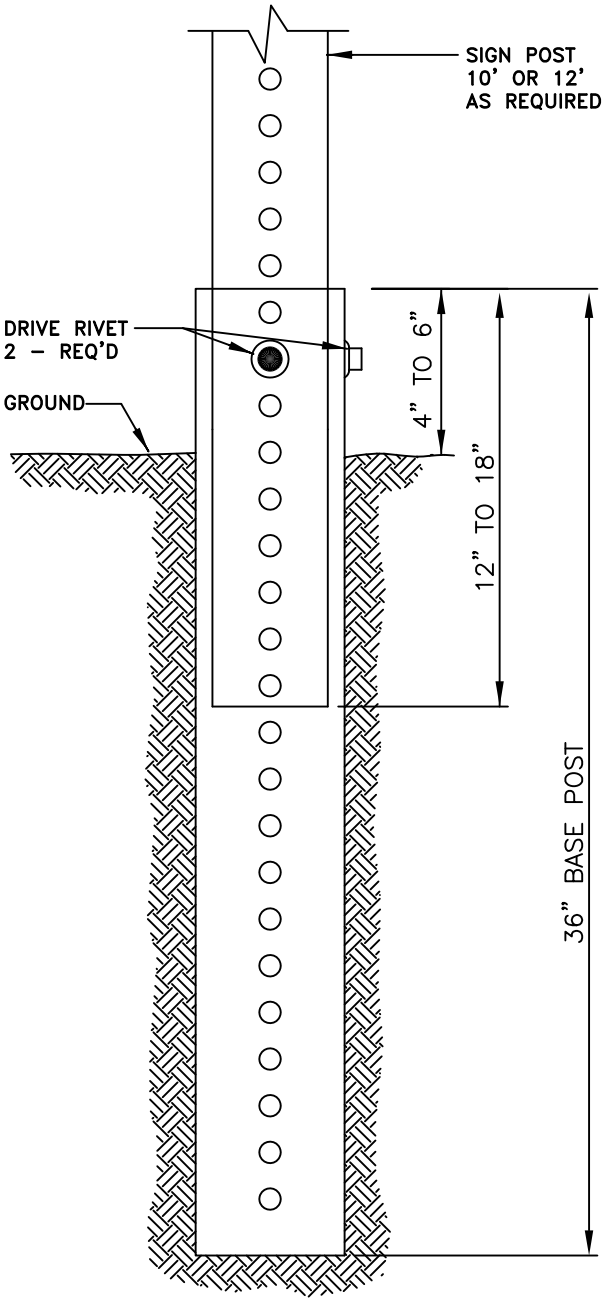
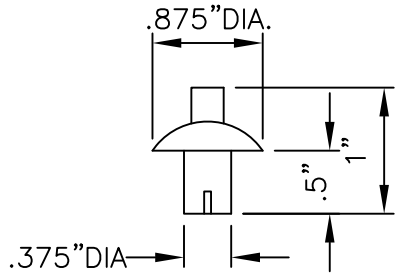




WT. .018/C

DRIVE RIVET

NOTES:

1. POSTS SHALL BE TELESPAR BRAND SQUARE TUBING OR APPROVED EQUAL. SIGN POST MUST BE BREAK AWAY AND ACCEPTABLE PER NCHRP 350.
2. POSTS SHALL BE COLD ROLLED STEEL WITH PERFORATIONS OF .4375 INCH DIAMETER ON ONE INCH CENTERS ON ALL FOUR SIDES.
3. POSTS SHALL EMPLOY A YIELDING BREAKAWAY SYSTEM CONSISTING OF A BASE POST AND SIGN POST.
4. ALL FASTENINGS OF TUBING JOINTS AND CONNECTIONS SHALL UTILIZE A MINIMUM OF TWO DRIVE RIVETS UNLESS OTHERWISE SPECIFIED. RIVETS SHALL BE ON ADJOINING FACES OF POST NOT OPPOSITE SIDES AND SHALL NOT USE WASHERS.
5. GALVANIZED COATING SHALL CONFORM TO A.S.T.M. SPECIFICATION A–525,DES. G–90.
6. BASE POST MUST BE DRIVEN WITH A MECHANICAL DRIVER UNLESS OTHERWISE APPROVED BY THE TRAFFIC ENGINEER.
7. WHENEVER A SIGN WILL HAVE CONCRETE POURED AROUND THE BASE (i.e. SIDEWALK, ISLANDS OR WITH EXCEPTIONS ALLOWED BY THE TRAFFIC ENGINEER), A ZUMAR HDA20 HEAVY DUTY 30" SIGN ANCHOR MUST BE USED. THE TOP OF THE BASE MUST BE TAPED OFF TO PREVENT CONCRETE FROM FILLING BASE WHILE POURING CONCRETE.

PART	TUBE SIZE	MIN. WALL THICKNESS	LENGTH
BASE POST	2.25" x 2.25"	12 GAGE	36 INCH
SIGN POST	2" x 2"	12 GAGE	10' or 12' AS REQ'D.

AUGUST 29, 2013

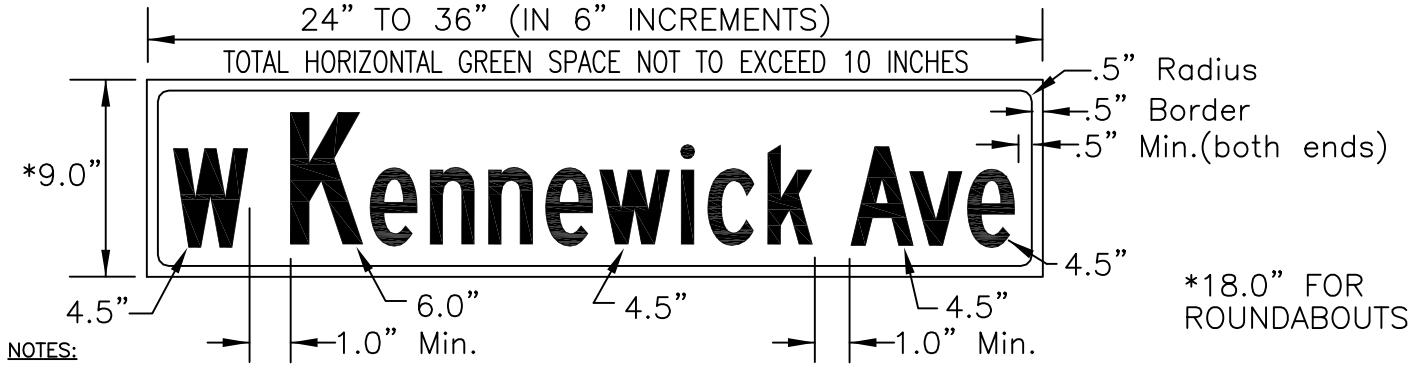
BENTON CITY

TYPICAL SIGN POST DETAIL

DWG #

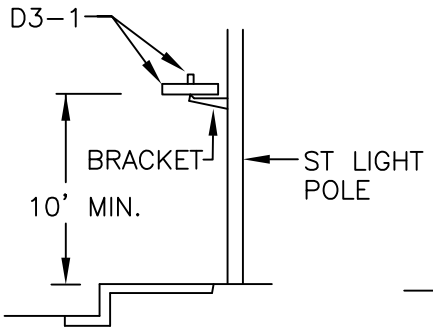
7 – 1

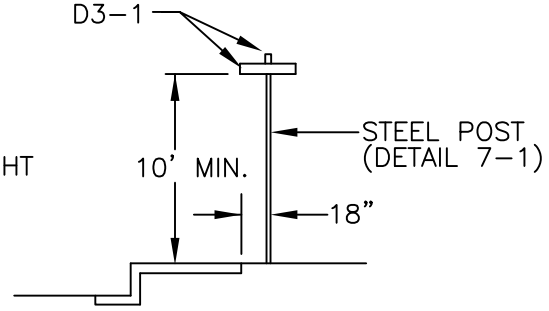
S:BCGEN/DETAILS/7–1 SIGN POST.DWG

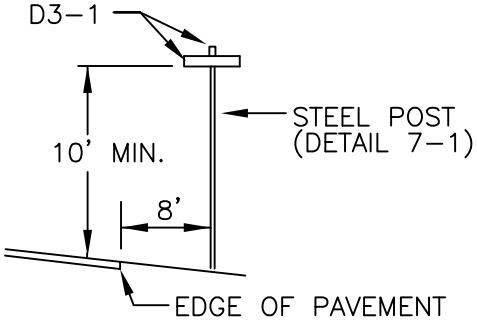


NOTES:

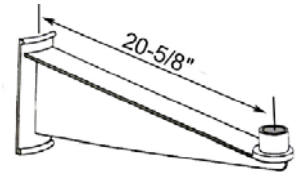
1. LETTERS ARE TO BE HIGHWAY GOTHIC, SERIES "C". CHARACTER SPACING REDUCTIONS FOR THE LEGEND SHALL BE NO LESS THAN 30% AND NO GREATER THAN 60% TO ALLOW FOR FIT. VERTICAL BORDERS WILL BE 1.5 INCHES TOP AND BOTTOM FROM THE EDGE OF THE PLATE EXCEPT WHEN LOWER CASE LETTERS HAVE DESCENDERS, IN WHICH CASE THE ENTIRE SIGN TEXT MAY NEED TO BE SHIFTED UP.
2. HIGHWAY GOTHIC, SERIES "B" SHALL BE PERMITTED WHEN SIGN LENGTH EXCEEDS 36". IF HIGHWAY GOTHIC, SERIES "B" DOES NOT ALLOW FIT ON 36" PLATE, INCREASE PLATE SIZE TO 42" (MAXIMUM) TRYING SERIES "C" FIRST AND THEN SERIES "B" IF "C" DOES NOT FIT.
3. LETTERS, NUMBERS, AND BORDERS SHALL BE 3M ELECTROCUT SERIES 1170. BACKGROUNDS ARE TO BE 3M DIAMOND GRADE DG3 REFLECTIVE SHEETING SERIES 4000.
4. EXTRUDED ALUMINUM PLATE 6061–P61 WITH ALODINE FINISH. FLAT PLATE WITH 1 INCH RADII CORNERS FOR ROUNDABOUTS.
5. STREET NAME SIGNS SHALL BE INSTALLED ON THE SIGN POST OR STREET LIGHT STANDARD BY MEANS OF AN ALUMINUM SIGN BRACKET APPROVED BY THE TRAFFIC ENGINEER.
6. STREET SIGN BRACKETS MUST BE ZUMAR PRODUCTS (12 INCH), TRAFFIC SAFETY SUPPLY PRODUCTS OR TRAFFIC ENGINEER APPROVED EQUAL. ZUMAR PRODUCTS CAN BE PURCHASED THROUGH ZUMAR INDUSTRIES, INC AT (800) 426–7967 AND TRAFFIC SAFETY SUPPLY PRODUCTS CAN BE PURCHASED AT TRAFFIC SAFETY SUPPLY CO. AT (800) 547–8518.



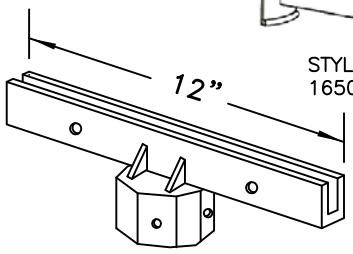




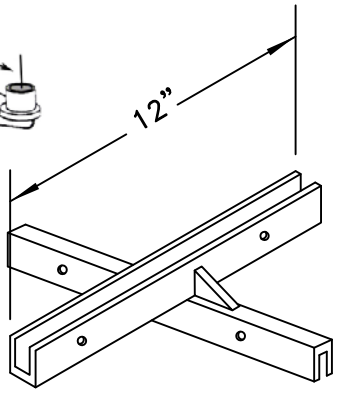
TYPICAL PLACEMENT



STYLE #KC 500
16504202



Z12RDSQ00EX



812EX90X

STREET SIGN BRACKETS

AUGUST 29, 2013

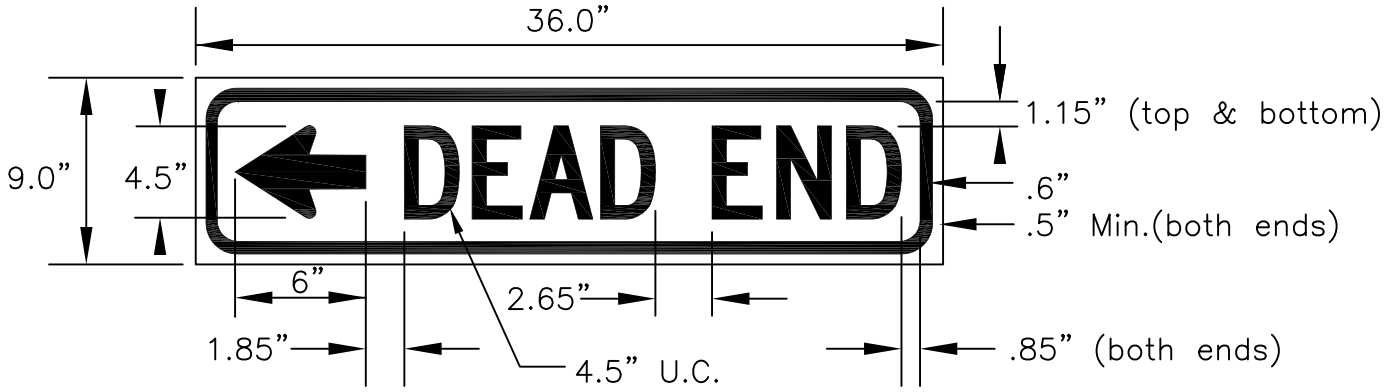
BENTON CITY

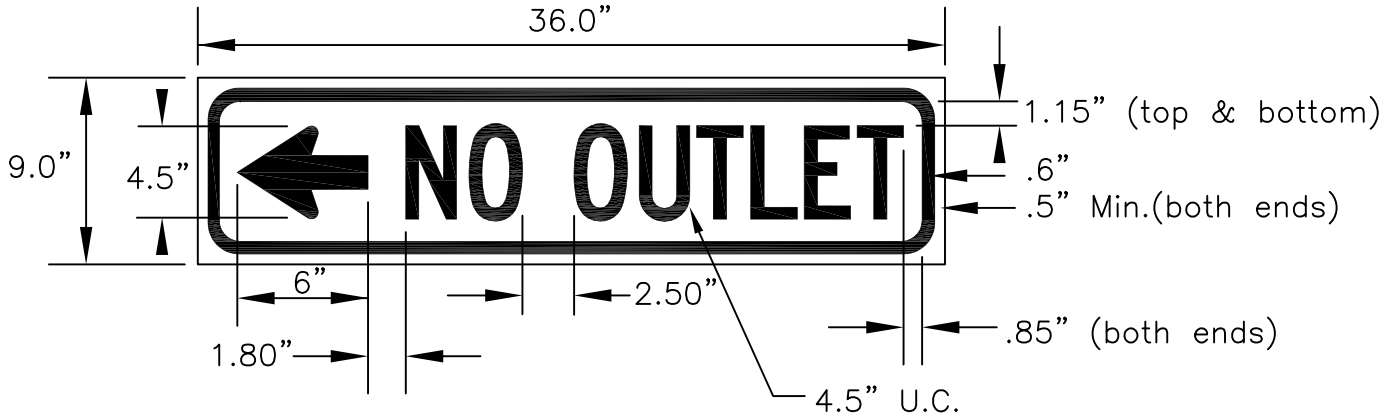
STREET NAME SIGN

DWG # 7–2

SHEET 1 OF 2

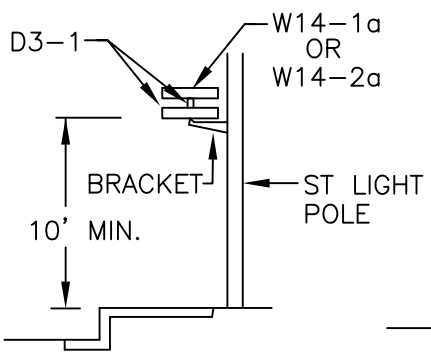
S:BCGEN/DETAILS/7–2 ST SIGN.DWG

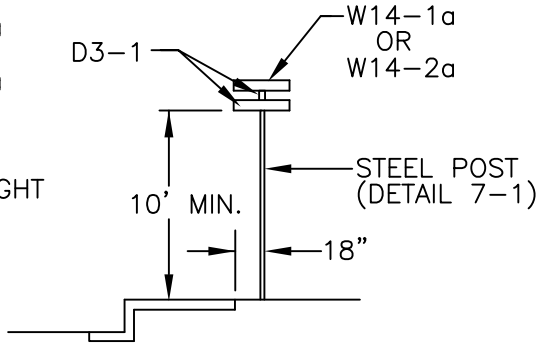


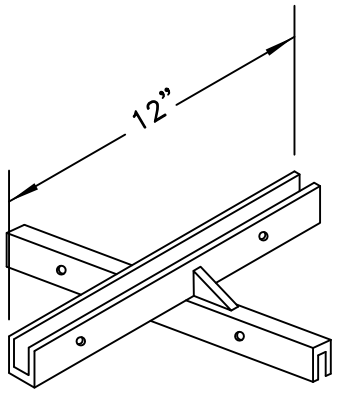


NOTES:

1. BLACK LETTERS, ARROWS AND BORDER ON REFLECTIVE, STANDARD YELLOW (491) BACKGROUND. LETTERS ARE TO BE HIGHWAY GOTHIC, SERIES "C". LETTERS AND SPACING TO BE PER THE STATE OF WASHINGTON SIGN FABRICATION MANUAL.
2. LETTERS, ARROWS, AND BORDER SHALL BE 3M ELECTROCUT SERIES 1170. BACKGROUND SHALL BE 3M DIAMOND GRADE DG3 REFLECTIVE SHEETING SERIES 4000.
3. EXTRUDED ALUMINUM PLATE 6061–P61 WITH ALODINE FINISH.
4. SIGNS SHALL BE INSTALLED ON THE SIGN POST OR STREET LIGHT STANDARD BY MEANS OF AN ALUMINUM SIGN BRACKET APPROVED BY THE TRAFFIC ENGINEER.
5. BRACKETS MUST BE ZUMAR PRODUCTS (12 INCH), TRAFFIC SAFETY SUPPLY PRODUCTS OR TRAFFIC ENGINEER APPROVED EQUAL. ZUMAR PRODUCTS CAN BE PURCHASED THROUGH ZUMAR INDUSTRIES, INC AT (800) 426–7967 AND TRAFFIC SAFETY SUPPLY PRODUCTS CAN BE PURCHASED AT TRAFFIC SAFETY SUPPLY CO. AT (800) 547–8518.







