BE SO ALIGNED AS TO NOT EXTEND BEYOND LEFT FACE OF FIXED OBJECT.
7. MOUNT TYPE 1 OBJECT MARKER (OM-1) ON DELINEATOR POST IN FRONT OF ATTENUATOR PAD, OR THE OBJECT MARKER MAY BE MOUNTED ON THE FIRST DRUM IN A MANNER APPROVED BY THE ENGINEER.
8. THE RECOMMENDED NUMBER OF REPLACEMENT MODULES FOR SAND FILLED IMPACT ATTENUATORS SHALL CONSIST OF 35% OF THE TOTAL NUMBER OF MODULES REQUIRED FOR THE PROJECT.
EXAMPLE: 1,000 MODULES \times 0.35 = 350
THE PERCENTAGE OF EACH SIZE SHALL BE AS FOLLOWS:
200-400 LB. MODULES USE 35% (350 \times 0.35 = 123)
700 LB. MODULES USE 30% (350 \times 0.30 = 105)
1,400 LB. MODULES USE 25% (350 \times 0.25 = 87)
2,100 LB. MODULES USE 10% (350 \times 0.10 = 35)
FOR 200-400 LB. MODULES THE INNER CONTAINER IS THE SAME SIZE FOR BOTH WEIGHTS.
9. DESIGN VELOCITY = 70 MPH. FOR OTHER DESIGN SPEEDS, CONTACT THE TRAFFIC ENGINEER FOR DETAILS.

INSTALLATION SEQUENCE OF IMPACT ATTENUATORS

- STEP 1**
PUT ALL EMPTY MODULES IN PLACE TO CONFORM WITH THE PLAN FOR SITE WITH APPROXIMATELY 2'-0" CLEARANCE TO FIXED OBJECT FOR ACCESS. LEAVE ABOUT 3" BETWEEN MODULES TO FACILITATE LID PLACEMENT.
- STEP 2**
OUTLINE, IN PAINT, THE LOCATION OF THE MODULES FOR FUTURE REFERENCE. A CAN OF PRESSURIZED PAINT IN A CONTRASTING COLOR IS CONVENIENT FOR THIS PURPOSE.
- STEP 3**
MOVE MODULES TO THE SIDE AND USING PAINT INDICATE THE WEIGHT SPECIFIED FOR EACH MODULE AS SHOWN ON THE SPECIFIC SITE PLAN.
- STEP 4**
MAKE SURE THAT ALL MODULES HAVE THE PROPER SIZE INNER CONTAINERS OR CORES INSTALLED FOR THE SAND MASS REQUIRED AT EACH LOCATION, AS RECOMMENDED BY THE MANUFACTURER.
- STEP 5**
BEGINNING NEAR THE FIXED OBJECT, PLACE A ROW OF MODULES IN THE PROPER LOCATION AND FILL WITH PRESCRIBED AMOUNT OF SAND. CONTINUE ONE ROW AT A TIME, AWAY FROM THE FIXED OBJECT UNTIL ALL MODULES ARE COMPLETE AND ALL LIDS ARE SECURELY SNAPPED ON.



ATTENUATOR MODULE PLACEMENT DETAIL

BASIS OF PAYMENT			
ITEM NO.	ITEM	UNIT	TOTAL
509(D)	CLASS "C" CONCRETE	C.Y.	6.83
511(A)	REINFORCING STEEL	LB.	281.00
870(A)	SAND FILLED IMPACT ATTEN. MODULE	EA.	19.00

QUANTITIES PER ATTENUATOR PAD

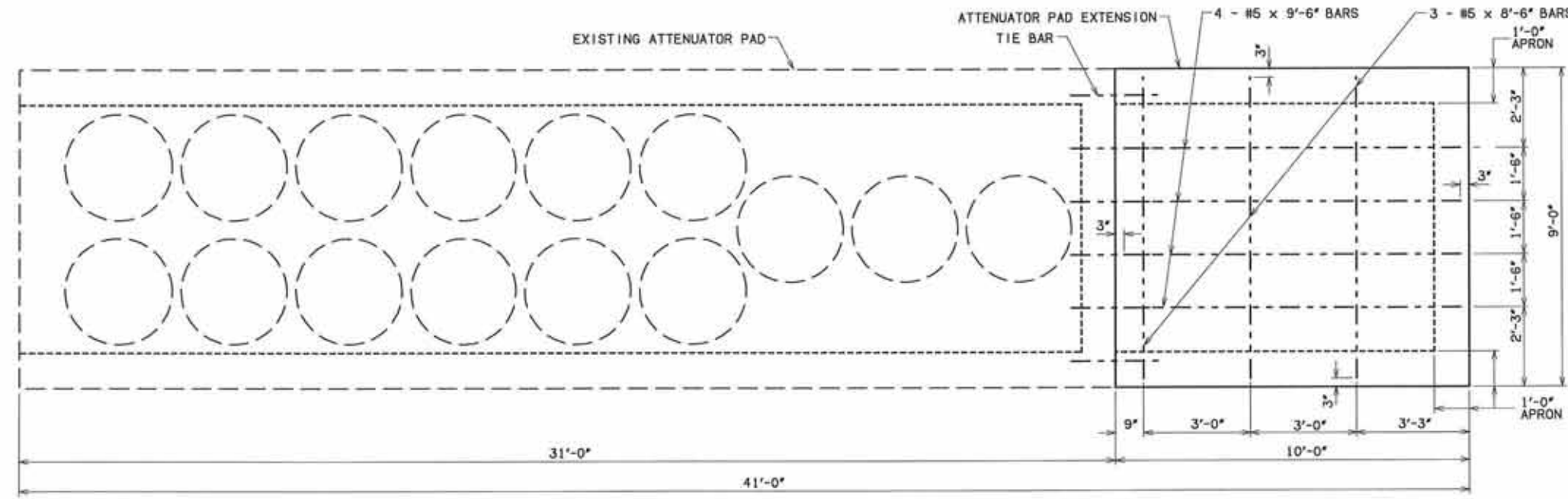
DESIGN	DISTANCE FROM FACE OF FIXED OBJECT TO EDGE OF TRAVEL LANE.	LAYOUT ANGLE	DISTANCE FROM CENTER LINE OF PAD TO DESIGN IMPACT POINT
A	4' TO 10'	0°	0'
A-1	10' TO 15'	3°	4'
A-2	15' AND OVER	8°	1'-3"



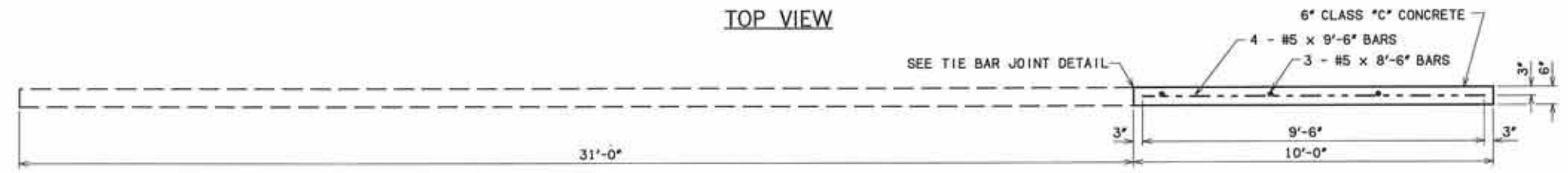
APPROVED BY TRAFFIC ENGINEER: *Chad J. Smart* DATE: 8/5/10

TRAFFIC STANDARD
IMPACT ATTENUATOR AND PAD DETAILS
FOR 70 MPH DESIGN VELOCITY
(SAND FILLED)

DESCRIPTION	REVISIONS	DATE

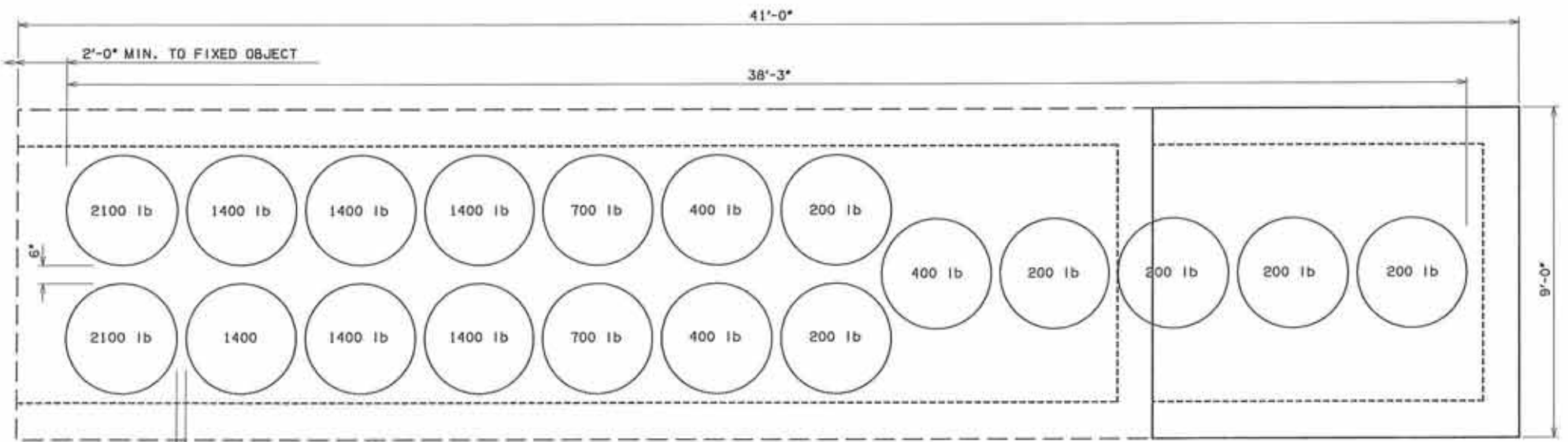


TOP VIEW



SIDE VIEW

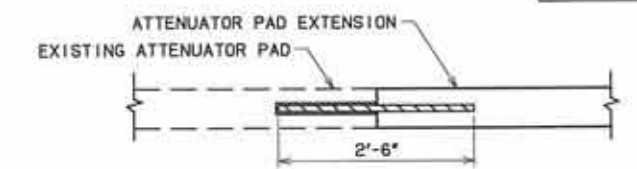
EXISTING ATTENUATOR PAD EXTENSION



TOP VIEW

NEW SAND FILLED IMPACT ATTENUATORS

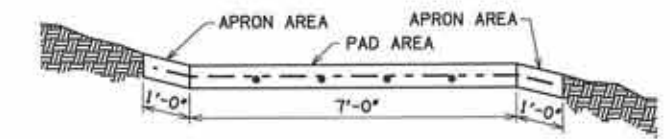
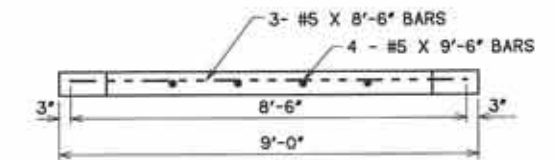
(SEE NOTE 7)



TIE BAR JOINT DETAIL

TIE BARS WILL BE EPOXIED INTO DRILLED HOLES. EACH DRILLED HOLE SHALL BE PLACED WITH SUFFICIENT EPOXY TO COMPLETELY FILL THE VOID BETWEEN THE TIE BAR AND THE HOLE.

TIE BARS -- NO. 5 DEFORMED REINFORCING STEEL BARS, 30" LONG, SHALL BE EPOXIED INTO 3/4" DIAM. (MAX.) DRILLED HOLES AT 18" C/C.



END VIEW ATTENUATOR PAD

GENERAL NOTES:

1. ALL EXISTING SAND FILLED IMPACT ATTENUATION MODULES MAY BE USED IN THE MODIFIED FORMATION. ANY EXISTING DAMAGED MODULES OR MODULES DAMAGED IN THE MODIFICATION SHALL BE REPLACED AS DIRECTED BY THE ENGINEER.
2. THE ATTENUATOR PAD MAY BE SLOPED 1/2" PER FOOT PERPENDICULAR TO THE DIRECTION OF TRAVEL TO AVOID UNDESIRABLE EXCAVATION OF MEDIAN SLOPE.
3. APRON AREA MAY BE PLACED INTEGRAL OR SEPARATE FROM PAD AND MAY BE SLOPED TO FIT EXISTING GROUND CONTOUR.
4. ALL WORK SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.
5. THE NUMBER INSIDE THE CIRCLE DENOTES THE SAND MASS WEIGHT (IN POUNDS) PER MODULE.
6. FOR CONSTRUCTION SEQUENCE SEE STANDARD 1A1-1 (LATEST REVISION).
7. ALL MODIFICATION TO EXISTING MODULES SHALL BE INCLUDED IN THE COST OF NEW MODULES.
8. DESIGN VELOCITY = 70 MPH.

BASIS OF PAYMENT			
ITEM NO.	ITEM	UNIT	TOTAL
509(D)	CLASS 'C' CONCRETE	C.Y.	1.67
511(A)	REINFORCING STEEL	LB.	79.00
870(A)	SAND FILLED IMPACT ATTEN. MODULE	EA.	4.00

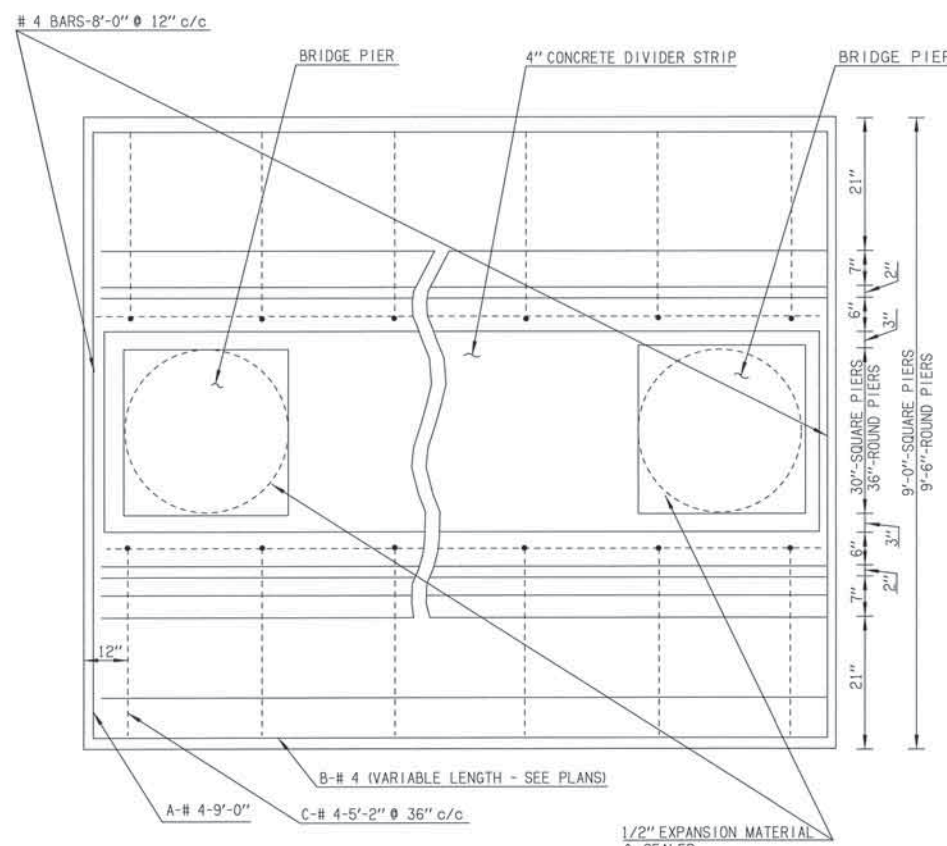
QUANTITIES PER ATTENUATOR PAD EXTENSION



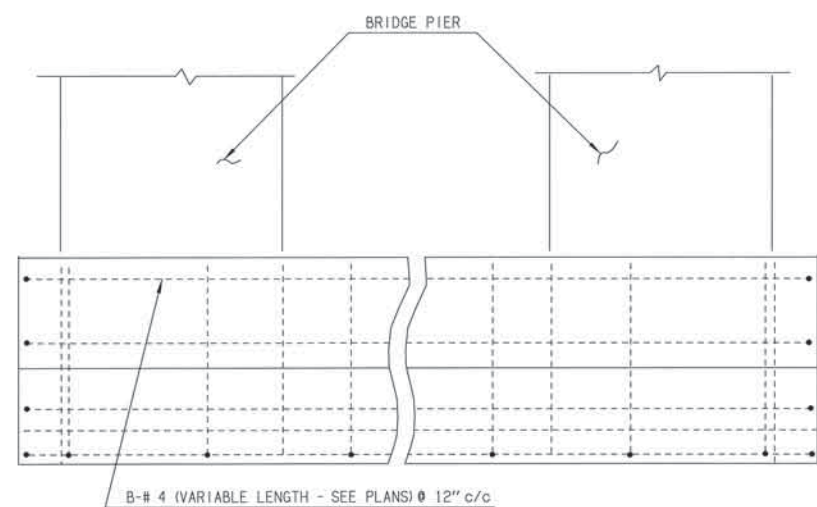
APPROVED BY TRAFFIC ENGINEER *Donald J. Small* DATE 8/15/12

TRAFFIC STANDARD
MODIFICATION OF EXISTING
IMPACT ATTENUATOR
FOR 70 MPH DESIGN VELOCITY
(SAND FILLED)

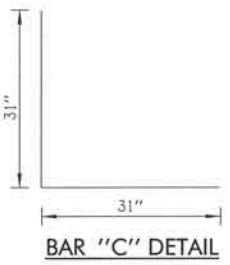
DESCRIPTION	REVISIONS	DATE



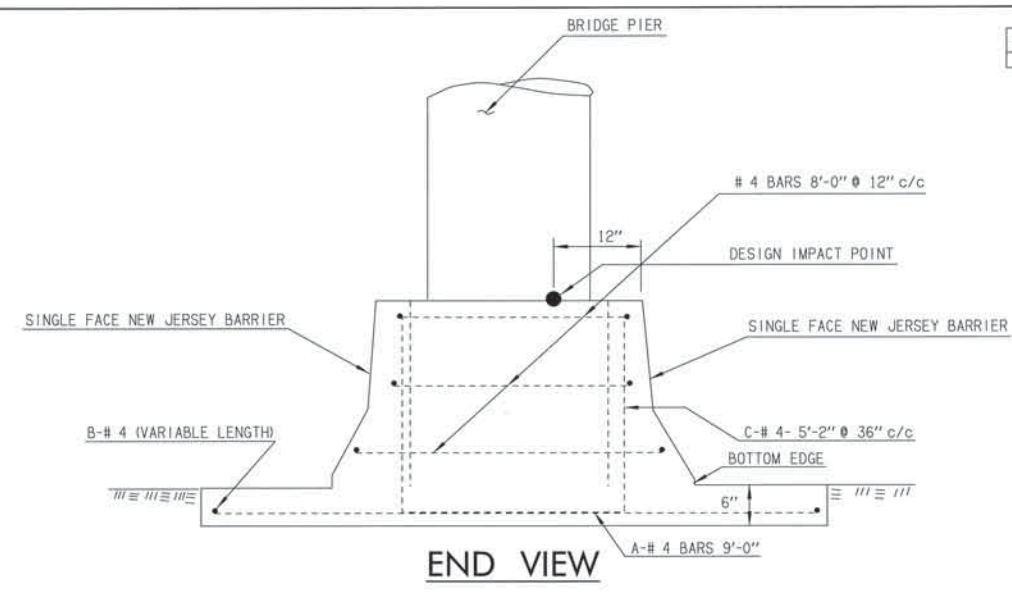
PLAN VIEW



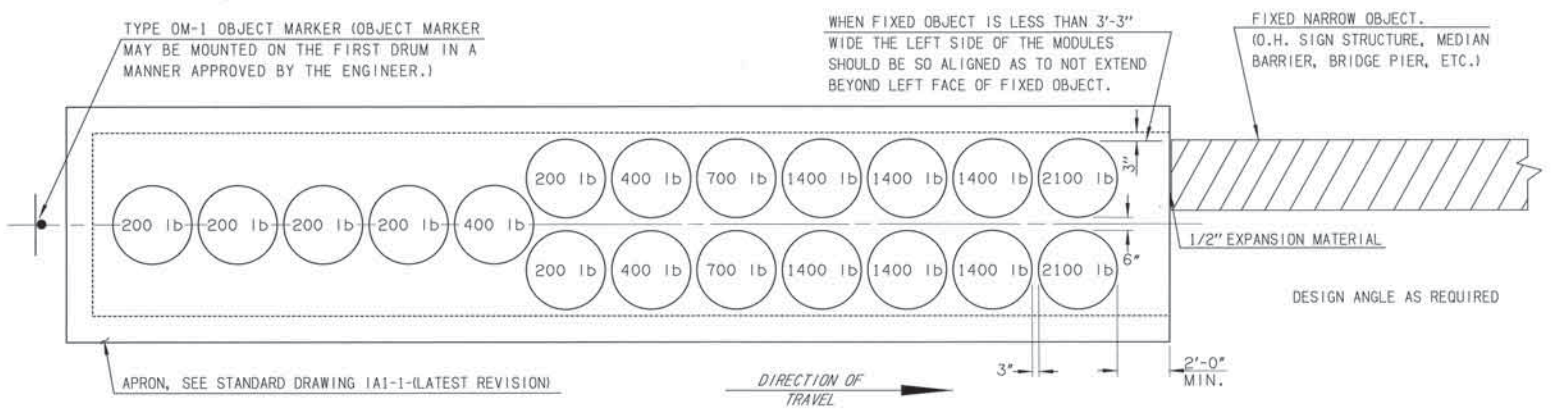
SIDE VIEW



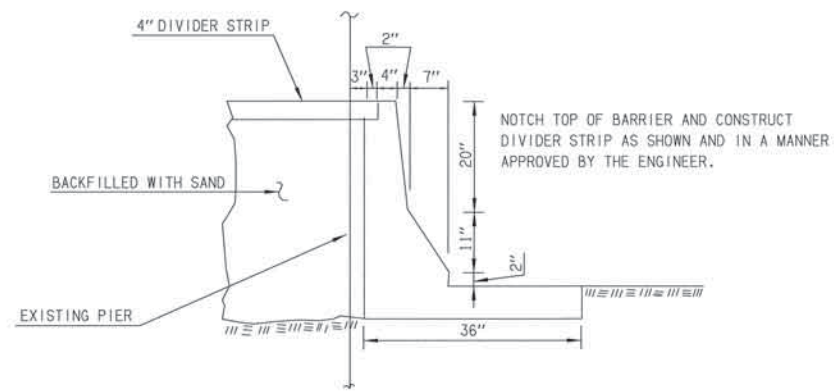
BAR "C" DETAIL



END VIEW



**DESIGN VELOCITY 70 MPH
TYPICAL-NARROW FIXED OBJECTS**



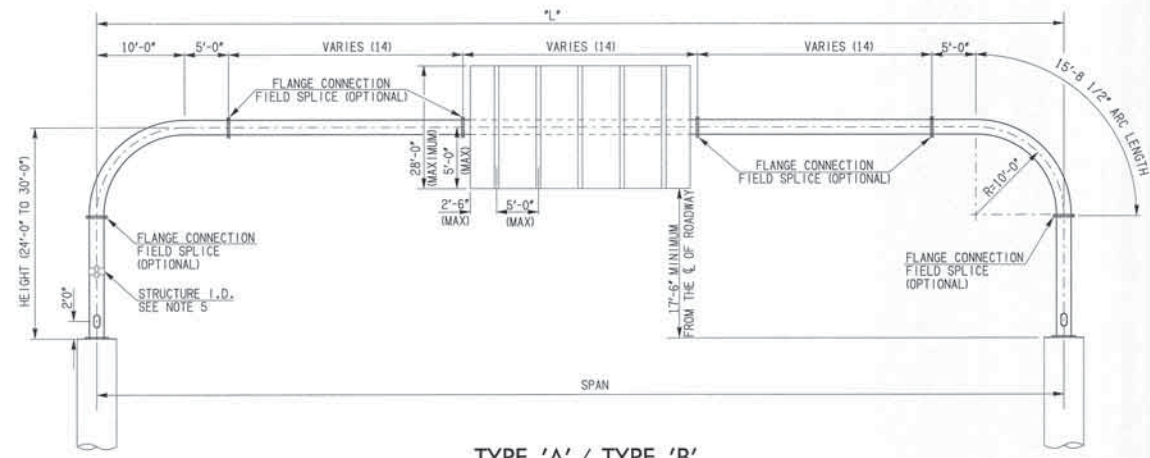
BASIS OF PAYMENT			
ITEM NO.	ITEM	UNIT	TOTAL
804 (A)	STRUCTURAL CONCRETE	CY	VAR
804 (B)	REINFORCING STEEL	LB.	VAR
870 (A)	SAND FILLED IMPACT ATTEN. MODULE	EA.	19.0



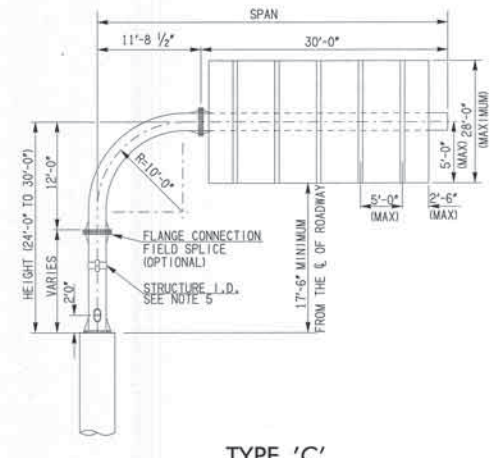
APPROVED BY TRAFFIC ENGINEER: *David Conroy* DATE: 1/9/12

TRAFFIC STANDARD
CONCRETE MEDIAN PIER PROTECTION

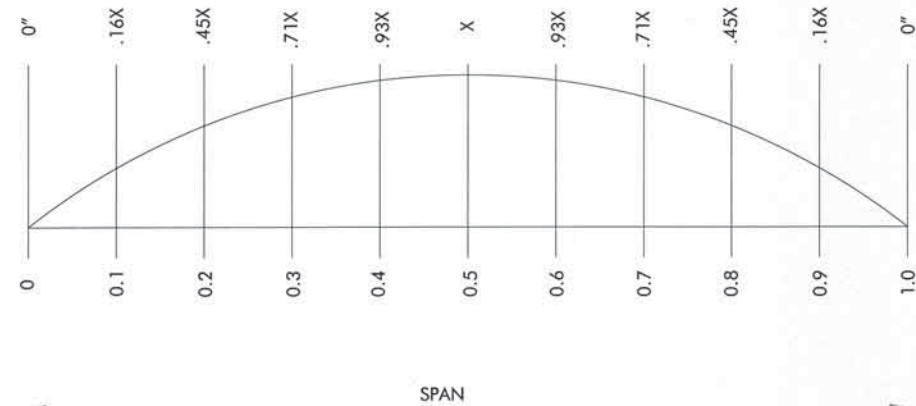
DESCRIPTION	REVISIONS	DATE
ADDED DIMENSIONS/MODIFIED NOTE		7/08/2011
REMOVED FLANGE PLATE		11/1/2011
MODIFIED NOTE L		8/17/2012
MODIFIED NOTE L		8/28/2013



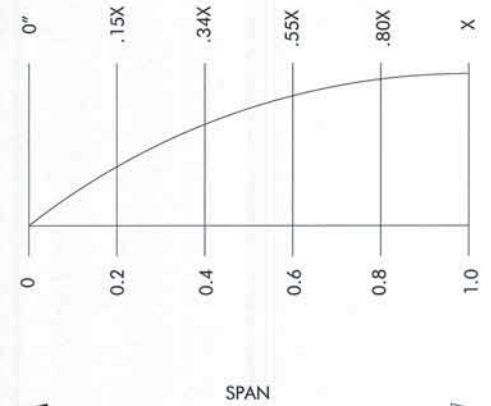
TYPE 'A' / TYPE 'B'



TYPE 'C'



TYPE A & B CAMBER DIAGRAM (SEE STANDARD MTS2-1, LATEST REVISION, FOR MAX. CAMBER)



TYPE C CAMBER DIAGRAM (SEE STANDARD MTS2-1, LATEST REVISION, FOR MAX. CAMBER)

