

LEGEND

- 1. 1/2" STAINLESS STEEL NUT WITH LOCK WASHERS (STAINLESS STEEL OR BRONZE).
- 2. 9" CABLE SADDLE (BRONZE), PAINTED GREEN, TO FIT 1/4" TO 1/2" SPAN WIRE.
- 3. SPAN WIRE.
- 4. 1/2" 'J' CABLE CLAMPS (STAINLESS STEEL).
- 5. BRONZE BALANCE ADJUSTER DIRECTIONAL LOCK. PAINTED GREEN. WITH STAINLESS STEEL BOLTS AND WASHERS.
- 6. 5/8" PINS (STAINLESS STEEL) WITH BRASS OR STAINLESS STEEL COTTER PIN. INSTALL BRASS OR STAINLESS STEEL WASHERS ON EACH SIDE OF COTTER
- 7. BRONZE ENTRANCE FITTING, PAINTED GREEN.
- 8. 1-1/2" INSULATED CHASE NIPPLE.
- 9. 1-1/2" GALVANIZED DROP PIPE PAINTED SILVER. SEE NOTÉ BELOW. BOTTOM THREADS TO ACCOMODATE FULL NUT AND LOCKING WIRE.
- 10. 1-1/2" MALLEABLE LOCK NUT-JAM TIGHT BEFORE INSTALLING HEAD.
- 11. (NON-CORROSIVE) SERRATED LOCKING WASHER.
- 12. SERRATED LOCKING WASHER (MAY BE OMITTED IF THE TOP OF THE VEHICLE HEAD IS SERRATED).
- 13. SIGNAL HEAD WITH AUTOCAULKING IN LOCKING HOLES AT TOP OF THE VEHICLE HEAD.
- 14. 1-1/2" DIAMETER FLAT CORK GASKET. (NEOPRENE OK)
- 15. 1-1/2" NON-CORROSIVE SLIP RING.
- 16. 1-1/2" MALLEABLE NUT.
- 17. SAFETY LOCKING WIRE, #14TW OR EQUAL.
- 18. NUT (NO GASKET).
- 19. PINNACLE (NO WASHER) BOTTOM OF LOWEST SECTION.
- 20. 1-1/2" GALVANIZED 90° ELBOW, PAINTED GREEN.
- 21. STAINLESS STEEL SET SCREW WITH HEX HEAD.
- 22. 1-1/2" GALVANIZED NIPPLE, PAINTED GREEN.
- 23. TWO-WAY HOUSING WITH BOTTOM COVER, PAINTED. GREEN.

NOTE:

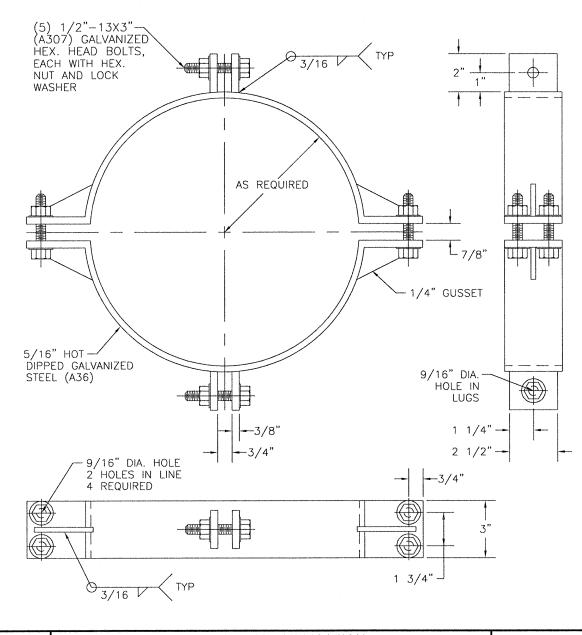
ALL METAL THREADS AND BRACKETS SHALL BE PAINTED WITH A HIGH QUALITY RUST PREVENTATIVE PAINT. A COAT OF GALVANIZED BONDING PRIMER SHALL BE APPLIED AND THOROUGHLY DRY BEFORE APPLYING FINISH COAT OF PAINT. ANY PAINTED HARDWARE DAMAGED DURING ASSEMBLY OR SHIPPING SHALL BE PAINTED AGAIN.

CITY OF TACOMA **DEPARTMENT OF PUBLIC WORKS** CITY ENGINEER 2/4/03

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VEHICLE TRAFFIC SIGNAL (SINGLE & MULTIPLE) HANGER ASSEMBLY

STANDARD PLAN NO.



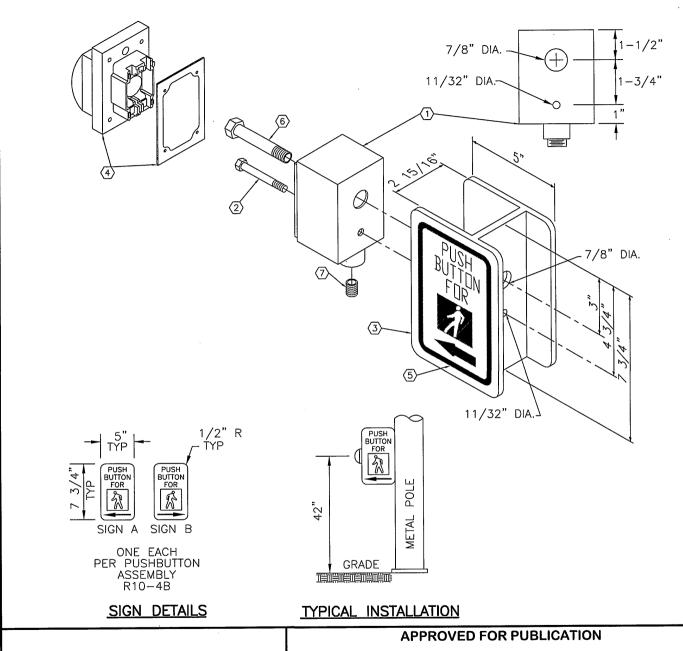
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CITY ENGINEER DATE 2/4/03

SPAN WIRE STRAIN CLAMP

STANDARD PLAN NO.