812EX90X

AUGUST 29, 2013

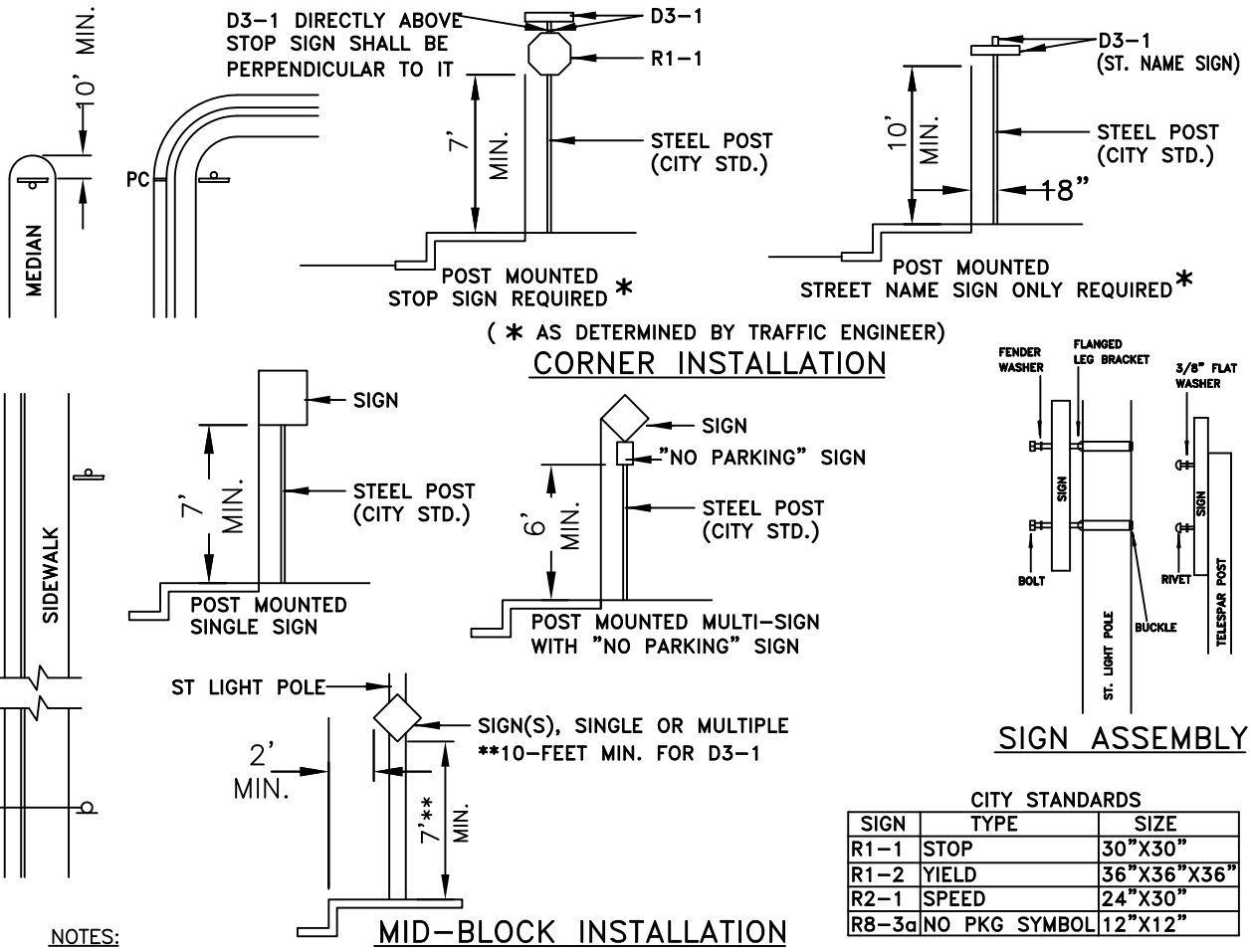
BENTON CITY

STREET NAME SIGN

DWG # 7–2

SHEET 2 OF 2

S:BCGEN/DETAILS/7–2–2 ST SIGN.DWG



CITY STANDARDS

SIGN	TYPE	SIZE
R1-1	STOP	30"X30"
R1-2	YIELD	36"X36"X36"
R2-1	SPEED	24"X30"
R8-3a	NO PKG SYMBOL	12"X12"

NOTES:

1. EDGE OF SIGN TO BE EVEN WITH BACK OF SIDEWALK.
2. SIGNS TO BE INSTALLED AT BACK OF SIDEWALK UNLESS OTHERWISE NOTED ON PLANS.
3. SIGNS SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND "STANDARD HIGHWAY SIGNS" MANUAL. THEY SHALL BE THE STANDARD SIZE AND LETTERING APPROPRIATE FOR CONVENTIONAL URBAN AREAS UNLESS OTHERWISE NOTED.
4. ALL SIGN PLAQUES SHALL BE MADE OF ALUMINUM AND HAVE A MINIMUM THICKNESS OF .080 INCHES. ANY SIGN WITH A HORIZONTAL DIMENSION OVER 36" SHALL HAVE A MINIMUM THICKNESS OF 0.125 INCHES AND SIGN BRACING IN ACCORDANCE WITH WSDOT STD. PLAN G-50.10-00. THE SIDE DIMENSION FOR A DIAMOND SHAPED SIGN IS CONSIDERED THE HORIZONTAL DIMENSION.
5. BOLTS, NUTS, RIVETS, AND WASHERS SHALL BE GALVANIZED OR CADMIUM PLATE STEEL. INSTALL A 3/8" FLAT WASHER, OF SAME DIAMETER, BEHIND RIVET ON THE SIGN FACE FOR STABILITY. NO PLASTIC OR NYLON.
6. POSTS SHALL CONFORM TO CITY OF BENTON CITY STD. DWG. NO. 7-1.
7. REFLECTIVE SHEETING SHALL BE 3M DIAMOND GRADE DG3 SERIES 4000. ALL SIGNS MUST BE COVERED WITH 3M 1160 SERIES FILM WITH PREMASK FOR PROTECTION FROM GRAFFITI (EXCEPT D3-1'S).
8. ALL MOUNTING HARDWARE FOR STREET LIGHT POLES MUST BE BAND-IT OR APPROVED EQUAL. THE HARDWARE REQUIRED IS 3/4" X .030 STAIINLESS STEEL BANDS, 3/4" STAINLESS STEEL EAR LOCK, BUCKLES, STAINLESS STEEL FLARED LEG BRACKETS WITH ONE BOLT AND METAL FENDER WASHER.
9. ALL SIGNS TO BE INSTALLED PER APPROVED PLANS. MODIFICATIONS TO BE APPROVED BY TRAFFIC ENGINEER OR ASSIGNED DESIGNEE.
10. ALL OLD AND/OR UNUSED BANDS AND FASTENERS MUST BE REMOVED.

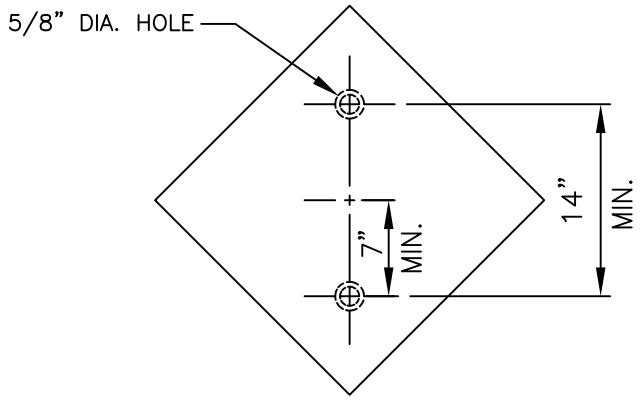
AUGUST 29, 2013

BENTON CITY

TYPICAL SIGN INSTALLATION

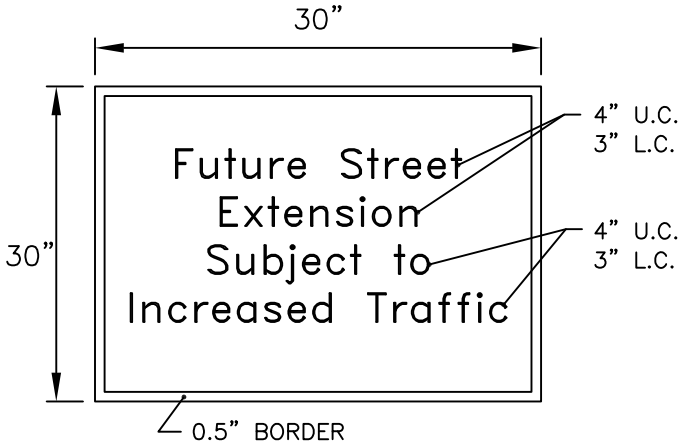
DWG # 7-3

S:BCGEN/DETAILS/7-3 SIGN INSTALL.DWG



OM4-3

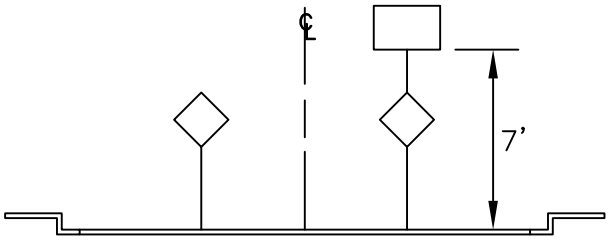
COLOR: RED
18" X 18"

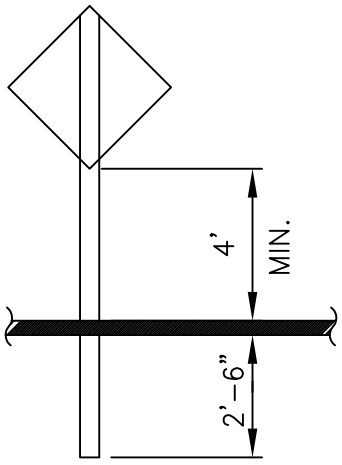


COLOR: WHITE LETTERS AND BORDER ON YELLOW BACKGROUND

NOTES:

1. REFLECTIVE SHEETING SHALL BE 3M DIAMOND GRADE DG3 SERIES 4000 OR TRAFFIC ENGINEER APPROVED EQUAL.
2. ONE-TENTH GAUGE ALUMINUM PLATE.
3. POST SHALL BE AS PER CITY OF BENTON CITY STD. DWG. NO. 7-1 EXCEPT 8 FT. SIGN POSTS MAY BE USED WHEN OM4-3 ARE USED ALONE.
4. THE NUMBER OF OM4-3 SIGNS REQUIRED FOR ANY STREET SHALL BE DETERMINED BY THE TRAFFIC ENGINEER.
5. OM4-3 SIGNS ARE TO BE INSTALLED IN THE CENTER OF TRAVEL AND/OR PARKING LANE.
6. ONE "FUTURE STREET EXTENSION" SIGN SHALL BE INSTALLED ABOVE ONE OF THE OM4-3 AT THE END, UNLESS OTHERWISE APPROVED BY THE ENGINEER.





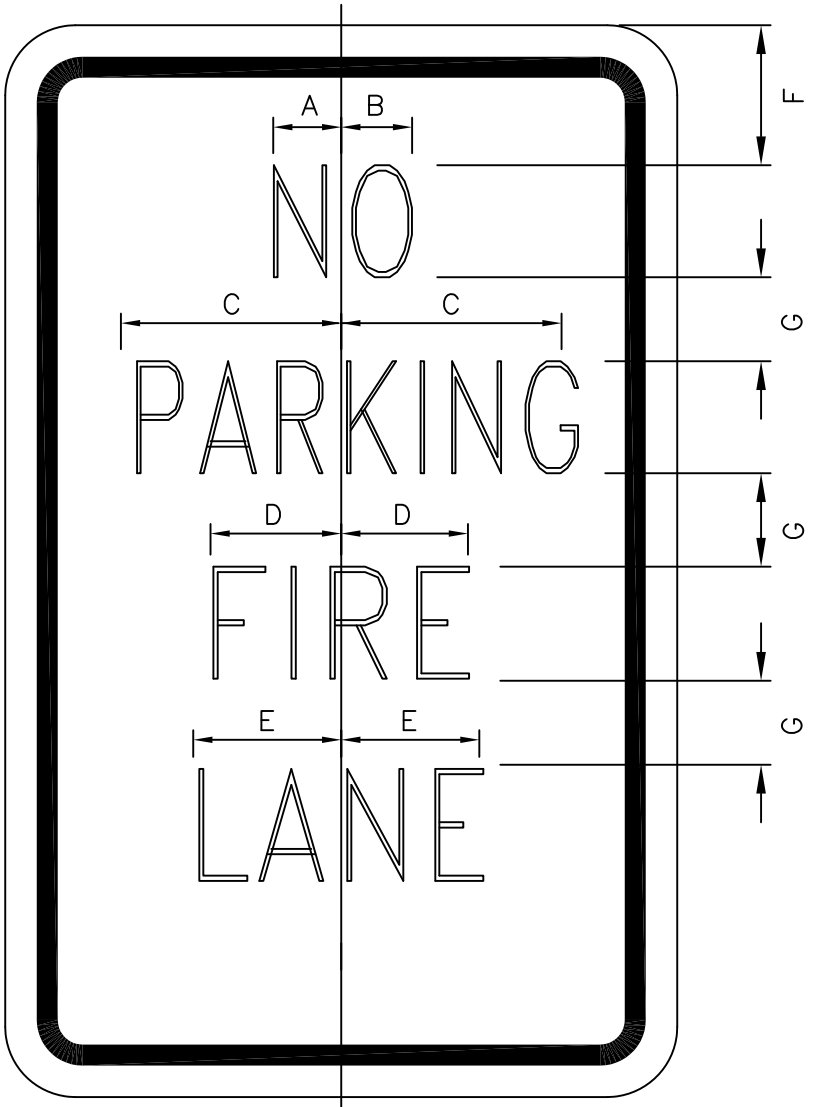
AUGUST 29, 2013

BENTON CITY

END OF ROADWAY SIGNAGE

DWG # 7-4

S:BCGEN/DETAILS/7-4 RD END SIGN.DWG



R7-35

ALL DIMENSIONS ARE IN INCHES

SIZE	BORDER WIDTH	MARGIN WIDTH	LETTER SIZE, SERIES & STROKE WIDTH					CORNER RADIUS	
			LINE 1	LINE 2	LINE 3	LINE 4	LINE 5		
12 x 18	1/4	1/4	2 C	2 C	2 C	2 C	1 C	1-1/4	

	DIMENSIONS													
	A	B	C	D	E	F	G							
12 x 18	1-1/8	1-1/2	4-1/2	2-5/8	2-7/8	1-7/8	1-3/8							

WHITE BACKGROUND WITH RED BORDER & LEGEND.
REFLECTORIZED BACKGROUND/OPAQUE LEGEND.

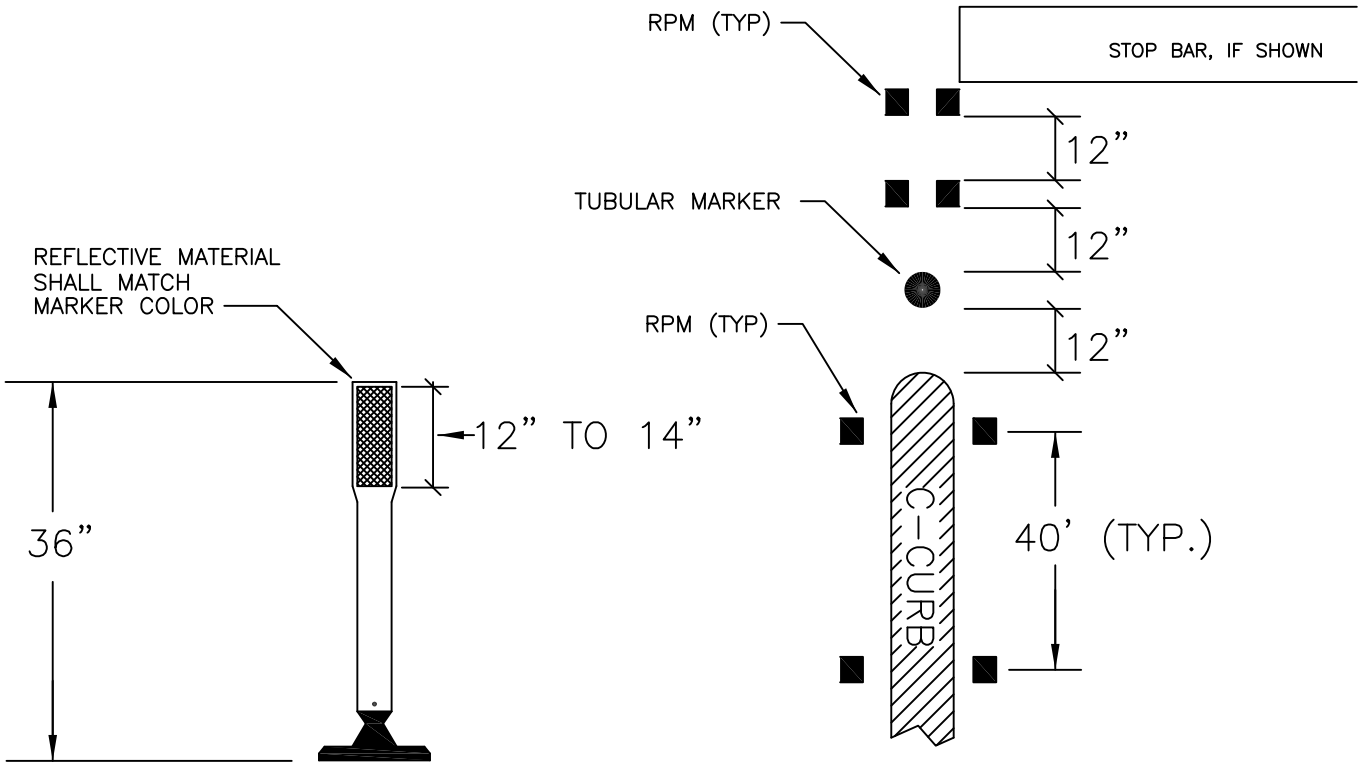
AUGUST 29, 2013

BENTON CITY

NO PARKING FIRE LANE SIGN

DWG # 7-5

S:BCGEN/DETAILS/7-5 FIRE LANE SIGN.DWG



TUBULAR MARKER

DIMENSIONS SHOWN ARE APPROXIMATE AND MAY VARY ± 10 PERCENT.

NOTES:

1. RAISED PAVEMENT MARKERS (RPM) ARE TO BE PER THE STATE OF WASHINGTON STANDARD SPECIFICATION (SWSS) SECTION 8-09 AND 9-21. TYPE 2 SHALL NORMALLY BE REQUIRED.
2. C-CURB SHALL BE PER SWSS SECTION 8-07.
3. RPM'S SHALL BE 2YY WHEN USED FOR CENTERLINE, AND 2W WHEN USED FOR GORE LINES UNLESS OTHERWISE INDICATED ON THE PLANS OR DIRECTED BY THE ENGINEER.
4. TUBULAR MARKERS SHALL BE 36" FLEXIBLE YELLOW (ON CENTERLINE) OR WHITE (ON GORE LINES) MARKERS. THE TUBULAR MARKERS SHALL BE FLAT-TOPPED DELINEATOR POSTS FROM IMPACT RECOVERY SYSTEMS OR ENGINEER APPROVED EQUAL. MARKERS SHALL HAVE 2-1/2" X 12" REFLECTIVE MATERIALS ON BOTH SIDES IN A COLOR MATCHING THE MARKER COLOR. REFLECTIVE MATERIALS SHALL BE 3M DIAMOND GRADE DG3.
5. MARKERS ARE TO BE INSTALLED USING SUPER BUNDY OR ENGINEER APPROVED EQUAL PER THE MANUFACTURERS RECOMMENDATIONS. ADHESIVE TO COVER THE ENTIRE BASE. A MINIMUM OF 3 MUST BE USED FOR THE TUBULAR MARKERS, APPLIED ONE AT A TIME TO FILL THE VOIDS THROUGH THE TOP. IF NEEDED, ADHESIVE MUST BE CUT TO FIT RPM'S.

