



DISH Wireless L.L.C. SITE ID:

**SESEA00475A**

DISH Wireless L.L.C. SITE ADDRESS:

**7917 CENTER BLVD SE  
SNOQUALMIE, WA 98065**

### WASHINGTON CODE OF COMPLIANCE

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES

CODE TYPE	CODE
BUILDING	2018 IBC W/ W.A.C. AMENDMENTS
MECHANICAL	2018 IMC W/ W.A.C. AMENDMENTS
ELECTRICAL	2020 NEC W/ W.A.C. AMENDMENTS

### SHEET INDEX

SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
A-1	OVERALL SITE PLAN
A-2	ENLARGED BUILDING PLAN
A-3	ANTENNA PLAN & SCHEDULE
A-4	EAST & SOUTH ELEVATIONS
A-5	WEST ELEVATION
A-6	EQUIPMENT LAYOUT AND ELEVATION
A-7	EQUIPMENT DETAILS
A-8	EQUIPMENT DETAILS
A-9	BATTERY SIGNAGE DETAILS
A-10	BATTERY SPECIFICATIONS
S-1	ANTENNA SCREEN ISOMETRIC VIEWS
S-2	ANTENNA SCREEN LOWER FRAME LAYOUT
S-3	ANTENNA SCREEN UPPER FRAME LAYOUT
S-4	ANTENNA SCREEN SECTION
S-5	ANTENNA SCREEN CONNECTION DETAILS
S-6	EQUIPMENT FRAME DETAILS I
S-7	EQUIPMENT FRAME DETAILS II
S-8	ACCESS LADDER AT GRADE DETAILS
S-9	ACCESS LADDER AT ROOF DETAILS
E-1	ELECTRICAL/FIBER ROUTE PLAN
E-2	ELECTRICAL NOTES & DETAILS
E-3	ELECTRICAL ONE-LINE & PANEL SCHEDULE
G-1	GROUNDING PLANS AND NOTES
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS
RF-1	RF CABLE COLOR CODE
GN-1	LEGEND AND ABBREVIATIONS
GN-2	RF SIGNAGE
GN-3	GENERAL NOTES
GN-4	GENERAL NOTES
GN-5	GENERAL NOTES

### SCOPE OF WORK

THIS IS NOT AN ALL INCLUSIVE LIST. CONTRACTOR SHALL UTILIZE SPECIFIED EQUIPMENT PART OR ENGINEER APPROVED EQUIVALENT. CONTRACTOR SHALL VERIFY ALL NEEDED EQUIPMENT TO PROVIDE A FUNCTIONAL SITE. THE PROJECT GENERALLY CONSISTS OF THE FOLLOWING:

#### SECTOR SCOPE OF WORK:

- INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR), (6) FUTURE PANEL ANTENNAS (2 PER SECTOR)
- INSTALL (1) ANTENNA SCREEN
- INSTALL (3) PROPOSED BACK-TO-BACK MOUNT, (6) FUTURE BACK-TO-BACK MOUNT
- INSTALL PROPOSED JUMPERS
- INSTALL (6) PROPOSED RRU's (2 PER SECTOR), (12) FUTURE RRU's (4 PER SECTOR)
- INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP)
- INSTALL (1) PROPOSED HYBRID CABLE (NO ALTERNATIVE)
- INSTALL (1) PROPOSED CABLE TRAY UP

#### ROOFTOP SCOPE OF WORK:

- INSTALL (1) PROPOSED WALL MOUNTED EQUIPMENT CABINET
- INSTALL (1) PROPOSED CABLE LADDER TRAY OR CABLE TRAY
- INSTALL (1) PROPOSED BBU IN CABINET
- INSTALL (1) PROPOSED EQUIPMENT CABINET
- INSTALL (1) PROPOSED POWER CONDUIT
- INSTALL (1) PROPOSED TELCO CONDUIT
- INSTALL (1) PROPOSED NEMA 3 TELCO-FIBER BOX
- INSTALL (1) PROPOSED GPS UNIT
- INSTALL (1) PROPOSED ACCESS LADDER AT ROOF LEVEL
- INSTALL (1) PROPOSED ACCESS LADDER WITH AT GRADE LEVEL WITH ANTI-CLIMBING

### SITE PHOTO



UNDERGROUND SERVICE ALERT - WASHINGTON 811  
UTILITY NOTIFICATION CENTER OF WASHINGTON  
(800) 424-5555  
WWW.WASHINGTON811.COM

CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION



### GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE. NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

11"x17" PLOT WILL BE HALF SCALE UNLESS OTHERWISE NOTED

CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON THE JOB SITE, AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

### SITE INFORMATION

PROPERTY OWNER: SNOQUALMIE RIDGE CNTR LLC  
ADDRESS: 7917 CENTER BLVD SE  
SNOQUALMIE, WA 98065

COUNTY: KING

LATITUDE (NAD 83): 47° 31' 47.04" N  
47.5295209407

LONGITUDE (NAD 83): 121° 52' 22.58" W  
-121.87286675

ZONING JURISDICTION: CITY OF SNOQUALMIE

ZONING DISTRICT: MU

PARCEL NUMBER: 785196-0020

OCCUPANCY GROUP: U

CONSTRUCTION TYPE: II-B

POWER COMPANY: T.B.D.

TELEPHONE COMPANY: T.B.D.

### PROJECT DIRECTORY

APPLICANT: DISH Wireless L.L.C.  
5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120

SITE DESIGNER: CORE ONE CONSULTING USA  
13555 SE 36TH ST, SUITE 100  
SEATTLE, WA 98006  
(206) 582-5060

SITE ACQUISITION: MIKE SLOTEMAKER  
(206) 214-8954

CONSTRUCTION MANAGER: ERICK HURDLE  
Erick.Hurdle@dish.com

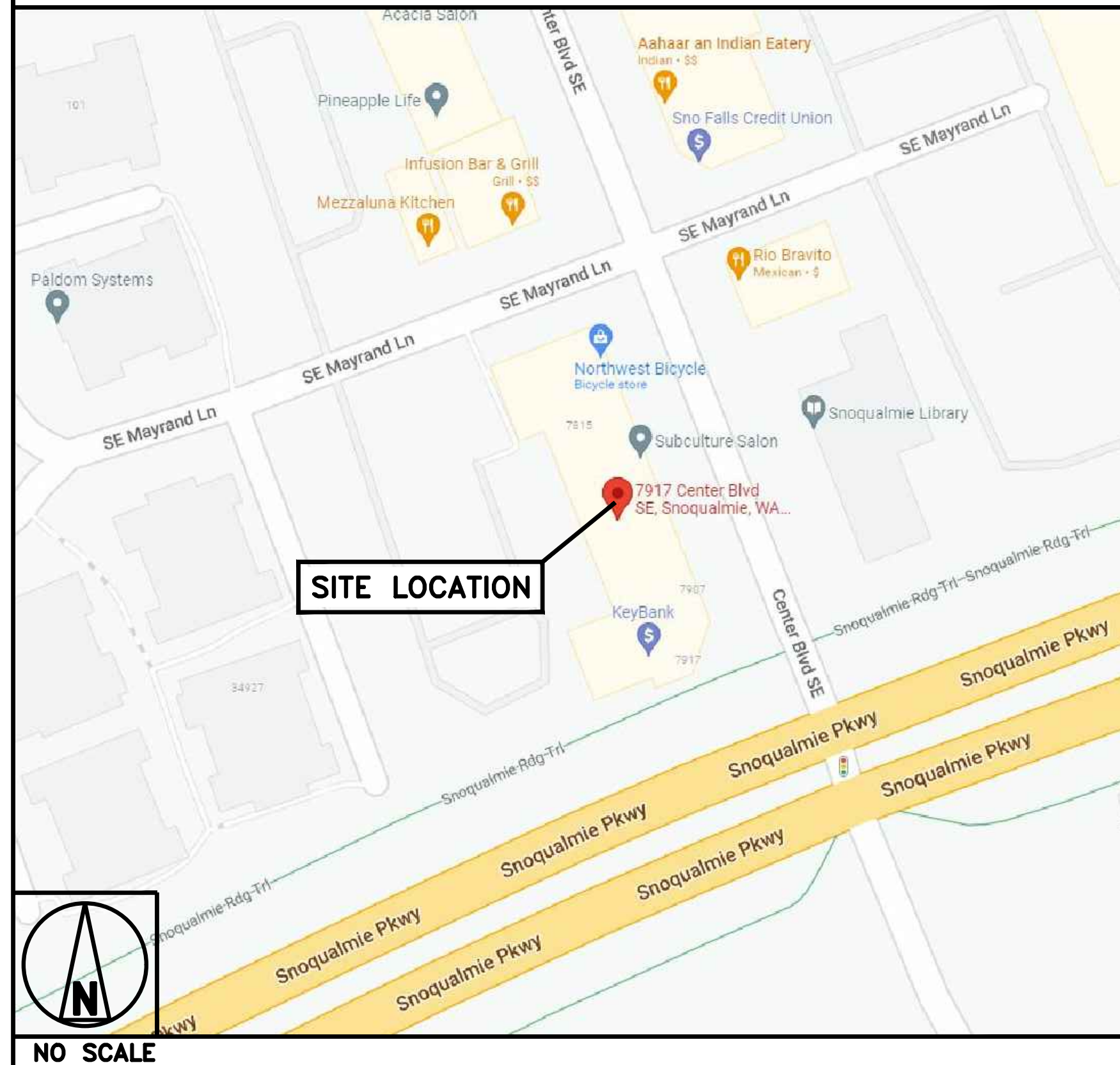
RF ENGINEER: CORY THOMAS  
Cory.Thomas@dish.com

### DIRECTIONS

#### DIRECTIONS FROM SEATTLE-TACOMA INTERNATIONAL AIRPORT:

GET ON WA-518 E IN TUKWILA FROM AIRPORT EXPRESSWAY. FOLLOW I-405 AND I-90 E TO WA-18 E. TAKE EXIT 25 FROM I-90 E. FOLLOW SNOQUALMIE PKWY TO CENTER SE IN SNOQUALMIE. DESTINATION WILL BE ON LEFT.

### VICINITY MAP



5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120



13555 SE 36TH ST, SUITE 100  
BELLEVUE, WA 98006



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DRAWN BY: CHECKED BY: APPROVED BY:

A.D. B.B. M.L.

RFDS REV #: ---

### CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	04/27/2023	ISSUED FOR REVIEW
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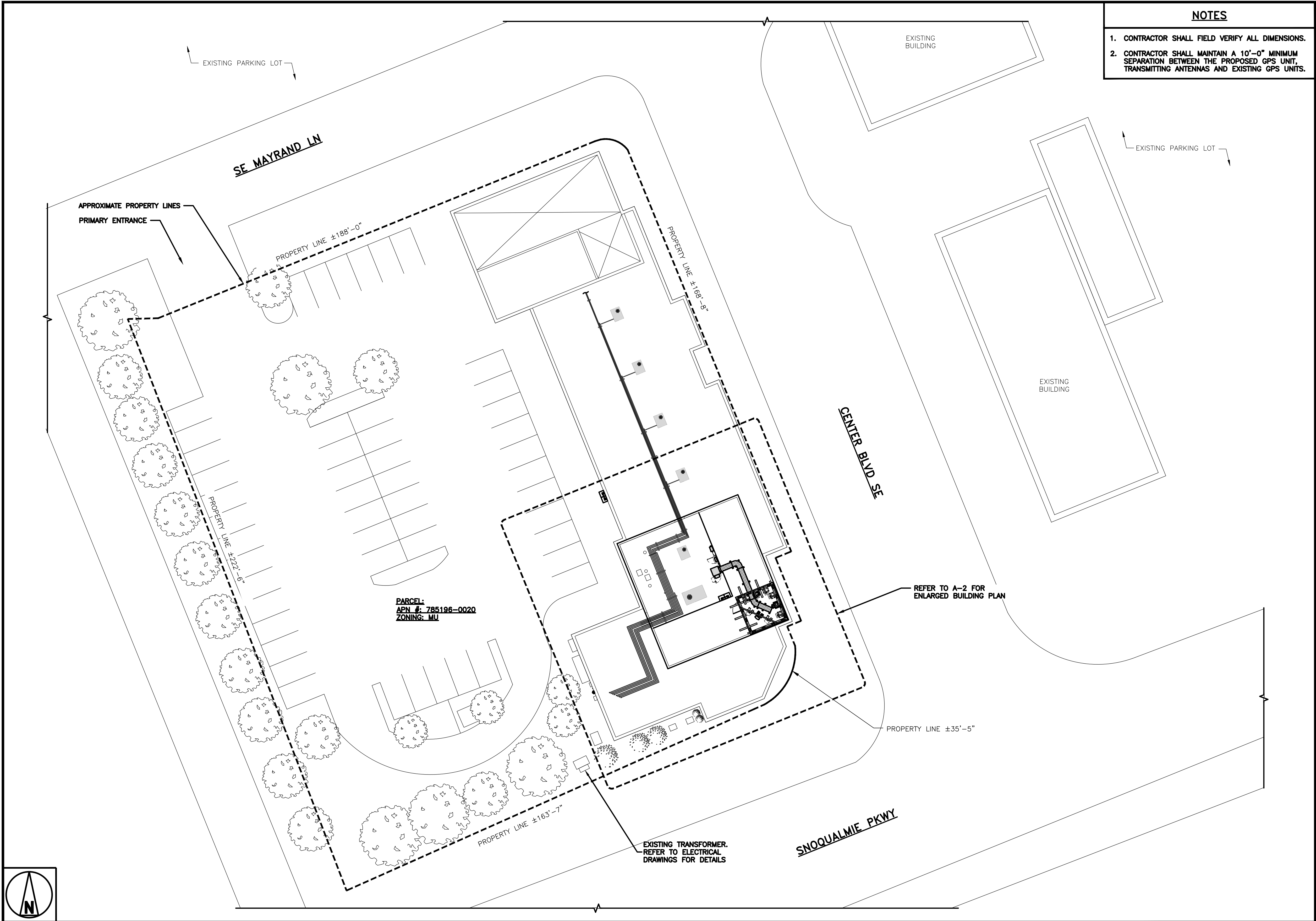
DISH Wireless L.L.C.  
PROJECT INFORMATION

**SESEA00475A**  
**7917 CENTER BLVD SE**  
**SNOQUALMIE, WA 98065**

SHEET TITLE  
**TITLE SHEET**

SHEET NUMBER  
**T-1**





NOTES

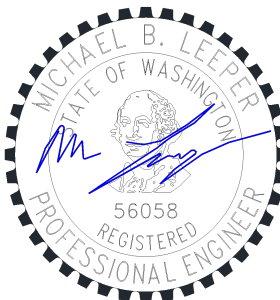
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- 2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.



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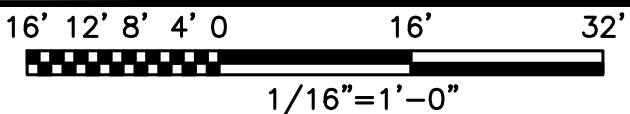
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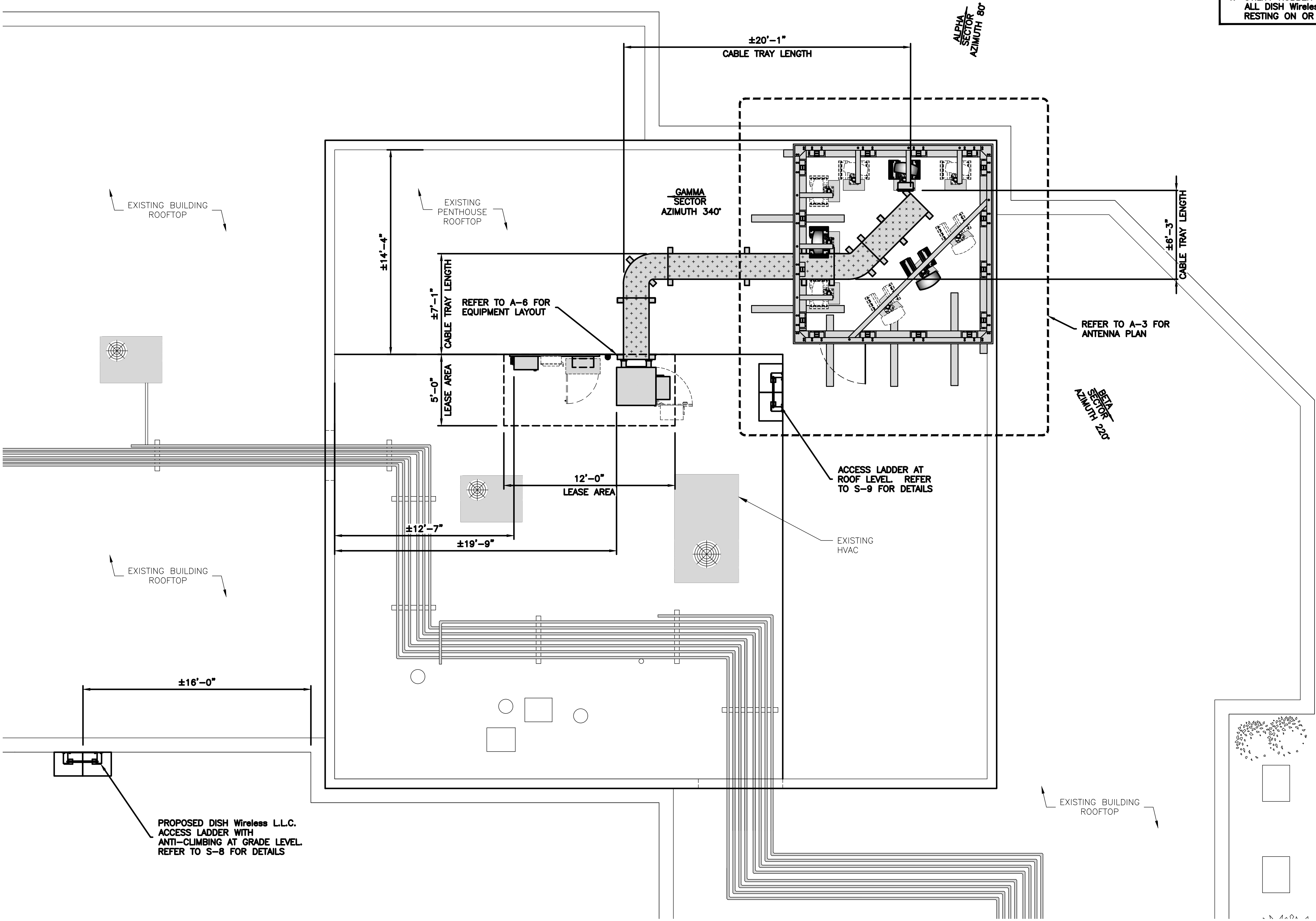
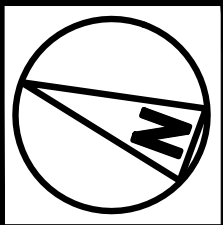
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SHEET TITLE  
OVERALL  
SITE PLAN

SHEET NUMBER  
  
A-1

OVERALL SITE PLAN





NOTES

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- 2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
- 3. CONTRACTOR TO VERIFY WITH DISH Wireless L.L.C. C.M. THE LOCATION OF THE POWER AND FIBER SOURCE PRIOR TO CONSTRUCTION.
- 4. UTILITY RUBBER MAT TO BE IN STALLED UNDER ALL DISH Wireless L.L.C. EQUIPMENT THAT IS RESTING ON OR AFFIXED TO ROOF MEMBRANE



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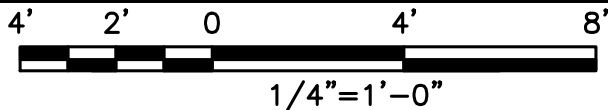
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SHEET TITLE  
ENLARGED BUILDING  
PLAN

SHEET NUMBER  
**A-2**

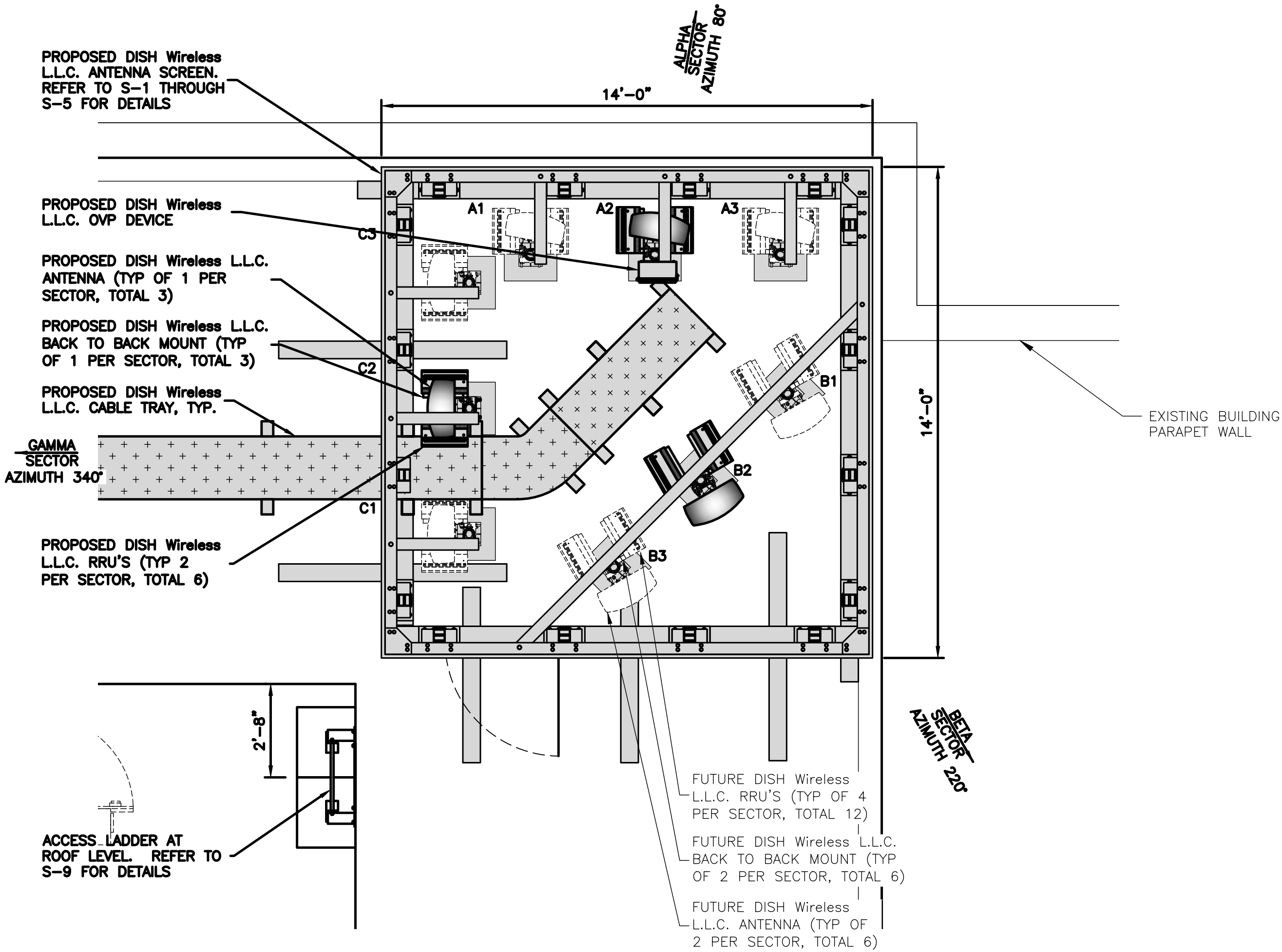
ENLARGED BUILDING PLAN



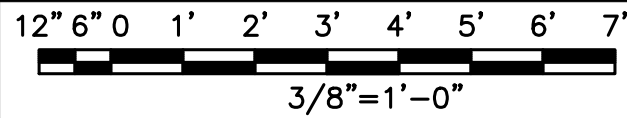


- NOTES
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.

2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS



ANTENNA PLAN



1

SECTOR POS.	ANTENNA					TRANSMISSION CABLE	RRH			OVP
	EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECH	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH	MANUFACTURER – MODEL NUMBER	TECH	POS.	MANUFACTURER MODEL
A1	FUTURE	FFW-65B-R2	5G	340°	±39'-4"	(1) HIGH-CAPACITY HYBRID CABLE (52' LONG ±)	RF4451D-70A/RF4450T-71A	5G	A1	RAYCAP RDIC-9181-PF-48
A2	PROPOSED	FFW-65B-R2	5G	80°	±39'-4"		RF4451D-70A/RF4450T-71A	5G	A2	
A3	FUTURE	FFW-65B-R2	5G	340°	±39'-4"		RF4451D-70A/RF4450T-71A	5G	A3	
B1	FUTURE	FFW-65B-R2	5G	340°	±39'-4"	SHARED WITH ALPHA	RF4451D-70A/RF4450T-71A	5G	B1	SHARED WITH ALPHA
B2	PROPOSED	FFW-65B-R2	5G	220°	±39'-4"		RF4451D-70A/RF4450T-71A	5G	B2	
B3	FUTURE	FFW-65B-R2	5G	340°	±39'-4"		RF4451D-70A/RF4450T-71A	5G	B3	
C1	FUTURE	FFW-65B-R2	5G	340°	±39'-4"	SHARED WITH ALPHA	RF4451D-70A/RF4450T-71A	5G	C1	SHARED WITH ALPHA
C2	PROPOSED	FFW-65B-R2	5G	340°	±39'-4"		RF4451D-70A/RF4450T-71A	5G	C2	
C3	FUTURE	FFW-65B-R2	5G	340°	±39'-4"		RF4451D-70A/RF4450T-71A	5G	C3	
NOTES										
1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS.										
2. ANTENNA AND RRH MODELS MAY CHANGE DUE TO EQUIPMENT AVAILABILITY. ALL EQUIPMENT CHANGES MUST BE APPROVED AND REMAIN IN COMPLIANCE WITH THE PROPOSED DESIGN AND STRUCTURAL ANALYSES.										

ANTENNA SCHEDULE

NO SCALE

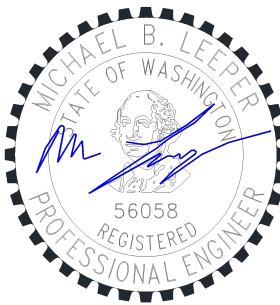
2



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LITTLETON, CO 80120



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BELLEVUE, WA 98006



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A.D. B.B. M.L.

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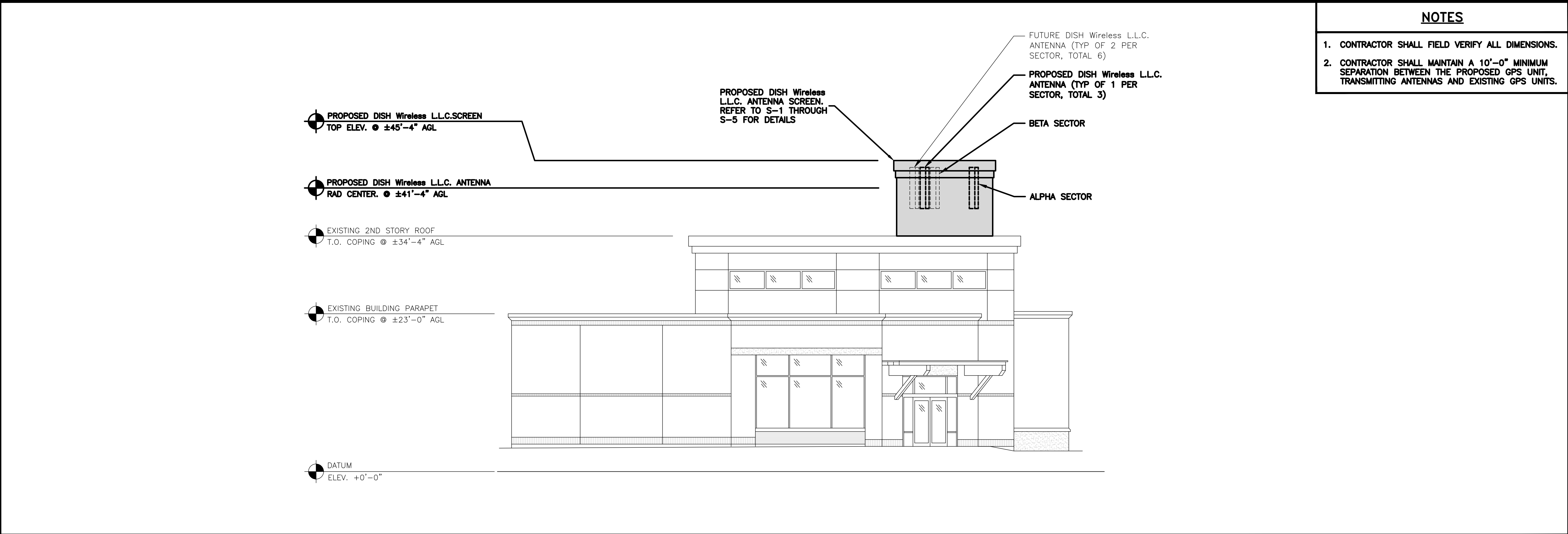
SESEA00475A  
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SHEET TITLE  
ANTENNA PLAN  
& SCHEDULE

SHEET NUMBER

A-3





- NOTES
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2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.

