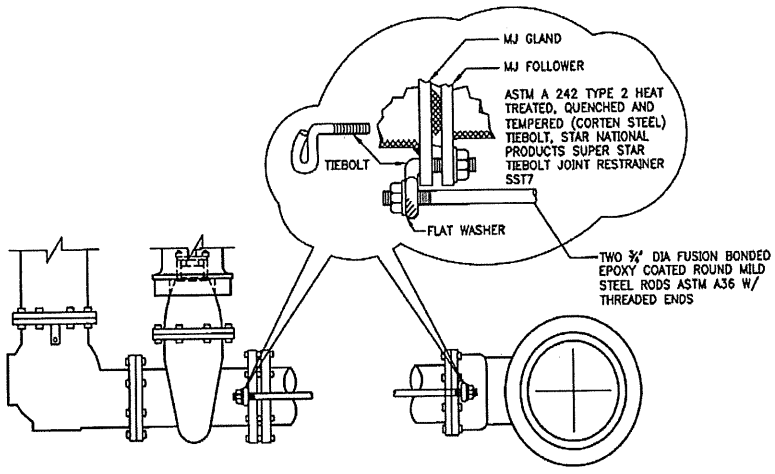
APPENDIX C

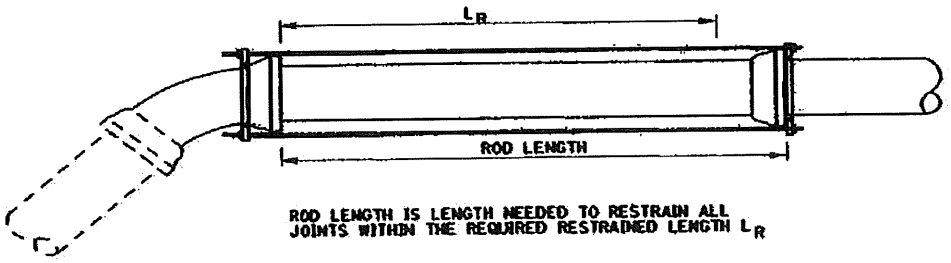
WSDOT AND CITY STANDARD PLANS AND DETAILS

Eye Bolt Detail



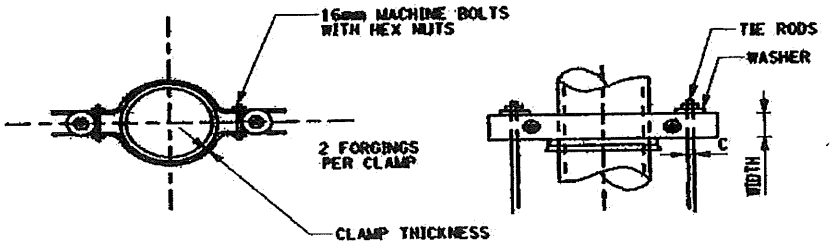
TIEBOLT RESTRAINT

Restraining Rod Detail



ROD LENGTH IS LENGTH NEEDED TO RESTRAIN ALL JOINTS WITHIN THE REQUIRED RESTRAINED LENGTH L_R

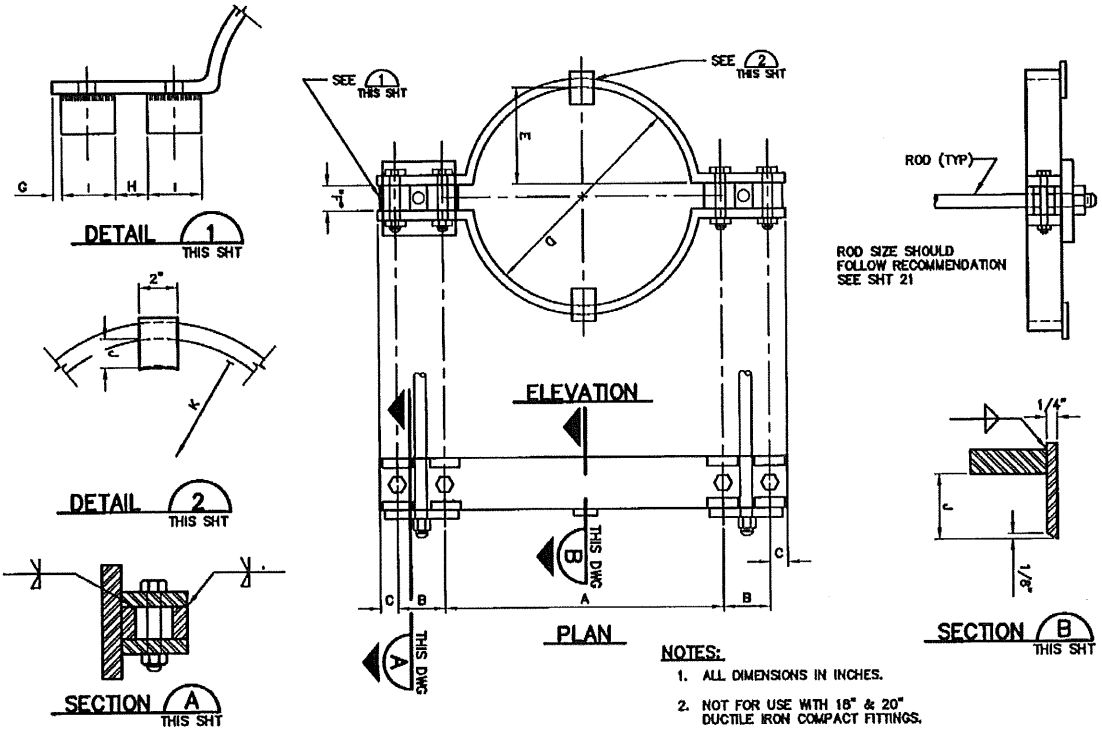
TIE RODS
PLAN



CROSS SECTION PLAN

TIE ROD CLAMP DETAIL

Clamp Detail & Dimensions



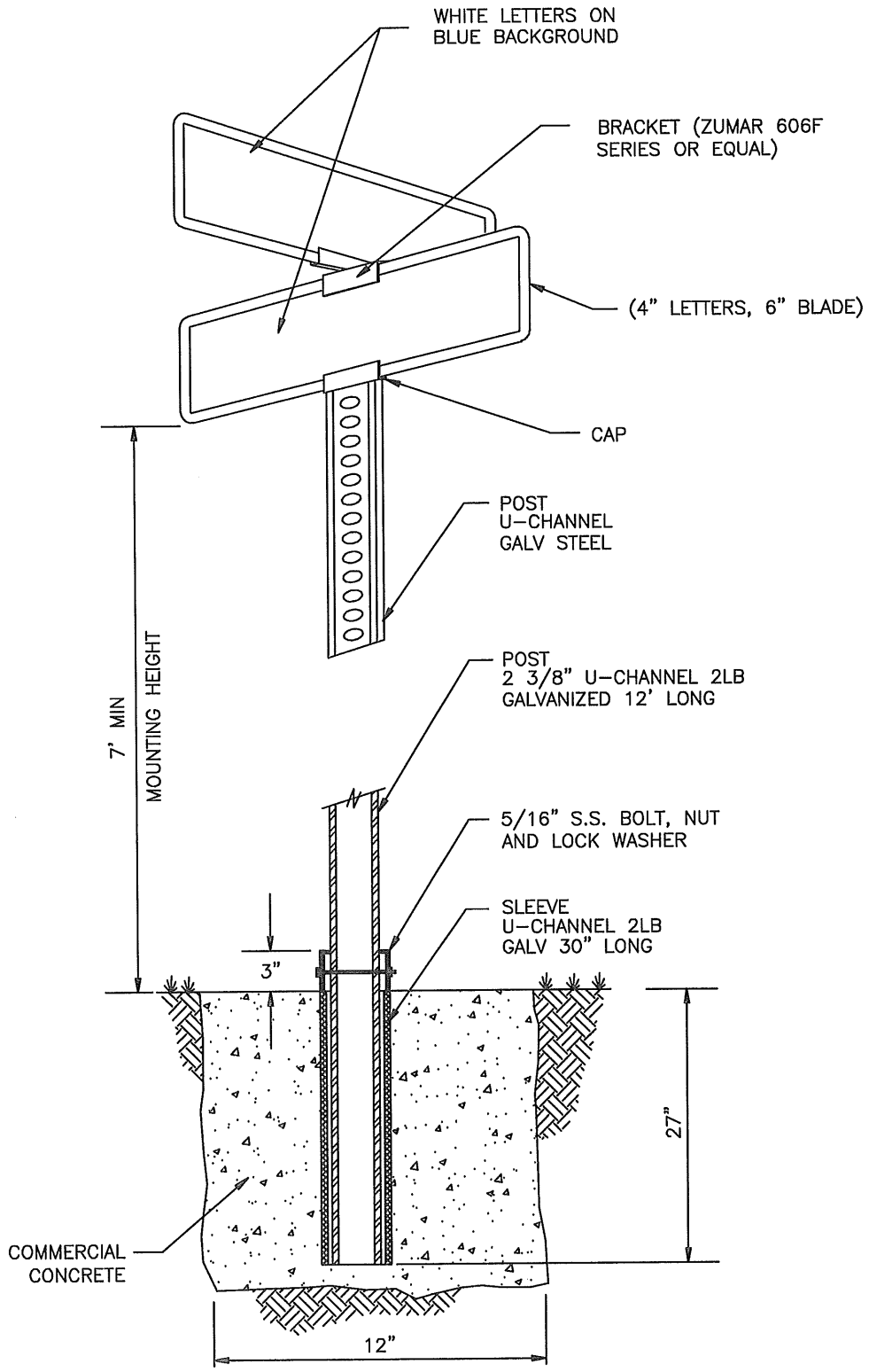
NOTES:

1. ALL DIMENSIONS IN INCHES.
2. NOT FOR USE WITH 18" & 20" DUCTILE IRON COMPACT FITTINGS.

TABLE OF DIMENSIONS FOR CLAMPS

PIPE ø	BAR SIZE	A		B		C		D		E		F		G		H		I		J	K	BOLT SIZE		PIPE ø
		BELL CLAMP	BODY CLAMP	BELL CLAMP	BODY CLAMP	BELL CLAMP	BODY CLAMP	BELL CLAMP	BODY CLAMP	BELL CLAMP	BODY CLAMP	BELL CLAMP	BODY CLAMP	BELL CLAMP	BELL CLAMP	BELL CLAMP	BODY CLAMP	BELL CLAMP	BODY CLAMP	BELL CLAMP	BODY CLAMP	BELL CLAMP	BODY CLAMP	
4	1 1/2x 1/2	9	7 3/8	3	4	1 1/2	1 1/2	8 1/4	4 3/4	2 5/8	1 7/8			3/8	3/8	1 1/4	1 1/4	2 1/4	2 1/2	5/8	2 1/2	3x 1 1/2	2 1/2x 3/8	4
6	2 x 1/2	11 1/4	9 5/8	3	4	1 1/2	1 1/2	8 1/2	6 7/8	3 3/4	2 15/16							2 1/4	2 1/2	1/2	3 3/4	3 1/2x 1/2	3 1/2x 1/2	6
8	2 1/2x 1/2	13 5/8	11 7/8	3 1/2	4	1 1/2	1 1/2	10 3/4	9 1/8	4 7/8	4 1/16							2 1/4	2 1/2	5/8	4 3/4	4 1/2x 1/2	4x 1/2	8
12	2 1/2x 5/8	16 1/4	16 3/8	3 1/2	4	1 1/2	1 1/2	15 1/8	13 1/4	7 1/16	6 1/8							2 1/4	2 1/2	13/16	6 3/4	4 1/2x 5/8	4 1/2x 5/8	12
16	3x 3/4	23 1/8	20 5/8	4	4 1/2	1 1/2	1 1/2	19 3/4	17 3/8	9 1/4	8 1/16	1 1/4	1 1/4	1/4	1/4	1 1/2	1 1/2	2 1/4	2 3/4	15/16	8 15/16	5 1/2x 5/8	5 1/2x 5/8	16
20	3x 3/4	27 1/2	25	4	4 1/2	1 1/2	1 1/2	24 1/8	21 5/8	11 5/16	10 1/16	1 1/2	1 1/2	3/8	3/8	1 3/4	1 3/4	2 1/4	2 1/2	1	11 1/16	5 1/2x 5/8	5 1/2x 5/8	20
24	RODS AND CLAMPS NOT ALLOWED.																							24

Eye Bolt/Restraining Tie Rod Detail

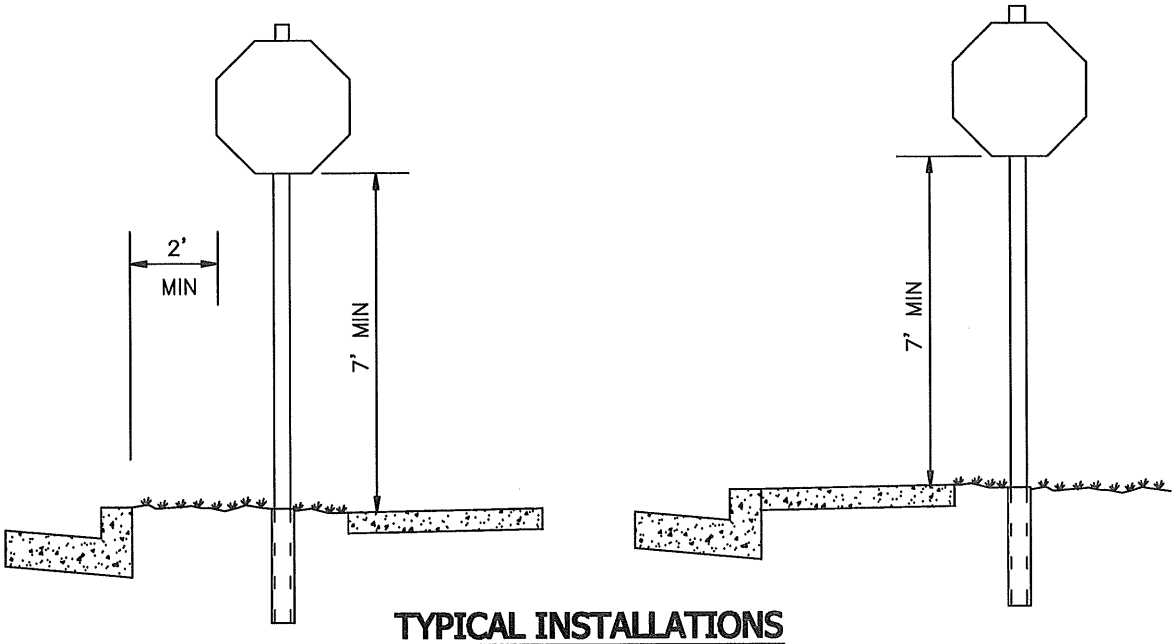


TYPICAL SECTION

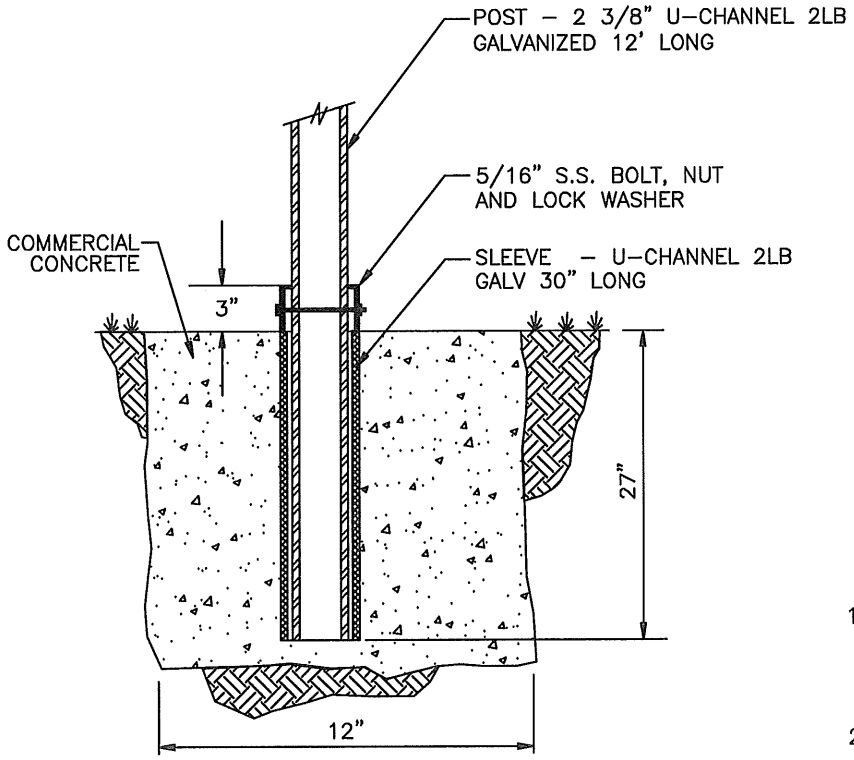
CITY OF ARLINGTON	APPROVED BY	L. OLIVE	*DEPARTMENT OF PUBLIC WORKS* STANDARD DETAILS
	DATE	07/31/2008	
	REF STD SPEC		POST MOUNTED STREET NAME SIGNS

STANDARD DETAIL NUMBER

R-110



TYPICAL INSTALLATIONS



TYPICAL SECTION

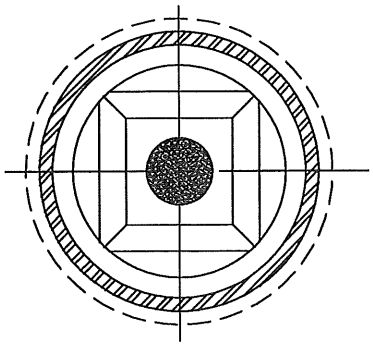
NOTES:

1. STANDARD STOP SIGNS SHALL BE 30"x30" PRIZMATIC SPECIFICATION UNLESS OTHERWISE APPROVED OR DIRECTED BY THE CITY ENGINEER.
2. STREET NAME SIGNS MAY BE INSTALLED AT TOP OF POST.

CITY OF ARLINGTON	APPROVED BY	L. OLIVE	*DEPARTMENT OF PUBLIC WORKS* STANDARD DETAILS
	DATE	07/31/2008	
	REF STD SPEC		TRAFFIC REGULATORY SIGN INSTALLATION

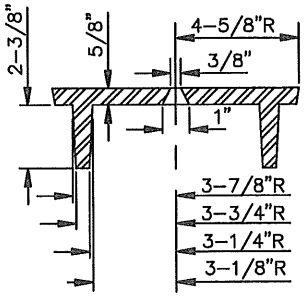
STANDARD DETAIL NUMBER

R–120

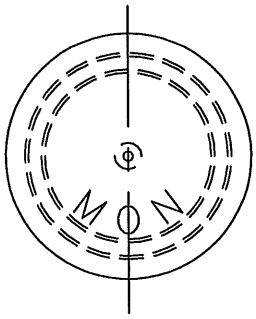


PLAN

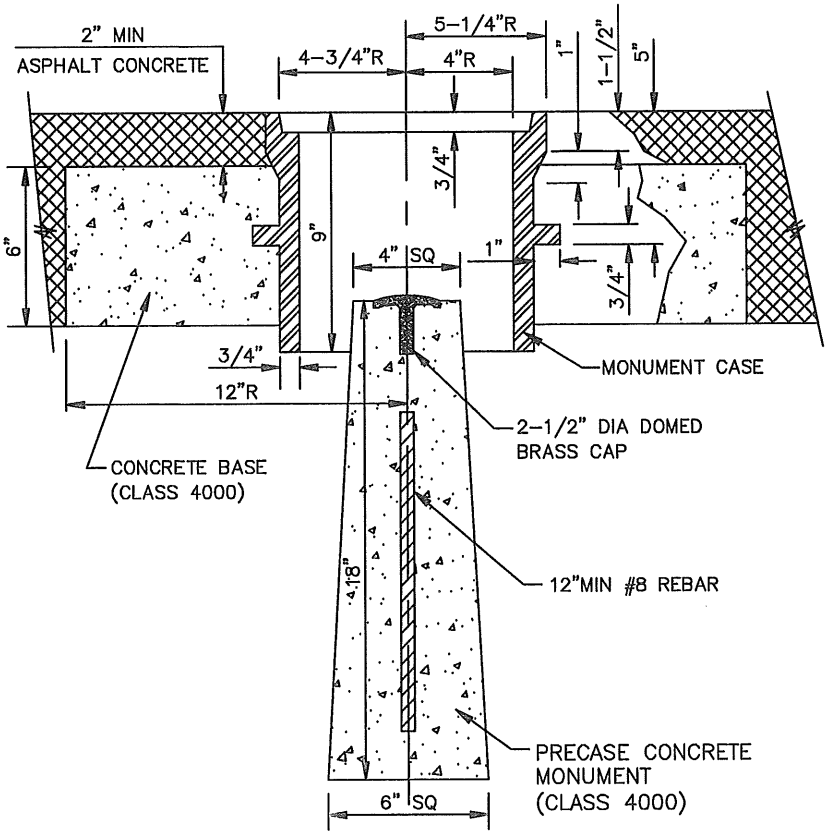
COVER REMOVED



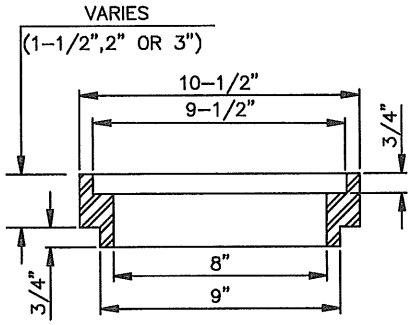
COVER SECTION



COVER PLAN



SECTION



EXTENSION SECTION

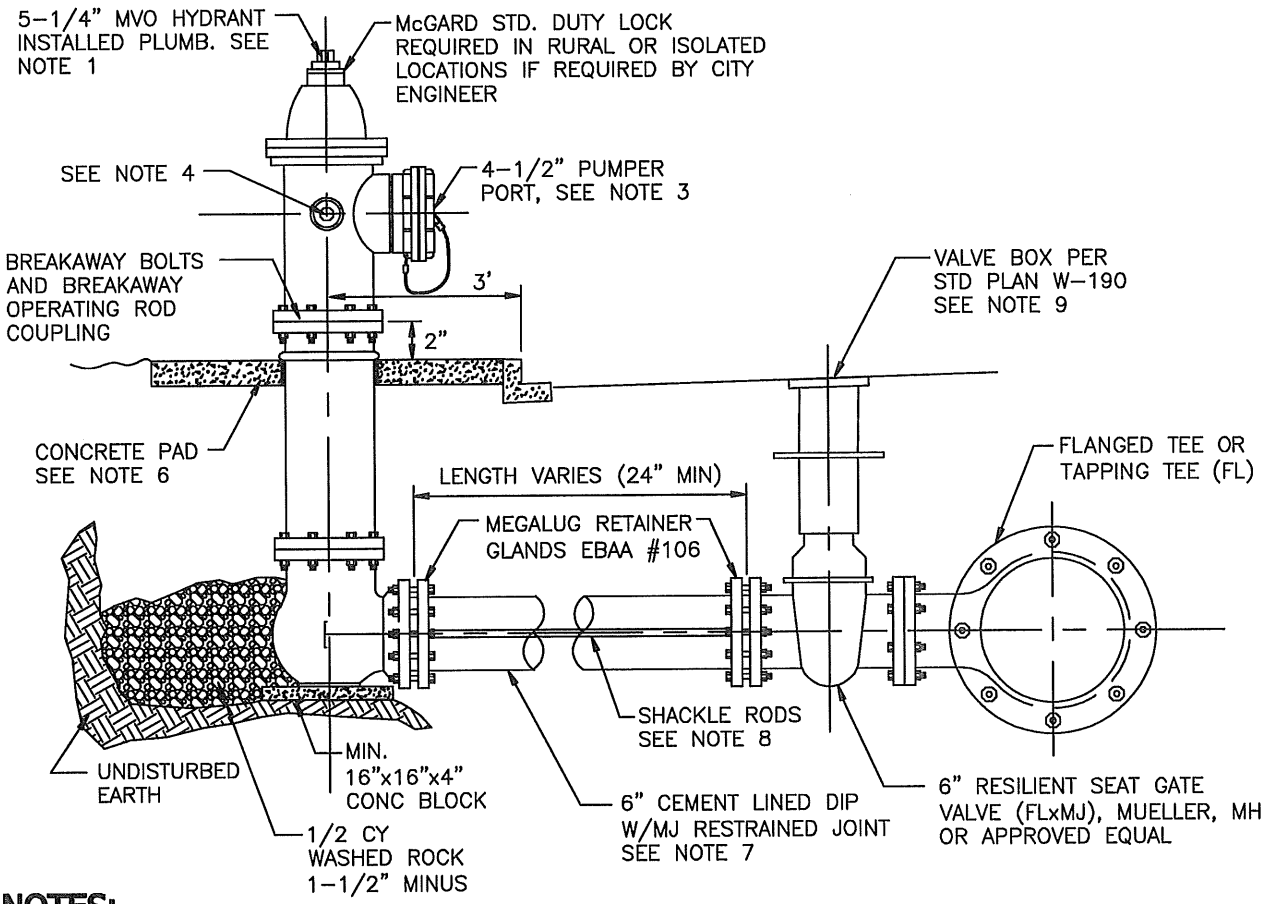
NOTES

1. MONUMENTS IN NON-PAVED AREAS SHALL BE 3" ABOVE GRADE.
2. ALL MONUMENTS SHALL BE PRECAST CONC. WITH REBAR AND 2-1/2" DIA BRASS CAP.
3. MONUMENT CASE AND RISER SECTION SHALL BE CAST IRON PER ASTM-A48, CLASS 30, WITH BITUMINOUS COATING.
4. COVER SHALL BE DUCTILE IRON PER ASTM-A536, GRADE 80-55-06, WITH BITUMINOUS COATING.
5. LEGEND ON COVER SHALL BE 1/8" RAISED INTERGRALLY CAST LETTERS 1" HIGH WITH A MIN FACE WIDTH OF 3/16".

