

# POR TROUTDALE

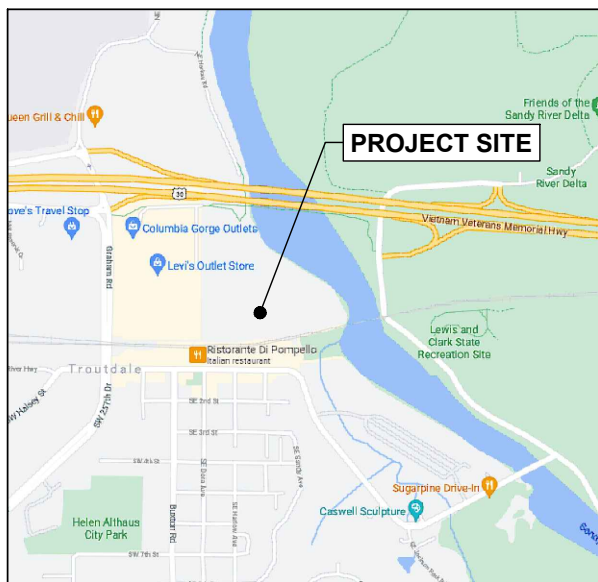
302 NW 257TH AVE  
TROUTDALE, OR 97060  
MULTNOMAH COUNTY

PSLC 151425 / PROJECT ID 457897

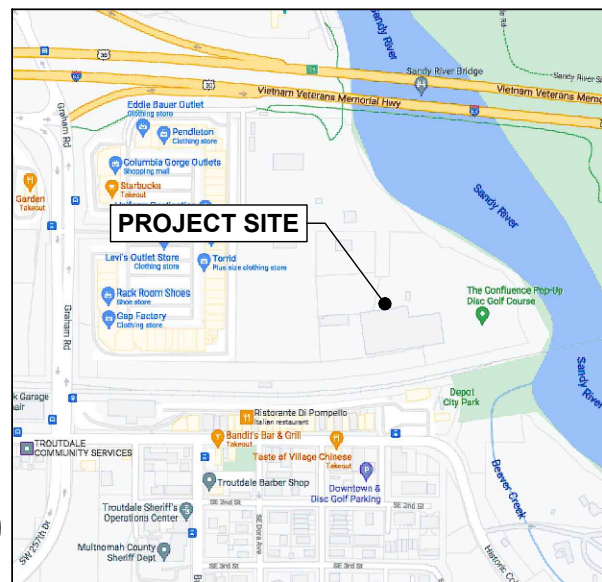


PRELIMINARY DRAWINGS  
NOT FOR CONSTRUCTION

## VICINITY MAP



## LOCATION MAP



## PROJECT CONTACT LIST

### PROPERTY OWNER:

URBAN RENEWAL AGENCY OF THE  
CITY OF TROUTDALE  
219 E. HISTORIC COLUMBIA RIVER HWY  
TROUTDALE, OR 97060-2078  
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erich.mueller@troutdaleoregon.gov

### IMPLEMENTATION CONTACT:

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### REAL ESTATE:

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LAKE OSWEGO, OR 97035  
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sarah.blanchard@acomconsultinginc.com

### STRUCTURAL ENGINEER:

WELLS L. HOLMES, S.E.  
VECTOR STRUCTURAL ENGINEERING  
651 W GALENA PARK BLVD, SUITE 101  
DRAPER, UT 84020  
PHONE: 801.990.1775

### APPLICANT:

CELLCO PARTNERSHIP  
(d/b/a VERIZON WIRELESS)  
5430 NE 122ND AVENUE  
PORTLAND, OR 97230

### A&E CONSULTANT:

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### ZONING / PERMITTING:

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### ELECTRICAL ENGINEER:

DEAN P. LEVORSEN, P.E.  
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PHONE: 801.990.1775

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## DRIVING DIRECTIONS

FROM VERIZON WIRELESS OFFICE - PORTLAND, OR:

DEPART NE 122ND BLVD TOWARD NE WHITAKER WAY. TURN LEFT TO MERGE ONTO I-84 E/US-30 E TOWARD TROUTDALE/HOOD RIVER. MERGE ONTO I-84 E/US-30 E. USE THE RIGHT 2 LANES TO TAKE EXIT 17 TOWARD MARINE DR/TROUTDALE. CONTINUE ONTO NW FRONTAGE RD. USE THE 2ND FROM THE RIGHT LANE TO TURN SLIGHTLY RIGHT TOWARD GRAHAM RD. CONTINUE ONTO GRAHAM RD. TURN LEFT ONTO NW 257TH WAY. TURN RIGHT. TURN RIGHT. YOUR DESTINATION WILL BE ON THE LEFT.

## CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT CONDITIONS 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:

OREGON STATE AND LOCAL BUILDING CODES WITH THE FOLLOWING REFERENCE CODE:

- 2021 IBC, STANDARDS AND AMENDMENTS - 2022 OSSC
- 2022 OREGON MECHANICAL SPECIALTY CODE (OMSC)
- 2021 IFC, STANDARDS AND AMENDMENTS - 2022 OFC
- 2021 UPC, STANDARDS AND AMENDMENTS - 2021 OPSC
- 2020 NEC, STANDARDS AND AMENDMENTS - 2021 OESC

ACCESSIBILITY REQUIREMENTS FOR PERSONS WITH DISABILITIES:  
FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. ACCESSIBILITY IS NOT REQUIRED.

DO NOT SCALE DRAWINGS. CONTRACTOR MUST  
VERIFY ALL DIMENSIONS AND ADVISE CONSULTANTS  
OF ANY ERRORS OR OMISSIONS. NO VARIATIONS OR  
MODIFICATIONS TO WORK SHOWN SHALL BE  
IMPLEMENTED WITHOUT PRIOR WRITTEN APPROVAL.  
ALL PREVIOUS ISSUES OF THIS DRAWING ARE  
SUPERSEDED BY THE LATEST REVISION. ALL  
DRAWINGS AND SPECIFICATIONS REMAIN THE  
PROPERTY OF ACOM CONSULTING.

## PROJECT INFORMATION

### CODE INFORMATION:

JURISDICTION: CITY OF TROUTDALE  
ZONING CLASSIFICATION: MIXED - OFFICE/HOUSING  
CONSTRUCTION TYPE: II-B  
OCCUPANCY: UTILITY  
PROPOSED BUILDING USE: TELECOM

### SITE LOCATION (NAVD88):

GROUND ELEVATION: 42.53' AMSL  
STRUCTURE HEIGHT: 130.0' (TOP OF WATER TOWER)

### GEODETIC COORDINATES (NAD83):

LATITUDE: 45.542328° (45° 32' 32.3808" N)  
LONGITUDE: -122.386456° (122° 23' 11.2416" W)

### LEASE AREA SIZE:

EXISTING

### PARCEL SIZE:

15.89 ACRES

### PARCEL NUMBER:

R708822

## SCOPE OF WORK

- REMOVE (10) EXISTING ANTENNAS
- REMOVE (4) TOWER MOUNTED RRUS
- REMOVE (6) TOWER MOUNTED DIPLEXERS
- REMOVE (1) TOWER MOUNTED TRIPLEXER
- REMOVE (16) 1-5/8" COAXIAL CABLES
- REMOVE (1) 12x24 HYBRID CABLE
- INSTALL (2) MX06FIT845-02 ANTENNA PER SECTOR FOR A TOTAL OF (8)
- INSTALL (1) AIR6419 ANTENNA PER ALPHA, BETA & GAMMA SECTOR FOR A TOTAL OF (3)
- INSTALL (1) 4490 RRU'S PER SECTOR FOR A TOTAL OF (4)
- INSTALL (1) 4890 RRU'S PER SECTOR FOR A TOTAL OF (4)
- INSTALL (4) 6x12 HYBRID CABLES
- INSTALL (1) TOWER MOUNTED OVP-6

**POR  
TROUTDALE**

302 NW 257TH AVE  
TROUTDALE, OR 97060

COVER SHEET

T-1

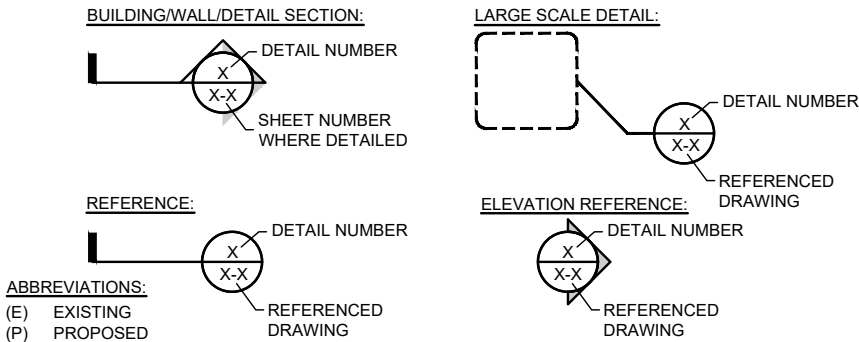
YK-HAY V-1-SMR'S(POR TROUTDALE (URBAN))\_2024 ANTENNA MOD(POR TROUTDALE)\_SMR 90% PCD\_02-23-24.DWG

