

	SITE NAME:	SITE F	рното	PREPARED BY:
46	ERWIN RADIO BLDG <u>SITE NUMBER:</u> NCDUN017 <u>SITE ADDRESS:</u> 5 RED HILL CHURCH ROAD	PROPOSED SIT		ENGINEERED TOWER BOLUTIONS, PLLC 3227 WELLINGTON COURT RALEIGH, NC 27615
	DUNN, NC 28334	*		o: 919-782-2710, f: 919-435-0631 www.engineeredtowersolutions.com
	_ATITUDE & LONGITUDE:			PREPARED FOR:
N J				DUKE
=T #'S	SHEET TITLES			ENERGY
_1 #0		- And the ball	En las	
	SUBVEY		T -716	
· GN-3			TTT F	
· GN_7		The Broker of the		
10			i had body	SITE NUMBER: NCDUN017
1.1	TEMPORARY SITE PLAN			
1.2	FINAL SITE PLAN			DUNN, NC 28334
1.3	DETAILED SITE PLAN			35.3350617, -78.555769°
1.4	DIMENSIONED SITE PLAN		Care And	SEAL:
-2	TOWER ELEVATION		A State of the second s	6B FE SIONA
3.1	ANTENNA SCHEDULE	All construction music comply with current NG building Codes and is subject to field inspection and verification.	62	SEAL 7
3.2	TRANSMISSION LINE SCHEDULE	APPROVED Limited building only review Permit holder responsible for full complements with the only	<u>)(</u> '	027825
3.3	ANTENNA LAYOUTS	01/28/2021 Bull		TB STOINEER
3.4	ANTENNA LAYOUTS	01/28/2021	NORTH CAROLINA	OPHER MAN
4.1	SHELTER DETAILS			
4.2	SHELTER FOUNDATION DETAILS	SITE SU	IMMARY	0 11/05/2020 CONSTRUCTION
4.3	GENERATOR DETAILS	SITE TYPE:	NEW CONSTRUCTION	1 12/14/2020 CLIENT COMMENTS
4.4	PROPANE TANK DETAILS	STRUCTURE TYPE:	SELF SUPPORT	
4.5	ICE BRIDGE DETAILS	STRUCTURE OWNER:	DUKE ENERGY	
4.6	FENCE DETAILS	ANTENNA SITE REG. NO.:	1310171	
-1	ELECTRICAL NOTES	STRUCTURE HEIGHT (AGL):	308' ±	
-2	SHELTER PANEL SCHEDULE	OCCUPANCY TYPE:	UTILITY & MISCELLANEOUS (U)	
-3	ELECTRICAL PLAN	STRUCTURE LATITUDE:	N 35° 20' 06.22" (35.335061)	
-4	ONE-LINE DIAGRAM	STRUCTURE LONGITUDE:	W 78° 39' 20.77" (-78.655769)	
-5	ALARM WIRING DETAILS	JURISDICTION:	HARNETT COUNTY	
-6	FIBER ROUTING PLAN	COUNTY:	HARNETT	SHEET TITLE:
i-1	GROUNDING PLANS	PARCEL ID:	021507 9002	
-2	GROUNDING DETAILS I	GROUND ELEV. (AMSL):	204'	TITLE PAGE
-3	GROUNDING DETAILS II	POWER PROVIDER:	DUKE ENERGY	
-4	GROUNDING DETAILS III	TELCO PROVIDER	TBD	SHEET # T-1 CURRENT REV #:1 ETS #: 204581.AE.02 ETS #: 204581.AE.02



GRAPHIC SCALE IN FEET

SCALE: 1'' = 30'

SURVEYOR CERTIFICATION

I HEREBY CERTIFY THAT THIS MAP IS CORRECT AND WAS DRAWN UNDER MY DIRECT SUPERVISION. ANY VISIBLE ENCROACHMENTS ARE SHOWN HEREON.

H G. DARRELL TAYLOR, NORTH CAROLINA PROFESSIONAL LAND SURVEYOR #L-3729 POINT TO POINT LAND SURVEYORS, INC.

THIS MAP MAY NOT BE A CERTIFIED SURVEY AND HAS NOT BEEN REVIEWED BY A LOCAL GOVERNMENT AGENCY FOR COMPLIANCE WITH ANY APPLICABLE LAND DEVELOPMENT REGULATIONS AND HAS NOT BEEN REVIEWED FOR COMPLIANCE WITH RECORDING REQUIREMENTS FOR PLATS.



* THIS SPECIFIC PURPOSE SURVEY WAS PREPARED FOR THE EXCLUSIVE USE OF ENGINEERED TOWER SOLUTIONS, PLLC. BOUNDARY INFORMATION SHOWN HEREON HAS BEEN COMPILED FROM TAX MAPS AND DEED DESCRIPTIONS ONLY. NO BOUNDARY SURVEY OF THE PARENT PARCEL WAS PERFORMED.

THIS DRAWING DOES NOT REPRESENT A BOUNDARY SURVEY.

THIS SPECIFIC PURPOSE SURVEY WAS PREPARED WITHOUT BENEFIT OF A TITLE REPORT WHICH MAY REVEAL ADDITIONAL CONVEYANCES, EASEMENTS, OR RIGHTS-OF-WAY NOT SHOWN HEREON.

EQUIPMENT USED FOR ANGULAR & LINEAR MEASUREMENTS: LEICA TPS 1200 ROBOTIC & GEOMAX ZENITH 35. [DATE OF LAST FIELD VISIT: 10/30/2020]

THE 1' CONTOURS AND SPOT ELEVATIONS SHOWN ON THIS SPECIFIC PURPOSE SURVEY ARE ADJUSTED TO NAVD 88 DATUM (COMPUTED USING GEOID18) AND HAVE A VERTICAL ACCURACY OF \pm 0.5'. CONTOURS OUTSIDE THE IMMEDIATE SITE AREA ARE

BEARINGS SHOWN ON THIS SPECIFIC PURPOSE SURVEY ARE BASED ON NC GRID NORTH (NAD 83) NORTH CAROLINA ZONE.

PER THE FEMA FLOODPLAIN MAPS, THE SITE IS LOCATED IN AN AREA DESIGNATED AS ZONE X (AREA OF MINIMAL FLOOD HAZARD). COMMUNITY PANEL NO. : 3720150600J DATED: 10/03/2006

NO WETLAND AREAS HAVE BEEN INVESTIGATED BY THIS SPECIFIC PURPOSE SURVEY.

ALL ZONING INFORMATION SHOULD BE VERIFIED WITH THE PROPER ZONING OFFICIALS.

ANY UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM ABOVE GROUND ANY UNDERGROUND UTILITIES SHOWN HAVE BEEN LUCATED FROM ABOVE GROUND FIELD SURVEY INFORMATION. THE SURVEYOR MAKES NO GLABANTESS THAT ANY UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER INSERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT ANY UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED ANY UNDERGROUND UTILITIES.



DATE: 11/05/2020



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rse Number: C-4145 strors Trace, Ste. 103 e City, GA 30269 65.4440 (f) 678.565.44



SPECIFIC PURPOSE SURVEY PREPARED FOR:



ENGINEERED TOWER SOLUTIONS, PLLC 8774 YATES DRIVE, SUITE 150 WESTMINSTER, CO 80031

ERWIN

TOWNSHIP OF DUKE, HARNETT COUNTY, NORTH CAROLINA

SHEET:

OF 1

GENERAL NOTES	GENERAL NOTES	ANTENNA MOUNTIN
1. ALL SITE WORK SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS AND CARRIER PROJECT SPECIFICATIONS.	21. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF	40. DESIGN AND CONSTRUCTION OF ANTENNA SUPPORTS SHA ANSI/TIA-222 OR APPLICABLE LOCAL CODES.
2. GENERAL CONTRACTOR SHALL VISIT THE SITE AND SHALL FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS, DIMENSIONS, AND SHALL CONFIRM THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE REDUCHT TO THE ATTENTION OF THE ENCIPEER DRIOR TO THE COMMENCEMENT OF	THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS SHALL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION, B) CONFINED SPACE, C) ELECTRICAL SAFETY, AND D) TRENCHING & EXCAVATION.	 ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABF WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS O PRODUCTS", UNLESS NOTED OTHERWISE. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE S
 SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. GENERAL CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF WORK. 	22. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED, CAPPED, PLUGGED OR OTHERWISE DISCONNECTED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE RESPONSIBLE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE OWNER AND/OR LOCAL UTILITIES.	 ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) (HARDWARE", UNLESS NOTED OTHERWISE. 43. DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY ACCORDANCE WITH ASTM A780.
4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES, AND APPLICABLE REGULATIONS.	23. THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION.	44. ALL ANTENNA MOUNTS SHALL BE INSTALLED WITH LOCK N SHALL BE TORQUED TO MANUFACTURER'S RECOMMENDA 45. CONTRACTOR SHALL INSTALL ANTENNA PER MANUFACTUR
 UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED IN THESE DRAWINGS. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE 	24. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE FEDERAL AND LOCAL JURISDICTION FOR EROSION AND SEDIMENT CONTROL.	FOR INSTALLATION AND GROUNDING. 46. PRIOR TO SETTING ANTENNA AZIMUTHS AND DOWNTILTS, SHALL CHECK THE ANTENNA MOUNT FOR TIGHTNESS AND PLUMB. ANTENNA AZIMUTHS SHALL BE SET FROM TRUE NO
ONLY UNLESS OTHERWISE NOTED. DIMENSIONS SHOWN ARE TO FINISHED SURFACES UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS THE MINIMUM REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS, SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR	25. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUNDING. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.	WITHIN +/- 5% AS DEFINED BY THE RFDS. ANTENNA DOWN 0.5% AS DEFINED BY THE RFDS. REFER TO ND-00246.
OBTAINING A CLARIFICATION FROM THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT	26. THE SUBGRADE SHALL BE BROUGHT TO A SMOOTH UNIFORM GRADE AND COMPACTED	
 WORK AND PREPARED BY THE ENGINEER PRIOR TO PROCEEDING WITH WORK. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH 	TO 95 PERCENT STANDARD PROCTOR DENSITY UNDER PAVEMENT AND STRUCTURES AND 80 PERCENT STANDARD PROCTOR DENSITY IN OPEN SPACE. ALL TRENCHES IN PUBLIC RIGHT OF WAY SHALL BE BACKFILLED WITH FLOWABLE FILL OR OTHER MATERIAL PRE-APPROVED BY THE LOCAL JURISDICTION.	 47. ALL RF CONNECTIONS SHALL BE TIGHTENED BY A TORQUE 48. ALL RF CONNECTIONS, GROUNDING HARDWARE AND ANTE HAVE A TORQUE MARK INSTALLED IN A CONTINUOUS STRA
 MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE. 8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN IN THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE 	27. ALL NECESSARY RUBBISH, STUMPS, DEBRIS, STICKS, STONES, AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LAWFUL MANNER.	SIDES OF THE CONNECTION. A. RF CONNECTION BOTH SIDES OF THE CONNECTOR. B. GROUNDING AND ANTENNA HARDWARE ON THE NUT S THREADS TO THE SOLID SURFACE, EXAMPLE OF SOLID
ENGINEER PRIOR TO PROCEEDING. 9. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF WORK AREA, ADJACENT AREAS AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFORM TO ALL OSHA REQUIREMENTS AND THE LOCAL	28. ALL BROCHURES, OPERATING AND MAINTENANCE MANUALS, CATALOGS, SHOP DRAWINGS, AND OTHER DOCUMENTS SHALL BE TURNED OVER TO THE GENERAL CONTRACTOR AT COMPLETION OF CONSTRUCTION AND PRIOR TO PAYMENT.	ANTENNA BRACKET METAL. 49. ALL 8M ANTENNA HARDWARE SHALL BE TIGHTENED TO 9 L
JURISDICTION. 10. GENERAL CONTRACTOR SHALL COORDINATE WORK AND SCHEDULE WORK ACTIVITIES WITH OTHER DISCIPLINES.	29. CONTRACTOR SHALL SUBMIT A COMPLETE SET OF AS-BUILT REDLINES TO THE GENERAL CONTRACTOR UPON COMPLETION OF PROJECT AND PRIOR TO FINAL PAYMENT.	 50. ALL 12M ANTENNA HARDWARE SHALL BE TIGHTENED TO 43 51. ALL GROUNDING HARDWARE SHALL BE TIGHTENED UNTIL COLLAPSES AND THE GROUNDING HARDWARE IS NO LONG
11. ERECTION SHALL BE DONE IN WORKMANLIKE MANNER BY COMPETENT EXPERIENCED WORKMAN	30. CONTRACTOR SHALL LEAVE PREMISES IN A CLEAN CONDITION.	52. ALL DIN TYPE CONNECTIONS SHALL BE TIGHTENED TO 18-
IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST ACCEPTED PRACTICE. ALL MEMBERS SHALL BE LAID PLUMB AND TRUE AS INDICATED IN THE DRAWINGS.	31. THE PROPOSED FACILITY WILL BE UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SEWER SERVICE, AND IS NOT FOR HUMAN HABITAT (NO HANDICAP ACCESS REQUIRED).	53. ALL N TYPE CONNECTIONS SHALL BE TIGHTENED TO 15-20
LOCAL JURISDICTION. CONTRACTOR SHALL KEEP AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DEBRIS.	32. STRUCTURE IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION, APPROXIMATELY 2 TIMES PER MONTH, BY CARRIER TECHNICIANS.	
13. THE SCOPE OF WORK FOR THIS PROJECT IS REPRESENTED BY DARK SHADED LINES AND NOTES. CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR OF ANY EXISTING CONDITIONS THAT DEVIATE FROM THE DRAWINGS PRIOR TO BEGINNING CONSTRUCTION	33. NO OUTDOOR STORAGE OR SOLID WASTE CONTAINERS ARE PROPOSED.	
14. CONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO THE CONSTRUCTION MANAGER 48 HOURS PRIOR TO THE COMMENCEMENT OF WORK.	34. ALL MATERIAL SHALL BE FURNISHED AND WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST CARRIER GROUNDING STANDARD. IN CASE OF A CONFLICT BETWEEN THE CONSTRUCTION SPECIFICATION AND THE DRAWINGS, THE DRAWINGS SHALL CONSTRUCTION SPECIFICATION AND THE DRAWINGS, THE	
15. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.	35. CONTRACTORS SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS REQUIRED FOR CONSTRUCTION. IF CONTRACTOR CANNOT OBTAIN A	
16. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.	PERMIT, THEY MUST NOTIFY THE GENERAL CONTRACTOR IMMEDIATELY.	
17. GENERAL CONTRACTOR SHALL COORDINATE AND MAINTAIN ACCESS FOR ALL TRADES AND CONTRACTORS TO THE SITE AND/OR BUILDING.	BASIS.	
18. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SECURITY OF THE SITE FOR THE DURATION OF CONSTRUCTION UNTIL JOB COMPLETION.	37. INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM SITE VISITS AND/OR DRAWINGS PROVIDED BY THE SITE OWNER. CONTRACTORS SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.	
19. THE GENERAL CONTRACTOR SHALL MAINTAIN IN GOOD CONDITION ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDENDA, AND CHANGE ORDERS ON THE PREMISES AT ALL TIMES.	38. ALL CABLE INSTALLATIONS TO FOLLOW MANUFACTURER'S INSTRUCTIONS AND	
20.THE GENERAL CONTRACTOR SHALL PROVIDE PORTABLE FIRE EXTINGUISHERS WITH A RATING OF NO LESS THAN 2-A OT 2-A:10-B:C AND SHALL BE WITHIN 25 FEET OF TRAVEL DISTANCE TO ALL PORTIONS OF WHERE THE WORK IS BEING COMPLETED DURING CONSTRUCTION.	 NO WHITE STROBE LIGHTS ARE PERMITTED. LIGHTING IF REQUIRED, WILL MEET FAA STANDARDS AND REQUIREMENTS. 	

