



8921 RESEARCH DRIVE
CHARLOTTE, NC 28262

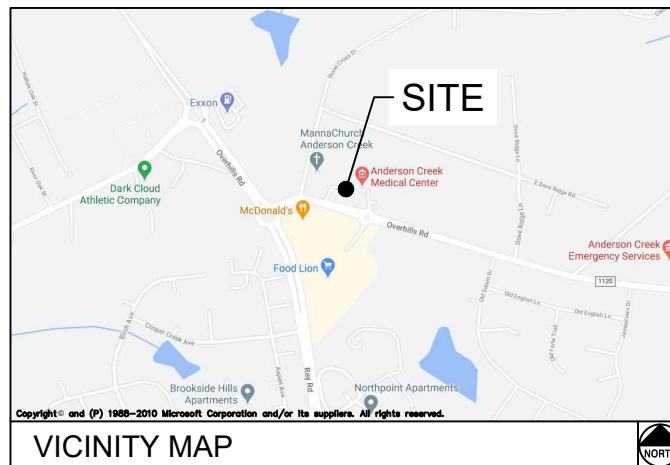
OVERHILLS

SITE ADDRESS (E-911 TBD)

6792 OVERHILLS RD
SPRING LAKE, NC 28390
HARNETT COUNTY
LATITUDE: 35° 15' 24.34" N
LONGITUDE: 78° 57' 56.89" W
TAX/PIN #: 0514-08-1369.000
ZONING: RA-20

HARNETT COUNTY SHERIFF'S OFFICE
175 BAIN STREET
LILLINGTON, NC 27546
PHONE: (910) 893-9111
ATTN.: CUSTOMER SERVICE

SPRING LAKE FIRE DEPARTMENT
300 RUTH STREET
SPRING LAKE, NC 28390
PHONE: (910) 436-0337
ATTN.: CUSTOMER SERVICE



DRIVING DIRECTIONS

FROM CHARLOTTE OFFICE: HEAD SOUTHWEST 0.1 MI; CONTINUE STRAIGHT 75 FT; TURN RIGHT ONTO RESEARCH DR 0.4 MI; TURN LEFT ONTO W W.T.HARRIS BLVD 0.4 MI; TURN LEFT TO MERGE ONTO I-85 N TOWARD KANNAPOLIS 0.3 MI; MERGE ONTO I-85 N 6.1 MI; KEEP LEFT TO STAY ON I-85 N 68.8 MI; KEEP LEFT AT THE FORK TO STAY ON I-85 N 5.5 MI; TAKE EXIT 126A-126B TO MERGE ONTO US-421 S TOWARD SANFORD 55.8 MI; CONTINUE ONTO NC-87 BYP 1.1 MI; CONTINUE ONTO NC-87 16.0 MI; TURN LEFT ONTO NURSERY RD 2.4 MI; CONTINUE STRAIGHT ONTO OVERHILLS RD 1.2 MI; AT THE TRAFFIC CIRCLE, TAKE THE 1ST EXIT AND STAY ON OVERHILLS RD 0.2 MI; AT THE TRAFFIC CIRCLE, TAKE THE 2ND EXIT AND STAY ON OVERHILLS RD 0.2 MI; AT THE TRAFFIC CIRCLE, TAKE THE 4TH EXIT AND STAY ON OVERHILLS RD 479 FT. THE DESTINATION WILL BE ON THE RIGHT.

MUNICIPALITY:
HARNETT COUNTY

STATE:
NORTH CAROLINA

TOWER TYPE:
WATER TANK

TOWER HEIGHT:
142.8' (HIGHEST APPURTENANCE (152.2))

NUMBER OF CARRIERS:
1 EXISTING, 1 PROPOSED

USE:
EXISTING ELEVATED WATER TANK AND UNMANNED EQUIPMENT

FLOOD INFO
SITE IS LOCATED WITHIN FEMA FLOOD MAP AREA 3720050400J DATED 10/03/2006 WITHIN FLOOD ZONE X.

PROJECT SUMMARY

DEVELOPER
VERIZON WIRELESS
8921 RESEARCH DRIVE
CHARLOTTE, NC 28262
PHONE: (704) 577-8785
ATTN: MICHAEL HAVEN

POWER COMPANY
SOUTH RIVER EMC
PHONE: (910) 892-8071
ATTN.: CUSTOMER SERVICE

PROPERTY OWNER
SOUTH CENTRAL WATER AND SEWER DIST.
700 MCKINNEY PARKWAY
LILLINGTON, NC 27546
PHONE: (478) 987-0303
ATTN.: DEBBIE SULLIVAN

CONSULTANT
KIMLEY-HORN AND ASSOCIATES, INC.
11720 AMBER PARK DRIVE, SUITE 600
ALPHARETTA, GEORGIA 30009
PHONE: (770) 545-6105
ATTN.: DAVID FRANKLIN

CONTACTS

SHEET NO.	SHEET TITLE
T1	COVER SHEET
T2	APPENDIX B - BUILDING CODE SUMMARY
N1	GENERAL NOTES
C0	OVERALL SITE PLAN
C1	SITE PLAN
C2	EQUIPMENT PAD LAYOUT
C3	EQUIPMENT RACK DETAIL - FRONT
C4	EQUIPMENT RACK DETAIL - REAR
C5	CONCRETE PAD FOUNDATION DETAILS
C6	WAVEGUIDE BRIDGE DETAILS
C7	ANTENNA AND TOWER ELEVATION DETAILS
C8	CORRAL DETAILS
C8.1	CORRAL DETAILS
C9	BRACKET DETAILS
C10	BALCONY AND DOME MOUNTING DETAILS
M1	MECHANICAL PLAN
E1	ELECTRICAL NOTES
E2	UTILITY SERVICE ROUTING PLAN
E3	OVERALL UTILITY ROUTING SERVICE PLAN
E4	ELECTRICAL SINGLE LINE DIAGRAM
E5	PANEL SCHEDULE
E6	ELECTRICAL DETAILS
E7	GROUNDING NOTES
E8	GROUNDING PLAN
E9	GROUNDING SINGLE LINE DIAGRAM
E10	GROUNDING DETAILS
E11	GROUNDING DETAILS

SHEET INDEX

HARNETT COUNTY PLANNING SERVICES
108 E FRONT STREET
LILLINGTON, NC 2746
PHONE: (910) 893-7525
ATTN.: CUSTMER SERVICE

PERMIT INFORMATION

verizon
8921 RESEARCH DRIVE
CHARLOTTE, NORTH CAROLINA 28262

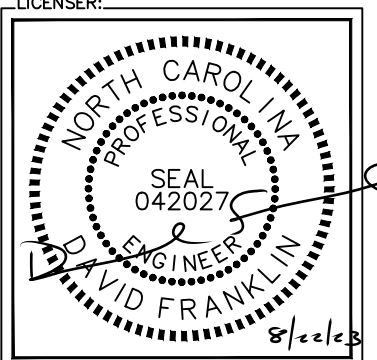
PROJECT INFORMATION:
SITE NAME:
OVERHILLS
SITE No.: 30356
PROJECT #: 20141092521
6792 OVERHILLS RD
SPRING LAKE, NC 28390
HARNETT COUNTY

PLANS PREPARED BY:
Kimley»Horn
11720 AMBER PARK DRIVE, SUITE 600
ALPHARETTA, GA 30009
PHONE: 770-619-4280
WWW.KIMLEY-HORN.COM
NC License F-0102



REV: DATE: ISSUED FOR: BY:

REV	DATE	ISSUED FOR	BY
8			
7			
6			
5			
4			
3			
2	08/17/23	CONSTRUCTION	DMF
1	03/07/22	CONSTRUCTION	DMF
0	04/23/21	CONSTRUCTION	DMF



KHA PROJECT NUMBER:
018985426

DRAWN BY: TDM CHECKED BY: CDS

SHEET TITLE:
COVER SHEET

SHEET NUMBER:
T1

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2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)

Name of Project: VERIZON WIRELESS - OVERHILLS
Address: 6792 OVERHILLS RD, SPRING LAKE, NC
Owner/Authorized Agent: DAVID FRANKLIN Phone # (770) 545-6105

CONTACT: DAVID FRANKLIN, P.E. (#042027)
DESIGNER FIRM NAME LICENSE # TELEPHONE # E-MAIL
Architectural KIMLEY-HORN & ASSOC. DAVID FRANKLIN 042027 (770) 545-6105 david.franklin@kimley-horn.com

2018 NC BUILDING CODE: [X] New Building [] Addition [] Renovation
2018 NC EXISTING BUILDING CODE: EXISTING: [] Prescriptive [] Repair [] Chapter 14
CONSTRUCTED: (date) CURRENT OCCUPANCY(S) (Ch. 3): TELECOMMUNICATIONS SITE

BASIC BUILDING DATA
Construction Type: [] I-A [] II-A [] III-A [] IV [] V-A
Sprinklers: [] No [] Partial [] Yes [] NFPA 13 [] NFPA 13R [] NFPA 13D

Gross Building Area Table
FLOOR EXISTING (SQ FT) NEW (SQ FT) SUB-TOTAL
3rd Floor
2nd Floor
Mezzanine
1st Floor
Basement

ALLOWABLE AREA
Primary Occupancy Classification(s): Select one Select one Select one Select one Select one
Assembly [] A-1 [] A-2 [] A-3 [] A-4 [] A-5

Accessory Occupancy Classification(s):
Incidental Uses (Table 509):
Special Uses (Chapter 4 - List Code Sections):
Mixed Occupancy: [] No [] Yes Separation: Hr. Exception:

Table with 4 columns: STORY NO., DESCRIPTION AND USE, (A) BLDG AREA PER STORY (ACTUAL), (B) TABLE 506.2 AREA, (C) AREA FOR FRONTAGE INCREASES, (D) ALLOWABLE AREA PER STORY OR UNLIMITED

1 Frontage area increases from Section 506.2 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = (F)
b. Total Building Perimeter = (P)
c. Ratio (F/P) = (F/P)
d. W = Minimum width of public way = (W)
e. Percent of frontage increase = 100[(F/P - 0.25) x W/30] = (%)

ALLOWABLE HEIGHT
Table with 4 columns: BUILDING HEIGHT IN FEET (TABLE 504.3), ALLOWABLE, SHOWN ON PLANS, CODE REFERENCE

FIRE PROTECTION REQUIREMENTS

Table with 7 columns: BUILDING ELEMENT, FIRE SEPARATION DISTANCE (FEET), REQ'D, RATING, DETAIL # AND SHEET #, DESIGN # FOR RATED ASSEMBLY, SHEET # FOR RATED PENETRATION, SHEET # FOR RATED JOINTS

PERCENTAGE OF WALL OPENING CALCULATIONS

Table with 4 columns: FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES, DEGREE OF OPENINGS PROTECTION (TABLE 705.8), ALLOWABLE AREA (%), ACTUAL SHOWN ON PLANS (%)

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting: [] No [] Yes
Exit Signs: [] No [] Yes
Fire Alarm: [] No [] Yes

LIFE SAFETY PLAN REQUIREMENTS

- Life Safety Plan Sheet #:
[] Fire and/or smoke rated wall locations (Chapter 7)
[] Assumed and real property line locations (if not on the site plan)
[] Exterior wall opening area with respect to assumed property lines (705.8)

ACCESSIBLE DWELLING UNITS (SECTION 1107)

Table with 8 columns: TOTAL UNITS, ACCESSIBLE UNITS REQUIRED, ACCESSIBLE UNITS PROVIDED, TYPE A UNITS REQUIRED, TYPE A UNITS PROVIDED, TYPE B UNITS REQUIRED, TYPE B UNITS PROVIDED, TOTAL ACCESSIBLE UNITS PROVIDED

ACCESSIBLE PARKING (SECTION 1106)

Table with 4 columns: LOT OR PARKING AREA, TOTAL # OF PARKING SPACES, # OF ACCESSIBLE SPACES PROVIDED, TOTAL # ACCESSIBLE UNITS PROVIDED

PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)

Table with 2 columns: USE, WATERCLOSETS, URINALS, LAVATORIES, SHOWERS, DRINKING FOUNTAINS

SPECIAL APPROVALS

Special approval: Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, etc., describe below

ENERGY SUMMARY

The following data shall be considered minimum and any special attributes required to meet the energy code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet.

