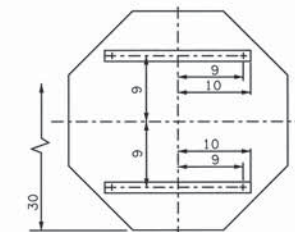
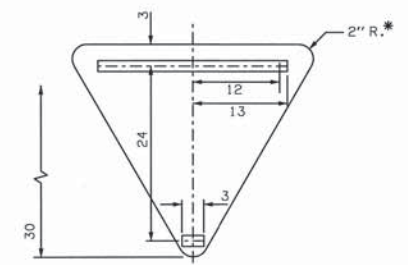


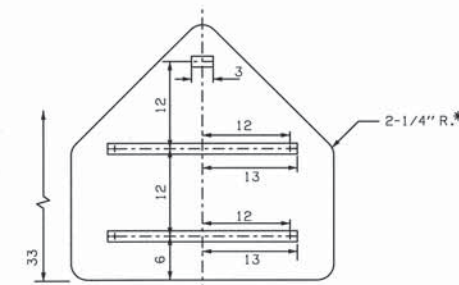
DESCRIPTION	REVISIONS	DATE



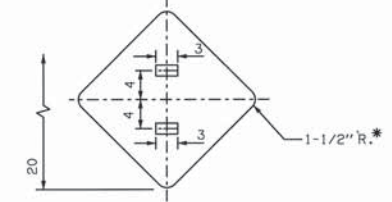
B-30(O)
 (1) 2" SQUARE TUBE POST
 (1) 2" PIPE POST



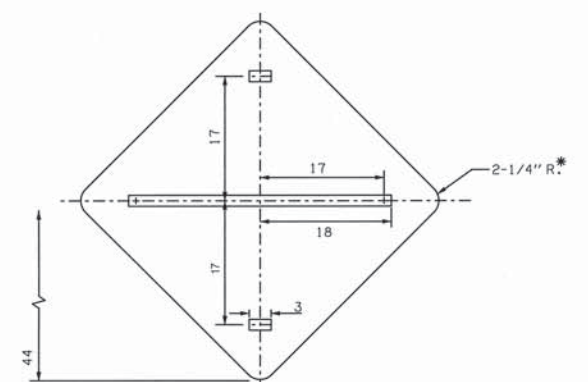
B-36(T)
 (1) 2" SQUARE TUBE POST
 (1) 2" PIPE POST



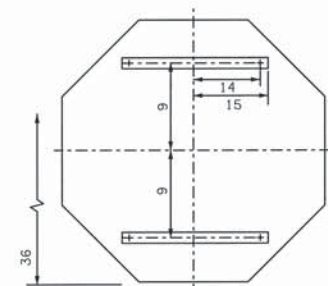
B-36(P)
 (1) 2" SQUARE TUBE POST
 (1) 2" PIPE POST



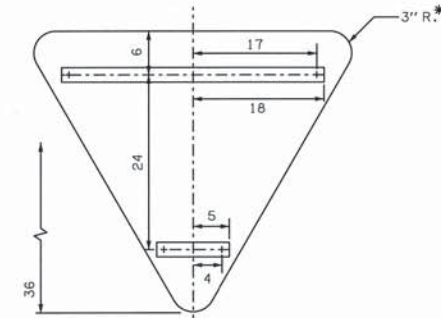
B-18(D)
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



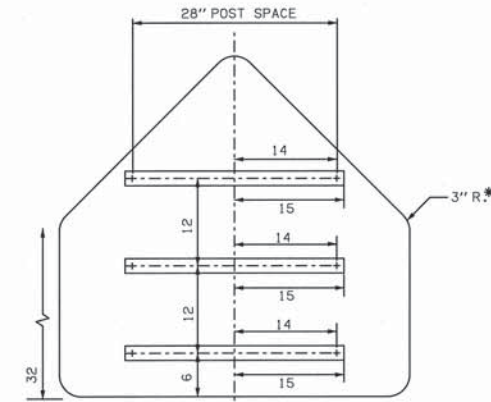
B-36(D)
 (1) 2" SQUARE TUBE POST
 (1) 2-1/2" PIPE POST



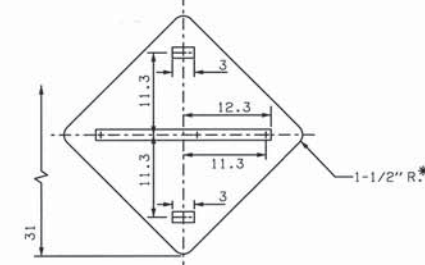
B-36(O)
 (1) 2" SQUARE TUBE POST
 (1) 2-1/2" PIPE POST



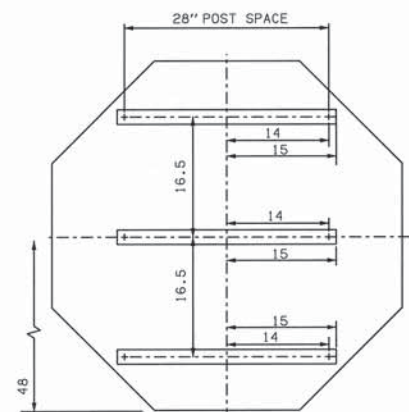
B-48(T)
 (2) 2" SQUARE TUBE POSTS
 (1) 2-1/2" PIPE POST



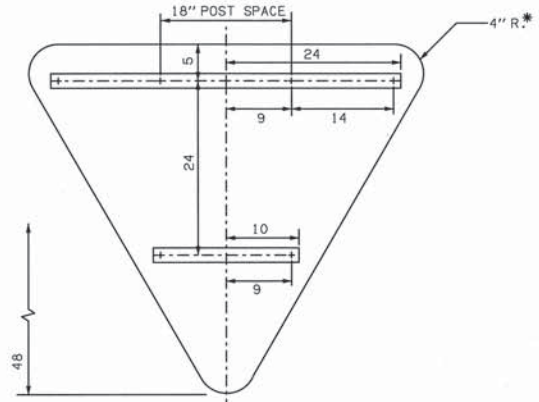
B-48(P)
 (2) 2" SQUARE TUBE POSTS
 (2) 2" PIPE POSTS



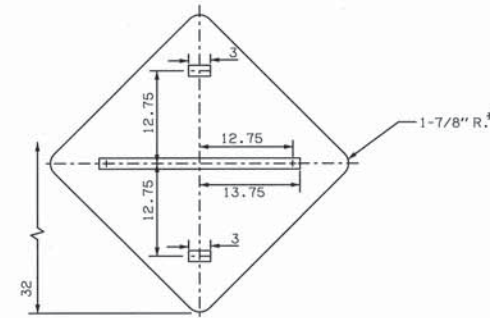
B-24(D)
 (1) 2" SQUARE TUBE POST
 (1) 2" PIPE POST



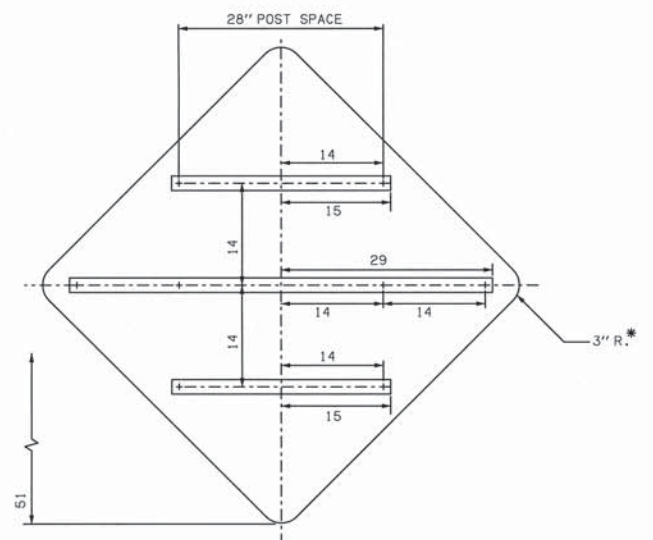
B-48(O)
 (2) 2" SQUARE TUBE POSTS
 (2) 2-1/2" PIPE POSTS



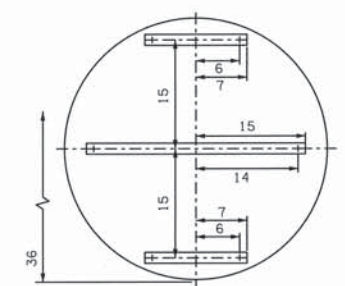
B-60(T)
 (2) 2" SQUARE TUBE POSTS
 (2) 2" PIPE POSTS



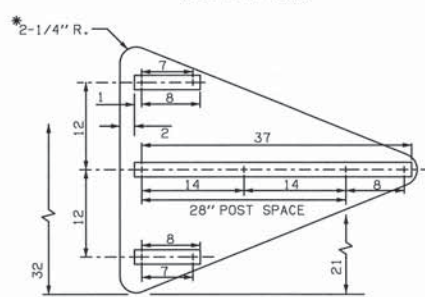
B-30(D)
 (1) 2" SQUARE TUBE POST
 (1) 2" PIPE POST



B-48(D)
 (2) 2" SQUARE TUBE POSTS
 (2) 2-1/2" PIPE POSTS



B-36(R)
 (1) 2" SQUARE TUBE POST
 (1) 2-1/2" PIPE POST



B-4836(T)
 (2) 2" SQUARE TUBE POSTS
 (2) 2" PIPE POSTS

CONSTRUCTION NOTES:

- (1) ALL FLAT SHEET SIGNS SHALL USE GALVANIZED STEEL POSTS.
- (2) THICKNESS OF MATERIALS FOR FLAT SHEET SIGNS SHALL BE AS FOLLOWS, DETERMINED BY THE LONGEST DIMENSION OF THE SIGN UNLESS OTHERWISE SPECIFIED.

ALUMINUM ALLOY 6061-T6 OR 5052-H38	GALVANIZED STEEL
0.063" FOR SIGNS THROUGH 24"	16 GAUGE FOR SIGNS THROUGH 24"
0.080" FOR SIGNS 25" THROUGH 35"	14 GAUGE FOR SIGNS 25" THROUGH 35"
0.100" FOR SIGNS 36" AND LARGER	12 GAUGE FOR SIGNS 36" AND LARGER
- (3) SIGN BRACKETS SHALL BE GALVANIZED STEEL OR ALUMINUM. HOLES FOR MOUNTING BRACKETS TO SIGN SHALL BE 5/16" D. HOLES FOR MOUNTING SIGN AND BRACKETS TO POST SHALL BE 3/8" D. HOLES SHALL BE PUNCHED BEFORE GALVANIZING. SIZE OF BRACKETS SHALL BE AS FOLLOWS: SIGNS THROUGH 36" SHALL USE A GALVANIZED STEEL OR ALUMINUM CHANNEL 1-1/2" X 1/2" X 1/8". SIGNS LARGER THAN 36" SHALL USE A GALVANIZED STEEL OR ALUMINUM CHANNEL 2" X 1/2" X 1/8". ALUMINUM SIGN BRACKETS SHALL BE ALLOY 6061-T6, 6062-T6 OR 6063-T6.
- (4) ALL BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED STEEL OR CADMIUM PLATED. ALL BOLT ENDS SHALL BE SUFFICIENTLY BRADDED AFTER INSTALLATION TO MINIMIZE REMOVAL BY VANDALISM.
- (5) ALL POSTS SHALL EXTEND 2" ABOVE THE TOP SIGN BRACKET, BUT NOT ABOVE THE TOP OF THE SIGN.
- * (6) CORNER RADIUS FOR ALL FLAT SHEET SIGNS SHALL BE AS SHOWN.
- (7) ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.



APPROVED BY
 TRAFFIC ENGINEER: *David Gray* DATE: 8/3/2010

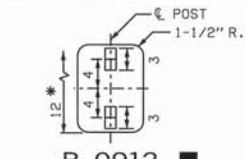
TRAFFIC STANDARD

SIGN BLANK AND BRACKET DETAILS

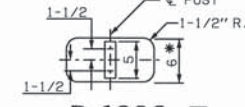
2009 SPECIFICATIONS

SBS1-1	00
T-130	

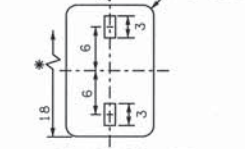
DESCRIPTION	REVISIONS	DATE



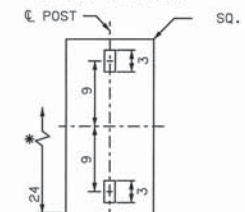
B-0912
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



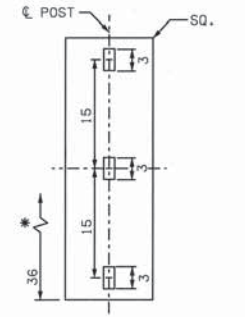
B-1206
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



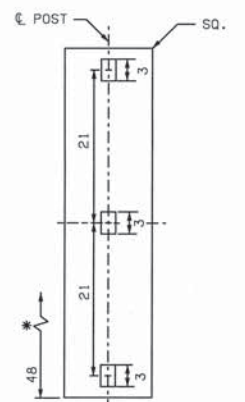
B-1218
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



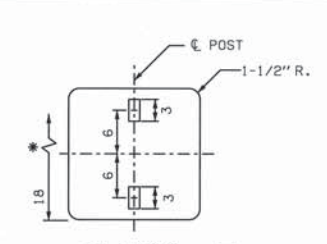
B-1224
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



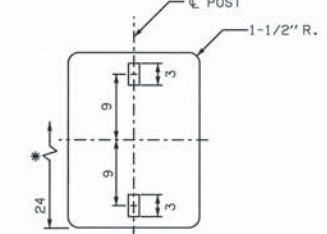
B-1236
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



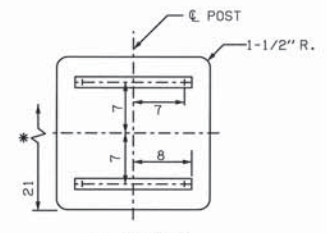
B-1248
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



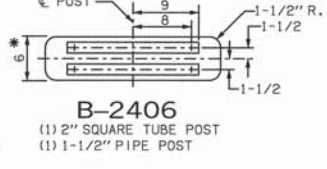
B-18(S)
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



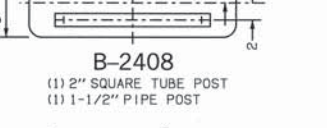
B-1824
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



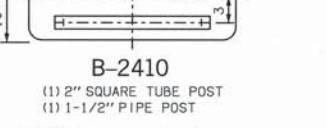
B-21(S)
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



B-2406
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



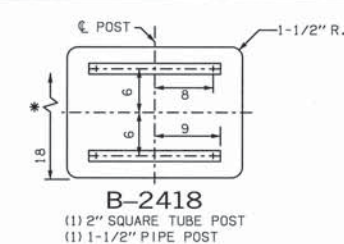
B-2408
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



B-2410
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



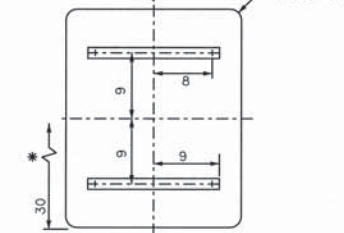
B-2412
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