	PREPARED BY:
IG	
ALL CONFORM TO CURRENT	
RICATION IN ACCORDANCE ON IRON AND STEEL	
SHALL BE GALVANIZED IN ON IRON AND STEEL	3227 WELLINGTON COURT RALEIGH, NC 27615 o: 919-782-2710, f: 919-435-0631
Y COLD GALVANIZING IN	PREPARED FOR:
NUTS, DOUBLE NUTS AND TIONS.	DUKE
RER'S RECOMMENDATION	ENERGY
ANTENNA CONTRACTOR DENSURE THAT THEY ARE	
TILTS SHALL BE WITHIN +/-	
E WRENCH.	NCDUN017
ENNA HARDWARE SHALL AIGHT LINE FROM BOTH	SITE ADDRESS: 465 RED HILL CHURCH ROAD DUNN, NC 28334
BIDE STARTING FROM THE D SURFACE: GROUND BAR,	LATTODE/CONGTUDE: 35.335061° 78.95769° SEAL:
_B-FT (12 NM).	OF GESSIO
3 LB-FT (58 NM).	SEAL
THE LOCK WASHER GER LOOSE.	9: 027825 ≥
22 LB-FT (24.4-29.8 NM).	BO NGINEER G
) LB-IN (1.7-2.3 NM).	12/14/2020
	REV DATE DETAILS
	0 11/05/2020 CONSTRUCTION
	1 12/14/2020 CLIENT COMMENTS
	CHECKED BY: AD
	GENERAL NOTES I
	SHEET # GN-1 CURRENT REV #: 1 ETS #: 204581.AE.02