AUGUST 29, 2013

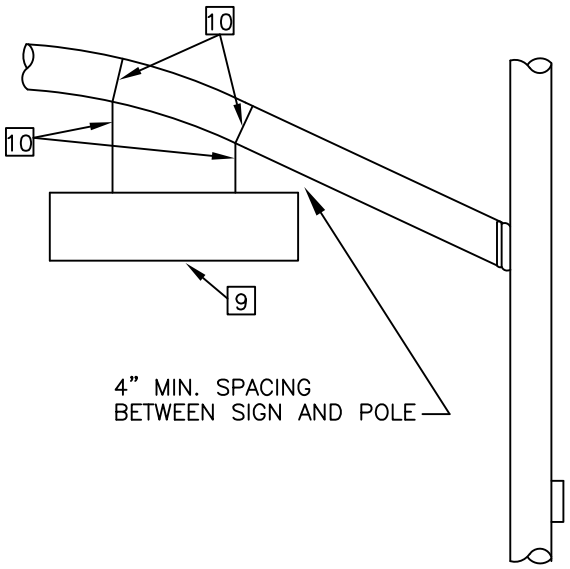
BENTON CITY

PAVEMENT & TUBULAR MARKER INSTALLATION

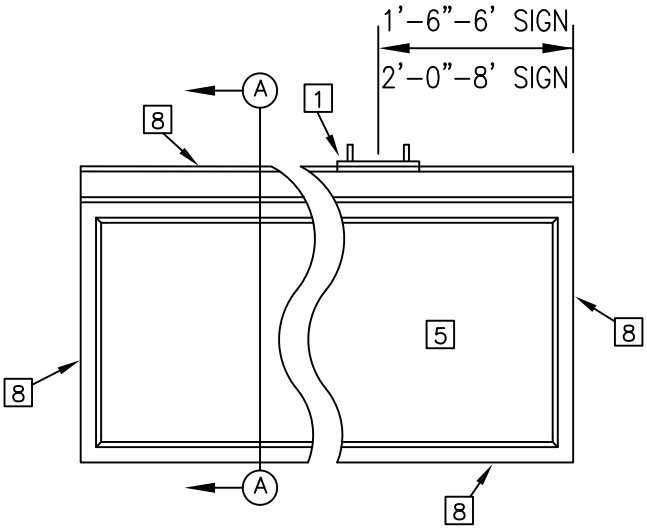
DWG # 7-6

S:BCGEN/DETAILS/7-6 MARKER.DWG

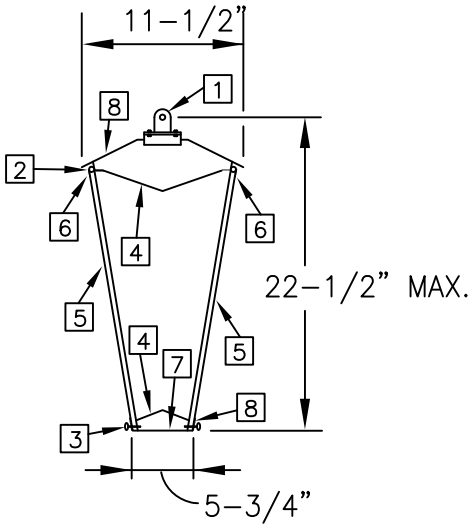
1. LOWER MOUNTING ASSEMBLY, WITH GASKET
   SEE DWG NO. 7-12 SHEET 3 OF 3.
2. CONTINUOUS HINGE
3. THUMB SCREW, 1/4-20.
   MINIMUM THREE PER SIDE ON 24 INCH CENTERS.
4. ALUMINUM STIFFENER
5. SIGN PANEL, SEE SPECIAL PROVISIONS, 16-INCH
   MINIMUM HEIGHT. MESSAGE IS SHOWN ELSEWHERE.
6. CLOSED CELL NEOPRENE GASKET (CONTINUOUS)
7. SCREENED DRAIN HOLE-2 REQUIRED (12" FROM EACH END)
8. EXTRUDED ALUM. (6063 T-5) FRAMING
   (0.010 MIN. THICKNESS-CONTINUOUS)
9. ADJUST FIXTURE LEVEL
10. MOUNTING ASSEMBLY AND BRACKET
    SEE DWG NO. 7-12 SHEET 3 OF 3.



SIGN MOUNTING



TYPE A SIGN



SECTION A-A

AUGUST 29, 2013

BENTON CITY

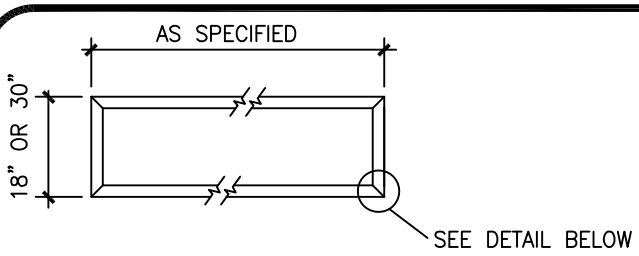
MAST ARM ST. NAME SIGN

TYPE A SIGN

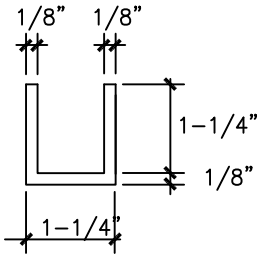
DWG # 7-7

SHEET 1 OF 3

S:BCGEN/DETAILS/7-6 MARKER.DWG

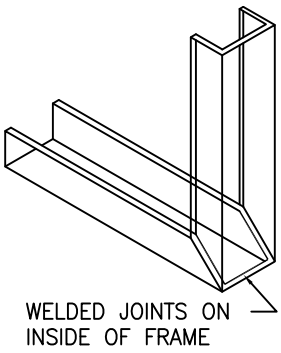


SIGN FRAME

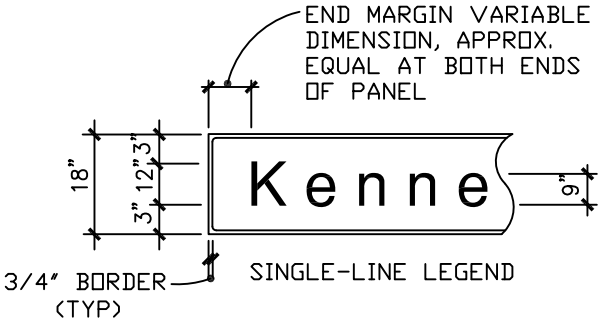


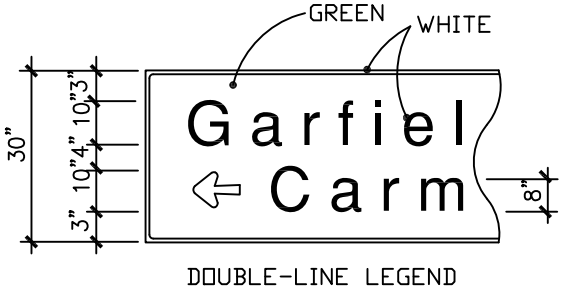
FRAME SECTION

ALUMINUM 6063T5

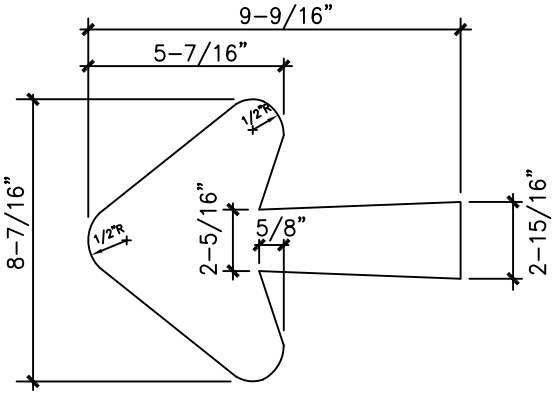


FRAME CORNER





SIGN PANEL



ARROW DETAIL

AUGUST 29, 2013

BENTON CITY

MAST ARM ST. NAME SIGN

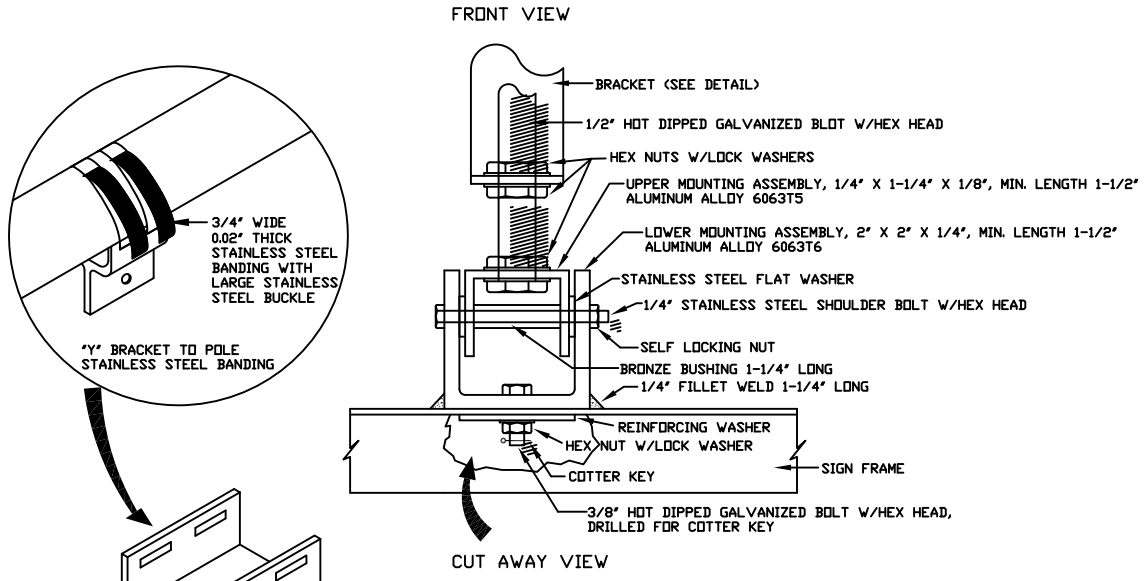
TYPE B SIGN

DWG #

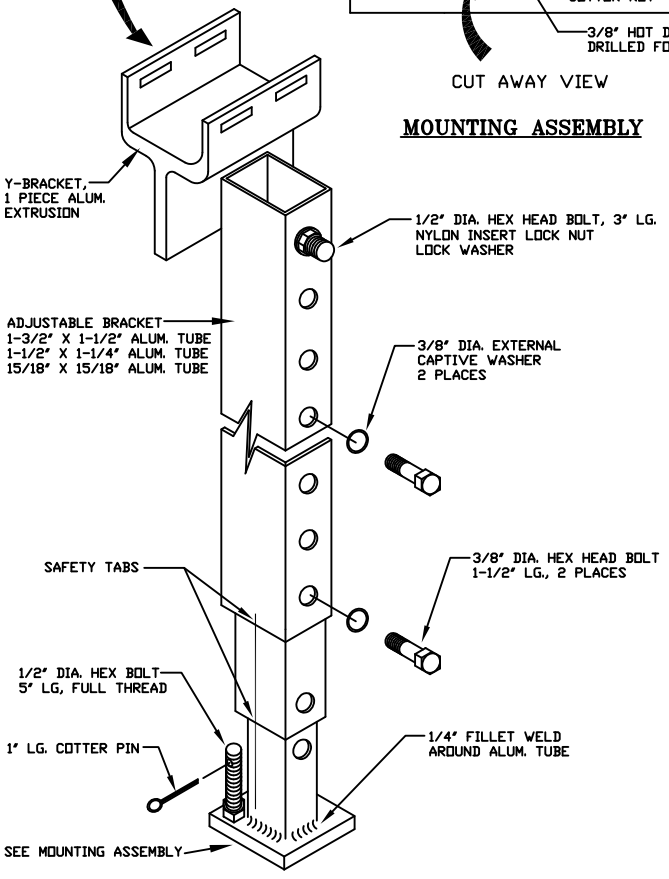
7 — 7

SHEET 2 OF 3

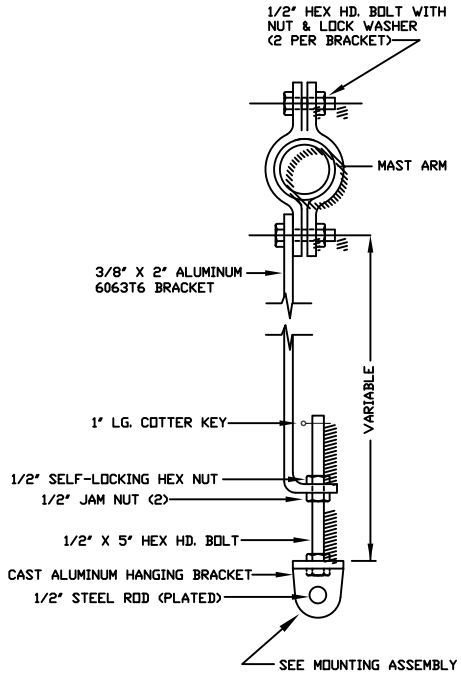
S:BCGEN/DETAILS/7-7-2 MAST ARM.DWG



MOUNTING ASSEMBLY



BRACKET



BRACKET
(ALTERNATIVE)

AUGUST 29, 2013

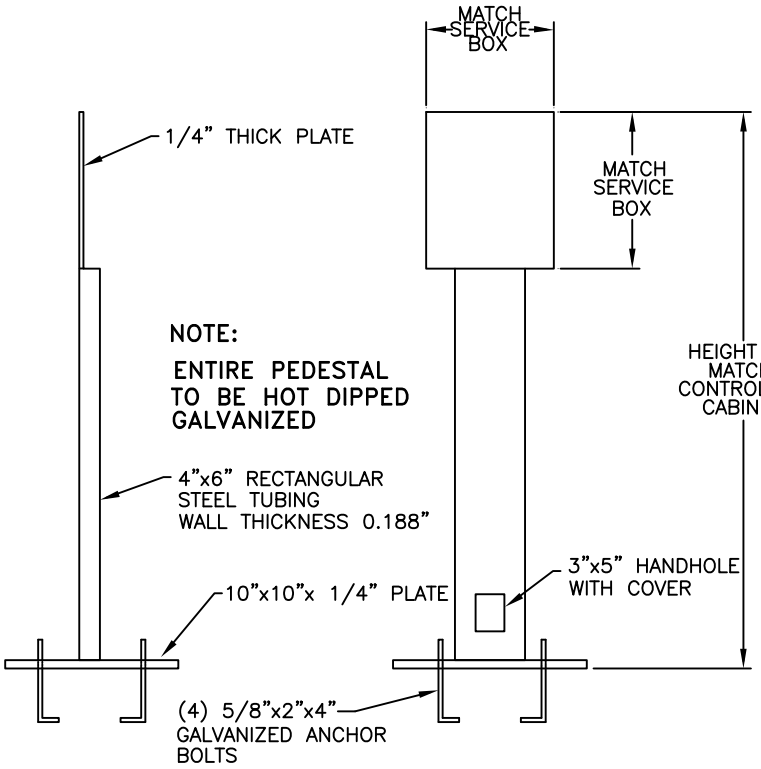
BENTON CITY

MAST ARM SIGN

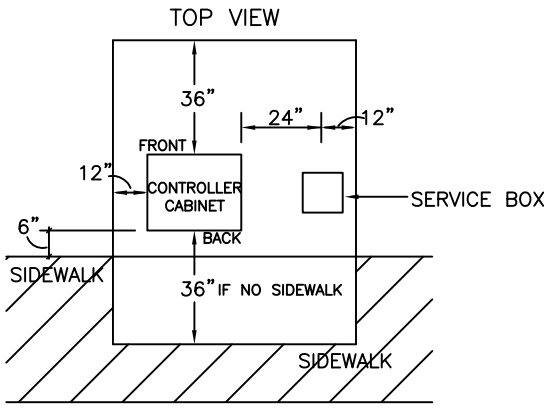
DWG # 7 — 7

SHEET 3 OF 3

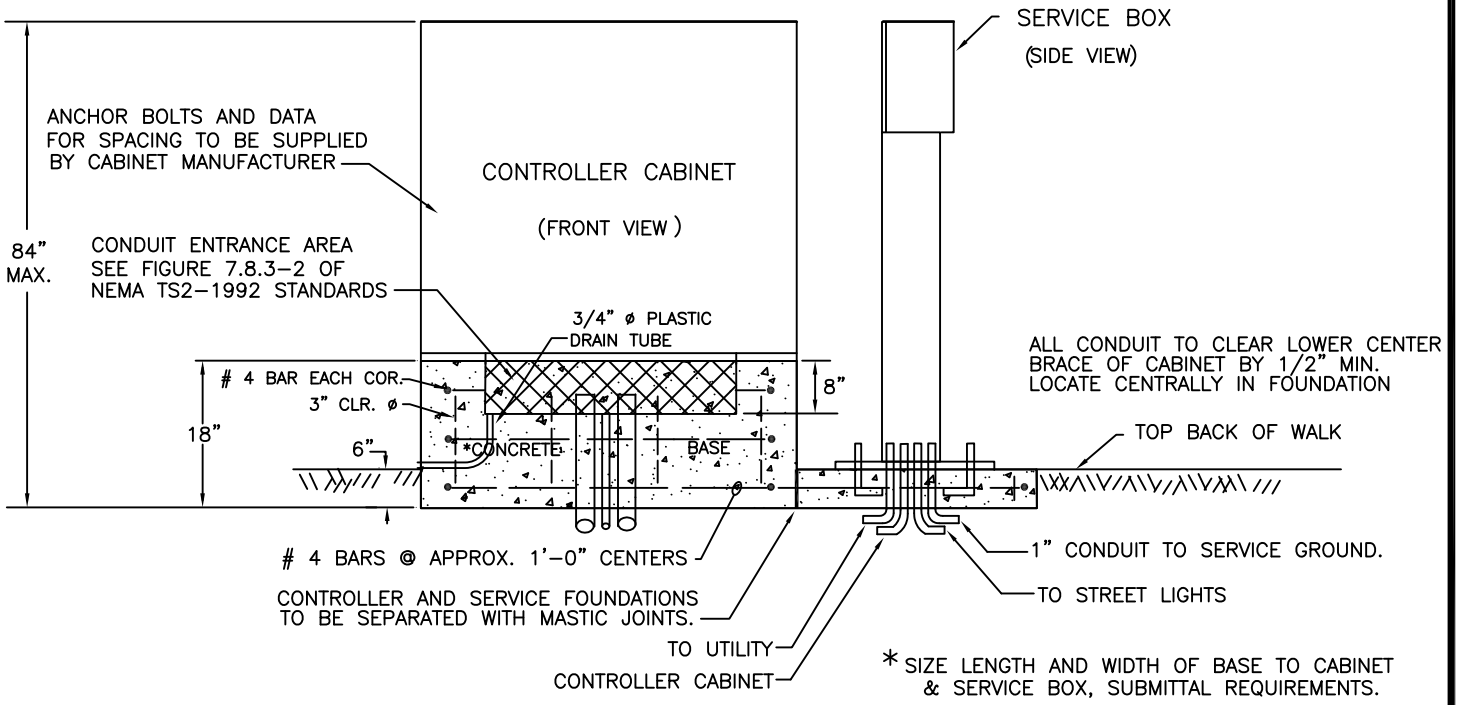
S:BCGEN/DETAILS/7-7-2 MAST ARM.DWG



PEDESTAL FOR SERVICE BOX



TYPICAL PAD



AUGUST 29, 2013

BENTON CITY

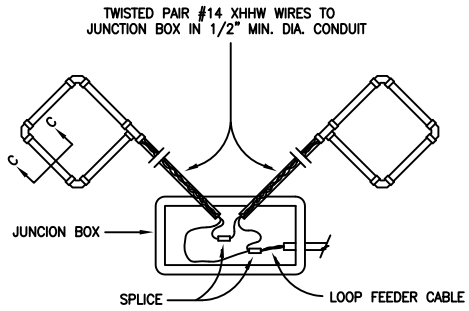
ALTERNATE CONTROLLER CABINET & BOX PLACEMENT

DWG # 7-8

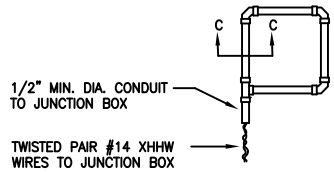
S:BCGEN/DETAILS/7-7-2 MAST ARM.DWG

PVC CONDUIT PREFORMED DETECTOR LOOPS

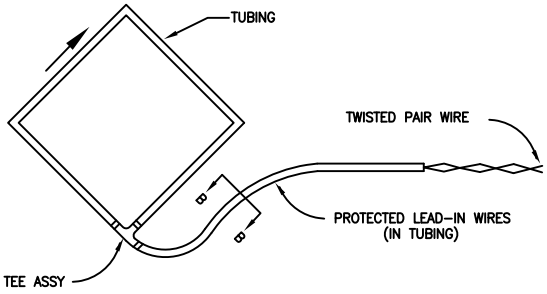
ALL CONDUIT & FITTINGS SHALL BE SCHEDULE 40 RIGID NON-METALLIC CONTINUOUS TO JUNCTION BOX WINDINGS SHALL BE THE SAME AS FOR LOOPS IN SAWCUT. ALTERNATE DESIGNS MUST BE APPROVED.