1. WORK SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, AND REGULATIONS. ALL NECESSARY LICENSES, CERTIFICATES, ETC., REQUIRED BY AUTHORITY HAVING JURISDICTION SHALL BE PROCURED AND PAID FOR BY THE CONTRACTOR.
2. ACOM HAS NOT CONDUCTED, NOR DOES IT INTEND TO CONDUCT ANY INVESTIGATION AS TO THE PRESENCE OF HAZARDOUS MATERIAL, INCLUDING, BUT NOT LIMITED TO, ASBESTOS WITHIN THE CONFINES OF THIS PROJECT. ACOM DOES NOT ACCEPT RESPONSIBILITY FOR THE INDEMNIFICATION, THE REMOVAL, OR ANY EFFECTS FROM THE PRESENCE OF THESE MATERIALS. IF EVIDENCE OF HAZARDOUS MATERIALS IS FOUND, WORK IS TO BE SUSPENDED AND THE OWNER NOTIFIED. THE CONTRACTOR IS NOT TO PROCEED WITH FURTHER WORK UNTIL INSTRUCTED BY THE OWNER IN WRITING.
3. ALL MATERIAL FURNISHED UNDER THIS CONTRACT SHALL BE PROPOSED, UNLESS OTHERWISE NOTED. ALL WORK SHALL BE GUARANTEED AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP. THE CONTRACTOR SHALL REPAIR OR REPLACE AT HIS EXPENSE ALL WORK THAT MAY DEVELOP DEFECTS IN MATERIALS OR WORKMANSHIP WITHIN SAID PERIOD OF TIME OR FOR ONE YEAR AFTER THE FINAL ACCEPTANCE OF THE ENTIRE PROJECT, WHICHEVER IS GREATER.
4. THE GENERAL CONTRACTOR AND EACH SUBCONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS AND UTILITIES AT THE JOB SITE BEFORE WORK IS STARTED. NO CLAIMS FOR EXTRA COMPENSATION FOR WORK WHICH COULD HAVE BEEN FORESEEN BY AN INSPECTION, WHETHER SHOWN ON THE CONTRACT DOCUMENTS OR NOT, WILL BE ACCEPTED OR PAID.
5. THE GENERAL CONTRACTOR AND EACH SUBCONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING DIMENSIONS AND CONDITIONS AT THE JOB SITE WHICH COULD AFFECT THE WORK UNDER THIS CONTRACT. ALL MANUFACTURERS RECOMMENDED SPECIFICATIONS, EXCEPT THOSE SPECIFICATIONS HEREIN, WHERE MOST STRINGENT SHALL BE COMPLIED WITH.
6. THE CONTRACTOR SHALL VERIFY AND COORDINATE SIZE AND LOCATION OF ALL OPENINGS FOR STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING, CIVIL, OR ARCHITECTURAL WORK.
7. THE CONTRACTOR SHALL VERIFY THAT NO CONFLICTS EXIST BETWEEN THE LOCATIONS OF ANY AND ALL MECHANICAL, ELECTRICAL, PLUMBING, OR STRUCTURAL ELEMENTS, AND THAT ALL REQUIRED CLEARANCES FOR INSTALLATION AND MAINTENANCE ARE MET. NOTIFY THE CONSULTANT OF ANY CONFLICTS. THE CONSULTANT HAS THE RIGHT TO MAKE MINOR MODIFICATIONS IN THE DESIGN OF THE CONTRACT WITHOUT THE CONTRACTOR GETTING ADDITIONAL COMPENSATION.
8. DO NOT SCALE THE DRAWINGS. DIMENSIONS ARE EITHER TO THE FACE OF FINISHED ELEMENTS OR TO THE CENTER LINE OF ELEMENTS, UNLESS NOTED OTHERWISE. CRITICAL DIMENSIONS SHALL BE VERIFIED AND NOTIFY THE CONSULTANT OF ANY DISCREPANCIES.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAILY CLEAN UP OF ALL TRADES AND REMOVE ALL DEBRIS FROM THE CONSTRUCTION SITE. AT THE COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL THOROUGHLY CLEAN THE BUILDING, SITE, AND ANY OTHER SURROUNDING AREAS TO A BETTER THAN EXISTING CONDITION.
10. THE CONTRACTOR IS RESPONSIBLE FOR ADEQUATELY BRACING AND PROTECTING ALL WORK DURING CONSTRUCTION AGAINST DAMAGE, BREAKAGE, COLLAPSE, ETC. ACCORDING TO APPLICABLE CODES, STANDARDS, AND GOOD CONSTRUCTION PRACTICES.
11. THE CONTRACTOR SHALL MEET ALL OSHA REQUIREMENTS FOR ALL INSTALLATIONS.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES TO THE EXISTING CONSTRUCTION AND REPAIR ALL DAMAGES TO BETTER THAN PROPOSED CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY DAMAGE TO THE BUILDING SITE OR ANY ADJACENT STRUCTURES AROUND THE PROJECT. THE CONSULTANT SHALL BE SOLE AND FINAL JUDGE AS TO THE QUALITY OF THE REPAIRED CONSTRUCTION. ANY ADDITIONAL MODIFICATIONS WHICH MUST BE MADE SHALL BE MADE AT THE CONTRACTOR'S EXPENSE.
13. WHERE ONE DETAIL IS SHOWN FOR ONE CONDITION, IT SHALL APPLY FOR ALL LIKE OR SIMILAR CONDITIONS, EVEN THOUGH NOT SPECIFICALLY MARKED ON THE DRAWINGS OR REFERRED TO IN THE SPECIFICATIONS, UNLESS NOTED OTHERWISE.
14. WHERE PROPOSED PAVING, CONCRETE SIDEWALKS OR PATHS MEET EXISTING CONSTRUCTION, THE CONTRACTOR SHALL MATCH THE EXISTING PITCH, GRADE, AND ELEVATION SO THE ENTIRE STRUCTURE SHALL HAVE A SMOOTH TRANSITION.
15. THE CONTRACTOR SHALL MODIFY THE EXISTING FLOORS, WALL, CEILING, OR OTHER CONSTRUCTION AS REQUIRED TO GAIN ACCESS TO AREAS FOR ALL MECHANICAL, PLUMBING, ELECTRICAL, OR STRUCTURAL MODIFICATIONS. WHERE THE EXISTING CONSTRUCTION DOORS, PARTITIONS, CEILING, ETC., ARE TO BE REMOVED, MODIFIED, OR REARRANGED OR WHERE THE EXPOSED OR HIDDEN MECHANICAL, ELECTRICAL, SYSTEMS ARE ADDED OR MODIFIED, THE GENERAL CONTRACTOR SHALL REPAIR, PATCH AND MATCH ALL EXISTING CONSTRUCTION AND FINISHES OF ALL FLOORS WALLS AND CEILINGS. WHERE CONCRETE MASONRY CONSTRUCTION IS MODIFIED, THE CONTRACTOR SHALL TOOTH IN ALL PROPOSED CONSTRUCTION TO MATCH THE EXISTING BOND. WHERE CONCRETE CONSTRUCTION IS MODIFIED, THE CONTRACTOR SHALL VERIFY THE EXACT DETAILS TO BE USED FOR CONSTRUCTION. ALL WORK SHALL BE COVERED UNDER THE GENERAL CONTRACT.
16. VERIFY ALL EXISTING DIMENSIONS PRIOR TO PERFORMING WORK.
17. VERIFY LOCATION OF ALL BURIED UTILITIES PRIOR TO ANY EXCAVATION.
18. IN RAWLAND CONDITIONS, TOWER FOUNDATION STRUCTURAL STEEL TO BE GROUNDED PRIOR TO CONCRETE POUR. TOWER FOUNDATION STRUCTURAL STEEL TO BE CONNECTED TO PERMANENT GROUND ROD PRIOR TO TOWER ERECTION. TOWER GROUND MUST BE MAINTAINED AT ALL TIMES.
19. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR APPLYING FOR COMMERCIAL POWER IMMEDIATELY UPON AWARD OF CONTRACT. THE GENERAL CONTRACTOR IS REQUIRED TO KEEP ALL DOCUMENTATION RECEIVED FROM THE POWER COMPANY, ACKNOWLEDGING APPLICATION FOR POWER, WRITTEN AND VERBAL DISCUSSIONS WITH THE POWER COMPANY, ETC.
20. THE GENERAL CONTRACTOR SHALL OBTAIN WRITTEN CONFIRMATION OF THE EXPECTED DATE OF COMPLETION OF THE POWER CONNECTION FROM THE POWER COMPANY.
21. IF THE POWER COMPANY IS UNABLE TO PROVIDE THE POWER CONNECTION BY OWNER'S REQUIRED DATE, THE GENERAL CONTRACTOR SHALL PROVIDE AND MAINTAIN A TEMPORARY GENERATOR UNTIL THE POWER COMPANY CONNECTION IS COMPLETED. COSTS ASSOCIATED WITH THE TEMPORARY GENERATOR TO BE APPROVED BY THE OWNER.
22. IF THE GENERAL CONTRACTOR FAILS TO TAKE NECESSARY MEASURES AS DESCRIBED IN NOTES 19, 20 AND 21 ABOVE, THE GENERAL CONTRACTOR SHALL PROVIDE A TEMPORARY GENERATOR AT NO COST TO THE OWNER.
23. PLANS PART OF THIS SET ARE COMPLEMENTARY. INFORMATION IS NOT LIMITED TO ONE PLAN. DRAWINGS AND SPECIFICATIONS ARE INSTRUMENTS OF SERVICE AND SHALL REMAIN THE PROPERTY OF THE ARCHITECT, WHETHER THE PROJECT FOR WHICH THEY ARE MADE IS EXECUTED OR NOT. THEY ARE NOT TO BE USED BY THE OWNER ON OTHER PROJECTS OR EXTENSION TO THIS PROJECT EXCEPT BY AGREEMENT IN WRITING AND WITH APPROPRIATE COMPENSATION TO THE ARCHITECT. THESE PLANS WERE PREPARED TO BE SUBMITTED TO GOVERNMENTAL BUILDING AUTHORITIES FOR REVIEW FOR COMPLIANCE WITH APPLICABLE CODES AND IT IS THE SOLE RESPONSIBILITY OF THE OWNER AND/OR CONTRACTOR TO BUILD ACCORDING TO APPLICABLE BUILDING CODES.
24. IF CONTRACTOR OR SUB-CONTRACTOR FIND IT NECESSARY TO DEViate FROM ORIGINAL APPROVED PLANS, THEN IT IS THE CONTRACTOR'S AND THE SUB-CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE ARCHITECT WITH 4 COPIES OF THE PROPOSED CHANGES FOR HIS APPROVAL BEFORE PROCEEDING WITH THE WORK. IN ADDITION THE CONTRACTOR AND SUB-CONTRACTORS SHALL BE RESPONSIBLE FOR PROCURING ALL NECESSARY APPROVALS FROM THE BUILDING AUTHORITIES FOR THE PROPOSED CHANGES BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR AND SUB-CONTRACTORS SHALL BE RESPONSIBLE FOR PROCURING ALL NECESSARY INSPECTIONS AND APPROVALS FROM BUILDING AUTHORITIES DURING THE EXECUTION OF THE WORK.
25. IN EVERY EVENT, THESE CONSTRUCTION DOCUMENTS AND SPECIFICATIONS SHALL BE INTERPRETED TO BE A MINIMUM ACCEPTABLE MEANS OF CONSTRUCTION BUT THIS SHALL NOT RELIEVE THE CONTRACTOR, SUB-CONTRACTOR, AND/OR SUPPLIER/MANUFACTURER FROM PROVIDING A COMPLETE AND CORRECT JOB WHEN ADDITIONAL ITEMS ARE REQUIRED TO THE MINIMUM SPECIFICATION. IF ANY ITEMS NEED TO EXCEED THESE MINIMUM SPECIFICATIONS TO PROVIDE A COMPLETE, ADEQUATE AND SAFE WORKING CONDITION, THEN IT SHALL BE THE DEEMED AND UNDERSTOOD TO BE INCLUDED IN THE DRAWINGS. FOR EXAMPLE, IF AN ITEM AND/OR PIECE OF EQUIPMENT REQUIRES A LARGER WIRE SIZE (I.E. ELECTRICAL WIRE), STRONGER OR LARGER PIPING, INCREASED QUANTITY (I.E. STRUCTURAL ELEMENTS), REDUCED SPACING, AND/OR INCREASED LENGTH (I.E. BOLT LENGTHS, BAR LENGTHS) THEN IT SHALL BE DEEMED AND UNDERSTOOD TO BE INCLUDED IN THE BID/PROPOSAL. THESE DOCUMENTS ARE MEANT AS A GUIDE AND ALL ITEMS REASONABLY INFERRED SHALL BE DEEMED TO BE INCLUDED.
26. THESE CONTRACT DOCUMENTS AND SPECIFICATIONS SHALL NOT BE CONSTRUED TO CREATE A CONTRACTUAL RELATIONSHIP OF ANY KIND BETWEEN THE ARCHITECT AND THE CONTRACTOR.

## SPECIAL INSPECTION

1. IF UTILIZED, SPECIAL INSPECTIONS SHALL BE PERFORMED BY AN INDEPENDENT SPECIAL INSPECTOR UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER. THE INDEPENDENT SPECIAL INSPECTOR SHALL COMPLY WITH ALL CITY SPECIAL INSPECTION REQUIREMENTS:  
A. CONTINUOUS DURING THE INSTALLATION OF EXPANSION AND/OR ADHESIVE ANCHORS, IF UTILIZED. INSPECT HOLE SIZE, DEPTH, CLEANLINESS AND INSTALLATION PER ICC REPORT.  
B. PERIODIC FOR HIGH STRENGTH (A325) BOLT INSTALLATIONS, IF UTILIZED.
2. THE SPECIAL INSPECTOR SHALL PROVIDE A COPY OF THEIR REPORT TO THE OWNER, ARCHITECT, STRUCTURAL ENGINEER, CONTRACTOR AND BUILDING OFFICIAL AS EACH TEST IS COMPLETED. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION; THEN, IF UNCORRECTED, TO THE PROPER DESIGN AUTHORITY AND THE BUILDING OFFICIAL.
3. ANY MATERIAL WHICH FAILS TO MEET THE PROJECT SPECIFICATIONS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND THE STRUCTURAL ENGINEER, SPECIAL INSPECTION TESTING REQUIREMENTS APPLY EQUALLY TO ALL BIDDER-DESIGNED COMPONENTS.
4. INSPECTION FOR PREFABRICATED CONSTRUCTIONS SHALL BE THE SAME AS FOR THE MATERIAL USED IF THE CONSTRUCTION TOOK PLACE ON SITE, CONTINUOUS INSPECTION WILL NOT BE REQUIRED DURING PREFABRICATION IF THE APPROVED AGENCY CERTIFIES THE CONSTRUCTION AND FURNISHES EVIDENCE OF COMPLIANCE.
5. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL REPORT SIGNED BY BOTH THE INSPECTOR AND THE INSPECTOR'S SUPERVISOR STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE CODE.
6. STRUCTURAL OBSERVATION NOT REQUIRED.