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[COAXIAL CABLE NOTES	ROW CONSTRUCTION NOTE STANDALONE	104. ALL F LINE = 2-3/8	POSTS SHALL BE SCHEDULE 20-GALVANIZ 8" CORNER = 3" GATE = 3"	
54.	TYPES AND SIZES OF THE ANTENNA CABLE ARE BASED ON ESTIMATED LENGTHS. PRIOR TO	75. NO BOLT THREADS TO PROTRUDE MORE THAN 1-1/2" [.038M].	ATTACHME	ENT OF THE BARBED WIRE.	
	ORDERING CABLE, CONTRACTOR SHALL VERIFY ACTUAL LENGTH BASED ON CONSTRUCTION LAYOUT AND NOTIFY THE PROJECT MANAGER IF ACTUAL LENGTHS EXCEED ESTIMATED LENGTHS.	76. 90 SHORT SWEEPS UNDER ANTENNA ARM. ALL CABLES MUST ONLY TRANSITION ON THE INSIDE OR BOTTOM OF ARMS (NO CABLE ON TOP OF ARMS).	106. ALL TO SECURED 107. GATE	DP AND BRACED RAILS SHALL BE 1-5/8" DIA IN PLACE BY USE OF GAE BRACE CLAMPS FRAMES SHALL HAVE A FULL HEIGHT VER	METER SCHED TICAL BRACE AI
55.	CONTRACTOR SHALL VERIFY THE DOWN-TILT OF EACH ANTENNA WITH A DIGITAL LEVEL.	77. USE 90 CONNECTOR AT CABLE CONNECTION TO ANTENNAS.	BRACE, SE 108. HINGE	CURED IN PLACE BY USE OF GATE BRACE S SHALL BE A MINIMUM OF 200 DEGREES	CLAMPS. WITH A HINGE A
56.	CONTRACTOR SHALL CONFIRM COAX COLOR CODING PRIOR TO CONSTRUCTION. REFER TO "ANTENNA SYSTEM LABELING STANDARD" ND-00027 LATEST VERSION.	 PLACE GPS ON ARM WITH SOUTHERN SKY EXPOSURE AT MINIMUM 6' [1.83] FROM TRANSMIT ANTENNA, WHICH IS 24" [.61M] AWAY FROM CENTER OF POLE. 	REEPERS S PROOF. AL DOME CAP	SHALL BE PROVIDED FOR ALL GATES. THE L STOPS AND DOUBLE GATES SHALL HAV 2.	E A FULL HEIGH
57.	COAXIAL CABLE NOTES	79. USE 1/2" [.013M] CABLE ON ANTENNAS UNLESS OTHERWISE SPECIFIED.	109. USE A TERMINATI	NO. 7 GAUGE ZINC COATED TENSION WIR ED WITH BEND CLIPS AT CORNER AND GA	E AT THE BOTT TE POSTS.
58.	TYPES AND SIZES OF THE ANTENNA CABLE ARE BASED ON ESTIMATED LENGTHS. PRIOR TO ORDERING CABLE, CONTRACTOR SHALL VERIFY ACTUAL LENGTH BASED ON CONSTRUCTION	80. FILL VOID AROUND CABLES AT CONDUIT OPENING WITH FOAM SEALANT TO PREVENT WATER INTRUSION.	110. USE A 111. STRET 112. ALL CO	16 X 1/2" EYEBOLT TO HOLD TENSION WIR ICHER BARS SHALL BE 3/16 X 3/4" OR HAVI ORNER. GATE AND END PANELS SHALL HA	E AT LINE POST E EQUIVALENT (VE A 3/8" TRUSS
	LAYOUT AND NOTIFY THE PROJECT MANAGER IF ACTUAL LENGTHS EXCEED ESTIMATED LENGTHS.	FENCING DETAILS	BE BRACEL FITTINGS.	D WITH 1-5/8" HORIZONTAL COMPRESSION	MEMBER, SECU
59.	CONTRACTOR SHALL VERIFY THE DOWN-TILT OF EACH ANTENNA WITH A DIGITAL LEVEL.	81. ALL FABRIC, WIRE RAILS, POLES, HARDWARE, AND OTHER STEEL MATERIAL SHALL BE HOT-DIPPED GALVANIZED AND CONFIRM TO ALL ASTM REGULATIONS FOR GALVANIZING.	113. PROVI FASTEN AN 114. BARBE	IDE ALL OTHER HARDWARE NECESSARY T ND FINISH THE FENCING PROPERLY. ED WIRE SUPPORT ARMS SHALL BE SCHEI	O ATTACH, TEN
60.	CONTRACTOR SHALL CONFIRM COAX COLOR CODING PRIOR TO CONSTRUCTION. REFER TO "ANTENNA SYSTEM LABELING STANDARD" ND-00027 LATEST VERSION.	82. THE CONTRACTOR SHALL MATCH THE FENCING HEIGHT, STYLE, BANDING, BARBED WIRES,	AND LOCK 115. ALL PC	WIRE IN THE ARM. DSTS, GATE GUARDS, AND OTHER PIPES S	HALL BE CAPPE
61.	ALL JUMPERS TO THE ANTENNAS SHALL BE 1/2" DIA. LDF AND SHALL NOT EXCEED 6'-0".	THE EXTENSION OR MODIFICATIONS OF AN EXISTING FENCED AREA.	GALVANIZE 116. ALL PC TO A MININ	ED CAST STEEL DOME CAP DSTS SHALL HAVE A MINIMUM OF 6" OF CC ALIM OF 8" LARGER THAN THE DIAMETER A	
62.	ALL COAXIAL CABLE SHALL BE SECURED TO THE DESIGNED SUPPORT STRUCTURE, IN AN APPROVED MANNER, AT DISTANCES NOT TO EXCEED 4'-0" OC.	83. FABRIC SHALL BE 6'-0" HIGH X 2" CHAIN LINK MESH OF NO. 9 GAUGE (0.148) WIRE. THE FABRIC SHALL HAVE A TWISTED AND BARBED FINISH FOR THE TOP EDGES AND A KNUCKLED FINISH FOR THE BOTTOM EDGES. FABRIC SHALL CONFORM TO THE SPECIFICATIONS OF ASTM A-329 CLASS-1.	117. ALL FE LOCK WIRE 118. ATTAC	EINCE POSTS SHALL BE SCHEDULE 40 GAL EIN THE ARM. CH FABRIC TO BRACE RAILS, TENSION WIR	ANIZED STEEL
63.	CONTRACTOR SHALL FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS REGARDING BOTH THE INSTALLATION AND GROUNDING OF ALL COAXIAL CABLES, CONNECTORS, ANTENNAS, AND ALL OTHER EQUIPMENT.	84.BARBED WIRE SHALL BE DOUBLE-STRAND, 12 GAUGE TWISTED WIRE, WITH 14 GAUGE 4 POINT ROUND BARBS SPACED AT 5" ON CENTER.		ABBREV	
64.	64. CONTRACTOR SHALL WEATHERPROOF ALL ANTENNA CONNECTORS WITH SELF AMALGAMATING TAPE. WEATHERPROOFING SHALL BE COMPLETED IN STRICT ACCORDANCE WITH AT&T STANDARDS	85.ALL POSTS SHALL BE SCHEDULE 20-GALVANIZED STEEL PIPE OF THE FOLLOWING DIAMETERS: LINE = 2-3/8" CORNER = 3" GATE = 3"	A/C AFF	AIR CONDITIONING ABOVE FINISHED FLOOR	MCR MIN
Г	GENERAL CABLE AND EQUIPMENT NOTES	86.EXTEND GATE AND CORNER POSTS 1'-0" INCLUDING THE METAL DOME CAP TO PROVIDE FOR ATTACHMENT OF THE BARBED WIRE.	AGL	ABOVE GROUND LEVEL, ABOVE GRADE LEVEL ADVANCED WIRELESS SERVICE	NA NIC
65.	CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ANTENNA, TMAS, DIPLEXERS, AND COAX CONFIGURATION, MAKE AND MODELS PRIOR TO INSTALLATION.	87.ALL TOP AND BRACED RAILS SHALL BE 1-5/8" DIAMETER SCHEDULE 20 MECHANICAL BRACE, SECURED IN PLACE BY USE OF GAE BRACE CLAMPS.	BBU BLDG BLK	BATTERY BACKUP UNIT BUILDING BLOCKING	NO NTS OC
66.	ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.	88. GATE FRAMES SHALL HAVE A FULL HEIGHT VERTICAL BRACE AND A FULL WIDTH HORIZONTAL BRACE, SECURED IN PLACE BY USE OF GATE BRACE CLAMPS.	CLG CLR	CEILING CLEAR	OD PCS
67.	CONTRACTOR SHALL REFERENCE THE STRUCTURAL ANALYSIS/DESIGN DRAWINGS FOR DIRECTIONS ON CABLE DISTRIBUTION/ROUTING.	89. HINGES SHALL BE A MINIMUM OF 200 DEGREES WITH A HINGE ADAPTER, LATCHES, STOPS AND KEEPERS SHALL BE PROVIDED FOR ALL GATES. THE GUIDE LATCH ASSEMBLY SHALL BE TAMPER PROOF. ALL STOPS AND DOUBLE GATES SHALL HAVE A FULL HEIGHT PLUNGER BAR WITH A METAL	CONC CONT D	CONCRETE CONTINUOUS DEPTH DOUBLE	PDS PROJ PROP
68.	ALL OUTDOOR RF CONNECTORS/CONNECTIONS SHALL BE WEATHERPROOFED, EXCEPT THE RET CONNECTORS, USING BUTYL TAPE AFTER INSTALLATION AND FINAL CONNECTIONS ARE MADE. BUTYL TAPE SHALL HAVE A MINIMUM OF ONE-HALF TAPE WIDTH OVERLAP ON EACH TURN AND EACH LAYER SHALL BE WRAPPED THREE TIMES. WEATHERPROOFING SHALL BE	DOME CAP. 90. USE A NO. 7 GAUGE ZINC COATED TENSION WIRE AT THE BOTTOM OF THE FABRIC, TERMINATED WITH BEND CLIPS AT CORNER AND GATE POSTS.	DEG Φ, DIA DIAG DN	DEGREE DIAMETER DIAGONAL DOWN	PVC REQ RF RM
	SMOOTH WITHOUT BUCKLING. BUTYL BLEEDING IS NOT ALLOWED.	91. USE A 6" X 1/2" EYEBOLT TO HOLD TENSION WIRE AT LINE POSTS.	DET DWG	DETAIL DRAWING	RO RRJ
69.	IF REQUIRED TO PAINT ANTENNAS AND/OR COAX: A. TEMPERATURE SHALL BE ABOVE 50° F. 3. PAINT COLOR MUST BE APPROVED BY BLIILDING OWNER/LANDLORD	92. STRETCHER BARS SHALL BE 3/16 X 3/4" OR HAVE EQUIVALENT CROSS SECTION AREA.	E EA ELEVEL	EXISTING EACH ELEVATION	SHT SIM
	 FOR REGULATED TOWERS, FAA/FCC APPROVED PAINT IS REQUIRED. DO NOT PAINT OVER COLOR CODING OR ON EQUIPMENT MODEL NUMBERS. 	93. ALL CORNER, GATE AND END PANELS SHALL HAVE A 3/8" TRUSS ROD WITH TURNBUCKLES AND BE BRACED WITH 1-5/8" HORIZONTAL COMPRESSION MEMBER, SECURELY ATTACHED WITH IRON FITTINGS.	ELEC EQ EQUIP	ELECTRICAL EQUAL EQUIPMENT	SF SS STI
70.	ALL PROPOSED GROUND BAR DOWNLEADS ARE TO BE TERMINATED TO THE EXISTING ADJACENT GROUND BAR DOWNLEADS A MINIMUM DISTANCE OF 4'-0" BELOW GROUND BAR. TERMINATIONS MAY BE EXOTHERMIC OR COMPRESSION.	94. PROVIDE ALL OTHER HARDWARE NECESSARY TO ATTACH, TENSION, CLIP, BAND, HINGE, FASTEN AND FINISH THE FENCING PROPERLY.	EXT FIF	EXTERIOR FIBER INTERFACE FRAME, FACILITY INTERFACE FRAME	SUSP TMA TND
71.	ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATION & RECOMMENDATIONS.	95. BARBED WIRE SUPPORT ARMS SHALL BE SCHEDULE 40 GALVANIZED STEEL WITH SET BOLT AND LOCK WIRE IN THE ARM.	FIN FLOUR FLR	FINISH FLOURESCENT FLOOR	TYP UMTS
[FIBER & POWER CABLE MOUNTING	96. ALL POSTS, GATE GUARDS, AND OTHER PIPES SHALL BE CAPPED WITH A HOT DIPPED GALVANIZED CAST STEEL DOME CAP.	FT	FOOT, FEET GAUGE	
72.	THE FIBER OPTIC TRUNK CABLES SHALL BE INSTALLED INTO CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY. WHEN INSTALLING FIBER OPTIC TRUNK CABLES INTO A CABLE TRAY SYSTEM, THEY SHALL BE INSTALLED INTO AN INTER DUCT AND A PARTITION BARRIER SHALL BE	97. ALL POSTS SHALL HAVE A MINIMUM OF 6" OF CONCRETE UNDER THE LOWER MOST PORTION TO A MINIMUM OF 8" LARGER THAN THE DIAMETER AT THE FINISHED GRADE.	GALV GC GRND	GALVANIZED GENERAL CONTRACTOR GROUND	W/ W/O WCS
	INSTALLED BETWEEN THE 600 VOLT CABLES AND THE INTER DUCT IN ORDER TO SEGREGATE CABLE TYPES. OPTIC FIBER TRUNK CABLES SHALL HAVE APPROVED CABLE RESTRAINTS EVERY (60) SIXTY FEET AND SECURELY FASTENED TO THE CABLE TRAY SYSTEM. NFPA 70	98. ALL FENCE POSTS SHALL BE SCHEDULE 40 GALVANIZED STEEL POSTS WITH SET BOLT AND LOCK WIRE IN THE ARM.	GSM GYP HORZ	GLOBAL SYSTEM MOBILE GYPSUM BOARD HORIZONTAL	WP
73	(NEC) ARTICLE 770 RULES SHALL APPLY.	99. ATTACH FABRIC TO BRACE RAILS, TENSION WIRE AND TRUSS RODS WITH THE TIE CLIPS AT 2'-0" INTERVALS.	HR HT ID	HOUR HEIGHT INSIDE DIAMETER	
'.	CABLE TRAY AND SHALL BE SECURED AT INTERVALS NOT EXCEEDING (6) SIX FEET. AN EXCEPTION; WHERE TYPE TC-ER CABLES ARE NOT SUBJECT TO PHYSICAL DAMAGE, CABLES	0 100. ALL FABRIC, WIRE RAILS, POLES, HARDWARE, AND OTHER STEEL MATERIAL SHALL BE HOT-DIPPED GALVANIZED AND CONFIRM TO ALL ASTM REGULATIONS FOR GALVANIZING.	IN INSUL	INCH, INCHES INSULATION INTERIOR	
	OR CABLE TRAY WHICH ARE SERVING UTILIZATION EQUIPMENT OR DEVICES, A DISTANCE (6) SIX FEET SHALL NOT BE EXCEEDED WITHOUT CONTINUOUS SUPPORTING. NFPA 70 (NEC) ARTICLES 336 AND 392 RULES SHALL APPLY.	101. THE CONTRACTOR SHALL MATCH THE FENCING HEIGHT, STYLE, BANDING, BARBED WIRES, SUPPORTS, AND MEASUREMENTS OF THE EXISTING FENCE WHEREVER THE PROJECT REQUIRES THE EXTENSION OR MODIFICATIONS OF AN EXISTING FENCED AREA.	L LBS LTE	LENGTH POUNDS LONG TERM EVOLUTION	
74.	WHEN INSTALLING OPTIC FIBER TRUNK CABLES OR TYPE TC-ER CABLES INTO CONDUITS, NFPA 70 (NEC) ARTICLE 300 RULES SHALL APPLY.	102. FABRIC SHALL BE 6'-0" HIGH X 2" CHAIN LINK MESH OF NO. 9 GAUGE (0.148) WIRE. THE FABRIC SHALL HAVE A TWISTED AND BARBED FINISH FOR THE TOP EDGES AND A KNUCKLED FINISH FOR THE BOTTOM EDGES. FABRIC SHALL CONFORM TO THE SPECIFICATIONS OF ASTM A-329 CLASS-1.	MECH MTL MFR	MECHANICAL METAL MANUFACTURER	
		103. BARBED WIRE SHALL BE DOUBLE-STRAND, 12 GAUGE TWISTED WIRE, WITH 14 GAUGE 4 POINT ROUND BARBS SPACED AT 5" ON CENTER.			



