

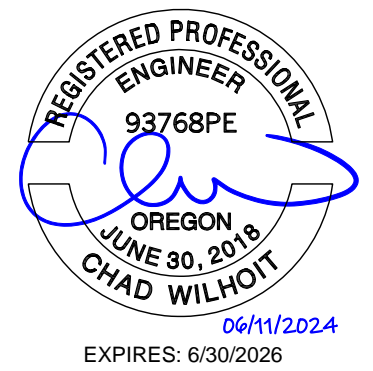


PROJECT NAME: PRP_VZW_VCA2_OR Beaverton
PROJECT ADDRESS: 13855 SW BARROWS RD, BEAVERTON, OR 97223
PROJECT TYPE: EXISTING PGE WOOD POLE COLLOCATION
CUSTOMER NODE ID #: 5000344152
CROWN NODE ID #: CITATION_7
POLE ID #: C1133C-3549
HUB NAME: 167612
CARRIER: VERIZON
COORDINATES: LAT: 45.437909° LONG: -122.819347°
CROWN CASTLE BILLING / SCU #: 525572

T1.1-SHEET INDEX		
SHEET #	SHEET DESCRIPTION	PAGE
T1.1	TITLE SHEET	1
A1.1	SITE PLAN	2
A1.2	POLE ELEVATIONS	3
A1.3	PHOTO SIMULATION	4
A1.4	SITE SURVEY	5
D1.1	ELECTRICAL DETAILS/ONE LINE DIAGRAM	6
D1.2	EQUIPMENT SPECIFICATIONS	7
D1.3	EQUIPMENT SPECIFICATIONS	8
D1.4	TRAFFIC CONTROL PLAN	9
D1.5	GENERAL NOTES & DETAILS	10



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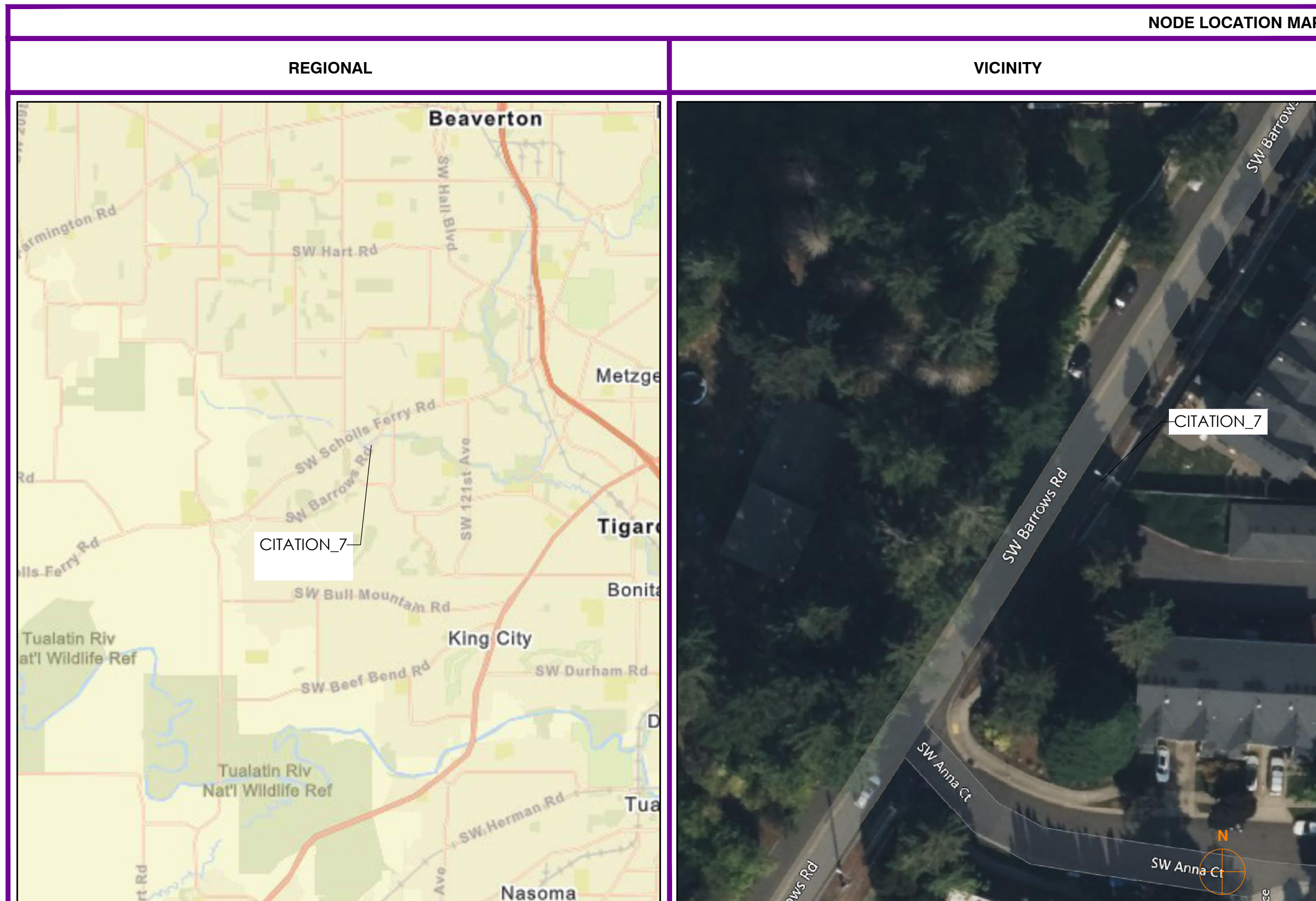


PGE TO OBTAIN PERMITS FOR POLE REPLACEMENT UNDER SEPARATE APPLICATION. NO SMALL CELL WIRELESS EQUIPMENT SHALL BE INSTALLED UNTIL AFTER PGE POLE REPLACEMENT IS COMPLETE.

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PROJECT TEAM
A&E COMPANY: P. MARSHALL & ASSOCIATES ADDRESS: 6801 PORTWEST DR, STE 100 HOUSTON, TX 77024 CONTACT: PAT MARSHALL PHONE #: 678-280-2325 EMAIL: PAT.MARSHALL@PMAS.COM PERMITTING COMPANY: CROWN CASTLE ADDRESS: 1505 WESTLAKE AVE. N., STE 800 SEATTLE, WA 98109 CONTACT: AMANDA NATIONS PHONE #: 206-336-2889 EMAIL: AMANDA.NATIONS@CROWNCastle.COM UTILITIES: COMPANY: CROWN CASTLE ADDRESS: 200 SPECTRUM CENTER DR., STE 1900 IRVINE, CA 92618 CONTACT: LANISHA KELLY PHONE #: 323-855-4967 EMAIL: LANISHA.KELLY@CROWNCastle.COM SURVEY: COMPANY: S&F LAND SERVICES, LLC ADDRESS: 901 NW CARLTON, STE 3 BEND, OR 97703 CONTACT: MATT FAULKNER EMAIL: MATT.FAULKNER@SFLANDS.COM

PROJECT SUMMARY		
JURISDICTION BEAVERTON CITY 12725 SW MILKMAN WAY BEAVERTON, OR 97005 PH: 503-526-2403 HANDICAPPED REQUIREMENTS FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS REQUIREMENTS ARE NOT REQUIRED. PARCEL INFORMATION TBD POLE OWNER PORTLAND GENERAL ELECTRIC SCOTT ZISKA SCOTT.ZISKA@PGN.COM 541-232-2530	APPLICANT: CROWN CASTLE 1505 WESTLAKE AVE. N., STE 800 SEATTLE, WA 98109 CODES: GENERAL ORDER (GO) 95, RULE 94 2018 INTERNATIONAL BUILDING CODE (IBC) 2020 NATIONAL ELECTRICAL CODE (NEC) PLUMBING REQUIREMENTS FACILITY HAS NO PLUMBING POWER COMPANY PORTLAND GENERAL ELECTRIC	NOTE: THE PROPOSED POLE DESIGN CONTAINED IN THIS DRAWING PACKAGE IS CURRENTLY OUT OF COMPLIANCE WITH TIGARD CODE WHICH STATES THAT POLES SUPPORTING STREETLIGHTS SHALL NOT BE USED AND THAT ALL PROPOSED EQUIPMENT TO BE INTEGRATED WITHIN THE POLE. A VARIANCE REQUEST OR ALTERNATIVE DESIGN IS CURRENTLY TO BE DETERMINED.



PROJECT DESCRIPTION
THIS PROJECT CONSISTS OF THE INSTALLATION OF PROPOSED SMALL CELL EQUIPMENT AND ASSOCIATED ELECTRICAL COMPONENTS ALONG WITH NECESSARY MOUNTING HARDWARE ON AN EXISTING OWNED BY PORTLAND GENERAL ELECTRIC. PROPOSED POWER AND FIBER WILL BE DELIVERED OVERHEAD. <ul style="list-style-type: none"> (3) ERICSSON - AIR 1652 B77D ANTENNA/RADIO UNITS (1) JMA WIRELESS - CX200M1236-3Cxy OMNIDIRECTIONAL ANTENNA (1) ERICSSON - RADIO 4455 RADIO UNIT (1) 2" POWER SERVICE RISER CONDUIT (1) SQUARE D - QO612L100RB AC LOAD CENTER/DISCONNECT SWITCH CIRCUITS AND FEEDERS FOR EQUIPMENT THE PLANS AND DETAILS IN THIS DRAWING SET REPRESENT A PORTION OF A SMALL CELL NETWORK TO BE CONSTRUCTED IN PUBLIC RIGHT OF WAY PURSUANT TO AUTHORITY GRANTED BY BEAVERTON CITY. THIS PROJECT MEETS BEAVERTON CITY DESIGN MANUAL STANDARDS AND GUIDELINES. PROPOSED POWER TO BE BROUGHT TO AC DISCONNECT ON POLE.

REVISION				
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E	06/11/2024	MAG	LOWERED 5G ANT.	

CALL OREGON ONE CALL (800) 332-2344
 CALL 3 WORKING DAYS BEFORE YOU DIG!