- STRUCTURAL STEEL TUBING USED IN THE FABRICATION OF MONOTUBES SHALL EITHER BE COLD-FORMED WELDED OR SEAMLESS TUBING CONFORMING TO THE ASTM A500, GRADE C (MEETING ZONE 2 CHАРY V-NOTCH REQUIREMENTS) OR ASTM A847; OR HOT-FORMED WELDED OR SEAMLESS TUBING CONFORMING TO ASTM A501, GRADE B OR ASTM A618, GRADE 1B AND 111, (PLUS MEETING ZONE 2 CHАРY V-NOTCH REQUIREMENTS). WHEN STRUCTURAL TUBING CONFORMING TO THE REQUIREMENTS SHOWN ABOVE IS NOT READILY AVAILABLE, MATERIAL MEETING API 5L, PSL 2, GRADE X46 OR HIGHER, MAY BE SUBSTITUTED.
- BASE PLATES AND FLANGE PLATES TO BE STRUCTURAL STEEL CONFORMING TO THE SPECIFICATIONS OF ASTM DESIGNATION: A36.
- ALL FLANGE BOLTS TO CONFORM TO THE SPECIFICATIONS OF ASTM A325, AND SHALL BE TIGHTENED AND INSPECTED USING DIRECT TENSION INDICATORS TO CONFORM TO THE SPECIFICATIONS OF ASTM A959, TYPE 325. ALL WASHERS TO CONFORM TO THE SPECIFICATIONS OF ASTM F436. ALL ANCHOR BOLTS TO CONFORM TO THE SPECIFICATIONS OF ASTM F1554-GRADE 55 AND TO BE TIGHTENED AND INSPECTED USING DIRECT TENSION INDICATORS CONFORMING TO THE SPECIFICATIONS OF ASTM F2437 (TYPE 1 GRADE 55). ALL ANCHOR BOLT NUTS TO CONFORM TO THE SPECIFICATIONS OF ASTM F563-GRADE A. ALL ANCHOR BOLT WASHERS TO CONFORM TO THE SPECIFICATIONS OF ASTM F436.
- HOT-DIP GALVANIZE ALL TUBE MEMBERS PER ASTM A123. GALVANIZE ALL NUTS, BOLTS AND FASTENERS FOR SIGN STRUCTURES AFTER FABRICATION PER ASTM A123 OR ASTM A153.
- STAMP STRUCTURE IDENTIFICATION ON UPRIGHT OF STRUCTURE WITH THE FOLLOWING INFORMATION: JPH, TYPE 'A', 'B' OR 'C', STRUCTURE LENGTH, DATE MANUFACTURED AND MANUFACTURER'S NAME.
- WELDING OF STEEL TO CONFORM TO THE REQUIREMENTS OF AWS D1.1 (LATEST REVISION). GRIND ALL AREAS TO BE WELDED TO BRIGHT METAL. COMPLETE ALL WELDING AND REQUIRED NON-DESTRUCTIVE TESTING BEFORE MATERIAL IS GALVANIZED. TEST ALL CIRCUMFERENTIAL AND STIFFENER WELDS NON-DESTRUCTIVELY USING THE ENHANCED MAGNETIC PARTICLE METHOD ACCORDANCE WITH ODOT STANDARD SPECIFICATION 720.03B. MAXIMUM WELD UNDERCUT SHALL BE 0.01".
- CONSTRUCT SIGN STRUCTURES TRUE TO DIMENSIONS FREE FROM KINKS, TWISTS, BENDS, AND UNIFORM IN APPEARANCE. ASSEMBLE COMPLETED SECTIONS IN THE SHOP AND CORRECT ANY DIMENSIONS OUT OF TOLERANCE.
- MAST ARMS TO BE TEMPORARILY SUPPORTED TO TAKE ALL LOAD OFF OF THE FIELD SPLICES WHILE BOLTS ARE BEING TIGHTENED IN ORDER TO FIRMLY SEAT THE FLANGE PLATES.
- POSTS FOR TUBULAR SIGN STRUCTURES TO BE FORMED TO THE RADIUS SHOWN ON THE PLANS BY FABRICATION METHODS WHICH WILL NOT CRIMP OR BUCKLE THE INTERIOR RADIUS OF THE PIPE BEND.
- CLIPS, EYES OR REMOVABLE BRACKETS TO BE AFFIXED TO ALL POSTS AND MAST ARMS, AS NECESSARY, TO SECURE THE SIGN DURING SHIPPING AND FOR LIFTING AND MOVING DURING ERECTION. THIS IS TO PREVENT DAMAGE TO THE FINISHED GALVANIZED OR PAINTED SURFACES. BRACKETS ON TUBULAR SIGN STRUCTURES TO BE REMOVED AFTER ERECTION. DETAILS OF SUCH DEVICES TO BE SHOWN ON THE SHOP DRAWINGS.
- BOLTS WITH DIAMETERS EXCEEDING BY UP TO 1/4 INCH THE DIAMETER OF THE BOLTS SHOWN ON THE PLANS MAY BE USED, PROVIDED THAT THE REQUIRED CLEARANCES AND EDGE DISTANCE ARE NOT REDUCED BELOW THAT REQUIRED FOR THE LARGER BOLT.
- FABRICATE ALL SIGN STRUCTURES TO THE LARGEST PRACTICAL SECTIONS PRIOR TO GALVANIZING. SPLICE LOCATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL AND THE CONTRACTOR SHALL NOT COMMENCE FABRICATION UNTIL SUCH SPLICE LOCATIONS ARE APPROVED.
- ALL TYPE 'C' SIGN STRUCTURES TO HAVE A REMOVABLE CAP ON THE END OF THE HORIZONTAL MEMBER OF THE STRUCTURE.
- THE LENGTH OF THE CROSS ARMS LABELED AS 'VARIES' (TYPE 'A'/TYPE 'B') SHOULD BE A MINIMUM OF 30'.
- FOR SIGNS < 10'-0" TALL, SIGNS SHALL BE CENTERED ON THE SPAN. FOR SIGNS ≥ 10'-0" TALL, BOTTOM OF SIGNS SHALL BE 5'-0" BELOW C. OF THE SPAN.

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
852(C)	OVHD.SN.STR., MONOTUBE TYPE A	EA
852(D)	OVHD.SN.STR., MONOTUBE TYPE B	EA
852(E)	OVHD.SN.STR., MONOTUBE TYPE C	EA



APPROVED BY
TRAFFIC ENGINEER: *David Smith* DATE: 8/30/2013
APPROVED BY
BRIDGE ENGINEER: *Robert Smith* DATE: 8/30/2013

TRAFFIC STANDARD
MONOTUBE STRUCTURE
(TYPE 'A', TYPE 'B' & TYPE 'C')

TRFPCA# U:\Traffic\IMMontgomery\FAMA\Comments_Standards_OA\Standards - Working Drawings\Traffic Standards Current\2009Standards_Monotube\1148_MTS1-1-02_REV 82813.dwg 8:23:19 AM 8/30/2013 R:\CAD_Support\Plotting\Color_Table\hw.rvt

DESCRIPTION	REVISIONS	DATE
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TYPE 'A' (0.00 SQ FT TO 600.00 SQ FT)

SPAN	SIGN AREA	UPRIGHT			ARM		MAX CAMBER (X)
		HEIGHT	DIAMETER	THICK.	DIAMETER	THICK.	
(FT)	(SQ FT)	(FT)	(IN)	(IN)	(IN)	(IN)	(IN)
70.00	600.00	30.00	20.00	0.5000	20.00	0.2500	0.6000
70.00	600.00	24.00	20.00	0.3750	20.00	0.2500	0.6000
75.00	600.00	30.00	20.00	0.5000	20.00	0.2500	0.8000
75.00	600.00	24.00	20.00	0.3750	20.00	0.2500	0.7000
80.00	600.00	30.00	20.00	0.5000	20.00	0.2500	1.0000
80.00	600.00	24.00	20.00	0.3750	20.00	0.2500	0.9000
85.00	600.00	30.00	20.00	0.5000	20.00	0.2500	1.2000
85.00	600.00	24.00	20.00	0.3750	20.00	0.2500	1.1000
90.00	600.00	30.00	20.00	0.5000	20.00	0.2500	1.4000
90.00	600.00	24.00	20.00	0.3750	20.00	0.2500	1.3000
95.00	600.00	30.00	24.00	0.3750	24.00	0.2500	1.2000
95.00	600.00	24.00	24.00	0.3750	24.00	0.2500	1.1000
100.00	600.00	30.00	24.00	0.3750	24.00	0.2500	1.4000
100.00	600.00	24.00	24.00	0.3750	24.00	0.2500	1.4000
105.00	600.00	30.00	24.00	0.3750	24.00	0.2500	1.7000
105.00	600.00	24.00	24.00	0.3750	24.00	0.2500	1.6000
110.00	600.00	30.00	24.00	0.3750	24.00	0.2500	1.9000
110.00	600.00	24.00	24.00	0.3750	24.00	0.2500	1.9000
115.00	600.00	30.00	24.00	0.3750	24.00	0.2500	2.2000
115.00	600.00	24.00	24.00	0.3750	24.00	0.2500	2.1000
120.00	600.00	30.00	24.00	0.3750	24.00	0.3750	2.5000
120.00	600.00	24.00	24.00	0.3750	24.00	0.2500	2.4000
125.00	600.00	30.00	24.00	0.3750	24.00	0.3750	2.8000
125.00	600.00	24.00	24.00	0.3750	24.00	0.3750	2.7000
130.00	600.00	30.00	24.00	0.3750	24.00	0.3750	3.2000
130.00	600.00	24.00	24.00	0.3750	24.00	0.3750	3.2000
135.00	600.00	30.00	24.00	0.5000	24.00	0.3750	3.7000
135.00	600.00	24.00	24.00	0.3750	24.00	0.3750	3.7000
140.00	600.00	30.00	24.00	0.5000	24.00	0.3750	4.2000
140.00	600.00	24.00	24.00	0.3750	24.00	0.3750	4.1000
145.00	600.00	30.00	24.00	0.5000	24.00	0.3750	4.7000
145.00	600.00	24.00	24.00	0.3750	24.00	0.3750	4.6000
150.00	600.00	30.00	24.00	0.5000	24.00	0.5000	5.2000
150.00	600.00	24.00	24.00	0.3750	24.00	0.3750	5.1000

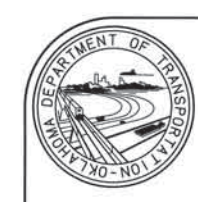
TYPE 'B' (601.00 SQ FT TO 800.00 SQ FT)

SPAN	SIGN AREA	UPRIGHT			ARM		MAX CAMBER (X)
		HEIGHT	DIAMETER	THICK.	DIAMETER	THICK.	
(FT)	(SQ FT)	(FT)	(IN)	(IN)	(IN)	(IN)	(IN)
70.00	800.00	30.00	24.00	0.5000	24.00	0.2500	0.4000
70.00	800.00	24.00	20.00	0.5000	20.00	0.2500	0.6000
75.00	800.00	30.00	24.00	0.5000	24.00	0.2500	0.6000
75.00	800.00	24.00	20.00	0.5000	20.00	0.2500	0.7000
80.00	800.00	30.00	24.00	0.5000	24.00	0.2500	0.7000
80.00	800.00	24.00	24.00	0.3750	24.00	0.2500	0.7000
85.00	800.00	30.00	24.00	0.5000	24.00	0.2500	0.9000
85.00	800.00	24.00	24.00	0.3750	24.00	0.2500	0.8000
90.00	800.00	30.00	24.00	0.5000	24.00	0.2500	1.0000
90.00	800.00	24.00	24.00	0.3750	24.00	0.2500	1.0000
95.00	800.00	30.00	24.00	0.5000	24.00	0.2500	1.2000
95.00	800.00	24.00	24.00	0.3750	24.00	0.2500	1.1000
100.00	800.00	30.00	24.00	0.5000	24.00	0.3750	1.4000
100.00	800.00	24.00	24.00	0.3750	24.00	0.3750	1.3000
105.00	800.00	30.00	24.00	0.5000	24.00	0.3750	1.7000
105.00	800.00	24.00	24.00	0.3750	24.00	0.3750	1.5000
110.00	800.00	30.00	24.00	0.5000	24.00	0.3750	2.0000
110.00	800.00	24.00	24.00	0.3750	24.00	0.3750	1.8000
115.00	800.00	30.00	24.00	0.5000	24.00	0.3750	2.3000
115.00	800.00	24.00	24.00	0.3750	24.00	0.3750	2.0000
120.00	800.00	30.00	24.00	0.5000	24.00	0.3750	2.6000
120.00	800.00	24.00	24.00	0.3750	24.00	0.3750	2.4000
125.00	800.00	30.00	24.00	0.5000	24.00	0.3750	2.9000
125.00	800.00	24.00	24.00	0.5000	24.00	0.3750	2.8000
130.00	800.00	30.00	24.00	0.5000	24.00	0.5000	3.3000
130.00	800.00	24.00	24.00	0.5000	24.00	0.3750	3.1000
135.00	800.00	30.00	24.00	0.5000	24.00	0.5000	3.8000
135.00	800.00	24.00	24.00	0.5000	24.00	0.5000	3.5000
140.00	800.00	30.00	24.00	0.5000	24.00	0.5000	4.3000
140.00	800.00	24.00	24.00	0.5000	24.00	0.5000	4.0000
145.00	800.00	30.00	24.00	0.5000	24.00	0.5000	4.8000
145.00	800.00	24.00	24.00	0.5000	24.00	0.5000	4.5000
150.00	800.00	30.00	30.00	0.5000	30.00	0.3750	3.5000
150.00	800.00	24.00	30.00	0.3750	30.00	0.3750	3.3000

DYNAMIC MESSAGE SIGNS (DMS) MAY ONLY BE USED ON TYPE 'B' OR 'C' MONOTUBES. IF DYNAMIC MESSAGE SIGN IS ANTICIPATED, ADD 0.5000" TO MAX CAMBER FOR TYPE 'B' AND 0.3500" TO MAX CAMBER FOR TYPE 'C'.

TYPE 'C' (350.00 SQ FT)

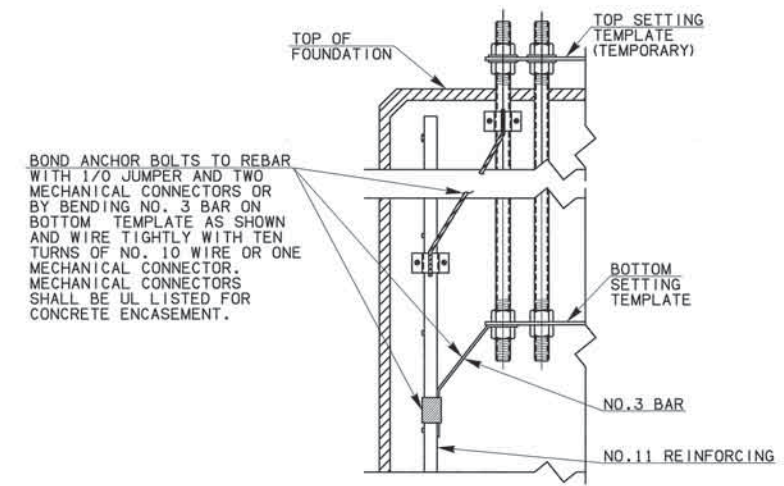
SPAN	SIGN AREA	UPRIGHT			ARM		MAX CAMBER (X)
		HEIGHT	DIAMETER	THICK.	DIAMETER	THICK.	
(FT)	(SQ FT)	(FT)	(IN)	(IN)	(IN)	(IN)	(IN)
40.00	350.00	30.00	24.00	0.5000	24.00	0.3750	4.2000
40.00	350.00	24.00	24.00	0.3750	24.00	0.3750	4.0000



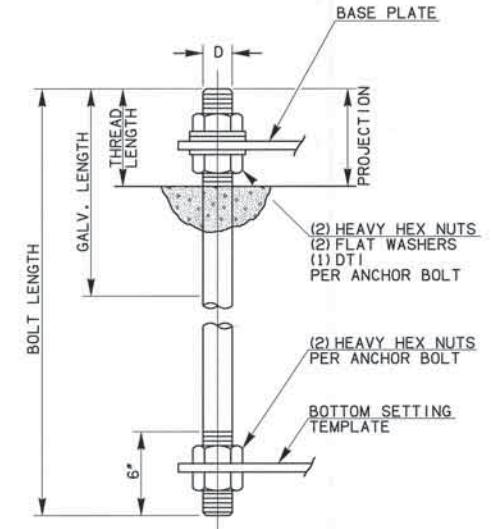
APPROVED BY
TRAFFIC ENGINEER: *[Signature]* DATE: 7/29/2010
APPROVED BY
BRIDGE ENGINEER: *[Signature]* DATE: 7/29/2010

TRAFFIC STANDARD
MONOTUBE STRUCTURE
(TYPE 'A', TYPE 'B' & TYPE 'C')

DESCRIPTION	REVISIONS	DATE
REVISED SHEET		7/08/2011
OPTIONAL SLOTTED BASE PLATE HOLES		4/2/2013



LIGHTNING PROTECTION SYSTEM



ANCHOR BOLT DETAIL

"D"	THREADS PER INCH	BOLT LENGTH	GALV. LENGTH	THREAD LENGTH	PROJECTION
2"	4.5	63"	20"	10"	9"
2 1/4"	4.5	63"	24"	12"	11"

SETTING TEMPLATE CHART

PIPE SIZE	TOP TEMPLATE THICKNESS	BOTTOM TEMPLATE THICKNESS	TEMPLATE ID	TEMPLATE OD	TEMPLATE BOLT CIRCLE	ANCHOR BOLT DIA.	NUMBER OF BOLTS
20"x3/8"	1/4"	3/4"	21 1/2"	30 1/2"	26"	2"	8
20"x1/2"	1/4"	3/4"	21 1/2"	30 1/2"	26"	2 1/4"	8
24"x3/8"	1/4"	3/4"	25 1/2"	34 1/2"	30"	2 1/4"	8
24"x1/2"	1/4"	3/4"	25 1/2"	34 1/2"	30"	2 1/4"	12
30"x3/8"	1/4"	3/4"	31 1/2"	40 1/2"	36"	2 1/4"	12
30"x1/2"	1/4"	3/4"	31 1/2"	40 1/2"	36"	2 1/4"	12

PIPE SIZE & BASE PLATE CHART

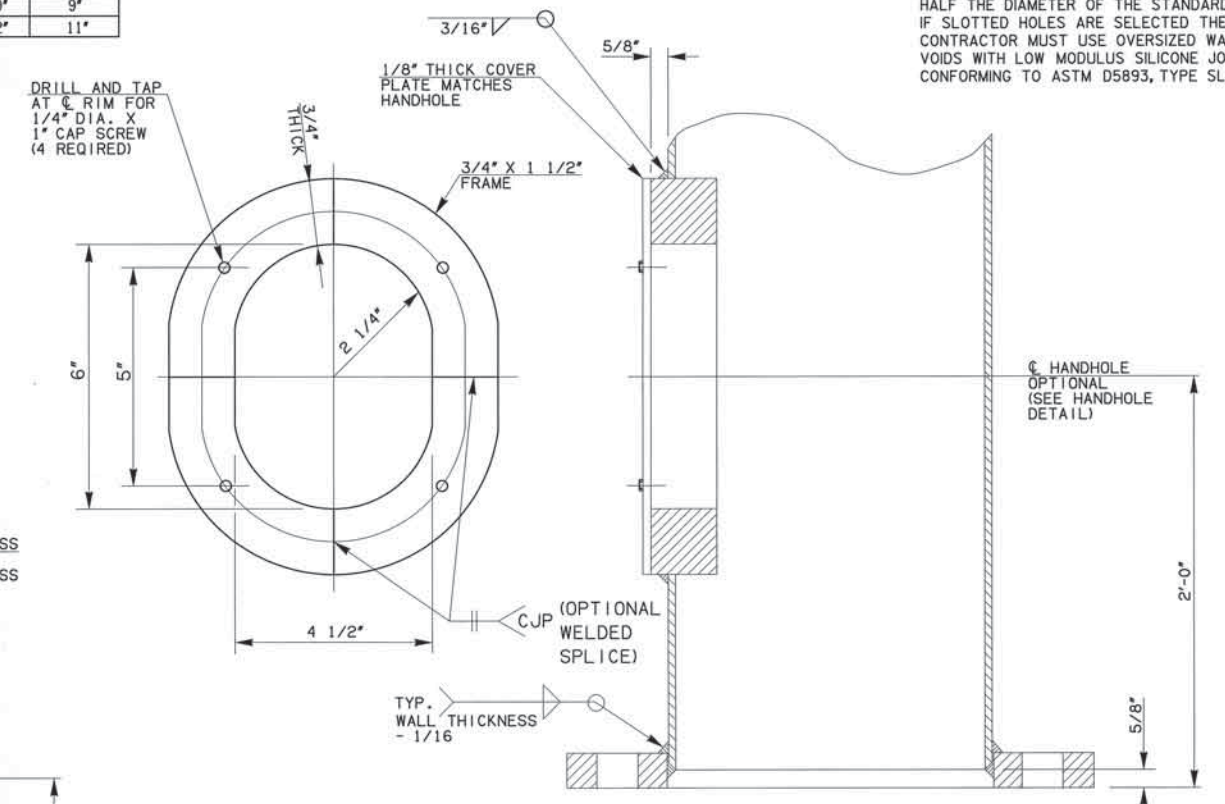
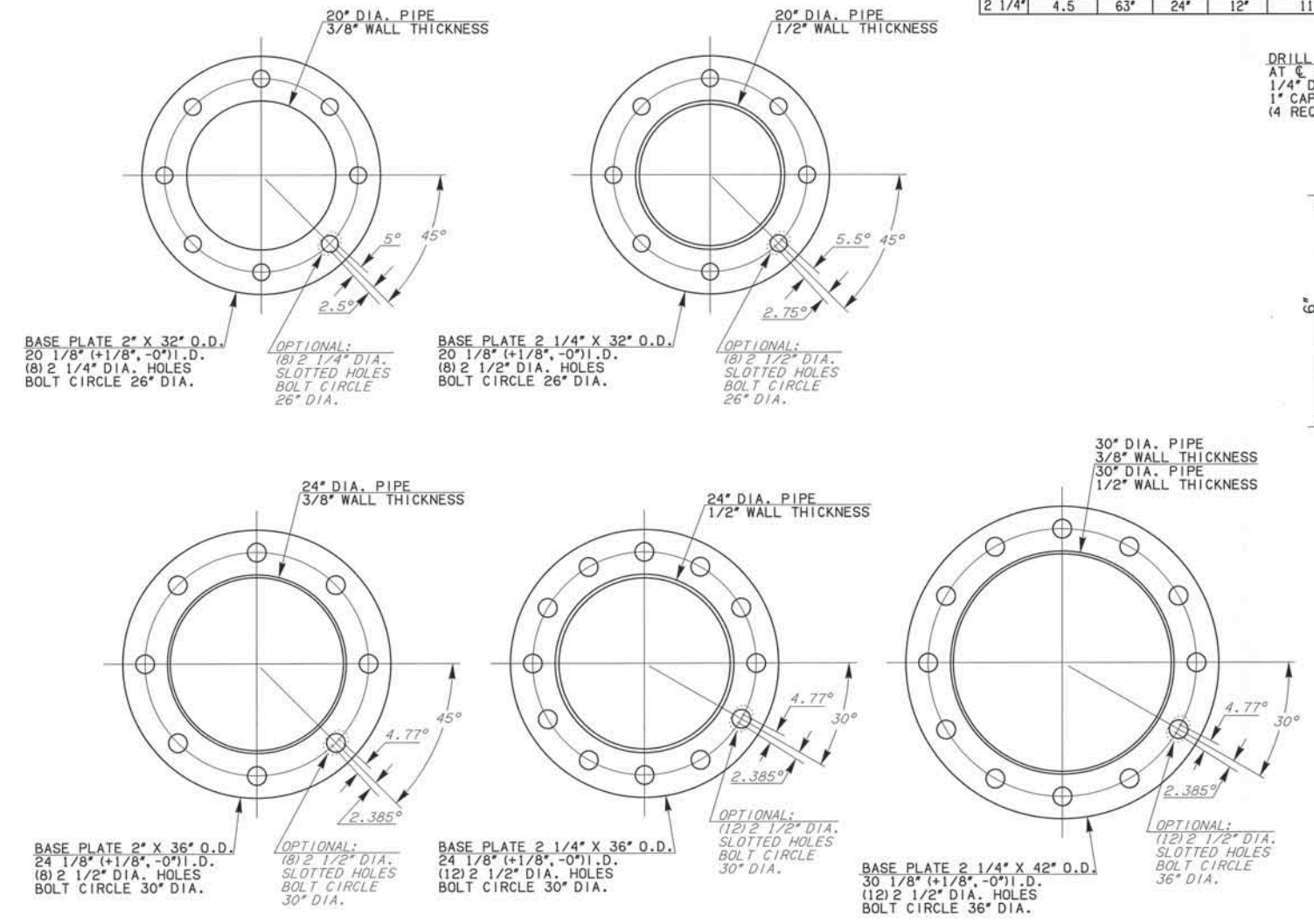
PIPE SIZE	BASE PLATE THICKNESS	BASE PLATE OD	ANCHOR BOLT DIA.	BASE PLATE I.D.
20"x3/8"	2"	32"	2"	20 1/8"+1/8, -0
20"x1/2"	2"	32"	2 1/4"	20 1/8"+1/8, -0
24"x3/8"	2"	36"	2 1/4"	24 1/8"+1/8, -0
24"x1/2"	2 1/4"	36"	2 1/4"	24 1/8"+1/8, -0
30"x3/8"	2 1/4"	42"	2 1/4"	30 1/8"+1/8, -0
30"x1/2"	2 1/4"	42"	2 1/4"	30 1/8"+1/8, -0

NOTES:

A HANDHOLE IS OPTIONAL, USE AS DIRECTED BY THE ENGINEER. A MAXIMUM TWO (2) WELDED SPLICES OF HANDHOLE FRAME WILL BE ALLOWED. SPLICE LOCATED AT EITHER POSITION AS INDICATED IS ACCEPTABLE.

DIRECT TENSIONING INDICATOR SHALL BE TENSIONED ACCORDING TO MANUFACTURER'S GUIDE LINES AND SPECIFICATION.

SLOTTED HOLES FOR BASE PLATES ARE OPTIONAL FOR TYPE 'A' & 'B' MONOTUBE STRUCTURES ONLY; THE CONTRACTOR HAS THE OPTION OF USING STANDARD BOLT HOLES, OR SLOTTED HOLES NO GREATER THAN HALF THE DIAMETER OF THE STANDARD BOLT HOLE. IF SLOTTED HOLES ARE SELECTED THEN THE CONTRACTOR MUST USE OVERSIZED WASHERS, FILL SLOTTED VOIDS WITH LOW MODULUS SILICONE JOINT SEALANT CONFORMING TO ASTM D5893, TYPE SL.



