

LEGEND

EXISTING	PROPOSED	
		VEHICLE SIGNAL HEAD
		PEDESTRIAN SIGNAL HEAD
		PEDESTRIAN PUSH BUTTON
		SIGNAL STANDARD, TYPE PS
		SIGNAL STANDARD, TYPE III
		TYPE 1 JUNCTION BOX, J-40.10-04
		TYPE 2 JUNCTION BOX, J-40.10-04
		TYPE 8 JUNCTION BOX, J-40.30-04
		VIDEO DETECTION CAMERA
		PREEMPTION DETECTOR/INDICATOR LIGHT
		CONDUIT
		CONTROLLER CABINET
		SERVICE CABINET
		SIGNAL-MOUNTED TRAFFIC SIGN
		CONSTRUCTION NOTE
		SIGNAL STANDARD NO. & NOTE
		WIRE NOTE

WRING SCHEDULE

CONDUIT RUN	CONDUIT SIZE	CONDUCTORS											REMARKS
		PED DETECT 2CS	EVP DETECT 3CS	EVP LIGHT 2CS	PED HEAD 3C	SIGNAL HEAD 5C	VIDEO DETECT CAT5e	VIDEO POWER CABLE	ILLUM #6	WIRELESS ANTENNA CAT5e	SERVICE #2	GROUND #6	
1	EX 2.5"	1			2	1	1	1	2			1	REPLACE EX CONDUCTORS
2	2.5"	1			2	1	1	1	2			1	EXTEND EX CONDUIT TO NEW JUNCTION BOX
3	2"	1			2							1	
4	3"		1	1		1	1	1	2	1		1	
5	2"								2			1	SEE ILLUMINATION PLANS
6	3"	2	1				2	2	2	1		1	
	3"			1	4	2			2			1	
7	EX 2.5"	2	1	1	4	2	2	2		1		1	REMOVE UNNECESSARY EX CONDUCTORS, OTHER EX CONDUCTORS TO REMAIN NOT SHOWN
8	2"								2			1	
9	EX 1.25"										3		
10	1.25"										3		EXTEND EX CONDUIT TO NEW SERVICE CABINET
11	EX 3"												EX UTILITY POWER CONDUCTORS REMAIN

NOTES:

- ALL NEW CONDUIT ROADWAY CROSSINGS SHALL BE SCHEDULE 80 PVC. SCHEDULE 40 PVC IS ALLOWABLE ELSEWHERE.
- WHERE EXISTING CONDUIT IS TO BE EXTENDED, CONTRACTOR IS RESPONSIBLE FOR VERIFYING CONDUIT TYPES AND SIZES PRIOR TO PROVIDING EQUIPMENT SUBMITTALS FOR REVIEW.
- ALL EQUIPMENT SHALL BE GROUNDED PER NEC AND 2024 WSDOT STANDARD SPECIFICATIONS 8-20.3(9). SEE WSDOT STD PLAN J-60.05-01 FOR SERVICE GROUNDING AND GROUNDING CONDUCTORS THROUGH CONDUITS AND JUNCTION BOXES. CONDUIT GROUND WIRE SHALL BE GREEN USE PER 2023 WSDOT STANDARD SPECIFICATIONS 9-29.3(2)A3.

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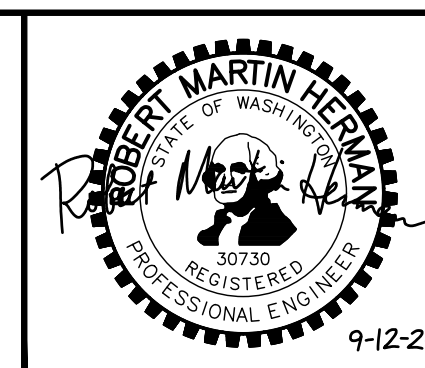
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DEVELOPMENT ENGINEERING

DATE _____

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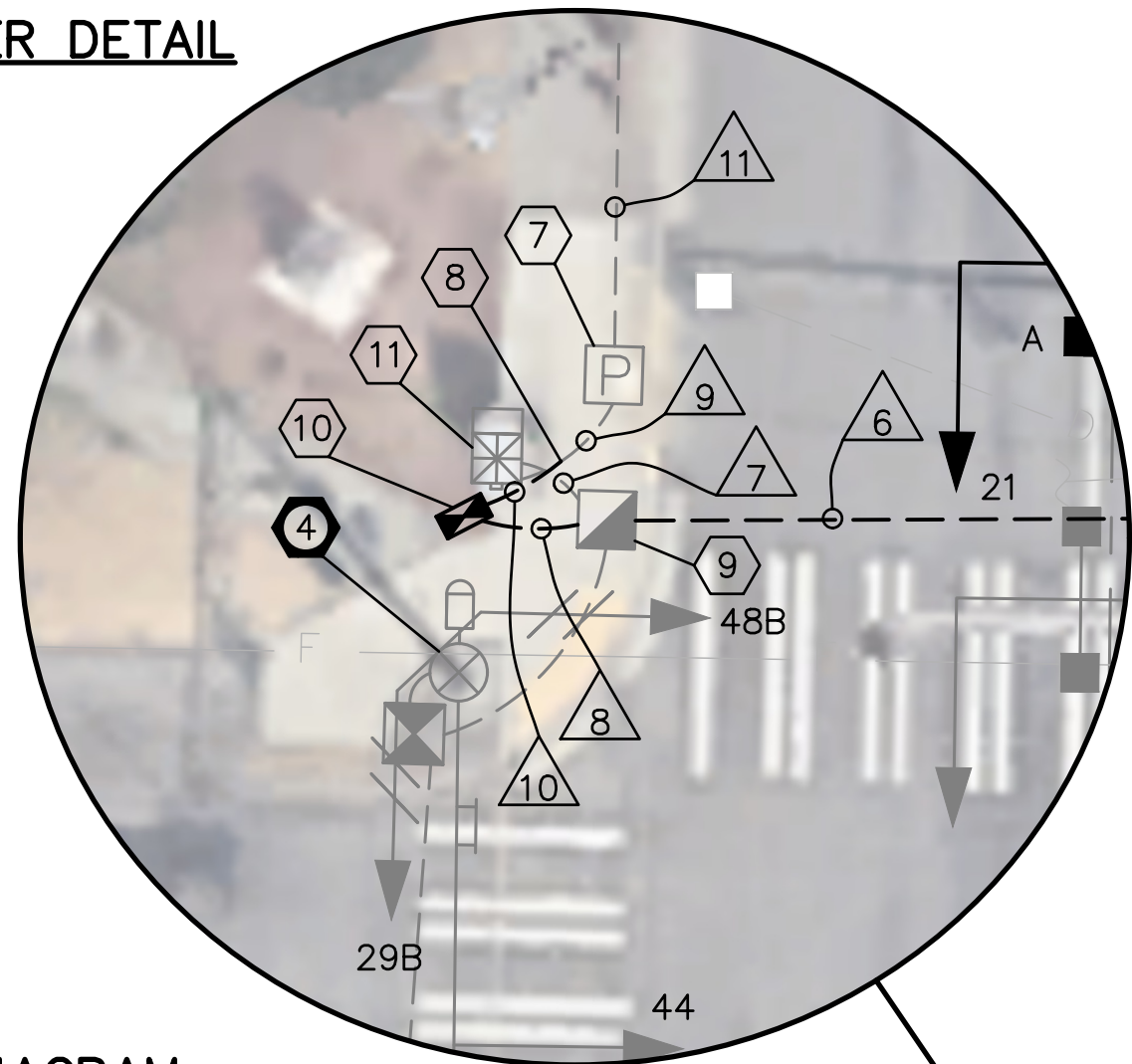


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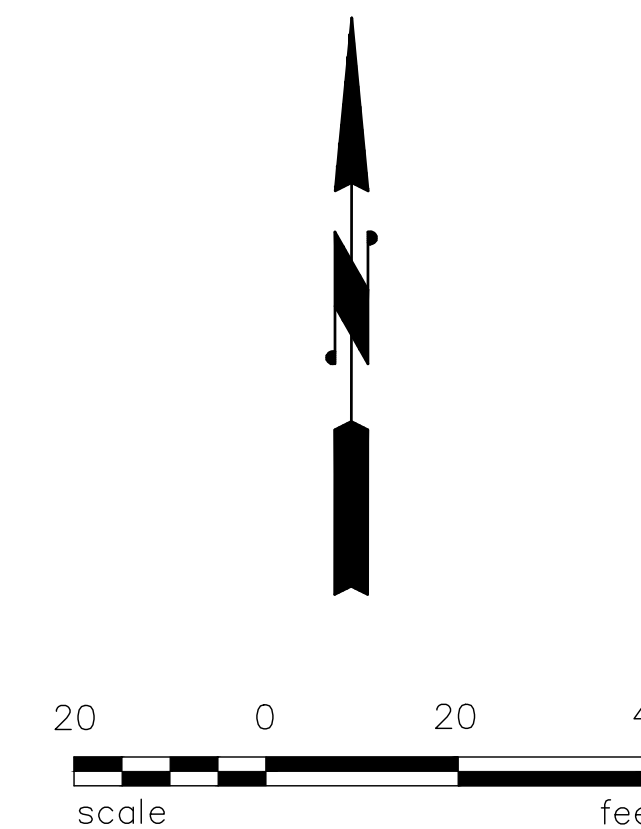
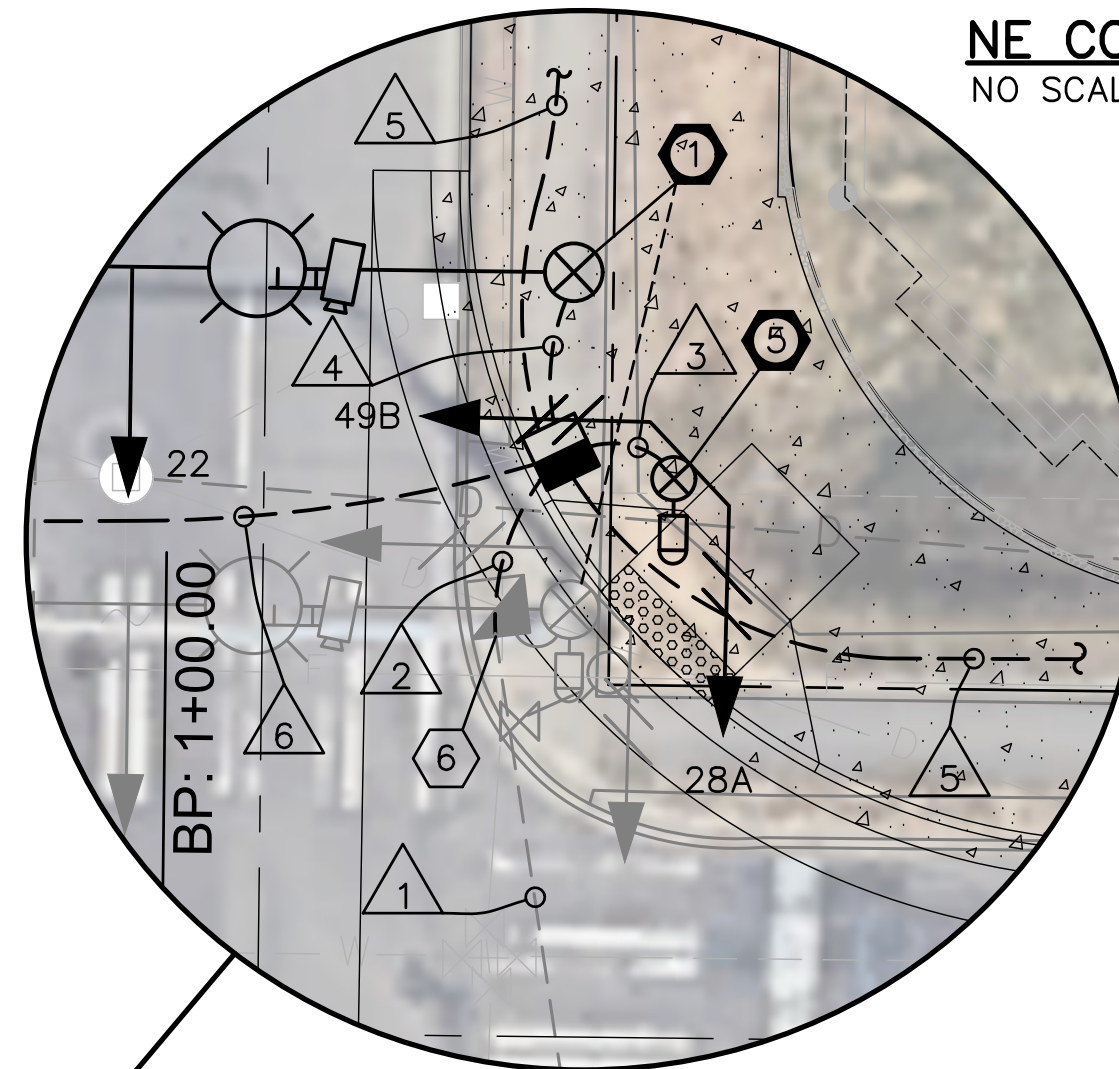
2ND STREET APARTMENTS
CITY OF PUYALLUP, WA
2ND ST. NE/5TH AVE. NE
TRAFFIC SIGNAL NOTES, LEGEND & SCHEDULES

TS1
SHEET 1 OF 7 SHEETS

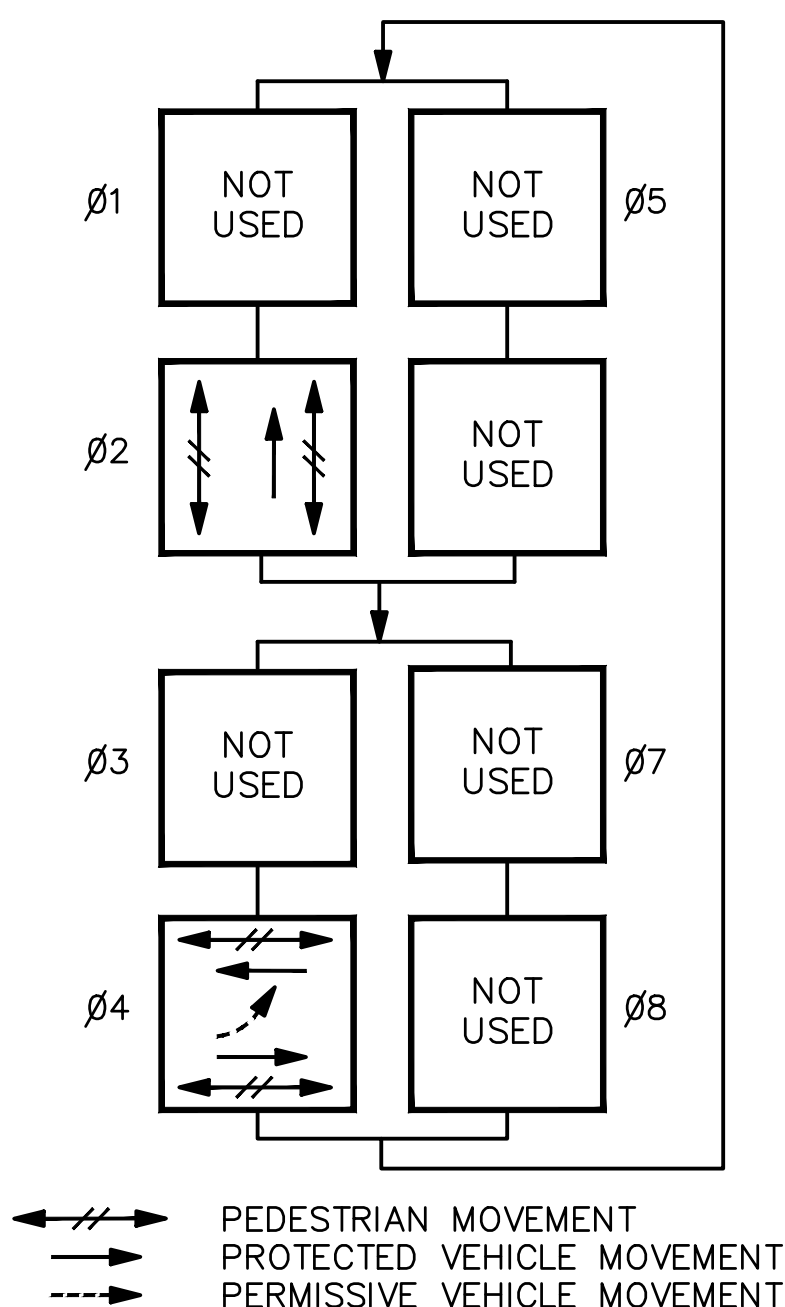
NW CORNER DETAIL
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NE CORNER DETAIL
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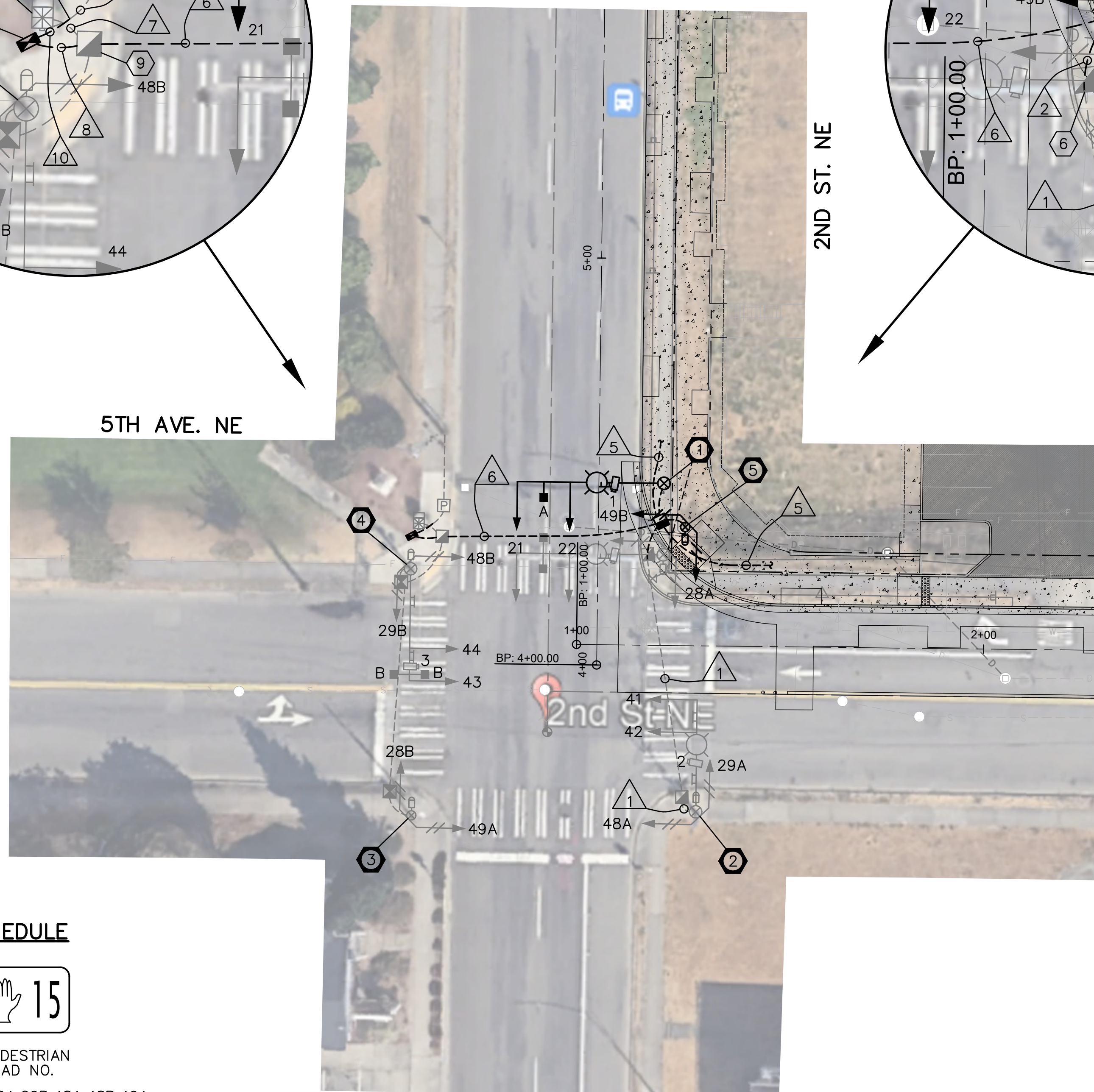