CITY ENGINEER

CONSTRUCTION NOTES

- (1) FD-1-50-A CAST ALUMINUM BOX
- 5/16 INCH STAINLESS HEX BOLT WITH LOCK WASHER. DRILL & TAP POLE FOR 5/16 INCH STAINLESS STEEL BOLT.
- (3) H-TYPE EXTRUDED ALUMINUM OR FABRICATED APPROVED EQUAL
- BUTTON, PLATE, STAINLESS STEEL FASTENERS & GASKET. PUSHBUTTON MECHANISM MUST HAVE MINIMUM OF 1/8 INCH OVER TRAVEL. REES #1371-412 OR APPROVED EQUAL.
- SIGN TO BE SCREENED ON BOTH FACES OF EXTRUDED ALUMINUM OR ON SEPARATE PANELS
- (6) 1/2 INCH CHASE NIPPLE W/NPT
- 7 1/2 INCH ALUMINUM PLUG (DRILL 1/8 INCH DRAIN HOLE)

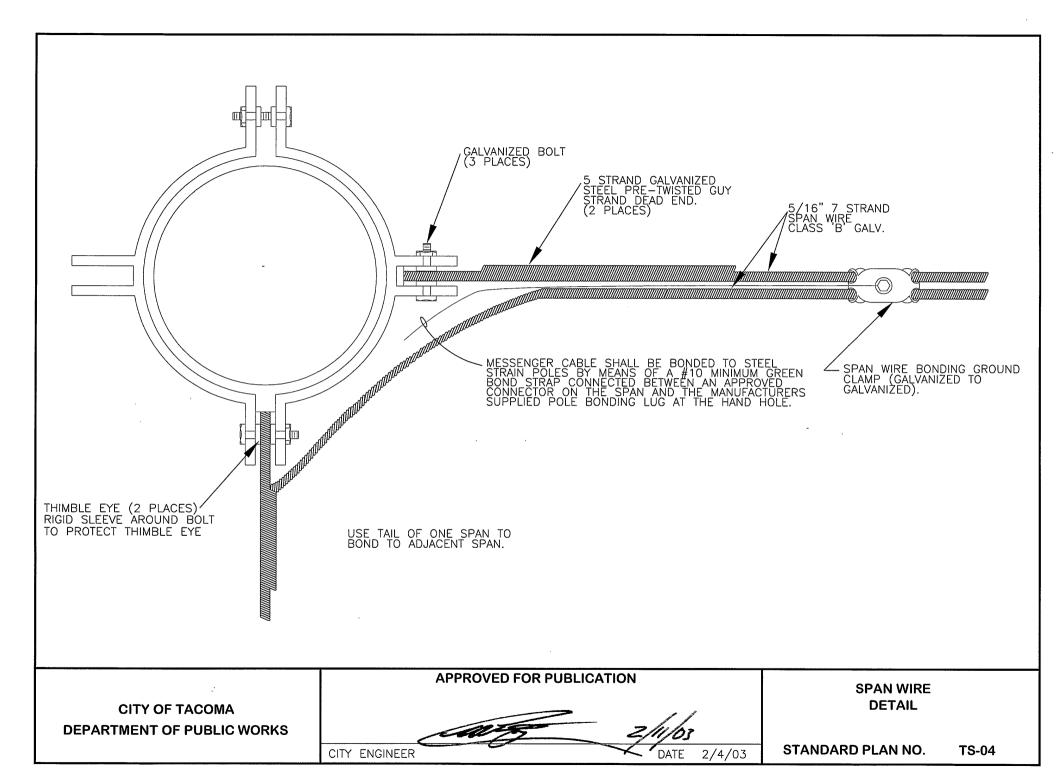
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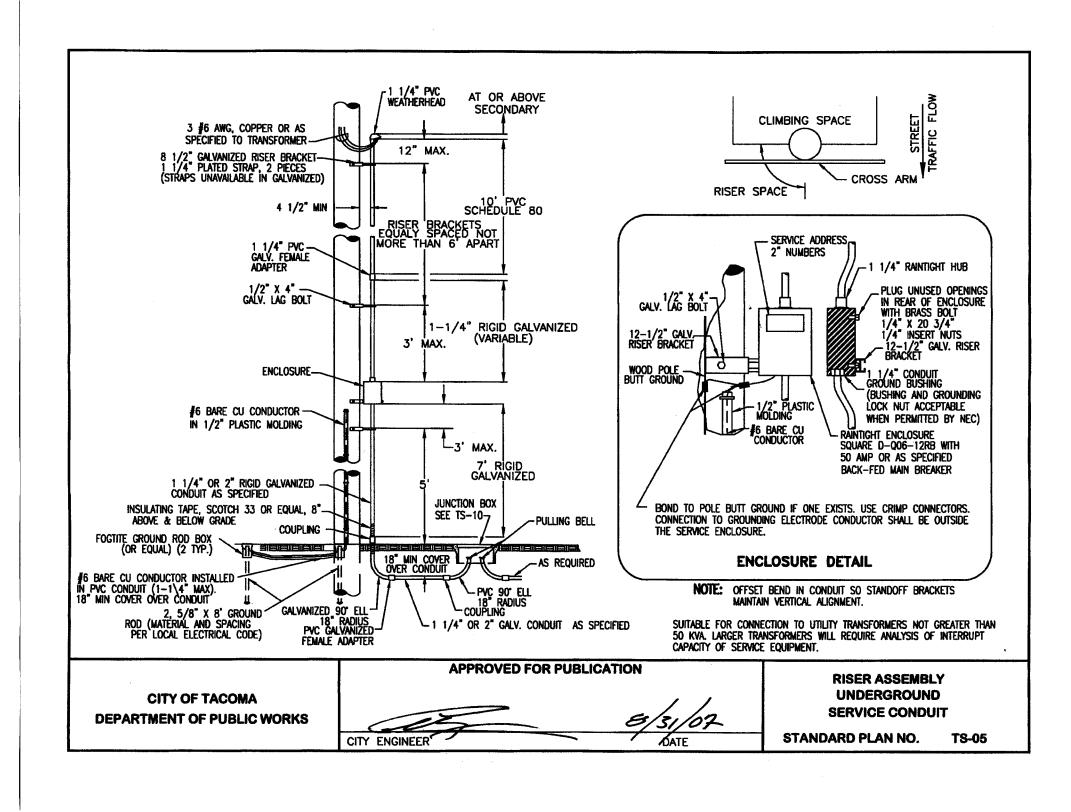
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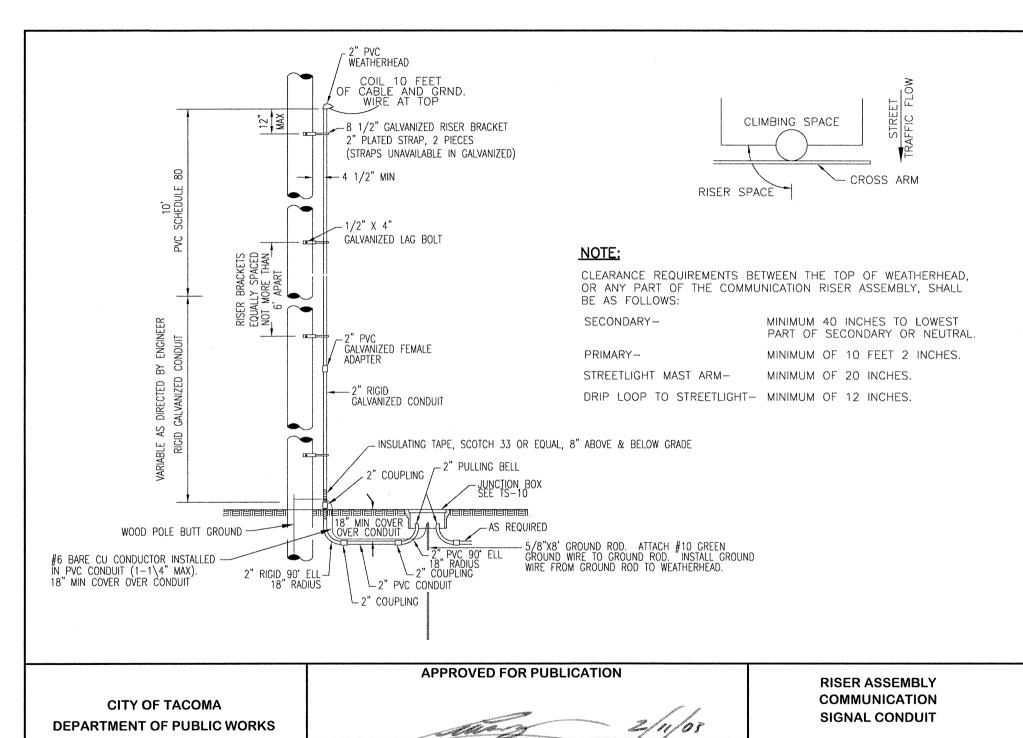
STANDARD PLAN NO.