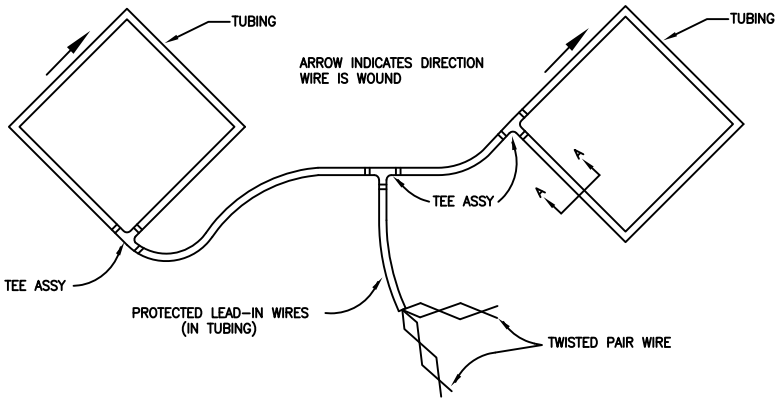
TWO LOOPS IN SERIES



SINGLE LOOP

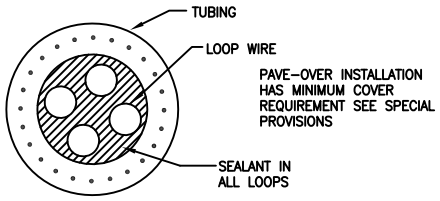


PRE-FORMED LOOP ASSY SINGLE



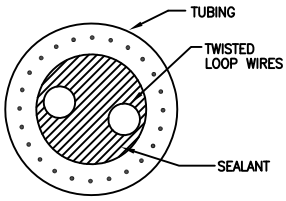
PRE-FORMED LOOP ASSY DOUBLE

(OPTION)



TYPICAL ALL LOOPS

PAVE OVER OR SAWCUT
SECTION A-A

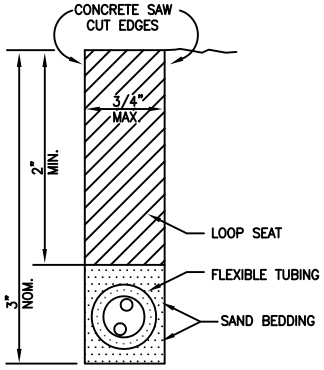


LEAD-IN

FOR PAVE OVER OR A.C. BACKFILL
SECTION B-B

NOTES:

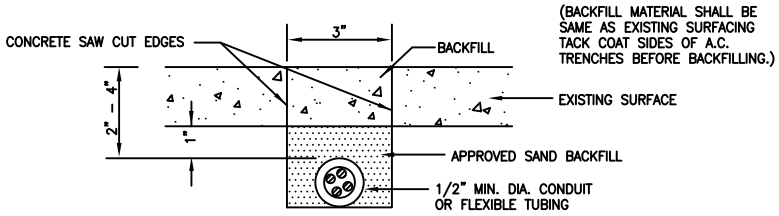
1. LOOP AND LEAD-IN CONSTRUCTED OF 3/8" ID X 11/16 OD CLASS A, OIL RESISTANT, REINFORCED, FLEXIBLE RUBBER TUBING
2. LOOP WIRE AND LOOP LEAD-IN WIRE NO. 16 TFFN STRANDED



LOOP SEAL BACKFILL DETAIL

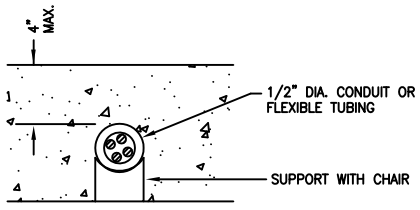
(USE ONLY IF PAVEMENT DEPTH EXCEEDS 4")

TYPICAL CROSS SECTIONS FOR FLEXIBLE PREFORMED LOOPS



BELOW EXISTING PAVEMENT

(USE THIS DETAIL WHEN PAVEMENT DEPTH IS NOT ADEQUATE FOR LOOP SEAL BACKFILL AS DETAILED ON RIGHT.)



NEW P.C. PAVEMENT

SECTION C-C

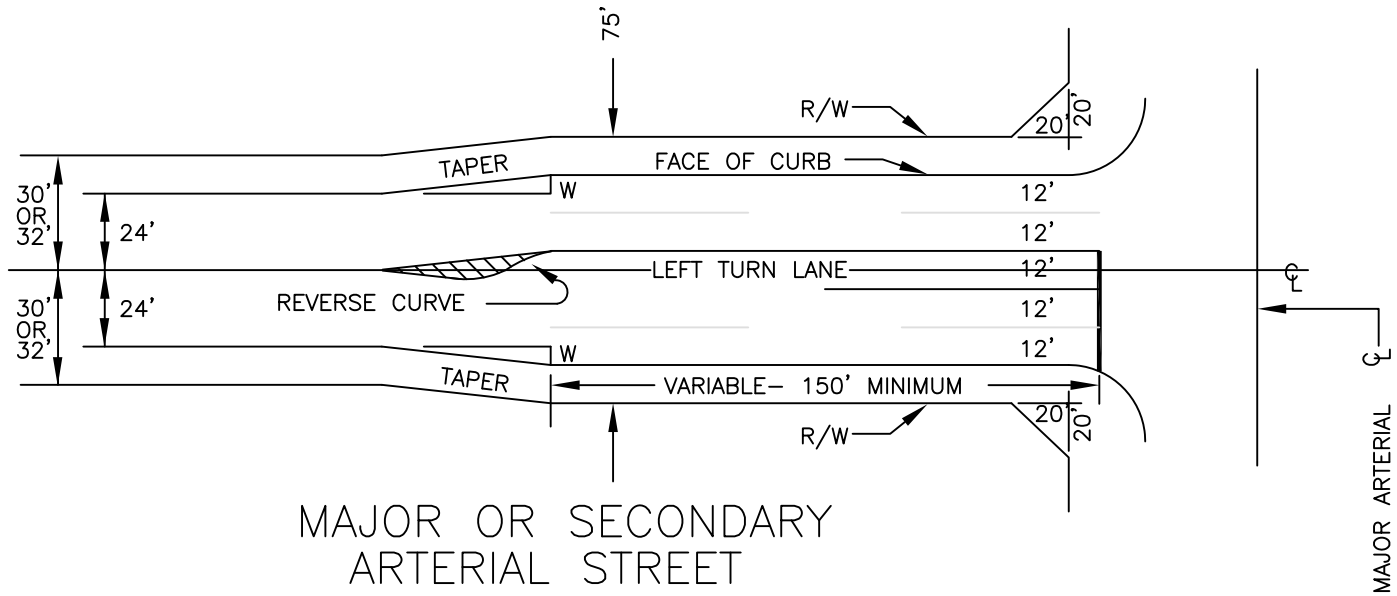
AUGUST 29, 2013

BENTON CITY

PREFORMED-CONDUIT ENCASED VEHICLE DETECTOR LOOP

DWG # 7-9

S:BCGEN/DETAILS/7-9 DET LOOP.DWG



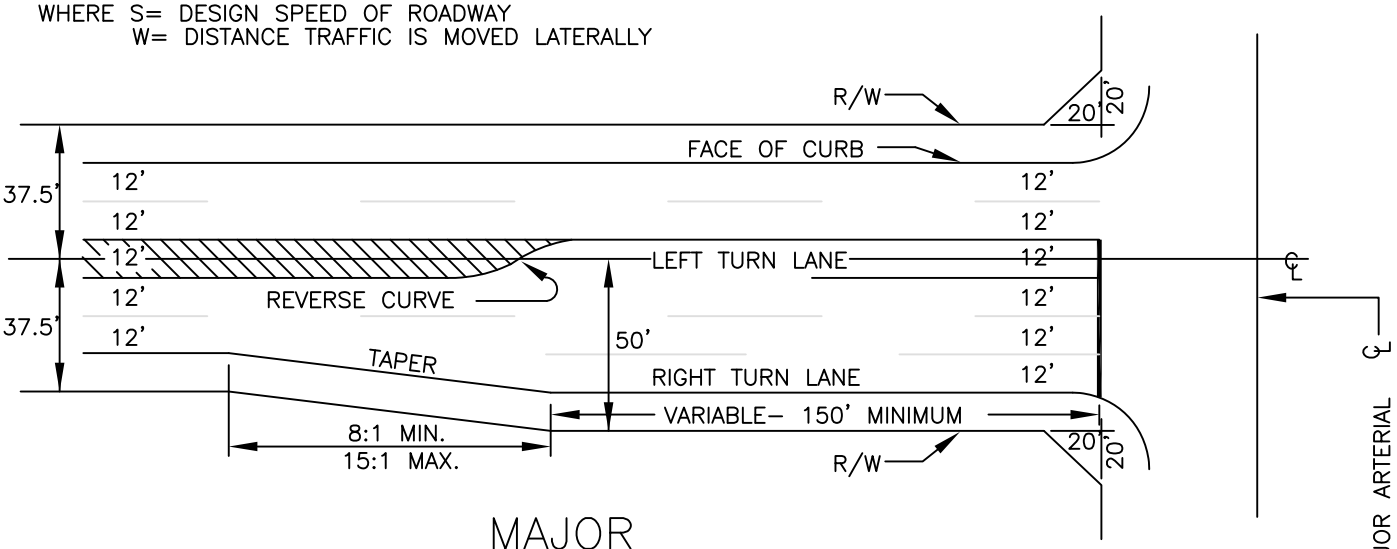
MAJOR OR SECONDARY ARTERIAL STREET

TAPER LENGTH FORMULAS:

DESIGN SPEED >40 M.P.H. : S x W= TAPER LENGTH

DESIGN SPEED ≤40 M.P.H. : $\frac{W \times S^2}{60}$ = TAPER LENGTH

WHERE S= DESIGN SPEED OF ROADWAY
W= DISTANCE TRAFFIC IS MOVED LATERALLY



MAJOR ARTERIAL STREET

NOTE:

STORAGE LANES GREATER THAN THE MINIMUM SHALL BE DETERMINED BY THE TRAFFIC ENGINEER.

AUGUST 29, 2013

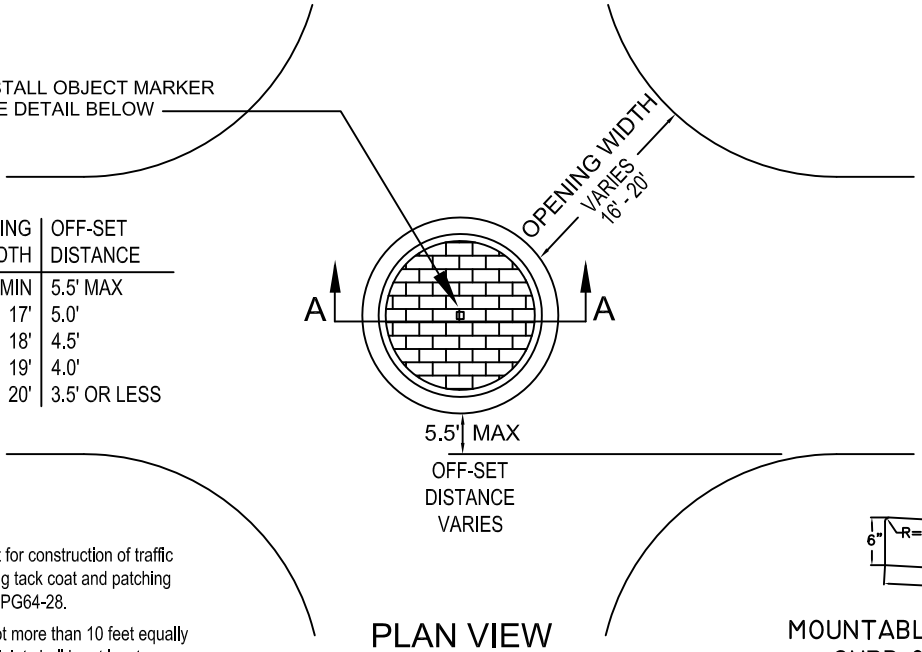
BENTON CITY

STREET INTERSECTION WIDENING

DWG #

7–10

S:BCGEN/DETAILS/7–10 INT WIDENING.DWG

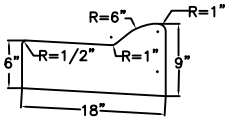


OPENING WIDTH	OFF-SET DISTANCE
16' MIN	5.5' MAX
17'	5.0'
18'	4.5'
19'	4.0'
20'	3.5' OR LESS

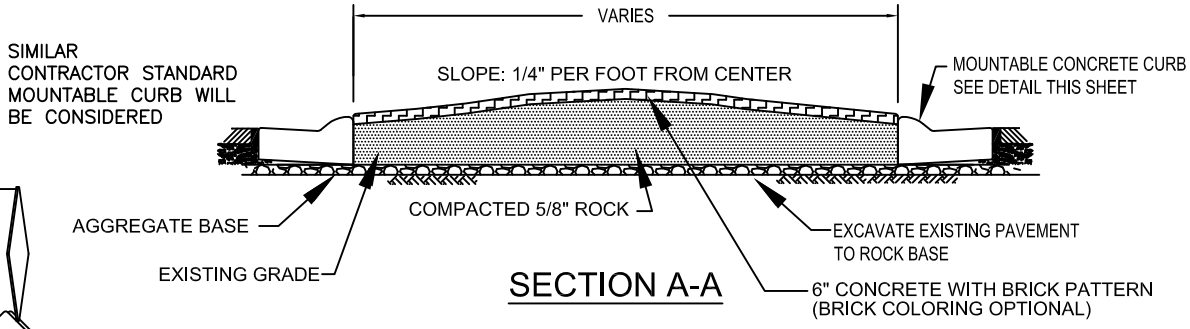
CONSTRUCTION NOTES:

1. Sawcut and remove existing asphalt for construction of traffic circle. Finish by sawcutting, applying tack coat and patching around circle with 2" HMA Class 'A' PG64-28.
2. Contraction joint spacing shall be not more than 10 feet equally spaced around circle. Depth of the joint shall be at least $1\frac{1}{2}$ inches.

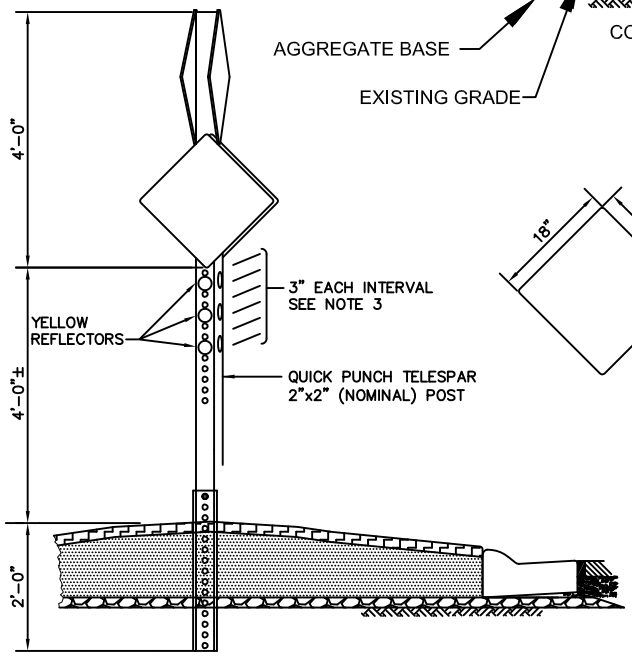
PLAN VIEW



MOUNTABLE CONCRETE CURB & GUTTER
N.T.S.



SECTION A-A



SIGN DETAIL

ADDITIONAL SIGNING AND STRIPING MAY BE REQUIRED ON EACH APPROACH AS DETERMINED BY THE TRAFFIC ENGINEER.

NOTES:

1. IN THE CASE WHERE ALL APPROACHES OF THE INTERSECTION ARE PRIMARILY AT THE SAME LEVEL WITH RESPECT TO GRADES (LESS THAN 3%) THE LOWER SET OF SIGNS SHALL FACE THE HIGHER TRAFFIC VOLUME STREET.
2. IN THE CASE WHERE AN APPROACH HAS A GRADE LARGER THAN 3% THE HIGHER SIGNS WILL FACE THE STEEPEST APPROACH TO ALLOW BETTER SIGHT DISTANCE.
3. PLACE A MINIMUM OF THREE (3) REFLECTORS ON EACH AND EVERY SIDE OF POST OR PLACE THREE (3) DIAMOND GRADE REFLECTORIZED YELLOW STRIPS COMPLETELY AROUND POST.

ALL CHANGES MUST BE APPROVED BY THE TRAFFIC ENGINEER

AUGUST 30, 2013

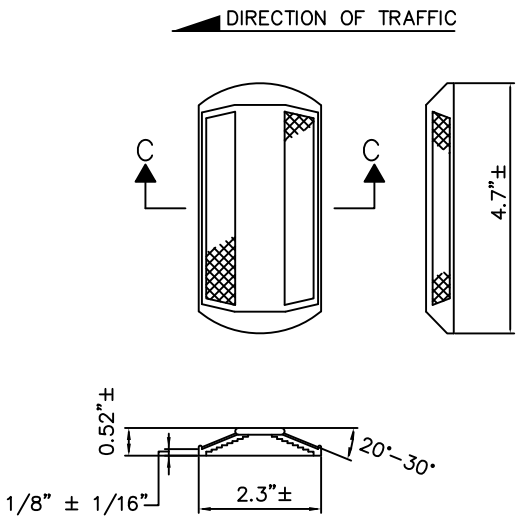
BENTON CITY

TRAFFIC CIRCLE

DWG # 7-11

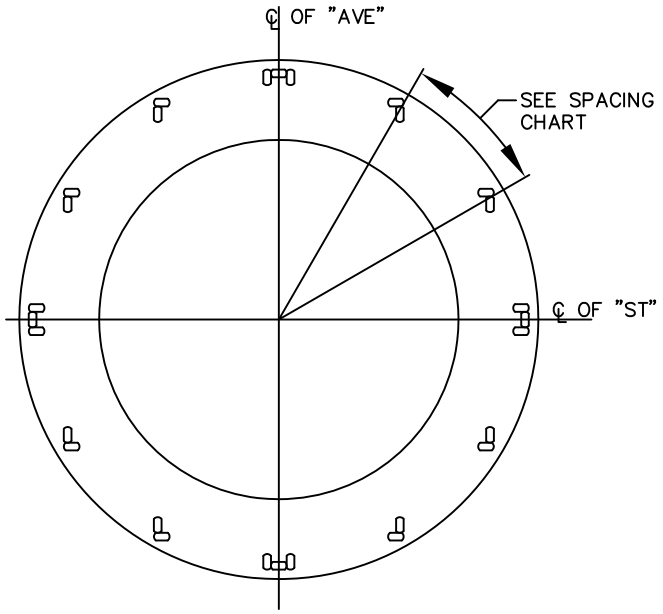
SHEET 1 OF 2

S:BCGEN/DETAILS/7-11-1 TRAFFIC CIRCLE.DWG



SECTION C–C

LANE MARKER–TYPE 2B

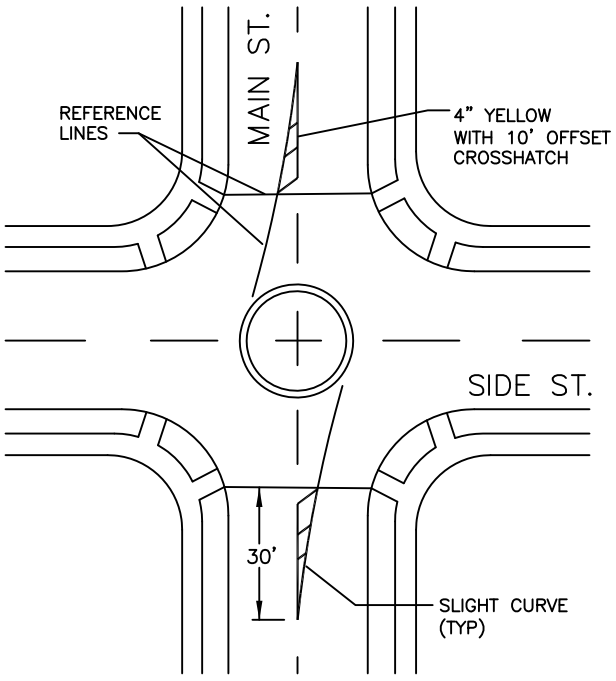


TRAFFIC CIRCLE REFLECTOR LAYOUT

SPACING CHART

DIAMETER OF CIRCLE	DEGREE OF SPACING
≤12'–0"	EVERY 45°
≤20'–0"	EVERY 30°
>20'–0"	EVERY 22–1/2°

(FACING VEHICLE APPROACHES)