	STRUCTURAL STEEL NOTES		FOUNDATION NOTES	[[FOUNDATION NOTE
1. TH SP DE UNO 2. FO A. B. C. D. A. B. C. D. 3. ALACCO 4. HORAP ECTOPER 7. A. ALH 9. ALH 10. GA 7. A. ALH 10. GA 11. COPEBOR 12. FAH 13. THE 14. HOLAP 15. FAH 16. COPEBOR 17. COPEBOR 18. HE 19. ALN 10. GA 11. COPEBOR 12. FAH 13. HE	STRUCTURAL STEEL NOTES EFABRICATION AND ERECTION OF STEUCTURAL STEEL SHALL CONFORM TO THE AISC ECIFICATION FOR MANUAL OF STEEL CONSTRUCTION, LOAD AND RESISTANCE FACTOR SIGN, 157H EDITION. ILESS OTHERWISE NOTED, ALL STRUCTURAL ELEMENTS SHALL CONFORM TO THE ILLOWING REQUIREMENTS: STRUCTURAL STEEL: 9. MOLE: ASTM A38 9. PIATE: ASTM A32 10. PIPETUBE: ASTM A500-50 3. LL UDOLS: ASTM A532 GARBON AND ALLOY STEEL NUTS. ALL UWDIS, ASTM A533 GARBON EST ALL WASHERS, ASTM F436 HARDENED STEEL WASHERS. 1. CONNECTIONS NOT FULLY DETAILED ON THESE PLANS SHALL BE DETAILED BY THE STEEL INSTRUCTION, LOAD AND RESISTANCE FACTOR DESIGN, 157H EDITION. NESS SHALL NOT BE FLAME CUT THRU STEEL UNLESS APPROVED BY THE ENGINEER. 1. TOID GALVANIZE ALL ITEMS UNLESS OTHERWISE NOTED, AFTER FABRICATION WHERE VACTORABLE GALVANIZING: ASTM A123, ASTM, A153/AISM OR ASTM A653/A653M, G90, AS PILCABLE. PARE DAMAGED SURFACES WITH GALVANIZING REPAIR METHOD AND PAINT CONFORMING VICABLE ON BY APPLICATION OF STICK OR THICK PASTED MATERIAL SPECIFICALLY SIGNED FOR REPAIR OF GALVANIZING, CLEAN AREAS TO BE CREPAIRED AND REMOVE SLAG (OW WELDS HEAT SURFACES TO WHICH GALVANIZING REPAIR METHOD AND PAINT CONFORMING VICLOKING OF BY APPLICATION OF STICK OR THICK THE MATERIAL SPECIFICALLY SIGNED FOR REPAIR OF GALVANIZING, CLEAN AREAS TO BE REPAIRED AND REMOVE SLAG (OW WELDS HEAT SURFACES TO WHICH STICK OR THICK THAT THE ATTICK AND REPLACED AND WIPE OF CLESS MALLEN AND FREMACED SIGNES HALL BE OF SUFFICIENT LENGTH NO EXCLUDE THE VICLO AS THE SUSTALE DE INSTALLED ON ALL PROPOSED AND/OR REPLACED AND WIPE OF CLES	FOUI 1. 1 2. 1 3. 1 4. 1 5. 1 9. 1 7. 1 8. 1 9. 1 7. 1 8. 1 9. 1 7. 1 8. 1 9. 1 8. 1 8. 1 9. 1 8. 1	POUNDATION NOTALATION SHALL BE SUPERVISED BY PERSONNEL KNOWLEDGEABLE AND REVEREINCED WITH THE PROPOSED FOUNDATION TYPE. CONSTRUCTION SHALL BE IN ACCORDANCE WITH GENERALLY ACCEPTED PRACTICES AND IN A GOOD WORKMANLIKE MANNER. CONTRACTOR TO VERIFY DIMENSIONS WITH ORIGINAL TOWER DRAWINGS. ETS SHALL BE NOTIFIED OF ANY DISCREPANCIES BETWEEN FIELD MEASURED DIMENSIONS AND ORIGINAL TOWER DRAWINGS. CONTRACTOR TO YERIFY DIMENSIONS WITH ORIGINAL TOWER DRAWINGS. ETS SHALL BE NOTIFIED OF ANY DISCREPANCIES BETWEEN FIELD MEASURED DIMENSIONS AND ORIGINAL TOWER DRAWINGS. FOUNDATION DESIGN MODIFICATIONS MAY DE REQUIRED IN THE EVENT THE DESIGN PARAMETERS ARE NOT APPLICABLE FOR THE SUBSURFACE CONDITIONS ENCOUNTERED DURING CONSTRUCTION. FOR FOUNDATION TOLERANCES, SEE ORIGINAL TOWER DRAWINGS. THE FOUNDATION MODIFICATION DESIGN IS IN ACCORDANCE WITH GENERALLY ACCEPTED PROFESSIONAL EVENINEER PRIVATES AND PRACTICES WITHIN THE LIMITS OF SUBSURFACE DATA PROVIDED. THE FOUNDATION DEPICH INDICATED IS BASED ON THE GRADE LINE DESCRIBED IN THE REFERENCE GEOTECHNICAL REPORT. FOUNDATION MODIFICATION MAY DE REQUIRED IN THE REFERENCE GEOTECHNICAL REPORT. FOUNDATION MODIFICATION MAY DE REQUIRED IN THE REFERENCE GEOTECHNICAL REPORT. FOUNDATION METHODS WILL INCORPORATE THE PROCEDURES RECOMMENDED IN THIS REPORT. THE FOUNDATION DESIGN ASSUMES THAT INSTALLATION METHODS WILL INCORPORATE THE PROCEDURES RECOMMENDED IN THIS REPORT. THE FOUNDATION DESIGN ASSUMES THAT INSTALLATION METHODS WILL INCORPORATE THE PROCEDURES RECOMMENDED IN THIS REPORT. THE FOUNDATION DESIGN ASSUMES THAT INSTALLATION METHODS MADE SUBJOR PRAMETERS ARE ACCEPTABLE BASED ON THE CONDITIONS AND ASSUMED DESIGN PRAMETERS ARE ACCEPTABLE BASED ON THE CONDITIONS AND ASSUMED DESIGN PRAMETERS ARE ACCEPTABLE BASED ON THE CONDITIONS WILL BE PERFORMED TO CONCRETE. THE FOUNDATION DESIGN ASSUMES THAT INSTALLATION OF EXCAVATION PRIOR TO CONCRETE PROCEDURES SHALL BE IN ACCORDANCE WITH LOCAL CODES AND SAFETY REGULATIONS. UTILITIES SHALL BE ERMITED TO AND APPROVAL BY THE OWNER/REGINES OFTER. THE ENDINGTI	EPC 1. 2. 3. SOI 1. 1.1 1.2 1.2 1.2 1.2 1.2 1.2	POUNDATION OF A STANDARD OF A STANDARD PROCESSION AND AND A STANDARD PROCESSION AND A STANDARD PROCESSION AND A STANDARD PROCESSION AND A STANDARD PROCESSION AND A MANUFACTURER'S INSTRUCT CONTRADICION BETHALLING ADHESIVE ANCHORING SYS PERSON BY A MANUFACTURER'S REPRESENTATIVE, ON TECHNIQUES, THIS TRAINING SHALL INCLUDE PROPER OF INSTALLATION METHODS FOR THE ADHESIVE ANCHORING CONDITIONS ON THIS PROJECT. ALL TRAINING TO BE CONDUCT ON SITE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR REPRESENTATIVE TO SET UP TRAINING, ETS IS NOT RESPONS FOR OR DURING ADHESIVE ANCHORING SYSTEM TRAINING. INSTALLATION METHODS FOR THE ADHESIVE ANCHORING CONDITIONS ON THIS PROJECT. ALL TRAINING TO BE CONDUCT ON SITE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR REPRESENTATIVE TO SET UP TRAINING, ETS IS NOT RESPONS FOR OR DURING ADHESIVE ANCHORING SYSTEM TRAINING. SUBGRADE PROPINE SUBGRADE TO OF SUBGRADE IN A FREE-DRAINING CONDITION STOCKPILE MATERIALS ON TO OF SUBGRADE IN CONTRUCTION MANAGER. SOUND STOCKPILE MATERIALS ON THE AL AND SHALL MEET OF REQUIREMENTS NOTES UNDER SOIL STRENGTING. CONTRUCTOR MANAGER. SOUNDATION SON THE SUBDRADE IN A FREE DRAINING CONDITION ON DISTRUCTION MANAGER. SOUNDATION SON SUBGRADE SOIL STRENGTING. SOUNDATION SON THIS SUBDRADE SOIL STRENGTING. CONTRUCTOR OF SUBGRADE WITHIN ONE INCH OF EST. CONTRACTOR, CONTRACTOR SUBGRADE WITHIN ONE INCH OF EST. CONTRACTOR, SHALL BE REDESIGNED. CONTRACTOR CARSTRUCT TOP OF SUBGRADE WITHIN ONE INCH OF EST. CONTRACTOR, SHALL BE REPRORMED BY ANS CERTIFIED WELD TOR CONTRACTOR SHALL BE REDESIGNED. CONTRACTOR CARSTRUCT TOP OF SUBGRADE WITHIN ONE INCH OF EST. CONTRACTOR, CONTRACTOR SHALL SUBMIT LETTER AND REPORT CONTRACTOR. CONTRACTOR
SN OF AP TH SH TH 3. TIC BE B B 4. AL DE	IUG TIGHT AND THE CONNECTION IS FULLY COMPACTED. FOLLOWING THIS INITIAL 'ERATION ALL BOLTS IN THE CONNECTION SHALL BE TIGHTENED FURTHER BY THE 'PLICABLE AMOUNT OF ROTATION OF THE PART NOT TURNED BY THE WRENCH. TIGHTENING OPERATION IERE SHALL BE NO ROTATION OF THE PART NOT TURNED BY THE WRENCH. TIGHTENING OPERATION IALL PROGRESS SYSTEMATICALLY FROM THE MOST RIGID PART OF THE JOINT IN A MANNER IAT WILL MINIMIZE RELAXATION OF PREVIOUSLY PRETENSIONED BOLTS. SHTEN CONNECTION BOLTS BY AISC - "TURN OF THE NUT" METHOD, USING THE CHART 'COW. SOLTS UP TO AND INCLUDING FOUR DIA. '2" BOLTS UP TO AND INCLUDING 2.0 INCH LENGTH +½ TURN BEYOND SNUG TIGHT '4" BOLTS UP TO AND INCLUDING 2.5 INCH LENGTH +½ TURN BEYOND SNUG TIGHT '4" BOLTS UP TO AND INCLUDING 3.0 INCH LENGTH +½ TURN BEYOND SNUG TIGHT '4" BOLTS UP TO AND INCLUDING 3.5 INCH LENGTH +½ TURN BEYOND SNUG TIGHT '4" BOLTS UP TO AND INCLUDING 4.0 INCH LENGTH +½ TURN BEYOND SNUG TIGHT '4" BOLTS UP TO AND INCLUDING 4.0 INCH LENGTH +½ TURN BEYOND SNUG TIGHT '4" BOLTS UP TO AND INCLUDING 4.0 INCH LENGTH +½ TURN BEYOND SNUG TIGHT '4" BOLTS 2.25 TO 4.0 INCH LENGTH +½ TURN BEYOND SNUG TIGHT '4" BOLTS 3.75 TO 5.0 INCH LE	CON 1. 2. 3. 4. 4. 5. 5. 5. 1. 2. 6.	 WORK SHALL BE IN ACCORDANCE WITH THE ACI 318-14, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY". THE CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3000-PSI IN 28 DAYS. PROPORTIONS OF CONCRETE MATERIALS SHALL BE SUITABLE FOR THE INSTALLATION METHOD UTILIZED AND SHALL RESULT IN DURABLE CONCRETE FOR RESISTANCE TO LOCAL ANTICIPATED AGGRESSIVE ACTIONS. THE DURABILITY REQUIREMENTS OF ACI 318-14 SHALL BE SATISFIED BASED ON THE CONDITIONS EXPECTED AT THE SITE. CONCRETE SHALL BE PLACED IN A MANNER THAT WILL PREVENT SEGREGATION OF CONCRETE MATERIALS, INFILTRATION OF WATER OR SOIL, AND OTHER OCCURRENCES THAT MAY DECREASE THE STRENGTH OR DURABILITY OF THE FOUNDATION. FREE FALL CONCRETE MAY BE USED PROVIDED FALL IS VERTICAL DOWN WITHOUT HITTING THE SIDES OF THE EXCAVATION, FORMWORK, REINFORCING BARS, FORM TIES, CAGE BRACING, OR OTHER OBSTRUCTIONS. UNDER NO CIRCUMSTANCES SHALL CONCRETE FALL THROUGH WATER. THE MAXIMUM SIZE OF THE AGGREGATE SHALL NOT EXCEED A SIZE SUITABLE FOR THE INSTALLATION METHODS UTILIZED OR 2/3-CLEAR DISTANCE BEHIND OR BETWEEN REINFORCING. THE MAXIMUM SIZE MAY BE INCREASED TO 2/3-CLEAR DISTANCE PROVIDED WORKABILITY AND METHODS OF CONSOLIDATION SUCH AS VIBRATING WILL PREVENT HONEYCOMBS AND VOIDS. SHING THE TOP OF THE FOUNDATION SHALL BE SLOPED TO DRAIN WITH A FLOATED FINISH. THE EXPOSED EDGES OF THE CONCRETE SHALL BE CHAMFERED 1" X 1". 	6. 7. 8.	BELOW O'F. WHEN THE TEMPERATURE IS BETWEEN O'F AND 32 STEEL IN THE VICINITY OF THE WELD AREA AT 70°F DURING THE DO NOT WELD ON WET OR FROST-COVERED SURFACES & PR FROM HIGH WINDS. FOR ALL WELDING, USE E70XX ELECTRODES. AFTER FINAL INSPECTION, THE AREA OF THE WELDS, THE INS DAMAGED BY WELDING OR GRINDING SHALL RECEIVE A COI COATING SHALL BE APPLIED BY BRUSH. THE GALVANIZING MINIMUM OF 95% ± PURE ZINC. THE FINISHED COATING SHALL MILS.

S	PREPARED BY:
ORDING TO MANUFACTURERS	ETE
IONS SHALL BE FOLLOWED; ANY COMMENDATIONS AND THESE ENTION OF THE ENGINEER AND	ENGINEERED TOWER
STEMS SHALL BE TRAINED, IN THE PROPER INSTALLATION RILLING, HOLE CLEANING, AND SYSTEM AND CONSTRUCTION TED PRIOR TO CREWS STEPPING TO CONTACT MANUFACTURER	3227 WELLINGTON COURT RALEIGH, NC 27615 o: 919-782-2710, f: 919-435-0631 www.engineeredtowersolutions.com
IBLE FOR ANY COST OCCURRED	DUKE
OWN ON THE DRAWINGS.	ENERGY.
'ION. LESS AUTHORIZED BY	
SOILS SHALL BE FREE OF THE MINIMUM BEARING CAPACITY	
ILL, STRUCTURAL FILL SHOULD BE JF 95 PERCENT OF THE MAXIMUM METHOD ABLISHED GRADE AND	SITE NUMBER: NCDUN017
CAPACITY. IF OTHER CONDITIONS R SHALL HAVE SOIL BEARING ECHNICAL ENGINEER PRIOR TO	SITE ADDRESS: 465 RED HILL CHURCH ROAD DUNN, NC 28334 LATITUDE/LONGTUDE:
	35.335061°, 78.665769° SEAL: FIRM #: P-1016
D1.1/D1.1M: 2015 "STRUCTURAL	R S S S
DERS. SPECTOR TO PERFORM VISUAL T SHALL BE ISSUED TO THE ORT TO TOWER OWNER. CE OF 2" MINIMUM ALL AROUND. A DISTANCE OF 2" MINIMUM ALL EAS ARE 100% FREE OF ALL EFROM SCALE, SLAG, RUST, HAT WOULD PREVENT PROPER	SEAL 027825 OPHER 12/14/2020
VICINITY OF THE WELD AREA IS 2°F, PREHEAT AND MAINTAIN THE	REV DATE DETAILS
E WELDING PROCESS. ROVIDE ADEQUATE PROTECTION	0 1/103/2020 CONSTRUCTION 1 12/14/2020 CLIENT COMMENTS
STALLATION AND ALL SURFACES SLD-GALVANIZED COATING. THIS COMPOUND SHALL CONTAIN A BE A MINIMUM THICKNESS OF 3	
	SHEET TITLE:
	SHEET # GN-3 CURRENT REV #:1 ETS #: 204581.AE.02

APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES) (Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: Erwin Radio Bldg		
Address: 465 Red Hill Church Road, Dunn, NC, 28334		
Proposed Use: Telecommunications		
Owner or Authorized Agent: Duke Energy	Phone #	
Owned By: City/County	Private	State
Code Enforcement Jurisdiction: City	County Harnett	

LEAD DESIGN I	PROFESSIONAL: Christopher Ply	, PE		
DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #
Architectural				()
Civil	Engineered Tower Solutions, PLLC	Christopher Ply, PE	027825	(919) 523-0952
Electrical				()
Fire Alarm				()
Plumbing				()
Mechanical				()
Sprinkler-Standp	ipe			
Structural				()
Retaining Walls	>5' High			()
Other				

YEAR EDITION OF CODE: 2018

New Construction Renovation (Existing Bldg) Upfit ☐ Alteration

BUILDING DATA Construction Type:	I-A I-I IV V Mixed construction	B □ II-A □ II-E A ⊠ V-B n: □ No □ Yes T:	B III-A III-B
Sprinklers: 🛛 N	D Yes [□ NFPA 13 □ NFPA 1	3R 🗌 NFPA 13D
Standpipes: 🛛 No	D Yes Class		Wet 🗌 Dry
Fire District: 🛛 No	o 🗌 Yes		
Building Height: 10.625	Feet <u>1</u> Number	er of Stories 🔲 Unlimited	per
Mezzanine: 🛛 🛛 Ne	D 🗌 Yes		
High Rise: 🛛 No Gross Building Area:	o 🗌 Yes Central	Reference Sheet # (if provide	d)
FLOOR E	XISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
6 th Floor			
5 th Floor			
4 th Floor			
3 rd Floor			
2 nd Floor			
Mezzanine			
1 st Floor	0	328.2	
Basement			
TOTAL	0	328.2	
NO Administration and F			20

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			ALLOWA	BLE AREA		1
Primary Occ	upancy: Business High-Hazard Institutional Institutional Institutional Mercantile Storage Jtility and Misco	Assembly Educational H-1 I-1 Use Condition Residential S-1 ellaneous	A-1 Factory-I H-2 I-2 on S-2 Parking Garag	☐ A-2 ndustrial ☐ H-3 1-3 1 ☐ 2 R-1 ☐ R-2 ☐ High-p ge ☐ Open	☐ A ☐ F-1 ☐ H ☐ I4 ☐ 3 ☐ 4 ☐ R-3 ☐ R iled ☐ E	$\begin{array}{cccc} 3 & \square & A - \\ & \square & F - \\ 4 & \square & H - 3 \\ & \square & 5 \\ & -4 \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\ $
Secondary O	ccupancy: _					
Special Occu	pancy:	508.2	508.3 508	3.4 🗌 508.5	508.6	508.7
	Non-Separated N The required typ imitations for ea- construction, so Separated Mixed For each story, t	A NO fixed Occupan e of constructi ach of the appl determined, sh l Occupancy (: he area of the ada by the allow	res Sep cy (302.3.2) on for the build icable occupan- nall apply to the 302.3.3) - See to occupancy shall	aration: ling shall be det cies to the entir e entire building below for area c l be such that ti for ageh was d	Hr. Except termined by ap e building. Th g. alculations he sum of the r	non: pplying the he e most restric ratios of the a
<u>_Ad</u> Allo	ctual Area of Oc wable Area of C	ccupancy A Decupancy A	+ <u>Actual</u> Allowabl +	<u>Area of Occup</u> e Area of Occu	$\frac{ancy B}{pancy B} \leq \dots \leq $	=
						-
STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 503 ⁵ AREA	(C) AREA FOR OPEN SPACE INCREASE ¹	(D) AREA FOR SPRINKLER INCREASE ²	(E) ALLOWABL AREA OR UNLIMITED
1	EQUIPMENT SHELTER	328.2	5,500	N/A	N/A	N/A
 Open space a. Peri b. Tota c. Rati d. W = e. Perc The sprinkl a. Multi b. Sing Unlimited a Group A med Maximum 1 The maxim must comply the second secon	e area increases meter which fro al Building Perin o (F/P) = Minimum widtl eent of frontage : er increase per S ti-story building rea applicable u ofton picture (50' Building Area = um area of parki with 412.1.2.	from Section 5 nts a public wa neter (F/P) n of public way increase $I_f =$ Section 506.3 i $I_s = 200$ perce $g I_s = 300$ perce nder condition 7.8); Malls (40) total number of ng garages mus	06.2 are compu y or open space = 100 [F/P - 0.25] s as follows: ant s of Sections G 2.6); and H-2 ai f stories in the st comply with 4	thed thus: having 20 feet (P) (W) x W/30 = roup B, F, M, S reraft paint hang building x E but 406.3.5. The mat	minimum wid , A-4 (507.1, 50 gers (507.6). not greater tha aximum area of	th =))7.2, 507.3, 50 n 3 x E. Sair traffic co

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ALLOWABLE HEIGHT

	ALLOWABLE (TABLE 503)	INCREASE FOR SPRINKLERS	SHOWN ON PLANS	CODE REFERENCE
Type of Construction	Type V-B		Туре	2018
Building Height in Feet	Feet40	Feet = $H + 20' ={60}$	10.625	2018
Building Height in Stories	Stories 1	Stories + 1 =2	Stories 1	2018

FIRE PROTECTION REQUIREMENTS

Life Safety Plan Sheet #, if Provided

BUILDING ELEMENT	FIRE	RATING		DETAIL #	DESIGN#	DESIGN # FOR	DESIGN#
	SEPARATION DISTANCE (FEET)	REQ'D	PROVIDED (W/* REDUCTION)	AND SHEET #	FOR RATED ASSEMBLY	RATED PENETRATION	FOR RATED JOINTS
Structural frame, including columns, girders, trusses		N/A					
Bearing walls							
Exterior							
North	10	1	2	SDUK13 SHEET 0-0			
East	10	1	2				
West	10	1	2				
South	10	1	2				
Interior		N/A					
Nonbearing walls and partitions Exterior		N/A					
North		N/A					
East		N/A					
West		N/A					
South		N/A					
Interior		N/A					
Floor construction Including supporting beams and joists		0	2				
Roof construction Including supporting beams and joists	N/A	0	2	SDUK13 SHEET 0-0			
Shafts - Exit		N/A					
Shafts - Other		N/A					
Corridor Separation		N/A					
Occupancy Separation		N/A					
Party/Fire Wall Separation		N/A					
Smoke Barrier Separation		N/A					
Tenant Separation		N/A					

* Indicate section number permitting reduction

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LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting:	🗌 No
Exit Signs:	🗌 No
Fire Alarm:	🗌 No
Smoke Detection Systems:	🗌 No
Panic Hardware:	🛛 No

X Yes X Yes X Yes X Yes Ves Yes

EXIT REQUIREMENTS

NUMBER AND ARRANGEMENT OF EXITS

FLOOR, ROOM OR SPACE DESIGNATION	MINU	MUM ² OF EXITS	TRAVEL DISTA	ARRAN EGRESS ¹	
	REQUIRED	SHOWN ON PLANS	ALLOWABLE TRAVEL DISTANCE (TABLE 1004.2.4)	ACTUAL TRAVEL DISTANCE SHOWN ON PLANS	REQUIRE DISTANC BETWEE EXIT DOO
EQUIPMENT SHELTER	1	1			

¹ Corridor dead ends (Section 1004.3.2.3) ² Single exits (Table 1005.2.2)

³ Common Path of Travel (Section 1004.2.5)

EXIT WIDTH

USE GROUP	(a)	(b)		c)	EXIT WIDTE			
OR SPACE DESCRIPTION	AREA ¹ sq. ft.	AREA ¹ PER OCCUPANT	EGRESS WIDTH PER OCCUPANT (TABLE 1003.2.3)		(section 1003. (a+b) x c	р width 1003.2.3)) х с		
		(TABLE 1003.2.2.2)	STAIR	LEVEL	STAIR	LEVEL	I	
EQUIPMENT SHELTER	328.2						Γ	
							Ι	
							Ι	
							I	
							Ι	

¹ See Table 1003.2.2.2 to determine whether net or gross area is applicable.

See definition "Area, Gross" and "Area, Net" (Section 1002)

² Minimum stairway width (Section 1003.3.3); min. corridor width (Section 1004.3.2.2); min. door width (Section 1003.3.1)

 ³ Minimum width of exit passage way (Section 1005.3.3)
 ⁴ See Section 1003.2.2.7 for converging exits.
 ⁵ The loss of one means of egress shall not reduce the available capacity to less than 50 percent of the total required (Section 1005.5.1) 1003.2.3)

⁶ Assembly occupancies (Section 1008)

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in) ^{2,3,4,5,6}	
ACTUAL	VIDTH
SHOWN O	N PLANS
STAIR	LEVEL



Importance Factors: Wind (l_W) 1 Solution: Solution: 1 Seismic (l_E) 1 Live Loads: Roof 94 Psf Mezzanine N/A psf Floor 196 psf Snow Load: 111 psf Wind Load: Basic Wind Speed 128 mph (ASCE-7-98) Exposure Category C Wind Base Shears (for MWFRS) $V_X = 77.39 \text{ k}$ $Vy = 0 \text{ k}$ SEISMIC DESIGN CATEGORY A Wind Base Shears (for MWFRS) $V_X = 77.39 \text{ k}$ $Vy = 0 \text{ k}$ SEISMIC DESIGN CATEGORY A Image: Solution of the following Seismic Design Parameters: Seismic Use Group Image: Solution of the following Seismic Design Parameters: Seismic Use Group Image: Solution of the following Seismic Design Parameters: Seismic Use Group Sms 0.141 %g Sms %g Site Classification Bearing Wall Dual w/Special Moment Frame Dual w/Intermediate R/C or Special Steel Moment Frame Dual w/Intermediate R/C or Special Steel Moment Frame Moment Frame Solut Bearing Wall Ye = N/A Malaysis Procedure Malaysis Procedure Simplified		
Live Loads: Roof $\frac{94}{196}$ psf Floor $\frac{196}{196}$ psf Snow Load: 111 psf Wind Load: Basic Wind Speed 128 mph (ASCE-7-98) Exposure Category C Wind Base Shears (for MWFRS) $Vx = 77.39 \text{ k}$ $Vy = 0 \text{ k}$ SEISMIC DESIGN CATEGORY A Wind Base Shears (for MWFRS) $Vx = 77.39 \text{ k}$ $Vy = 0 \text{ k}$ SEISMIC DESIGN CATEGORY B, C, & D Provide the following Seismic Design Parameters: Seismic Use Group III Spectral Response Acceleration S _{MS} 0.141 %g S _{MI} 0.103 %g Site Classification B Basic structural system (check one) Inverted Pendulum Moment Frame Dual w/Intermediate R/C or Special Steel Moment Frame Dual w/Intermediate R/C or Special Steel Moment Frame X M Analysis Procedure Simplified Equivalent Lateral Force X M Architectural, Mechanical, Components anchored? N/A N/A SOIL BEARING CAPACTITES: Field Test (provide copy of test report) T.B.D psf Field Test (provide copy of test report) <	Importance Factors:	Wind (I_W) 1Snow (I_S) 1Seismic (I_E) 1
Snow Load: 111psf Wind Load: Basic Wind Speed 28mph (ASCE-7-98) Exposure Category C Wind Base Shears (for MWFRS) $V_x =77.39 \text{ k}$ $Vy =0 \text{ k}$ SEISMIC DESIGN CATEGORY A	Live Loads:	Roof 94 psf Mezzanine <u>N/A</u> psf Floor 196 psf
Wind Load: Basic Wind Speed 128 mph (ASCE-7-98) Exposure Category C $Vx = 77.39 k$ $Vy = 0k$ SEISMIC DESIGN CATEGORY A $Vx = 77.39 k$ $Vy = 0k$ SEISMIC DESIGN CATEGORY A No SEISMIC DESIGN CATEGORY B, C, & D No Seismic Design Parameters: $Seismic Design Parameters:$ Scismic Use Group III Spectral Response Acceleration S_{MS} $Moment Frame$ Dual w/Special Moment Frame $Moment Frame$ Inverted Pendulum Seismic base shear $Vx = -N/A$ Analysis Procedure Simplified Equivalent Lateral Force X Soll BEARING CAPACITIES: Field Test (provide copy of test report) T.B.D psf Fresumptive Bearing capacity T.B.D psf Presumptive Bearing capacity T.B.D psf Presumptive Bearing capacity T.B.D psf Pile size, type, and capacity T.B.D psf Pile size, type, and capacity T.B.D psf	Snow Load:	<u>111</u> psf
SEISMIC DESIGN CATEGORY A Compliance with Section 1616.4 only? Yes SeiSMIC DESIGN CATEGORY B, C, & D Provide the following Seismic Design Parameters: Seismic Use Group III Spectral Response Acceleration S_{MS} 0.141 %g Spectral Response Acceleration S_{MS} Basic structural system (check one)	Wind Load:	Basic Wind Speed128mph (ASCE-7-98)Exposure Category C $V_x = 77.39 \text{ k}$ $V_y = 0 \text{ k}$ Wind Base Shears (for MWFRS) $V_x = 77.39 \text{ k}$ $V_y = 0 \text{ k}$
SEISMIC DESIGN CATEGORY B, C, & D Provide the following Seismic Design Parameters: Seismic Use Group III Spectral Response Acceleration S _{MS} _0.141%g S _{M1_0.103%g} Site Classification B Basic structural system (check one)	SEISMIC DESIGN CATEGOR Compliance with Section 1616.	AY A .4 only? Yes No
LATERAL DESIGN CONTROL: Earthquake WindX SOIL BEARING CAPACITIES:	Provide the following Seismic Seismic Use Group Spectral Response A Site Classification Basic structural syst	Design Parameters: <u>III</u> .cceleration S _{MS} 0.141 %g S _{MI} 0.103 %g <u>B</u> tem (check one) ing Wall Dual w/Special Moment Frame
SOIL BEARING CAPACITIES: Field Test (provide copy of test report)T.B.Dpsf Presumptive Bearing capacitypsf Pile size, type, and capacitypsf PlumBING FIXTURE REQ UIREMENTS	Beari X Build Mom Seismic base shear Analysis Procedure Architectural Mech	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
PLUMBING FIXTURE REQ UIREMENTS	Beari X Build Mom Seismic base shear Analysis Procedure Architectural, Mech LATERAL DESIGN CONTRO	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
	Beari X Build Mom Seismic base shear Analysis Procedure Architectural, Mech LATERAL DESIGN CONTRO SOIL BEARING CAPACITIE Field Test (provide c Presumptive Bearing Pile size, type, and c	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$