CITY OF ARLINGTON	APPROVED BY	L. OLIVE	*DEPARTMENT OF PUBLIC WORKS* STANDARD DETAILS
	DATE	07/31/2008	
	REF STD SPEC		SURVEY MONUMENT

STANDARD DETAIL NUMBER

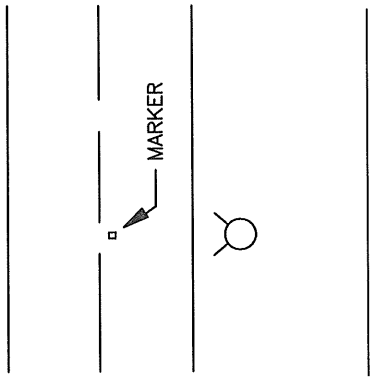
R-130



NOTES:

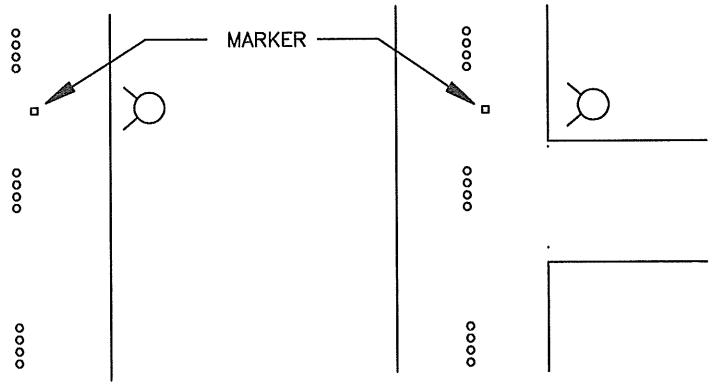
1. HYDRANTS AND ALL MATERIALS SHALL CONFORM TO AWWA STANDARDS AND SHALL BE OF STANDARD MANUFACTURE (M&H 929 RELIANT OR MUELLER SUPER CENTURION 250 ONLY).
2. THE CENTER OF THE HYDRANT SHALL BE 3' FROM FACE OF CURB. IF THERE IS NO CURB, THE CENTER OF HYDRANT SHALL BE 3' FROM RIGHT–OF–WAY AND A MINIMUM OF 5' FROM TRAVELED LANE.
3. ONE 5" TO 4–1/2" PUMPER PORT W/N.S.T. AND STORZ ADAPTER ASSEMBLY. PUMPER PORT TO BE FACING STREET OR ROADWAY FOR THE FIRE ENGINE ACCESS.
4. TWO 2–1/2" HOSE PORTS W/N.S.T. AND 1–1/4" OPERATING NUTS.
5. PROVIDE GUARD POSTS FOR VEHICULAR TRAFFIC PROTECTION IF REQUIRED BY CITY ENGINEER PER STD. DETAIL W–030.
6. INSTALL 3'x3'x4" CONCRETE PAD (3000 PSI) AROUND HYDRANT IN UNPAVED AREAS INCLUDING PLANTER STRIPS. COMPLETELY SURROUND HYDRANT W/FULL DEPTH OF CONCRETE PAD WITH 1/4" JOINT MATERIAL BEFORE PLACING CONCRETE.
7. HYDRANT RUN TO BE 6" CEMENT LINED DUCTILE IRON PIPE CLASS 52 WITH RESTRAINED JOINTS (MEGALUG OR APPROVED EQUAL). HYDRANT RUN LONGER THAN 50 FEET SHALL BE 8" DIA. OR LARGER.
8. ¾" GALV. SHACKLE RODS WITH THE EYE BOLTS AT BOTH ENDS REQUIRED FROM VALVE TO HYDRANT.
9. FIRE HYDRANTS SHALL BE PAINTED WITH TWO COATS OF HIGH GLOSS EQUIPMENT YELLOW "RUST–OLEUM" TYPE PAINT.
10. INSTALL 24"x24"x4" CONCRETE PAD (3000 PSI) AROUND VALVE BOX AND 48"x48"x4" FOR MULTIPLE VALVE BOXES IN UNPAVED AREA.

CITY OF ARLINGTON	APPROVED BY	L. OLIVE	*DEPARTMENT OF PUBLIC WORKS* STANDARD DETAILS	STANDARD DETAIL NUMBER
	DATE	07/31/2008		
	REF STAD SPEC		FIRE HYDRANT ASSEMBLY	W–010



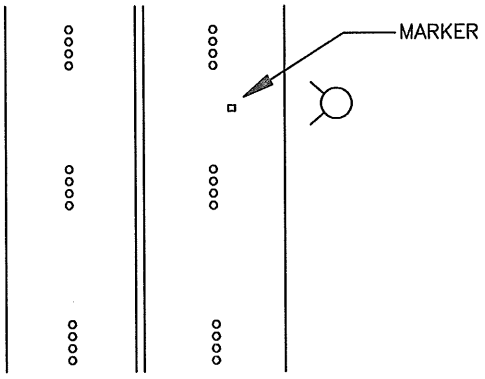
TWO LANE ROAD

OFFSET MARKER TO INDICATE WHICH SIDE OF STREET HYDRANT IS ON. MARKER TO BE PLACED 4" TO 6" OFF OF CENTERLINE



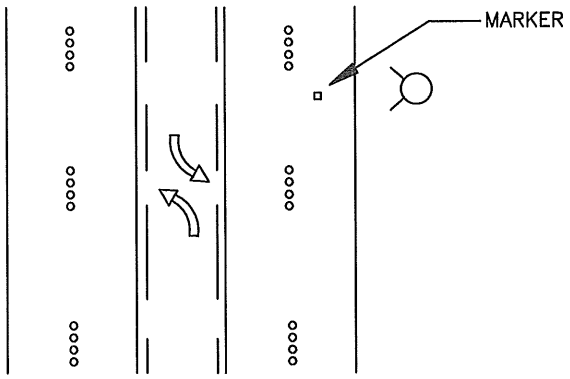
ON SIDE STREETS

WHERE THE HYDRANT IS WITHIN 20' OF THE MAIN TRAVELED STREET, THE MARKER IS TO BE INSTALLED ON THAT MAIN STREET AND 4" TO 6" OFF THE CENTERLINE.



FOUR LANE ROAD

OFFSET MARKER TO INDICATE WHICH SIDE OF STREET HYDRANT IS ON. MARKER TO BE PLACED 4" TO 6" OFF OF DOTS OR PAINTED LANE DIVIDER.



FIVE LANE ROAD

OFFSET MARKER TO INDICATE WHICH SIDE OF STREET HYDRANT IS ON. MARKER TO BE PLACED 4" TO 6" OFF OF DOTS OR PAINTED LANE DIVIDER.

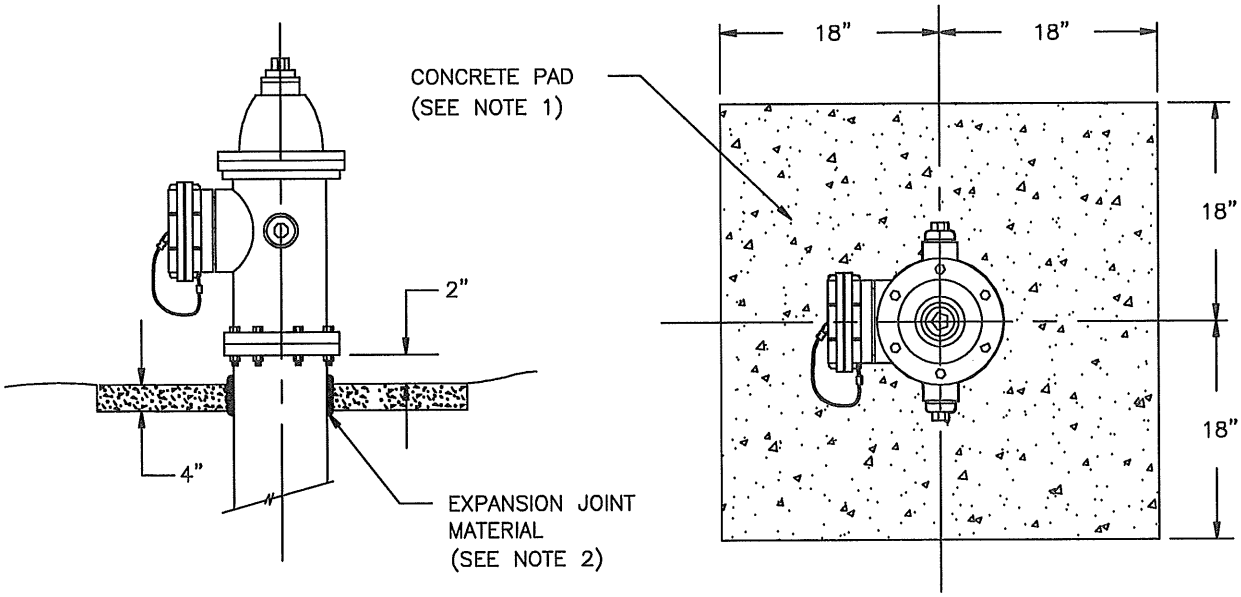
NOTE:

MARKER: TYPE 88 AB STIMSONITE TWO WAY (BLUE)

CITY OF ARLINGTON	APPROVED BY	L. OLIVE	*DEPARTMENT OF PUBLIC WORKS* STANDARD DETAILS
	DATE	07/31/2008	
	REF STAD SPEC		FIRE HYDRANT MARKER

STANDARD DETAIL NUMBER

W-015

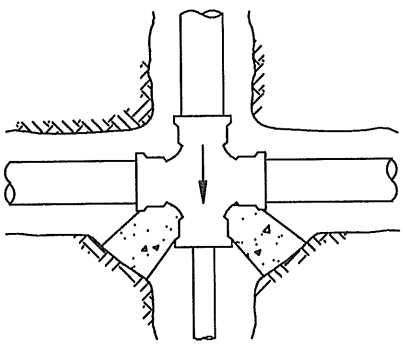


ELEVATION **PLAN**

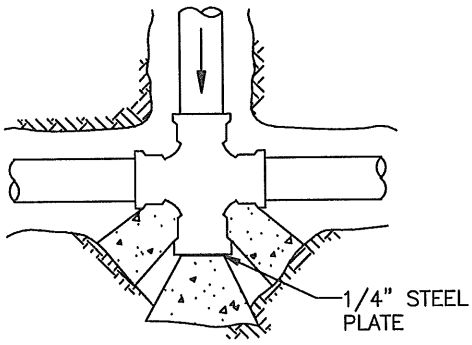
NOTES:

1. CONCRETE SHALL BE CLASS 3000 PSI MIN.
2. INSTALL 1/4" EXPANSION JOINT MATERIAL WITH FULL DEPTH OF CONCRETE PAD AROUND HYDRANT.

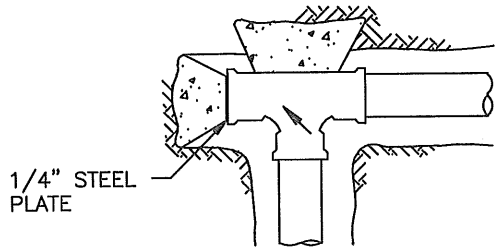
CITY OF ARLINGTON	APPROVED BY	L. OLIVE	*DEPARTMENT OF PUBLIC WORKS* STANDARD DETAILS	STANDARD DETAIL NUMBER
	DATE	07/31/2008		
	REF STAD SPEC		FIRE HYDRANT CONCRETE PAD	W-020



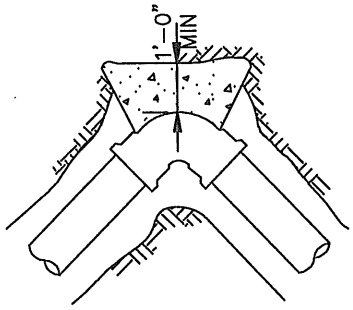
UNBALANCED CROSS



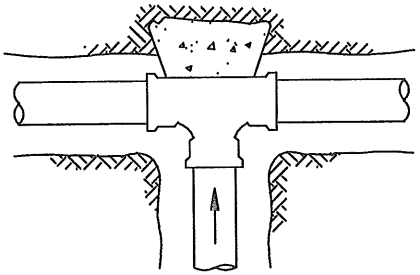
CROSS WITH PLUG



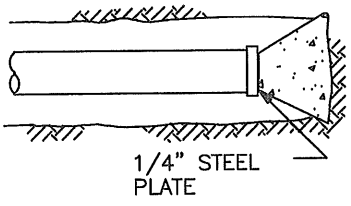
PLUGGED TEE



HORIZONTAL BEND



TEE



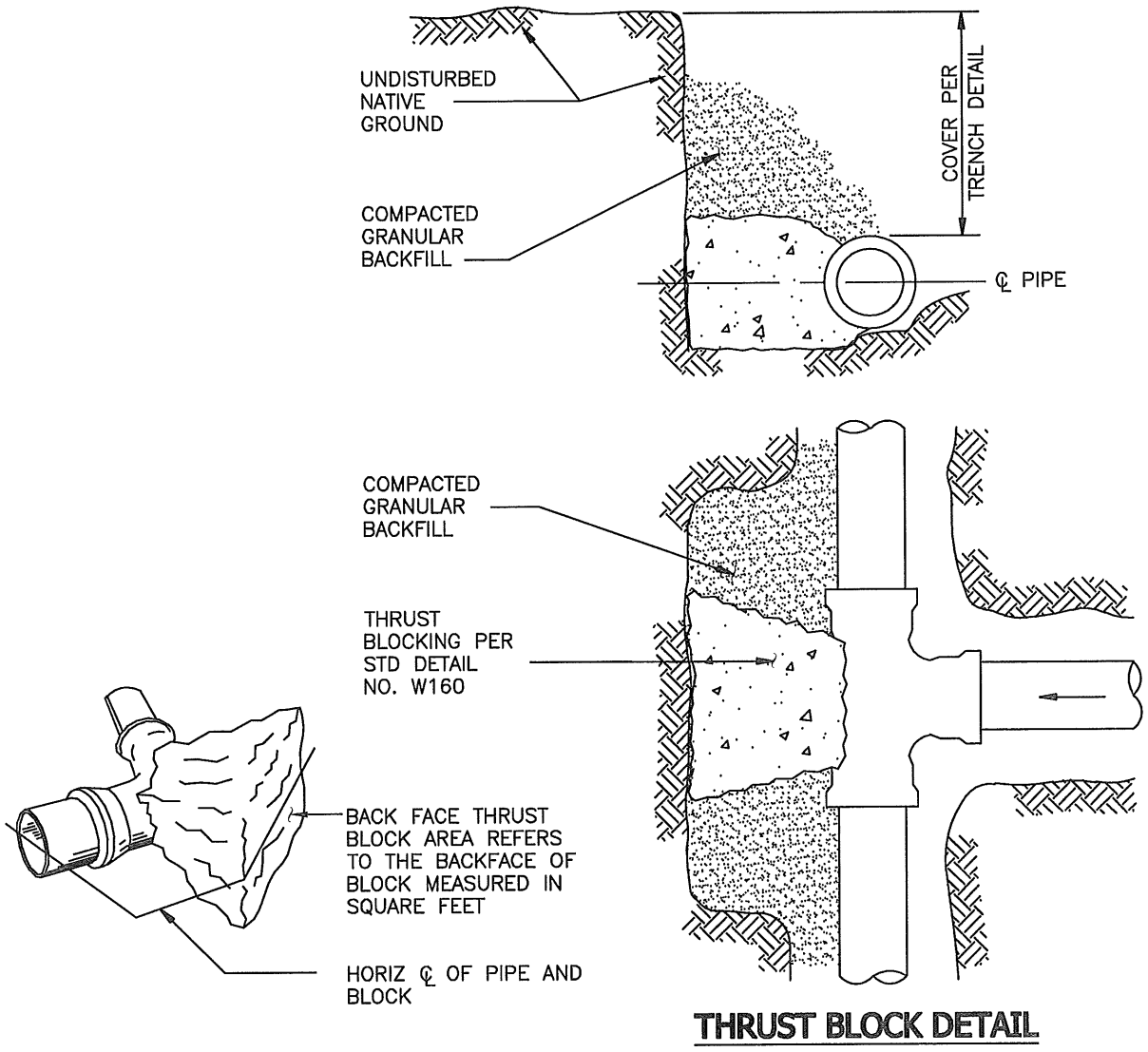
PIPE & CAP

THRUST BLOCK AREA IN SQUARE FEET (SEE STD DETAIL NO W-165)												
SOIL	FIRM SILT OR FIRM SILTY SAND				COMPACT SAND				COMPACT SAND & GRAVEL			
PIPE SIZE / FITTING	90° BEND	TEE	45° BEND CAP OR PLUG	11 1/4° & 22 1/2° BEND	90° BEND	TEE	45° BEND CAP OR PLUG	11 1/4° & 22 1/2° BEND	90° BEND	TEE	45° BEND CAP OR PLUG	11 1/4° & 22 1/2° BEND
4"	7.0	4.2	4.2	1.7	2.9	2.1	2.1	1.0	2.2	1.6	1.6	1.0
6"	13.3	9.4	9.4	3.8	6.7	4.7	4.7	1.9	5.0	3.5	3.5	1.4
8"	23.3	16.7	16.7	6.7	11.7	8.4	8.4	3.4	8.8	6.3	6.3	2.5
12"	53.0	37.5	37.5	15.0	26.5	18.8	18.8	7.5	20.0	14.0	14.0	5.6
AREAS CALCULATED ON 300 PSI TEST PRESSURE AND 3'-0" MIN COVER OVER WATERMAIN												

IF ECOLOGY BLOCKS MAY BE USED IN LIEU OF POURED-IN-PLACE BLOCKING FOR FITTINGS IN SHADED PORTION OF TABLE RESTRAINED JOINTS MUST BE USED.

FOR NOTES SEE STD DETAIL NO W-165

CITY OF ARLINGTON	APPROVED BY	L. OLIVE	*DEPARTMENT OF PUBLIC WORKS* STANDARD PLANS	STANDARD DETAIL NUMBER
	DATE	07/31/2009		
	REF STAD SPEC		THRUST BLOCK	W-160

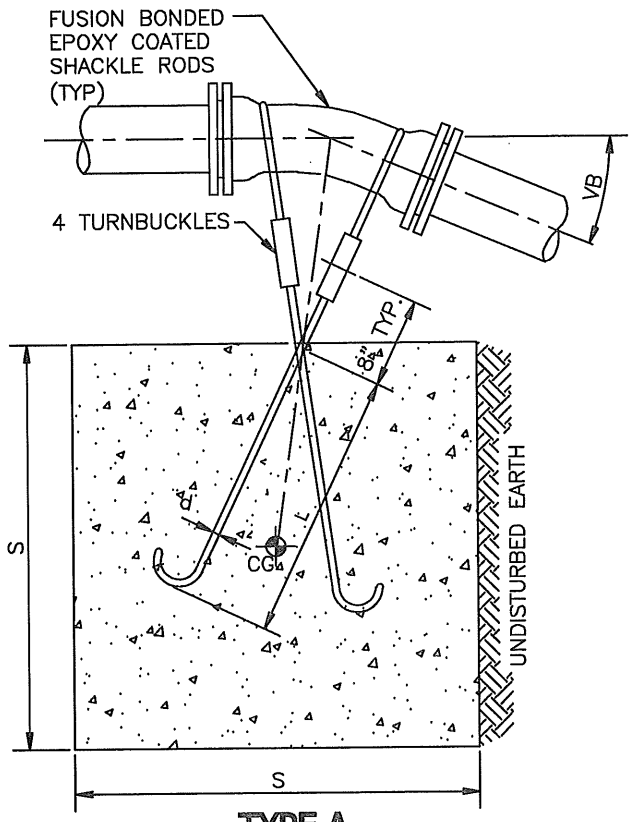


THRUST BLOCK DETAIL

NOTES:

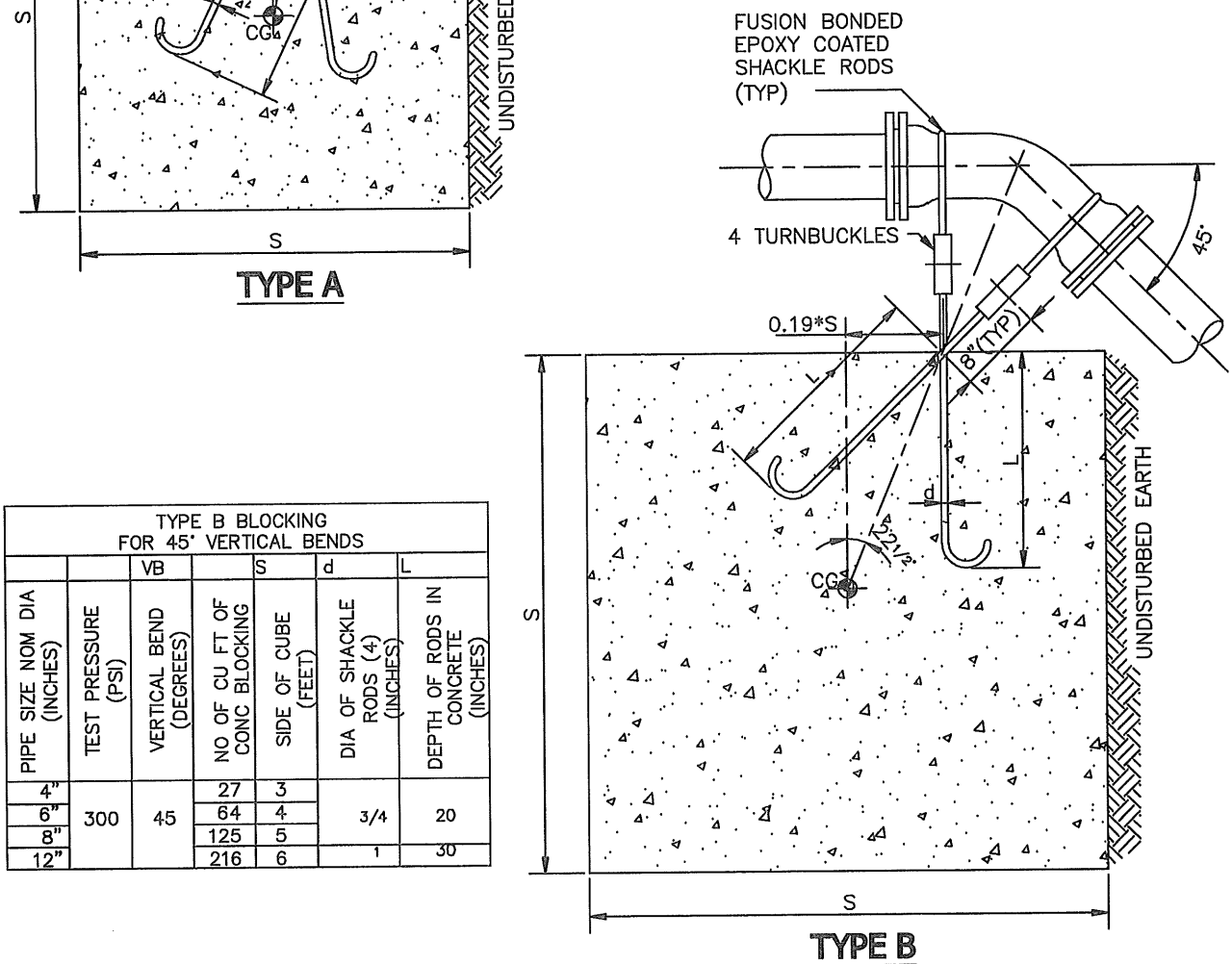
1. LOCATION AND SIZE OF BLOCKING FOR PIPE LARGER THAN 12" DIAMETER AND FOR SOIL TYPES DIFFERENT THAN SHOWN SHALL BE DETERMINED BY THE CITY ENGINEER.
2. ALL BLOCKING FOR HORIZONTAL FITTINGS (POURED IN PLACE) SHALL BEAR AGAINST UNDISTURBED NATIVE GROUND OR FILL MATERIAL COMPACTED TO 95% MAXIMUM DENSITY.
3. ALL POURED THRUST BLOCKS SHALL BE BACKFILLED AFTER MINIMUM 1 DAY. PRESSURE TESTING SHALL OCCUR AFTER CONCRETE HAS REACHED COMPRESSIVE STRENGTH (f'c).
4. ALL BLOCKING TO BE CONCRETE CL 3000–1 (3000 PSI).
5. BLOCKING AGAINST FITTINGS SHALL BEAR AGAINST THE GREATEST FITTING SURFACE AREA POSSIBLE, BUT SHALL NOT COVER OR ENCLOSE BELL ENDS, JOINT BOLTS OR GLANDS. ACCESS TO BOLTS AND GLANDS SHALL BE PROVIDED.
6. ALL HORIZONTAL BLOCKING THRUST AREAS SHALL BE CENTERED ON PIPE.
7. WHERE POURED–IN–PLACE BLOCKING IS REQUIRED AT A POINT OF CONNECTION TO AN EXISTING WATERMAIN, THE BLOCKING SHALL BE INSTALLED PRIOR TO CONNECTION WHENEVER POSSIBLE OR AS DIRECTED BY THE CITY ENGINEER.
8. TEMPORARY BLOCKING, IF USED, SHALL BE APPROVED BY THE CITY ENGINEER.