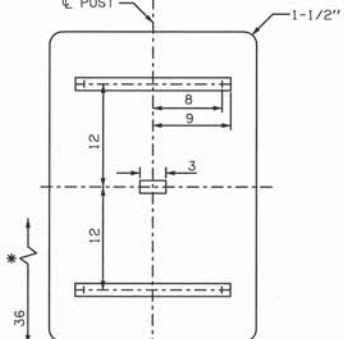
B-2418
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



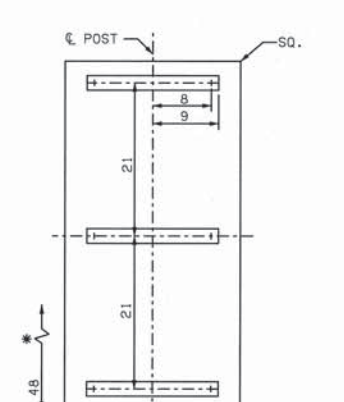
B-24(S)
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



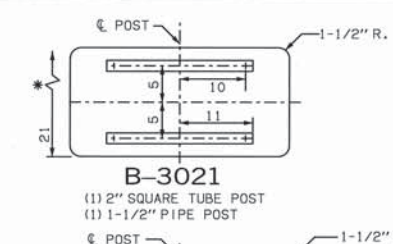
B-2430
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



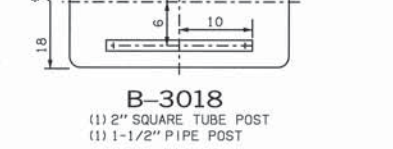
B-2436
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



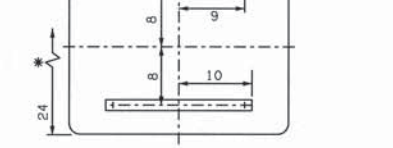
B-2448
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



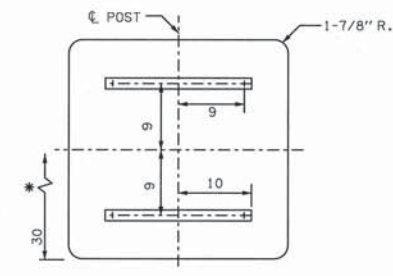
B-3021
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



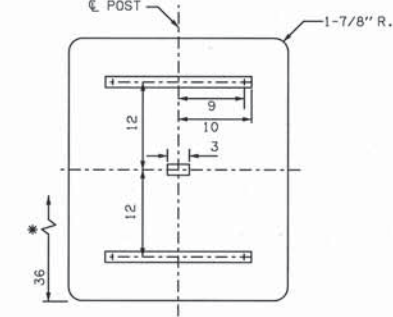
B-3018
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



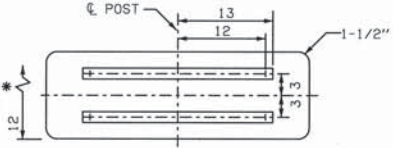
B-3024
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



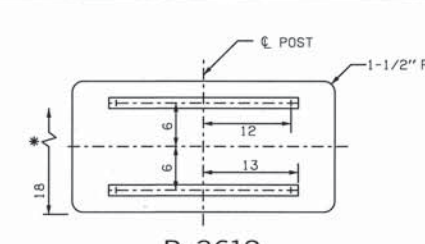
B-30(S)
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



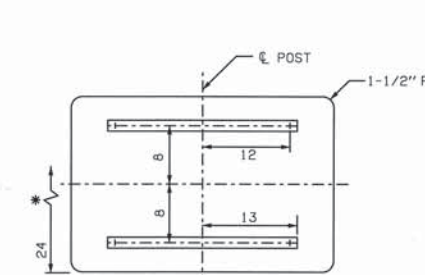
B-3036
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



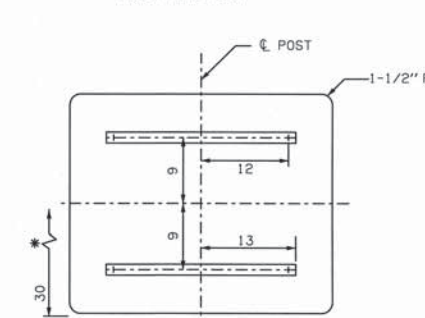
B-3612
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



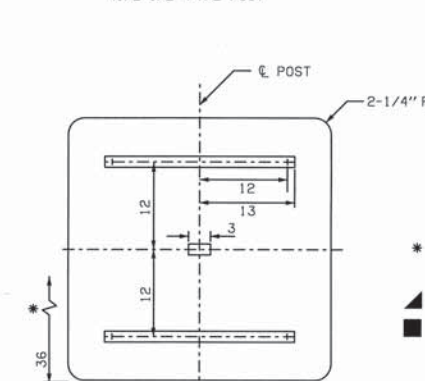
B-3618
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



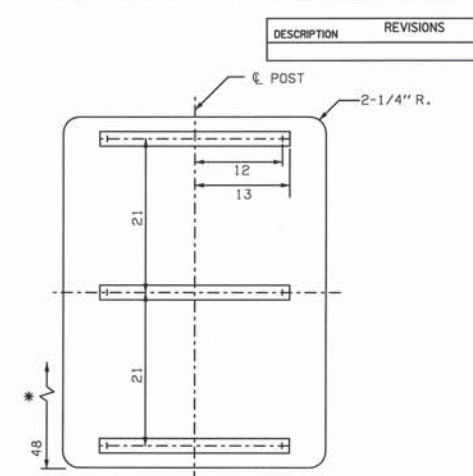
B-3624
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



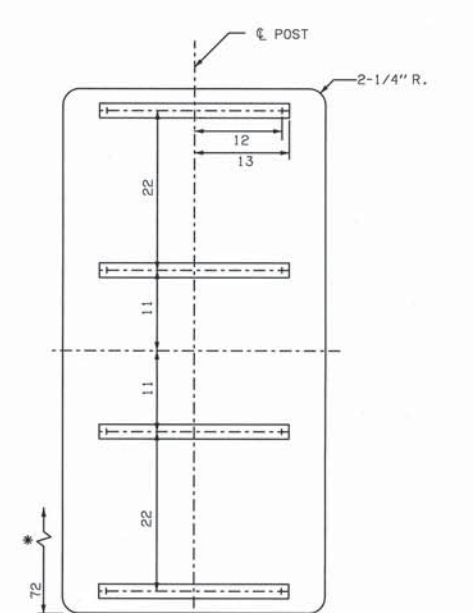
B-3630
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



B-36(S)
 (1) 2" SQUARE TUBE POST
 (1) 1-1/2" PIPE POST



B-3648
 (2) 2" SQUARE TUBE POSTS
 (1) 3" PIPE POST



B-3672
 (1) 3-1/2" PIPE POST

NOTES:
 * ALL POSTS SHALL EXTEND 2" ABOVE THE TOP SIGN BRACKET, BUT NOT ABOVE THE TOP OF THE SIGN.
 ▲ SIGN BLANK THICKNESS SHALL BE .060" ALUMINUM OR 16 GAUGE STEEL.
 ■ VERTICAL SIGN BRACKET ONLY.
 ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.



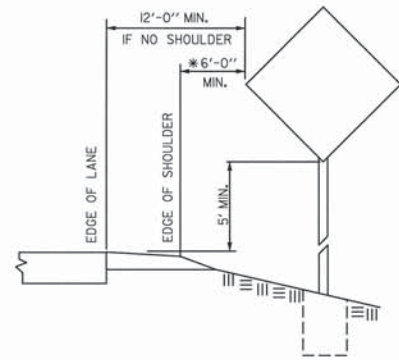
APPROVED BY
 TRAFFIC ENGINEER: *David Smith* DATE: 8/31/2010

TRAFFIC STANDARD

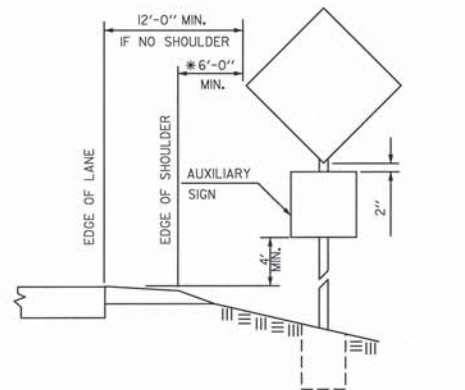
SIGN BLANK AND BRACKET DETAILS

2009 SPECIFICATIONS

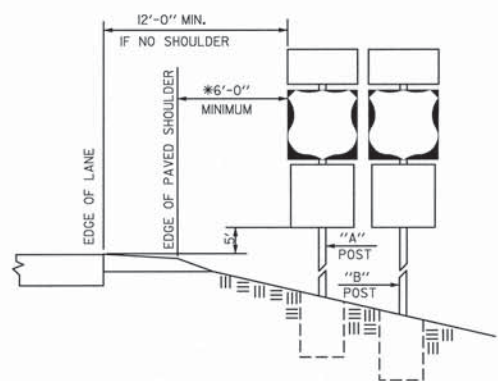
SBS2-1	00
T-131	



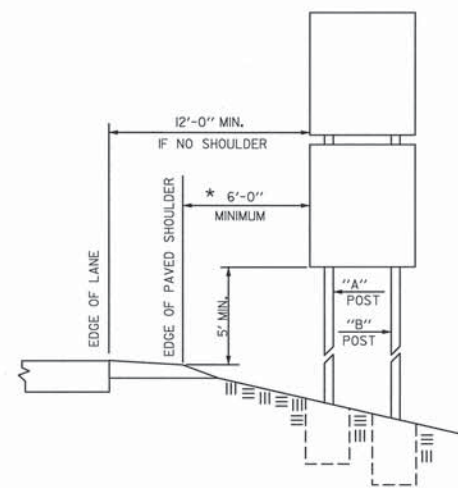
SINGLE POST (RURAL)



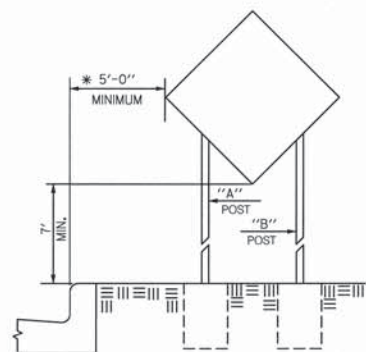
SINGLE POST WITH AUXILIARY SIGN (RURAL)



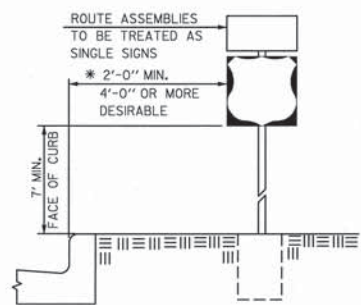
ROADSIDE ASSEMBLY (RURAL)



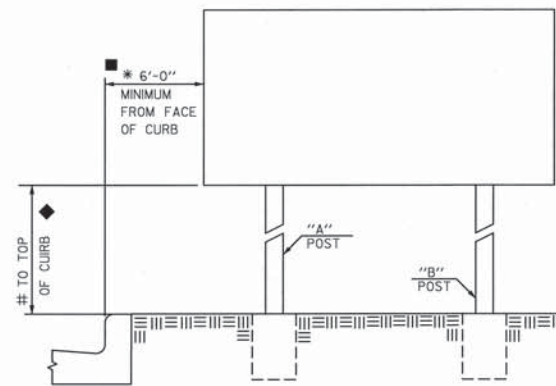
DOUBLE POST MAXIMUM & MINIMUM SPEED LIMIT SIGNS (RURAL)



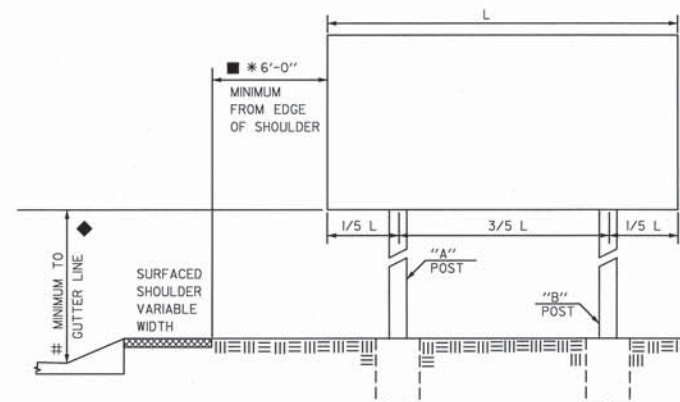
BUSINESS, COMMERCIAL OR RESIDENTIAL AREA



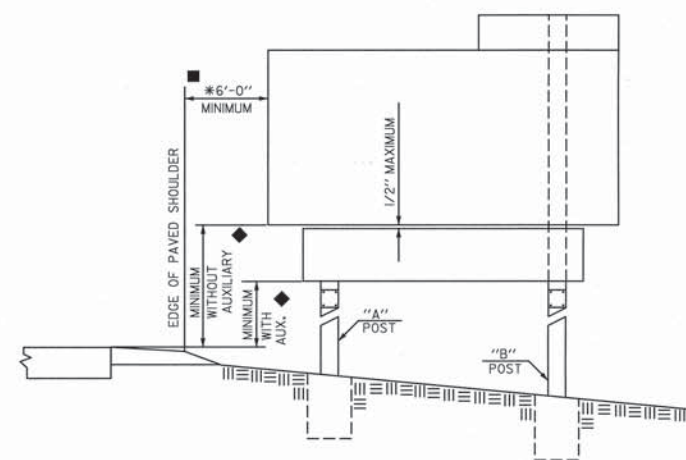
BUSINESS, COMMERCIAL OR RESIDENTIAL AREA



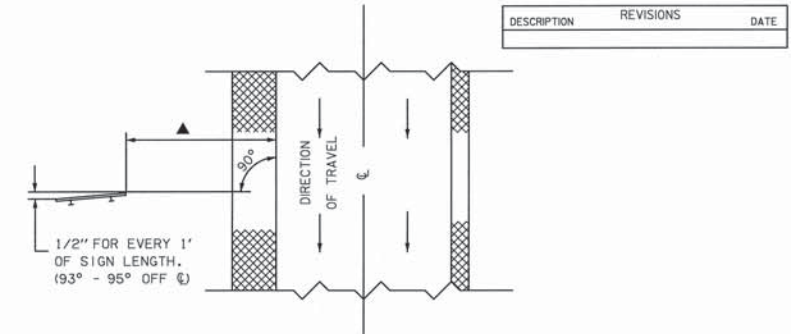
INFORMATION SIGN WITH NON-MOUNTABLE CURB



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 RECOMMEND 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 Smith* DATE: 8/31/2010

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			
	1/2"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).