CANDIDATE:
CITATION_7
 13855 SW BARROWS RD
 BEAVERTON, OR 97223

HUB:
167612

SHEET TITLE:
TITLE SHEET

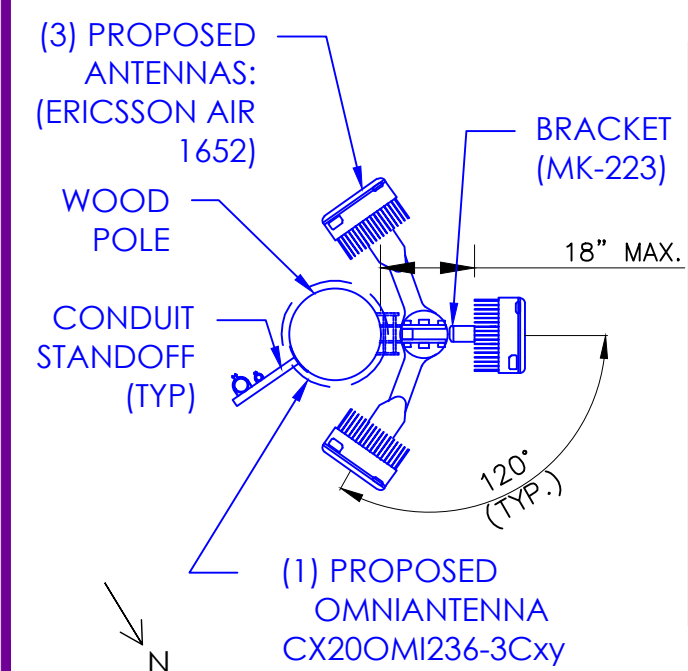
SHEET NUMBER:
T1.1

REVISION:
A

- SITE PLAN DEVELOPED FROM AERIAL PHOTO. CONTRACTOR TO VERIFY FIELD CONDITIONS & DIMENSIONS PRIOR TO CONSTRUCTION.
- ROW INFORMATION SHOWN IS BASED ON JURISDICTION'S GIS DATA.
- RIGHT-OF-WAY USE PERMIT SHALL BE OBTAINED BY CONTRACTOR PRIOR TO COMMENCING WORK.
- ALL WORK TO BE CONDUCTED IN CITY RIGHT OF WAY, U.N.O.
- ALL DISTURBED LANDSCAPING SHALL BE REPLACED TO SIMILAR EXISTING CONDITION.
- ANY SIDEWALK CLOSURE SHALL BE COORDINATED WITH THE CITY AND PROPER SIGNAGE WILL BE PLACED.
- TEMPORARY LIGHTING WILL BE COORDINATED WITH CITY AND PROVIDED WHENEVER EXISTING LIGHTING IS REMOVED OR UNAVAILABLE AS REQUIRED.
- NO MATERIALS OR EQUIPMENT SHALL BE STORED ON PRIVATE PROPERTY OR BLOCK ACCESS TO PRIVATE PROPERTY.
- CLEANUP OF THE WORK AREA WILL BE COMPLETED EACH EVENING AND THE PROJECT AREA WILL BE RETURNED TO EXISTING CONDITION AT THE COMPLETION OF CONSTRUCTION AT EACH NODE LOCATION.
- ALL WORK TO COMPLY WITH OSHA AND CITY GUIDELINES.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE AND REPLACE, AT THEIR COST, ANY AND ALL DAMAGED PAVEMENT, SIDEWALK, CURB AND GUTTER OUTSIDE THE PAY LIMIT, DAMAGE DUE TO THEIR ACTIVITIES ON THE PROJECT. THIS INCLUDES, BUT IS NOT LIMITED TO THE REMOVAL AND REPLACEMENT OF NEWLY CRACKED, THE REMOVAL AND REPLACEMENT OF EXISTING CRACKS WHERE THE CRACKS HAVE BEEN ENLARGED DUE TO THE CONTRACTORS OPERATIONS, THE REMOVAL AND REPLACEMENT OF DEFORMED PAVEMENT, CURB AND GUTTER, SIDEWALK, ETC.. ALL SAW CUTS USED FOR THE REMOVAL OF THESE ITEMS SHALL BE PERPENDICULAR AND PARALLEL TO THE CENTERLINE CONTROLLING THAT ITEM, OR AT THE DISCRETION OF THE CITY INSPECTOR.

- #—#—# FENCE
- OHP— OVERHEAD POWER
- UGP— UNDERGROUND POWER
- UGP— (PROPOSED) UNDERGROUND POWER
- GAS— GAS
- S—S—S— STORM SEWER
- W—W—W— WASTEWATER
- W— WATER
- - - - - FIBER
- P—P—P— PROPERTY LINE

- WATER MH
- ⊙ STORM SEWER MH
- WASTEWATER MH
- UTILITY MH
- UTILITY VALVE
- ⊕ WATER METER
- ⊕ FIRE HYDRANT
- ⊕ WATER VALVE
- CATCH BASIN
- ⊕ UTILITY POLE
- ⊕ LIGHT POLE
- ◆ PROPOSED NODE POLE
- ⊕ TRAFFIC LIGHT POLE
- BOLLARD
- ⊕ HANDHOLE
- ⊕ STREET SIGN



POLE WILL BE STEPPED ACCORDING TO GO 95 STANDARDS FOR CLIMBING SPACE

- ANTENNA AZIMUTH IS: 0° - 120° - 240°
- (1) 2" POWER CONDUIT AT 5:00
- (1) 1" FIBER CONDUIT AT 5:00
- (1) POLE MOUNTED CABINET AT 10:00

*CLOCK POSITION IS CLOCKWISE FROM NORTH

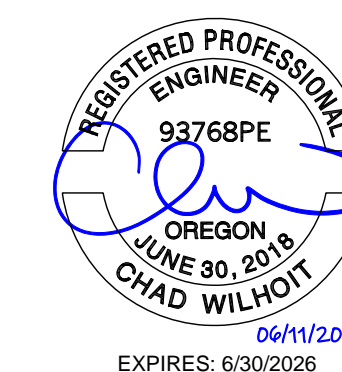
SUBJECT POLE: CITATION_7

LOCATION:
 LAT: 45.437909
 LONG: -122.819347
 ADDRESS: 13855 SW BARROWS RD
 BEAVERTON CITY RIGHT-OF-WAY

INFO:
 POLE OWNER: PORTLAND GENERAL ELECTRIC
 POLE TYPE: EXISTING PGE WOOD POLE
 COLLOCATION
 POLE ID #: C1133C-3549
 EXISTING POLE CLASS: TBD
 EXISTING POLE DIAMETER: 13.38"



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 13855 SW BARROWS RD
 BEAVERTON, OR 97223

HUB:
167612

SHEET TITLE:
SITE PLAN

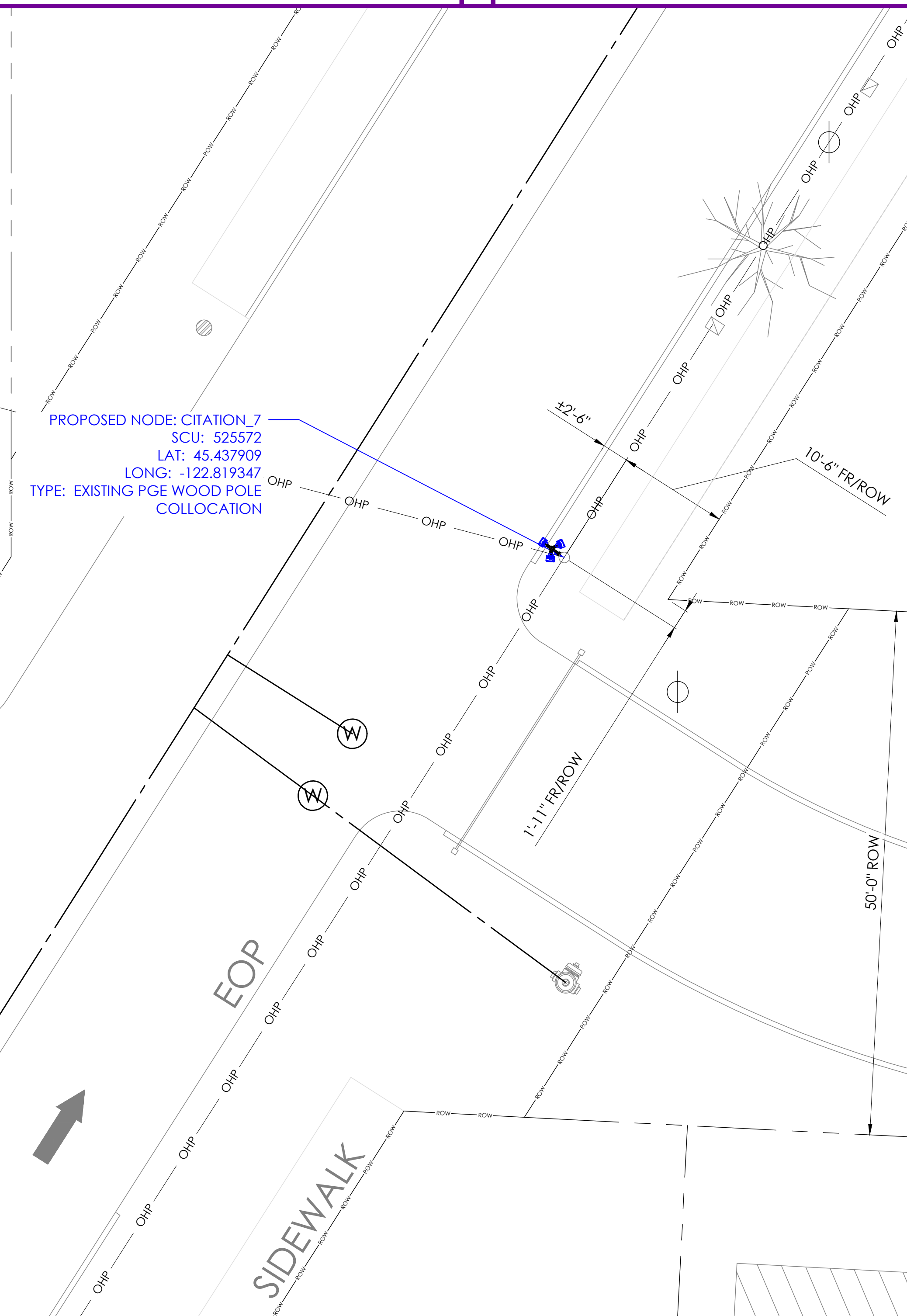
SHEET NUMBER: **A1.1** REVISION: **A**

GENERAL PROJECT NOTES SCALE: NTS 1

ABBREVIATIONS AND SYMBOLS SCALE: NTS 2

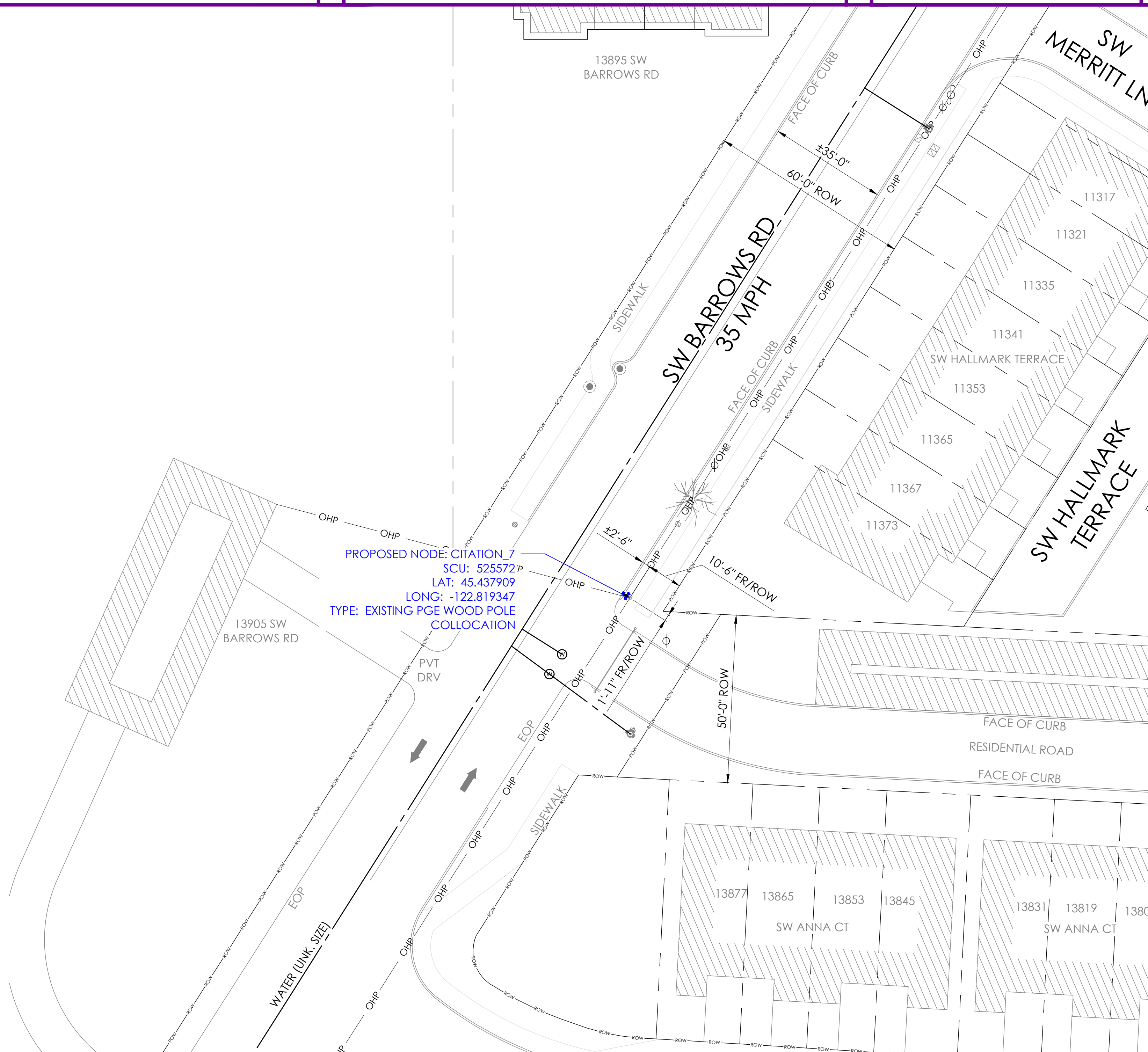
TOP VIEW AND AZIMUTH SCALE: NTS 3

POLE INFORMATION SCALE: NTS 4



DETAILED SITE PLAN

OVERALL SITE PLAN



OVERALL SITE PLAN

POLE INFORMATION

1/4"=1'-0" (FULL SIZE)
 1/8"=1'-0" (11x17)