STRIPING LAYOUT

WHEN REQUIRED

ALL CHANGES MUST BE APPROVED BY THE TRAFFIC ENGINEER

AUGUST 30, 2013

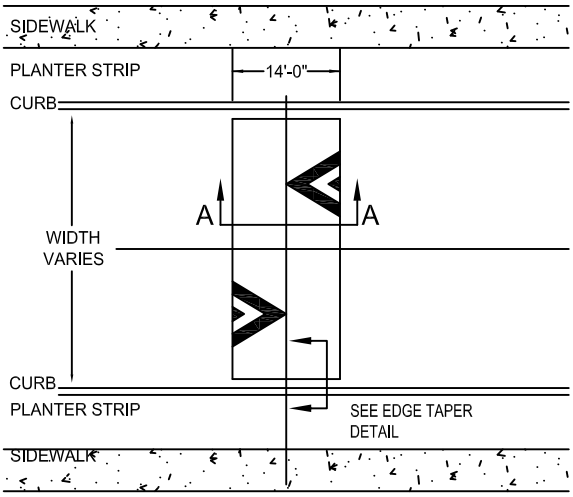
BENTON CITY

TRAFFIC CIRCLE

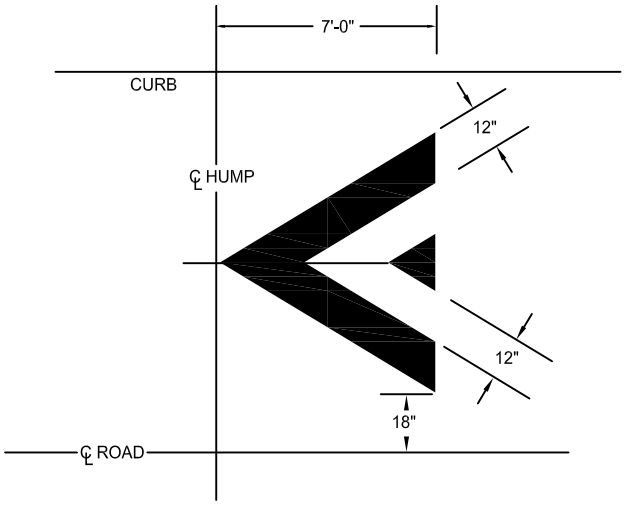
DWG # 7–11

SHEET 2 OF 2

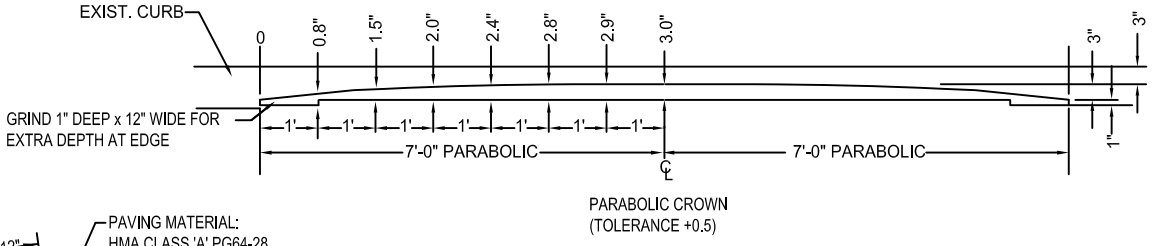
S:BCGEN/DETAILS/7–11–2 TRAFFIC CIRCLE.DWG



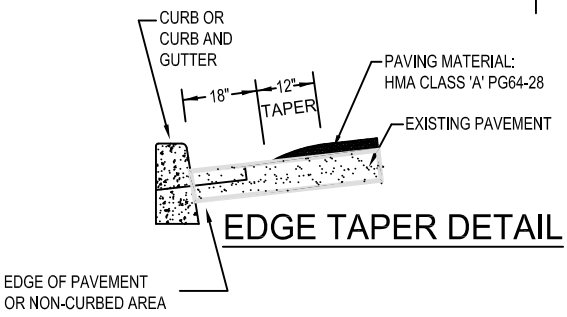
PLAN VIEW



PAVEMENT MARKING DETAIL



SECTION A-A

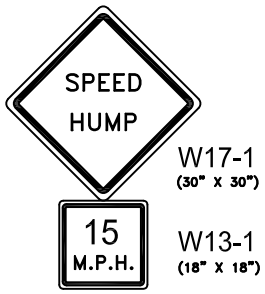


EDGE TAPER DETAIL

ADDITIONAL SIGNING AND STRIPING MAY BE REQUIRED ON EACH APPROACH AS DETERMINED BY THE TRAFFIC ENGINEER.

CONSTRUCTION NOTES:

1. Grind for extra depth at edges as shown.
2. Apply bitumal tack coat over air-blown cleaned and swept asphalt concrete.
3. Asphalt shall be rolled for compaction per specifications.
4. Install W17-1 & W13-1 signs 100' to 150' in advance of the hump, on each approach as directed by the Engineer. Use existing street light standards for mounting if possible.
   Pavement markings shall be min. 0.120 inch thick plastic. Markings
5. shall be in accordance with WSDOT Standard Specifications sections 8-22.3(3)(4)and (5) and section 9-34.3.



SIGN DETAIL

Sign materials and installation must be in accordance with City of Benton City Standard Drawings 7-1 and 7-3.

SPEED HUMP

ALL CHANGES MUST BE APPROVED BY THE TRAFFIC ENGINEER

AUGUST 30, 2013

BENTON CITY

SPEED HUMP

DWG #

7-12

S:BCGEN/DETAILS/7-12 SPEED HUMP.DWG

W21-1701

(36" X 36")

REFER TO WSDOT SIGN FABRICATION MANUAL FOR SIGN DETAILS

RCW 47.36.200

(2) IF THE CONSTRUCTION, REPAIR, OR MAINTENANCE WORK INCLUDES OR USES GROOVED PAVEMENT, ABRUPT LANE EDGES, STEEL PLATES, OR GRAVEL OR EARTH SURFACES, THE CONSTRUCTION, REPAIR, OR MAINTENANCE ZONE MUST BE POSTED WITH SIGNS STATING THE CONDITION, AS REQUIRED BY CURRENT LAW, AND IN ADDITION, MUST WARN MOTORCYCLISTS OF THE POTENTIAL HAZARD. FOR THE PURPOSES OF THIS SUBSECTION, THE DEPARTMENT SHALL ADOPT BY RULE A UNIFORM SIGN OR SIGNS FOR THIS PURPOSE, INCLUDING AT LEAST THE FOLLOWING LANGUAGE, "MOTORCYCLES USE EXTREME CAUTION."

ALL CHANGES MUST BE APPROVED BY THE TRAFFIC ENGINEER

AUGUST 30, 2013

BENTON CITY

REQUIRED SIGN

(WHEN ABOVE CONDITIONS APPLY)

DWG #

7-13

S:BCGEN/DETAILS/7-13 REQ SIGN.DWG

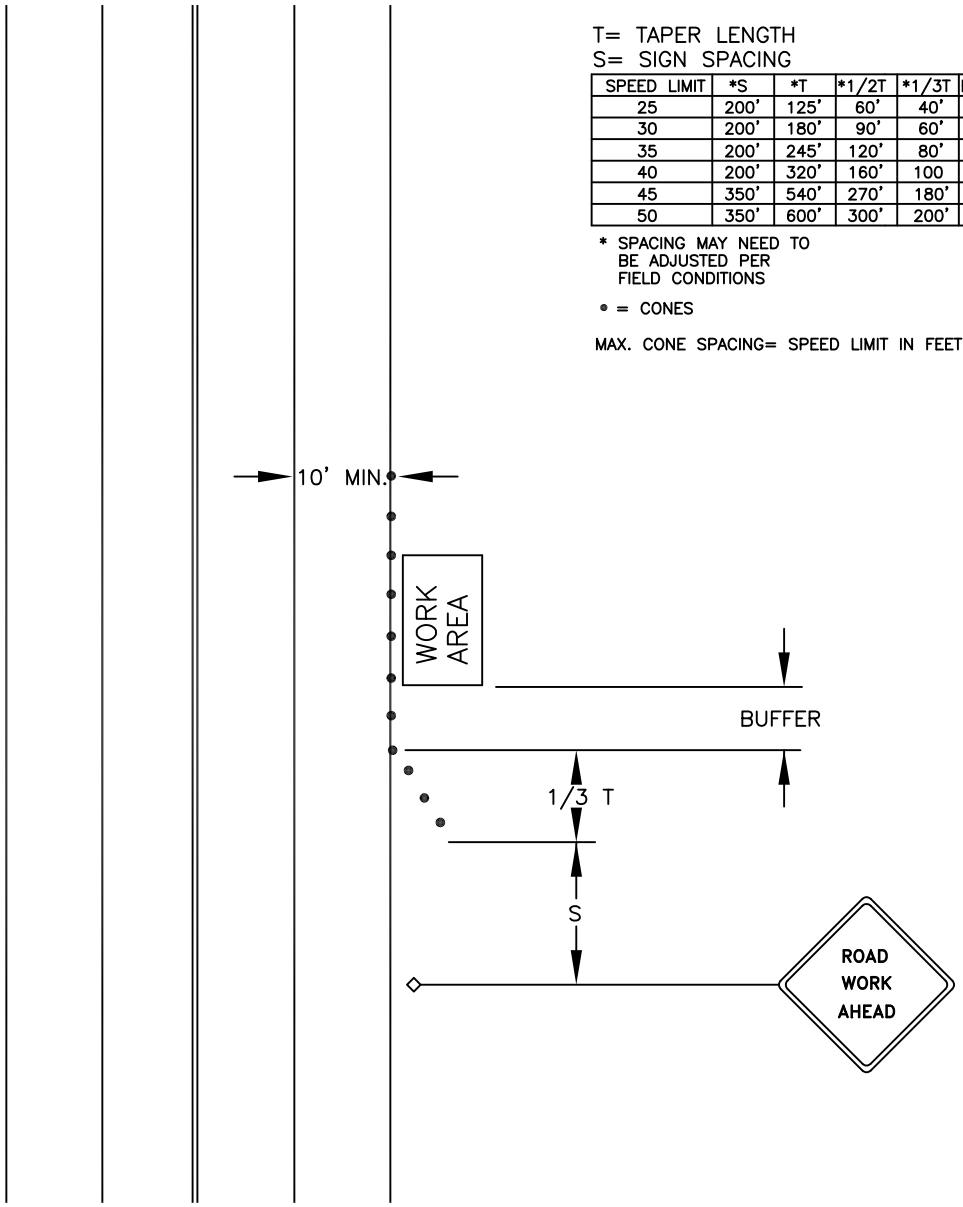
T= TAPER LENGTH
S= SIGN SPACING

SPEED LIMIT	*S	*T	*1/2T	*1/3T	BUFFER
25	200'	125'	60'	40'	55'
30	200'	180'	90'	60'	85'
35	200'	245'	120'	80'	120'
40	200'	320'	160'	100	170'
45	350'	540'	270'	180'	220'
50	350'	600'	300'	200'	280'

* SPACING MAY NEED TO BE ADJUSTED PER FIELD CONDITIONS

• = CONES

MAX. CONE SPACING= SPEED LIMIT IN FEET



ALL CHANGES MUST BE APPROVED BY THE TRAFFIC ENGINEER

AUGUST 30, 2013

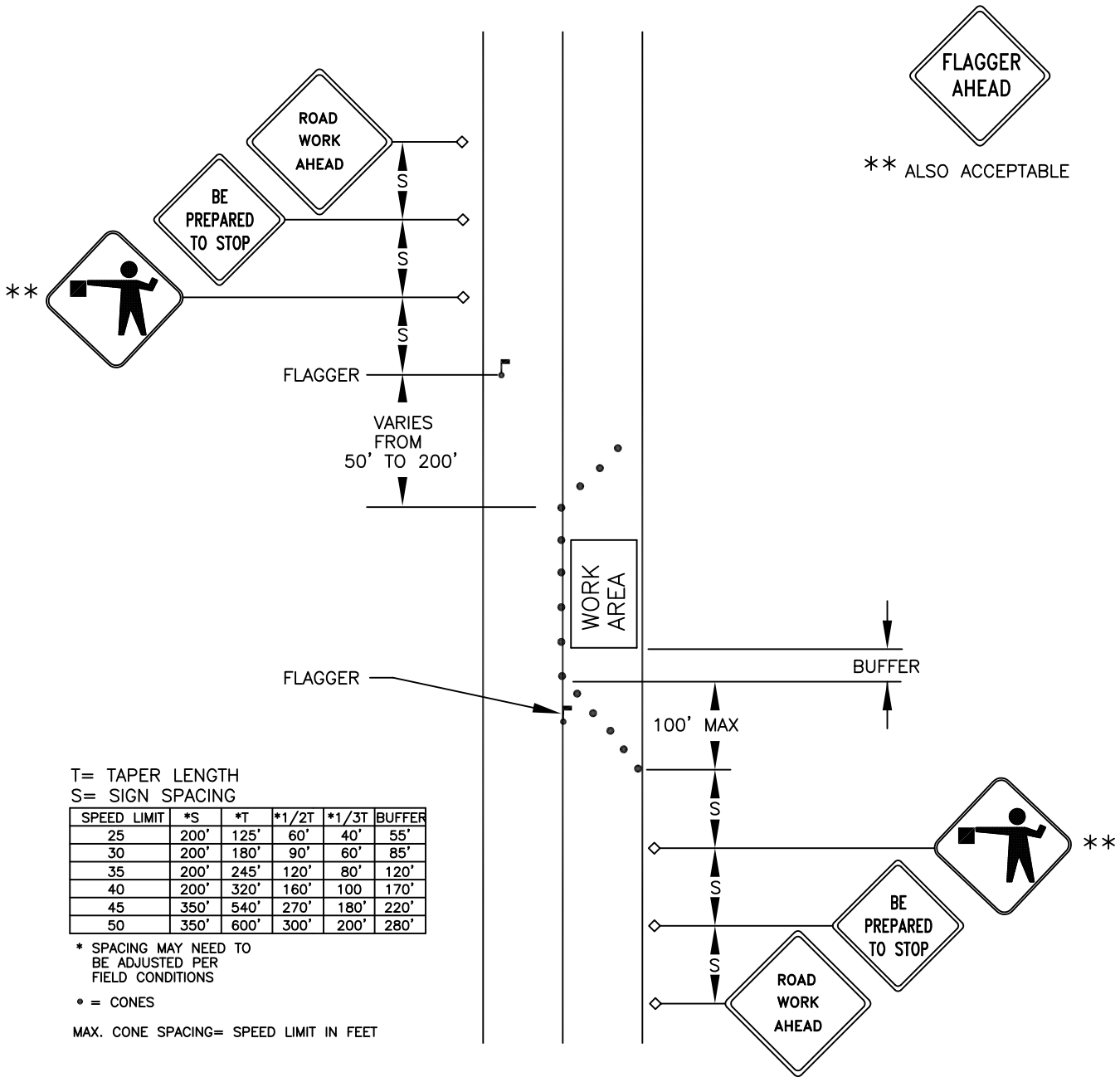
BENTON CITY

SHOULDER WORK
ANY ROAD

DWG #

7-14

S:BCGEN/DETAILS/7-14 SHOULDER WORK.DWG



T= TAPER LENGTH
S= SIGN SPACING

SPEED LIMIT	*S	*T	*1/2T	*1/3T	BUFFER
25	200'	125'	60'	40'	55'
30	200'	180'	90'	60'	85'
35	200'	245'	120'	80'	120'
40	200'	320'	160'	100	170'
45	350'	540'	270'	180'	220'
50	350'	600'	300'	200'	280'

* SPACING MAY NEED TO BE ADJUSTED PER FIELD CONDITIONS

• = CONES

MAX. CONE SPACING= SPEED LIMIT IN FEET

ALL CHANGES MUST BE APPROVED BY THE TRAFFIC ENGINEER

AUGUST 30, 2013

BENTON CITY

TYPICAL LANE CLOSURE 2 LANE ROAD

DWG # 7-15

S:BCGEN/DETAILS/7-15 LANE CLOSE.DWG

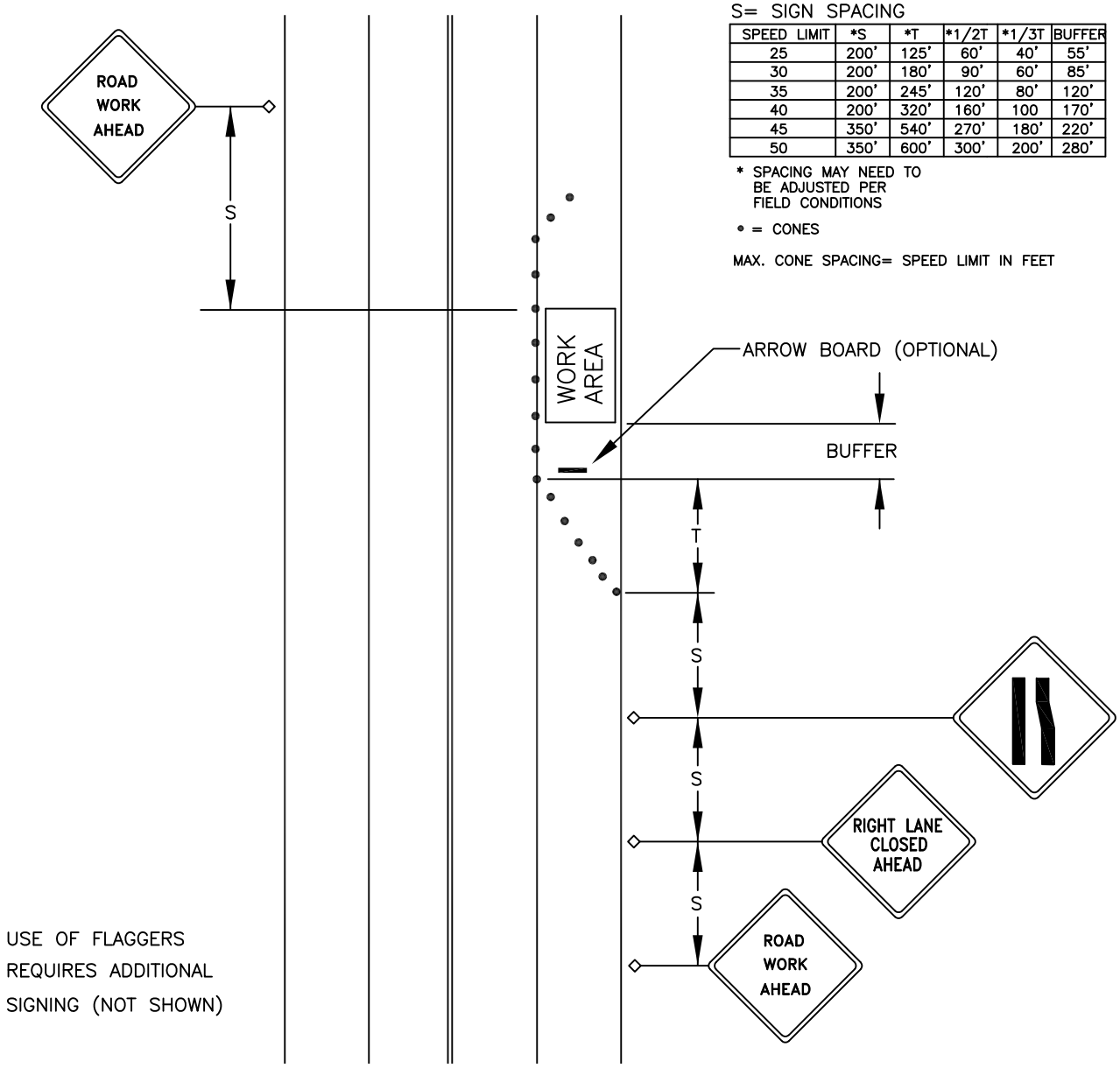
T= TAPER LENGTH
S= SIGN SPACING

SPEED LIMIT	*S	*T	*1/2T	*1/3T	BUFFER
25	200'	125'	60'	40'	55'
30	200'	180'	90'	60'	85'
35	200'	245'	120'	80'	120'
40	200'	320'	160'	100	170'
45	350'	540'	270'	180'	220'
50	350'	600'	300'	200'	280'

* SPACING MAY NEED TO BE ADJUSTED PER FIELD CONDITIONS

• = CONES

MAX. CONE SPACING= SPEED LIMIT IN FEET



USE OF FLAGGERS REQUIRES ADDITIONAL SIGNING (NOT SHOWN)