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

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

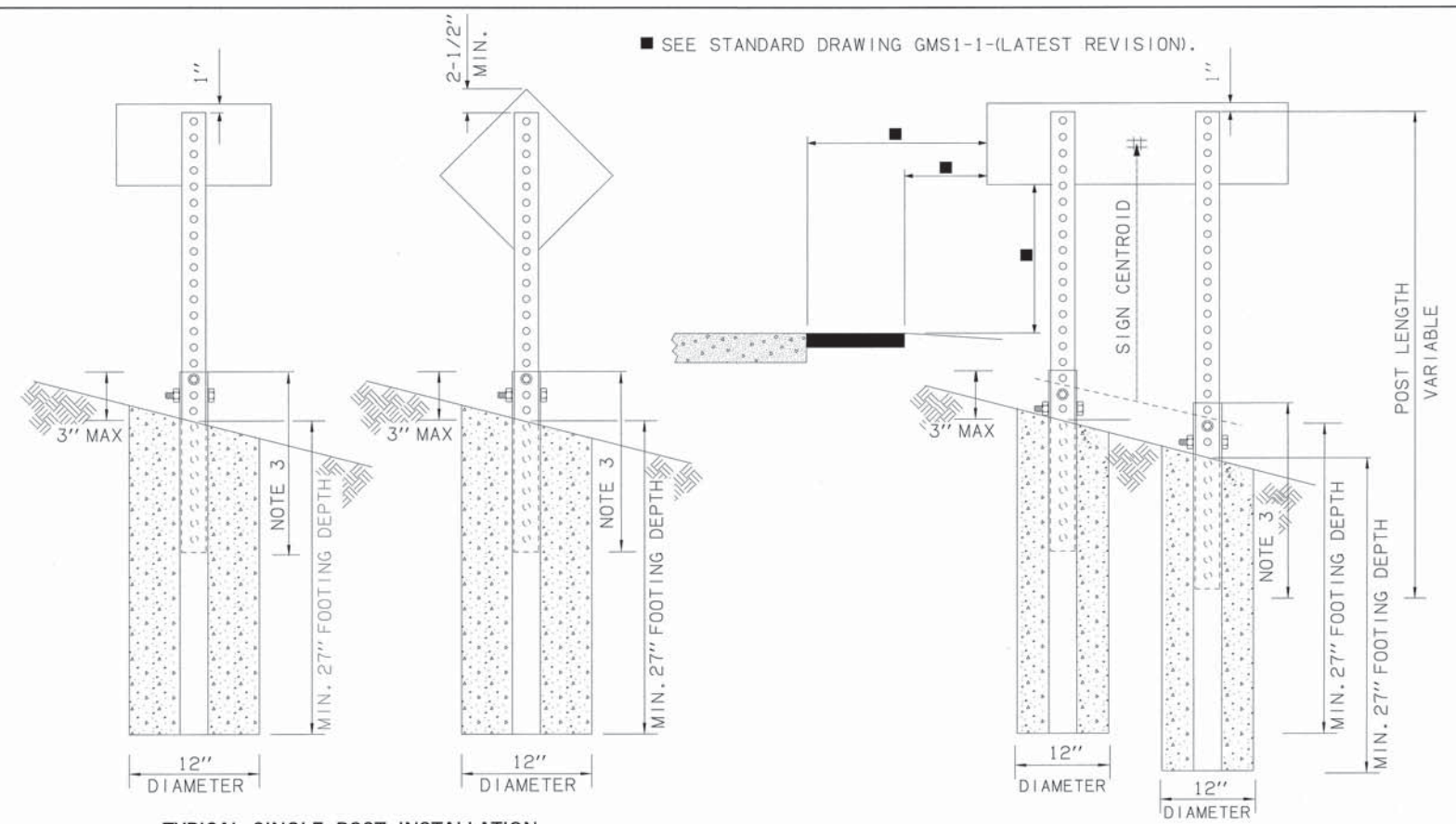


TRAFFIC STANDARD
SQUARE TUBE POST DETAILS

2009 SPECIFICATIONS

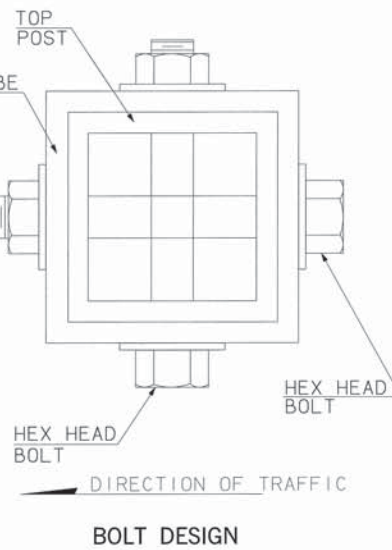
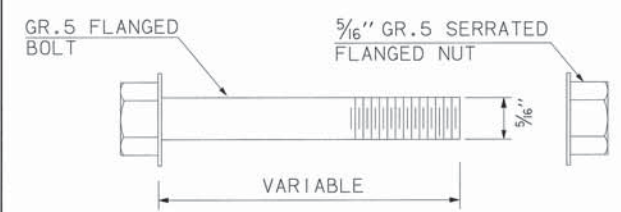
SSP1-1	02
T-138	

SEE STANDARD DRAWING GMS1-1-(LATEST REVISION).

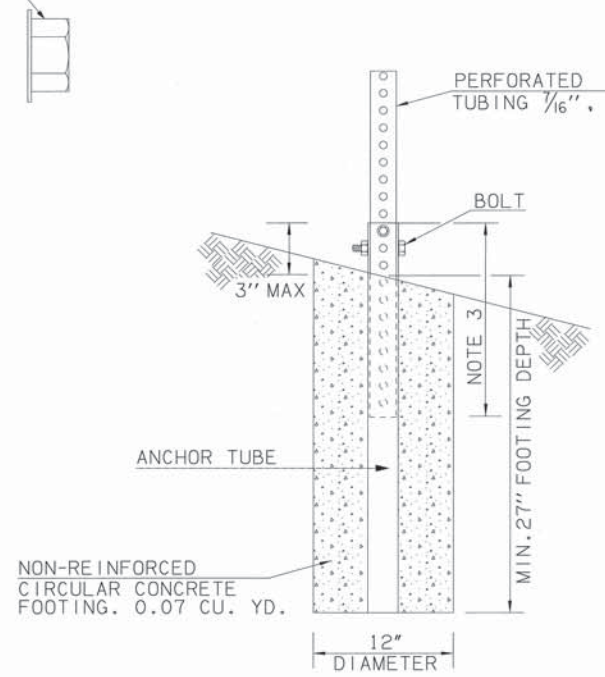


TYPICAL SINGLE POST INSTALLATION

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.



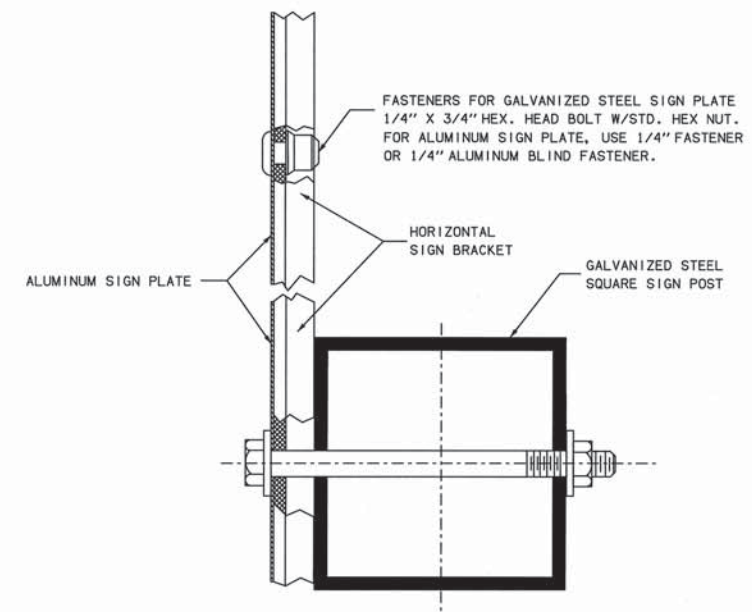
HEAVY DUTY ANCHOR TUBE

- DRAWING NOT TO SCALE -

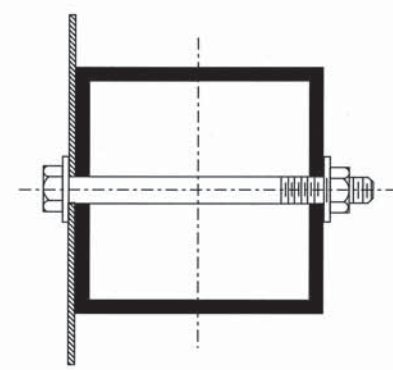
NON-PERFORATED HEAVY DUTY ANCHOR TUBE
2 1/2" X 2 1/2" X 3/16" ANCHOR FOR 1 3/4" & 2" UPRIGHT POST.
3" X 3" X 3/16" ANCHOR FOR 2 1/4" & 2 1/2" UPRIGHT POST.

APPLY DUCT TAPE TO PREVENT CONCRETE ENTERING ANCHOR TUBE.

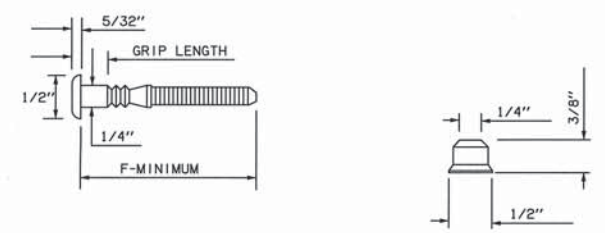
DESCRIPTION	REVISIONS	DATE



TOP VIEW

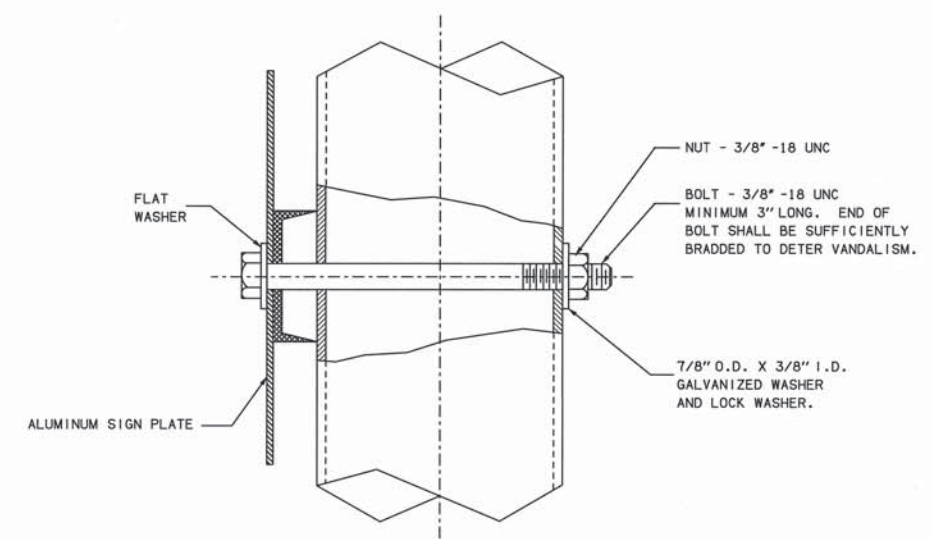


TOP VIEW



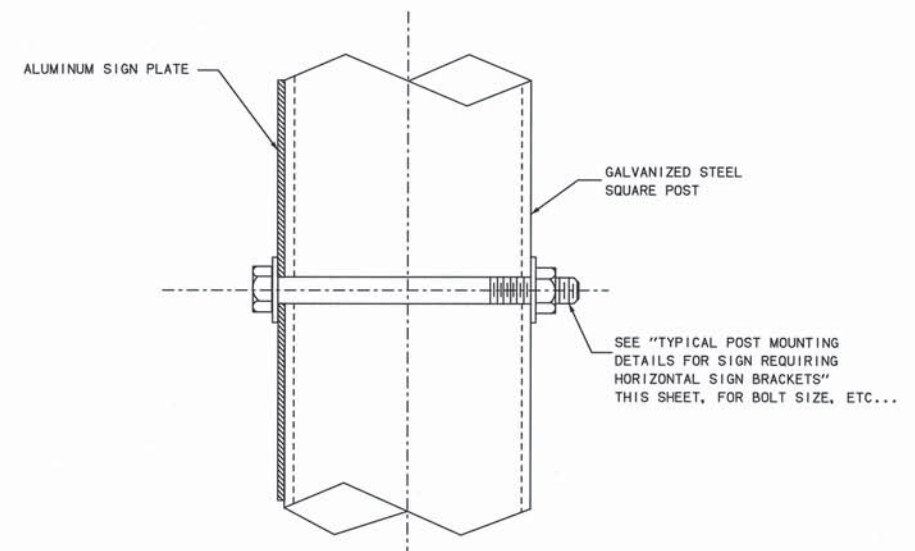
1/4" FASTENER AND 1/4" COLLAR (TYPICAL)

GRIP NO.	GRIP LENGTH (INCHES)	F-MIN.
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"



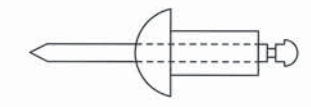
SIDE VIEW

TYPICAL POST MOUNTING DETAILS FOR SIGN REQUIRING HORIZONTAL SIGN BRACKETS



SIDE VIEW

TYPICAL POST MOUNTING DETAILS FOR SIGN 18" WIDE AND UNDER



ALUMINUM ALLOY BODY AND MANDREL. GRIP RANGE 1/16" TO 1/4".

1/4" BLIND FASTENERS

NOTE: ALL NUTS SHALL BE SELF-LOCKING.



APPROVED BY TRAFFIC ENGINEER: *David G. Smith* DATE: 8/31/2010

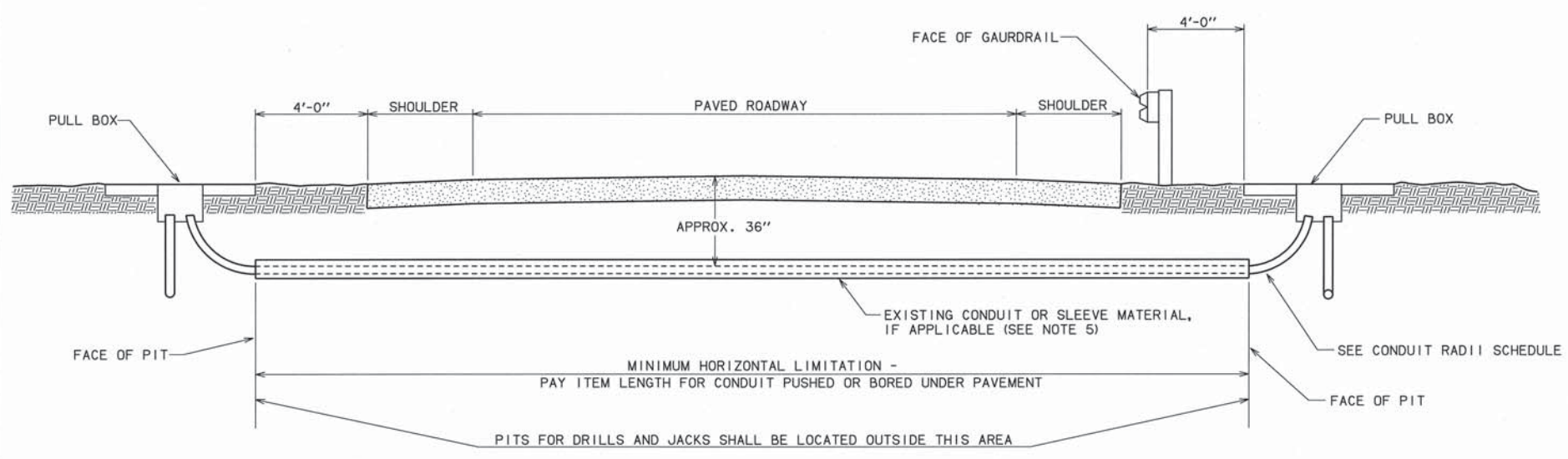
TRAFFIC STANDARD

SHEET SIGN ASSEMBLY DETAILS (SQUARE TUBE)