CITY OF ARLINGTON	APPROVED BY	L. OLIVE	*DEPARTMENT OF PUBLIC WORKS* STANDARD DETAILS	STANDARD DETAIL NUMBER
	DATE	07/31/2008		
	REF STAD SPEC		THRUST BLOCK	W–165



TYPE A

TYPE A BLOCKING FOR 11 1/4° & 22 1/2° VERTICAL BENDS						
		VB		S	d	L
PIPE SIZE NOM DIA INCHES	TEST PRESSURE PSI	VERTICAL BEND DEGREES	NO OF CU FT OF CONC BLOCKING	SIDE OF CUBE FEET	DIA OF SHACKLE RODS (2) INCHES	DEPTH OF RODS IN CONCRETE INCHES
4"	300	11 1/4	8	2	3/4	18
		22 1/2	12	2 1/4		24
6"	300	11 1/4	12	2 1/4	3/4	24
		22 1/2	27	3		
8"	300	11 1/4	16	2 1/2	3/4	24
		22 1/2	43	3 1/2		
12"	300	11 1/4	64	4	1	36
		22 1/2	125	5	1	36



TYPE B

TYPE B BLOCKING FOR 45° VERTICAL BENDS						
		VB		S	d	L
PIPE SIZE NOM DIA (INCHES)	TEST PRESSURE (PSI)	VERTICAL BEND (DEGREES)	NO OF CU FT OF CONC BLOCKING	SIDE OF CUBE (FEET)	DIA OF SHACKLE RODS (4) (INCHES)	DEPTH OF RODS IN CONCRETE (INCHES)
4"	300	45	27	3	3/4	20
6"			64	4		
8"			125	5		
12"			216	6	1	30

FOR NOTES SEE STD DETAIL NO. W–175

APPROVED BY	L. OLIVE	
DATE	07/31/2008	
REF STAD SPEC		

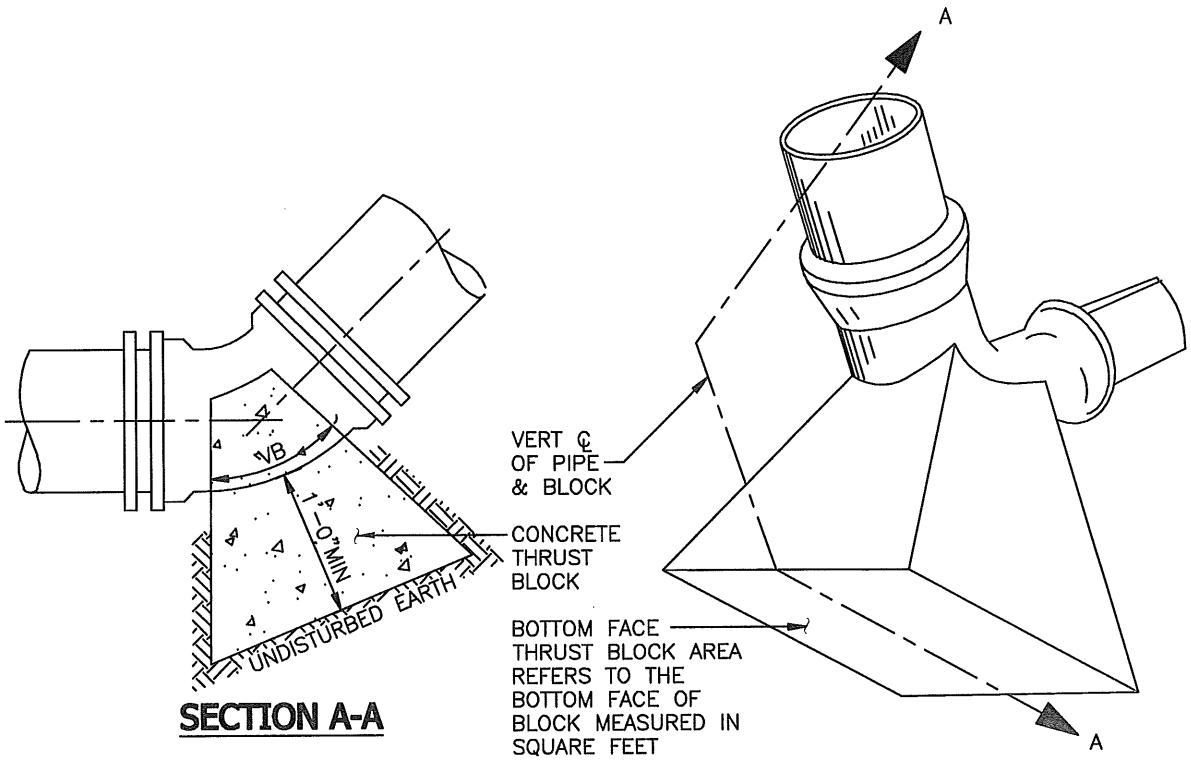
DEPARTMENT OF PUBLIC WORKS

STANDARD DETAILS

VERTICAL THRUST BLOCK
TYPE A & TYPE B

STANDARD DETAIL NUMBER

W–170



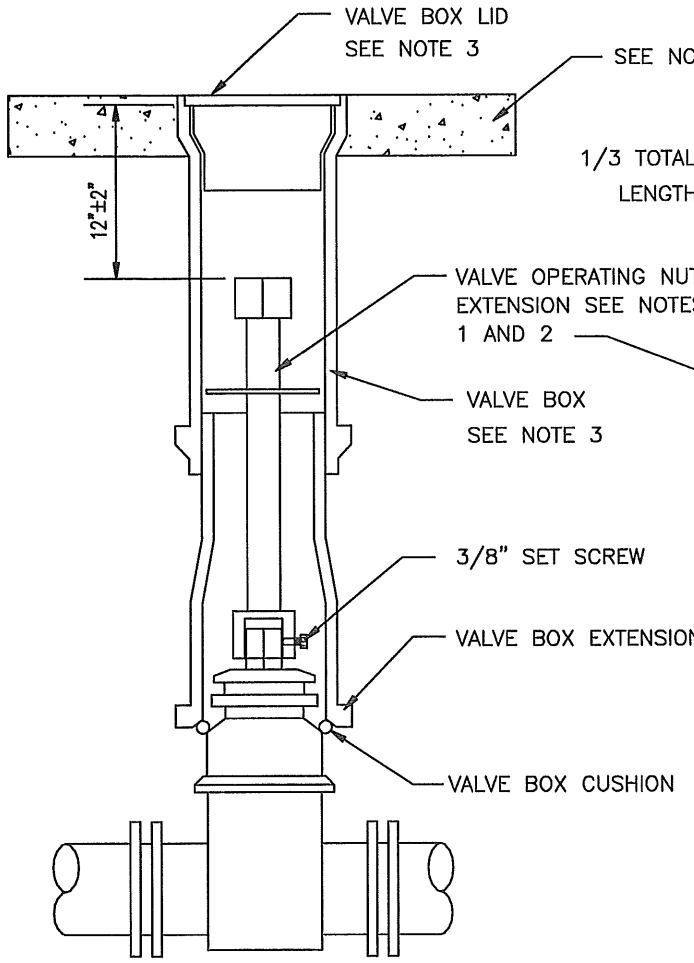
SECTION A-A

TYPE "C" BLOCKING FOR 11¼°, 22½°, 45° AND 90° VERTICAL BENDS THRUST BLOCK AREA IN SQUARE FEET									
SOIL	FIRM SILT OR FIRM SILTY SAND			COMPACT SAND			COMPACT SAND & GRAVEL		
PIPE SIZE / FITTING	90° BEND	TEE, 45°BEND & DEAD END	11¼° & 22½° BEND	90° BEND	TEE, 45°BEND & DEAD END	11¼° & 22½° BEND	90° BEND	TEE, 45°BEND & DEAD END	11¼° & 22½° BEND
4"	5.8	4.2	1.7	2.9	2.1	1.0	2.2	1.6	1.0
6"	13.3	9.4	3.8	6.7	4.7	1.9	5.0	3.5	1.4
8"	23.3	16.7	6.7	11.7	8.4	3.4	8.8	6.3	2.5
12"	53.0	37.5	15.0	26.5	18.8	7.5	20.0	14.0	5.6
AREAS CALCULATED ON 300 PSI TEST PRESSURE AND 3'-0"MIN COVER OVER WATERMAIN									

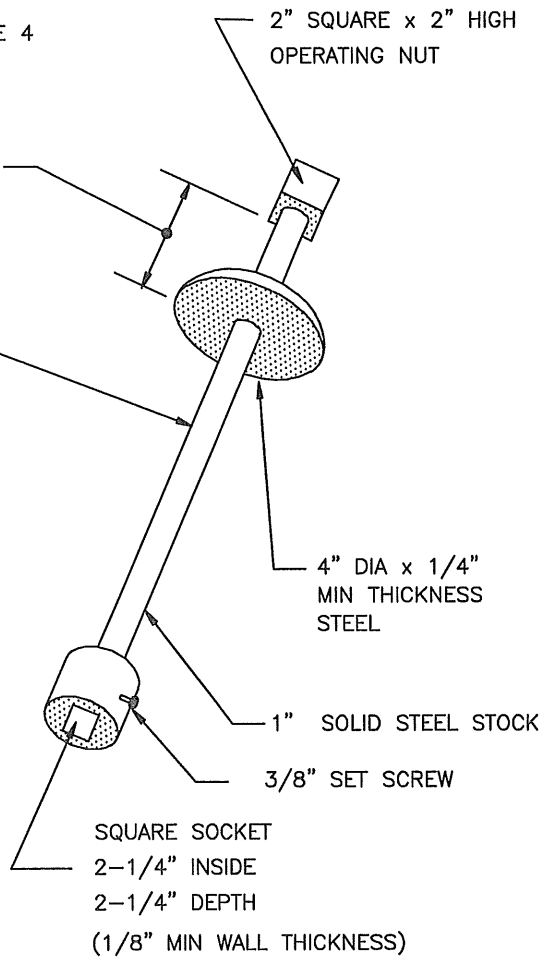
NOTES:

1. LOCATION AND SIZE OF BLOCKING FOR PIPE LARGER THAN 12" DIAMETER AND FOR SOIL TYPES DIFFERENT THAN SHOWN SHALL BE DETERMINED BY THE CITY ENGINEER.
2. ALL BLOCKING FOR VERTICAL FITTINGS (POURED IN PLACE) SHALL BEAR AGAINST UNDISTURBED NATIVE GROUND.
3. ALL POURED THRUST BLOCKS SHALL BE BACKFILLED AFTER MINIMUM 1 DAY. PRESSURE TESTING SHALL OCCUR AFTER CONCRETE HAS REACHED COMPRESSIVE STRENGTH (f'c).
4. ALL BLOCKING SHALL BE CONCRETE CL 3000-1 (3000 psi).
5. AFTER INSTALLATION, SHACKLE RODS & TURNBUCKLES SHALL BE CLEANED AND COATED WITH 2 COATS OF ASPHALTIC VARNISH, ROYSTON ROYKOTE #612M OR APPROVED EQUAL.
6. SHACKLE RODS SHALL BE FUSION BONDED EPOXY COATED ROUND MILD STEEL, ASTM A 36.
7. BLOCKING AGAINST FITTINGS SHALL BEAR AGAINST THE GREATEST FITTING SURFACE AREA POSSIBLE, BUT SHALL NOT COVER OR ENCLOSE BELL ENDS, JOINT BOLTS OR GLANDS REASONABLE ACCESS TO BOLTS AND GLANDS SHALL BE PROVIDED.

CITY OF ARLINGTON	APPROVED BY: L. OLIVE DATE: 07/31/2008 REF STAD SPEC:	*DEPARTMENT OF PUBLIC WORKS* STANDARD DETAILS VERTICAL THRUST BLOCK TYPE C	STANDARD DETAIL NUMBER W-175



VALVE BOX AND EXTENSION



VALVE OPERATING NUT EXTENSION

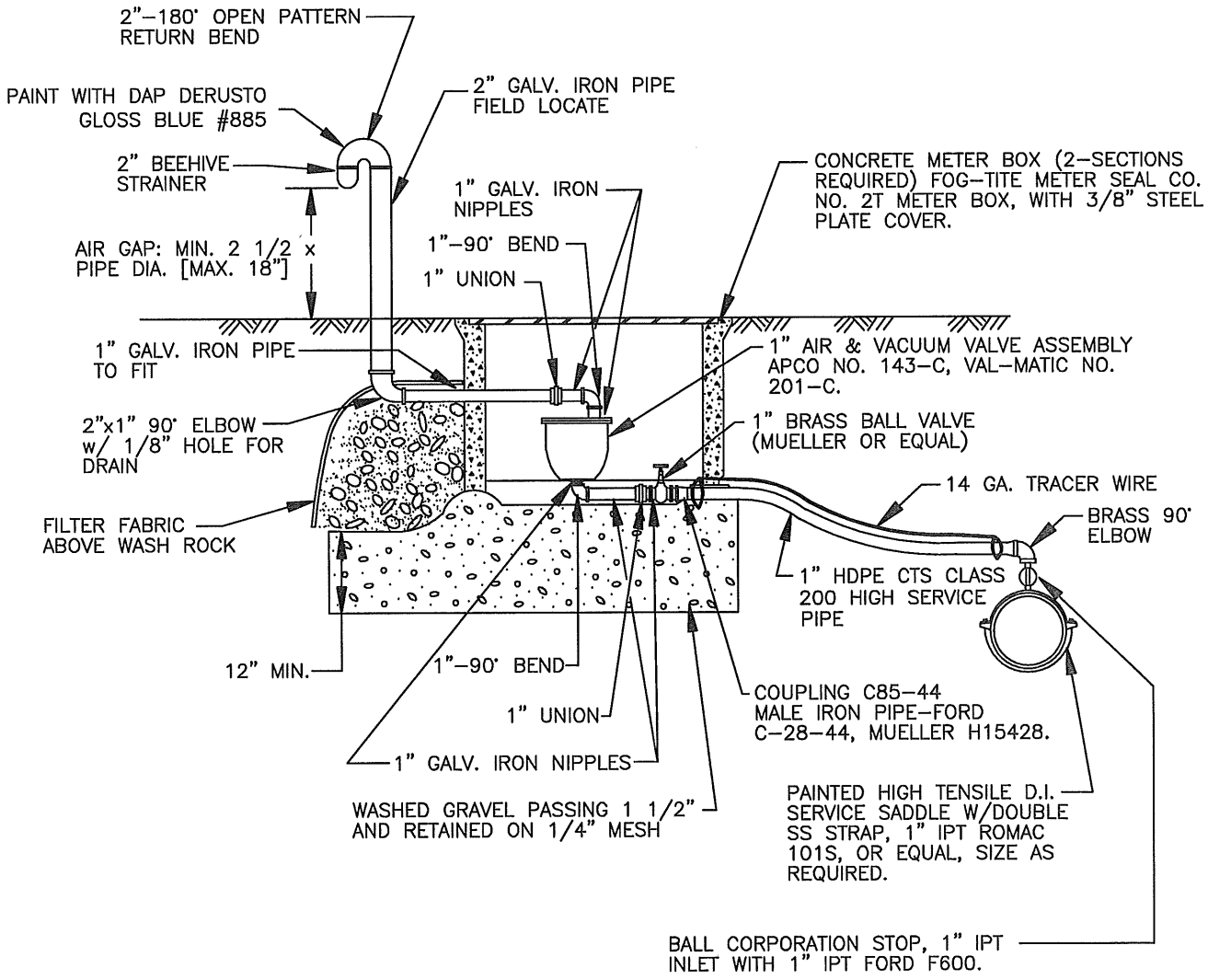
NOTES:

1. VALVE OPERATING NUT EXTENSIONS ARE REQUIRED WHEN THE VALVE NUT IS MORE THAN THREE (3) FEET BELOW FINISHED GRADE. EXTENSIONS ARE TO BE A MINIMUM OF ONE (1) FOOT LONG. ONLY ONE EXTENSION WILL BE ALLOWED PER VALVE.
2. ALL VALVE OPERATING NUT EXTENSIONS ARE TO BE MADE OF STEEL, SIZED AS NOTED, AND PAINTED WITH TWO (2) COATS OF METAL PAINT.
3. VALVE BOXES SHALL BE CAST IRON, TWO PIECE UNITS, DESIGNED WITH DEEP SKIRT (2") LIDS W/LUGS, EQUAL TO "RICH NO. 940" AS MANUFACTURED BY RICH OR SATHER.
4. 4" THICK CONCRETE PAD AROUND VALVE BOXES OUTSIDE OF PAVED AREAS. 2'x2' SQUARE AROUND SINGLE VALVE BOXES AND 4'x4' AROUND MULTIPLE VALVE BOXES.

CITY OF ARLINGTON	APPROVED BY	L. OLIVE	*DEPARTMENT OF PUBLIC WORKS* STANDARD DETAILS
	DATE	07/31/2003	
	REF STAD SPEC		VALVE BOX AND OPERATING NUT EXTENSION

STANDARD DETAIL NUMBER

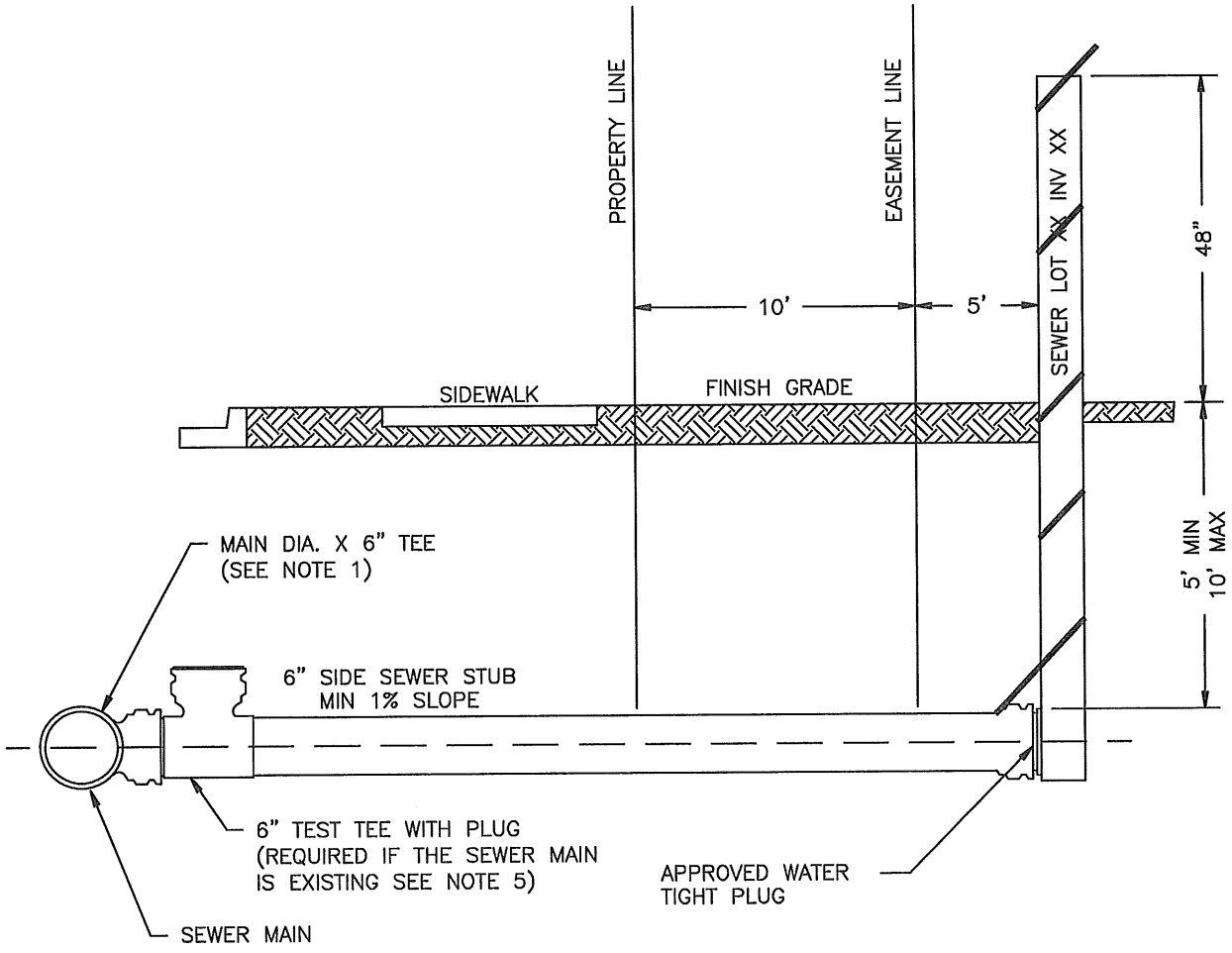
W–190



NOTES:

1. ALL FITTINGS TO BE BRASS OR COPPER FROM WATER MAIN TO 1" AIR & VACUUM ASSEMBLY.
2. AIR & VACUUM RELEASE VALVE ASSEMBLY MUST BE INSTALLED AT THE HIGHEST POINT OF THE LINE. IF THE HIGH POINT FALLS IN A LOCATION WHERE ASSEMBLY CANNOT BE INSTALLED, PROVIDE ADDITIONAL DEPTH OF LINE TO CREATE HIGH POINT AT A LOCATION WHERE ASSEMBLY CAN BE INSTALLED.

CITY OF ARLINGTON	APPROVED BY	L. OLIVE	*DEPARTMENT OF PUBLIC WORKS* STANDARD DETAILS	STANDARD DETAIL NUMBER
	DATE	07/31/2008		
	REF STAD SPEC		1" COMBINATION AIR VALVE ASSEMBLY	W–260



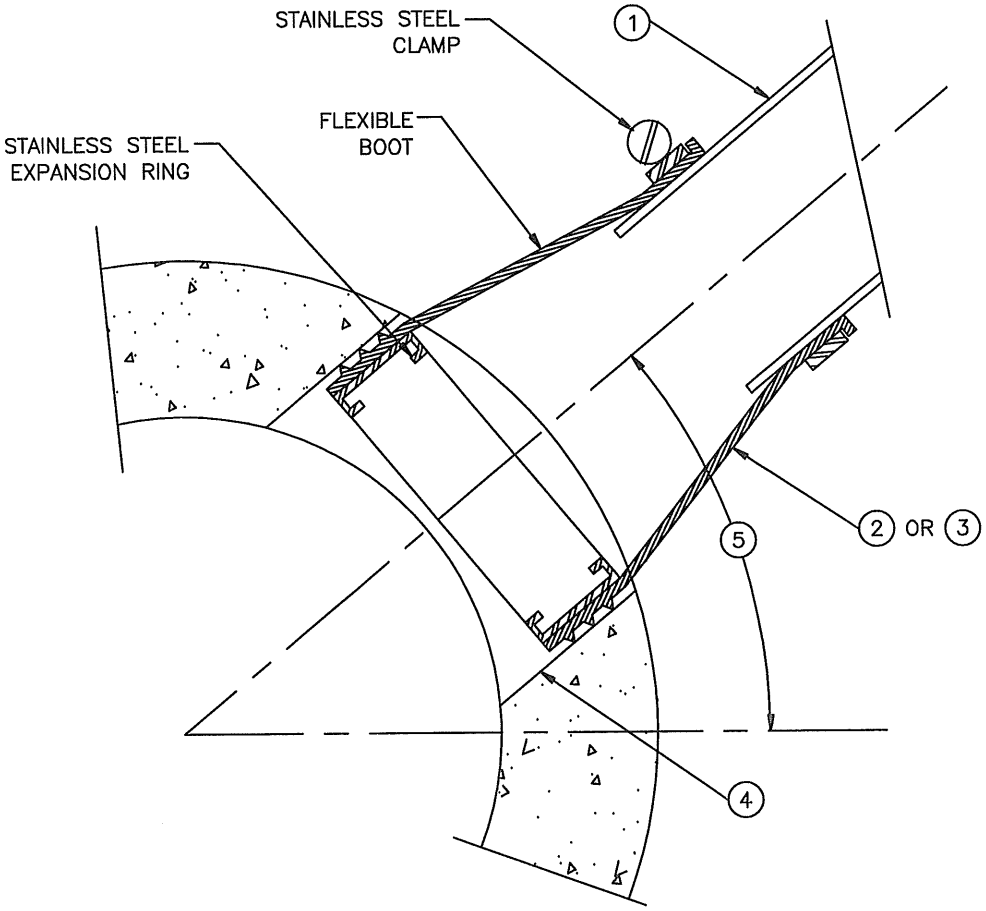
NOTES:

1. AT THE CONNECTION TO THE SEWER MAIN A MAIN DIA. X 6" TEE IS REQUIRED FOR NEW SEWER MAINS AND A ROMAC TAPPING TEE OR CORE DRILLED INSERT-A-TEE REQUIRED FOR AN EXISTING SEWER MAIN.
2. 2x4 PRESSURE TREATED MARKER POST SHALL BE PAINTED WHITE WITH BLACK LETTERS "SEWER LOT # INVERT DEPTH".
3. 12 GAUGE WIRE SHALL BE CONNECTED TO PIPE AT INVERT AND WRAPPED AROUND MARKER POST.
4. DETECTOR TAPE REQUIRED FROM SEWER MAIN TO MARKER POST.
5. TEST TEE SHALL BE INSTALLED AT THE SEWER MAIN WHEN A SIDE SEWER IS CONNECTED TO AN EXISTING SEWER MAIN.