ALL CHANGES MUST BE APPROVED BY THE TRAFFIC ENGINEER

AUGUST 30, 2013

BENTON CITY

TYPICAL RT. LANE CLOSURE 4 LANE ROAD

DWG # 7-16

S:BCGEN/DETAILS/7-16 LANE CLOSE.DWG

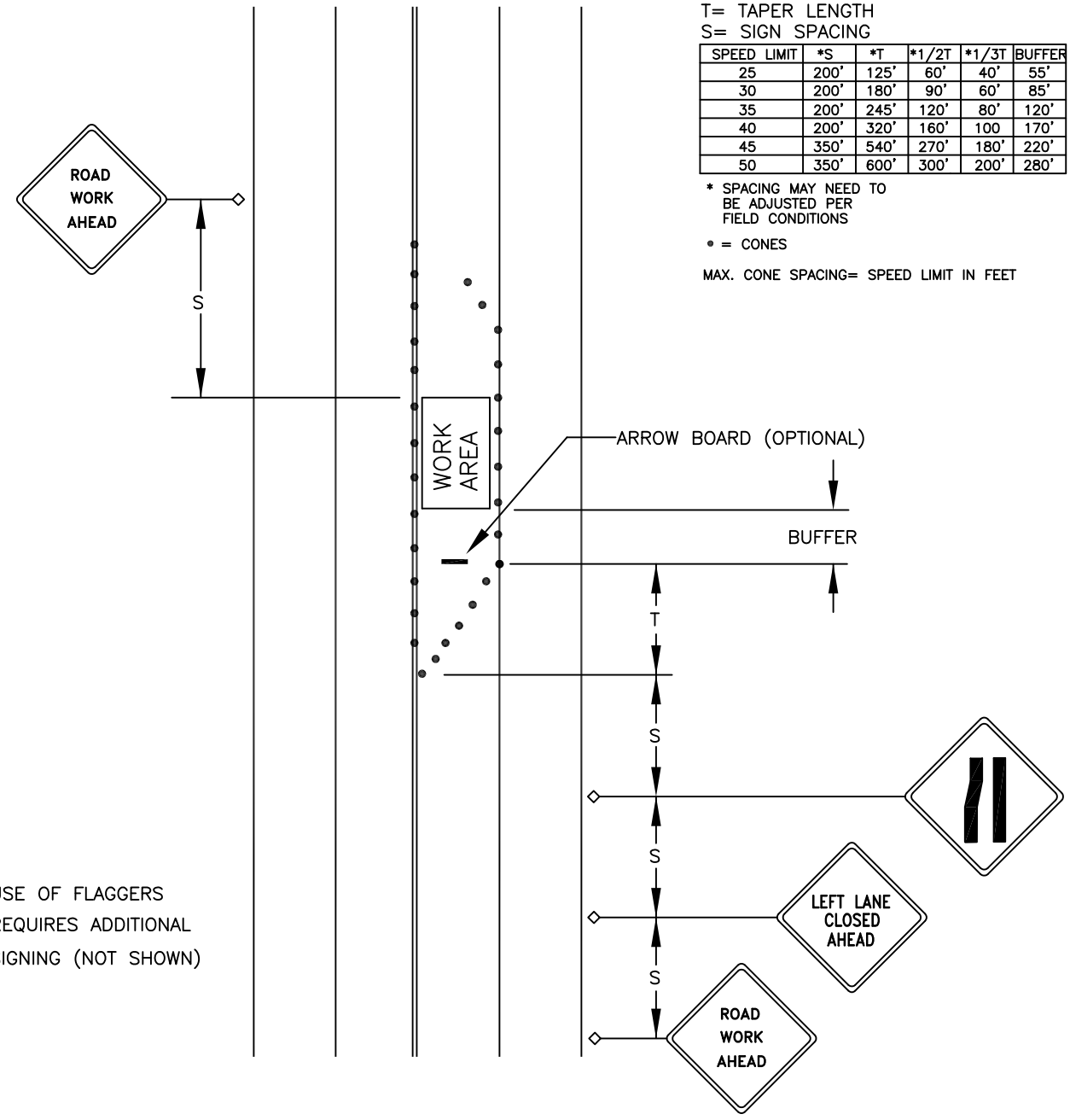
T= TAPER LENGTH
S= SIGN SPACING

SPEED LIMIT	*S	*T	*1/2T	*1/3T	BUFFER
25	200'	125'	60'	40'	55'
30	200'	180'	90'	60'	85'
35	200'	245'	120'	80'	120'
40	200'	320'	160'	100	170'
45	350'	540'	270'	180'	220'
50	350'	600'	300'	200'	280'

* SPACING MAY NEED TO BE ADJUSTED PER FIELD CONDITIONS

• = CONES

MAX. CONE SPACING= SPEED LIMIT IN FEET



USE OF FLAGGERS REQUIRES ADDITIONAL SIGNING (NOT SHOWN)

ALL CHANGES MUST BE APPROVED BY THE TRAFFIC ENGINEER

AUGUST 30, 2013

BENTON CITY

TYPICAL LT. LANE CLOSURE 4 LANE ROAD

DWG # 7-17

S:BCGEN/DETAILS/7-17 LANE CLOSE.DWG

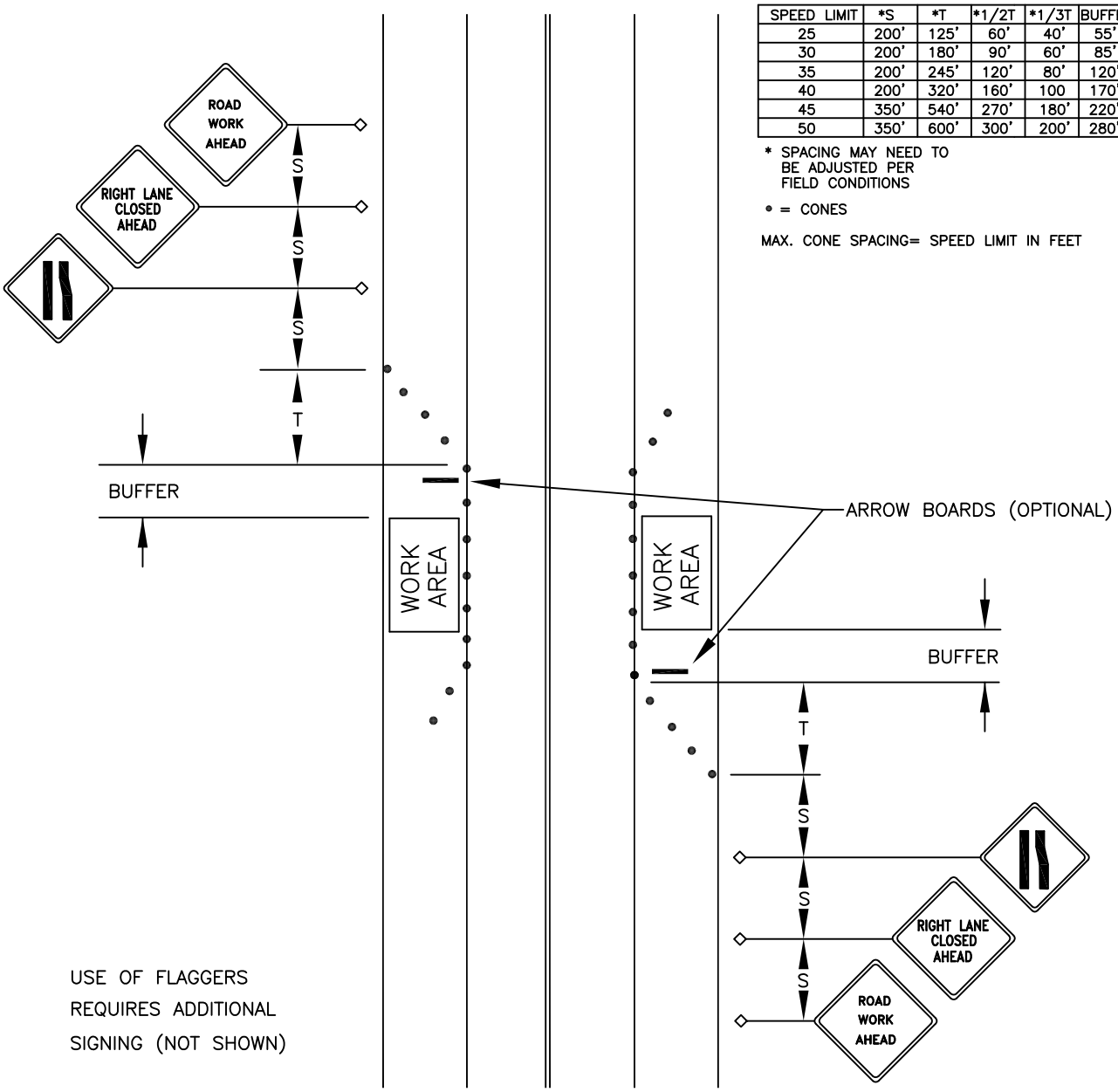
T= TAPER LENGTH
S= SIGN SPACING

SPEED LIMIT	*S	*T	*1/2T	*1/3T	BUFFER
25	200'	125'	60'	40'	55'
30	200'	180'	90'	60'	85'
35	200'	245'	120'	80'	120'
40	200'	320'	160'	100	170'
45	350'	540'	270'	180'	220'
50	350'	600'	300'	200'	280'

* SPACING MAY NEED TO BE ADJUSTED PER FIELD CONDITIONS

• = CONES

MAX. CONE SPACING= SPEED LIMIT IN FEET



USE OF FLAGGERS REQUIRES ADDITIONAL SIGNING (NOT SHOWN)

ALL CHANGES MUST BE APPROVED BY THE TRAFFIC ENGINEER

AUGUST 30, 2013

BENTON CITY

TYPICAL DOUBLE LANE CLOSURE – 4 LANE ROAD

DWG # 7-18

S:BCGEN/DETAILS/7-18 LANE CLOSE.DWG

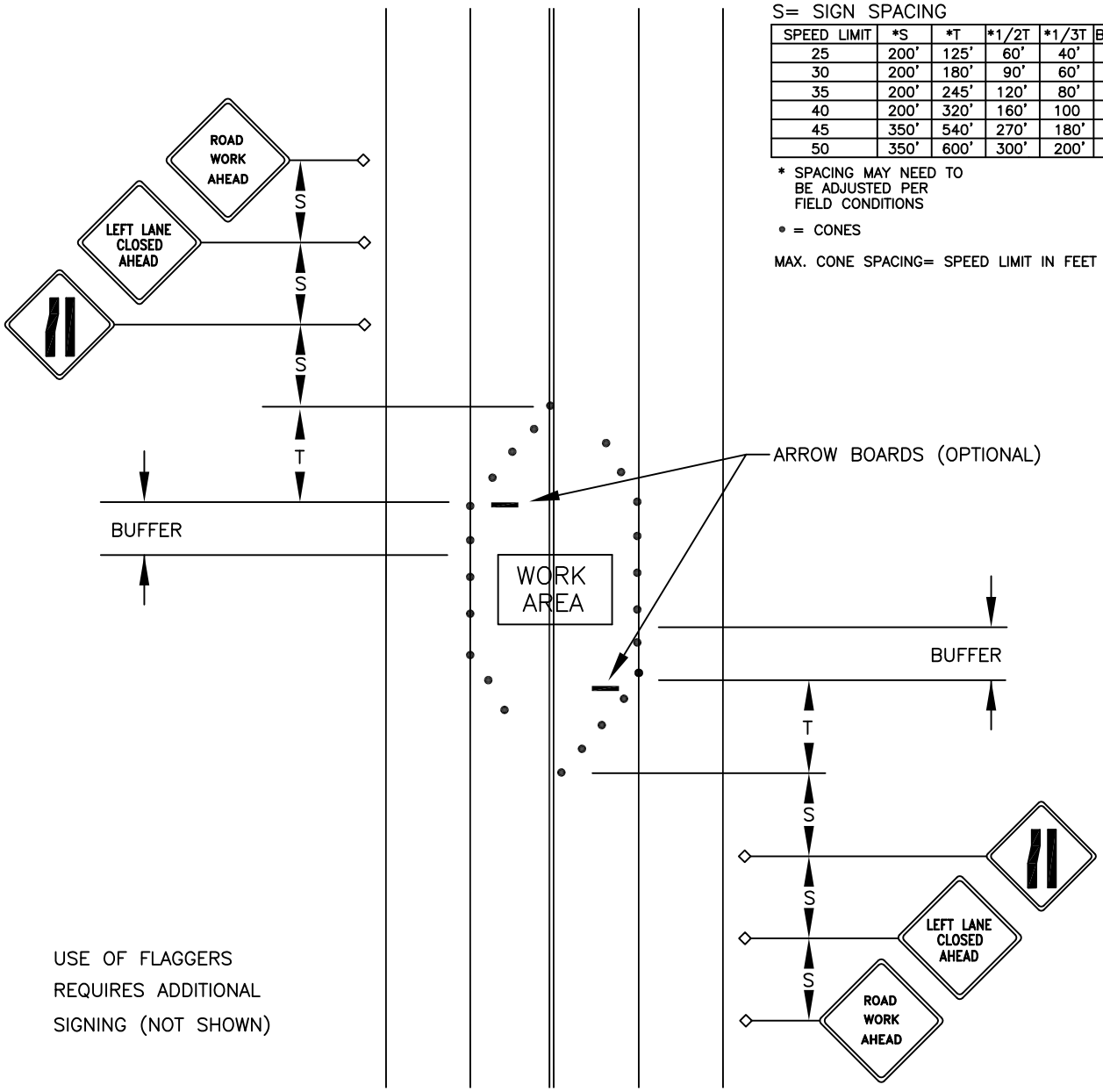
T= TAPER LENGTH
S= SIGN SPACING

SPEED LIMIT	*S	*T	*1/2T	*1/3T	BUFFER
25	200'	125'	60'	40'	55'
30	200'	180'	90'	60'	85'
35	200'	245'	120'	80'	120'
40	200'	320'	160'	100	170'
45	350'	540'	270'	180'	220'
50	350'	600'	300'	200'	280'

* SPACING MAY NEED TO BE ADJUSTED PER FIELD CONDITIONS

• = CONES

MAX. CONE SPACING= SPEED LIMIT IN FEET



USE OF FLAGGERS REQUIRES ADDITIONAL SIGNING (NOT SHOWN)

ALL CHANGES MUST BE APPROVED BY THE TRAFFIC ENGINEER

AUGUST 30, 2013

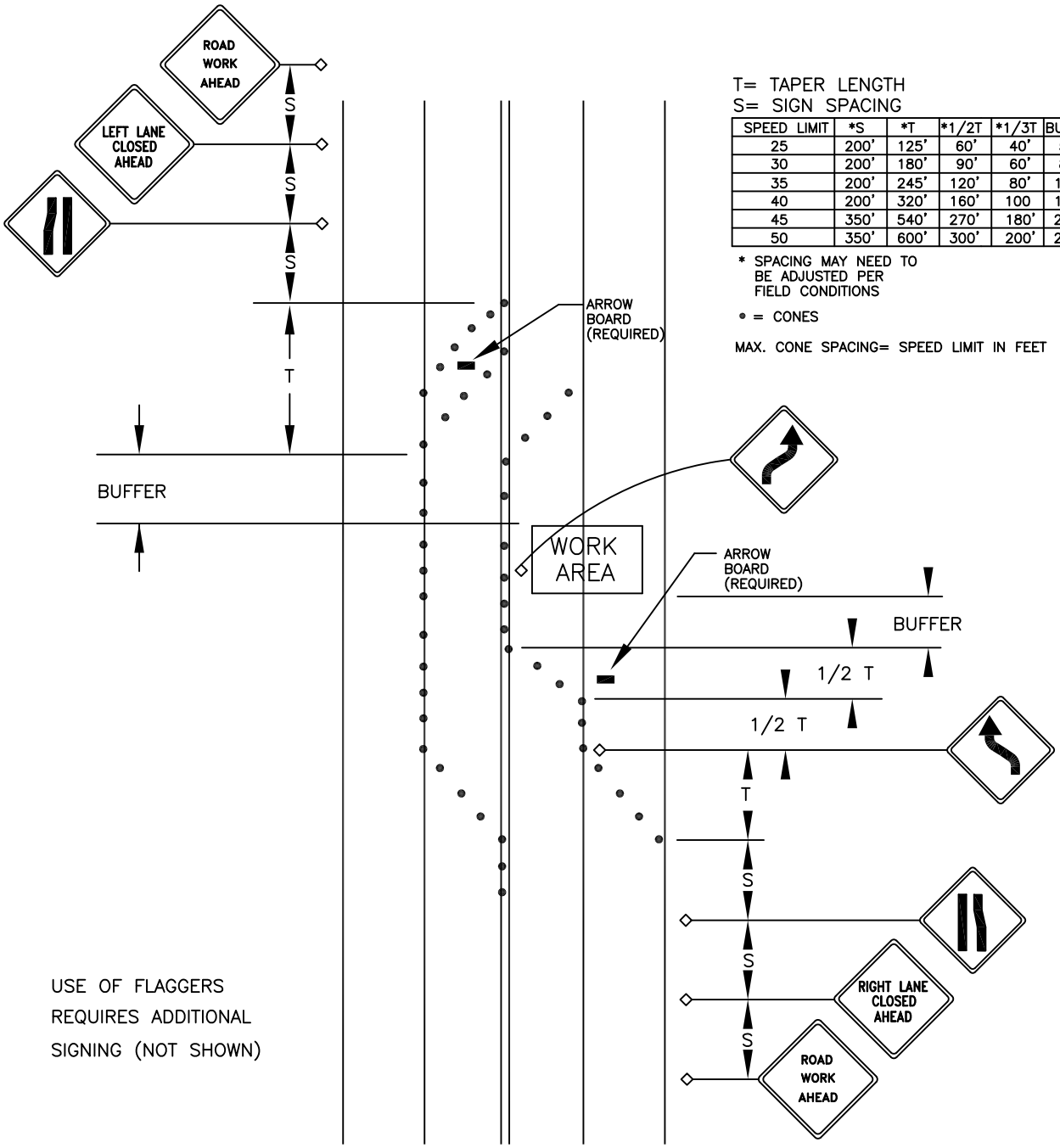
BENTON CITY

TYPICAL DOUBLE LANE CLOSURE – 4 LANE ROAD

DWG #

7–19

S:BCGEN/DETAILS/7–19 LANE CLOSE.DWG



T= TAPER LENGTH
S= SIGN SPACING

SPEED LIMIT	*S	*T	*1/2T	*1/3T	BUFFER
25	200'	125'	60'	40'	55'
30	200'	180'	90'	60'	85'
35	200'	245'	120'	80'	120'
40	200'	320'	160'	100	170'
45	350'	540'	270'	180'	220'
50	350'	600'	300'	200'	280'

* SPACING MAY NEED TO BE ADJUSTED PER FIELD CONDITIONS

• = CONES

MAX. CONE SPACING= SPEED LIMIT IN FEET

USE OF FLAGGERS REQUIRES ADDITIONAL SIGNING (NOT SHOWN)