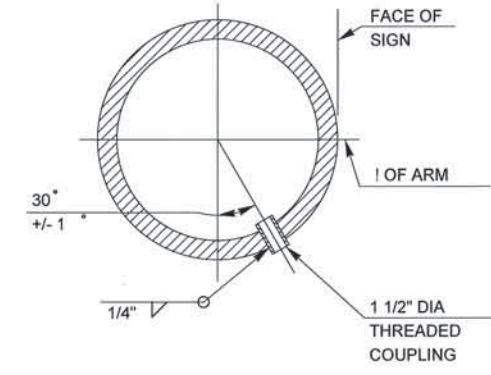
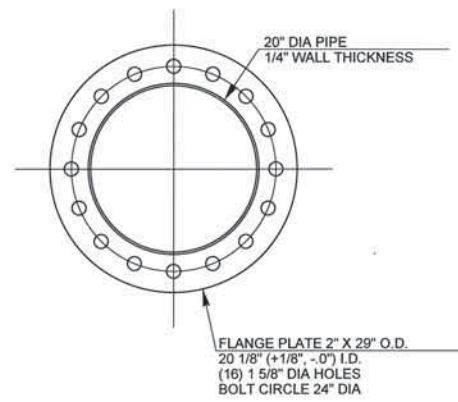
TYPICAL UPRIGHT BASE DETAIL



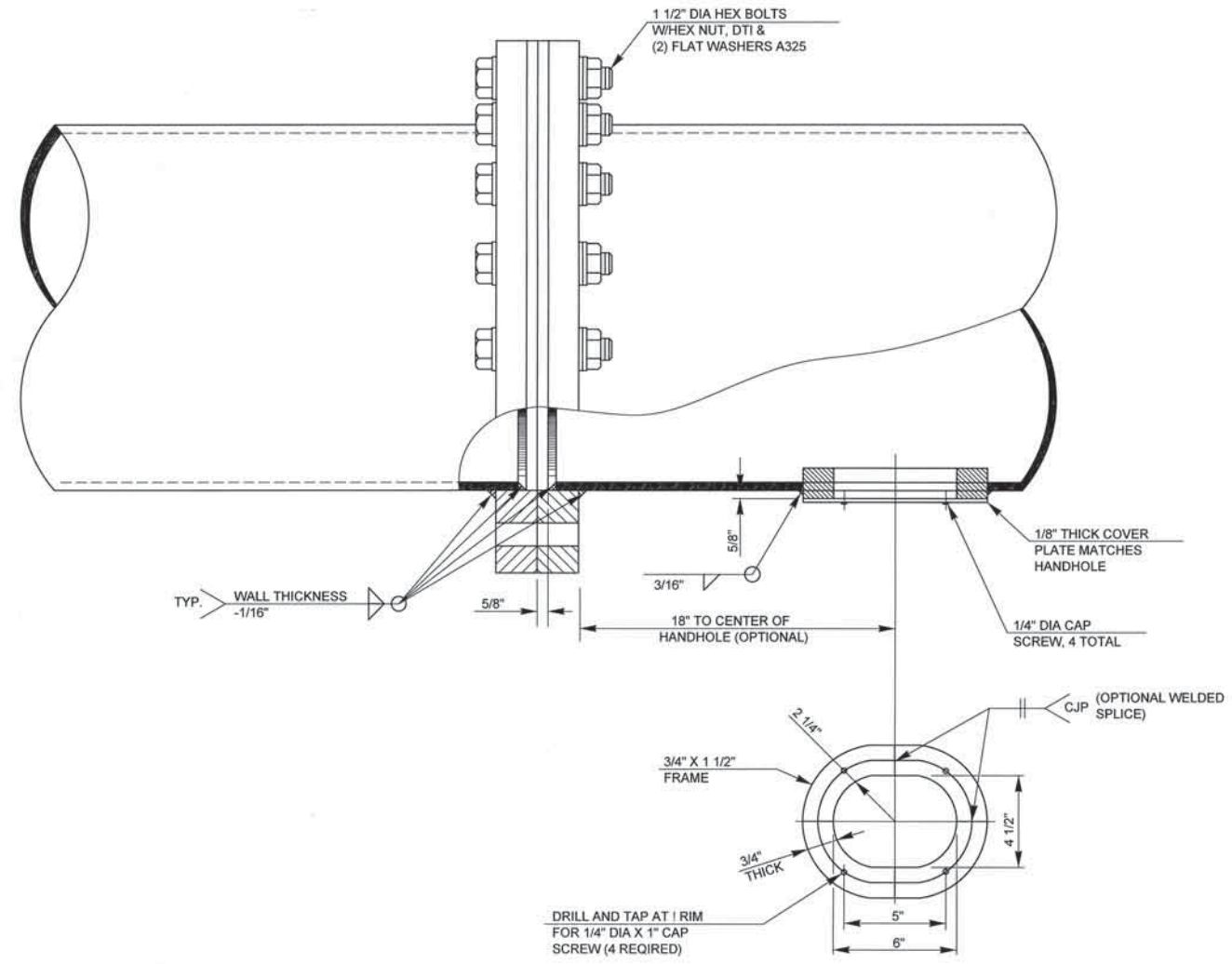
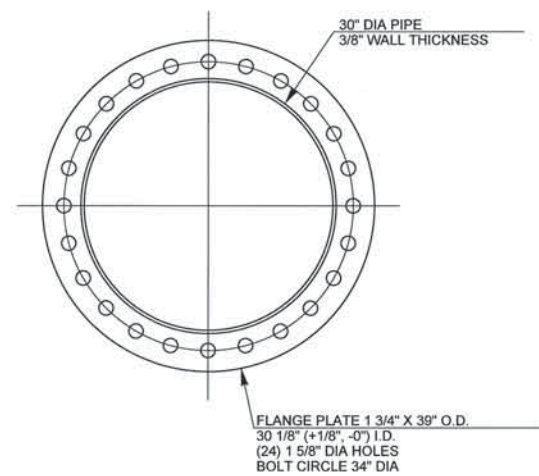
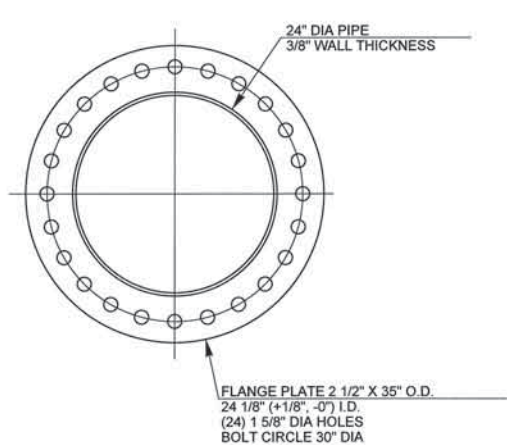
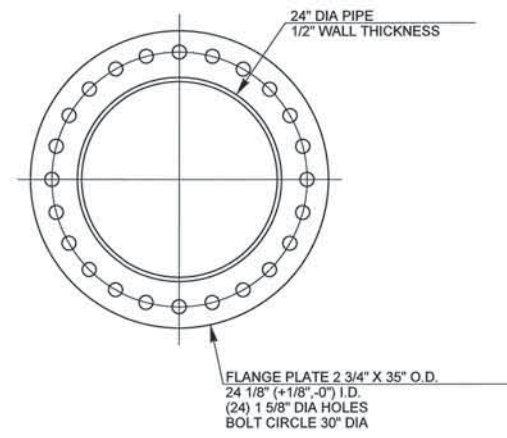
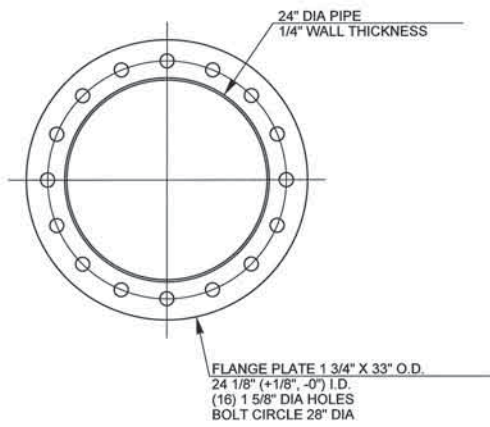
APPROVED BY TRAFFIC ENGINEER: *[Signature]* DATE: 4/16/2013
 APPROVED BY BRIDGE ENGINEER: *[Signature]* DATE: 4/18/2013

TRAFFIC STANDARD
 MONOTUBE STRUCTURE
 BASEPLATE DETAILS
 TYPE 'A' & 'B'

DESCRIPTION	REVISIONS	DATE
REVISED SHEET		7/20/2011



COUPLING (OPTIONAL)
TO BE PLACED OVER CENTER OF DRIVING LANES



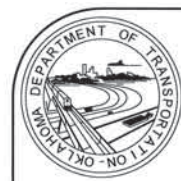
TYPICAL FLANGE CONNECTION DETAIL

NOTES:

A HANDHOLE IS OPTIONAL, USE AS DIRECTED BY THE ENGINEER. A MAXIMUM TWO (2) WELDED SPLICES OF HANDHOLE FRAME WILL BE ALLOWED. SPLICE LOCATED AT EITHER POSITION AS INDICATED IS ACCEPTABLE.

DIRECT TENSIONING INDICATOR SHALL BE TENSIONED ACCORDING TO MANUFACTURER'S GUIDE LINES AND SPECIFICATION.

WHEN CONNECTING TWO PIPES OF DIFFERENT SIZES, USE THE FLANGE PLATE DESIGN FROM THE LARGER SIZE.



APPROVED BY
TRAFFIC ENGINEER: *David Smith* DATE: 7/22/2011

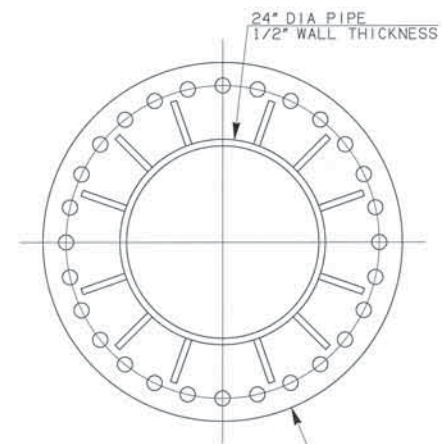
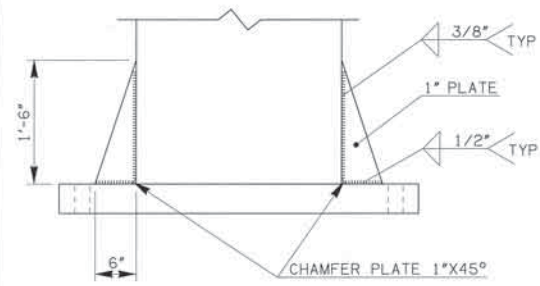
APPROVED BY
BRIDGE ENGINEER: *Gregory Smith* DATE: 7/27/2011

TRAFFIC STANDARD
MONOTUBE STRUCTURE
FLANGE PLATE DETAILS
TYPE 'A' & 'B'

2009 SPECIFICATIONS

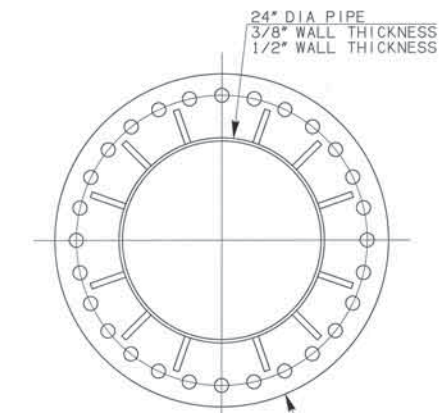
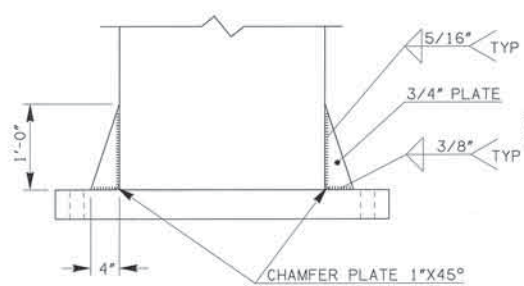
MTD2-1 01E
T-151

DESCRIPTION	REVISIONS	DATE
REVISED SHEET		7/08/2011
ADDED STIFFENER WELDS		11/11/2011
DREW 1" PLATE IN ELEVATION AND MADE NOTE		8/28/2013



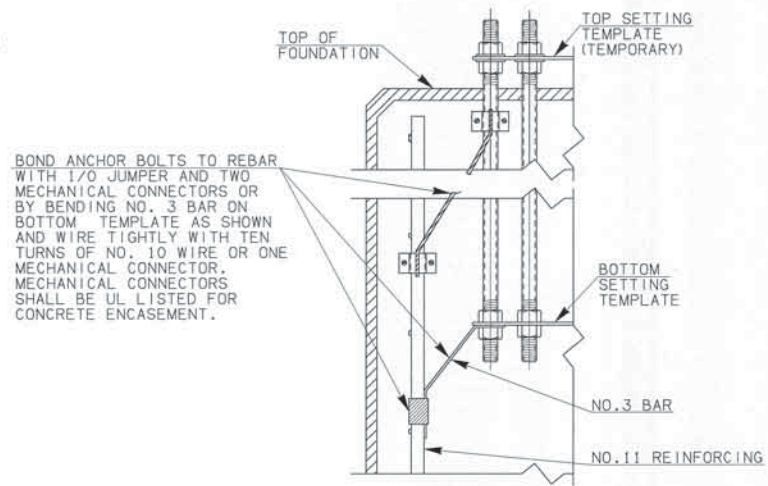
UPRIGHT FLANGE PLATE 2 1/2" X 42" O.D. 24 1/8" (+1/8"-0") I.D. (28) 1/2" DIA HOLES BOLT CIRCLE 38" DIA

OPTIONAL-UPRIGHT FLANGE PLATE

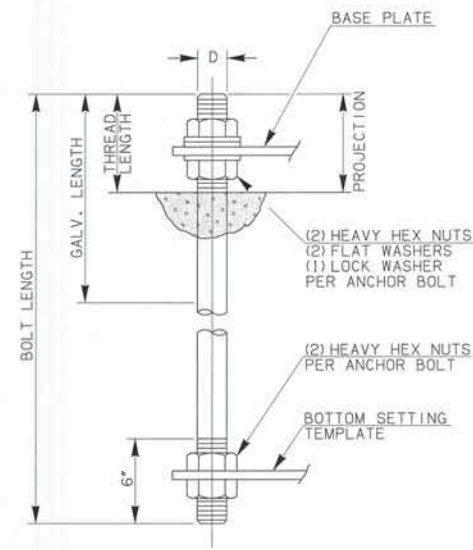


FLANGE PLATE 2 1/2" X 39" O.D. 24 1/8" (+1/8"-0") I.D. (28) 1/2" DIA HOLES BOLT CIRCLE 34" DIA

FLANGE PLATE



LIGHTING PROTECTION SYSTEM



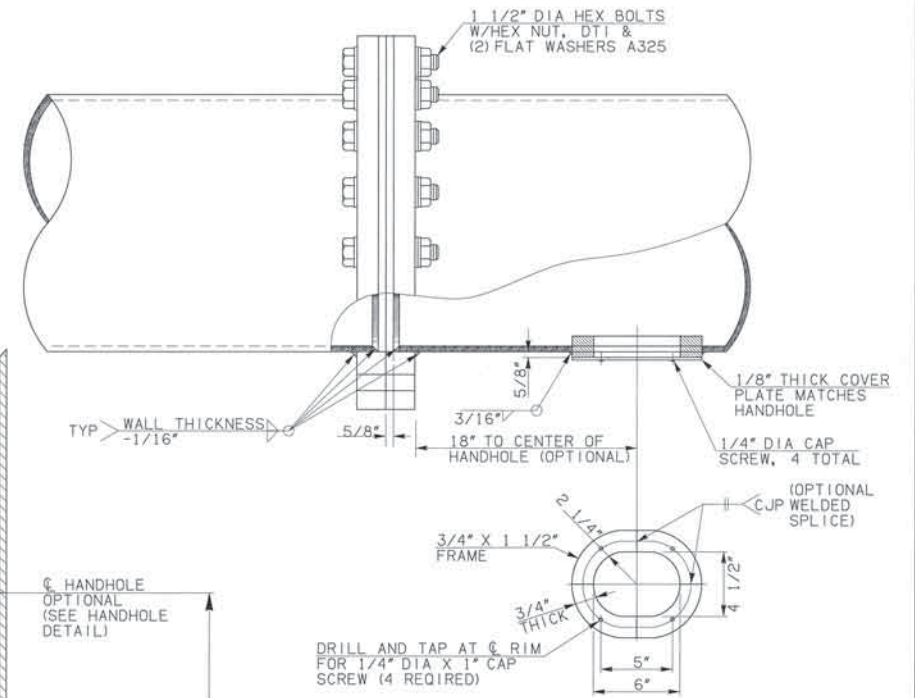
ANCHOR BOLT DETAIL

"D"	THREADS PER INCH	BOLT LENGTH	GALV. LENGTH	THREAD LENGTH	PROJECTION
2 1/4"	4.5	63"	24"	12"	11"

NOTES:
 A HANDHOLE IS OPTIONAL, USE AS DIRECTED BY THE ENGINEER. A MAXIMUM TWO (2) WELDED SPLICES OF HANDHOLE FRAME WILL BE ALLOWED. SPLICE LOCATED AT EITHER POSITION AS INDICATED IS ACCEPTABLE.
 DIRECT TENSIONING INDICATOR SHALL BE TENSIONED ACCORDING TO MANUFACTURER'S GUIDE LINES AND SPECIFICATION.
 WHEN CONNECTING TWO PIPES OF DIFFERENT SIZES, USE THE FLANGE PLATE DESIGN FROM THE LARGER SIZE.

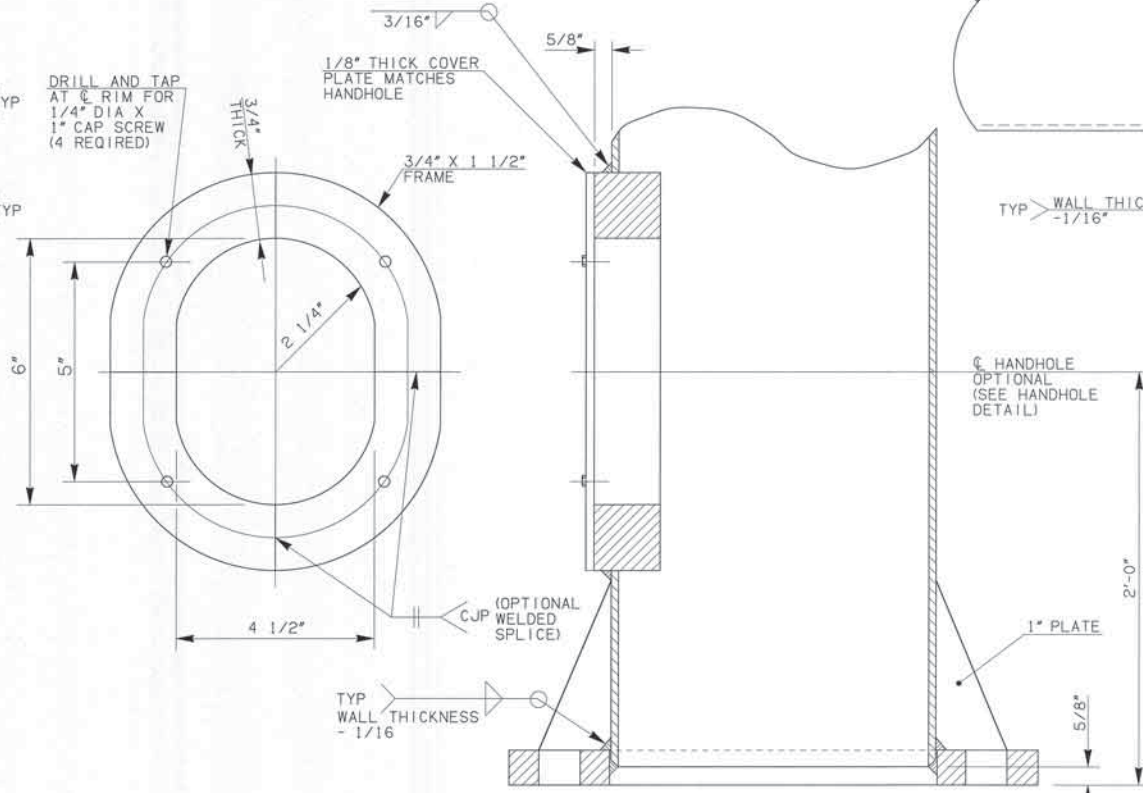
SETTING TEMPLATE CHART

PIPE SIZE	TOP TEMPLATE THICKNESS	BOTTOM TEMPLATE THICKNESS	TEMPLATE ID	TEMPLATE OD	TEMPLATE BOLT CIRCLE	ANCHOR BOLT DIA	NUMBER OF BOLTS
20"x3/8"	1/4"	3/4"	25 1/2"	34 1/2"	30"	2 1/4"	16
20"x1/2"	1/4"	3/4"	25 1/2"	34 1/2"	30"	2 1/4"	16



TYPICAL FLANGE CONNECTION DETAIL

* 3/4" PLATE NOT SHOWN FOR CLARITY



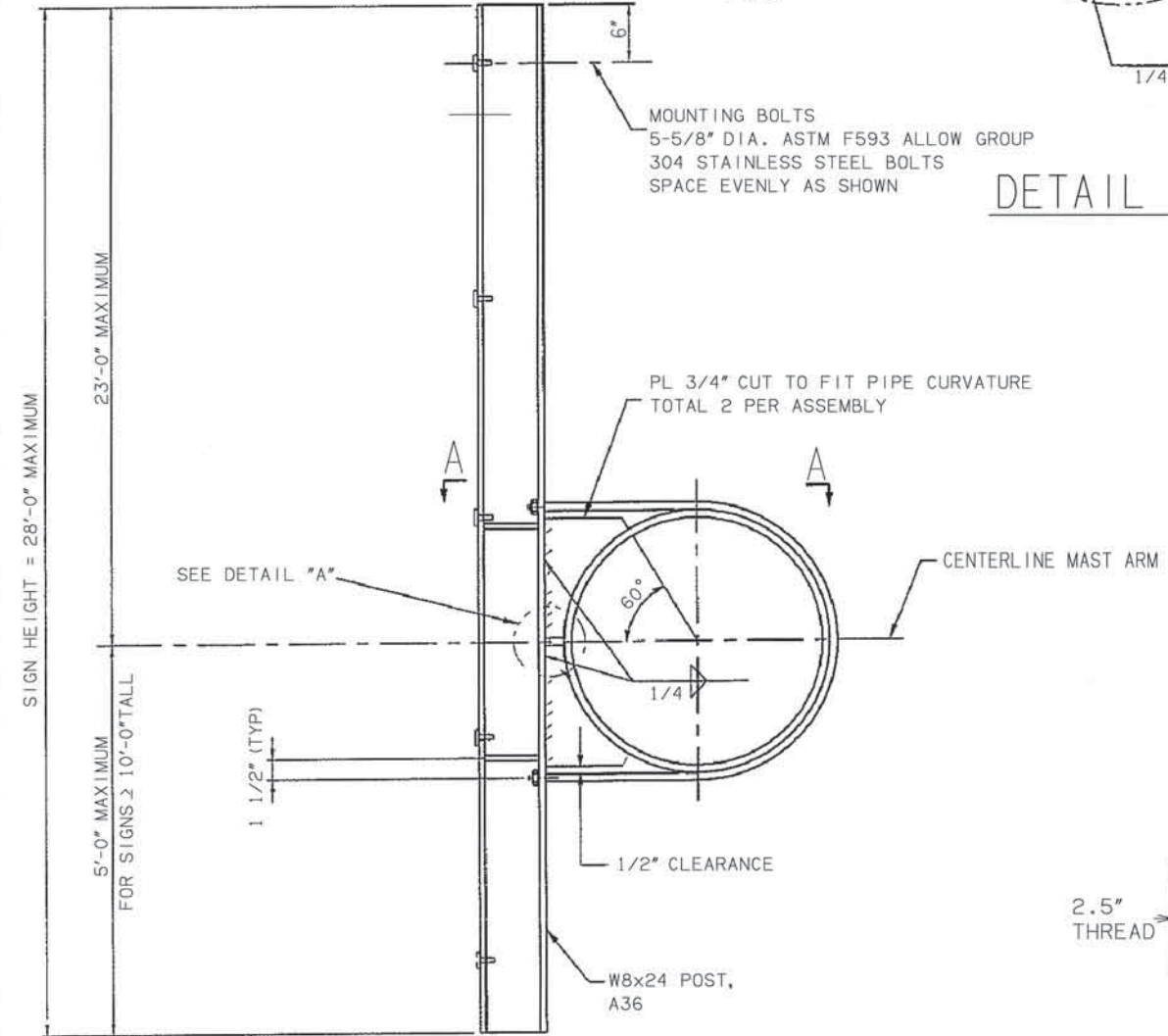
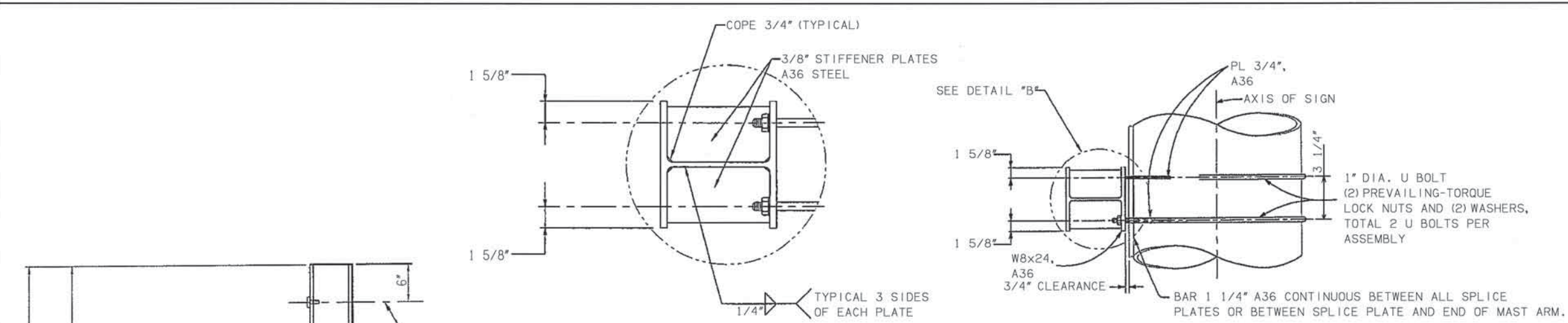
TYPICAL UPRIGHT BASE DETAIL



APPROVED BY TRAFFIC ENGINEER: *[Signature]* DATE: 8/30/2013
 APPROVED BY BRIDGE ENGINEER: *[Signature]* DATE: 8/29/2013

TRAFFIC STANDARD
 MONOTUBE STRUCTURE
 BASE & FLANGE PLATE DETAILS
 TYPE 'C'

DESCRIPTION	REVISIONS	DATE

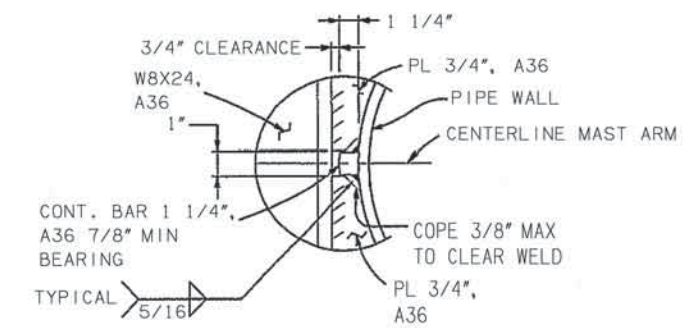


VIEW A-A

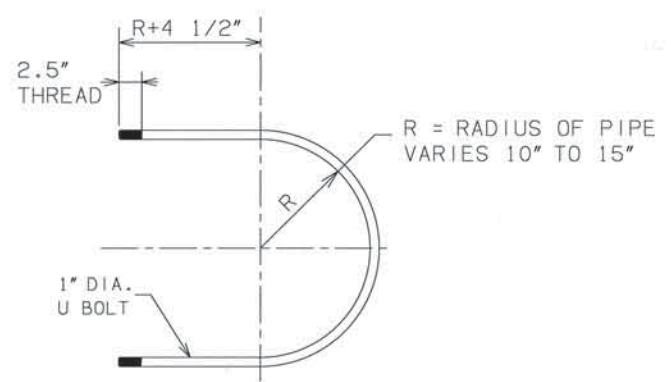
DETAIL B

GENERAL NOTES

1. ALL U-BOLTS SHALL CONFORM TO THE MATERIAL SPECIFICATIONS OF ASTM A193-B7, AND THREADS SHALL CONFORM TO ASTM A325 SECTION 7.2. ALL U-BOLT NUTS SHALL BE PREVAILING-TORQUE LOCK NUTS AND SHALL CONFORM TO THE SPECIFICATIONS OF ASTM A194-2H. ALL WASHERS SHALL CONFORM TO THE SPECIFICATIONS OF ASTM F436.

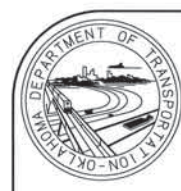


DETAIL A



U BOLT DETAIL

SIGN MOUNTING BRACKET



APPROVED BY
TRAFFIC ENGINEER: *[Signature]* DATE: 7/29/2018
APPROVED BY
BRIDGE ENGINEER: *[Signature]* DATE: 7/29/2018

TRAFFIC STANDARD
OVERHEAD SIGN
BRACKET DETAIL
(MONOTUBE STRUCTURES)

ALL GENERAL NOTES SHOWN BELOW SHALL APPLY TO ALL OF THE STANDARD DRAWINGS IN TCS SERIES

DESCRIPTION	REVISIONS	DATE
MODIFIED NOTES		3/15/2011

CONTRACTOR

ON CONSTRUCTION PROJECTS IT WILL BE THE CONTRACTORS RESPONSIBILITY TO INSTALL THE NECESSARY TRAFFIC CONTROL BEFORE CONSTRUCTION BEGINS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL DEVICES TO ASSURE A HIGH DEGREE OF BOTH DAY AND NIGHT VISIBILITY, WHICH WILL INCLUDE ANY WASHING, REPLACEMENT AND/OR REPOSITIONING WHERE DEEMED NECESSARY BY THE ENGINEER.