H-TYPE PEDESTRIAN PUSHBUTTON

ASSEMBLY





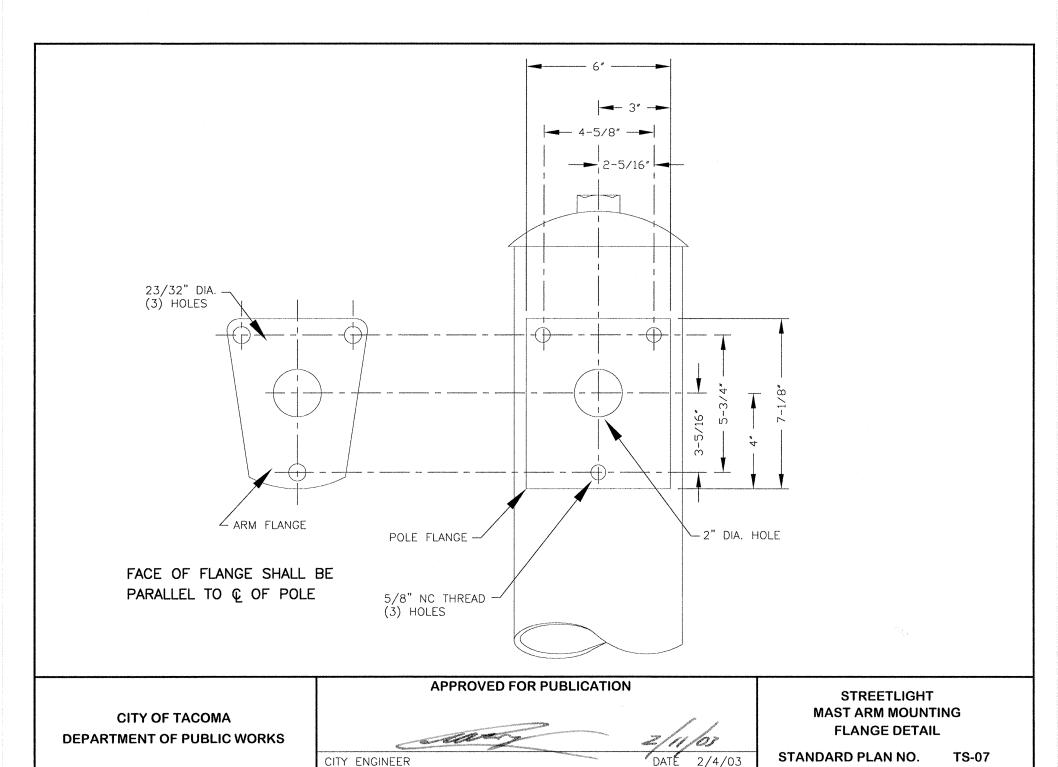


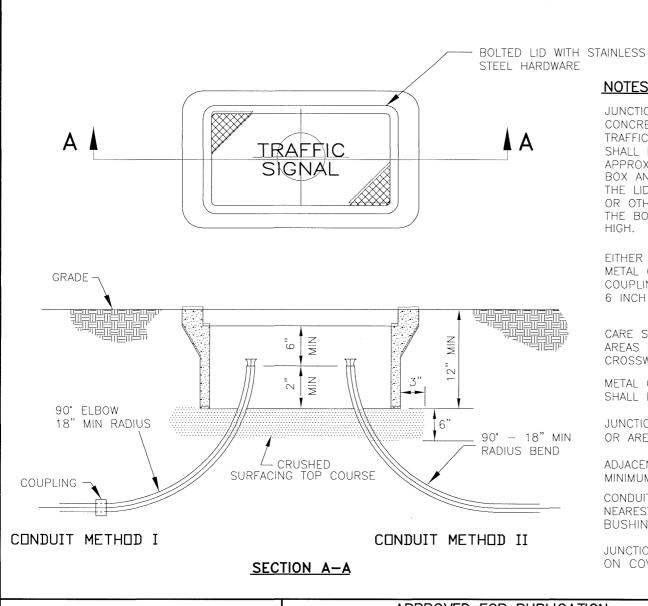
CITY ENGINEER

STANDARD PLAN NO.

DATE

2/4/03





NOTES:

JUNCTION BOXES SHALL BE CONCRETE WITH LOCKING POLYMER CONCRETE OR CAST-IRON LIDS. LIDS SHALL BE RATED FOR TRAFFIC AND SHALL HAVE A NONSKID SURFACE. THE LIDS SHALL HAVE AN EDGE THICKNESS OF 1-3/4" AND BE APPROXIMATELY 10-1/8" x 15-1/4" FOR A STANDARD JUNCTION BOX AND $13-1/8" \times 22-1/8"$ FOR A LARGE JUNCTION BOX. THE LID SHALL BE MARKED "TRAFFIC SIGNAL", "STREETLIGHTING", OR OTHER DESIGNATION AS CALLED FOR ON THE PROPOSAL. THE BODY OF THE BOX SHALL BE A MINIMUM OF 12 INCHES HIGH.