CITY OF ARLINGTON	APPROVED BY	L. OLIVE	*DEPARTMENT OF PUBLIC WORKS* STANDARD DETAIL
	DATE	07/31/2008	
	REF STAD SPEC		SIDE SEWER STUB

STANDARD DETAIL NUMBER

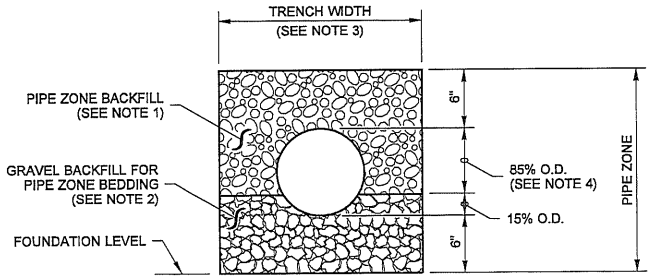
SS-090



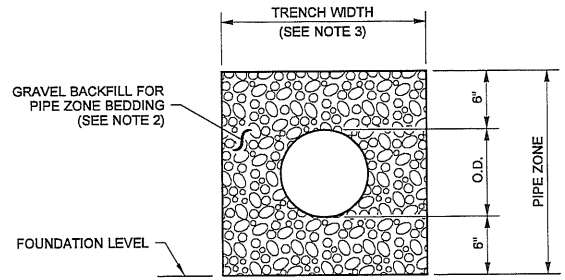
NOTES:

1. PVC SIDE SEWER. FOR REMAINDER OF PVC SERVICE SEE SS-090.
2. ROMAC STYLE CB TAPPING SADDLE OR APPROVED EQUAL ON ALL PIPE.
3. CORE-DRILLING WITH INSERT-A-TEE MAY ALSO BE USED ON ALL PIPE.
4. CORE DRILL EXISTING MAINLINE PIPE PER MFG'S SPECIFICATIONS.
5. 35° MIN, 45° MAX.

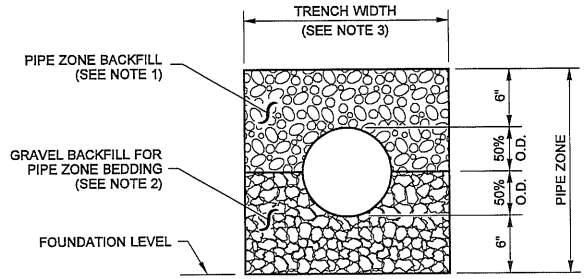
CITY OF ARLINGTON	APPROVED BY	L. OLIVE	*DEPARTMENT OF PUBLIC WORKS* STANDARD DETAIL	STANDARD DETAIL NUMBER
	DATE	07/31/2008		
	REF STAD SPEC		NEW SERVICE ON EXISTING MAIN	SS-100



CONCRETE AND DUCTILE IRON PIPE



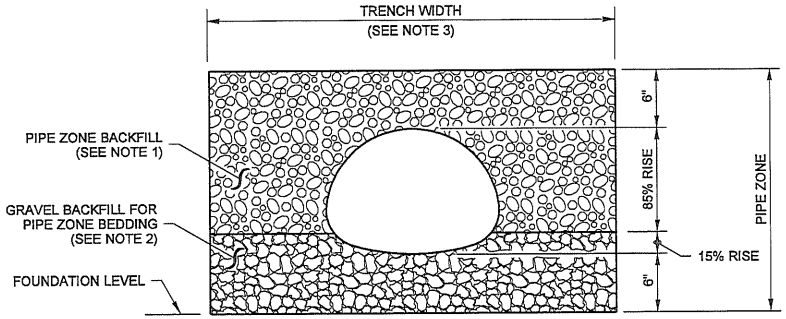
THERMOPLASTIC PIPE



METAL PIPE

NOTES

1. See Standard Specifications Section 7-08.3(3) for Pipe Zone Backfill.
2. See Standard Specifications Section 9-03.12(3) for Gravel Backfill for Pipe Zone Bedding.
3. See Standard Specifications Section 2-09.4 for Measurement of Trench Width.
4. For sanitary sewer installation, concrete pipe shall be bedded to spring line.



PIPE ARCHES

CLEARANCE BETWEEN PIPES FOR MULTIPLE INSTALLATIONS		
PIPE	**SIZE**	**MINIMUM DISTANCE BETWEEN BARRELS**
CIRCULAR PIPE (DIAMETER)	12" to 24"	12"
	30" to 96"	DIAM. /2
	102" to 180"	48"
PIPE ARCH (SPAN) METAL ONLY	18" to 36"	12"
	43" to 142"	SPAN /3
	148" to 200"	48"

MATTHEW J. WITECKI
STATE OF WASHINGTON
15588
REGISTERED
PROFESSIONAL ENGINEER

EXPIRES JULY 1, 2007

NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE ORIGINAL, SIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

PIPE ZONE BEDDING AND BACKFILL

STANDARD PLAN B-55.20-00

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

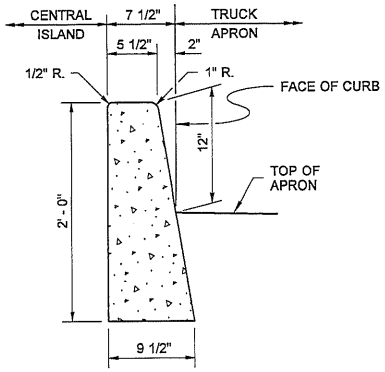
Harold J. Peterfeso *06-01-06*

STATE DESIGN ENGINEER — DATE

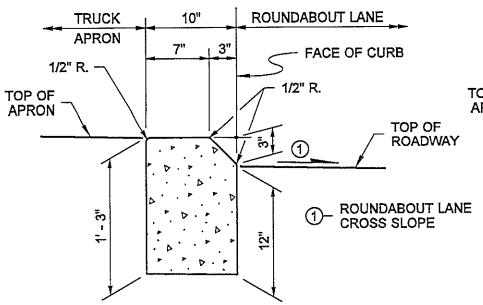
Washington State Department of Transportation

GENERAL NOTE

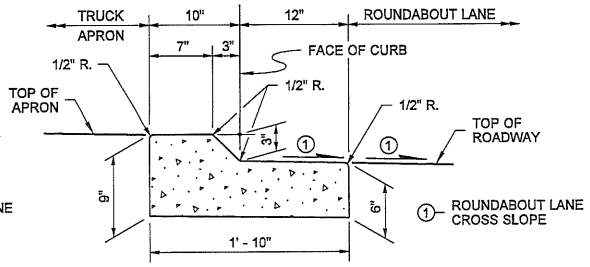
See Standard Plan F-3 for Curb Expansion and Contraction Joint spacing.



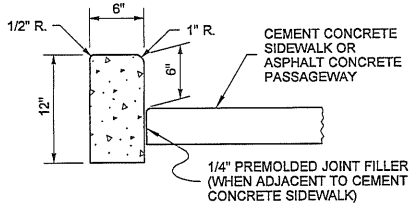
ROUNDABOUT CENTRAL ISLAND CEMENT CONCRETE CURB



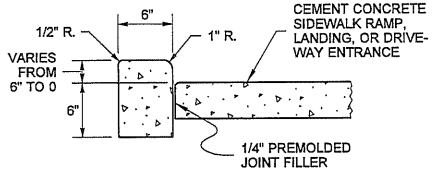
ROUNDABOUT TRUCK APRON CEMENT CONCRETE CURB



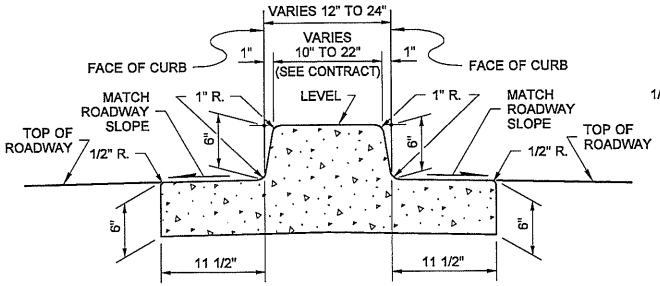
ROUNDABOUT TRUCK APRON CEMENT CONCRETE CURB AND GUTTER



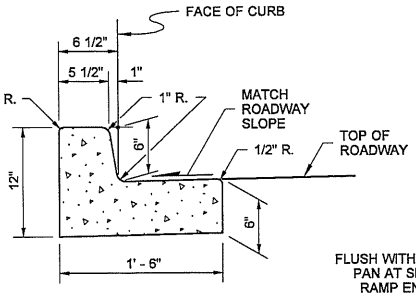
CEMENT CONCRETE PEDESTRIAN CURB



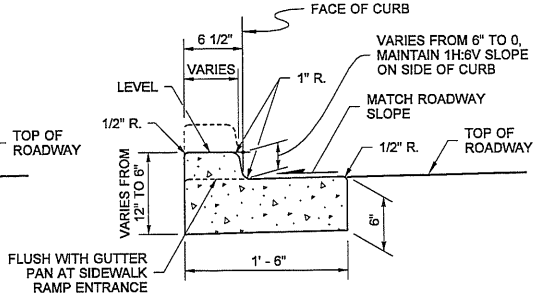
CEMENT CONCRETE PEDESTRIAN CURB
AT SIDEWALK RAMPS & LANDINGS, AND DRIVEWAY ENTRANCES



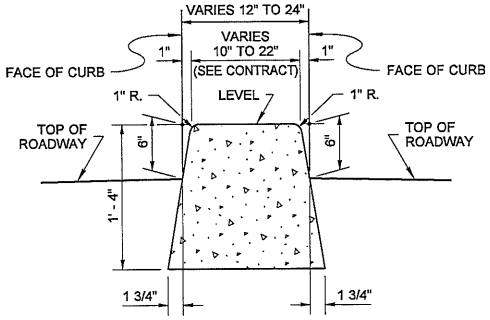
DUAL-FACED CEMENT CONCRETE TRAFFIC CURB AND GUTTER



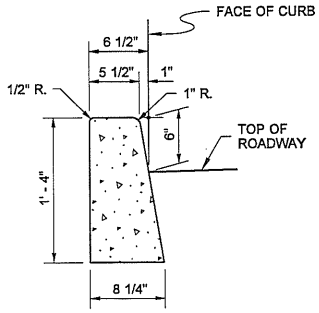
CEMENT CONCRETE TRAFFIC CURB AND GUTTER



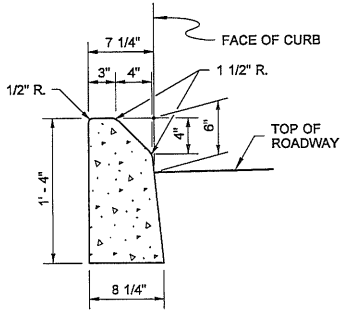
DEPRESSED CURB SECTION
AT SIDEWALK RAMPS AND DRIVEWAY ENTRANCES



DUAL-FACED CEMENT CONCRETE TRAFFIC CURB



CEMENT CONCRETE TRAFFIC CURB



MOUNTABLE CEMENT CONCRETE TRAFFIC CURB

DRAWN BY: MARK SUJKA

KEVIN J. DAYTON
STATE OF WASHINGTON
24035
REGISTERED
PROFESSIONAL ENGINEER
EXPIRES JULY 27, 2007

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CEMENT CONCRETE CURBS

STANDARD PLAN F-10.12-00

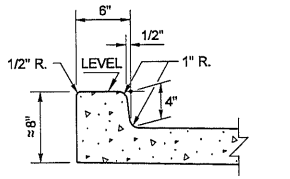
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

Kevin J. Dayton — *12-20-06*

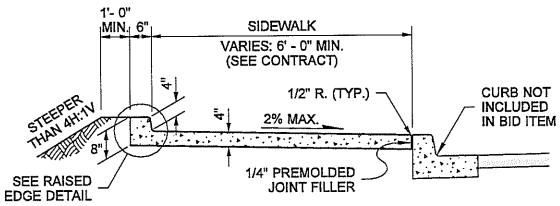
STATE DESIGN ENGINEER — DATE

Washington State Department of Transportation

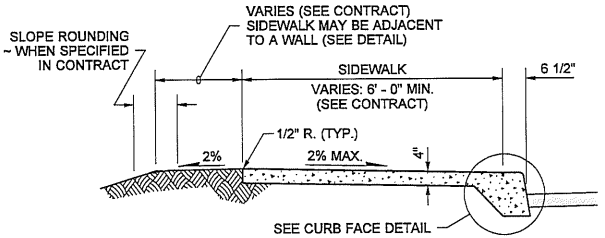


NOTE: EXTEND SIDEWALK TRANSVERSE JOINTS TO INCLUDE RAISED EDGE

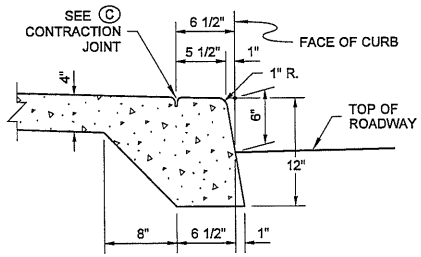
RAISED EDGE DETAIL



CEMENT CONCRETE SIDEWALK WITH RAISED EDGE

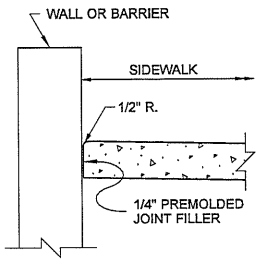


MONOLITHIC CEMENT CONCRETE CURB AND SIDEWALK

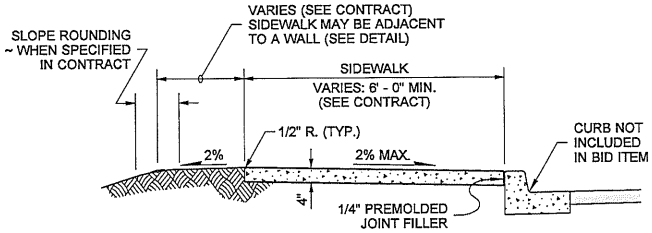


NOTE: EXTEND SIDEWALK TRANSVERSE EXPANSION JOINTS TO INCLUDE CURB (FULL DEPTH)

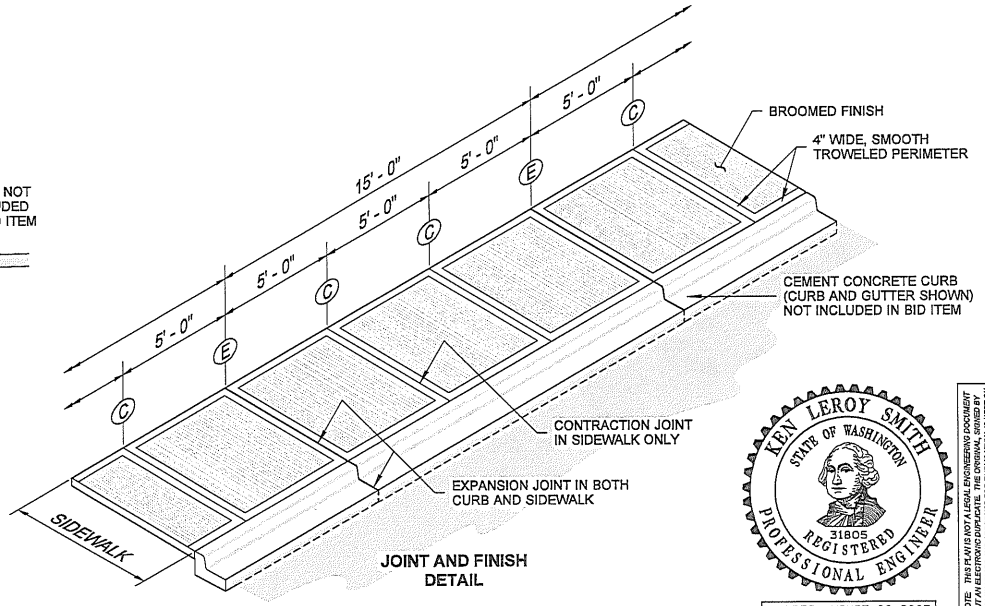
CURB FACE DETAIL



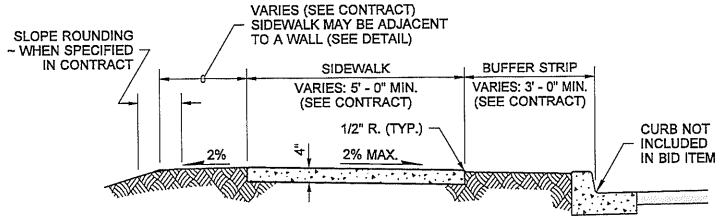
SIDEWALK ADJACENT TO WALL DETAIL



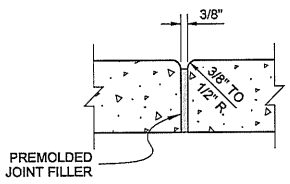
CEMENT CONCRETE SIDEWALK
ADJACENT TO CURB



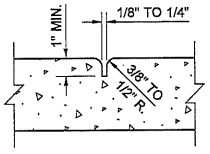
JOINT AND FINISH DETAIL



CEMENT CONCRETE SIDEWALK
ADJACENT TO BUFFER STRIP



Ⓔ **EXPANSION JOINT**



Ⓒ **CONTRACTION JOINT**

DRAWN BY: MARK SUJKA

KEN LEROY SMITH
STATE OF WASHINGTON
31805
REGISTERED
PROFESSIONAL ENGINEER
EXPIRES AUGUST 26, 2007

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CEMENT CONCRETE SIDEWALK

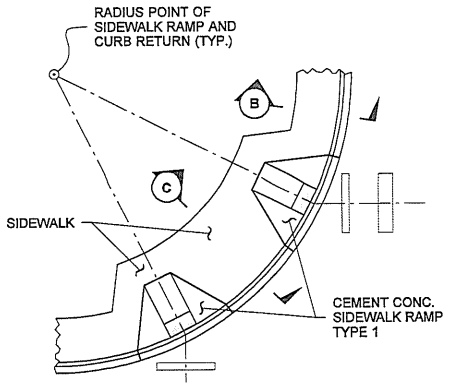
STANDARD PLAN F-30.10-00

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

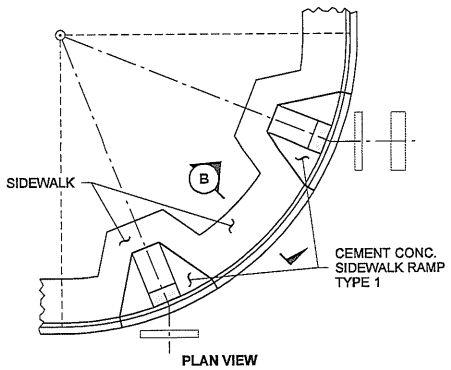
Ken L. Smith — STATE DESIGN ENGINEER — *01-23-07* — DATE

Washington State Department of Transportation



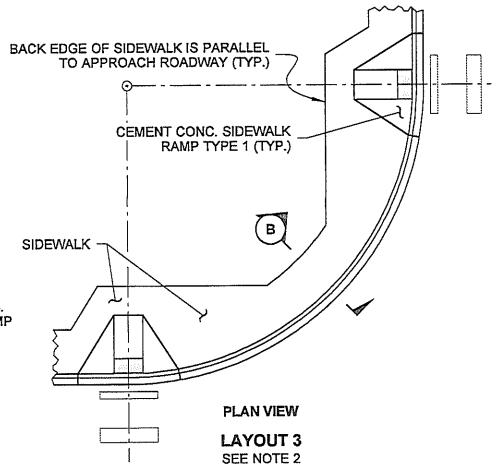
PLAN VIEW

LAYOUT 1
SEE NOTE 2



PLAN VIEW

LAYOUT 2
SEE NOTE 2

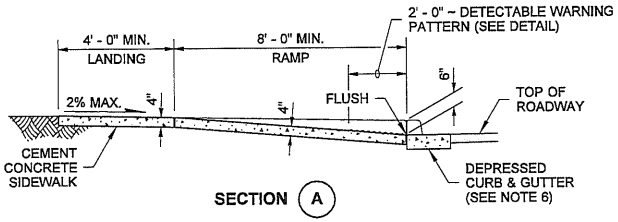


PLAN VIEW

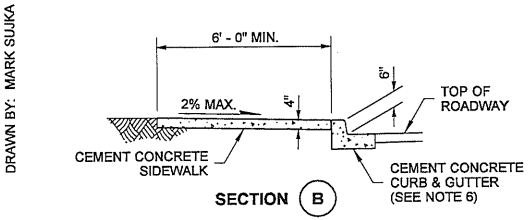
LAYOUT 3
SEE NOTE 2

NOTES

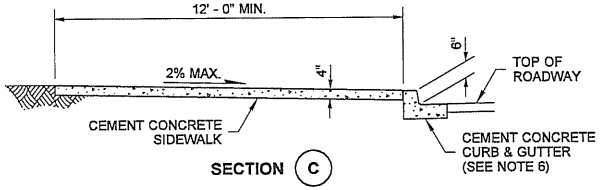
1. The bottom of the ramp shall have a level area (not in excess of 2% in any direction), 4' × 4'.
2. Layouts 1, 2, & 3 require two (2) of this bid item: "Cement Conc. Sidewalk Ramp Type 1". The bid item does not include the adjacent Curb (or Curb & Gutter), or Sidewalk.
3. Ramp slopes shall not be steeper than 12H:1V.
4. To the maximum extent feasible, ramp cross slopes shall not exceed 2%.
5. Avoid placing drainage structures, junction boxes or other obstructions in front of ramp access areas.
6. Curb & Gutter is shown, see the Contract Plans for the curb design specified. See Standard Plan F-10.12 for curb details.
7. See Standard Plan F-30.10 for sidewalk joint placement and details.