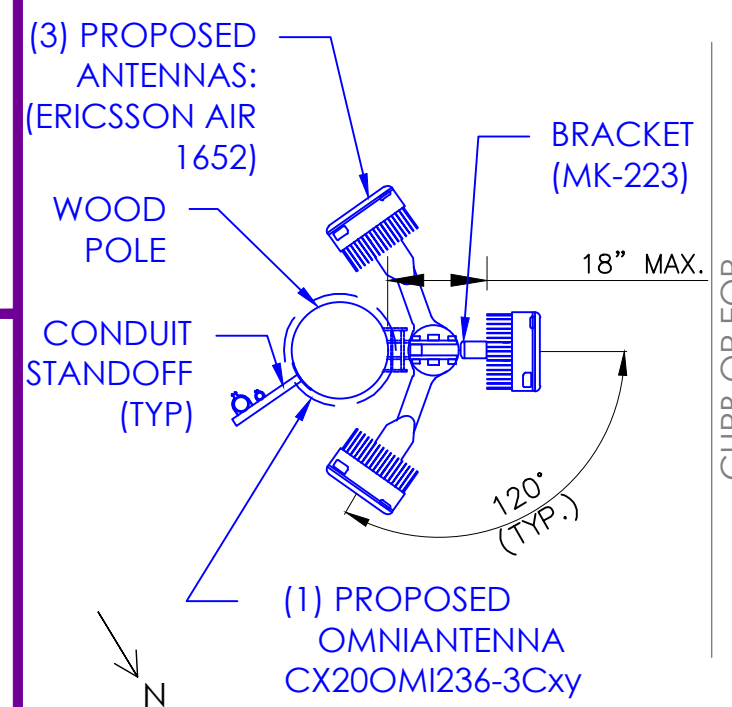
1"=10'-0" (FULL SIZE)
 1"=20'-0" (11x17)

- ALL BLUE COLORED EQUIPMENT IS NEW OR EXISTING-TO-BE-MODIFIED)
- ALL AZIMUTHS SHOWN ON THIS PAGE ARE GENERIC - SEE SHEET A1.1 FOR SPECIFIC DETAILS
- ALL NEW EQUIPMENT TO BE PAINTED/WAPPED TO MATCH EXISTING INFRASTRUCTURE AND FOLLOW JURISDICTIONAL REQUIREMENTS.

EQUIPMENT	QTY.	HEIGHT (IN)	WIDTH (IN)	DEPTH (IN)	VOLUME (CU. FT) (EA)	VOLUME (CU. FT) (TOTAL)
ERICSSON AIR 1652	3	21.3	8.0	5.6	0.54	1.63
RADIO MOUNTING BRACKET	3	5.3	5.3	1.8	0.03	0.08
ELECTRICAL DISCONNECT	1	12.6	8.9	5.0	0.3	0.3
OMNI-ANTENNA	1	24.0	14.6		1.27	1.27
POLE CABINET	1	48.0	20.0	20.0	3.49	3.49
POLE EXTENSION	1	54.0	10.0		1.96	1.96
TOTAL				8.77		

PROPOSED EQUIPMENT:

- (3) ERICSSON AIR 1652 ANTENNA/RADIO UNITS
 - RAD. CENTER = 43'-9"
 - AZIMUTH IS 0°, 120°, 240°
- (1) JMA CX200MI236-3CXY
- (1) SQUARE D AC LOAD CENTER
- (1) FIBER NID
- 2" SCH 80 POWER CONDUIT
- 1" SCH 80 FIBER CONDUIT



POLE WILL BE STEPPED ACCORDING TO GO 9 STANDARDS FOR CLIMBING SPACE

- ANTENNA AZIMUTH IS: 0° - 120° - 240°
- (1) 2" POWER CONDUIT AT 5:00
- (1) 1" FIBER CONDUIT AT 5:00
- (1) POLE MOUNTED CABINET AT 10:00

*CLOCK POSITION IS CLOCKWISE FROM NORTH

SUBJECT POLE: CITATION_7

LOCATION:

LAT: 45.437909
 LONG: -122.819347
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 BEAVERTON CITY RIGHT-OF-WAY

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 (E) POLE CLASS: TBD
 (E) POLE DIAMETER: 13.38"

NOTES

SCALE: NTS

1

PROPOSED EQUIPMENT AND VOLUME CALCULATIONS

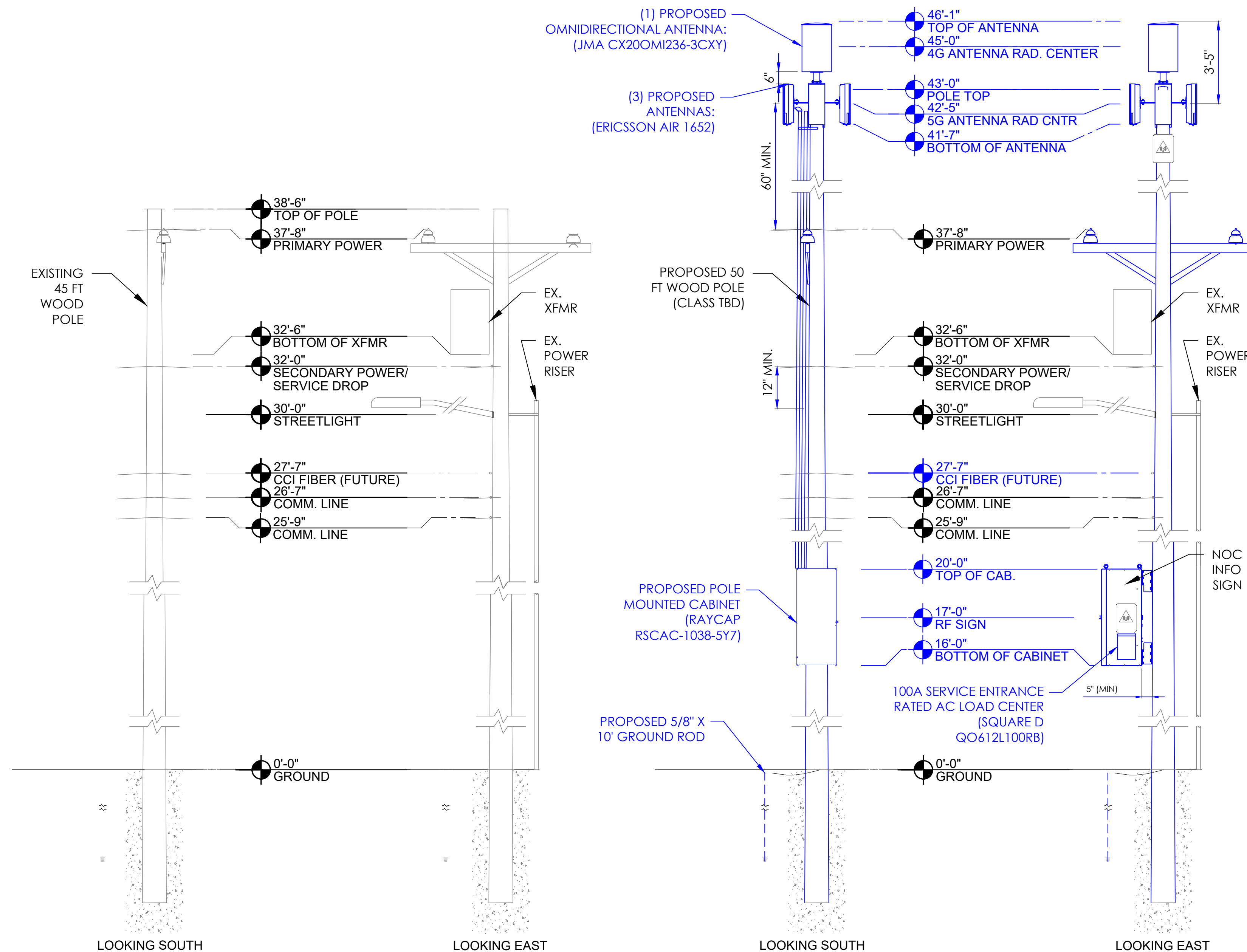
SCALE: NTS

2

TOP VIEW AND AZIMUTH

POLE INFORMATION

4



1 EXISTING POLE ELEVATION
 SCALE: NOT TO SCALE

2 PROPOSED POLE ELEVATION
 SCALE: NOT TO SCALE



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CANDIDATE:
CITATION_7
 13855 SW BARROWS RD
 BEAVERTON, OR 97223

HUB:
167612

SHEET TITLE:
POLE ELEVATION

SHEET NUMBER:
A1.2

REVISION:
A



1 PHOTO SIMULATION (BEFORE)
SCALE: NOT TO SCALE



2 PHOTO SIMULATION (AFTER)
SCALE: NOT TO SCALE



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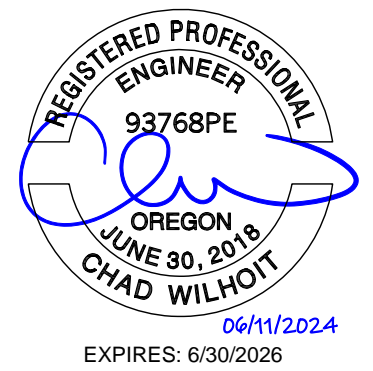
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CITATION_7
13855 SW BARROWS RD
BEAVERTON, OR 97223