EITHER METHOD SHOWN IS ACCEPTABLE FOR PLASTIC OR METAL CONDUIT. IF PIPE BENDER IS NOT AVAILABLE USE COUPLING AND STANDARD 90° BEND. BOX SHALL SET ON A 6 INCH CRUSHED SURFACING TOP COURSE FOR DRAINAGE.

CARE SHALL BE TAKEN TO PLACE JUNCTION BOXES OUT OF AREAS HEAVILY USED BY PEDESTRIANS, ESPECIALLY NEAR CROSSWALKS AND CORNERS.

METAL COVERS SHALL BE GROUNDED. GROUND CONNECTION SHALL BE MINIMUM 24" LONG.

JUNCTION BOXES SHALL NOT BE PLACED IN CURB RAMPS OR AREAS SUBJECT TO VEHICULAR TRAFFIC.

ADJACENT JUNCTION BOXES SHALL BE SEPARATED BY A MINIMUM OF THREE (3) INCHES.

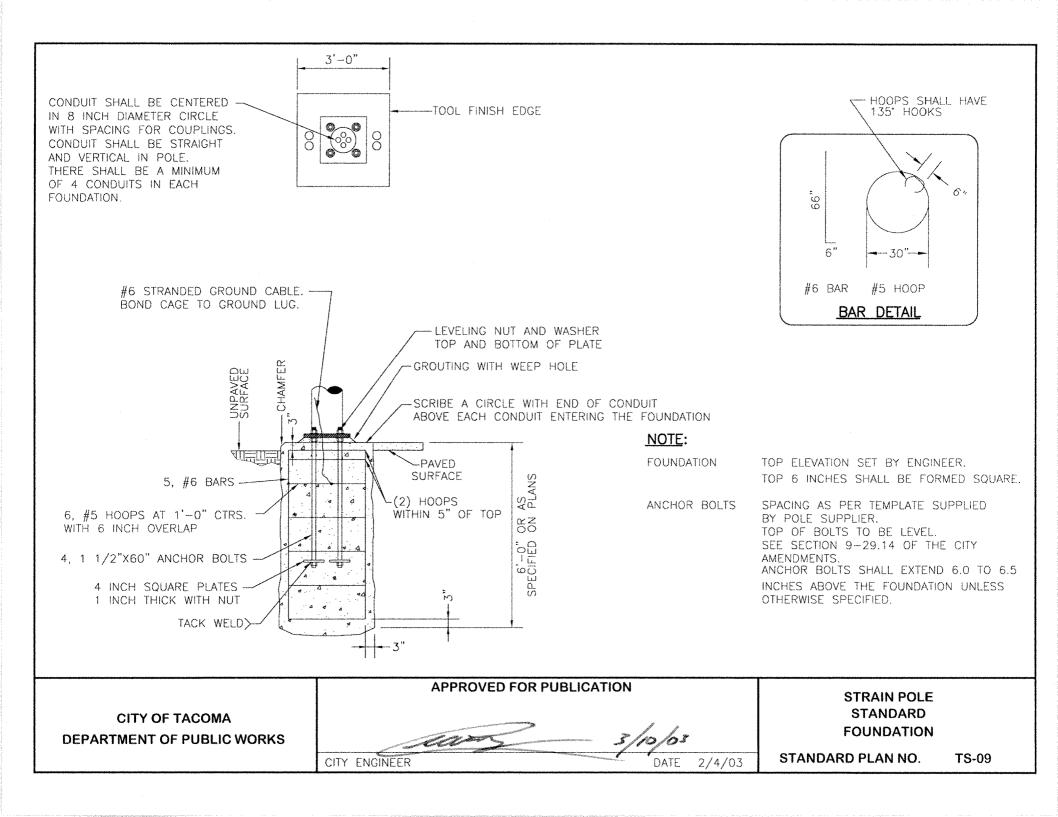
CONDUIT SHALL BE PLACED WITHIN 3" OF THE BOX WALL NEAREST ITS ENTRY LOCATION. INSTALL PULLING BELLS OR BUSHINGS ON CONDUIT ENDS.

