

THE PROJECT DEPICTED IN THESE PLANS QUALIFIES AS AN ELIGIBLE FACILITIES REQUEST ENTITLED TO EXPEDITED REVIEW UNDER 47 U.S.C. § 1455(A) AS A MODIFICATION OF AN EXISTING WIRELESS TOWER THAT INVOLVES THE COLLOCATION, REMOVAL, AND/OR REPLACEMENT OF TRANSMISSION EQUIPMENT THAT IS NOT A SUBSTANTIAL CHANGE UNDER CFR § 1.61000 (B)(7)

### STRUCTURAL PARAMETERS

RISK CATEGORY WIND SPEED (V<sub>ULT</sub> 3-S GUST): 120 MPH ICE WIND SPEED 30 MPF ICE THICKNESS: 0.25" EXPOSURE CATEGORY TOPOGRAPHIC FACTOR: SERVICE WIND SPEED: 30 MPH SEISMIC DESIGN CATEGORY:

0.080 S<sub>1</sub>: 0.048

# verizon<sup>/</sup>

**AMERICAN TOWER** CORPORATION

## IINFINIGY&

BELLEVUE, WA 98004

**VERIZON SITE:** MASON SW

ATC SITE: 416988 MASON SW FL

5 SW CUMORAH HILL RD FT. WHITE, FL 32024 **COLUMBIA COUNTY** 

300'-0" GUYED TOWER

DRAWINGS ISSUED FOR

DESCRIPTION

0	02/01/23	CES	ISSUED FOR CONSTRUCTION	PHR
_				/
111.	Street, CAR	STOP	HER J WARD	111111111111111111111111111111111111111

TITLE

SHEET

**MASON SW GUYED TOWER** 300'-0"

LONG: 82° 38' 59.54" W

ATC SITE: SITE ADDRESS: **COUNTY:** JURISDICTION:

416988 5 SW CUMORAH HILL RD FT. WHITE, FL 32024

> **COLUMBIA COLUMBIA COUNTY**

> > SITE PHOTO

### SITE INFORMATION

**VERIZON SITE NAME:** 

PROPERTY INFORMATION: SITE ADDRESS

SITE TYPE:

**TOWER HEIGHT:** 

LAT: 29° 57' 2.96" N

5 SW CUMORAH HILL RD FT. WHITE, FL 32024 COUNTY COLUMBIA LATITUDE (NAD83): 29° 57' 2.96" N (29.950822°)

82° 38' 59.54" W (-82.649872°) LONGITUDE (NAD83) GROUND ELEVATION (NAVD88): ±102.0' AMSL COLUMBIA COUNTY

JURISDICTION: ZONING:

OCCUPANCY CLASSIFICATION: U SEE SHEET A-LEGAL DESCRIPTION:

AREA OF CONSTRUCTION: EXISTING

TYPE OF CONSTRUCTION: V-B PROPOSED USE UNMANNED TELECOMMUNICATIONS

HANDICAP REQUIREMENTS:

FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION HANDICAPPED ACCESS NOT REQUIRED.

PROPERTY OWNER:

JOHNNY W ABRAMS JR COMPANY: **ADDRESS** 2912 HWY 82 CITY, STATE, ZIP: MIDWAY, AL 36053

TOWER OPERATOR:

COMPANY: AMERICAN TOWER CORPORATION **ADDRESS** 900 CIRCLE 75 PKWY, SUITE 300 CITY, STATE, ZIP ATLANTA, GA 30339

CONTACT FRITZ LOVELACE PHONE: (770) 330-5496

E-MAIL: frederick.lovelace@americantower.com APPLICANT

COMPANY:

5901 BENJAMIN CENTER DR, SUITE 110 A-B ADDRESS

PROJECT TEAM

INFINIGY ENGINEERING, PLLC

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INFINIGY SOLUTIONS, LLC

AMERICAN TOWER CORPORATION

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(407) 928-3219

CITY, STATE, ZIP TAMPA, FL 33634

ARCHITECTURAL & ENGINEERING:

CONTACT: PHONE: E-MAIL:

CONTACT

COMPANY

CONTACT

COMPANY:

ADDRESS:

CONTACT

CITY, STATE, ZIP:

PHONE:

F-MAII

SITE ACQUISITION:

ATC PROJECT MANAGER:

PHONE

E-MAIL:

### SHEET INDEX SHEET DESCRIPTION TITLE SHEET T-1 T-2 SPECIFICATIONS & NOTES T-3 SPECIFICATIONS & NOTES A-1 OVERALL SITE PLAN A-2 ENLARGED SITE PLANS A-3 EAST ELEVATIONS A-4 ANTENNA PLANS & RF SCHEDULES A-5 **EQUIPMENT DETAILS** A-6 **EQUIPMENT DETAILS** A-7 GENERATOR SPECIFICATIONS A-8 GENERATOR SPECIFICATIONS A-9 FUEL DETAILS A-10 FUEL NOTES A-11 PIPING SIZE CHARTS ELECTRICAL SITE PLAN & NOTES E-1 G-1 SCHEMATIC GROUNDING PLAN & NOTES G-2 GROUNDING DETAILS ATTACHED MOUNT MODIFICATION DETAILS Plans Reviewer for Code

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME

**APPROVALS** 

CONSTRUCTION AS DESCRIBED HEREIN. ALL CONSTRUCTION DOCUMENTS

SIGNATURE

ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT & ANY

THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE

CHANGES OR MODIFICATIONS THEY MAY IMPOSE

APPROVAL:

PROJECT MANAGER

CONSTRUCTION MANAGER

DEVELOPMENT MANAGER

CONSTRUCTION MANAGER

SITE ACQUISITION

RE ENGINEER

OPS MANAGER

SITE OWNER

DOCUMENTS & AUTHORIZE THE SUBCONTRACTOR TO PROCEED WITH

TELECOMMUNICATIONS FACILITY AS FOLLOWS:

- REMOVE (2) 1/2" COAX CABLES & (1) CONTROL CABLE
- INSTALL (6) MX06FRO860-02 & (3) AIR6449 B77 PANEL ANTENNAS
- INSTALL (2) RCMDC-6627-PF-48 OVP'S
- INSTALL (2) 12x24 HYBRID CABLES
- REMOVE (1) 30kW PROPANE GENERATOR

DESIGN IS BASED ON: ATC APPLICATION ID 14137966, REV. #0

THESE PLANS HAVE BEEN DEVELOPED FOR THE MODIFICATION OF AN JNMANNED TELECOMMUNICATIONS FACILITY OWNED OR LEASED BY VERIZON IN ACCORDANCE WITH THE PROVIDED SCOPE OF WORK NCORPORATED IN THE PLANS BY INFINIGY. THESE PLANS ARE NOT FOR CONSTRUCTION UNLESS STAMPED & SIGNED. & ACCOMPANIED BY A PASSING STRUCTURAL STABILITY ANALYSIS FOR THE STRUCTURE AND MOUNT PREPARED BY A LICENSED PROFESSIONAL ENGINEER

### PROJECT DESCRIPTION

CUMORAH HILL ST; SITE WILL BE ON THE LEFT: 5 SW CUMORAH HILL RD, FT. WHITE, FL 32024

VICINITY MAP

- REMOVE (1) WEATHERVANE, (2) RRU'S, & (2) JUNCTION BOXES
- INSTALL (3) 4449 & (3) 8843 RRU'S

- REMOVE (1) ATS
- INSTALL (1) DC PLANT CABINET INSTALL (1) 50kW PROPANE GENERATOR

DATE:

REDS VERSION N/A DATED 7/01/2021

VERIZON PROPOSES TO MODIFY AN EXISTING UNMANNED

- TOWER SCOPE OF WORK
- REMOVE (6) PANEL ANTENNAS REMOVE (8) 1-5/8" COAX CABLES

- REMOVE (2) CABINETS, (6) RUS'S & (6) RUL'S

### CODE 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 THE LATEST EDITIONS OF THESE CODES.

- 2020 FLORIDA BUILDING CODE, 7TH EDITION
- ANSI/TIA-222-H

DRIVING DIRECTIONS FROM VERIZON LOCAL OFFICE (5901 BENJAMIN CENTER DR. SUITE 110 A-B TAMPA, EL 33634): HEAD WEST ON BENJAMIN CENTER DR

TURN RIGHT ONTO BENJAMIN CENTER CT; TURN RIGHT ONTO JOHNS RD; TURN RIGHT ONTO W SLIGH AVE; TAKE THE RAMP ON THE LEFT FOR 1-275 N; BEAR

S / FL-25 / S US HIGHWAY 441; TURN RIGHT ONTO SW TOMMY LITES ST; TURN LEFT ONTO SW TUSTENUGGEE AVE / COUNTY HWY-131; TURN RIGHT ONTO SW

RIGHT ONTO I-75 N; HEAD RIGHT ON THE RAMP FOR US-41 / US-441 TOWARD HIGH SPRINGS / LAKE CITY; BEAR RIGHT, THEN TURN LEFT ONTO US-41 S / US-441

- 7TH EDITION FLORIDA FIRE PREVENTION CODE (NFPA 70) 2017 NATIONAL ELECTRICAL CODE
- CITY/COUNTY ORDINANCES

Warren signed and so warren, P.E. 2023.02.01 15:49:36

Christopher J

Know what's below. Call before you dig

REGULATORY REVIEW PHONE (770) 330-5496 E-MAIL: frederick.lovelace@americantower.com PROJECT MANAGER

- A. GENERAL
- ALL PAINT PRODUCT LINES SHALL BE SHERWIN WILLIAMS UNLESS SPECIFICALLY NOTED OTHERWISE BY VERIZON
- 2 CONTRACTOR SHALL PREPARE ALL SURFACES AND APPLY ALL FINISHES PER LATEST EDITION OF MANUFACTURER'S SPECIFICATIONS.
- COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS REGARDING SUFFICIENT DRYING TIME BETWEEN COATS WITH PROVISIONS AS RECOMMENDED BY MANUFACTURER FOR EXISTING WEATHER CONDITIONS
- FINISH COLOR AND TEXTURE OF ALL PAINTED SURFACES SHALL MATCH EXISTING ADJACENT SURFACES UNLESS OTHERWISE NOTED BY VERIZON.
- ALL PAINT MATERIAL DATA SHEETS SHALL BE PROVIDED TO THE VERIZON CONSTRUCTION MANAGER.
- 6. PREPARE PREVIOUSLY PAINTED SURFACE BY LIGHT SANDING WITH 400 GRIT SANDPAPER AND NON-HYDROCARBON WASH. PREPARE GALVANIZED SURFACES BY ACID ETCH OR SOLVENT CLEANING IN ACCORDANCE WITH SSPC-SP1
- FURNISH DROP CLOTHS, SHIELDS, MASKING AND OTHER PROTECTIVE METHODS TO PREVENT SPRAY OR DROPPINGS FROM DAMAGING ADJACENT SURFACES AND
- APPLY PAINT BY AIRLESS SPRAY, SANDING LIGHTLY BETWEEN EACH SUCCEEDING ENAMEL COAT ON FLAT SURFACES. APPLY MATERIAL TO ACHIEVE A COATING NO THINNER THAN THE DRY FILM THICKNESS INDICATED.
- APPLY BLOCK FILTER TO CONCRETE BLOCK CONSTRUCTION AND ENSURE COMPLETE COVERAGE WITH PORES COMPLETELY FILLED.
- 10 CONTRACTOR SHALL CORRECT RUNS SAGS MISSES AND OTHER DEFECTS INCLUDING INADEQUATE COVERAGE AS DIRECTED BY THE VERIZON CONSTRUCTION MANAGER. REPAINT AS NECESSARY TO ACHIEVE SURFACES THAT ARE SMOOTH, EVENLY COATED WITH UNIFORM SHEEN AND FREE FROM BLEMISHES.
- B. PAINTING SCOPE
- PAINT THE FOLLOWING MATERIALS AND SYSTEMS CHECKED BELOW WITH THE COATING SYSTEM

PAINTING S	SCOPE			
SURFACE TO BE PAINTED	COATING SYSTEM	PAINT	DO NOT PAINT	N/A
BTS UNIT				Х
ALL EQUIPMENT & CABINETS OTHER THAN THE BTS UNIT				Х
ANTENNA COVERS, TILT BRACKETS, MOUNTING BRACKETS AND ASSOCIATED HARDWARE, CABLE AND CABLE COVERS EXPOSED TO VIEW, EXPOSED CONDUIT AND HANGERS, ETC.	SEE PLANS	SEE PLANS		
FLASHING UNITS, METAL TRIM AND OTHER METAL SURFACES				х
STUCCO, CONCRETE, CONCRETE BLOCK AND CEMENTIOUS TYPE FINISH SYSTEMS.				х
PLYWOOD, LUMBER AND WOOD TRIM INCLUDING THE BACK SIDE OF ALL SCREEN WALLS				х
DRYWALL				Х
CONCRETE POLES			, in the second	Х
METAL POLES AND METAL POLE STAND-OFF				Х

- C. COATING SYSTEM SPECIFICATIONS
- DTM ACRYLIC COATING (SERIES B66) BY SHERWIN WILLIAMS CO. 1MIL DFT PER COAT APPLIED IN TWO COATS OVER DTM BONDING PRIMER (B66A50).
- 100% ACRYLIC, LATEX COATING EQUIVALENT TO A-100 (SERIES A-82) BY SHERWIN WILLIAMS CO. 1 MIL DFT PER COAT APPLIED IN TWO COATS OVER SPECIFIED PRIMER.
- D. PAINT & PRIMER

### ANTENNAS

- PRIMER: KEM AOUA E61-W525
- TOPCOAT: COROTHANE II B65W200/B60V22

- PRIMER: KEM AQUA E61-W525
- TOPCOAT: COROTHANE II B65W200/B60V22

### COAXIAL JUMPER CABLES

- PRIMER: AS REQUIRED FOR ADHESION, APPLY ONE COAT OF KEM AQUA WATER REDUCIBLE PRIMER E61W25 REDUCED 25%
- TOPCOAT: 2 COATS COROTHANE II POLYURETHANE B65W200/B60V2

- PRIMER: KEM BOND HS B50WZ4, DMT ACRYLIC PRIMER TOPCOAT: 2 COATS COROTHANE II POLYURETHANE
- B65W200/B60V2

### GALVANIZED METAL

. ACID ETCH WITH COMMERCIAL ETCH OR VINEGAR PRIMER COAT AND FINISH COAT (GALVITE HIGH SOLIDS OR DTM PRIMER/FINISH)