SIGNAL PHASING DIAGRAM



5TH AVE. NE

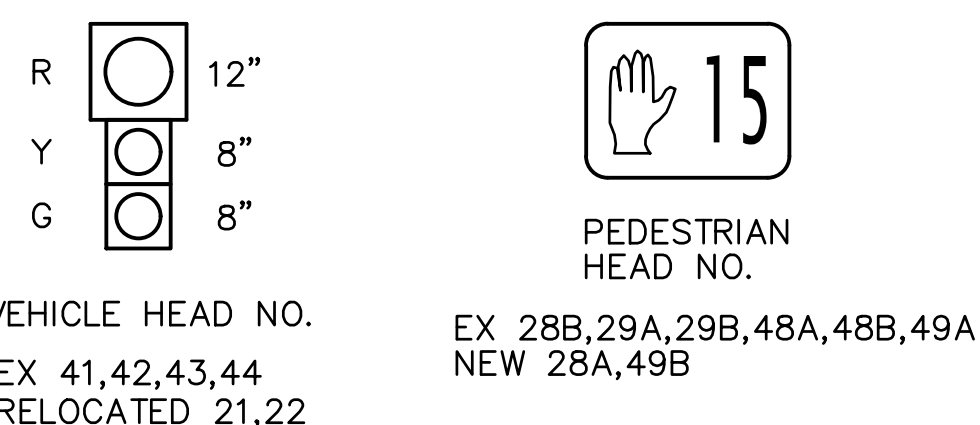
2ND ST. NE



CONSTRUCTION NOTES

1. CONSTRUCT FOUNDATION AND RELOCATE EXISTING TYPE III SIGNAL STANDARD, VEHICLE SIGNAL HEADS, EVP DETECTOR/INDICATOR LIGHT, VIDEO DETECTION CAMERA, ANTENNA, LUMINAIRE AND STREET NAME SIGN. USE WSDOT STANDARD PLAN J-26.10-03. REMOVE EXISTING PEDESTRIAN SIGNAL HEADS AND MOUNTING. INSTALL TERMINAL CABINET WHERE PEDESTRIAN HEADS WERE MOUNTED TO POLE. PLUG ANY REMAINING HOLES IN A WEATHERTIGHT MANNER. REMOVE EXISTING PEDESTRIAN PUSH BUTTON AND SALVAGE FOR RE-INSTALLATION. REMOVE EXISTING FOUNDATION TO TWO FEET BELOW GRADE. REMOVE EXISTING CONDUIT TO EXISTING JUNCTION BOX. REPLACE CONDUCTORS PER WIRING SCHEDULE.
2. INSTALL TERMINAL CABINET BELOW EXISTING PEDESTRIAN SIGNAL HEAD MOUNT. REPLACE ALL EXISTING CONDUCTORS IN SIGNAL STANDARD PER WIRING SCHEDULE, EXCEPT WIRING IN SIGNAL MAST ARM DOWN TO NEW TERMINAL CABINET.
3. NO CHANGES.
4. NO CHANGES.
5. CONSTRUCT FOUNDATION AND INSTALL TYPE PS SIGNAL STANDARD, PEDESTRIAN SIGNAL HEADS AND MOUNTING. RE-INSTALL PEDESTRIAN PUSH BUTTON REMOVED FROM SIGNAL STANDARD NO. 1. USE WSDOT STANDARD PLANS J-20.16-02, J-20.20-02 AND J-21.10-05.
6. REMOVE ALL EXISTING CONDUCTORS AND CONDUIT SWEEPS FROM JUNCTION BOX. REMOVE EXISTING JUNCTION BOX. EXTEND EAST LEG CONDUIT CROSSING TO NEW JUNCTION BOX. INSTALL NEW TYPE 8 JUNCTION BOX. BACKFILL VOID.
7. COORDINATE WITH SERVING ELECTRICAL UTILITY FOR SERVICE DISCONNECTION AND RE-CONNECTION.
8. REMOVE SIDEWALK PANEL. REMOVE EXISTING SERVICE ENTRANCE CONDUCTORS. INTERCEPT EXISTING SERVICE ENTRANCE CONDUIT AND EXTEND TO NEW ELECTRICAL SERVICE CABINET. INSTALL NEW SERVICE ENTRANCE CONDUCTORS. REPLACE SIDEWALK PANEL.
9. ROUTE NEW CONDUIT TO EXISTING JUNCTION BOX. REMOVE UNNECESSARY EXISTING CONDUCTORS. REMOVE CONDUIT SWEEPS FOR EXISTING NORTH LEG CROSSING. SPLICE NEW ILLUMINATION CONDUCTORS TO EXISTING ILLUMINATION CONDUCTORS FOR EXISTING 2ND ST. NE CIRCUIT.
10. CONSTRUCT FOUNDATION AT BACK OF SIDEWALK BETWEEN CONTROLLER CABINET FOUNDATION AND PATH TO PARK. INSTALL ELECTRICAL SERVICE CABINET. USE CITY OF PUYALLUP STANDARD DETAIL 01.05.05. ENSURE TWO GROUND WELLS ARE PROVIDED AND WIRED.
11. REPLACE ALL EXISTING FIELD CONDUCTORS FEEDING SIGNAL STANDARD NOS. 1 AND 2 PER WIRING SCHEDULE. PULLING IN NEW CONDUCTOR WILL REQUIRE LIFTING CONTROLLER CABINET DUE TO BASE CONFIGURATION.

SIGNAL DISPLAY SCHEDULE



SIGNAL DISPLAY NOTES:

1. ALL EXISTING VEHICLE SIGNAL HEADS SHALL BE REMAIN UNCHANGED. ALL RELOCATED VEHICLE SIGNAL HEADS SHALL USE EXISTING MOUNTINGS.
2. ALL EXISTING PEDESTRIAN SIGNAL HEADS SHALL REMAIN UNCHANGED, EXCEPT EXISTING 28A AND 49B SHALL BE REPLACED. ALL NEW PEDESTRIAN SIGNAL HEADS SHALL BE SOLID STATE LED COUNTDOWN TYPE WITH PORTLAND ORANGE HAND AND LUNAR WHITE MAN INDICATIONS AND Z-CRATE VISORS. USE TYPE C MOUNTING FOR NEW HEADS 28A AND 49B. USE STANDARD PLAN J-75.10-02.

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION, WSDOT STANDARD PLANS, CITY OF PUYALLUP STANDARD DETAILS, NATIONAL ELECTRICAL CODE, ALL CURRENT VERSIONS, AND AS MODIFIED BY PROJECT SPECIAL PROVISIONS.
2. ALL NEW JUNCTION BOXES SHALL BE ADA-COMPLIANT. JUNCTION BOXES SHALL NOT ENCROACH INTO CURB RAMP ENVELOPE.
3. SEE ILLUMINATION PLANS FOR PROJECT FRONTAGE LIGHTING. ALL SIGNAL AND ILLUMINATION WORK SHALL BE COORDINATED.
4. SHUT DOWNS OF TRAFFIC SIGNAL SYSTEM SHALL BE MINIMIZED. INTERSECTION SHALL BE OPERATED WITH OFF-DUTY UNIFORMED POLICE OFFICER ANY TIME TRAFFIC SIGNAL IS DARK.

PREEMPTION SCHEDULE

CIRCUIT	PHASE
A	2
B	4

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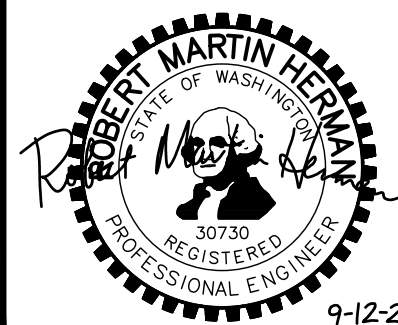
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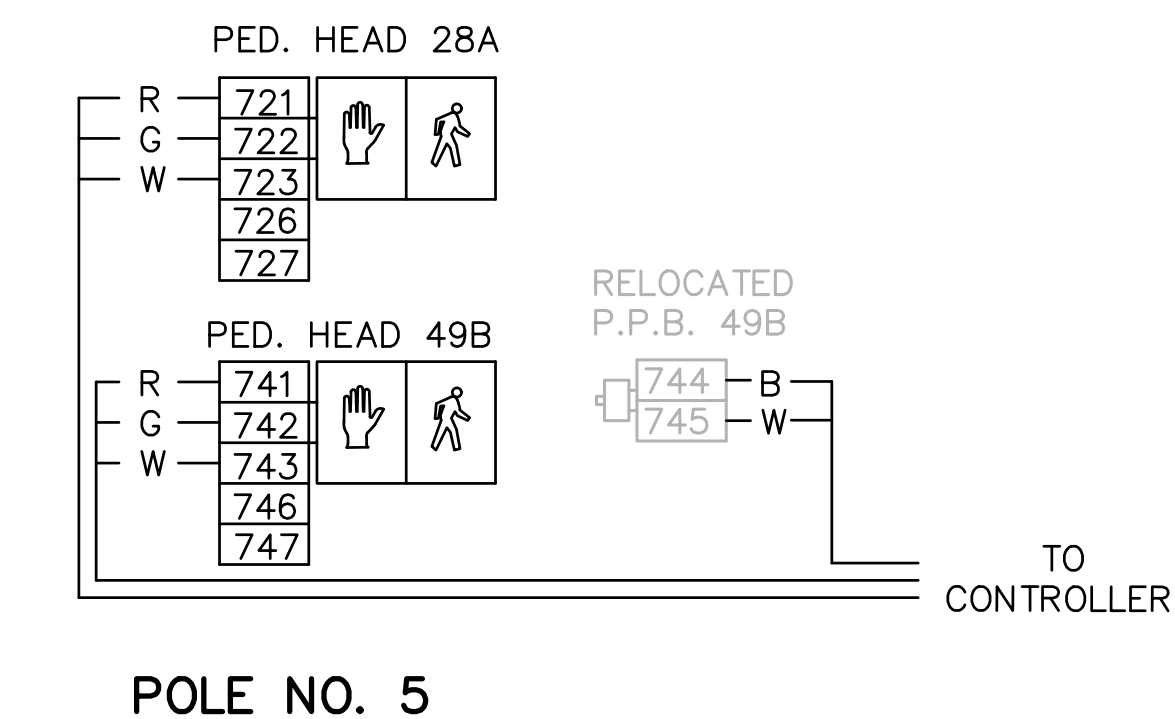
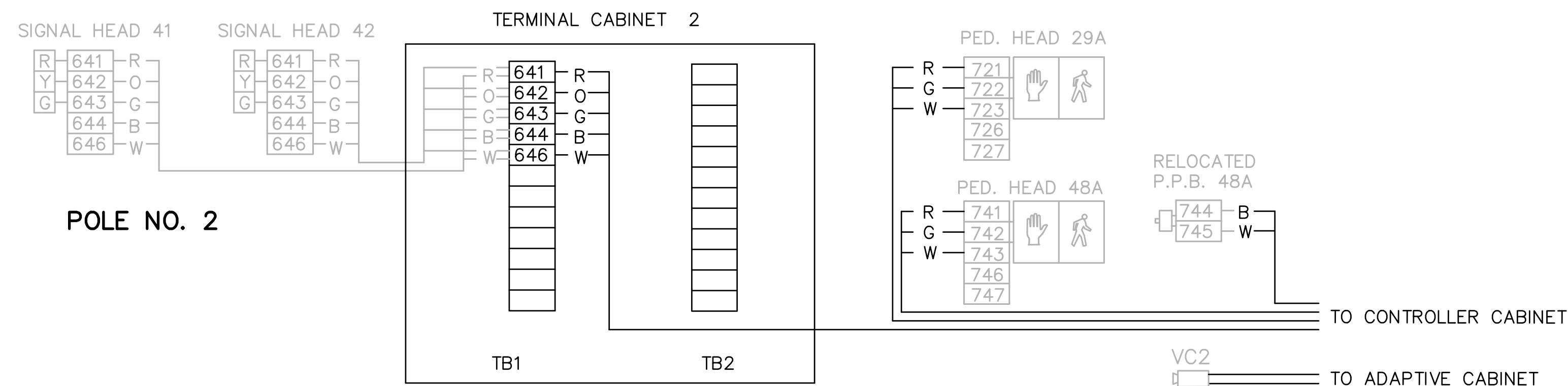
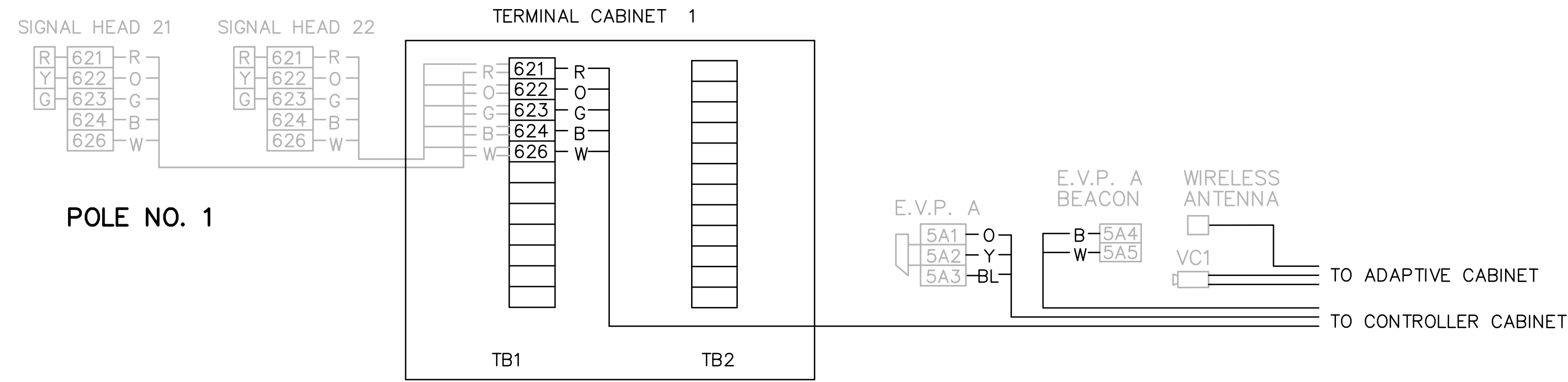
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2ND STREET APARTMENTS
CITY OF PUYALLUP, WA
2ND ST. NE/5TH AVE. NE
TRAFFIC SIGNAL SYSTEM MODIFICATION PLAN

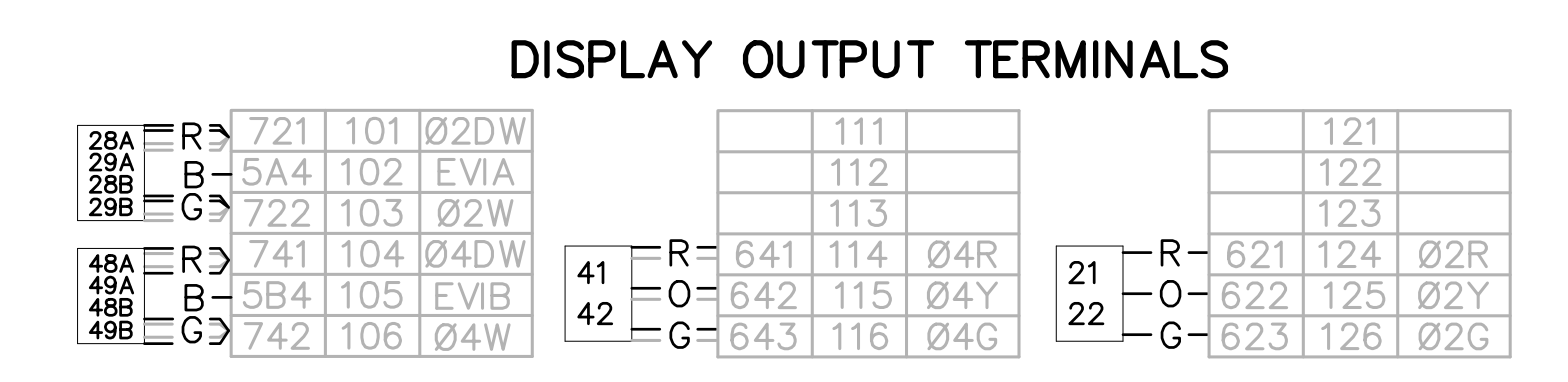
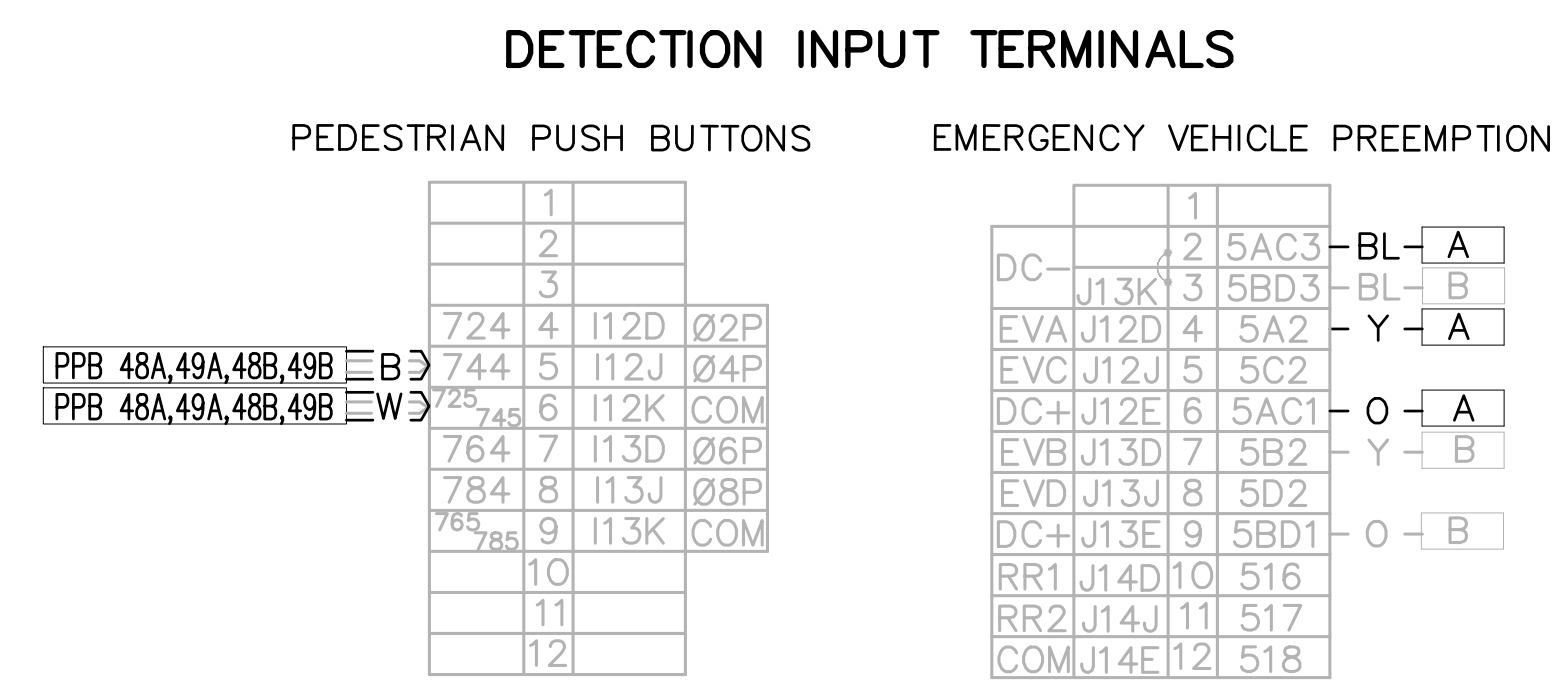
TS2
SHEET 2 OF 7 SHEETS

FIELD WIRE TERMINATIONS

CONTROLLER TERMINATIONS



NOTES:
 1. ONLY SIGNAL STANDARDS BEING MODIFIED ARE SHOWN.
 2. EXISTING FEATURES ARE SHOWN IN HALF-TONE LINETYPE. NEW FEATURES ARE SHOWN IN SOLID LINETYPE.