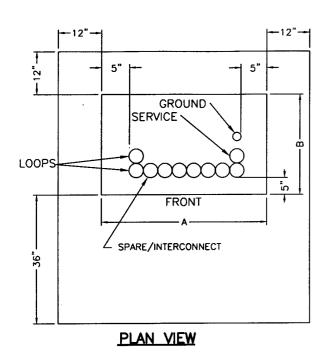
JUNCTION BOXES SHALL BE RATED FOR 8000 POUND LOAD ON COVER.

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JUNCTION BOX **INSTALLATION** TYPICAL

STANDARD PLAN NO. TS-08



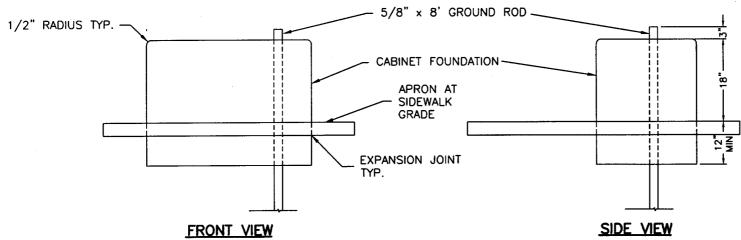


M-CABINET FOUNDATION A=32", B=19"

P-CABINET FOUNDATION A=46", B=28"

NOTES:

- CONDUIT SHALL HAVE MINIMUM 18" RADIUS BENDS.
- 2. CONDUITS SHALL EXTEND 1" ABOVE TOP OF BASE. INSTALL PULLING BELLS ON CONDUIT ENDS.
- CONDUITS TO BE INSTALLED PER ENGINEER'S INSTRUCTIONS.
- 4. 15 FEET OF SLACK CABLE SHALL BE PROVIDED AT THE CONTROLLER END OF ALL CABLES TERMINATING IN THE CONTROLLER CABINET.
- 5. CABINET ANCHORS SHALL BE EXPANSION ANCHORS (5/8" x 4-1/2").
- 6. 4" THICK CONCRETE APRON SHALL EXTEND 12" AROUND REAR AND SIDES AND 36" IN FRONT. INSTALL EXPANSION JOINT BETWEEN FOUNDATION AND APRON.

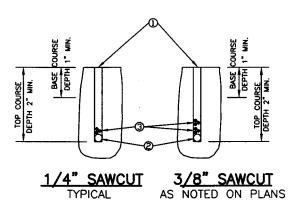


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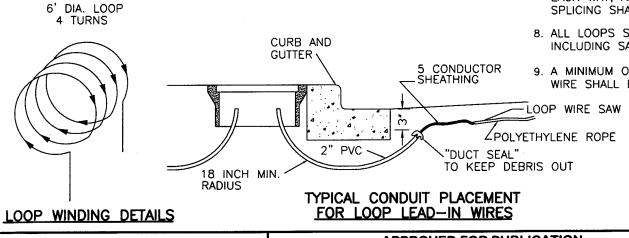
9/14/04 DATE FOUNDATION & APRON FOR "M" AND "P" CONTROLLER CABINETS

STANDARD PLAN NO. TS-10



NOTES:

- n SEALANT CRAFTCO 34271 OR EQUAL TO WITHIN 1/4 INCH OF THE SAWCUT. DO NOT OVERFILL.
- @ TWISTED POLYETHYLENE ROPE (SIZE FOR SNUG FIT).
- 3 LOOP WIRE #12 USE STRANDED COPPER CONDUCTOR (SEE LOOP WINDING DETAIL) OR LEAD-IN WIRES #18 STRANDED TINNED COPPER CONDUCTOR: ONE PAIR FOR EACH LOOP SERVED, 2 PAIRS MAX. PER SAWCUT.



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ABOUT 12 INCHES FROM CURB.

2. LEAD-IN CUT SHALL BE THE SAME AS LOOP CUT EXCEPT AS INDICATED ON THE PLANS. IN THE LAST 12 TO 18 INCHES FROM THE GUTTER SECTION THE CUT SHALL GRADUALLY TRANSITION TO A FULL DEPTH CUT WHERE THE CONDUIT STUBS OUT UNDER THE CURB AND GUTTER. THIS WILL ALLOW THE LEAD-IN WIRE TO EXIT THE CONDUIT AND ENTER THE SAW CUT WITH NO SHARP EDGES.

1. CHANGE FROM 2 INCH CUT TO APPROXIMATELY A 4 INCH CUT AT

3. METHOD SAME FOR CONCRETE OR ASPHALT PAVEMENTS.

CONSTRUCTION NOTES:

- 4. INSTALL 5 CONDUCTOR CABLE SHEATHING OVER INDIVIDUAL PAIRS. EXTEND 6 INCHES INTO SAWCUTS AND 6 INCHES INTO CONDUIT. LEAVE SLACK AS DIRECTED BY ENGINEER.
- 5. ALL SAWCUTS SHALL BE CLEANED WITH A HIGH PRESSURE WASHER AND DRIED WITH 100 PSI MINIMUM AIR PRESSURE. ALL WASH WATER AND SLURRY SHALL BE VACCUMED UP AND PROHIBITED FROM LEAVING THE IMMEDIATE CUT AREA.
- 6. ONLY THOSE LOOPS THAT CAN BE COMPLETELY FINISHED, HAVING LOOP WIRE, ROPE AND SEALANT INSTALLED, IN ONE WORKING DAY, SHALL BE SAW-CUT IN THAT WORKING DAY. NO CONTINUOUS TRAFFIC SHALL BE ALLOWED TO TRAVEL OVER OPEN SAW-CUTS BEFORE LOOP WIRE, ROPE AND SEALANT HAVE BEEN INSTALLED. ALL ROADWAY SURFACES SHALL BE THOROUGHLY CLEANED UPON COMPLETION OF ANY LOOP WORK.
- 7. LOOP SPLICING PROCEDURE SHALL BE TO TWIST THE WIRE, SOLDER IT, WRAP WITH ELECTRICIAN'S TAPE TO 4 INCHES PAST THE SPLICE EACH WAY, AND COAT WITH MOISTURE-RESISTANT VARNISH. LOOP SPLICING SHALL BE PERFORMED BY CITY OF TACOMA CREWS.
- 8. ALL LOOPS SHALL BE COMPLETELY INSTALLED BY THE CONTRACTOR INCLUDING SAW-CUTTING, LAYING WIRE, TESTING AND SEALANT.
- 9. A MINIMUM OF THREE (3) FEET OF SLACK LOOP WIRE OR LEAD-IN WIRE SHALL BE LEFT AT JUNCTION BOX.