HUB:
167612

SHEET TITLE:
PHOTO SIMULATION

SHEET NUMBER: **A1.3** REVISION: **A**



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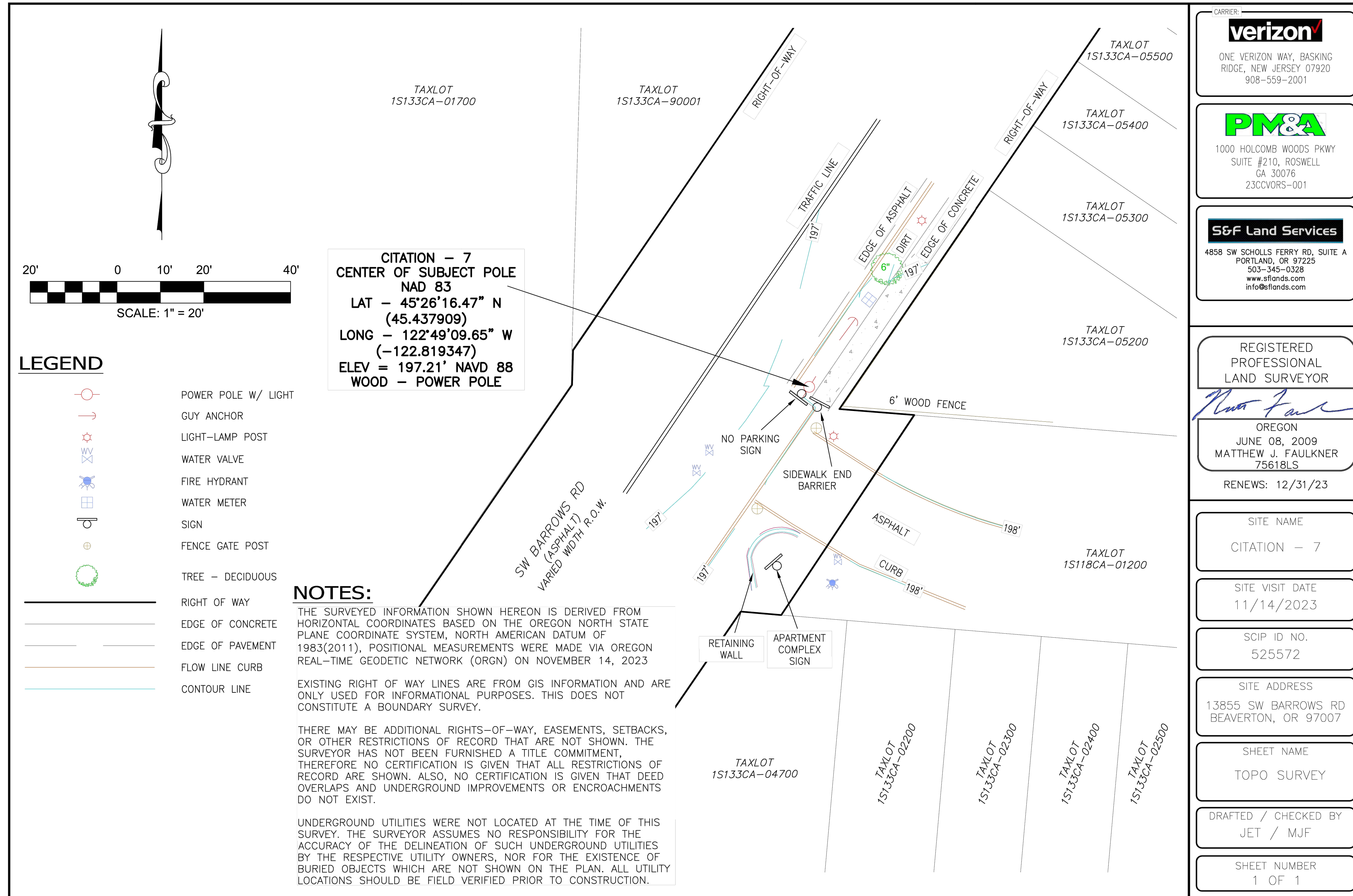
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CITATION_7
13855 SW BARROWS RD
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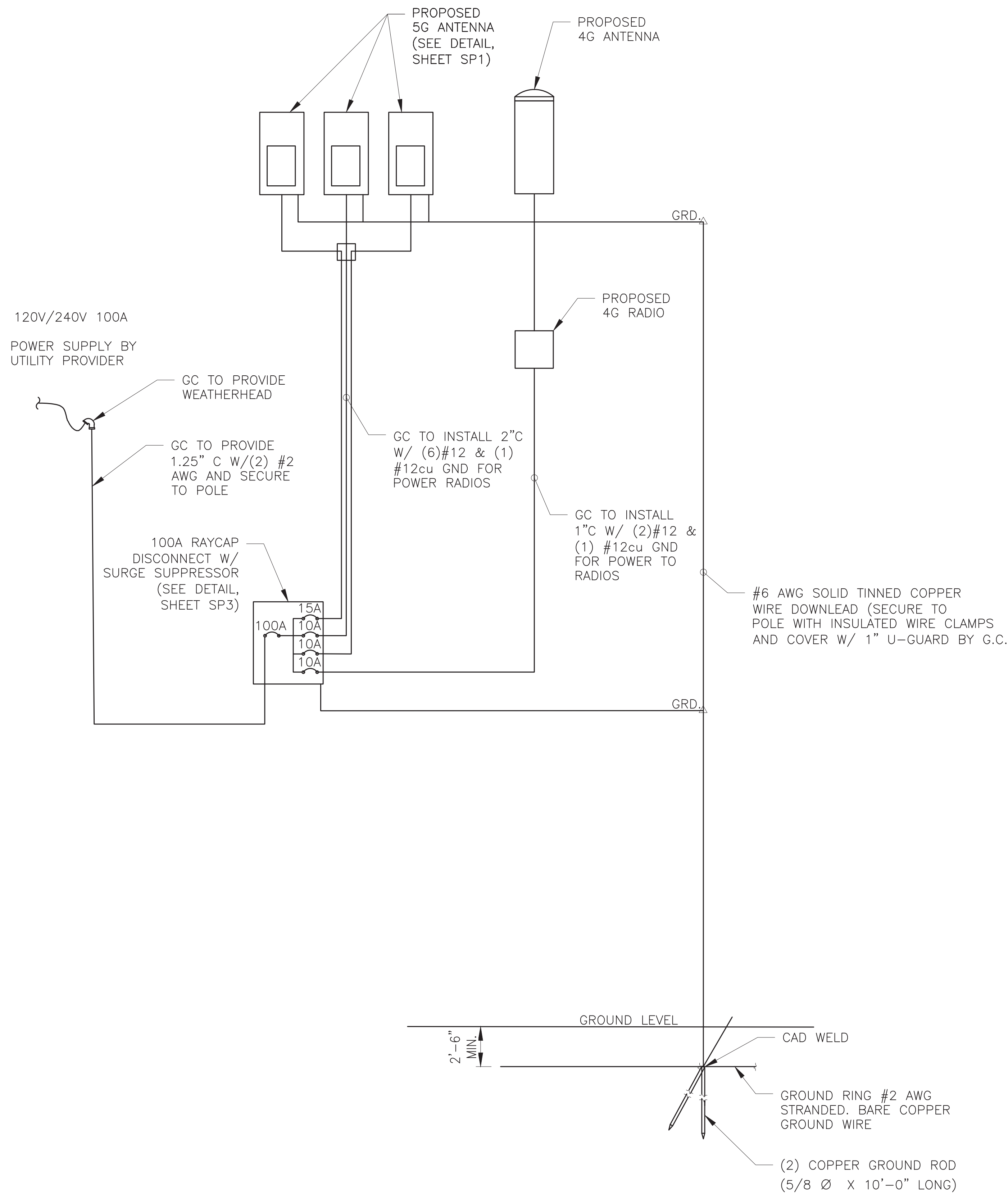
HUB:
167612

SHEET TITLE:
SITE SURVEY

SHEET NUMBER:
A1.4

REVISION:
A





1 ONE LINE DIAGRAM
SCALE: NOT TO SCALE

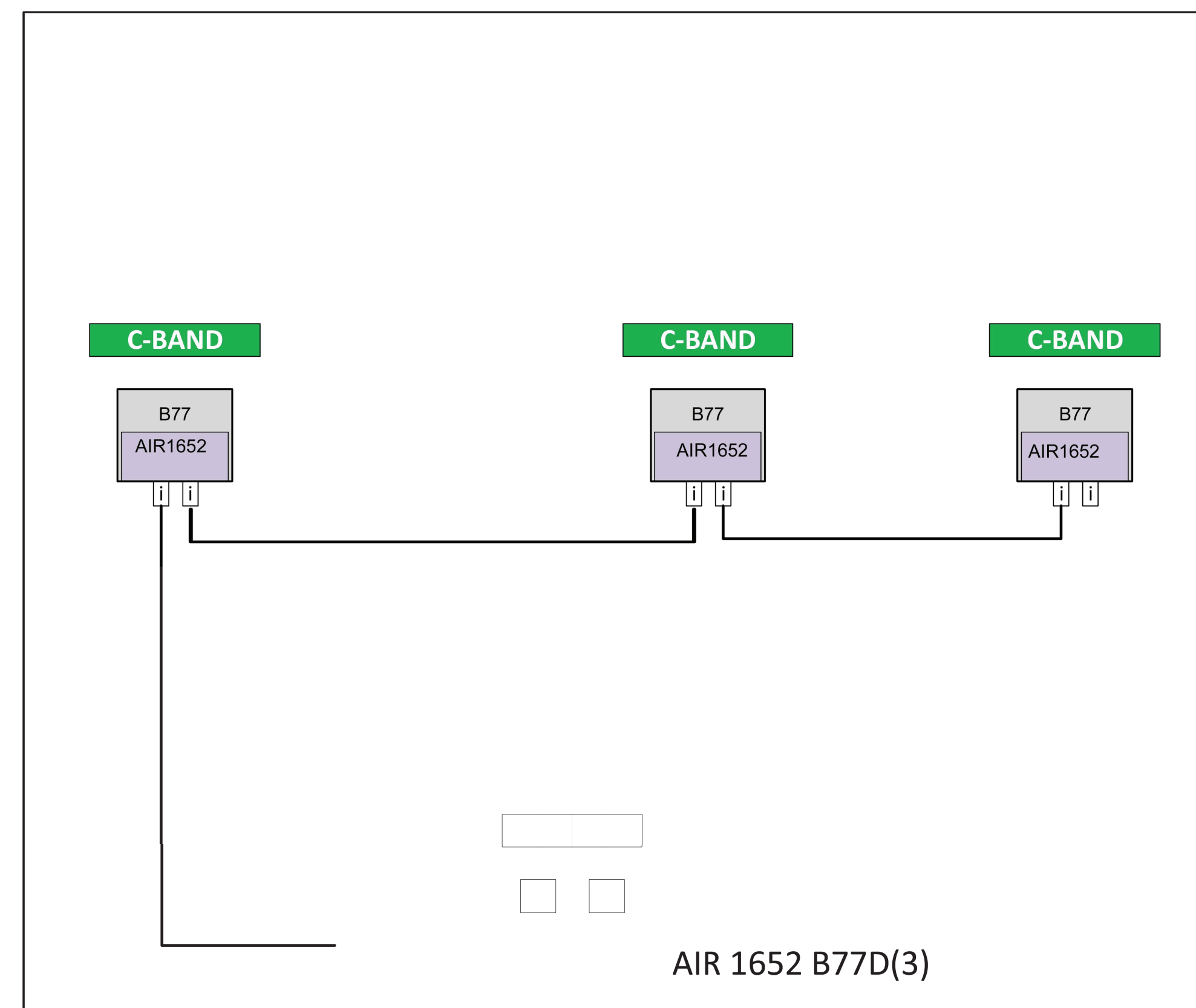
PANEL NAME		LOCATION:		VOLTAGE: 240/120 1Ø		MOUNTING / ENCLOSURE		SURFACE / NEMA 1					
CITATION_7		BASE CABINET		MAIN C/B: 100 AMPS		AVAIL. FAULT CURRENT:							
10/26/2023				BUS RATING: 100 AMPS		SHORT CIRCUIT RATING: 35,000							
AMPS/ POLES	WIRE & CONDUIT	TYPE	DESCRIPTION	KVA	CKT	A	B	CKT	KVA	DESCRIPTION	TYPE	WIRE & CONDUIT	AMPS/ POLES
15/1	2#12, 1#12G, 1/2" C	EQ	Radio 4455 B2/B25 B66A	1.20	1	1.80		2	0.60	AIR 1652 B77D	EQ	2#12, 1#12G, 1/2" C	10/1
10/1	2#12, 1#12G, 1/2" C	EQ	AIR 1652 B77D	0.60	3		1.20	4	0.60	AIR 1652 B77D	EQ	2#12, 1#12G, 1/2" C	10/1
			SPACE	0.00	5			6	0.00	SPACE	EQ		
			SPACE	0.00	7			8	0.00	SPACE	EQ		
			SPACE	0.00	9			10	0.00	SPACE	EQ		
			SPACE	0.00	11			12	0.00	SPACE	EQ		
				PHASE TOTAL	1.8		1.2		KVA				
										TOTAL CONNECTED LOAD	3.0 KVA	13 A	
										TOTAL DEMAND LOAD	3.8 KVA	16 A	