Existing building envelope complies with code: [] No [] Yes
Climate Zone: [] 3A [] 4A [] 5A
Method of Compliance: Energy Code [] Performance [] Prescriptive

THERMAL ENVELOPE (Prescriptive method only)

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:
Openings (windows or doors with glazing)
U-Value of assembly:
Solar heat gain coefficient:
projection factor:
Door R-Values:

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:

NOTE: SCOPE OF WORK INCLUDES INSTALLATION OF CAST IN PLACE CONCRETE PAD, PREFABRICATED EQUIPMENT CABINETS AND GENERATOR. NO NEW BUILDING BEING CONSTRUCTED.

2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS STRUCTURAL DESIGN

(PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)
DESIGN LOADS:

Importance Factors: Snow (Ia) Seismic (Ia)
Live Loads: Roof Mezzanine Floor
Ground Snow Load:
Wind Load: Basic Wind Speed Exposure Category

SEISMIC DESIGN CATEGORY

Provide the following Seismic Design Parameters:
Risk Category (Table 1604.5)
Spectral Response Acceleration
Site Classification (ASCE 7)
Data Source:
Basic structural system
Analysis Procedure:
Architectural, Mechanical, Components anchored?

LATERAL DESIGN CONTROL

Lateral Design Control: Earthquake Wind
SOIL BEARING CAPACITIES:
Field Test (provide copy of test report)
Presumptive Bearing capacity
Pile size, type, and capacity

2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS MECHANICAL DESIGN

(PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)
MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone
winter dry bulb:
summer dry bulb:
Interior design conditions
winter dry bulb:
summer dry bulb:
relative humidity:

Building heating load

Building cooling load

Mechanical Spacing Conditioning System
Unitary
description of unit:
heating efficiency:
cooling efficiency:
size category of unit:
Boiler
Size category. If oversized, state reason:
Chiller
Size category. If oversized, state reason:
List equipment efficiencies:

2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS ELECTRICAL DESIGN

(PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)
ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance: Energy Code ASHRAE 90.1
Lighting schedule (each fixture type)
lamp type required in fixture
number of lamps in fixture
ballast type used in the fixture
number of ballasts in fixture
total wattage per fixture
total interior wattage specified vs. allowed (whole building or space by space)
total exterior wattage specified vs. allowed

Additional Efficiency Package Options

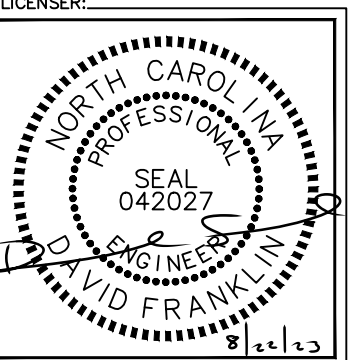
- (When using the 2018 IECC; not required for ASHRAE 90.1)
[] C406.2 More Efficient HVAC Equipment Performance
[] C406.3 Reduced Lighting Power Density
[] C406.4 Enhanced Digital Lighting Controls
[] C406.5 On-Site Renewable Energy
[] C406.6 Dedicated Outdoor Air System
[] C406.7 Reduced Energy Use in Service Water Heating



PROJECT INFORMATION:
SITE NAME: OVERHILLS
SITE No.: 30356
PROJECT #: 20141092521
6792 OVERHILLS RD
SPRING LAKE, NC 28390
HARNETT COUNTY

PLANS PREPARED BY:
Kimley Horn
11720 AMBER PARK DRIVE, SUITE 600
ALPHARETTA, GA 30009
PHONE: 770-619-4280
WWW.KIMLEY-HORN.COM
NC License F-0102

Table with 4 columns: REV., DATE, ISSUED FOR, BY.
Row 1: 8, 04/23/21, CONSTRUCTION, DMF



KHA PROJECT NUMBER: 018985426

DRAWN BY: TDM CHECKED BY: CDS

SHEET TITLE: APPENDIX B - BUILDING CODE SUMMARY

SHEET NUMBER: T2

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1.00 GENERAL NOTES

- 1.01 ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE DRAWINGS AND SPECIFICATIONS. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE, LOCAL AND NATIONAL CODES, ORDINANCES AND OR REGULATIONS APPLICABLE TO THIS PROJECT.
- 1.02 THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES AND SHALL CHECK ALL DIMENSIONS. ALL DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE PROJECT MANAGER AND/OR ENGINEER AND BE RESOLVED BEFORE PROCEEDING WITH WORK. WHERE THERE IS A CONFLICT BETWEEN DRAWING AND VERIZON SPECIFICATIONS, THE VERIZON PROJECT ENGINEER SHOULD BE CONTACTED FOR CLARIFICATION.
- 1.03 ALL INFORMATION SHOWN ON THE DRAWINGS RELATIVE TO EXISTING CONDITIONS IS GIVEN AS THE BEST PRESENT KNOWLEDGE, BUT WITHOUT GUARANTEE OF ACCURACY. WHERE ACTUAL CONDITIONS CONFLICT WITH THE DRAWINGS, THEY SHALL BE REPORTED TO THE PROJECT MANAGER AND/OR ENGINEER SO THAT PROPER REVISIONS MAY BE MADE. MODIFICATION OF DETAILS OF CONSTRUCTION SHALL NOT BE MADE WITHOUT WRITTEN APPROVAL OF THE PROJECT MANAGER AND/OR ENGINEER.
- 1.04 CONTRACTOR SHALL REVIEW AND BE FAMILIAR WITH SITE CONDITIONS AS SHOWN ON THE ATTACHED SITE PLAN AND/OR SURVEY DRAWINGS.
- 1.05 WAVEGUIDE BRIDGE AND EQUIPMENT CABINETS ARE SHOWN FOR REFERENCE ONLY. REFER TO SEPARATE DRAWINGS FOR SPECIFIC INFORMATION.
- 1.06 ALL FINISHED GRADES SHALL SLOPE MINIMUM 1/4 IN./FT. AWAY FROM EQUIPMENT IN ALL DIRECTIONS. CONTRACTOR SHALL SLOPE SWALES AS REQUIRED ALONG EXISTING TERRAIN TO DRAIN AWAY FROM COMPOUND AND ACCESS DRIVE.
- 1.07 THE EXISTING TANK AND TANK FOUNDATIONS WERE DESIGNED BY OTHERS. TANK INFORMATION PROVIDED ON THESE PLANS ARE PROVIDED FOR REFERENCE PURPOSES ONLY. NOTIFY ENGINEER OR PROJECT MANAGER OF ANY CONFLICTS OR DISCREPANCIES. CONTRACTOR TO OBTAIN COPY OF STRUCTURAL ANALYSIS, IF AVAILABLE, FROM VERIZON PROJECT MANAGER TO CONFIRM COAX ROUTING AND ANTENNA MOUNT INFORMATION.
- 1.08 THE CONTRACTOR SHALL PROVIDE ADEQUATE EXCAVATION SLOPING, SHORING, BRACING, AND GUYS IN ACCORDANCE WITH ALL NATIONAL, STATE, AND LOCAL SAFETY ORDINANCES.
- 1.09 UPON COMPLETION OF CONSTRUCTION, CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE CAUSED BY CONSTRUCTION ACTIVITIES TO THE EXISTING ACCESS ROAD AND COMPOUND GRAVEL AREAS. ANY NEW FILL MATERIALS SHALL BE COMPACTED.
- 1.10 THE CONTRACTOR IS HEREBY NOTIFIED THAT PRIOR TO COMMENCING CONSTRUCTION, HE IS RESPONSIBLE FOR CONTACTING THE UTILITY COMPANIES INVOLVED AND SHALL REQUEST A VERIFICATION AT THE CONSTRUCTION SITE OF THE LOCATIONS OF THEIR UNDERGROUND UTILITIES AND WHERE THEY MAY POSSIBLY CONFLICT WITH THE PLACEMENT OF IMPROVEMENTS AS SHOWN ON THESE PLANS. THE CONTRACTOR OR ANY SUBCONTRACTOR FOR THIS CONTRACT WILL BE REQUIRED TO NOTIFY "NORTH CAROLINA 811" 48 HOURS IN ADVANCE OF PERFORMING ANY WORK BY CALLING THE TOLL FREE NUMBER (800) 632-4949 (OR 811). ANY UTILITIES DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE REPAIRED BY THE CONTRACTOR, AT NO EXPENSE TO THE OWNER.
- 1.11 CONTRACTOR SHALL TAKE EXTREME CAUTION WHEN CONSTRUCTING WAVEGUIDE FOOTINGS SO AS TO NOT DAMAGE THE EXISTING TOWER GROUNDING RING. IF THE EXISTING RING BECOMES DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR AND/OR REPLACEMENT OF THE TOWER GROUNDING RING AS DEEMED APPROPRIATE BY VERIZON.
- 1.12 CONTRACTOR TO PROVIDE DUMPSTER AND PORTABLE TOILET FACILITY DURING CONSTRUCTION.