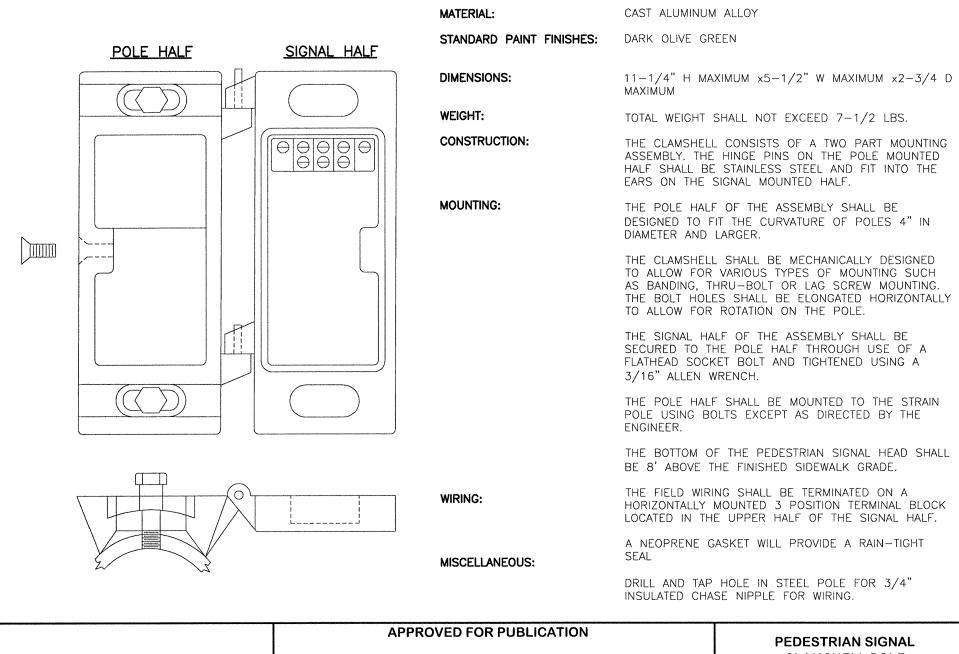
LOOP WIRE SAW CUT

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INDUCTION LOOP **DETAILS**

CITY FNGINEER

STANDARD PLAN NO.



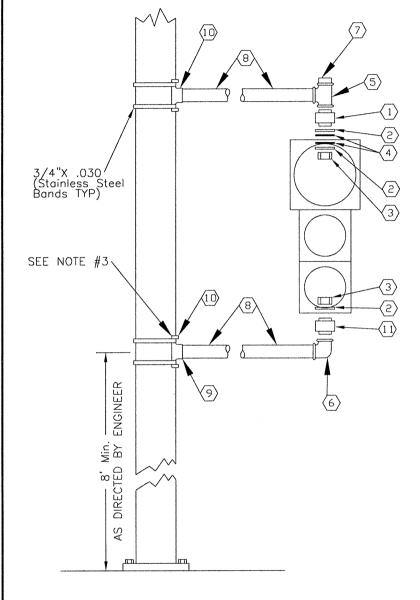
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DEPARTMENT OF PUBLIC WORKS

CITY ENGINEER

2/12/03

CLAMSHELL POLE MOUNTING DETAIL

STANDARD PLAN NO.



NOTES:

- ALL METAL THREADS SHALL BE PAINTED WITH A HIGH QUALITY RUST PREVENTATIVE PAINT AND DRIED BEFORE ASSEMBLY. AFTER ASSEMBLY, A COAT OF GALVANIZED BONDING PRIMER PAINT SHALL BE APPLIED (AND THOROUGHLY DRY BEFORE PAINTING). COMPLETE BRACKET ASSEMBLY SHALL HAVE A FINISH COAT OF EXTERIOR QUALITY GREEN PAINT. ANY PAINTED HARDWARE DAMAGED DURING ASSEMBLY OR SHIPPING SHALL BE PAINTED AGAIN.
- 2. ALL TEES AND ELBOWS SHALL BE MADE FLAT AND LEVEL AT CONTACT POINTS, FOR WATERTIGHT SEAL.
- THE BOTTOM BRACKET FLANGE ON A STEEL POLE SHALL HAVE A 5/16" X 3/4" FLATHEAD BRASS OR BRONZE SCREW LOCATED IN THE TOP OF THE FLANGE. THE SCREW SHALL BE TAPPED INTO THE CENTERLINE OF THE POLE BEFORE BANDING.

LEGEND:

- 1-1/2" GALVANIZED NIPPLE TO PROVIDE FULL NUT, (REAMED AND PRIMED) WITH 1" LONG PIECE OF PVC CONDUIT USED
- AND PRIMED) WITH 1 LONG PIECE OF PVC CONDUIT OF AS SPACER.

 1-1/2" DIAMETER NON-CORROSIVE SLIP RING.

 1-1/2" MALLEABLE NUT, NON-CORROSIVE

 1-1/2" DIAMETER FLAT CORK GASKET. (NEOPRENE OK)

 1-1/2" GALVANIZED TEE.

 1-1/2" GALVANIZED ELBOW.