LOAD TYPE	DESCRIPTION	CONN. LOAD KVA	LOAD AMPS	DEMAND FACTOR	DESIGN LOAD KVA	DESIGN LOAD AMPS
L	LIGHTING	0.0	0.0	1.25	0.0	0.0
R	RECEPTACLE	0.0	0.0	NEC	0.0	0.0
M	MOTOR	0.0	0.0	NEC	0.0	0.0
H	HEATING	0.0	0.0	1.00	0.0	0.0
AC	HVAC	0.0	0.0	1.00	0.0	0.0
EQ	EQUIPMENT	3.0	12.5	1.25	3.8	15.8
E	EXISTING	0.0	0.0	1.25	0.0	0.0

* ALL EQUIPMENT LOADS CONSIDERED CONTINUOUS LOADS

NOTES:

2 PANEL SCHEDULE
SCALE: NOT TO SCALE



3 FIBER DIAGRAM
SCALE: NOT TO SCALE



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HUB:
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SHEET TITLE:
ELECTRICAL DETAILS/
ONE LINE DIAGRAM

SHEET NUMBER:
D1.1

REVISION:
A

3.3 Physical Characteristics

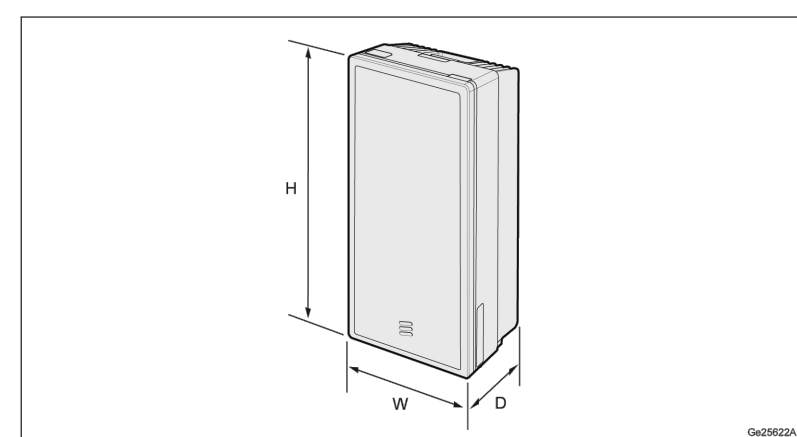


Figure 2 AIR Unit Dimensions

Table 6 AIR 1652 Dimensions

Product	Height, H (mm)	Width, W (mm)	Depth, D (mm)
AIR 1652 B77D	540	282	141
	Without protrusions	200	135

Table 7 AIR 1652 Weight

AIR Unit Type	Unit Weight ⁽¹⁾
AIR 1652 B77D	13.5 kg

(1) The weight is given with ±5% accuracy.

Table 8 Mounting Kit Weight

Mounting Kit	Weight
SXK 109 2157/1	3.2 kg
SXK 109 2157/2	2.3 kg
SXK 109 2157/3	2.0 kg

1 RRUS
SCALE: NOT TO SCALE



SIGNAGE NOTES

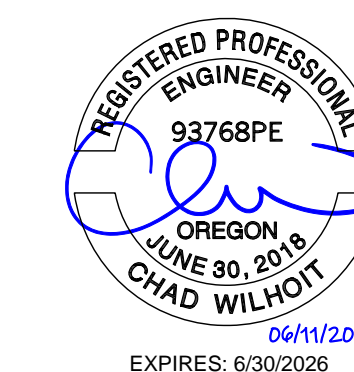
1. ALL SIGNAGE TO BE MOUNTED TO POLE
2. ALL SIGNAGE SHOULD BE STAINLESS STEEL TO PREVENT CORROSION OVER TIME

WARNING AND INFORMATION SIGN SHOULD BE NO SMALLER THAN 6" X 7.5" WITH MINIMUM READABLE LETTER HEIGHT AT 5FT. AWAY OF 0.20" FOR MESSAGE TEXT AND 0.44" FOR SIGNAL TEXT. SIGNS SHOWN ARE TYPICAL, ACTUAL SIGN MAY VARY PER VERIZON RF REQUIREMENTS FOR SITE. ALL SIGNS SHOULD FOLLOW THE VERIZON RADIO FREQUENCY COMPLIANCE SIGNAGE & DEMARCAION GUIDELINES DATED 3/3/20.



ALL IDENTIFICATION TAGS SHALL MEET NES SPECIFICATIONS.
-TAG MUST BE OUTDOOR RATED BRASS OR STAINLESS STEEL
-TAG SHALL BE ATTACHED ON THE FACE OF THE METER COVER
-TAG SHALL BE STAMPED OR CNC MACHINED WITH A MINIMUM CHARACTER HEIGHT OF 1/2"

2 SIGNAGE NOTES
SCALE: NOT TO SCALE



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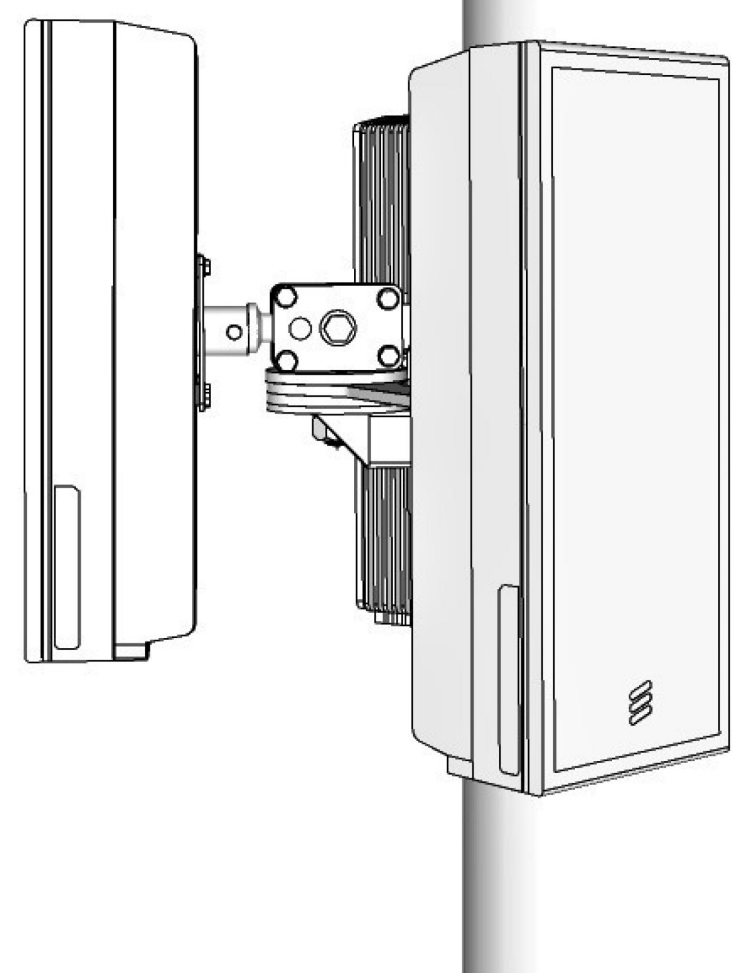
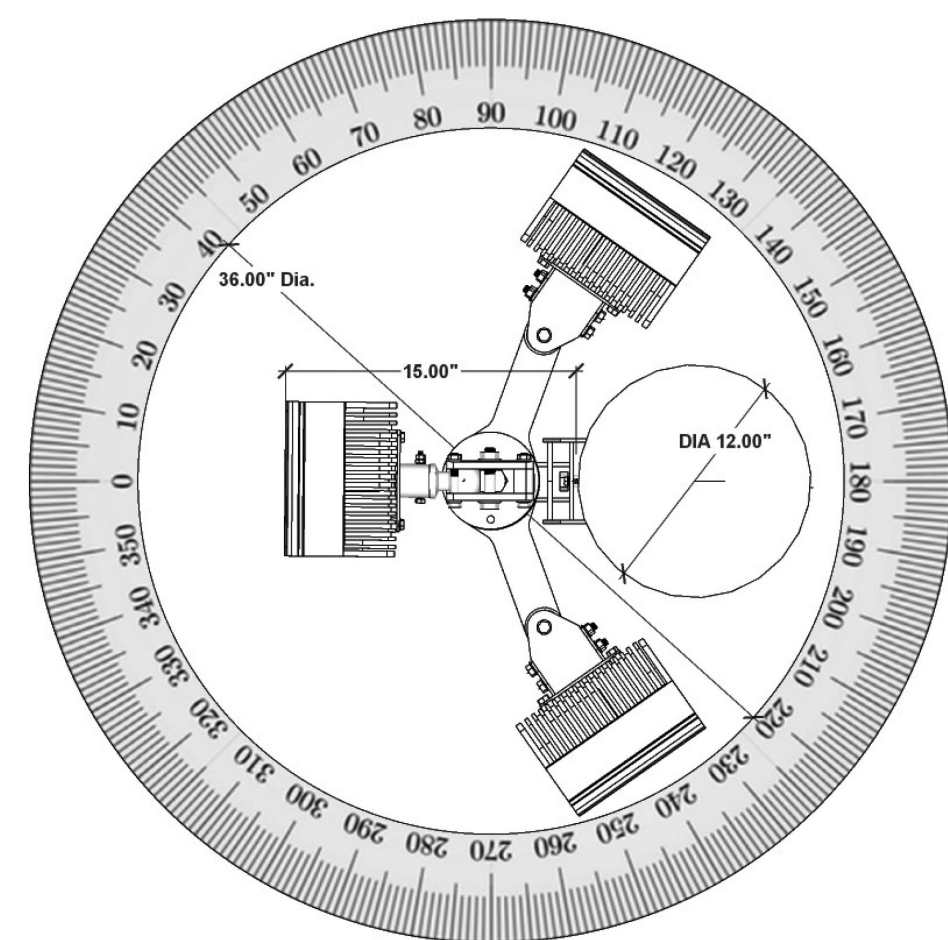
HUB:
167612

SHEET TITLE:
ANTENNA & RRUS SPECIFICATIONS

SHEET NUMBER:
D1.2

REVISION:
A

ITEM NO.	PART NUMBER	DESCRIPTION PART NAME	DIMENSIONS	MATERIAL FINISH	QTY	UNIT WT. LBS.
1	SAB-4	Side Arm Bracket 4" Flush Mount	Length 4.00" Width 4.00" Height 10.00"	Hot Rolled Steel, Galvanized	x1	6 lbs.
2	COM-STKBKT	Compact Stack-Bracket	Length 5.62" Width 5.00" Height 3.00"	Hot Rolled Steel, Galvanized	x1	5.5 lbs.
3	3AX-STK-BKT-ERIC	3 Axis Stack Bracket for Ericsson radio models: 1652/8701/6705/5322	Length 13.50" Width 5.00" Height 5.00"	Hot Rolled Steel, Galvanized	x2	12 lbs.