BUILDING SOUTH ELEVATION

8' 4' 0 8' 16'

1/8"=1'-0"

1



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BUILDING EAST ELEVATION

8' 4' 0 8' 16'

1/8"=1'-0"

2

dish

wireless.

5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120

CORE ONE

CONSULTING USA

13555 SE 36TH ST, SUITE 100  
BELLEVUE, WA 98006

MICHAEL B. LEPPARD

REGISTERED PROFESSIONAL ENGINEER

56058

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SHEET TITLE

EAST & SOUTH  
ELEVATIONS

SHEET NUMBER

A-4

DISH Wireless L.L.C. TEMPLATE VERSION 48 – 2/21/2022





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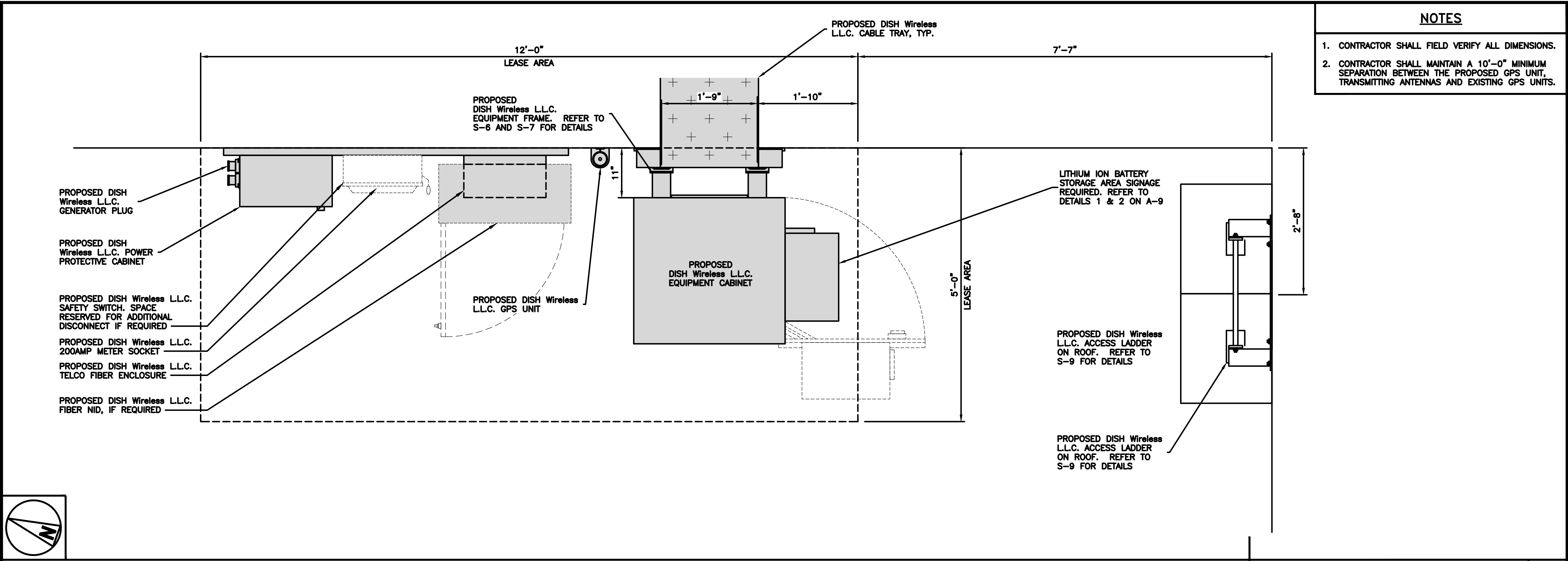
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SHEET TITLE  
WEST  
ELEVATION

SHEET NUMBER  
**A-5**





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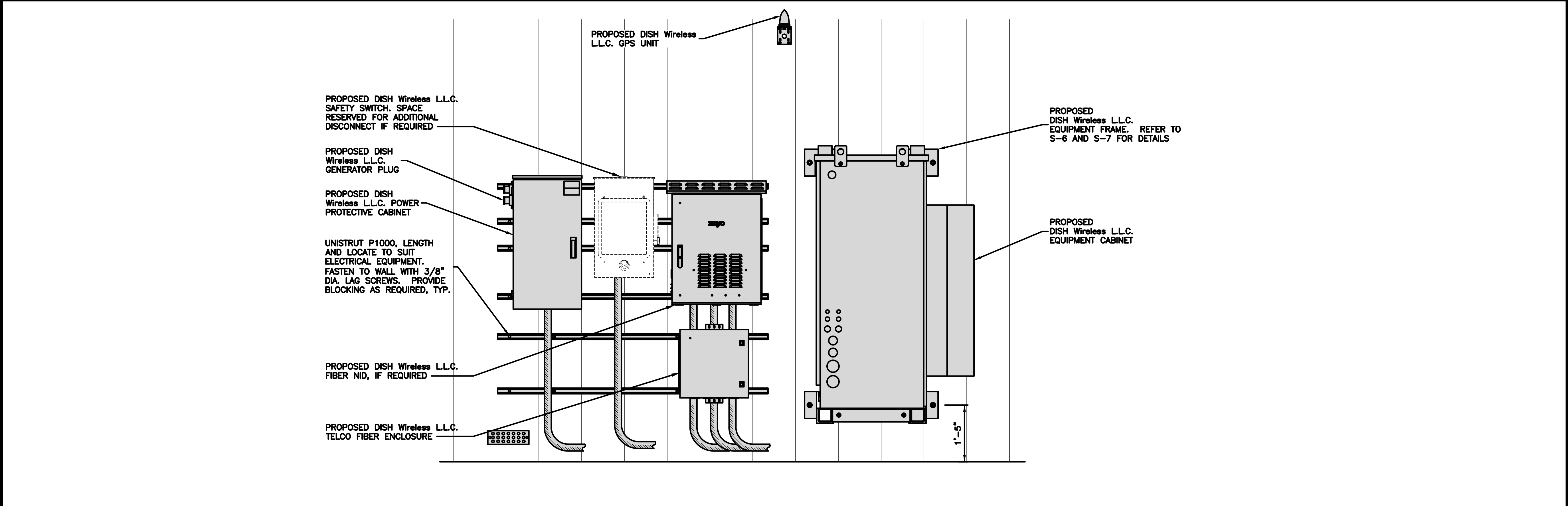
MICHAEL B. LEPPARD  
STATE OF WASHINGTON  
56058  
REGISTERED  
PROFESSIONAL ENGINEER

EQUIPMENT LAYOUT

12" 9" 6" 3" 0 1' 2'

1"=1'-0"

1



EQUIPMENT ELEVATION

12" 6" 0 1' 2' 3'

3/4"=1'-0"

2

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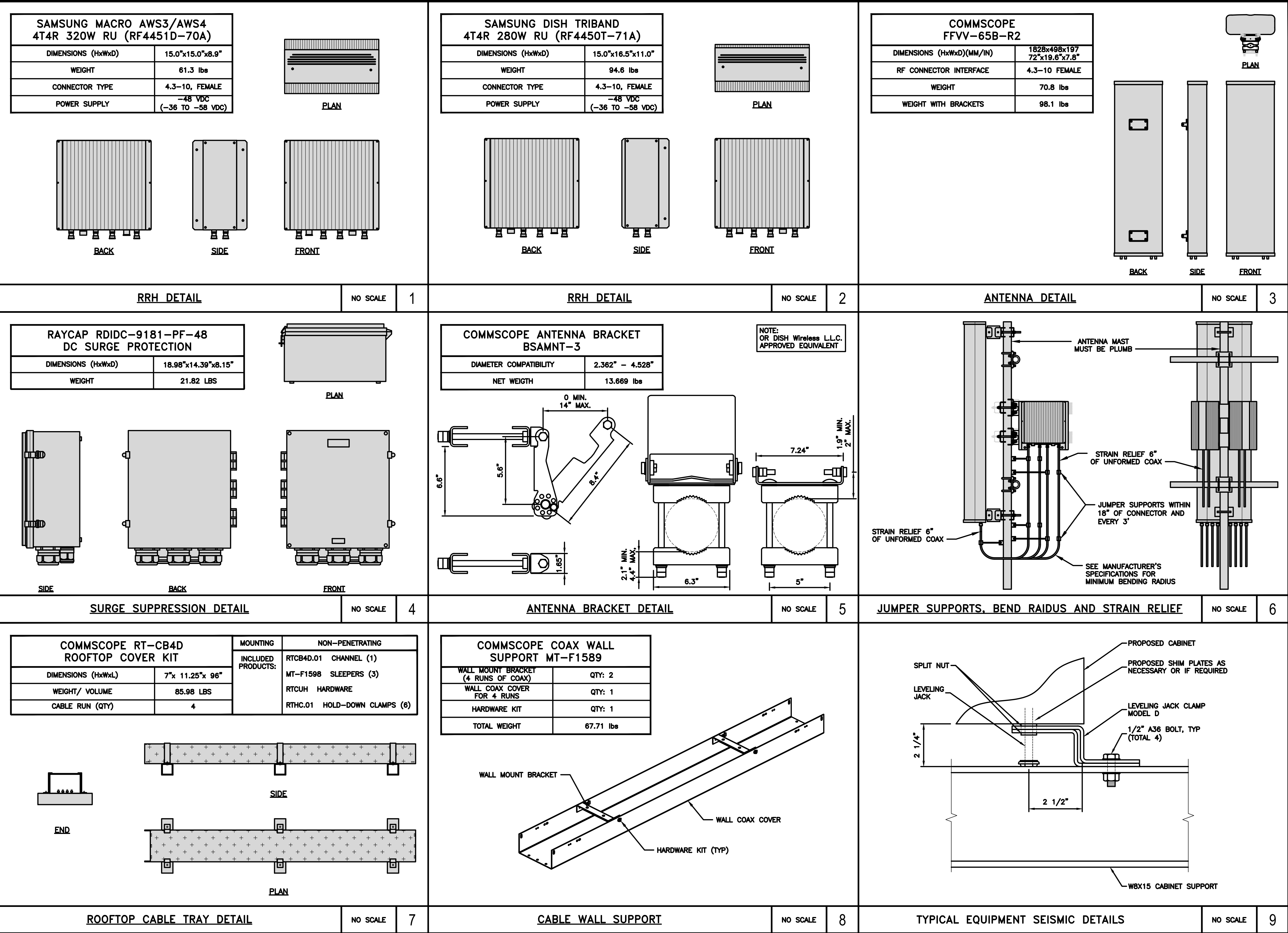
SHEET TITLE  
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AND ELEVATION

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A-6









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SHEET TITLE

EQUIPMENT DETAILS

SHEET NUMBER

A-8

The logo for Dish Wireless, featuring the word "dish" in a bold, lowercase sans-serif font, with a stylized satellite dish icon integrated into the letter "i". Below "dish" is the word "wireless." in a smaller, lowercase sans-serif font.

BATTERY MANUFACTURER:	POLARIUM
MODEL NUMBER:	23° 2U/200AH SLB48-200-228-1U 13S SERIES, GENERATION 5
VOLTAGE:	48V
AMPERAGE CAPACITY Ah (0.2C, 25°C TO 39 V):	200AH

CABINET CONTAINS 2 POLARIUM 48V 200AH LITHIUM  
BATTERY MODULES TOTAL CAPACITY OF 20KWH  
3822 ML OF ELECTROLYTE PER EACH BATTERY MODULE



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BATTERY SIGNAGE DETAILS		

SHEET NUMBER

A-9

### BATTERY SIGNAGE DETAIL

**NO SCALE**

1

### BATTERY SIGNAGE DETAIL

**NO SCALE**

2

NOT USED

**NO SCALE**

3

NOT USED

**NO SCALE**

4

NOT USED

**NO SCALE**

5

NOT USED

**NO SCALE**

6

NOT USED

NO SCALE

7

NOT USED

**NO SCALE**

8





**Polarium**

**Battery 23" 2U / 200Ah**

SLB48-200-228-1U  
13S Series, Generation 5

Polarium Battery is an advanced power backup system for telecom use. Its rechargeable smart lithium-ion battery provides reliable power backup for hybrid, off-grid and grid-connected telecom sites worldwide.

**Safe**  
All our products are designed with your safety in mind - thoroughly verified and certified for safe operation.

**Simple**  
Advanced technology made super easy to use. easy to install, maintenance free, charge control.

**Strong**  
Works in all conditions and environments. Extra protection against dust and moisture for prolonged life.

**Smart**  
Automatic balancing, automatic reconnect, remote monitoring options and much more.

**Secure**  
Our unique, patented Anti-Theft Device disables function of batteries if removed from site. It's prepared for optional GPS tracker.

**Sustainable**  
The lifetime is extraordinary long. It's small, light, maintenance free and can be remotely controlled.

DS2002281U-Rev 4.0

**Technical Specification**

Enclosure Size	23" 2U
Lithium Chemistry	NMC
Rated Voltage	48 V
Rated Capacity Ah (0.2C, 25°C to 39 V)	200 Ah
Rated Energy Wh (0.2C, 25°C to 39 V)	9676 Wh
Calendar Life @ 80% SOC	20 years
Peak Discharge Power	6kW for 60 seconds
Discharge Cutoff Current	100 A
End-of-Discharge Voltage (LVBD)**	39 V
Charge Current Limitation (CLD)*	100 A
Charge Voltage for 100% SOC	54.6 V
Charge Voltage for 80% SOC	52 V
Operating Temperature Charging	0 to +55°C (32 to 131°F)
Operating Temperature Discharging	-20 to +60°C (-4 to 140°F)
Operating Relative Humidity	According to ETSI 300 019-1-3 class 3.2 (0-95%)
Storage Temperature	-20 to +60°C (-4 to 140°F)
Weight	Approx. 53 Kg (116.8 lbs)
Dimensions mm (in")	W 544 D 725 H 87 (W 21.4" D 28.5" H 3.4")
Circuit breaker	100 A, BMS Controlled, dual pole
IP class	IP20
Communication Protocols	RS485, RJ45 (2) ports, Modbus
Certified according to	UL1973, UL62368, UN38.3
Management & Monitoring	Software for PC (Studio) included for full local monitoring and management. Remote connection via Modbus

\*If the charge current is 100A or higher, the battery will automatically reduce the charge current to 6-12A temporarily  
\*\*Cut off when one cell reaches 2.5V, 13 cells in series  
Data subject to change without notice

Polarium Energy Solutions AB  
Jan Stenbecks Torg 17 | PO Box 1037 | SE-164 21, Kista, Sweden  
Phone: +46 8 5454 4000 | info@polarium.com | www.polarium.com

**NOTES**

1. POLARIUM SLB48-200-228-1U HAS BEEN TESTED FOR THERMAL RUNAWAY PROTECTION TO THE STANDARD OF UL 1973.

**NOTE:**  
MAXIMUM OF (2) 48V 200Ah (POLARIUM) LITHIUM ION BATTERY MODULES. BATTERY 23" 2U / 200Ah MODEL SLB48-200-228-1U 13S SERIES, GENERATION 5. TOTAL CAPACITY OF 19.36 KWh. 3822 ML OF ELECTROLYTE PER EACH BATTERY MODULE.  
COMPLIANCE WITH WASHINGTON FIRE CODE SECTION 1206.1.1 IS NOT REQUIRED

TABLE 1206.2 BATTERY STORAGE SYSTEM THRESHOLD QUANTITIES:	
BATTERY TECHNOLOGY:	CAPACITY:*
FLOW BATTERIES**	20 kWh
LEAD ACID, ALL TYPES	70 kWh
LITHIUM, ALL TYPES	20 kWh
NICKEL CADMIUM (Ni-Cd)	70 kWh
SODIUM, ALL TYPES	20 kWh***
OTHER BATTERY TECHNOLOGIES	10 kWh
* FOR BATTERIES RATED IN AMP-HOURS,kWh SHALL BE EQUAL RATED VOLTAGE TIMES AMP-HOUR RATING DIVIDED BY 1000.	
** SHALL INCLUDE VANADIUM, ZINC-BROMINE, POLYSULFIDE-BROMIDE, AND OTHER FLOWING ELECTROLYTE-TYPE TECHNOLOGIES.	
*** 70 kWh FOR SODIUM-ION TECHNOLOGIES.	

TABLE 1206.2.9 MAXIMUM ALLOWABLE BATTERY QUANTITIES:		
BATTERY TECHNOLOGY:	MAXIMUM ALLOWABLE QUANTITIES:*	GROUP H OCCUPANCY:
FLOW BATTERIES**	600 kWh	GROUP H-2
LEAD ACID, ALL TYPES	UNLIMITED	N/A
LITHIUM, ALL TYPES	600 kWh	GROUP H-2
NICKEL CADMIUM (Ni-Cd)	UNLIMITED	N/A
SODIUM, ALL TYPES	600 kWh	GROUP H-2
OTHER BATTERY TECHNOLOGIES	200 kWh	GROUP H-2***
*** FOR BATTERIES RATED IN AMP-HOURS,kWh SHALL BE EQUAL RATED VOLTAGE TIMES AMP-HOUR RATING DIVIDED BY 1000.		
** SHALL INCLUDE VANADIUM, ZINC-BROMINE, POLYSULFIDE-BROMIDE, AND OTHER FLOWING ELECTROLYTE-TYPE TECHNOLOGIES.		
*** SHALL BE A GROUP H-4 OCCUPANCY IF THE FIRE CODE OFFICIAL DETERMINES THAT A FIRE OR THERMAL RUNAWAY INVOLVING THE BATTERY TECHNOLOGY DOES NOT REPRESENT A SIGNIFICANT FIRE HAZARD.		

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DRAWN BY:	CHECKED BY:	APPROVED BY:
A.D.	B.B.	M.L.

RFDS REV #:

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A&E PROJECT NUMBER  
SESEA00475A

DISH Wireless L.L.C.  
PROJECT INFORMATION  
SESEA00475A  
7917 CENTER BLVD SE  
SNOQUALMIE, WA 98065

SHEET TITLE  
BATTERY SPECIFICATIONS

SHEET NUMBER  
**A-10**

BATTERY SPECIFICATIONS

NO SCALE

1





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DISH Wireless L.L.C.  
PROJECT INFORMATION

SESEA00475A  
7917 CENTER BLVD SE  
SNOQUALMIE, WA 98065

SHEET TITLE  
ANTENNA SCREEN  
ISOMETRIC VIEWS

SHEET NUMBER

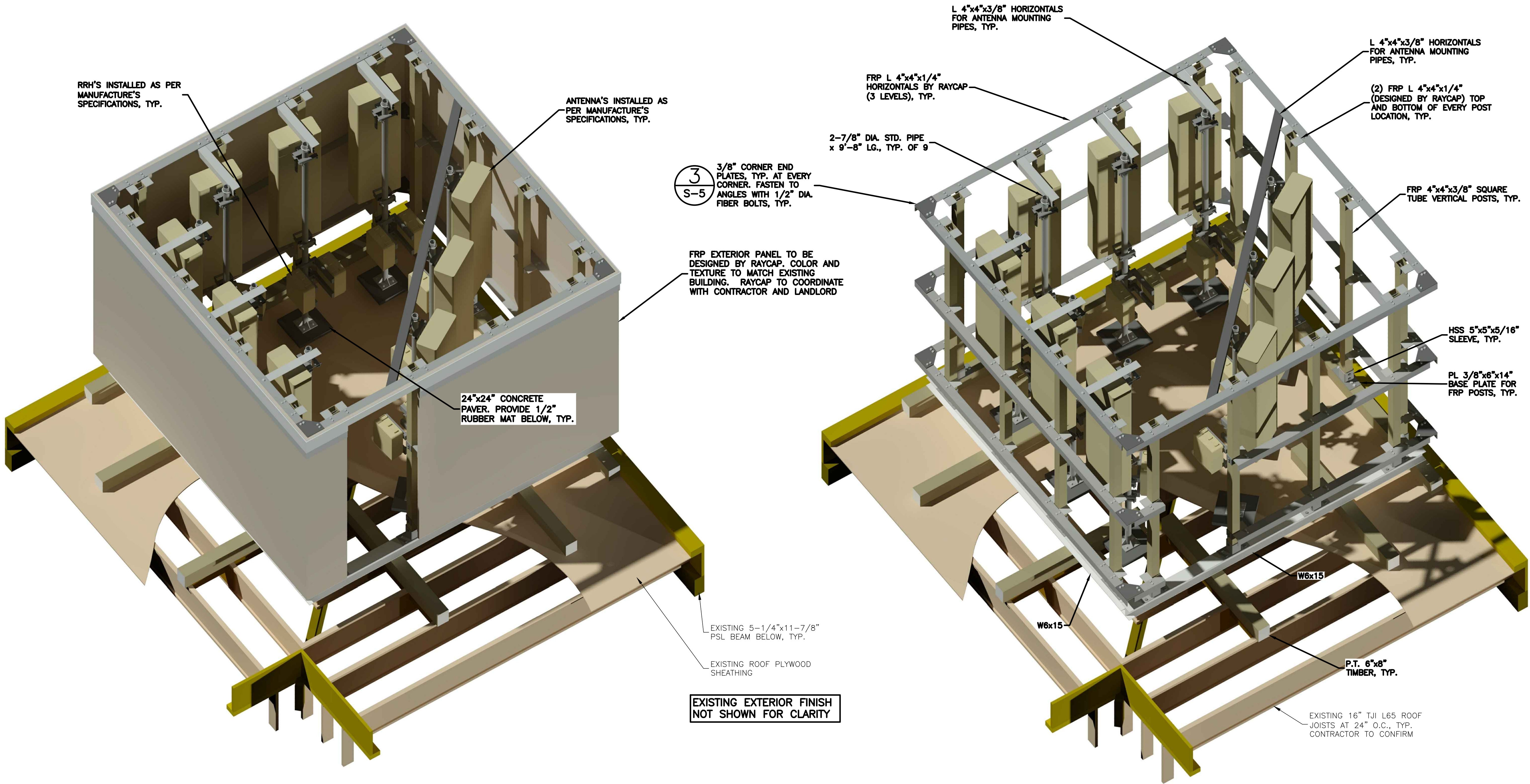
S-1

NOTE

1. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ROOF MEMBRANE DURING CONSTRUCTION. REPAIR ANY DAMAGE TO PRE-CONSTRUCTION CONDITIONS.
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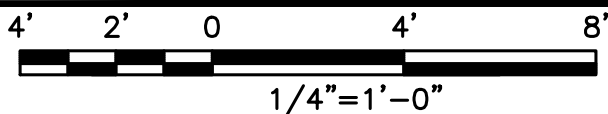
FRP SCREEN TO BE PAINTED TO MATCH EXISTING BUILDING



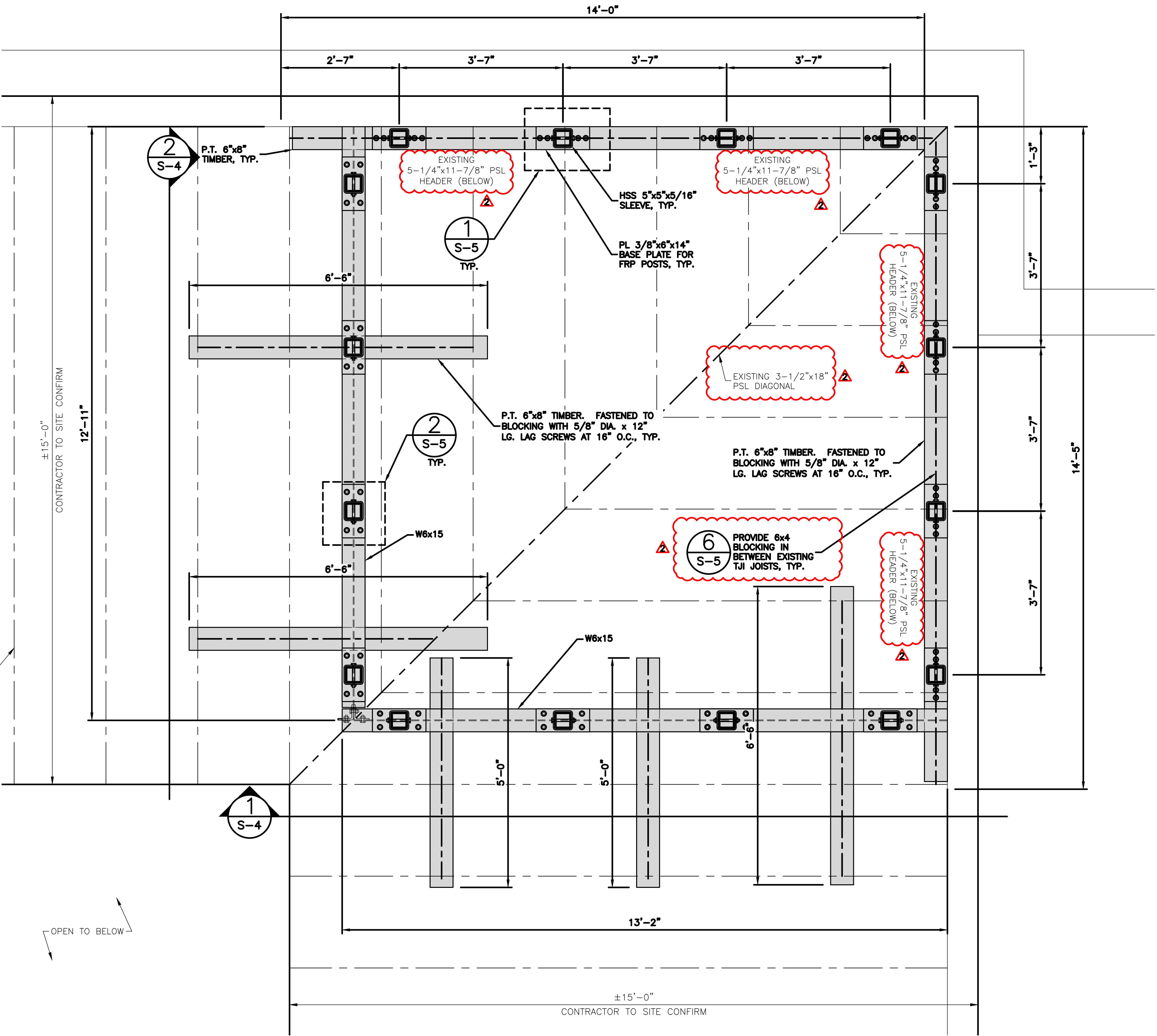
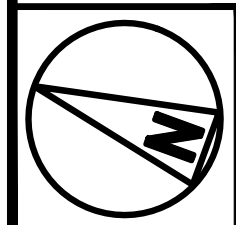
ANTENNA SCREEN ISOMETRIC VIEW (WITH SCREEN)

ANTENNA SCREEN ISOMETRIC VIEW (WITHOUT SCREEN)

ANTENNA SCREEN ISOMETRIC VIEWS







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**dish**  
wireless.