### STAINLESS STEEL

- PRIMER: OTM WASH PRIMER, B71Y1
- TOPCOAT: 2 COATS COROTHANE II POLYURETHANE

### PRE-PRIMED STEEL

• TOUCH UP ANY RUST OR UN-PRIMED STEEL WITH KEM BOND HS, SS0WZ4

### ALUMINUM & COPPER

- PRIMER: DTM WASH PRIMER, B71Y1
- TOPCOAT: 2 COATS COROTHANE II POLYURETHANE B65W200/B60V2

### CONCRETE MASONRY

- PRIMER: PRO MAR EXTERIOR BLOCK FILLER
- TOPCOAT: 2 COATS A-100 LATEX HOUSE & TRIM,

### CONCRETE STUCCO (EXISTING)

• 2 COATS A-100 LATEX HOUSE & TRIM, SHEEN TO MATCH

### STUCCO

- PRIMER: PRO MAR MASONRY CONDITIONER B-46-W21000
- TOPCOAT: SUPERPAINT A-80 SERIES A-89 SATIN A-84 GLOSS

### WOOD

- PRIMER: A-100 EXTERIOR ALKYD WOO9D PRIMER
- TOPCOAT: 2 COATS A-100 LATEX HOUSE & TRIM SHEEN TO MATCH ADJACENT SURFACES

- THE LATEST EDITION OF THE AMERICAN INSTITUTE OF ARCHITECTS DOCUMENT A201 "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION" ARE INCLUDED IN THESE SPECIFICATIONS AS IF COMPLETELY REPRODUCED HEREIN.
- 2. THIS FACILITY IS AN UNOCCUPIED PCS TELECOMMUNICATIONS SITE AND IS EXEMPT FROM ADA ACCESS REQUIREMENTS
- PRIOR TO SUBMISSION OF BIDS, THE CONTRACTORS PARTICIPATING SHALL VISIT THE JOB SITE WITH THE CONSTRUCTION AND CONTRACT DOCUMENTS TO CONFIRM THAT THE PROJECT CAN BE ACCOMPLISHED AS DESIGNED HEREIN AS WELL AS TO FAMILIARIZE THEMSELVES WITH ALL FIELD CONDITIONS AFFECTING THE PROPOSED PROJECT INCLUDING DEMOLITION, ELECTRICAL. MECHANICAL AND STRUCTURAL INSTALLATIONS PRIOR TO PROCEEDING WITH CONSTRUCTION. SHOULD ANY ERRORS, OMISSION, OR DISCREPANCIES BE FOUND, THE GENERAL CONTRACTOR SHALL IMMEDIATELY NOTIFY IN WRITING, THE VERIZON CONSTRUCTION MANAGER AND THE ARCHITECT.
- IN THE EVENT OF DISCREPANCIES WITHIN THESE DRAWINGS, THE CONTRACTOR SHALL INCLUDE THE MORE COSTLY OR EXTENSIVE WORK IN THE BID, UNLESS SPECIFICALLY DIRECTED OTHERWISE BY VERIZON. IF A DISCREPANCY EXISTS AND THE PROJECT MANAGER AND ARCHITECT ARE NOT NOTIFIED. THE GENERAL CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL COSTS INCURRED TO REPAIR OR CORRECT ALL PROBLEMS THAT RESULT.
- 5. THESE DRAWINGS SHALL NOT BE SCALED AS THESE DRAWINGS ARE INTENDED TO BE FOR DIAGRAMMATIC PURPOSES ONLY, FIGURED DIMENSIONS HAVE PRECEDENCE OVER DRAWING SCALE AND DETAIL DRAWINGS HAVE PRECEDENCE OVER SMALL SCALE DRAWINGS. CONTRACTOR SHALL CHECK THE ACCURACY OF ALL DIMENSIONS IN THE FIELD. UNLESS SPECIFICALLY NOTED, DO NOT FABRICATE ANY MATERIALS, OR BEGIN ANY CONSTRUCTION UNTIL THE ACCURACY OF DRAWING DIMENSIONS HAS BEEN VERIFIED AGAINST ACTUAL FIELD DIMENSIONS.
- 6. THE CONTRACTOR SHALL INCLUDE IN HIS OR HER BID ALL MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE THE WORK AS INDICATED OR IMPLIED BY THESE DRAWINGS.
- CONTRACTOR SHALL NOTIFY THE VERIZON CONSTRUCTION MANAGER. THE PROPERTY OWNER AND THE ARCHITECT IF ANY DETAILS ARE CONSIDERED IMPRACTICAL, UNSUITABLE, UNSAFE, NOT WATERPROOF OR NOT WITHIN CUSTOMARY TRADE PRACTICE. IF WORK IS PERFORMED, IT WILL BE ASSUMED THAT THERE IS NO OBJECTION TO ANY DETAIL. DETAILS ARE INTENDED TO SHOW THE END RESULT OF THE DESIGN MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB CONDITIONS, AND SHALL BE INCLUDED AS PART OF THE WORK
- EXISTING ELEVATIONS AND LOCATIONS SHALL BE VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION. IF THEY DIFFER FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR SHALL NOTIFY THE VERIZON CONSTRUCTION MANAGER AND THE ARCHITECT SO THAT MODIFICATIONS CAN BE MADE BEFORE PROCEEDING WITH THE WORK.
- 9. THE CONTRACTOR SHALL VERIFY ALL TELEPHONE & RADIO EQUIPMENT LAYOUTS, SPECIFICATIONS, PERFORMANCE, INSTALLATION AND FINAL LOCATIONS WITH VERIZON CONSTRUCTION MANAGER PRIOR TO BEGINNING WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL WORK WITH ERICSSON RADIO SYSTEMS.
- 10. ALL SYMBOLS & ABBREVIATIONS USED ON THESE DRAWINGS ARE CONSIDERED CONSTRUCTION STANDARDS IF THE CONTRACTOR HAS QUESTIONS REGARDING THEIR EXACT MEANING THE VERIZON CONSTRUCTION MANAGER AND THE ARCHITECT SHALL BE NOTIFIED FOR CLARIFICATION BEFORE THE CONTRACTOR PROCEEDS WITH THE WORK
- 11. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, LICENSES AND INSPECTIONS NECESSARY FOR PERFORMANCE OF THE WORK AND INCLUDE THOSE IN THE COST OF THE WORK TO VERIZON

- 12. THE CONTRACTOR SHALL PROVIDE CONTINUOUS SUPERVISION AND DIRECT ALL WORK WHILE ANY SUBCONTRACTORS OR WORKERS ARE ONSITE, USING HIS OR HER BEST SKILL AND ATTENTION. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, PROCEDURES SEQUENCES AND COORDINATION OF ALL PORTIONS OF THE CONTRACTED WORK.
- 13. WORKMANSHIP THROUGHOUT SHALL BE OF THE BEST QUALITY OF THE TRADE INVOLVED, AND SHALL MEET OR EXCEED THE FOLLOWING MINIMUM REFERENCE STANDARDS FOR QUALITY AND PROFESSIONAL CONSTRUCTION PRACTICE:
- NRCA NATIONAL ROOFING CONTRACTORS ASSOCIATION O'HARE INTERNATIONAL CENTER 10255 W HIGGINS RD, SUITE 600 ROSEMONT, IL 60018-5607
- SMACNA SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION 4201 LAFAYETTE CENTER DR CHANTILLY, VA 20151-1219
- IILP INTERNATIONAL INSTITUTE FOR LATH AND PLASTER 820 TRANSFER RD ST. PAUL, MN 55114-1406
- 14. INSTALL ALL EQUIPMENT AND MATERIALS PER THE LATEST EDITION OF THE MANUFACTURER'S INSTALLATION SPECIFICATIONS UNLESS OTHERWISE INDICATED BY VERIZON, OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
- 15. THE CONTRACTOR SHALL VERIFY, COORDINATE, AND PROVIDE ALL NECESSARY BLOCKING, BACKING, FRAMING, HANGERS OR OTHER SUPPORTS FOR ALL
- 16. THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL GIVE ALL REQUIRED CONSTRUCTION NOTICES AND SHALL COMPLY WITH ALL APPLICABLE LOCAL CODES REGULATIONS, LAWS AND ORDINANCES, AS WELL AS THE STATE DEPARTMENT OF INDUSTRIAL RELATIONS REGULATIONS, INCLUDING BUT NOT LIMITED TO THE DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
- 17. THE CONTRACTOR SHALL PROTECT ALL PROPERTY FROM DAMAGE THAT MAY OCCUR DURING CONSTRUCTION, ANY DAMAGE TO NEW AND EXISTING FINISHES, CONSTRUCTION, STRUCTURE, LANDSCAPING, CURBS, STAIRS, OR EQUIPMENT, ETC. SHALL BE IMMEDIATELY REPAIRED OR REPLACED TO THE SATISFACTION OF VERIZON AND THE PROPERTY OWNER'S REPRESENTATIVE, AT THE EXPENSE OF THE CONTRACTOR
- 18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR, AND SHALL REPLACE OR REMEDY, ANY FAULTY, IMPROPER. OR INFERIOR MATERIALS OR WORKMANSHIP OR ANY DAMAGE WHICH SHALL APPEAR WITHIN ONE YEAR AFTER THE COMPLETION AND ACCEPTANCE OF THE WORK BY VERIZON UNDER THIS CONTRACT.
- 19. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PROTECT AND LOCATE, OR CONTACT AN OUTSIDE AGENCY TO LOCATE, ALL EXISTING UTILITIES REGARDLESS OF WHETHER OR NOT SHOWN HEREIN. THE CONTRACTOR SHALL BEAR ALL EXPENSES FOR THE REPAIR OR REPLACEMENT OF UTILITIES OR OTHER PROPERTY DAMAGED IN CONJUNCTION WITH THE EXECUTION OF WORK.
- 20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE SECURITY OF THE PROJECT SITE WHILE THE JOB IS IN PROGRESS AND UNTIL THE JOB IS COMPLETED AND ACCEPTED BY VERIZON.
- 21. THE CONTRACTOR SHALL PROVIDE TEMPORARY WATER, POWER AND TOILET FACILITIES AS REQUIRED BY THE PROPERTY OWNER VERIZON AND THE CITY OR GOVERNING AGENCY.
- 22. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR REDLINING THE CONSTRUCTION DOCUMENTS TO ILLUSTRATE THE AS-BUILT CONDITION OF THE SITE. THIS SHALL BE DONE AFTER THE SITE HAS BEEN AWARDED. FINAL INSPECTION BY THE RESPONSIBLE BUILDING AGENCY. ONE SET OF REDLINED DRAWINGS SHALL BE PROVIDED TO THE VERIZON CONSTRUCTION MANAGER

- 23. THE LATEST EDITION OF ALL PERMITTED AND APPROVED PLANS PERTAINING TO THIS PROJECT SHALL BE KEPT IN A PLAN BOX AND SHALL NOT BE USED BY WORKERS. ALL CONSTRUCTION SETS SHALL REFLECT THE SAME INFORMATION. THE CONTRACTOR SHALL ALSO MAINTAIN IN GOOD CONDITION, ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDENDA AND CHANGE ORDERS ON THE PREMISES AT ALL TIMES. THESE ARE TO BE UNDER THE CARE OF THE CONSTRUCTION SUPERINTENDENT.
- 24. THE CONTRACTOR SHALL REMOVE ALL RUBBISH AND WASTE MATERIALS ON A DAILY BASIS, EXCEPT FOR THAT SPECIFIED AS THE PROPERTY OF THE BUILDING OR PROPERTY OWNER AND SHALL EXERCISE STRICT CONTROL OVER SITE CLEANING THROUGHOUT CONSTRUCTION AND FINAL CLEAN-UP UPON COMPLETION OF WORK. ALL AREAS ARE TO BE LEFT IN A BROOM CLEAN CONDITION AT THE END OF EACH DAY THEN AT A VACUUM CLEAN CONDITION, FREE FROM PAINT SPOTS, DUST OR SMUDGES OF ANY NATURE AT COMPLETION OF WORK
- 25. THE GENERAL CONTRACTOR MUST PERFORM WORK DURING PROPERTY OWNER'S PREFERRED HOURS TO AVOID DISRUPTION OF NORMAL ACTIVITY
- 26. ALL EXPOSED METAL SHALL BE HOT-DIPPED GALVANIZED.
- 27. SEAL ALL PENETRATIONS THROUGH FIRE-RATED AREAS WITH U.L. LISTED OR FIRE MARSHALL APPROVED MATERIALS IF AND WHERE APPLICABLE TO THIS FACILITY AND PROJECT SITE
- 28. PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2-A OR 2-A10BC WITHIN 75 FEET TRAVEL DISTANCE TO ALL PORTIONS OF THE PROJECT AREA UNDER CONSTRUCTION.
- 29. ELECTRICAL POWER SYSTEM SHALL BE GROUNDED PER NEC ARTICLES 250 AND 810.
- ALL NEW OPENINGS IN THE EXTERIOR ENVELOPE OF CONDITIONED SPACES SUCH AS AT WALL AND ROOF PENETRATIONS SHALL BE CAULKED OR SEALED TO LIMIT INFILTRATION OF AIR AND MOISTURE.
- 31. UPON COMPLETION OF CONSTRUCTION, VERIZON CONSTRUCTION MANAGER SHALL CONDUCT A WAI K-THRU WITH PROPERTY OWNER OR REPRESENTATIVE OF PROPERTY OWNER
- 32. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL SYSTEM EQUIPMENT IN A CLEAN WORKING ORDER UNTIL ACCEPTANCE OF THE PROJECT BY VERIZON.
- 33. INSTALL ALL EQUIPMENT AND MATERIALS PER THE LATEST EDITION OF THE MANUFACTURER'S INSTALLATION SPECIFICATIONS UNLESS SPECIFICALLY OTHERWISE INDICATED, OR WHERE LOCAL CODES OR REGULATION TAKE PRECEDENCE





## ||NFINIGY&

BELLEVUE, WA 98004

**VERIZON SITE:** MASON SW

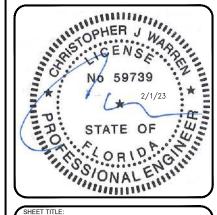
ATC SITE: 416988 MASON SW FL

5 SW CUMORAH HILL RD FT. WHITE, FL 32024 **COLUMBIA COUNTY** 

300'-0" GUYED TOWER

DRAWINGS	ISSUED	FOR:

REV.	DATE	DRAWN	DESCRIPTION	QA/QC
Α	09/16/22	RCD	PRELIMINARY REVIEW	PD
0	02/01/23	CES	ISSUED FOR CONSTRUCTION	PHR



**SPECIFICATIONS** & NOTES

**GENERAL SPECIFICATIONS** 

SINS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF INFINIGY ENGINEERING, PLLC AND ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR OTHER PROJECTS WITHOUT THE WRITTEN AUTHORIZATION OF INFINIGY ENGINEERING, PLLC. IT IS UNLAWFUL FOR ANY PERSON TO AMEND ANY ASPECT OF THESE DRAWINGS WITHOUT THE WRITTEN APPROVAL OF THE

- A. GENERAL
- PRECEDENCE: UNLESS OTHERWISE SHOWN OR SPECIFIED, THE FOLLOWING GENERAL NOTES SHALL APPLY. INFORMATION ON THESE DRAWINGS SHALL HAVE THE FOLLOWING PRECEDENCE
  - A. ALL DIMENSIONS TO TAKE PRECEDENCE OVER SCALE SHOWN ON PLANS, SECTIONS AND DETAILS.
  - NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.
  - C. MATERIAL NOTES AND SPECIFICATIONS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER THE SPECIFICATIONS
- 2. OTHER TRADES: SEE THE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS NOT SHOWN.
- GENERAL DETAILS AND NOTES ON THESE SHEETS SHALL APPLY UNLESS SPECIFICALLY SHOWN OR NOTED OTHERWISE. CONSTRUCTION DETAILS NOT FULLY SHOWN OR NOTED SHALL BE SIMILAR TO DETAILS SHOWN FOR SIMILAR CONDITIONS
- SHORING: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL ALL TEMPORARY BRACING AND SHORING TO INSURE THE SAFETY OF THE WORK UNTIL IT IS COMPLETED. THIS INCLUDES UNDERPINNING EXISTING FOOTINGS WHERE APPLICABLE.
- SAFETY: THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE, UNLESS OTHERWISE INDICATED, THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION.
- WATERPROOFING: WATERPROOFING AND DRAINAGE DETAILS OR SPECIFICATIONS SHOWN IN THESE DRAWINGS ARE FOR GENERAL INFORMATIONAL PURPOSES ONLY. CONTRACTOR TO NOTIFY THE VERIZON CONSTRUCTION MANAGER AND THE ARCHITECT IF ANY INADEQUATE OR IMPROPER CONDITIONS
- B STEEL
- ALL STRUCTURAL STEEL SECTIONS AND WELDED PLATE MEMBERS SHALL CONFORM TO ASTM A-36 AND BE FABRICATED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE AISC
- 2. ALL BOLTS SHALL CONFORM TO ASTM A-307 UNLESS OTHERWISE NOTED ON PLANS. HIGH STRENGTH BOLTS SHALL CONFORM TO ASTM A-325
- 3. STEEL PIPE COLUMNS SHALL BE GRADE "B" CONFORMING TO ASTM A53
- 4. STEEL TUBING SHALL BE GRADE "B" CONFORMING TO ASTM A500.
- ALL WELDING SHALL BE DONE BY THE SHIELDED ARC METHOD. ALL WELDERS SHALL BE PROPERLY QUALIFIED AND BE PRE-APPROVED. SURPLUS METAL SHALL BE DRESSED OFF TO SMOOTH, EVEN SURFACES WHERE WELDS ARE NOT EXPOSED TO VIEW ALL WELDING SHALL COMPLY WITH THE LATEST A.W.S. SPECIFICATIONS.
- 6. THE FOLLOWING WELDING EQUIPMENT MUST BE USED: A. 250 AMP WELDERS.
  - ROD OVENS
- GRINDERS
- 7. NO BUZZ BOXES SHALL BE USED.
- ALL STRUCTURAL STEEL SHALL HAVE MILL CERTIFICATION. MILL CERTIFICATION SHALL BE KEPT ON THE JOB SITE FOR EXAMINATION BY THE DESIGN ENGINEER AND THE CITY INSPECTOR
- ALL HIGH STRENGTH BOLTS SHALL HAVE MILL CERTIFICATION. MILL CERTIFICATION SHALL BE KEPT ON THE JOB SITE FOR EXAMINATION BY THE INSPECTOR.
- 10. STEEL THAT HAD BEEN WELDED, CUT OR SCRATCHED IN THE FIELD SHALL BE TOUCHED UP WITH COLD GALVANIZING PAINT
- 11. WELDING INDICATED IN THESE DRAWINGS IS DESIGNED FOR ONE HALF OF ALLOWABLE CODE STRESSES UNLESS NOTED "FULL STRESS" AT END OF WELD SYMBOL.