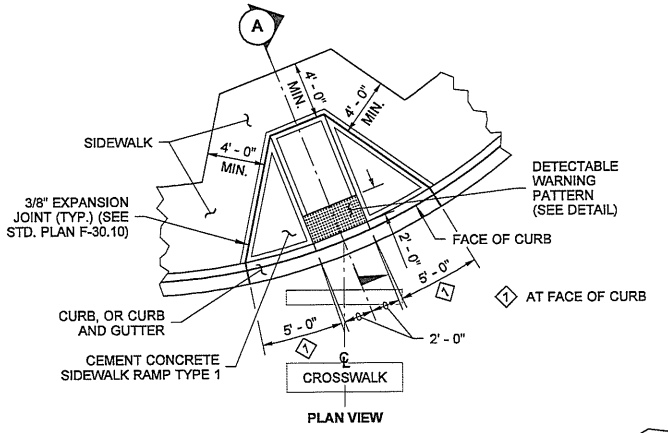
SECTION (A)



SECTION (B)

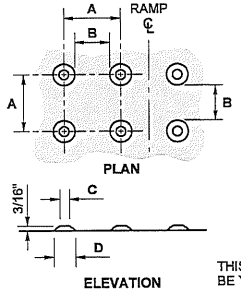


SECTION (C)



PLAN VIEW

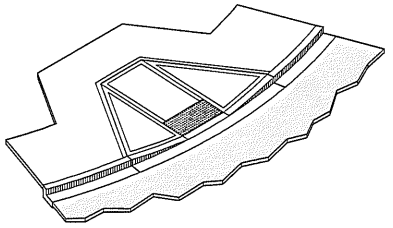
SIDEWALK RAMP TYPE 1
FOR LAYOUTS 1, 2, & 3



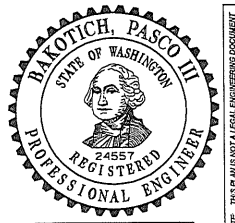
	MIN.	MAX.
A	1 5/8"	2 3/8"
B	5/8"	1 1/2"
C	7/16"	3/4"
D	7/8"	1 7/16"

THIS PATTERN AREA SHALL BE YELLOW IN COLOR

DETECTABLE WARNING PATTERN DETAIL



ISOMETRIC VIEW



EXPIRES JUNE 19, 2008

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SIDEWALK RAMP TYPE 1 WITH LAYOUTS

STANDARD PLAN F-40.10-01

SHEET 1 OF 1 SHEET

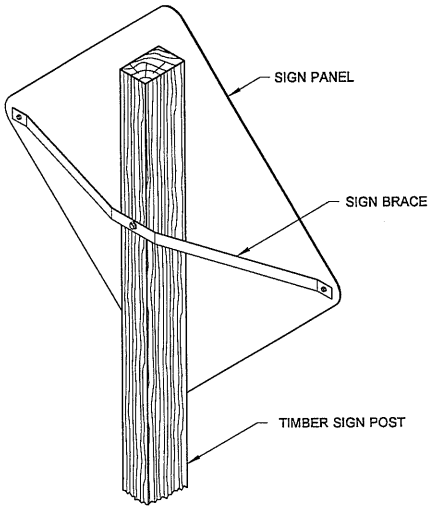
APPROVED FOR PUBLICATION

Pasco Bakotich III — STATE DESIGN ENGINEER — *10-05-07* — DATE

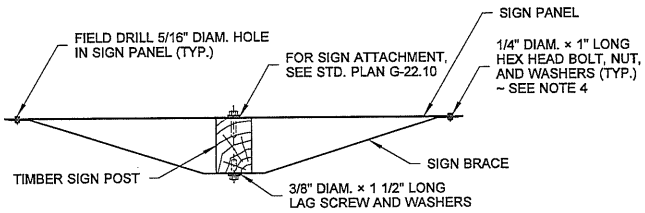
Washington State Department of Transportation

DRAWN BY: MARK SUJKA

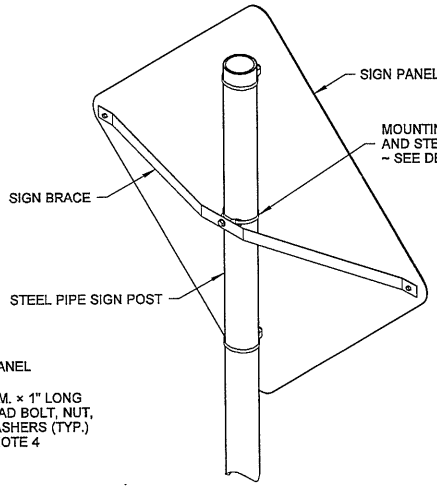
DRAWN BY: ELENA BRUNSTEIN



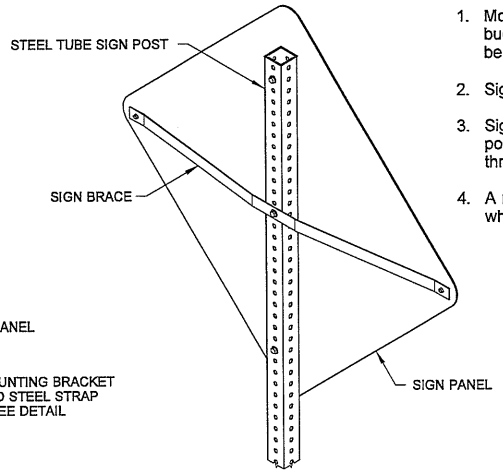
SIGN BRACE ON TIMBER POST



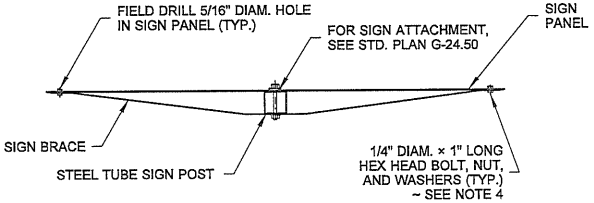
PLAN



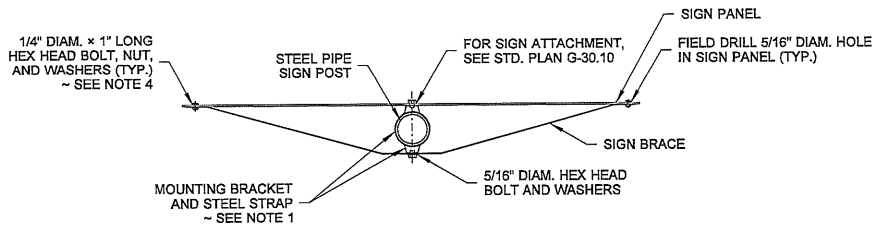
SIGN BRACE ON STEEL PIPE



SIGN BRACE ON STEEL TUBE



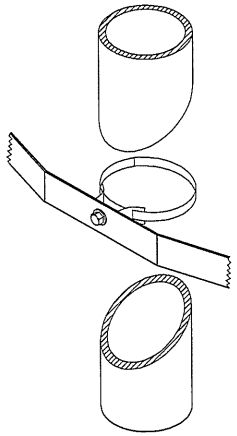
PLAN



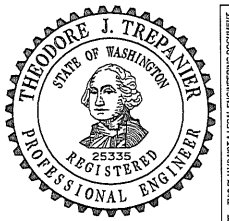
PLAN

NOTES

1. Mounting brackets with steel straps shall be a stainless steel band and buckle system product or an approved equal. Mounting brackets shall be one bolt, flared leg; steel straps shall be 3/4" wide and 0.030" thick.
2. Sign braces are only installed when specified in the contract.
3. Sign braces are typically necessary on large sign panels that are exposed to high winds, traffic generated wind buffeting, or when snow thrown from plows might impact the sign.
4. A nylon washer shall be placed between the sign and the steel washer when the sign face has Type 3 or 4 sheeting.



MOUNTING BRACKET AND STEEL STRAP DETAIL



EXPIRES AUGUST 9, 2009

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SIGN BRACING

STANDARD PLAN G-50.10-00

SHEET 1 OF 2 SHEETS

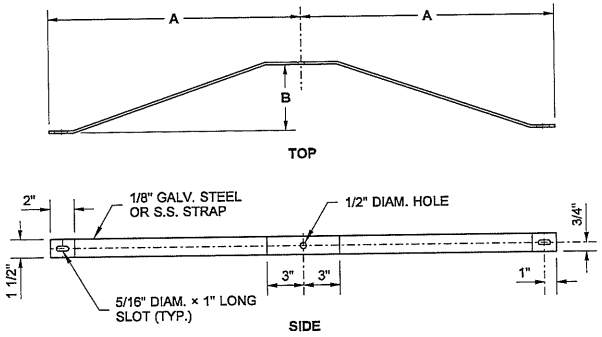
APPROVED FOR PUBLICATION

Pasco Bakotich III — STATE DESIGN ENGINEER — *11-8-07* — DATE

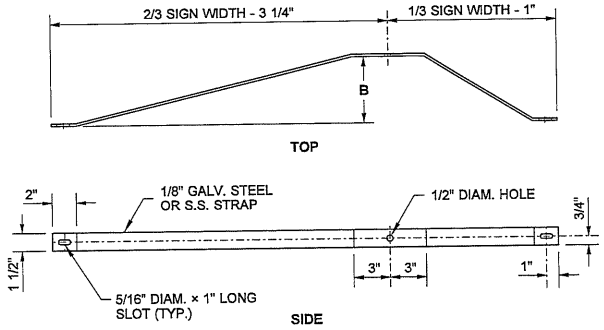
Washington State Department of Transportation

DRAWN BY: ELENA BRUNSTEIN

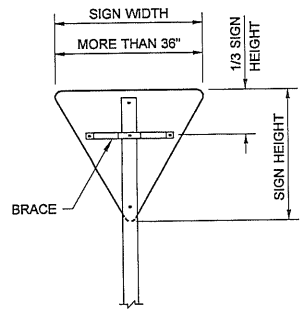
SIGN BRACE DIMENSIONS				
	SIGN TYPE			
	YIELD	DIAMOND-SHAPED	OTHERS	
A	1/3 SIGN WIDTH - 1 3/4"	1/2 SIGN WIDTH - 2 1/4"	1/2 SIGN WIDTH - 1"	
	SIGN POST TYPE			
	4x6 OR 6x6 TIMBER POST	6x8 TIMBER POST	3" DIAM. STEEL PIPE	2 1/2" SQUARE TUBE
B	5 1/2"	7 1/2"	4 3/4"	2 1/2"



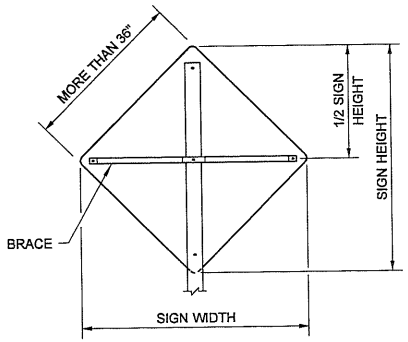
SIGN BRACE DETAIL



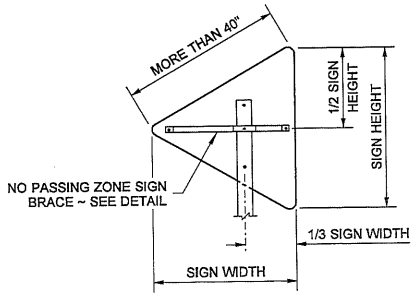
NO PASSING ZONE SIGN BRACE DETAIL



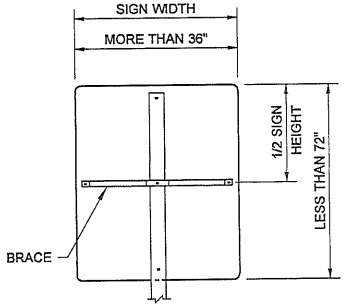
YIELD SIGN



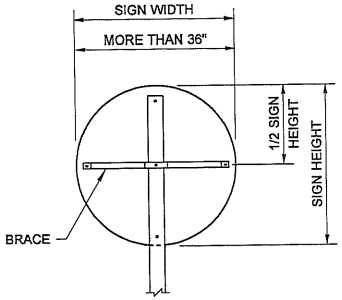
DIAMOND-SHAPED SIGN



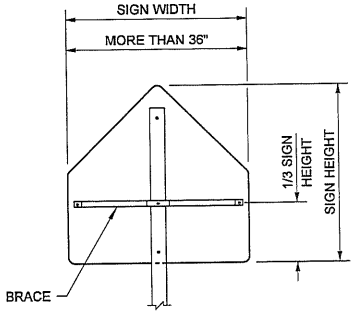
NO PASSING ZONE SIGN



SMALL RECTANGULAR SIGN

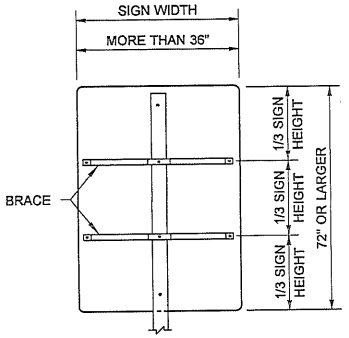


RAILROAD WARNING SIGN

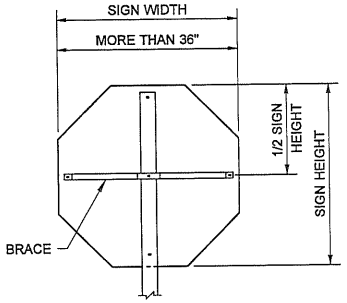


SCHOOL ZONE SIGN

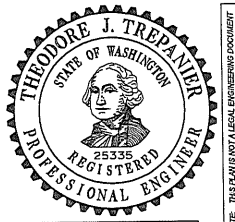
SIGN BRACE PLACEMENT



LARGE RECTANGULAR SIGN



STOP SIGN



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SIGN BRACING

STANDARD PLAN G-50.10-00

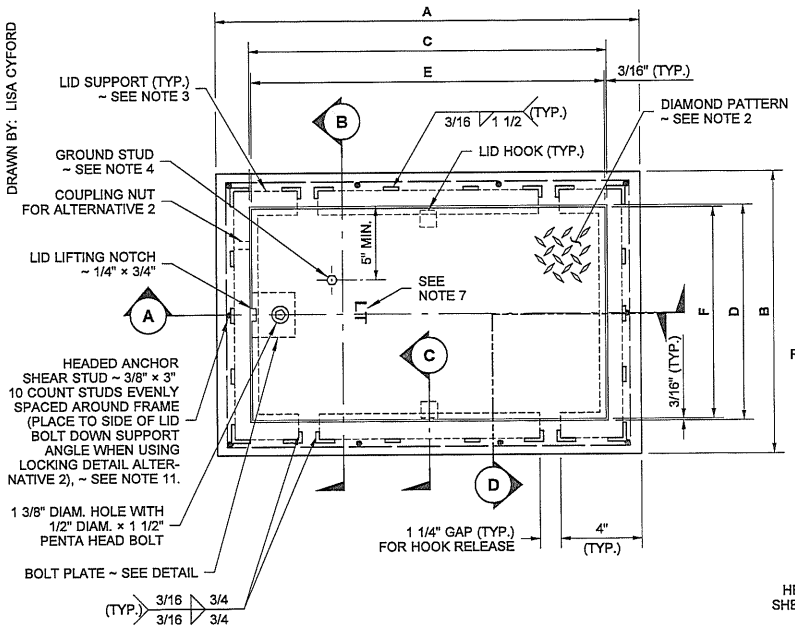
SHEET 2 OF 2 SHEETS

APPROVED FOR PUBLICATION

Pasco Bakotich III — STATE DESIGN ENGINEER — *11-8-07* — DATE

Washington State Department of Transportation

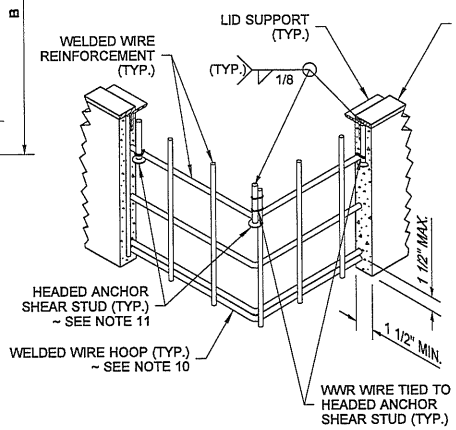
DRAWN BY: LISA CYFORD



LOCKING LID STANDARD DUTY JUNCTION BOX

(CONDUITS NOT SHOWN)

JUNCTION BOX DIMENSION TABLE			
MARK	ITEM	BOX TYPE	
		TYPE 1	TYPE 2
A	OUTSIDE LENGTH OF JUNCTION BOX	22"	33"
B	OUTSIDE WIDTH OF JUNCTION BOX	17"	22 1/2"
C	INSIDE LENGTH OF JUNCTION BOX	18" ~ 19"	28" ~ 29"
D	INSIDE WIDTH OF JUNCTION BOX	13" ~ 14"	17" ~ 18"
E	LID LENGTH	17 5/8"	28 5/8"
F	LID WIDTH	12 5/8"	18 1/8"
CAPACITY ~ CONDUIT DIAMETER		6"	12"

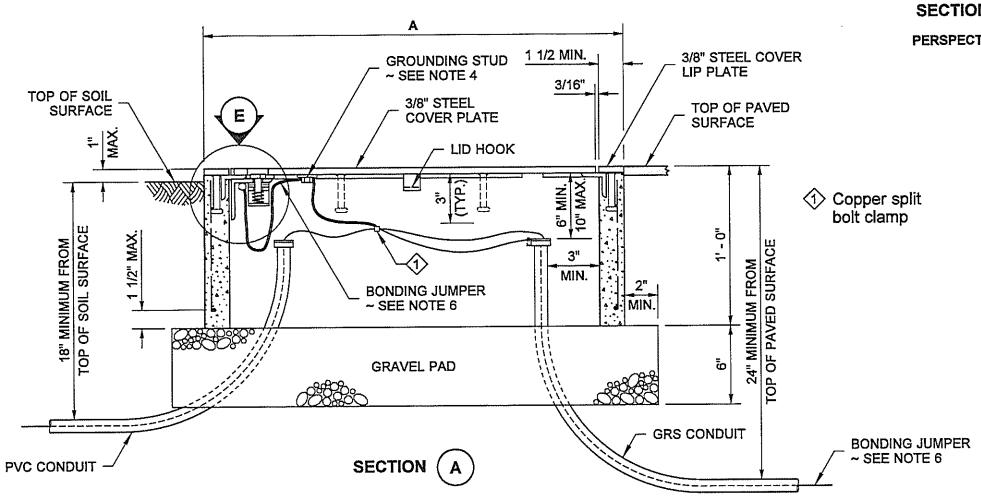


SECTION (D)

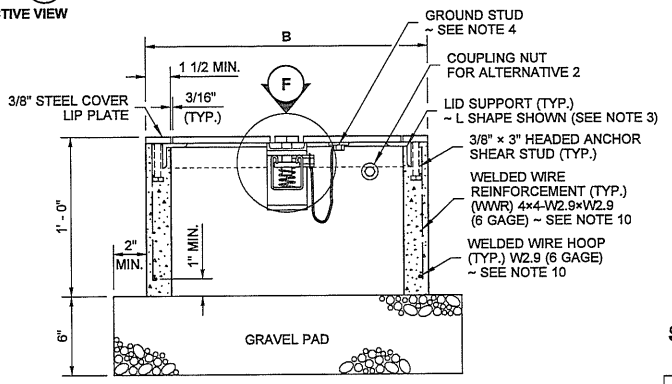
PERSPECTIVE VIEW

NOTES

1. All box dimensions are approximate. Exact configurations vary among manufacturers.
2. The lid thicknesses are minimum. The diamond pattern shall be 28% minimum of overall thickness.
3. Lid support members shall be 3/16" minimum thick steel C, L, or T shape, welded to the frame.
4. A 1/4-20NC × 3/4" S.S. ground stud shall be welded to the bottom of the lid; include 2 S.S. nuts and 2 flat washers.
5. Bolts and nuts shall be liberally coated with anti-seize compound.
6. Connect a Bonding Jumper to steel conduit bushing for GRS conduit; connect to Equipment grounding conductor for PVC conduit. Bonding Jumper shall be #8 min. × 4' of tinned braided copper.
7. The System Identification letters shall be 1/8" line thickness formed by engraving, stamping, or with a S. S. weld bead. Grind off diamond pattern before forming letters. For System Identification Detail see **Standard Plan J-40.30.**
8. When required in the Contract, Type 2 boxes shall be provided with a 10" x 27 1/2", 10 gage divider plate complete with fasteners.
9. The Junction Box Type 2 shall be provided with a 12" deep extension when specified in the Contract.
10. See the Standard Specifications for alternative reinforcement and class of concrete.
11. Headed Anchor Shear Studs must be welded to the Steel Cover Lip Plate and wire tied in two places to the vertical Welded Reinforcement Wire when in contact with each other. Wire tie all other Headed Anchor Shear Studs to the horizontal Welded Reinforcement Wire.
12. Lid Bolt Down Attachment Tab provides a method of retrofitting by using a mechanical process in lieu of welding. Attachment Tab shown depicts a typical component arrangement, actual configurations of assembly will vary among manufacturers. See approved manufacturers shop drawing for specifics.
13. Unless otherwise noted in the plans or approved by the Engineer, Junction Boxes, Cable Vaults and Pull Boxes shall not be placed within the traveled way or paved shoulders. All Junction Boxes, Cable Vaults and Pull Boxes placed within the traveled way or paved shoulders shall be heavy-duty.

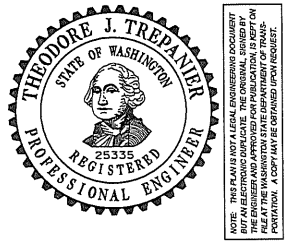


SECTION (A)



SECTION (B)

(CONDUITS NOT SHOWN)



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LOCKING LID STANDARD JUNCTION BOX TYPES 1 & 2

STANDARD PLAN J-40.10-00

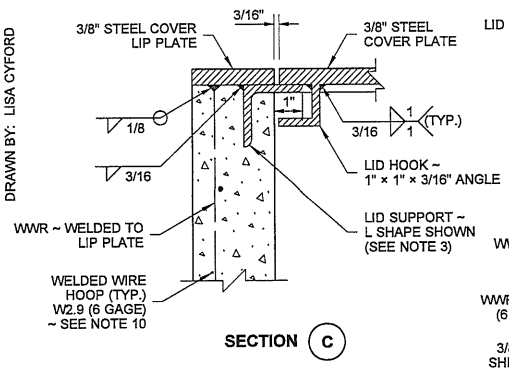
SHEET 1 OF 2 SHEETS

APPROVED FOR PUBLICATION

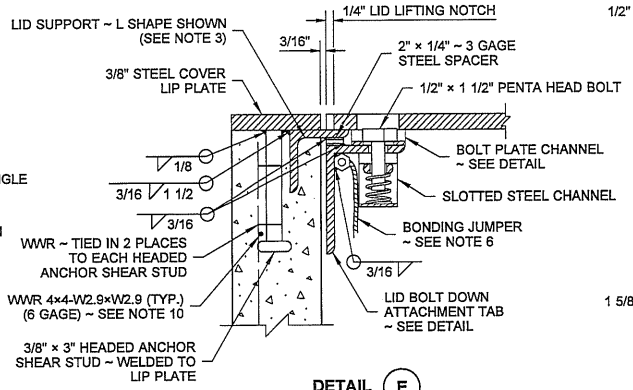
Pasco Bakotich III — STATE DESIGN ENGINEER — *01-06-09* — DATE

Washington State Department of Transportation

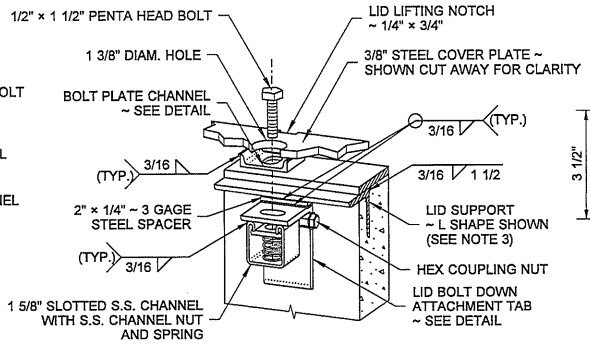
DRAWN BY: LISA CYFORD



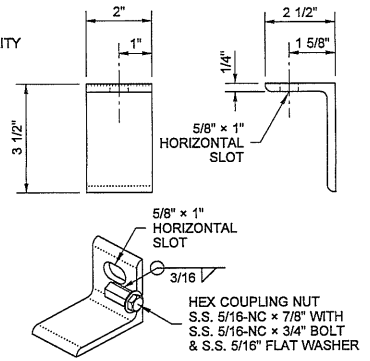
SECTION (C)



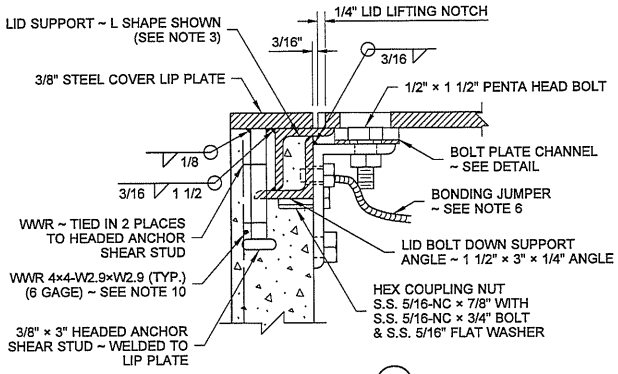
DETAIL (E)
ALTERNATIVE 1 SHOWN



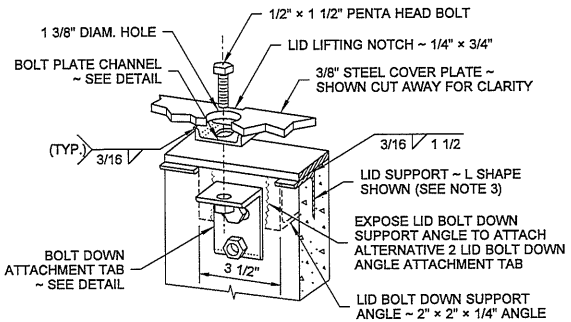
DETAIL (F)
ALTERNATIVE 1 SHOWN
PERSPECTIVE VIEW



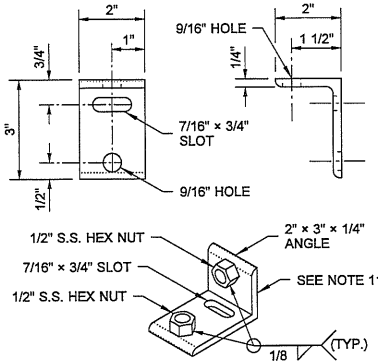
ALTERNATIVE 1
LID BOLT DOWN ATTACHMENT TAB
(SEE NOTE 12)



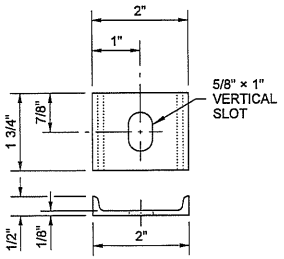
DETAIL (E)
ALTERNATIVE 2 SHOWN



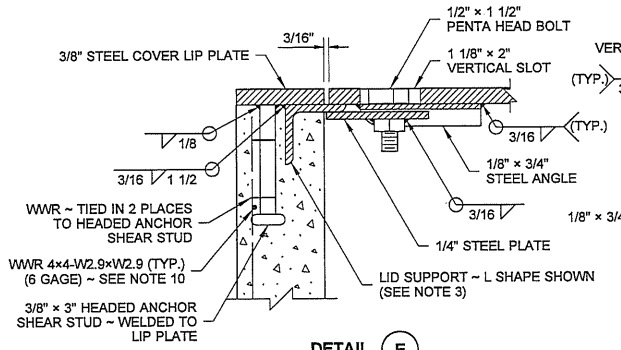
DETAIL (F)
ALTERNATIVE 2 SHOWN
PERSPECTIVE VIEW



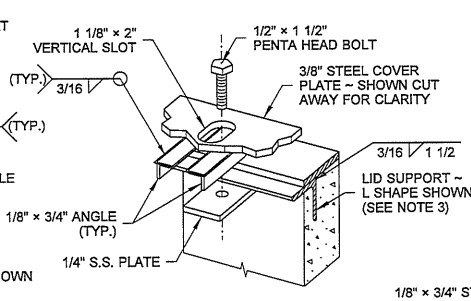
ALTERNATIVE 2
LID BOLT DOWN ATTACHMENT TAB
(SEE NOTE 12)