## LEGEND





Y:\CHAY V\SMR\SPOR TROUTDALE (URBAN)\\_2024 ANTENNA MOD\POR TROUTDALE\_SMR 90% PCD\_02-23-24.DWG

GENERAL STRUCTURAL NOTES	CONCRETE
<div>1. CONTRACTOR SHALL FIELD VERIFY SITE OR LAYOUT RESTRICTIONS, SITE CONDITIONS, DIMENSIONS, AND ELEVATIONS BEFORE START OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF VECTOR STRUCTURAL ENGINEERING, LLC PRIOR TO BEGINNING PROJECT. ALL WORK SHALL BE PERFORMED USING ACCEPTED CONSTRUCTION PRACTICES.</div> <div>2. NO FIELD MODIFICATIONS MAY BE MADE WITHOUT EXPRESS WRITTEN CONSENT FROM THE ENGINEER OF RECORD. ENGINEER OF RECORD ASSUMES NO RESPONSIBILITY FOR THE STRUCTURE IF ALTERATIONS AND/OR ADDITIONS ARE MADE TO THE DESIGN AS SHOWN IN THESE DRAWINGS.</div> <div>3. THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL COMPLY WITH ALL LOCAL CODES, REGULATIONS, AND ORDINANCES AS WELL AS STATE DEPARTMENT OF INDUSTRIAL REGULATIONS AND DIVISION OF INDUSTRIAL SAFETY (OSHA) REQUIREMENTS.</div> <div>4. THE CONTRACTOR SHALL SUPERVISE AND DIRECT ALL WORK TO THE BEST OF HIS/HER ABILITY AND SKILL. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, PROCEDURES, AND SEQUENCES, AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.</div> <div>5. THE CONTRACTOR SHALL VERIFY, COORDINATE, AND PROVIDE ALL NECESSARY BLOCKING, BACKING, FRAMING, HANGERS, OR OTHER SUPPORTS FOR ALL ITEMS REQUIRING SAME, WHETHER SHOWN OR NOT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY BRACING, SHORING, FORMWORK, ETC., AND SHALL CONFORM TO ALL NATIONAL, STATE, AND LOCAL ORDINANCES AND CODES, IN ORDER TO SAFELY EXECUTE ALL STAGES OF WORK TO COMPLETE THIS PROJECT.</div> <div>6. IT IS THE INTENT OF THESE DRAWINGS TO SHOW THE COMPLETED INSTALLATION OF THE STRUCTURE SHOWN.</div> <div>7. CONTRACTOR ASSUMES RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES. THIS REQUIREMENT APPLIES CONTINUOUSLY, AND IS NOT LIMITED TO NORMAL WORKING HOURS.</div> <div>8. CONTRACTOR TO HOLD ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT.</div> <div>9. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN. THE CONTRACTOR IS FINANCIALLY RESPONSIBLE FOR REPAIR OR REPLACEMENT OF UTILITIES OR OTHER PROPERTY DAMAGED IN CONJUNCTION WITH THE EXECUTION OF WORK ON THIS PROJECT.</div> <div>10. WEATHER PROOFING AND/OR FLASHING TO BE PROVIDED BY CONTRACTOR AS REQUIRED.</div> <div>11. CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE ARCHITECT/ ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED.</div> <div>12. THESE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESARY TO PROTECT THE STRUCTURE, WORKERS, AND PEDESTRIANS DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, TEMPORARY STRUCTURES, AND PARTIALLY COMPLETED WORK, ETC. OBSERVATION VISITS TO THE SITE BY THE ARCHITECT/ ENGINEER SHALL NOT INCLUDE INSPECTION OF SUCH ITEMS.</div> <div>13. ALL STRUCTURAL MEMBERS, HARDWARE, &amp; FASTENERS TO BE STEEL, U.N.O.</div> <div>14. CONTRACTOR TO VERIFY SUITABILITY OF EQUIPMENT AND CLIENT TOLERANCE FOR ANTICIPATED DIFFERENTIAL MOVEMENT OF STRUCTURES DUE TO FROST HEAVE, SETTLEMENT, AND OTHER FACTORS.</div> <div>15. ALL ASPECTS OF THE EXISTING STRUCTURE ARE ASSUMED TO BE IN GOOD CONDITION, FREE FROM DAMAGE OR DETERIORATION. CONTRACTOR TO VERIFY CONDITION OF STRUCTURE AND INFORM VECTOR OF ANY DAMAGED STRUCTURAL MEMBERS.</div>	<div>1. ALL PHASES OF WORK PERTAINING TO THE CONCRETE CONSTRUCTION SHALL CONFORM TO THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318 LATEST APPROVED EDITION) WITH MODIFICATIONS AS NOTED IN THE DRAWINGS AND SPECIFICATIONS.</div> <div>2. REINFORCED CONCRETE DESIGN IS BY THE "ULTIMATE STRENGTH DESIGN METHOD", ACI 318-(LATEST EDITION)</div> <div>3. SCHEDULE OF STRUCTURAL CONCRETE 28-DAY STRENGTHS AND TYPES:<div>LOCATION IN STRUCTURESTRENGTH PSIGRADE BEAMS3000FOOTINGS3000</div></div> <div>4. CONCRETE MIX DESIGN SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL WITH THE FOLLOWING REQUIREMENTS:<div>a. COMPRESSIVE STRENGTH AT AGE 28 DAYS AS SPECIFIED ABOVE.</div><div>b. LARGE AGGREGATE-HARDROCK, ¾" MAXIMUM SIZE CONFORMING TO ASTM C-33</div><div>c. CEMENT-ASTM C-150, TYPE TYPE II PORTLAND CEMENT</div><div>d. MAXIMUM SLUMP 5-INCHES, MAX WATER CEMENT RATIO: 0.45</div><div>e. AIR ENTRAINING AGENT TO BE USED FOR CONCRETE EXPOSED TO FREEZING TEMPERATURES. TOTAL AIR CONTENT TO BE 6%</div><div>f. NO ADMIXTURES, EXCEPT FOR ENTRAINED AIR, AND AS APPROVED BY THE ENGINEER.</div></div> <div>5. CONCRETE MIXING OPERATIONS, ETC. SHALL CONFORM TO ASTM C-94</div> <div>6. PLACEMENT OF CONCRETE SHALL CONFORM TO ACI STANDARD 514 AND PROJECT SPECIFICATIONS.</div> <div>7. CLEAR COVERAGE OF CONCRETE OVER OUTER REINFORCING BARS SHALL BE AS FOLLOWS: CONCRETE POURED DIRECTLY AGAINST EARTH - 3 INCHES CLEAR, STRUCTURAL SLABS - ¾ INCHES CLEAR (TOP AND BOTTOM), FORMED CONCRETE WITH EARTH BACK FILL - 2 INCHES CLEAR. CLEAR COVER FOR ALL REINFORCEMENT IN PRECAST CONCRETE MEMBERS FABRICATED IN A PLANT CONTROLLED ENVIRONMENT TO BE 1-1/2" MIN. FOR UP TO # 4 REINFORCING BARS, UNLESS NOTED OTHERWISE.</div> <div>8. ALL REINFORCING BARS, ANCHOR BOLTS AND OTHER CONCRETE INSERTS SHALL BE WELL SECURED IN POSITION PRIOR TO PLACING CONCRETE.</div> <div>9. PROVIDE SLEEVES FOR PLUMBING AND ELECTRICAL OPENINGS IN CONCRETE BEFORE PLACING. DO NOT CUT ANY REINFORCING THAT MAY CONFLICT. CORING IN CONCRETE IS NOT PERMITTED EXCEPT AS SHOWN. NOTIFY THE STRUCTURAL ENGINEER IN ADVANCE OF CONDITIONS NOT SHOWN ON THE DRAWINGS.</div> <div>10. CONDUIT OR PIPE SIZE (O.D.) SHALL NOT EXCEED 30% OF SLAB THICKNESS AND SHALL BE PLACED BETWEEN THE TOP AND BOTTOM REINFORCING, UNLESS SPECIFICALLY DETAILED OTHERWISE. CONCENTRATIONS OF CONDUITS OR PIPES SHALL BE AVOIDED EXCEPT WHERE DETAILED OPENINGS ARE PROVIDED.</div> <div>11. PRECAST CONCRETE SHALL BE FABRICATED IN AN APPROVED SHOP IN A PLANT CONTROLLED ENVIRONMENT. REINFORCEMENT SPECIFIED IS MINIMUM ONLY. DESIGN AND VERIFICATION OF PRECAST MEMBERS, INCLUDING EMBEDS, FOR LOADS TO DUE LIFTING AND TRANSPORTATION IS THE RESPONSIBILITY OF THE PRECASTER.</div> <div>12. MODULUS OF ELASTICITY OF CONCRETE, WHEN TESTED IN ACCORDANCE WITH ASTM C-460, SHALL BE AT LEAST THE VALUE GIVEN BY THE EQUATIONS IN SECTION 8.5.1 OF ACI 318 FOR THE SPECIFIED 28-DAY STRENGTH.</div> <div>13. SHRINKAGE OF CONCRETE, WHEN TESTED IN ACCORDANCE WITH ASTM C-157, SHALL NOT EXCEED 0.0004 INCHES/INCH.</div> <div>14. CONCRETE PLACED IN COLD WEATHER CONDITIONS SHALL BE IN ACCORDANCE WITH ACI 306 (LATEST EDITION)</div>
DESIGN CRITERIA	REINFORCING STEEL
<div>1. THE DESIGN CRITERIA FOR THIS STRUCTURE IS AS FOLLOWS:<div>A. STANDARDS AND DESIGN CODES:<div>BUILDING CODE: INTERNATIONAL BUILDING CODE, 2012 EDITION (2012 IBC)</div></div><div>B. FOUNDATION ANALYSIS/DESIGN IS BY OTHERS AND IS TO BASED ON SITE-SPECIFIC GEOTECHNICAL RECOMMENDATIONS OR CODE PRESCRIBED PRESUMPTIVE SOIL PARAMETERS AS APPROVED BY THE JURISDICTION.</div></div>	<div>1. REINFORCING BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A-615 GRADE 60.</div> <div>2. ALL REINFORCING BAR BENDS SHALL BE MADE COLD</div> <div>3. MINIMUM LAP OF WELDED WIRE FABRIC SHALL BE 6 INCHES OR ONE FULL MESH AND ONE HALF, WHICH EVER IS GREATER.</div> <div>4. ALL BARS SHALL BE MARKED SO THEIR IDENTIFICATION CAN BE MADE WHEN THE FINAL IN-PLACE INSPECTION IS MADE.</div> <div>5. REBAR SPLICES ARE TO BE: CLASS "B"</div> <div>6. REINFORCING SPLICES SHALL BE MADE ONLY WHERE INDICATED ON THE DRAWINGS.</div> <div>7. DOWELS BETWEEN FOOTINGS AND WALLS OR COLUMNS SHALL BE THE SAME GRADE, SIZE AND SPACING OR NUMBER AS THE VERTICAL REINFORCING, RESPECTIVELY.</div>
	POST-INSTALLED ANCHORS
	<div>1. USE, INSTALLATION, EMBEDMENT DEPTH, AND DIAMETER OF EXPANSION/WEDGE OR ADHESIVE ANCHORS IN HARDENED CONCRETE OR CMU SHALL CONFORM TO ICC REPORT &amp; MANUFACTURER'S RECOMMENDATIONS.</div> <div>2. MAINTAIN CRITICAL EDGE DISTANCE SPECIFIED IN ICC REPORT AS A MINIMUM, U.N.O. IN THESE DRAWINGS</div> <div>3. LOCATE AND AVOID CUTTING EXISTING REBAR OR TENDONS WHEN DRILLING HOLES IN ELEVATED CONCRETE SLABS, CONCRETE WALLS, OR CMU.</div>

PRELIMINARY DRAWINGS  
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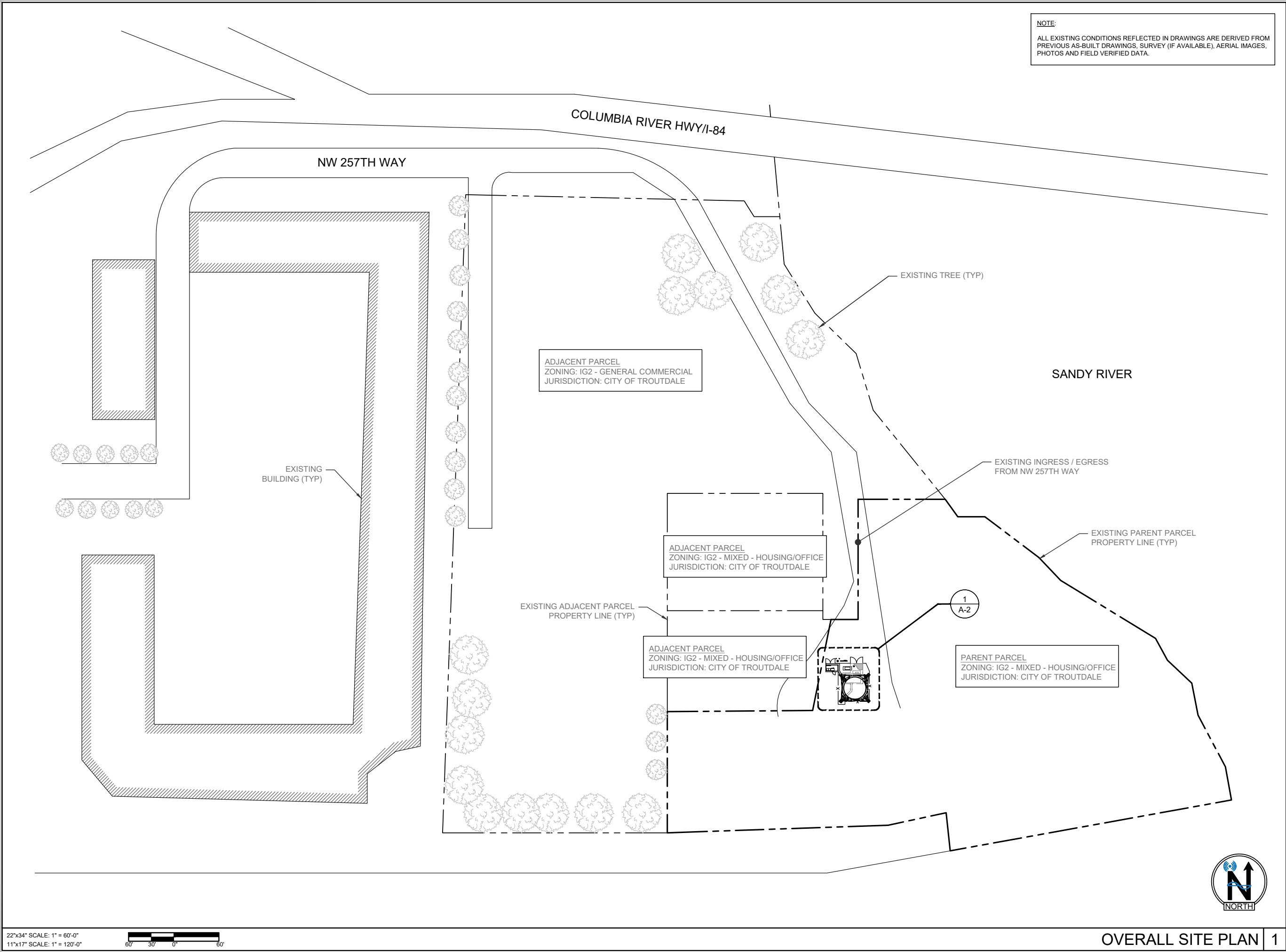
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GENERAL NOTES

T-3

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**NOTE:**  
ALL EXISTING CONDITIONS REFLECTED IN DRAWINGS ARE DERIVED FROM PREVIOUS AS-BUILT DRAWINGS, SURVEY (IF AVAILABLE), AERIAL IMAGES, PHOTOS AND FIELD VERIFIED DATA.