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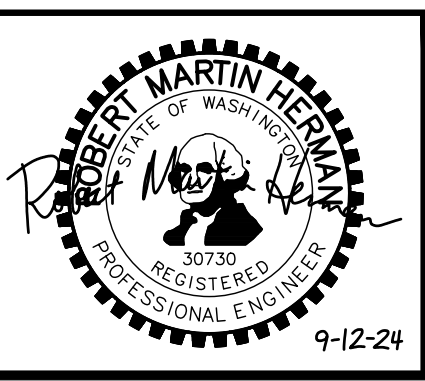
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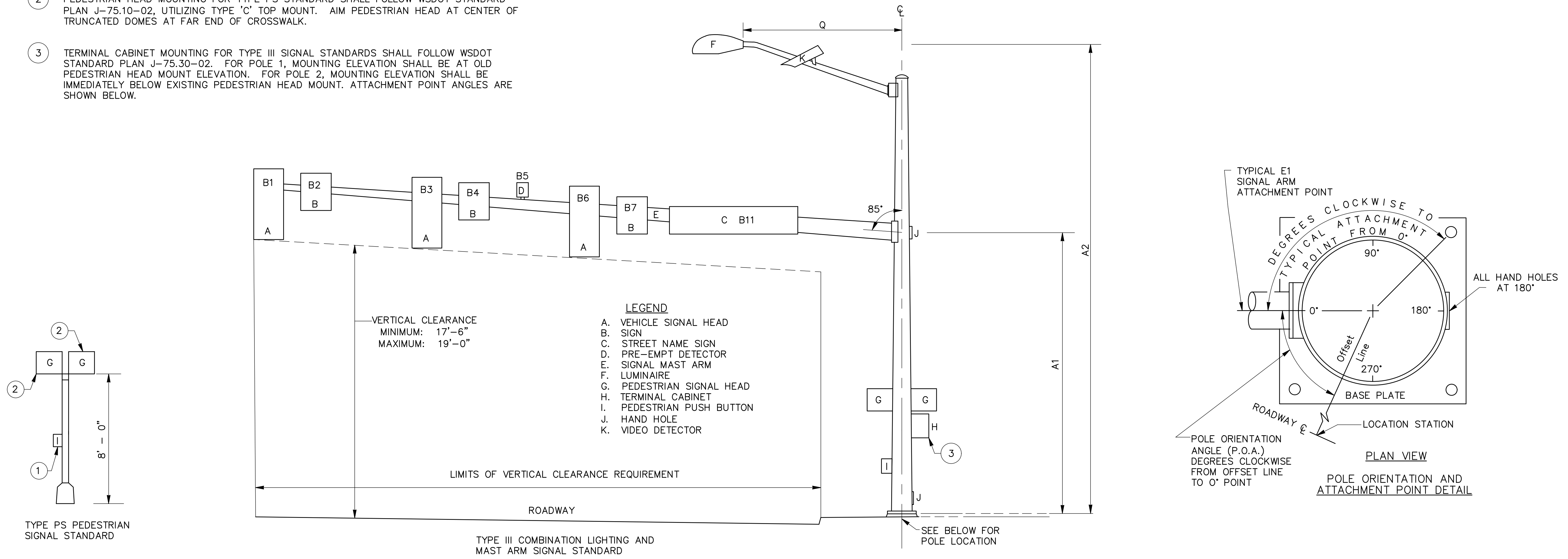
2ND ST. NE/5TH AVE. NE
 TRAFFIC SIGNAL WIRING TERMINATIONS

TS3

SHEET
 3
 OF
 7
 SHEETS

NOTES

- ① PEDESTRIAN PUSH BUTTON MOUNTED DIRECTLY TO POLE, ON SIDE OF POLE SHOWN IN PLANS.
- ② PEDESTRIAN HEAD MOUNTING FOR TYPE PS STANDARD SHALL FOLLOW WSDOT STANDARD PLAN J-75.10-02, UTILIZING TYPE 'C' TOP MOUNT. AIM PEDESTRIAN HEAD AT CENTER OF TRUNCATED DOMES AT FAR END OF CROSSWALK.
- ③ TERMINAL CABINET MOUNTING FOR TYPE III SIGNAL STANDARDS SHALL FOLLOW WSDOT STANDARD PLAN J-75.30-02. FOR POLE 1, MOUNTING ELEVATION SHALL BE AT OLD PEDESTRIAN HEAD MOUNT ELEVATION. FOR POLE 2, MOUNTING ELEVATION SHALL BE IMMEDIATELY BELOW EXISTING PEDESTRIAN HEAD MOUNT. ATTACHMENT POINT ANGLES ARE SHOWN BELOW.



SIGNAL STANDARD DETAIL CHART

STD #	FIELD LOCATION					POLE TYPE	MOUNTING HEIGHT (FT)		SIGNAL MAST ARM DATA											LUMINAIRE ARM (FT)	POLE ATTACHMENT POINT ANGLE (DEGREES)				FOUNDATION DEPTH (FT)	REMARKS
									OFFSET DISTANCE, Z (FT) - POLE CL TO ATTACHMENT POINT							WINDLOAD AREA, XY (FT²)										
	STATION	OFFSET	LT.	RT.	P.O.A.		A1	A2	B1	B2	B3	B5	B6	B11	B13/B14	B1	B2	B3	B6		B11	Q	E	F		
RELOC EX 1	2ND 4+44.78	16.00'		✓	0	III	EX	EX	EX 36		EX 23	EX 29.5		EX 14		EX 9.2		EX 9.2	EX 5	659*	EX			135	10	
EX 2	5TH 1+29.73	40.80'		✓	0	III																	135			
EX 3						PS																				
EX 4						II																				
NEW 5	2ND 4+34.15	21.34'		✓	0	PS																				USE WSDOT STANDARD PLAN J-21.10-05 FOR FOUNDATION

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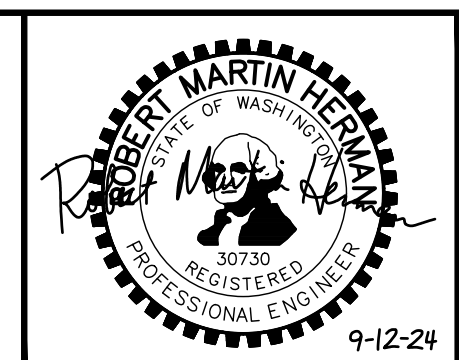
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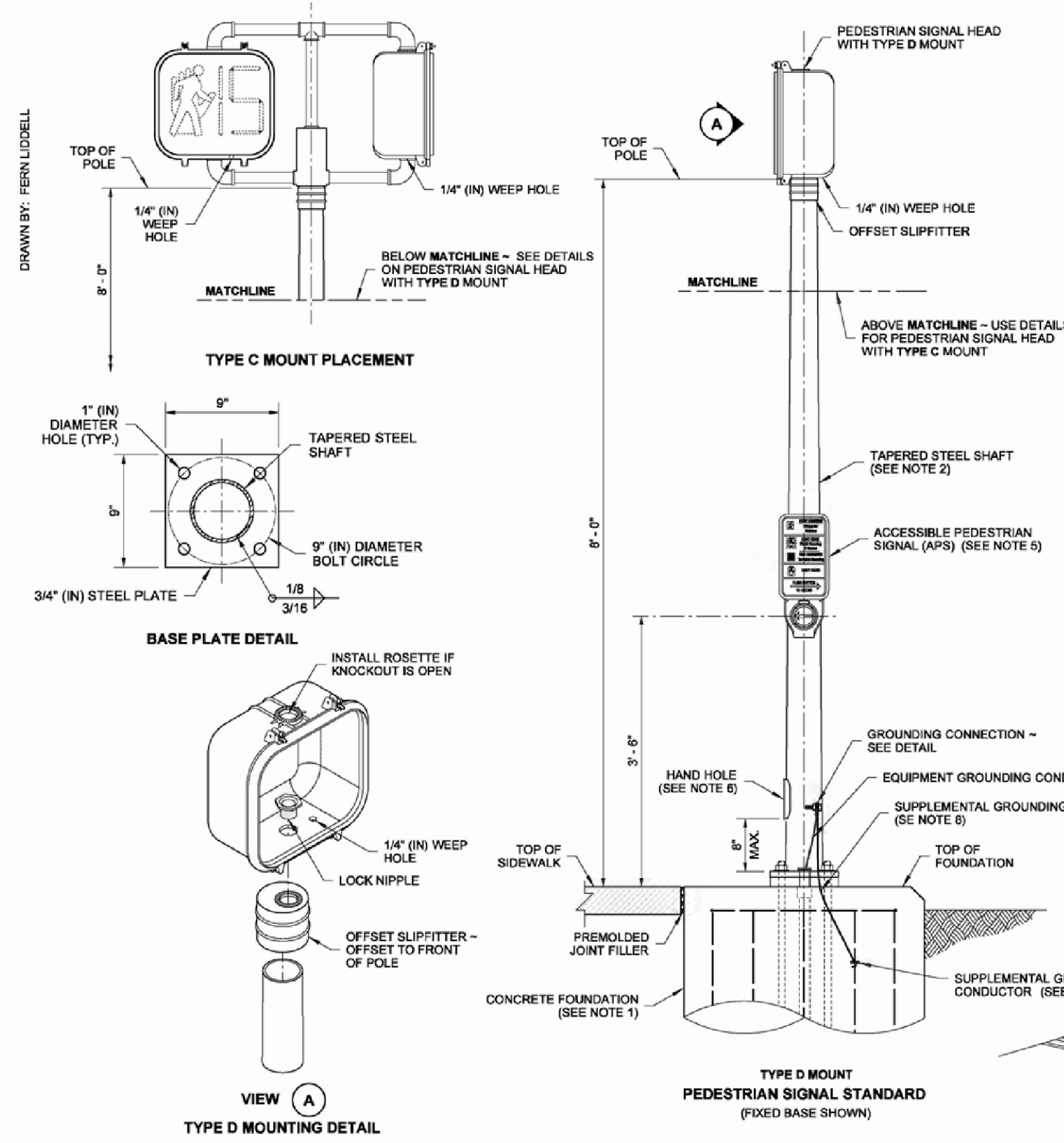
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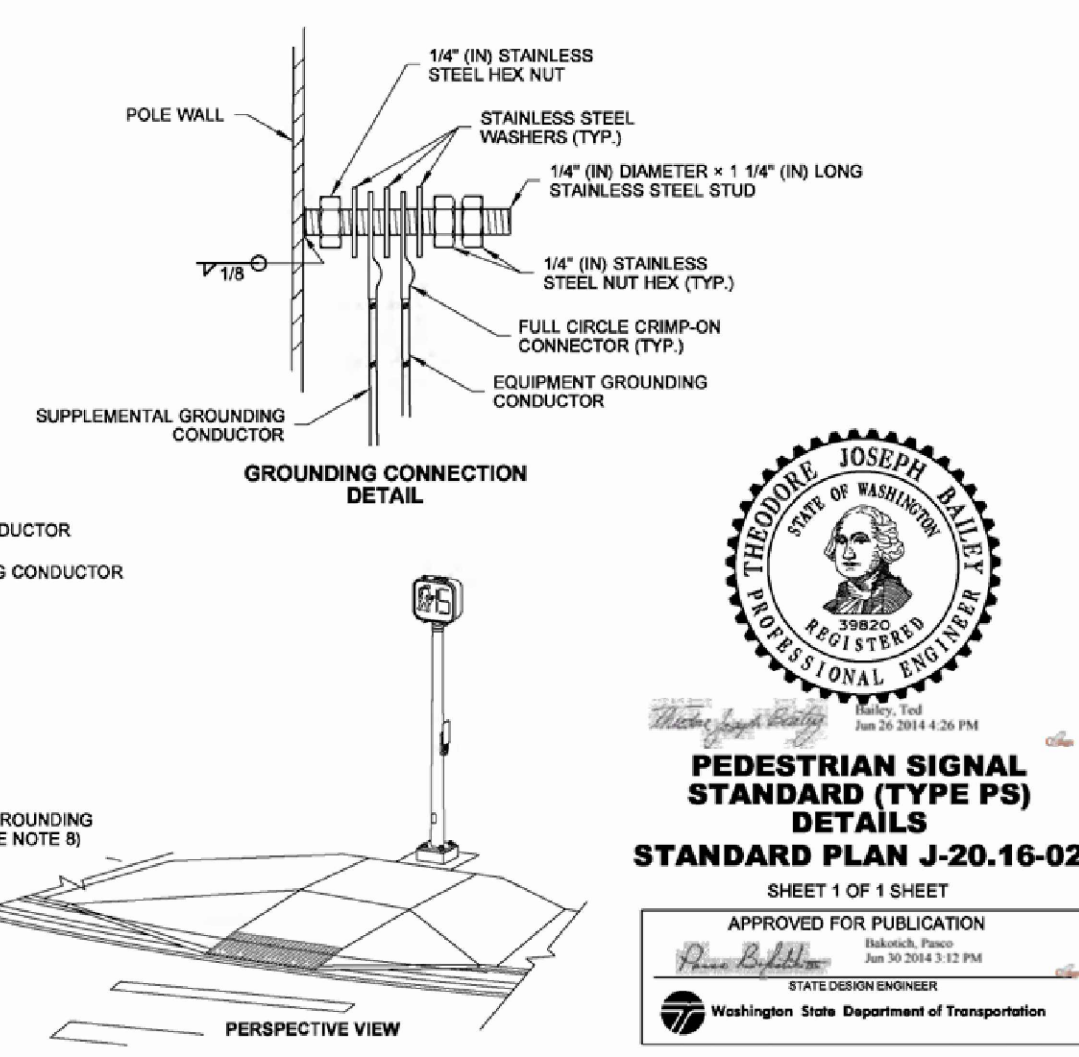
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TRAFFIC SIGNAL STANDARD DETAIL CHART

TS4

SHEET 4 OF 7 SHEETS



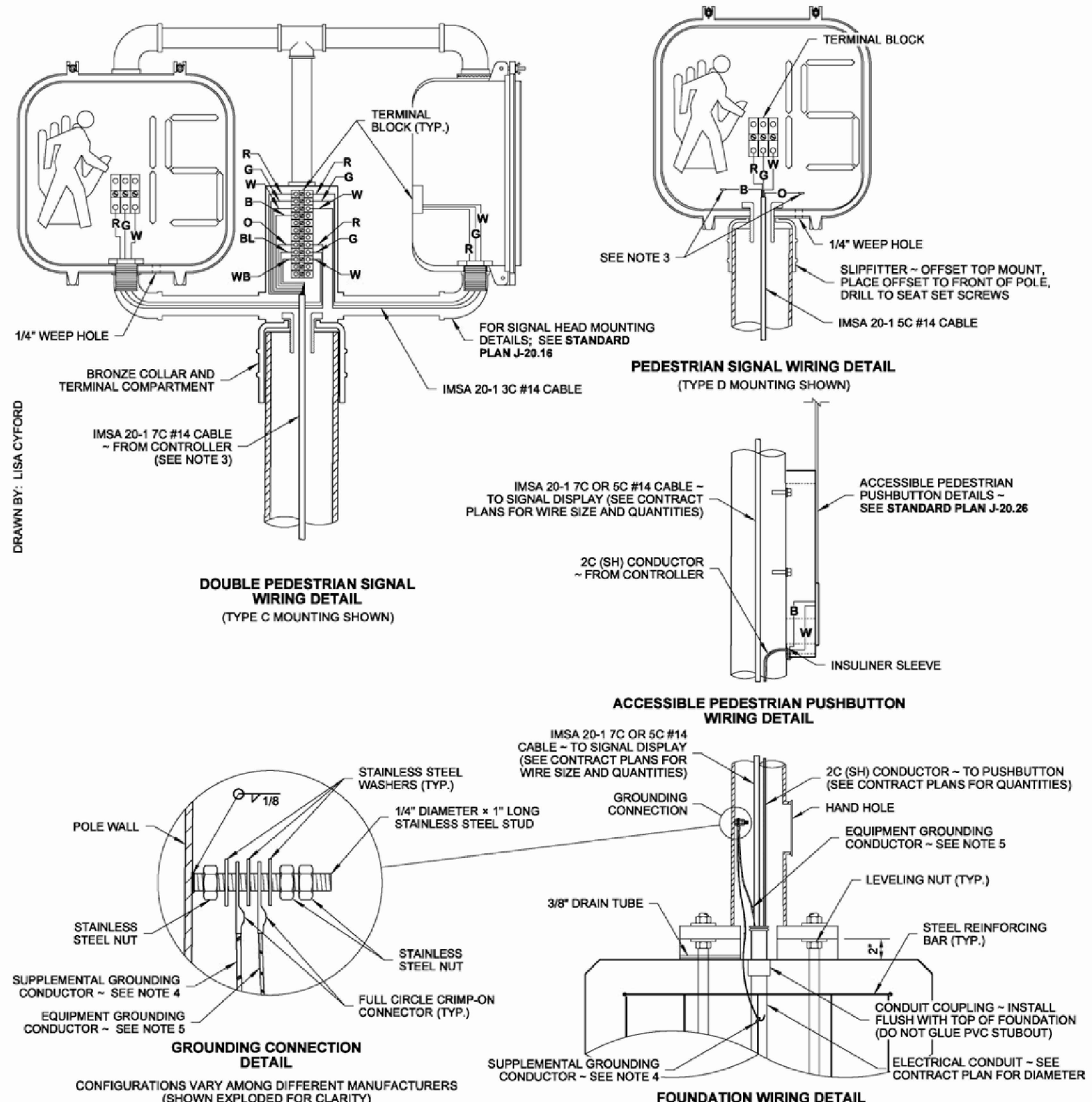
- NOTES**
- See Standard Plan J-21.10 for Signal Standard Foundation with Fixed Base and Slip Base details.
 - Steel shaft shall be tapered either round or dodecaagon (12-sided), 11 gage, 4 1/2" (O.D.) at slipfitter weld. Taper shall be 0.14" (in) per foot.
 - Welding of structures shall be in accordance with the latest edition of the AWS D1.1 Structural Welding Code - Steel. All butt welds shall be ground flush with base metal.
 - See Standard Plan J-20.26 for Accessible Pedestrian Pushbutton details.
 - See Standard Plan J-20.20 for Accessible Pedestrian Signal Standard Electrical details.
 - Hand holes shall include a removable, rain-tight cover and gasket, fastened with two stainless steel screws (ASTM 593).
 - Supplemental grounding conductor shall be non-insulated #4 AWG stranded copper and shall be clamped to vertical rebar with a connector suitable for use embedded in concrete. Provide 3" - 0" min. slack. Attach to pole grounding stud with a full circle crimp-on connector (crimped with a manufacturer recommended crimper).
 - The junction box serving the standard shall preferably be located 5' - 0" (10' - 0" max.) from the standard.
 - Where shown in the plans, install plaque (R10 - 32P) "PUSH BUTTON FOR 2 SECONDS FOR EXTRA CROSSING TIME" two inches above the Accessible Pedestrian Signal (APS) Assembly.