THE CONTRACTOR SHALL REPAIR OR REPLACE ANY NEW OR EXISTING PERMANENT STATE OWNED SIGNS WHICH ARE DAMAGED DUE TO HIS NEGLIGENCE OR CARELESS HANDLING DURING THE CONSTRUCTION OF THIS PROJECT. THIS SHALL BE DONE AT THE CONTRACTORS EXPENSE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TEMPORARY TRAFFIC CONTROL WORK ZONE AND EXISTING PAVEMENT MARKINGS ON ALL ROADWAYS OPEN TO TRAFFIC WITHIN THE PROJECT. SUFFICIENT QUANTITIES HAVE BEEN PROVIDED FOR MAINTAINING PAVEMENT MARKINGS FOR PRESCRIBED DETOUR ROUTES WHEN DEEMED NECESSARY BY THE ENGINEER.

SIGN MATERIALS

ALL SIGN BLANK MATERIALS SHALL BE THE OPTION OF THE CONTRACTOR BUT SHALL BE OF SUCH MATERIAL THAT WILL RETAIN A SATISFACTORY APPEARANCE THROUGHOUT THE LIFE OF THE PROJECT.

ALL SIGNS, LIGHTS, FLAGS, ETC. SHALL CONFORM IN SIZE, SHAPE, COLOR, LEGENDS AND APPLICATIONS TO THE STANDARDS SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND/OR OKLAHOMA STATE STANDARD DRAWINGS FOR SIGNS. STANDARD DRAWINGS ARE AVAILABLE FROM THE DEPARTMENT OF TRANSPORTATION. INTERPRETATIONS THAT MAY BE NECESSARY SHALL BE REFERRED TO THE ENGINEER.

SIGN SHEETING

REFLECTORIZATION OF TRAFFIC CONTROL DEVICES SHALL BE BY MEANS OF WIDE ANGLE, FLAT TOP REFLECTIVE SHEETING MEETING THE REQUIREMENTS OF 2009, OKLAHOMA STANDARD SPECIFICATIONS.

SIGN INSTALLATION

ALL SIGNS SHALL BE SECURELY PLACED OR WEIGHTED TO PREVENT BLOWING OVER. ROCKS, BROKEN CONCRETE OR OTHER SUCH OBJECTS SHALL NOT BE CONSIDERED AN ACCEPTABLE SUBSTITUTE FOR SAND BAGS WHEN USED TO OBTAIN ADDED STABILITY FOR MOVABLE SIGNS AND BARRICADES.

SPACING OF SIGNING, ON THE PLANS OR TCS STANDARDS, SHOULD BE NO LESS THAN THE DISTANCES SHOWN. THE DISTANCE BETWEEN SIGNS SHOULD BE INCREASED ON HIGH SPEED OR MORE HEAVILY TRAVELED HIGHWAYS, OR WHERE SIGHT DISTANCE IS RESTRICTED.

IN ALL CONSTRUCTION ZONES, THE 48 INCH X 48 INCH WARNING SIGNS SHALL HAVE ATTACHED THERETO FLORESCENT FLAGS AND TYPE "A" WARNING LIGHTS. THIS SHALL ALSO APPLY WHEN SIGNS ARE USED ON BOTH SIDES OF THE ROADWAY. ADDITIONAL FLASHING LIGHTS MAY BE REQUIRED WHEN SO DESIRED BY THE ENGINEER.

ALL DIAMOND SHAPED CONSTRUCTION WARNING SIGNS ON EXPRESSWAYS OR FREEWAYS SHALL BE 48 INCH X 48 INCH, WITH THE APPROPRIATE ADVISORY SIGN WHERE REQUIRED UNLESS OTHERWISE NOTED IN THE PLANS.

DUE TO THE TEMPORARY NATURE OF CONSTRUCTION, SIGNS WHICH ARE 33 S.F. AND OVER WILL HAVE NO REINFORCING STEEL IN THEIR FOOTINGS.

ALL SIGNS AND SIGN ASSEMBLIES WITH A TOTAL SURFACE AREA OF 10 S.F. OR MORE SHALL BE INSTALLED ON TWO (2) POSTS. THE EXCEPTION BEING SINGLE ROUTE MARKER ASSEMBLIES.

SIGNS MOUNTED ON BARRICADES SHALL BE MOUNTED AS HIGH AS NECESSARY TO BE VISIBLE.

BARRICADES

ONE (1) WING BARRICADE SHALL BE SET ON EACH SIDE OF THE ROADWAY IN ADVANCE OF THE FIRST ADVANCE WARNING SIGN. THE EXCEPTIONS ARE MINOR CROSS STREETS AND SECTION LINE ROADS WHICH INTERSECT THE WORK AREA.

WING BARRICADES SHALL BE INSTALLED ON TWO (2) BREAKAWAY POSTS.

WORK DURATION

THE FIVE CATEGORIES OF WORK DURATION AND THEIR TIME AT A LOCATION SHALL BE:
 A) LONG-TERM STATIONARY IS WORK THAT OCCUPIES A LOCATION MORE THAN 3 DAYS.
 B) INTERMEDIATE-TERM STATIONARY IS WORK THAT OCCUPIES A LOCATION MORE THAN ONE DAYLIGHT PERIOD UP TO 3 DAYS, OR NIGHTTIME WORKLASTING MORE THAN 1 HOUR.
 C) SHORT-TERM STATIONARY IS DAYTIME WORK THAT OCCUPIES A LOCATION FOR MORE THAN 1 HOUR WITHIN A SINGLE DAYLIGHT PERIOD.
 D) SHORT DURATION IS WORK THAT OCCUPIES A LOCATION UP TO 1 HOUR.
 E) MOBILE IS WORK THAT MOVES INTERMITTENTLY OR CONTINUOUSLY.

LIGHTING

TYPE "A" WARNING LIGHTS SHALL BE USED ON BARRICADES (AS REQUIRED) AND WARNING SIGNS.

TYPE "C" WARNING LIGHTS MAY BE USED ON VERTICAL PANELS (OPTIONAL).

CONSTRUCTION NOTES

SHOULD THE REQUIRED WORK ON ANY PROJECT, INCLUDING ANY TRAFFIC CONTROL, OVERLAP OR OTHERWISE INTERFERE WITH THE ON-GOING WORK OR TRAFFIC CONTROL OF ANOTHER PROJECT, IT SHALL BE THE RESPONSIBILITY OF THE RESPECTIVE CONTRACTORS TO COORDINATE THEIR WORK ACTIVITIES TO FACILITATE THE SAFE MOVEMENT OF TRAFFIC THROUGHOUT OR AROUND THEIR COLLECTIVE WORK AREAS. ANY SUCH RECOMMENDED CHANGES SHALL BE SUBMITTED IN WRITING TO EACH PROJECT RESIDENT ENGINEER FOR REVIEW AND APPROVAL.

ALL TRAFFIC CONTROL DEVICES NOT REQUIRED FOR THE SAFE CONDUCT OF TRAFFIC THROUGH THE TEMPORARY TRAFFIC CONTROL ZONE SHALL BE PROMPTLY REMOVED, COMPLETELY COVERED, TURNED AWAY FROM TRAFFIC OR OTHERWISE TAKEN OUT OF SERVICE. DEVICES SHALL NOT BE STORED ALONG THE ROADWAY WITHIN 15 FEET (15') OF AN OPEN DRIVING LANE, EITHER BEFORE OR AFTER THEY ARE TO BE USED UNLESS PROTECTED BY GUARDRAIL, BRIDGE RAIL, AND/OR BARRIERS INSTALLED FOR OTHER PURPOSES. THESE DEVICES SHALL BE REMOVED FROM THE TEMPORARY TRAFFIC CONTROL ZONE WHEN THE ENGINEER DETERMINES THEY ARE NO LONGER NEEDED. WHERE THERE IS INSUFFICIENT RIGHT-OF-WAY TO PROVIDE FOR THIS 15 FEET (15') SETBACK, THE CONTRACTOR SHALL DETERMINE ALTERNATE LOCATIONS AND REQUEST THE ENGINEERS APPROVAL TO USE THEM.

TRAFFIC CONTROL DEVICES, WARNING DEVICES, AND BARRIERS SHALL BE KEPT IN CORRECT POSITION, PROPERLY DIRECTED, CLEARLY VISIBLE AND CLEAN AT ALL TIMES. DAMAGED, DEFACED OR DIRTY DEVICES OR BARRICADES SHALL IMMEDIATELY BE REPAIRED, REPLACED OR CLEANED BY THE CONTRACTOR AND APPROVED FOR USE BY THE ENGINEER.

NO EQUIPMENT OR VEHICLES BELONGING TO THE CONTRACTOR, HIS SUB-CONTRACTORS OR EMPLOYEES SHALL BE PARKED OR STOPPED WITHIN 30 FEET (30') OF A LANE CARRYING TRAFFIC, AT ANY TIME, UNLESS REQUIRED BY ONGOING WORK OPERATIONS.

ALL DETOURS AND DIVERSIONS SHOULD BE IN PLACE, WITH SIGNING, STRIPING AND CHANNELIZING DEVICES, AS SHOWN IN THE PLANS OR STANDARD DRAWINGS, BEFORE THEY ARE OPENED TO TRAFFIC.

WHEN IT BECOMES NECESSARY TO CLOSE THE ROAD TO THROUGH TRAFFIC, NO LESS THAN SEVEN DAYS PRIOR TO THE CLOSURE, THE CONTRACTOR SHALL NOTIFY THE FOLLOWING INDIVIDUALS OR AGENCIES DESCRIBING THE AFFECTED ROAD AND THE APPROXIMATE DURATION OF THE CLOSURE. THOSE TO BE NOTIFIED INCLUDE BUT ARE NOT LIMITED TO 1) LOCAL LAW ENFORCEMENT OFFICIALS, 2) LOCAL FIRE OFFICIALS, 3) AMBULANCE SERVICES, 4) LOCAL SCHOOL SUPERINTENDENT, 5) UNITED STATES POSTAL SERVICE, AND 6) CITY OR COUNTY ROAD SUPERINTENDENT.

ALL TEMPORARY TRAFFIC CONTROL DEVICES, AND THEIR CONDITIONS THROUGHOUT THE LIFE OF THE CONSTRUCTION PROJECT, SHALL MEET O.D.O.T.'S LATEST "QUALITY STANDARDS FOR TEMPORARY TRAFFIC CONTROL DEVICES". THE O.D.O.T. RESIDENT ENGINEER WILL MAKE FINAL DECISION OF ALL TEMPORARY TRAFFIC CONTROL DEVICES BASED ON THE O.D.O.T. GUIDELINES.

NO GENDER BIAS SIGNS ARE ALLOWED.

ARROW DISPLAY

USE OF AN ARROW DISPLAY, IN THE ARROW OR CHEVRON MODE, SHALL BE LIMITED TO STATIONARY OR MOVING LANE CLOSURES.

AN ARROW DISPLAY, IN THE CAUTION MODE, SHALL BE USED ONLY FOR SHOULDER WORK, BLOCKING THE SHOULDER, ROADSIDE WORK NEAR THE SHOULDER, OR FOR MOBILE OPERATIONS (I.E. STRIPING).

AN ARROW DISPLAY IN THE ARROW OR CHEVRON MODE, SHALL NOT BE USED ON A TWO-LANE, TWO-WAY ROADWAY FOR TEMPORARY ONE-LANE OPERATION.

AN ARROW DISPLAY SHALL NOT BE USED ON A MULTI-LANE ROADWAY TO LATERALLY SHIFT TRAFFIC.

CHANNELIZING DEVICES

IN THOSE AREAS WHERE DRIVERS ARE ASKED TO MAKE A DECISION OR MUST BE GUIDED THROUGH A PRECISE MOVEMENT, BY USE OF CHANNELIZING DEVICES, IT IS ESPECIALLY IMPORTANT TO PROVIDE A CLEARLY DEFINED PATH. EXAMPLES OF THIS COULD BE IN DELINEATING A TEMPORARY GORE OR TURNING RADIUS. IN SUCH AREAS THE SPACING OF CHANNELIZING DEVICES MAY BE REDUCED TO 10 FEET FOR SPEEDS OF 40 M.P.H. OR LESS, AND 20 FEET FOR SPEEDS GREATER THAN 40 M.P.H.

WHEN CHANNELIZING DEVICES ARE USED TO DIRECT TRAFFIC ACROSS EXISTING LANE LINES OR EDGE LINES, THE SPACING BETWEEN CHANNELIZING DEVICES SHALL BE REDUCED 50%. SPACING SHOULD ALSO BE REDUCED WHEN CHANNELIZING DEVICES ARE PLACED ON CURVES, HILLS, OR NEXT TO POTENTIAL HAZARDS.

ALL TRAFFIC CONTROL CHANNELIZING DEVICES SHALL MEET MUTCD COLOR REQUIREMENTS.

FLAGGERS

FLAGGERS MUST BE CLEARLY VISIBLE TO APPROACHING TRAFFIC FOR A DISTANCE SUFFICIENT TO PERMIT PROPER RESPONSE BY MOTORISTS TO THE FLAGGING INSTRUCTIONS, AND TO PERMIT TRAFFIC TO REDUCE SPEED OR STOP BEFORE ENTERING THE TEMPORARY TRAFFIC CONTROL ZONE. FLAGGERS SHALL BE POSITIONED TO MAINTAIN MAXIMUM COLOR CONTRAST BETWEEN THE FLAGGER'S REFLECTIVE CLOTHING AND EQUIPMENT AND THE WORK AREA BACKGROUND.

DURING HOURS OF DARKNESS, FLAGGER STATIONS SHALL BE ILLUMINATED SUCH THAT THE FLAGGER WILL BE CLEARLY VISIBLE TO APPROACHING TRAFFIC. LIGHTS TO BE USED FOR ILLUMINATING THE STATION SHALL BE APPROVED BY THE ENGINEER. REFLECTORIZED PADDLES AND REFLECTORIZED VESTS, SHIRTS OR JACKETS SHALL BE USED FOR NIGHTTIME FLAGGING.

UNLESS OTHERWISE SPECIFIED IN THE PLANS, THE COST OF FLAGGING OPERATIONS SHALL BE INCLUDED IN OTHER ITEMS OF WORK.

MINIMUM STANDARDS FOR TRAFFIC CONTROL DEVICES

- (1) WARNING LIGHTS (TYPE A FLASHERS AND TYPE C STEADY BURN)
 - (A) NOT LESS THAN NINETY (90) PERCENT OF THE TOTAL NUMBER OF LIGHTS BEING USED AT ANY ONE TIME SHALL BE FULLY OPERATIONAL.
 - (B) NOT MORE THAN THREE (3) LIGHTS ADJACENT TO ONE ANOTHER SHALL BE FAILING.
- (2) ARROW DISPLAY
 - (A) WHEN IN ARROW MODE, NO MORE THAN TWO (2) LAMPS IN THE STEM AND ZERO (0) LAMPS IN THE HEAD SHALL BE FAILING. THE DIMMING FUNCTION SHALL BE OPERATING PROPERLY.
 - (B) WHEN IN CAUTION MODE (CORNERS), A MINIMUM OF FOUR (4) LAMPS SHALL BE OPERATIONAL. THE DIMMING FUNCTION SHALL BE OPERATING PROPERLY.
 - (C) ANY LAMP WHICH IS LIGHTED BUT IMPROPERLY ALIGNED SHALL NOT BE CONSIDERED OPERATIONAL.
- (3) CHANGEABLE MESSAGE SIGNS
 - (A) NOT LESS THAN NINETY (90) PERCENT OF THE PIXELS SHALL BE FUNCTIONAL IN EACH CHARACTER MODULE.
 - (B) NO SANDBAG BALLASTING OVER 3 FEET IN HEIGHT.
- (4) PAVEMENT MARKING TAPE
 - (A) NOT MORE THAN TEN (10) PERCENT OF ALL TAPE, PAINT, MESSAGE OR SYMBOL SHALL BE MISSING.
 - (B) NOT MORE THAN TWO (2) CONSECUTIVE DASHED LINES SHALL BE MISSING.
 - (C) NOT MORE THAN FIFTY (50) CONTINUOUS FEET OF A SOLID LINE SHALL BE MISSING.
- (5) CONSTRUCTION ZONE PAVEMENT MARKERS
 - (A) NOT MORE THAN TEN (10) PERCENT OF THE TOTAL NUMBER OF MARKERS SHALL BE MISSING.
 - (B) NOT MORE THAN THREE (3) CONSECUTIVE MARKERS SHALL BE MISSING.

STRIPING

WHENEVER THE WORK CAUSES THE OBLITERATION OF PAVEMENT MARKINGS, EITHER TEMPORARY OR PERMANENT MARKINGS SHALL BE IN PLACE PRIOR TO OPENING THE ROADWAY TO TRAFFIC. CENTERLINE PAVEMENT MARKINGS SHALL BE PROVIDED AT ALL TIMES FOR ROADWAYS OPEN TO TRAFFIC.

THE APPLICATION SURFACES FOR PAVEMENT MARKINGS SHALL BE FREE OF DUST, DIRT, MOISTURE OR OTHER FOREIGN MATTER WHICH WOULD INTERFERE WITH ADHESION. INSTALLATION OF ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.

ALL TEMPORARY PAVEMENT MARKINGS SHALL BE REMOVED IMMEDIATELY AHEAD OF THE PERMANENT STRIPING OPERATIONS OR RE-STRIPING FOR FOLLOWING CONSTRUCTION PHASES.

WHEN REMOVABLE PAVEMENT MARKINGS TAPE IS TO BE INSTALLED ON NEW CONCRETE PAVEMENT, THE CURING COMPOUND SHALL BE REMOVED PRIOR TO INSTALLATION.

IF REMOVABLE PAVEMENT MARKING TAPE IS INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS AND FAILS DURING THE FIRST SIX MONTHS OF SERVICE, IT SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. REPLACEMENT SHALL BE ACCOMPLISHED IN A TIMELY MANNER UPON BEING NOTIFIED, BY THE ENGINEER, OF SUCH FAILURE.

PILOT CAR

WHEN LANE CLOSURES ARE REQUIRED ON TWO-LANE /TWO-WAY ROADWAYS, THE CONTRACTOR MAY, AT HIS OPTION, UTILIZE A PILOT CAR. IF THE CONTRACTOR ELECTS TO USE A PILOT CAR, CHANNELIZING DEVICES ALONG THE CENTERLINE WILL NOT BE REQUIRED. THE PILOT CAR OPERATOR SHALL BE IN RADIO CONTACT WITH PERSONNEL IN THE TEMPORARY TRAFFIC CONTROL ZONE. MAXIMUM SPEED OF THE PILOT CAR THROUGH THE WORK AREA SHALL BE 25 M.P.H. FULL COMPENSATION FOR FURNISHING AND OPERATING THE PILOT CAR, (INCLUDING DRIVER, RADIOS, AND ANY OTHER EQUIPMENT OR LABOR REQUIRED) SHALL BE CONSIDERED AS INCLUDED IN THE COST OF OTHER ITEMS OF WORK.

MISCELLANEOUS

TRAFFIC CONDITIONS MAY NECESSITATE CHANGES IN THE USE AND/OR QUANTITIES OF THE TRAFFIC CONTROL DEVICES AS SHOWN IN THE PLANS OR IN THE STANDARDS. ANY SUCH CHANGES ARE SUBJECT TO APPROVAL BY THE ENGINEER.

ALL CHANNELIZING DEVICES PROVIDED ON THIS PROJECT SHALL BE IN GOOD CONDITION AND SHALL BE APPROVED FOR USE ON THIS PROJECT BY THE ENGINEER.

THE REGULATORY SPEED LIMITS THROUGH THE WORK ZONE MAY BE ADJUSTED AT THE DISCRETION OF THE ENGINEER WITH THE DOCUMENTED APPROVAL OF THE DIVISION ENGINEER IN ACCORDANCE WITH TITLE 47 OF THE OKLAHOMA MOTOR VEHICLE LAWS.

THE TERMINATION AREA EXTENDS FROM THE DOWNSTREAM END OF THE WORK AREA TO THE TEMPORARY TRAFFIC CONTROL DEVICE SUCH AS "END ROAD WORK" SIGNS. IF POSTED, A SPEED SIGN, OR OTHER SIGNS MAY BE USED TO INFORM ROAD USERS THAT THEY CAN RESUME NORMAL OPERATIONS.

THE CONSTRUCTION SIGNING AND BARRICADE CONTRACTOR SHOULD AFFIX THEIR COMPANY NAME AND/OR LOGO INCONSPICUOUSLY ON EACH TRAFFIC CONTROL DEVICE.



APPROVED BY TRAFFIC ENGINEER: *Shelby Gray* DATE: 3/21/11

TRAFFIC STANDARD
 TRAFFIC CONTROL STANDARD
 TRAFFIC CONTROL CONSTRUCTION NOTES

2009 SPECIFICATIONS

TCS1-1	01
T-501	

\$\$\$date\$\$\$

TAPER LENGTH CRITERIA FOR WORK ZONES

SPEED LIMIT M.P.H.	"L" FORMULA	"L" TAPER LENGTH (MINIMUM) (FT)			NUMBER OF CHANNELIZING DEVICES REQUIRED (MINIMUM)			SPACING CHANNELIZING DEVICES (MAXIMUM)		MAXIMUM HORIZONTAL ALIGNMENT THRU DETOUR (DEGREE) (S=0)	SPEED LIMIT M.P.H.
		10' OFFSET	11' OFFSET	12' OFFSET	10' OFFSET	11' OFFSET	12' OFFSET	① THRU TAPER SECTION (FT.)	② THRU TANGENT SECTION (FT.)		
20	$L = W \times S^2 / 60$	70	75	80	5	5	5	20	40	—	20
25		105	115	125	6	6	6	25	50	—	25
30		150	165	180	6	7	7	30	60	15	30
35		205	225	245	7	8	8	35	70	11	35
40	$L = W \times S$	265	295	320	8	9	9	40	80	8	40
45		450	495	540	11	12	13	45	90	6	45
50		500	550	600	11	12	13	50	100	5	50
55		550	605	660	12	14	15	50	100	4	55
60		600	660	720	13	15	16	50	100	3	60
65		650	715	780	14	16	17	50	100	2.5	65
70		700	770	840	15	17	18	50	100	2	70
75	750	825	900	16	18	19	50	100	1.8	75	

NOTES:

① RECOMMENDED SIGNING TO BE USED THRU LANE TAPER IS (1) CW1-8 ON EVERY OTHER DRUM.

② RECOMMENDED SIGNING TO BE USED THRU TANGENT LANES IS (1) R4-7A(R) OR (1) R4-7A(L) (AS APPLIES) ON EVERY OTHER DRUM.

L = TAPER LENGTH IN FEET
W = WIDTH OF OFFSET IN FEET
S = POSTED SPEED OR OFF-PEAK 85 PERCENTILE SPEED IN MPH

TYPE OF TAPER
UPSTREAM TAPERS
MERGING TAPER
SHIFTING TAPER
SHOULDER TAPER
TWO-WAY TRAFFIC TAPER

TAPER LENGTH
L MINIMUM
1/2 L MINIMUM
1/3 L MINIMUM
100 FEET MAXIMUM

DOWNSTREAM TAPERS
(USE IS OPTIONAL)
100 FEET PER LANE

FLARE RATES FOR CONCRETE MEDIAN BARRIER IN TEMPORARY TRAFFIC CONTROL ZONES

SPEED *	FLARE RATE (MINIMUM)
40 M.P.H.	9 TO 1
45 M.P.H.	10 TO 1
50 M.P.H.	11 TO 1
55 M.P.H.	12 TO 1
60 M.P.H.	13 TO 1
65 M.P.H.	14 TO 1
70 M.P.H.	15 TO 1
75 M.P.H.	16 TO 1

* POSTED SPEED LIMIT PRIOR TO CONSTRUCTION

STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED

SPEED * (MPH)	LENGTH (FEET)
20 M.P.H.	115
25 M.P.H.	155
30 M.P.H.	200
35 M.P.H.	250
40 M.P.H.	305
45 M.P.H.	360
50 M.P.H.	425
55 M.P.H.	495
60 M.P.H.	570
65 M.P.H.	645
70 M.P.H.	730
75 M.P.H.	820

* POSTED SPEED, OFF-PEAK 85th PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED.

ROAD TYPE	RECOMMENDED DISTANCE BETWEEN SIGNS (MIN.)		
	A (FT)	B (FT)	C (FT)
URBAN (LOW SPEED)	100	100	100
URBAN (HIGH SPEED)	350	350	350
RURAL	500	500	500
EXPRESSWAY / FREEWAY	1,000	1,500	2,640

PAVEMENT MARKINGS THROUGH TEMPORARY TRAFFIC CONTROL ZONE

	DRIVING SURFACE	FLEX TAB MARKERS	TAPE (REMOVABLE)	TAPE (NON-REMOVABLE)	PAINT	CONSTRUCTION ZONE PAVEMENT MARKERS
ASPHALT	EXISTING PAVEMENT TO BE REMOVED OR OVERLAYED IN THE NEXT PHASE	X	X	X	X	X
	EXISTING PAVEMENT TO BE LEFT IN PLACE THRU THE NEXT PHASE	X	X			X
	INTERMEDIATE LIFT	X	X	X	X	X
	MILLED SURFACE	X	X	X	X	X
	FINAL LIFT	X	X			
CONCRETE	EXISTING PAVEMENT TO BE REMOVED OR OVERLAYED IN THE NEXT PHASE	X	X	X	X	X
	EXISTING PAVEMENT TO BE LEFT IN PLACE THRU THE NEXT PHASE	X	X			X
	FINAL SURFACE	X	X		X	X

NOTE: USE OF NON-REMOVABLE TAPE (FOILBACK) SHALL BE LIMITED TO THOSE CONDITIONS SHOWN IN THE TABLE.

RECOMMENDED CLEAR ZONE DISTANCE (FT) (CONSTRUCTION WORK ZONES)

DESIGN SPEED	DESIGN ADT	FILL SLOPES			CUT SLOPES		
		6:1 OR FLATTER	5:1 OR 4:1	3:1	3:1	4:1 OR 5:1	6:1 OR FLATTER
40 MPH OR LESS	UNDER 750	4	4	SEE NOTE 3	4	4	4
	750-1500	5	6		5	5	5
	1500-6000	6	7		6	6	6
	OVER 6000	7	8		7	7	7
45-50 MPH	UNDER 750	5	6		4	4	5
	750-1500	7	8		5	6	7
	1500-6000	8	10		6	7	8
	OVER 6000	10	12		7	9	10
55 MPH	UNDER 750	6	7		4	5	5
	750-1500	8	10		5	7	8
	1500-6000	10	12		7	8	10
	OVER 6000	11	13		8	10	11
60 MPH	UNDER 750	8	10	5	6	7	
	750-1500	10	13	6	8	10	
	1500-6000	13	16 *	7	9	12	
	OVER 6000	15	18 *	10	12	13	
65-70 MPH	UNDER 750	9	10	5	7	7	
	750-1500	12	14	6	9	10	
	1500-6000	14	17 *	8	11	13	
	OVER 6000	15	19 *	11	13	14	

NOTES:

* THE CLEAR ZONE MAY BE LIMITED TO 15 FEET FOR PRACTICALITY AND TO PROVIDE A CONSISTENT ROADWAY TEMPLATE.

(1) ALL DISTANCES ARE MEASURED FROM EDGE OF THE TRAVEL LANE.

(2) FOR CLEAR ZONES, THE "DESIGN ADT" WILL BE THE TOTAL ADT ON TWO-WAY ROADWAYS AND DIRECTIONAL ADT ON ONE-WAY ROADWAYS (E.G., RAMPS AND ONE ROADWAY OF A DIVIDED HIGHWAY).

(3) FILL SLOPES WHICH ARE 3:1 OR STEEPER ARE CRITICAL AND MAY REQUIRE A BARRIER. THEREFORE THERE IS NOT A CLEAR ZONE APPLICATION.