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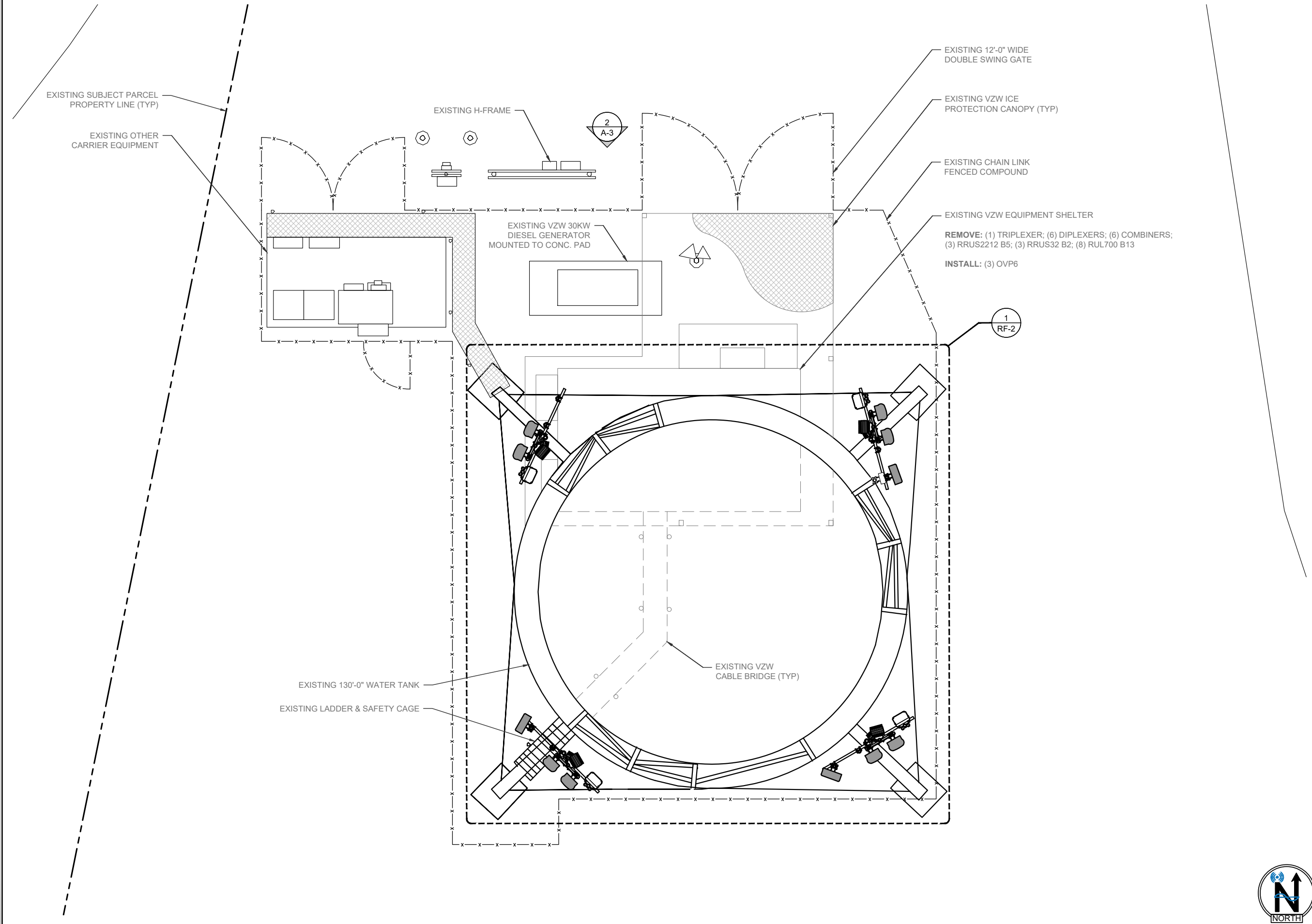
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**OVERALL SITE PLAN**

**A-1**

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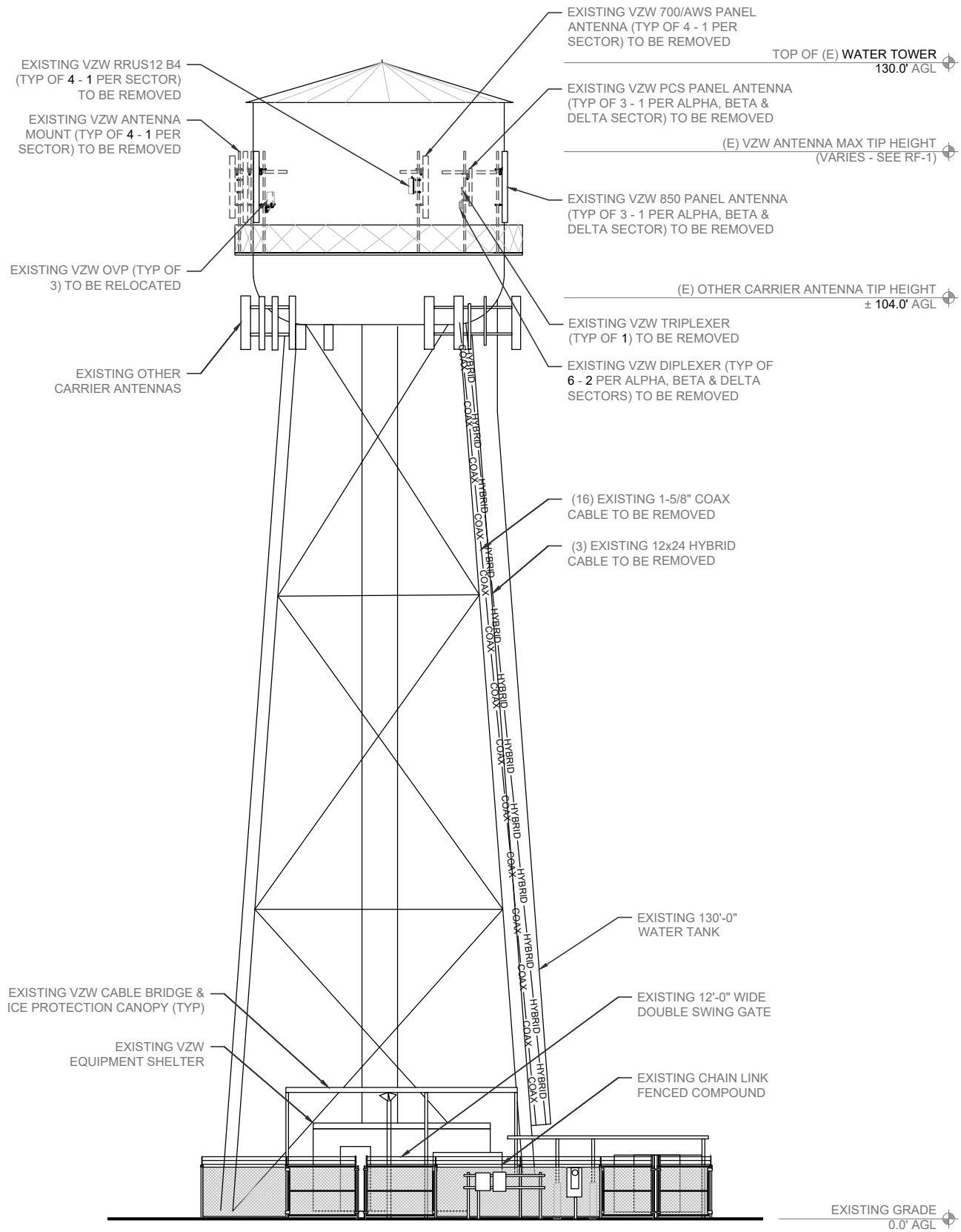
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ENGINEERS

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**ENLARGED SITE PLAN**

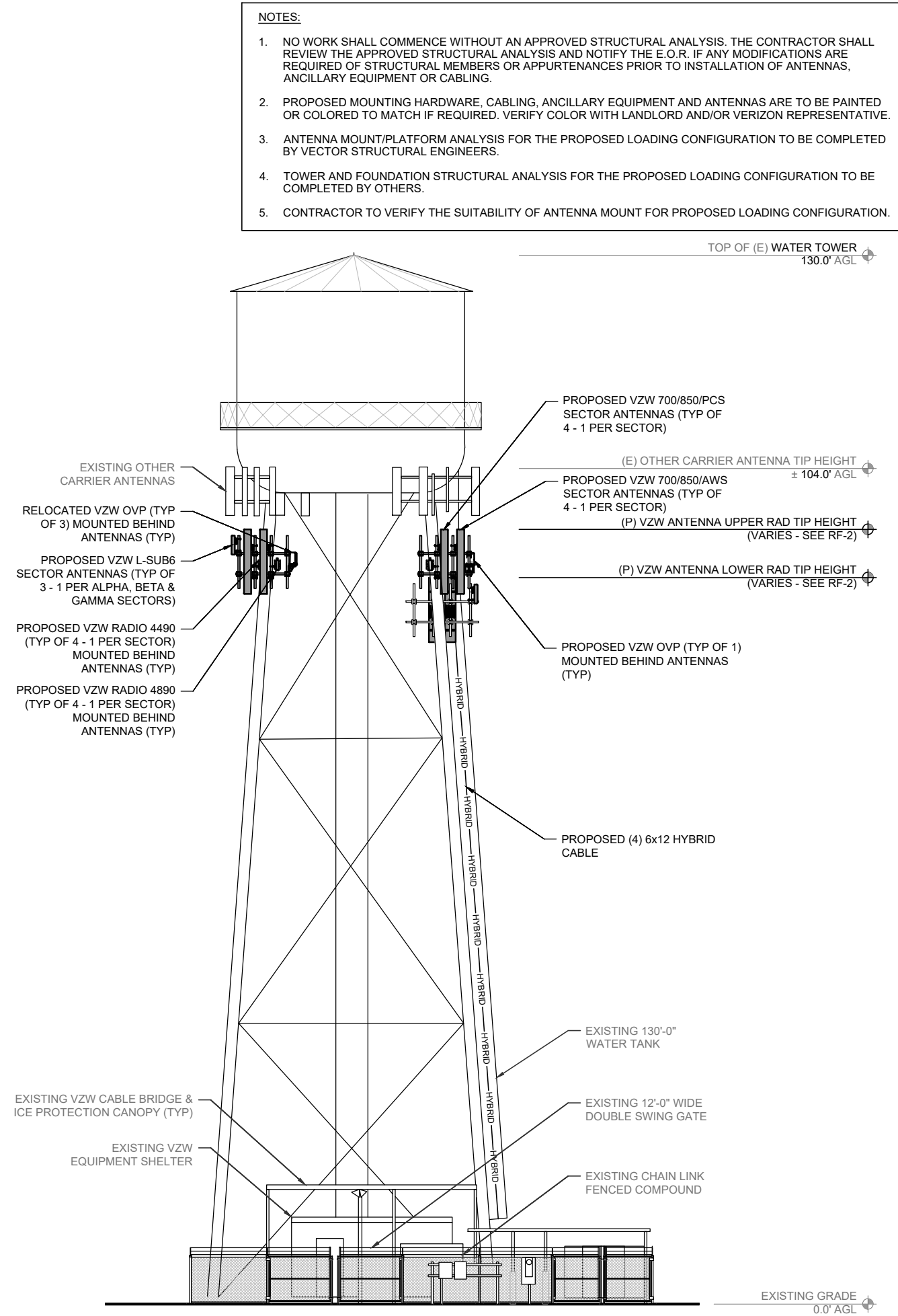
**A-2**

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EXISTING NORTH ELEVATION

1



PROPOSED NORTH ELEVATION

2

NOTES:

1. NO WORK SHALL COMMENCE WITHOUT AN APPROVED STRUCTURAL ANALYSIS. THE CONTRACTOR SHALL REVIEW THE APPROVED STRUCTURAL ANALYSIS AND NOTIFY THE E.O.R. IF ANY MODIFICATIONS ARE REQUIRED OF STRUCTURAL MEMBERS OR APPURTENANCES PRIOR TO INSTALLATION OF ANTENNAS, ANCILLARY EQUIPMENT OR CABLING.
2. PROPOSED MOUNTING HARDWARE, CABLING, ANCILLARY EQUIPMENT AND ANTENNAS ARE TO BE PAINTED OR COLORED TO MATCH IF REQUIRED. VERIFY COLOR WITH LANDLORD AND/OR VERIZON REPRESENTATIVE.
3. ANTENNA MOUNT/PLATFORM ANALYSIS FOR THE PROPOSED LOADING CONFIGURATION TO BE COMPLETED BY VECTOR STRUCTURAL ENGINEERS.
4. TOWER AND FOUNDATION STRUCTURAL ANALYSIS FOR THE PROPOSED LOADING CONFIGURATION TO BE COMPLETED BY OTHERS.
5. CONTRACTOR TO VERIFY THE SUITABILITY OF ANTENNA MOUNT FOR PROPOSED LOADING CONFIGURATION.