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6 Calm Street Rochester, NY 14611
P: 585-254-9353 NYMFG.COM

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FILE: MK-223

COMMENTS:
3AX-STK-BKT-ERIC features:
Azimuth: 180°
Tilt: 0-20°
Max radio wt.: 60 lbs.

DESCRIPTION:
RADIO MODEL SHOWN:
ERICSSON AIR 1652

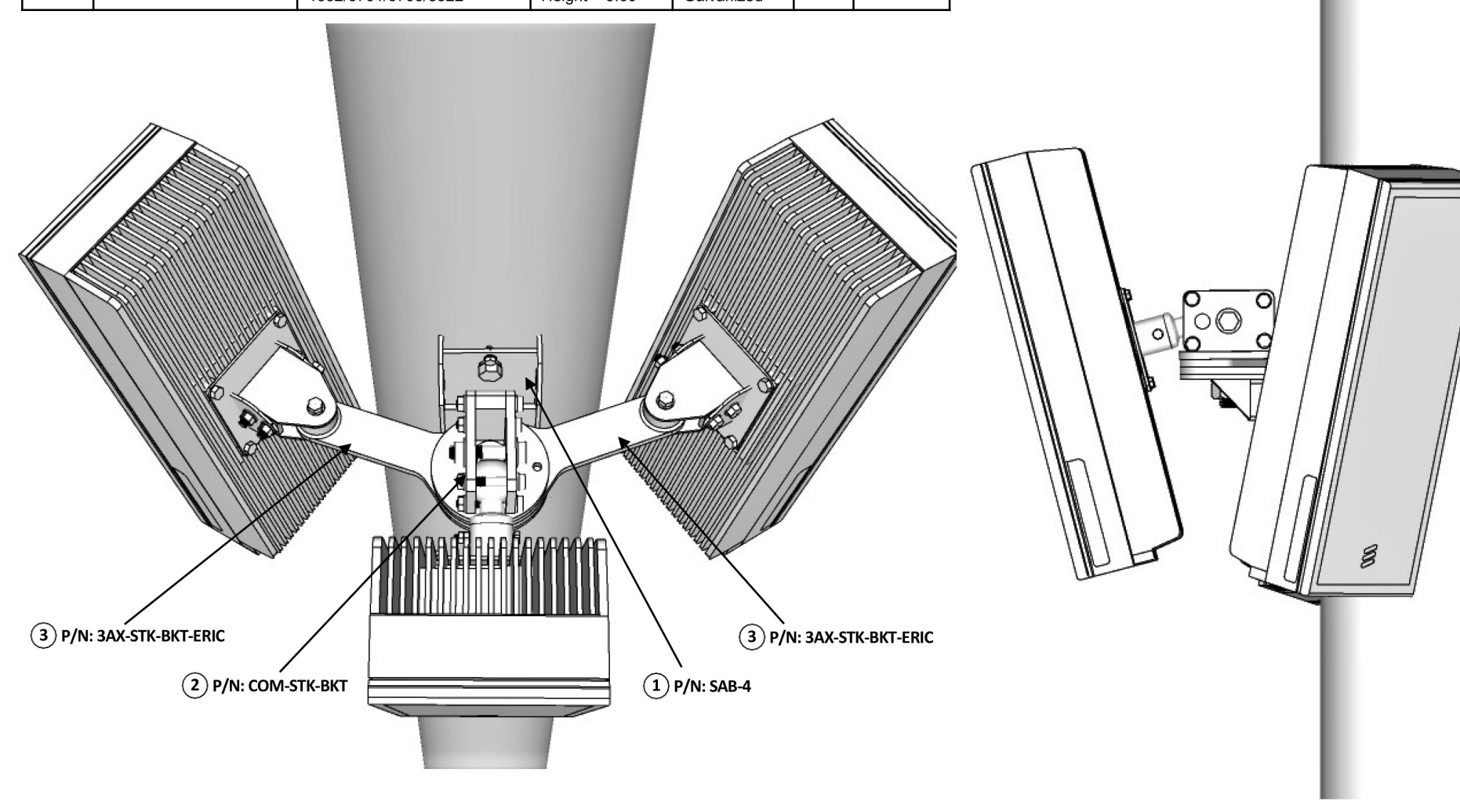
DRAWN BY: SAL ANSELMO DATE: 9/21/2023

REV	DESCRIPTION	DATE	BY

PAGE: 1 of 5

PART NUMBER:
SAB-4
COM-STKBKT
3AX-STK-BKT-ERIC

ITEM NO.	PART NUMBER	DESCRIPTION PART NAME	DIMENSIONS	MATERIAL FINISH	QTY	UNIT WT. LBS.
1	SAB-4	Side Arm Bracket 4" Flush Mount	Length 4.00" Width 4.00" Height 10.00"	Hot Rolled Steel, Galvanized	x1	6 lbs.
2	COM-STKBKT	Compact Stack-Bracket	Length 5.62" Width 5.00" Height 3.00"	Hot Rolled Steel, Galvanized	x1	5.5 lbs.
3	3AX-STK-BKT-ERIC	3 Axis Stack Bracket for Ericsson radio models: 1652/8701/6705/5322	Length 13.50" Width 5.00" Height 5.00"	Hot Rolled Steel, Galvanized	x2	12 lbs.



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FILE: MK-223

COMMENTS:
3AX-STK-BKT-ERIC features:
Azimuth: 180°
Tilt: 0-20°
Max radio wt.: 60 lbs.

DESCRIPTION:
RADIO MODEL SHOWN:
ERICSSON AIR 1652

DRAWN BY: SAL ANSELMO DATE: 9/21/2023

REV	DESCRIPTION	DATE	BY

PAGE: 2 of 5

PART NUMBER:
SAB-4
COM-STKBKT
3AX-STK-BKT-ERIC

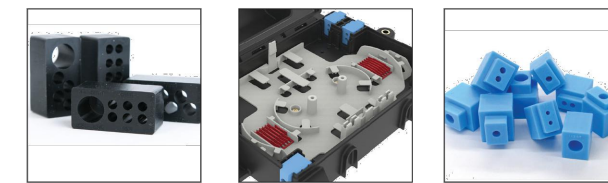
3 MK-223 POLE MOUNT
SCALE: NOT TO SCALE

PREFORMED LINE PRODUCTS
The connection you can count on.

COYOTE® DTC4/DTC6
(Drop Termination Closure)
4/6 Grommet Design



☒ COMMUNICATIONS ☒ ENERGY ☒ SPECIAL INDUSTRIES ☒ SOLAR



1 COYOTE DTC4/DTC6 (JUNCTION BOX)
SCALE: NOT TO SCALE

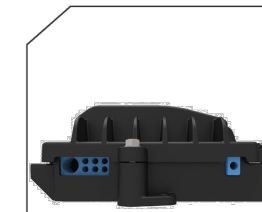
PLP® Fiber Optic Products
COYOTE® DTC4/DTC6 (Drop Termination Closure)

Description
Identifying closure systems to protect the final connection point in your FTTH network is critical. Selecting one packed with features to support splicing, connectivity or ducting applications, using traditional cable, blown fiber, pushable drop cable technology or microtube cable, with a footprint slightly larger than a splice tray, has been impossible, until now.

The COYOTE DTC4 and DTC6 are the latest additions to the DTC (Drop Termination Closure) Family. Like the original DTC, these closures offer a durable, compact solution with multiple internal fiber organizers to support your current and future needs. Network evolution is unpredictable so why not choose a closure system developed to adapt.

Key Features:

- **Size:** 10.8" x 7.8" x 3.2" (274 x 198 x 82 mm)
- **Max Splice Capacity:** 24
- **Max Adapter Capacity:** See table for adapter options
- **Grommet Quantity:** 4 or 6 – See table for grommet options
- Flexible grommet sealing system supports a wide range of flat or round cable profiles
- Factory installed sealing materials
- Reenterable and reusable
- Designed to GR-771 Generic Requirements for Fiber Splice Closures
- Constructed with flame retardant UV stabilized material
- **Applications:**
 - DTC4 - IP-68 rated
 - Aerial, below grade, direct buried, pole mount or interior applications
 - DTC6 - IP-68 rated
 - Aerial, below grade, direct buried, pole mount or interior applications



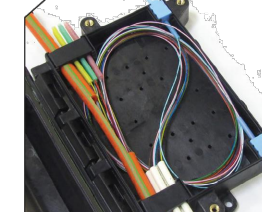
DTC4 - 2 grommets per end



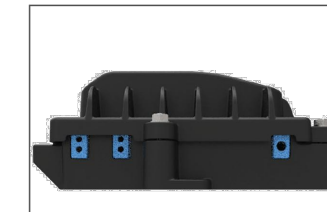
DTC4 - Splice only



DTC4 - Splice + Bulkhead



DTC4 - Duct Transition



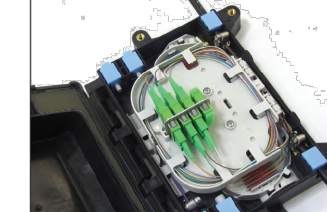
DTC6 - 3 grommets per end



DTC6 - Splice only



DTC6 - Splice + Bulkhead



DTC6 - Splice + Bulkhead

Product data sheet
Characteristics

QO612L100RB
LOAD Center QO MLO 240V 100A 1PH 6SP

Product availability: Stock - Normally stocked in distribution facility



Main
Product: Load Center
Marketing Trade Name: QO
Cover type: Surface cover

Complementary

Load Center Type	Main lugs
Line Rating Current	100 A
Number of poles	6
Short Circuit Current Rating	10 kA
Maximum Number of Single Pole Circuits	12
Maximum Number of Tandem Breakers	6
Number of Phases	1 phase
Voltage Rating	120/240 V AC
Wire Size	AWG 8...AWG 1 aluminium/copper
Electrical Connection	Lugs
Grounding Bar	Grounding bar (ordered separately)
Electrical connection	Lugs
Wiring configuration	3-wire
Busbar Material	Tin plated aluminium busbar
Enclosure Material	Welded galvanized steel
Cover Finish	Baked enamel gray
Box number	2R
Height	12.64 in (321 mm)
Width	8.90 in (226 mm)
Tightening torque	5.65 Nm (50 lbf-in) AWG 8...AWG 10)

Environment

Enclosure Rating	NEMA 3R outdoor
Ambient air temperature for operation	23 °F (-5 °C) 104 °F (40 °C)
Product certifications	UL listed

Ordering and shipping details

Category	00101 - QO 1PH LC-2-BCKT,NEMA 1,3R
Discount Schedule	DE3A
GTIN	00785901785590
Package weight(Lbs)	4.35 kg (9.55 lb/US)
Returnability	Yes
Country of origin	MX

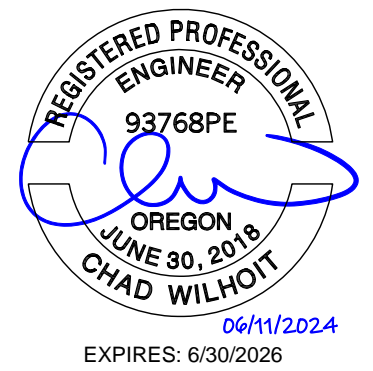
Jan 8, 2025

1

2 DISCONNECT / LOAD CENTER
SCALE: NOT TO SCALE



PM&A
P. MARSHALL & ASSOCIATES
6801 PORTWEST DR.
SUITE 100
HOUSTON, TX 77024



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A	10/11/2023	MAG	PRELIMINARY	DC
B	01/10/2024	TD	PRELIMINARY	DC
C	02/13/2024	MAG	PRELIMINARY	DC
D	02/29/2024	TD	PRELIMINARY	DC
E	06/11/2024	MAG	LOWERED 5G ANT.	