1	OCCUPANCY	WATERCLOSETS		URINALS	LAVA	TORIES	SHOWERS/	DRINKING FOUNTAINS		
L		MALE	FEMALE		MALE	FEMALE	TUBS	REGULAR	ACCESSIBLE	
ſ										
ſ										

ACCESSIBLE PARKING

LOT OR PARKING	TOTAL # OF PA	RKING SPACES	# OF ACCESSIBL	TOTAL #	
AREA	REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS AISLE	VAN SPACES WITH 8' ACCESS AISLE	ACCESSIBLE PROVIDED
TOTAL					

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NC Administration and Enforcement

ENERGY SUMMARY
The following data shall be considered minimum and any special attribute required to meet the energy also be provided. Each Designer shall furnish the required portions of the project information for the If energy cost budget method, state the annual energy cost budget vs allowable annual energy cost
THERMAL ENVELOPE
Method of Compliance:
Prescriptive Performance Energy Cost Budget
Roof/ceiling Assembly (each assembly)
Description of assembly U-Value of total assembly R-Value of insulation Skylights in each assembly U-Value of skylight total square footage of skylights in each assembly
Exterior Walls (each assembly)
Description of assembly U-Value of total assembly R-Value of insulation U-Value of assembly U-Value of assembly shading coefficient projection factor low e required, if applicable Door R-Values CONCRETE + PANELING & INSULATION 0.075 13.266 U-Value of assembly shading coefficient projection factor low e 700 coefficient factor fac
Walls adjacent to unconditioned space (each assembly)
Description of assembly U-Value of total assembly R-Value of insulation Openings (windows or doors with glazing) U-Value of assembly Low e required, if applicable Door R-Values

R-Value of insulation NC Administration and Enforcement

SPECIAL APPROVALS

Special approval: (Local Jurisdiction, Department of Insurance, SBCCI, ICC, etc., describe below)

Walls below grade (each assembly) Description of assembly U-Value of total assembly

	PREP	ARED BY:	
		1	
		_	
		F	75
		ENIGINE	RED TOWER
		SOLUTI 3227 WEI	UNGTON COURT
		RALE	IGH, NC 27615
	,	www.enginee	redtowersolutions.com
	PREP	ARED FOR:	
	-		DUKE
			NEPCY
	4		INLKGI®
		S	ITE NAME:
		RWIN F	
		SIT	
		NC	DUN017
		<u>SITI</u> 465 RED H	E ADDRESS:
		DUN	IN, NC 28334
		LATITU 35.3350	DE/LONGITUDE: 061°, 78.655769°
	SEAL		FIRM #: P-1016
		A Street The	SAPE
		102	ESION
	Canton I	- Q	SEAL
	71817		27825
	litter.	2:	
	2	1/5	GINEE
		minnin	PHER 12/14/2020
		11/05/2020	CONSTRUCTION
	1	12/14/2020	CLIENT COMMENTS
	DRAV	VN BY: HA	CHECKED BY: AD
	SHEE	T TITLE:	
	11		
1			
	N		PENDIX B III
			PENDIX B III
	SHEE	IC APF	CURRENT REV #:1

gy code shall ne plan data sheet. St budget.

Floors over unconditioned space (each assembly)

Description of assembly U-Value of total assembly R-Value of insulation

Floors slab on grade

Description of assembly U-Value of total assembly R-Value of insulation Horizontal/vertical requirement slab heated

CONCRETE + TILE 0.191 5.237 ment

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance:

Energy Cost Budget

Lighting schedule

lamp type required in fixture32W FLnumber of lamps in fixture2ballast type used in the fixtureELECnumber of ballasts in fixture2total wattage per fixture60total interior wattage specified vs allowed600 VS 331 (ONLY LIT WHEN OCCUPIED)

Equipment schedules with motors (not used for mechanical systems)

motor horsepower number of phases minimum efficiency motor type # of poles

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Method of Compliance

Prescriptive Energy Cost Budget

Thermal Zone

winter dry bulb summer dry bulb

Interior design conditions

winter dry bulb summer dry bulb relative humidity

NC Administration and E forceme

Building heating load

Building cooling load

Mechanical Spacing Conditioning System

Unitary description of unit heating efficiency cooling efficiency heat output of unit cooling output of unit total boiler output. If oversized, state reason. Chiller total chiller capacity. If oversized, state reason.

List equipment efficiencies

Equipment schedules with motors (mechanical systems)

motor horsepower number of phases S minimum efficiency motor type R # of poles 2

siency RECIPROCATING 2

NC Administration and Enforcement

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		PROPOSED DUKE ENERGY 65'x55' TELECOMMUNICATIONS COMPOUND W/ 308' SELF SUPPORT TOWER (SEE SHEET C-1.3)
		PROPOSED DUKE ENERGY 308' SELF SUPPORT TOWER FALL ZONE
		State St
		Rest and Rest for the second s
PROPOSED TOW	'ER SETBACKS	
PROPOSED TOV	'ER SETBACKS DISTANCE	
PROPOSED TOW	ER SETBACKS DISTANCE 328'-0" ±	
PROPOSED TOW PROPERTY BOUNDARY LINE NORTH NORTHEAST	VER SETBACKS DISTANCE 328'-0" ± 305'-0" ±	
PROPOSED TOW PROPERTY BOUNDARY LINE NORTH NORTHEAST SOUTHEAST	ER SETBACKS DISTANCE 328'-0" ± 305'-0" ± 252'-0" ±	

















				PF	ROPOSED ANTE	NNA SCH	IEDULE					
OWNER	SYSTEM	SIZE (FT)	TYPE	MANUFACTURE	PART #	ELEV. (FT)	LOC.	AZ.	FREQ.	FCC LICENSE	TRANSMIT POWER	MOUNT
DUKE	AIR TERMINAL	10				308						PIPE
DUKE	LIGHTING		FLASHEAD	FLASH TECH.	FH370D	308	TOP					
DUKE	800 MHz P25 (RX)	14.5	OMNI	DBSPECTRA	DS8A10P36U-D	292	В		806-869	NEW		6' SIDE ARM
DUKE	800 MHz P25	2	TTA	DBSPECTRA	DS7TMD17C	292	В					LEG
DUKE	900 MHz WAN TRUNKING (RX)	14.7	OMNI	DBSPECTRA	DS9A10P36U-D	292	С		896-900			6' SIDE ARM
DUKE	900MHz WAN TRUNKING (RX)	2	TTA	DBSPECTRA	DS9TMD5C	292	С					LEG
DUKE	VHF PAGING	21	FOLDED DIPOLE	COMMSCOPE	DB224-A	255	A		150-160			6' SIDE ARM
DUKE	800 MHz P25 (TX)	14.5	OMNI	DBSPECTRA	DS8A10P36U-D	255	В		806-869	NEW		6' SIDE ARM
DUKE	900 MHz WAN TRUNKING (TX)	14.7	OMNI	DBSPECTRA	DS9A10P36U-D	255	С		935-939	-	100	6' SIDE ARM
NCSHP	PUBLIC SAFETY 800MHz (RX)	15	OMNI	RFI	CC807-11	225	В					6' SIDE ARM
NCSHP	PUBLIC SAFETY 800MHz (TTA)	2	TTA	TXRX		225	В					LEG
DUKE	CAMBIUM RADIO	2	INTEGRATED HIGH GAIN	CAMBIUM	(2) PMP 450m	220	A	90°, 180°	5 GHz			2' STANDOFF
DUKE	CAMBIUM RADIO	2	INTEGRATED HIGH GAIN	CAMBIUM	(2) PMP 450m	220	С	0°, 270°	5 GHz			2' STANDOFF
NCSHP	PUBLIC SAFETY 800MHz (TX)	15	OMNI	RFI	CC807-11	200	В					6' SIDE ARM
	FUTURE	6	DISH	RFS	PADX6-W57AC	195	А		6			PIPE
	FUTURE	6	DISH	RFS	PADX6-W57AC	195	В		6			PIPE
	FUTURE	6	DISH	RFS	PADX6-W57AC	195	С		6			PIPE
	FUTURE LTE	8	4 PANEL, 3 SEC	CSS	VARIOUS	185	A,B,C					
	FUTURE LTE	8	4 PANEL, 3 SEC	CSS	VARIOUS	160	A,B,C					
DUKE	LIGHTING		MARKER	FLASH TECH.	L-810 MARKER	150	A					
DUKE	LIGHTING		MARKER	FLASH TECH.	L-810 MARKER	150	В					
DUKE	LIGHTING		MARKER	FLASH TECH.	L-810 MARKER	150	С					
NCSHP	FUTURE MW	6	DISH	RFS	PAD6-65B	140	А	63.32				
NCSHP	PUBLIC SAFETY MICROWAVE	6	DISH	ANDREW	PL6-65-PXA	130	В	234.8				
DUKE	MOSCAD HARRIS SIREN CONTROL	2	YAGI	DECIBEL	DB436	98	С	303	451-457		5	LEG

OWNER	LOCATION	SIZE	DIELECTRIC	MANUFACTURE	PART #
DUKE					
DUKE		2/C #6 AWG	-	FLASH TECH.	TEK90
DUKE		(1) 1/2" JUMPER TO TTA	FOAM	EUPEN	EC4-50
DUKE		(1) 7/8" (1) 1/2"	FOAM	EUPEN	EC5-50A EC4-50
DUKE	AB	(1) 1/2" JUMPER TO TTA	FOAM	EUPEN	EC4-50A
DUKE	AB	(1) 7/8" (1) 1/2"	FOAM	EUPEN	EC5-50A EC4-50
DUKE		(1) 7/8"	FOAM	EUPEN	EC5-50A
DUKE		(1) 1-5/8"	FOAM	EUPEN	EC7-50A
DUKE	AB	(1) 1-5/8"	FOAM	EUPEN	EC7-50A
NCSHP		(1) 7/8"	FOAM	EUPEN	EC5-50A
NCSHP		(1) 7/8" (1) 1/2"	FOAM	EUPEN	EC5-50A EC4-50A
DUKE		(2) CAT 5E	COPPER	SUPERIOR ESSEX	CAT5E
DUKE		(2) CAT 5E	COPPER	SUPERIOR ESSEX	CAT5E
NCSHP		(1) 1-5/8"	FOAM	EUPEN	EC7-50A
FUTURE	44 AN	(2) EU63	AIR	EUPEN	EU63
FUTURE		(2) EU63	AIR	EUPEN	EU63
FUTURE		(2) EU63	AIR	EUPEN	EU63
FUTURE		(15) 1-5/8"	FOAM	EUPEN	EC7-50A
FUTURE		(15) 1-5/8"	FOAM	EUPEN	EC7-50A
DUKE		2/C #6 AWG		FLASH TECH.	TEK90
DUKE		2/C #6 AWG		FLASH TECH.	TEK90
DUKE		2/C #6 AWG		FLASH TECH.	TEK90
CSHP - FUTURE					
NCSHP		(1) EW63	AIR	ANDREW	EW63
DUKE		(1) 1/2"	FOAM	EUPEN	EC4-50A