2009 SPECIFICATIONS

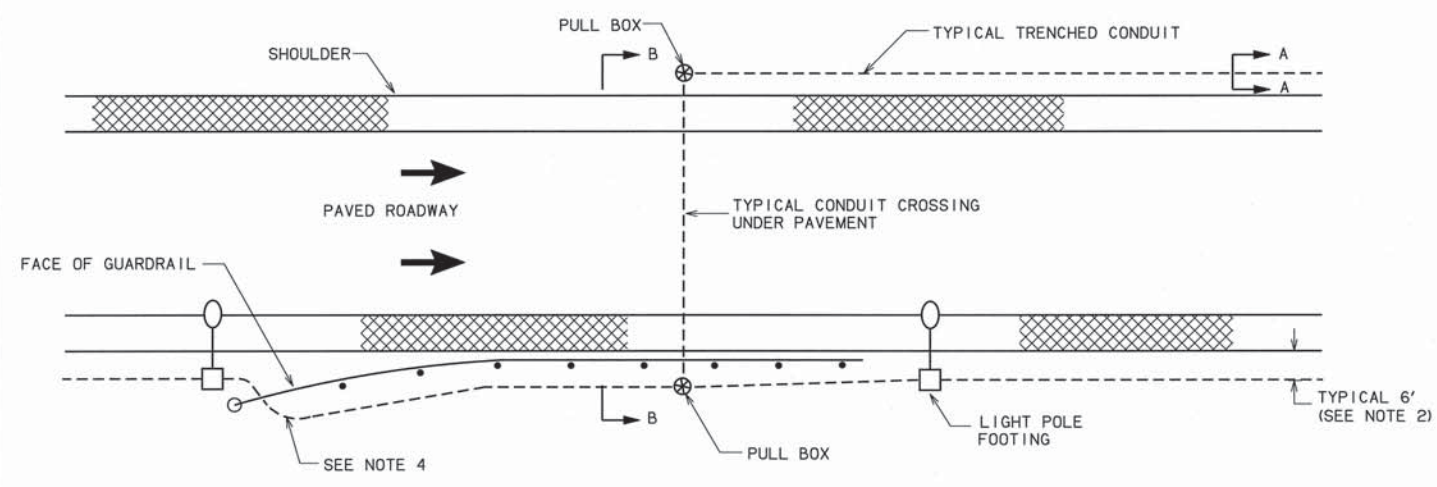
SSA1-1	00
T-139	

DESCRIPTION	REVISIONS	DATE

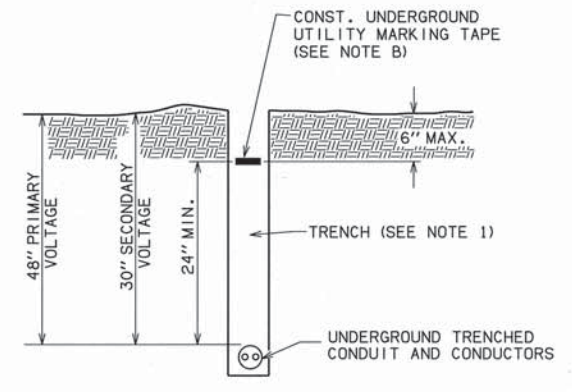


CONDUIT CROSSING UNDER PAVEMENT

SECTION B-B



CONDUIT DETAILS



SECTION "A-A"

CONDUIT RADII SCHEDULE

NOMINAL CONDUIT OR SLEEVE DIAMETER (INCHES)	MINIMUM RADIUS (INCHES)
1/2, 3/4, 1, 1-1/4	12
1-1/2	18
2	24
2-1/2, 3	30
4	36
5	48

MATERIALS SPECIFICATIONS

- MATERIAL FOR CABLE IN DUCT CONDUIT SHALL BE RIGID GALVANIZED STEEL OR SCHEDULE 40 PVC PLASTIC.
- THE UNDERGROUND UTILITY MARKING TAPE SHALL BE A MINIMUM OF 4 MIL THICKNESS, 6" WIDE, POLYETHYLENE TAPE, COLOR SHALL BE IN ACCORDANCE WITH AWPB UNIFORM COLOR CODE. TAPE USED TO MARK UNDERGROUND ELECTRICAL CABLE SHALL BE SAFETY RED COLOR WITH PRINTED LEGEND "CAUTION-ELECTRICAL LINE BURIED BELOW". THE TAPE SHALL BE SIMILAR TO REEF INDUSTRIES, INC. STOCK NO. 0571415 OR APPROVED EQUAL. THE COST OF THE TAPE SHALL BE INCLUDED IN THE TRENCHING.
- THE CONTRACTOR SHALL INSTALL A PULL LINE IN ALL CONDUIT BETWEEN LIGHT POLE FOOTINGS THAT IS TO BE USED FOR A FUTURE LIGHTING SYSTEM. MATERIAL SHALL BE POLYESTER TAPE OR ROPE, GALVANIZED STEEL WIRE, OR ANY OTHER APPROVED MATERIAL THAT HAS A MINIMUM BREAKING STRENGTH OF 1250 LBS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING THE PULL LINE AT EACH END OF THE CONDUIT AND ALSO FOR CAPPING THE CONDUIT ENDS TO PREVENT DEBRIS FROM PLUGGING THE CONDUIT. INSTALLATION, CAPPING AND SECURING PROCEDURES SHALL BE APPROVED BY THE ENGINEER. THE COST OF ALL MATERIAL, LABOR AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK SHALL BE INCLUDED IN THIS ITEM OF WORK.

GENERAL NOTES

- THE TRENCH SHALL BE BACKFILLED IN APPROX. 6" LAYERS, AND TAMPED TO 95% DENSITY OF THE SURROUNDING EARTH.
- THERE SHALL BE APPROXIMATELY 6'-0" BETWEEN THE PAVEMENT AND THE TRENCHED CONDUIT, UNLESS OTHERWISE SPECIFIED IN THE PLANS.
- ALL CONDUIT SHALL BE INSTALLED TO FIT THE EXISTING FIELD CONDITIONS. HOWEVER, IF MAJOR RELOCATIONS ARE NECESSARY THAT MAY AFFECT THE OVERALL DESIGN OF THE ELECTRICAL SYSTEM, THE CONTRACTOR SHALL RECEIVE APPROVAL OF THE ENGINEER PRIOR TO MAKING THE RELOCATIONS.
- IF TRENCHED CONDUIT MUST CROSS UNDER EXISTING GUARDRAIL IT SHOULD BE BETWEEN POSTS AND AS CLOSE TO PERPENDICULAR TO THE RAIL AS FEASIBLE.
- C.I.D. CONDUIT MAY BE INSTALLED THROUGH EXISTING CONDUIT IF AVAILABLE, OTHERWISE THE CONTRACTOR SHALL PROVIDE AN ADEQUATE SIZED SLEEVE FOR CROSSING BELOW PAVED SURFACES. ALL COSTS OF SLEEVE MATERIAL AND INSTALLATION SHALL BE INCLUDED IN THE PRICE BID FOR "BORED" CONDUIT.
- THERE SHALL BE NO MORE THAN FOUR (4) 90 DEG. BENDS OR 360 DEG. TOTAL OF ALL THE BENDS IN A SINGLE RUN OF CONDUIT.
- ALL TRENCHED CONDUIT SHALL BE FOR SECONDARY VOLTAGES, UNLESS OTHERWISE SPECIFIED IN THE PLANS.
- CONDUCTORS HAVING UNLIKE VOLTAGES SHALL HAVE SEPARATE CONDUITS AND PULL BOXES.
- THE CONDUIT MUST BE INSTALLED TO FIT EXISTING CONDITIONS AND ALL DISTURBED AREAS MUST BE REPAIRED OR RESTORED TO ORIGINAL CONDITION BY THE CONTRACTOR. THERE WILL BE NO PAY ITEM FOR THIS WORK.
- WHEN CONDUIT IS INSTALLED FOR FUTURE, ALL CONDUIT ENDS SHALL BE CAPPED.

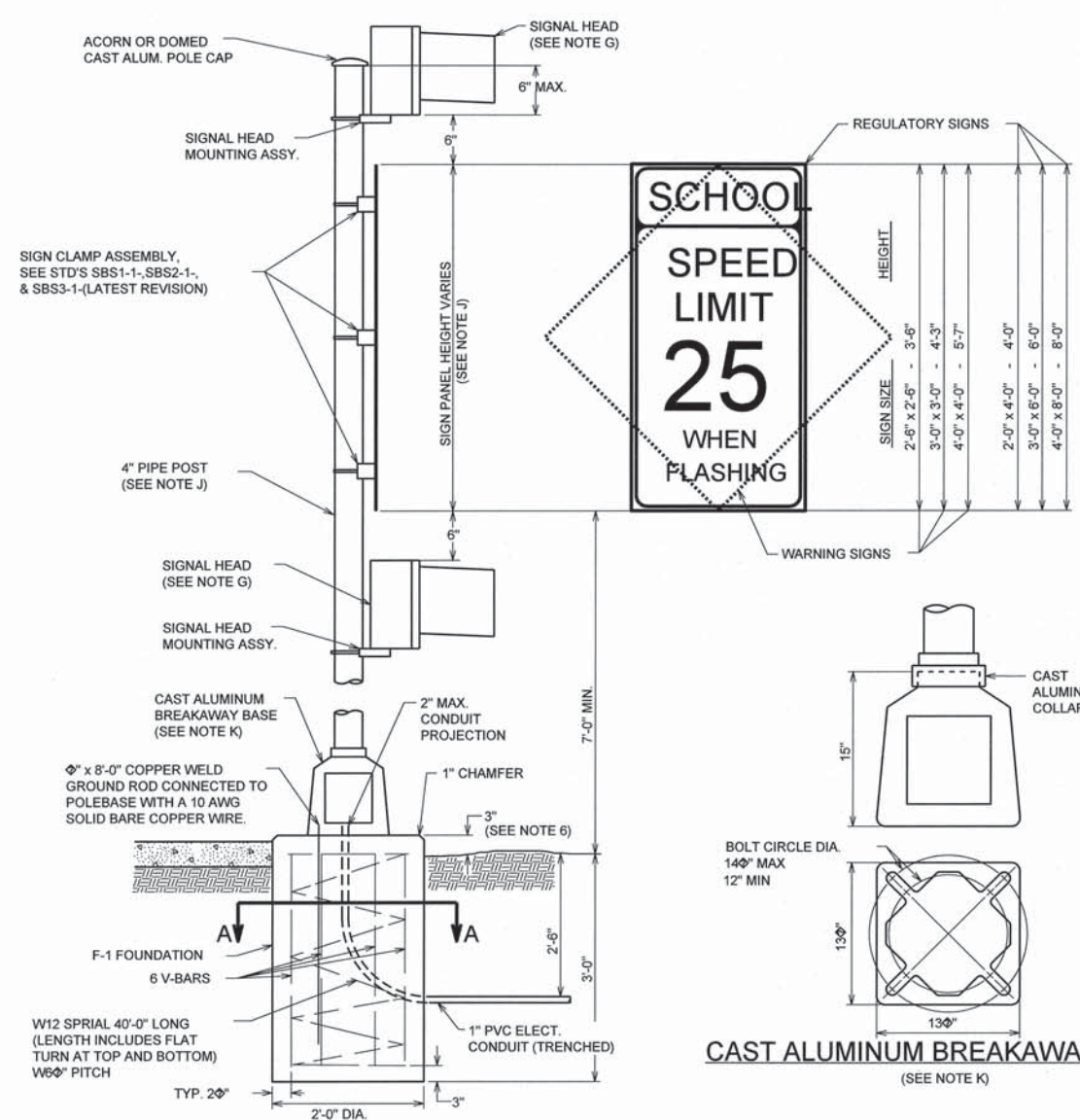
BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
802(A)	GALVANIZED STEEL ELECTRICAL CONDUIT	LF
802(B)	POLYVINYL CHLORIDE (PVC) CONDUIT	LF
802(C)	HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT	LF
802(D)	ALUMINUM CONDUIT	LF

APPROVED BY
TRAFFIC ENGINEER: *David J. Smith* DATE: 8/31/2010

TRAFFIC STANDARD

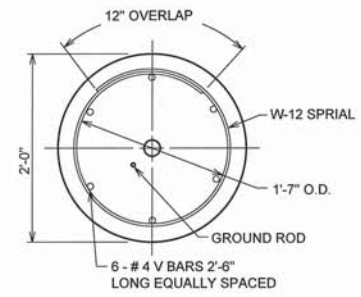
TYPICAL CONDUIT CONSTRUCTION DETAILS
(FOR UNDERGROUND CONDUIT INSTALLTION)

DESCRIPTION	REVISIONS	DATE
MODIFIED NOTE K.		7/08/2011

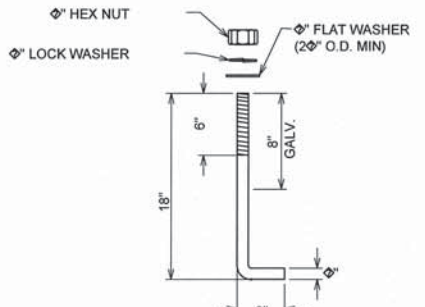


TYPICAL FLASHING REGULATORY / WARNING SIGN

STRUCTURAL CONCRETE = 0.35 CY
REINFORCING STEEL = 27 LBS

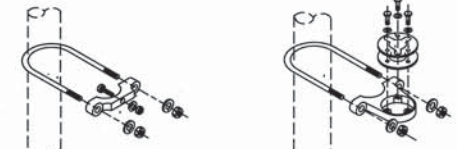
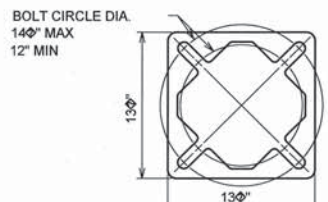


SECTION "A-A"

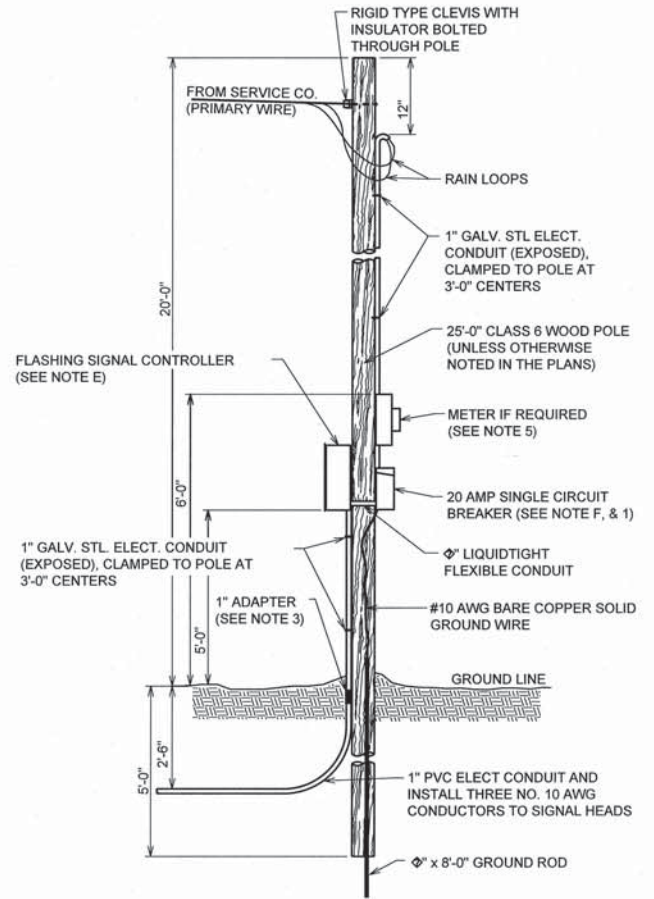


ANCHOR BOLT DETAIL
(SEE NOTE H)