CROSSOVER CRITERIA FOR WORK ZONES

WIDTH OF MEDIAN (W) (FT)	LATERAL SHIFT - (P) (FT)	LENGTH OF CROSSOVER - LC * (FT)											
		V.	30 M.P.H.	35 M.P.H.	40 M.P.H.	45 M.P.H.	50 M.P.H.	55 M.P.H.	60 M.P.H.	65 M.P.H.	70 M.P.H.	75 M.P.H.	
		D.	15°	11°	8°	6°	5°	4°	3°	2.5°	2°	1.8°	
20	32	R.	382	521	716	955	1146	1433	1910	2292	2855	3183	
30	42		219	256	301	348	382	427	493	541	605	637	
40	52		250	293	344	398	437	489	565	619	692	730	
50	62		277	325	382	443	485	543	628	688	770	812	
60	72		301	354	417	483	529	593	685	751	841	886	
70	82		324	381	448	519	570	638	738	809	905	955	
80	92		344	405	478	554	608	681	787	863	966	1,018	
90	102		363	428	505	586	643	720	833	914	1,023	1,078	
100	112		381	450	531	616	676	758	877	962	1,076	1,135	
110	122		398	470	555	644	708	793	918	1,007	1,127	1,189	
120	132		414	489	578	672	738	827	958	1,050	1,176	1,240	
			429	508	601	698	767	860	995	1,092	1,223	1,290	

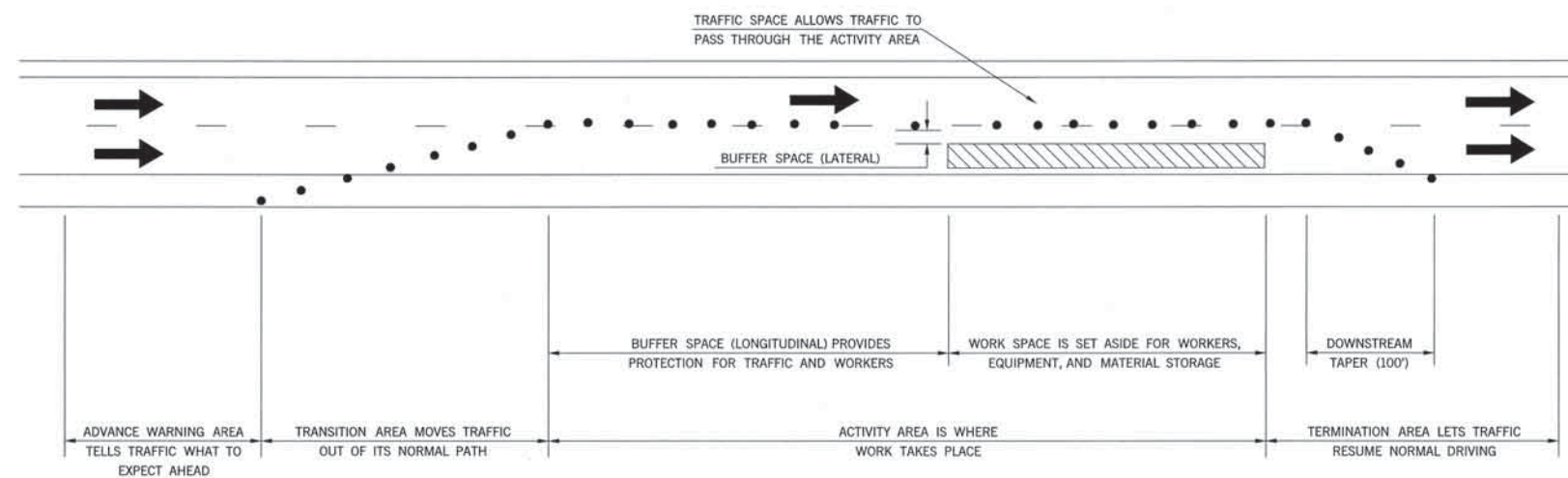
* CROSSOVER = REVERSE CURVE CONNECTION TYING TWO (2) PARALLEL ROADWAYS.



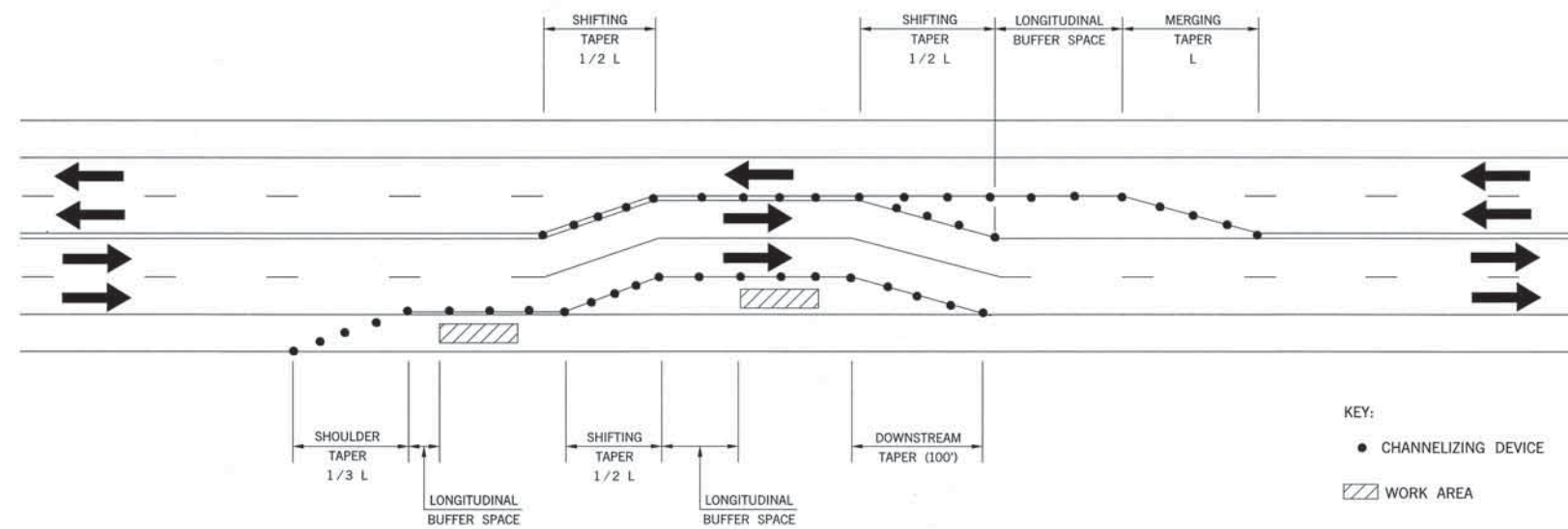
APPROVED BY TRAFFIC ENGINEER *David Smart* DATE 6/23/10

TRAFFIC STANDARD
TRAFFIC CONTROL STANDARD
TRAFFIC CONTROL TABLES AND CHARTS

DESCRIPTION	REVISIONS	DATE
CHANGED TRANSITION NOTATION		5/31/2011



COMPONENT PARTS OF A TEMPORARY TRAFFIC CONTROL ZONE



TAPERS AND BUFFER SPACE

TEMPORARY TRAFFIC CONTROL ELEMENTS



APPROVED BY TRAFFIC ENGINEER: *David G. Smith* DATE: 5/31/2011

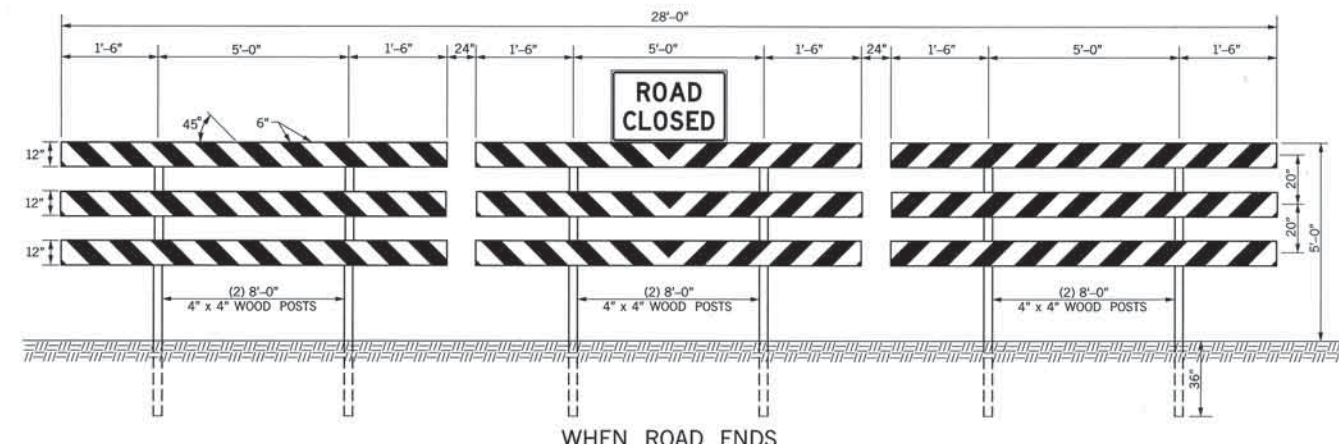
TRAFFIC STANDARD
TRAFFIC CONTROL STANDARD
TEMPORARY TRAFFIC CONTROL ELEMENTS

2009 SPECIFICATIONS

TCS3-1 01
T-503

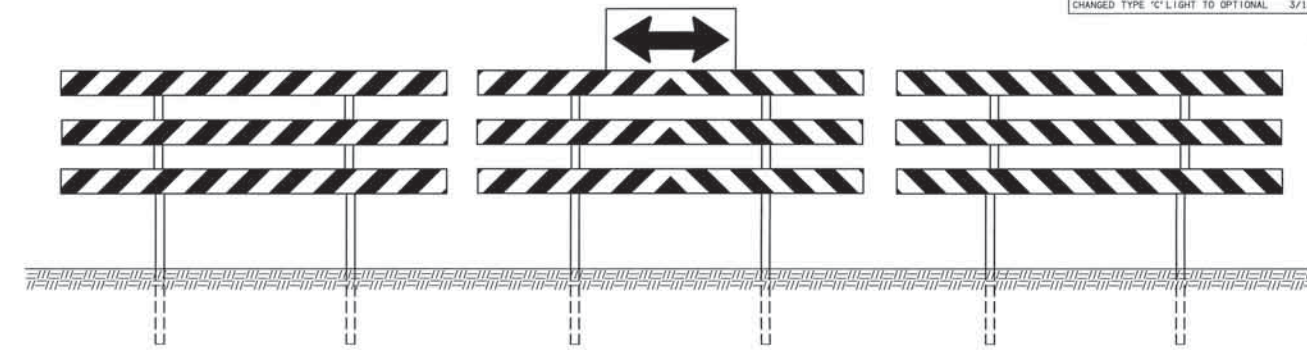
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DESCRIPTION	REVISIONS	DATE
CHANGED TYPE 'C' LIGHT TO OPTIONAL		3/15/2011



WHEN ROAD ENDS

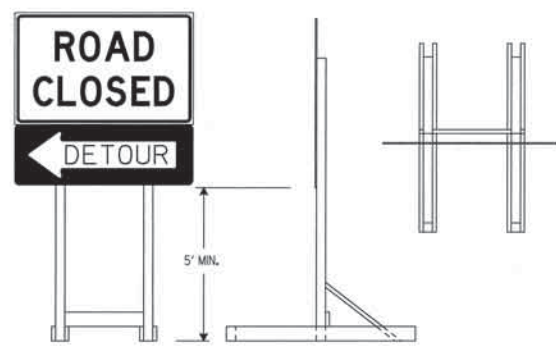
PERMANENT TYPE III(A/B) BARRICADE
(DIMENSIONS ARE TYPICAL FOR BOTH BARRICADES)



FOR T-INTERSECTIONS

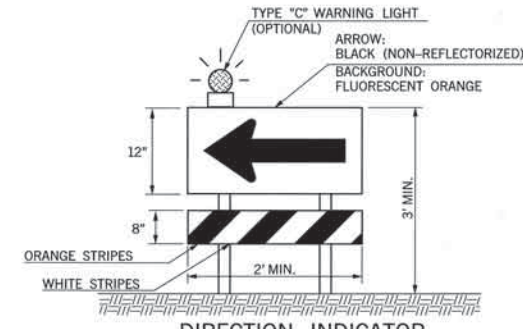
NOTES: A PERMANENT BARRICADE TYPE III(A) SHALL CONSIST OF NINE (9) PANELS AND SIX (6) POSTS.
TYPICAL INSTALLATION AS SHOWN IS FOR AN ABSOLUTE CLOSURE.
BARRICADES SHOULD NOT BE PLACED PARALLEL TO TRAFFIC IF NOT OUTSIDE OF CLEAR ZONE.

PERMANENT BARRICADE TYPE III(B) WILL BE IDENTICAL TO TYPE III(A) WITH NINE (9) ADDITIONAL REFLECTORIZED 3/4"x12" LUMBER PANELS ATTACHED TO THE BACK SIDE OF THE BARRICADE.
COLOR: BACKGROUND - WHITE (REFLECTORIZED)
DIAGONAL STRIPES - RED (REFLECTORIZED)

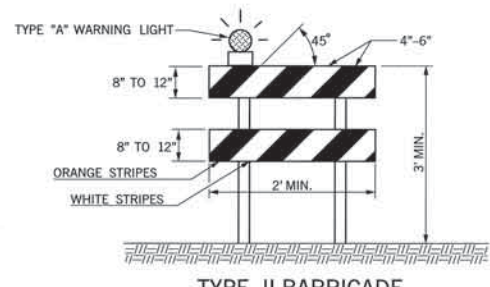


Skid-Mounted Sign Support with plywood sign

LONG INTERMEDIATE TERM STATIONARY PORTABLE SIGN SUPPORTS
5 Foot Mounting Height
(SKID MOUNTED)
(SHALL BE PLACED BEHIND TYPE III BARRICADE)



DIRECTION INDICATOR BARRICADE



TYPE II BARRICADE

NOTES: FOR WOODEN BARRICADES NOMINAL LUMBER DIMENSIONS WILL BE SATISFACTORY.
FOR RAILS LESS THAN 3 FEET LONG, 4 INCH WIDE STRIPES SHALL BE USED.
TYPE III BARRICADES SHALL BE CONSTRUCTED USING A MINIMUM OF TWO (2) POSTS.
FOR WOODEN BARRICADES, PANEL THICKNESS SHALL NOT EXCEED ONE-HALF INCH (1/2").
BARRICADES SHOULD NOT BE PLACED PARALLEL TO TRAFFIC IF NOT OUTSIDE OF CLEAR ZONE.

PROJECTS WITH WORK LIMITS OF 2.0 MILES OR MORE IN LENGTH WILL REQUIRE THE G20-1A SIGN. THE SIGN (G20-1A) WILL BE REQUIRED ON ONE SIDE OF A 2-LANE ROADWAY AND BOTH SIDES OF A DIVIDED HIGHWAY.

ALL BARRICADE STRIPES SHALL BE RETROREFLECTIVE.
COLOR: BACKGROUND - WHITE (REFLECTORIZED)
DIAGONAL STRIPES - FLUORESCENT ORANGE (REFLECTORIZED)

IF BARRICADES ARE USED TO CHANNELIZE PEDESTRIANS, THERE SHALL BE CONTINUOUS DETECTABLE BOTTOM AND TOP RAILS WITH NO GAPS BETWEEN INDIVIDUAL BARRICADES TO BE DETECTABLE TO USERS OF LONG CANES. THE BOTTOM OF THE BOTTOM RAIL SHALL BE NO HIGHER THAN 6 INCHES ABOVE THE GROUND SURFACE. THE TOP OF THE TOP RAIL SHALL BE NO LOWER THAN 36 INCHES ABOVE THE GROUND SURFACE.

SIGNS MOUNTED ON TYPE III BARRICADES SHOULD NOT COVER MORE THAN 50 PERCENT OF THE TOP TWO RAILS OR 33 PERCENT OF THE TOTAL AREA OF THE THREE RAILS

SIGNS MOUNTED ON BARRICADES, OR OTHER PORTABLE SUPPORTS, SHALL BE NO LESS THAN 1' ABOVE THE TRAVELED WAY.

SANDBAGS MAY BE PLACED ON LOWER PARTS OF THE FRAME OR THE STAYS OF BARRICADES TO PROVIDE THE REQUIRED BALLAST.

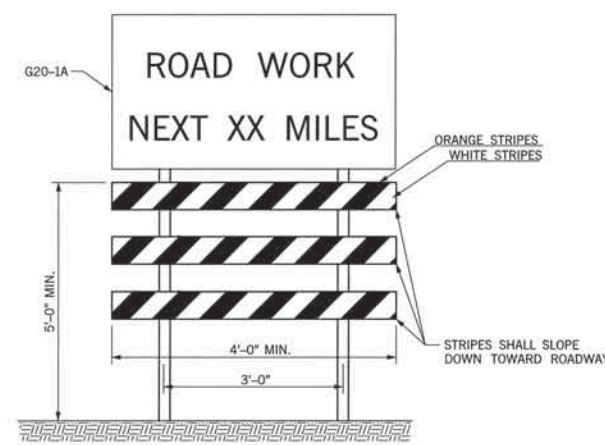
BALLAST SHALL NOT BE PLACED ON TOP OF ANY STRIPED RAIL. BARRICADES SHALL NOT BE BALLASTED BY NONDEFORMABLE OBJECTS SUCH AS ROCKS OR CHUNKS OF CONCRETE. BALLAST SHALL NOT EXTEND INTO THE ACCESSIBLE PASSAGE WIDTH OF 60".

DIRECTION INDICATOR BARRICADE SHALL CONSIST OF A ONE-DIRECTION LARGE ARROW (W1-6) SIGN MOUNTED ABOVE A DIAGONAL STRIPED, HORIZONTALLY ALIGNED, RETROREFLECTIVE RAIL.

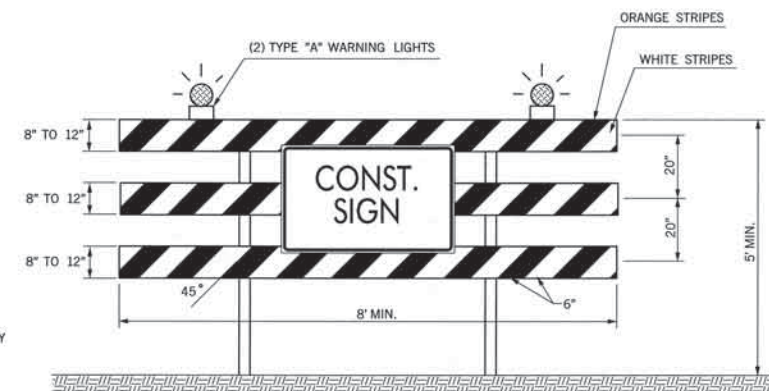
WHERE BARRICADES EXTEND ENTIRELY ACROSS A ROADWAY, THE STRIPES SHOULD SLOPE DOWNWARD IN THE DIRECTION TOWARD WHICH ROAD USERS MUST TURN.

WHERE BOTH RIGHT AND LEFT TURNS ARE PROVIDED, THE BARRICADE STRIPES SHOULD SLOPE DOWNWARD IN BOTH DIRECTIONS FROM THE CENTER OF THE BARRICADE OR BARRICADES.

WHERE NO TURNS ARE INTENDED, THE STRIPES SHOULD BE POSITIONED TO SLOPE DOWNWARD TOWARD THE CENTER OF THE BARRICADE OR BARRICADES.

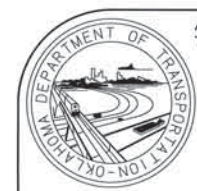


WING BARRICADE



TYPE III BARRICADE

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
880(B)	CONSTRUCTION SIGNS	SD
880(C)	CONSTRUCTION BARRICADES	SD
880(E)	WARNING LIGHTS	SD



APPROVED BY TRAFFIC ENGINEER: *[Signature]* DATE: 3/21/11

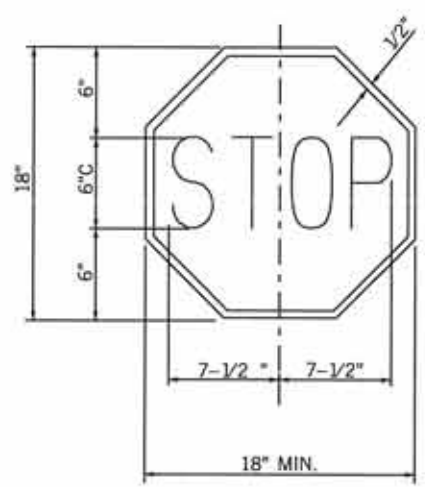
TRAFFIC STANDARD
TRAFFIC CONTROL STANDARD
TRAFFIC CONTROL DEVICES

2009 SPECIFICATIONS

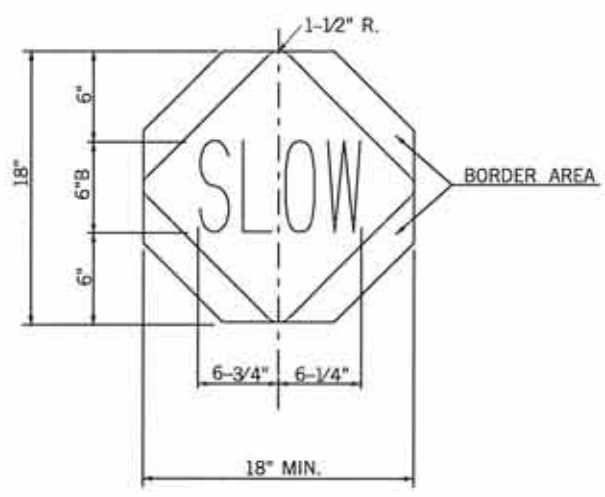
TCS4-1	01
T-504	

\$\$\$date\$\$\$

DESCRIPTION	REVISIONS	DATE

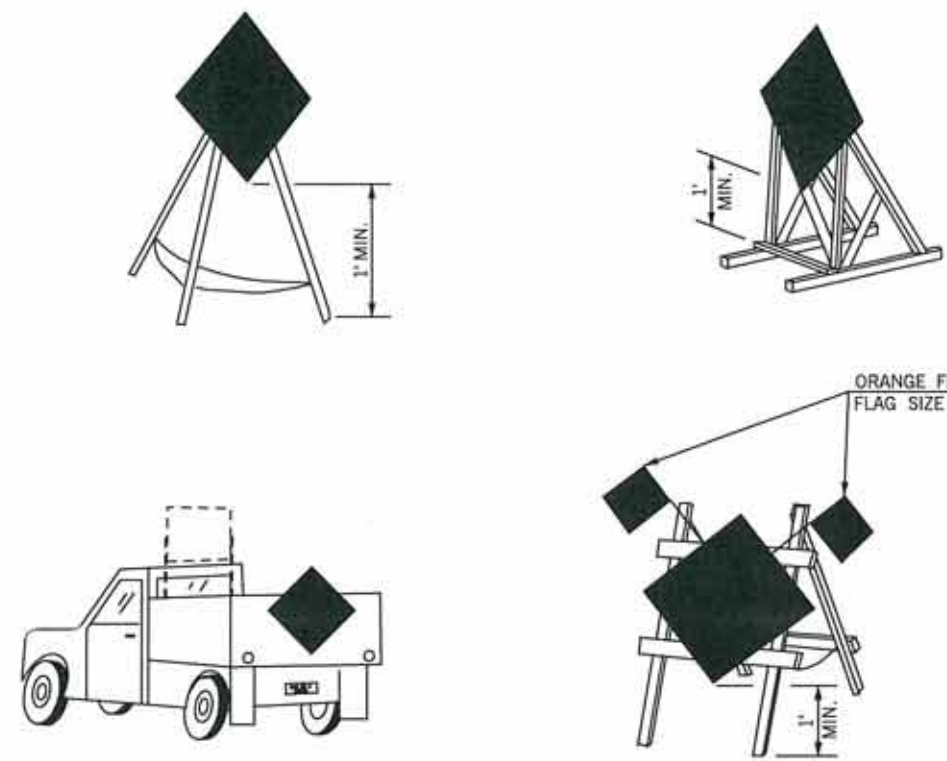


STOP:
LEGEND AND BORDER: WHITE (REFLECTORIZED)
BACKGROUND: RED (REFLECTORIZED)



SLOW:
LEGEND AND BORDER AREA: BLACK (NON-REFLECTORIZED)
BACKGROUND: ORANGE (REFLECTORIZED)

STOP-SLOW PADDLE

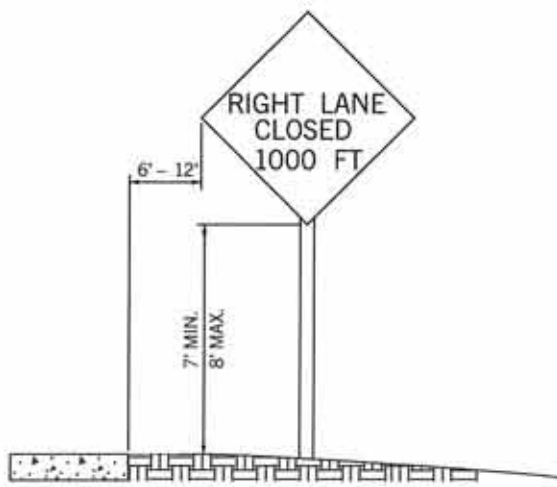


NOTE:
THE BOTTOM OF SIGNS MOUNTED ON BARRICADES OR TEMPORARY SUPPORTS SHALL NOT BE LESS THAN 1 FOOT ABOVE THE TRAVELED WAY.

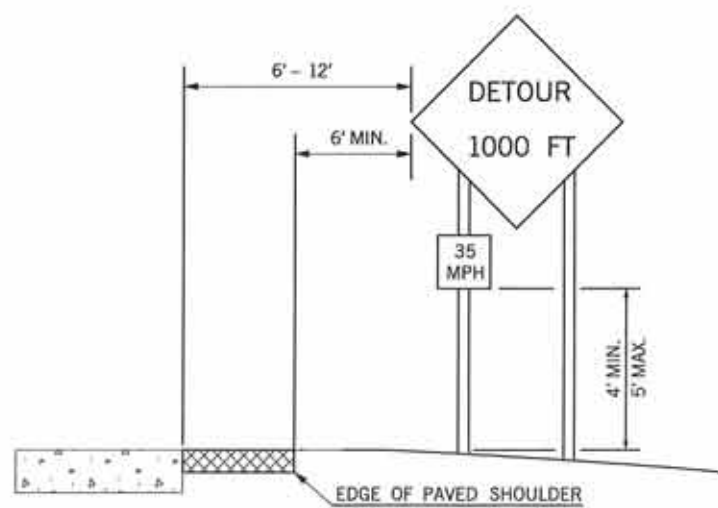
PORTABLE AND TEMPORARY MOUNTINGS
METHODS OF MOUNTING SIGNS OTHER THAN ON POSTS



URBAN DISTRICT
(WITH CURB)



URBAN DISTRICT
(WITHOUT CURB)



RURAL DISTRICT WITH
ADVISORY SPEED PLATE



RURAL DISTRICT

HEIGHT AND LATERAL LOCATIONS OF SIGNS - TYPICAL INSTALLATIONS

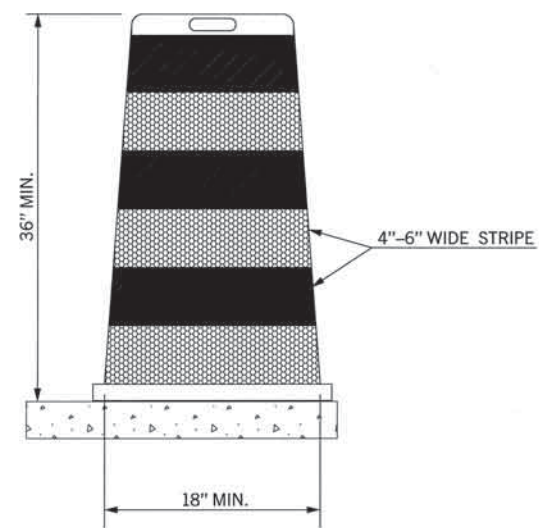


APPROVED BY
TRAFFIC ENGINEER: *Cheryl Smith* DATE: 6/23/10
TRAFFIC STANDARD

TRAFFIC CONTROL STANDARD
TYPICAL SIGN INSTALLATION

TRFPC36 M:\2009_Standards_TC\505.dgn 8:16:51 AM 6/2/2010 d:\usr2\flib\leroyh.pen R:\TRAF_FLOT\bw.tbl

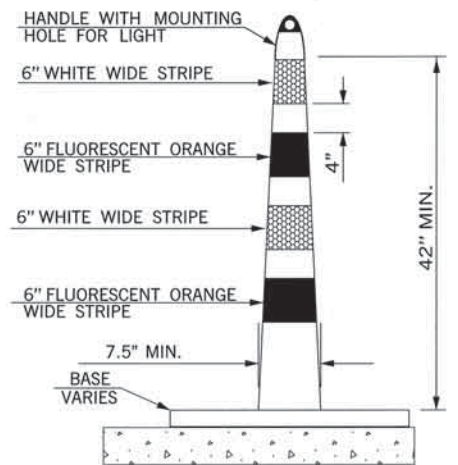
DESCRIPTION	REVISIONS	DATE
ADD NOTE TO VERTICAL PANEL		07/19/10
CHANGED TYPE "C" LIGHT TO OPTIONAL		3/15/2011



DRUM

NOTES:

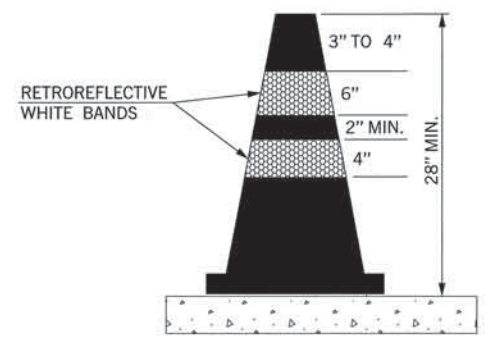
METAL DRUMS SHALL NOT BE USED.
 EACH DRUM SHALL HAVE A MINIMUM OF TWO (2) FLUORESCENT ORANGE STRIPES ALTERNATING WITH A MINIMUM OF TWO (2) WHITE STRIPES. THESE STRIPES SHALL CONSIST OF RETROREFLECTIVE SHEETING.
 BALLAST SHALL NOT BE PLACED ON TOP OF A DRUM.
 DRUMS SHALL NOT BE USED TO DELINEATE AN EDGE DROP OFF IF THEY MUST BE PLACED IN THE DROP OFF AREA BELOW THE LEVEL OF THE DRIVING SURFACE.