- C. CONCRETE
- STRENGTH: CONCRETE FOR THE PROJECT SHALL HAVE THE FOLLOWING ULTIMATE COMPRESSIVE STRENGTH AT AGE OF 28 DAYS:

STRENGTH WT. SLUMP ADMIXTURE LOCATION SLAB&FOOTING 3000psi 150pcf 4"

- INSPECTION: CONCRETE WITH SPECIFIED STRENGTH GREATER THAN 2500psi SHALL BE CONTINUOUSLY INSPECTED DURING PLACEMENT BY A DEPUTY INSPECTOR EMPLOYED BY A TESTING LABORATORY APPROVED BY THE BUILDING DEPT
- REBAR GRADES: REINFORCING STEEL SHALL BE CLEAN PREFORMED BARS CONFORMING TO ASTM A615 AS

#4 & SMALLER BARS GRADE 40 #5 & LARGER BARS GRADE 60 ALL BARS AT CAISSON FOOTING...GRADE 60

- 4. FOUNDATIONS & SLABS: TYPE V, LOW ALKALI, CONFORMING TO ASTM C-150. PIER/CAISSON FOOTINGS: TYPE V, LOW ALKALI, CONFORMING TO ASTM C-150.
- AGGREGATE: USED IN THE CONCRETE SHALL CONFORM TO ASTM C-33, USE ONLY AGGREGATES KNOWN NOT TO CAUSE EXCESSIVE SHRINKAGE. THE MAXIMUM SIZE AGGREGATE IN CONCRETE WORK SHALL BE THE
- FOUNDATIONS & SLABS 9" OR LESS: 3/4" GRAVEL PIER/CAISSON FOOTING: 1" GRAVEL
- 6. SHALL BE CLEAN AND FREE FROM DELETERIOUS AMOUNT OF ACIDS, ALKALIS, ORGANIC MATERIALS AND SHALL BE SUITABLE FOR HUMAN CONSUMPTION.
- 7. MIXING: PREPARATION OF CONCRETE SHALL CONFORM TO ASTM C-94, NO MORE THAN 90 MINUTES SHALL ELAPSE BETWEEN CONCRETE BATCHING AND CONCRETE PLACEMENT UNLESS APPROVED BY A TESTING AGENCY
- SEGREGATION OF AGGREGATES: CONCRETE SHALL NOT BE FLOPPED THROUGH REINFORCING STEEL (AS IN WALLS, COLUMNS, CAISSON, AND DROP CAPITALS) SO AS TO CAUSE SEGREGATION OF AGGREGATES. USE HOPPERS, CHUTES, TRUNKS OR PUMP HOSE SO THAT THE FREE UNCONFINED FALL OF CONCRETE SHALL NOT EXCEED 5 FT.
- SPLICES OF REINFORCING STEEL SHALL BE LAPPED A MINIMUM OF 30 DIAMETERS AND SECURELY WIRED TOGETHER. SPLICES OF ADJACENT REINFORCING BARS SHALL BE STAGGERED WHEREVER POSSIBLE
- 10 REAR CLEARANCE: MINIMUM COVERAGE FOR JOISTS BEAMS, GIRDERS AND COLUMNS SHALL BE TO FACE OF STIRRUPS OR TIES. UNLESS OTHERWISE NOTED, CONCRETE COVERAGE FOR REINFORCING BARS TO FACE OF BAR SHALL BE AS FOLLOWS:
  - A. CONCRETE IN CONTACT WITH EARTH, UNFORMED 3"

3/4"

- B. CONCRETE IN CONTACT WITH EARTH, FORMED 2" 1-1/2"
- C WALL EXTERIOR FACE
- D. WALL, INTERIOR FACE
- E. STRUCTURAL SLABS
- G. BEAMS, GIRDERS & COLUMNS 1-1/2"
- 11. PENETRATIONS: NO SLEEVES OR CHASES SHALL BE PLACED IN BEAMS, SLABS, WALLS AND COLUMNS. EXCEPT THOSE SHOWN ON THE PLANS. CONTRACTOR SHALL OBTAIN PRIOR APPROVAL FOR INSTALLATIONS OF ANY ADDITIONAL SLEEVES OR CHASES. ALL PLUMBING, ELECTRICAL AND MECHANICAL OPENINGS SHALL BE SLEEVES. CORING IS NOT ALLOWED UNLESS PRIOR APPROVAL IS OBTAINED FROM THE STRUCTURAL ENGINEER
- 12. EMBEDDED ITEMS: CONDUIT PLACED IN A CONCRETE SLAB SHALL NOT HAVE AN OUTSIDE DIAMETER GREATER THAN 1/4 THE THICKNESS OF THE SLAB. CONDUIT SHALL NOT BE EMBBEDED IN A SLAB THAT IS LESS THAN 3-1/2" THICK, UNLESS SLAB IS LOCALLY THICKENED. MINIMUM CLEAR DISTANCE BETWEEN COUNDUITS SHALL BE SIX INCHES

- 13. ANCHORING: ALL ANCHOR BOLTS, REINFORCING STEEL, DOWELS, INSERTS, ETC., SHALL BE WELL SECURED IN POSITION PRIOR TO PLACING CONCRETE. NO REPOSITIONING DURING CONCRETE POUR IS ALLOWED
- 14 SLABS SHALL BE SPRAYED WITH A CURING COMPOUND. IMMEDIATELY AFTER FINISHING CURING COMPOUNDS USED ON CONCRETE WHERE TILE OR FLOOR COVERING IS TO BE BONDED TO THE CONCRETE SURFACE SHALL BE APPROVED BY THE TILE OR FLOOR COVERING MANUFACTURER, KEEP SLAB WET FOR 7 DAY MINIMUM
- 15. CONSOLIDATION: ALL CONCRETE SHALL BE VIBRATED AS IT IS BEING PLACED WITH ELECTRICALLY OPERATED VIBRATING FOUIPMENT
- D. TIMBER
- 1. ALL FRAMING LUMBER FOR 4X AND LARGER BEAMS SHALL BE NO. 1 GRADE DOUGLAS FIR., S45, UNLESS NOTED OTHERWISE
- 2. ALL FRAMING LUMBER FOR 2X RAFTERS AND JOISTS SHALL BE NO.2 GRADE DOUGLAS FIR, S45, UNLESS NOTED OTHERWISE
- STRIPPING, BLOCKING, BACKING AND OTHER NON-STRUCTURAL LUMBER SHALL BE NO. 2 OR STD & BTR GRADE DOUGLAS FIR, S45. 2X4 STUD WALLS SHALL BE D.F. STANDARD & BTR.
- 4. ALL BEAMS, JOISTS AND RAFTERS SHALL BE INSTALLED WITH CROWN SIDE UP
- ROOF PLYWOOD SHALL MATCH EXISTING PLYWOOD SHEATHING WITH A SPAN INDEX RATIO 32/16. EDGE NAIL WITH8d AT 6" O.C. UNLESS NOTED OTHERWISE ON PLANS. FIELD NAIL WITH 8d AT 12" O.C.
- PLYWOOD SHEETS SHALL BE LAID WITH THE FACE GRAIN PERPENDICULAR TO SUPPORTS AND WITH THE EDGES STAGGERED. UNLESS NOTED OTHERWISE ON THE
- PLYWOOD SHALL BE GRADE MARKED BY DFPA, TECO, OR PTL AND SHALL CONFORM TO PS 1-83.
- THE MAXIMUM MOISTURE CONTENT OF ALL LUMBER SHALL NOT EXCEED 24% AT THE TIME OF INSTALLATION
- MINIMUM NAILING SHALL COMPLY WITH TABLE 23-1-q OF BUILDING CODE. ALL NAILS SHALL BE COMMON WIRE
- 10. ALL BOLTS SHALL HAVE STANDARD CUT WASHERS UNDER HEADS AND/OR NUTS WHERE IN CONTACT WITH WOOD
- 11. LAG BOLTS SHALL BE SCREWED INTO PLACE, NOT DRIVEN. LAG BOLTS SHALL BE INSTALLED IN PRE-DRILLED HOLES WITH A DIAMETER EQUAL TO 75% DIAMETER OF BOLT
- 12. CONNECTORS: ALL SHEET METAL FRAMING CONNECTORS SHOWN IN THE PLANS SHALL BE STRONG CONNECTORS AS MANUFACTURED BY THE SAMSON COMPANY. SUBSTITUTIONS MAY BE MADE WHEN APPROVED BY THE STRUCTURAL ENGINEER
- 13. ALL LUMBER EXPOSED TO WEATHER OR IN CONTACT WITH MASONRY OR CONCRETE SHALL BE WOLMANIZED PRESSURE TREATED LUMBER OR A NATURALLY DECAY RESISTANT LUMBER SUCH AS REDWOOD OR CEDAR.
- 14. ALASKAN YELLOW CEDAR GLUE-LAMINATED BEAMS A. LUMBER SPECIES: ALASKAN YELLOW CEDAR (A.C.) CONFORMING TO 20F-V12
  - B. STRENGTH PROPERTIES: Fb BOTTOM FIBER BENDING STRESS 2000psi MIN. Fb TOP FIBER BENDING STRESS 1000psi MIN. Fy SHEAR STRESS 190psi MIN.
    - Fc COMPRESSION STRESS PERPENDICULAR TO GRAIN 560psi MIN. MODULUS ELASTICITY 1400ksi MIN.
  - CAMBER TO RADIUS OF 1600° U.O.N.
- ALL GLB'S SHALL BE FABRICATED WITH EXTERIOR
- MANUFACTURE OF GLB'S SHALL CONFORM TO THE
- G. GLU-LAM MATERIAL SHALL BE IN ACCORDANCE WITH ANSI/AITC A190.1 AND ASTM D3737.





## **IINFINIGY**

BELLEVUE, WA 98004

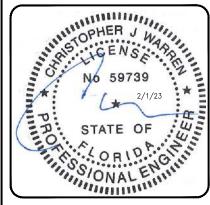
**VERIZON SITE:** MASON SW

ATC SITE: 416988 MASON SW FL

5 SW CUMORAH HILL RD FT. WHITE, FL 32024 **COLUMBIA COUNTY** 

300'-0" GUYED TOWER

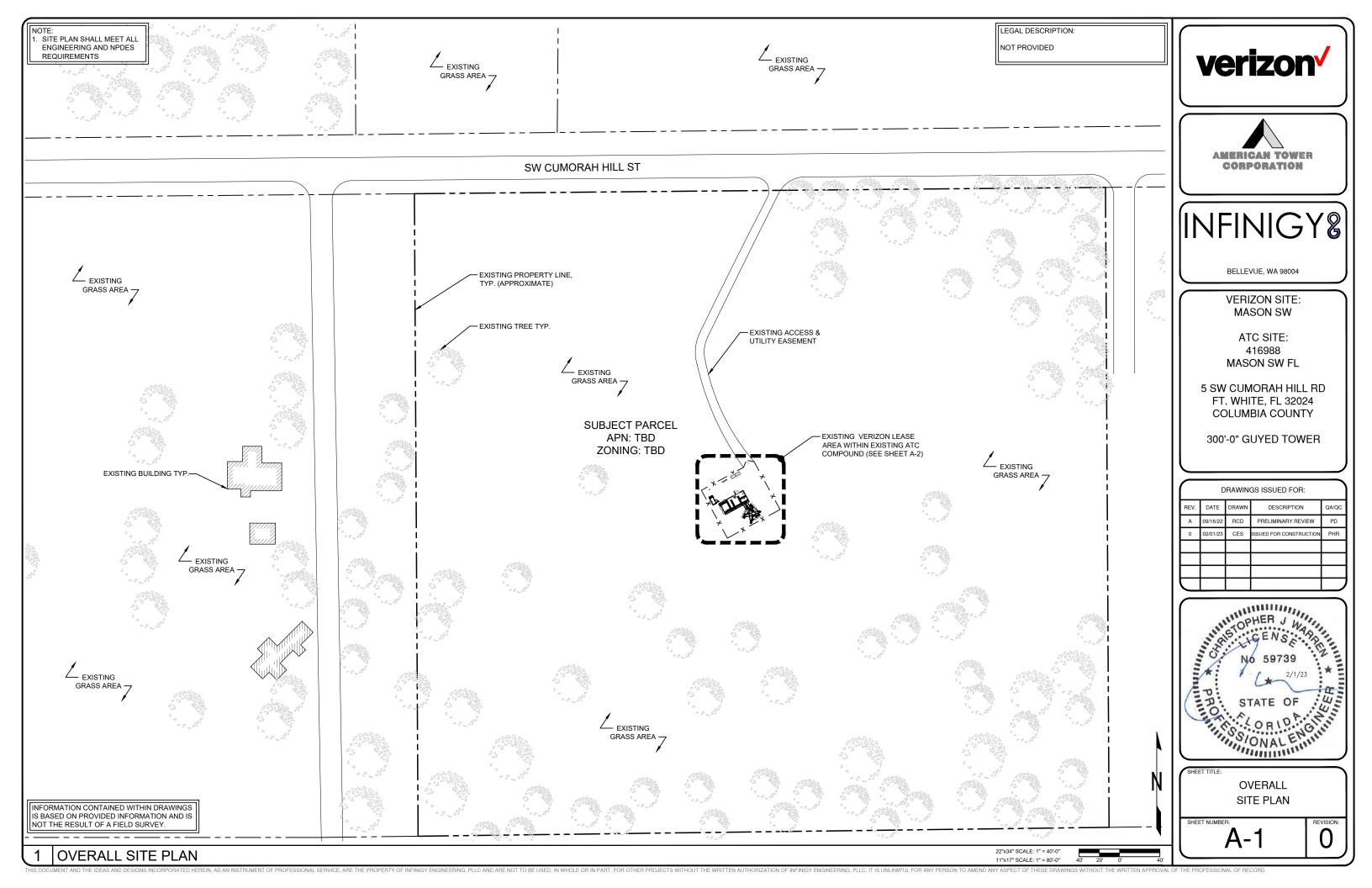
REV.	DATE	DRAWN	DESCRIPTION	QA/QC
Α	09/16/22	RCD	PRELIMINARY REVIEW	PD
0	02/01/23	CES	ISSUED FOR CONSTRUCTION	PHR