2.00 EQUIPMENT FOUNDATION NOTES

- 2.01 FOUNDATIONS ARE DESIGNED FOR A PRESUMPTIVE ALLOWABLE SOIL BEARING CAPACITY OF 2,000 PSF. CONTRACTOR SHALL VERIFY SOIL CONDITIONS AND BEARING CAPACITY PRIOR TO CONSTRUCTION.
- 2.02 EXCAVATE A MINIMUM 18" BELOW PROPOSED EQUIPMENT FOUNDATIONS OF EXPANSIVE, ORGANIC, UNCONSOLIDATED OR OTHERWISE UNACCEPTABLE MATERIAL AND REPLACE WITH WELL-COMPACTED MATERIAL ACCEPTABLE TO VERIZON.
- 2.03 CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING, PROTECTING, AND RELOCATING AS REQUIRED ALL SERVICE AND UTILITY LINES IN VICINITY OF THE WORK SITE. ALL EXCAVATIONS NEAR THESE LINES TO BE CARRIED OUT WITH EXTREME CAUTION. COORDINATE ALL RELOCATIONS WITH THE PROPERTY OWNER.
- 2.04 CONTRACTOR TO CUT/FILL EXISTING COMPOUND SUBSOIL TO PROVIDE AN AREA AS LEVEL AS POSSIBLE FOR THE EQUIPMENT FOUNDATIONS. ALL FILL AREAS ARE TO BE FILLED WITH SUITABLE MATERIALS. FILL MATERIALS ARE TO BE PLACED, COMPACTED, AND TESTED IN MAXIMUM LAYERS OF 8". COMPACTION OF ALL FILL MATERIAL SHALL ACHIEVE 95 PERCENT OF MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D 698. ALL TESTS MUST MEET THE MINIMUM SPECIFIED SOIL BEARING CAPACITY. COMPACTION TESTING IS BY THE GEOTECHNICAL TESTING COMPANY DESIGNATED FOR THE PROJECT. SCHEDULING AND COORDINATION IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. REPORTS OF ALL TESTING ARE TO BE PROMPTLY DELIVERED OR FAXED TO THE VERIZON WIRELESS PROJECT MANAGER.
- 2.05 CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS AND SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST REVISION TO ACI-318 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
- 2.06 CONCRETE SHALL HAVE A SLUMP BETWEEN 3" AND 6".
- 2.07 FIBERS FOR CONCRETE SHALL BE FIBERMESH 650, 100 PERCENT VIRGIN POLYPROPYLENE FIBRILLATED FIBERS, e3 PATENTED TECHNOLOGY PATENTED TECHNOLOGY, CONTAINING NO REPROCESSED OLEFIN MATERIALS. THE FIBERS SHALL CONFORM TO ASTM C1116 TYPE III AND MANUFACTURED SPECIFICALLY FOR THE SECONDARY REINFORCEMENT OF CONCRETE.
- 2.08 THE FIBERS SHALL BE MANUFACTURED IN AN ISO 9001:2008 CERTIFIED MANUFACTURING FACILITY. UNLESS OTHERWISE STATED, FIBERMESH 650 MACRO-SYNTHETIC FIBERS SHALL BE ADDED TO THE CONCRETE AT THE BATCHING PLANT AT THE RECOMMENDED APPLICATION RATE OF 3 LBS/YD³ AND MIXED FOR A SUFFICIENT TIME (MINIMUM 5 MINUTES AT FULL MIXING SPEED) TO ENSURE UNIFORM DISTRIBUTION OF THE FIBERS THROUGHOUT THE CONCRETE. FIBROUS CONCRETE REINFORCEMENT SHALL BE MANUFACTURED BY FIBERMESH, 4019 INDUSTRY DRIVE, CHATTANOOGA, TN 37416 USA, TEL: 800 621-1273, WEBSITE: WWW.FIBERMESH.COM
- 2.09 AT THE REQUEST OF THE VERIZON WIRELESS PROJECT MANAGER, TEST CYLINDERS SHALL BE MOLDED AND LABORATORY CURED IN ACCORDANCE WITH ASTM C31. THREE CYLINDERS SHALL BE TAKEN FOR EACH DAY'S CONCRETE PLACEMENT. CYLINDERS SHALL BE TESTED IN ACCORDANCE WITH THE LATEST REVISION TO ASTM C39.
- 2.10 CHAMFER ALL EXPOSED EXTERNAL CORNERS OF CONCRETE WITH 3/4" x 45° CHAMFER, UNLESS OTHERWISE NOTED.
- 2.11 CONCRETE FORMWORK IS TO BE STRIPPED WITHIN 48 HOURS. VIBRATION OF THE CONCRETE MUST ASSURE THAT HONEYCOMBING WILL BE AT A MINIMUM. MECHANICAL VIBRATION OF ALL CONCRETE IS REQUIRED UNLESS OTHERWISE DIRECTED BY VERIZON WIRELESS' PROJECT MANAGER. ABOVE GRADE CONCRETE IS TO BE RUBBED AND PATCHED TO ASSURE SMOOTH FINISH AT TIME OF FORMS REMOVAL. CONTRACTOR SHALL PROVIDE A BROOM FINISH ON THE TOP SURFACE OF THE EQUIPMENT FOUNDATION UNLESS OTHERWISE DIRECTED BY VERIZON WIRELESS' PROJECT MANAGER.
- 2.12 TOPS OF CONCRETE FOUNDATION MUST BE WITHIN 0.02' OF ELEVATION REQUIRED.
- 2.13 TOP OF FOUNDATION FINISH TO BE LEVEL ±1/8" IN 10'.
- 2.14 TOP OF FOUNDATION TO HAVE MEDIUM BROOM FINISH.
- 2.15 CONTRACTOR SHALL REFER TO DRAWINGS OF OTHER TRADES AND VENDOR DRAWINGS FOR EMBEDDED ITEMS AND RECESSES NOT SHOWN ON THE STRUCTURAL DRAWINGS. CONTRACTOR SHALL VERIFY PLACEMENT OF EQUIPMENT AND LOCATION OF CONDUIT FOR MANUFACTURER'S AND VENDORS SPECIFICATIONS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL OPENINGS AND SLEEVES FOR PROPER DISTRIBUTION OF ALL UTILITIES.



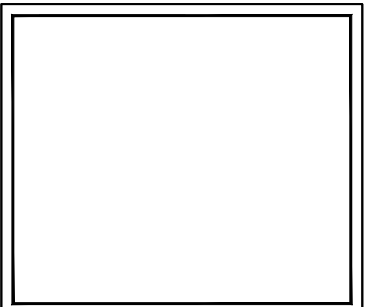
PROJECT INFORMATION:

SITE NAME:
OVERHILLS
SITE No.: 30356
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6792 OVERHILLS RD
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HARNETT COUNTY

PLANS PREPARED BY:

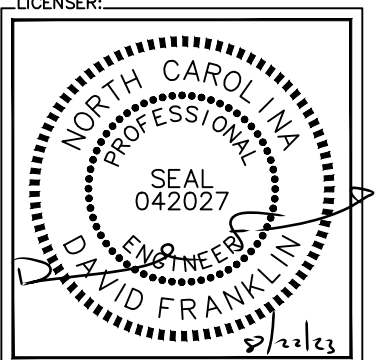
Kimley»Horn

11720 AMBER PARK DRIVE, SUITE 600
ALPHARETTA, GA 30009
PHONE: 770-619-4280
WWW.KIMLEY-HORN.COM
NC License F-0102



REV: _____ DATE: _____ ISSUED FOR: _____ BY: _____

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0	04/23/21	CONSTRUCTION	DMF



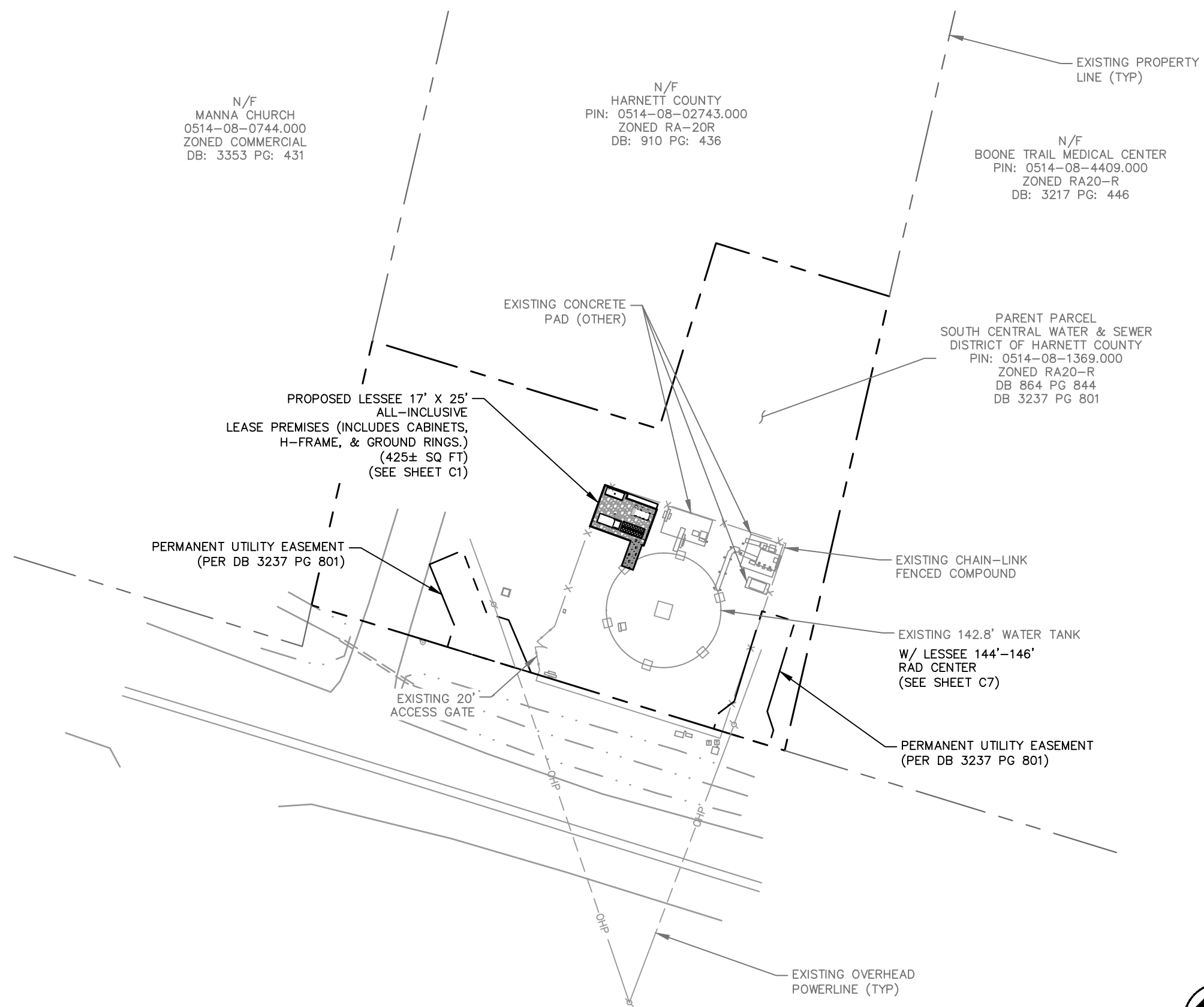
KHA PROJECT NUMBER:
018985426

DRAWN BY: _____ CHECKED BY: _____
TDM CDS

SHEET TITLE:
GENERAL NOTES

SHEET NUMBER:
N1

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N/F
MANNA CHURCH
0514-08-0744.000
ZONED COMMERCIAL
DB: 3353 PG: 431

N/F
HARNETT COUNTY
PIN: 0514-08-02743.000
ZONED RA-20R
DB: 910 PG: 436

N/F
BOONE TRAIL MEDICAL CENTER
PIN: 0514-08-4409.000
ZONED RA20-R
DB: 3217 PG: 446

PARENT PARCEL
SOUTH CENTRAL WATER & SEWER
DISTRICT OF HARNETT COUNTY
PIN: 0514-08-1369.000
ZONED RA20-R
DB 864 PG 844
DB 3237 PG 801

PROPOSED LESSEE 17' X 25'
ALL-INCLUSIVE
LEASE PREMISES (INCLUDES CABINETS,
H-FRAME, & GROUND RINGS.)
(425± SQ FT)
(SEE SHEET C1)

PERMANENT UTILITY EASEMENT
(PER DB 3237 PG 801)

EXISTING 20'
ACCESS GATE

EXISTING CONCRETE
PAD (OTHER)

EXISTING CHAIN-LINK
FENCED COMPOUND

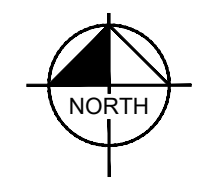
EXISTING 142.8' WATER TANK
W/ LESSEE 144'-146'
RAD CENTER
(SEE SHEET C7)

PERMANENT UTILITY EASEMENT
(PER DB 3237 PG 801)

EXISTING OVERHEAD
POWERLINE (TYP)

EXISTING PROPERTY
LINE (TYP)