CHANNELIZER CONE

NOTES:

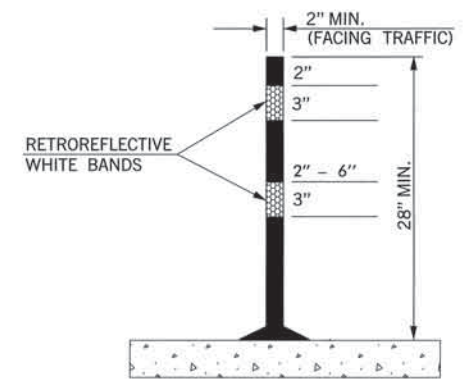
CHANNELIZER CONES USED ON HIGH SPEED ROADWAYS, ON ALL HIGHWAYS DURING NIGHTTIME, OR WHENEVER MORE CONSPICUOUS GUIDANCE IS NEEDED SHALL BE A MINIMUM OF 42 INCHES HIGH.
 EACH CHANNELIZER CONES SHALL HAVE A MINIMUM OF TWO (2) FLUORESCENT ORANGE STRIPES ALTERNATING WITH A MINIMUM OF TWO (2) WHITE STRIPES. THESE STRIPES SHALL CONSIST OF RETROREFLECTIVE SHEETING.
 BASE SHALL WEIGH 30 LBS. OR MORE.



CONE

NOTES:

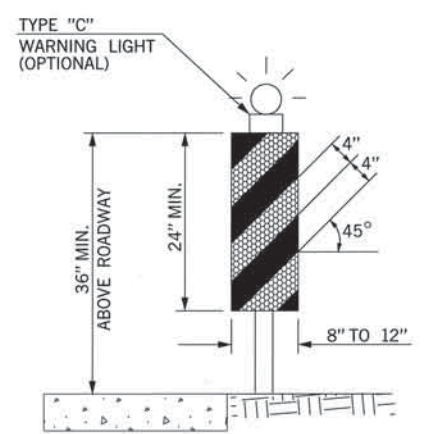
CONES USED ON HIGH SPEED ROADWAYS, ON ALL HIGHWAYS DURING NIGHTTIME, OR WHENEVER MORE CONSPICUOUS GUIDANCE IS NEEDED SHALL BE A MINIMUM OF 28 INCHES HIGH.
 CONES SHALL BE PREDOMINANTLY ORANGE, WITH WHITE RETROREFLECTIVE SHEETING.



TUBE CHANNELIZER

NOTES:

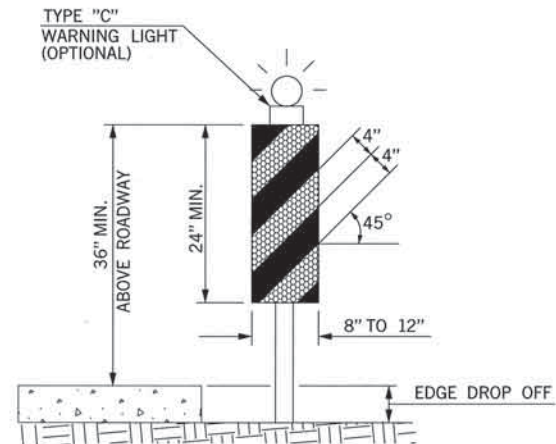
TUBE CHANNELIZERS USED ON HIGH SPEED ROADWAYS, ON ALL HIGHWAYS DURING NIGHTTIME, OR WHENEVER MORE CONSPICUOUS GUIDANCE IS NEEDED SHALL BE A MINIMUM OF 28 INCHES HIGH.
 TUBE CHANNELIZERS SHALL BE PREDOMINANTLY ORANGE, WITH WHITE RETROREFLECTIVE SHEETING.



**VERTICAL PANEL
W/O DROP OFF**

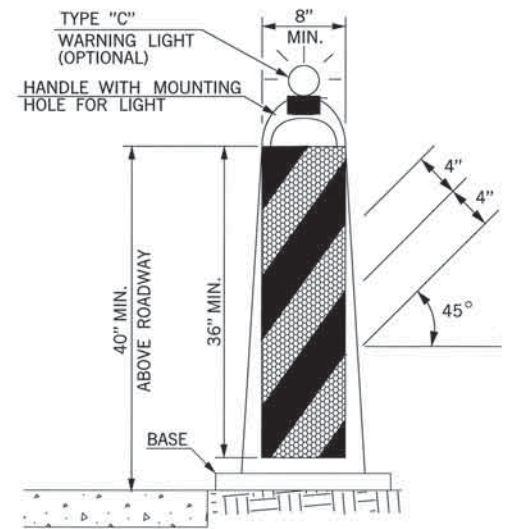
NOTES:

PANEL STRIPE WIDTHS SHALL BE 6 INCHES EXCEPT WHERE PANEL LENGTHS ARE LESS THAN 36 INCHES, THEN 4 INCH WIDE STRIPES MAY BE USED.
 MARKINGS FOR VERTICAL PANELS SHALL BE ALTERNATING FLUORESCENT ORANGE AND WHITE RETROREFLECTORIZED STRIPES (SLOPING DOWNWARD AT AN ANGLE OF 45 DEGREES IN THE DIRECTION TRAFFIC IS TO PASS).
 SHALL HAVE A MINIMUM OF TWO (2) FULL FLUORESCENT ORANGE STRIPES.



**VERTICAL PANEL
W/DROP OFF**

ON UNDIVIDED HIGHWAYS, VERTICAL PANELS SHALL HAVE A MINIMUM OF 192 SQUARE INCHES OF RETROREFLECTIVE SHEETING ON EACH PANEL (FRONT AND BACK). WHEN USED ON HIGH SPEED ROADWAYS, VERTICAL PANELS SHALL HAVE MINIMUM OF 270 SQUARE INCHES OF RETROREFLECTIVE SHEETING ON EACH PANEL (FRONT AND BACK). THIS SHALL CONSTITUTE ONE (1) COMPLETE VERTICAL PANEL.
 ON DIVIDED HIGHWAYS A VERTICAL PANEL MAY HAVE SHEETING ON ONLY ONE SIDE.



STACKABLE VERTICAL PANEL

NOTES:

(1) VERTICAL PANEL SIGNS SHALL BE MOUNTED BACK TO BACK WHEN USED FOR TWO-WAY TRAFFIC.
 (2) BASE SHALL BE NO LARGER THAN 28" LONG BY 20" WIDE, AND 2" THICK.
 (3) BASE SHALL WEIGHT 30 LBS. OR MORE.
 (4) THESE DEVICES SHALL BE CONSTRUCTED OF A MATERIAL THAT CAN BE STRUCK WITHOUT DAMAGING VEHICLES ON IMPACT.

KEY:

	FLUORESCENT ORANGE (REFLECTORIZED)
	WHITE (REFLECTORIZED)

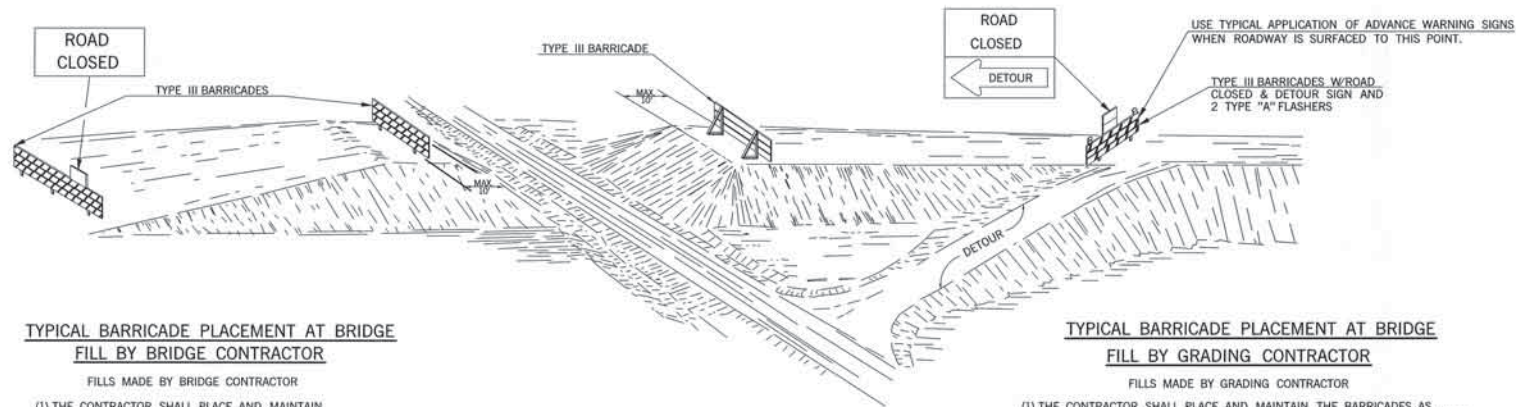
BASIS OF PAYMENT

ITEM NO.	ITEM	UNIT
880(D)	VERTICAL PANEL	SD
880(E)	WARNING LIGHTS	SD
880(F)	DRUMS	SD
880(G)	TUBE CHANNELIZERS	SD
880(H)	CONES	SD
880(I)	CHANNELIZER CONES	SD



APPROVED BY TRAFFIC ENGINEER: *[Signature]* DATE: 3/21/11

TRAFFIC STANDARD
CHANNELIZING DEVICES

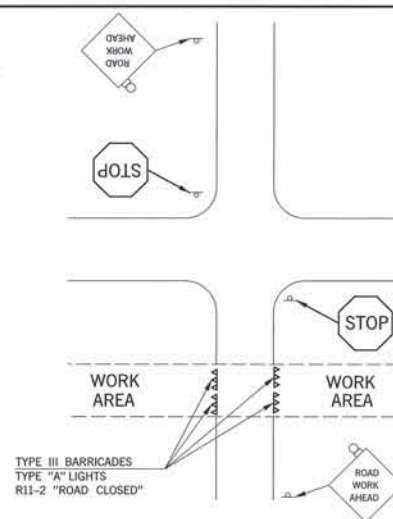


TYPICAL BARRICADE PLACEMENT AT BRIDGE FILL BY BRIDGE CONTRACTOR

- FILLS MADE BY BRIDGE CONTRACTOR
- (1) THE CONTRACTOR SHALL PLACE AND MAINTAIN THE BARRICADES AS SHOWN UNTIL THEY ARE NO LONGER NEEDED.
 - (2) THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO REMOVAL OF THE BARRICADES.
 - (3) THE ENGINEER SHALL NOTIFY THE GRADING CONTRACTOR TO FURNISH AND ERECT HIS BARRICADES "IMMEDIATELY" AFTER THE BRIDGE CONTRACTOR REMOVES HIS BARRICADES. THE GRADING CONTRACTOR SHALL MAINTAIN HIS BARRICADES UNTIL FINAL INSPECTION OR UNTIL THEY ARE NO LONGER NEEDED.
 - (4) BARRICADES AT BRIDGE FILL SHALL BE IN PLACE AND MAINTAINED AT ALL TIMES UNTIL OPENED TO TRAFFIC. HOWEVER, BARRICADES MAY BE REMOVED OR ADJUSTED, AS NEEDED, TO ALLOW ACCESS TO THE WORK AREA.

TYPICAL BARRICADE PLACEMENT AT BRIDGE FILL BY GRADING CONTRACTOR

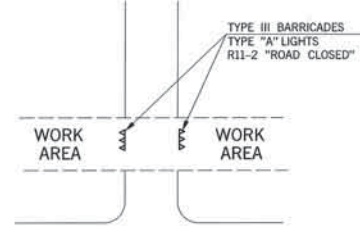
- FILLS MADE BY GRADING CONTRACTOR
- (1) THE CONTRACTOR SHALL PLACE AND MAINTAIN THE BARRICADES AS SHOWN UNTIL FINAL INSPECTION OR UNTIL THEY ARE NO LONGER NEEDED.
 - (2) THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO REMOVAL OF THE BARRICADES.
 - (3) IF THE BRIDGE WORK ORDER IS ISSUED PRIOR TO COMPLETION OF THE GRADING CONTRACT, THE BRIDGE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE GRADING CONTRACTOR TO ASSUME RESPONSIBILITY FOR PROTECTION OF THE BRIDGE WORK AREA. THIS WILL INCLUDE FURNISHING, INSTALLING, AND MAINTAINING ALL BARRICADES AND SIGNS NECESSARY TO PROVIDE THAT PROTECTION UNTIL THE BRIDGE IS COMPLETED AND THE FINAL INSPECTION IS COMPLETED.
 - (4) IF THE BRIDGE WORK ORDER HAS NOT BEEN ISSUED PRIOR TO THE FINAL INSPECTION OF THE GRADING, THEN THE GRADING CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE OKLAHOMA DEPARTMENT OF TRANSPORTATION FOR STATE FORCES TO SUPPLY, INSTALL AND MAINTAIN ANY NECESSARY TRAFFIC CONTROL DEVICES NEEDED TO PROTECT THE WORK AREA. THESE STATE OWNED DEVICES SHALL REMAIN IN PLACE UNTIL SUCH TIME THAT THE BRIDGE WORK ORDER IS ISSUED. AT THAT TIME THE BRIDGE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR TRAFFIC CONTROL AND REPLACE THE STATE OWNED DEVICES WITH HIS OWN.
 - (5) SUFFICIENT NUMBER OF TYPE II BARRICADES WITH SIGNS SHALL BE USED TO COMPLETELY CLOSE THE WORK AREA TO THROUGH TRAFFIC.
 - (6) BARRICADES AT BRIDGE FILL SHALL BE IN PLACE AND MAINTAINED AT ALL TIMES UNTIL OPENED TO TRAFFIC. HOWEVER, BARRICADES MAY BE REMOVED OR ADJUSTED, AS NEEDED, TO ALLOW ACCESS TO THE WORK AREA.



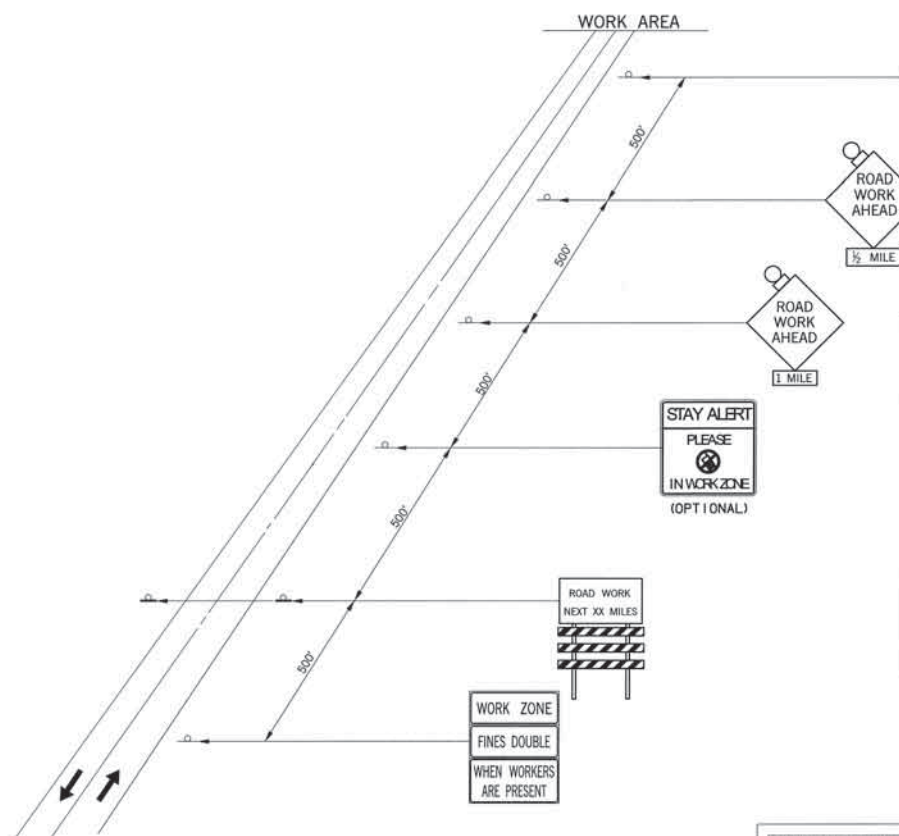
TYPICAL SIGN PLACEMENT FOR INTERSECTING ROADS AND STREETS

DESCRIPTION	REVISIONS	DATE
MODIFIED NOTE		3/16/2011
ADD "NO CELL PHONE" USAGE IN WORK ZONE DISTANCE SIGN TO WARNING SIGNS		4/2/2013

- NOTES:
- (1) SIGNS SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
 - (2) FLASHING WARNING LIGHTS SHALL BE USED TO CALL ATTENTION TO THE EARLY WARNING SIGNS.
 - (3) WARNING LIGHTS SHOULD BE USED TO MARK CHANNELIZING DEVICES AT NIGHT AS NEEDED.
 - (4) PLACEMENT OF TYPE III BARRICADES SHALL BE APPROVED BY THE ENGINEER.
 - (5) TYPE II BARRICADES, DRUMS AND/OR VERTICAL PANELS MAY BE SUBSTITUTED FOR TYPE III BARRICADES TO AVOID OBSTRUCTING THE MOTORIST'S VIEW.
 - (6) IF TWO OR MORE DRIVEWAYS ARE IN CLOSE PROXIMITY, THE BARRICADES BETWEEN THE DRIVEWAYS MAY BE OMITTED AT THE DISCRETION OF THE ENGINEER.
 - (7) THE "ROAD WORK AHEAD" SIGN, WHICH SERVES AS A GENERAL WARNING OF OBSTRUCTIONS OR RESTRICTIONS, SHALL BE LOCATED ON ALL INTERSECTING ROADS AND STREETS.



TYPICAL SIGN PLACEMENT FOR PRIVATE DRIVE OR RESIDENCE



TYPICAL APPLICATION ADVANCE WARNING SIGNS ON 2-LANE HIGHWAY

TYPICAL CONSTRUCTION WARNING SIGNS WITH MESSAGES OTHER THAN DETAILED ON STANDARD DRAWINGS SHALL BE CONSTRUCTED USING THE LARGEST POSSIBLE LETTER SIZE. SIGN SIZE AND COLOR SHALL BE THE SAME AS OTHER CONSTRUCTION WARNING SIGNS USED FOR SIMILAR CONDITIONS.

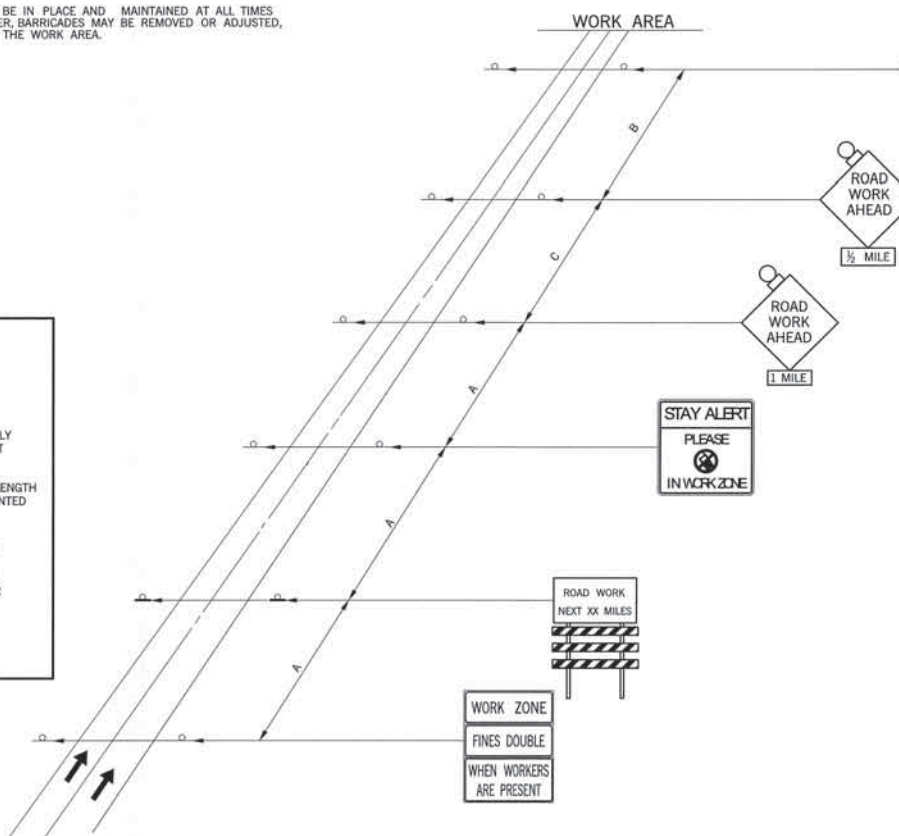
FINES DOUBLE IN WORK ZONE SIGNS ARE TO BE USED ONLY ON STATE OR FEDERAL HIGHWAYS WHERE THE SPEED LIMIT IS REDUCED OR AS DIRECTED BY THE ENGINEER.

PROJECTS WITH WORK LIMITS OF 1.0 MILES OR MORE IN LENGTH WILL REQUIRE THE Q20-1A SIGN. THE SIGN SHALL BE MOUNTED AS SHOWN ON TCS4-1 (LATEST REVISION).

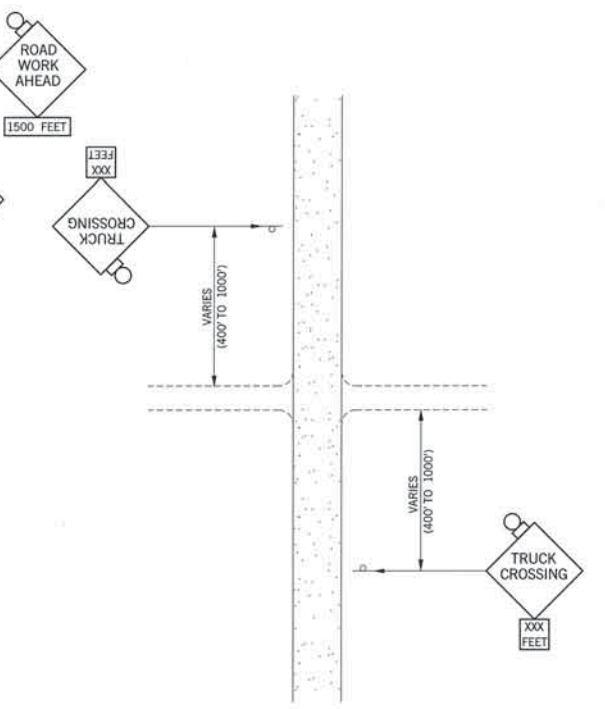
WARNING SIGNS SHOWN ARE "ADVANCE" WARNING SIGNS AND ARE REQUIRED ON ALL STATE HIGHWAYS. ADDITIONAL WARNING SIGNS MAY BE REQUIRED WITHIN THE PROJECT LIMITS TO WARN DRIVERS OF SPECIFIC HAZARDS. ADVANCE "WARNING SIGNS" MAY CHANGE AS CONDITIONS CHANGE OR AS DIRECTED BY THE ENGINEER.

PROJECT WORK OF 1.0 MILE OR MORE IN LENGTH WILL REQUIRE SIGNS CS-14 AND R2-1 TO BE PLACED EVERY 1/2 MILE THROUGH WORK ZONE.

ROAD TYPE	DISTANCE BETWEEN SIGNS SHALL BE A (MIN.)		
	A (FT)	B (FT)	C (FT)
URBAN (LOW SPEED)	100	100	100
URBAN (HIGH SPEED)	350	350	350
RURAL	500	500	500
EXPRESSWAY /FREEWAY	1,000	1,500	2,640



TYPICAL APPLICATION ADVANCE WARNING SIGNS ON A DIVIDED HIGHWAY



TYPICAL APPLICATION ADVANCE SIGNING WHERE TRUCKS ARE CROSSING



APPROVED BY TRAFFIC ENGINEER: *David S. ...* DATE: 4/18/2013

TRAFFIC STANDARD TRAFFIC CONTROL STANDARD PLACEMENT OF ADVANCE WARNING SIGNS

2009 SPECIFICATIONS

TCS7-1	02
	T-507

SSdateSS

DESCRIPTION	REVISIONS	DATE



STOP

R1-1 30 x 30 5.18 SF
 R1-1E 36 x 36 7.46 SF
 R1-1F 48 x 48 13.26 SF

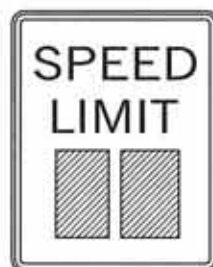
COLOR:
 LEGEND AND BORDER:
 WHITE (REFLECTORIZED)
 BACKGROUND:
 RED (TRANSPARENT REFLECTORIZED)



YIELD

R1-2 36 x 36 x 36 3.90 SF
 R1-2E 48 x 48 x 48 6.93 SF
 R1-2F 60 x 60 x 60 10.83 SF

COLOR:
 LEGEND AND BORDER:
 RED (TRANSPARENT REFLECTORIZED)
 BACKGROUND:
 WHITE (REFLECTORIZED)



SPEED LIMIT

R2-1()^{SPEED} 24 x 30 5.00 SF
 R2-1E() 36 x 48 12.00 SF
 R2-1F() 48 x 60 20.00 SF

COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 WHITE (REFLECTORIZED)



NO RIGHT TURN

R3-1 24 x 24 4.00 SF
 R3-1E 36 x 36 9.00 SF
 R3-1F 48 x 48 16.00 SF

COLOR:
 ARROW AND BORDER:
 BLACK (NON-REFLECTORIZED)
 CIRCLE AND DIAGONAL:
 RED (TRANSPARENT REFLECTORIZED)
 BACKGROUND:
 WHITE (REFLECTORIZED)



NO LEFT TURN

R3-2 24 x 24 4.00 SF
 R3-2E 36 x 36 9.00 SF
 R3-2F 48 x 48 16.00 SF

COLOR:
 ARROW AND BORDER:
 BLACK (NON-REFLECTORIZED)
 CIRCLE AND DIAGONAL:
 RED (TRANSPARENT REFLECTORIZED)
 BACKGROUND:
 WHITE (REFLECTORIZED)



KEEP RIGHT SIGN

R4-7 24 x 30 5.00 SF
 R4-7E 36 x 48 12.00 SF
 R4-7F 48 x 60 20.00 SF

COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 WHITE (REFLECTORIZED)



KEEP LEFT SIGN

R4-8 24 x 30 5.00 SF
 R4-8E 36 x 48 12.00 SF
 R4-8F 48 x 60 20.00 SF

COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 WHITE (REFLECTORIZED)



KEEP RIGHT

R4-7a(R) 24 x 30 5.00 SF
 R4-7a(R)E 36 x 48 12.00 SF
 R4-7a(R)F 48 x 60 20.00 SF

COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 WHITE (REFLECTORIZED)



KEEP LEFT

R4-7a(L) 24 x 30 5.00 SF
 R4-7a(L)E 36 x 48 12.00 SF
 R4-7a(L)F 48 x 60 20.00 SF

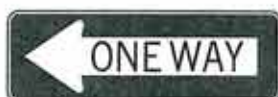
COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 WHITE (REFLECTORIZED)



DO NOT ENTER

R5-1 30 x 30 6.25 SF
 R5-1E 36 x 36 9.00 SF
 R5-1F 48 x 48 16.00 SF

COLOR:
 SYMBOL: :
 RED (TRANSPARENT REFLECTORIZED)
 LEGEND AND BACKGROUND: :
 WHITE (REFLECTORIZED)



ONE WAY

R6-1(L) 36 x 12 3.00 SF
 R6-1E(L) 54 x 18 6.75 SF
 R6-1F(L) 54 x 18 6.75 SF

COLOR:
 ARROW AND BORDER:
 WHITE (NON-REFLECTORIZED)
 LEGEND AND BACKGROUND:
 BLACK (REFLECTORIZED)



ONE WAY

R6-1(R) 36 x 12 3.00 SF
 R6-1E(R) 54 x 18 6.75 SF
 R6-1F(R) 54 x 18 6.75 SF

COLOR:
 ARROW AND BORDER:
 WHITE (NON-REFLECTORIZED)
 LEGEND AND BACKGROUND:
 BLACK (REFLECTORIZED)



STOP HERE ON RED

R10-6 24 x 36 6.00 SF

COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 WHITE (REFLECTORIZED)

NOTES:
 WORD SIGNS MAY BE USED IF SYMBOL SIGNS ARE NOT AVAILABLE EITHER IN "STANDARD HIGHWAY SIGNS MANUAL" OR IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) (CURRENT EDITION).