- GALVANIZED PLUG. FOR STEEL OR WOOD POLES 1-1/2" GALVANIZED NIPPLE 12" LONG.
- FOR CONCRETE POLES, SEE CONCRETE POLE MOUNTING DETAIL.
 DRILL AND TAP HOLE IN STEEL POLE FOR 3/4" INSULATED
 CHASE NIPPLE FOR WIRING.
- ALUMINUM POLE FLANGE. SEE NOTE #3.
 1-1/2" GALVANIZED NIPPLE TO PROVIDE FULL NUT, (REAMED AND PRIMED) WITH 3" LONG PIECE OF PVC CONDUIT USED AS SPACER.

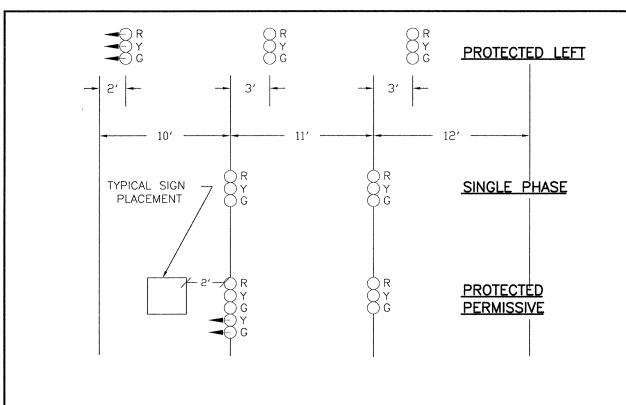
STEEL POLE

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CITY ENGINEER

DATE 2/4/03 **VEHICLE SIGNAL HEAD POLE MOUNT** DETAIL

STANDARD PLAN NO.

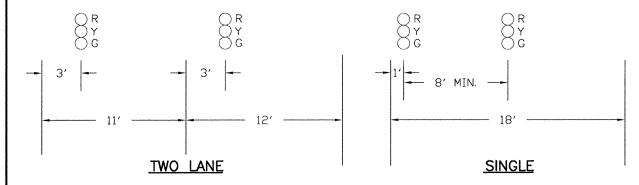


NOTE:

THIS STANDARD DEPICTS A
VEHICLE HEAD PLACEMENT AS IT
RELATES TO THE LANE LINES ON
THE APPROACH TO THE GIVEN
HEADS.

SIGNAL HEADS MUST BE LEVELED TO SPEC FROM A POINT 80 FEET FROM THE STOP BAR.

OVERHEAD SIGNS SHALL BE PLACED 2 FEET FROM VEHICLE HEAD.



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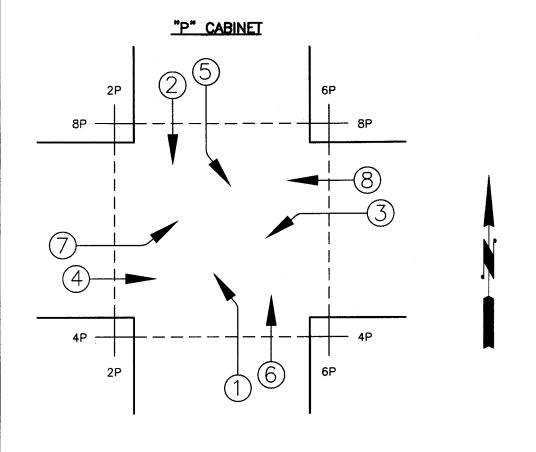
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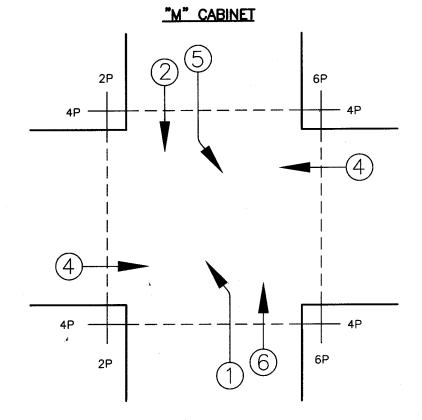
STANDARDS FOR SIGNAL PLACEMENT

STANDARD PLAN NO.

TS-14

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PEDESTRAIN SIGNAL WIRING

RED N/S — DW
GREEN N/S — WK
ORANGE E/W — DW
BLACK E/W — WK
WHITE NEUTRAL

PEDESTRAIN PUSH BUTTON WIRING

RED N/S GREEN SPARE ORANGE SPARE *BLACK E/W

WHITE COMM BETWEEN PUSH BUTTONS

*BLACK USED WHEN ONLY ONE PUSH BUTTON IS USED FOR CROSSING EITHER STREET.