JOSEPH BALEY
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Jun 26 2014 4:20 PM

PEDESTRIAN SIGNAL STANDARD (TYPE PS) DETAILS
STANDARD PLAN J-20.16-02
SHEET 1 OF 1 SHEET

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- NOTES**
- See Standard Plan J-21.10 for Signal Standard Foundation with Fixed Base and Slip Base details.
 - See Standard Specification 9-29.3 for Cable Conductor requirements.
 - Install heat shrink caps on all spare conductors not terminated on a terminal strip.
 - Supplemental grounding conductor shall be non-insulated #4 AWG stranded copper and shall be clamped to vertical rebar with a connector suitable for use embedded in concrete. Provide 3" - 0" min. slack. Attach to pole grounding stud with a full circle crimp-on connector (crimped with manufacturer's recommended crimper).
 - Equipment grounding conductor shall attach to grounding stud with a full circle crimp-on connector (crimped with a manufacturer's recommended crimper).

5C PEDESTRIAN HEAD TERMINATIONS

TERMINAL NUMBER	COLOR CODE	USE
7 * 1	R	DON'T WALK DISPLAY
7 * 2	G	WALK DISPLAY
7 * 3	W	NEUTRAL CONDUCTOR
7 * 6	B	SPARE CONDUCTOR
7 * 7	O	SPARE CONDUCTOR

* ASSOCIATED PHASE NUMBER

7C PEDESTRIAN HEAD TERMINATIONS

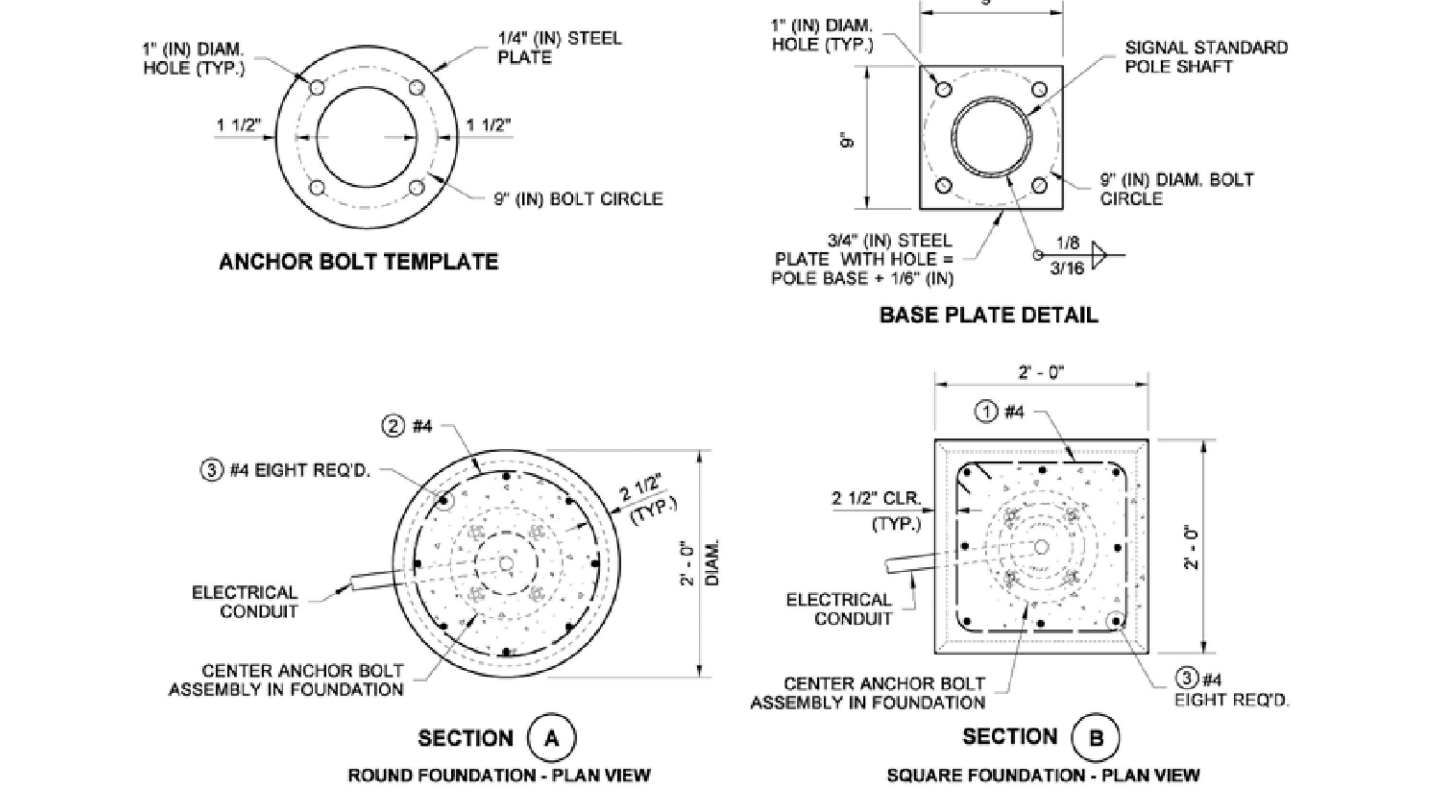
TERMINAL NUMBER	COLOR CODE	USE
7 * 1	R	DON'T WALK DISPLAY
7 * 2	G	WALK DISPLAY
7 * 3	W	NEUTRAL CONDUCTOR
7 * 6	B	SPARE CONDUCTOR
7 * 1	O	DON'T WALK DISPLAY
7 * 2	BL	WALK DISPLAY
7 * 3	WB	NEUTRAL CONDUCTOR

* ASSOCIATED PHASE NUMBER

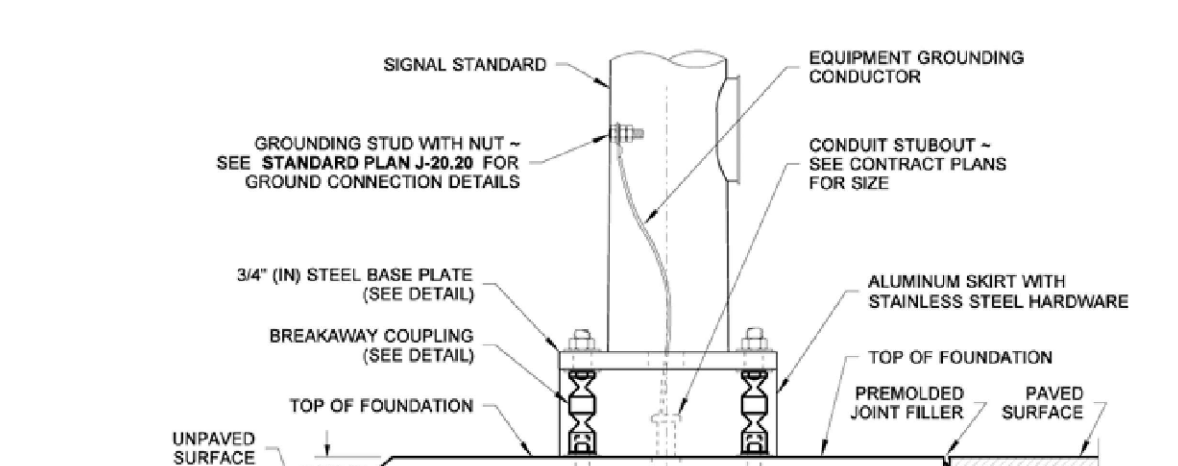
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PEDESTRIAN SIGNAL STANDARD (TYPE PS) ELECTRICAL DETAIL
STANDARD PLAN J-20.20-02
SHEET 1 OF 1 SHEET

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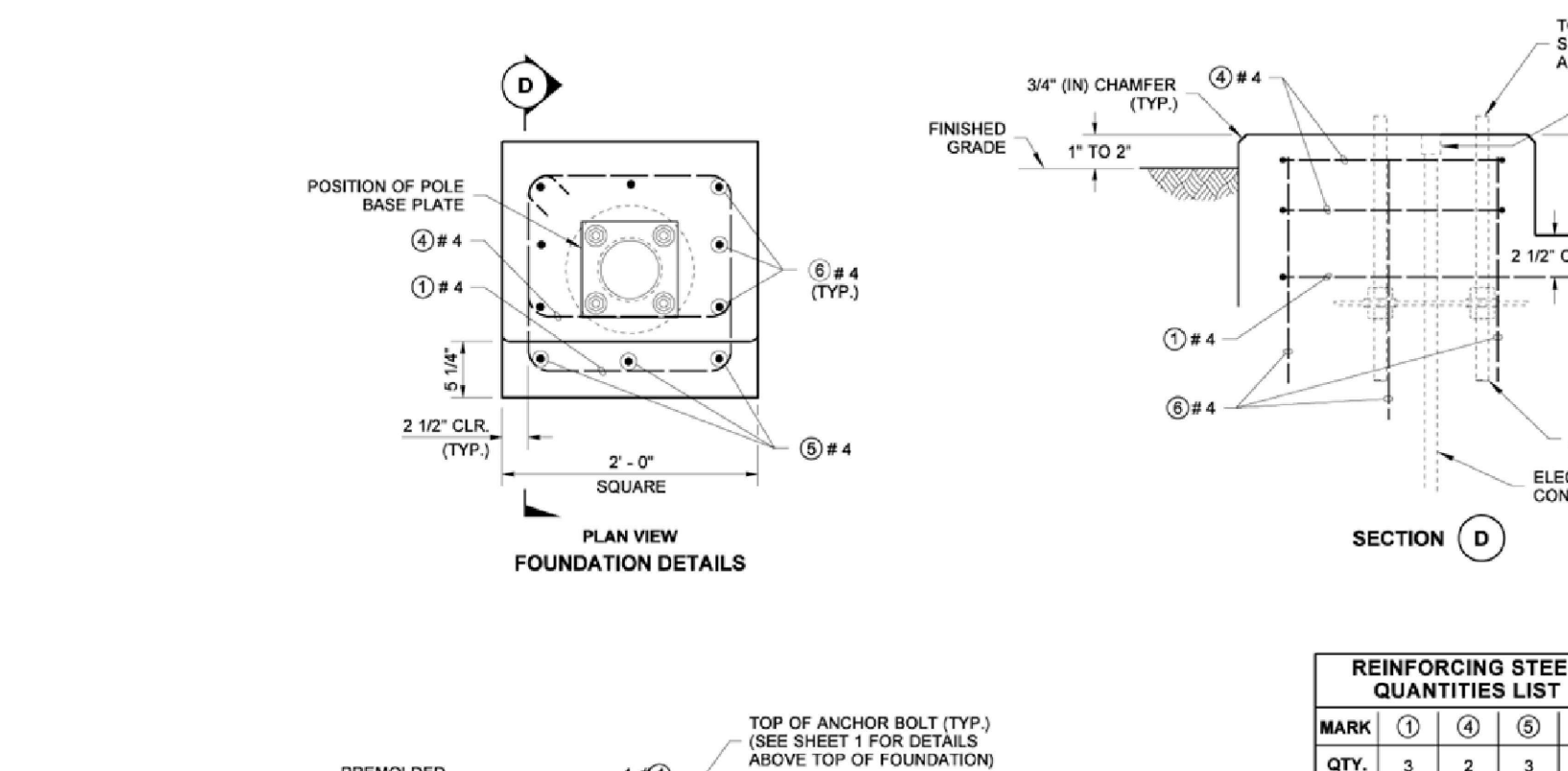
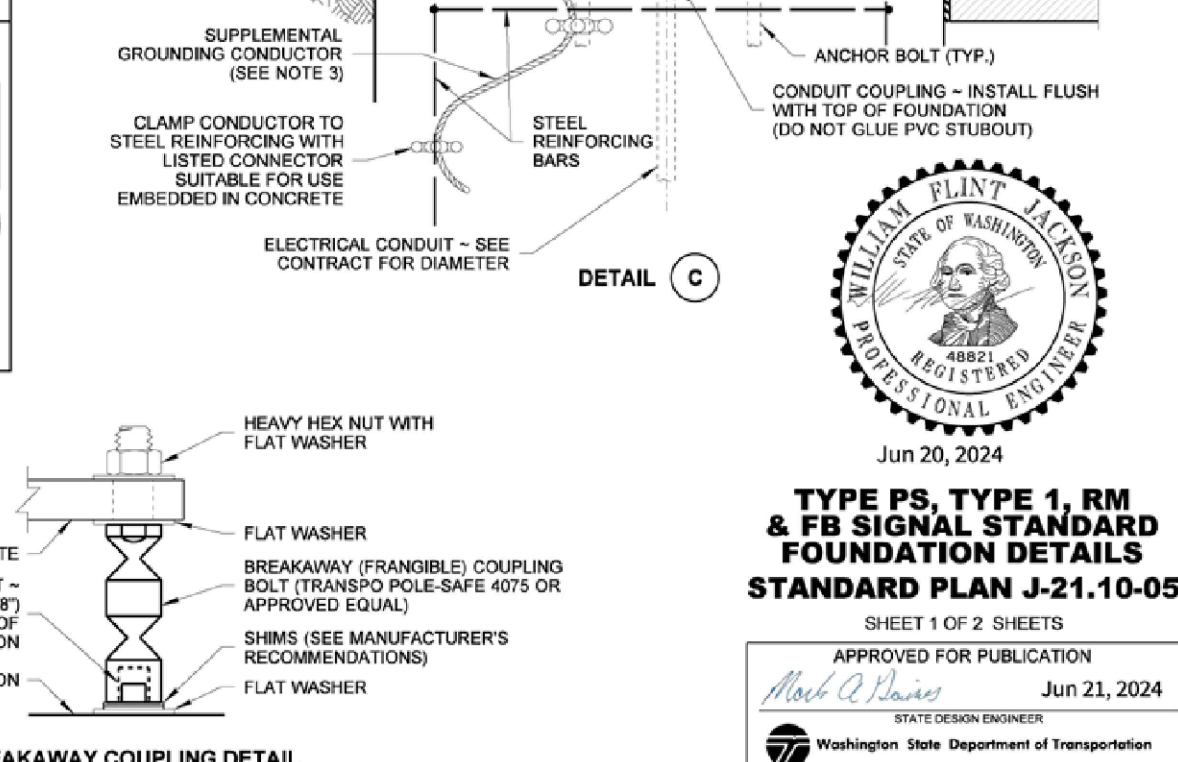
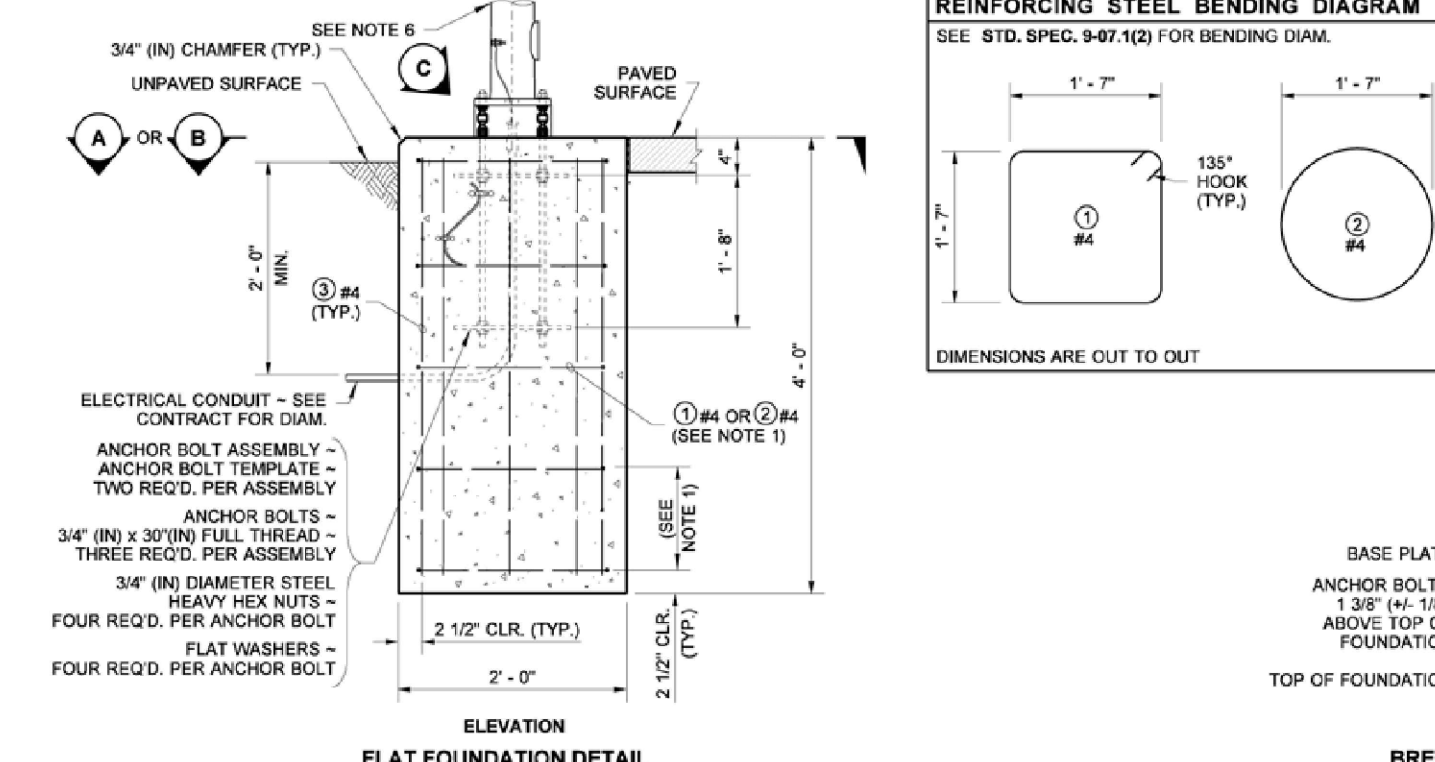
- NOTES**
- Round foundations require five reinforcing steel hoops at ~ 10" spacing. Square foundations require three reinforcing steel hoops at ~ 1" - 3 1/2" spacing.
 - Nuts for anchor bolts shall be ASTM A563 Grade A, D, or DH. Washers for anchor bolts shall meet ASTM F436.
 - Supplemental grounding conductor shall be non-insulated #4 AWG stranded copper and shall be clamped to vertical rebar and anchor bolt with connectors suitable for use embedded in concrete. Supplemental ground shall be verified intact by Contracting Agency Inspector before placing concrete.
 - Junction box serving the Standard shall preferably be located 5' - 0" (10' - 0" Max.) from the Standard.
 - Provide cable tie at wiring entering the junction box - See Detail A, Standard Plan J-28.70.
 - See Standard Plan J-20.16, J-21.15, J-21.16, or J-22.15 as applicable for pole details above this point.