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
880(B)	CONSTRUCTION SIGNS	SD



APPROVED BY
 TRAFFIC ENGINEER *Charles Smith* DATE 6/23/10

TRAFFIC STANDARD
 TRAFFIC CONTROL STANDARD
 CONSTRUCTION SIGNS



ROAD CLOSED

R11-2 48 x 30 10.00 SF

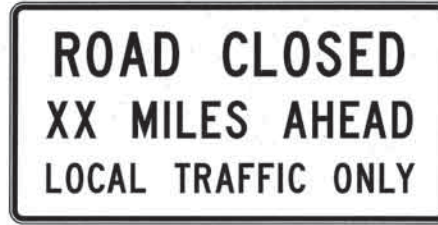
COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
WHITE (REFLECTORIZED)



LANE CLOSED

R11-2(LANE) 48 x 30 10.00 SF

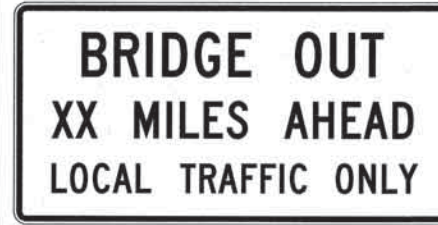
COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
WHITE (REFLECTORIZED)



ROAD CLOSED XX MILES AHEAD

R11-3a 60 x 30 12.50 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
WHITE (REFLECTORIZED)



BRIDGE OUT XX MILES AHEAD

R11-3b 60 x 30 12.50 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
WHITE (REFLECTORIZED)



ROAD CLOSED TO THRU TRAFFIC

R11-4 60 x 30 12.50 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
WHITE (REFLECTORIZED)



DETOUR SIGN

M4-8 24 x 12 2.00 SF
M4-8E 30 x 15 3.13 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



DETOUR SIGN

M4-9(R) 30 x 24 5.00 SF
M4-9(R)E 48 x 36 12.00 SF
M4-9(R)F 60 x 48 20.00 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



DETOUR SIGN

M4-9(L) 30 x 24 5.00 SF
M4-9(L)E 48 x 36 12.00 SF
M4-9(L)F 60 x 48 20.00 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



DETOUR SIGN

M4-9(V) 30 x 24 5.00 SF
M4-9(V)E 48 x 36 12.00 SF
M4-9(V)F 60 x 48 20.00 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



DETOUR SIGN

M4-10(R) 48 x 18 6.00 SF

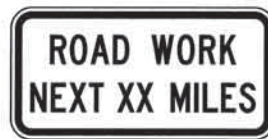
COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



DETOUR SIGN

M4-10(L) 48 x 18 6.00 SF

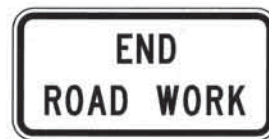
COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



ROAD WORK NEXT XX MILES SIGN

G20-1A 36 x 18 4.50 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



END ROAD WORK SIGN

G20-2A 36 x 18 4.50 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



PILOT CAR FOLLOW ME SIGN

G20-4 36 x 18 4.50 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)

NOTES:
WORD SIGNS MAY BE USED IF SYMBOL SIGNS ARE NOT AVAILABLE EITHER IN "STANDARD HIGHWAY SIGNS MANUAL" OR IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) (CURRENT EDITION).

ALL DIAMOND SHAPE CONSTRUCTION WARNING SIGNS SHALL BE 48 INCHES X 48 INCHES UNLESS OTHERWISE NOTED IN THE PLANS.

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
880(B)	CONSTRUCTION SIGNS	SD



APPROVED BY
TRAFFIC ENGINEER: *David Gandy* DATE: 3/21/11

TRAFFIC STANDARD
TRAFFIC CONTROL STANDARD
CONSTRUCTION SIGNS



TURN LEFT

W1-1(L) 48 x 48 16.00 SF

COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



TURN RIGHT

W1-1(R) 48 x 48 16.00 SF

COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



CURVE LEFT

W1-2(L) 48 x 48 16.00 SF

COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



CURVE RIGHT

W1-2(R) 48 x 48 16.00 SF

COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



LEFT REVERSE TURN

W1-3(L) 48 x 48 16.00 SF

COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



RIGHT REVERSE TURN

W1-3(R) 48 x 48 16.00 SF

COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



LEFT REVERSE CURVE

W1-4(L) 48 x 48 16.00 SF

COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



RIGHT REVERSE CURVE

W1-4(R) 48 x 48 16.00 SF

COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



LEFT REVERSE CURVE

W1-4B(L) 48 x 48 16.00 SF

COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



RIGHT REVERSE CURVE

W1-4B(R) 48 x 48 16.00 SF

COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



LEFT REVERSE CURVE

W1-4C(L) 48 x 48 16.00 SF

COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



RIGHT REVERSE CURVE

W1-4C(R) 48 x 48 16.00 SF

COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



ARROW

W1-6 48 x 24 8.00 SF
W1-6E 60 x 30 12.50 SF

COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)



DOUBLE ARROW

W1-7 48 x 24 8.00 SF
W1-7E 60 x 30 12.50 SF

COLOR:
SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE
(REFLECTORIZED)

DESCRIPTION	REVISIONS	DATE

NOTES:
WORD SIGNS MAY BE USED IF SYMBOL SIGNS ARE NOT AVAILABLE EITHER IN "STANDARD HIGHWAY SIGNS MANUAL" OR IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) (CURRENT EDITION).

ALL DIAMOND SHAPE CONSTRUCTION WARNING SIGNS SHALL BE 48 INCHES X 48 INCHES UNLESS OTHERWISE NOTED IN THE PLANS.

* SUPPLEMENTAL SIGNS SHALL ONLY BE USED IN CONJUNCTION WITH DIAMOND SHAPE CONSTRUCTION WARNING SIGNS. THE SIZE OF SUPPLEMENTAL SIGNS SHALL BE APPROPRIATE FOR USE WITH A 48 INCH X 48 INCH WARNING SIGN UNLESS OTHERWISE NOTED IN THE PLANS.

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
880(B)	CONSTRUCTION SIGNS	SD



APPROVED BY TRAFFIC ENGINEER *David G. Smith* DATE: 6/23/10
TRAFFIC STANDARD

TRAFFIC CONTROL STANDARD
CONSTRUCTION SIGNS

2009 SPECIFICATIONS

TCS10-1 00
T-510

TRFFC36 M:\2009 Standards TC\1510.dgn 8:18:46 AM 6/22/2010 d:\usr2\rlis\erayh.pain B:\TRAF PLOT\low.tbl

T:\Traffic\TRAFFIC STD CURRENT\2009\DRAWINGS\TCS11-1-01 1511.dgn 10:38:39 AM 7/19/2010 R:\TRAFFIC_PLOT\erohy.pan R:\TRAFFIC_PLOT\bw.tbl

DESCRIPTION	REVISIONS	DATE
CHANGE DESIGN NUMBER		07/19/10



CHEVRON

W1-8 18 x 24 3.00 SF
 W1-8E 30 x 36 7.50 SF
 W1-8F 36 x 48 12.00 SF

COLOR:
 SYMBOL AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE
 (REFLECTORIZED)



STOP AHEAD

W3-1 48 x 48 16.00 SF

COLOR:
 BORDER AND ARROW:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)
 SYMBOL:
 WHITE BORDER ON RED BACKGROUND
 (REFLECTORIZED)



YIELD AHEAD

W3-2 48 x 48 16.00 SF

COLOR:
 BORDER AND ARROW:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)
 SYMBOL:
 WHITE BORDER ON RED BACKGROUND
 (REFLECTORIZED)



SIGNAL AHEAD

W3-3 48 x 48 16.00 SF

COLOR:
 SYMBOL AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)
 R = RED (REFLECTORIZED)
 Y = YELLOW (REFLECTORIZED)
 G = GREEN (REFLECTORIZED)



BE PREPARED TO STOP

BE PREPARED TO STOP SIGN

W3-4 48 x 48 16.00 SF

COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



SPEED REDUCTION

W3-5 48 x 48 16.00 SF

COLOR:
 BORDER AND ARROW:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)
 SYMBOL:
 BLACK BORDER AND TEXT ON
 WHITE BACKGROUND (REFLECTORIZED)



LEFT LANE ENDS

W4-2(L) 48 x 48 16.00 SF

COLOR:
 SYMBOL AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



RIGHT LANE ENDS

W4-2(R) 48 x 48 16.00 SF

COLOR:
 SYMBOL AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



ROAD NARROWS

ROAD NARROWS

W5-1 48 x 48 16.00 SF

COLOR:
 SYMBOL AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



NARROW BRIDGE

NARROW BRIDGE

W5-2 48 x 48 16.00 SF

COLOR:
 SYMBOL AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)

NOTES:
 WORD SIGNS MAY BE USED IF SYMBOL SIGNS ARE NOT AVAILABLE EITHER IN "STANDARD HIGHWAY SIGNS MANUAL" OR IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) (CURRENT EDITION).

ALL DIAMOND SHAPE CONSTRUCTION WARNING SIGNS SHALL BE 48 INCHES X 48 INCHES UNLESS OTHERWISE NOTED IN THE PLANS.

* SUPPLEMENTAL SIGNS SHALL ONLY BE USED IN CONJUNCTION WITH DIAMOND SHAPE CONSTRUCTION WARNING SIGNS. THE SIZE OF SUPPLEMENTAL SIGNS SHALL BE APPROPRIATE FOR USE WITH A 48 INCH X 48 INCH WARNING SIGN UNLESS OTHERWISE NOTED IN THE PLANS.



ONE LANE BRIDGE

W5-3 48 x 48 16.00 SF

COLOR:
 SYMBOL AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



DIVIDED HIGHWAY

W6-1 48 x 48 16.00 SF

COLOR:
 SYMBOL AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



DIVIDED HIGHWAY

W6-2 48 x 48 16.00 SF

COLOR:
 SYMBOL AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



TWO WAY TRAFFIC SIGN

W6-3 48 x 48 16.00 SF

COLOR:
 SYMBOL AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
B80(B)	CONSTRUCTION SIGNS	SD



APPROVED BY TRAFFIC ENGINEER: *[Signature]* DATE: 8/6/10

TRAFFIC STANDARD
 TRAFFIC CONTROL STANDARD
 CONSTRUCTION SIGNS



SHOULDER WORK SIGN

W21-5 48 x 48 16.00 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE (REFLECTORIZED)



SURVEY CREW SIGN

W21-6 48 x 48 16.00 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE (REFLECTORIZED)



UTILITY WORK AHEAD SIGN

W21-7 48 x 48 16.00 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE (REFLECTORIZED)



MOWING AHEAD SIGN

W21-8 48 x 48 16.00 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE (REFLECTORIZED)



BRIDGE REPAIR SIGN

W21-9 48 x 48 16.00 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE (REFLECTORIZED)



MATERIAL ON SHOULDER SIGN

W21-10 48 x 48 16.00 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE (REFLECTORIZED)



MATERIAL ON ROADWAY SIGN

W21-11 48 x 48 16.00 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE (REFLECTORIZED)



BLASTING ZONE AHEAD SIGN

W22-1 48 x 48 16.00 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE (REFLECTORIZED)



CELL TELEPHONES SIGN

W22-2 36 x 30 7.50 SF
W22-2E 42 x 36 10.50 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE (REFLECTORIZED)



END BLASTING ZONE SIGN

W22-3 36 x 30 7.50 SF
W22-3E 42 x 36 10.50 SF

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE (REFLECTORIZED)

NOTES:
WORD SIGNS MAY BE USED IF SYMBOL SIGNS ARE NOT AVAILABLE EITHER IN "STANDARD HIGHWAY SIGNS MANUAL" OR IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) (CURRENT EDITION).

ALL DIAMOND SHAPE CONSTRUCTION WARNING SIGNS SHALL BE 48 INCHES X 48 INCHES UNLESS OTHERWISE NOTED IN THE PLANS.

* SUPPLEMENTAL SIGNS SHALL ONLY BE USED IN CONJUNCTION WITH DIAMOND SHAPE CONSTRUCTION WARNING SIGNS. THE SIZE OF SUPPLEMENTAL SIGNS SHALL BE APPROPRIATE FOR USE WITH A 48 INCH X 48 INCH WARNING SIGN UNLESS OTHERWISE NOTED IN THE PLANS.

TRFPC36 (A)\2009 Standards TC1515.dgn 8:20:40 AM 6/2/2010 d:\usr2\lib\erofy\pen R:\TRAF PLOT\bw.tbl

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
880(B)	CONSTRUCTION SIGNS	SD



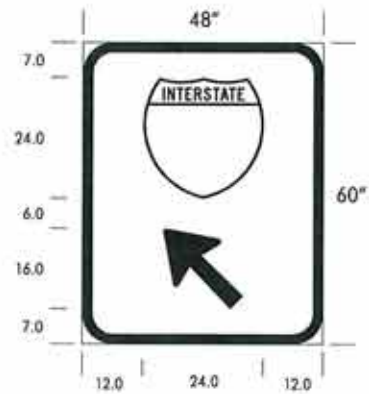
APPROVED BY TRAFFIC ENGINEER *David Small* DATE: 6/23/10

TRAFFIC STANDARD
TRAFFIC CONTROL STANDARD
CONSTRUCTION SIGNS

2009 SPECIFICATIONS

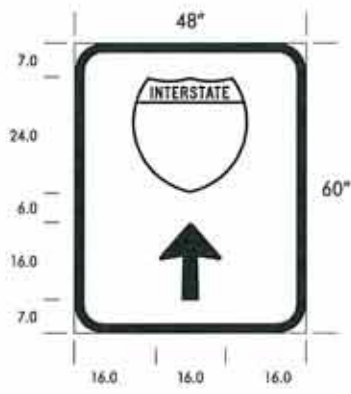
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DESCRIPTION	REVISIONS	DATE
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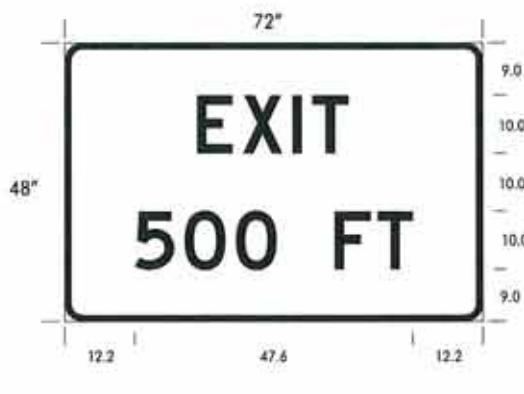
SIGN	CONSTRUCTION SIGN-1
WIDTH x HEIGHT	48' x 60'
BORDER WIDTH	1"
CORNER RADIUS	6"
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE COLOR: GREEN
LEGEND/BORDER	TYPE: REFLECTIVE COLOR: WHITE

SYMBOL	X	Y	WID	HT
M1_1_2	12.0	29.0	24.0	24.0
ARLONG,135deg	16.0	7.0	16.0	16.0



SIGN	CONSTRUCTION SIGN-2
WIDTH x HEIGHT	48' x 60'
BORDER WIDTH	1"
CORNER RADIUS	6"
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE COLOR: GREEN
LEGEND/BORDER	TYPE: REFLECTIVE COLOR: WHITE

SYMBOL	X	Y	WID	HT
M1_1_2	12.0	29.0	24.0	24.0
ARLONG,90deg	16.0	7.0	16.0	16.0



SIGN	CONSTRUCTION SIGN-3
WIDTH x HEIGHT	72' x 48'
BORDER WIDTH	1"
CORNER RADIUS	6"
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE COLOR: GREEN
LEGEND/BORDER	TYPE: REFLECTIVE COLOR: WHITE

HT FONT	LETTER SPACINGS							LEN	
10.0	×	E	X	I	T	×			26.5
D	22.7	8.0	9.0	3.5	6.0	22.8			72.0
10.0	×	5	0	0	F	T	×		47.6
D	12.2	8.6	8.6	7.0	10.0	7.3	6.1	12.2	72.0



SIGN	CONSTRUCTION SIGN-4
WIDTH x HEIGHT	48' x 48'
BORDER WIDTH	1"
CORNER RADIUS	6"
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE COLOR: GREEN
LEGEND/BORDER	TYPE: REFLECTIVE COLOR: WHITE

HT FONT	LETTER SPACINGS							LEN
8.0	×	E	X	I	T	×		26.4
D	10.8	7.9	9.0	3.5	6.0	10.8		48.0
8.0	×	O	P	E	N	×		32.1
D	7.9	9.1	8.9	7.8	6.3	8.0		48.0



SIGN	CONSTRUCTION SIGN-5
WIDTH x HEIGHT	48' x 48'
BORDER WIDTH	1"
CORNER RADIUS	6"
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE COLOR: GREEN
LEGEND/BORDER	TYPE: REFLECTIVE COLOR: WHITE

HT FONT	LETTER SPACINGS							LEN
10.0	×	E	X	I	T	×		26.5
D	10.7	8.0	9.0	3.5	6.0	10.8		48.0

SYMBOL	X	Y	WID	HT
ARLONG,90deg	19.0	4.5	12.0	19.0



SIGN	CONSTRUCTION SIGN-6
WIDTH x HEIGHT	48' x 48'
BORDER WIDTH	1"
CORNER RADIUS	6"
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE COLOR: GREEN
LEGEND/BORDER	TYPE: REFLECTIVE COLOR: WHITE

HT FONT	LETTER SPACINGS							LEN
10.0	×	E	X	I	T	×		26.5
D	10.7	8.0	9.0	3.5	6.0	10.8		48.0

SYMBOL	X	Y	WID	HT
ARLONG,45deg	18.0	10.0	12.3	12.3

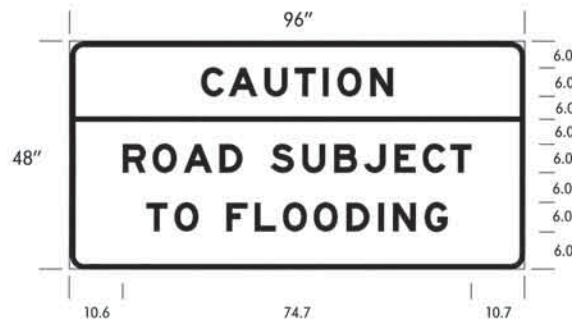
BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
880(B)	CONSTRUCTION SIGNS	SD



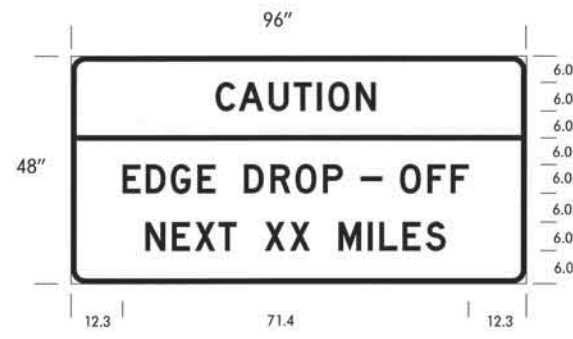
APPROVED BY
TRAFFIC ENGINEER *David Smith* DATE 6/22/10
TRAFFIC STANDARD

TRAFFIC CONTROL STANDARD
CONSTRUCTION SIGNS

DESCRIPTION	REVISIONS	DATE
CHANGED MOUNTING DESCRIPTION		3/15/2011



SIGN	CONSTRUCTION SIGN-7
WIDTH x HEIGHT	96" x 48"
BORDER WIDTH	2"
CORNER RADIUS	3"
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE COLOR: ORANGE
LEGEND/BORDER	TYPE: NON-REFLECTIVE COLOR: BLACK



SIGN	CONSTRUCTION SIGN-8
WIDTH x HEIGHT	96" x 48"
BORDER WIDTH	2"
CORNER RADIUS	3"
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE COLOR: ORANGE
LEGEND/BORDER	TYPE: NON-REFLECTIVE COLOR: BLACK

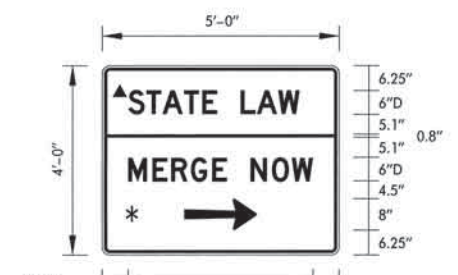


SIGN	CONSTRUCTION SIGN-9
WIDTH x HEIGHT	96" x 48"
BORDER WIDTH	2"
CORNER RADIUS	3"
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE COLOR: ORANGE
LEGEND/BORDER	TYPE: NON-REFLECTIVE COLOR: BLACK

HT FONT	LETTER SPACINGS													LEN		
6.0	C	A	U	T	I	O	N							40.6		
D	28.0	5.9	7.6	6.3	6.0	3.5	6.5	4.8	27.9							96.0
6.0	R	O	A	D	S	U	B	J	E	C	T			74.7		
D	10.6	6.3	6.5	7.6	4.8	6.0	6.7	6.3	6.3	5.9	6.0	10.7			96.0	
6.0	T	O	F	L	O	O	D	I	N	G					63.3	
D	16.3	6.0	6.5	6.0	6.0	6.5	6.5	4.8	3.5	6.7	4.8	16.4			96.0	

HT FONT	LETTER SPACINGS													LEN				
6.0	C	A	U	T	I	O	N							40.2				
D	27.9	5.9	7.6	6.3	6.0	3.1	6.5	4.8	27.9							96.0		
6.0	E	D	G	E	D	R	O	P	-	O	F	F			71.4			
D	12.3	4.8	5.2	5.4	3.7	6.0	5.2	5.2	5.7	7.8	8.2	5.7	4.8	3.7	12.3			96.0
6.0	N	E	X	T	X	X	M	I	L	E	S					62.3		
D	16.8	5.6	4.8	4.8	3.7	6.0	5.2	4.1	6.0	6.1	2.4	4.8	4.8	4.1	16.9			96.0

HT FONT	LETTER SPACINGS													LEN		
8.0	C	O	N	G	E	S	T	I	O	N					65.3	
D	15.3	6.9	7.5	7.3	7.3	6.4	6.9	6.5	3.1	8.0	5.4	15.4			96.0	
8.0	B	E	P	R	E	P	A	R	E	D					76.3	
D	9.8	7.3	5.0	8.0	7.3	7.3	6.4	7.3	8.1	7.3	5.0	7.3	9.9			96.0
8.0	T	O	S	T	O	P							48.1			
D	23.9	6.4	5.6	8.0	6.9	6.4	7.5	7.3	24.0					96.0		



SIGN NUMBER	CONSTRUCTION SIGN-10
WIDTH x HGT.	5'-0" x 4'-0"
BORDER WIDTH	0.75"
CORNER RADIUS	1.5"
MOUNTING	Ground
SIGN AREA	20.0 Sq.Ft.
BACKGROUND	TYPE: Reflective COLOR: SEE NOTES
LEGEND/BORDER	TYPE: Reflective COLOR: Black

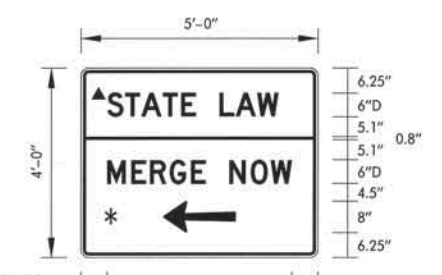
BORDER R=1.5" TH=0.75" IN=0.5"

* BACKGROUND: REFLECTIVE WHITE LEGEND/BORDER: NON-REFLECTIVE BLACK

* BACKGROUND: REFLECTIVE ORANGE LEGEND/BORDER: NON-REFLECTIVE BLACK

Dimensions are in inches, tenths
Letter locations are paneled to lower left corner

LETTER POSITIONS (X)										LENGTH	SERIES SIZE
S	T	A	T	E	L	A	W			43.3	D 2000
6.6	11.2	15.3	20.7	25.4	29.1	35.1	39.2	44.6			
M	E	R	G	E	N	O	W			46.7	D 2000
6.6	12.8	17.5	22.5	27.9	31.6	37.6	43	48			



SIGN NUMBER	CONSTRUCTION SIGN-11
WIDTH x HGT.	5'-0" x 4'-0"
BORDER WIDTH	0.75"
CORNER RADIUS	1.5"
MOUNTING	Ground
SIGN AREA	20.0 Sq.Ft.
BACKGROUND	TYPE: Reflective COLOR: SEE NOTES
LEGEND/BORDER	TYPE: Reflective COLOR: Black

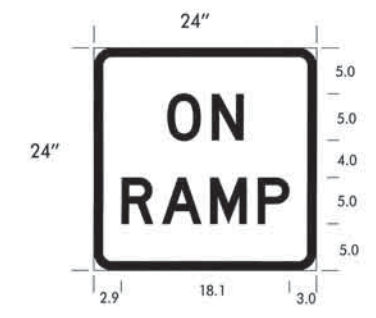
BORDER R=1.5" TH=0.75" IN=0.5"

* BACKGROUND: REFLECTIVE WHITE LEGEND/BORDER: NON-REFLECTIVE BLACK

* BACKGROUND: REFLECTIVE ORANGE LEGEND/BORDER: NON-REFLECTIVE BLACK

Dimensions are in inches, tenths
Letter locations are paneled to lower left corner

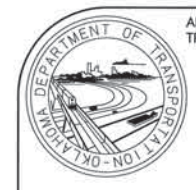
LETTER POSITIONS (X)										LENGTH	SERIES SIZE
S	T	A	T	E	L	A	W			43.3	D 2000
6.6	11.2	15.3	20.7	25.4	29.1	35.1	39.2	44.6			
M	E	R	G	E	N	O	W			46.7	D 2000
6.6	12.8	17.5	22.5	27.9	31.6	37.6	43	48			



SIGN	CONSTRUCTION SIGN-12
WIDTH x HEIGHT	24" x 24"
BORDER WIDTH	1"
CORNER RADIUS	2"
MOUNTING	GROUND
BACKGROUND	TYPE: REFLECTIVE COLOR: ORANGE
LEGEND/BORDER	TYPE: NON-REFLECTIVE COLOR: BLACK

HT FONT	LETTER SPACINGS						LEN
5.0	O	N					8.2
D	7.9	4.8	3.4	7.9			24.0
5.0	R	A	M	P			18.1
D	2.9	4.4	5.2	5.1	3.4	3.0	24.0

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
B80(B)	CONSTRUCTION SIGNS	SD



APPROVED BY TRAFFIC ENGINEER: *Chad Smith* DATE: 3/21/11

TRAFFIC STANDARD
TRAFFIC CONTROL STANDARD
CONSTRUCTION SIGNS

2009 SPECIFICATIONS

TCS18-1 01
T-518

\$\$\$date\$\$\$



SIGN NUMBER	CS-13
WIDTH x HGHT.	2'-0" x 1'-0"
BORDER WIDTH	0.63"
CORNER RADIUS	1.5"
MOUNTING	Ground
SIGN AREA	2.0 Sq.Ft.
BACKGROUND	TYPE: Reflective COLOR: FLO*
LEGEND/BORDER	TYPE: Non-Reflective COLOR: Black

Dimensions are in Inches.tenths

LETTER POSITIONS (X)					LENGTH	SERIESIZE
B	E	G	I	N		D 2000
4.8	8.2	11.3	14.9	16.5		14.4



SIGN NUMBER	CS-13E
WIDTH x HGHT.	3'-0" x 1'-0"
BORDER WIDTH	0.63"
CORNER RADIUS	1.5"
MOUNTING	Ground
SIGN AREA	3.0 Sq.Ft.
BACKGROUND	TYPE: Reflective COLOR: FLO*
LEGEND/BORDER	TYPE: Non-Reflective COLOR: Black