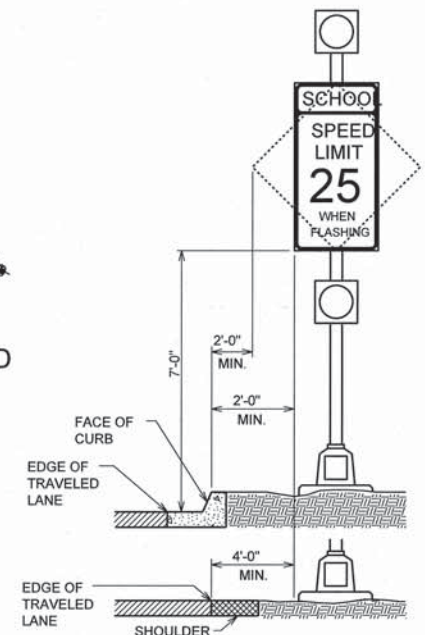
CAST ALUMINUM BREAKAWAY BASE
(SEE NOTE K)



SIGN CLAMP
SIGNAL HEAD MOUNTING
MOUNTING ASSEMBLYS



TYPICAL SERVICE POLE



LATERAL CLEARANCE DISTANCE
SEE SIGNING SCHEDULE

MATERIAL SPECIFICATIONS

- A. ELECTRICAL CONDUIT AND FITTINGS SHALL BE IN ACCORDANCE WITH SECTION 802 OF THE 2009 STANDARD SPECIFICATIONS AND MAY BE EITHER RIGID GALV. STEEL OR SCH. 40 PVC PLASTIC.
- B. ELECTRICAL CONDUCTORS FROM THE POWER SERVICE INSULATOR TO THE CONTROLLER, AND TO THE FLASHING SIGNAL HEADS SHALL BE A NO. 10 AWG. TYPE THIN. ELECTRICAL WIRING FROM THE FOOTING TO THE SIGNAL HEADS SHALL BE INSTALLED WITHIN THE SUPPORTING SIGN POLE.
- C. ALL CONDUITS OR STRAPS SHALL BE GALVANIZED MALLEABLE IRON.
- D. THE SERVICE POLE SHALL BE TREATED FULL LENGTH IN ACCORDANCE WITH AMERICAN WOOD PRESERVERS ASSOCIATION SPECIFICATIONS, TO BE AT LEAST 7.5 LBS. PER CUBIC FOOT RETENTION OF CREOSOTE OR 0.38 PENTACHLOROPHENOL MEASURED BY THE EMPTY CELL PROCESS. WOOD POLES SHALL COMPLY WITH THE LATEST REVISIONS OF ANSI STANDARD 05.1.
- E. THE FLASHER CONTROLLER SHALL BE A TYPE I FLASHER FOR 24 HOUR OPERATION OR A TYPE II FLASHER FOR TIMED OPERATION, IN A CAST ALUMINUM, NEMA 3R RAINTIGHT, LOCKABLE ENCLOSURE. CONTROLLER SHALL CONFORM TO SECTION 827 OF THE 2009 STANDARD SPECIFICATIONS.
- F. THE ENCLOSURE FOR THE CIRCUIT BREAKER SHALL BE A N.E.M.A. 3R RAINTIGHT ENCLOSURE, AND SHALL BE LOCKED IN ACCORDANCE WITH THE POWER COMPANY REQUIREMENTS. CIRCUIT BREAKERS SHALL BE I-POLE, 120 VOLT, RATED AT 20 AMP.
- G. SIGNAL HEADS USED SHALL BE ONE-WAY, ONE SECTION (WITH YELLOW LENS AND TUNNEL VISOR (V-1), CONFORMING TO SECTION 831 OF THE 2009 STANDARD SPECIFICATIONS. SIGNAL HEAD SIZE SHALL BE EITHER A S-8 (8") OR S-22 (12") AS SPECIFIED ON THE PLANS.
- H. ANCHOR BOLTS SHALL BE ASTM A-572 OR A-36, MODIFIED TO 50,000 PSI YIELD STRENGTH WITH A HEAVY DUTY FLAT WASHER, HEAVY DUTY LOCK WASHER AND HEAVY DUTY HEX NUT, ALL GALVANIZED AS PER ASTM A-153.
- I. THE FUSE HOLDER LOCATED IN THE POLE BASE SHALL BE WATERPROOF, IN-LINE, BREAK-A-WAY TYPE INCLUDING A 10 AMP KTK FUSE.
- J. THE PIPE POST SHALL BE 4" @ 10.79 SCH. 40 GALV. STEEL. PIPE LENGTH WILL VARY DUE TO SIGN SIZES AND FIELD CONDITIONS. THE CONTRACTOR SHALL VERIFY AND ADJUST THE PIPE POST LENGTH AS REQUIRED. MINIMUM LENGTH OF 12', UNLESS OTHERWISE SPECIFIED IN THE SIGNING SCHEDULE. SPUN ALUMINUM SCH.40 OR 80 PIPE, AS REQUIRED, MAY BE USED AS AN ALTERNATE POST MATERIAL.
- K. ALL COST OF THE FHWA APPROVED SQUARE CAST ALUMINUM BASE WITH A PLASTIC DOOR, GROUNDING LUG AND A CAST ALUMINUM BASE COLLAR SHALL BE INCLUDED IN THE PRICE BID FOR REGULATORY OR WARNING SIGN ASSEMBLY.
- L. COST OF CONCRETE AND STEEL IN THE FOOTING SHALL BE INCLUDED IN THE PRICE BID OF REGULATORY OR WARNING SIGN ASSEMBLY PAY ITEM. FOR CONCRETE AND STEEL QUANTITIES SEE STANDARD FGS2-1 (LATEST REVISION).

GENERAL NOTES

- 1. SERVICE POLE: PRIMARY SERVICE SHALL BE FURNISHED TO A SERVICE POLE. THE INSTALLATION SHALL INCLUDE GROUND ROD, METER BASE, INSULATORS, CABLES, CONDUIT, SERVICE HEAD, SERVICE BRACKET, CIRCUIT BREAKERS AND ALL OTHER ITEMS NECESSARY TO COMPLETE THE WORK. THE CONTRACTOR SHALL COORDINATE WITH THE POWER COMPANY TO GET THE CONNECTION AT THE PROPER TIME. THE EQUIPMENT, CONSTRUCTION AND INSTALLATION ON THE SERVICE POLE SHALL BE SUBJECT TO THE APPROVAL OF THE POWER COMPANY. THE COST OF MATERIALS AND INSTALLATION OF THE SERVICE POLE, AS DESCRIBED ABOVE, INCLUDING ANY PERMITS OR CHARGES BY POWER COMPANY FOR THE CONNECTION SHALL BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS.
- 2. ON PROJECTS WHERE SERVICE POLES ARE INSTALLED THE SERVICE POLE SHALL BE INSTALLED AS CLOSE TO THE RIGHT-OF-WAY AS POSSIBLE. LOCATION SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION TO PROVIDE THE MAXIMUM CLEARZONE DISTANCE POSSIBLE.
- 3. INSTALL A CONDUIT COUPLING ADAPTOR, OR COMPRESSION COUPLING IF NECESSARY TO CONNECT CONDUITS OF DISSIMILAR MATERIALS.
- 4. THE PRIMARY WIRING SHALL BE PROVIDED BY THE LOCAL UTILITY CO., UNLESS OTHERWISE SPECIFIED.
- 5. THE CONTRACTOR SHALL INSTALL THE REQUIRED METERING EQUIPMENT FURNISHED BY LOCAL UTILITY CO., UNLESS OTHERWISE SPECIFIED.
- 6. WHEN POLE FOUNDATION IS PLACED IN SOIL AREAS, THE FOUNDATION SHALL EXTEND A MAXIMUM OF 3" ABOVE GROUND LINE. WHEN FOUNDATION IS PLACED IN SIDEWALK OR OTHER SURFACED AREA, THE FOUNDATION TOP SHALL BE FLUSH WITH THE SURFACE.

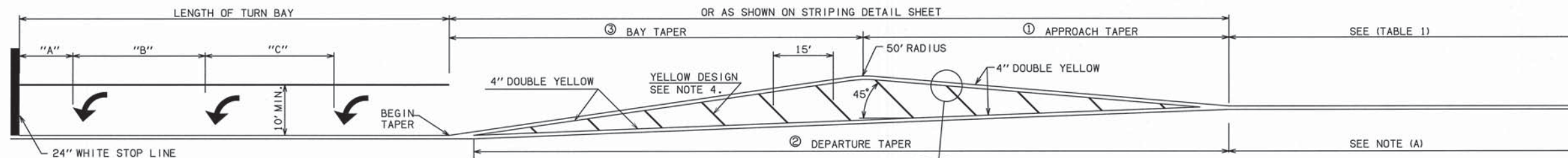
BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
836	REGULATORY OR WARNING SIGN ASSEMBLY	EA



APPROVED BY TRAFFIC ENGINEER: *David Smith* DATE: 7/27/10

TRAFFIC STANDARD
REGULATORY AND WARNING SIGN WITH FLASHING SIGNAL

2009 SPECIFICATIONS



DESCRIPTION	REVISIONS	DATE
ADDED GENERAL NOTE 4.		7/08/2011
UPDATED SYMBOLS		4/2/2013

LEFT TURN BAY AND STRIPED MEDIAN DETAIL
SEE PLANS FOR LENGTH OF LEFT TURN BAYS AND TAPERS ON STRIPED MEDIANS

- THE PREFERRED APPROACH TAPER RATE IS V:1, WHERE V IS THE DESIGN SPEED. FOR V≤40 MPH, IT IS ACCEPTABLE FOR THE APPROACH TAPER TO BE (V²/60):1.
- THE PREFERRED DEPARTURE TAPER RATE IS V:1, WHERE V IS THE DESIGN SPEED. FOR V≤40 MPH, IT IS ACCEPTABLE FOR THE DEPARTURE TAPER TO BE (V²/60):1.
- SEE RECOMMENDED BAY TAPER RATES TABLE.

RECOMMENDED BAY TAPER RATES

DESIGN SPEED (MPH)	TAPER RATE
V < 30	8:1
30 ≤ V ≤ 50	10:1
50 > V	15:1

TABLE 1

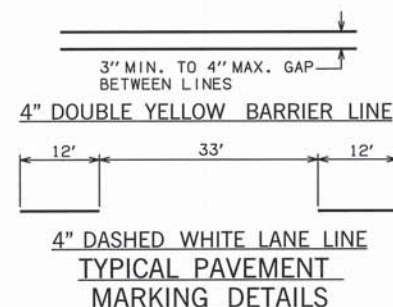
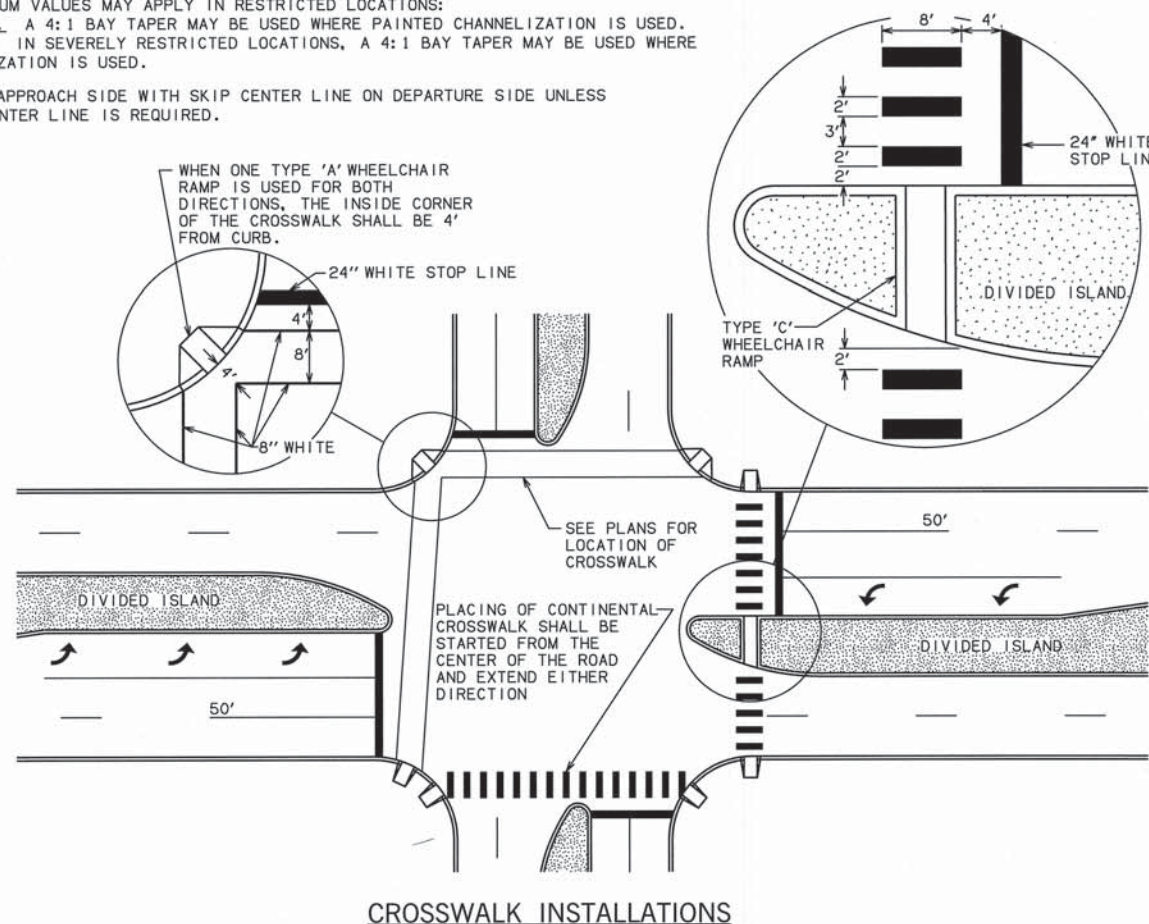
POSTED SPEED	NO PASS LENGTH (MINIMUM)
60 MPH	790'
55 MPH	725'
50 MPH	660'
45 MPH	590'
40 MPH	360'
35 MPH	260'
30 MPH	200'
25 MPH	150'

- MATERIAL SPECIFICATIONS**
- UNLESS OTHERWISE SPECIFIED, RETROREFLECTIVE PAVEMENT MARKING SHALL BE APPLIED BY THE EXTRUSION METHOD.
 - THE THICKNESS OF THE PLASTIC PAVEMENT MARKING SHALL BE MEASURED FROM THE PLANE OF THE PAVEMENT SURFACE WITH A DEVICE SUPPLIED BY CONTRACTOR AND SUITABLE TO THE ENGINEER. THICKNESSES ARE AS FOLLOWS:
LANE LINES, STOP LINES, WORDS, ARROWS AND SYMBOLS.....0.120" MIN. & 0.188" MAX.
EDGE, GORE AND DIAGONAL LINES.... 0.090" MIN. & 0.188" MAX.
 - THE THICKNESS OF THE MULTI-POLYMER PAVEMENT MARKING SHALL BE MEASURED FROM THE PLANE OF THE PAVEMENT SURFACE WITH A DEVICE SUPPLIED BY CONTRACTOR AND SUITABLE TO THE ENGINEER. THICKNESSES ARE AS FOLLOWS:
LANE LINES, STOP LINES, WORDS, ARROWS, SYMBOLS, EDGE, GORE AND DIAGONAL LINES.... 0.020" MIN. & 0.025" MAX.