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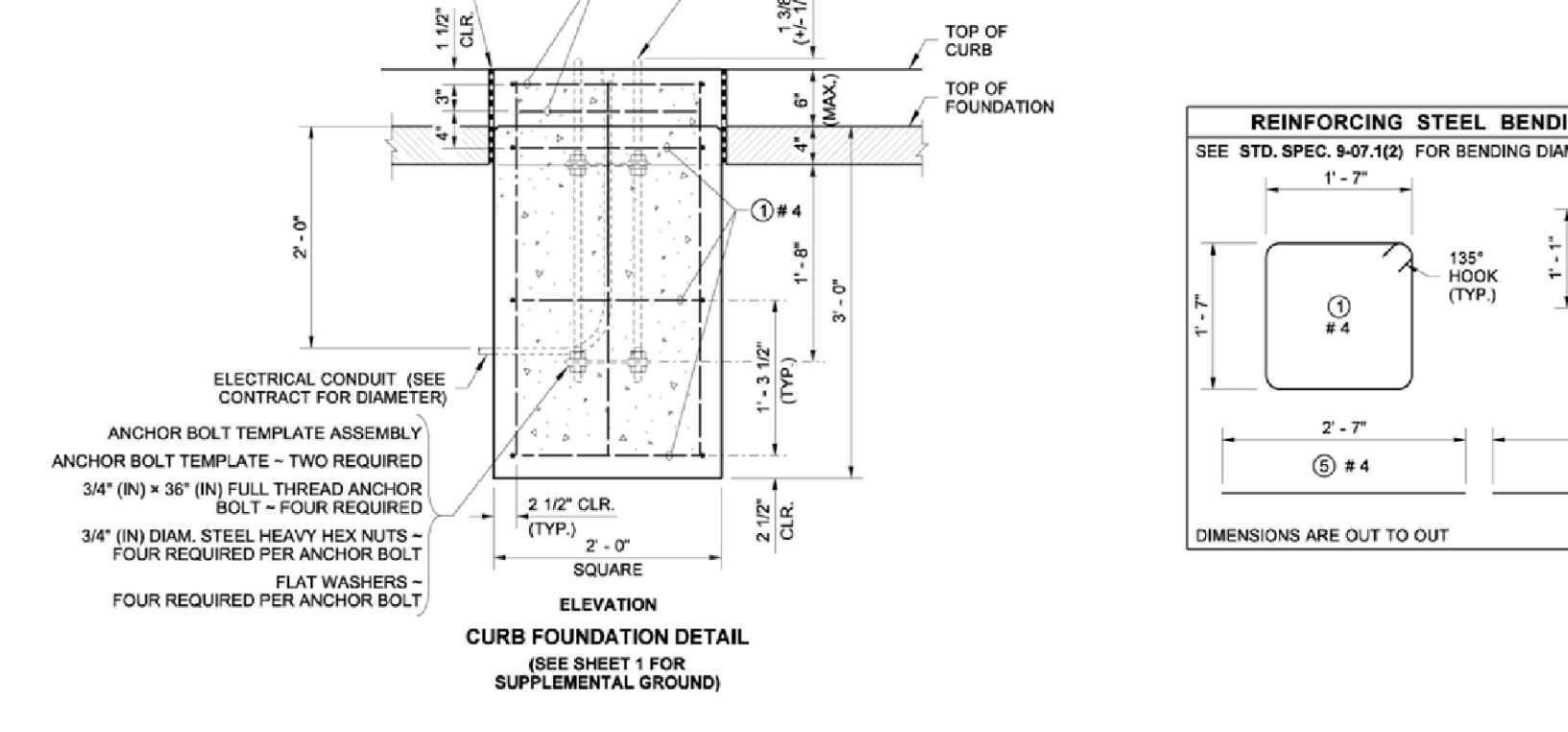
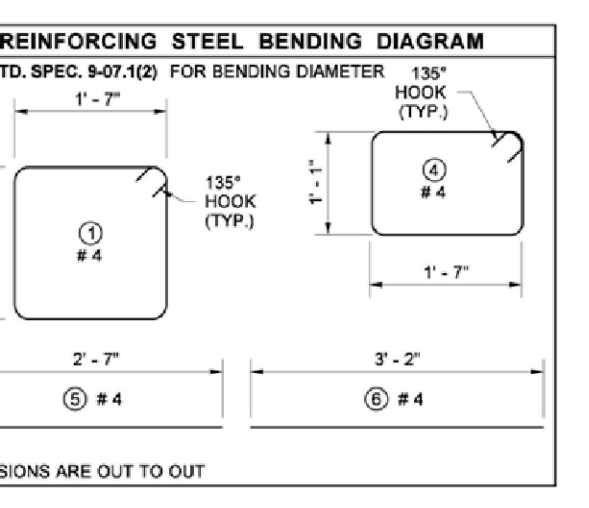
TYPE PS, TYPE 1, RM & FB SIGNAL STANDARD FOUNDATION DETAILS
STANDARD PLAN J-21.10-05
SHEET 1 OF 2 SHEETS

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REINFORCING STEEL QUANTITIES LIST

MARK	①	④	⑤	⑥
QTY.	3	2	3	7



WILLIAM FLINT JACKSON
STATE OF WASHINGTON
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No. 48821
Jun 20, 2024

TYPE PS, TYPE 1, RM & FB SIGNAL STANDARD FOUNDATION DETAILS
STANDARD PLAN J-21.10-05
SHEET 2 OF 2 SHEETS

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ROBERT MARTIN BERNA
STATE OF WASHINGTON
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No. 30750
9-12-24

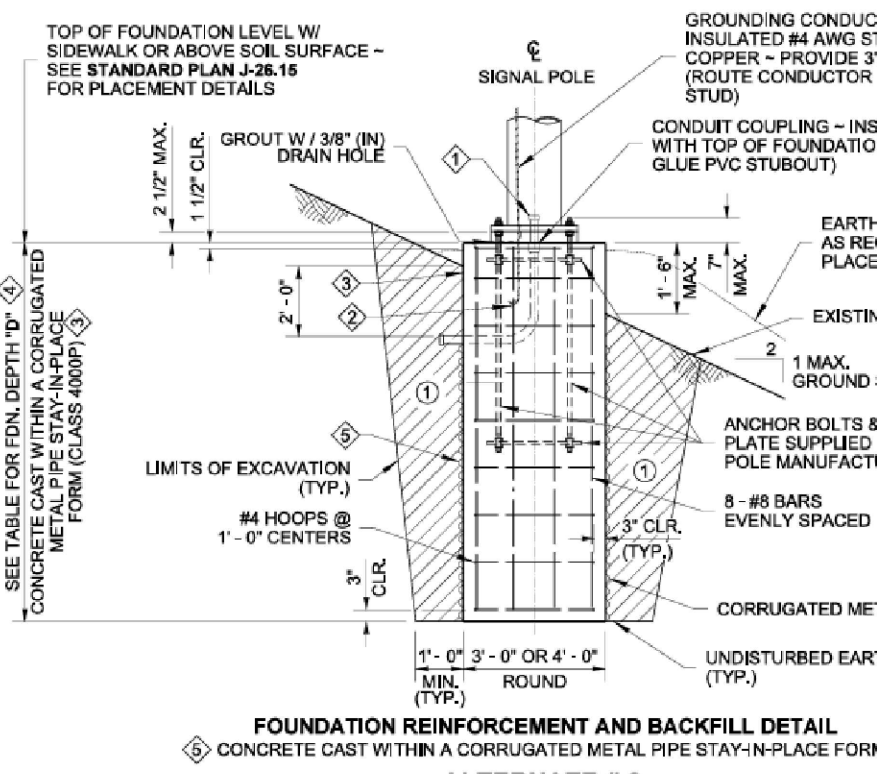
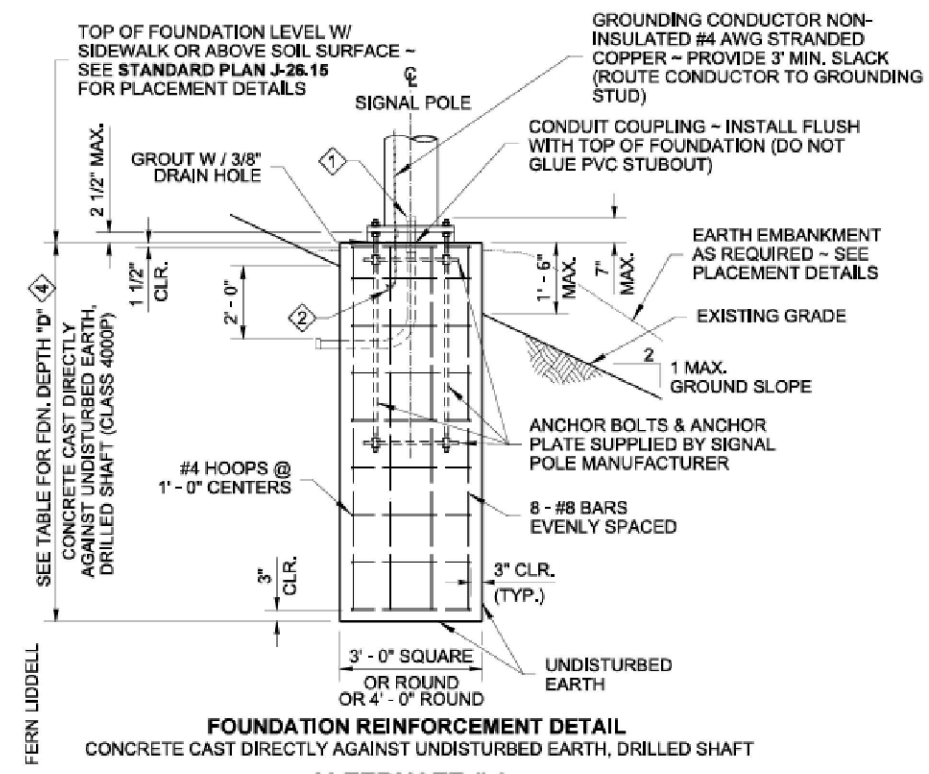
HIE HERMAN TRAFFIC ENGINEERING, INC.
11215 Southeast 220th Place, Kent, Washington 98031
253-236-4941 tel. bob@hte-inc.com

2ND STREET APARTMENTS
CITY OF PUYALLUP, WA

2ND ST. NE/5TH AVE. NE
TRAFFIC SIGNAL DETAILS

TS5

SHEET 5 OF 7 SHEETS



- NOTES**
- This structure has been designed according to the Fifth Edition 2009 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. Basic wind velocity is 90 mph. Design Life/Recurrence Interval 50 years, and Fatigue Category III.
 - Foundations are designed for Single Mast Arm Standards and Double Mast Arm Standards with 90° between arms. Special foundation design is required for Double Mast Arm Standards when the angle between mast arms is other than 90°. For Double Mast Arm Standards with 90° between arms, use larger XYZ value for foundation depth selection.
 - Foundations not within the parameters of this standard require Special Design. Contact the WSDOT Bridge and Structures Office through the Engineer for Special Foundation Designs.
 - Where a foundation is constructed within a Media Filter Drain, the foundation depth shown in the Contract Plans shall be increased by the depth of the Media Filter Drain.
 - The top 2 feet of the foundation shall use a smooth form (such as paper or cardboard). After the concrete has cured, this entire form shall be removed.
 - For design parameters between the values listed in Table, depth interpolations may be interpolated between the values provided.
 - Install Signal Foundation Identification Tag. See Standard Plan J-26-15 for details.

FOUNDATION REINFORCEMENT DETAIL
ALTERNATE #1
 CONCRETE CAST DIRECTLY AGAINST UNDISTURBED EARTH, DRILLED SHAFT

FOUNDATION DEPTH "D" TABLE

ALTERNATE #1 DRILLED SHAFT-TYPE CONSTRUCTION
 FOR LATERAL BEARING PRESSURE = 2500 PSF & Ø = 34", 1500 PSF & Ø = 28", 1000 PSF & Ø = 26"

ALLOWABLE LATERAL BEARING PRESSURE	FOUNDATION TYPE	GROUND SLOPE = 3H:1V OR FLATTER						GROUND SLOPE = GREATER THAN 3H:1V TO 2H:1V							
		XYZ (FT)	XYZ (FT)	XYZ (FT)	XYZ (FT)	XYZ (FT)	XYZ (FT)	XYZ (FT)	XYZ (FT)	XYZ (FT)	XYZ (FT)	XYZ (FT)			
1000 PSF	3'-0" ROUND	7-0"	8-0"	9-0"	10-0"	11-0"	12-0"	13-0"	14-0"	15-0"	16-0"	17-0"	18-0"	19-0"	20-0"
	3'-0" SQUARE	8-0"	9-0"	10-0"	11-0"	12-0"	13-0"	14-0"	15-0"	16-0"	17-0"	18-0"	19-0"	20-0"	21-0"
	4'-0" ROUND	8-0"	9-0"	10-0"	11-0"	12-0"	13-0"	14-0"	15-0"	16-0"	17-0"	18-0"	19-0"	20-0"	21-0"
	4'-0" SQUARE	9-0"	10-0"	11-0"	12-0"	13-0"	14-0"	15-0"	16-0"	17-0"	18-0"	19-0"	20-0"	21-0"	22-0"
1500 PSF	3'-0" ROUND	7-0"	8-0"	9-0"	10-0"	11-0"	12-0"	13-0"	14-0"	15-0"	16-0"	17-0"	18-0"	19-0"	20-0"
	3'-0" SQUARE	8-0"	9-0"	10-0"	11-0"	12-0"	13-0"	14-0"	15-0"	16-0"	17-0"	18-0"	19-0"	20-0"	21-0"
	4'-0" ROUND	8-0"	9-0"	10-0"	11-0"	12-0"	13-0"	14-0"	15-0"	16-0"	17-0"	18-0"	19-0"	20-0"	21-0"
	4'-0" SQUARE	9-0"	10-0"	11-0"	12-0"	13-0"	14-0"	15-0"	16-0"	17-0"	18-0"	19-0"	20-0"	21-0"	22-0"
2500 PSF OR GREATER	3'-0" ROUND	7-0"	8-0"	9-0"	10-0"	11-0"	12-0"	13-0"	14-0"	15-0"	16-0"	17-0"	18-0"	19-0"	20-0"
	3'-0" SQUARE	8-0"	9-0"	10-0"	11-0"	12-0"	13-0"	14-0"	15-0"	16-0"	17-0"	18-0"	19-0"	20-0"	21-0"
	4'-0" ROUND	8-0"	9-0"	10-0"	11-0"	12-0"	13-0"	14-0"	15-0"	16-0"	17-0"	18-0"	19-0"	20-0"	21-0"
	4'-0" SQUARE	9-0"	10-0"	11-0"	12-0"	13-0"	14-0"	15-0"	16-0"	17-0"	18-0"	19-0"	20-0"	21-0"	22-0"