PROPOSED DUKE ENERGY 900MHz (TX) OMNI ANTENNA (DBSPECTRA P/N: DS9A10P36U-D) PROPOSED DUKE ENERGY 308' PROPOSED DUKE ENERGY VHF PAGING DIPOLE ANTENNA (COMMSCOPE P/N: DB224-A) PROPOSED DUKE ENERGY PROPOSED DUKE ENERGY 800MHz (DBSPECTRA P/N: DS8A10P36U-D)





	1
PPOSED DUKE ENERGY 308' F-SUPPORT TOWER	PREPARED BY:
PPOSED NCSHP PUBLIC ETY DISH ANTENNA DREW P/N: PL6-65-PXA)	SITE NAME: ERWIN RADIO BLDG
	NCDUN017 SITE ADDRESS: 465 RED HILL CHURCH ROAD DUNN, NC 28334 LATITUDE/LONGITUDE: 35.335061°, 78.6 5769° SEAL: FIRM #: P-1016 SEAL 027825 VGINEER 12/14/2020
	0 11/05/2020 CONSTRUCTION
	1 12/14/2020 CLIENT COMMENTS
	DRAWN BY: HA CHECKED BY: AD
	SHEET TITLE: ANTENNA LAYOUTS SHEET #C-3.4 CURRENT REV #: 1 ETS # 204581 AE 02
	E 13 #. 204301.AE.UZ











2'-0" WIDE ICE BRIDGE CHANNEL (P/N: COMMSCOPE WB-K110-B OR EQUIVALENT) 2'-0" LONG UNISTRUT WITH (6) - 3/4" HOLES (SPACED 3" O.C.) (TYP.)	INGINEERED TOWER SUBJECT SOURT RALEIGH, NC 27615 C: 919-782-2710, f: 919-435-0631 www.engineeredtowersolutions.com PREPARED FOR:
	12/14/2020
	REV DATE DETAILS
	U 11/05/2020 CONSTRUCTION
	CLIENT COMMENTS
PIPE TO BE ETE	
	DRAWN BY: HA CHECKED BY: AD
	SHEET TITLE: ICE BRIDGE DETAILS SHEET #C-4.5 CURRENT REV #: 1 ETS # 204581 AF 02



ELECTRICAL NOTES	ELECTRICAL NOTES	ABBREVIATIONS			
ELECTRICAL NOTES SCOPE 1. SHALL INCLUDE ALL LABOR, MATERIALS AND APPLIANCES REQUIRED FOR THE FURNISHING, INSTALLING AND TESTING, COMPLETE AND READY FOR OPERATION OF ALL WORK SHOWN ON THE DRAWING AS SPECIFIED HEREIN: A. ELECTRIC SERVICE B. CONDUIT AND RACEWAY C. CONDUCTORS D. MISCELLANEOUS MATERIALS E. TELEPHONE CONDUITS F. LIGHTNING ARRESTING SYSTEM CODES 1. THE INSTALLATION SHALL COMPLY WITH ALL LAWS APPLYING TO ELECTRICAL INSTALLATION IN EFFECT WITH THE REGULATIONS OF THE LATEST EDITION OF THE NATIONAL ELECTRICAL SAFETY CODE AND THE ICC 2012, ADMINISTRATIVE RULES WITH THE NATIONAL ELECTRIC CODE, AND ANY LOCAL CODES AND ORDINANCES WITH THE REQUIATION OF THE SERVING UTILITY COMPANY, ALL PERMITS REQUIRED SHALL BE OBTINED AND, AFTER COMPLETION OF WORK, THE OWNER SHALL BE FURNISHED A CERTIFICATE OF FINAL INSPECTION AND APPROVAL. TESTING THESTING OF THE INSTALLATION, OPERATE AND ADJUST ALL EQUIPMENT AND SYSTEMS TO MEET SPECIFIED PERFORMANCE REQUIREMENTS. ALL TESTING SHALL BE DONE BY QUALIFIED PERSONNEL. GURANTEE 1. IN ADDITION TO THE GUARANTEE OF THE EQUIPMENT BY THE MANUFACTURER, EACH PIECE OF	 ELECTRICAL NOTES EXTERIOR CONDUIT 1. ALL EXPOSED CONDUIT SHALL BE NEATLY INSTALLED AND RUN PARALLEL OR PERPENDICULAR TO STRUCTURAL ELEMENTS. SUPPORTS AND MOUNTING HARDWARE SHALL BE HOT DIPPED GALVANIZED STEEL. EQUIPMENT 1. ALL DISCONNECT SWITCHES SHALL BE SERVICE ENTRANCE RATED, HEAVY DUTY TYPE. 2. NEW CIRCUIT BREAKERS SHALL BE RATED TO WITHSTAND THE MAXIMUM AVAILABLE FAULT CURRENT AS DETERMINED BY THE LOCAL UTILITY. CONTRACTOR SHALL VERIFY MAXIMUM AVAILABLE FAULT CURRENT, AND COORDINATE INSTALLATION WITH THE LOCAL UTILITY BEFORE STARTING WORK. CONDUCTORS 1. FURNISH AND INSTALL CONDUCTORS CALLED FOR IN THE DRAWINGS. ALL CONDUCTORS SHALL HAVE TYPE THWN (MIN) (75 DEGREE) INSULATION, RATED FOR 600 VOLTS. 2. ALL CONDUCTORS SHALL BE UL LISTED AND SHALL BE PROVIDED AND INSTALLED AS FOLLOWS: A. MINIMUM WIRE SIZE SHALL BE #12 AWG. B. ALL CONDUCTORS SIZE #8 AND LARGER SHALL BE STRANDED. CONDUCTORS SIZED #10 AND SMALLER MAY BE SOLID OR STRANDED. C. CONNECTION FOR #10 AWG AND SMALLER SHALL BE BY TWISTING TIGHT AND INSTALLING INSULATED PRESSURE OR WIRE NUT CONNECTIONS. D. CONNECTION FOR #8 AWG AND LARGER SHALL BE BY USE OF STEEL CRIMP-ON SLEEVES WITH NYLON INSULATOR. 	A AMPERE NEC AFG ABOVE FINISHED GRADE PH ATS AUTOMATIC TRANSFER SWITCH PNL AWG AMERICAN WIRE GAUGE PNLBD BCW BARE COPPER WIRE PVC BFG BELOW FINISHED GRADE PVC BKR BREAKER RGS C CONDUIT SW DISC DISCONNECT TGB EGR EXTERNAL GROUND RING UL EMT ELECTRIC METALLIC TUBING FSC FSC FLEXIBLE STEEL CONDUIT V GEN GENERATOR W GPS GLOBAL POSITIONING SYSTEM XFMR IGB ISOLATED GROUND BAR IGR IGR INTERIOR GROUND RING (HALO) KW KW KILOWATTS SING (HALO)			
 IN ADDITION TO THE GUARANTEE OF THE EXQUIPMENT BY THE MANUFACTURER, EACH PIECE OF EQUIPMENT SPECIFIED HEREIN SHALL ALSO BE GUARANTEED FOR DEFECTS OF MATERIAL OR WORKMANSHIP OCCURRING DURING A PERIOD OF ONE (1) YEAR FROM FINAL ACCEPTANCE OF THE WORK BY THE OWNER. WITHOUT EXPENSE TO THE OWNER ALL WARRANTEE CERTIFICATES & GUARANTEES FURNISHED BY THE MANUFACTURERS SHALL BE TURNED OVER TO THE OWNER. COORDINATION CONTRACTOR SHALL COORDINATE ALL WORK WITH THE POWER AND TELEPHONE COMPANIES AND SHALL COORDINATE ALL WORK WITH THE POWER AND TELEPHONE COMPANIES AND SHALL COMPLY WITH ALL SERVICE REQUIREMENTS OF EACH UTILITY COMPANY, IF REQUIRED. EXAMINATION OF SITE PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL VISIT THE SITE OF THE JOB AND SHALL FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED ELECTRICAL INSTALLATION AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. FAILURE TO COMPLY WITH THE INTENT OF THIS PARAGRAPH WILL IN NO WAY RELIEVE THE CONTRACTOR OF PERFORMING ALL WORK NECESSARY FOR A COMPLETE AND WORKING SYSTEM OR SYSTEMS. CUTTING, PATCHING AND EXCAVATION COORDINATION OF ALL SLEEVES, CHASES, ETC., WILL BE REQUIRED PRIOR TO THE CONSTRUCTION OF ANY PORTION OF THE WORK. ALL CUTTING AND PATCHING OF WALLS, PARTITIONS, FLOORS, AND CHASES IN CONCRETE, WOOD, STEEL OR MASONRY SHALL BE DONE AS PROVIDED ON THE DRAWINGS. ALL NECESSARY EXCAVATIONS AND BACKFILLING INCIDENTAL TO THE WORK UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWING SHALL BE PROVIDED BY THIS CONTRACTOR. SEAL ALL PENETRATION THROUGH WALL AND FLOORS WITH APPROVED GROUT. RACEWAYS ALL NECESSARY EXCAVATIONS AND BACKFILLING INCIDENTAL TO THE WORK UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS. WHERE INSTALLED ON EXTERIORS AND EXPOSED TO DAMAGE, ALL CONDUIT SHALL BE RIGID STEEL EMT OR SCH40 PVC. AS INDICATED ON THE DRAWINGS. WHERE INSTALLED ON EXTERIORS AND EXPOSED TO DAMAGE, ALL	 ALL CONDUCTORS SHALL BE COLOR CODED IN ACCORDANCE WITH NEC STANDARDS. THE RACEWAY SYSTEM SHALL BE COMPLETE BEFORE INSTALLING CONDUCTORS PENETRATIONS CONTRACTOR SHALL COMPLY WITH UL PENETRATION DETAILS FOR PENETRATIONS OF ALL RATED WALLS, ROOF, ETC. GROUNDING ALL ELECTRICAL NEUTRALS, RACEWAYS AND NON-CURRENT CARRYING PARTS OF ELECTRICAL EQUIPMENT AND ASSOCIATED ENCLOSURES SHALL BE GROUNDED IN ACCORDANCE WITH NEC ARTICLE 250. THIS SHALL INCLUDE NEUTRAL CONDUCTORS, CONDUITS, SUPPORTS, CABINETS, BOXES, GROUND BUSSES, ETC. THE NEUTRAL CONDUCTOR FOR EACH SYSTEM SHALL BE GROUNDED BY ONE POINT ONLY. PROVIDE GROUND CONDUCTOR IN ALL RACEWAYS. PROVIDE BONDING AND GROUND TO MEET NFPA 780 - LIGHTNING PROTECTION AS A MINIMUM. ALL GROUNDING SHALL BE INSTALLED IN ACCORDANCE WITH MOTOROLA R-56 GUIDELINES, SECTION 4. 				
 THE DRAWINGS. ALL CONDUIT RUNS SHALL USE APPROVED COUPLINGS AND CONNECTORS. PROVIDE INSULATED BUSHING FOR ALL CONDUIT TERMINATIONS. ALL CONDUIT RUNS IN A WET LOCATION SHALL HAVE WATERPROOF FITTINGS. PROVIDE SUPPORTS FOR ALL CONDUITS IN ACCORDANCE WITH NEC REQUIREMENTS. ALL CONDUITS SHALL BE SIZED AS REQUIRED BY NEC. BURIAL DEPTH OF ALL CONDUITS SHALL BE AS REQUIRED BY CODE FOR EACH SPECIFIC CONDUIT TYPE AND APPLICATION. CONDUIT ROUTES ARE SCHEMATIC. CONTRACTOR SHALL FIELD VERIFY BEFORE BID. COORDINATE ROUTE WITH WIRELESS CARRIER AND BUILDING OWNER. 		E UNDERGR T			



200A, 120/240V, POWER PANEL SCHEDULE, MCB.														
	V (WA	A TTS)	WIRE	BREA			T PHASE CKT		BREAKER		WIRE	VA (WATTS)		
JERVED	L1	L2		Р	TRIP	#		#	Р	TRIP		L1	L2	JERVED
	2940			2	504	1		2		504		2940		
HVAC #1		2940		2	SUA	3	॒॑॑ॾ	4		SUA			2940	HVAC #2
LIGHTS	320			1	20A	5	A	6	1	20A		180		TWIST REC
QUAD REC		720		1	20A	7	<u>Λ</u> ΒΛ	8	1	20A			180	TWIST REC
QUAD REC	1080			1	20A	9		10	1	20A		180		TWIST REC
SMOKE		9.6		1	20A	11		12	1	20A			180	TWIST REC
DEHYDRATOR	55			1	20A	13		14	1	20A		180		TWIST REC
TOWER LIGHT		386.1		1	20A	15		16	1	20A			180	TWIST REC
						17		18	1	20A		180		TWIST REC
TWIST REC		1750		1	20A	19	<u> </u>	20						SPARE
TWISTLOCK	1750			2	20.4	21	<u></u> Α Λ	22						SPARE
REC		1750		2	204	23	$A \blacksquare T$	24	2	604			4	SURGE
TWISTLOCK	1750			2	20.4	25		26	2			4		ARRESTOR
REC		1750		2	204	27	$A \square $	28						SPARE
TWISTLOCK	1750			2	204	29		30						SPARE
REC		1750		2	207	31	$A \square $	32						SPARE
TWISTLOCK	1750			2	204	33		34						SPARE
REC		1750		2	207	35	$A \square $	36						SPARE
TWISTLOCK	1750			2	204	37		38						SPARE
REC		1750		-	20/1	39	$A \square $	40						SPARE
GFCI REC	180			1	20A	41		42						SPARE
VOLT AMPS	13,325	5 14,58	56									3,664	3,484	VOLT AMPS

16,989	18,040	TOTAL VOLT AMPERES
142	150	TOTAL AMPS PER LEG
152	.50	CONNECTED
163	.70	DEMAND
36.	.30	SPARE

SHELTER PANEL SCHEDULE

N.T.S.