1 OVERALL PLAN
C0 SCALE: 1" = 50'



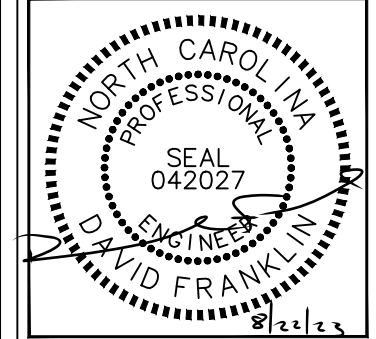
PROJECT INFORMATION:
SITE NAME:
OVERHILLS
SITE No.: 30356
PROJECT #: 20141092521
6792 OVERHILLS RD
SPRING LAKE, NC 28390
HARNETT COUNTY

PLANS PREPARED BY:
Kimley»Horn
11720 AMBER PARK DRIVE, SUITE 600
ALPHARETTA, GA 30009
PHONE: 770-619-4280
WWW.KIMLEY-HORN.COM
NC License F-0102

REV: DATE: ISSUED FOR: BY:

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1	03/07/22	CONSTRUCTION	DMF
0	04/23/21	CONSTRUCTION	DMF

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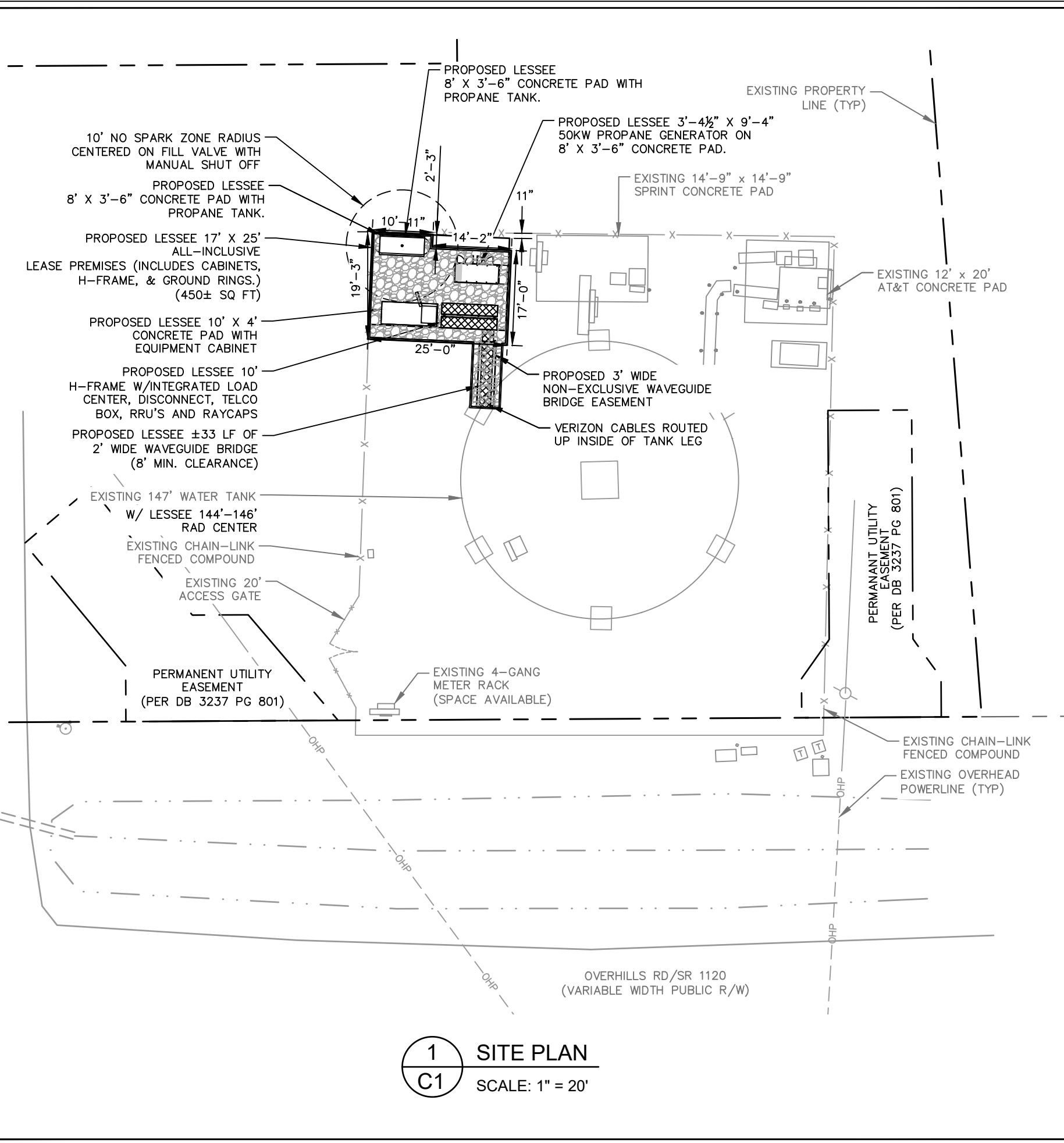
KHA PROJECT NUMBER:
018985426

DRAWN BY: TDM CHECKED BY: CDS

SHEET TITLE:
OVERALL SITE PLAN

SHEET NUMBER:
C0

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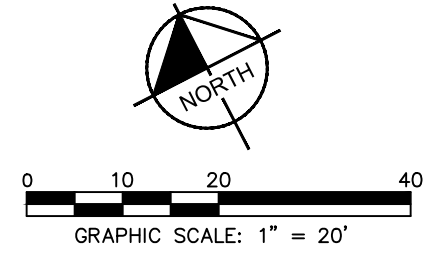
1 SITE PLAN
C1 SCALE: 1" = 20'

SITE NOTES:

1. VERIZON WIRELESS STAFF SHALL COORDINATE WITH THE PROPERTY OWNER AND/OR TOWER OWNER TO OBTAIN THE PROPER EASEMENT AGREEMENTS TO CONSTRUCT AND MAINTAIN EQUIPMENT IN AND AROUND THE TOWER COMPOUND.
2. PROPOSED COMPOUND LAYOUT BASED ON SURVEY PROVIDED BY POINT TO POINT LAND SURVEYOR DATED 02/07/2018.
3. CONTRACTOR TO CONFIRM WITH VERIZON CONSTRUCTION MANAGER THAT THE SHELTER/EQUIPMENT SHOWN HAS BEEN ORDERED/SCHEDULED FOR DELIVERY TO THIS SITE.
4. THE BASIS OF EQUIPMENT DESIGN INCLUDES ONE (1) RF CABINET, ONE (1) FUTURE BATTERY CABINET, AND ONE (1) FUTURE EXPANSION CABINET.
5. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND MODIFYING SCOPE OF WORK TO ACCOMMODATE ANY CHANGES IN THE EXACT EQUIPMENT PROCURED BY VERIZON WIRELESS. COORDINATE ANY CHANGES WITH VERIZON WIRELESS CONSTRUCTION MANAGER.
6. ROUTE COAX/FIBER UP TOWER PER STRUCTURAL ANALYSIS BY TANK OWNER.
7. TOWER DIMENSIONS SHOWN ON THIS PLAN ARE FOR TOWER CENTER LOCATION. CONTRACTOR TO OBTAIN COPY OF TOWER ERECTION DRAWINGS FROM VERIZON CONSTRUCTION MANAGER PRIOR TO DRILLING TOWER FOUNDATIONS. CASSIONS AND TOWER SHOWN ON THIS PLAN ARE ILLUSTRATIVE, SEE DESIGN DRAWING BY OTHERS. DO NOT SCALE.

LESSEE LEASE PREMISES NOTE:

1. LESSEE LEASE PREMISES AND NON-EXCLUSIVE WAVEGUIDE BRIDGE EASEMENT AREA SHALL HAVE GRAVEL SURFACE (4" MIN.) WITH PRESSURE TREATED WOOD EDGING.



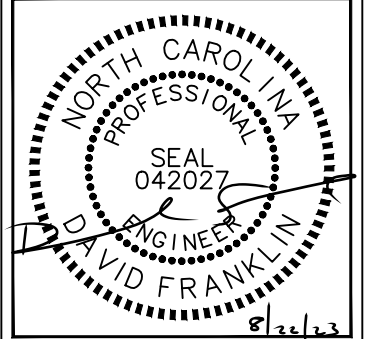
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LICENSER:



KHA PROJECT NUMBER:
 018985426

DRAWN BY: TDM CHECKED BY: CDS

SHEET TITLE:

SITE PLAN

SHEET NUMBER:

C1

PROJECT INFORMATION:

SITE NAME:
OVERHILLS
SITE No.: 30356
PROJECT #: 20141092521
6792 OVERHILLS RD
SPRING LAKE, NC 28390
HARNETT COUNTY

PLANS PREPARED BY:

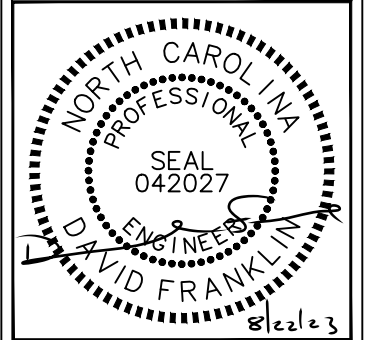
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KHA PROJECT NUMBER:

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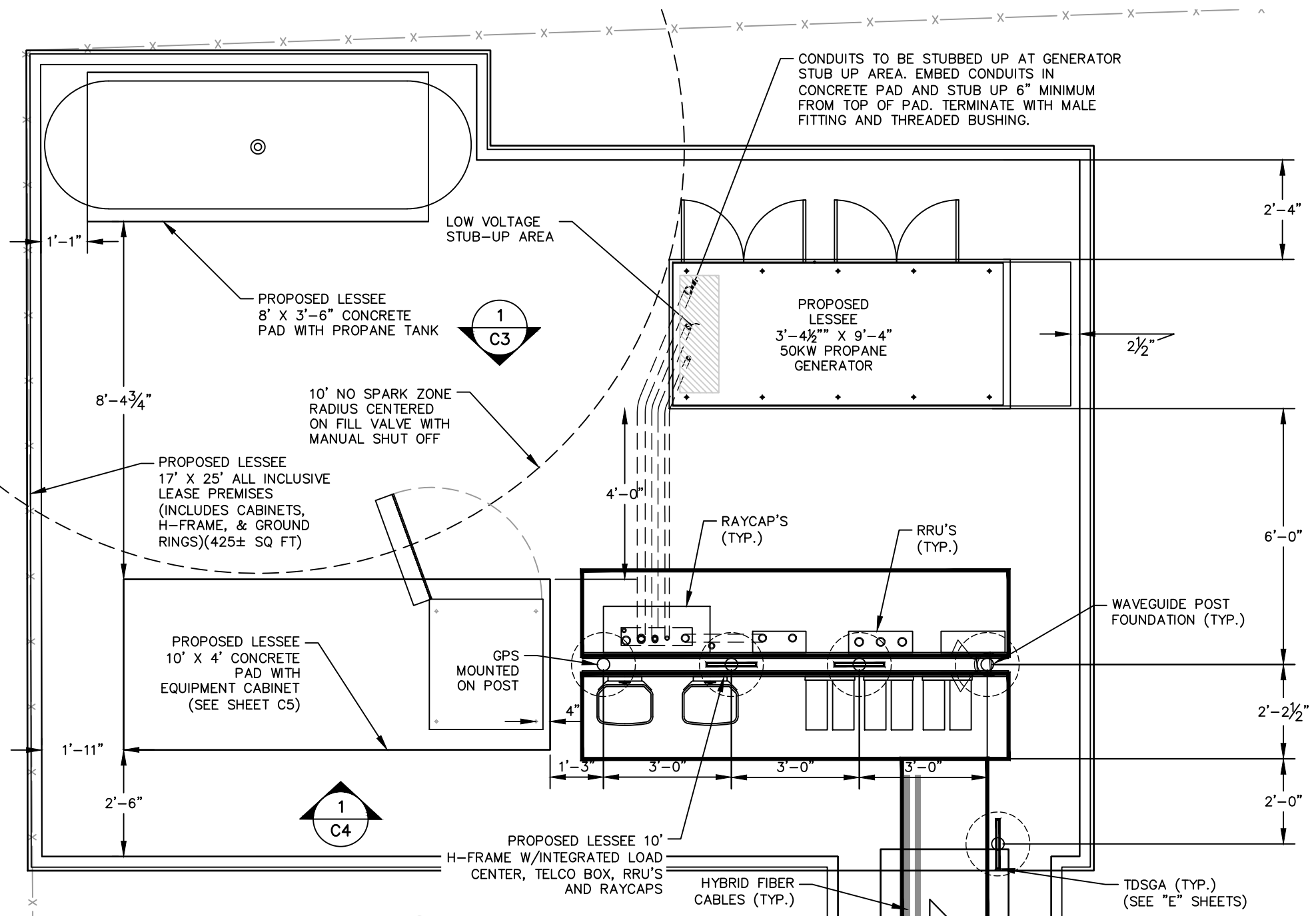
TDM CDS