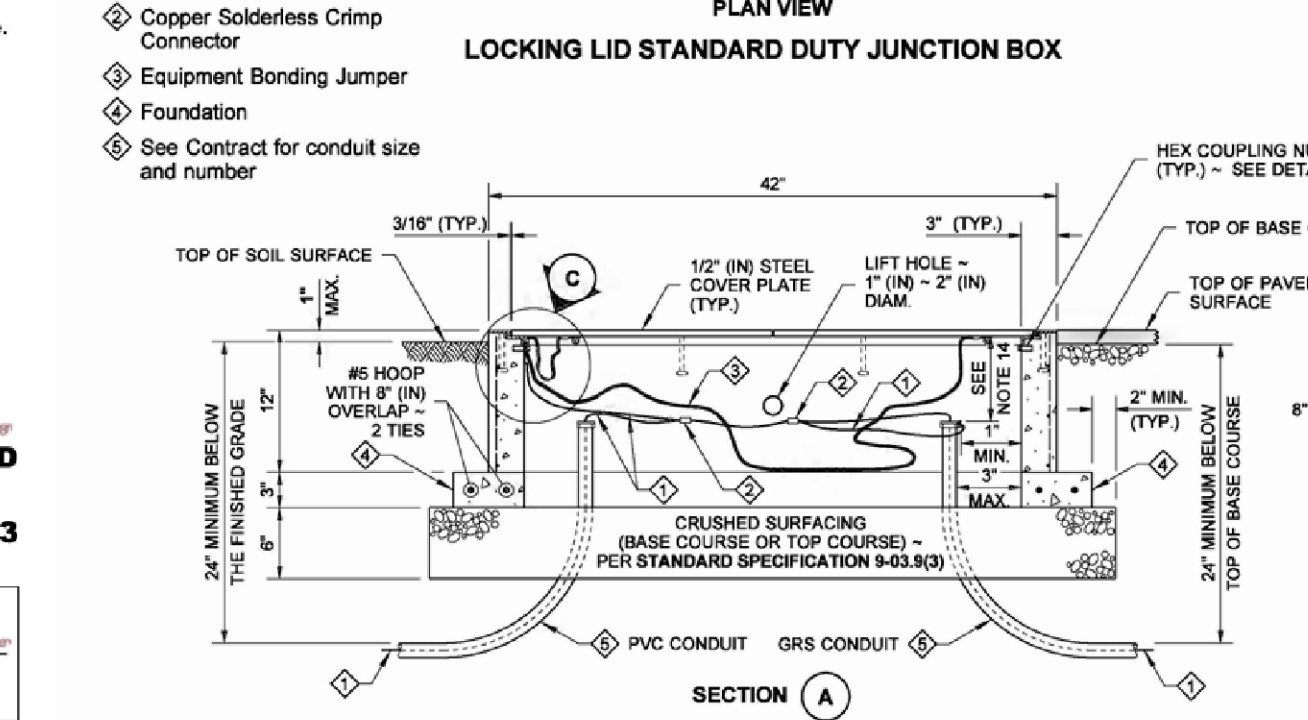
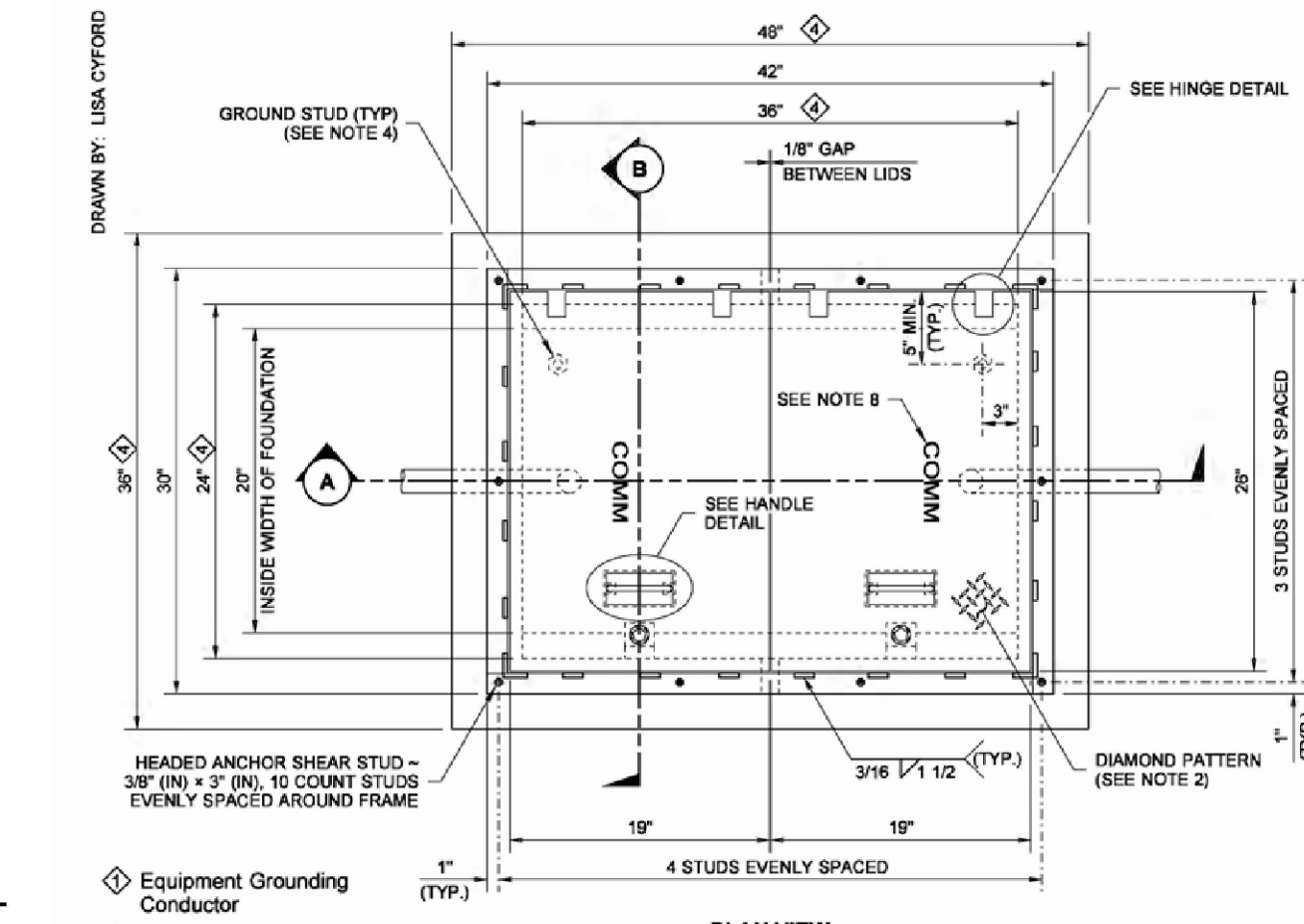
ALTERNATE #2 CORRUGATED METAL PIPE TYPE CONSTRUCTION
 FOR LATERAL BEARING PRESSURE = 2500 PSF & Ø = 23", 1500 PSF & Ø = 18", 1000 PSF & Ø = 17"

When the existing soil will not retain a vertical face, over-excavate the foundation area and install a 36" or 48" diameter corrugated metal (pipe) form. The top of the corrugated metal form shall terminate 1 foot below final grade. Continue forming to full height using paper or cardboard form to achieve a smooth finish on final exposed cement concrete. Support the form as necessary to remain plumb.

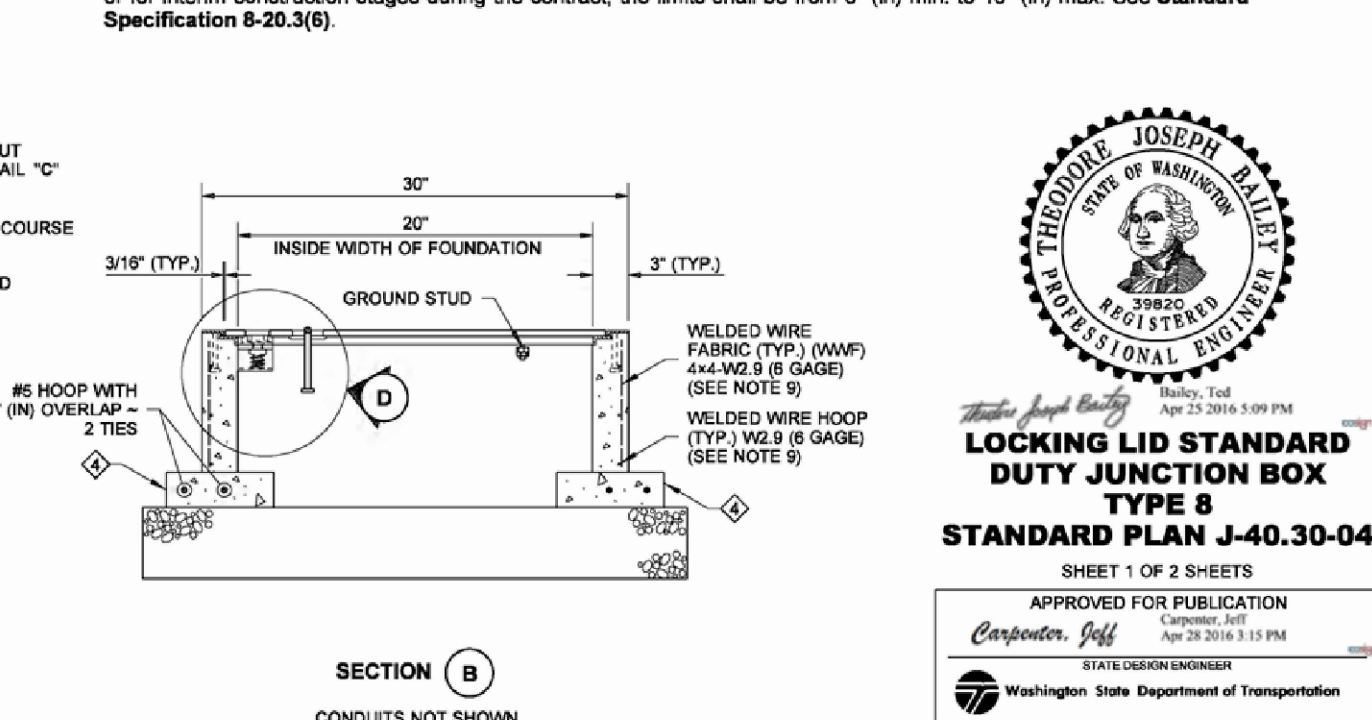
Place the concrete foundation.

After concrete has cured, remove the entire paper or cardboard form portion.

Shoring or Extra Excavation as required. Excavated area shall be backfilled with Controlled-Density Fill (CDF), or with soil in accordance with Standard Specification Section 8-29.3(2) and Compaction Method 1 of Standard Specification Section 2-99.3(1E).