TURN BAY TABLE

LENGTH OF BAY FT.	"A" FT.	"B" FT.	"C" FT.
75 TO 99	20	35	--
100 TO 149	20	35	35
150 TO 200	30	55	55

- THE FOLLOWING MINIMUM VALUES MAY APPLY IN RESTRICTED LOCATIONS:
- RIGHT-TURN LANES.** A 4:1 BAY TAPER MAY BE USED WHERE PAINTED CHANNELIZATION IS USED.
 - LEFT-TURN LANES.** IN SEVERELY RESTRICTED LOCATIONS, A 4:1 BAY TAPER MAY BE USED WHERE PAINTED CHANNELIZATION IS USED.
- (A) NO PASS LINE ON APPROACH SIDE WITH SKIP CENTER LINE ON DEPARTURE SIDE UNLESS DOUBLE YELLOW CENTER LINE IS REQUIRED.



FOR SPACING OF ARROWS SEE "TURN BAY TABLE"

- GENERAL NOTES**
- LANE WIDTH IS THE DISTANCE BETWEEN PAVEMENT MARKINGS, OR PAVEMENT MARKING AND EDGE OF PAVEMENT. LANE WIDTH IS MEASURED FROM CENTER OF STRIPE TO CENTER OF STRIPE.
 - LANE LINES SHALL BE PLACED LEFT OF THE LONGITUDINAL PAVEMENT JOINTS.
 - ALL PAVEMENT MARKING SHALL OVERLAP WHERE IT MEETS OTHER PAVEMENT MARKING.
 - WIDTH OF DIAGONALS ARE AS FOLLOWS:
≥ 45 MPH - 12" WIDE
< 45 MPH - 8" WIDE

BASIS OF PAYMENT

ITEM NO.	ITEM	UNIT
854(A)	TRAFFIC STRIPE (PAINT) (4" WIDE)	LF
854(B)	TRAFFIC STRIPE (PAINT) (ARROW, WORDS, OR SYMBOLS)	EA
855(A)	TRAFFIC STRIPE (PLASTIC) (4" WIDE)	LF
855(A)	TRAFFIC STRIPE (PLASTIC) (6" WIDE)	LF
855(A)	TRAFFIC STRIPE (PLASTIC) (8" WIDE)	LF
855(A)	TRAFFIC STRIPE (PLASTIC) (24" WIDE)	LF
855(B)	TRAFFIC STRIPE (PLASTIC) (ARROW)	EA
855(B)	TRAFFIC STRIPE (PLASTIC) (WORDS)	EA
856(A)	TRAFFIC STRIPE (MULTI-POLYMER) (4" WIDE)	LF
856(A)	TRAFFIC STRIPE (MULTI-POLYMER) (6" WIDE)	LF
856(A)	TRAFFIC STRIPE (MULTI-POLYMER) (8" WIDE)	LF
856(A)	TRAFFIC STRIPE (MULTI-POLYMER) (24" WIDE)	LF
856(B)	TRAFFIC STRIPE (MULTI-POLYMER) (SYMBOLS, WORDS, ETC)	EA

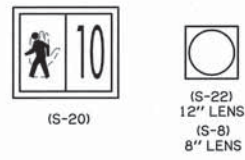
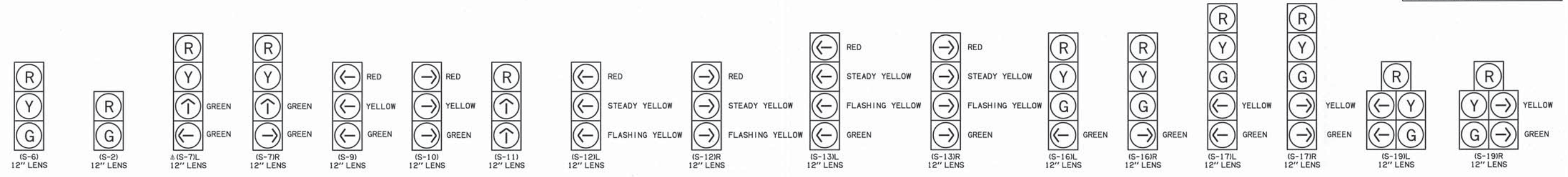
APPROVED BY
TRAFFIC ENGINEER: *David Smith* DATE: 4/8/2013

TRAFFIC STANDARD
PAVEMENT MARKING
(CROSSWALKS AND LEFT TURN BAY)

2009 SPECIFICATIONS

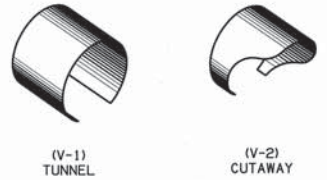
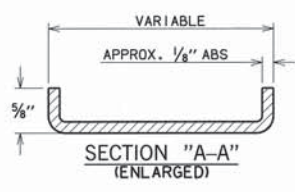
PM1-1	02
T-101	

DESCRIPTION	REVISIONS	DATE
ADDED SIGNALS		7/08/2011
UPDATED SYMBOLS		
ADDED RETRO-REFLECTIVE TAPE TO BACKPLATE		4/2/2013

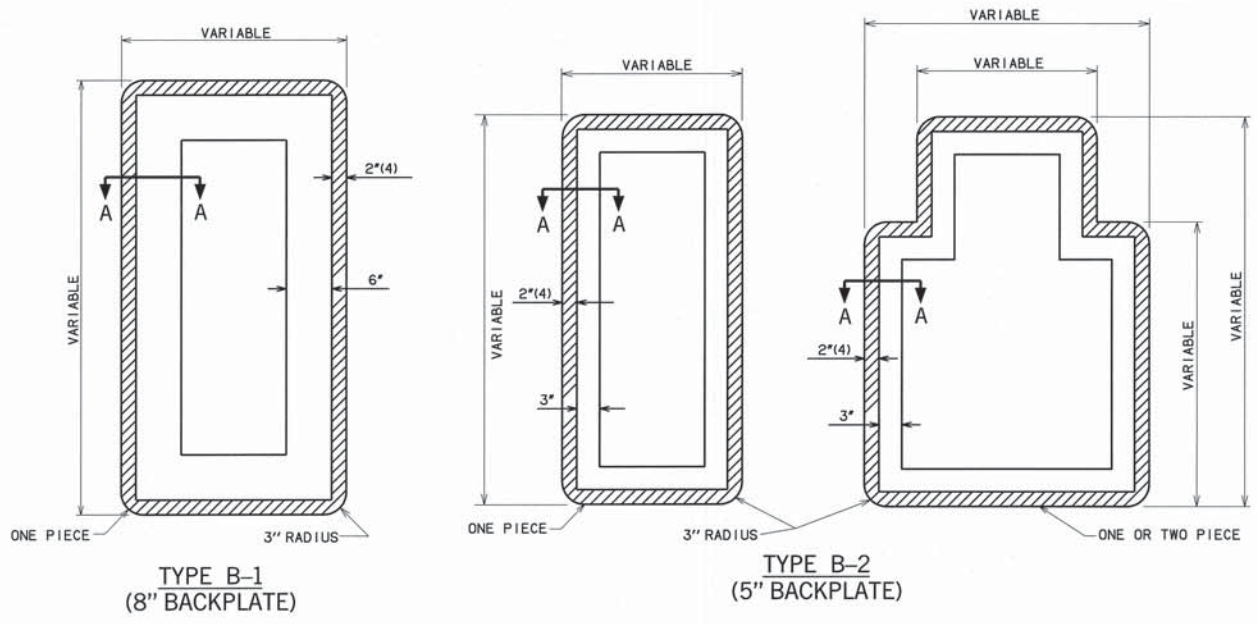


SIGNAL FACE TYPES

R = RED
Y = YELLOW
G = GREEN



VISOR TYPES



GENERAL NOTES

1. ALL TRAFFIC SIGNAL AND PEDESTRIAN SIGNAL HEADS SHALL BE FURNISHED WITH GLASS LENSES, UNLESS OTHERWISE SPECIFIED. THE LENSES SHALL CONFORM TO THE LATEST STANDARD OF THE INSTITUTE OF TRANSPORTATION ENGINEERS.
2. BACKPLATES SHALL BE INSTALLED WITH TWO RIVETS AND/OR SCREWS PER SECTION, A MINIMUM OF SIX PER SIGNAL, OR AS RECOMMENDED BY THE MANUFACTURER.
3. VACUUM FORMED BACKPLATES SHALL BE USED ON ALL STANDARD TRAFFIC SIGNAL HEADS. UNLESS NOTED ON PLANS, BACKPLATES ARE TO BE BLACK.
4. BACKPLATES SHALL HAVE A 2" FLUORESCENT YELLOW TAPE APPLIED TO THE BACKPLATE. THE TAPE SHALL EITHER BE TYPE 1X OR TYPE X1.

BASIS OF PAYMENT		
ITEM NO.	ITEM	UNIT
833	BACKPLATE	EA

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

TRAFFIC STANDARD

TRAFFIC SIGNALS AND ACCESSORIES



SCHOOL CROSSING

COLOR:
BORDER AND LEGEND:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLOURESCENT YELLOW-GREEN
(REFLECTORIZED)

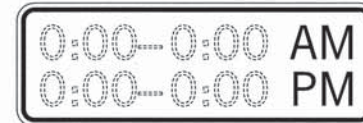
S1-1 36 x 36 6.75 SF
S1-1E 48 x 48 12.00 SF



SCHOOL BUS STOP AHEAD

COLOR:
BORDER AND LEGEND:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLOURESCENT YELLOW-GREEN
(REFLECTORIZED)

* RED (REFLECTORIZED)
S3-1 30 x 30 6.25 SF
S3-1E 36 x 36 9.00 SF



SCHOOL ZONE TIME

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

S4-1P 24 x 10 1.67 SF
S4-1PE 36 x 18 4.50 SF



WHEN CHILDREN ARE PRESENT

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

S4-2P 24 x 10 1.67 SF
S4-2PE 36 x 18 4.50 SF

DESCRIPTION	REVISIONS	DATE
-------------	-----------	------



SCHOOL

COLOR:
BORDER AND LEGEND:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLOURESCENT YELLOW-GREEN
(REFLECTORIZED)

S4-3P 24 x 8 1.33 SF
S4-3PE 36 x 12 3.00 SF



WHEN FLASHING

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

S4-4P 24 x 10 1.67 SF
S4-4PE 36 x 18 4.50 SF



REDUCE SPEED SCHOOL ZONE AHEAD

COLOR:
BORDER AND ARROW:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLOURESCENT YELLOW-GREEN (REFLECTORIZED)
SYMBOL:
BLACK BORDER AND TEXT ON
WHITE BACKGROUND (REFLECTORIZED)

S4-5 36 x 36 9.00 SF
S4-5E 48 x 48 16.00 SF

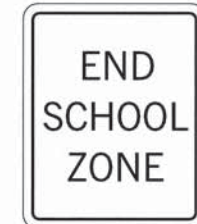
COLOR:
TOP PANEL
BACKGROUND - FLOURESCENT YELLOW
GREEN (REFLECTORIZED)
LEGEND - BLACK (NON-REFLECTORIZED)

BOTTOM PANEL
BACKGROUND - WHITE (REFLECTORIZED)
LEGEND - BLACK (NON-REFLECTORIZED)



SCHOOL SPEED LIMIT

S5-1 24 x 48 8.00 SF
S5-1E 36 x 72 18.00 SF



END SCHOOL ZONE

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

S5-2 24 x 30 5.00 SF
S5-2E 36 x 48 12.00 SF



DIAGONAL ARROW

COLOR:
BORDER AND LEGEND:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLOURESCENT YELLOW-GREEN
(REFLECTORIZED)

W16-7P 24 x 12 2.00 SF
W16-7PE 30 x 18 3.75 SF



AHEAD

COLOR:
BORDER AND LEGEND:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLOURESCENT YELLOW-GREEN
(REFLECTORIZED)

W16-9P 24 x 12 2.00 SF
W16-9PE 30 x 18 3.75 SF

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



APPROVED BY
TRAFFIC ENGINEER: *Clifford J. Smith* DATE: 8/31/2010

TRAFFIC STANDARD
SCHOOL AREA TRAFFIC
CONTROL SIGNS

2009 SPECIFICATIONS

SZSD1-1 00
T-119

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: *Sheld Gandy* DATE: 3/21/11

TRAFFIC STANDARD
TRAFFIC CONTROL STANDARD
TRAFFIC CONTROL CONSTRUCTION NOTES

2009 SPECIFICATIONS

TCS1-1	01
T-501	

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

DESCRIPTION	REVISIONS	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	$L = \frac{W \times S^2}{60}$	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
100 FEET PER LANE

DOWNSTREAM TAPERS (USE IS OPTIONAL)

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

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
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
	FINAL LIFT	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.

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.

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	2865	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.

RECOMMENDED DISTANCE BETWEEN SIGNS (MIN.)