5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120

**CORE ONE**  
CONSULTING USA

13555 SE 36TH ST, SUITE 100  
BELLEVUE, WA 98006



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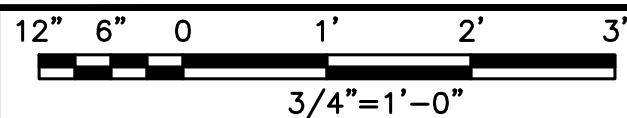
DISH Wireless L.L.C.  
PROJECT INFORMATION  
SESEA00475A  
7917 CENTER BLVD SE  
SNOQUALMIE, WA 98065

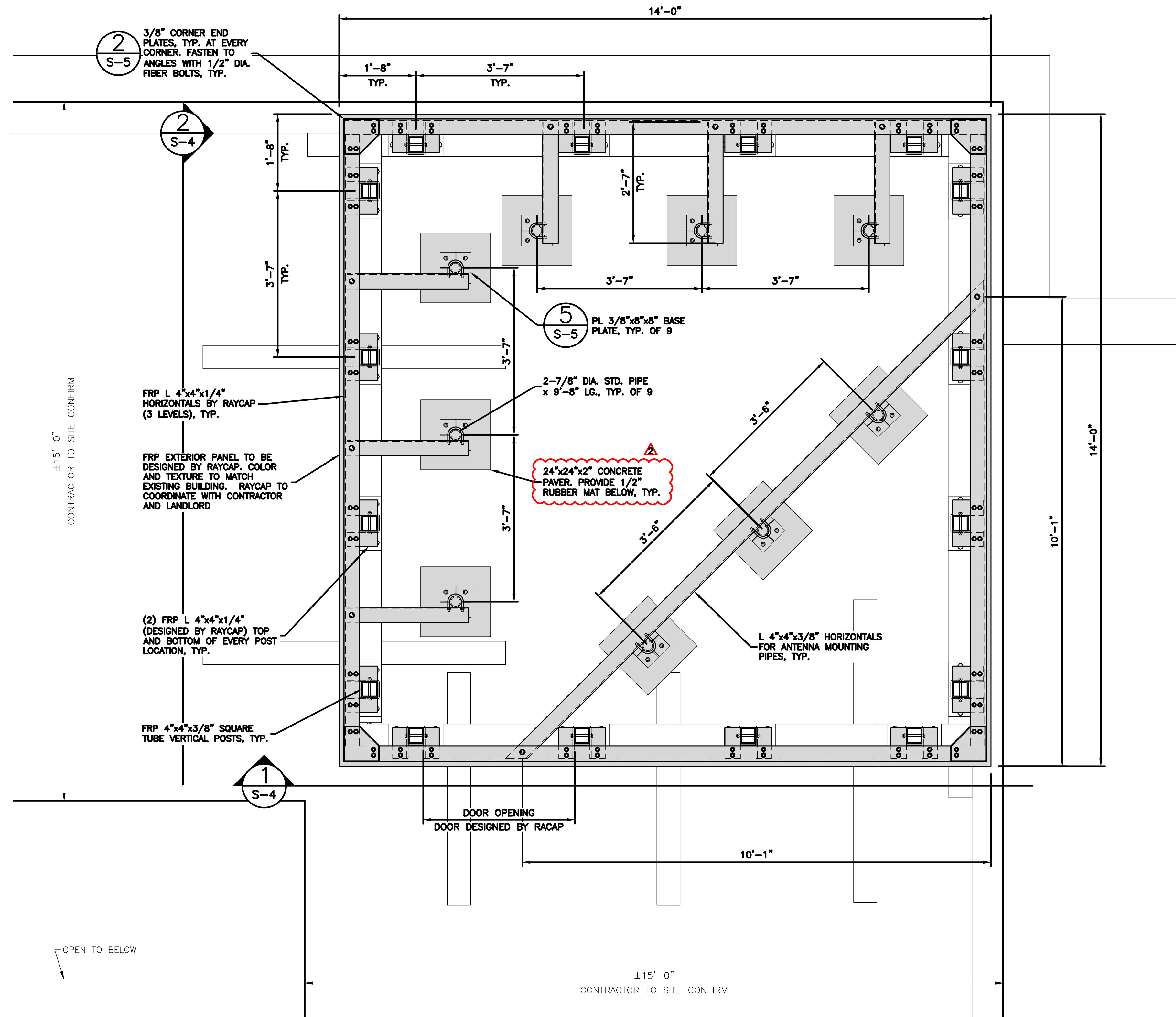
SHEET TITLE  
ANTENNA SCREEN  
LOWER FRAME LAYOUT

SHEET NUMBER

S-2

ANTENNA SCREEN LOWER FRAME LAYOUT





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PROJECT INFORMATION

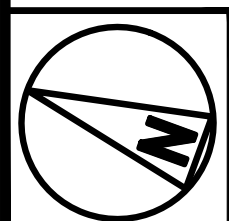
SESEA00475A  
7917 CENTER BLVD SE  
SNOQUALMIE, WA 98065

SHEET TITLE

ANTENNA SCREEN  
UPPER FRAME LAYOUT

SHEET NUMBER

**S-3**



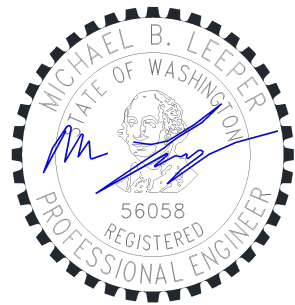




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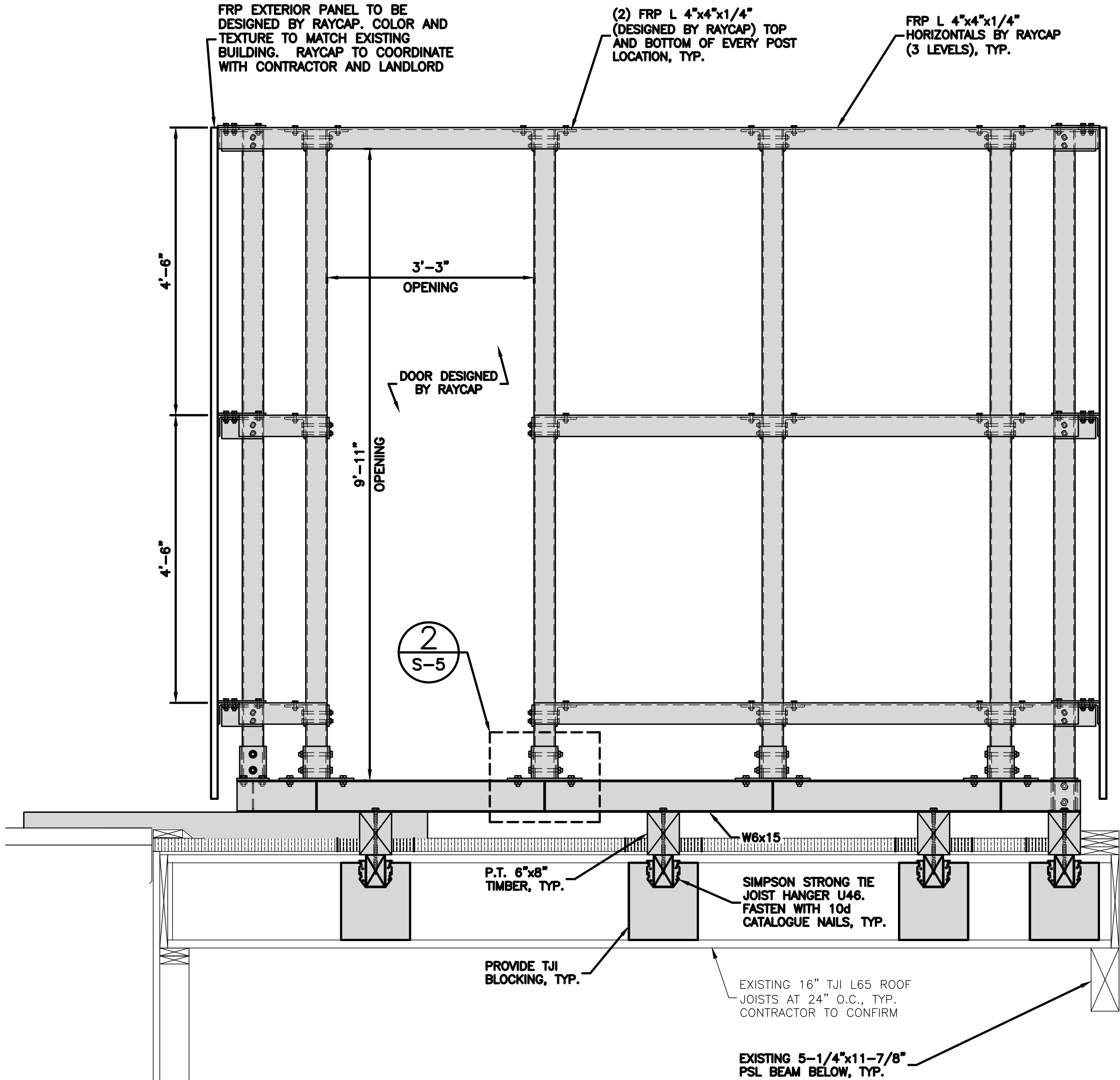
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ANTENNA SCREEN  
SECTIONS

SHEET NUMBER

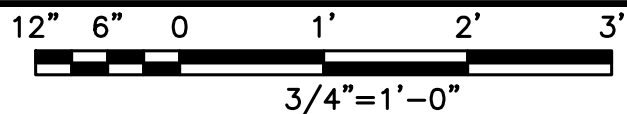
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#### NOTE

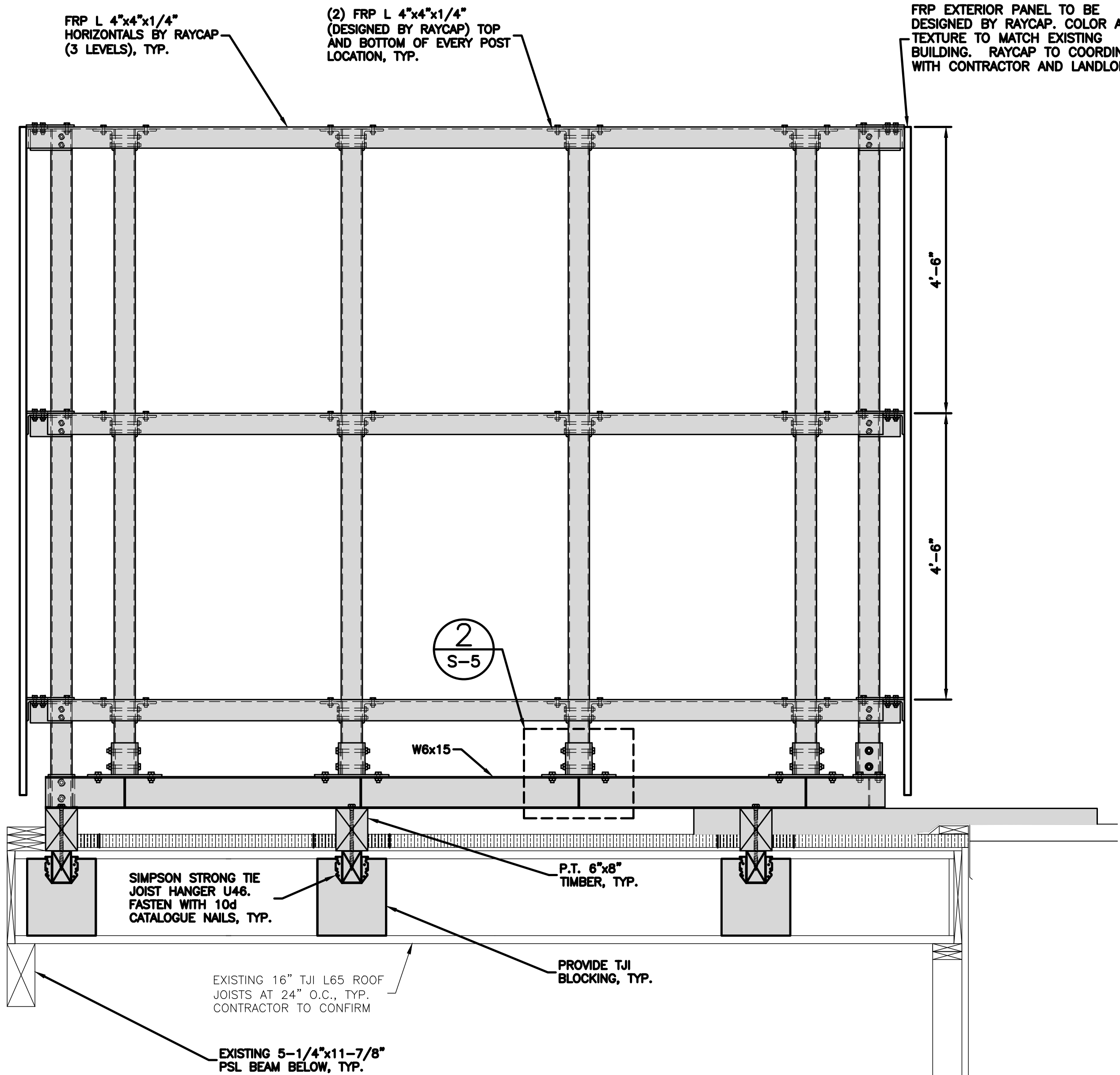
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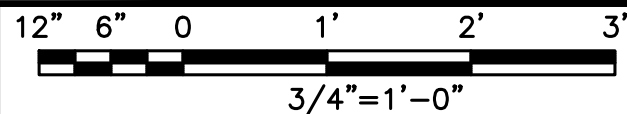
SECTION



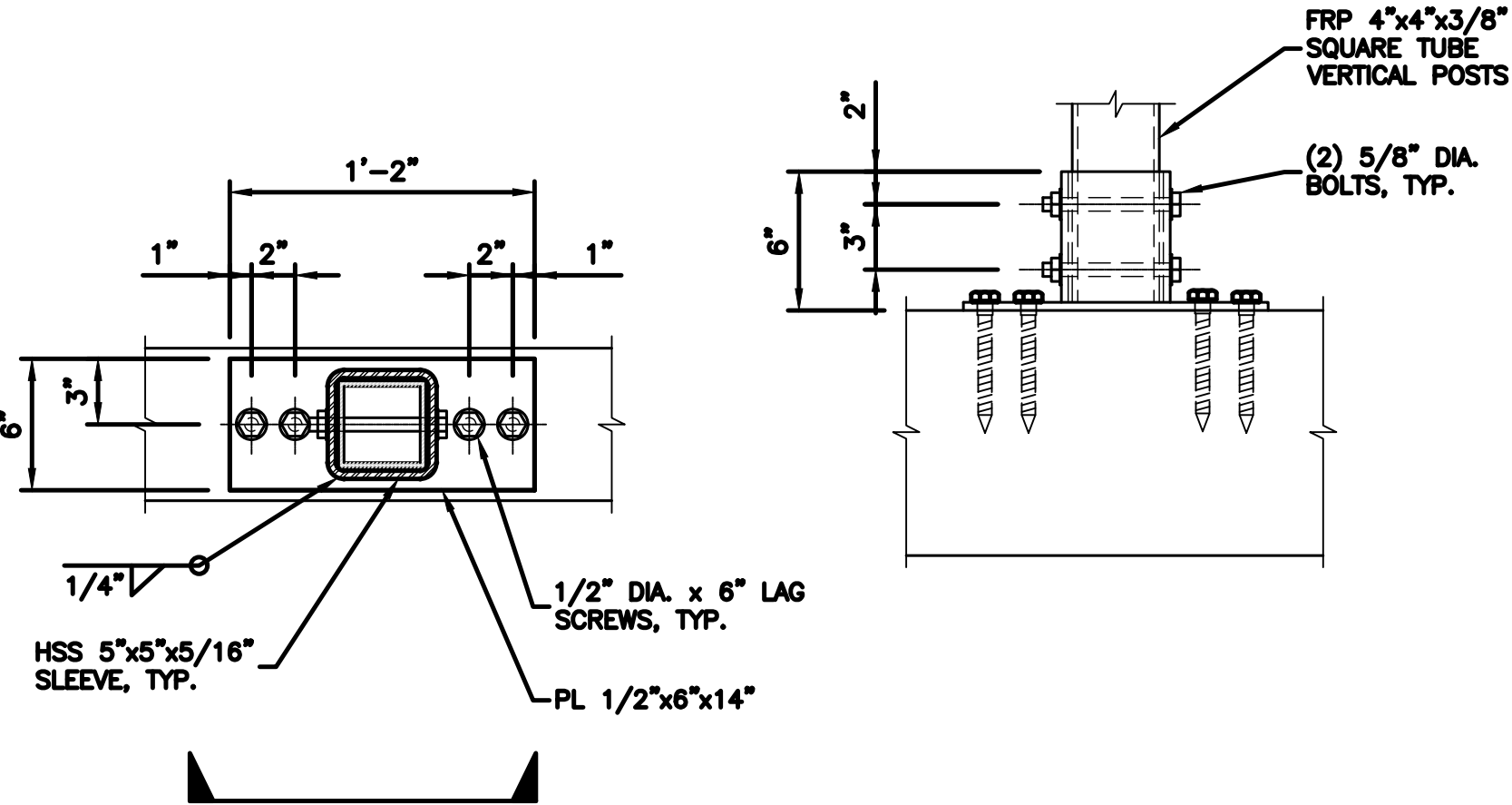
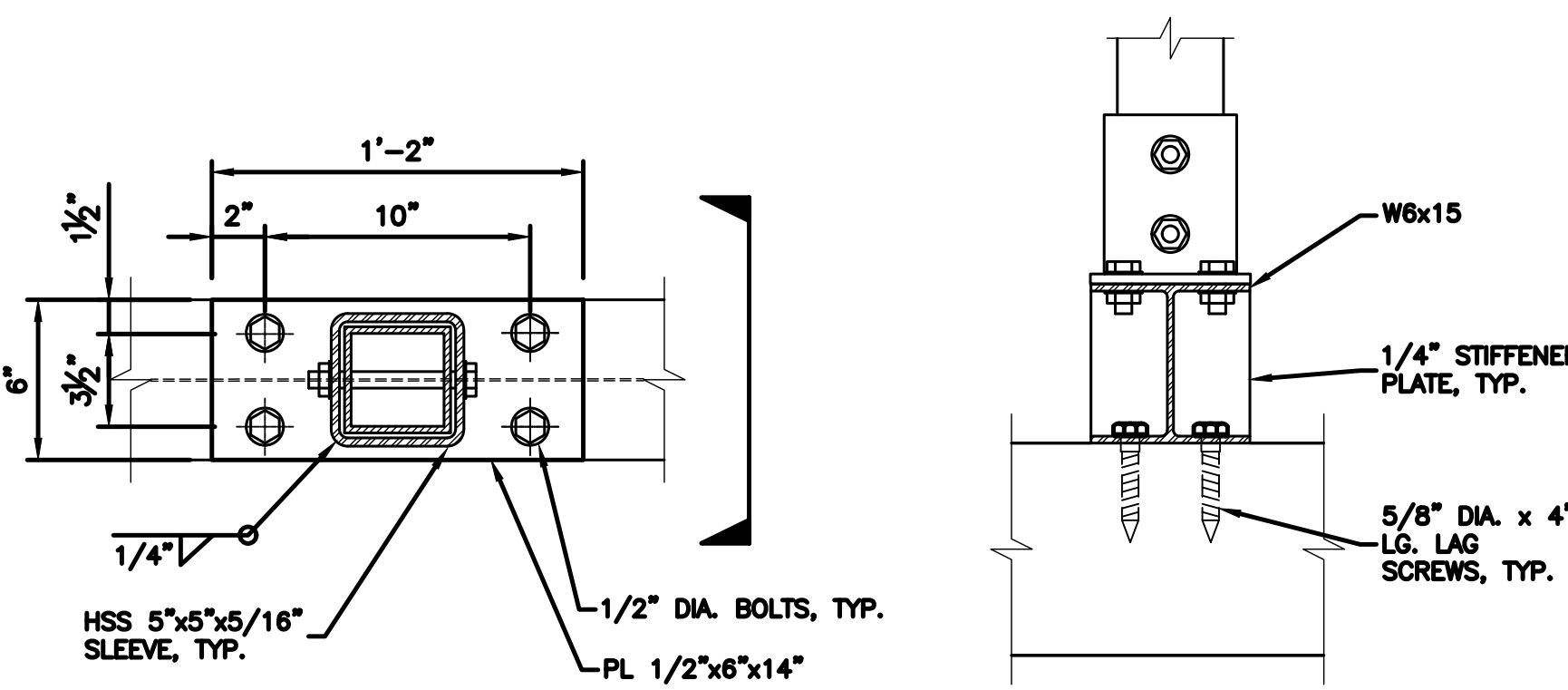
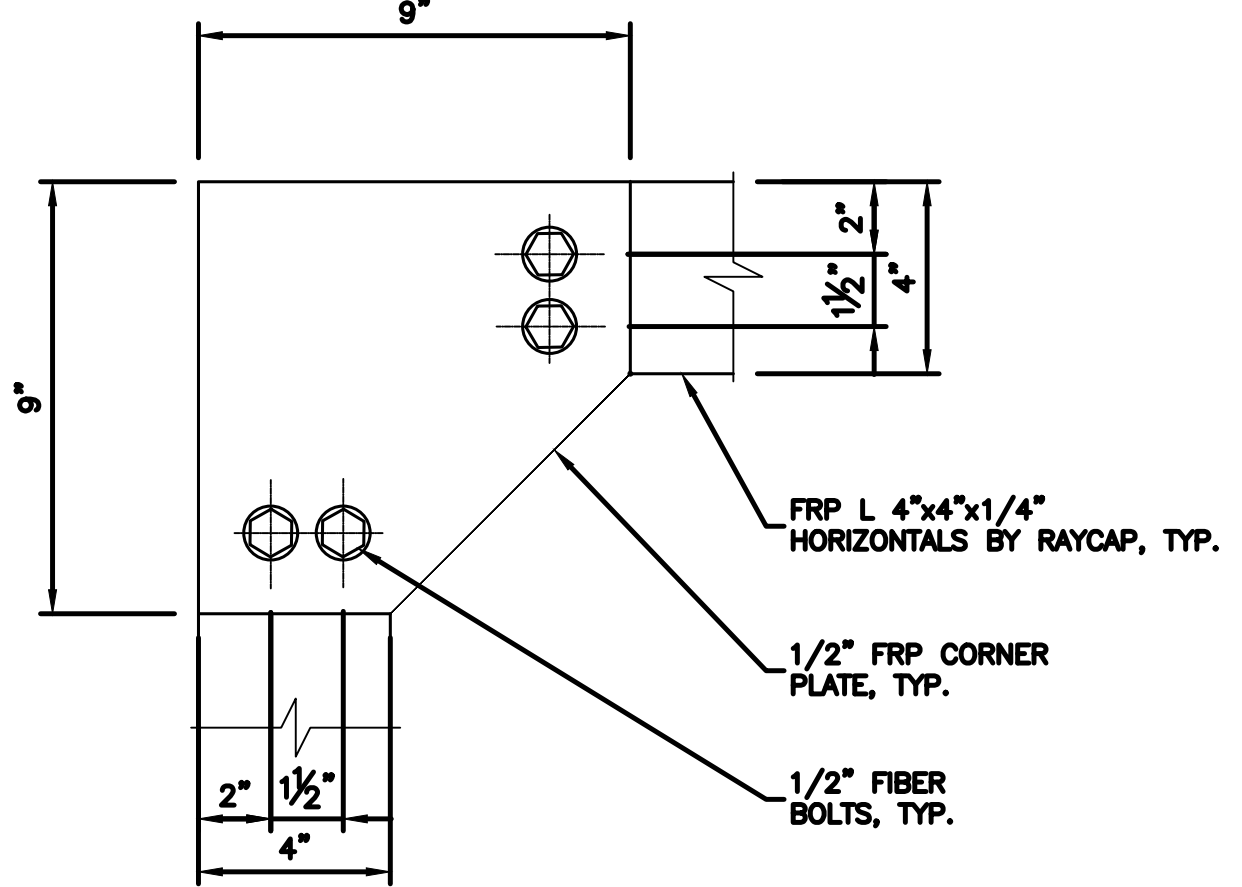
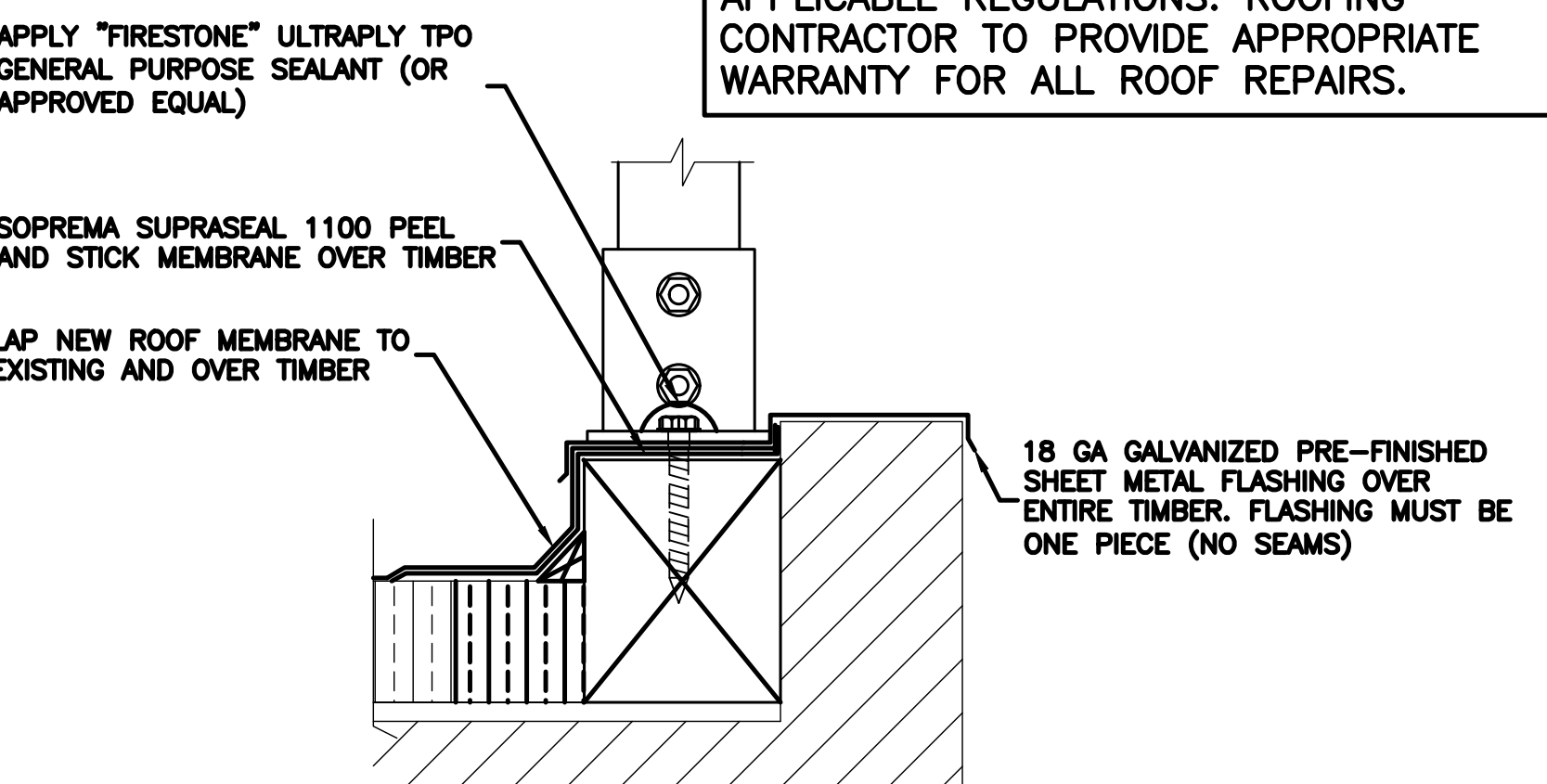
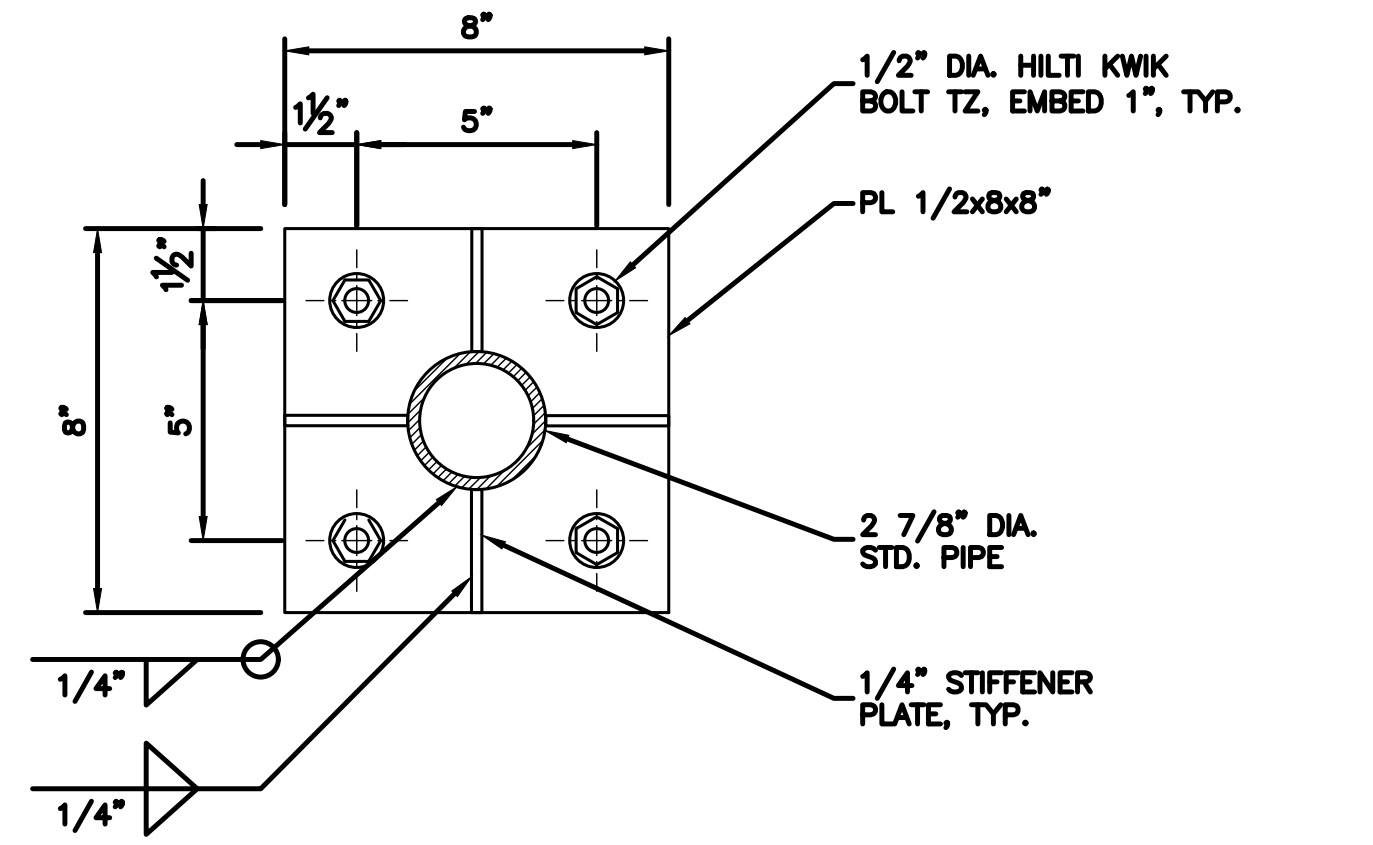
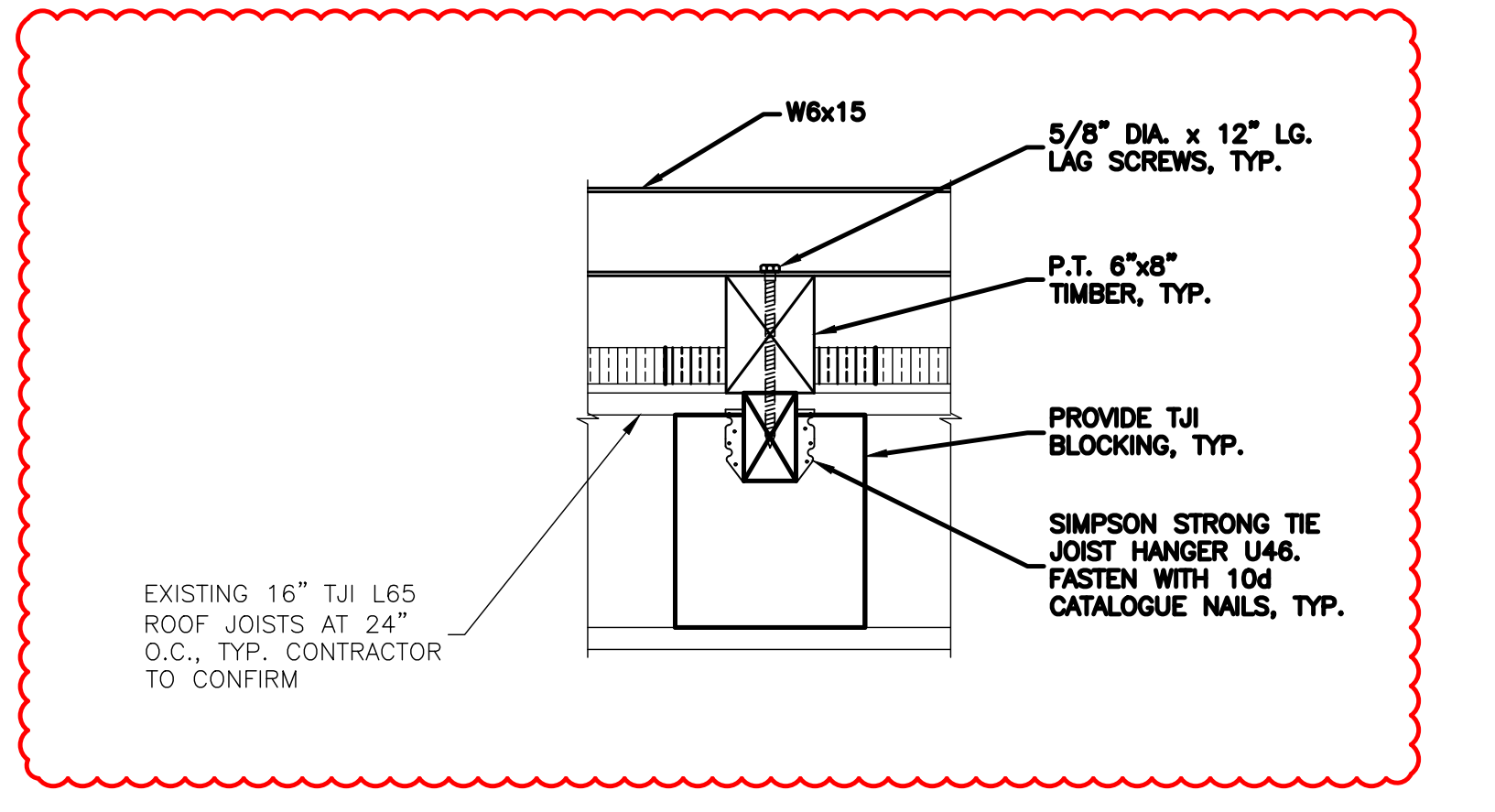
1