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CALL 3 WORKING DAYS
BEFORE YOU DIG!

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BEAVERTON, OR 97223

HUB:
167612

SHEET TITLE:
EQUIPMENT SPECIFICATIONS

SHEET NUMBER:
D1.3

REVISION:
A

Figure 6H-6. Shoulder Work with Minor Encroachment (TA-6)

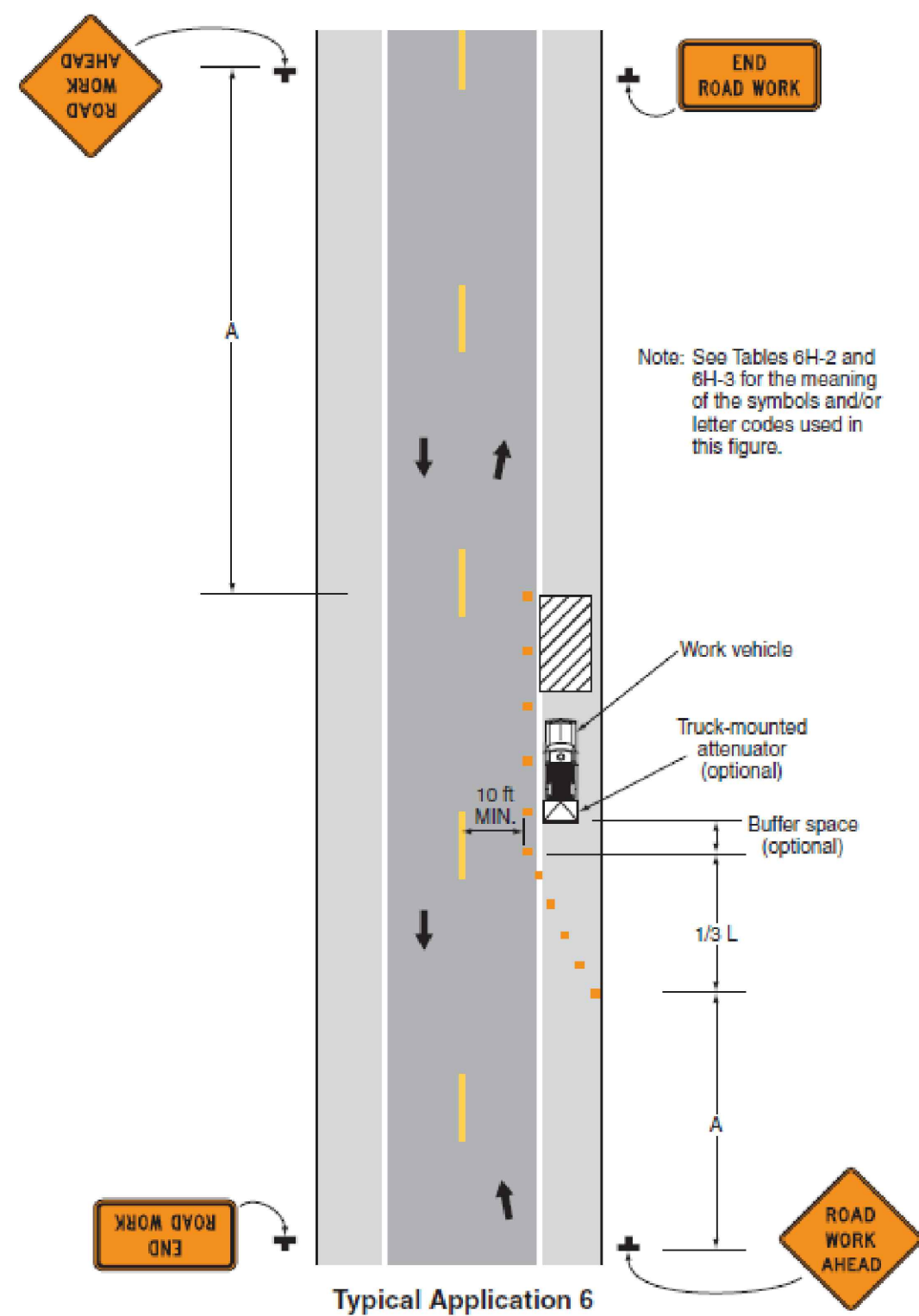


Figure 6E-2. Example of the Use of a Red/Yellow Lens Automated Flagger Assistance Device (AFAD)

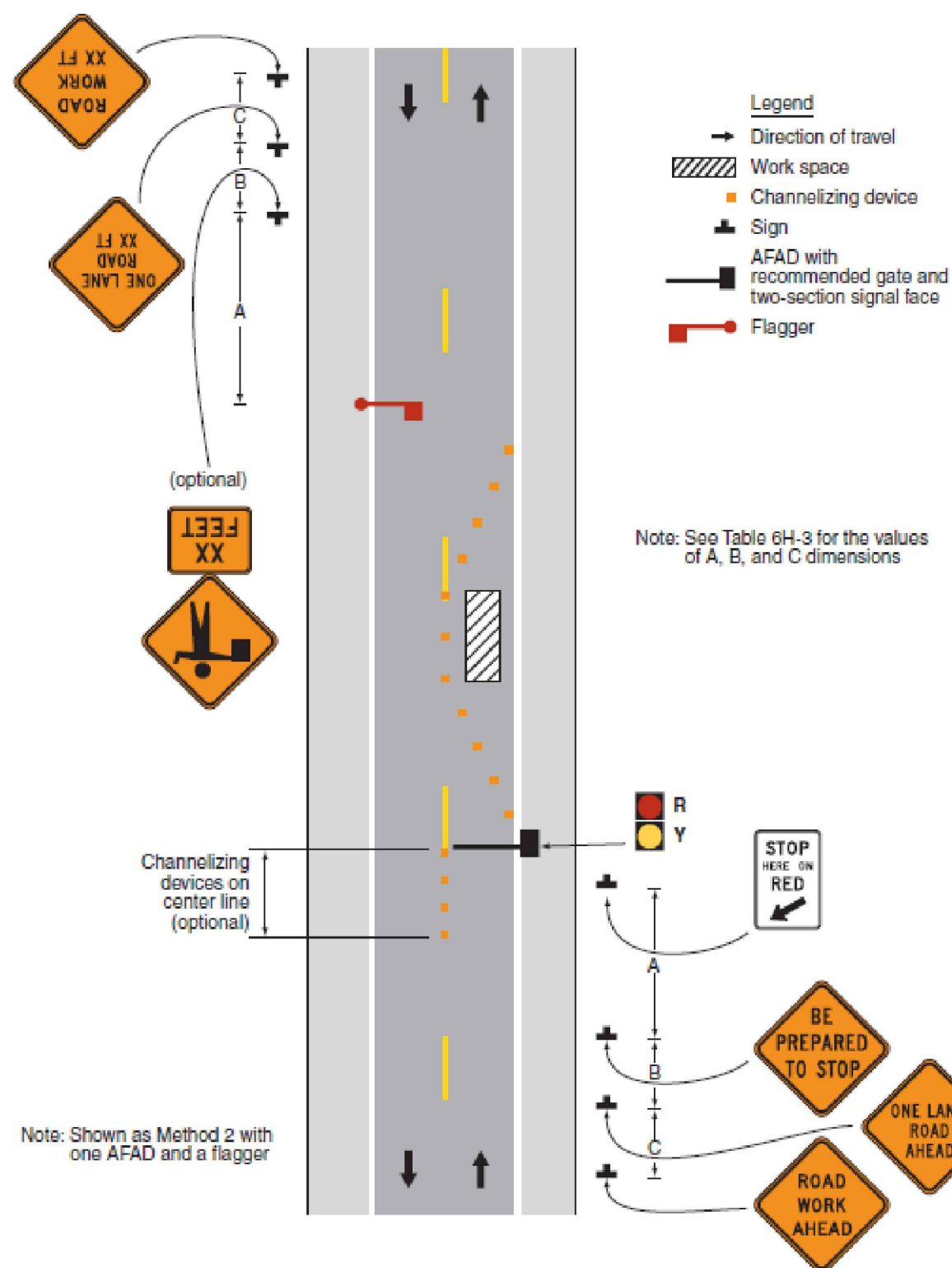


Table 6C-3. Taper Length Criteria for Temporary Traffic Control Zones

Type of Taper	Taper Length
Merging Taper	at least L
Shifting Taper	at least 0.5 L
Shoulder Taper	at least 0.33 L
One-Lane, Two-Way Traffic Taper	50 feet minimum, 100 feet maximum
Downstream Taper	50 feet minimum, 100 feet maximum

Note: Use Table 6C-4 to calculate L

Table 6C-4. Formulas for Determining Taper Length

Speed (S)	Taper Length (L) in feet
40 mph or less	$L = \frac{WS^2}{60}$
45 mph or more	$L = WS$

Where: L = taper length in feet
W = width of offset in feet
S = posted speed limit, or off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

Table 6C-2. Stopping Sight Distance as a Function of Speed

Speed*	Distance
20 mph	115 feet
25 mph	155 feet
30 mph	200 feet
35 mph	250 feet
40 mph	305 feet
45 mph	360 feet
50 mph	425 feet
55 mph	495 feet
60 mph	570 feet
65 mph	645 feet
70 mph	730 feet
75 mph	820 feet

* Posted speed, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed

Figure 6H-22. Right-Hand Lane Closure on the Far Side of an Intersection (TA-22)