ROAD TYPE	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

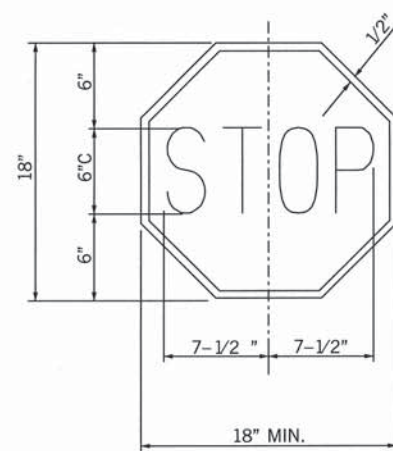


APPROVED BY TRAFFIC ENGINEER: *David Smith* DATE: 6/23/10

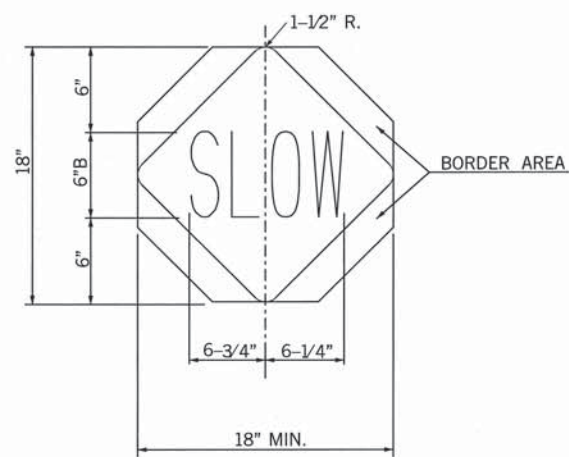
**TRAFFIC STANDARD
TRAFFIC CONTROL STANDARD
TRAFFIC CONTROL TABLES AND CHARTS**

TRFPC36 M:\2009_Standards_TC\502.dgn 6/23/2010 8:22:34 AM R:\TRAF_PLOT\eroy.pen R:\TRAF_PLOT\bw.cb

DESCRIPTION	REVISIONS	DATE

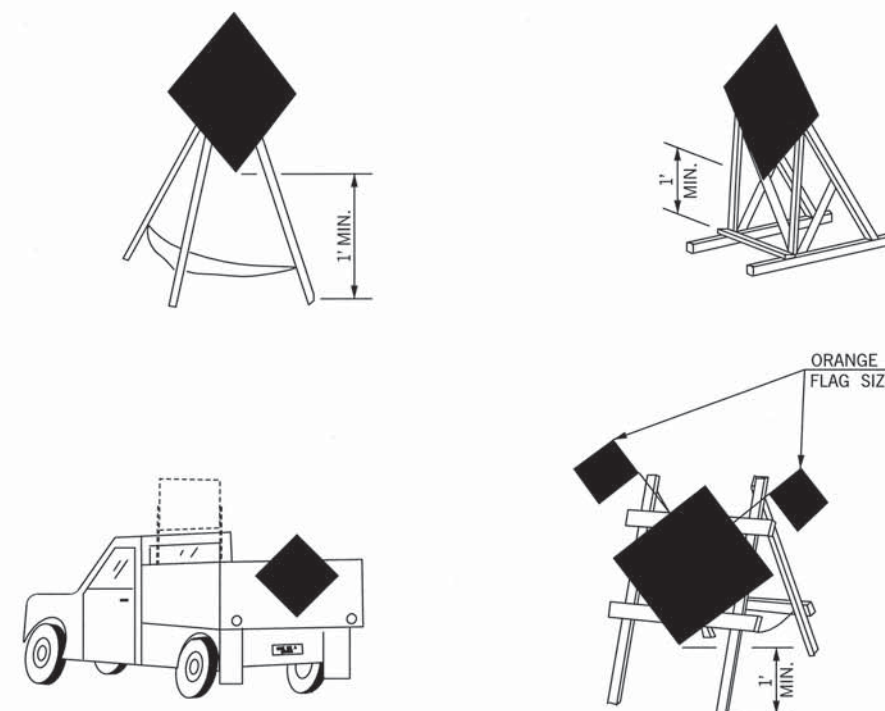


STOP:
 LEGEND AND BORDER: WHITE (REFLECTORIZED)
 BACKGROUND: RED (REFLECTORIZED)



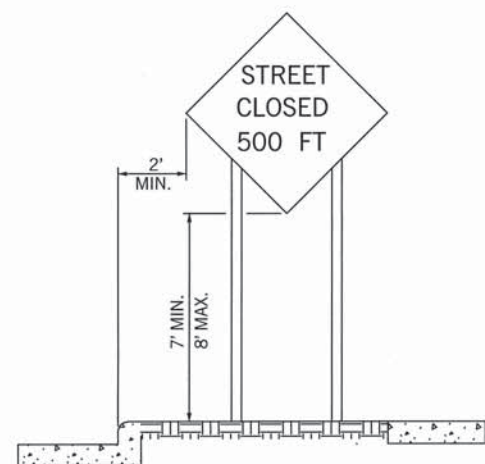
SLOW:
 LEGEND AND BORDER AREA: BLACK (NON-REFLECTORIZED)
 BACKGROUND: ORANGE (REFLECTORIZED)

STOP-SLOW PADDLE

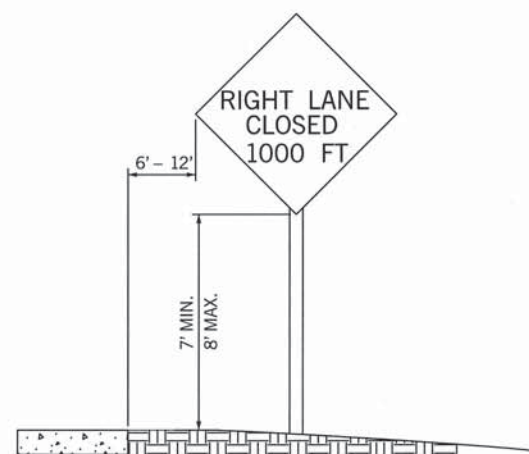


NOTE:
 THE BOTTOM OF SIGNS MOUNTED
 ON BARRICADES OR TEMPORARY
 SUPPORTS SHALL NOT BE LESS THAN
 1 FOOT ABOVE THE TRAVELED WAY.

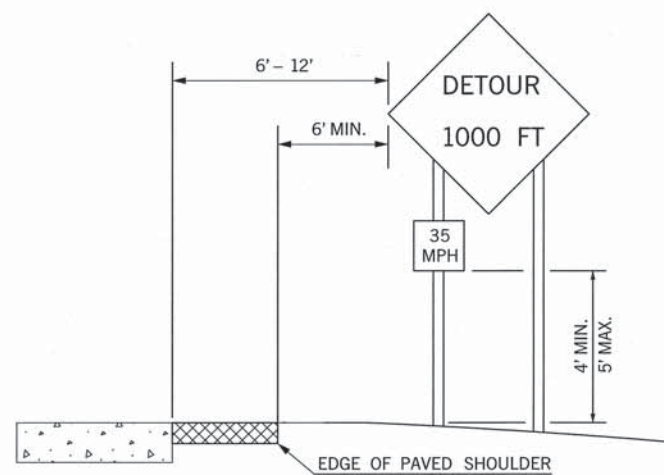
**PORTABLE AND TEMPORARY MOUNTINGS
 METHODS OF MOUNTING SIGNS OTHER THAN ON POSTS**



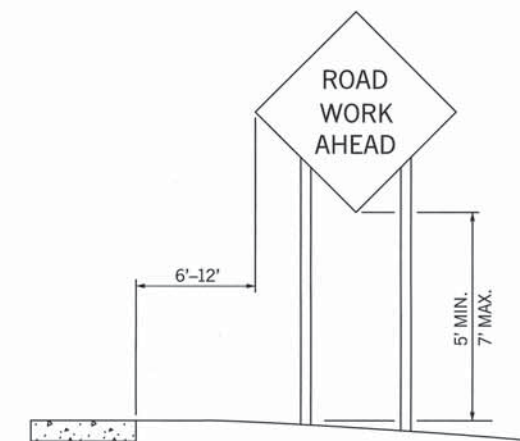
**URBAN DISTRICT
 (WITH CURB)**



**URBAN DISTRICT
 (WITHOUT CURB)**



**RURAL DISTRICT WITH
 ADVISORY SPEED PLATE**



RURAL DISTRICT

HEIGHT AND LATERAL LOCATIONS OF SIGNS – TYPICAL INSTALLATIONS

TRFFC36 M:\2009_Standards_TC\505.dgn 8:24:30 AM 6/23/2010 R:\TBAF_PLOT\teroy.pen R:\TBAF_PLOT\bw.ctb



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

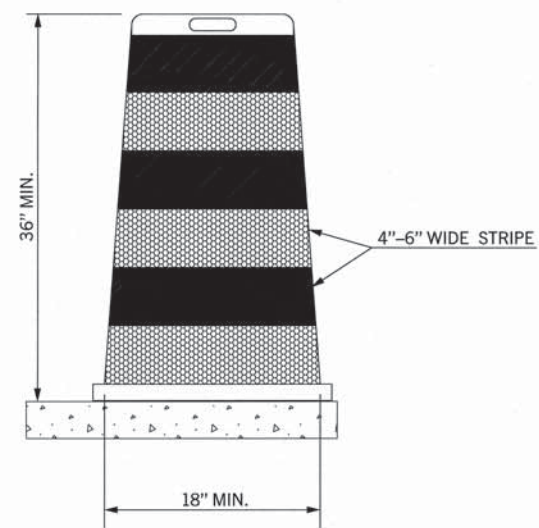
TRAFFIC STANDARD

TRAFFIC CONTROL STANDARD
 TYPICAL SIGN INSTALLATION

2009 SPECIFICATIONS

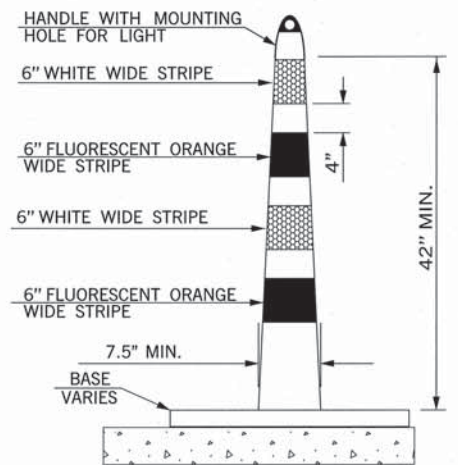
TCSS-1	00
T-505	

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



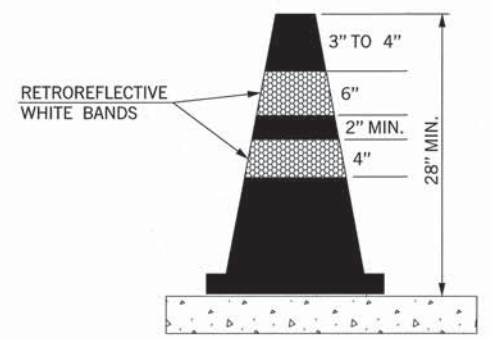
DRUM

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.



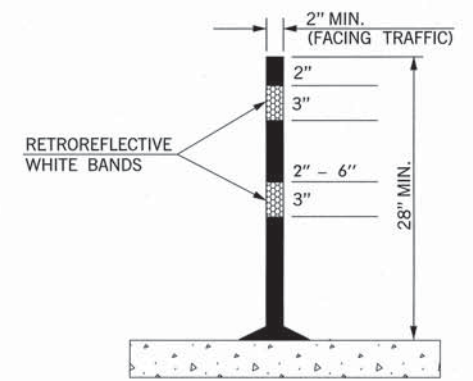
CHANNELIZER CONE

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.



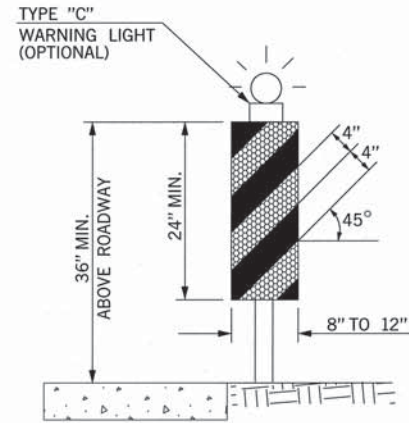
CONE

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.



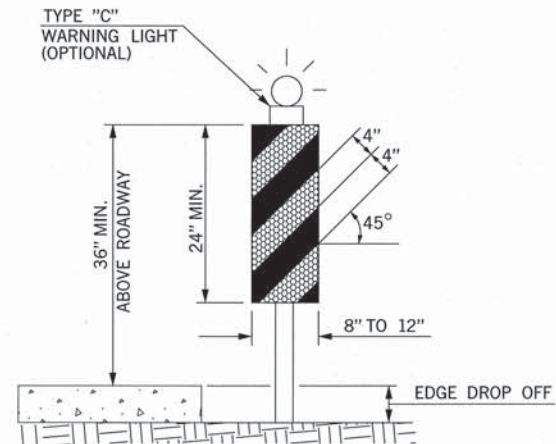
TUBE CHANNELIZER

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.



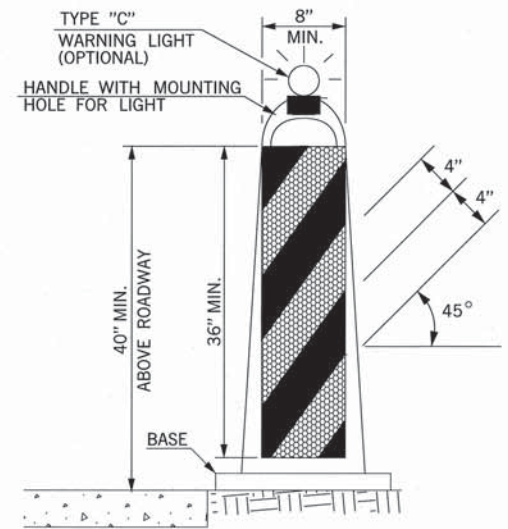
**VERTICAL PANEL
W/O DROP OFF**

NOTES:
 PANEL STRIPE WIDTHS SHALL BE 6 INCHES EXCEPT WHERE PANELS 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:

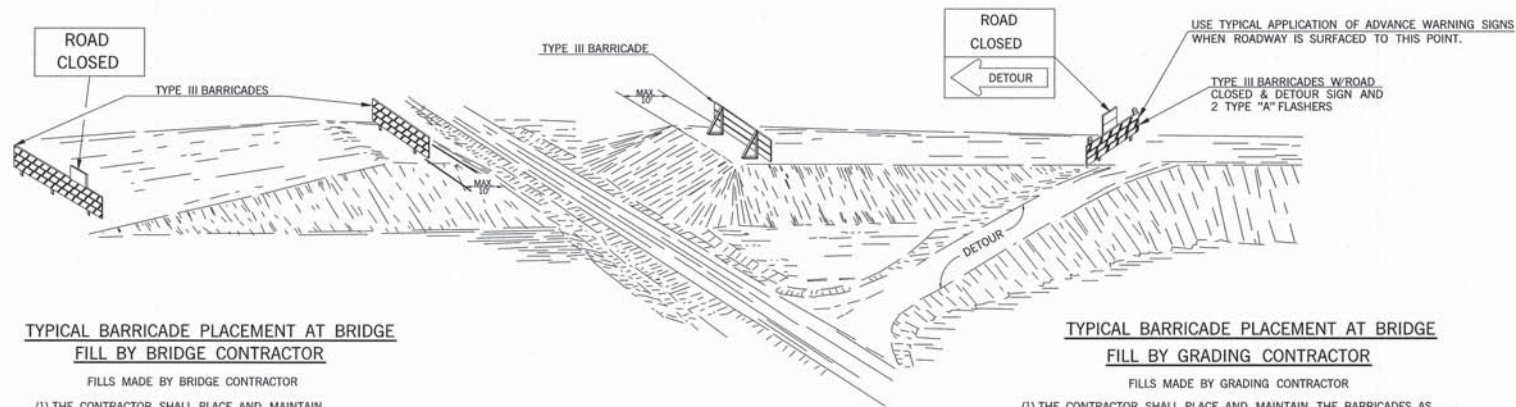
	FLUORESCENT ORANGE (REFLECTORIZED)
	WHITE (REFLECTORIZED)

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: *Dudley Smith* DATE: 3/15/11

TRAFFIC STANDARD
 CONTROL STANDARD
 CHANNELIZING DEVICES

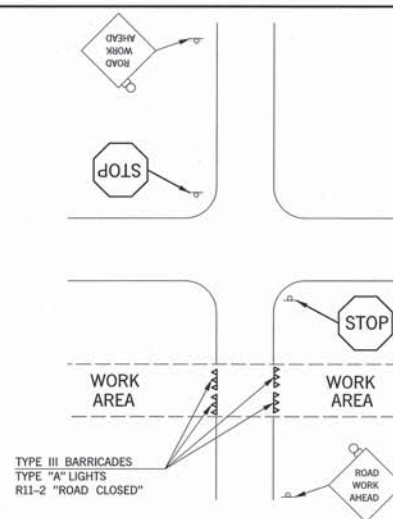


TYPICAL BARRICADE PLACEMENT AT BRIDGE FILL BY BRIDGE CONTRACTOR

- 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

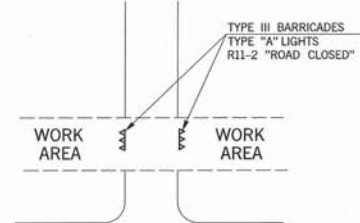
- FILLS MADE BY GRADING CONTRACTOR
- (1) THE CONTRACTOR SHALL PLACE AND MAINTAIN THE BARRICADES AS SHOWN UNTIL FINAL INSPECTION OR UNTIL THEY ARE NO LONGER NEEDED.
 - (2) THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO REMOVAL OF THE BARRICADES.
 - (3) IF THE BRIDGE WORK ORDER IS ISSUED PRIOR TO COMPLETION 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.