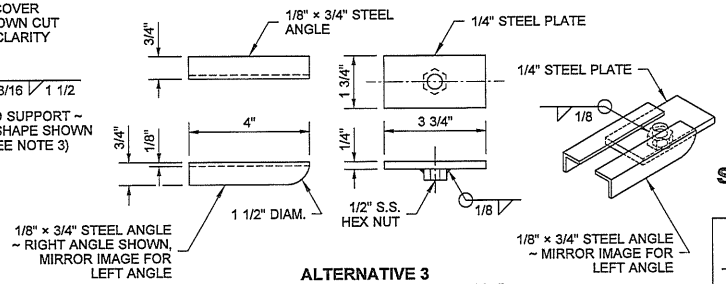
BOLT PLATE CHANNEL



DETAIL (E)
ALTERNATIVE 3 SHOWN



DETAIL (F)
ALTERNATIVE 3 SHOWN
PERSPECTIVE VIEW



ALTERNATIVE 3
LID BOLT DOWN ATTACHMENT TAB
(SEE NOTE 12)

THEODORE J. TREPANIER
STATE OF WASHINGTON
25335
REGISTERED
PROFESSIONAL ENGINEER

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LOCKING LID STANDARD JUNCTION BOX TYPES 1 & 2
STANDARD PLAN J-40.10-00

SHEET 2 OF 2 SHEETS

APPROVED FOR PUBLICATION

Pasco Bakotich III — 01-06-09

STATE DESIGN ENGINEER — DATE

Washington State Department of Transportation

DRAWN BY: ELENA BRUNSTEIN

LONGITUDINAL BUFFER SPACE = B					
POSTED SPEED (MPH)	25	30	35	40	45
LENGTH **B** (FEET)	55	85	120	170	270

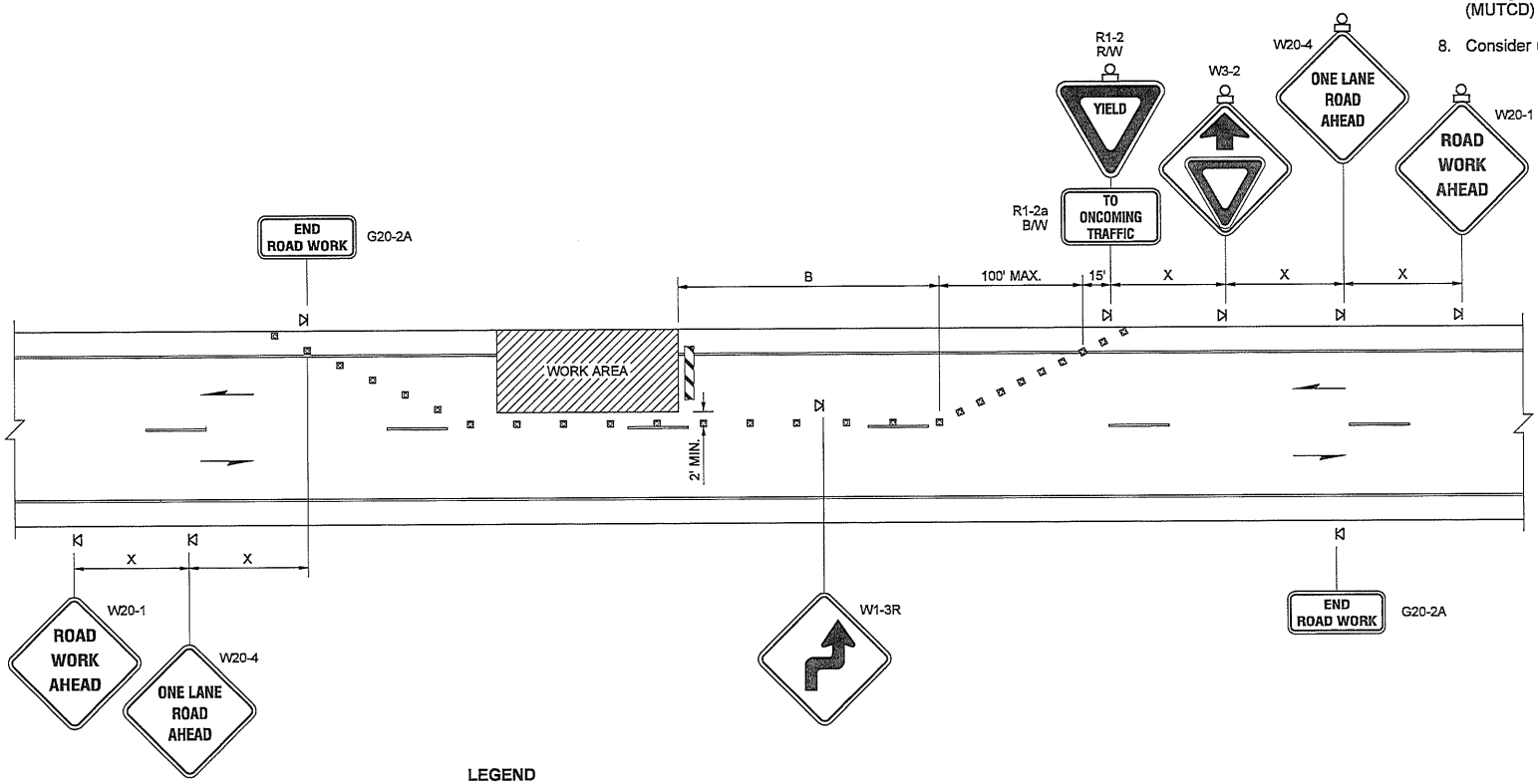
CHANNELIZING DEVICE SPACING		
POSTED SPEED (MPH)	IN TAPER (FEET)	IN TANGENT (FEET)
35 / 45	30	60
25 / 30	20	40

SIGN SPACING = X		
RURAL ROADS	45 / 55 MPH	500' ±
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' ±
RURAL ROADS, URBAN ARTERIALS, RESIDENTIAL & BUSINESS DISTRICTS	25 / 30 MPH	200' ±
URBAN STREETS	25 MPH OR LESS	100' ±
ALL SIGNS ARE BLACK ON ORANGE UNLESS DESIGNATED OTHERWISE		

ALL SIGN SPACING MAY BE ADJUSTED TO ACCOMMODATE AT-GRADE INTERSECTIONS AND DRIVEWAYS.

NOTES

1. This plan is intended for use on roadways when traffic volumes create sufficient gaps for motor vehicles to yield.
2. Steady Burning Warning Lights (Type C per MUTCD) shall be used to mark Channelizing Devices at night.
3. Adequate sight distance shall be provided for drivers to see opposing traffic, otherwise use flaggers and/or Temporary Signal.
4. Extend Channelizing Device taper across shoulder ~ recommended.
5. Post mount signs when in place for 3 days or longer.
6. For speed limit 35 mph or higher replace W1-3R with W1-4R.
7. For signs size refer to Manual on Uniform Traffic Control Devices (MUTCD) and WSDOT Sign Fabrication Manual M55-05.
8. Consider using a PCMS for additional advance warning.



LEGEND

- SIGN LOCATION
- CHANNELIZING DEVICES
- BARRICADE ~ TYPE 3 L
- FLASHING WARNING LIGHT

FOR LOCAL AGENCY USE ONLY
NOT FOR USE ON STATE ROUTES

THEODORE J. TREPANIER
STATE OF WASHINGTON
25335
REGISTERED
PROFESSIONAL ENGINEER
EXPIRES AUGUST 9, 2009

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LANE CLOSURE WITHOUT FLAGGERS ~ LOW VOLUME ROAD STANDARD PLAN K-20.20-01

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

Pasco Bakotich III — STATE DESIGN ENGINEER — *10-12-07* — DATE

Washington State Department of Transportation

DRAWN BY: ELENA BRUNSTEIN

LONGITUDINAL BUFFER SPACE = B										
POSTED SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH **B** (FEET)	155	200	250	305	SEE STD. PLAN K-40.20					

BUFFER DATA	
TYPICAL PROTECTIVE VEHICLE WITH TMA (SEE NOTE 1)	
VEHICLE TYPE	**LOADED WEIGHT**
4 YARD DUMP TRUCK, SERVICE TRUCK, FLAT BED, ETC.	MINIMUM WEIGHT 15,000 LBS. (MAXIMUM WEIGHT SHALL BE IN ACCORDANCE WITH MANUFACTURER RECOMMENDATION)
◇1 **ROLL AHEAD STOPPING DISTANCE** = 30 FEET MIN. (DRY PAVEMENT ASSUMED)	

MINIMUM TAPER LENGTH = L (FEET)										
SHOULDER WIDTH (FEET)	POSTED SPEED (MPH)									
	25	30	35	40	45	50	55	60	65	70
6	63	90	123	160						
8	84	120	164	214	SEE STD. PLAN K-40.20					
10	105	150	204	267						
LESS THAN 6	3 DEVICES MINIMUM, SPACED 10' O.C.									

CHANNELIZING DEVICE SPACING		
POSTED SPEED (MPH)	IN TAPER (FEET)	IN TANGENT (FEET)
35 / 40	30	60
25 / 30	20	40

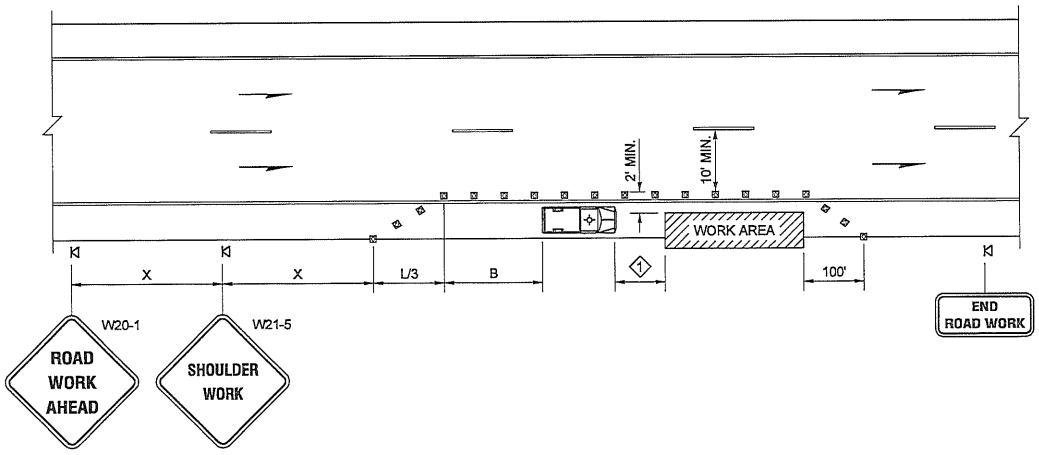
NOTES

1. A Protective Vehicle is recommended regardless if a Truck Mounted Attenuator (TMA) is available; a work vehicle may be used. When no TMA is used, the Protective Vehicle shall be strategically located to shield workers, with no specific Roll-Ahead distance.
2. Channelizing Device spacing for the downstream taper option shall be 20' O.C.
3. For signs size refer to Manual on Uniform Traffic Control Devices (MUTCD) and WSDOT Sign Fabrication Manual M55-05.

SIGN SPACING = X (1)		
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' ±
RURAL ROADS, URBAN ARTERIALS, RESIDENTIAL & BUSINESS DISTRICTS	25 / 30 MPH	200' ± (2)
URBAN STREETS	25 MPH OR LESS	100' ± (2)
ALL SIGNS ARE BLACK ON ORANGE UNLESS DESIGNATED OTHERWISE		

(1) ALL SIGN SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS, AT-GRADE INTERSECTIONS, AND DRIVEWAYS.

(2) THIS SIGN SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.



LEGEND

- ⋈ SIGN LOCATION
- ▫ ▫ ▫ CHANNELIZING DEVICES
- PROTECTIVE VEHICLE ~ RECOMMENDED

FOR LOCAL AGENCY USE ONLY
NOT FOR USE ON STATE ROUTES

THEODORE J. TREPANIER
STATE OF WASHINGTON
25335
REGISTERED
PROFESSIONAL ENGINEER
EXPIRES AUGUST 9, 2007

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SHOULDER CLOSURE ~ LOW SPEED ROADWAY (40 MPH OR LESS)
STANDARD PLAN K-40.40-00

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

Ken L. Smith — *02-15-07*

STATE DESIGN ENGINEER — DATE

Washington State Department of Transportation

DRAWN BY: ELENA BRUNSTEIN

SIGN SPACING = X (1)		
RURAL HIGHWAYS	60 / 65 MPH	800' ±
RURAL ROADS	45 / 55 MPH	500' ±
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' ±
RURAL ROADS, URBAN ARTERIALS, RESIDENTIAL & BUSINESS DISTRICTS	25 / 30 MPH	200' ± (2)
URBAN STREETS	25 MPH OR LESS	100' ± (2)
ALL SIGNS ARE BLACK ON ORANGE UNLESS DESIGNATED OTHERWISE		

(1) ALL SIGN SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMPS, AT-GRADE INTERSECTIONS, AND DRIVEWAYS.

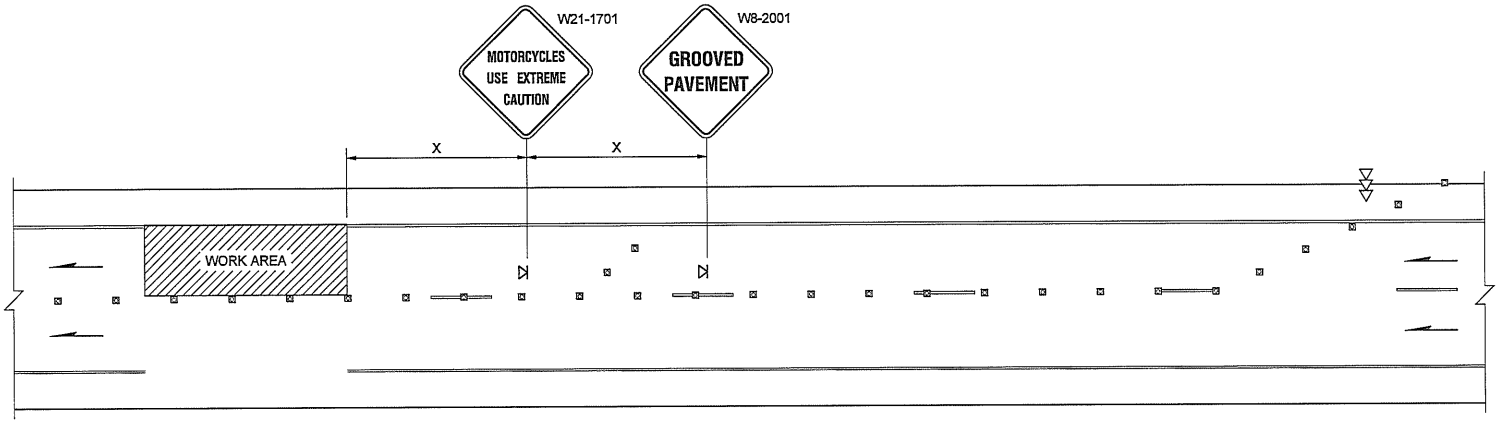
(2) THIS SIGN SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

CHANNELIZING DEVICE SPACING		
POSTED SPEED (MPH)	IN TAPER (FEET)	IN TANGENT (FEET)
50 / 70	40	80
35 / 45	30	60
25 / 30	20	40

NOTES

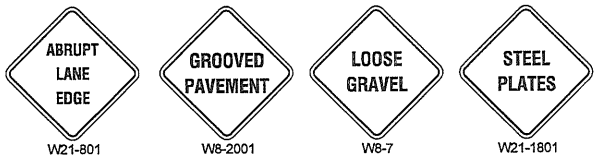
1. See Standard Plan K-24.60 for typical lane closure signing details, device spacing requirements, and lane closure taper length.
2. MOTOCYCLES USE EXTREME CAUTION signs shall be installed when the following roadway conditions exist:
   - grooved pavement
   - abrupt lane edge
   - steel plates
   - loose gravel of earth

   Specific signs for each of the conditions noted shall be installed along with MOTORCYCLES USE EXTREME CAUTION signs.
3. For signs size refer to Manual on Uniform Traffic Control Devices (MUTCD) and WSDOT Sign Fabrication Manual M55-05.



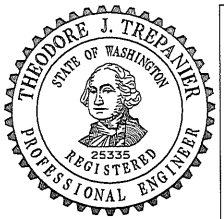
LEGEND

- SIGN LOCATION
- CHANNELIZING DEVICES
- ARROW PANEL



MOTORCYCLE WARNING SIGN (W21-1701) SHOULD BE INSTALLED AT 1 MILE SPACING, THROUGHOUT THE WORK ZONE WHERE THE CONDITION EXISTS, AS PART OF THE SEQUENCE OF OTHER APPROPRIATE STANDARD WARNING SIGNS ON 1 MILE SPACING

FOR LOCAL AGENCY USE ONLY
NOT FOR USE ON STATE ROUTES



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MOTORCYCLE SUPPLEMENTAL SIGNING

STANDARD PLAN K-60.40-00

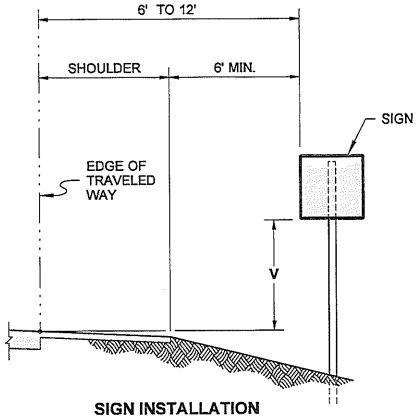
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

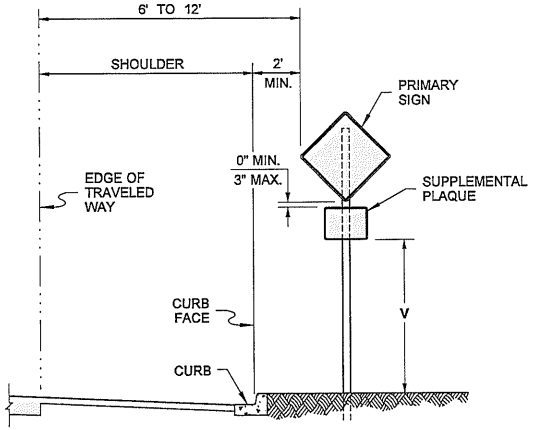
Ken L. Smith — STATE DESIGN ENGINEER
02-15-07 — DATE

Washington State Department of Transportation

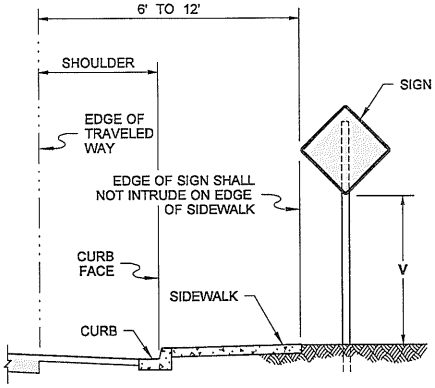
DRAWN BY: FERN LIDDELL



SIGN INSTALLATION (FILL SECTION)



SIGN INSTALLATION (CURB SECTION)

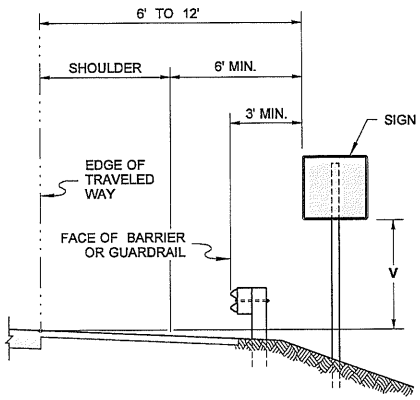


SIGN INSTALLATION (SIDEWALK AND CURB SECTION)

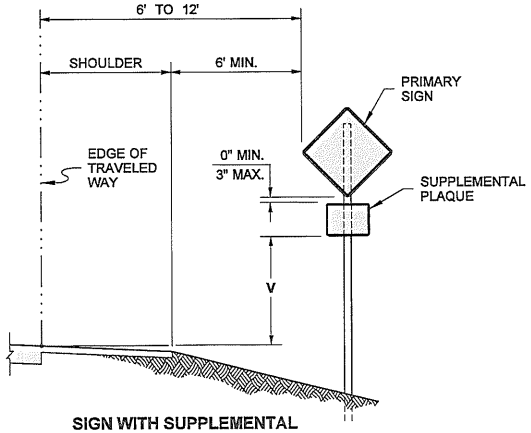
NOTES

1. For sign installation details, see Std. Plan G - series.
2. In rural areas, the "V" Height can be a minimum of 7 feet for primary signs and 6 feet for the supplemental plaques for greater visibility, as directed by the engineer.
3. The "V" height for signs, with an area of more than 50 square feet and two or more sign supports, is 7 feet in both rural and urban areas.

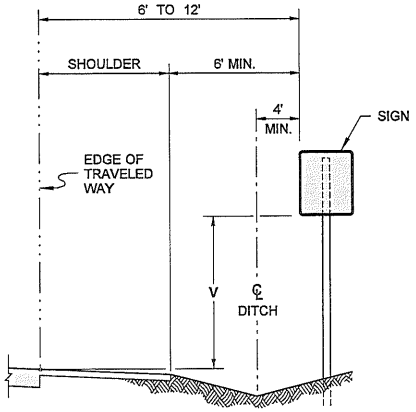
HEIGHT V		
	TO BOTTOM OF SIGN (NO SUPPLEMENTAL PLAQUE)	TO BOTTOM OF SUPPLEMENTAL PLAQUE (WHEN REQUIRED)
RURAL	5' MINIMUM	4' MINIMUM
URBAN	7' MINIMUM	6' MINIMUM



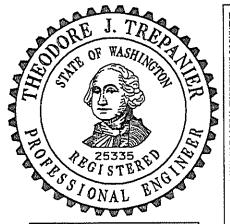
SIGN INSTALLATION (BEHIND TRAFFIC BARRIER)



SIGN WITH SUPPLEMENTAL PLAQUE INSTALLATION (FILL SECTION)



SIGN INSTALLATION (DITCH SECTION)



EXPIRES AUGUST 9, 2007

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CLASS A CONSTRUCTION SIGNING INSTALLATION

STANDARD PLAN K-80.10-00

SHEET 1 OF 1 SHEET

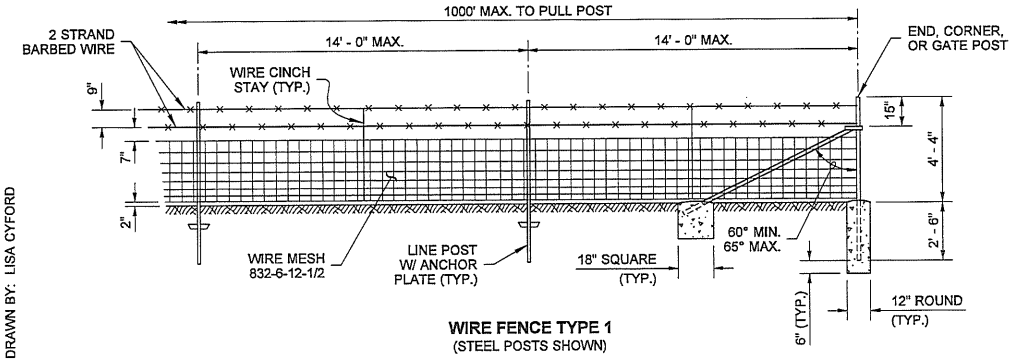
APPROVED FOR PUBLICATION

Ken L. Smith — STATE DESIGN ENGINEER

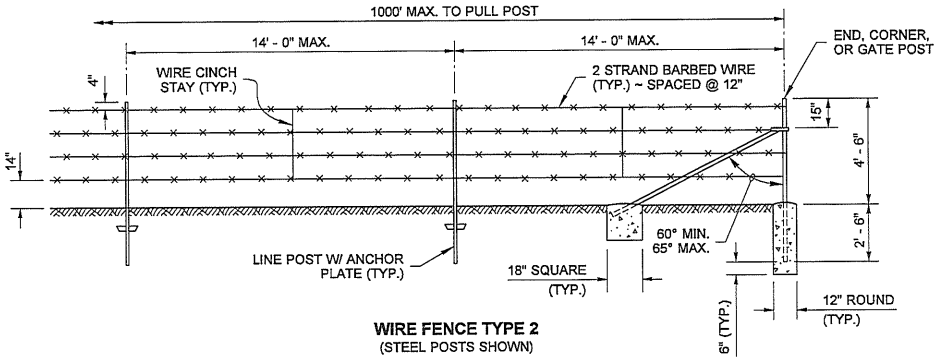
02-21-07 — DATE

Washington State Department of Transportation

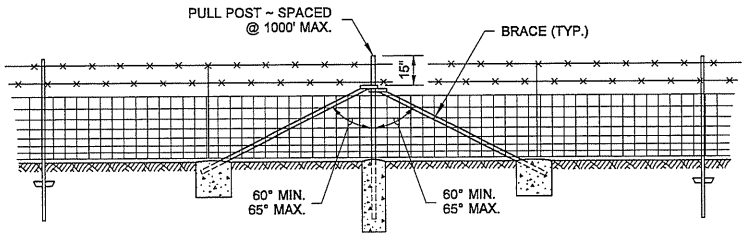
DRAWN BY: LISA CYFORD



WIRE FENCE TYPE 1
(STEEL POSTS SHOWN)



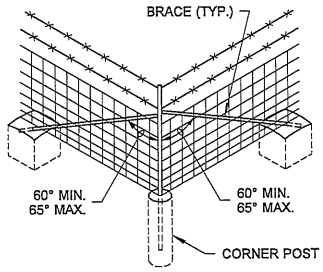
WIRE FENCE TYPE 2
(STEEL POSTS SHOWN)



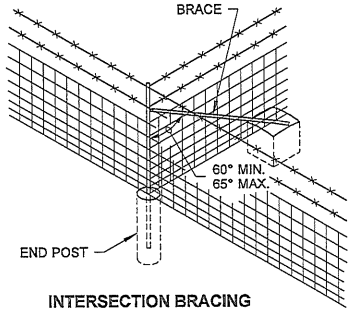
INTERMEDIATE BRACING / PULL POST
(SHOWN FOR FENCE TYPE 1)

NOTES

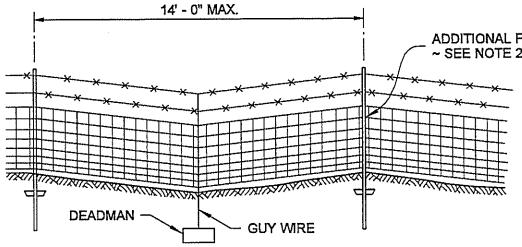
1. The bracing and pull post details for Wire Fence Type 2 are the same as for Type 1.
2. Attach the wire mesh to the posts using four fasteners. Three additional fasteners per post are required within and at the limits of sag conditions. Use additional fasteners on posts which mark the angle point of any sudden change in topography.
3. Wood anchors (for wood posts) shall be 2×4 lumber, 12" long minimum, and fastened with three 16d galvanized nails.