AUGUST 30, 2013

BENTON CITY

TYPICAL DOUBLE LANE CLOSURE – 4 LANE ROAD

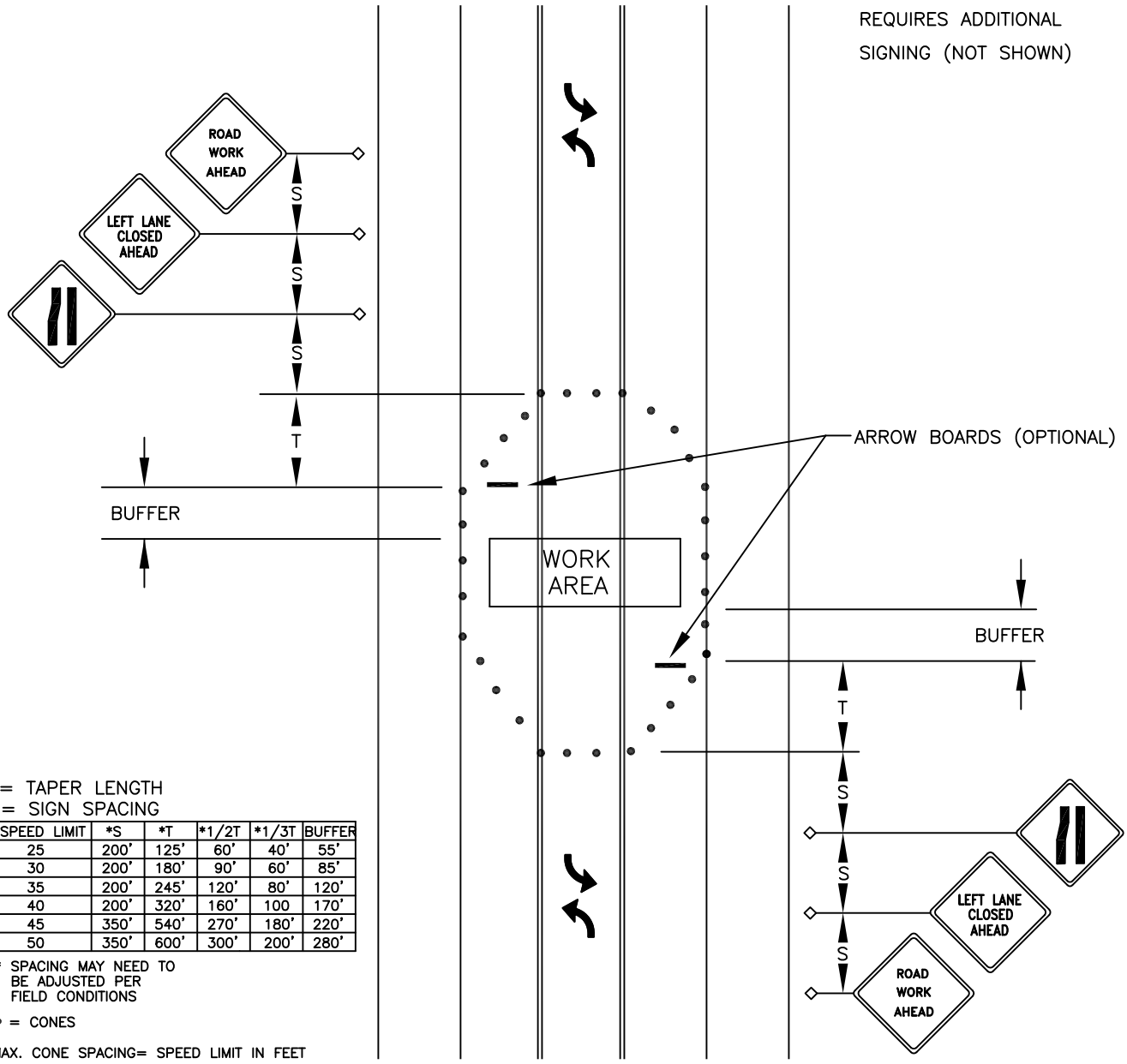
DWG #

7-20

S:BCGEN/DETAILS/7-20 LANE CLOSE.DWG

MAX. CONE SPACING= SPEED LIMIT IN FEET

USE OF FLAGGERS
REQUIRES ADDITIONAL
SIGNING (NOT SHOWN)



T= TAPER LENGTH
S= SIGN SPACING

SPEED LIMIT	*S	*T	*1/2T	*1/3T	BUFFER
25	200'	125'	60'	40'	55'
30	200'	180'	90'	60'	85'
35	200'	245'	120'	80'	120'
40	200'	320'	160'	100	170'
45	350'	540'	270'	180'	220'
50	350'	600'	300'	200'	280'

* SPACING MAY NEED TO BE ADJUSTED PER FIELD CONDITIONS

• = CONES

MAX. CONE SPACING= SPEED LIMIT IN FEET

ALL CHANGES MUST BE APPROVED BY THE TRAFFIC ENGINEER

AUGUST 30, 2013

BENTON CITY

TYPICAL 2-LANE CLOSURE - 5 LANE ROAD

DWG #

7-21

S:BCGEN/DETAILS/7-21 LANE CLOSE.DWG

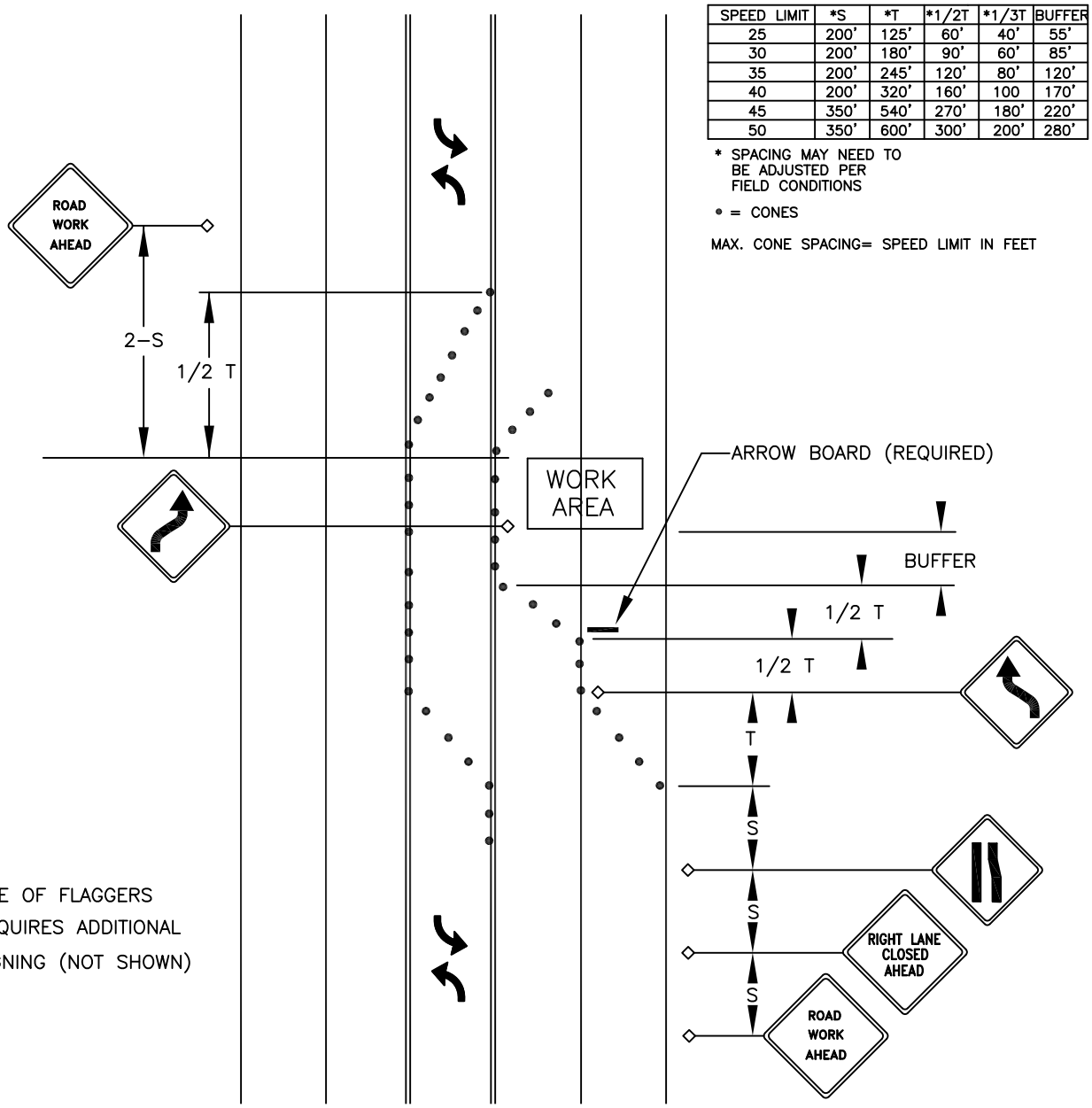
T= TAPER LENGTH
S= SIGN SPACING

SPEED LIMIT	*S	*T	*1/2T	*1/3T	BUFFER
25	200'	125'	60'	40'	55'
30	200'	180'	90'	60'	85'
35	200'	245'	120'	80'	120'
40	200'	320'	160'	100	170'
45	350'	540'	270'	180'	220'
50	350'	600'	300'	200'	280'

* SPACING MAY NEED TO BE ADJUSTED PER FIELD CONDITIONS

• = CONES

MAX. CONE SPACING= SPEED LIMIT IN FEET



USE OF FLAGGERS REQUIRES ADDITIONAL SIGNING (NOT SHOWN)

ALL CHANGES MUST BE APPROVED BY THE TRAFFIC ENGINEER

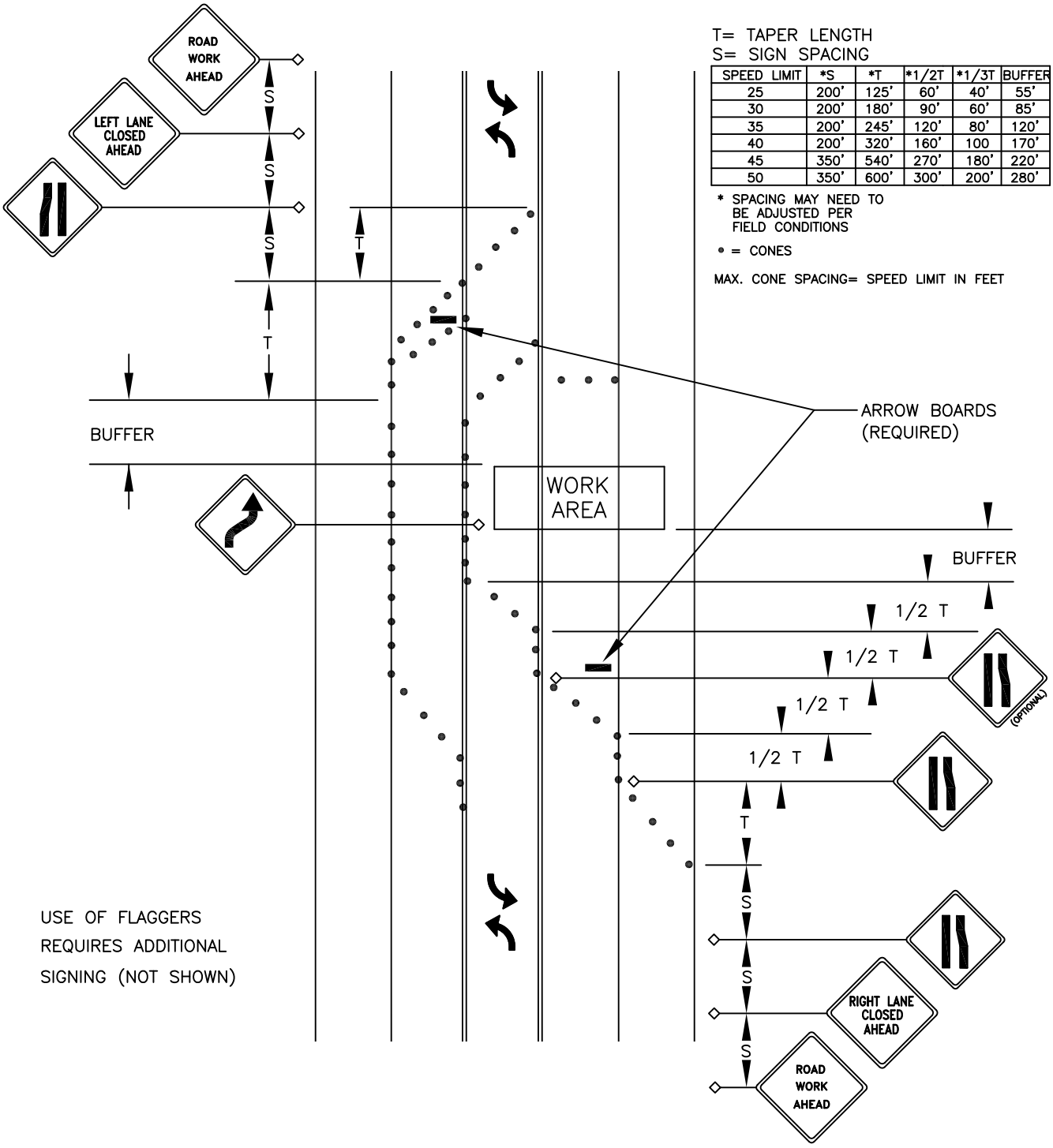
AUGUST 30, 2013

BENTON CITY

TYPICAL 2–LANE CLOSURE – 5 LANE ROAD

DWG # 7–22

S:BCGEN/DETAILS/7–22 LANE CLOSE.DWG



T= TAPER LENGTH
S= SIGN SPACING

SPEED LIMIT	*S	*T	*1/2T	*1/3T	BUFFER
25	200'	125'	60'	40'	55'
30	200'	180'	90'	60'	85'
35	200'	245'	120'	80'	120'
40	200'	320'	160'	100	170'
45	350'	540'	270'	180'	220'
50	350'	600'	300'	200'	280'

* SPACING MAY NEED TO BE ADJUSTED PER FIELD CONDITIONS

• = CONES

MAX. CONE SPACING= SPEED LIMIT IN FEET

ALL CHANGES MUST BE APPROVED BY THE TRAFFIC ENGINEER

AUGUST 30, 2013

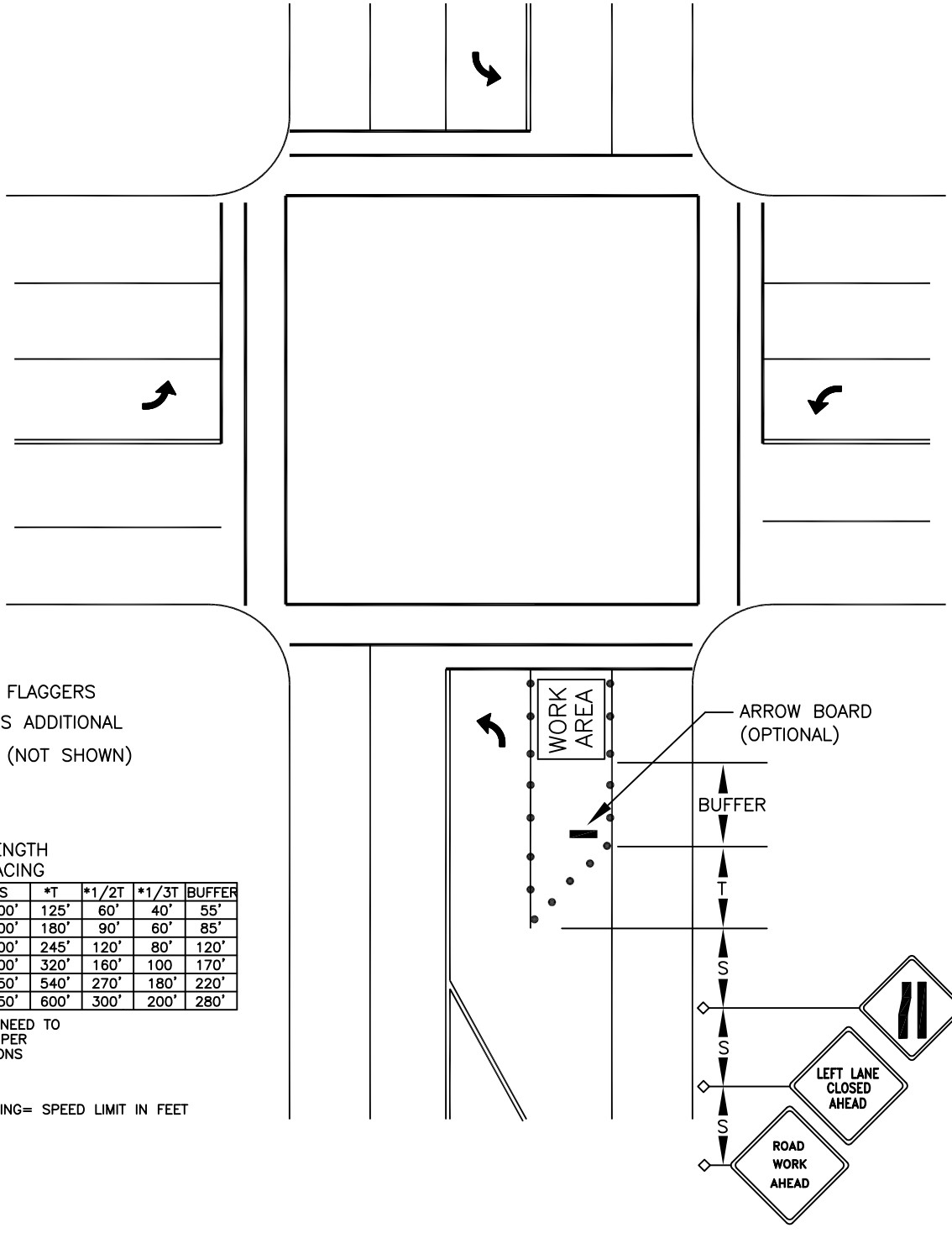
BENTON CITY

TYPICAL 3-LANE CLOSURE - 5 LANE ROAD

DWG #

7-23

S:BCGEN/DETAILS/7-23 LANE CLOSE.DWG



USE OF FLAGGERS REQUIRES ADDITIONAL SIGNING (NOT SHOWN)

T= TAPER LENGTH
S= SIGN SPACING

SPEED LIMIT	*S	*T	*1/2T	*1/3T	BUFFER
25	200'	125'	60'	40'	55'
30	200'	180'	90'	60'	85'
35	200'	245'	120'	80'	120'
40	200'	320'	160'	100	170'
45	350'	540'	270'	180'	220'
50	350'	600'	300'	200'	280'

* SPACING MAY NEED TO BE ADJUSTED PER FIELD CONDITIONS

• = CONES

MAX. CONE SPACING= SPEED LIMIT IN FEET

ALL CHANGES MUST BE APPROVED BY THE TRAFFIC ENGINEER

AUGUST 30, 2013

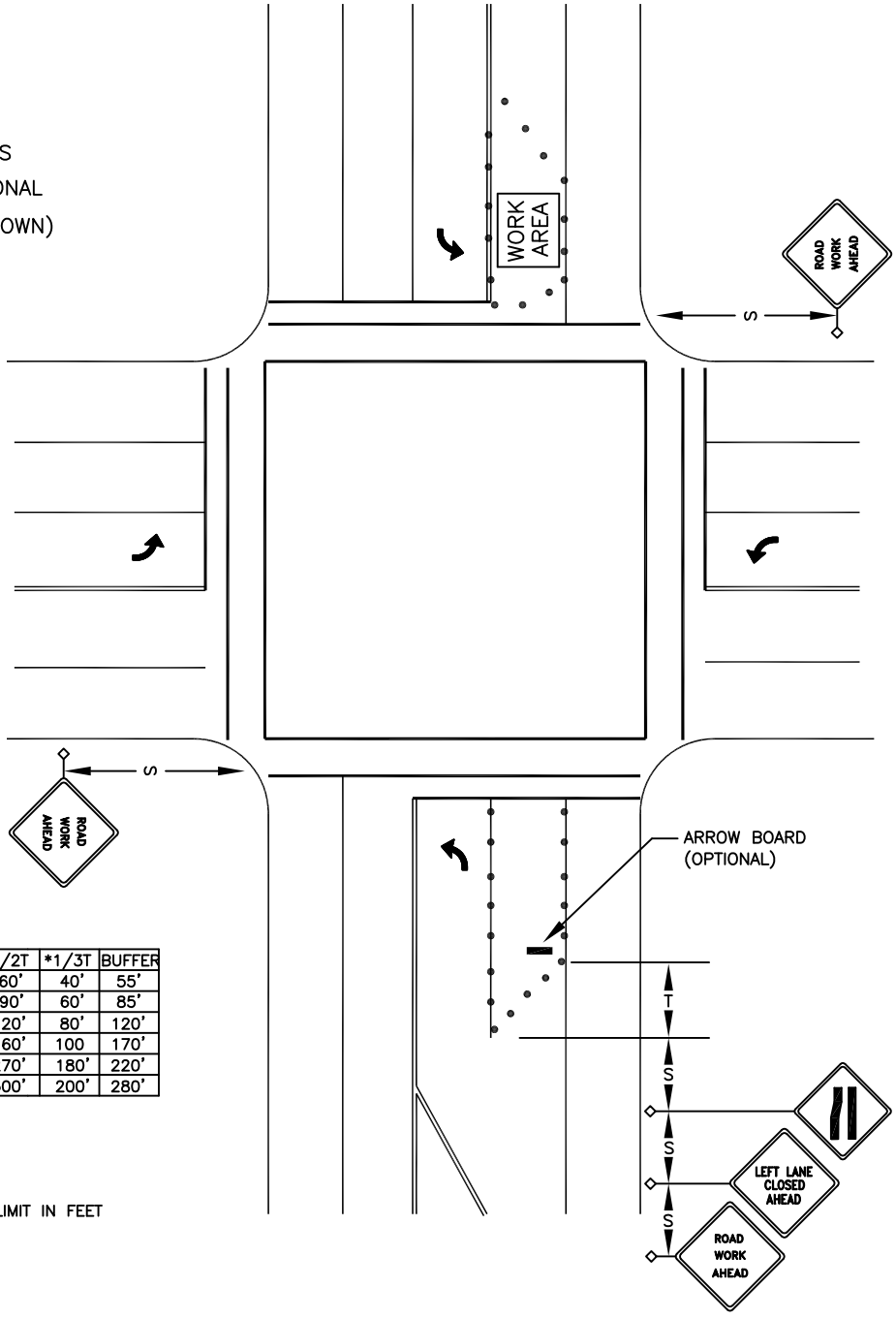
BENTON CITY

INSIDE LANE CLOSURE NEAR SIDE OF INTERSECTION

DWG # 7-24

S:BCGEN/DETAILS/7-24 LANE CLOSE.DWG

USE OF FLAGGERS
REQUIRES ADDITIONAL
SIGNING (NOT SHOWN)