Dimensions are in Inches.tenths

LETTER POSITIONS (X)					LENGTH	SERIESIZE
B	E	G	I	N		D 2000
7.2	12.3	16.9	22.3	24.7		21.6

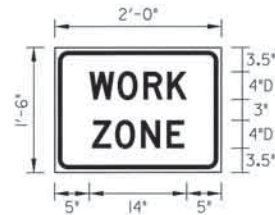


SIGN NUMBER	CS-13F
WIDTH x HGHT.	4'-0" x 1'-6"
BORDER WIDTH	0.63"
CORNER RADIUS	1.5"
MOUNTING	Ground
SIGN AREA	6.0 Sq.Ft.
BACKGROUND	TYPE: Reflective COLOR: FLO*
LEGEND/BORDER	TYPE: Non-Reflective COLOR: Black

Dimensions are in Inches.tenths

LETTER POSITIONS (X)					LENGTH	SERIESIZE
B	E	G	I	N		E 2000
7.1	15.2	22.6	30.9	34.4		33.8

FLO* = FLUORESCENT ORANGE



SIGN NUMBER	CS-14
WIDTH x HGHT.	2'-0" x 1'-6"
BORDER WIDTH	0.63"
CORNER RADIUS	1.5"
MOUNTING	Ground
SIGN AREA	3.0 Sq.Ft.
BACKGROUND	TYPE: Reflective COLOR: FLO*
LEGEND/BORDER	TYPE: Non-Reflective COLOR: Black

Dimensions are in Inches.tenths

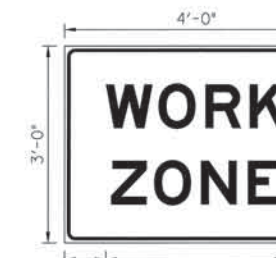
LETTER POSITIONS (X)					LENGTH	SERIESIZE
W	O	R	K			D 2000
5	9.1	12.8	16.2			14
Z	O	N	E			D 2000
5.4	8.7	12.5	16.1			13.2



SIGN NUMBER	CS-14E
WIDTH x HGHT.	3'-0" x 2'-0"
BORDER WIDTH	0.63"
CORNER RADIUS	1.5"
MOUNTING	Ground
SIGN AREA	6.0 Sq.Ft.
BACKGROUND	TYPE: Reflective COLOR: FLO*
LEGEND/BORDER	TYPE: Non-Reflective COLOR: Black

Dimensions are in Inches.tenths

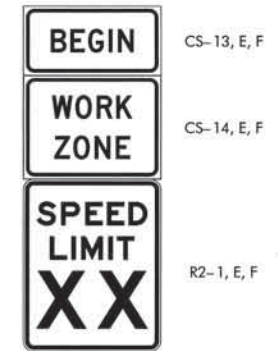
LETTER POSITIONS (X)					LENGTH	SERIESIZE
W	O	R	K			D 2000
7.5	13.6	19.2	24.3			21
Z	O	N	E			D 2000
8.1	13.1	18.7	24.2			19.8



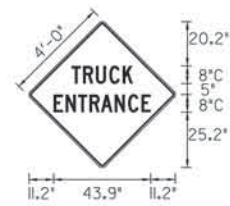
SIGN NUMBER	CS-14F
WIDTH x HGHT.	4'-0" x 3'-0"
BORDER WIDTH	0.63"
CORNER RADIUS	1.5"
MOUNTING	Ground
SIGN AREA	12.0 Sq.Ft.
BACKGROUND	TYPE: Reflective COLOR: FLO*
LEGEND/BORDER	TYPE: Non-Reflective COLOR: Black

Dimensions are in Inches.tenths

LETTER POSITIONS (X)					LENGTH	SERIESIZE
W	O	R	K			E 2000
7.6	17.2	25.7	33.8			32.9
Z	O	N	E			E 2000
8.5	16.4	24.9	33.5			31



CONSTRUCTION
BEGIN WORK ZONE
SPEED LIMIT
ASSEMBLY



SIGN NUMBER	CS-15
WIDTH x HGHT.	4'-0" x 4'-0"
BORDER WIDTH	0.75"
CORNER RADIUS	1.38"
MOUNTING	Ground
SIGN AREA	16.0 Sq.Ft.
BACKGROUND	TYPE: Reflective COLOR: Yellow
LEGEND/BORDER	TYPE: Reflective COLOR: Black

Dimensions are in Inches.tenths

LETTER POSITIONS (X)					LENGTH	SERIESIZE			
T	R	U	C	K		C 2000			
19.3	24.5	30.4	36.5	42.5		27.7			
E	N	T	R	A	N	C	E		C 2000
11.2	16.7	22.3	27.5	32.7	38.9	45	51.1		43.9

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
880(B)	CONSTRUCTION SIGNS	SD



APPROVED BY
TRAFFIC ENGINEER: *David Gandy* DATE: 3/2/11

TRAFFIC STANDARD
TRAFFIC CONTROL STANDARD
CONSTRUCTION SIGNS

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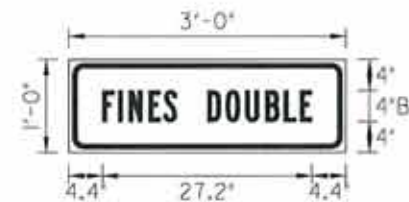
DESCRIPTION	REVISIONS	DATE
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SIGN NUMBER	CS-16
WIDTH x HGHT.	3'-0" x 1'-0"
BORDER WIDTH	0.63"
CORNER RADIUS	1.5"
MOUNTING	Ground
SIGN AREA	3.0 Sq.Ft.
BACKGROUND	TYPE: Reflective COLOR: Orange
LEGEND/BORDER	TYPE: Non-Reflective COLOR: Black

Dimensions are in inches, tenths

LETTER POSITIONS (X)										LENGTH	SERIESIZE
W	O	R	K	Z	O	N	E			C	2000
4.5	8	11.2	14.1	16.3	20.3	23.2	26.3	29.5		27	



SIGN NUMBER	CS-17
WIDTH x HGHT.	3'-0" x 1'-0"
BORDER WIDTH	0.63"
CORNER RADIUS	1.5"
MOUNTING	Ground
SIGN AREA	3.0 Sq.Ft.
BACKGROUND	TYPE: Reflective COLOR: White
LEGEND/BORDER	TYPE: Non-Reflective COLOR: Black

Dimensions are in inches, tenths

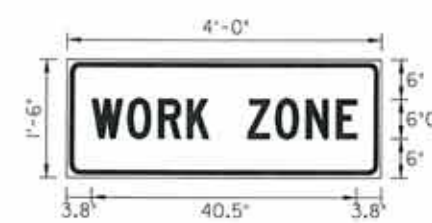
LETTER POSITIONS (X)										LENGTH	SERIESIZE	
F	I	N	E	S	D	O	U	B	L	E	B	2000
4.4	6.5	7.9	10.5	12.4	14.1	18.1	20.5	23.1	25.7	28	30.1	27.2



SIGN NUMBER	CS-18
WIDTH x HGHT.	3'-0" x 1'-6"
BORDER WIDTH	0.63"
CORNER RADIUS	1.5"
MOUNTING	Ground
SIGN AREA	4.5 Sq.Ft.
BACKGROUND	TYPE: Reflective COLOR: White
LEGEND/BORDER	TYPE: Non-Reflective COLOR: Black

Dimensions are in inches, tenths

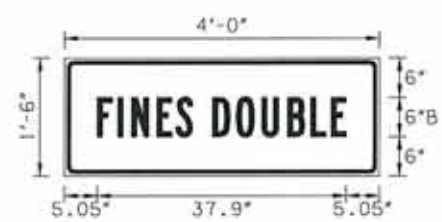
LETTER POSITIONS (X)										LENGTH	SERIESIZE	
W	H	E	N	W	O	R	K	E	R	S	B	2000
3	6.1	8.7	10.9	12.6	16.6	19.6	22.2	24.6	27	29.1	31.3	30
A	R	E	P	R	E	S	E	N	T		B	2000
5.3	8	10.3	11.9	15.9	18.1	20.5	22.4	24.8	26.9	29.2	25.5	



SIGN NUMBER	CS-16E
WIDTH x HGHT.	4'-0" x 1'-6"
BORDER WIDTH	0.63"
CORNER RADIUS	1.5"
MOUNTING	Ground
SIGN AREA	6.0 Sq.Ft.
BACKGROUND	TYPE: Reflective COLOR: Orange
LEGEND/BORDER	TYPE: Non-Reflective COLOR: Black

Dimensions are in inches, tenths

LETTER POSITIONS (X)										LENGTH	SERIESIZE
W	O	R	K	Z	O	N	E			C	2000
3.8	9	13.8	18.2	21.5	27.5	31.8	36.5	41.2		40.5	



SIGN NUMBER	CS-17E
WIDTH x HGHT.	4'-0" x 1'-6"
BORDER WIDTH	0.63"
CORNER RADIUS	1.5"
MOUNTING	Ground
SIGN AREA	6.0 Sq.Ft.
BACKGROUND	TYPE: Reflective COLOR: White
LEGEND/BORDER	TYPE: Non-Reflective COLOR: Black

Dimensions are in inches, tenths

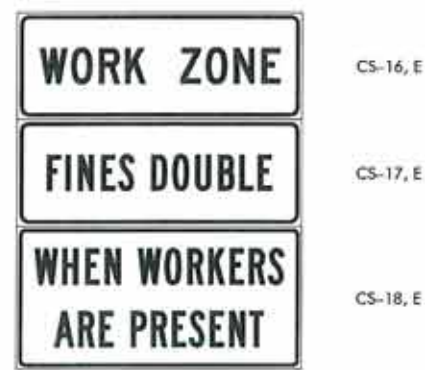
LETTER POSITIONS (X)										LENGTH	SERIESIZE	
F	I	N	E	S	D	O	U	B	L	E	B	2000
5.1	8.2	10.3	14.2	17.1	22.7	26.2	30.1	34	37.5	40.7	37.9	



SIGN NUMBER	CS-18E
WIDTH x HGHT.	4'-0" x 2'-0"
BORDER WIDTH	0.63"
CORNER RADIUS	1.13"
MOUNTING	Ground
SIGN AREA	8.0 Sq.Ft.
BACKGROUND	TYPE: Reflective COLOR: White
LEGEND/BORDER	TYPE: Non-Reflective COLOR: Black

Dimensions are in inches, tenths

LETTER POSITIONS (X)										LENGTH	SERIESIZE	
W	H	E	N	W	O	R	K	E	R	S	B	2000
3	7.7	11.6	14.9	20.4	24.9	28.8	32.4	36	39.2	42.4	41.9	
A	R	E	P	R	E	S	E	N	T		B	2000
6.4	10.5	14	19.3	22.7	26.3	29.1	32.7	35.9	39.3		35.2	



CONSTRUCTION
FINES DOUBLE
ASSEMBLY

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
880(B)	CONSTRUCTION SIGNS	SD

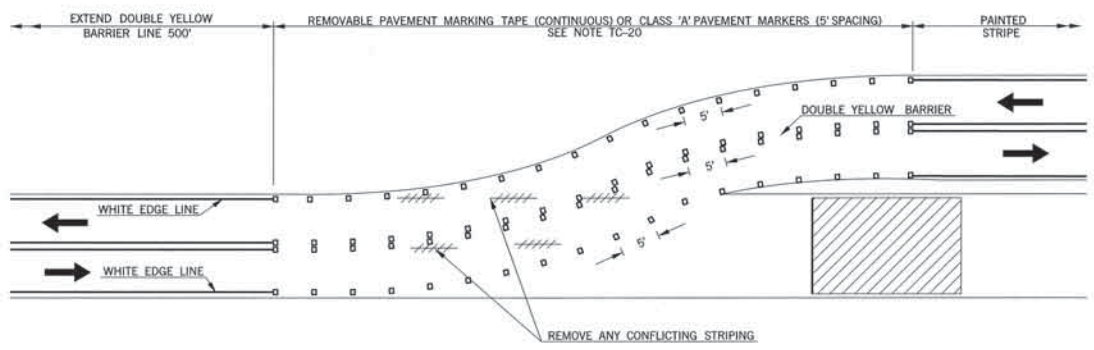


APPROVED BY TRAFFIC ENGINEER *David Smith* DATE 6/23/10

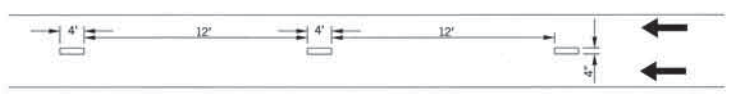
TRAFFIC STANDARD
TRAFFIC CONTROL STANDARD
CONSTRUCTION SIGNS

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DESCRIPTION	REVISIONS	DATE
ADDED TRAFFIC STRIPE NOTES		4/10/12
REDEFINED TERMS, MOD. PM SPACING		4/2/2013

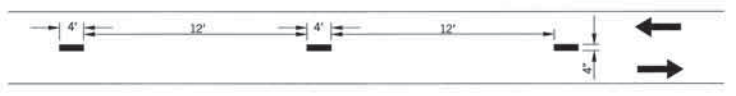


CONSTRUCTION ZONE PAVEMENT MARKINGS THRU SHOO-FLY

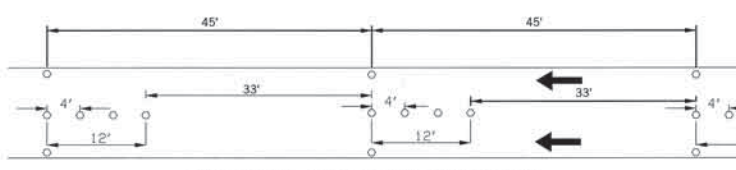


**ONE-WAY PAVEMENT MARKING
REMOVABLE TAPE OR PAINT**

PAVEMENT MARKINGS: REMOVABLE TAPE OR PAINT
WIDTH OF STRIPED LANE LINES SHALL BE A MINIMUM OF 4".
INTERMEDIATE-TERM STATIONARY PAVEMENT MARKINGS ARE THOSE THAT MAY BE USED UNTIL THE EARLIEST DATE WHEN IT IS PRACTICAL AND POSSIBLE TO INSTALL PERMANENT PAVEMENT MARKINGS THAT MEET THE FULL OKLAHOMA DEPARTMENT OF TRANSPORTATION STANDARDS FOR PAVEMENT MARKINGS.

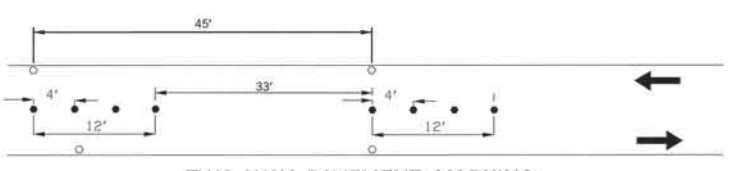


**TWO-WAY PAVEMENT MARKING
REMOVABLE TAPE OR PAINT**



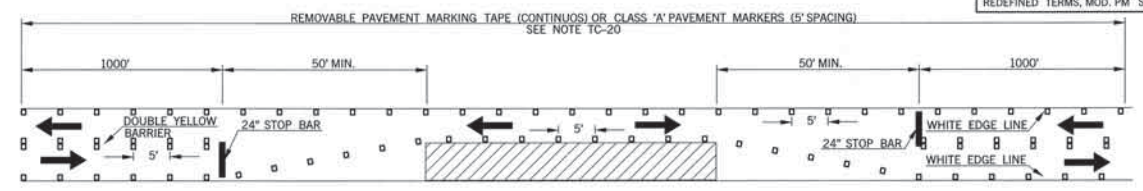
**ONE-WAY PAVEMENT MARKING
FLEX TABS**

PAVEMENT MARKINGS: FLEX TABS
TYPE I - FLEX TAB MARKERS SHALL HAVE REFLECTORIZED MATERIAL ON BOTH SIDES.
TYPE II - FLEX TAB MARKERS SHALL HAVE REFLECTORIZED MATERIAL ON BOTH SIDES AND SHALL HAVE A CLEAR REMOVABLE COVER.
FLEX TABS MAY BE INSTALLED AS SHOWN FOR LONG-TERM STATIONARY PAVEMENT MARKINGS.



**TWO-WAY PAVEMENT MARKING
FLEX TABS**

INTERMEDIATE-TERM STATIONARY PAVEMENT MARKINGS



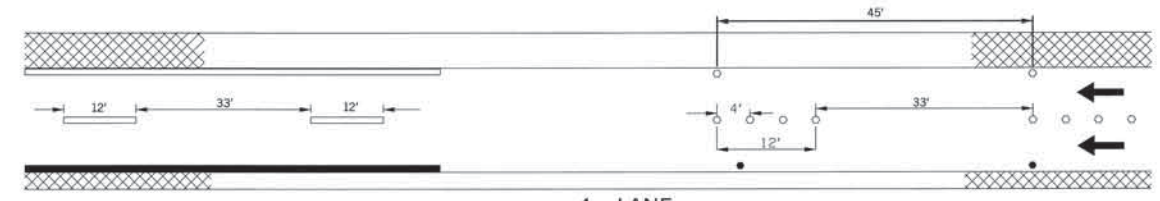
**TYPICAL PAVEMENT MARKINGS FOR ONE LANE CLOSURE ON TWO LANE /TWO WAY ROADWAY
REMOVABLE TAPE OR CONSTRUCTION ZONE PAVEMENT MARKERS**

NOTES:
CONSTRUCTION ZONE PAVEMENT MARKINGS SHALL CONSIST OF EITHER PAINT, CONSTRUCTION ZONE PAVEMENT MARKERS (FLEX TABS) OR REMOVABLE MARKING TAPE. THERMO-PLASTIC STRIPE MAY BE USED IN CONJUNCTION WITH PAINT, FLEX TABS OR TAPE WHEN SPECIFIED IN THE PLANS.
ALL PAVEMENT MARKINGS TO BE PLACED ON TEMPORARY SURFACES OR ON SURFACES SCHEDULED TO BE REMOVED SHALL BE DONE WITH PAINT UNLESS OTHERWISE SHOWN IN THE PLANS OR STANDARD DRAWINGS. ALL FINAL OR FINISHED SURFACES SHALL BE MARKED WITH EITHER REMOVABLE PAVEMENT MARKING TAPE OR CONSTRUCTION ZONE PAVEMENT MARKERS, UNLESS OTHERWISE NOTED ON THE PLANS.
WIDTH OF STRIPED LANE LINES SHALL BE A MINIMUM OF 4".

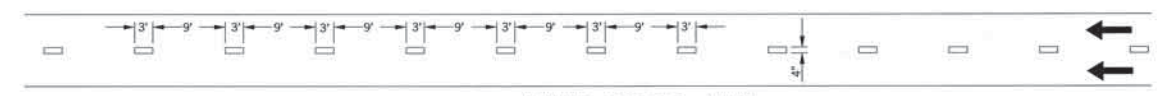
KEY:



TWO-LANE /TWO-WAY



**4 -LANE
DIVIDED ROADWAY**



**WHITE DOTTED LINE
LONG-TERM STATIONARY PAVEMENT MARKINGS**

MUTCD DEFINITIONS OF THE FIVE CATEGORIES OF WORK DURATION, AND THEIR TIME AT A LOCATION SHALL BE:
A. LONG-TERM STATIONARY IS WORK THAT OCCUPIES A LOCATION MORE THAN 3 DAYS.
B. INTERMEDIATE-TERM STATIONARY IS WORK THAT OCCUPIES A LOCATION MORE THAN ONE DAYLIGHT PERIOD UP TO 3 DAYS, OR NIGHTTIME WORK LASTING MORE THAN 1 HOUR.
C. SHORT-TERM STATIONARY IS DAYTIME WORK THAT OCCUPIES A LOCATION FOR MORE THAN 1 HOUR WITHIN A SINGLE DAYLIGHT PERIOD.
D. SHORT DURATION IS WORK THAT OCCUPIES A LOCATION UP TO 1 HOUR.
E. MOBILE IS WORK THAT MOVES INTERMITTENTLY OR CONTINUOUSLY.



APPROVED BY: *[Signature]* DATE: 4/8/2013
TRAFFIC ENGINEER

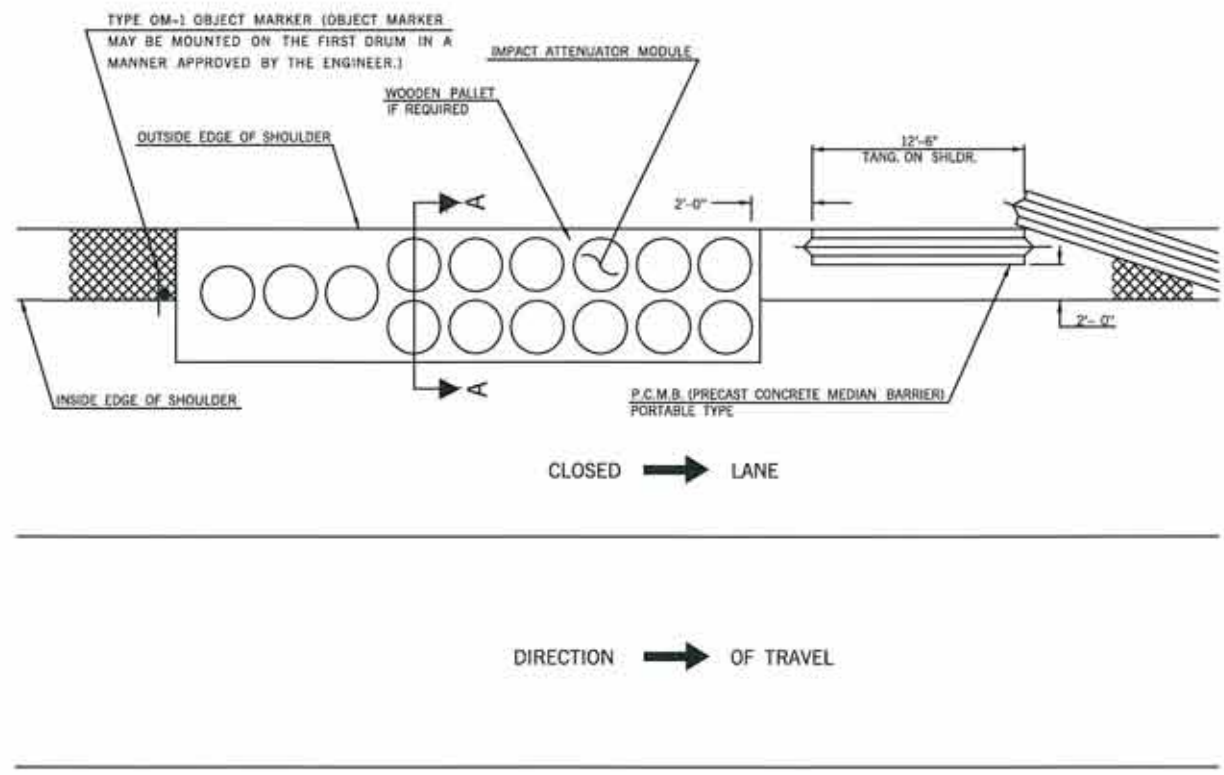
TRAFFIC STANDARD
TRAFFIC CONTROL STANDARD
CONSTRUCTION ZONE PAVEMENT MARKINGS

2009 SPECIFICATIONS

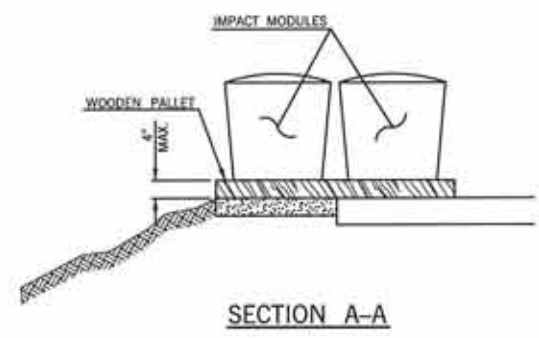
TCS21-1	02
	T-521

\$\$\$date\$\$\$

DESCRIPTION	REVISIONS	DATE
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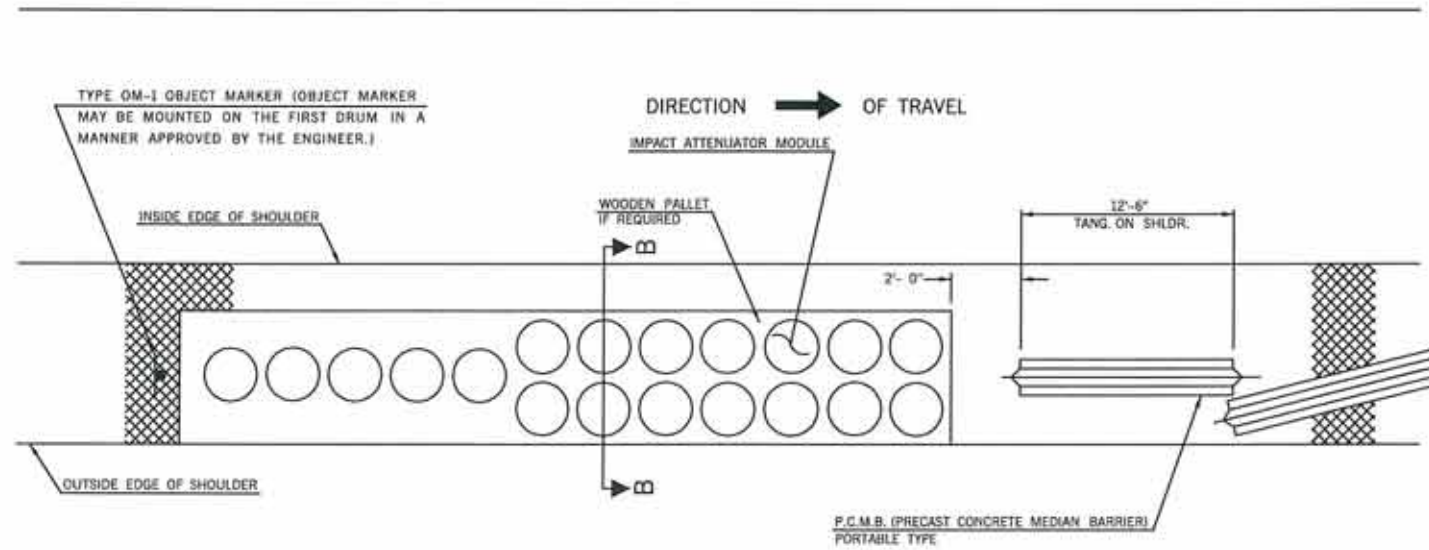


ATTENUATOR PLACEMENT INSIDE SHOULDER
(THE 15 MODULE CONFIGURATION SHOWN)

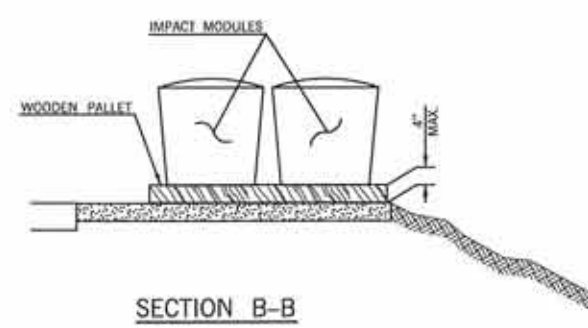


NOTES:
THE CONTRACTOR, AT HIS OPTION, MAY INSTALL THE IMPACT ATTENUATOR ON WOODEN PALLETS TO PROVIDE PORTABILITY SINCE RELOCATION WILL BE NECESSARY.

MODULE CONFIGURATION AND NUMBER OF MODULES ARE AS FOLLOWS:
(1) FOR DESIGN SPEEDS 60 MPH AND LESS USE 15 MODULES.
(2) FOR DESIGN SPEEDS GREATER THAN 60 MPH USE 19 MODULES.



ATTENUATOR PLACEMENT OUTSIDE SHOULDER
(THE 19 MODULE CONFIGURATION SHOWN)



NOTES:
THE CONTRACTOR, AT HIS OPTION, MAY INSTALL THE IMPACT ATTENUATOR ON WOODEN PALLETS TO PROVIDE PORTABILITY SINCE RELOCATION WILL BE NECESSARY.

MODULE CONFIGURATION AND NUMBER OF MODULES ARE AS FOLLOWS:
(1) FOR DESIGN SPEEDS 60 MPH AND LESS USE 15 MODULES.
(2) FOR DESIGN SPEEDS GREATER THAN 60 MPH USE 19 MODULES.

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
870(A)	SAND FILLED IMPACT ATTEN. MODULE	SD

APPROVED BY
TRAFFIC ENGINEER *David Smith* DATE 6/23/10

TRAFFIC STANDARD
TRAFFIC CONTROL STANDARD
PLACEMENT OF SAND FILLED IMPACT
ATTENUATOR FOR CONSTRUCTION ZONES



TRFPC36 D:\var2\2009_Standards_TC\1523.dgn 3:28:42 PM 6/22/2010 R:\TRAF_PLOT\lroyh.pen R:\TRAF_PLOT\bw.tbl