SECTION




2


 <p>FRP 4"x4"x3/8" SQUARE TUBE VERTICAL POSTS (2) 5/8" DIA. BOLTS, TYP. 1'-2" 1" 2" 2" 1" 6" 3" 1/4" HSS 5"x5"x5/16" SLEEVE, TYP. 1/2" DIA. x 6" LAG SCREWS, TYP. PL 1/2"x6"x14" TOP VIEW FRONT VIEW</p>	NO SCALE1
 <p>1'-2" 1 1/2" 2" 10" 6" 3 1/2" 1/4" HSS 5"x5"x5/16" SLEEVE, TYP. 1/2" DIA. BOLTS, TYP. PL 1/2"x6"x14" W6x15 1/4" STIFFENER PLATE, TYP. 5/8" DIA. x 4" LG. LAG SCREWS, TYP. TOP VIEW SIDE VIEW</p>	NO SCALE2
 <p>9" 9" 2" 1 1/2" 4" FRP L 4"x4"x1/4" HORIZONTALS BY RAYCAP, TYP. 1/2" FRP CORNER PLATE, TYP. 1/2" FIBER BOLTS, TYP.</p>	NO SCALE3
 <p>APPLY "FIRESTONE" ULTRAPLY TPO GENERAL PURPOSE SEALANT (OR APPROVED EQUAL) SOPREMA SUPRASEAL 1100 PEEL AND STICK MEMBRANE OVER TIMBER LAP NEW ROOF MEMBRANE TO EXISTING AND OVER TIMBER 18 GA GALVANIZED PRE-FINISHED SHEET METAL FLASHING OVER ENTIRE TIMBER. FLASHING MUST BE ONE PIECE (NO SEAMS) CONTRACTOR TO OBTAIN THE SERVICES OF A QUALIFIED ROOFING CONTRACTOR FOR ROOFING WORK. ALL WORK SHOULD BE DONE IN ACCORDANCE WITH APPLICABLE LOCAL JURISDICTION, CODES, ORDINANCES AND APPLICABLE REGULATIONS. ROOFING CONTRACTOR TO PROVIDE APPROPRIATE WARRANTY FOR ALL ROOF REPAIRS.</p>	NO SCALE4
 <p>8" 1 1/2" 5" 1/2" DIA. HILTI KWIK BOLT TZ, EMBED 1", TYP. PL 1/2x8x8 2 7/8" DIA. STD. PIPE 1/4" STIFFENER PLATE, TYP. 1/4" 1/4"</p>	NO SCALE5
 <p>W6x15 5/8" DIA. x 12" LG. LAG SCREWS, TYP. P.T. 6"x8" TIMBER, TYP. PROVIDE TJI BLOCKING, TYP. SIMPSON STRONG TIE JOIST HANGER U46. FASTEN WITH 10d CATALOGUE NAILS, TYP. EXISTING 16" TJI L65 ROOF JOISTS AT 24" O.C., TYP. CONTRACTOR TO CONFIRM</p>	NO SCALE6
	NO SCALE7
	NO SCALE8
	NO SCALE9



5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120



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SESEA00475A

DISH Wireless L.L.C.  
PROJECT INFORMATION

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7917 CENTER BLVD SE  
SNOQUALMIE, WA 98065

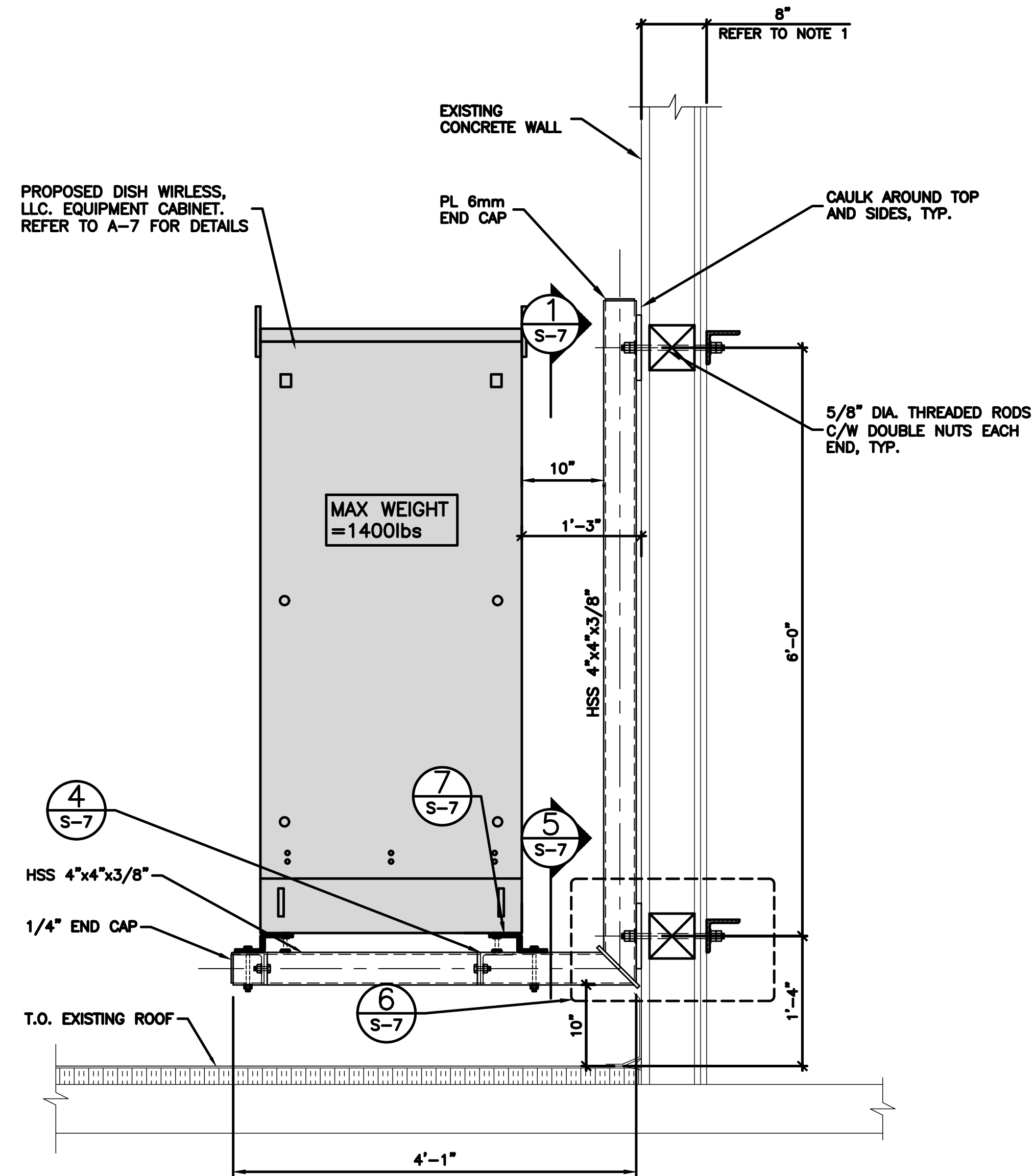
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ANTENNA SCREEN  
CONNECTION DETAILS

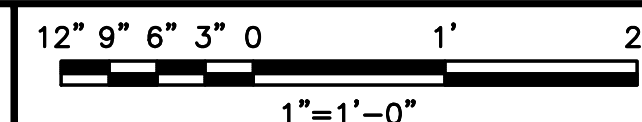
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S-5

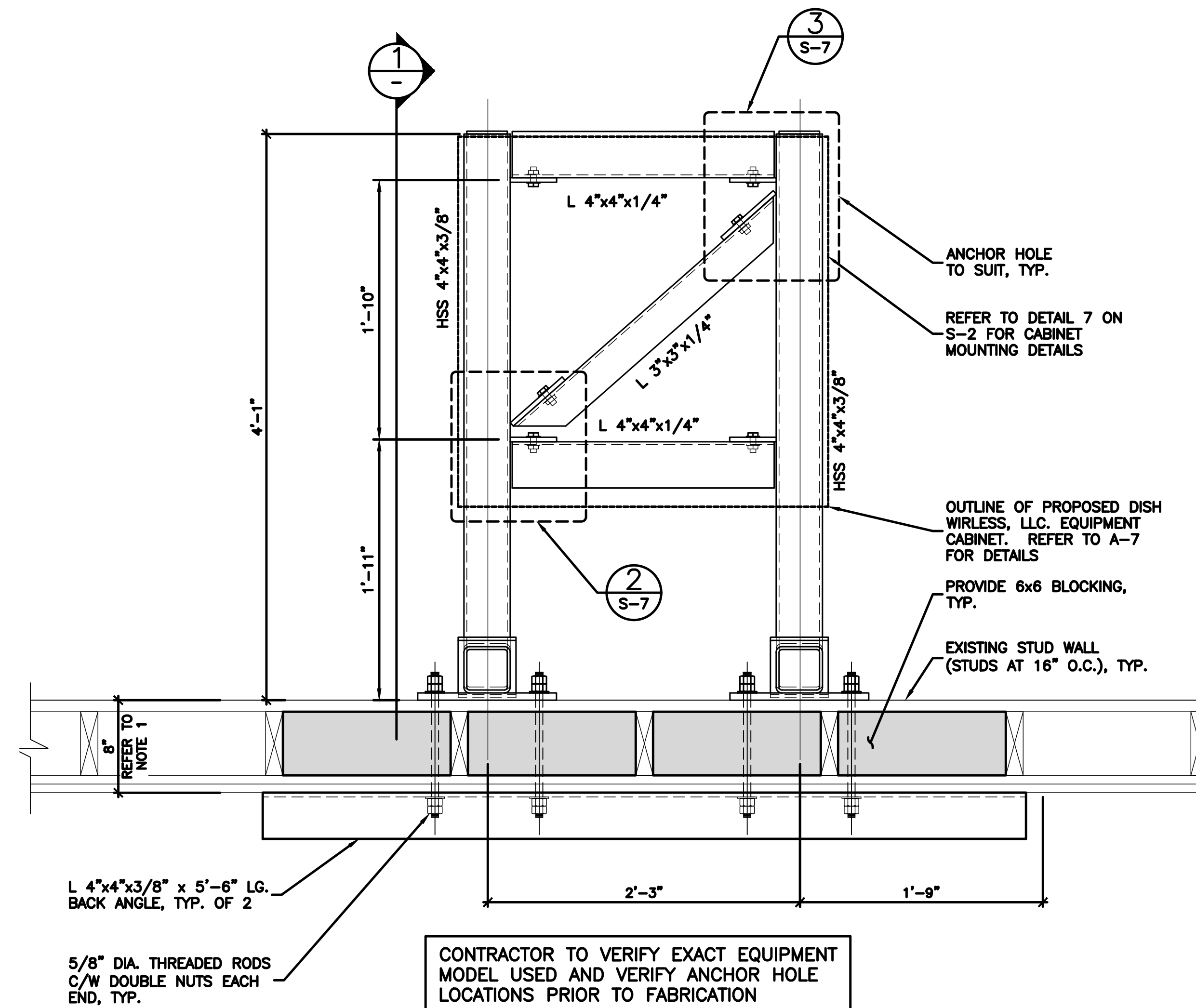




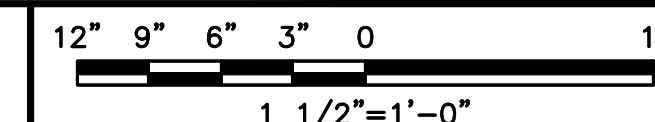
EQUIPMENT FRAME SECTION



1



EQUIPMENT FRAME PLAN



2

NOTES

1. CONTRACTOR TO SITE VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER.
2. PROVIDE VENT HOLES AS REQUIRED FOR GALVANIZING.
3. ALL WELDS TO BE SEALED.
4. ANCHOR EQUIPMENT CABINET AS PER MANUFACTURER'S RECOMMENDATIONS.

**dish**  
wireless.

5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120

**CORE ONE**  
CONSULTING USA

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SHEET TITLE  
EQUIPMENT FRAME  
DETAILS I

SHEET NUMBER

**S-6**



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LITTLETON, CO 80120



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SHEET TITLE  
EQUIPMENT FRAME  
DETAILS II

SHEET NUMBER

S-7

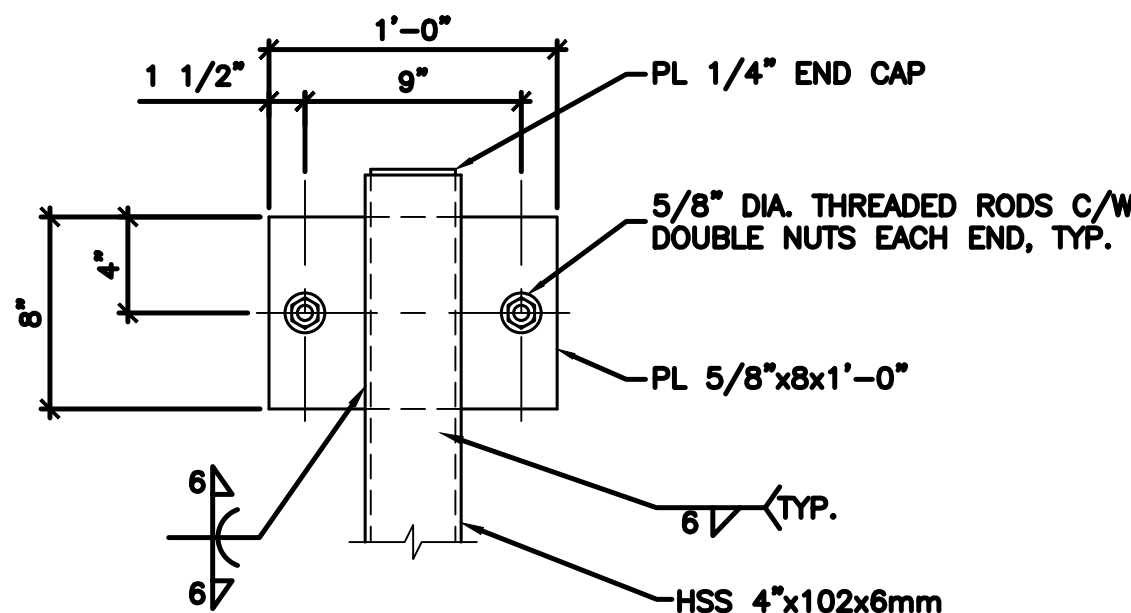
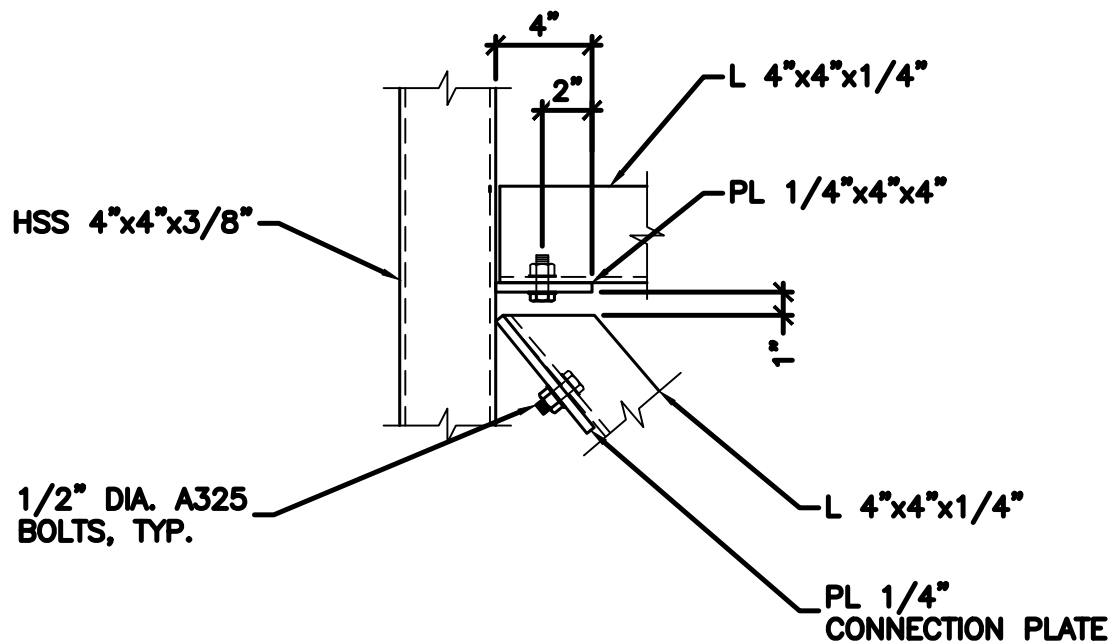


PLATE CONNECTION DETAIL

NO SCALE

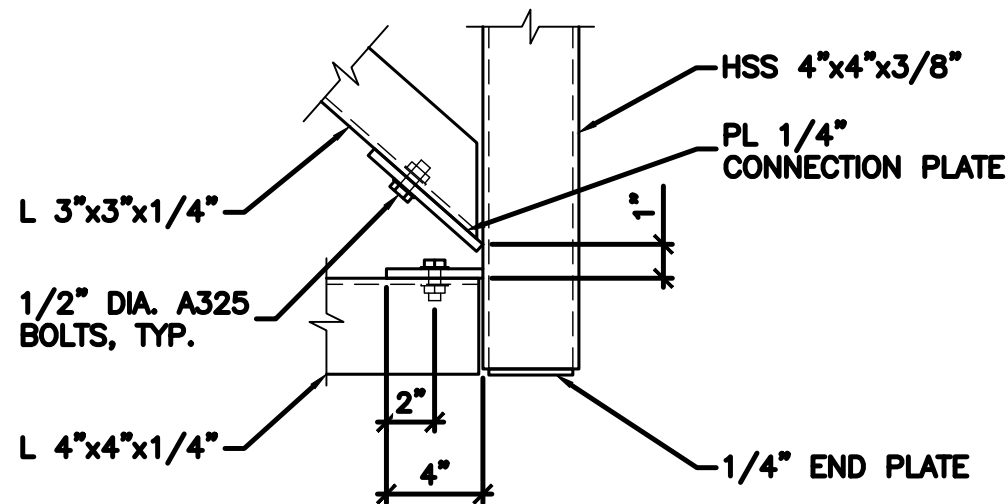
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CONNECTION DETAIL

NO SCALE

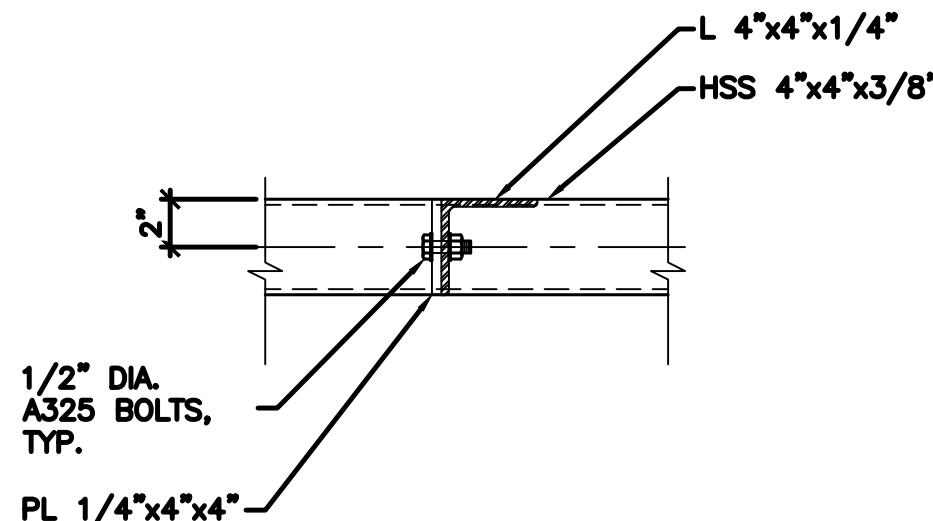
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CONNECTION DETAIL