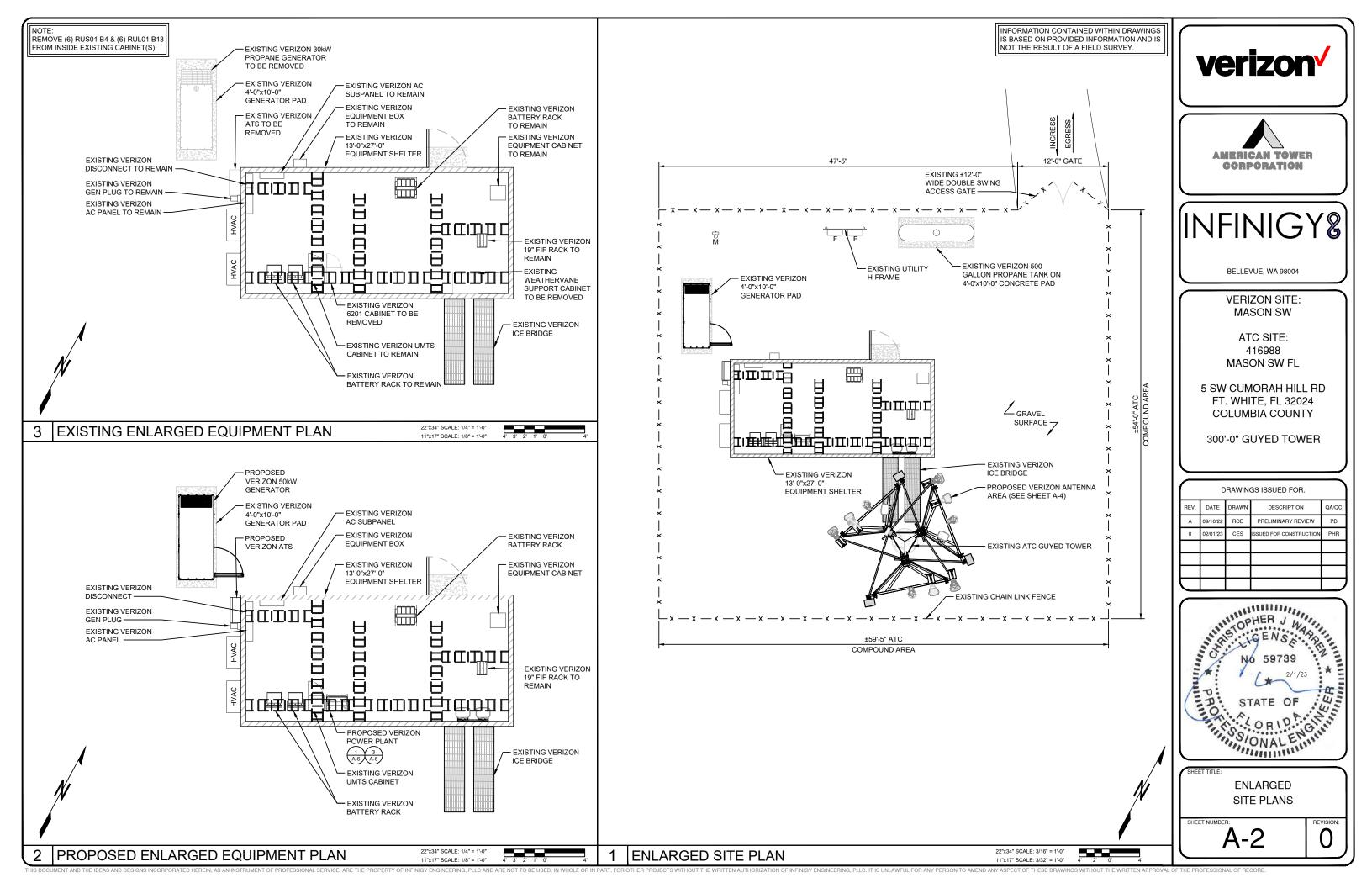


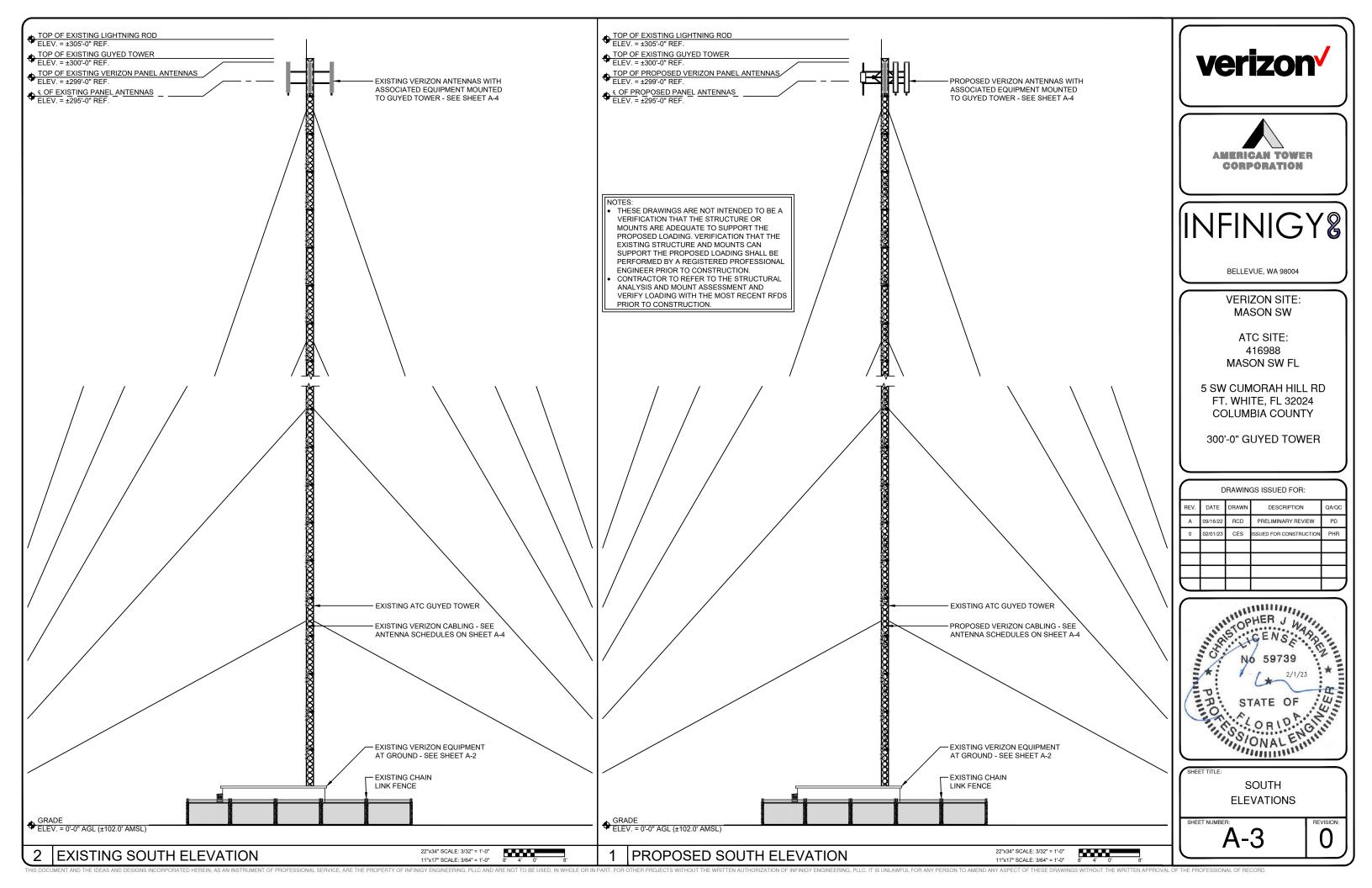
**SPECIFICATIONS** & NOTES

STRUCTURAL SPECIFICATIONS

DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF INFINIGY ENGINEERING, PLLC AND ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR OTHER PROJECTS WITHOUT THE WRITTEN AUTHORIZATION OF INFINIGY ENGINEERING, PLLC. IT IS UNLAWFUL FOR ANY PERSON TO AMEND ANY ASPECT OF THESE DRAWINGS WITHOUT THE WRITTEN APPROVAL OF THE







	EXISTING RF CONFIGURATION SCHEDULE *SEE LATEST RFDS FOR DOWNTILT INFO												
SECTOR	POSITION	TECH.	QTY.	MANUFACTURER	MODEL	RAD CENTER	TIP HEIGHT	AZIMUTH	RET	MECH. DT *	ELEC. DT *	COAX CABLES	HYBRID CABLES
	A1	850 CDMA/AWS LTE	1	CSS	X7CAP-865-22-IP	295'-0"	299'-0"	40°	FALSE				
ALPHA	A2	700 LTE	1	CSS	X7-865-0	295'-0"	299'-0"	40°	FALSE				
ALPHA	A3	850 CDMA/AWS LTE	1	CSS	X7CAP-865-22-IP	295'-0"	299'-0"	40°	FALSE				
	-				-		-		ı				
	B1	850 CDMA/AWS LTE	1	CSS	X7CAP-865-22-IP	295'-0"	299'-0"	140°	FALSE			(18) 1-5/8"	
BETA	B2	700 LTE	1	CSS	X7-865-0	295'-0"	299'-0"	140°	FALSE			`(2) 1/2"	
BEIA	B3	850 CDMA/AWS LTE	1	CSS	X7CAP-865-22-IP	295'-0"	299'-0"	140°	FALSE			(1)	
	-				-		-		ı			CONTROL	
	C1	850 CDMA/AWS LTE	1	CSS	X7CAP-865-22-IP	295'-0"	299'-0"	300°	FALSE				
GAMMA	C2	700 LTE	1	CSS	X7-865-0	295'-0"	299'-0"	300°	FALSE				
GAMINA	C3	850 CDMA/AWS LTE	1	CSS	X7CAP-865-22-IP	295'-0"	299'-0"	300°	FALSE				
					-		-		ı				

**BIAS-TEES** 

RRU'S

(2) RRU3908

OVP'S

RU'S

(2) RUS01 B4, (2) RUL01 B13

(2) RUS01 B4, (2) RUL01 B13

(2) RUS01 B4, (2) RUL01 B13

COMBINERS

LOCATION SECTO

BETA

GAMMA

ALPHA

BETA

GAMMA

ANTENNA

LEVEL

GROUND

LEVEL

TMA'S

	PROPOSED RF CONFIGURATION SCHEDULE *SEE LATEST R FOR DOWNTILT												
SECTOR	POSITION	TECH.	QTY.	MANUFACTURER	MODEL	RAD CENTER	TIP HEIGHT	AZIMUTH	RET	MECH. DT *	ELEC. DT *	COAX CABLES	HYBRID CABLES
	A1	700/850/PCS LTE	1	JMA	MX06FRO860-02	295'-0"	299'-0"	40°	FALSE				
ALPHA	A2	700/850/AWS LTE	1	JMA	MX06FRO860-02	295'-0"	299'-0"	40°	FALSE				
ALPHA	A3	850 CDMA	1	CSS	X7-865-0	295'-0"	299'-0"	40°	FALSE				
	A4	5G L-SUB6 LTE	1	ERICSSON	AIR6449 B77	295'-0"	296'-4"	40°	FALSE				
	B1	700/850/PCS LTE	1	JMA	MX06FRO860-02	295'-0"	299'-0"	140°	FALSE				
BETA	B2	700/850/AWS LTE	1	JMA	MX06FRO860-02	295'-0"	299'-0"	140°	FALSE			(10) 1-5/8"	(2) 12x24
BEIA	B3	850 CDMA	1	CSS	X7-865-0	295'-0"	299'-0"	140°	FALSE			(10) 1-3/0	(Z) 1ZXZ+
	B4	5G L-SUB6 LTE	1	ERICSSON	AIR6449 B77	295'-0"	296'-4"	140°	FALSE				
	C1	700/850/PCS LTE	1	JMA	MX06FRO860-02	295'-0"	299'-0"	300°	FALSE				
GAMMA	C2	700/850/AWS LTE	1	JMA	MX06FRO860-02	295'-0"	299'-0"	300°	FALSE				
GAIVIIVIA	C3	850 CDMA	1	CSS	X7-865-0	295'-0"	299'-0"	300°	FALSE				
	C4	5G L-SUB6 LTE	1	ERICSSON	AIR6449 B77	295'-0"	296'-4"	300°	FALSE				

**BIAS-TEES** 

RRU'S

(1) 4449, (1) 8843

(1) 4449, (1) 8843

(1) 4449, (1) 8843

OVP'S

(2) RVZDC-6627-PF-48

(2) RVZDC-6627-PF-48

22"x34" SCALE: 1/2" = 1'-0"

11"x17" SCALE: 1/4" = 1'-0"

RU'S

COMBINERS

LOCATION SECTOR

BETA

GAMMA

ALPHA

BETA

GAMMA

ANTENNA

GROUND

LEVEL

LEVEL

TMA'S

PROPOSED ANTENNA PLAN





# INFINIGY&

BELLEVUE, WA 98004

**VERIZON SITE:** MASON SW

ATC SITE: 416988 MASON SW FL

5 SW CUMORAH HILL RD FT. WHITE, FL 32024 **COLUMBIA COUNTY** 

300'-0" GUYED TOWER

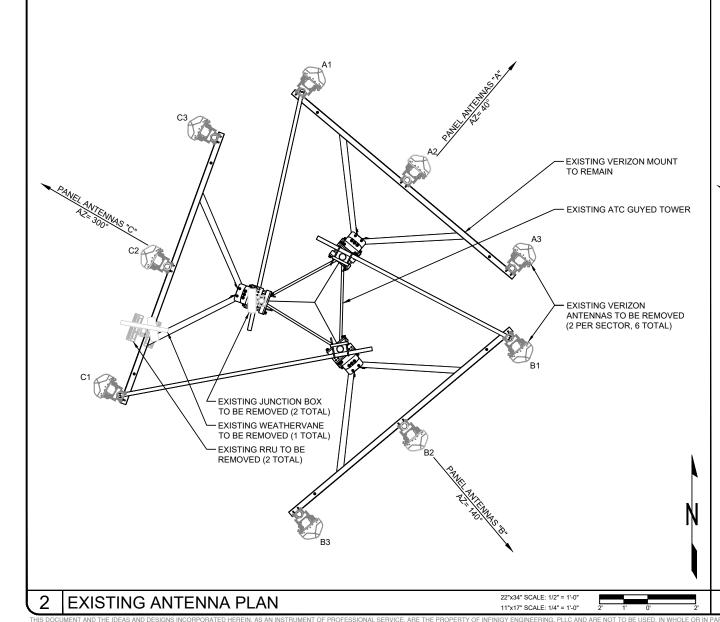
DRAWINGS ISSUED FOR:

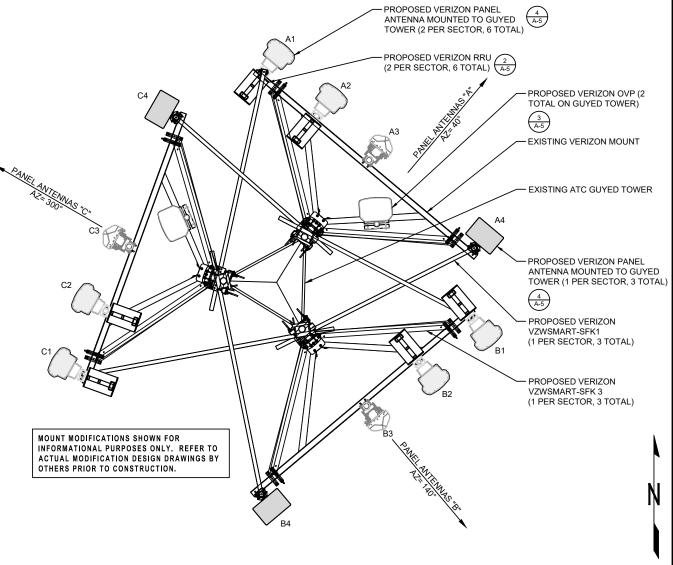
CES

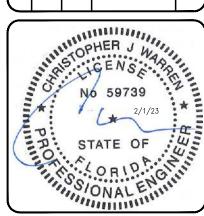
DESCRIPTION

ISSUED FOR CONSTRUCTIO

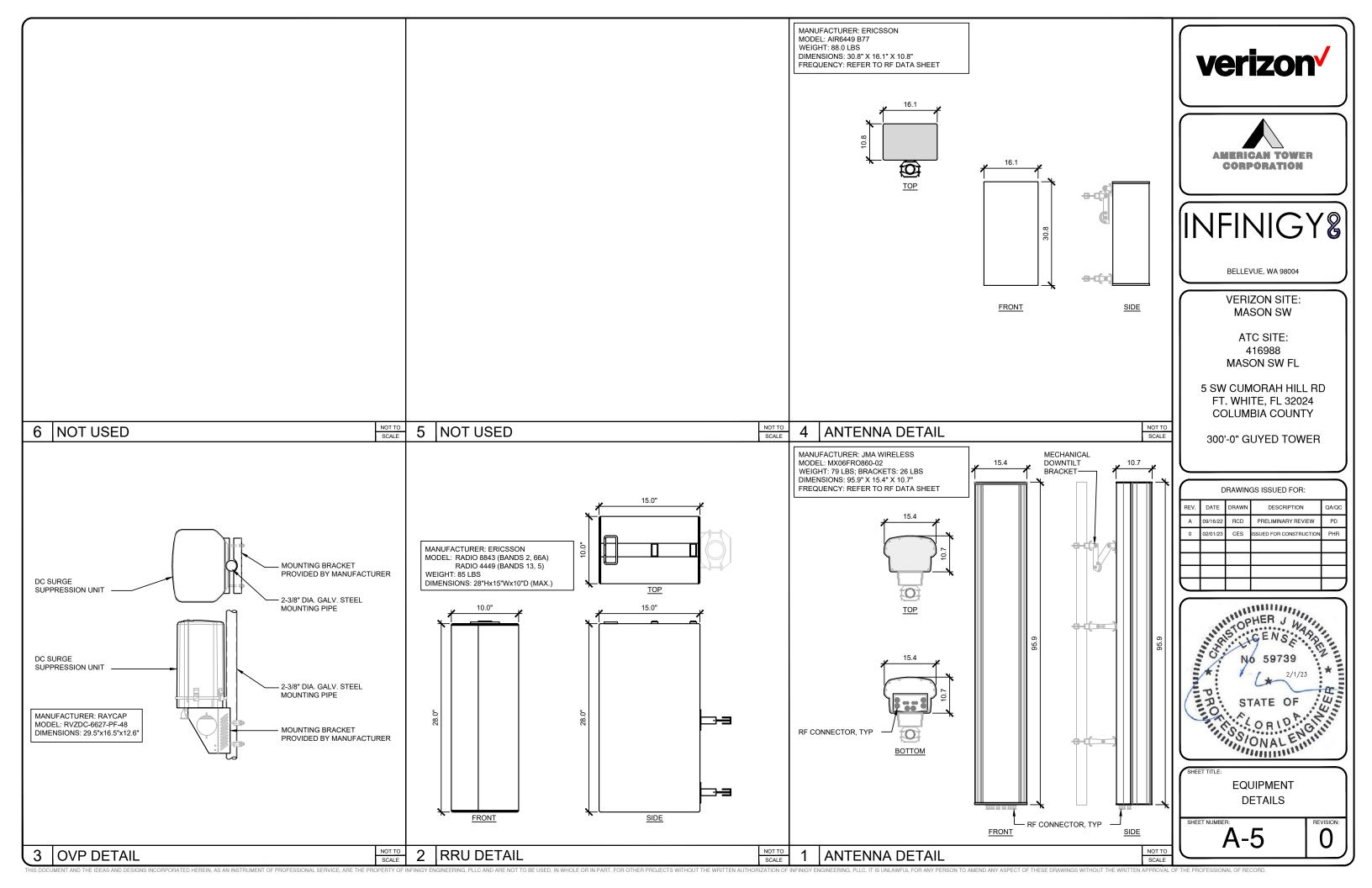
A1 A1	— PROPOSED VERIZON PANEL ANTENNA MOUNTED TO GUYED TOWER (2 PER SECTOR, 6 TOTAL)  — PROPOSED VERIZON RRU (2 PER SECTOR, 6 TOTAL)	4 A-5
C4 A2	A3 2 THE SECTION OF ICE AS	- PROPOSED VERIZON OVP (2 TOTAL ON GUYED TOWER)  (3 A-5) - EXISTING VERIZON MOUNT
PANEL ANTENNAS 'C.	A4	- EXISTING ATC GUYED TOWER
C2	B1	- PROPOSED VERIZON PANEL ANTENNA MOUNTED TO GUYED TOWER (1 PER SECTOR, 3 TOTAL)  4 A-5 - PROPOSED VERIZON VZWSMART-SFK1 (1 PER SECTOR, 3 TOTAL)
MOUNT MODIFICATIONS SHOWN FOR	B2 B3	- PROPOSED VERIZON VZWSMART-SFK 3 (1 PER SECTOR, 3 TOTAL)
INFORMATIONAL PURPOSES ONLY. REFER TO ACTUAL MODIFICATION DESIGN DRAWINGS BY OTHERS PRIOR TO CONSTRUCTION.	SAR RELIGIOUS STATES OF THE SECOND STATES OF THE SE	N
<b>∨</b> B4	•	

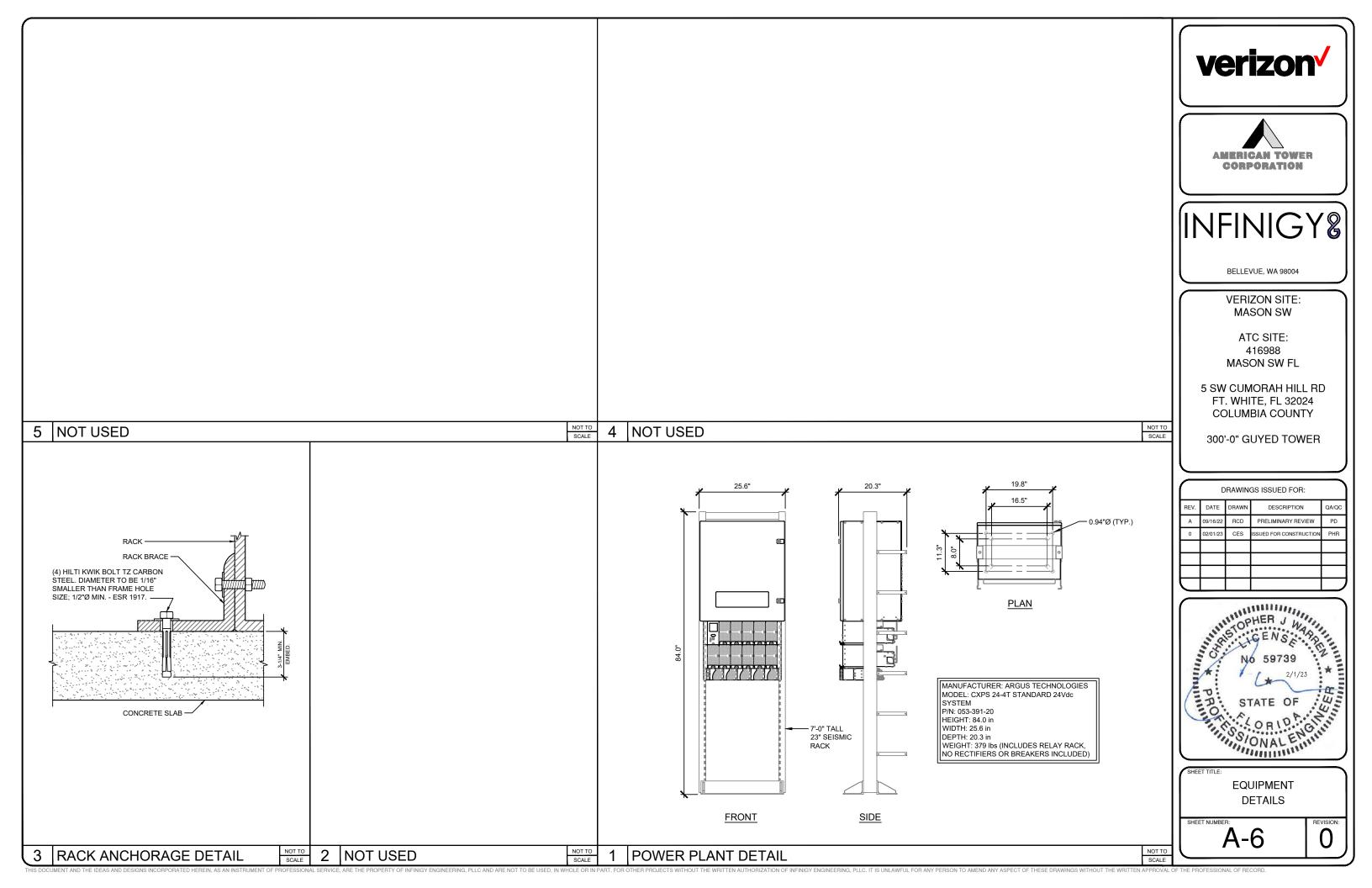






**ANTENNA PLANS** & RF SCHEDULES





# verizon<sup>v</sup>



MASON SW

ATC SITE: 416988

5 SW CUMORAH HILL RD FT. WHITE, FL 32024 **COLUMBIA COUNTY** 

300'-0" GUYED TOWER

	DRAWINGS ISSUED FOR:										
REV.	DATE	DRAWN	DESCRIPTION	QA/Q0							
Α	09/16/22	RCD	PRELIMINARY REVIEW	PD							
0	02/01/23	CES	ISSUED FOR CONSTRUCTION	PHR							

FOR REFERENCE ONLY

**GENERATOR** 

**A-**/ NOT TO

SCALE

# INFINIGY&

BELLEVUE, WA 98004

**VERIZON SITE:** 

MASON SW FL

	DRAWINGS ISSUED FOR:											
REV.	DATE	DRAWN	DESCRIPTION	QA/QC								
Α	09/16/22	RCD	PRELIMINARY REVIEW	PD								
0	02/01/23	CES	ISSUED FOR CONSTRUCTION	PHR								

**SPECIFICATIONS** 

KOHLER Model: KG50

190-600 V

Gas

F----

<u>09001</u> <u>KOHLER</u>

EPA-Certified for 60 Hz Stationary Emergency Applications

**Ratings Range** 

44 44-55 53-66

EPA certification not applicable at 50 Hz

The generator set and its components are prototype-tested, factory-built, and production-tested.

 The 60 Hz generator set offers a UL 2200 listing. The generator set accepts rated load in one step.
The 60 Hz generator set meets NFPA 110, Level 1, when

equipped with the necessary accessories and installed per NFPA standards. A one-year limited warranty covers all generator set systems and components. Two- and five-year extended limited

Kohler Co. provides one-source responsibility for the generating system and accessories.

warranties are also available. Alternator features:

Standard Features

 The unique Fast-Response<sup>®</sup> X excitation system delivers excellent voltage response and short-circuit capability using a rare-earth, permanent magnet (PM)-excited

o The brushless, rotating-field alternator has broadrange

Generat	tor Set F		rushless, rotating nectability.				
			130°C	Natural Gas 130°C Rise Standby Rating		Gas : Rise : Rating	
Alternator	Voltage	Ph	Hz	kW/kVA	Amps	kW/kVA	Amps
	120/208	3	60	53/66	184	53/66	184
	127/220	3	60	53/66	174	53/66	174
	120/240	3	60	53/66	159	53/66	159
	120/240	1	60	53/53	221	53/53	221
	139/240	3	60	53/66	159	53/66	159
	220/380	3	60	53/66	101	53/66	101
	277/480	3	60	53/66	80	53/66	80
4P8X	347/600	3	60	53/66	64	53/66	64
4F6A	110/190	3	50	44/55	168	44/55	168
	115/200	3	50	44/55	159	44/55	159
	120/208	3	50	44/55	153	44/55	153
	110/220	3	50	44/55	145	44/55	145
	110/220	1	50	44/44	200	44/44	200
	220/380	3	50	44/55	84	44/55	84
	230/400	3	50	44/55	80	44/55	80
	240/415	3	50	44/55	77	44/55	77
	120/208	3	60	53/66	184	53/66	184
	127/220	3	60	53/66	174	53/66	174
	120/240	3	60	53/66	159	53/66	159
	120/240	1	60	53/53	221	53/53	221
	139/240	3	60	53/66	159	53/66	159
	220/380	3	60	53/66	101	53/66	101
	277/480	3	60	53/66	80	53/66	80
	347/600	3	60	53/66	64	53/66	64
4P10X	110/190	3	50	44/55	168	44/55	168
	115/200	3	50	44/55	159	44/55	159
	120/208	3	50	44/55	153	44/55	153
	110/220	3	50	44/55	145	44/55	145
	110/220	1	50	44/44	200	44/44	200
	220/380	3	50	44/55	84	44/55	84
	230/400	3	50	44/55	80	44/55	80
	240/415	3	50	44/55	77	44/55	77
1001	120/240	1	60	53/53	221	53/53	221
4Q8X	110/220	1	50	44/44	200	44/44	200
-0.4034	120/240	1	60	53/53	221	53/53	221
4Q10X	110/220	1	50	44/44	200	44/44	200

RATINGS: All three phase units are noted at 0.8 power factor. All single-phase units are noted at 1.0 power factor. Shareby Ratings: The standby rating is applicable to varying loads for the duration of a power outge. There is no overload capability for this rating. Ratings are in accordance with ISO-56261- and ISO-5061-. For limited nursing time and continuous ratings, consult the slacory, collect increases in the continuous ratings, consult the slacory. Collect increases in the present set of manufactor receives the right to change the design or specifications without notice and without any obtigation or liability visibleosever. For dual fael engines, use the relaxed gas ratings for both the printing and secondary fusit.

C4-260 (C658) (2529)

### **Alternator Specifications**

Specifications	Alternator
Manufacturer	Kohler
Type	4-Pole, Rotating-Field
Exciter type	Brushless, Rare-Earth Permanent Magnet
Leads: quantity, type	
4P8X, 4P10X	12, Reconnectable
4Q8X, 4Q10X	4, 110-120/220-240 V
Voltage regulator	Solid State, Volts/Hz
Insulation:	NEMA MG1
Material	Class H
Temperature rise	130°C, Standby
Bearing: quantity, type	1, Sealed
Coupling	Flexible Disc
Amortisseur windings	Full
Voltage regulation, no-load to full-load	Controller Dependent
One-step load acceptance	100% of Rating
Unbalanced load capability	100% of Rated Standby Current
Peak motor starting kVA:	(35% dip for voltages below)
480 V, 400 V 4P8X (12 lead)	255 (60 Hz), 215 (50 Hz)
480 V, 400 V 4P10X (12 lead)	275 (60 Hz), 220 (50 Hz)
240 V, 220 V 4Q8X (4 lead)	120 (60 Hz), 96 (50 Hz)
240 V, 220 V 4Q10X (4 lead)	144 (60 Hz), 121 (50 Hz)

 The unique Fast-Response<sup>™</sup> X excitation system delivers excellent voltage response and short-circuit capability using a rare-earth, permanent magnet (PM)-excited alternator.

The brushless, rotating-field alternator has broadrange

. NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting.

Sustained short-circuit current of up to 300% of the rated current for up to 10 seconds.

Sustained short-circuit current enabling downstream circuit breakers to trip without collapsing the alternator field.

· Self-ventilated and dripproof construction.