CORNER BRACING
(SHOWN FOR FENCE TYPE 1)



INTERSECTION BRACING
(SHOWN FOR FENCE TYPE 1)



GRADE DEPRESSION (SAG) DETAIL
(STEEL POSTS SHOWN)

KEN LEROY SMITH
STATE OF WASHINGTON
31805
REGISTERED
PROFESSIONAL ENGINEER

EXPIRES AUGUST 26, 2007

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WIRE FENCE TYPES 1 & 2 AND WIRE GATES

STANDARD PLAN L-10.10-00

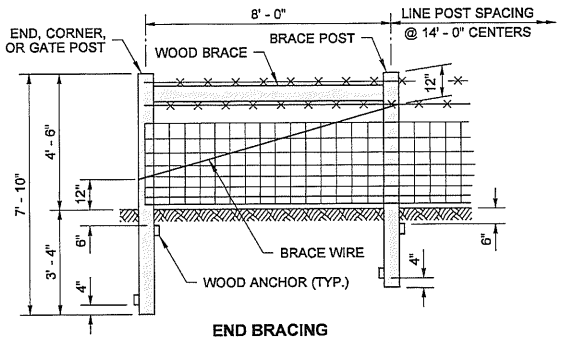
SHEET 1 OF 2 SHEETS

APPROVED FOR PUBLICATION

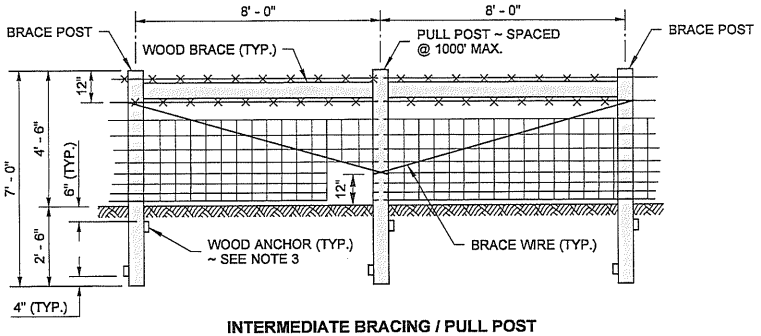
Ken L. Smith — STATE DESIGN ENGINEER — *02-21-07* — DATE

Washington State Department of Transportation

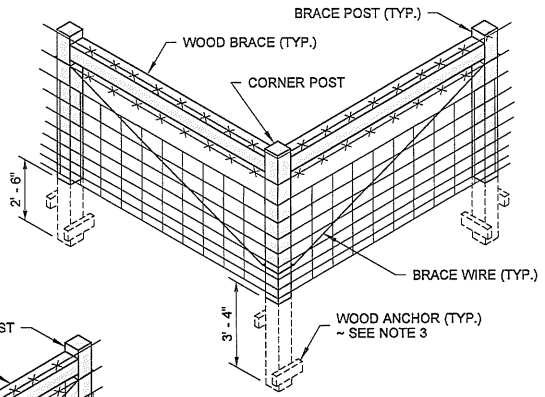
STEEL POSTS AND BRACES



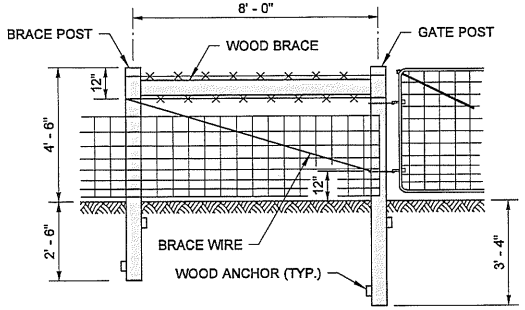
END BRACING
(FENCE TYPE 1 SHOWN)



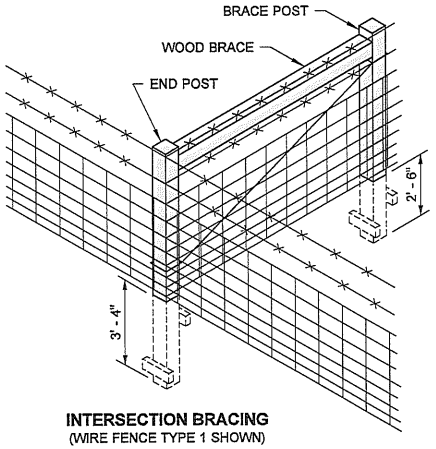
INTERMEDIATE BRACING / PULL POST
(WIRE FENCE TYPE 1 SHOWN)



CORNER BRACING
(WIRE FENCE TYPE 1 SHOWN)

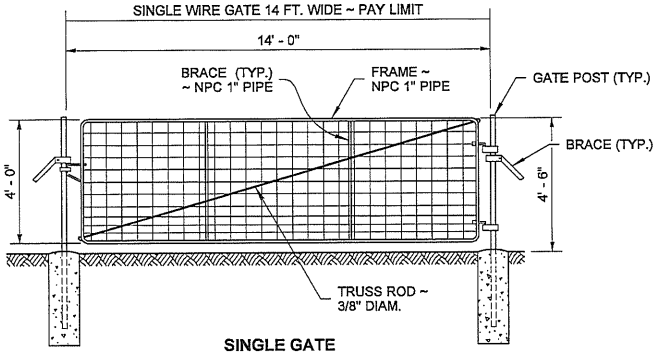


GATE BRACING
(WIRE FENCE TYPE 1 SHOWN)

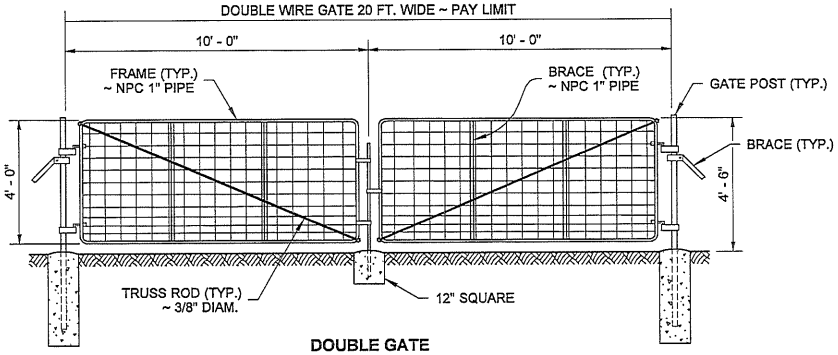


INTERSECTION BRACING
(WIRE FENCE TYPE 1 SHOWN)

WOOD POSTS AND BRACES



SINGLE GATE
(STEEL POSTS SHOWN)



DOUBLE GATE
(STEEL POSTS SHOWN)

GATES

DRAWN BY: LISA CYFORD

KEN LEROY SMITH
STATE OF WASHINGTON
31805
REGISTERED
PROFESSIONAL ENGINEER

EXPIRES AUGUST 26, 2007

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WIRE FENCE TYPES 1 & 2 AND WIRE GATES

STANDARD PLAN L-10.10-00

SHEET 2 OF 2 SHEETS

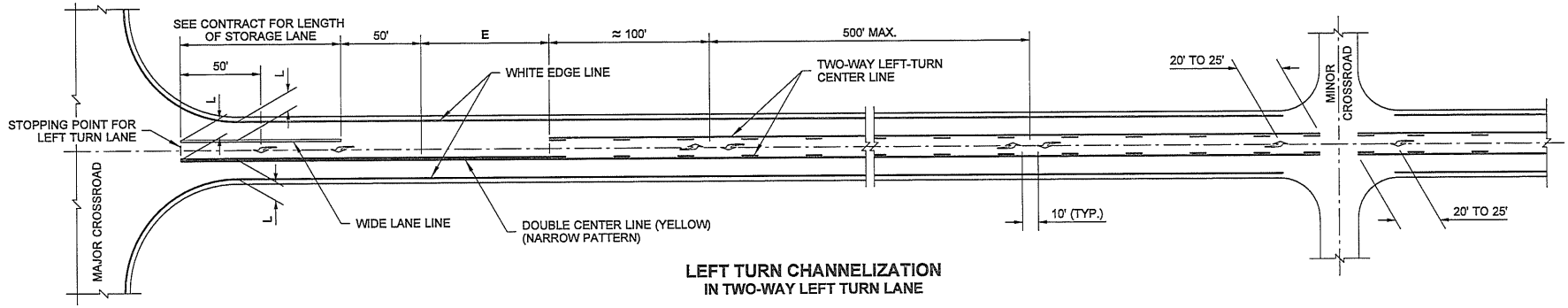
APPROVED FOR PUBLICATION

Ken L. Smith 02-21-07

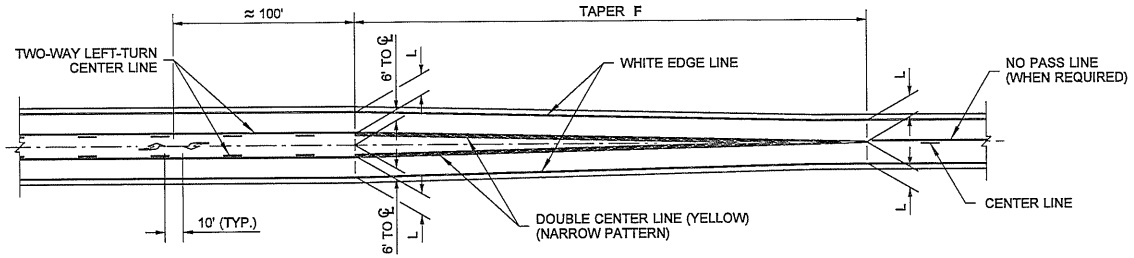
STATE DESIGN ENGINEER — DATE

Washington State Department of Transportation

DRAWN BY: FERN LIDDELL

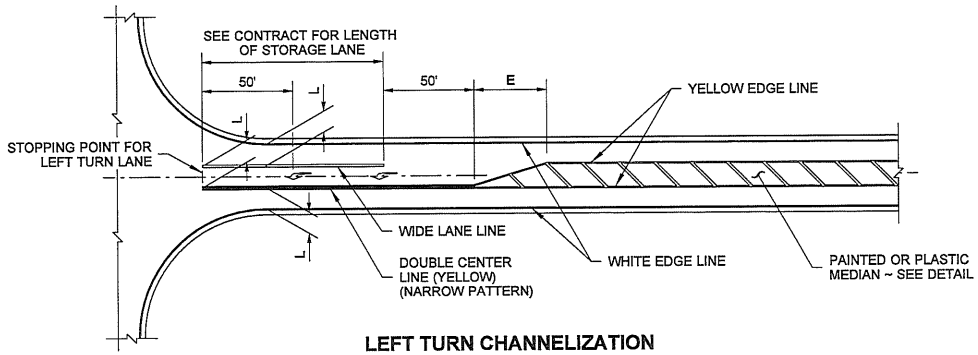


LEFT TURN CHANNELIZATION
IN TWO-WAY LEFT TURN LANE

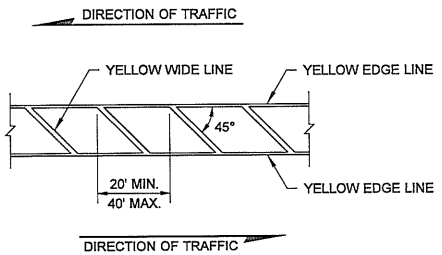


TWO-WAY LEFT TURN LANE TRANSITION

POSTED SPEED	DIMENSION E ◇1	APPROACH TAPER F
HIGH SPEED		
60 MPH	180'	360'
55 MPH	180'	330'
50 MPH	180'	300'
45 MPH	180'	270'
LOW SPEED		
40 MPH	120'	240'
35 MPH	120'	210'
30 MPH	120'	180'
25 MPH	120'	150'
20 MPH	120'	120'



LEFT TURN CHANNELIZATION
IN PAINTED MEDIAN



PAINTED OR PLASTIC MEDIAN
COMPOSED OF LONGITUDINAL MARKINGS

GENERAL NOTES

1. The channelization shown on this plan assumes optimal roadway geometric design. The dimensions may vary to fit existing conditions. See Contract.

L = 12' Typical Lane Width. See Contract for specified lane widths.

LEGEND

Type 2L Traffic Arrow

◇1 Can be reduced to a mnimum of 50' to increase storage capacity.

THEODORE J. TREPANIER
STATE OF WASHINGTON
25335
REGISTERED
PROFESSIONAL ENGINEER

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TWO-WAY LEFT-TURN AND MEDIAN CHANNELIZATION STANDARD PLAN M-3.40-02

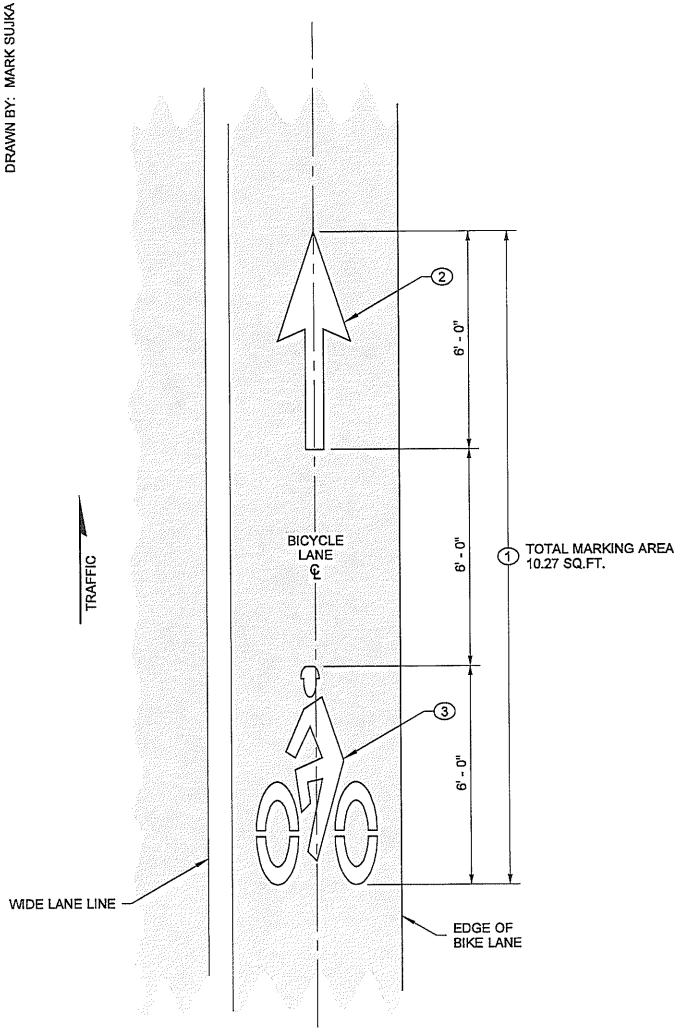
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

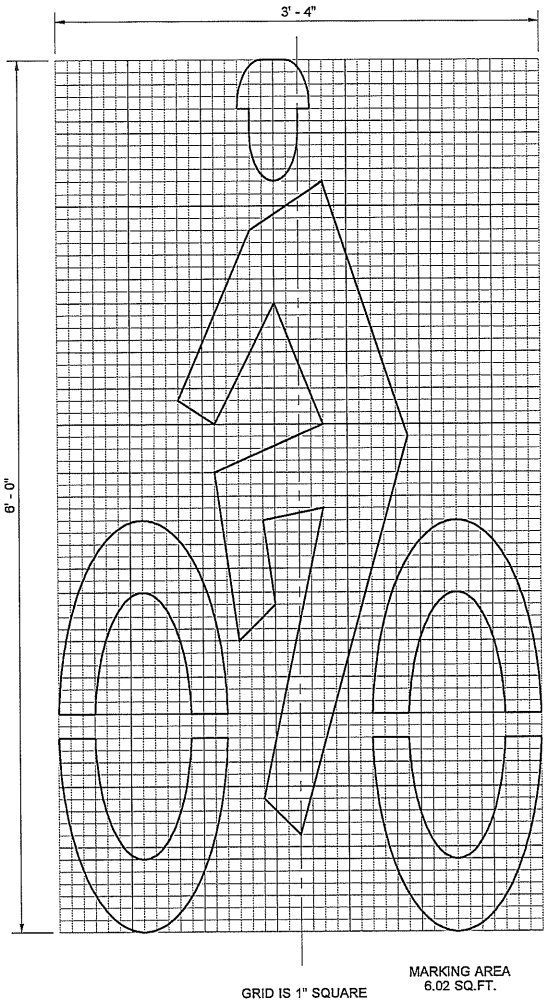
Pasco Bakotich III — STATE DESIGN ENGINEER
02-10-09 — DATE

Washington State Department of Transportation

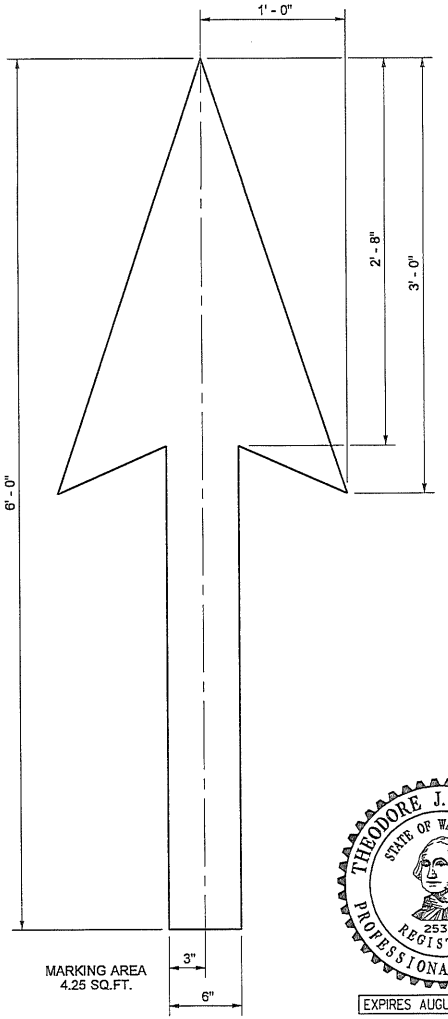
DRAWN BY: MARK SUJKA



BICYCLE LANE SYMBOL LAYOUT



BIKE RIDER SYMBOL DETAIL



BIKE LANE ARROW DETAIL

KEY NOTES

1. Bid Item "Bicycle Lane Symbol" includes Bike Lane Arrow and Bike Rider Symbol.
2. 2' x 6' White Bike Lane Arrow
3. Bike Rider Symbol

GENERAL NOTE

See contract for location and material requirements.

THEODORE J. TREPANIER
STATE OF WASHINGTON
25335
REGISTERED
PROFESSIONAL ENGINEER
EXPIRES AUGUST 9, 2007

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BICYCLE LANE SYMBOL LAYOUT

STANDARD PLAN M-9.50-01

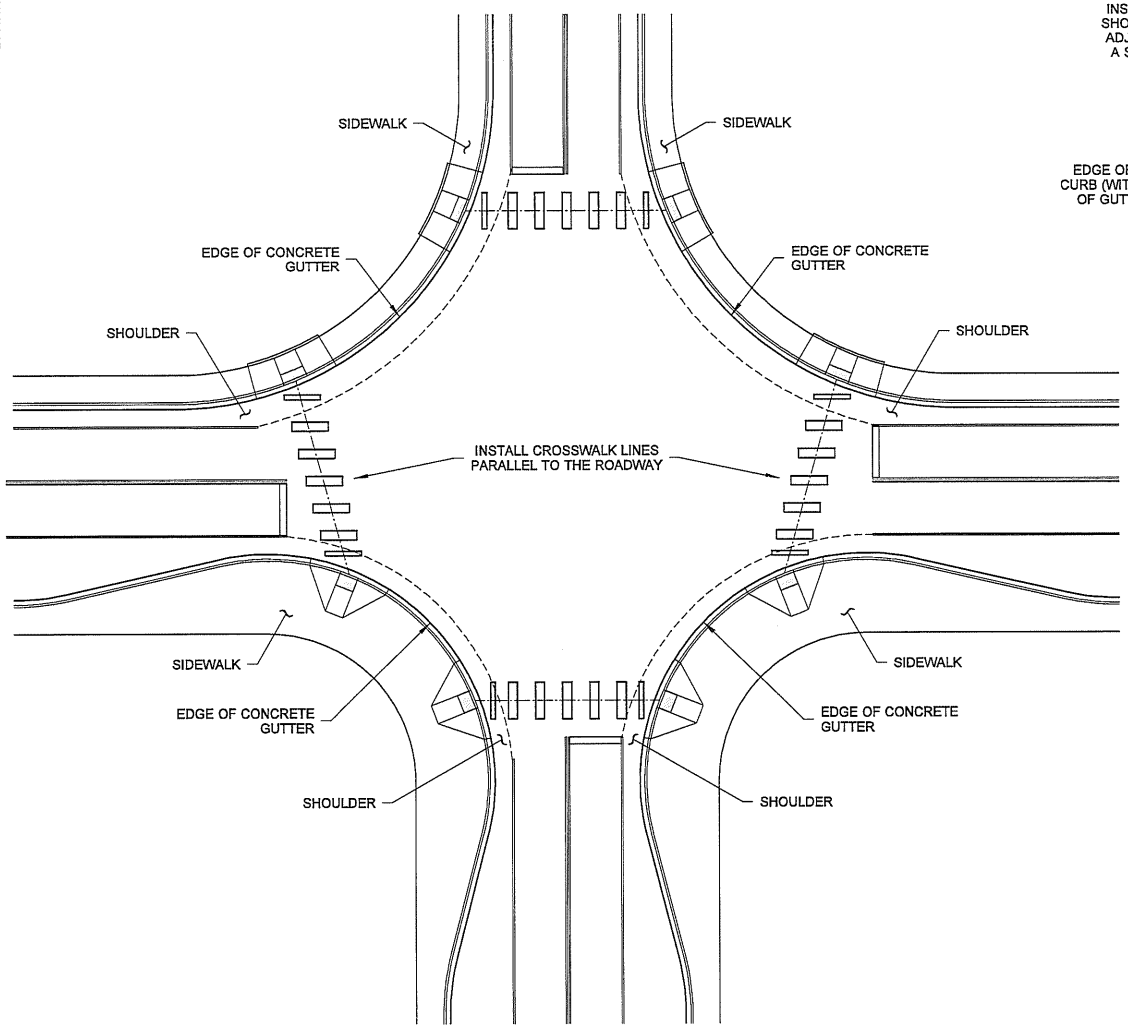
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

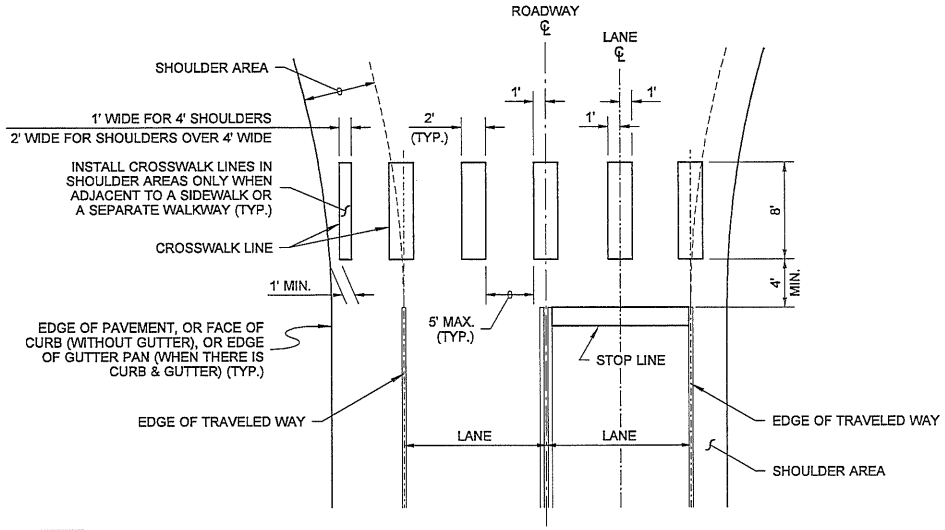
Ken L. Smith — STATE DESIGN ENGINEER — 01-30-07 — DATE

Washington State Department of Transportation

DRAWN BY: FERN LIDDELL



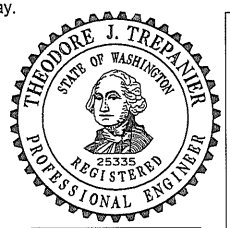
TYPICAL APPLICATIONS



DETAIL

NOTES

1. See the Contract Plans for locations of crosswalk centerlines.
2. To the maximum extent possible, curb ramp centerline should be perpendicular to the crosswalk centerline.
3. To the maximum extent possible, crosswalks should be perpendicular to the centerline of the traveled way.