NO SCALE

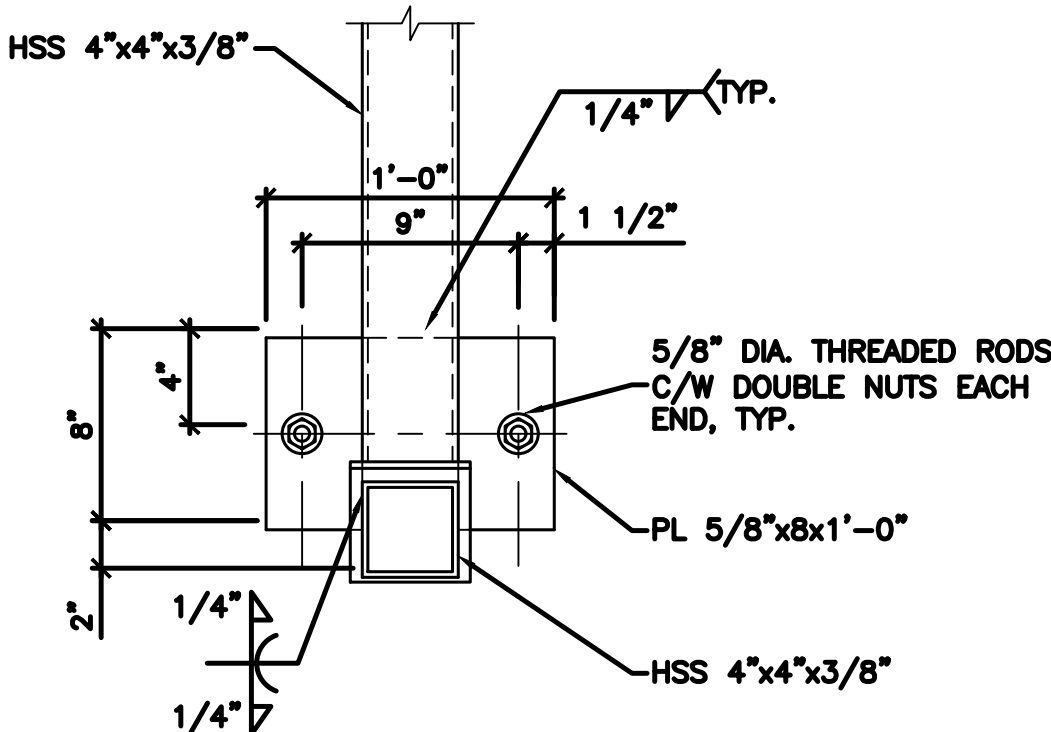
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CONNECTION DETAIL

NO SCALE

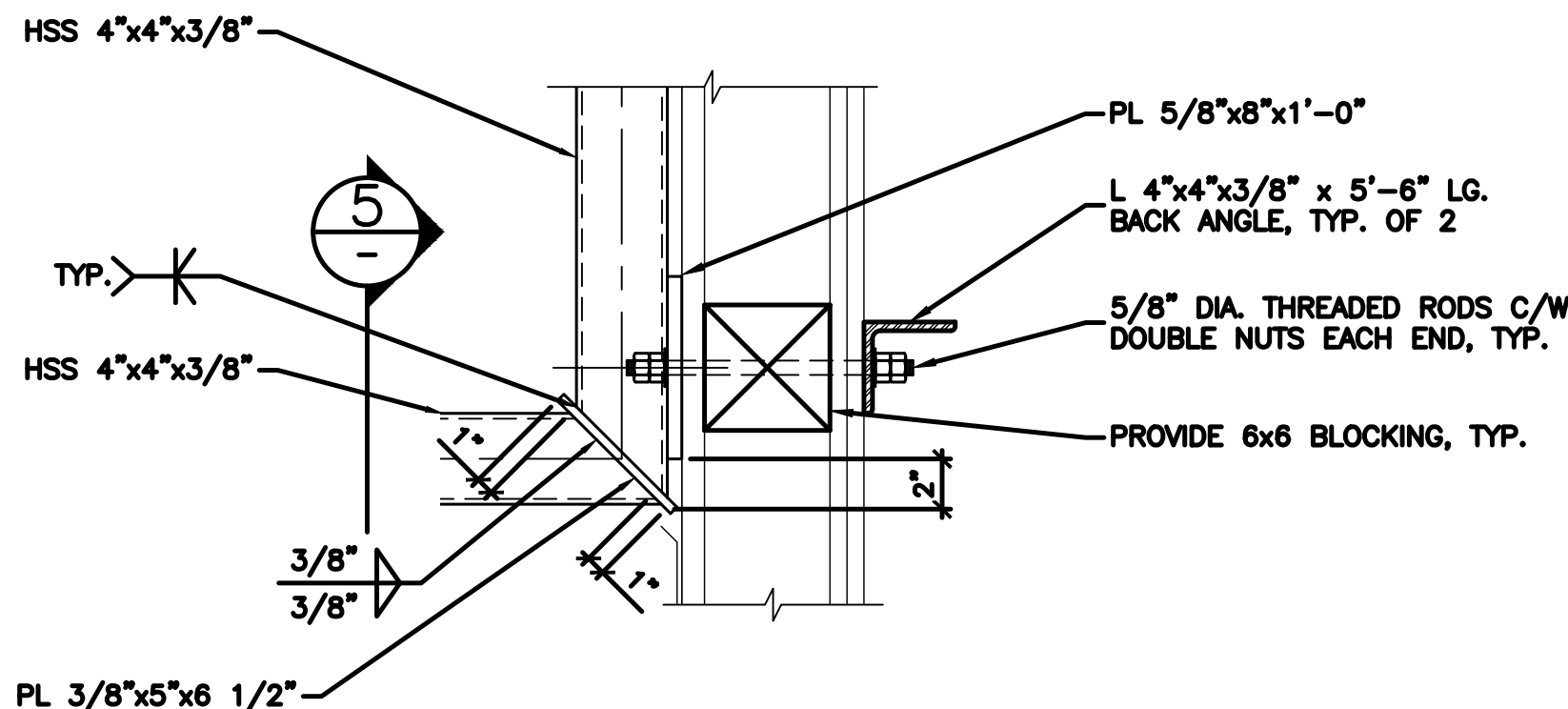
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CONNECTION DETAIL

NO SCALE

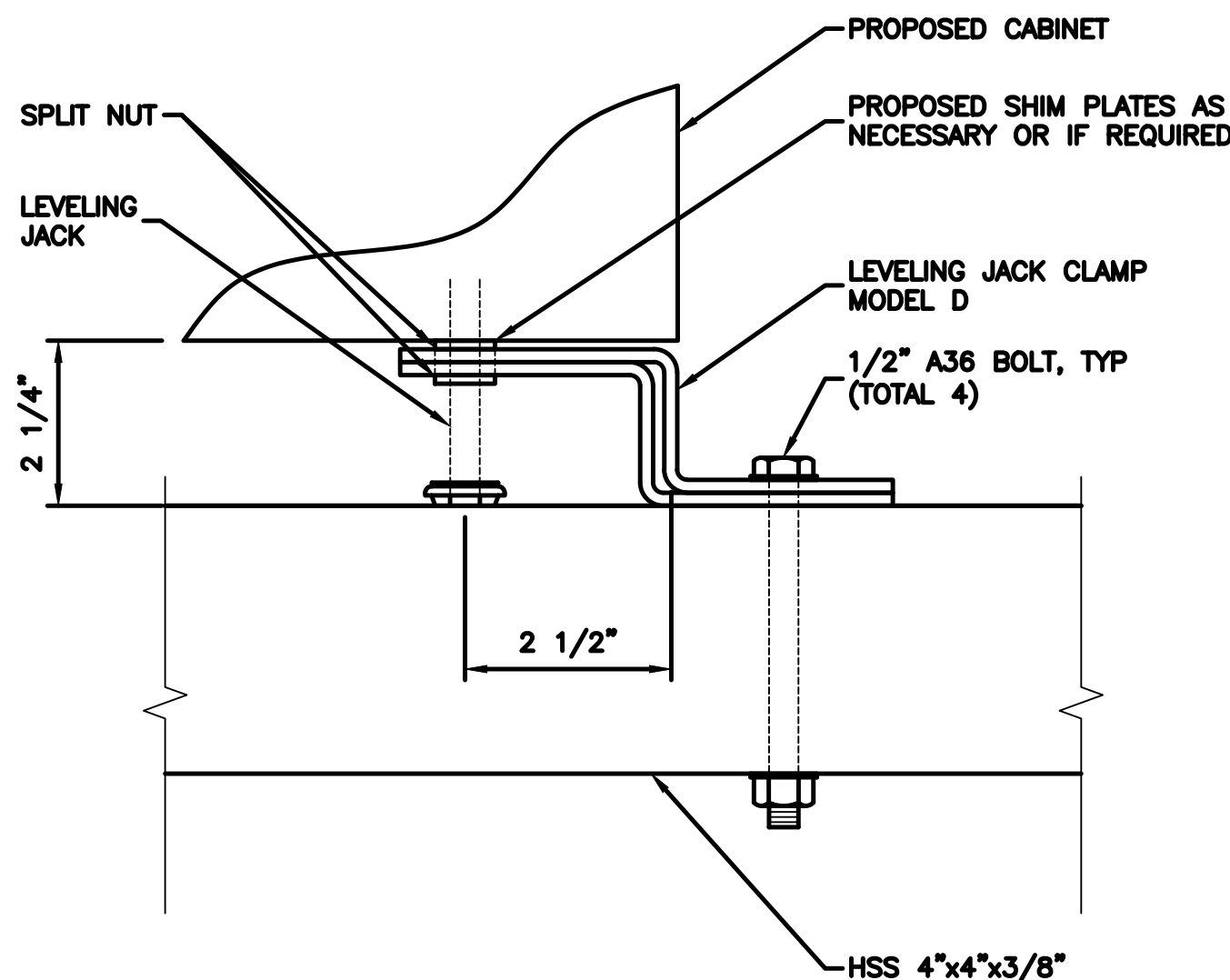
5



CONNECTION DETAIL

NO SCALE

6



TYPICAL EQUIPMENT  
SEISMIC DETAILS

NO SCALE

7

NOT USED

NO SCALE

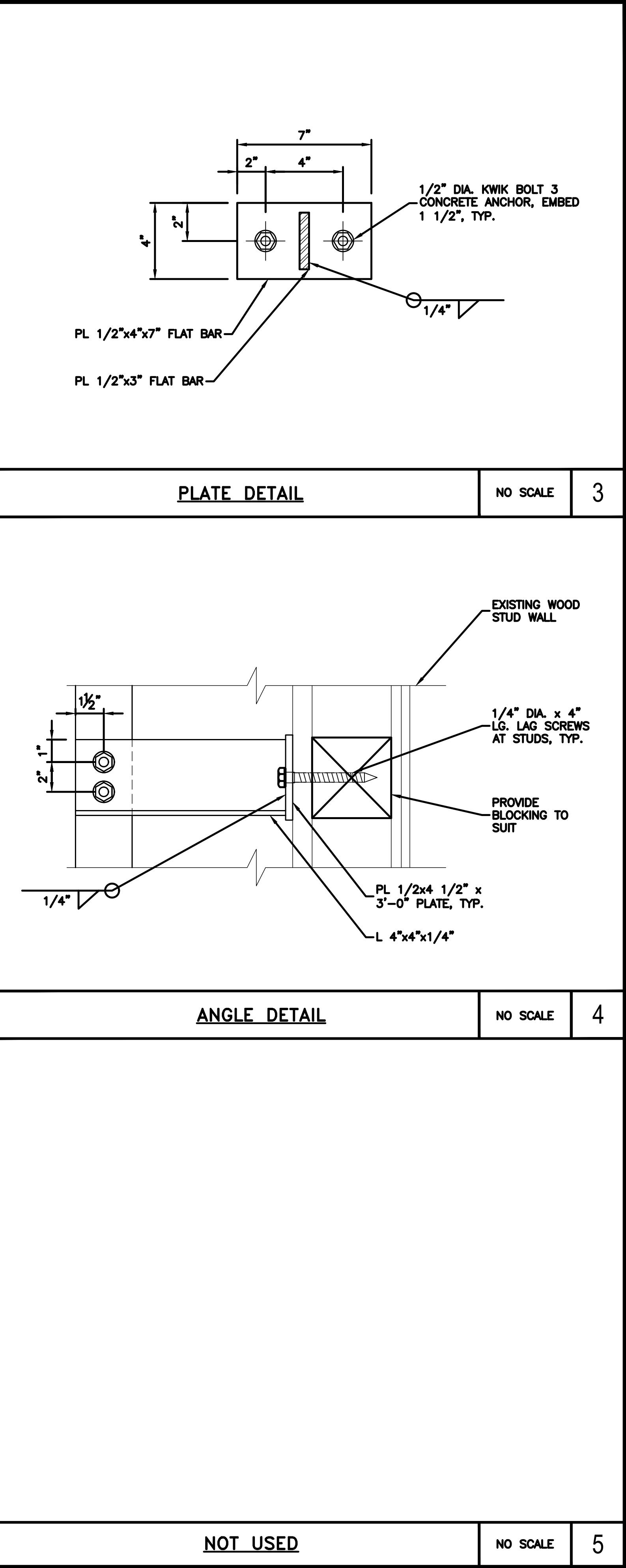
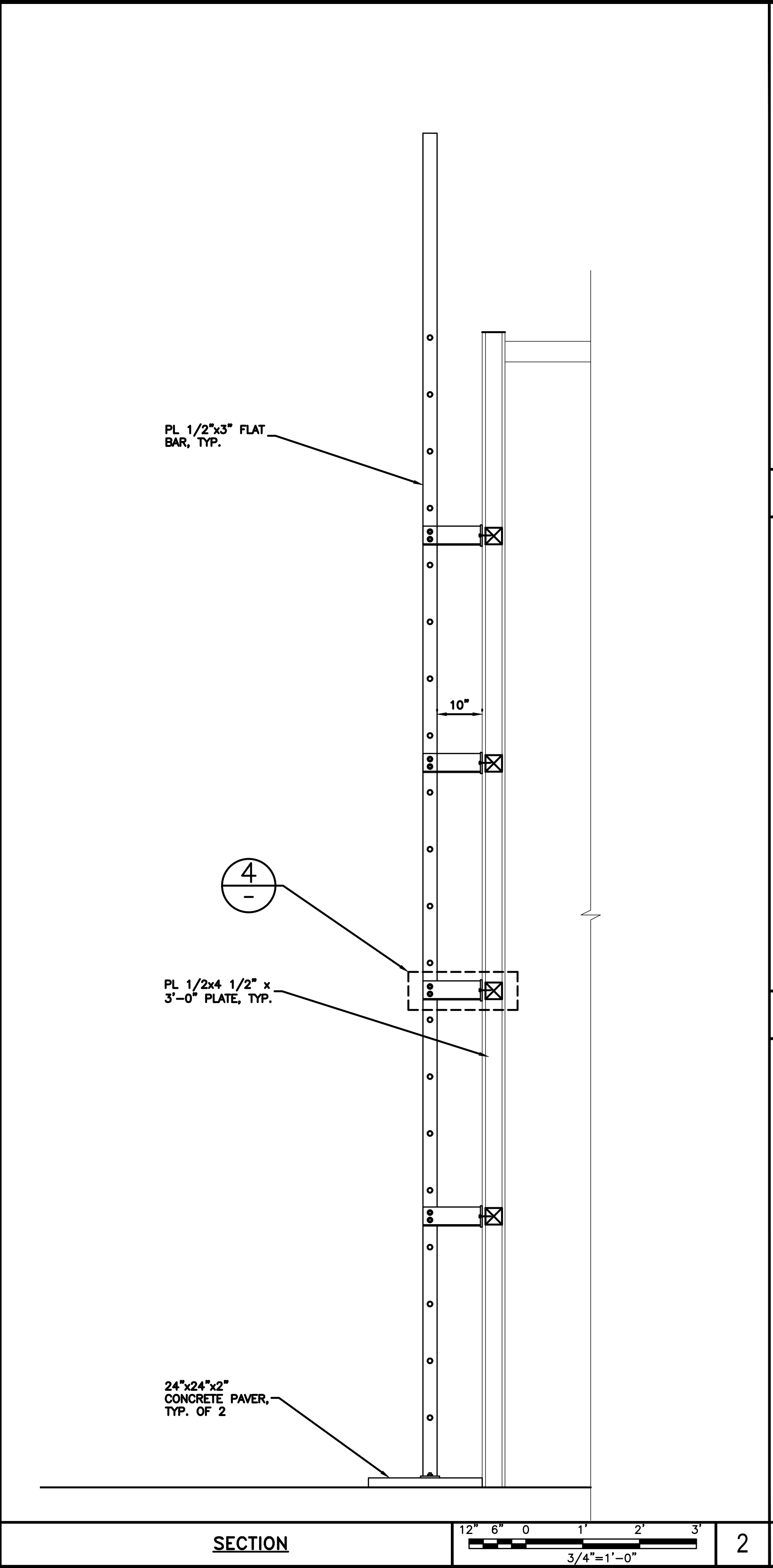
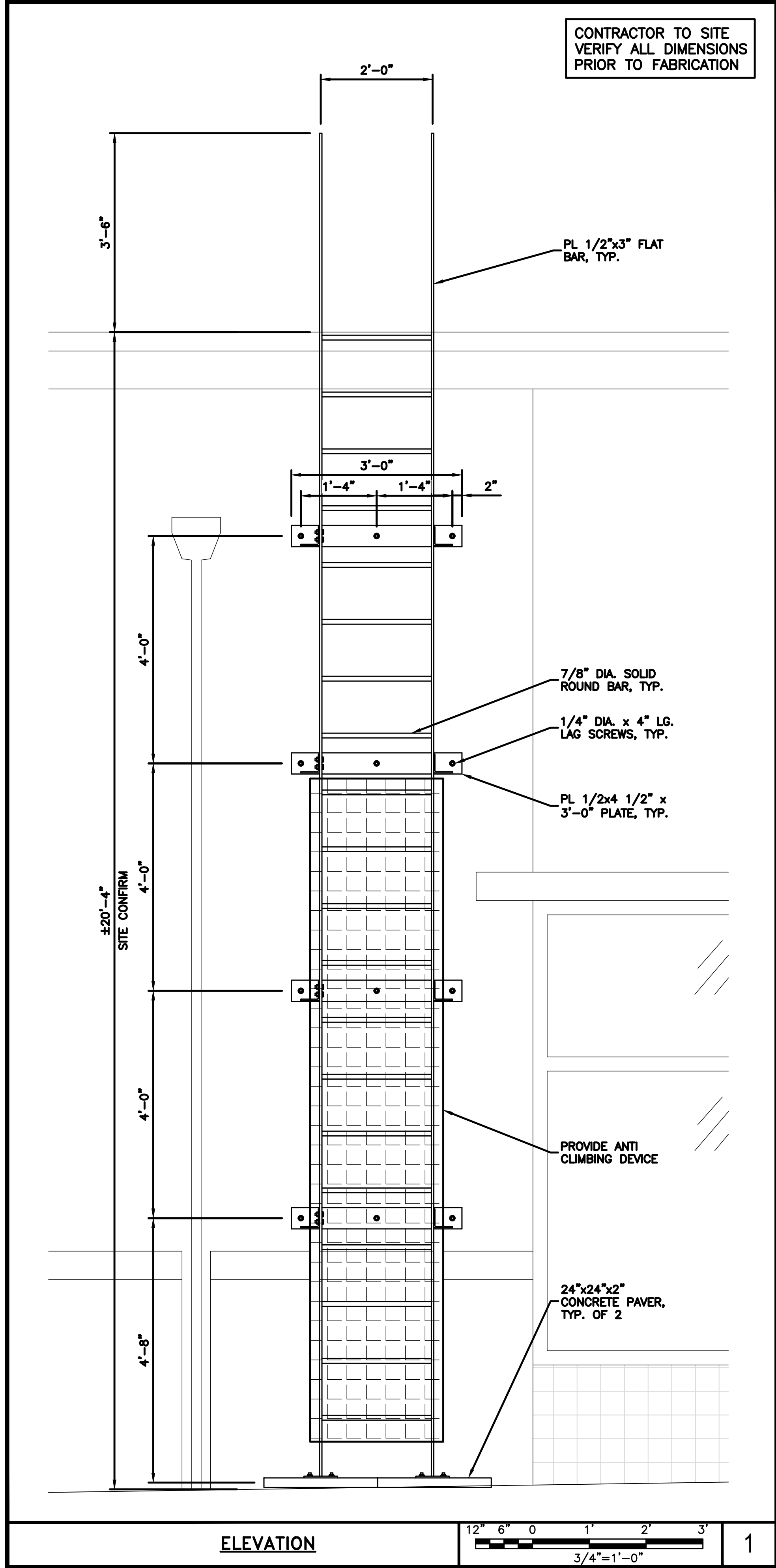
8

NOT USED

NO SCALE

9





5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120



13555 SE 36TH ST, SUITE 100  
BELLEVUE, WA 98006



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DRAWN BY: CHECKED BY: APPROVED BY:

A.D. B.B. M.L.

RFDS REV #: ---

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A&E PROJECT NUMBER

SESEA00475A

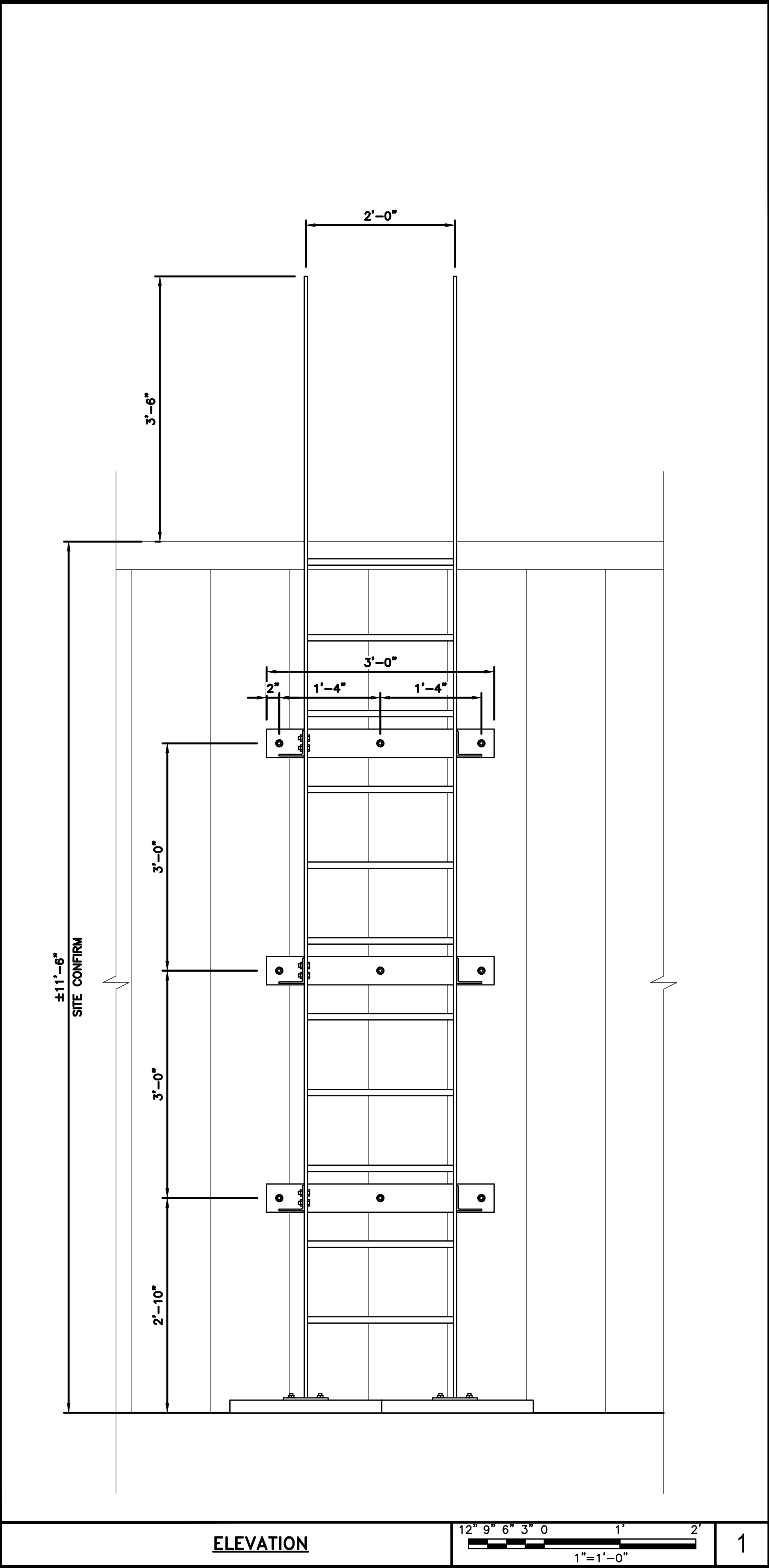
DISH Wireless L.L.C.  
PROJECT INFORMATION

SESEA00475A  
7917 CENTER BLVD SE  
SNOQUALMIE, WA 98065

SHEET TITLE  
ACCESS LADDER  
AT GRADE DETAILS

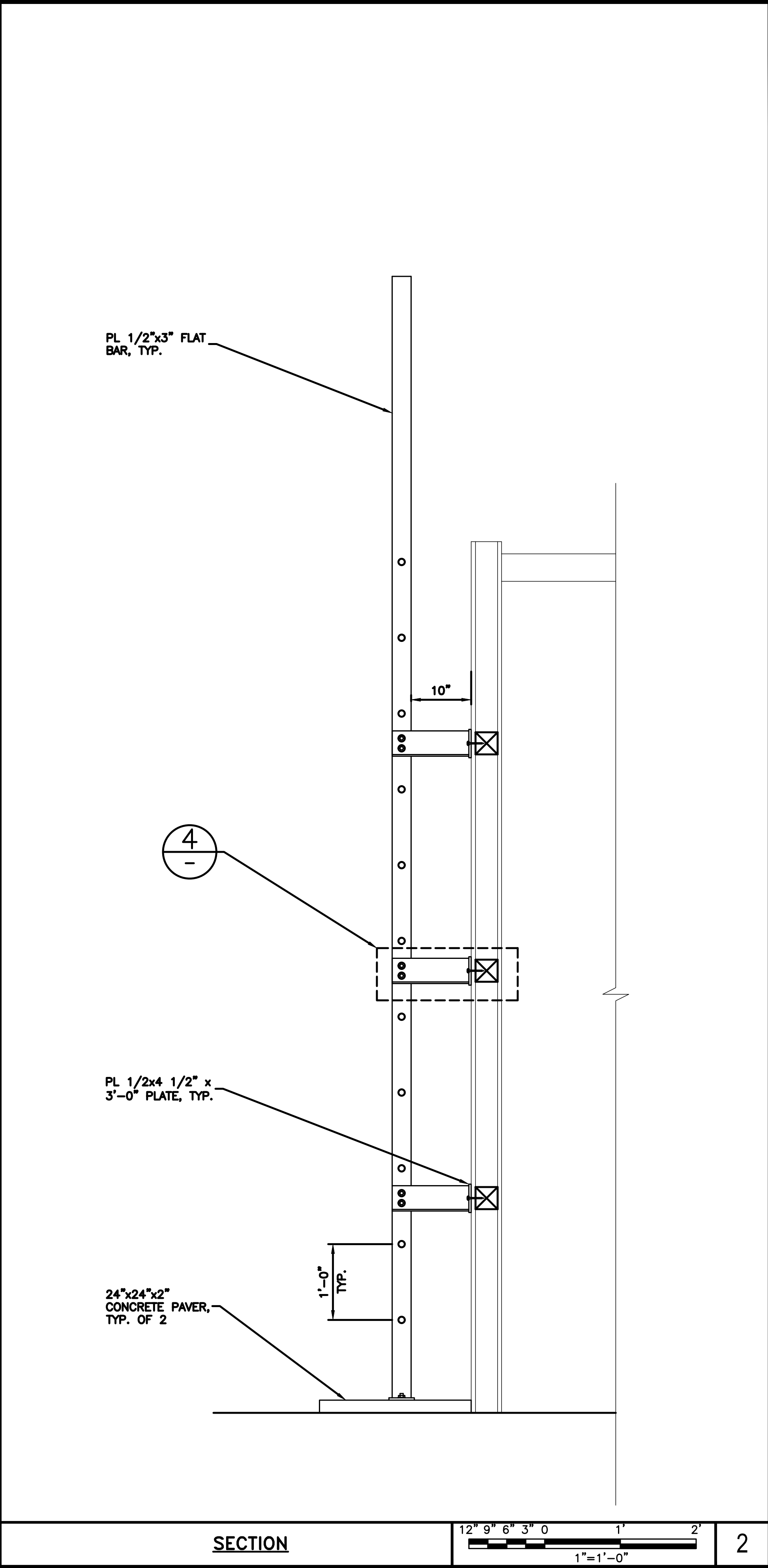
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S-8