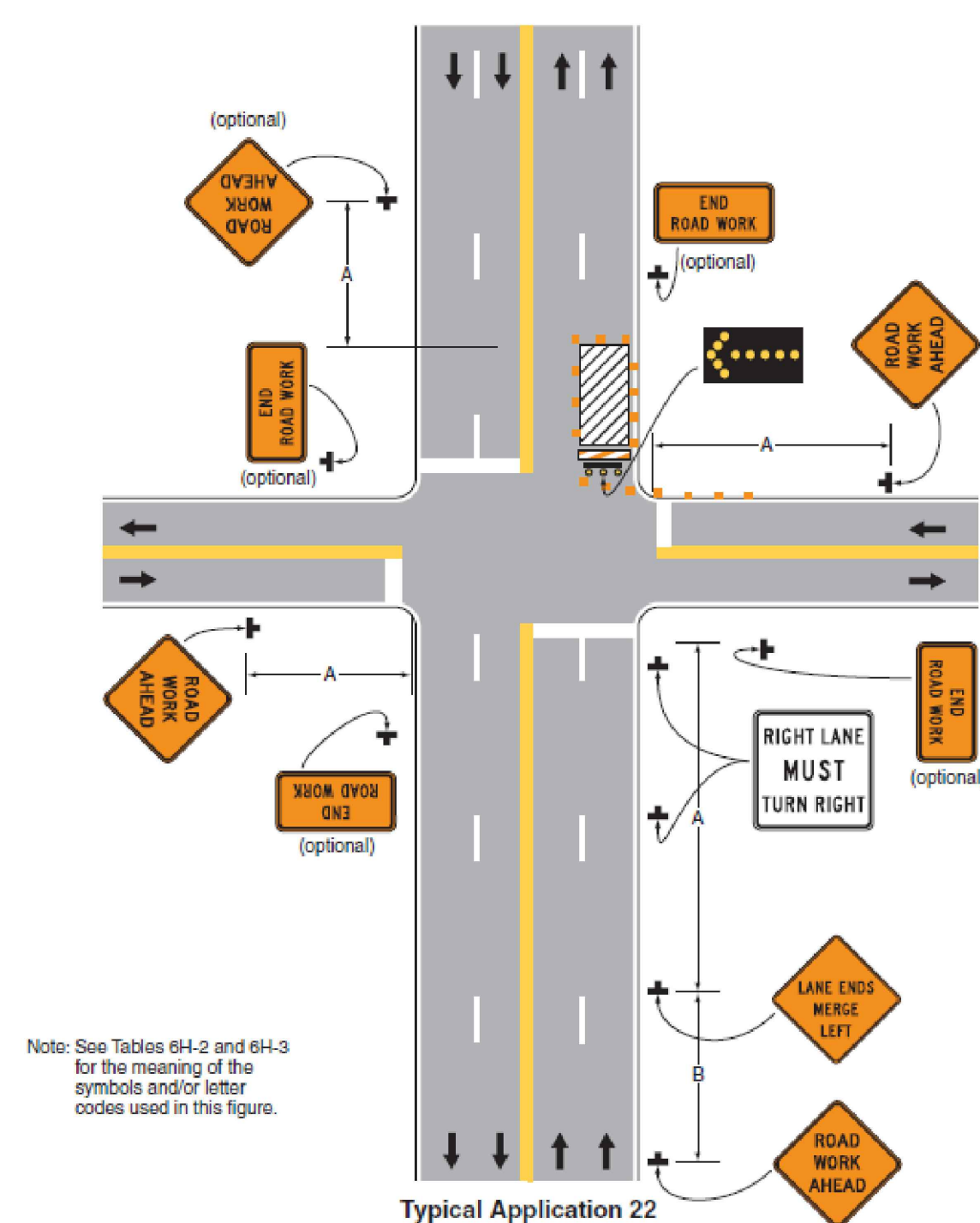


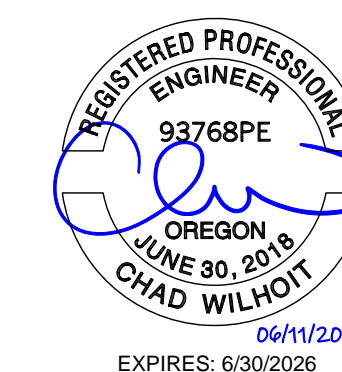
Table 6C-1. Recommended Advance Warning Sign Minimum Spacing

Road Type	Distance Between Signs**		
	A	B	C
Urban (low speed)*	100 feet	100 feet	100 feet
Urban (high speed)*	350 feet	350 feet	350 feet
Rural	500 feet	500 feet	500 feet
Expressway / Freeway	1,000 feet	1,500 feet	2,640 feet

* Speed category to be determined by the highway agency
** The column headings A, B, and C are the dimensions shown in Figures 6H-1 through 6H-46. The A dimension is the distance from the transition or point of restriction to the first sign. The B dimension is the distance between the first and second signs. The C dimension is the distance between the second and third signs. (The "first sign" is the sign in a three-sign series that is closest to the TTC zone. The "third sign" is the sign that is furthest upstream from the TTC zone.)



P. MARSHALL & ASSOCIATES
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SUITE 100
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C	02/13/2024	MAG	PRELIMINARY	DC
D	02/29/2024	TD	PRELIMINARY	DC
E	06/11/2024	MAG	LOWERED 5G ANT.	

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CALL 3 WORKING DAYS BEFORE YOU DIG!

CANDIDATE:
CITATION_7

13855 SW BARROWS RD
BEAVERTON, OR 97223

HUB:
167612

SHEET TITLE:
TRAFFIC CONTROL PLAN

SHEET NUMBER:
D1.5

REVISION:
A

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

- NOTICE TO PROCEED- NO WORK SHALL COMMENCE PRIOR TO CROWN CASTLE USA INC. WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN CASTLE USA INC. NOC AT 800-788-7011 & THE CROWN CASTLE USA INC. CONSTRUCTION MANAGER.
- PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.
- ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND CROWN CASTLE USA INC. STANDARD CED-STD-10253, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA-322 (LATEST EDITION).
- ALL SITE WORK TO COMPLY WITH QAS-STD-10068 "INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON CROWN CASTLE USA INC. TOWER SITE," CED-STD-10294 "STANDARD FOR INSTALLATION OF MOUNTS AND APPURTENANCES," AND LATEST VERSION OF ANSI/TIA-1019-A-2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS." IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY CROWN CASTLE USA INC. PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
- ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
- CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
- ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, TOWER OWNER, CROWN CASTLE USA INC., AND/OR LOCAL UTILITIES.
- THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
- CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
- THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
- CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
- CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
- NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR: GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION
CARRIER: ??????
TOWER OWNER: CROWN CASTLE USA INC.
- THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
- THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
- NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
- SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
- PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CROWN CASTLE.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND CROWN CASTLE PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
- CONTRACTOR IS TO PERFORM A SITE INVESTIGATION AND IS TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
- THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF CROWN CASTLE USA INC. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
- CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

ELECTRICAL INSTALLATION NOTES:

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
- CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
- WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
- ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
 - ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
 - ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.
- EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
- ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S)
- PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
- ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
- ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
- POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
- POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
- ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75' C (90' C IF AVAILABLE).
- RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEC AND NEC.
- ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
- ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC ON STRAIGHTS AND SCHEDULE 80 PVC UNDER ALL TRAFFIC EASEMENTS AND ALL ELBOWS/90s. ABOVE GRADE CONDUIT TO BE SCH 80 PVC OR IMC/RMC CONDUIT. EMT IS ALLOWED AT STUB UP LOCATIONS AND INDOORS ONLY.
- LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
- CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEC AND THE NEC.
- WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
- SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
- CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO AVOID OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
- EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3R (OR BETTER) FOR EXTERIOR LOCATIONS.
- METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
- NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
- THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR CROWN CASTLE USA INC. BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
- THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
- ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

CONDUCTOR COLOR CODE		
SYSTEM	CONDUCTOR	COLOR
120/240V, 1Ø	A PHASE	BLACK
	B PHASE	RED
	NEUTRAL	WHITE
	GROUND	GREEN
120/208V, 3Ø	A PHASE	BLACK
	B PHASE	RED
	C PHASE	BLUE
	NEUTRAL	WHITE
277/480V, 3Ø	A PHASE	BROWN
	B PHASE	ORANGE OR PURPLE
	C PHASE	YELLOW
	NEUTRAL	GREY
DC VOLTAGE	POS (+)	RED**
	NEG (-)	BLACK**

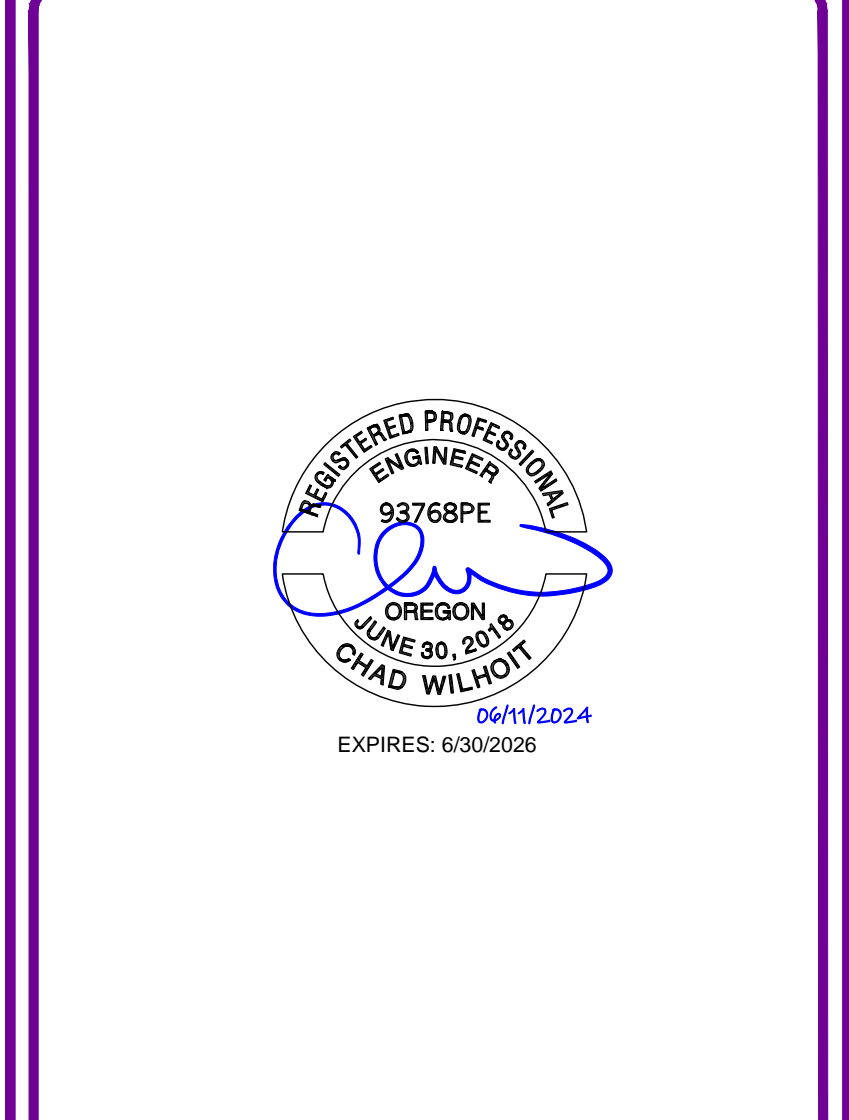
APWA UNIFORM COLOR CODE:

- WHITE PROPOSED EXCAVATION
- PINK TEMPORARY SURVEY MARKINGS
- RED ELECTRIC POWER LINES, CABLES, CONDUIT, AND LIGHTING CABLES
- YELLOW GAS, OIL, STEAM, PETROLEUM, OR GASEOUS MATERIALS
- ORANGE COMMUNICATION, ALARM OR SIGNAL LINES, CABLES, OR CONDUIT AND TRAFFIC LOOPS
- BLUE POTABLE WATER
- PURPLE RECLAIMED WATER, IRRIGATION, AND SLURRY LINES
- GREEN SEWERS AND DRAIN LINES

* SEE NEC 210.5(C)(1) AND (2)
** POLARITY MARKED AT TERMINATION

ABBREVIATIONS:

ANT	ANTENNA
(E)	EXISTING
FIF	FACILITY INTERFACE FRAME
GEN	GENERATOR
GPS	GLOBAL POSITIONING SYSTEM
GS	GLOBAL SYSTEM FOR MOBILE
LTE	LONG TERM EVOLUTION
MGB	MASTER GROUND BAR
MW	MICROWAVE
(N)	NEW
NEC	NATIONAL ELECTRIC CODE
(P)	PROPOSED
PP	POWER PLANT
QTY	QUANTITY
RECT	RECTIFIER
RBS	RADIO BASE STATION
RET	REMOTE ELECTRIC TILT
RFDS	RADIO FREQUENCY DATA SHEET
RRH	REMOTE RADIO HEAD
RRU	REMOTE RADIO UNIT
SIAD	SMART INTEGRATED DEVICE
TMA	TOWER MOUNTED AMPLIFIER
TYP	TYPICAL
UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
W.P.	WORK POINT



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

REVISION				
REV	DATE	DRWN	DESCRIPTION	DES./QA
A	10/11/2023	MAG	PRELIMINARY	DC
B	01/10/2024	TD	PRELIMINARY	DC
C	02/13/2024	MAG	PRELIMINARY	DC
D	02/29/2024	TD	PRELIMINARY	DC
E	06/11/2024	MAG	LOWERED 5G ANT.	



CANDIDATE:
CITATION_7
13855 SW BARROWS RD
BEAVERTON, OR 97223

HUB:
167612

SHEET TITLE:
GENERAL NOTES

SHEET NUMBER:
D1.6

REVISION:
A