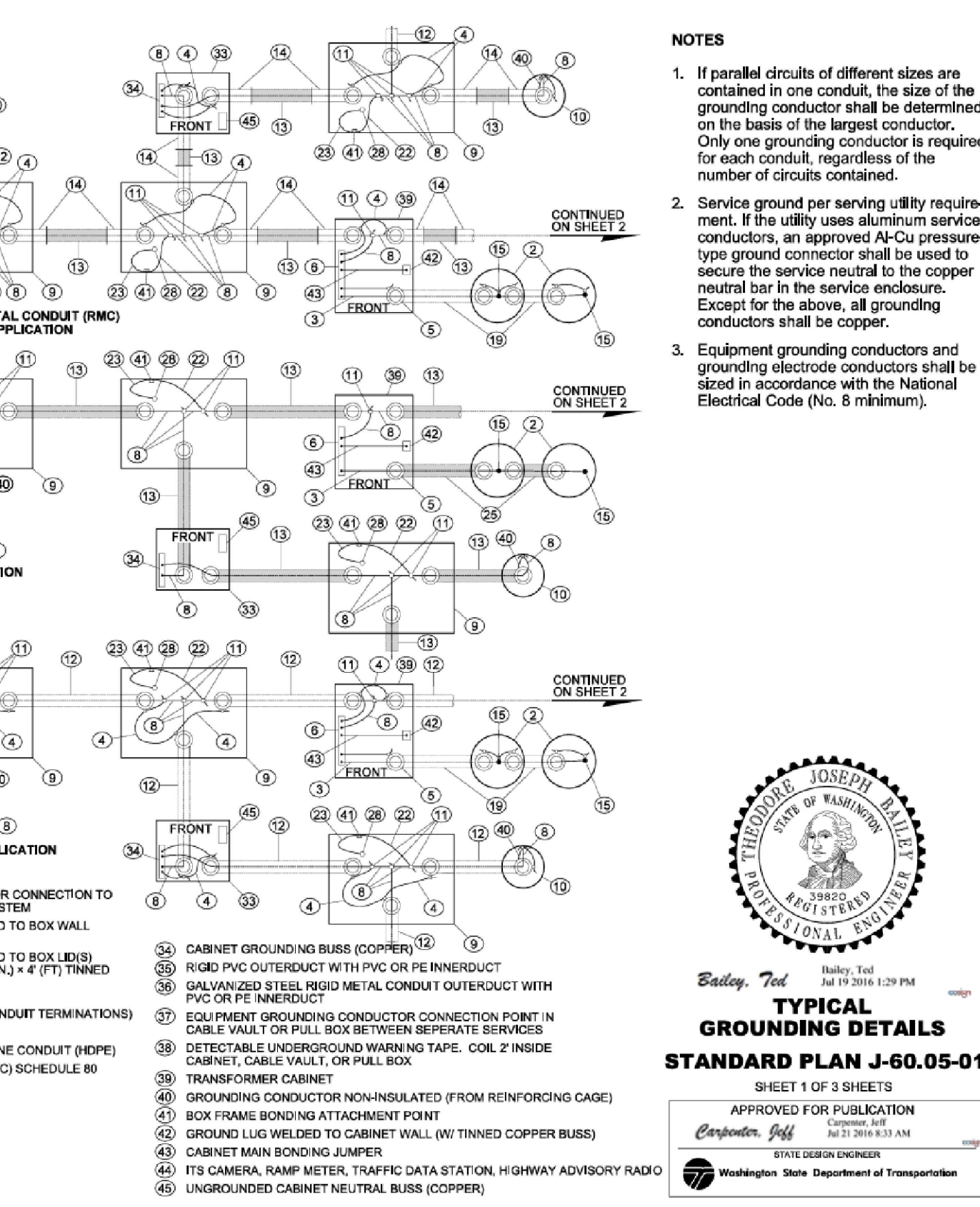
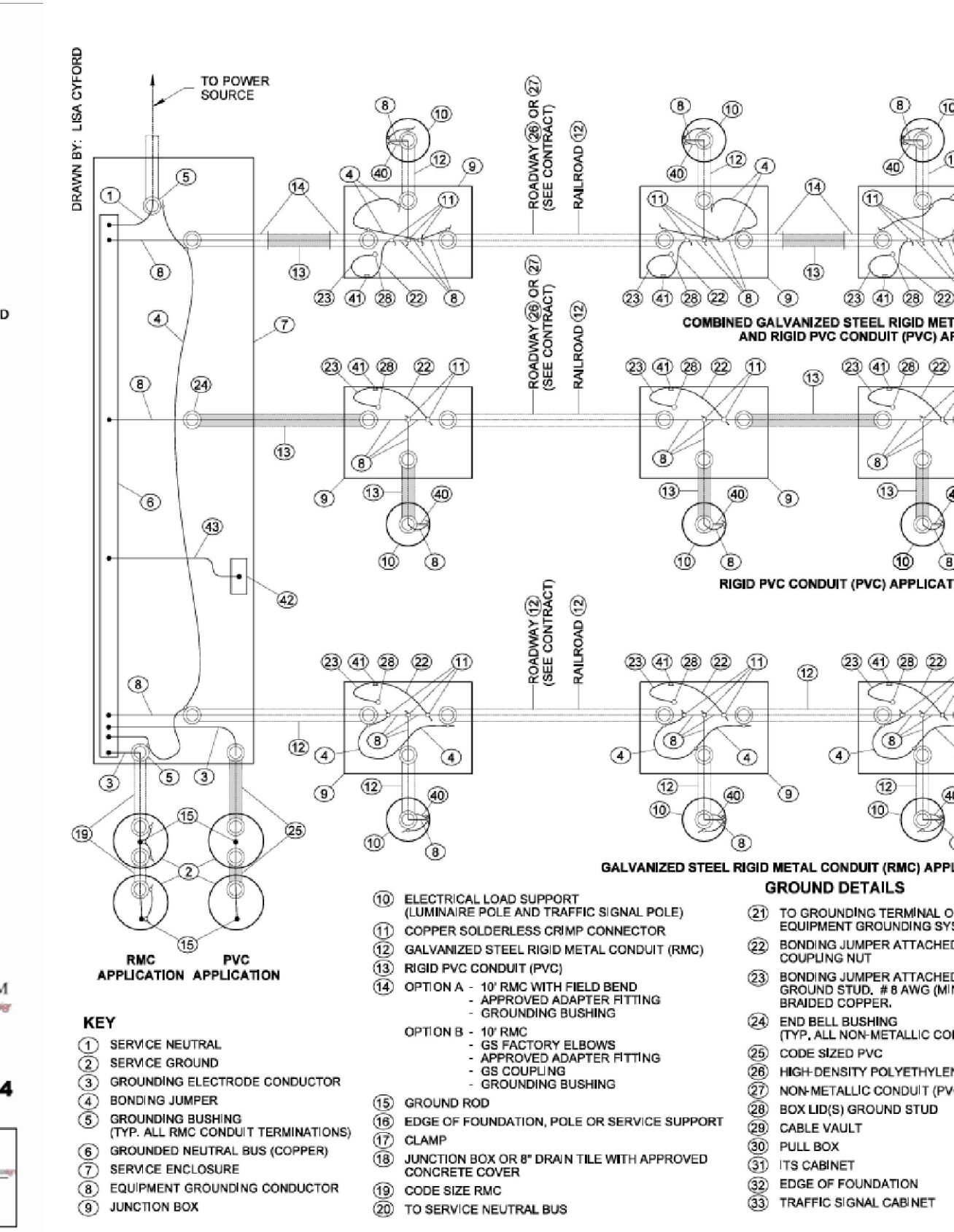
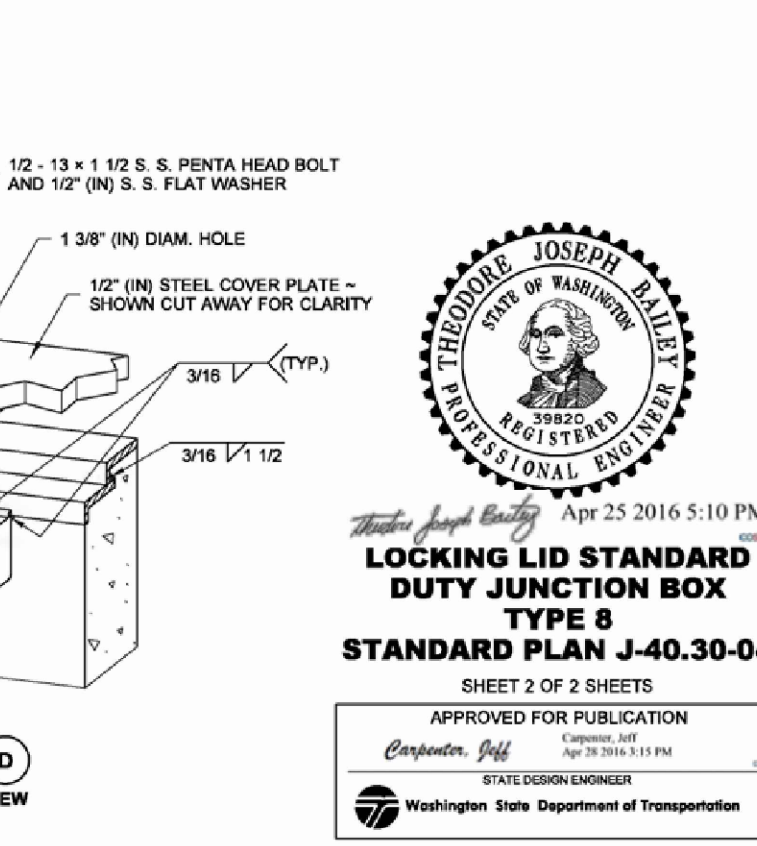
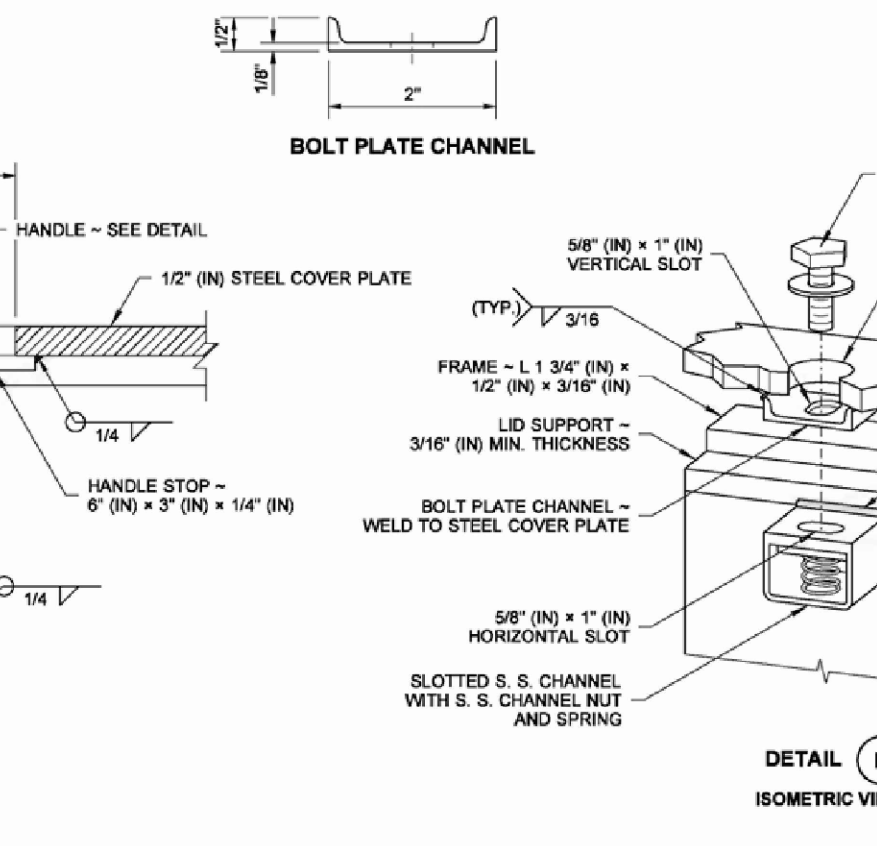
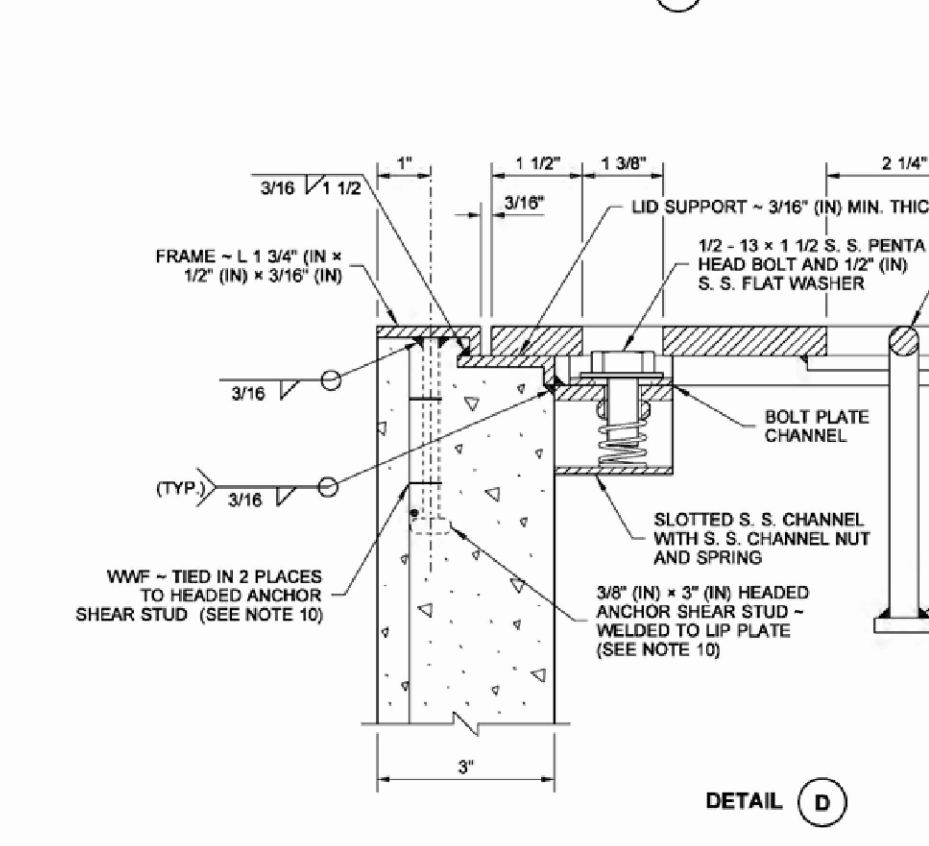
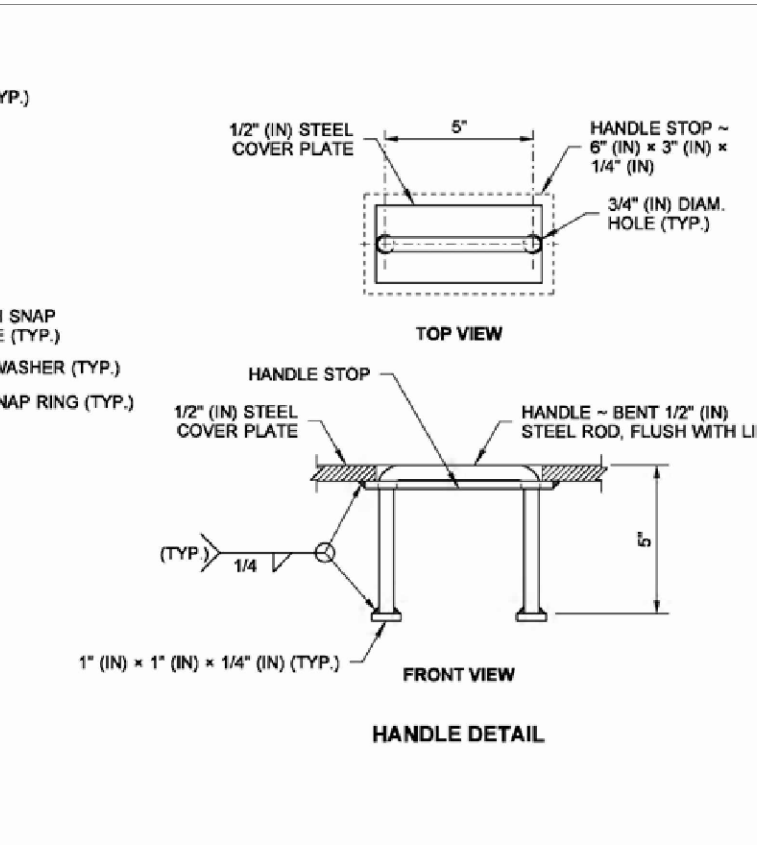
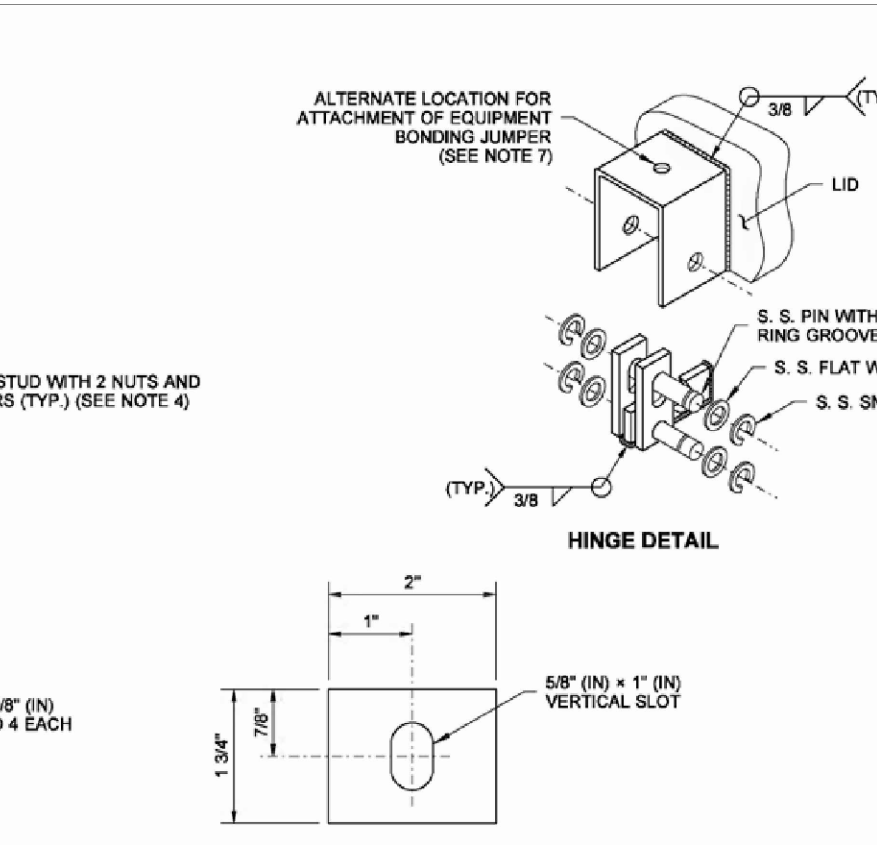
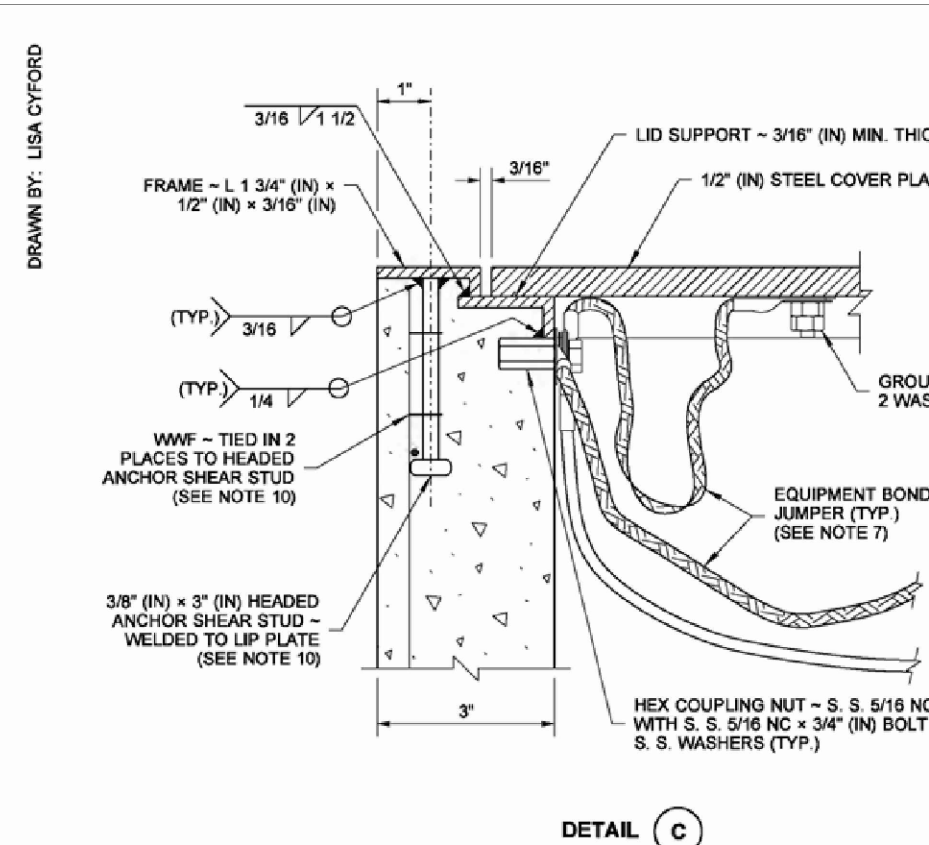


- COVER MARKING DETAIL**
- NOTES**
- All box dimensions are approximate. Exact configurations vary among manufacturers.
 - Minimum lid thicknesses are shown. Junction Boxes installed in sidewalks, walkways, and shared-use paths shall have a slip-resistant coating on the lid and to cover plate and shall be installed with the surface flush with and matched to the grade of the sidewalk, walkway, or shared-use path. The non-slip lid shall be identified with permanent markings on the underside, indicating the type of surface treatment (see Contract Documents for details) and the year of manufacture. The permanent marking shall be 1/8" (in) line thickness formed with a mild steel weld bead and shall be placed prior to hot-dip galvanizing.
 - Lid support members shall be 3/16" (in) min. thick steel C, L, or T shape, welded to the frame. Exact configurations vary among manufacturers.
 - A 1/4-20 NC x 3/4" (in) S. S. ground stud shall be welded to the bottom of each lid; include (2) S. S. nuts and (2) S. S. flat washers.
 - The hinges shall allow the lids to open 180°.
 - Bolts and nuts shall be liberally coated with anti-seize compound.
 - Connect Equipment Bonding Jumper to ground stud on lid. As an alternative to the ground stud connection, the Equipment Bonding Jumper shall be attached to the front face of the hinge pocket with a 5/16-20 NC x 3/4" (in) S. S. bolt, (2) each S. S. nuts, and (2) each S. S. flat washers. Equipment Bonding Jumper shall be #8 AWG min. x 4' (ft) of tinned braided copper.
 - The System Identification letters shall be 1/8" (in) line thickness formed by a mild steel weld bead. See Cover Marking detail. Grind off diamond pattern before forming letters. See Standard Specification 9-29.2(4) for details.
 - See Standard Specifications for alternative reinforcement and class of concrete.
 - See Standard Plan J-40.10 for Welded Wire Fabric and Headed Anchor Shear Stud attachment details.
 - Capacity - conduit diameter = 24" (in)
 - 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.
 - Unless otherwise noted in the plans or approved by the Engineer, Junction Boxes, Cable Vaults and Pull Boxes shall not be placed within the sidewalk, walkway, shared use path, 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.
 - Distance between the top of the conduit and the bottom of the Junction Box lid shall be 6" (in) min. to 8" (in) max. for final grade or new construction only. See Standard Specification 8-20.3(5). Where adjustments are to be made to existing Junction Boxes, or for interim construction stages during the contract, the limits shall be from 6" (in) min. to 10" (in) max. See Standard Specification 8-20.3(5).



LOCKING LID STANDARD DUTY JUNCTION BOX

LOCKING LID STANDARD DUTY JUNCTION BOX
 TYPE 8
 STANDARD PLAN J-40.30-04
 SHEET 1 OF 2 SHEETS



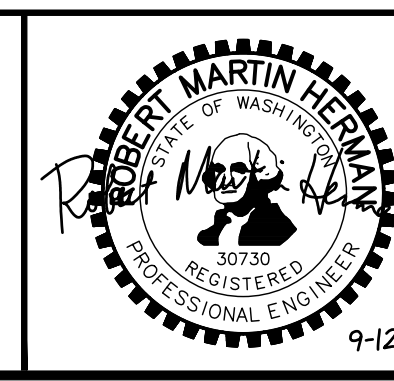
- KEY**
- SERVICE NEUTRAL
 - SERVICE GROUND
 - GROUNDING ELECTRODE CONDUCTOR
 - BONDING JUMPER
 - GROUNDING BUSHING (TYP. ALL RMC CONDUIT TERMINATIONS)
 - GROUND ROD
 - EDGE OF FOUNDATION, POLE OR SERVICE SUPPORT
 - CLAMP
 - GROUNDING BUSHING (TYP. ALL RMC CONDUIT TERMINATIONS)
 - GROUNDING BUSHING (TYP. ALL RMC CONDUIT TERMINATIONS)
 - EQUIPMENT GROUNDING CONDUCTOR
 - JUNCTION BOX OR 8" DRUM TIE WITH APPROVED CONCRETE COVER
 - EQUIPMENT GROUNDING CONDUCTOR
 - JUNCTION BOX
 - TO SERVICE NEUTRAL BUS
 - TO GROUNDING TERMINAL OR CONNECTION TO EQUIPMENT GROUNDING SYSTEM
 - BONDING JUMPER ATTACHED TO BOX WALL COUPLING NUT
 - BONDING JUMPER ATTACHED TO BOX LIDS
 - RIGID PVC CONDUIT (PVC)
 - OPTION A - 10 RMC WITH FIELD BEND, APPROVED ADAPTER FITTING, GROUNDING BUSHING
 - OPTION B - 10 RMC - GS FACTORY ELBOWS, APPROVED ADAPTER FITTING, GS COUPLING, GROUNDING BUSHING
 - END BELL BUSHING (TYP. ALL NON-METALLIC CONDUIT TERMINATIONS)
 - CODE SIZES PVC
 - HIGH-DENSITY POLYETHYLENE CONDUIT (HDPE)
 - NON-METALLIC CONDUIT (PVC) SCHEDULE 80
 - BOX LIDS
 - GROUND STUD
 - CABLE VAULT
 - PULL BOX
 - ITS CABINET
 - EDGE OF FOUNDATION
 - TRAFFIC SIGNAL CABINET
 - GROUNDING TERMINAL OR CONNECTION TO EQUIPMENT GROUNDING SYSTEM
 - BONDING JUMPER ATTACHED TO BOX WALL COUPLING NUT
 - BONDING JUMPER ATTACHED TO BOX LIDS
 - RIGID PVC CONDUIT (PVC)
 - OPTION A - 10 RMC WITH FIELD BEND, APPROVED ADAPTER FITTING, GROUNDING BUSHING
 - OPTION B - 10 RMC - GS FACTORY ELBOWS, APPROVED ADAPTER FITTING, GS COUPLING, GROUNDING BUSHING
 - END BELL BUSHING (TYP. ALL NON-METALLIC CONDUIT TERMINATIONS)
 - CODE SIZES PVC
 - HIGH-DENSITY POLYETHYLENE CONDUIT (HDPE)
 - NON-METALLIC CONDUIT (PVC) SCHEDULE 80
 - BOX LIDS
 - GROUND STUD
 - CABLE VAULT
 - PULL BOX
 - ITS CABINET
 - EDGE OF FOUNDATION
 - TRAFFIC SIGNAL CABINET
 - CABINET GROUNDING BUSSES (COPPER)
 - RIGID PVC OUTERDUCT WITH PVC OR PE INNERDUCT
 - GALVANIZED STEEL RIGID METAL CONDUIT OUTERDUCT WITH PVC OR PE INNERDUCT
 - EQUIPMENT GROUNDING CONDUCTOR CONNECTION POINT IN CABLE VAULT OR PULL BOX BETWEEN SEPARATE SERVICES
 - DETECTABLE UNDERGROUND WARNING TAPE, COIL INSIDE CABINET, CABLE VAULT, OR PULL BOX
 - TRANSFORMER CABINET
 - GROUNDING CONDUCTOR NON-INSULATED (FROM REINFORCING CAGE)
 - BOX FRAME BONDING ATTACHMENT POINT
 - CABINET MAIN BONDING JUMPER
 - JUNCTION BOX OR 8" DRUM TIE WITH APPROVED CONCRETE COVER
 - ITS CABINET
 - EDGE OF FOUNDATION
 - UNGROUNDING CABINET NEUTRAL BUS (COPPER)