## Application Data

Engine	00.11-	E0.15-
Engine Specifications	60 Hz	50 Hz
Manufacturer		hler
Engine: model, type		8 6.2 L
		spiration
Cylinder arrangement Displacement, L (cu. in.)		-8 378)
Bore and stroke, mm (in.)		(4.00 x 3.75)
Compression ratio	101.6 x 95.2c	
Rated rpm	1800	1500
Max, power at rated rpm, kW (HP)	77.0 (103)	64.3 (86)
Cylinder head material		uminum
Piston type and material		Aluminum
Crankshaft material		Iron
Valve (exhaust) material		d Steel
Governor type	Electronic	
Frequency regulation, no-load to full-load	Isochi	onous
Frequency regulation, steady state	±1.	0%
Frequency	Fix	ed
Air cleaner type, all models	D	ry
Exhaust		
Exhaust System	60 Hz	50 Hz
Exhaust manifold type	D	ry
Exhaust flow at rated kW, m3/min. (cfm)	11.7 (414)	9.8 (345)
Exhaust temperature at rated kW, dry		
exhaust, °C (°F)	677 (	1250)
Maximum allowable back pressure,		
kPa (in. Hg)	10.2	(3.0)
Exhaust outlet size at engine hookup,		
mm (in.)	76 (3.	0) OD

**Engine Electrical** gine Electrical System 50 Hz 60 Hz ition system Electronic ttery charging alternator Ground (negative/positive) Volts (DC) Ampere rating 130 rter motor rated voltage (DC) 12 ttery, recommended cold cranking ips (CCA): Qty., rating for - 18°C (0°F) 1.630 tery voltage (DC)

ruei		
Fuel System	60 Hz	50 Hz
Fuel type		s, LP Gas, or I Fuel
Fuel supply line inlet	1 N	PTF
Natural gas fuel supply pressure, kPa (in. H <sub>2</sub> O)	174.0	74 (7-11)
LPG vapor withdrawal fuel supply		, ,
pressure, kPa (in. H <sub>2</sub> O)	1.24-2.	74 (5-11)
Dual fuel engine, LPG vapor withdrawal fuel supply pressure, kPa (in. H <sub>2</sub> O)	1.2	4 (5)
Fuel Composition Limits *	Nat. Gas	LP Gas
Methane, % by volume	90 min.	_
Ethane, % by volume	4.0 max.	_
Propane, % by volume	1.0 max.	85 min.
Propene, % by volume	0.1 max.	5.0 max.
C <sub>4</sub> and higher, % by volume	0.3 max.	2.5 max.
Sulfur, ppm mass Lower heating value,	25	max.
MJ/m <sup>3</sup> (Btu/ft <sup>3</sup> ), min.	33.2 (890)	84.2 (2260)

\* Fuels with other compositions may be acceptable. If your fuel is outside the listed specifications, contact your local distributor for further analysis and advice.

## Operation Requirements

Lubrication

Cooling

Radiator System

engine, L (gal.)

Lubricating System

Oil pan capacity, L (qt.) §
Oil pan capacity with filter, L (qt.) §
Oil filter: quantity, type §

Ambient temperature, °C (°F) \*

Engine jacket water capacity, L (gal.)

Radiator system capacity, including

Engine, L. (gai.)
Engine jacket water flow, Lpm (gpm)
Heat rejected to cooling water at rated
kW, dry exhaust, kW (Btu/min.)

Water pump type Fan diameter, including blades, mm (in.)

Fan, kWm (HP)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H<sub>2</sub>O)

Kohler recommends the use of Kohler Genuine oil and filters

Air Requirements	60 Hz	50 Hz
Radiator-cooled cooling air,		
m³/min. (scfm) †	136 (4800)	113 (4000)
Combustion air, m3/min. (cfm)	4.6 (163)	3.9 (136)
Heat rejected to ambient air:		
Engine, kW (Btu/min.)	30.9 (1760)	26.5 (1510)
Alternator, kW (Btu/min.)	7.7 (440)	6.9 (390)
† Air density = 1.20 kg/m3 (0.075 lbm/ft3)	, ,	, ,

Enclosure with enclosed silencer reduces ambient temperature capability by 5°C (9°F).

60 Hz

60 Hz

5.7 (6.0) 7.1 (7.5)

1. Cartridge

50 (122) 7.3 (1.93)

20.8 (5.5) 129 (34.1) 108 (28.5)

61.7 (3510) 53.3 (3030)

Centrifugal 533 (21)

2.2 (2.9) 1.3 (1.7)

50 Hz

Fuel Consumption ‡	60	Hz	50	Hz	
Natural Gas, m <sup>3</sup> /hr. (cf	Standby Ratings				
100%		24.9	(879)	20.4	(721)
75%		19.7	(696)	14.8	(524)
50%		13.9	(490)	9.8	(345)
25%		7.9	(277)	5.8	(204)
LP Gas, m3/hr. (cfh) at	% load	Standby Ratings			
100%		9.5	(337)	8.5	(300)
75%		7.6	(267)	5.7	(199)
50%		5.1	(178)	4.2	(146)
25%		3.2	(113)	2.7	(96)
Nominal fuel rating:	Natural gas, 3 LP vapor, 93 N				

LP vapor conversion factors: 8.58 ft.3 = 1 lb. 0.535 m<sup>3</sup> = 1 kg. 36.39 ft.<sup>3</sup> = 1 gal.

MANUFACTURER: KOHLER MODEL: KG50 DIMENSIONS W/O ENCLOSURE: 86.6"x40.9"x46.1" WEIGHT W/O ENCLOSURE: 1900 LBS (MAX.) DIMENSIONS W/ ENCLOSURE: 101.0"x40.9"x53.7" WEIGHT W/ ENCLOSURE: 2438 LBS (MAX.)

ensions and Weights

Overall Size, L x W x H, mm (in.): 2200 x 1040x 1170 (86.6 x 40.9 x 46.1) 2200 x 864 x 1170 (86.6 x 34.0 x 46.1) Narrow Skid Weight (radiator model), wet, kg (lb.):

Controllers

APM402 Controller
Provides advanced control, system monitoring, and system diagnostics

for optimum performance and compatibility.

Digital display and menu control provide easy local data access

Measurements are selectable in metric or English units

Remote communication thru a PC via network or serial configuration

Controller supports Modbus® protocol

Integrated hybrid voltage regulator with ±0.5% regulation

Built-in alternator thermal overload protection

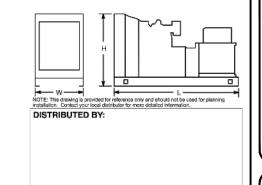
NFPA 110 Level 1 capability

Refer to 66-161 for additional controller features and accessories

Refer to G6-161 for additional controller features and accessories.

50 Hz for optimum performance and compatibility.

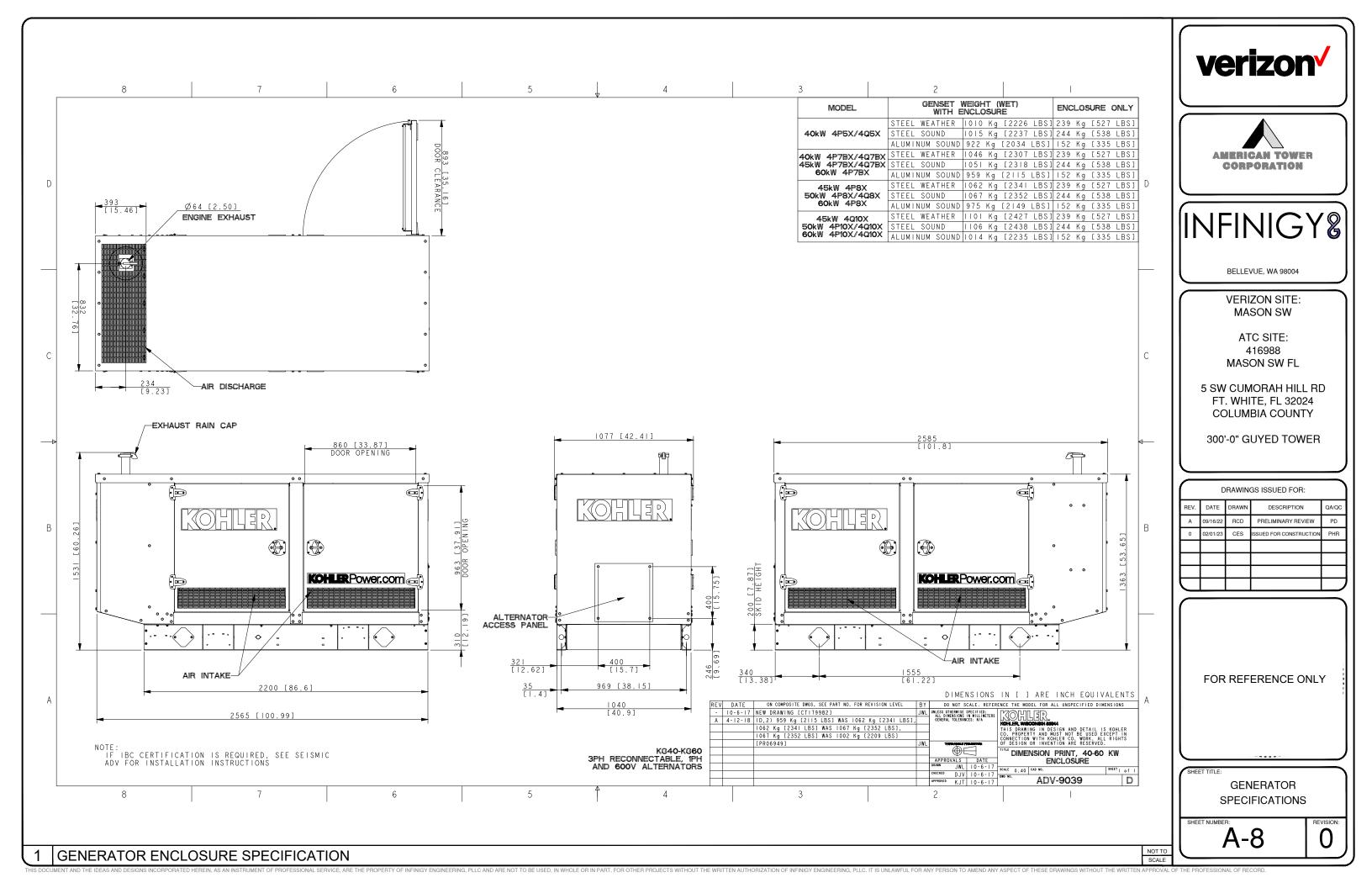
G20 (O

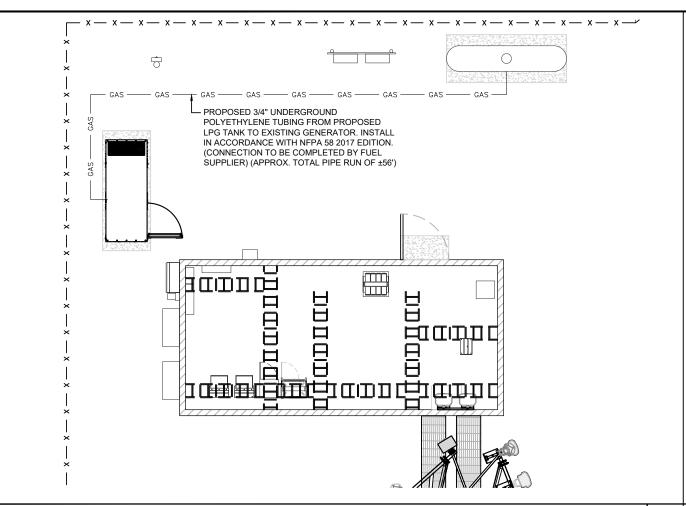


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**GENERATOR SPECIFICATION** 

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PROPOSED GRADE PROPOSED GRADE MATCH EXISTING GRADE SURFACE MATCH EXISTING GRADE SURFACE GEOTEXTILE FABRIC -GEOTEXTILE FABRIC WARNING TAPE WARNING TAPE COMPACTED TRENCH BACKFILL COMPACTED TRENCH BACKFILL COMPACTED MATERIAL COMPACTED MATERIAL 2 CONDUITS -VARIES 4 CONDUITS --VARIES 1'-6" (MIN.)

verizon



# |INFINIGY&

BELLEVUE, WA 98004

**VERIZON SITE:** MASON SW

ATC SITE: 416988 MASON SW FL

5 SW CUMORAH HILL RD FT. WHITE, FL 32024 **COLUMBIA COUNTY** 

300'-0" GUYED TOWER

GENERATOR ENCLOSURE SPECIFICATION

2 UTILITY TRENCH DETAILS

PROPOSED FILL POINT PROPOSED 500 PROPOSED 3/4" UNDERGROUND POLYETHYLENE TUBING FROM PROPOSED LPG TANK TO EXISTING GENERATOR. INSTALL IN ACCORDANCE WITH NFPA 58 2017 EDITION. GALLON LP TANK (CONNECTION TO BE COMPLETED BY FUEL SUPPLIER) (APPROX. TOTAL PIPE RUN OF ±56') EXISTING 30 kW GENERATOR FIF REQUIRED - PROPOSED 2ND REGULATOR, SHUTOFF VALVE, AND (2) CAPPED TEE FITTINGS (OUTSIDE GENERATOR)

GAS PIPING NOTES FOR LINE BETWEEN ND STAGE REGULATOR & GENERATOR GAS, 7TH EDITION, AND NFPA 58, 2017 DITION, FBC AMD.SEC.107.7.1):

- PIPING (EFFECTIVE LENGTH) = < 36' 2. FUEL DEMAND OF GENERATOR = 136 MBH
- 3. BTU CAPACITY OF PIPING SYSTEM = 136,000 BTU/HR
- 4. ABOVE GROUND GALVANIZED PIPING SHALL BE GALVANIZED STEEL PIPING PER ASME
- 5. ALL GAS PIPING MATERIALS AND INSTALLATION TO BE IN ACCORDANCE WITH 2017 FLORIDA BUILDING CODE FUEL GAS 6TH EDITION 2017
- GENERATOR SHALL BE EQUIPPED WITH A MANUAL AND AN AUTOMATIC SHUT-OFF VALVE PER NFPA 37, SECTION 5.4.

		DRAWINGS ISSUED FOR:								
	REV.	DATE	DRAWN	DESCRIPTION	QA/Q0					
	Α	09/16/22	RCD	PRELIMINARY REVIEW	PD					
l	0	02/01/23	CES	ISSUED FOR CONSTRUCTION	PHR					
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FOR REFERENCE ONLY

**FUEL** 

**DETAILS** 

NOT TO SCALE

FUEL DETAIL

### NOTES:

INSTALLATION SHALL COMPLY WITH THE 2020 FLORIDA BUILDING CODE, FUEL GAS CODE, 7th EDITION, AND NFPA 58, 2014 EDITION, FBC ADM.SEC.107.7.1

FIELD VERIFY MEASUREMENTS AND ROUTE OF FUEL PIPING, NOTIFY ENGINEER AND PROJECT CPM OF DISCREPANCIES.

FOR OTHER THAN POLYETHYLENE PIPE, EXPOSED GAS PIPING SHALL BE IDENTIFIED BY A YELLOW LABEL MARKED "GAS" IN BLACK LETTERS. THE MARKING SHALL BE SPACED AT INTERVALS NOT EXCEEDING 5 FEET (1524mm). THE MARKING SHALL NOT BE REQUIRED ON PIPE LOCATED IN THE SAME ROOM AS THE FOUIPMENT SERVED.

PIPING SHALL BE MARKED WITH AN APPROVED PERMANENT IDENTIFICATION BY THE INSTALLER SO THAT THE PIPING SYSTEM SUPPLIED BY EACH METER IS READILY IDENTIFIABLE.

STEEL AND WROUGHT-IRON PIPE SHALL BE AT LEAST OF STANDARD WEIGHT (SCHEDULE 40) AND SHALL COMPLY WITH ONE OF THE FOLLOWING STANDARDS:

- ASME B 36.10, 10M
- ASTM A 53
- ASTM A 106

STEEL TUBING SHALL COMPLY WITH ASTM A 254 OR ASTM A 539.

CORRUGATED STAINLESS STEEL TUBING SHALL BE TESTED AND LISTED IN COMPLIANCE WITH THE CONSTRUCTION, INSTALLATION AND PERFORMANCE REQUIREMENTS OF ANSI LC 1/CSA 6.26.