CIRCUIT	SCHEDULE
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	FROM	то	CONDUCTOR	RACEWAY	BY	FUNCTION	NOTES
1	SOURCE	METER	(3) 3/0 (1) #4 G	3" SCH 80 PVC	LOCAL UTILITY	POWER SOURCE	2 1/2" SCH 80 PVC RISER TO METER, 3" SCH 80 PVC UNDERG
2	METER	FRAME DISCONNECT SWITCH	(3) 3/0 (1) #4 G	2" SCH 80 PVC	SUBCONTRACTOR	METER DISCONNECT	
3	FRAME DISCONNECT SWITCH	#3 SHELTER DISCONNECT SWITCH	(3) 3/0 (1) #4 G	2" SCH 80 PVC	SUBCONTRACTOR	MAIN DISCONNECT	
4	#3 SHELTER DISCONNECT SWITCH	AUTOMATIC TRANSFER SWITCH	(3) 3/0 (1) #4 G	2" RGSC	SHELTER MANUFACTURER	SERVICE ENTRANCE	
5	AUTOMATIC TRANSFER SWITCH	MANUAL TRANSFER SWITCH	(3) 3/0 (1) #4 G	2" RGSC	SHELTER MANUFACTURER	TEMPORARY EMERGENCY POWER	
6	AUTOMATIC TRANSFER SWITCH	AC POWER PANEL	(3) 3/0 (1) #4 G	2" RGSC	SHELTER MANUFACTURER	AC POWER TO BREAKERS	
7	STANDBY GENERATOR	#1 SHELTER DISCONNECT SWITCH	(3) 3/0 (1) #4 G	2" SCH 80 PVC	SUBCONTRACTOR	AUTO EMERGENCY POWER	
8	AC POWER PANEL	STANDBY GENERATOR CONTROL BOARD	(2) #12	1" SCH 40 PVC	SUBCONTRACTOR	BATTERY CHARGER	ROUTE CABLES THROUGH AUTOMATIC TRANSFER SWITCH T
9	AC POWER PANEL	STANDBY GENERATOR CONTROL BOARD	(2) #12 (1) #12 G	1" SCH 40 PVC	SUBCONTRACTOR	ENGINE HTR/COOLANT	1" CONDUITS
10	STANDBY GENERATOR CONTROL BOARD	AUTOMATIC TRANSFER SWITCH	(2) #14 (DC)	1-1/2" SCH 40 PVC	SUBCONTRACTOR	CONTROL	ROUTE VIA DUKE ENERGY ALARM BOX, CABLE WILL BE ROUT
11	STANDBY GENERATOR CONTROL BOARD	AUTOMATIC TRANSFER SWITCH	2-WIRE RS485	1-1/2" SCH 40 PVC	SUBCONTRACTOR	CONTROL	ALARM BOX TO GENERATOR
12	MANUAL TRANSFER SWITCH	DUKE ENERGY ALARM BOX	(4) #18	1" PVC	SUBCONTRACTOR	MANUAL TRANSFER SWITCH ALARM	ROUTE VIA AUTOMATIC TRANSFER SWITCH. SEE E-## ON WH ENERGY ALARM BOX. CABLE PART #: BELDEN 83351E
13	STANDBY GENERATOR CONTROL BOARD	DUKE ENERGY ALARM BOX	(15) #18	1-1/2" SCH 40 PVC	SUBCONTRACTOR	GENERATOR ALARMS	SEE E-5 ON WHERE TO TERMINATE CABLES WITHIN DUKE EN BELDEN 8874MN
14	AUTOMATIC TRANSFER SWITCH	DUKE ENERGY ALARM BOX	(8) #18	1" PVC	SUBCONTRACTOR	AUTOMATIC TRANSFER SWITCH ALARMS	SEE E-5 ON WHERE TO TERMINATE CABLES WITHIN DUKE EN BELDEN 8448
15	PORTABLE GENERATOR RECEPTACLE	#2 SHELTER DISCONNECT SWITCH	(3) 3/0 (1) #4 G	2" RGSC	SHELTER MANUFACTURER	PORTABLE EMERGENCY POWER	
16	#2 SHELTER DISCONNECT SWITCH	MANUAL TRANSFER SWITCH	(3) 3/0 (1) #4 G	2" RGSC	SHELTER MANUFACTURER	PORTABLE EMERGENCY POWER	
17	#1 SHELTER DISCONNECT SWITCH	MANUAL TRANSFER SWITCH	(3) 3/0 (1) #4 G	2" RGSC	SHELTER MANUFACTURER	AUTO EMERGENCY POWER	
18	EQUIPMENT	GROUND RING	#2 THHN	NONE	SUBCONTRACTOR	GROUND CONNECTION	
19	GENERATOR	GROUND RING	2/0 BCW	NONE	SUBCONTRACTOR	GROUND CONNECTION	
20	STANDBY GENERATOR CONTROL BOARD	JLL ALARM BOX	(10) #18	1-1/2" SCH 40 PVC	SUBCONTRACTOR	GENERATOR ALARMS	LEAVE CABLE 20 IN JLL ALARM BOX, CABLE PART #: BELDEN

TO POWER	PREPARED BY: FIGURE FRED TOWER SOLUTIONS, PLLC 3227 WELLINGTON COURT RALEIGH, NC 27615 o: 919-782-2710, f: 919-435-0631 www.engineeredtowersolutions.com
ER MODEL SENERATOR G G H II E E 18	PREPARED FOR:
	SITE NAME: ERWIN RADIO BLDG SITE NUMBER: NCDUN017
-	SITE ADDRESS: 465 RED HILL CHURCH ROAD DUNN, NC 28334 <u>LATITUDE/LONGITUDE:</u> 35.335061°, 78.655769° SEAL: FIRM #: P-1010
GROUND	SEAL 027825
TO GENERATOR USING DEDICATED	REV DATE DETAILS 0 11/05/2020 CONSTRUCTION 1 12/14/2020 CLIENT COMMENTS
JTED THROUGH 2 SEPARATE GY ALARM BOX AND THEN JLL	
HERE TO LAND CABLES IN DUKE	
NERGY ALARM BOX CABLE PART #:	
	DRAWN BY: HA CHECKED BY: AD
1 5308UE	SHEET # E-4 CURRENT REV #:1
	ETS #: 204581.AE.02



- NOTES DETAIL SHOWING JUNCTION BOX WITH COVER REMOVED (P/N: EATON 12126HC) 2
- SUBCONTRACTOR TO GROUND JUNCTION BOX TO SHELTER GROUND



DUKE ENERGY ALARM BOX INSTALLATION







	PREPARED BY:
NED COPPER GROUND TO	
UIPMENT SHELTER GROUND	
(P. OF 2)	
SPECTION WELL	ENGINEERED TOWER
ΎΡ.)	3227 WELLINGTON COURT
	RALEIGH, NC 27615
	www.engineeredtowersolutions.com
	PREPARED FOR:
OPOSED SHELTER MASTER	C DUIVE
ROUND BAR	DUKE
	FNERGY
OPOSED #2 AWG SOLID TINNED	
OPPER GROUND TO EQUIPMENT	
IELTER GROUND RING	
	SITE NAME:
	ERWIN RADIO BLDG
	SITE NUMBER:
	NCDUN017
(P.)	SITE ADDRESS:
	465 RED HILL CHURCH ROAD DUNN, NC 28334
	LATITUDE/LONGITUDE:
	35.335061°, -79.655769°
	SEAL: FIRM #: P-1016
AWG SOLID TINNED COPPER	A 9890
ROUND RING	O SEESSIG 1
	CEAL AL
	SEAL
	027825
	5. En
	G G G
	12/14/2020
I	
	1 12/14/2020 CLIENT COMMENTS
OPOSED #2 AWG SOLID TINNED	
YPER BOND TO FENCE	
OPOSED #2 AWG SOLID	
NINED COPPER TO GROUND DD FOR SERVICE	
	DRAWN BY: HA CHECKED BY: AD
	GROUNDING PLANS
	SHEET # C 1 CURRENT REV #:1
	U-1 ETS # 204581 AE 02



€	PREPARED FO
	ERWIN 465 RE LAT 35.3
P OF THE GROUND RODS AND THE EATER. GROUNDING ELECTRODES SERVICE DISCONNECTING MEANS. E. THE CONSTRUCTION MANAGER THE EARTH'S SURFACE WHEREVER 005, ARTICLE 250.53) HOULD BE INSTALLED BEYOND THE SE POSITIONED 2 FEET TO 6 FEET EARTH AROUND THE GROUND RING -2002, SECTION 5.3.1) HOLE CONNECTOR FOR BONDS TO NDUITS. EXOTHERMICALLY WELD	REV DATE 0 11/05/20 1 12/14/20
THERMIC WELD TO BOND GROUND NSPECTION SLEEVE DETAIL. S CLAMP, BLACKBURN GUV SERIES STANDARD SPECIFICATIONS, THE IDING CIRCUITS. THE GROUNDING ALL NOTIFY THE OWNER PRIOR TO IAN 10 OHMS. USE 3 POINT FALL OF THIS VICINITY TO PROTECT FROM ID 90° PER NFPA 780-2004, SECTION QUIRED): (GENERAL CONTRACTOR	
F CONSTRUCTION TO VERIFY LESS	GF D SHEET # G

PREPARED BY: ENGINEERED TOWER BOLUTIONS, PULLO 3227 WELLINGTON COURT RALEIGH, NC 27615 o: 919-782-2710, f: 919-435-0631 www.engineeredtowersolutions.com PREPARED FOR: PREPARED FOR: CONTRACTOR						
SITE NAME:	Ī					
ERWIN RADIO BLDG						
NCDUN017						
SITE ADDRESS: 465 RED HILL CHURCH ROAD						
DUNN, NC 28334 LATITUDE/LONGITUDE:						
35.335061°, 78.655769°						
SEAL 027825						
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0 11/05/2020 CONSTRUCTION						
1 12/14/2020 CLIENT COMMENTS	-					
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DRAWN BY: HA CHECKED BY: AD						
DRAWN BY: HA CHECKED BY: AD						







IND BAR.	PREF	PARED BY:	
MANUFACTURER).		1	
		ENGINEE SOLUTI 3227 WEL RALEI o: 919-782-2 www.enginee	THE TOWER ONS, PLCC LINGTON COURT (GH, NC 27615 2710, f: 919-435-0631 redtowersolutions.com
	PREF	ARED FOR:	
т	4		DUKE ENERGY.
ADIO		SI	TE NAME:
R, DUNT	EF	RWIN F	RADIO BLDG
ED		SIT	
		INC SITE	
		465 RED H DUN	ILL CHURCH ROAD IN, NC 28334
		<u>LATITUI</u> 35.3350	DE/LONGITUDE:)61°, -78.655769°
ANTENNAS	SEAL	CHARGE CHARGE	CABO SEAL 27825 PHER 12/14/2020
	REV	DATE	DETAILS
		11/05/2020	CLIENT COMMENTS
	DRAV	VN BY: HA	CHECKED BY: AD
		GRO DE1	OUNDING TAILS III
		T# ^ 4	CURRENT REV #: 1
		G-4	ETS #: 204581.AE.02