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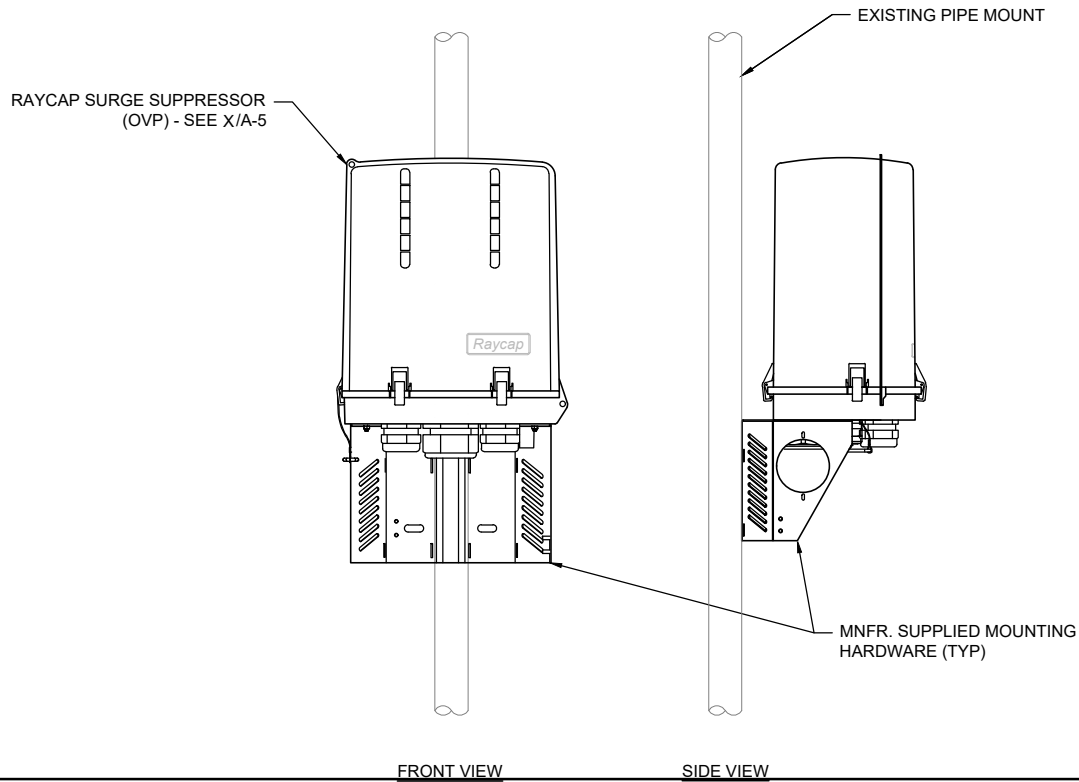
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**EXISTING AND  
PROPOSED  
ELEVATIONS**

A-3



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22"x34" SCALE: NOT TO SCALE  
11"x17" SCALE: NOT TO SCALE  
OVP MOUNTING DETAIL 1

Product Specifications

91900314  
Dual-mount antenna bracket



Product Specifications

91900314  
Dual-mount antenna bracket



Dual-mount antenna bracket

- Enables optimal spacing for low-band 4T4R beamforming by allowing for two of the same antenna on one bracket
- Mechanical tilt in line with specified antenna
- Spacing achieved can be 3/4", 2", or 12" (edge-to-edge) dependent on antenna model
- Compatible with MX\*, MC\*, X7C\*, C7C\* antenna ranges

Spacing options between dual antennas

X7C* and C7C* models	2 of same antennas locked at 2" spacing Example: (2) X7CQAP-FRO-645-V can be locked at 2" of spacing
MX*, MC* models	2 of same antennas locked at 3/4", 2", or 12" spacing Example: (2) MX08FRO660-02 can be locked at 2" or 12" spacing (see above image)

Brackets needed per antenna type

X7C* and C7C* models	All 4" and these 6" antennas: X7CQAP-FRO-645-V X7CQAP-FRO-660-V X7CQAP-FRO-665-V C7CQAP-FRO-666-V	X7CAP-665-V X7C-FRO-640-V X7C-FRO-660-V	X7C-665-V X7C-680-V C7C-FRO-656-V	91900314-02 (2 brackets needed)
	All 8" and this 6" antenna: X7CAP-FRO-640-V			91900314-03 (3 brackets needed)
	MX*, MC* models	4", 6" antennas 8" antennas		91900314-02 91900314-03

Mechanical specifications

Weight per bracket, lb (kg)	28 lb (12.7 kg) - dual mount bracket parts only
Range of allowable mechanical up/down tilt	Tilt range is not affected by dual mount bracket (see antenna datasheet)
Rated wind survival speed, mph (km/h)	150 mph (241 km/h)
Material specification	0.16" to 0.25" thick hot-dipped, galvanized steel

Ordering information

Mounting bracket model	Description
91900314-01	Single dual-mount antenna bracket assembly (see table above, "Brackets per antenna type")
91900314-02	Two dual-mount antenna bracket assemblies
91900314-03	Three dual-mount antenna bracket assemblies

\*Compatible antennas

4"-8" Quad-, Hex-, and Octo-Port macro antennas in the X7C, C7C, X7CAP, C7CAP, MX, MC models

Installation instructions

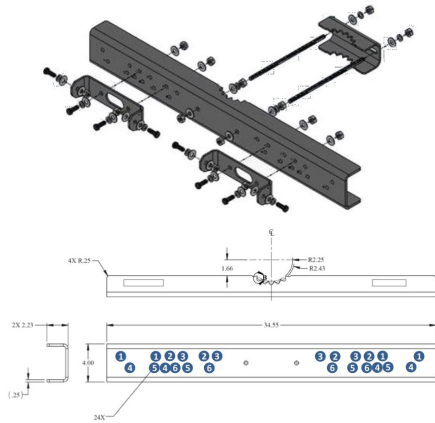
81900506

Installation instructions for dual-mount bracket assembly (comes with kit)

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Page 1

Dual-mount bracket assembly guide overview



Model types beginning with:	Antenna width	Corresponding hole position	Resulting spacing between antennas
MX*, MC*	15.4" (wide spacing)	1	12"
	15.4" (narrow spacing)	2	2"
	12"	3	2"
	20"	5	3/4"
X7C*, C7C*	12.5"	3	2"
	24.0"	4	2"
	18.8"	5	2"
	14.6"	6	2"

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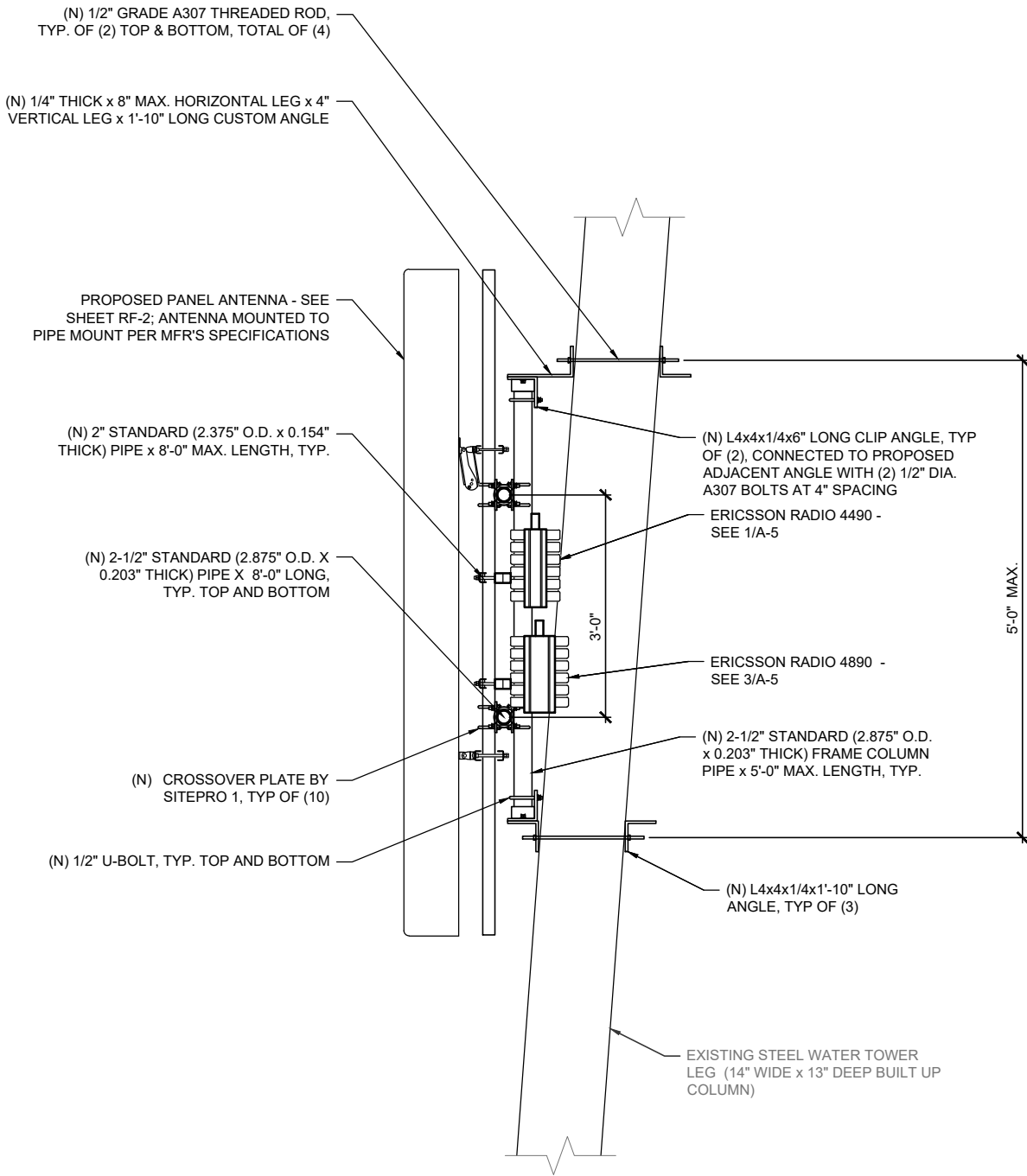
91900314  
Page 2

NOTES:

- VERIFY ANTENNA MOUNTING WITH TOWER STRUCTURAL

- (N) JUMPER W/ 10" MIN. RADIUS ON DRIP LOOP; ALL JUMPERS TO BE SECURED AS REQ'D W/ (N) CABLE SUPPORTS, TYP.

-BASIS-OF-DESIGN: EXISTING OTHER CARRIER LEG MOUNT



22"x34" SCALE: NOT TO SCALE  
11"x17" SCALE: NOT TO SCALE

ANTENNA MOUNTING DETAIL 2

PRELIMINARY DRAWINGS  
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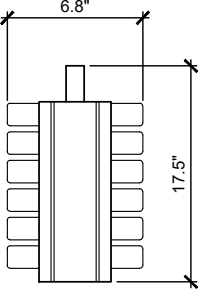
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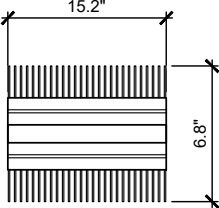
CONSTRUCTION  
DETAILS

A-4

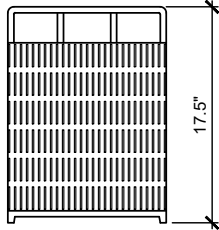
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SIDE VIEW

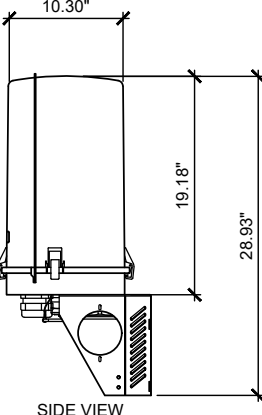


PLAN VIEW

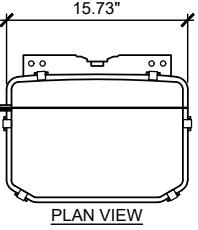


FRONT VIEW

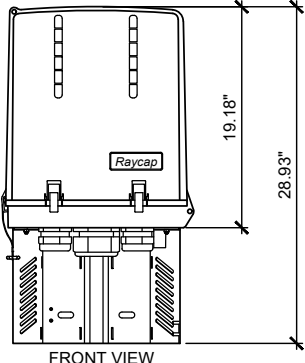
MANUFACTURER: ERICSSON  
MODEL: RADIO 4490  
HEIGHT: 17.5"  
WIDTH: 15.2"  
DEPTH: 6.8"  
WEIGHT: 68.4 LBS  
COLOR: OFF-WHITE



SIDE VIEW



PLAN VIEW



FRONT VIEW

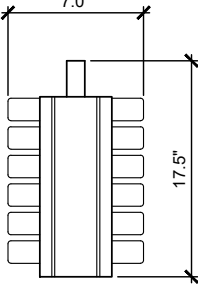
MANUFACTURER: RAYCAP  
MODEL: RCMD-3315-PF-48  
HEIGHT: 29.93"  
WIDTH: 15.73"  
DEPTH: 10.30"  
WEIGHT: 32.00 LBS (W/ MOUNT)  
COLOR: LIGHT GRAY

PRELIMINARY DRAWINGS  
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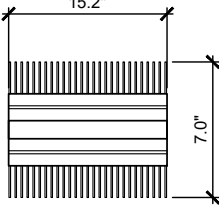
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ERICSSON RADIO 4490 DETAIL (700/850) 1