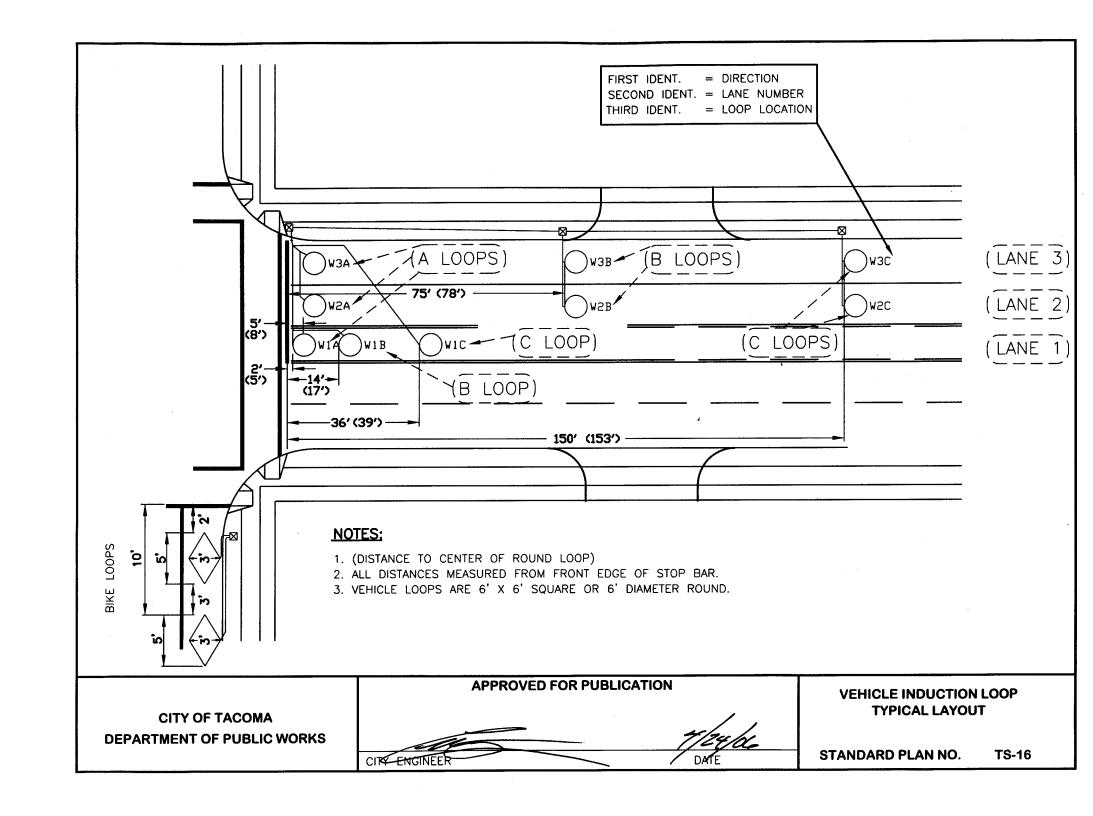
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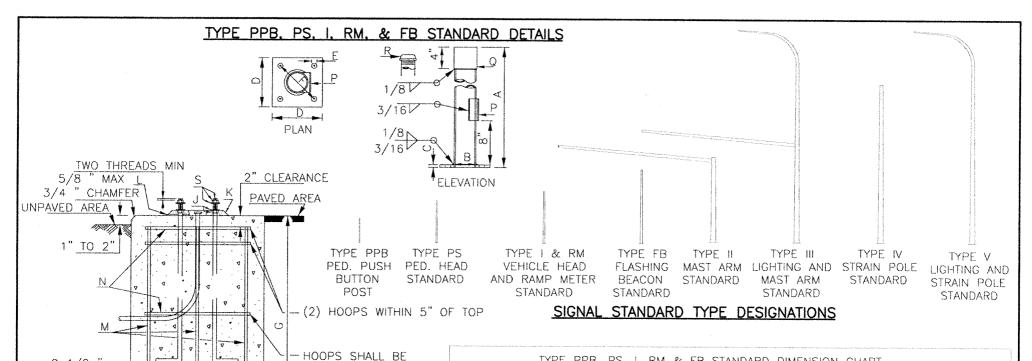
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CITY ENGINEER DATE

TRAFFIC SIGNAL PHASE ORIENTATION

STANDARD PLAN NO.





FOUNDATION DETAILS

H1 (SQUARE)

H2 (ROUND)

2 1/2 "

CLEARANCE

3" CLEARANCE

	ANCHOR BOLT, N	,	&		R	SIZ	ES			
MARK	STANDARD		DIMENSIONS							
S	TYPE PPB	4	name .	1/2	,,	DIA	×	- (market in a fig. , c) - of a	X	
S	TYPE PS & I	4	****	3/4	,,			30"		4"
S	TYPE FB & RM	3	****	3/4	**	DIA	X	30"	×	4"

TYPE PPB, PS, I, RM & FB STANDARD DIMENSION CHART												
MARK	ITEM	TYPE PPB	TYPE PS	TYPE	TYPE RM	TYPE FB						
Ā	HEIGHT	4"-6"	8'-0"	10'-0"	SHEET 2	SHEET 2						
В	POLE BASE DIA	2 1/2 "	*	*	*	*						
C	PLATE THICKNESS	1/2 "	1/2 "	1/2 "	SHEET 2	SHEET 2						
D	PLATE WIDTH	5"	9"	9"	SHEET 2	SHEET 2						
E	HOLE DIA	5/8 "	1	1"	SHEET 2	SHEET 2						
F	BOLT CIRCLE	4 1/2 "	8 1/2 "	8 1/2 "	SHEET 2	SHEET 2						
G	FOUNDATION DEPTH	1'-6"	3'-0"	3'-0"	3'-0"	3'-0"						
H1	FOUNDATION WIDTH	1'-6"	2'-0"		2'-0"	2'-0"						
H2	FOUNDATION DIA	2'-0"	2'-3"	2'-3"	2'-3"	2'-3"						
J	NUT & WASHER	FOUR 1/2	3/4"	3/4 "	3/4 "	3/4 "						
K	GROUT PAD THICKNESS	NONÉ	**	**	SHÉET 2	SHÉET 2						
L	PLASTIC DRAIN TUBE DIA	NONE	3/8 "	3/8 "	3/8 "	3/8 "						
M	VERTICAL RE-BAR	NONE	EIGHT #4			EIGHT #4						
N	HORIZ. RE-BAR HOOP	NONE	SIX #4	SIX #4	SIX #4	SIX #4"						
P	HANDHOLE SIZE	NONE	3-1/2"x4"	3-1/2"x4"	3-1/2"x4"	3-1/2"x4"						
Q	SLIPFITTER DIA (I.D.)	NONE	4"	4"	4"	4"						
R	CAP DIA	2 1/2 "	NONE	NONE	NONE	NONE						
R	CAP DIA	NONE	4" NONE	4" NONE	4" NONE	4"						

* TAPERED ROUND OR OCTAGONAL SHAFT, 11 GAGE, 4" OD AT SLIPFITTER WELD.

** LEVELING NUT HEIGHT 1" MAXIMUM.

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LEVELING NUTS NOT REQUIRED FOR TYPE PPB STANDARD

TAPER = 0.14 INCHES/FT.

CITY OF TACOMA

DEPARTMENT OF PUBLIC WORKS

CITY ENGINEER

PLACED 8" O.C.

135° HOOKS

HOOPS SHALL HAVE

3/10/03 DATE 2/4/03 SIGNAL STANDARD TYPE DESIGNATIONS AND TYPE PPB, PS, I, RM, & FB DETAILS

STANDARD PLAN NO.