SHEET TITLE:

EQUIPMENT PAD LAYOUT

SHEET NUMBER:

C2

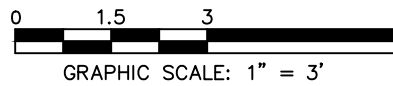
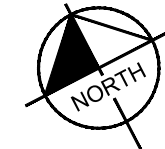


1
C2 **EQUIPMENT PAD LAYOUT**
SCALE: 1" = 3'

EQUIPMENT PAD/ROUTING NOTES:

- REFER TO THE SITE PLAN FOR EQUIPMENT PAD LOCATION AND ORIENTATION.
- RUN 2" FLEX TELCO CONDUIT FROM BOTTOM OF TELCO BOX TO SIDE OF RF CABINET WITH CHASE NIPPLE THROUGH FACTORY KNOCKOUT.
- RUN (2) 2" FLEX POWER CONDUIT AND (1) 1" ALARM CONDUIT FROM BOTTOM OF ILC TO SIDE OF RF CABINET WITH CHASE NIPPLES THROUGH FACTORY KNOCKOUTS.
- RUN 2" FLEX FIBER CONDUIT FROM BOTTOM OF OVP TO SIDE OF RF CABINET WITH CHASE NIPPLE THROUGH FACTORY KNOCKOUT.
- RUN (1) 1 1/2" FLEX POWER CONDUIT FOR EVERY (6) RRU CIRCUITS FROM BOTTOM OF OVP TO SIDE OF RF CABINET WITH CHASE NIPPLE THROUGH FACTORY KNOCKOUT.
- SUPPORT FLEX CONDUIT ON HORIZONTAL H-FRAME RAILS OR ON VERTICAL SITE STRUT SNT10 RAILS ADDED TO H-FRAME FOR CONDUIT/CABLE MANAGEMENT.
- RUN HYBRID CABLE FOR TOWER MOUNTED RRU'S OVERHEAD ON TRAPEZE SUSPENDED FROM

- WAVE GUIDE BRIDGE. SWEEP DOWN ONTO H-FRAME RAILS, THEN LOOP UNDER OVP AND CONNECT TO BOTTOM OF OVP. ATTACH GROUND KITS TO HYBRID CABLE BEFORE LOOPING UNDER OVP, AND BOND TO TDSGA GROUND BAR AT BASE OF H-FRAME.
- RUN COAX CABLE FOR GROUND MOUNTED RRU'S (IF USED) OVERHEAD ON TRAPEZE SUSPENDED FROM WAVE GUIDE BRIDGE. TERMINATE COAX ON ICE BRIDGE AND TRANSITION TO JUMPERS JUST BEFORE REACHING H-FRAME. ATTACH GROUND KITS TO COAX CABLE ON TOWER SIDE OF LAST ICE BRIDGE POST AND BOND TO TDSGA GROUND BAR NEAR TOP OF POST.
- GPS ANTENNA TO BE MOUNTED TO STANDARD HEIGHT POST WITH EXTENDED MOUNTING PIPE, USING COMMSCOPE GPS-U MOUNTING KIT. MOUNT AS NEAR AS PRACTICAL TO RBA84 CABINET.
- BOLT CABINETS AND GENERATOR TO SLAB USING FASTENERS SPECIFIED BY EQUIPMENT MANUFACTURER IN FACTORY PROVIDED MOUNTING HOLES.



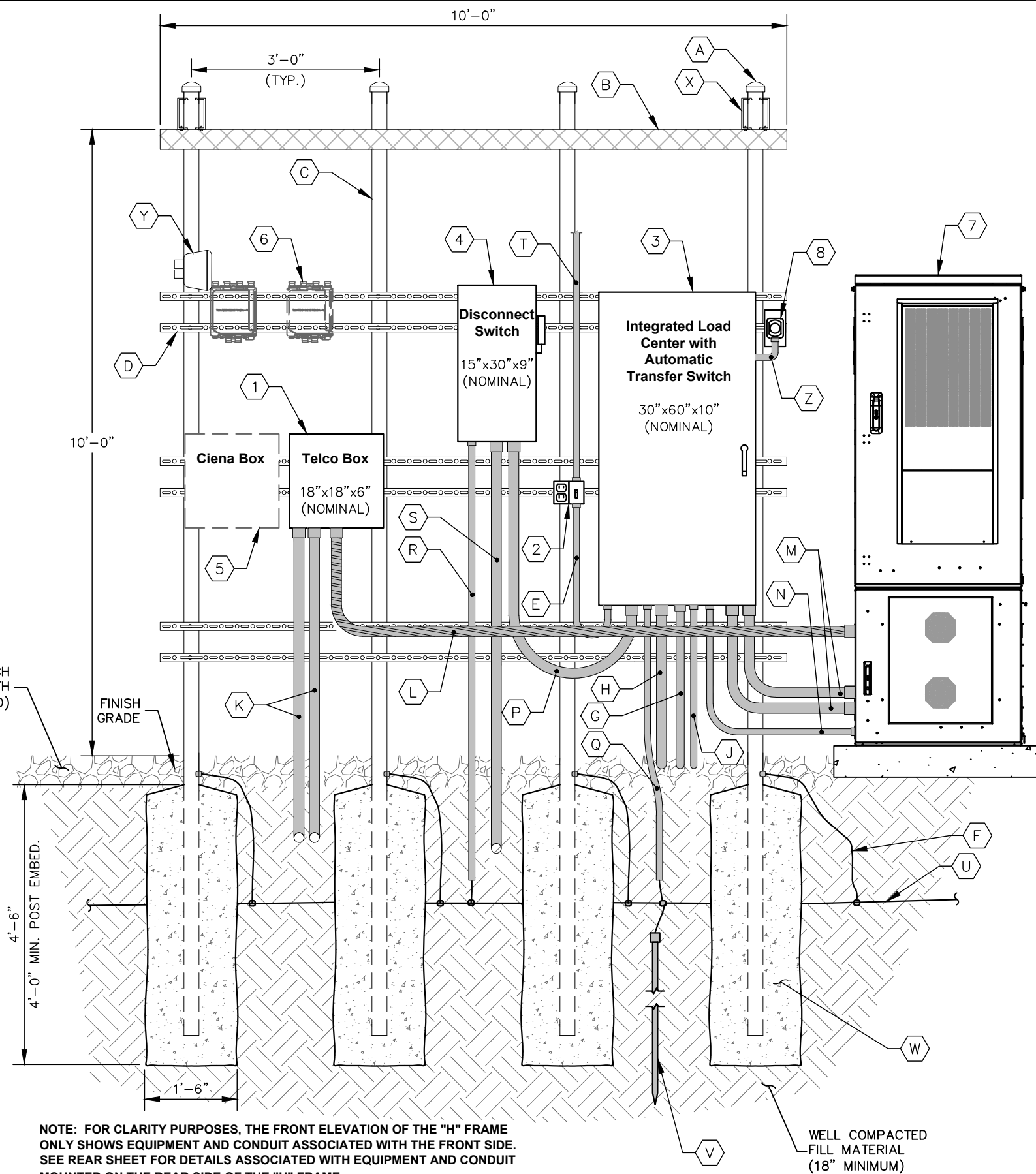
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KEY NOTES - CONDUIT, CONDUCTORS, & MISC

- (A) GALVANIZED RIGID STEEL CAP, TYPICAL.
- (B) ICE BRIDGE, SEE CIVIL SHEETS FOR ADDITIONAL DETAILS.
- (C) 3" GALVANIZED RIGID STEEL PIPE, TYPICAL.
- (D) 1½" X 1½" GALVANIZED STEEL CHANNEL (UNISTRUT #P1000) WITH PLASTIC END CAP (UNISTRUT #P2860), TYPICAL.
- (E) 1" PVC CONDUIT FOR ROUTING POWER CONDUCTORS TO LIGHTS/DUPLEX OUTLET.
- (F) ONE (1) #2 AWG BARE SOLID TINNED COPPER BONDING CONDUCTOR (BC) FROM H-FRAME VERTICAL PIPE TO GROUND RING, EXOTHERMIC WELD BOTH ENDS.
- (G) 1" PVC CONDUIT FOR ROUTING GENERATOR CONTROL AND ALARM SIGNAL CABLES TO THE GENERATOR.
- (H) 2" PVC CONDUIT FOR ROUTING POWER CONDUCTORS TO THE GENERATOR.
- (J) 1" PVC CONDUIT FOR ROUTING POWER CONDUCTORS TO THE GENERATOR BATTERY CHARGER AND THE GENERATOR BLOCK HEATER.
- (K) TWO (2) 2" PVC TELCO CONDUITS, WITH TWO (2) PULL ROPES EACH.
- (L) 2" FLEX CONDUIT FOR TELCO CABLES TO RF CABINET. REFER TO ROUTING NOTES ON EQUIPMENT PAD LAYOUT.
- (M) (2) 2" PVC CONDUIT FOR ROUTING POWER CONDUCTORS TO RF CABINET. REFER TO ROUTING NOTES ON EQUIPMENT PAD LAYOUT.
- (N) 1" PVC CONDUIT FROM INTEGRATED LOAD CENTER (ILC) TO RF CABINET FOR ALARM SIGNAL CABLE. REFER TO ROUTING NOTES ON EQUIPMENT PAD LAYOUT.
- (P) 2" PVC CONDUIT FOR ROUTING POWER CONDUCTORS FROM THE DISCONNECT SWITCH TO THE UTILITY BREAKER IN THE ILC.
- (Q) ¾" PVC CONDUIT WITH ONE (1) - #2 AWG BARE TINNED COPPER FROM GROUNDING LUG IN ILC TO GROUND ROD, EXOTHERMIC WELD TO GROUND ROD.
- (R) ¾" PVC CONDUIT WITH ONE (1) - #2 AWG BARE TINNED COPPER FROM GROUNDING LUG IN DISCONNECT SWITCH TO GROUND RING, EXOTHERMIC WELD TO GROUND RING.
- (S) 2" PVC CONDUIT FOR ROUTING POWER CONDUCTORS FROM THE UTILITY COMPANY METER TO THE DISCONNECT SWITCH.
- (T) 1" PVC CONDUIT FOR ROUTING POWER CONDUCTORS TO AREA LIGHTS.
- (U) GROUND RING (SEE "E" SHEETS).
- (V) GROUND ROD, EXOTHERMIC WELD TO GROUND RING (SEE "E" SHEETS).
- (W) CONCRETE FOUNDATION FOR H-FRAME VERTICAL PIPE. CONCRETE SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI. AND INCLUDE FIBERMESH 650.
- (X) WB-K210-B15 HORSEHEAD SUPPORT BRACKET (SEE "WAVEGUIDE BRIDGE DETAILS" SHEET). THRU BOLTS REQUIRED FOR ATTACHMENT IN LIEU OF FACTORY PROVIDED U-BOLTS.
- (Y) INSTALL LIGHT FIXTURES ON 60" LONG P1001A UNISTRUT RAIL (SEE "EQUIPMENT PAD LAYOUT" SHEET). ATTACH P1001A TO H-FRAME POST USING TWO (2) UB3 UNISTRUT CLAMPS. LIGHTS TO BE INSTALLED 7'-6" ABOVE GRADE.
- (Z) 1" PVC CONDUIT FOR ROUTING POWER CONDUCTORS FROM THE ILC TO THE EMERGENCY GENERATOR STOP SWITCH.