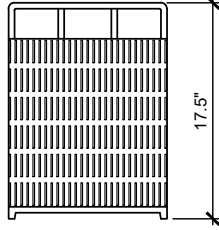
RAYCAP OVP SPLITTER DETAIL 2



SIDE VIEW

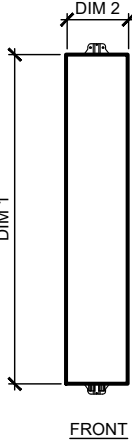


PLAN VIEW

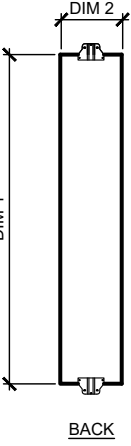


FRONT VIEW


MANUFACTURER: ERICSSON  
MODEL: RADIO 4890  
HEIGHT: 17.5"  
WIDTH: 15.2"  
DEPTH: 7.0"  
WEIGHT: 69.5 LBS  
COLOR: OFF-WHITE



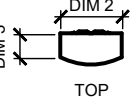
FRONT



BACK



SIDE



TOP

	QTY	DIM 1	DIM 2	DIM 3	*WEIGHT
ALPHA SECTOR					
(P) MX06FIT845-02	2	95.9"	15.4"	10.7"	108.0 LBS
(P) AIR6419	1	28.3"	16.1"	8.0"	71.0 LBS
(P) AIR6419	1	28.3"	16.1"	8.0"	71.0 LBS
BETA SECTOR					
(P) MX06FIT845-02	2	95.9"	15.4"	10.7"	108.0 LBS
(P) AIR6419	1	28.3"	16.1"	8.0"	71.0 LBS
GAMMA SECTOR					
(P) MX06FIT845-02	2	95.9"	15.4"	10.7"	108.0 LBS
(P) AIR6419	1	28.3"	16.1"	8.0"	71.0 LBS
DELTA SECTOR					
(P) MX06FIT845-02	2	95.9"	15.4"	10.7"	108.0 LBS

NOTES:  
1. INSTALL ANTENNAS PER MANUFACTURER SPECIFICATIONS.  
2. CONTRACTOR TO TORQUE ALL MOUNTING HARDWARE PER MANUFACTURER SPECIFICATIONS.  
3. \*ANTENNA WEIGHTS INCLUDE MOUNTING BRACKET WEIGHT U.N.O.

ERICSSON RADIO 4890 DETAIL (AWS / PCS) 3

ANTENNA DIMENSIONS 4

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ENGINEER OF RECORD:



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DETAILS

A-5

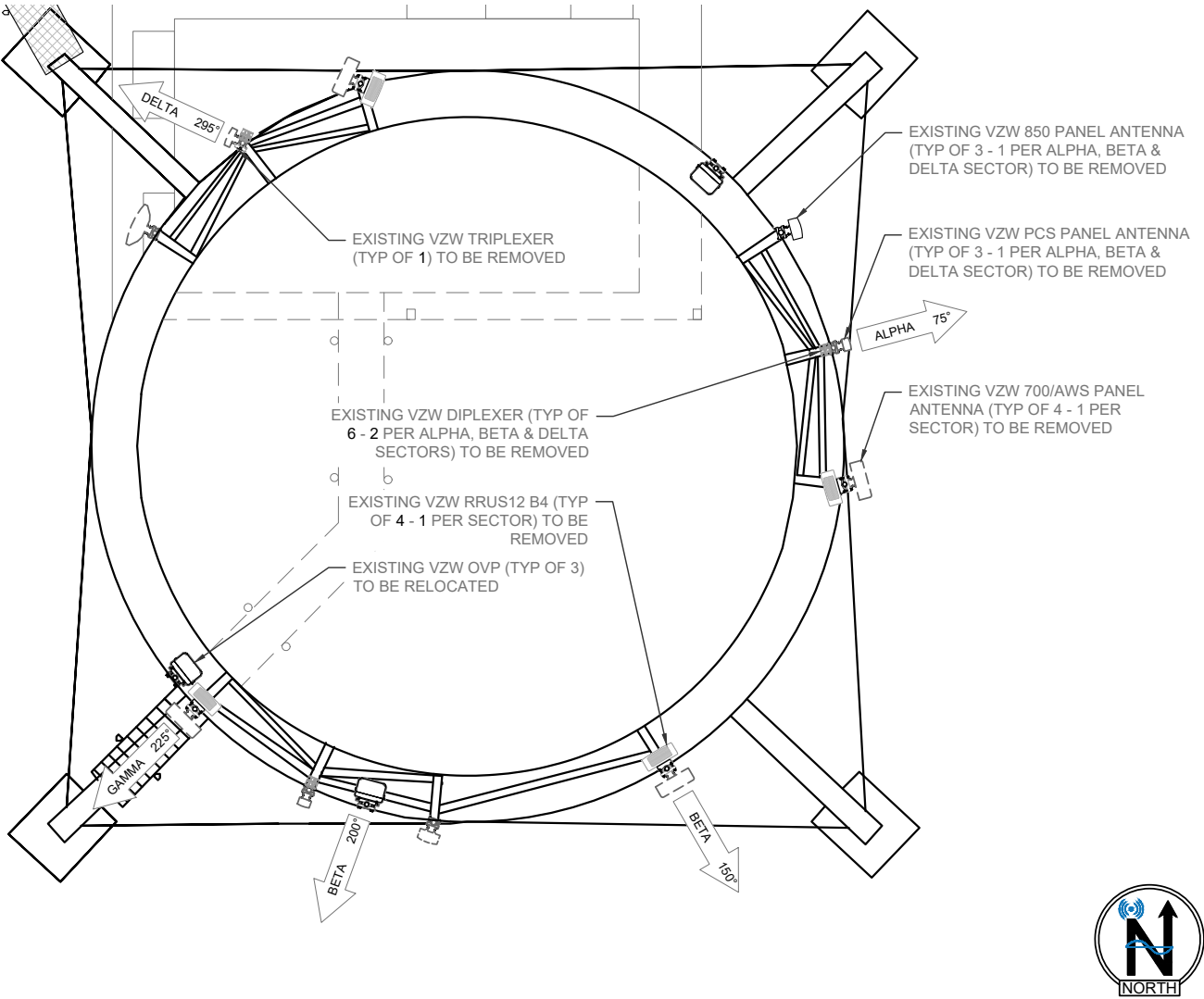
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EXISTING ANTENNA AND ANCILLARY EQUIPMENT SCHEDULE											
ALPHA SECTOR		AZIMUTH	TIP HEIGHT	QUANTITY	VENDOR	MODEL	MECH TILT	ELEC TILT	# OF FEEDERS	FEEDER TYPE	FEEDER LENGTH
850	REMOVE	75°	120.0'	(1)	ANTEL	BXA-80080-8CF	-	-	(2)	1-5/8 COAX	REMOVE
PCS	REMOVE	75°	118.9'	(1)	CSS	XP18-80-0D	-	-	(2)	1-5/8 COAX	REMOVE
700/AWS	REMOVE	75°	119.5'	(1)	AMPHENOL	HTXCW331821X000-T00	-	-	-	-	-
AWS	REMOVE	-	-	(1)	ERICSSON	RRUS12 B4	-	-	-	-	-
700/850/PCS	REMOVE	-	-	(1)	-	GENERIC TRIPLEXER	-	-	-	-	-
850/PCS	REMOVE	-	-	(2)	-	GENERIC DIPLEXER	-	-	-	-	-
N/A	RELOCATE	-	-	(1)	RAYCAP	OVP - RCMDC-3315-PF-48	-	-	(1)	12x24 HYBRID	REMOVE
BETA SECTOR		AZIMUTH	TIP HEIGHT	QUANTITY	VENDOR	MODEL	MECH TILT	ELEC TILT	# OF FEEDERS	FEEDER TYPE	FEEDER LENGTH
850	REMOVE	200°	120.0'	(1)	ANTEL	BXA-80080-8CF	-	-	(2)	1-5/8 COAX	REMOVE
PCS	REMOVE	200°	118.9'	(1)	CSS	XP18-80-0D	-	-	(2)	1-5/8 COAX	REMOVE
700/AWS	REMOVE	150°	119.5'	(1)	AMPHENOL	HTXCW331821X000-T00	-	-	-	-	-
AWS	REMOVE	-	-	(1)	ERICSSON	RRUS12 B4	-	-	-	-	-
850/PCS	REMOVE	-	-	(2)	-	GENERIC DIPLEXER	-	-	-	-	-
N/A	RELOCATE	-	-	(1)	RAYCAP	OVP - RCMDC-3315-PF-48	-	-	(1)	12x24 HYBRID	REMOVE
GAMMA SECTOR		AZIMUTH	TIP HEIGHT	QUANTITY	VENDOR	MODEL	MECH TILT	ELEC TILT	# OF FEEDERS	FEEDER TYPE	FEEDER LENGTH
700/AWS	REMOVE	225°	119.5'	(1)	AMPHENOL	HTXCW331821X000-T00	-	-	-	-	-
AWS	REMOVE	-	-	(1)	ERICSSON	RRUS12 B4	-	-	-	-	-
N/A	RELOCATE	-	-	(1)	RAYCAP	OVP - RCMDC-3315-PF-48	-	-	(1)	12x24 HYBRID	REMOVE
DELTA SECTOR		AZIMUTH	TIP HEIGHT	QUANTITY	VENDOR	MODEL	MECH TILT	ELEC TILT	# OF FEEDERS	FEEDER TYPE	FEEDER LENGTH
850	REMOVE	295°	119.9'	(1)	ANTEL	BXA-80040/8CF	-	-	(2)	1-5/8 COAX	REMOVE
PCS	REMOVE	295°	118.1'	(1)	CSS	XP19-45-0	-	-	(2)	1-5/8 COAX	REMOVE
700/AWS	REMOVE	295°	119.5'	(1)	AMPHENOL	HTXCW331821X000-T00	-	-	-	-	-
AWS	REMOVE	-	-	(1)	ERICSSON	RRUS12 B4	-	-	-	-	-
850/PCS	REMOVE	-	-	(2)	-	GENERIC DIPLEXER	-	-	-	-	-



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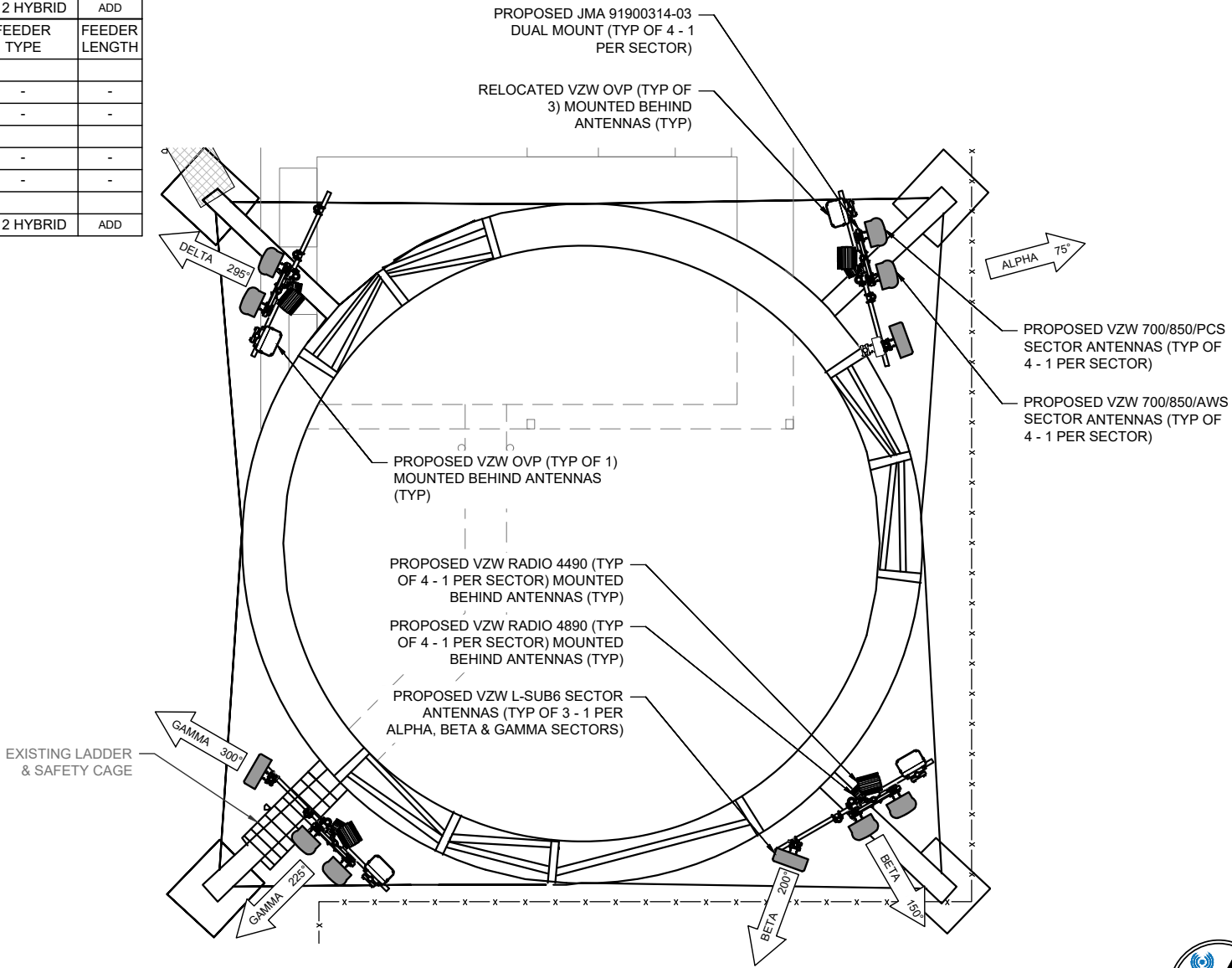
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ANTENNA  
CONFIGURATIONS