COPPER TUBING SHALL COMPLY WITH STANDARDS TYPE K OR L OF ASTM B 88 OR ASTM B 280. COPPER AND BRASS TUBING SHALL NOT BE USED IF THE GAS CONTAINS MORE THAN AN AVERAGE OF 0.3 GRAINS OF HYDROGEN SULFIDE PER 100 STANDARD CUBIC FEET OF GAS (0.7 MILLIGRAMS PER 100 LITERS).

PLASTIC PIPE, TUBING AND FITTINGS SHALL BE USED OUTSIDE, UNDERGROUND, ONLY, AND SHALL CONFORM TO ASTM D 2513. PIPE SHALL BE MARKED "GAS" AND "ASTM D 2513".

THE USE OF PLASTIC PIPE, TUBING AND FITTINGS IN UNDILLUTED LIQUEFIED PETROLEUM GAS PIPING SYSTEMS SHALL BE IN ACCORDANCE WITH NFPA 58.

WHERE IN CONTACT WITH MATERIAL OR ATMOSPHERE EXERTING A CORROSIVE ACTION, METALLIC PIPING AND FITTINGS COATED WITH A CORROSION—RESISTANT MATERIAL SHALL BE USED. EXTERNAL OR INTERNAL COATINGS OR LININGS USED ON PIPING OR COMPONENTS SHALL NOT BE CONSIDERED AS ADDING STRENGTH.

METALLIC PIPE AND FITTING THREADS SHALL BE TAPER PIPE THREADS AND SHALL COMPLY WITH ASMI B1.20.1.

PIPE JOINTS SHALL BE THREADED, FLANGED, BRAZED OR WELDED. WHERE NONFERROUS PIPE IS BRAZED THE BRAZING MATERIALS SHALL HAVE A MELTING POINT IN EXCESS OF 1,000°F (538°C). BRAZING ALLOYS SHALL NOT CONTAIN MORE THAN 0.05-PERCENT PHOSPHORUS.

METALLIC FITTINGS, INCLUDING VALVES, STRAINERS AND FILTERS, SHALL COMPLY WITH THE FOLLOWING: 1. THREADED FITTINGS IN SIZES LARGER THAN 4 INCHES (102 MM) SHALL NOT BE USED EXCEPT WHERE APPROVED.

2. FITTINGS USED WITH STEEL OR WROUGHT-IRON PIPE SHALL BE STEEL, BRASS, BRONZE, MALLEABLE IRON OR CAST IRON.

PLASTIC PIPE, TUBING AND FITTINGS SHALL BE JOINED IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS. SUCH JOINT SHALL COMPLY WITH THE FOLLOWING.

- 1. THE JOINT SHALL BE DESIGNED AND INSTALLED SO THAT THE LONGITUDINAL PULL-OUT RESISTANCE OF THE JOINT WILL BE AT LEAST EQUAL TO THE TENSILE STRENGTH OF THE PLASTIC PIPING MATERIAL.
- HEAT-FUSION JOINTS SHALL BE MADE IN ACCORDANCE WITH QUALIFIED PROCEDURES THAT HAVE BEEN ESTABLISHED AND PROVEN BY TEST TO PRODUCE GAS—TIGHT JOINTS AT LEAST AS STRONG AS THE PIPE OR TUBING BEING JOINED. JOINTS SHALL BE MADE WITH THE JOINING METHOD RECOMMENDED BY THE PIPE MANUFACTURER. HEAD FUSION FITTINGS SHALL BE MARKED "ASTM D 2513".
- 3. WHERE COMPRESSION-TYPE MECHANICAL JOINTS ARE USED, THE GASKET MATERIAL IN THE FITTING SHALL BE COMPATIBLE WITH THE PLASTIC PIPING AND WITH THE GAS DISTRIBUTED BY THE SYSTEM. AN INTERNAL TUBULAR RIGID STIFFENER SHALL BE USED IN CONJUNCTION WITH THE FITTING. THE STIFFENER SHALL BE FLUSH WITH THE END OF THE PIPE OR TUBING AND SHALL EXTEND AT LEAST TO THE OUTSIDE END OF THE PIPE OR TUBING AND AT LEAST TO THE OUTSIDE END OF THE COMPRESSION FITTING WHEN INSTALLED. THE STIFFENER SHALL BE FREE OF ROUGH OR SHARP EDGES AND SHALL NOT BE A FORCE FIT IN THE PLASTIC, SPLIT TUBULAR STIFFENERS SHALL NOT BE USED.
- 4. PLASTIC PIPING JOINTS AND FITTINGS FOR USE IN LIQUEFIED PETROLEUM GAS PIPING SYSTEMS SHALL BE IN ACCORDANCE WITH NFPA 58.

METALLIC PIPE OR TUBING EXPOSED TO CORROSIVE ACTION, SUCH AS SOIL CONDITION OR MOISTURE, SHALL BE PROTECTED IN AN APPROVED MANNER. ZINC COATINGS (GALVANIZING) SHALL NOT BE DEEMED ADEQUATE PROTECTION FOR GAS PIPING UNDERGROUND. FERROUS METAL EXPOSED IN EXTERIOR LOCATIONS SHALL BE PROTECTED FROM CORROSION IN A MANNER SATISFACTORY TO THE CODE OFFICIAL. WHERE DISSIMILAR METALS ARE JOINED UNDERGROUND, AN INSULATING COUPLING OR FITTING SHALL BE USED. PIPING SHALL NOT BE LAID IN CONTACT WITH CINDERS.

ALL PIPING INSTALLED OUTDOORS SHALL BE ELEVATED NO LESS THAN 3-1/2" INCHES (152 MM) ABOVE GROUND AND WHERE INSTALLED ACROSS ROOF SURFACES, SHALL BE ELEVATED NOT LESS THAN 3-1/2" INCHES (152 MM) ABOVE THE ROOF SURFACE, PIPING INSTALLED ABOVE GROUND, OUTDOORS, AND INSTALLED ACROSS THE SURFACE OF ROOFS SHALL BE SECURELY SUPPORTED AND LOCATED WHERE IT WILL BE PROTECTED FROM PHYSICAL DAMAGE. WHERE PASSING THROUGH AN OUTSIDE WALL, THE PIPING SHALL ALSO BE PROTECTED AGAINST CORROSION BY COATING OR WRAPPING WITH AN INERT MATERIAL. WHERE PIPING IS ENCASED IN A PROTECTIVE PIPE SLEEVE, THE ANNULAR SPACE BETWEEN THE PIPING AND THE SLEEVE SHALL BE SEALED.

UNDERGROUND PIPING SYSTEMS SHALL BE INSTALLED A MINIMUM DEPTH OF 12 INCHES (305 MM) BELOW GRADE. THE TRENCH SHALL BE GRADED SO THAT THE PIPE HAS A FIRM, SUBSTANTIALLY CONTINUOUS BEARING ON THE BOTTOM OF THE TRENCH

PLASTIC PIPE SHALL BE INSTALLED OUTSIDE UNDERGROUND ONLY. PLASTIC PIPE SHALL NOT BE USED WITHIN OR UNDER ANY BUILDING OR SLAB OR BE OPERATED AT PRESSURES GREATER THAN 100 PSIG (689 KPA) FOR NATURAL GAS OR 30 PSIG (207 KPA) FOR LP-GAS.

AN INSULATED COPPER TRACER WIRE OR OTHER APPROVED CONDUCTOR SHALL BE INSTALLED ADJACENT TO UNDERGROUND NONMETALLIC GAS PIPING. ACCESS SHALL BE PROVIDED TO THE TRACER WIRE OR THE TRACER WIRE SHALL TERMINATE ABOVE GROUND AT EACH END OF THE NONMETALLIC GAS PIPING. THE TRACER WIRE SIZE SHALL NOT BE LESS THAN 12 AWG AND THE INSULATION TIPE SHALL BE SUITABLE FOR DIRECT BURIAL.

- MP PRESSURE REGULATORS SHALL COMPLY WITH THE FOLLOWING:

  1. THE MP REGULATOR SHALL BE APPROVED AND SHALL BE SUITABLE FOR THE INLET AND OUTLET GAS PRESSURES FOR THE APPLICATION
- 2. THE MP REGULATOR SHALL MAINTAIN A REDUCED OUTLET PRESSURE UNDER LOCKUP (NO-FLOW) CONDITIONS.
- 3. THE CAPACITY OF THE MP REGULATOR, DETERMINED BY PUBLISHED RATINGS OF ITS MANUFACTURER, SHALL BE ADEQUATE TO SUPPLY THE APPLIANCES SERVED.
- THE MP PRESSURE REGULATOR SHALL BE PROVIDED WITH ACCESS. WHERE LOCATED INDOORS, THE REGULATOR SHALL BE VENTED TO THE OUTDOORS OR SHALL BE EQUIPPED WITH A LEAK-LIMITING DEVICE. PRESSURE REGULATORS THAT REQUIRE A VENT SHALL HAVE AN INDEPENDENT VENT TO THE OUTSIDE OF THE BUILDING. THE VENT SHALL BE DESIGNED TO PREVENT THE ENTRY OF WATER OR FOREIGN OBJECTS. REGULATORS EQUIPPED WITH AND LABELED FOR UTILIZATION WITH APPROVED VENT-LIMITED DEVICES INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- 5. A TEE FITTING WITH ONE OPENING CAPPED OR PLUGGED SHALL BE INSTALLED BETWEEN THE MP REGULATOR AND ITS UPSTREAM SHUTOFF VALVE. SUCH TEE FITTING SHALL BE POSITIONED TO ALLOW CONNECTION OF A PRESSURE-MEASURING INSTRUMENT AND TO SERVE AS A SEDIMENT TRAP.
- 6. A TEE FITTING WITH ONE OPENING CAPPED OR PLUGGED SHALL BE INSTALLED NOT LESS THAN 10 PIPE DIAMETERS DOWNSTREAM OF THE MP REGULATOR OUTLET. SUCH TEE FITTING SHALL BE POSITIONED TO ALLOW CONNECTION OF A PRESSURE-MEASURING INSTRUMENT.

### PRESSURE TESTS:

TEST PRESSURE SHALL BE MEASURED WITH A MANOMETER OR WITH PRESSURE-MEASURING DEVICE DESIGNED AND CALIBRATED TO READ, RECORD, OR INDICATE A PRESSURE LOSS CAUSED BY LEAKAGE DURING THE PRESSURE TEST PERIOD. THE SOURCE OF PRESSURE SHALL BE ISOLATED BEFORE THE PRESSURE TESTS ARE MADE. MECHANICAL GAUGES USED TO MEASURE TEST PRESSURES SHALL HAVE A RANGE SUCH THAT THE HIGHEST END OF THE SCALE IS NOT GREATER THAN FIVE TIMES THE TEST

THE TEST PRESSURE TO BE USED SHALL BE NO LESS THAN ONE AND A HALF TIMES THE PROPOSED MAXIMUM WORKING PRESSURE, BUT NO LESS THAN 3 PSIG (20 KPA GAUGE) IRRESPECTIVE OF DESIGN PRESSURE. WHERE THE TEST PRESSURE EXCEEDS 125 PSIG (862 KPA GAUGE), THE TEST PRESSURE SHALL NOT EXCEED A VALUE THAT PRODUCES A HOOP STRESS IN THE PIPING GREATER THAN 50 PERCENT OF THE SPECIFIED MINIMUM YIELD STRENGTH OF THE PIPE.

TEST DURATION SHALL BE NOT LESS THAT 1/2" HOUR FOR EACH 500 CUBIC FEET (14 CUBIC METERS) OF PIPE VOLUME OR FRACTION THEREOF. WHEN TESTING A SYSTEM HAVING A VOLUME LESS THAN 10 CUBIC FEET (0.28 CUBIC METERS) OR A SYSTEM IN A SINGLE-FAMILY DWELLING. THE TEST DURATION SHALL BE NOT LESS THAN 10 MINUTES. THE DURATION OF THE TEST SHALL NOT BE REQUIRED TO EXCEED 24 HOURS.

DIRECTION OF LEAKS AND DEFECTS

THE PIPING SYSTEM SHALL WITHSTAND THE TEST PRESSURE SPECIFIED WITHOUT SHOWING ANY EVIDENCE OF LEAKAGE OR OTHER DEFECTS.

ANY REDUCTION OF TEST PRESSURES AS INDICATED BY PRESSURE GAUGES SHALL BE DEEMED TO INDICATE THE PRESENCE OF A LEAK UNLESS SUCH REDUCTION CAN BE READILY ATTRIBUTED TO SOME OTHER CAUSE.

1. FUEL PIPE TO BE ATTACHED TO SLAB WITH 304 STAINLESS STEEL UNISTRUT PIPE CLAMPS AND CHANNEL.

DESIGN	
DELIVERY PRESSURE	11" - 14" H20
PIPE RUN (METER TO GENERATOR)	N/A
DESIGN FLOWRATE (100% LOAD)(LIQUID PROPANE GENERATOR)	136 CF/HR
GENERATOR OPERATING PRESSURE	11" - 14" H20

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– EQUIVALENT PIPE LENGTH





## ||NFINIG

BELLEVUE, WA 98004

**VERIZON SITE:** MASON SW

ATC SITE: 416988 MASON SW FL

5 SW CUMORAH HILL RD FT. WHITE, FL 32024 **COLUMBIA COUNTY** 

300'-0" GUYED TOWER

i	DRAWINGS ISSUED FOR:							
	REV.	DATE	DRAWN	DESCRIPTION	QA/QC			
	Α	09/16/22	RCD	PRELIMINARY REVIEW	PD			
	0	02/01/23	CES	ISSUED FOR CONSTRUCTION	PHR			
	0	02/01/23	CES	ISSUED FOR CONSTRUCTION	PHR			

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**FUEL NOTES** 

SCALE

## TABLE 402.4(35) POLYETHYLENE PLASTIC PIPE

Gas	Undiluted Propane
Inlet Pressure	
Pressure Drop	
Specific Gravity	1.50

PIPE SIZE (inch)								
Nominal OD	1/2	3/4	1	11/4	11/ <sub>2</sub>	2	3	4
Designation	SDR 9	SDR 11	SDR 11	SDR 10	SDR 11	SDR 11	SDR 11	SDR 1
Actual ID	0.660	0.860	1.077	1.328	1.554	1.943	2.864	3.682
Length (ft)			Ca	pacity in Thousa	nds of Btu per He	our		
10	340	680	1,230	2,130	3,210	5,770	16,000	30,900
20	233	468	844	1,460	2,210	3,970	11,000	21,200
30	187	375	677	1,170	1,770	3,180	8,810	17,000
40	160	321	580	1,000	1,520	2,730	7,540	14,600
50	142	285	514	890	1,340	2,420	6,680	12,900
60	129	258	466	807	1,220	2,190	6,050	11,700
70	119	237	428	742	1,120	2,010	5,570	10,800
80	110	221	398	690	1,040	1,870	5,180	10,000
90	103	207	374	648	978	1,760	4,860	9,400
100	98	196	353	612	924	1,660	4,590	8,900
125	87	173	313	542	819	1,470	4,070	7,900
150	78	157	284	491	742	1,330	3,690	7,130
175	72	145	261	452	683	1,230	3,390	6,560
200	67	135	243	420	635	1,140	3,160	6,100
250	60	119	215	373	563	1,010	2,800	5,410
300	54	108	195	338	510	916	2,530	4,900
350	50	99	179	311	469	843	2,330	4,510
400	46	92	167	289	436	784	2,170	4,190
450	43	87	157	271	409	736	2,040	3,930
500	41	82	148	256	387	695	1.920	3,720

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square inch = 6.895 kPa, 1 inch water column = 0.2488 kPa, 1 British thermal unit per hour = 0.2931 W, 1 cubic foot per hour = 0.0283 m³/h, 1 degree = 0.01745 rad.

Note: Table entries have been rounded to three significant digits.