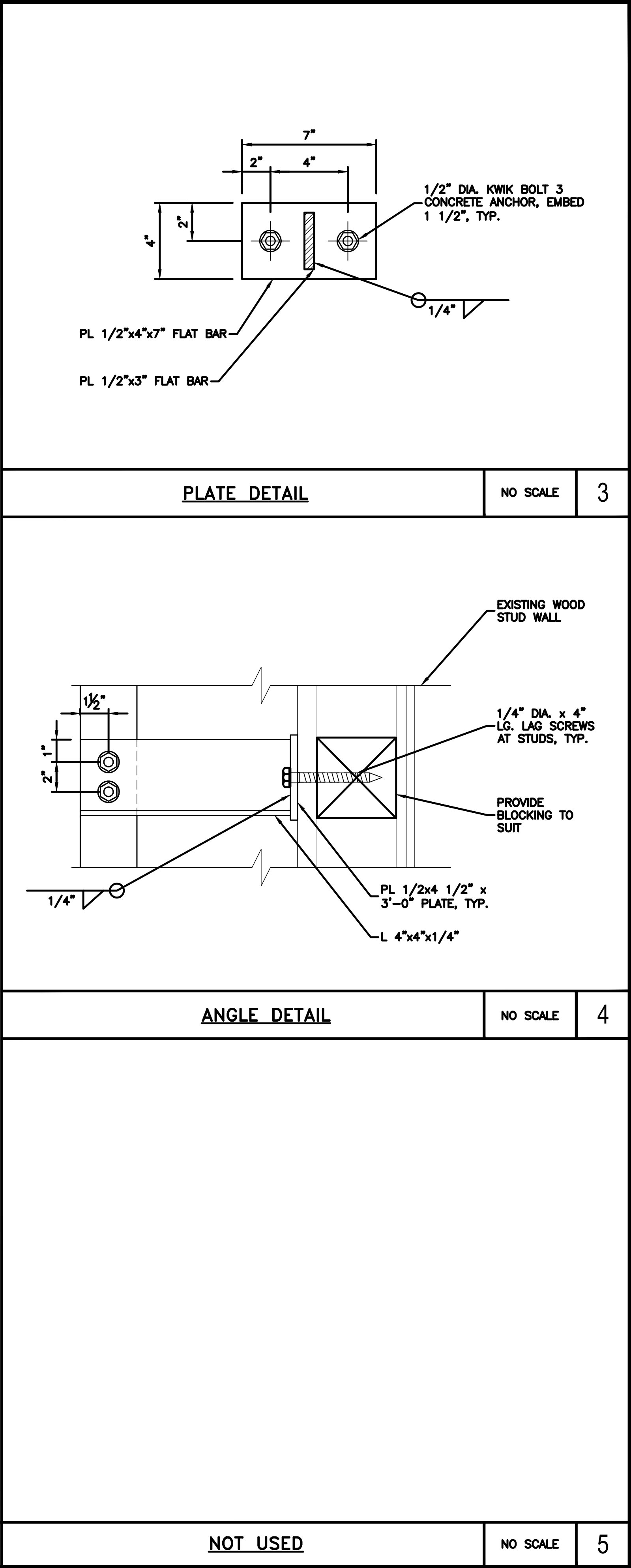
ELEVATION

1



SECTION

2



NOT USED

NO SCALE

5

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BELLEVUE, WA 98006

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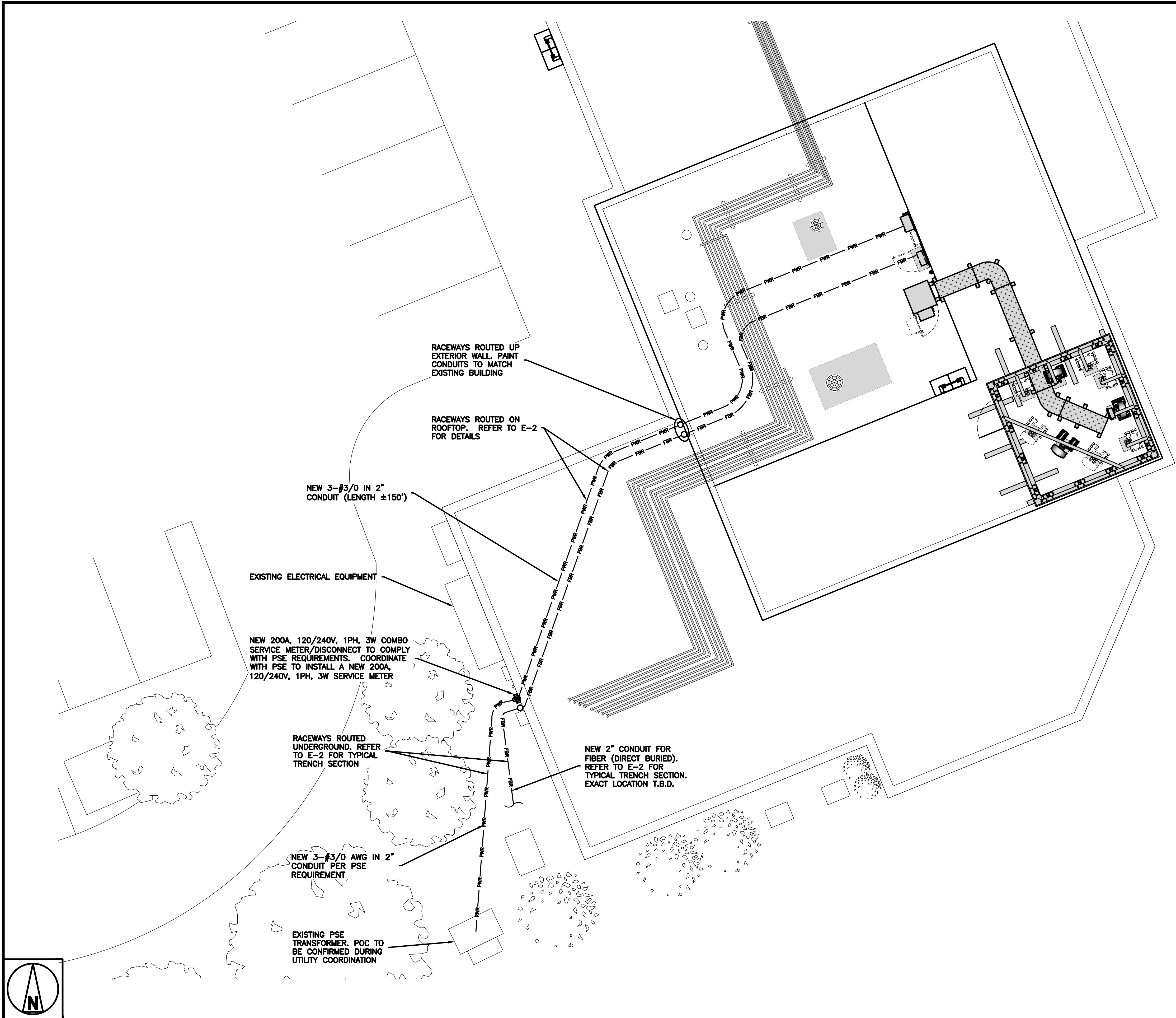
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SESEA00475A

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PROJECT INFORMATION  
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7917 CENTER BLVD SE  
SNOQUALMIE, WA 98065

SHEET TITLE  
ACCESS LADDER  
AT ROOF DETAILS

SHEET NUMBER  
S-9





NOTES

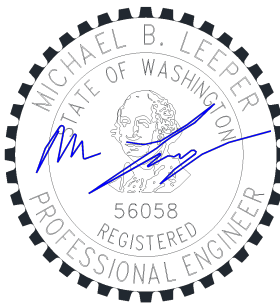
- 1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
- 2. CONTRACTOR IS RESPONSIBLE TO LOCATE AND IDENTIFY ANY AND ALL BURIED SERVICES IN THE VICINITY OF REQUIRED EXCAVATION PRIOR TO CONSTRUCTION.
- 3. SITE VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER.



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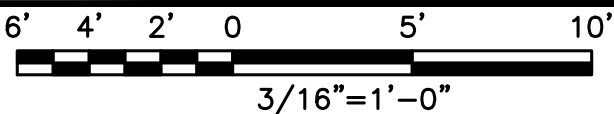
SESEA00475A  
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SHEET TITLE  
ELECTRICAL/FIBER  
ROUTE PLAN

SHEET NUMBER

E-1

POWER/FIBER UTILITY PLAN





DC POWER WIRING SHALL BE COLOR CODED AT EACH END FOR IDENTIFYING +24V AND -48V CONDUCTORS. RED MARKINGS SHALL IDENTIFY +24V AND BLUE MARKINGS SHALL IDENTIFY -48V.

- CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING A BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTOR'S FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.
- ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH CURRENT NATIONAL ELECTRICAL CODES AND ALL STATE AND LOCAL CODES, LAWS, AND ORDINANCES. PROVIDE ALL COMPONENTS AND WIRING SIZES AS REQUIRED TO MEET NEC STANDARDS.
- LOCATION OF EQUIPMENT, CONDUIT AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SHALL BE COORDINATED WITH FIELD CONDITIONS PRIOR TO CONSTRUCTION.
- CONDUIT ROUGH-IN SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT TO AVOID LOCATION CONFLICTS. VERIFY WITH THE MECHANICAL EQUIPMENT CONTRACTOR AND COMPLY AS REQUIRED.
- CONTRACTOR SHALL PROVIDE ALL BREAKERS, CONDUITS AND CIRCUITS AS REQUIRED FOR A COMPLETE SYSTEM.
- CONTRACTOR SHALL PROVIDE PULL BOXES AND JUNCTION BOXES AS REQUIRED BY THE NEC ARTICLE 314.
- CONTRACTOR SHALL PROVIDE ALL STRAIN RELIEF AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
- ALL DISCONNECTS AND CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED PHENOLIC NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS INSTALLED ON, AND PANEL FIELD LOCATIONS FED FROM.
- INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS PER THE SPECIFICATIONS AND NEC 250. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULL BOXES, AND ALL DISCONNECT SWITCHES, AND EQUIPMENT CABINETS.
- ALL NEW MATERIAL SHALL HAVE A U.L. LABEL.
- PANEL SCHEDULE LOADING AND CIRCUIT ARRANGEMENTS REFLECT POST-CONSTRUCTION EQUIPMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR AS-BUILT PANEL SCHEDULE AND SITE DRAWINGS.

#### ELECTRICAL NOTES

NO SCALE

1

NOT USED

NO SCALE

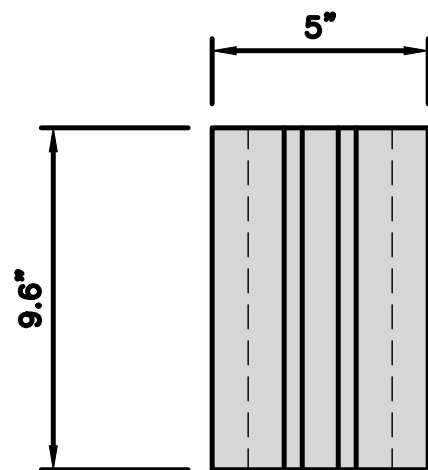
6

#### LIT TELCO BOX - INTERIOR WIRING LAYOUT (OPTIONAL)

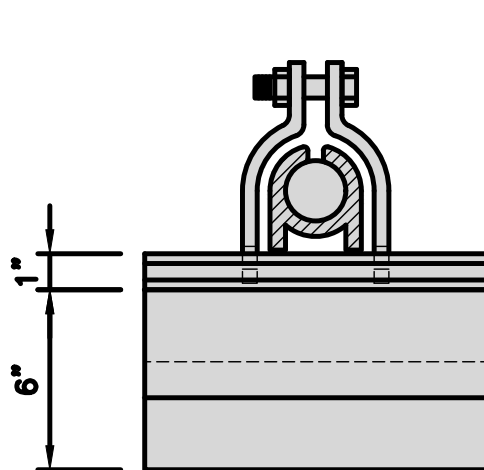
NO SCALE

2

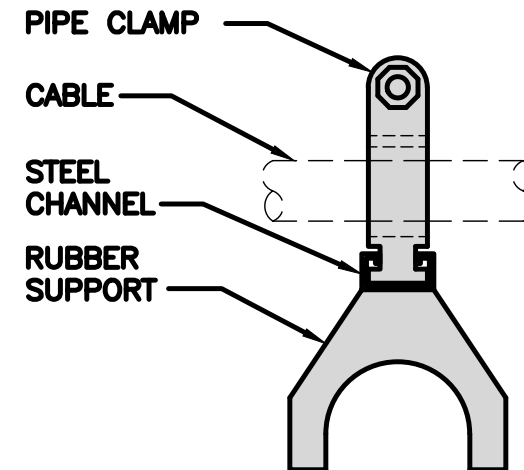
DURA-BLOK DB10 ROOFTOP CABLE SUPPORT	
DIMENSIONS (HxWxL)	5"x6"x9.6"
WEIGHT/ VOLUME	5.28 LBS
ULTIMATE LOAD CAPACITY	500 LBS
NOTE: NON-PENETRATING	



PLAN



FRONT



SIDE

9.6"

6"

1"

PIPE CLAMP  
CABLE  
STEEL CHANNEL  
RUBBER SUPPORT

PROPOSED DISH Wireless L.L.C.  
UNISTRUT

PROPOSED FIBER PROVIDER  
1-1/4" FLEX CONDUITS

FIBER PROVIDER TO TERMINATE  
POWER TO FIBER PROVIDER NID

PROPOSED DISH Wireless L.L.C.  
12 AWG WIRE (6' TAIL)

PROPOSED DISH Wireless L.L.C.  
10 AMP DISTRIBUTION BREAKER

PROPOSED DISH Wireless L.L.C.  
12 AWG WIRE

PROPOSED DISH Wireless L.L.C.  
1-1/2" POWER FROM CABINET

PROPOSED FIBER  
NID, IF REQUIRED

NOTE: FIBER PROVIDER  
WILL NEED TO PROVIDE AN  
ADDITIONAL 5FT UNISTRUT,  
2 U-BOLTS WITH 4 NUTS,  
IN THE EVENT THE  
BRACKET SPACING DOESN'T  
LINE UP WITH CURRENT  
SPACING BELOW

FIBER PROVIDER TO PUNCH TOP OF  
TELCO BOX OF NID ENCLOSURE AND  
INSTALL 1-1/4" LIQUID TIGHT  
CONNECTORS, UL LISTED, NYLON  
MATERIAL, WITH O-RING GASKET

FIBER PROVIDER TO INSTALL  
1-1/4" FLEX CONDUITS BETWEEN  
FDP TELCO BOX & NID

PROPOSED DISH Wireless L.L.C.  
TELCO FIBER ENCLOSURE

PROPOSED DISH Wireless L.L.C.  
1-1/2" FIBER TO CABINET

PROPOSED DISH Wireless L.L.C.  
2" CONDUIT FROM COMMERCIAL  
FIBER VAULT

#### ROOFTOP CABLE SUPPORT DETAIL

NO SCALE

4

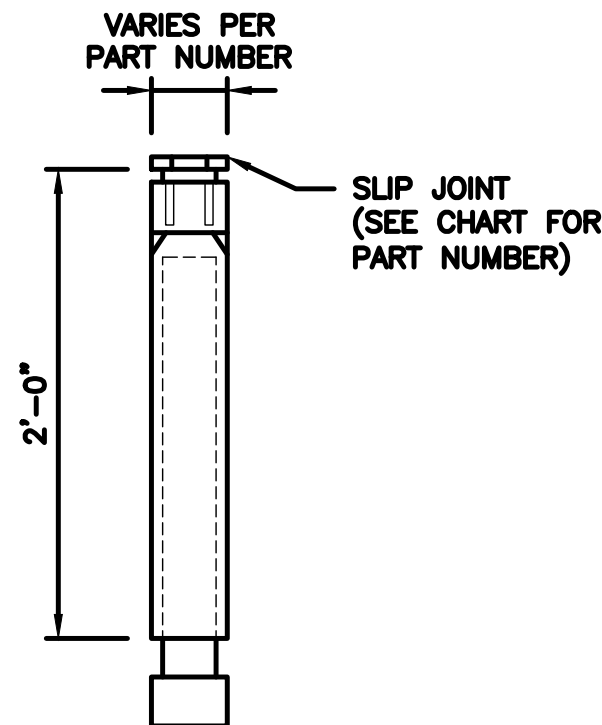
NOT USED

NO SCALE

7

#### CARLON EXPANSION FITTINGS

COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"
E945M	E945MX	3 1/2"	5	8"
E945N	E945NX	4"	5	8"
E945P	E945PX	5"	1	8"
E945R	E945RX	6"	1	8"



NOTE:  
CONTRACTOR TO INSTALL EXPANSION FITTING  
SLIP JOINT AT METER CENTER CONDUIT  
TERMINATION, AS PER LOCAL UTILITY POLICY,  
ORDINANCE AND/OR SPECIFIED REQUIREMENT.

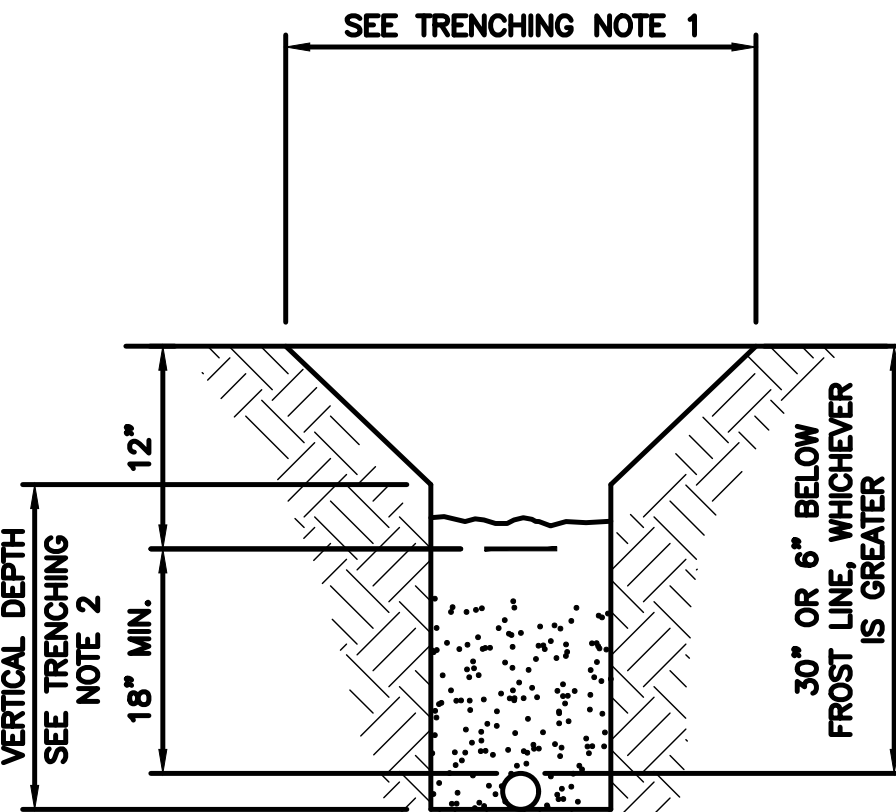
#### EXPANSION JOINT DETAIL

NO SCALE

3

#### TRENCHING NOTES

- CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
- TRENCHING SAFETY: INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT OSHA TRENCHING AND EXCAVATION SAFETY STANDARDS.
- ALL CONDUITS SHALL BE INSTALLED IN COMPLIANCE WITH THE CURRENT NATIONAL ELECTRIC CODE (NEC) OR AS REQUIRED BY THE LOCAL JURISDICTION, WHICHEVER IS THE MOST STRINGENT.



IMPORTANT: UNDERGROUND WARNING/MARKING TAPE SHALL BE BURIED AT A DEPTH OF 12 IN (30 CM) OR LESS BELOW GRADE. THE MINIMUM DISTANCE FROM THE TOP OF THE PIPELINE SHOULD BE 12 IN (30 CM). REQUIRED DEPTH OF PIPELINE SHALL BE 30" BELOW GRADE OR 6" BELOW FROSTLINE, WHICHEVER IS GREATER. EACH RUN OF UNDERGROUND WARNING/MARKING TAPE MUST BE OVERLAPPED BY A MINIMUM OF 20 FT (6 M) OR MUST BE JOINED.

#### TYPICAL UNDERGROUND TRENCH DETAIL

NO SCALE

5

NOT USED

NO SCALE

8

dish  
wireless.

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LITTLETON, CO 80120

CORE ONE  
CONSULTING USA

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BELLEVUE, WA 98006



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B.B.

M.L.

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SESEA00475A

DISH Wireless L.L.C.  
PROJECT INFORMATION

SESEA00475A  
7917 CENTER BLVD SE  
SNOQUALMIE, WA 98065

SHEET TITLE  
ELECTRICAL NOTES  
& DETAILS

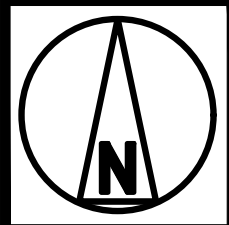
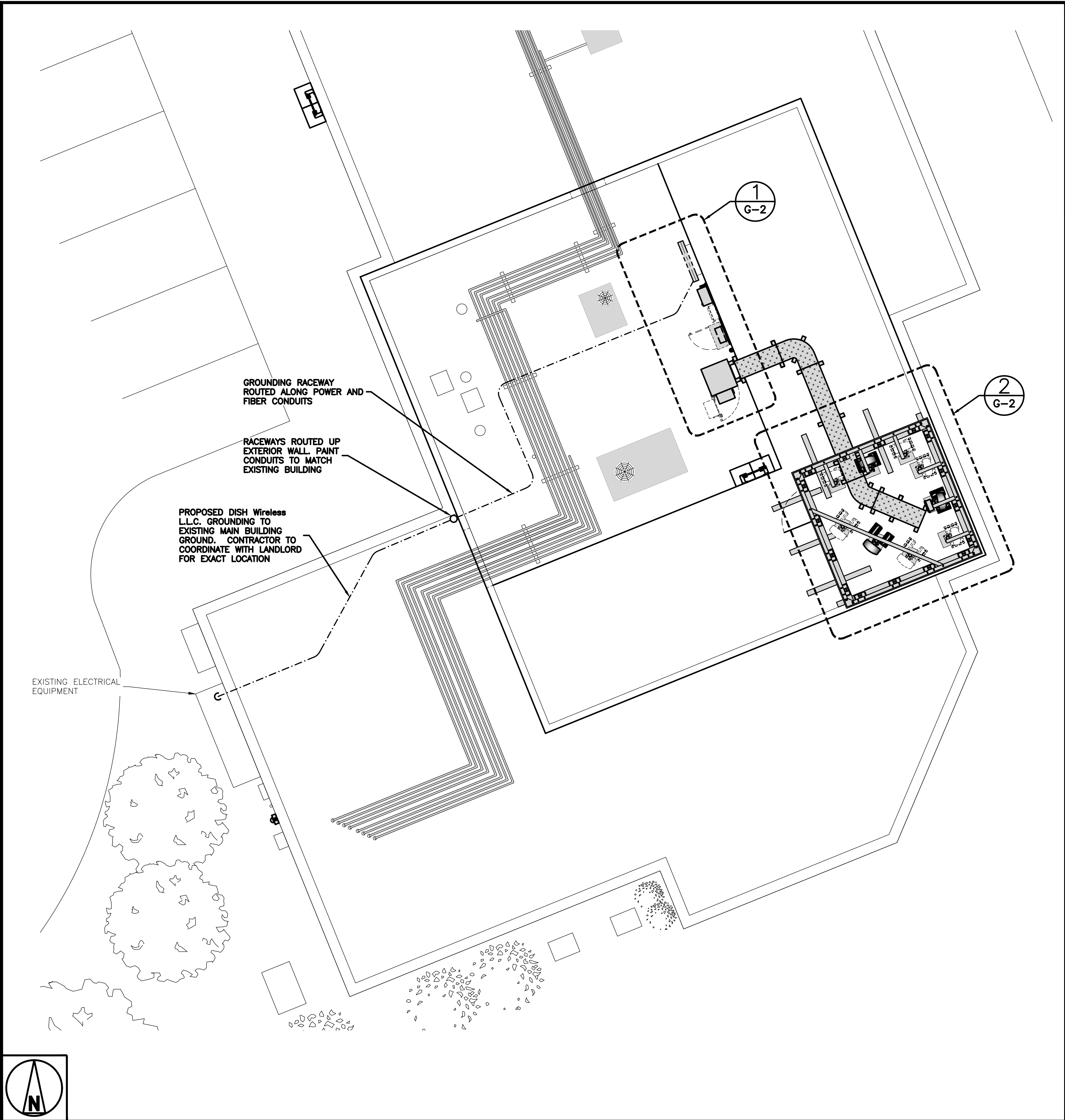
SHEET NUMBER

E-2

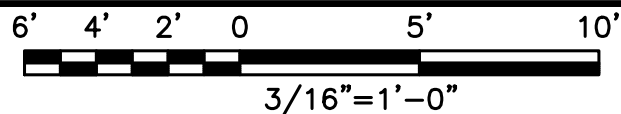








GROUNDING PLAN



1

GROUNDING KEY NOTES

NO SCALE

2

- EXOTHERMIC CONNECTION

■

MECHANICAL CONNECTION

⎓

GROUND BUS BAR

○

GROUND ROD
- ⬢

TEST GROUND ROD WITH INSPECTION SLEEVE

-----

#6 AWG STRANDED & INSULATED

- - - - -

#2 AWG SOLID COPPER TINNED

▲

BUSS BAR INSULATOR

GROUNDING LEGEND

1. GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
2. CONTRACTOR SHALL GROUND ALL EQUIPMENT AS A COMPLETE SYSTEM. GROUNDING SHALL BE IN COMPLIANCE WITH NEC SECTION 250 AND DISH Wireless L.L.C. GROUNDING AND BONDING REQUIREMENTS AND MANUFACTURER'S SPECIFICATIONS.
3. ALL GROUND CONDUCTORS SHALL BE COPPER; NO ALUMINUM CONDUCTORS SHALL BE USED.
4. NO EXOTHERMIC WELDING ON ROOFTOP

GROUNDING ROOFTOP KEY NOTES

- A

**EXTERIOR GROUND RING:** #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING.
- B

**ROOFTOP GROUND SYSTEM:** THE GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS.
- C

**INTERIOR GROUND RING:** #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE EQUIPMENT AREA. ALL NON-TELECOMMUNICATIONS RELATED METALLIC OBJECTS FOUND WITHIN A SITE SHALL BE GROUNDED TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR.
- D

**BOND TO INTERIOR GROUND RING:** #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING OR ROOM.
- E

**GROUND ROD:** UL LISTED COPPER CLAD STEEL. MINIMUM 1/2" DIAMETER BY EIGHT FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.
- F

**CELL REFERENCE GROUND BAR (CRGB):** POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG UNLESS NOTED OTHERWISE STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO COMMON BUILDING GROUND SYSTEM WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.
- G

**HATCH PLATE GROUND BAR:** BOND TO THE COMMON BUILDING GROUND SYSTEM WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CRGB MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS EACH.
- H

**EXTERIOR CABLE ENTRY PORT GROUND BARS:** LOCATED AT THE ENTRANCE TO THE CELL SITE ROOM. BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH MECHANICAL CONNECTIONS.
- I

**TELCO GROUND BAR:** BOND TO BOTH CELL REFERENCE GROUND BAR OR EXTERIOR GROUND RING.
- J

**FRAME BONDING:** THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK.
- K

**INTERIOR UNIT BONDS:** METAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS LOCATED WITH THE AREA OF THE INTERIOR GROUND RING REQUIRE A #6 AWG STRANDED GREEN INSULATED COPPER BOND TO THE INTERIOR GROUND RING.
- L

**FENCE AND GATE GROUNDING:** METAL FENCES SHALL BE BONDED TO THE COMMON BUILDING GROUND SYSTEM WITH A #2 AWG SOLID TINNED COPPER CONDUCTOR AT AN INTERVAL NOT EXCEEDING 25 FEET. BONDS SHALL BE MADE AT EACH GATE POST AND ACROSS GATE OPENINGS.
- M

**EXTERIOR UNIT BONDS:** METALLIC OBJECTS, EXTERNAL TO OR MOUNTED TO THE BUILDING, SHALL BE BONDED TO THE COMMON BUILDING GROUND SYSTEM. USING #2 TINNED SOLID COPPER WIRE
- N

**ICE BRIDGE SUPPORTS:** EACH ICE BRIDGE LEG SHALL BE BONDED TO THE GROUND RING WITH #2 AWG BARE TINNED COPPER CONDUCTOR. PROVIDE EXOTHERMIC WELDS AT BOTH THE ICE BRIDGE LEG AND BURIED GROUND RING.
- O

**DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICE CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH A MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR**
- P

**ROOFTOP COLLECTOR BUSS BAR IS TO BE MECHANICALLY BONDED TO COMMON BUILDING GROUND SYSTEM.**

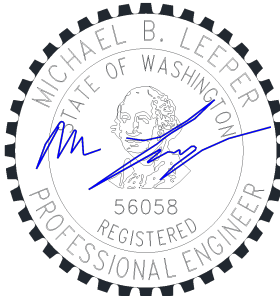
REFER TO DISH Wireless L.L.C. GROUNDING NOTES.