RF-1

YK-HAY V:\SMR\S\POR TROUTDALE (URBAN)\\_2024 ANTENNA MODIPOR TROUTDALE\_SMR 90% PCD\_02-23-24.DWG

PROPOSED ANTENNA AND ANCILLARY EQUIPMENT SCHEDULE											
ALPHA SECTOR		AZIMUTH	TIP HEIGHT	QUANTITY	VENDOR	MODEL	MECH TILT	ELEC TILT	# OF FEEDERS	FEEDER TYPE	FEEDER LENGTH
L-SUB6	ADD	70°	95.2'	(1)	ERICSSON	AIR6419	-	-	-	-	-
700/850/PCS	ADD	75°	96.0'	(1)	JMA	MX06FIT845-02	-	-	-	-	-
700/850/AWS	ADD	75°	96.0'	(1)	JMA	MX06FIT845-02	-	-	-	-	-
700/850	ADD	-	-	(1)	ERICSSON	RADIO 4490	-	-	-	-	-
AWS/PCS	ADD	-	-	(1)	ERICSSON	RADIO 4890	-	-	-	-	-
				(1)							
N/A	RELOCATE	-	-	(1)	RAYCAP	OVP - RCMDC-3315-PF-48	-	-	(1)	6x12 HYBRID	ADD
BETA SECTOR		AZIMUTH	TIP HEIGHT	QUANTITY	VENDOR	MODEL	MECH TILT	ELEC TILT	# OF FEEDERS	FEEDER TYPE	FEEDER LENGTH
L-SUB6	ADD	200°	95.2'	(1)	ERICSSON	AIR6419	-	-	-	-	-
700/850/PCS	ADD	150°	96.0'	(1)	JMA	MX06FIT845-02	-	-	-	-	-
700/850/AWS	ADD	150°	96.0'	(1)	JMA	MX06FIT845-02	-	-	-	-	-
700/850	ADD	-	-	(1)	ERICSSON	RADIO 4490	-	-	-	-	-
AWS/PCS	ADD	-	-	(1)	ERICSSON	RADIO 4890	-	-	-	-	-
				(1)							
N/A	RELOCATE	-	-	(1)	RAYCAP	OVP - RCMDC-3315-PF-48	-	-	(1)	6x12 HYBRID	ADD
GAMMA SECTOR		AZIMUTH	TIP HEIGHT	QUANTITY	VENDOR	MODEL	MECH TILT	ELEC TILT	# OF FEEDERS	FEEDER TYPE	FEEDER LENGTH
L-SUB6	ADD	300°	89.2'	(1)	ERICSSON	AIR6419	-	-	-	-	-
700/850/PCS	ADD	225°	90.0'	(1)	JMA	MX06FIT845-02	-	-	-	-	-
AWS	ADD	225°	90.0'	(1)	JMA	MX06FIT845-02	-	-	-	-	-
700/850	ADD	-	-	(1)	ERICSSON	RADIO 4490	-	-	-	-	-
AWS/PCS	ADD	-	-	(1)	ERICSSON	RADIO 4890	-	-	-	-	-
				(1)							
N/A	RELOCATE	-	-	(1)	RAYCAP	OVP - RCMDC-3315-PF-48	-	-	(1)	6x12 HYBRID	ADD
DELTA SECTOR		AZIMUTH	TIP HEIGHT	QUANTITY	VENDOR	MODEL	MECH TILT	ELEC TILT	# OF FEEDERS	FEEDER TYPE	FEEDER LENGTH
700/850/AWS	ADD	295°	96.0'	(1)	JMA	MX06FIT845-02	-	-	-	-	-
700/850/PCS	ADD	295°	96.0'	(1)	JMA	MX06FIT845-02	-	-	-	-	-
700/850	ADD	-	-	(1)	ERICSSON	RADIO 4490	-	-	-	-	-
AWS/PCS	ADD	-	-	(1)	ERICSSON	RADIO 4890	-	-	-	-	-
N/A	ADD	-	-	(1)	RAYCAP	OVP - RCMDC-3315-PF-48	-	-	(1)	6x12 HYBRID	ADD



PRELIMINARY DRAWINGS  
NOT FOR CONSTRUCTION

NO.	DATE	DRAWN	REVISION
A	02/23/24	YK	90% PCD REVIEW

CLIENT:

A&E CONSULTANT, SITE ACQUISITION AND PERMITTING:

ENGINEER OF RECORD:

**POR  
TROUTDALE**  
302 NW 257TH AVE  
TROUTDALE, OR 97060

ANTENNA  
CONFIGURATIONS

RF-2

YK-HAY V:\SMR\SPOR TROUTDALE (URBAN)\\_2024 ANTENNA MODIPOR TROUTDALE\_SMR 90% PCD\_02-23-24.DWG

PRELIMINARY DRAWINGS  
NOT FOR CONSTRUCTION

NO.	DATE	DRAWN	REVISION
A	02/23/24	YK	90% PCD REVIEW

CLIENT:

A&E CONSULTANT, SITE ACQUISITION AND PERMITTING:

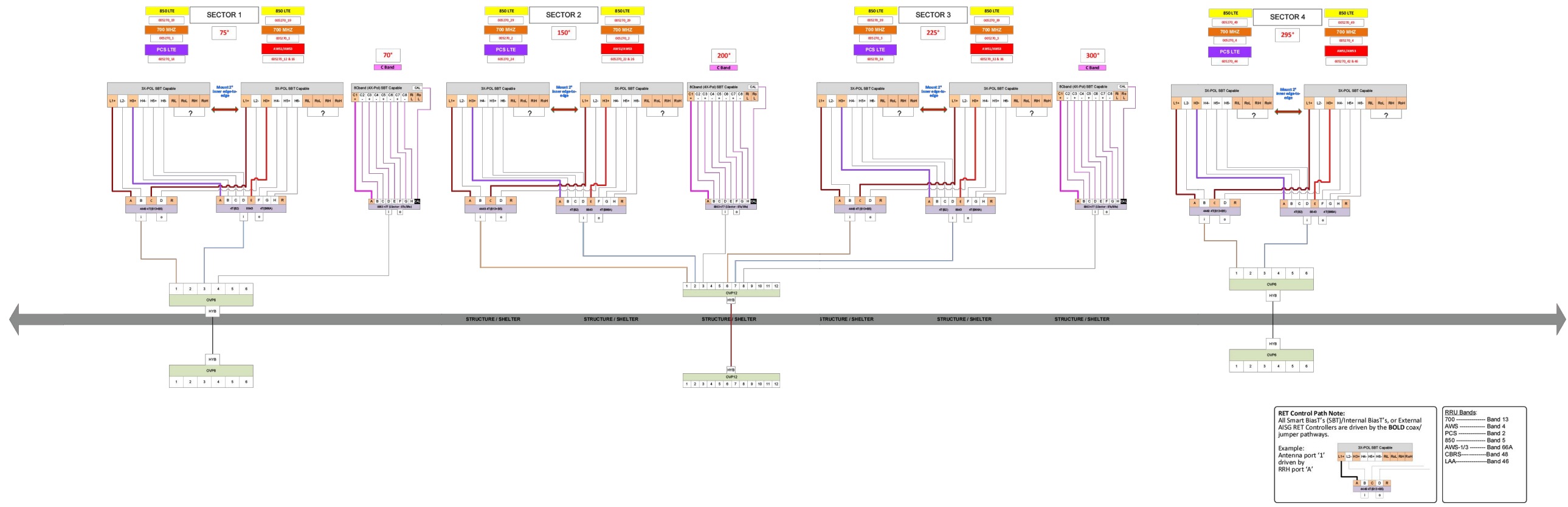
ENGINEER OF RECORD:

**POR  
TROUTDALE**  
302 NW 257TH AVE  
TROUTDALE, OR 97060

PROPOSED  
IT DIAGRAM


























RF-2

**TROUTDALE HD LSub6 Upgrade [ 4 Sector – 700/850/AWS-1/3/PCS – LTE ]  
[ 3 Sector – C Band 5G ]**





Y:\CHAY V\SMR\S\POR TROUTDALE (URBAN)\_2024 ANTENNA MODIPOR TROUTDALE\_SMR 90% PCD\_02-23-24.DWG

GENERAL ELECTRICAL NOTES			LEGEND		PRELIMINARY DRAWINGS NOT FOR CONSTRUCTION	
			SYMBOL	DESCRIPTION		
<div>1. GENERAL</div> <div><div>1. EXAMINE THE SITE CONDITIONS VERY CAREFULLY AND THE SCOPE OF PROPOSED WORK TOGETHER WITH THE WORK OF ALL OTHER TRADES AND INCLUDE IN THE BID PRICE ALL COSTS FOR WORK SUCH AS EQUIPMENT AND WIRING MADE NECESSARY TO ACCOMMODATE THE ELECTRICAL SYSTEMS SHOWN AND SYSTEMS OF OTHER TRADES.</div><div>2. SUBMITTAL OF BID INDICATES CONTRACTOR IS COGNIZANT OF ALL JOB SITE CONDITIONS AND WORK TO BE PERFORMED UNDER THIS CONTRACT.</div><div>3. PERFORM DETAILED VERIFICATION OF WORK PRIOR TO ORDERING THE ELECTRICAL EQUIPMENT AND COMMENCING CONSTRUCTION. ISSUE A WRITTEN NOTICE TO THE CONSULTANT OF ANY DISCREPANCIES.</div><div>4. OBTAIN ALL PERMITS, PAY ASSOCIATED FEES AND SCHEDULE INSPECTION.</div><div>5. PROVIDE ALL LABOR, MATERIAL, EQUIPMENT, INSURANCE, AND SERVICES TO COMPLETE THIS PROJECT IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND PRESENT IT AS FULLY OPERATIONAL TO THE SATISFACTION OF THE OWNER.</div><div>6. CARRY OUT WORK IN ACCORDANCE WITH ALL GOVERNING STATE, COUNTY AND LOCAL CODES AND O.S.H.A.</div><div>7. PRIOR TO BEGINNING WORK COORDINATE ALL POWER AND TELCO WORK WITH THE LOCAL UTILITY COMPANY AS IT MAY APPLY TO THIS SITE. ALL WORK TO COMPLY WITH THE RULES AND REGULATIONS OF THE UTILITIES INVOLVED.</div><div>8. FABRICATION AND INSTALLATION OF THE COMPLETE ELECTRICAL SYSTEM SHALL BE DONE IN A FIRST CLASS WORKMANSHIP PER NECA STANDARD 1-2000 BY QUALIFIED PERSONNEL EXPERIENCED IN SUCH WORK AND SHALL SCHEDULE THE WORK IN AN ORDERLY MANNER SO AS NOT TO IMPEDE PROGRESS OF THE PROJECT.</div><div>9. DURING PROGRESS OF THE WORK, MAINTAIN AN ACCURATE RECORD OF THE INSTALLATION OF THE ELECTRICAL SYSTEMS, LOCATING EACH CIRCUIT PRECISELY AND DIMENSIONING EQUIPMENT, CONDUIT AND CABLE LOCATIONS. UPON COMPLETION OF THE INSTALLATION, TRANSFER ALL RECORD DATA TO BLACK LINE PRINTS OF THE ORIGINAL DRAWINGS AND SUBMIT THESE DRAWINGS AS RECORD DRAWINGS TO THE CONSULTANT.</div><div>10. COMPLETE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF JOB ACCEPTANCE BY OWNER. ANY WORK, MATERIAL, OR EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED AT ONCE UPON WRITTEN NOTIFICATION, AT THE EXPENSE OF THE CONTRACTOR.</div><div>11. GENERAL CONTRACTOR IS RESPONSIBLE FOR REQUESTING CONNECTION OF COMMERCIAL POWER FROM THE POWER COMPANY. ELECTRICAL CONTRACTOR SHALL COORDINATE THIS WORK WITH THE GENERAL CONTRACTOR.</div><div>12. COORDINATE EXACT TELEPHONE REQUIREMENTS AND SERVICE ROUTING WITH LOCAL TELEPHONE COMPANY. APPLY FOR TELEPHONE SERVICE IMMEDIATELY UPON AWARD OF CONTRACT.</div></div> <div>2. BASIC MATERIALS AND METHODS</div> <div><div>1. ALL ELECTRICAL WORK SHALL CONFORM TO THE EDITION OF THE NEC ACCEPTED BY THE LOCAL JURISDICTION AND TO THE APPLICABLE LOCAL CODES AND REGULATIONS.</div><div>2. ALL MATERIALS AND EQUIPMENT SHALL BE PROPOSED. MATERIALS AND EQUIPMENT SHALL BE THE STANDARD PRODUCTS OF MANUFACTURER'S CURRENT DESIGN. ANY FIRST-CLASS PRODUCT MADE BY A REPUTABLE MANUFACTURER MAY BE USED PROVIDING IT CONFORMS TO THE CONTRACT REQUIREMENTS AND MEETS THE APPROVAL OF THE CONSULTANT AND THE OWNER.</div><div>3. ARRANGE CONDUIT, WIRING, EQUIPMENT, AND OTHER WORK GENERALLY AS SHOWN, PROVIDING PROPER CLEARANCES AND ACCESS. CAREFULLY EXAMINE ALL CONTRACT DRAWINGS AND FIT THE WORK IN EACH LOCATION WITHOUT SUBSTANTIAL ALTERATION. WHERE DEPARTURES ARE PROPOSED BECAUSE OF FIELD CONDITIONS OR OTHER CAUSES, PREPARE AND SUBMIT DETAILED DRAWINGS FOR ACCEPTANCE.</div><div>4. THE CONTRACT DRAWINGS ARE GENERALLY DIAGRAMMATIC AND ALL OFFSETS, BENDS, FITTINGS AND ACCESSORIES ARE NOT NECESSARILY SHOWN. PROVIDE ALL SUCH ITEMS AS MAY BE REQUIRED TO FIT THE WORK TO THE CONDITIONS.</div><div>5. MAINTAIN ALL CLEARANCES AS REQUIRED BY NEC.</div><div>6. SEAL AROUND CONDUITS AND AROUND CONDUCTORS WITHIN CONDUITS ENTERING THE BUILDING WHERE PENETRATION OCCURS WITH A SILICONE SEALANT TO PREVENT MOISTURE PENETRATION INTO BUILDING/SHELTER.</div><div>7. SILICONE SEAL AROUND ALL BOLTS AND SCREWS USED TO SECURE EQUIPMENT TO EXTERIOR OF BUILDING.</div></div> <div>3. CONDUCTORS AND CONNECTORS</div> <div><div>1. UNLESS NOTED OTHERWISE, ALL CONDUCTORS SHALL BE COPPER, MINIMUM SIZE #12 AWG, WITH THERMOPLASTIC INSULATION CONFORMING TO NEMA WC5 OR CROSS-LINKED POLYETHYLENE INSULATION CONFORMING TO NEMA WC7. (TYPES THHN OR THWN-2). INSULATION SHALL BE RATED FOR 90°C CONDUCTORS SHALL BE COLOR CODED IN ACCORDANCE WITH NEC.</div><div>2. ALL CONDUCTORS USED FOR GROUNDING SHALL BE COPPER AND SHALL HAVE GREEN INSULATION EXCEPT WHERE NOTED.</div><div>3. FOR COPPER CONDUCTORS #6 AWG AND SMALLER USE 3M SCOTCH-LOK OR T&amp;B STA-KON COMPRESSION TYPE CONNECTORS WITH INTEGRAL OR SEPARATE INSULATION CAPS. FOR COPPER CONDUCTORS LARGER THAN #6 AWG USE SOLDERLESS, IDENT HEX SCREW OR BOLT TYPE PRESSURE CONNECTORS OR DOUBLE COMPRESSION C-CLAMP CONNECTORS, UNLESS SPECIFIED OTHERWISE ON DRAWINGS.</div><div>4. UNLESS NOTED OTHERWISE ALL LUGS SHALL BE TIN PLATED COPPER, TWO-HOLE, LONG BARREL, COMPRESSION TYPE.</div><div>5. CONDUCTOR LENGTHS SHALL BE CONTINUOUS FROM TERMINATION TO TERMINATION WITHOUT SPLICES. SPLICES ARE NOT ACCEPTABLE. IF SPLICES ARE UNAVOIDABLE PRIOR APPROVAL FROM THE ENGINEER MUST BE OBTAINED.</div></div>			<div>4. RACEWAYS AND BOXES</div> <div><div>1. ALL CONDUIT SHALL BE UL LABELED.</div><div>2. ALL EMPTY CONDUITS INSTALLED FOR FUTURE USE SHALL HAVE A PULL CORD.</div><div>3. SHEET METAL BOXES SHALL CONFORM TO NEMA OS1; CAST-METAL BOXES SHALL CONFORM TO NEMA 81 AND SHALL BE SIZED IN ACCORDANCE WITH NEC UNLESS NOTED OTHERWISE.</div></div> <div>5. GROUNDING</div> <div><div>1. ALL LIGHTNING PROTECTION AND SAFTEY GROUNDING OF THE ELECTRICAL EQUIPMENT SHALL BE CARRIED OUT IN ACCORDANCE WITH THE CURRENT NFPA STANDARDS AND VERIZON WIRELESS STANDARDS</div><div>2. GROUND LUGS ARE SPECIFIED UNDER SECTION 3 "CONDUCTORS AND CONNECTORS".</div><div>3. ALL GROUND LUG AND COMPRESSION CONNECTIONS SHALL BE COATED WITH ANTI-OXIDANT AGENT, SUCH AS NO-OX, NOALOX, PENETROX OR KOPRSHIELD.</div><div>4. GROUND ALL EXPOSED METALLIC OBJECTS ON EQUIPMENT ROOM EXTERIOR.</div><div>5. PROVIDE LOCK WASHERS FOR ALL MECHANICAL CONNECTIONS FOR GROUND CONDUCTORS. USE STAINLESS STEEL HARDWARE THROUGHOUT.</div><div>6. DO NOT INSTALL GROUND RING OUTSIDE OF LEASE AREA.</div><div>7. REMOVE ALL PAINT AND CLEAN ALL DIRT FROM SURFACES REQUIRING GROUND CONNECTIONS, REPAINT TO MATCH AFTER CONNECTION IS MADE TO MAINTAIN CORROSION RESISTANCE.</div><div>8. ALL EXTERIOR GROUNDING CONDUCTORS INCLUDING EXTERIOR GROUND RING SHALL BE #2 AWG SOLID BARE TINNED COPPER UNLESS NOTED OTHERWISE. MAKE ALL GROUND CONNECTIONS AS SHORT AND DIRECT AS POSSIBLE. AVOID SHARP BENDS. THE RADIUS OF ANY BEND SHALL NOT BE LESS THAN 8" AND THE ANGLE OF ANY BEND SHALL NOT EXCEED 90°. GROUNDING CONDUCTORS SHALL BE ROUTED DOWNWARD TOWARD THE BURIED GROUND RING.</div><div>9. BOND ALL EXTERIOR CONDUITS, PIPES AND CYLINDRICAL METALLIC OBJECTS WITH A PENN-UNION GT SERIES CLAMP, BLACKBURN GUV SERIES CLAMP OR A BURNDY GAR 3900BU SERIES CLAMP ONLY, NO SUBSTITUTES ACCEPTED.</div><div>10. ALL GROUND CONNECTIONS SHALL BE APPROVED FOR THE METALS BEING CONNECTED.</div><div>11. ALL EXTERNAL GROUND CONNECTIONS SHALL BE EXOTHERMICALLY WELDED. ALL EXOTHERMIC WELDS TO EXTERIOR GROUND RING SHALL BE THE PARALLEL TYPE, EXCEPT FOR THE GROUND RODS WHICH ARE TEE EXOTHERMIC WELDS. REPAIR ALL GALVANIZED SURFACES THAT HAVE BEEN DAMAGED BY EXOTHERMIC WELDING. USE SPRAY GALVANIZER SUCH AS HOLUB LECTROSOL #15-501.</div><div>12. CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER WHEN THE BURIED GROUND RING IS INSTALLED SO THE REPRESENTATIVE CAN INSPECT THE GROUND RING BEFORE IT IS BACKFILLED WITH SOIL.</div><div>13. FOR METAL FENCE POST GROUNDING, USE A HEAVY DUTY TYPE GROUNDING CLAMP OR EXOTHERMIC WELD CONNECTION TO POST. GROUND ALL FENCE POSTS WITHIN 6' OF EQUIPMENT.</div><div>14. WHERE MECHANICAL CONNECTORS (TWO-HOLE OR CLAMP) ARE USED, APPLY A LIBERAL PROTECTIVE COATING OF AN ANTI-OXIDE COMPOUND SUCH AS NO-OX, NOALOX, PENETROX OR KOPRSHIELD ON ALL CONNECTORS.</div></div> <div>6. OVERCURRENT &amp; SHORT-CIRCUIT/GND FAULT PROTECTION (IF APPLICABLE)</div> <div><div>1. CONTRACTOR SHALL RECORD LOAD READINGS WHEN SITE POWER ORIGINATES FROM A 3Ø SERVICE TO MONITOR &amp; ASSURE A BALANCED LOAD AT THE PRIMARY SUPPLY. RECORDS SHALL BE PROVIDED TO THE SITE/FACILITY OWNER. CONTRACTOR SHALL CONSULT MANUFACTURER'S PLANS, SHOP DRAWINGS AND SPECS FOR INDOOR/OUTDOOR EQUIPMENT LOCATION &amp; INSTALLATION. ELECTRIC SERVICE SHALL BE IN COMPLIANCE WITH ALL RULES &amp; REGULATIONS OF THE UTILITY CO. ELECT. CONTRACTOR SHALL PROVIDE EQUIPMENT WITH HIGHER SHORT-CIRCUIT FAULT CURRENT RATINGS (KA.I.C.) AS REQUIRED TO MATCH &amp; EXCEED UTILITY CO. AVAILABLE SYMMETRICAL &amp; ASYMMETRICAL FAULT CURRENT LEVELS. FUSES IN SERVICE SWITCHES SHALL BE CLASS "RK1", CURRENT LIMITING TYPE, 200 KA.I.C., NON-TIME DELAY, DISCONNECT SWITCHES TO HAVE REJECTION CLIPS, UNLESS INDICATED OTHERWISE. ELECTRICAL EQUIPMENTS &amp; PROTECTIONS SHALL BE STANDARD KAIC RATED HIGHER THAN INCOMING EQUIPMENT AND/OR UTILITY CO. KAIC RATE AND CONSIDERING ELECTRIC MOTORS FAULT CONTRIBUTION. CONTRACTOR SHALL NOT BEGIN CONSTRUCTION UNTIL THIS MANDATORY REQUIREMENT IS MET. IF PROPOSED LOAD IS ADDED CONTRACTOR SHALL VERIFY &amp; CONFIRM BEFORE CONSTRUCTION THAT TOTAL UTILITY SERVICE LOAD SHALL KEEP EQUAL TO (125% MAX. DEMAND+ PROPOSED LOAD)&lt; 80% SERVICE ENTRANCE CONDUCTORS/MAIN OVER CURRENT PROTECTION CAPACITY, WHICHEVER RATING IS LOWER. LIGHTING SHALL MEET NEC, IESNA AND/OR FAA STANDARDS IF APPLICABLE. PHOTOMETRIC LEVELS SHALL COMPLY WITH LOCAL, STATE &amp; FEDERAL RULES. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN ACCESSIBLE AREAS ONLY. THE ELECTRICAL INSTALLATION SHALL MEET ALL STANDARD REQUIREMENTS OF POWER AND TELE- PHONE UTILITY COMPANIES.</div></div>	<div></div>	<div>ABBREVIATIONS</div> <div><div>AFG</div><div>AIC</div><div>BFG</div><div>C</div><div>CRGB</div><div>CU</div><div>C/W</div><div>D.T.T.</div><div>EC</div><div>G</div><div>GE</div><div>GEC</div><div>GRC</div><div>MTS</div><div>NEC</div><div>O/H</div><div>RNC</div><div>SD</div><div>SE</div><div>SN</div><div>TGB</div><div>TEGB</div><div>TR</div><div>TVSS</div><div>TYP</div><div>WP</div><div>U/G</div><div>PPC</div></div> <div><div>ABOVE FINISHED GRADE</div><div>AMPERE INTERRUPTING CAPACITY</div><div>BELOW FINISHED GRADE</div><div>CONDUIT</div><div>CELL REFERENCE GROUND BAR</div><div>COPPER</div><div>COMPLETE WITH</div><div>DRY TYPE TRANSFORMER</div><div>EMPTY CONDUIT</div><div>GROUND</div><div>GROUNDING ELECTRODE</div><div>GROUNDING ELECTRODE CONDUCTOR</div><div>GALVANIZED RIGID CONDUIT</div><div>MANUAL TRANSFER SWITCH</div><div>NATIONAL ELECTRICAL CODE</div><div>OVERHEAD</div><div>RIGID NON-METALLIC CONDUIT (SCHEDULE 80 PVC)</div><div>SERVICE DISCONNECT SWITCH</div><div>SERVICE ENTRANCE</div><div>SOLID NEUTRAL</div><div>TELCO GROUND BAR</div><div>TOWER EXIT GROUND BAR</div><div>TRANSFORMER</div><div>TRANSIENT VOLTAGE SURGE SUPPRESSOR</div><div>TYPICAL</div><div>WEATHERPROOF - NEMA 3R</div><div>UNDERGROUND</div><div>POWER PROTECTION SHELTER</div></div>	<div>CLIENT:</div> <div></div> <div>A&amp;E CONSULTANT, SITE ACQUISITION AND PERMITTING:<div></div></div> <div>ENGINEER OF RECORD:<div></div></div> <div>POR TROUTDALE 302 NW 257TH AVE TROUTDALE, OR 97060</div> <div>GENERAL ELECTRICAL NOTES</div> <div>E-1</div>