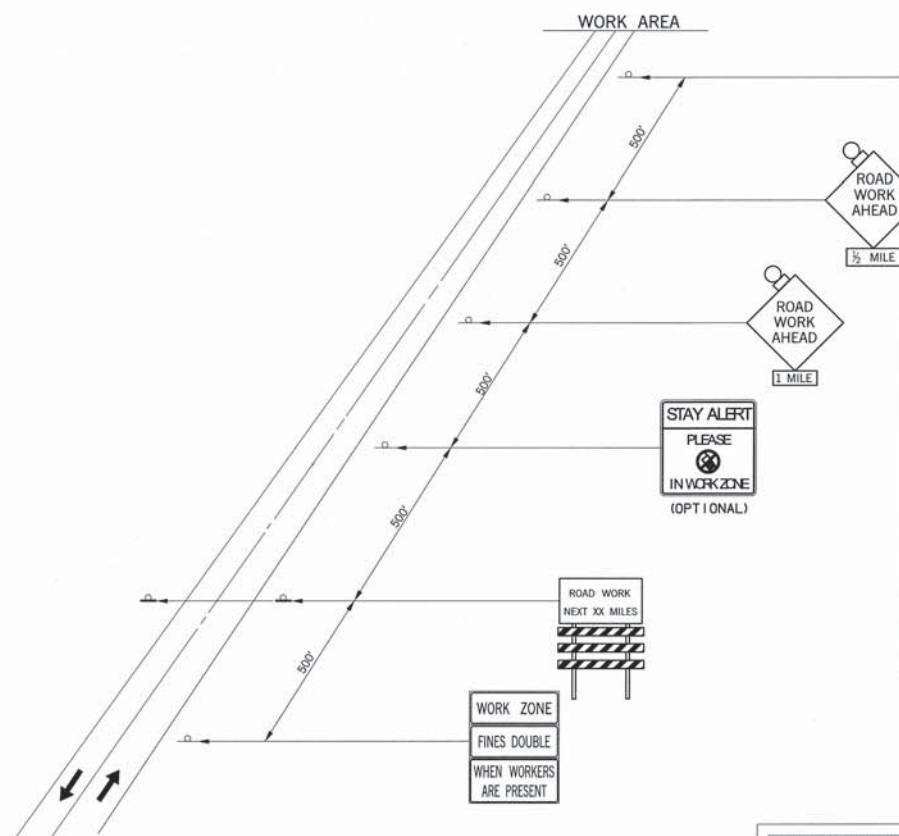
TYPICAL SIGN PLACEMENT FOR INTERSECTING ROADS AND STREETS

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 MOTORISTS 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.

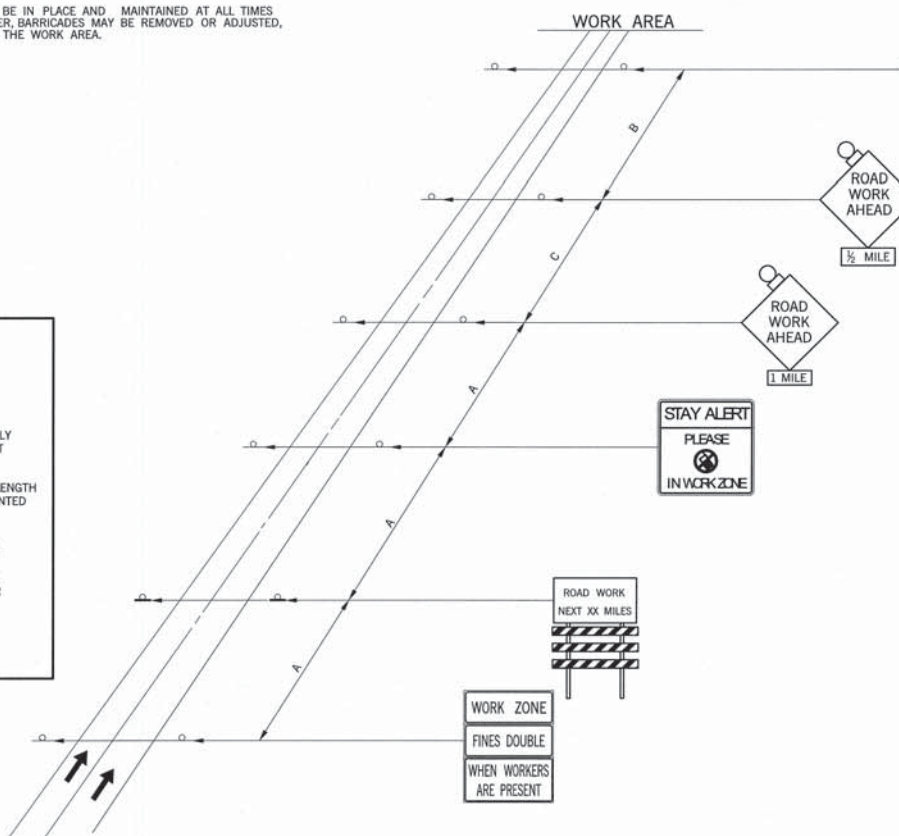
FINES DOUBLE IN WORK ZONE SIGNS ARE TO BE USED ONLY ON STATE OR FEDERAL HIGHWAYS WHERE THE SPEED LIMIT IS REDUCED OR AS DIRECTED BY THE ENGINEER.

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).

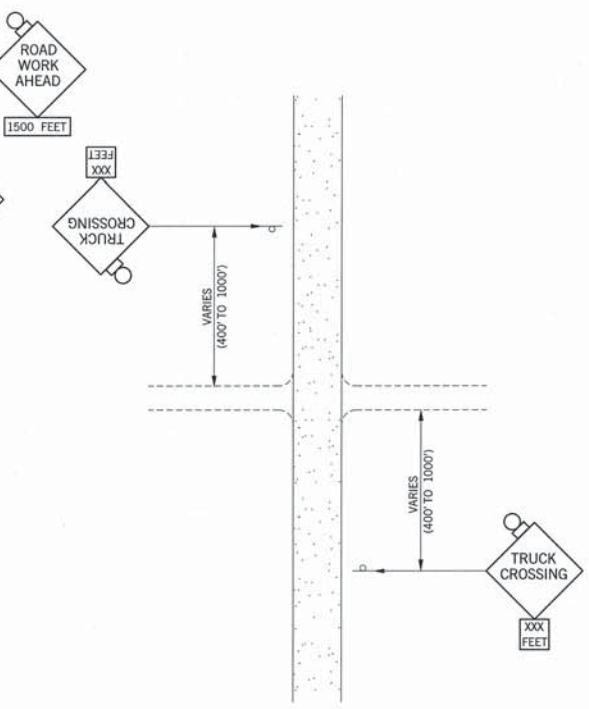
WARNING SIGNS SHOWN ARE "ADVANCE" WARNING SIGNS AND ARE REQUIRED ON ALL STATE HIGHWAYS. ADDITIONAL WARNING SIGNS MAY BE REQUIRED WITHIN THE PROJECT LIMITS TO WARN DRIVERS OF SPECIFIC HAZARDS. ADVANCE "WARNING SIGNS" MAY CHANGE AS CONDITIONS CHANGE OR AS DIRECTED BY THE ENGINEER.

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

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



ROAD CLOSED

R11-2 48 x 30 10.00 SF

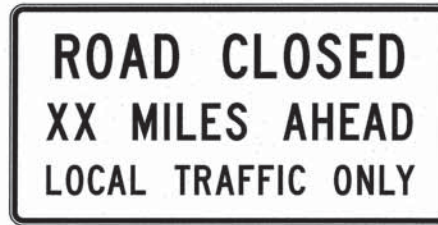
COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
WHITE (REFLECTORIZED)



LANE CLOSED

R11-2(LANE) 48 x 30 10.00 SF

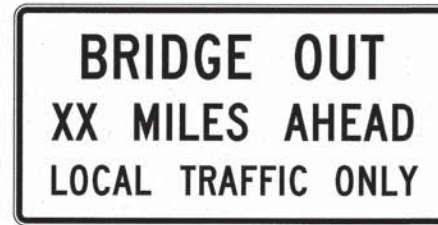
COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
WHITE (REFLECTORIZED)



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 STANARD
CONSTRUCTION SIGNS

2009 SPECIFICATIONS

TCS9-1 01
T-509

DESCRIPTION	REVISIONS	DATE



ROAD WORK SIGN

W20-1 48 x 48 16.00 SF
 COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



DETOUR SIGN

W20-2 48 x 48 16.00 SF
 COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



ROAD CLOSED SIGN

W20-3 48 x 48 16.00 SF
 COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



STREET CLOSED SIGN

W20-3A 48 x 48 16.00 SF
 COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



ONE LANE ROAD SIGN

W20-4 48 x 48 16.00 SF
 COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



LEFT LANE CLOSED SIGN

W20-5(L) 48 x 48 16.00 SF
 COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



RIGHT LANE CLOSED SIGN

W20-5(R) 48 x 48 16.00 SF
 COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



FLAGGER SIGN

W20-7 48 x 48 16.00 SF
 COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



FLAGGER SIGN

W20-7a 48 x 48 16.00 SF
 COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



WORKERS SIGN

W21-1 48 x 48 16.00 SF
 COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



FRESH OIL SIGN

W21-2 48 x 48 16.00 SF
 COLOR:
 LEGEND AND BORDER:
 BLACK (NON-REFLECTORIZED)
 BACKGROUND:
 FLUORESCENT ORANGE (REFLECTORIZED)



ROAD MACHINERY AHEAD SIGN

W21-3 48 x 48 16.00 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 MA\2009_Standard\TC\1514.dgn 8:37:49 AM 6/23/2010 R:\TRAF_PLOT\Veroy\pen_R\TRAF_PLOT\dw.ctb

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

2009 SPECIFICATIONS

TCS14-1	00
T-514	

DESCRIPTION	REVISIONS	DATE
ADDED NO CELL PHONE USE IN WORK ZONE		4/2/2013



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

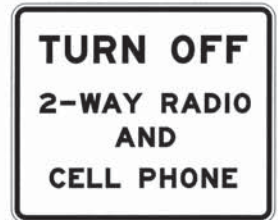
COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
FLUORESCENT ORANGE (REFLECTORIZED)



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.



BORDER
R=1.5"
TH=0.75"
IN=0.75"
NO CELL PHONE WORK ZONE

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

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

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

BASIS OF PAYMENT

ITEM NO.	ITEM	UNIT
880(B)	CONSTRUCTION SIGNS	SD



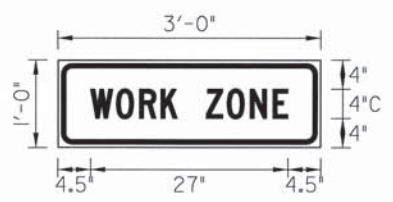
APPROVED BY
TRAFFIC ENGINEER: _____ DATE: _____

TRAFFIC STANDARD
TRAFFIC CONTROL STANDARD
CONSTRUCTION SIGNS

2009 SPECIFICATIONS

TCS15-1 01
T-515

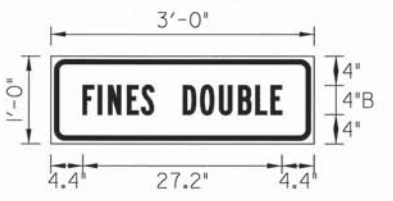
DESCRIPTION	REVISIONS	DATE
-------------	-----------	------



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
LEGNDBORDER	TYPE: Non-Reflective COLOR: Black

Dimensions are in Inches.tenths

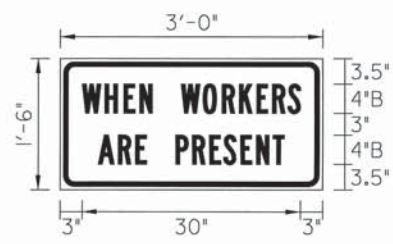
LETTER POSITIONS (X)											LENGTH	SERIESIZE
W	O	R	K	Z	O	N	E				C	2000
4.5	8	11.2	14.1	16.3	20.3	23.2	26.3	29.5			27	



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
LEGNDBORDER	TYPE: Non-Reflective COLOR: Black

Dimensions are in Inches.tenths

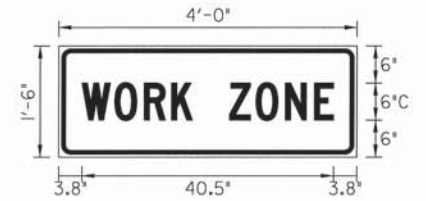
LETTER POSITIONS (X)													LENGTH	SERIESIZE
F	I	N	E	S	D	O	U	B	L	E			B	2000
4.4	6.5	7.9	10.5	12.4	14.1	18.1	20.5	23.1	25.7	28	30.1	27.2		



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
LEGNDBORDER	TYPE: Non-Reflective COLOR: Black

Dimensions are in Inches.tenths

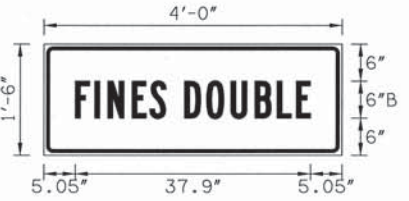
LETTER POSITIONS (X)													LENGTH	SERIESIZE
W	H	E	N	W	O	R	K	E	R	S			B	2000
3	6.1	8.7	10.9	12.6	16.6	19.6	22.2	24.6	27	29.1	31.3	30		
A	R	E		P	R	E	S	E	N	T			B	2000
5.3	8	10.3	11.9	15.9	18.1	20.5	22.4	24.8	26.9	29.2		25.5		



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
LEGNDBORDER	TYPE: Non-Reflective COLOR: Black

Dimensions are in Inches.tenths

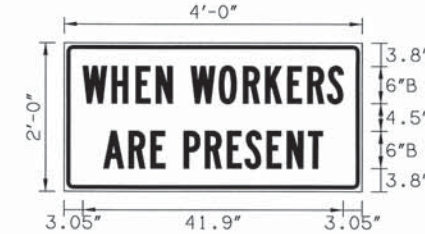
LETTER POSITIONS (X)											LENGTH	SERIESIZE
W	O	R	K	Z	O	N	E				C	2000
3.8	9	13.8	18.2	21.5	27.5	31.8	36.5	41.2			40.5	



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
LEGNDBORDER	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
LEGNDBORDER	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			



CS-16, E
CS-17, E
CS-18, E

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

TRFFC36 M:\2009_Standards_TC\1520.dgn 8:42:20 AM 6/23/2010 R:\TRAF_PLOT\lroy.pen R:\TRAF_PLOT\bw.ctb