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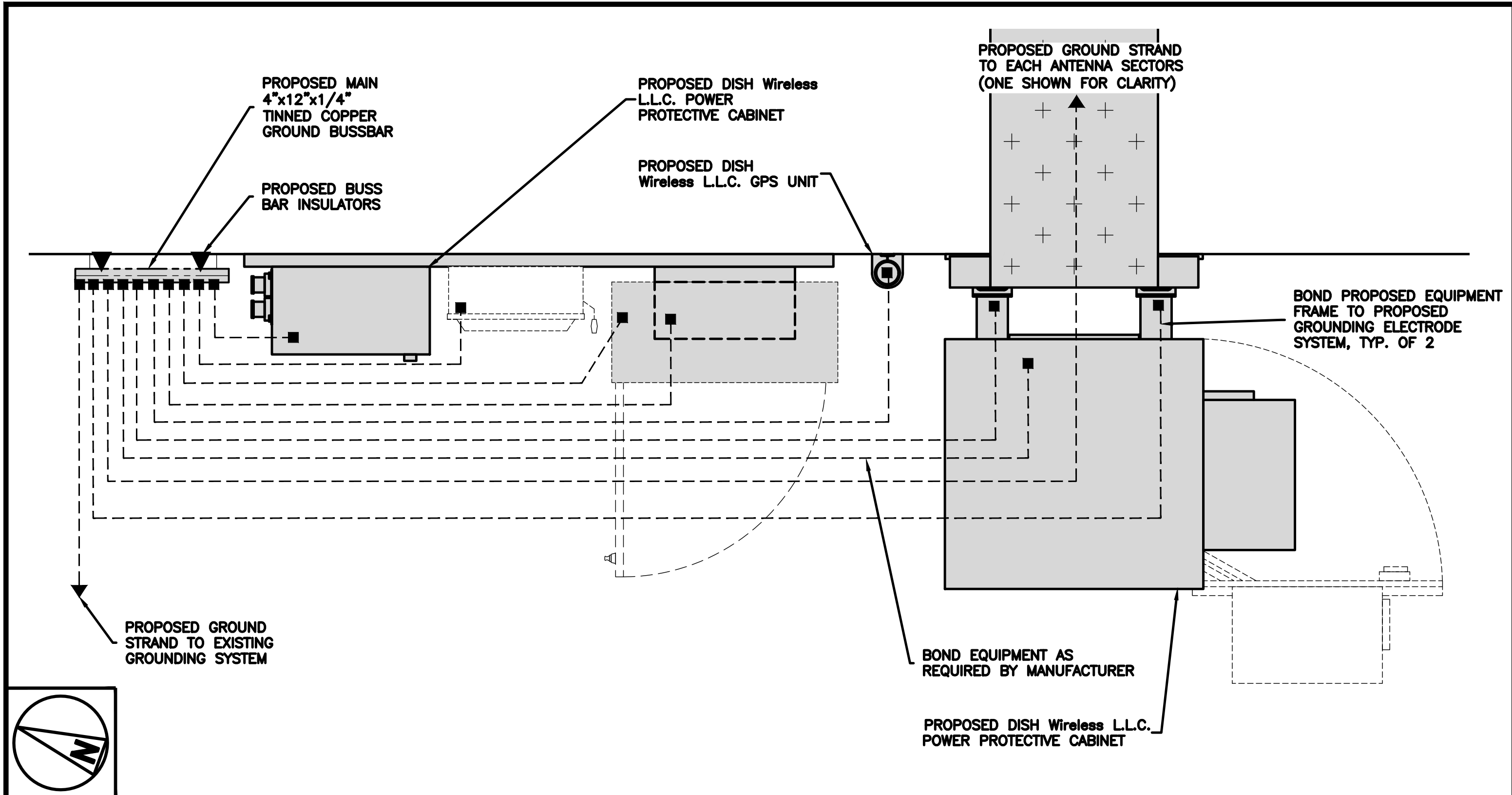
A&E PROJECT NUMBER  
SESEA00475A

DISH Wireless L.L.C.  
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7917 CENTER BLVD SE  
SNOQUALMIE, WA 98065

SHEET TITLE  
GROUNDING PLANS  
AND NOTES

SHEET NUMBER  
  
G-1

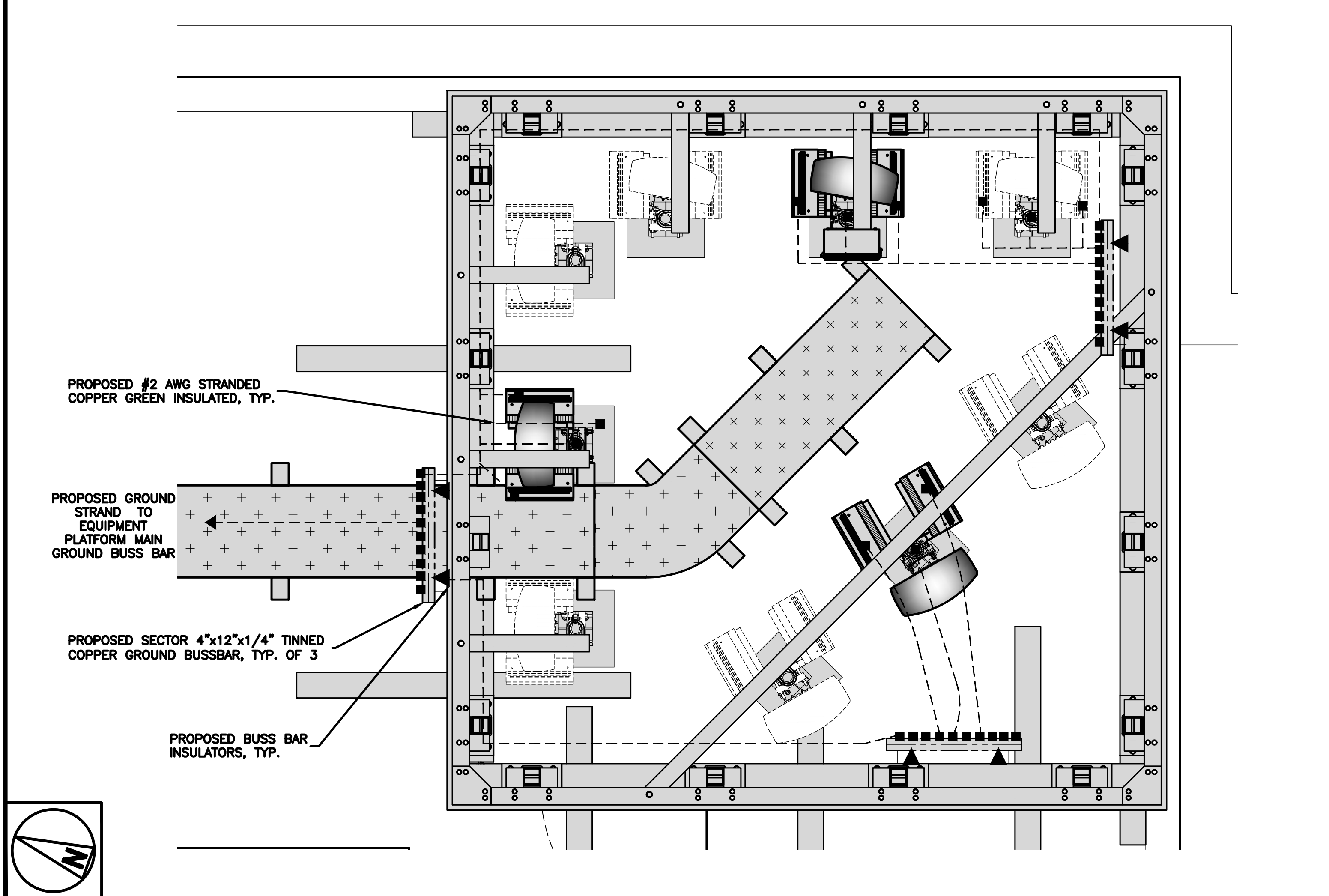




ROOFTOP EQUIPMENT GROUNDING PLAN

NO SCALE

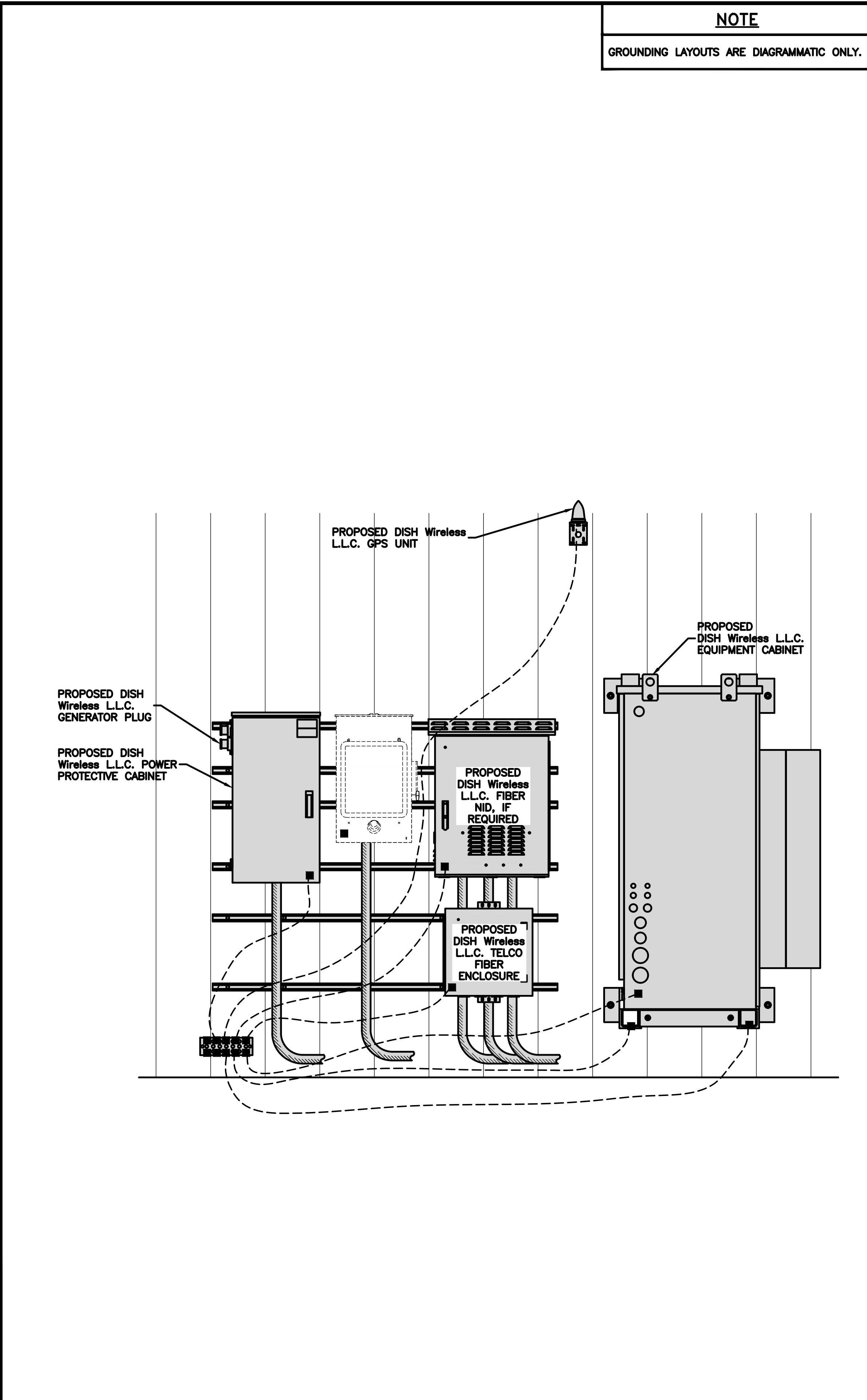
1



ROOFTOP EQUIPMENT GROUNDING PLAN

NO SCALE

2



H-FRAME GROUNDING DETAIL

NO SCALE

3

**NOTE**  
GROUNDING LAYOUTS ARE DIAGRAMMATIC ONLY.



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7917 CENTER BLVD SE  
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SHEET TITLE  
GROUNDING DETAILS

SHEET NUMBER  
**G-2**

1. EXOTHERMIC WELD (2) TWO, #2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUND BAR. ROUTE CONDUCTORS TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD.

2. ALL EXTERIOR GROUNDING HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.

3. FOR GROUND BOND TO STEEL ONLY: COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.

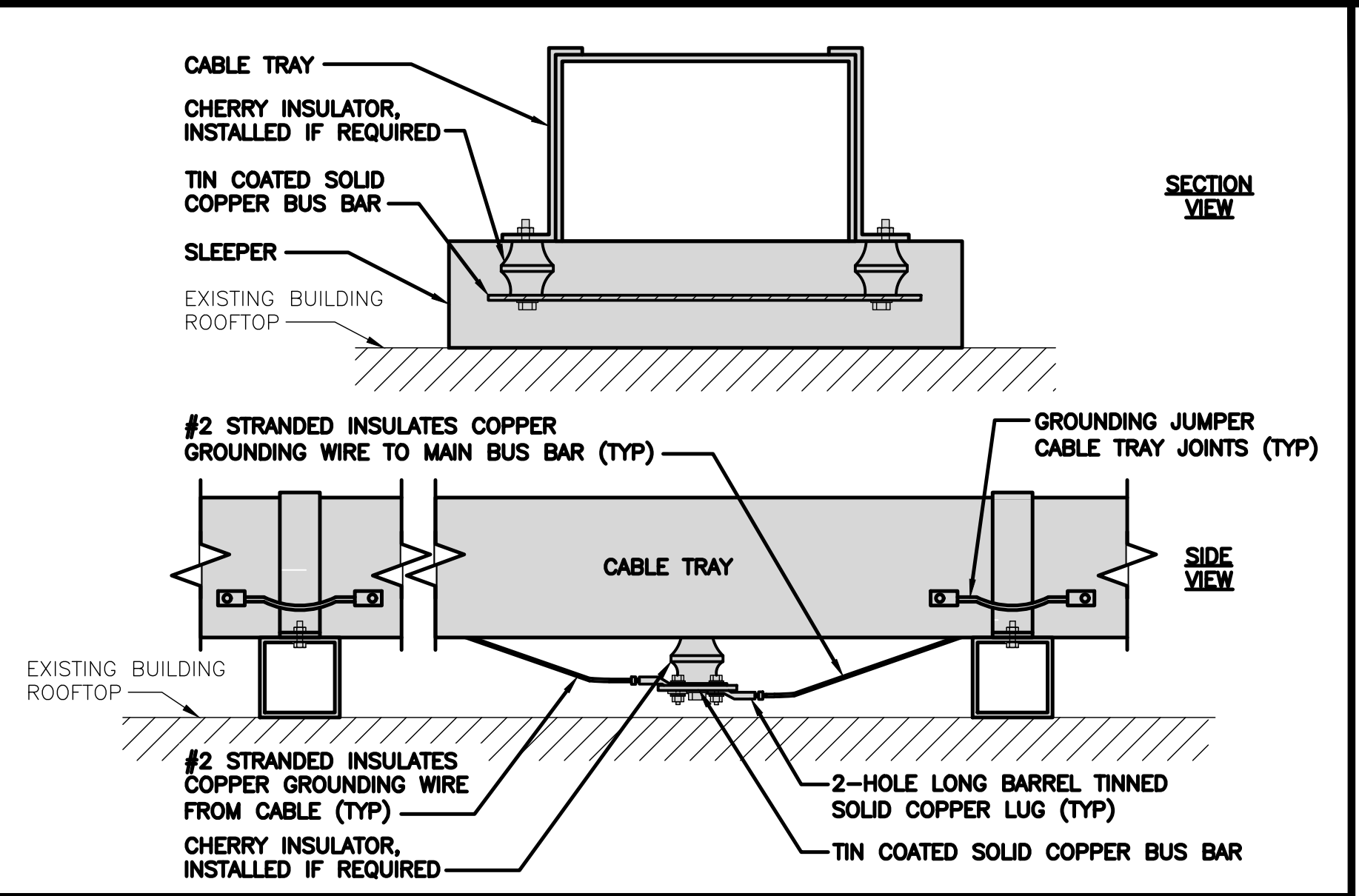
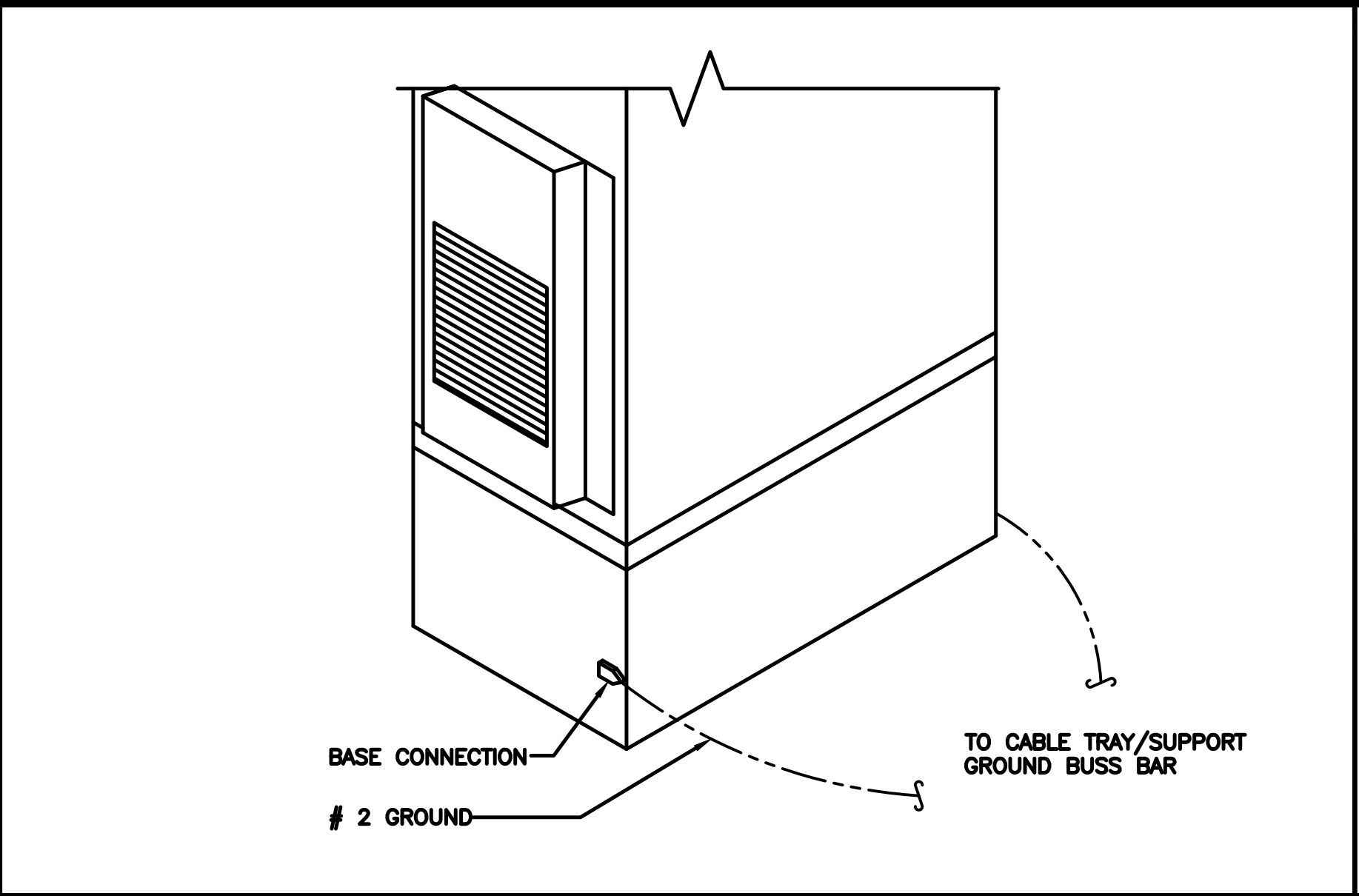
4. DO NOT INSTALL CABLE GROUNDING KIT AT A BEND AND ALWAYS DIRECT GROUND CONDUCTOR DOWN TO GROUNDING BUS.

5. NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUND BAR AND BOLTED ON THE BACK SIDE.

6. ALL GROUNDING PARTS AND EQUIPMENT TO BE SUPPLIED AND INSTALLED BY CONTRACTOR.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUND BAR AS REQUIRED.

8. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).



TYPICAL GROUNDING NOTES

NO SCALE

1

OUTDOOR CABINET GROUNDING

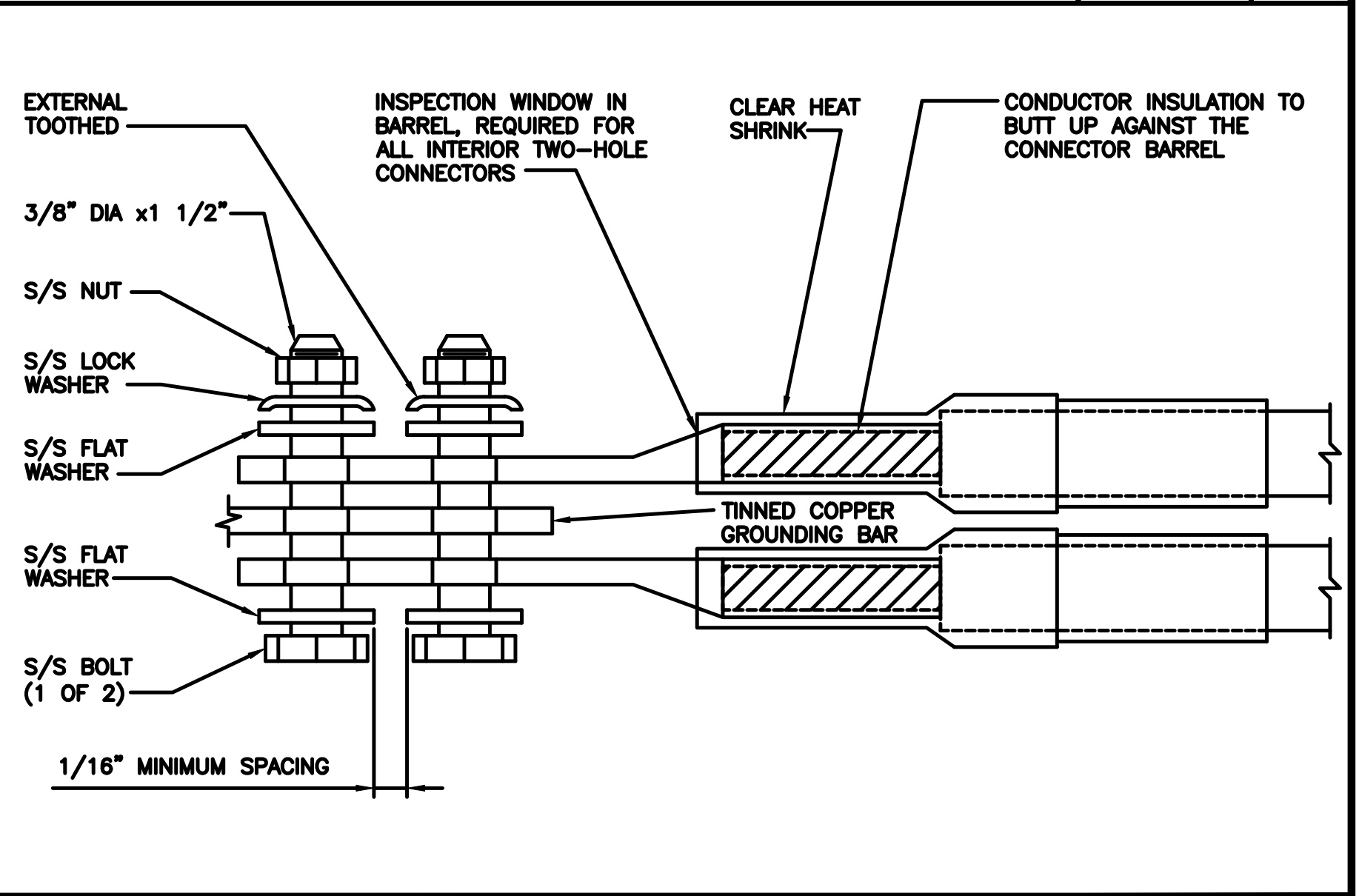
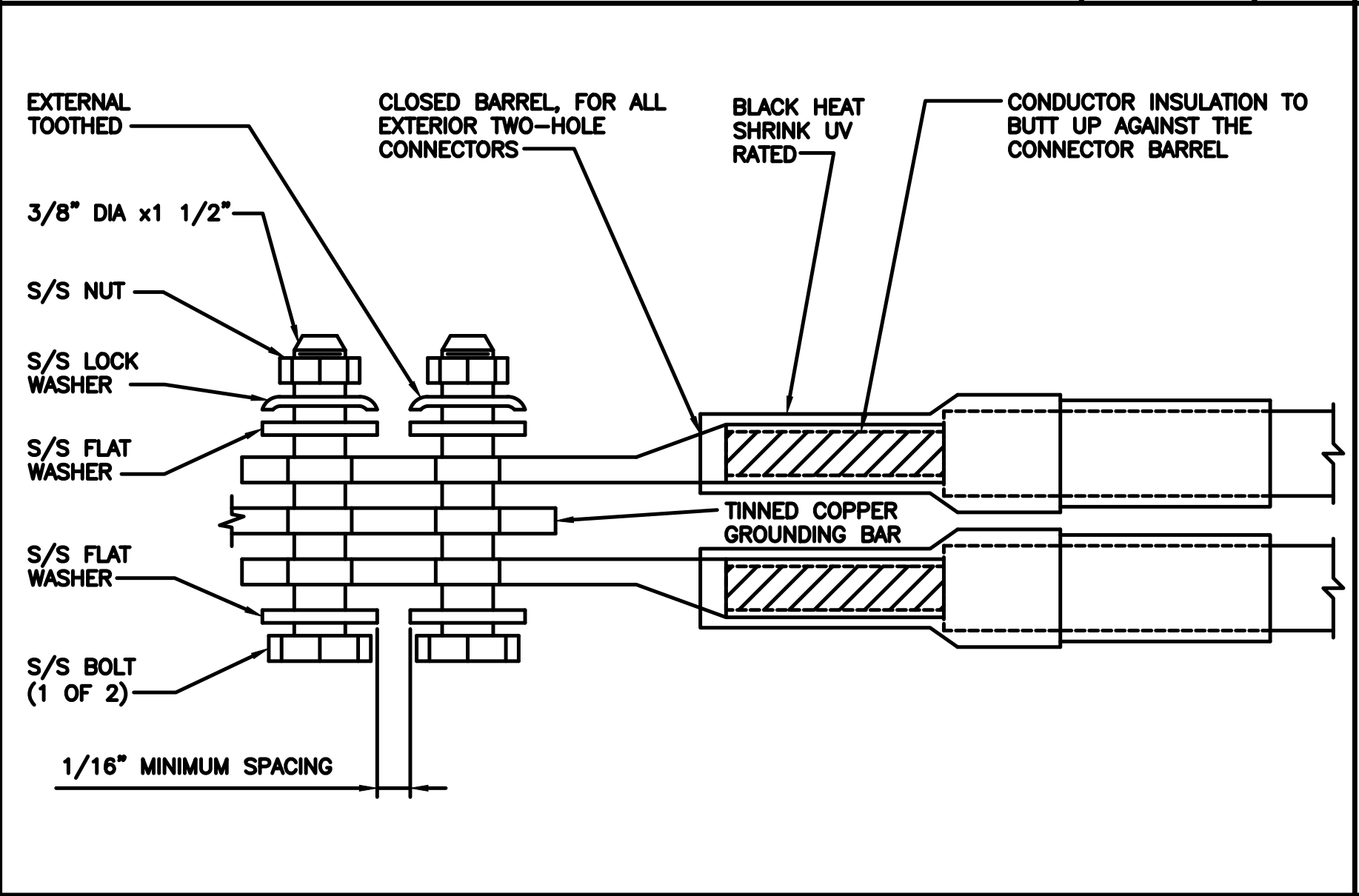
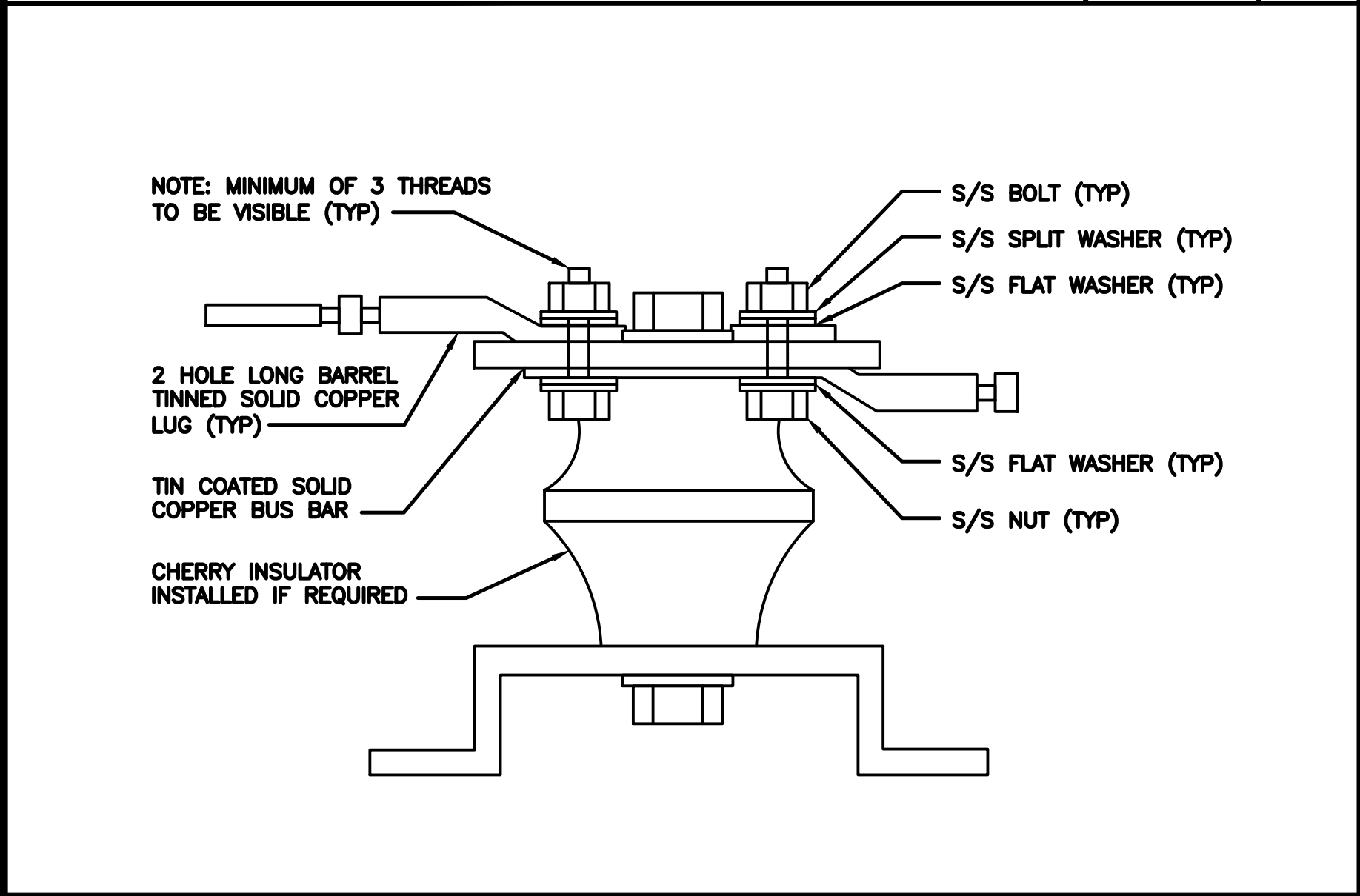
NO SCALE