T= TAPER LENGTH
S= SIGN SPACING

SPEED LIMIT	*S	*T	*1/2T	*1/3T	BUFFER
25	200'	125'	60'	40'	55'
30	200'	180'	90'	60'	85'
35	200'	245'	120'	80'	120'
40	200'	320'	160'	100	170'
45	350'	540'	270'	180'	220'
50	350'	600'	300'	200'	280'

* SPACING MAY NEED TO BE ADJUSTED PER FIELD CONDITIONS

• = CONES

MAX. CONE SPACING= SPEED LIMIT IN FEET

ALL CHANGES MUST BE APPROVED BY THE TRAFFIC ENGINEER

AUGUST 30, 2013

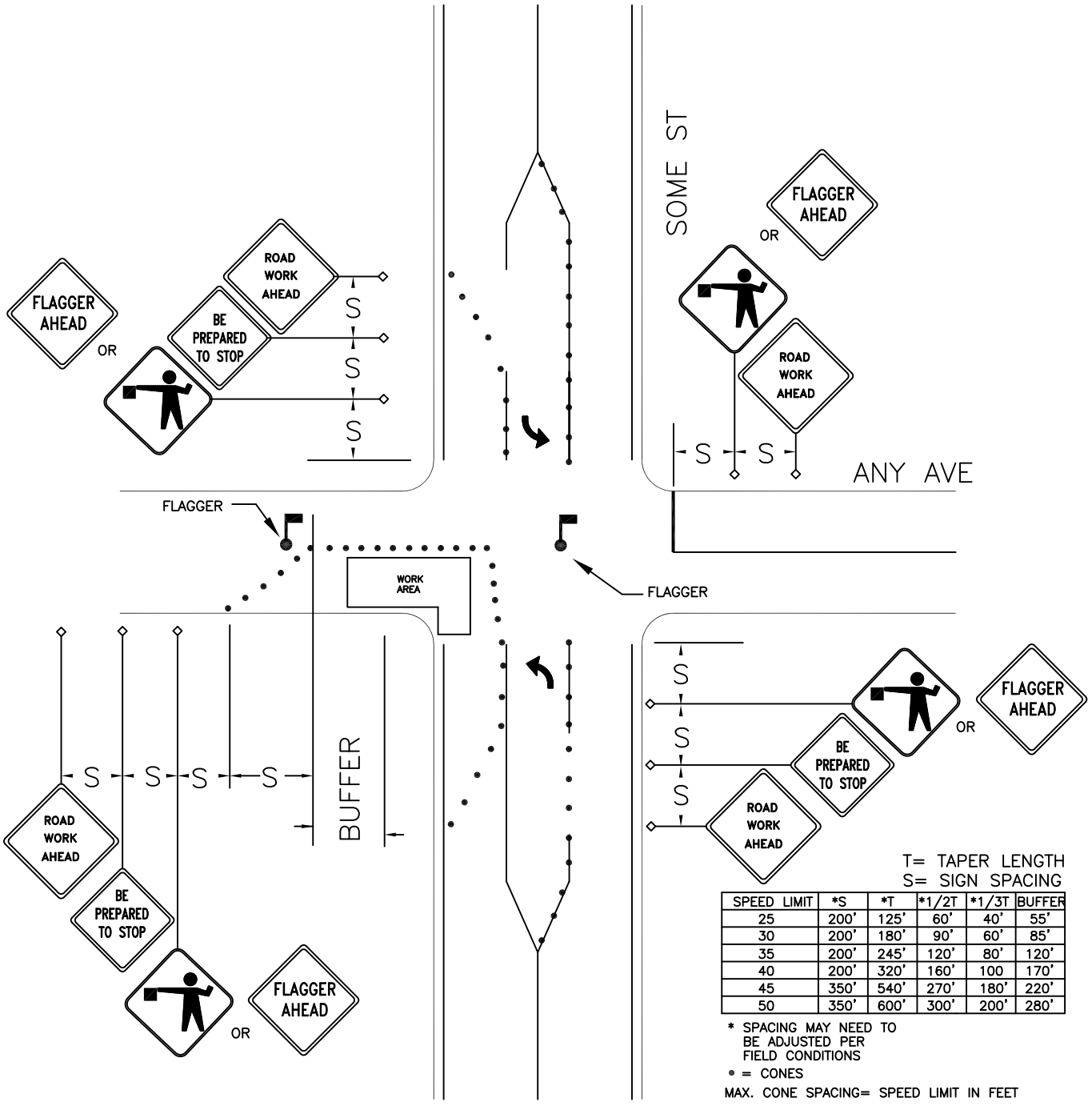
BENTON CITY

INSIDE LANE CLOSURE FAR SIDE OF INTERSECTION

DWG #

7-25

S:BCGEN/DETAILS/7-25 LANE CLOSE.DWG



T= TAPER LENGTH
S= SIGN SPACING

SPEED LIMIT	*S	*T	*1/2T	*1/3T	BUFFER
25	200'	125'	60'	40'	55'
30	200'	180'	90'	60'	85'
35	200'	245'	120'	80'	120'
40	200'	320'	160'	100	170'
45	350'	540'	270'	180'	220'
50	350'	600'	300'	200'	280'

* SPACING MAY NEED TO BE ADJUSTED PER FIELD CONDITIONS

• = CONES

MAX. CONE SPACING= SPEED LIMIT IN FEET

ALL CHANGES MUST BE APPROVED BY THE TRAFFIC ENGINEER

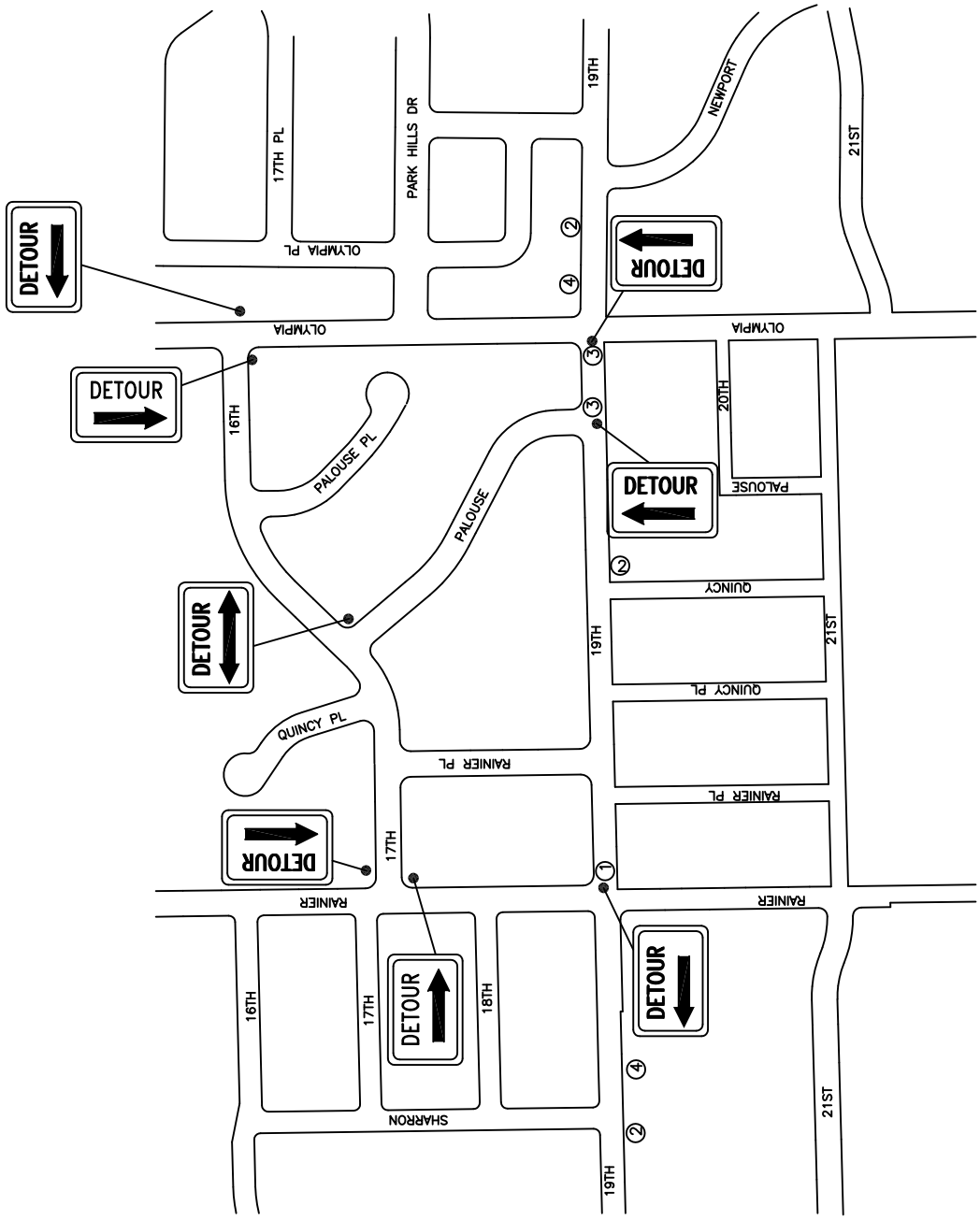
AUGUST 30, 2013

BENTON CITY

EXAMPLE OF WORK NEAR INTERSECTION

DWG # 7-26

S:BCGEN/DETAILS/7-26 INT WORK.DWG



SIGN LEGEND

① ROAD CLOSED TO THRU TRAFFIC
R11-4
60"X30"
ON TYPE III BARRICADE

② STREET CLOSED AHEAD
W20-3
(36"x 36")

③ ROAD CLOSED
R11-2
(48"x 30")
ON TYPE III BARRICADE

④ DETOUR AHEAD
W20-2
(36"x 36")

ALL CHANGES MUST BE APPROVED BY THE TRAFFIC ENGINEER

AUGUST 30, 2013

BENTON CITY

EXAMPLE OF ROAD CLOSURE AND DETOUR

DWG # 7-27

S:BCGEN/DETAILS/7-27 CLOSURE.DWG

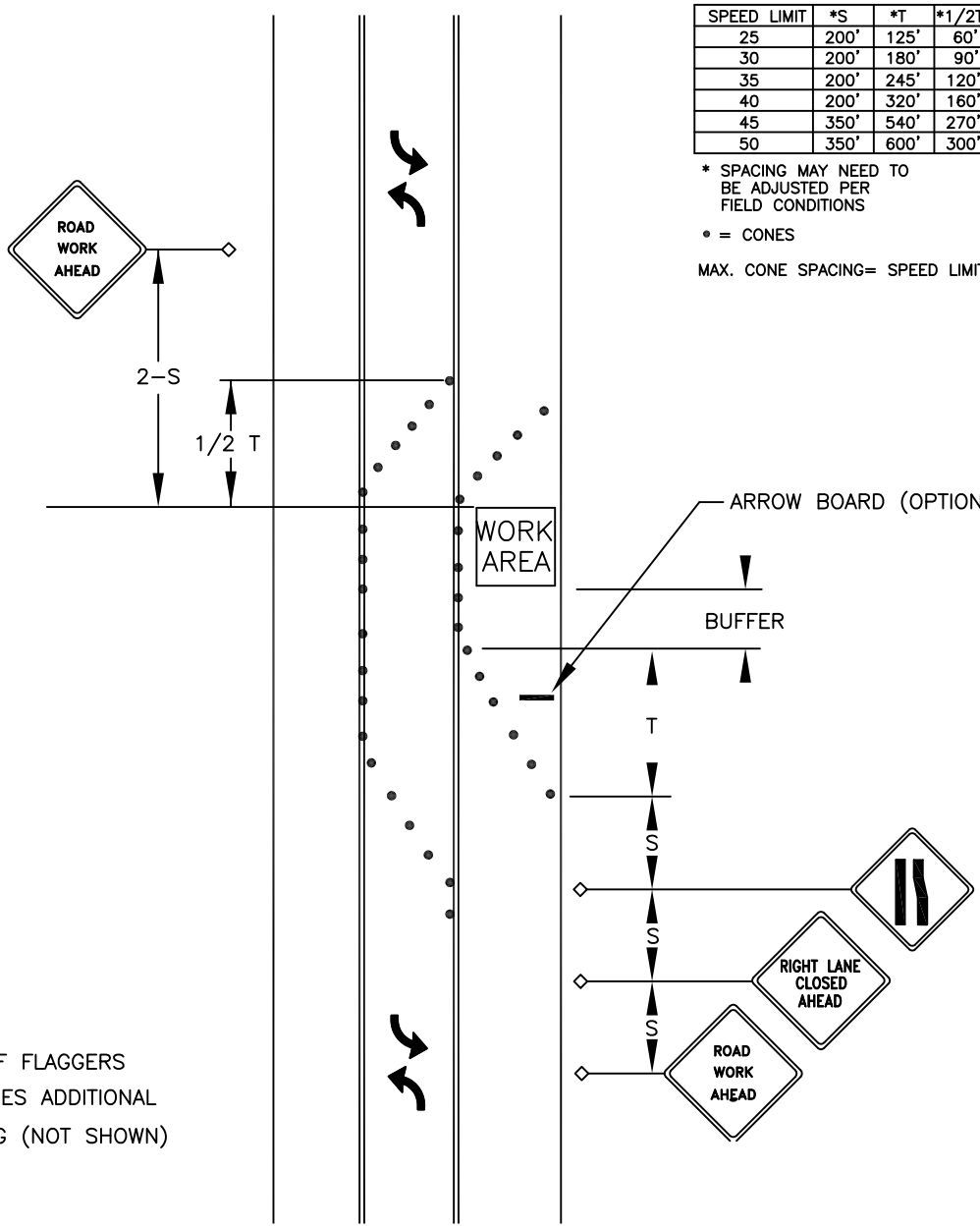
T= TAPER LENGTH
S= SIGN SPACING

SPEED LIMIT	*S	*T	*1/2T	*1/3T	BUFFER
25	200'	125'	60'	40'	55'
30	200'	180'	90'	60'	85'
35	200'	245'	120'	80'	120'
40	200'	320'	160'	100	170'
45	350'	540'	270'	180'	220'
50	350'	600'	300'	200'	280'

* SPACING MAY NEED TO BE ADJUSTED PER FIELD CONDITIONS

• = CONES

MAX. CONE SPACING= SPEED LIMIT IN FEET



USE OF FLAGGERS REQUIRES ADDITIONAL SIGNING (NOT SHOWN)

ALL CHANGES MUST BE APPROVED BY THE TRAFFIC ENGINEER

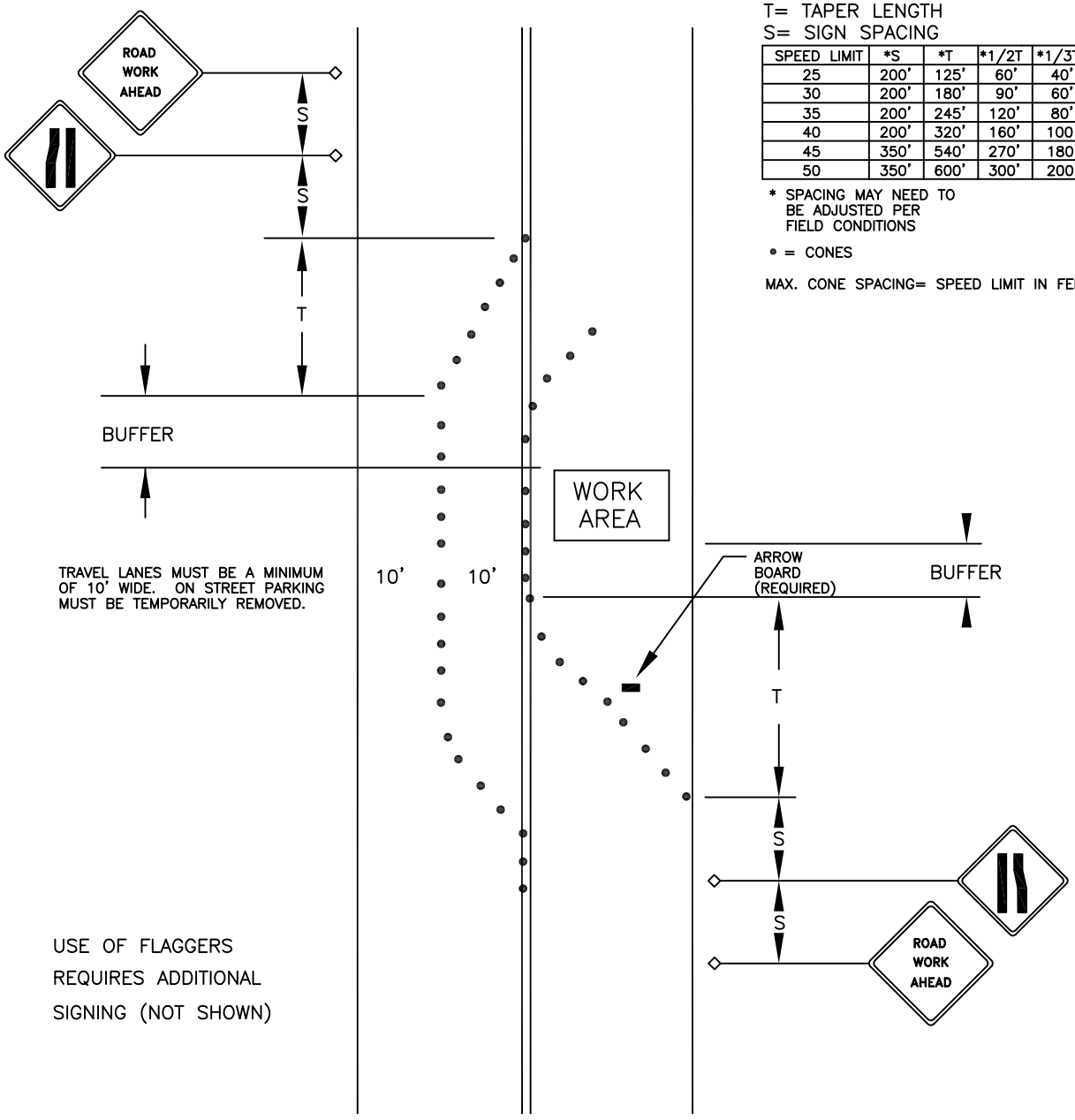
AUGUST 30, 2013

BENTON CITY

TYPICAL 1–LANE CLOSURE ONE SIDE – 3 LANE ROAD

DWG # 7–28

S:BCGEN/DETAILS/7–28 CLOSURE.DWG



T= TAPER LENGTH
S= SIGN SPACING

SPEED LIMIT	*S	*T	*1/2T	*1/3T	BUFFER
25	200'	125'	60'	40'	55'
30	200'	180'	90'	60'	85'
35	200'	245'	120'	80'	120'
40	200'	320'	160'	100	170'
45	350'	540'	270'	180'	220'
50	350'	600'	300'	200'	280'

* SPACING MAY NEED TO BE ADJUSTED PER FIELD CONDITIONS

• = CONES

MAX. CONE SPACING= SPEED LIMIT IN FEET

ALL CHANGES MUST BE APPROVED BY THE TRAFFIC ENGINEER

AUGUST 30, 2013

BENTON CITY

TYPICAL LANE CLOSURE 2 LANE ROAD 2-WAY TRAFFIC

DWG # 7-29

S:BCGEN/DETAILS/7-29 CLOSURE.DWG