KEY NOTES - ELECTRICAL EQUIPMENT

- (1) NEMA 3R ENCLOSURE TELCO BOX WITH REMOVABLE FRONT PANEL, PVC, (18" X 18" X 6" NOMINAL).
- (2) 20 AMP GFCI DUPLEX RECEPTACLE AND TIMER SWITCH, ENERLITES HET06 SERIES (OR APPROVED EQUIVALENT) IN LOCKABLE NEMA 3R ENCLOSURE, 2 GANG BOX WITH RED DOT 2CKPM-W COVER.
- (3) 200 AMP, 120/240 VOLT, INTEGRATED LOAD CENTER WITH 42 SPACE PANEL AND AUTOMATIC TRANSFER SWITCH (30" X 60" X 10" NOMINAL).
- (4) SE RATED, 240 V, 200 AMP, 2-POLE, NON-FUSED DISCONNECT IN NEMA 3R ENCLOSURE.
- (5) CIENA ETHERNET IF REQUIRED (COORDINATE WITH VERIZON CONSTRUCTION MANAGER FOR ADDITIONAL CONDUIT AND WIRING REQUIREMENTS).
- (6) DIPLEXERS "AS NEEDED".
- (7) VERIZON RF CABINET-FRONT VIEW.
- (8) EMERGENCY SHUTOFF SWITCH FOR GENERATOR MOUNTED ON 4" X 7" GALVANIZED J-BOX COVER PLATE



1 EQUIPMENT RACK DETAILS - FRONT
C3 NOT TO SCALE



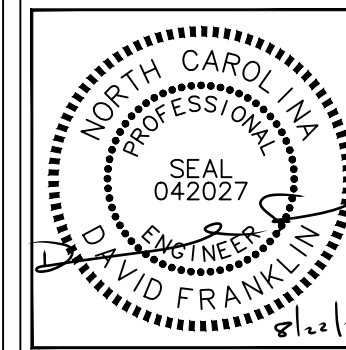
PROJECT INFORMATION:
 SITE NAME: OVERHILLS
 SITE No.: 30356
 PROJECT #: 20141092521
 6792 OVERHILLS RD
 SPRING LAKE, NC 28390
 HARNETT COUNTY

PLANS PREPARED BY:
Kimley»Horn
 11720 AMBER PARK DRIVE, SUITE 600
 ALPHARETTA, GA 30009
 PHONE: 770-619-4280
 WWW.KIMLEY-HORN.COM
 NC License F-0102

REV: DATE: ISSUED FOR: BY:

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LICENSER:



KHA PROJECT NUMBER:
 018985426

DRAWN BY: TDM CHECKED BY: CDS

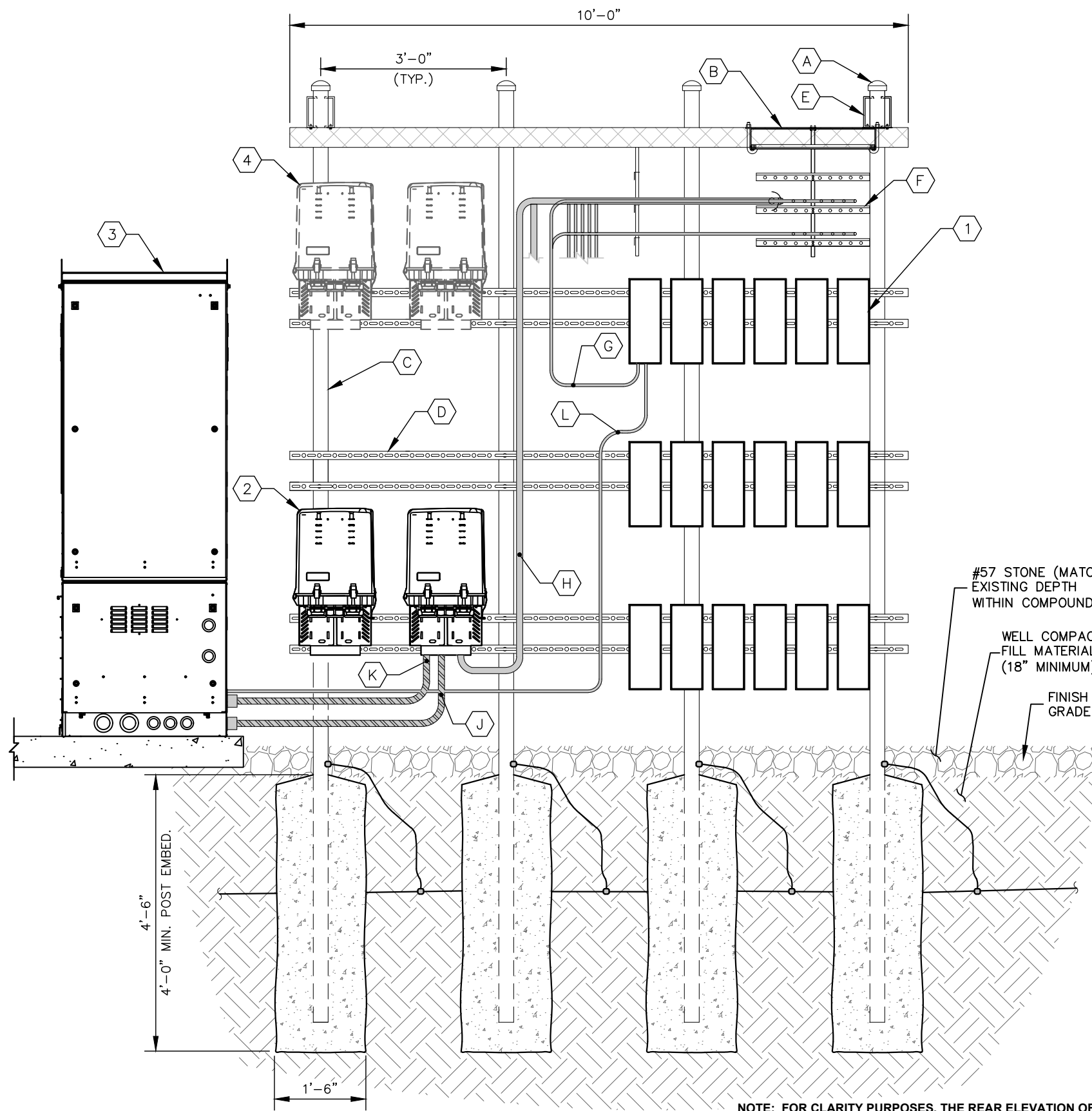
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**EQUIPMENT RACK
 DETAIL - FRONT**

SHEET NUMBER:
C3

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1 EQUIPMENT RACK DETAILS - REAR
C4 NOT TO SCALE

NOTE: FOR CLARITY PURPOSES, THE REAR ELEVATION OF THE "H" FRAME ONLY SHOWS EQUIPMENT AND CONDUIT ASSOCIATED WITH THE REAR SIDE. SEE FRONT SHEET FOR DETAILS ASSOCIATED WITH EQUIPMENT AND CONDUIT MOUNTED ON THE FRONT SIDE OF THE "H" FRAME.

KEY NOTES - CONDUIT, CONDUCTORS, & MISC

- (A) GALVANIZED RIGID STEEL CAP, TYPICAL.
- (B) ICE BRIDGE, SEE CIVIL SHEETS FOR ADDITIONAL DETAILS.
- (C) 3" GALVANIZED RIGID STEEL PIPE, TYPICAL.
- (D) 1 5/8" X 1 5/8" GALVANIZED STEEL CHANNEL (UNISTRUT #P1000) WITH PLASTIC END CAP (UNISTRUT #P2860), TYPICAL.
- (E) WB-K210-B15 HORSEHEAD SUPPORT BRACKET (SEE "WAVEGUIDE BRIDGE DETAILS" SHEET). THRU BOLTS REQUIRED FOR ATTACHMENT IN LIEU OF FACTORY PROVIDED U-BOLTS.
- (F) ICE BRIDGE RUNNING TOWARDS TOWER (SEE "EQUIPMENT PAD LAYOUT" SHEET).
- (G) COAX JUMPER CABLES INTO BOTTOM OF RRU'S, TYPICAL.
- (H) HYBRID CABLES RUNNING INTO BOTTOM OF RAYCAPS, TYPICAL (SEE NOTE 7 ON "EQUIPMENT PAD LAYOUT" SHEET).
- (J) 1 1/2" POWER FLEX CONDUIT RUNNING FROM BOTTOM OF RAYCAPS TO CABINET, TYPICAL (SEE "EQUIPMENT PAD LAYOUT" SHEET).
- (K) 2" FIBER FLEX CONDUIT RUNNING FROM BOTTOM OF RAYCAPS TO CABINET, TYPICAL (SEE "EQUIPMENT PAD LAYOUT" SHEET).
- (L) FIBER/POWER JUMPER TO RRU (TYP. FOR EACH RRU).