2

TYPICAL CABLE TRAY GROUND BUSS BAR

NO SCALE

3



LUG DETAIL

NO SCALE

4

TYPICAL EXTERIOR TWO HOLE LUG

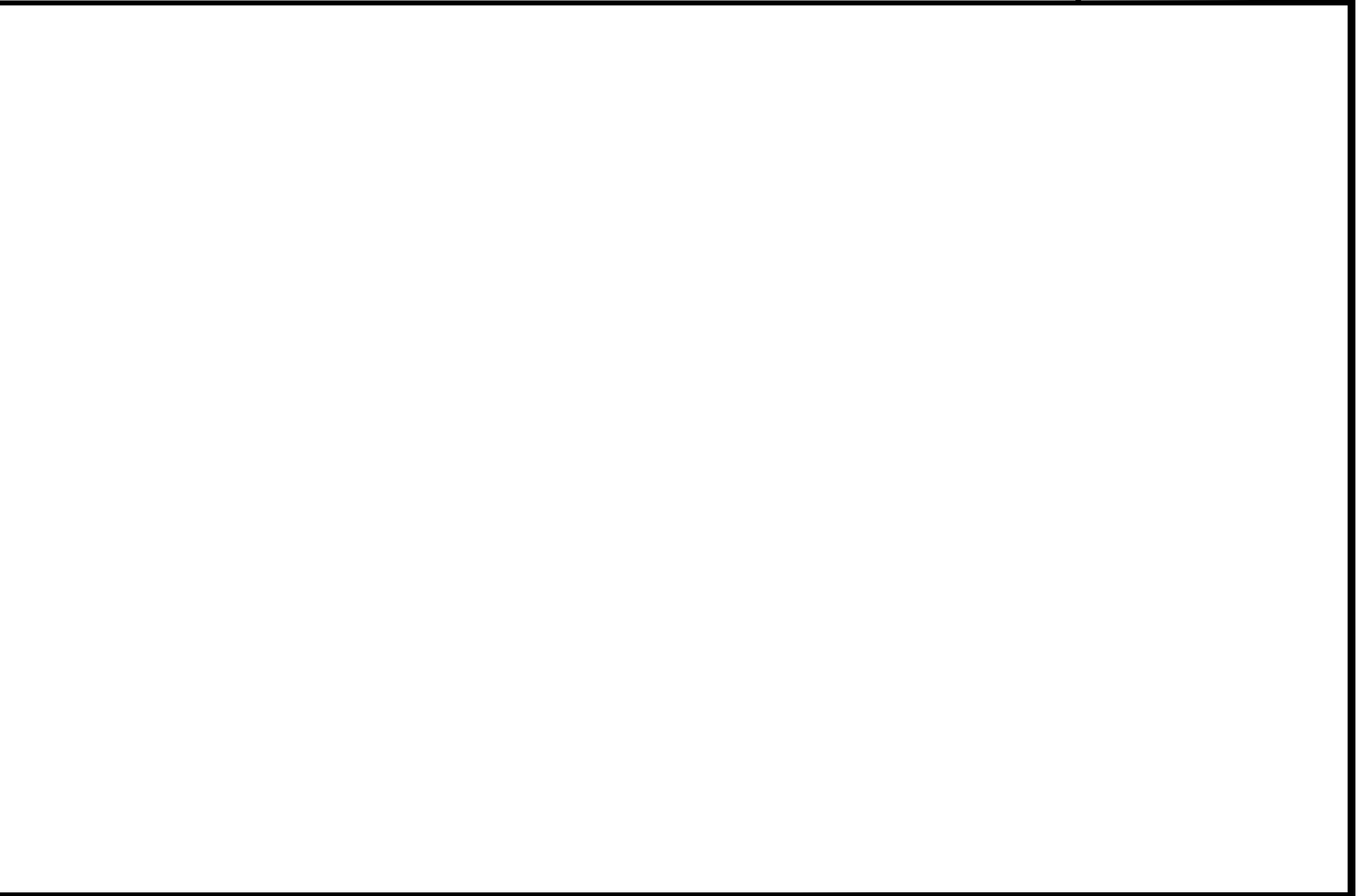
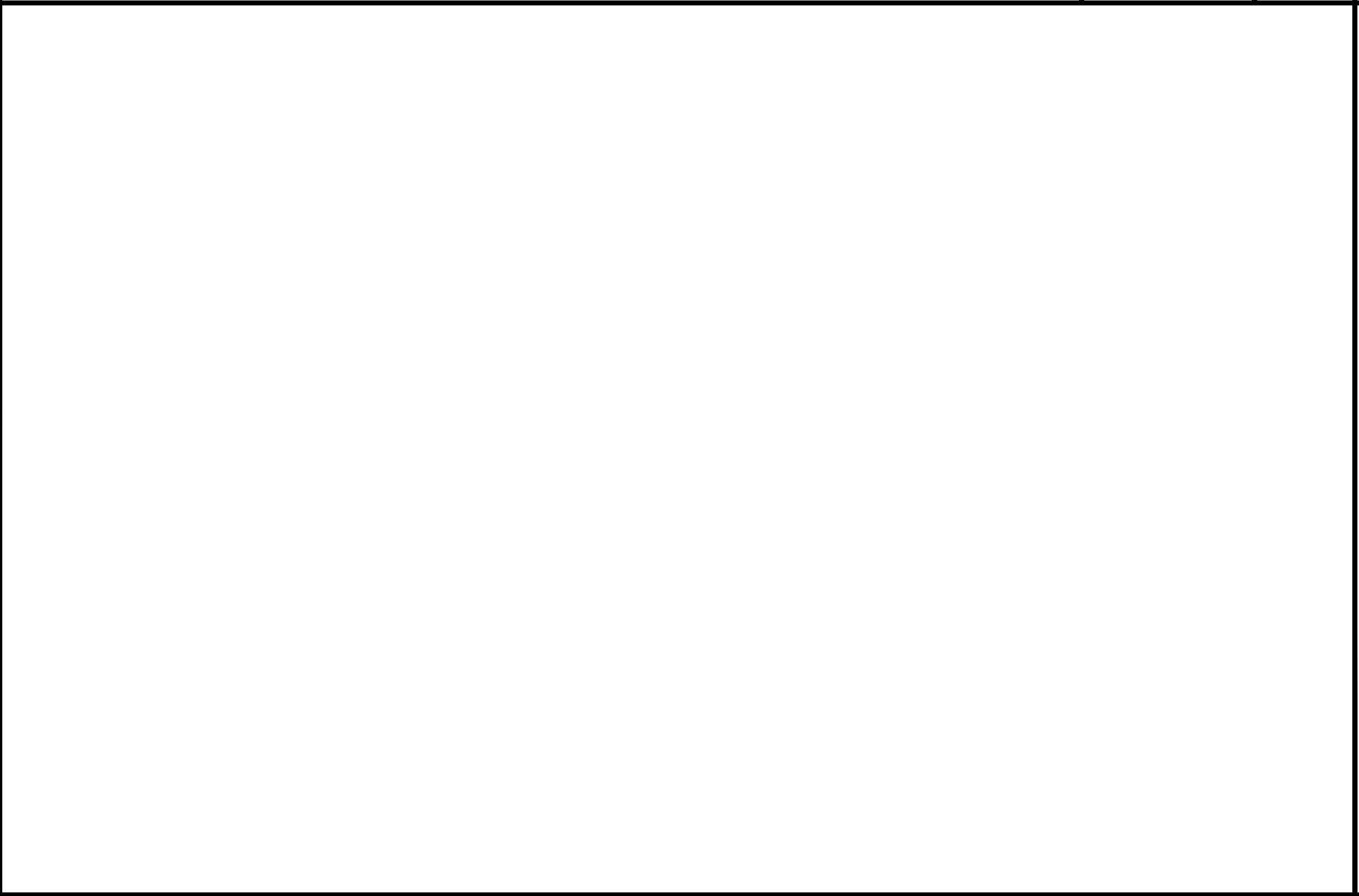
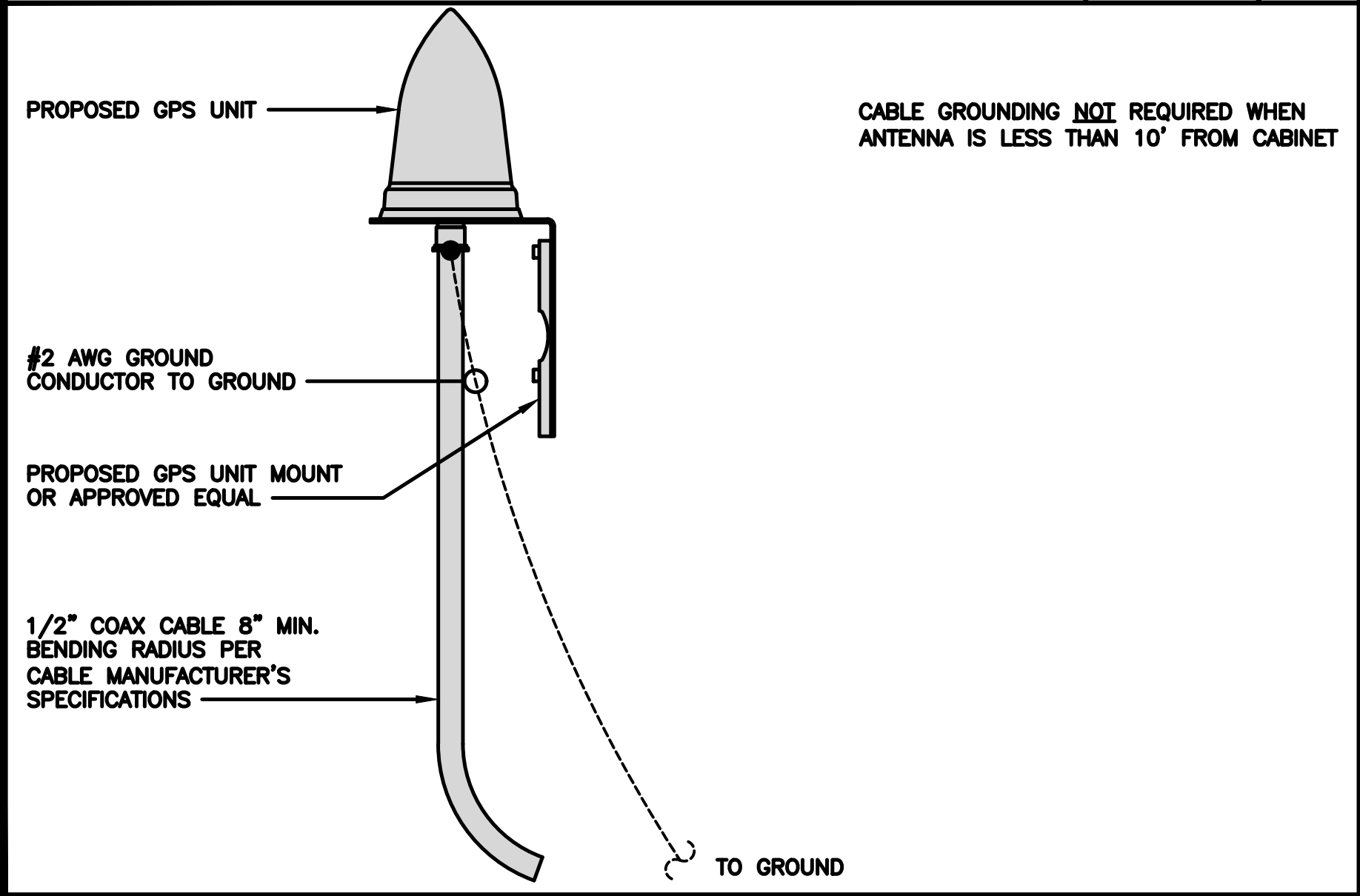
NO SCALE

5

TYPICAL INTERIOR TWO HOLE LUG

NO SCALE

6



TYPICAL GPS UNIT GROUNDING

NO SCALE

7

NOT USED

NO SCALE

8

NOT USED

NO SCALE

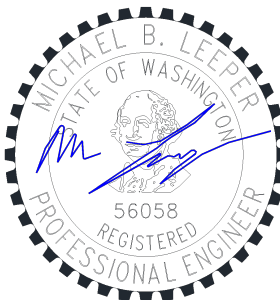
9



5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120



13555 SE 36TH ST, SUITE 100  
BELLEVUE, WA 98006



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DRAWN BY: CHECKED BY: APPROVED BY:

A.D. B.B. M.L.

RFDS REV #: ---

## CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	04/27/2023	ISSUED FOR REVIEW
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A&E PROJECT NUMBER  
SESEA00475A

DISH Wireless L.L.C.  
PROJECT INFORMATION  
SESEA00475A  
7917 CENTER BLVD SE  
SNOQUALMIE, WA 98065

SHEET TITLE  
GROUNDING DETAILS

SHEET NUMBER  
G-3





DISH Wireless L.L.C. TEMPLATE VERSION 48 – 2/21/2022

## ABBREVIATIONS

SHEET NUMBER
<b>GN-1</b>



SIGN TYPES		
TYPE	COLOR	COLOR CODE PURPOSE
INFORMATION	GREEN	"INFORMATIONAL SIGN" TO NOTIFY OTHERS OF SITE OWNERSHIP & CONTACT NUMBER AND POTENTIAL RF EXPOSURE.
NOTICE	BLUE	"NOTICE BEYOND THIS POINT" RF FIELDS BEYOND THIS POINT MAY EXCEED THE FCC GENERAL PUBLIC EXPOSURE LIMIT. OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR-1.1307(b)
CAUTION	YELLOW	"CAUTION BEYOND THIS POINT" RF FIELDS BEYOND THIS POINT MAY EXCEED THE FCC GENERAL PUBLIC EXPOSURE LIMIT. OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR-1.1307(b)
WARNING	ORANGE/RED	"WARNING BEYOND THIS POINT" RF FIELDS AT THIS SITE EXCEED FCC RULES FOR HUMAN EXPOSURE. FAILURE TO OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS COULD RESULT IN SERIOUS INJURY. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR-1.1307(b)

**SIGN PLACEMENT:**

- RF SIGNAGE PLACEMENT SHALL FOLLOW THE RECOMMENDATIONS OF AN EXISTING EME REPORT, CREATED BY A THIRD PARTY PREVIOUSLY AUTHORIZED BY DISH Wireless L.L.C.
- INFORMATION SIGN (GREEN) SHALL BE LOCATED ON EXISTING DISH Wireless L.L.C. EQUIPMENT.
  - A) IF THE INFORMATION SIGN IS A STICKER, IT SHALL BE PLACED ON EXISTING DISH Wireless L.L.C. EQUIPMENT CABINET.
  - B) IF THE INFORMATION SIGN IS A METAL SIGN IT SHALL BE PLACED ON EXISTING DISH Wireless L.L.C. H-FRAME WITH A SECURE ATTACH METHOD.
- IF EME REPORT IS NOT AVAILABLE AT THE TIME OF CREATION OF CONSTRUCTION DOCUMENTS; PLEASE CONTACT DISH Wireless L.L.C. CONSTRUCTION MANAGER FOR FURTHER INSTRUCTION ON HOW TO PROCEED.

**NOTES:**

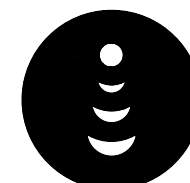
1. FOR DISH Wireless L.L.C. LOGO, SEE DISH Wireless L.L.C. DESIGN SPECIFICATIONS (PROVIDED BY DISH Wireless L.L.C.)
2. SITE ID SHALL BE APPLIED TO SIGNS USING "LASER ENGRAVING" OR ANY OTHER WEATHER RESISTANT METHOD (DISH Wireless L.L.C. APPROVAL REQUIRED)
3. TEXT FOR SIGNAGE SHALL INDICATE CORRECT SITE NAME AND NUMBER AS PER DISH Wireless L.L.C. CONSTRUCTION MANAGER RECOMMENDATIONS.
4. CABINET/SHELTER MOUNTING APPLICATION REQUIRES ANOTHER PLATE APPLIED TO THE FACE OF THE CABINET WITH WATER PROOF POLYURETHANE ADHESIVE
5. ALL SIGNS WILL BE SECURED WITH EITHER STAINLESS STEEL ZIP TIES OR STAINLESS STEEL TECH SCREWS
6. ALL SIGNS TO BE 8.5"x11" AND MADE WITH 0.04" OF ALUMINUM MATERIAL

# INFORMATION

This is an access point to an area with transmitting antennas.

Obey all signs and barriers beyond this point.  
Call the DISH Wireless L.L.C. NOC at 1-866-624-6874

Site ID: \_\_\_\_\_



THIS SIGN IS FOR REFERENCE PURPOSES ONLY

# NOTICE



Transmitting Antenna(s)

Radio frequency fields beyond this point **MAY EXCEED** the FCC Occupational exposure limit.

Obey all posted signs and site guidelines for working in radio frequency environments.

Call the DISH Wireless L.L.C. NOC at 1-866-624-6874 prior to working beyond this point.

Site ID: \_\_\_\_\_

THIS SIGN IS FOR REFERENCE PURPOSES ONLY

# CAUTION



Transmitting Antenna(s)

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Site ID: \_\_\_\_\_

THIS SIGN IS FOR REFERENCE PURPOSES ONLY

# WARNING



Transmitting Antenna(s)

Radio frequency fields beyond this point **EXCEED** the FCC Occupational exposure limit.

Obey all posted signs and site guidelines for working in radio frequency environments.

Call the DISH Wireless L.L.C. NOC at 1-866-624-6874 prior to working beyond this point.

Site ID: \_\_\_\_\_

THIS SIGN IS FOR REFERENCE PURPOSES ONLY

**dish**  
wireless.

5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120

**CORE ONE**  
CONSULTING USA

13555 SE 36TH ST, SUITE 100  
BELLEVUE, WA 98006



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DISH Wireless L.L.C.  
PROJECT INFORMATION

SESEA00475A  
7917 CENTER BLVD SE  
SNOQUALMIE, WA 98065

SHEET TITLE

RF  
SIGNAGE

SHEET NUMBER

**GN-2**

RF SIGNAGE



SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED – NO WORK SHALL COMMENCE PRIOR TO CONTRACTOR RECEIVING A WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE DISH Wireless L.L.C. AND TOWER OWNER NOC & THE DISH Wireless L.L.C. AND TOWER OWNER CONSTRUCTION MANAGER.
2. "LOOK UP" – DISH Wireless L.L.C. AND TOWER OWNER SAFETY CLIMB REQUIREMENT:  
  
THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR DISH Wireless L.L.C. AND DISH Wireless L.L.C. AND TOWER OWNER POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.
3. 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.
4. 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 DISH Wireless L.L.C. AND TOWER OWNER STANDARDS, 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).
5. ALL SITE WORK TO COMPLY WITH DISH Wireless L.L.C. AND TOWER OWNER INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON DISH Wireless L.L.C. AND TOWER OWNER TOWER SITE AND LATEST VERSION OF ANSI/TIA–1019–A–2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY DISH Wireless L.L.C. AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
7. 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.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER’S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES INCLUDING PRIVATE LOCATES SERVICES PRIOR TO THE START OF CONSTRUCTION.
10. 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.
11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND DISH PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
12. 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.
13. 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 DISH Wireless L.L.C. AND TOWER OWNER, AND/OR LOCAL UTILITIES.
14. 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.
15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER’S EQUIPMENT AND TOWER AREAS.
16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
18. 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.
19. 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.
20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS AND RADIOS REMOVED SHALL BE RETURNED TO THE OWNER’S DESIGNATED LOCATION.
21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
22. 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:

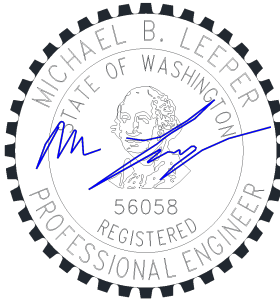
- 1.FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:  
  
CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION  
  
CARRIER:DISH Wireless L.L.C.  
  
TOWER OWNER:TOWER OWNER
2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS 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.
3. 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.
4. 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.
5. 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.
6. 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 CARRIER POC AND TOWER OWNER.
7. 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.
8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER’S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
10. 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 TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION, BEFORE SUBMITTING BIDS, 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.
12. 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 DISH Wireless L.L.C. AND TOWER OWNER
13. 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.
14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.



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LITTLETON, CO 80120



13555 SE 36TH ST, SUITE 100  
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7917 CENTER BLVD SE  
SNOQUALMIE, WA 98065

SHEET TITLE  
GENERAL NOTES

SHEET NUMBER  
  
GN-3



CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.
4. CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.
5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:  
#4 BARS AND SMALLER 40 ksi  
#5 BARS AND LARGER 60 ksi
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
  - CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
  - CONCRETE EXPOSED TO EARTH OR WEATHER:
    - #6 BARS AND LARGER 2"
    - #5 BARS AND SMALLER 1-1/2"
  - CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
    - SLAB AND WALLS 3/4"
    - BEAMS AND COLUMNS 1-1/2"
7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
- 4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
- 4.2. 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.
5. 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.
6. 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).
7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
8. TIE WRAPS ARE NOT ALLOWED.
9. 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.
10. 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.
11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
12. 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.
13. 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).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

16. ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
23. 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 ROUTE AROUND 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.
24. 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 3 (OR BETTER) FOR EXTERIOR LOCATIONS.
25. 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.
26. 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.
27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR DISH Wireless L.L.C. AND TOWER OWNER BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
28. 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.
29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "DISH Wireless L.L.C.".
30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.



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DRAWN BY: CHECKED BY: APPROVED BY:

A.D.	B.B.	M.L.
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RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	04/27/2023	ISSUED FOR REVIEW
B	05/11/2023	REVISED PER COMMENTS
0	05/23/2023	FINAL CD's
1	06/12/2023	REVISED PER COMMENTS
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A&E PROJECT NUMBER  
SESEA00475A

DISH Wireless L.L.C.  
PROJECT INFORMATION  
  
SESEA00475A  
7917 CENTER BLVD SE  
SNOQUALMIE, WA 98065

SHEET TITLE  
GENERAL NOTES

SHEET NUMBER

GN-4



GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES’S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE CONTRACTOR SHALL PERFORM IEEE FALL–OF–POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.
7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
17. MISCELLANEOUS ELECTRICAL AND NON–ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON–METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4” NON–METALLIC, FLEXIBLE CONDUIT FROM 24” BELOW GRADE TO WITHIN 3” TO 6” OF CAD–WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).
21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). DO NOT ATTACH GROUNDING TO FIRE SPRINKLER SYSTEM PIPES.



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