LOCKING LID STANDARD DUTY JUNCTION BOX
 TYPE 8
 STANDARD PLAN J-40.30-04
 SHEET 2 OF 2 SHEETS

TYPICAL GROUNDING DETAILS
 STANDARD PLAN J-60.05-01
 SHEET 1 OF 3 SHEETS

DRAWN	DESIGNED	CHECKED	PROJ. ENGR.	DRAWING FILE	DATE	REVISION	BY	APP'D
RMH	RMH	9/12/24 RMH		TS_rev1.DWG				

FOR:
DESIGN INNOVATIONS
 3309 56th St. NW, Suite 105
 Gig Harbor, WA 98335



HERMAN TRAFFIC ENGINEERING, INC.
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 253-236-4941 tel. bob@hte-inc.com

2ND STREET APARTMENTS
 CITY OF PUYALLUP, WA

2ND ST. NE/5TH AVE. NE
 TRAFFIC SIGNAL DETAILS

TS6
 SHEET 6 OF 7 SHEETS

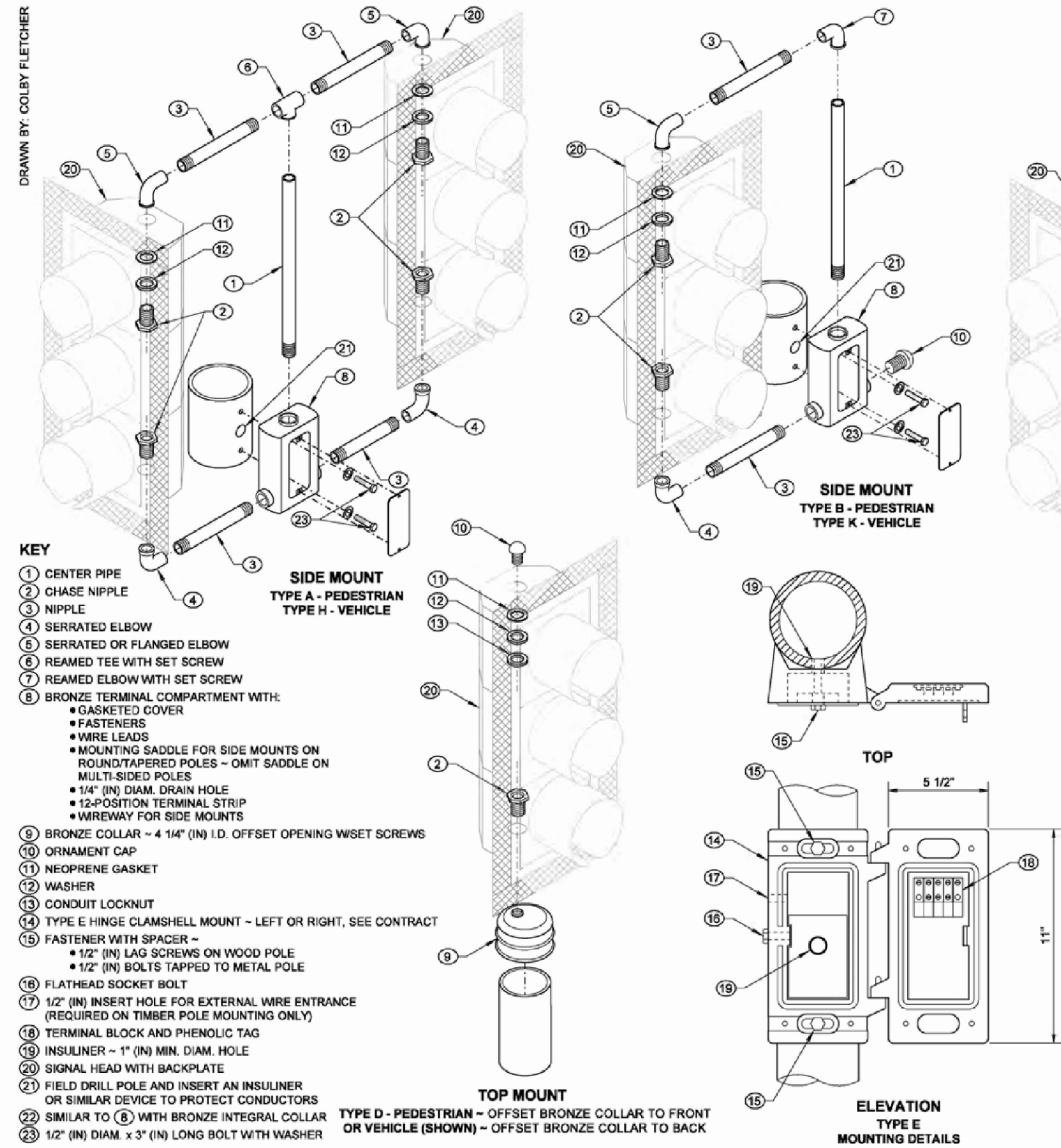
APPROVED

BY: _____
 CITY OF PUYALLUP
 DEVELOPMENT ENGINEERING

DATE: _____

NOTE: THIS APPROVAL IS VOID AFTER 180 DAYS FROM APPROVAL DATE. THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS. FIELD CONDITIONS MAY DICTATE CHANGES TO THESE PLANS AS DETERMINED BY THE DEVELOPMENT ENGINEERING MANAGER.

DRAWN BY COLBY FLETCHER



NOTES

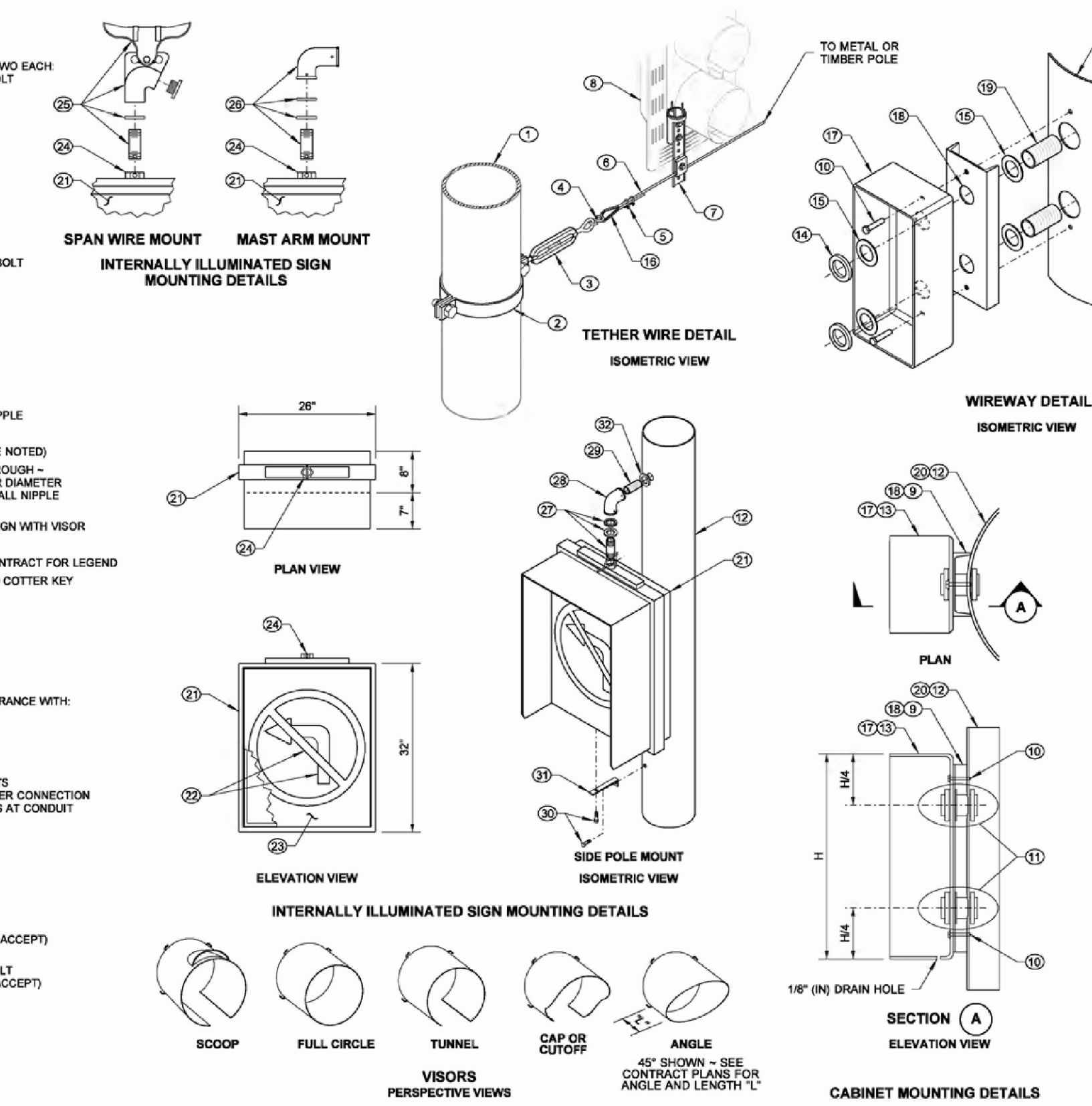
- See Contract for head type, mounting height, and orientation.
- All nipples, fittings, and center pipes shall be 1 1/2" (in) diameter.
- Install neoprene gasket inside head when flanged elbows are supplied.
- Extend wire sheath a minimum of 1" (in) inside all signal and sign housings and terminal compartments.
- Apply bead of silicone to the serrated ring and around the perimeter of all top openings prior to installation of fittings.
- See **Standard Specification 9-29.16** for backplate requirements. Where required, prismatic sheeting shall be applied in accordance with the manufacturer's recommendations. The application surface of the backplate shall be cleaned, degreased with isopropyl alcohol, and dried prior to application of the sheeting.
- Drill a 1/4" (in) drain hole in the bottom of each signal display assembly, and one in the bottom of each pedestrian head. When signal display assembly is mounted horizontally, drill a 1/4" (in) drain hole at the lowest point of each section of the signal assembly.



KEY

- METAL OR TIMBER POLE
- 2" (IN) x 3/16" (IN) S.S. TETHER WIRE BAND WITH TWO EACH
- 3/8" (IN) x 1/8" (IN) x 3/4" (IN) S.S. HEX HEAD BOLT
- 5/16" (IN) EYE AND EYE TURNBUCKLE
- 3/8" (IN) MILD STEEL S-HOOK
- 1/8" (IN) S.S. WIRE ROPE CLAMP (J-BOLT TYPE)
- 1/8" (IN) S.S. TETHER WIRE
- 1 1/2" (IN) BREAKAWAY TETHER ASSEMBLY WITH OPTIONAL EXTENDER BAR
- SIGNAL HEAD
- 6 x 8.2 LIFT CHANNEL
- TWO EACH
- 1/2" (IN) x 13 IN. x 2 1/2" (IN) S.S. HEX HEAD BOLT
- LOCK WASHERS (DRILL AND TAP POLE TO ACCEPT)
- WIREWAY (SEE DETAIL THIS SHEET)
- METAL POLE
- CABINET
- END BUSHING
- SEALING LOCKNUT
- WIRE ROPE THIMBLE
- CABINET WALL DRILLED 1/8" (IN) OVERSIZE OF NIPPLE
- CHANNEL DRILLED 1/8" (IN) OVERSIZE OF NIPPLE
- 2" (IN) DIAM. x 4" (IN) NIPPLE (UNLESS OTHERWISE NOTED)
- POLE WALL DRILLED SO BUSHING WILL PASS THROUGH - HOLE SIZE TO BE A MAXIMUM OF 1/8" (IN) LARGER DIAMETER THAN THE CONDUIT NIPPLE END BUSHING - INSTALL NIPPLE IN POLE WITH BUSHING INSTALLED
- 80S EXTRUDED ALUMINUM FRAME BLANK OUT SIGN WITH VISOR
- TRANSLUCENT PLEXIGLASS SIGN FACE - SEE CONTRACT FOR LEGEND
- 1 1/2" (IN) CAST IRON HUB WITH 5/16" (IN) PIN AND COTTER KEY
- SPAN WIRE MOUNT ASSEMBLY WITH:
 - 1 1/2" (IN) DIAM. CONDUIT LOCKNUT
 - 1 1/2" (IN) DIAM. CONDUIT NIPPLE
 - BRONZE MESSENGER HANGER WITH:
 - 1/2" (IN) DIAM. J-BOLTS
 - CABLE LOCK BAR
 - RIVET
 - COTTER KEY
 - BRONZE INTERNALLY THREADED WIRE ENTRANCE WITH:
 - BUSHING INSERT
 - ALLEN HEAD S.S. SET SCREW
- ARM MOUNT ASSEMBLY WITH:
 - 1 1/2" (IN) DIAM. CONDUIT LOCKNUT
 - BRONZE SERRATED BELL FITTING WITH:
 - 3/8" (IN) S.S. THROUGH BOLT AND NUTS
 - THREE S.S. SET SCREWS AT SLIPRITER CONNECTION
 - THREE ALLEN HEAD S.S. SET SCREWS AT CONDUIT NIPPLE CONNECTION
 - 1 1/2" (IN) DIAM. CONDUIT NIPPLE
 - SERRATED RING WITH NO PINS
- SIDE POLE MOUNT ASSEMBLY WITH:
 - 1 1/2" (IN) DIAM. CONDUIT LOCKNUT
 - 1 1/2" (IN) DIAM. CONDUIT NIPPLE
 - SERRATED RING WITH NO PINS
- 1 1/2" (IN) SERRATED ELBOW
- 1 1/2" (IN) DIAM. NIPPLE (DRILL AND TAP POLE TO ACCEPT)
- TWO EACH
- 1/2" (IN) x 20 IN. x 3/4" (IN) S.S. HEX HEAD BOLT
- LOCK WASHERS (DRILL AND TAP POLE TO ACCEPT)
- MOUNTING BRACKET
- LOCKNUT

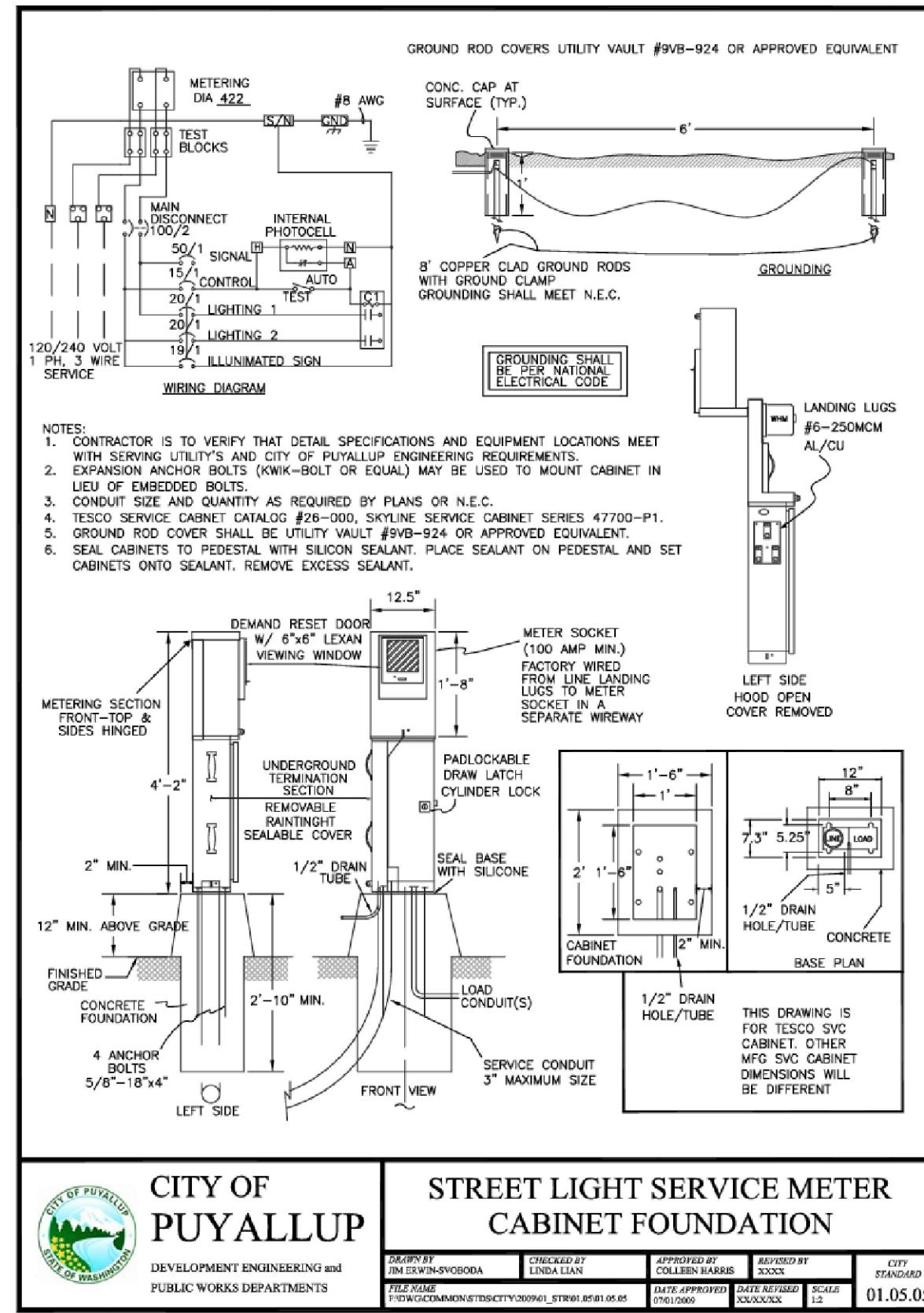
LEGEND:
S.S. = STAINLESS STEEL
DRAWN BY: COLBY FLETCHER



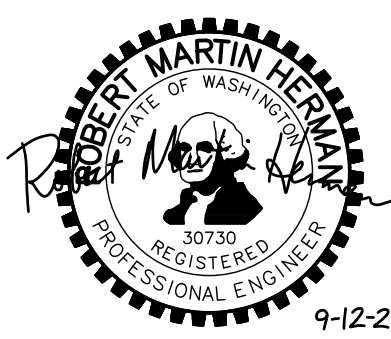
NOTES

- Backplates shall be installed with stainless steel screws and stainless steel washers.
- Silicone top of channel and around nipples at openings into pole.
- Breakaway tether extender bar shall extend one hole and one flat past tether wire.

APPROVED FOR PUBLICATION
Carpenter, Jeff
Jul 8 2015 3:12 PM
MISCELLANEOUS SIGNAL DETAILS
STANDARD PLAN J-75.30-02
SHEET 1 OF 1 SHEET
APPROVED FOR PUBLICATION
Carpenter, Jeff
Jul 10 2015 7:17 AM
Washington State Department of Transportation



FOR:
DESIGN INNOVATIONS
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Gig Harbor, WA 98335



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2ND STREET APARTMENTS
CITY OF PUYALLUP, WA

2ND ST. NE/5TH AVE. NE
TRAFFIC SIGNAL DETAILS

TS7

SHEET 1 OF 7 SHEETS

DRAWN	RMH				
DESIGNED	RMH				
CHECKED	9/12/24 RMH				
PROJ. ENGR.					
DRAWING FILE	TS_rev1.DWG				
	DATE	REVISION	BY	APP'D	