### Pro-Poly™ **Underground Gas Distribution System**

	Table 4						
Gas:	Undiluted	Propane [LP]		Specific Gravity:	1.52		
Gas Pressure:	11 ir	i. w.c.		Pressure Drop:	0.5 in. w.c.		
INTENDED USE: PE PI	pe Sizina Between integ	yral Second-Stage Regula	tor at Tank or Second-Sta	ge [Low-Pressure] Regula	tor and Building.		
IPS Pipe Size	3/4"	1"	1-1/4"	1-1/2"	2"		
SDR	11	11	11	11	11		
Pipe Length [feet]	$\overline{}$	Capacit	y in CUBIC FEET pe	r HOUR			
10'	680	1,230	2,130	3,210	5,770		
20'	468	844	1,460	2,210	3,970		
30'	375	677	1,170	1,770	3,180		
40'	321	580	1,000	1,520	2,730		
50'	285	514	890	1,340	2,420		
60'	258	466	807	1,220	2,190		
70'	237	428	742	1,120	2,010		
80'	221	398	690	1,040	1,870		
90'	207	374	648	978	1,760		
100'	196	353	612	924	1,660		
125'	173	313	542	819	1,470		
150'	157	284	491	742	1,330		
175'	145	261	452	683	1,230		
200'	135	243	420	635	1,140		
250'	119	215	373	563	1,010		
300'	108	195	338	510	916		
350'	99	179	311	469	843		
400'	92	167	289	436	784		
450'	87	157	271	409	736		
500'	82	148	256	387	695		





## INFINIGY&

BELLEVUE, WA 98004

**VERIZON SITE:** MASON SW

ATC SITE: 416988 MASON SW FL

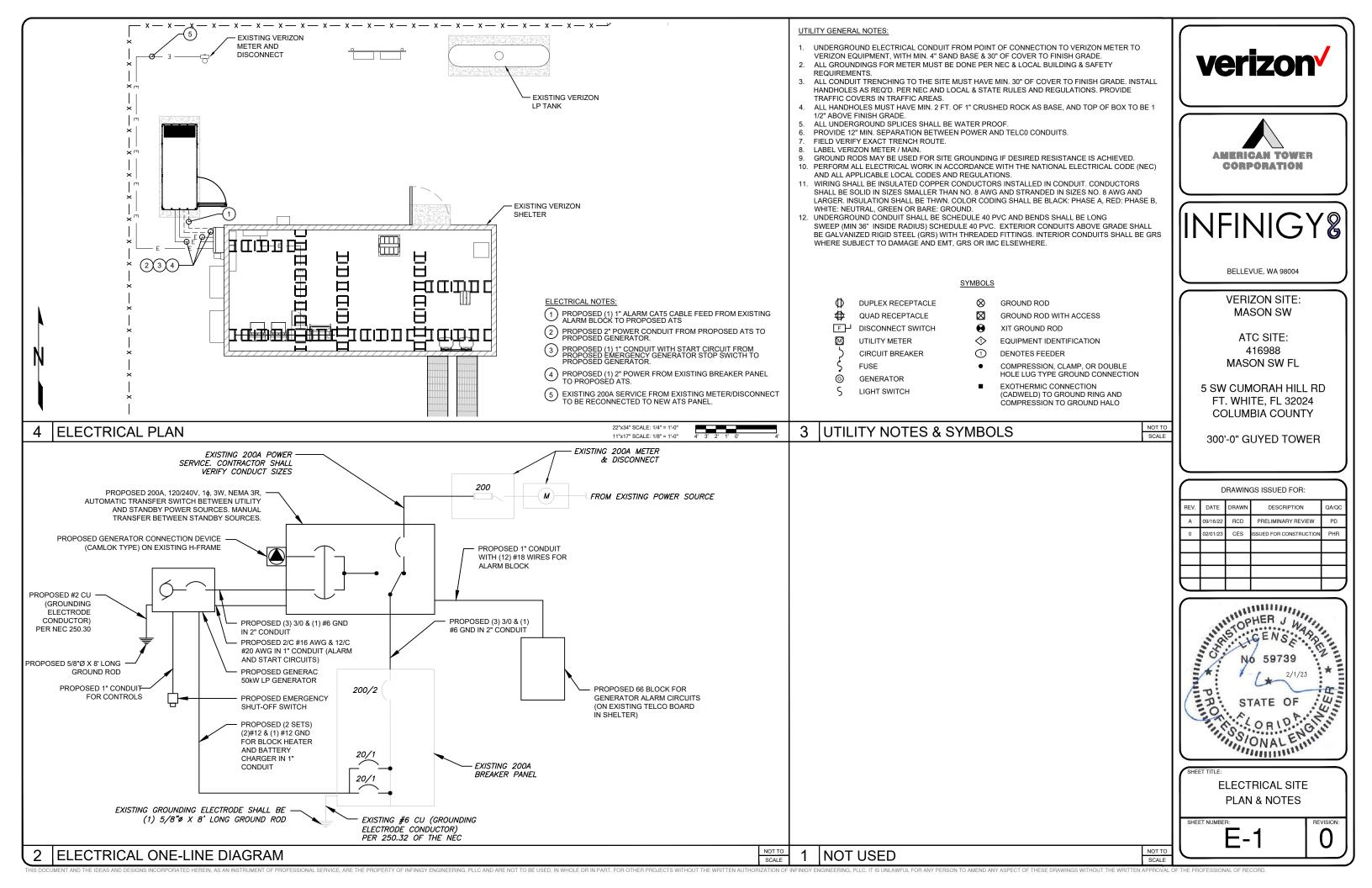
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300'-0" GUYED TOWER

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**PIPING** SIZE CHARTS



### **GROUNDING KEYED NOTES:**

- 1) GUYED TOWER GROUND BUS BAR AT BASE OF GUYED TOWER WITH COAX GROUND KIT. SEE DETAIL 5/G-2 FOR GROUND BAR CONSTRUCTION, SEE DETAIL 9/G-2 FOR GROUND WIRE CONNECTIONS, AND SEE DETAIL 1/G-2 FOR COAX GROUNDING
- 2) #2 AWG GROUND FROM GUYED TOWER GROUND BUS BAR TO GUYED TOWER GROUND RING (TYP OF (2) PLACES).
- (3) ANTENNA GROUND BUS BAR AT ANTENNA LEVEL OF GUYED TOWER WITH COAX GROUND KIT. SEE DETAIL 5/G-2 FOR GROUND BAR CONSTRUCTION, SEE DETAIL 9/G-2 FOR GROUND WIRE CONNECTIONS, AND SEE DETAIL 4/G-2 FOR COAX GROUNDING.
- (4) #6 AWG GROUND FROM ANTENNA / RRU / OVP TO ANTENNA GROUND BUS BAR.
- (5) EQUIPMENT GROUND BUS BAR MOUNTED TO EQUIPMENT SHELTER. SEE DETAIL 5/G-2 FOR GROUND BAR CONSTRUCTION AND FOR GROUND WIRE CONNECTIONS. SEE DETAIL 9/G-2.
- 6 #2 AWG GROUND FROM EQUIPMENT GROUND BAR TO EXTERNAL GROUND RING (TYP OF (2)

ELECTRICAL SYMBOLS

GROUND ROD WITH ACCESS

CADWELD TYPE CONNECTION

- REPRESENTS DETAIL NUMBER

REFERENCE SHEET NUMBER

COMPRESSION TYPE CONNECTION

CHEMICAL GROUND ROD

DISCONNECT SWITCH

CIRCUIT BREAKER

GROUNDING WIRE

GROUND ROD

METER

 $\boxtimes$ 

- (7) #6 AWG GROUND FROM EQUIPMENT TO EQUIPMENT SHELTER GROUND SYSTEM, TYP.
- (8) #2 AWG GROUND FROM GENERATOR TO GROUND RING (TYP)

### **GROUNDING NOTES:**

- 1. CONTRACTOR SHALL CAREFULLY REVIEW GROUNDING NOTES AND CONSULT WITH TOWER OWNER FOR SITE SPECIFIC CONDITIONS IF THERE SHOULD BE ANY FURTHER CLARIFICATIONS NEEDED.
- 2. VERIZON GROUNDING LEADS COMING FROM BOTH ANTENNAS AND COAX GROUND KITS SHALL BE DIRECTED TO DEDICATED VERIZON BUS BARS AND FOR A POLE OR TOWER. SHALL BE LOCATED UP ON A GIVEN POLE OR TOWER NEAR THE BOTTOM OF ANTENNAS, BEING DIRECTLY FASTENED TO THE STRUCTURE WITH STAINLESS STEEL HARDWARE AND / OR ANGLE ADAPTERS (E.G. PIROD / VALMONT GROUNDING BUS BAR PART NUMBER B2981 [VERIZON CONSTRUCTION MANAGER SHALL CONFIRM BUS BAR PART PRIOR TO CONTRACTOR PURCHASE OF PART] BEING ANCHORED TO A MOUNTING BRACKET KIT FOR B2372 OR EQUIVALENT OR BEING MOUNTED WITH UNIVERSAL CLAMP NUMBER B1852 OR EQUIVALENT [W/O CHERRY INSULATORS]).
- 3. ANCHORING OF VERIZON UPPER BUS BAR SHALL NOT EMPLOY THE USE OF DRILLING. WELDING OR CUTTING INTO THE EXISTING STRUCTURE (ALL NEW ATTACHMENT BRACKETS SHALL BE CLAMPED OR MECHANICALLY FASTENED TO STRUCTURE).
- 4. FOR A METAL POLE OR TOWER, VERIZON ANTENNA AND COAX GROUND LEADS SHALL TERMINATE AT UPPER BUS BAR W/O INSULATORS AT THE NEAR ANTENNA LOCATION WITH LEADS NOT CONTINUING DOWN THE POLE SHAFT OF TOWER LEG (TOWER STRUCTURE SHALL SERVE AS GROUNDING MEDIUM IN ORDER TO ENSURE THAT ALL EQUIPMENT ON THE TOWER IS ON THE SAME GROUND POTENTIAL MAINTAINING ONE COMMON GROUND PLANE).
- 5. FOR A POLE OR TOWER, A SECOND VERIZON BUS BAR <u>WITH</u> STAND OFF INSULATORS (E.G. PIROD / VALMONT GROUNDING BUS BAR PART NUMBER B2981 [VERIZON CONSTRUCTION MANAGER SHALL CONFIRM BUS BAR PART PRIOR TO CONTRACTOR PURCHASE OF PART] BEING ANCHORED TO A MOUNTING BRACKET KIT FOR B2372 OR EQUIVALENT OR BEING MOUNTED WITH UNIVERSAL CLAMP NUMBER B1852 OR EQUIVALENT <u>[WITH</u> STANDOFF CHERRY INSULATORS]) SHALL BE ADDED AT THE BASE OF THE TOWER TO CAPTURE ANY ADDITIONAL TOWER SURFACE LIGHTNING RESIDUAL SHEETING WITH A DEDICATED VERIZON GROUND LEAD BEING DIRECTED TO GROUND AND ATTACHED TO THE EXISTING TOWER GROUND RING (FINAL LOCATION OF BOTTOM OF TOWER GROUND BUS BAR SHALL BE APPROVED BY TOWER REPRESENTATIVE PRIOR TO INSTALLATION)
- VERIZON GROUND LEAD FROM LOWER VERIZON BUS BAR SHALL BE NO. 2 OR 2/0 AWG WIRE AND SHALL BE ATTACHED TO EXISTING POLE / TOWER GROUND RING WITH PARALLEL THRU WIRE MOLD (E.G. PIROD / VALMONT PART NUMBER 171791 OR EQUIVALENT)
- 7. VERIZON GROUND LEADS MAY NOT BE ATTACHED TO EXISTING GROUND RINGS WITH ANY CONFIGURATION OTHER THAN THE "PARALLEL THRU WIRE MOLD" WITH THE LEAD SWEEPING INTO THE GROUND RING IN THE CONFIGURATION SHOWN ON THE GROUNDING PLAN.
- 8. VERIZON GROUND LEADS FROM BOTH ANTENNAS AND COAX GROUND KITS WHERE THERE IS AN ESTABLISHED GROUND BUS BAR POSITIONED AT THE TOP OF A NONCONDUCTIVE POLE OR STRUCTURE (E.G. WOOD UTILITY POLES, PRE-CAST CONCRETE POLES, BUILDINGS, FIBERGLASS STRUCTURES, ETC.) SHALL EMPLOY THE USE OF SEPARATE GROUND LEAD CONDUCTORS RUNNING DOWN THE POLE OR STRUCTURE TO A BUS BAR AT THE BASE OF THE POLE OR STRUCTURE AND FURTHER RUNNING INTO AN EXISTING GROUND RING.

-FOR CLARITY, NOT ALL ANTENNA SECTORS ARE CALLED OUT. -ANTENNA/RRU GROUNDING IS TYPICAL FOR ALL SECTORS.





BELLEVUE, WA 98004

**VERIZON SITE:** MASON SW

ATC SITE: 416988 MASON SW FL

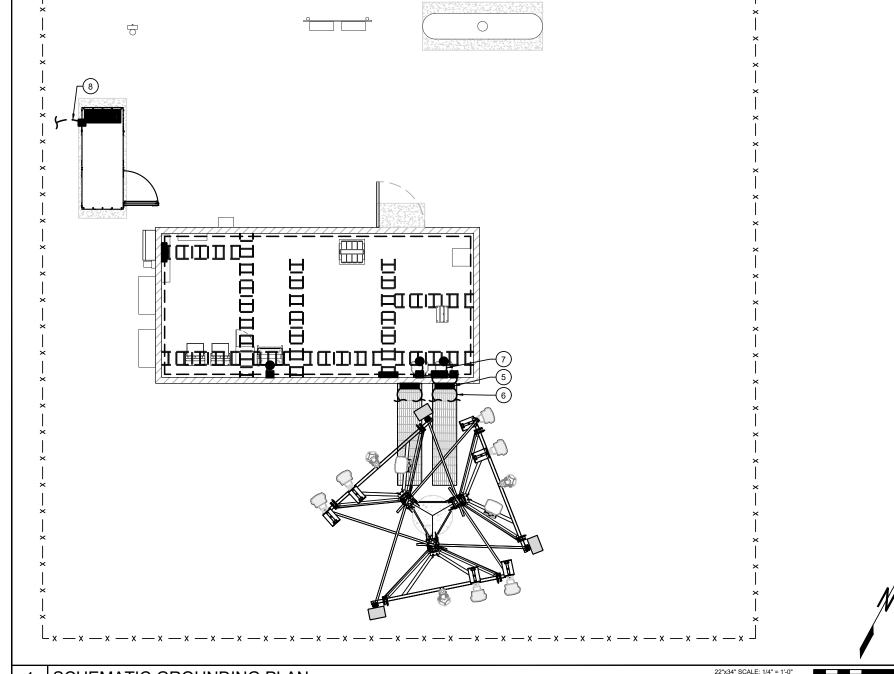
5 SW CUMORAH HILL RD FT. WHITE, FL 32024 **COLUMBIA COUNTY** 

300'-0" GUYED TOWER

DRAWINGS ISSUED FOR:				
REV.	DATE	DRAWN	DESCRIPTION	QA/QC
Α	09/16/22	RCD	PRELIMINARY REVIEW	PD
0	02/01/23	CES	ISSUED FOR CONSTRUCTION	PHR



SCHEMATIC GROUNDING PLAN & NOTES



### **ABBREVIATIONS**

AMERICAN WIRE GAUGE BARE COPPER WIRE **BCW** DWG DRAWING **EMT** ELECTRICAL METALLIC TUBING GEN IGR INTERIOR GROUND RING (HALO) IMC

INTERMEDIATE METALLIC CONDUIT MGB MASTER GROUND BAR PCS PERSONAL COMMUNICATION SYSTEM POWER TRANSFER SWITCH

PTS RIGID (SCH. 40) POLYVINYL PVC CHLORIDE CONDUIT

RGS RIGID GALVANIZED STEEL RWY **RACEWAY** 

SCHEMATIC GROUNDING PLAN

11"x17" SCALE: 1/8" = 1'-0"