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CROSSWALK LAYOUT

STANDARD PLAN M-15.10-01

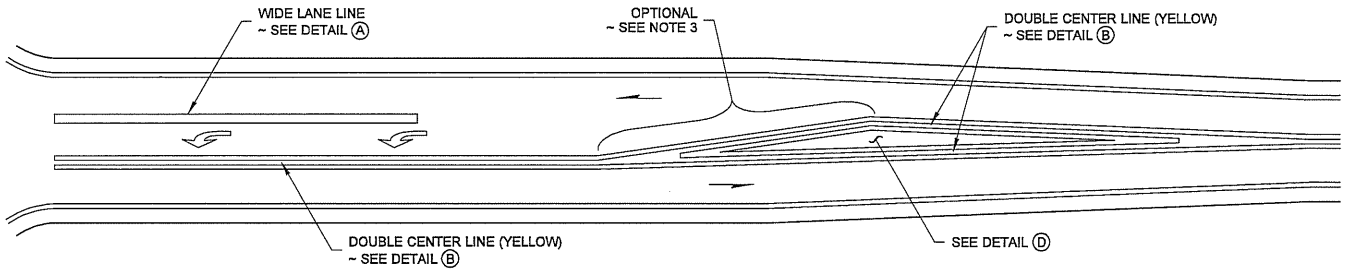
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

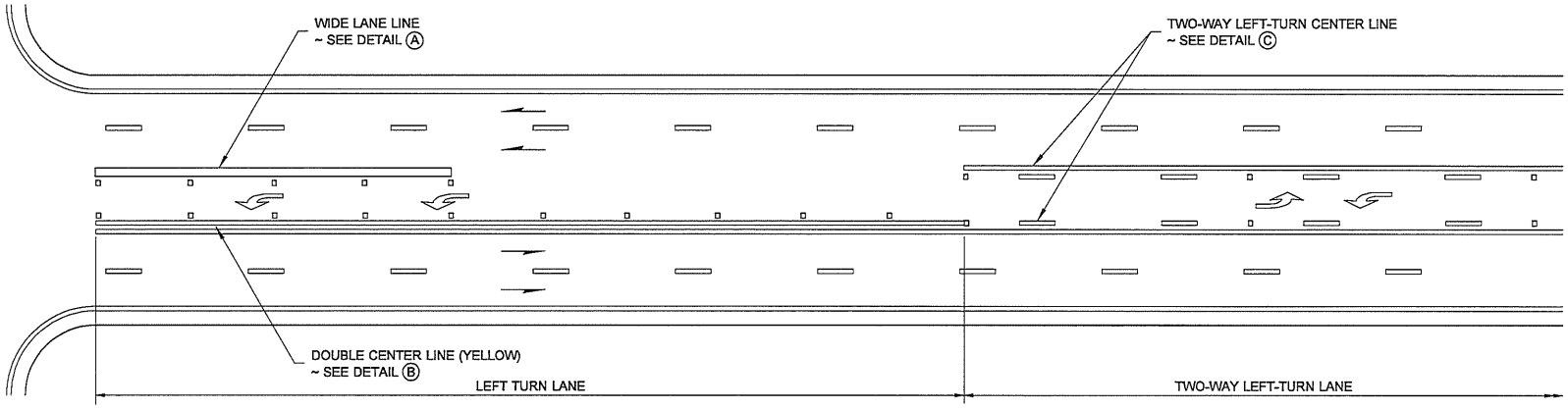
Ken L. Smith — STATE DESIGN ENGINEER — *02-06-07* — DATE

Washington State Department of Transportation

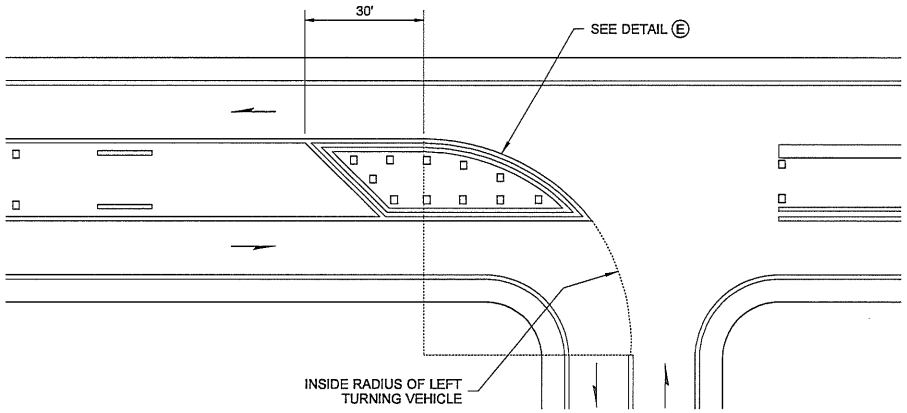
DRAWN BY: ADAM COCHRAN



LEFT TURN LANE
(SEE NOTE 3)



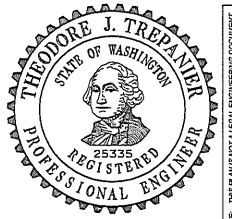
TWO-WAY LEFT-TURN LANE



END TWO-WAY LEFT-TURN LANE

NOTES

1. Raised pavement markers shall be installed only when specified in the Contract Plans.
2. See the Standard Plans for marker designation.
3. The portion labeled "OPTIONAL" is only used when the Optional Marked Deceleration Taper (see Standard Plans M-3.10 and M-3.20) is specified in the contract plans.



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LONGITUDINAL MARKING SUPPLEMENT WITH RPM's ~ TURN LANES

STANDARD PLAN M-20.40-01

SHEET 1 OF 2 SHEETS

APPROVED FOR PUBLICATION

Ken L. Smith — STATE DESIGN ENGINEER

01-30-07 — DATE

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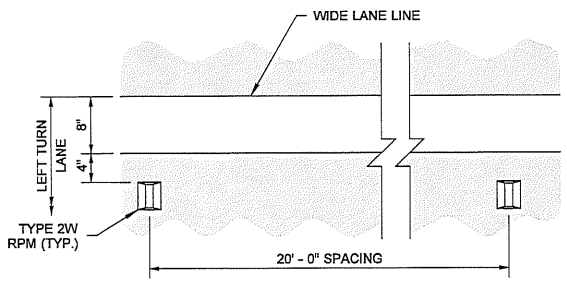
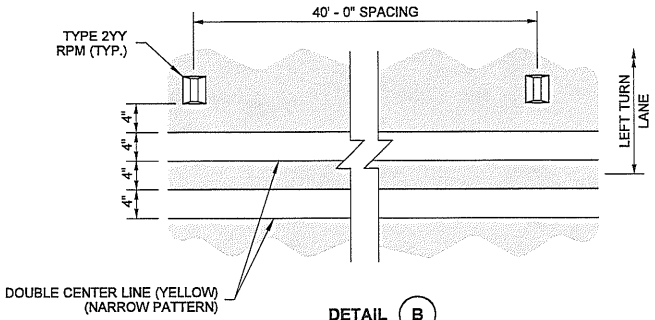
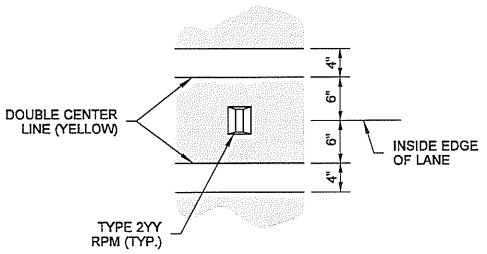


DETAIL (A)

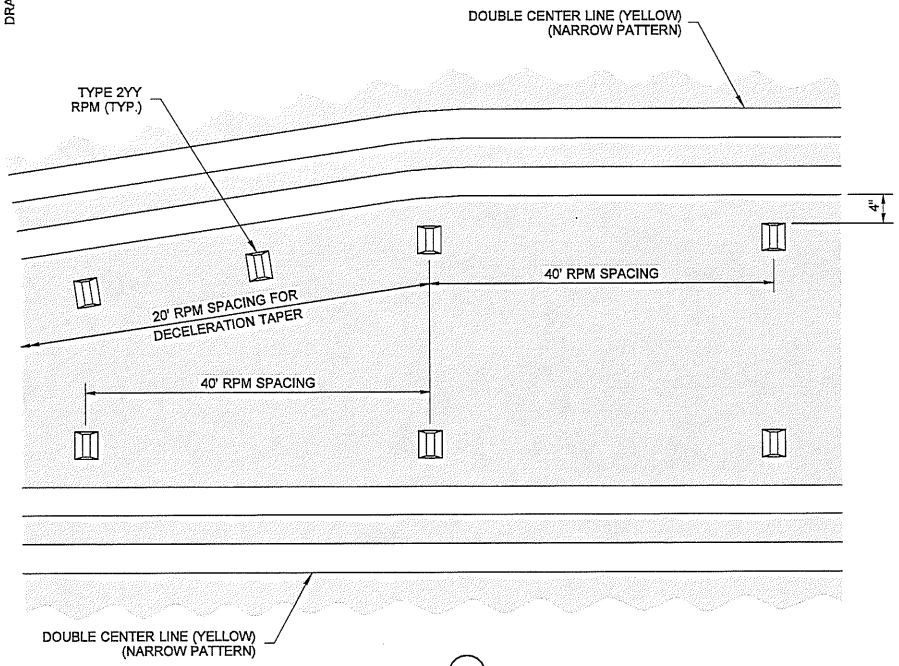


DETAIL (B)

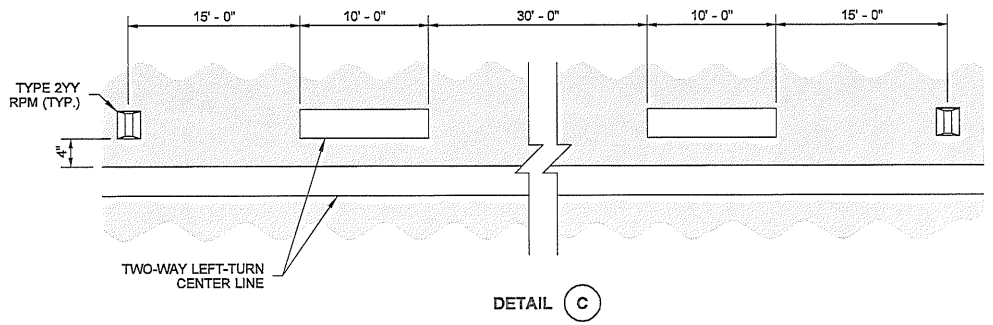


ALTERNATIVE LINE DETAIL

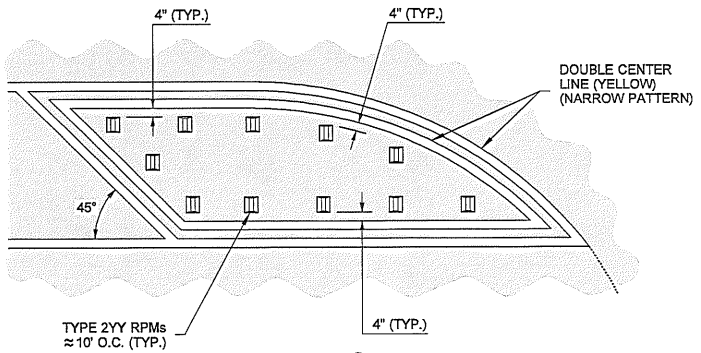
DRAWN BY: ADAM COCHRAN



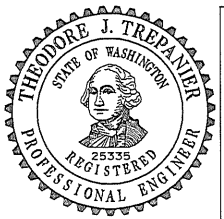
DETAIL (D)



DETAIL (C)



DETAIL (E)



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LONGITUDINAL MARKING SUPPLEMENT WITH RPM's ~ TURN LANES

STANDARD PLAN M-20.40-01

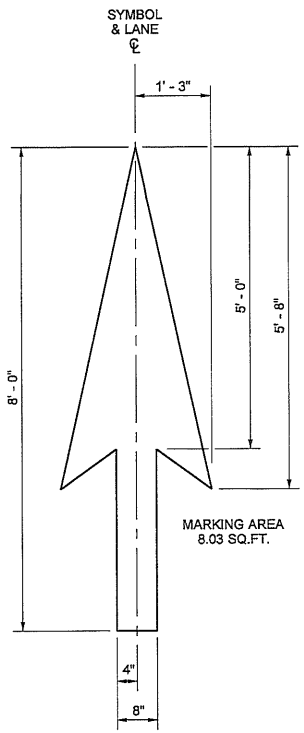
SHEET 2 OF 2 SHEETS

APPROVED FOR PUBLICATION

Ken L. Smith — STATE DESIGN ENGINEER

01-30-07 — DATE

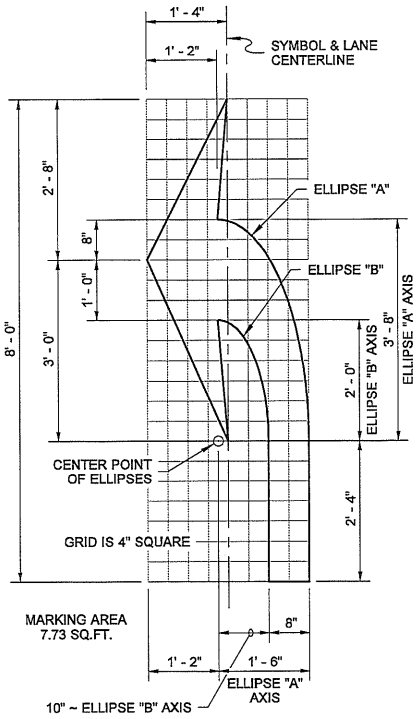
Washington State Department of Transportation



TYPE 1S
TRAFFIC ARROW

TYPE 2SR (RIGHT)
TRAFFIC ARROW

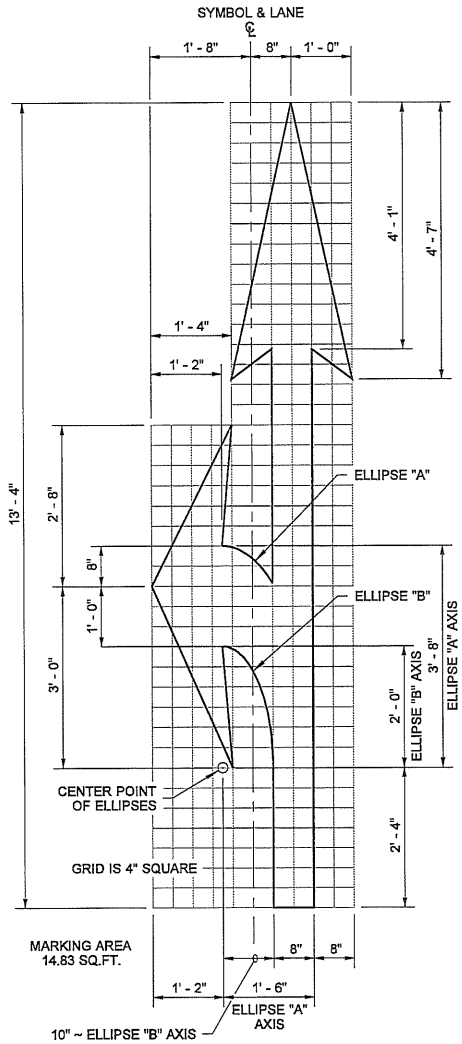
MIRROR IMAGE OF
TYPE 2SL TRAFFIC ARROW
(SHOWN AT REDUCED SCALE)



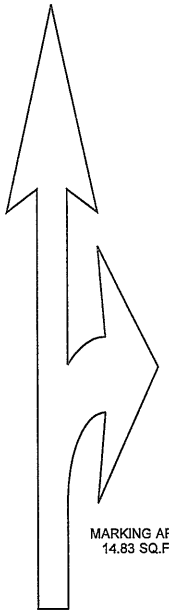
TYPE 2SL (LEFT) TRAFFIC ARROW

NOTE

Use the dimensions shown on this plan for each type Traffic Arrow being placed on roadways with a posted speed limit of 40 mph or lower.

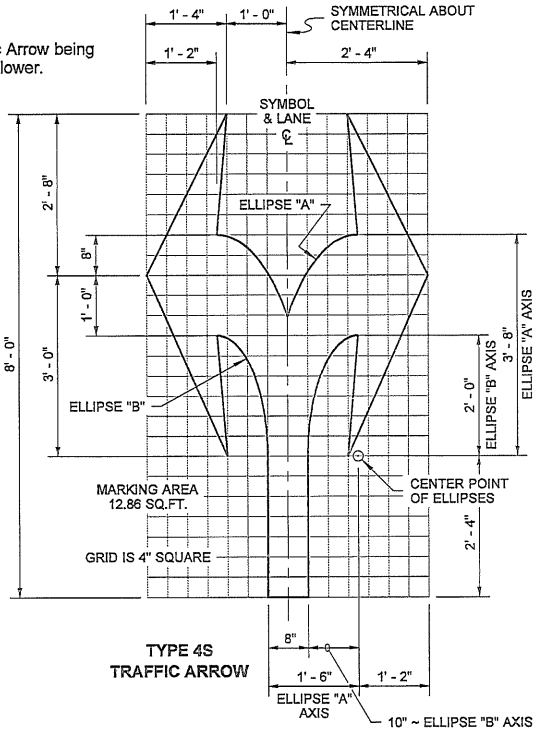


TYPE 3SL (LEFT) TRAFFIC ARROW

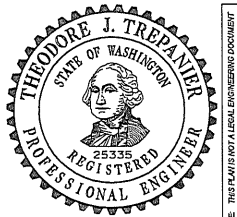


TYPE 3SR (RIGHT)
TRAFFIC ARROW

MIRROR IMAGE OF
TYPE 3SL TRAFFIC ARROW
(SHOWN AT REDUCED SCALE)



TYPE 4S
TRAFFIC ARROW



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SYMBOL MARKINGS TRAFFIC ARROWS FOR LOW SPEED ROADWAYS STANDARD PLAN M-24.40-01

SHEET 1 OF 2 SHEETS

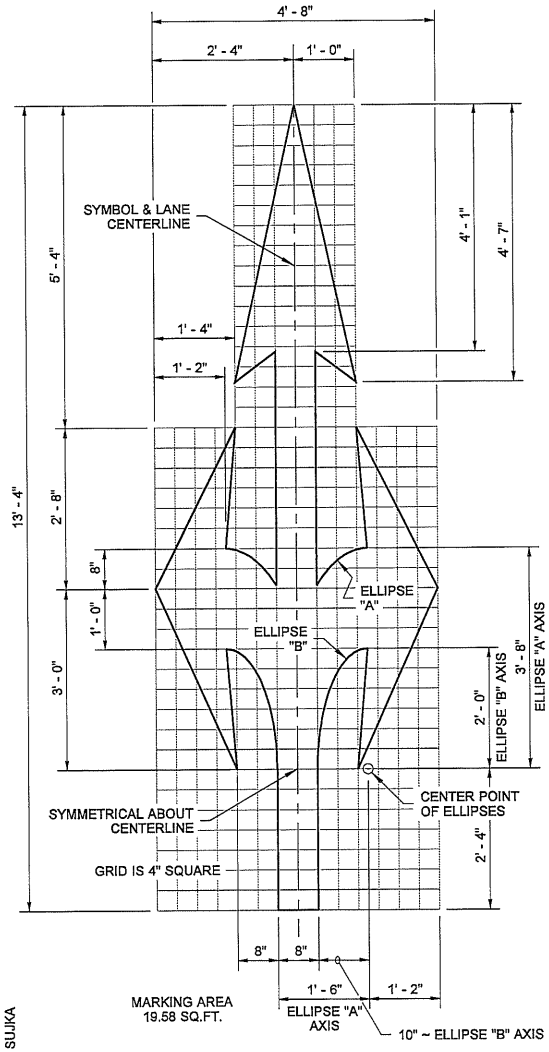
APPROVED FOR PUBLICATION

Harold J. Peterfeso 05-31-06

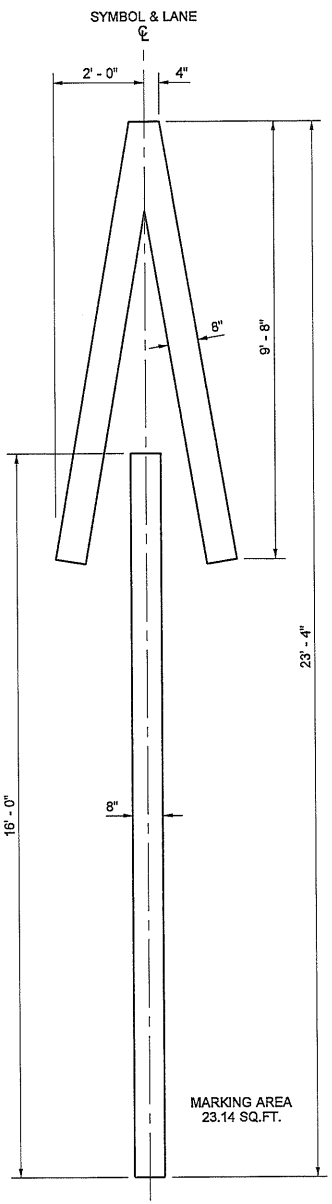
STATE DESIGN ENGINEER — DATE

Washington State Department of Transportation

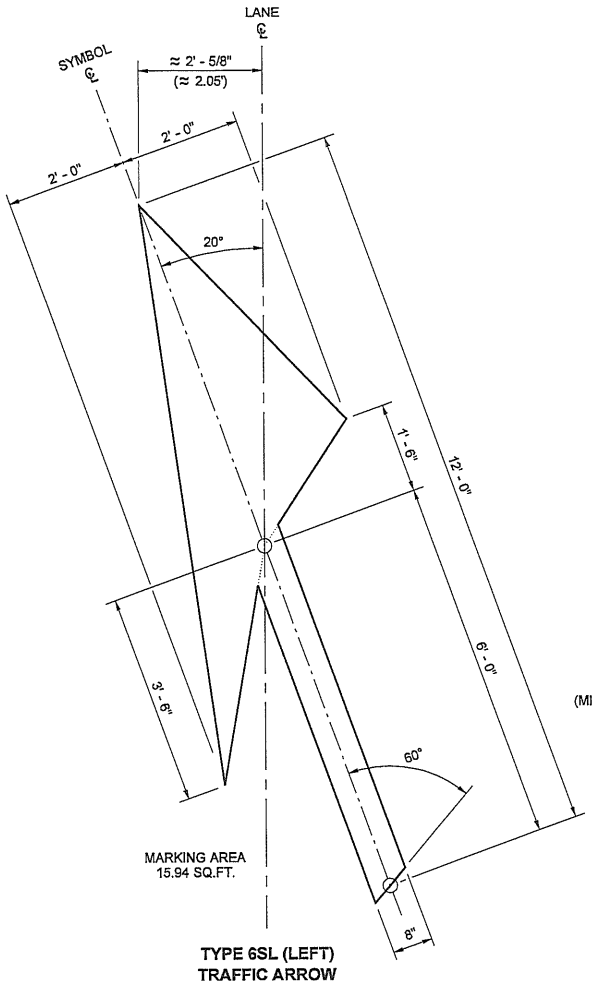
DRAWN BY: MARK SUJKA



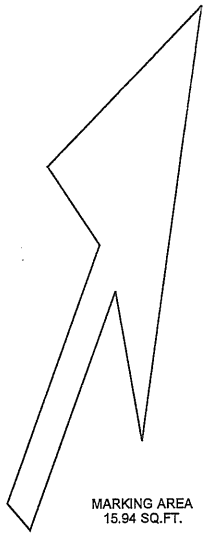
TYPE 7S TRAFFIC ARROW



TYPE 5 TRAFFIC ARROW

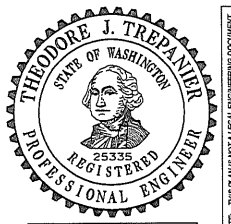


TYPE 6SL (LEFT) TRAFFIC ARROW



TYPE 6SR (RIGHT) TRAFFIC ARROW

MIRROR IMAGE OF TYPE 6SL (MIRRORED ABOUT LANE CENTERLINE) (SHOWN AT REDUCED SCALE)



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SYMBOL MARKINGS TRAFFIC ARROWS FOR LOW SPEED ROADWAYS

STANDARD PLAN M-24.40-01

SHEET 2 OF 2 SHEETS

APPROVED FOR PUBLICATION

Harold J. Peterfeso 05-31-06

STATE DESIGN ENGINEER — DATE

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