KEY NOTES - ELECTRICAL EQUIPMENT

- (1) VERIZON RF RRU'S (MODEL, QUANTITY OF, AND CONFIGURATION DETERMINED BY RF DESIGN).
- (2) VERIZON RAYCAPS (MODEL, QUANTITY OF, AND CONFIGURATION DETERMINED BY RF DESIGN).
- (3) VERIZON RF CABINET-REAR VIEW.
- (4) FUTURE VERIZON RAYCAPS.

verizon

8921 RESEARCH DRIVE
 CHARLOTTE, NORTH CAROLINA 28262

PROJECT INFORMATION:

SITE NAME:
 OVERHILLS
 SITE No.: 30356
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 6792 OVERHILLS RD
 SPRING LAKE, NC 28390
 HARNETT COUNTY

PLANS PREPARED BY:

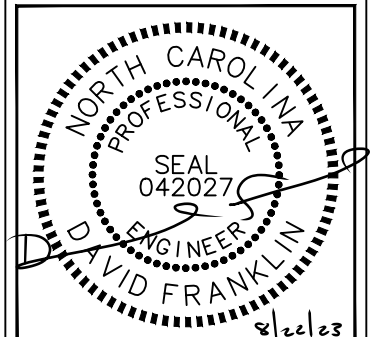
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DRAWN BY: CHECKED BY:

TDM CDS

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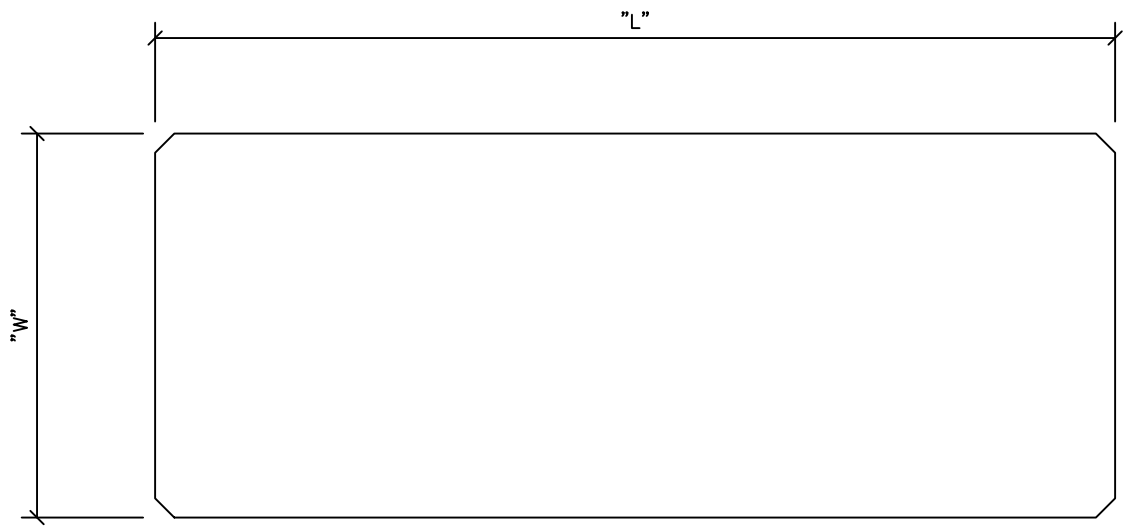
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 DETAIL - REAR**

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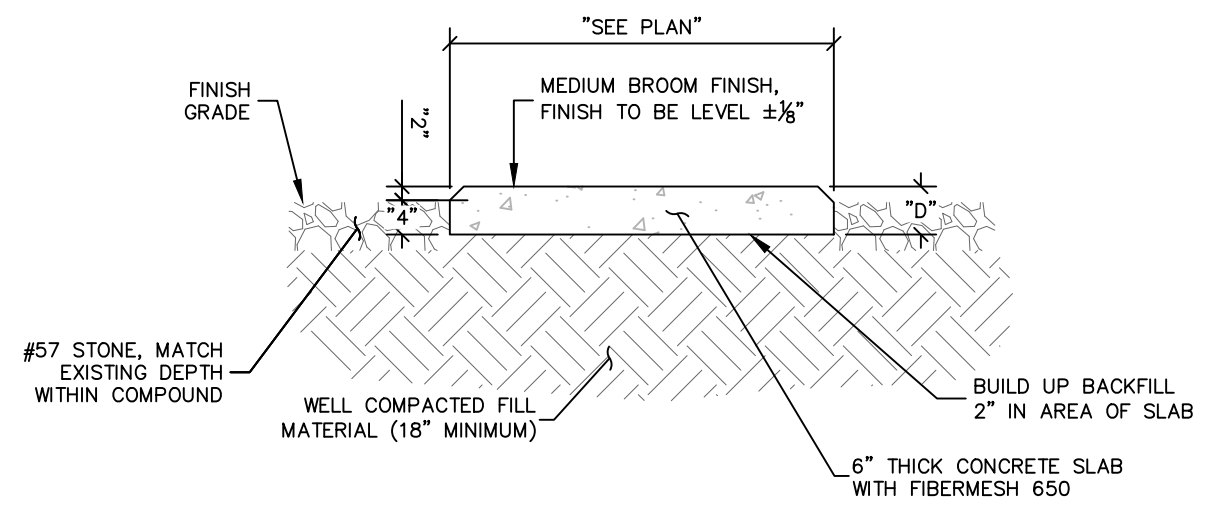
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CONCRETE PAD SCHEDULE				
PAD TYPE	"L"	"W"	"D"	REINFORCEMENT
EQUIPMENT PAD	10'-0"	4'-0"	6"	SEE DETAIL 2/C5
GENERATOR PAD	8'-0"	3'-6"	6"	SEE DETAIL 2/C5
PROPANE TANK PAD	8'-0"	3'-6"	6"	SEE DETAIL 2/C5



1 CONCRETE PAD PLAN
C5 NOT TO SCALE

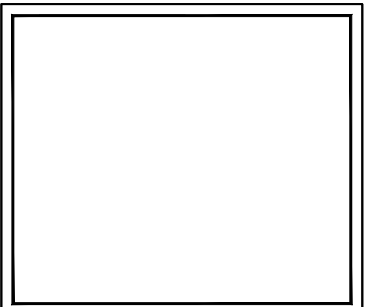


2 CONCRETE PAD FOUNDATION SECTION
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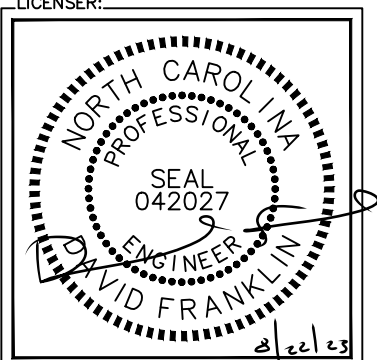


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LICENSER:
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 018985426
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SHEET TITLE:
CONCRETE PAD FOUNDATION DETAILS

SHEET NUMBER:
 C5

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8921 RESEARCH DRIVE
CHARLOTTE, NORTH CAROLINA 28262

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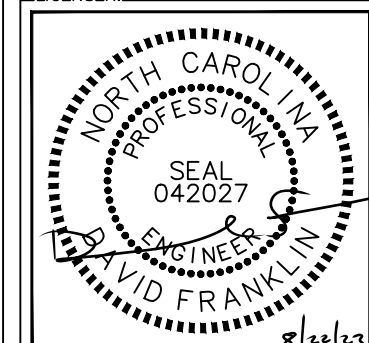
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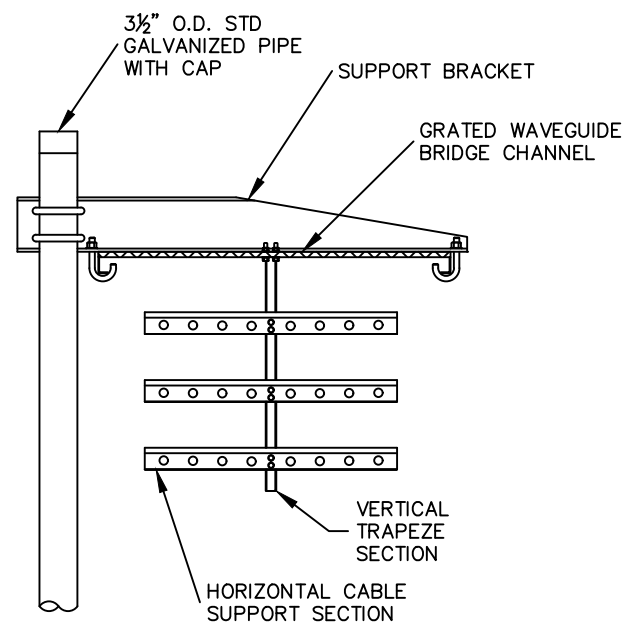
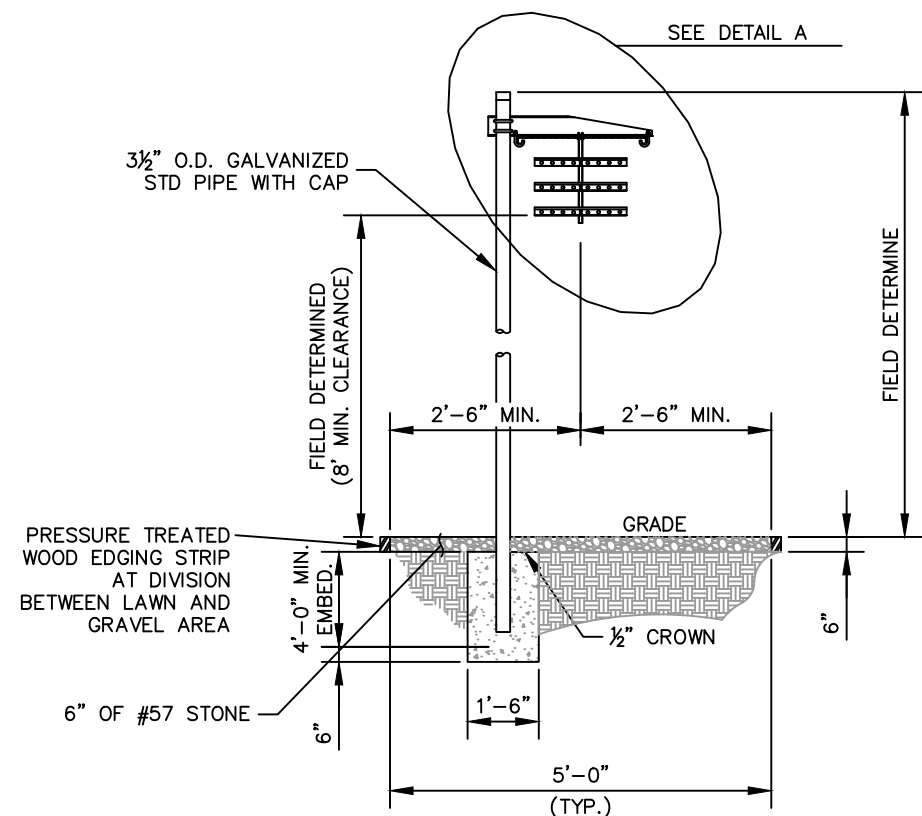
TDM CDS

SHEET TITLE:

**WAVEGUIDE
BRIDGE DETAILS**

SHEET NUMBER:

C6



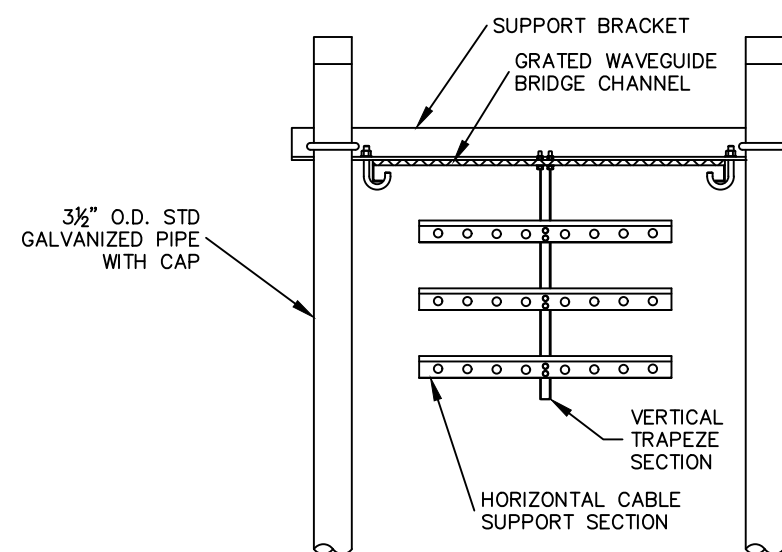
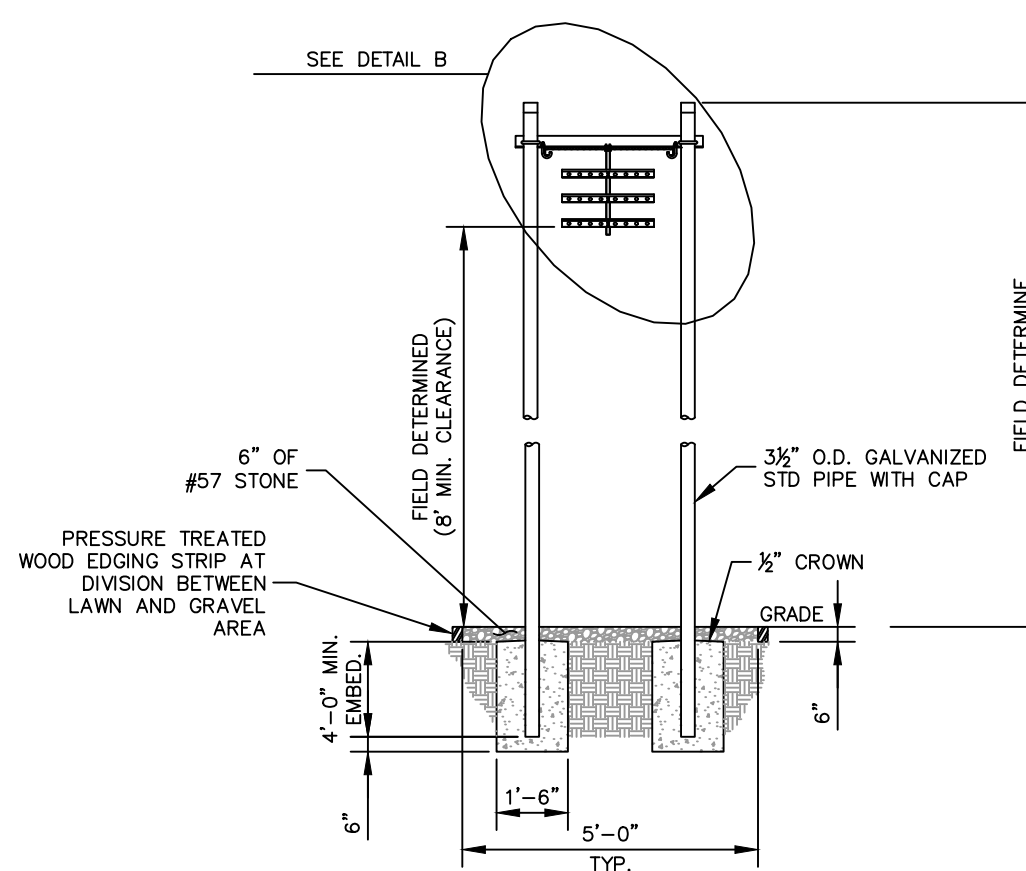
DETAIL A

ANDREW 1 POST WAVEGUIDE BRIDGE
KIT (PART #: WB-K210-B15, OR
APPROVED EQUIVALENT)

NOTE:

1. ALL MATERIALS FURNISHED BY CONTRACTOR UNLESS OTHERWISE NOTED.

1 WAVEGUIDE BRIDGE DETAIL
C6 NOT TO SCALE



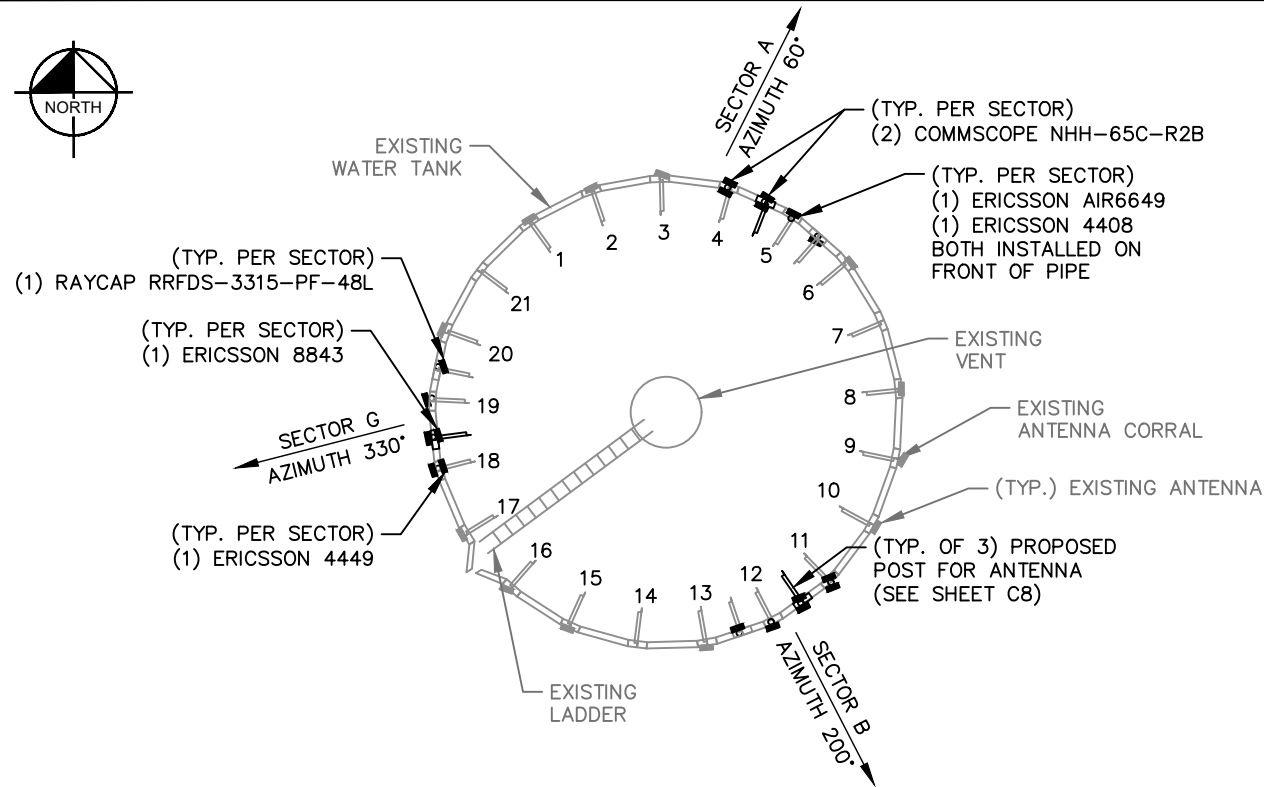
DETAIL B

ANDREW 2 POST WAVEGUIDE BRIDGE
KIT (PART #: WB-K410-B15, OR
APPROVED EQUIVALENT)

NOTE:

1. ALL MATERIALS FURNISHED BY CONTRACTOR UNLESS OTHERWISE NOTED.

2 WAVEGUIDE BRIDGE DETAIL (ALT DESIGN - 2 PIPE COLUMNS)
C6 NOT TO SCALE

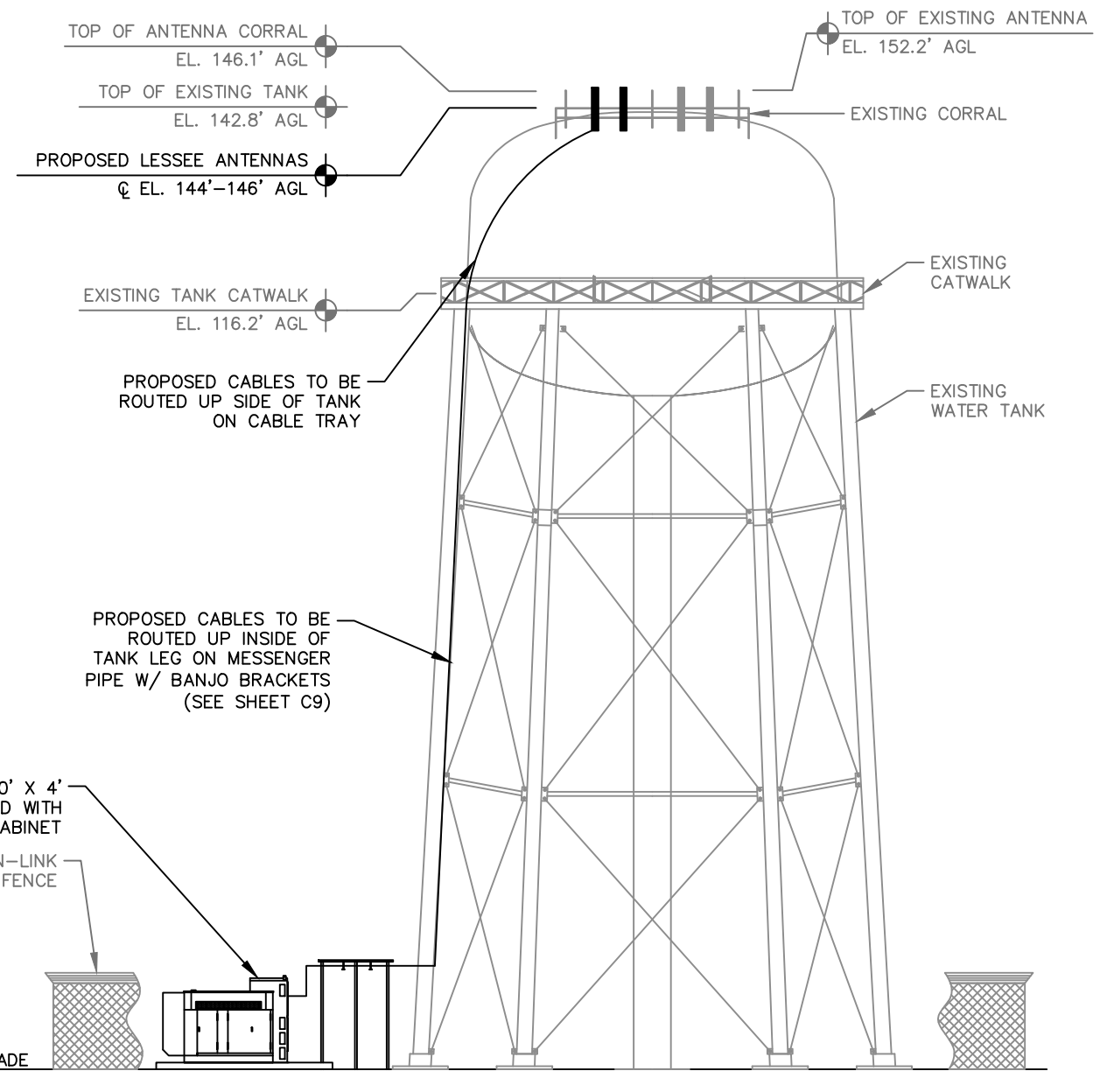


1 ANTENNA ORIENTATION PLAN
C7 (NOT TO SCALE, FOR ILLUSTRATIVE PURPOSES ONLY, SEE STRUCTURAL ANALYSIS BY OTHERS TO CONFIRM ANTENNA MOUNT TYPE)

NOTE:
 REFER TO APPENDIX FOR RFDS PROVIDED BY VERIZON. CONTRACTOR TO CONTACT THE VERIZON WIRELESS CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION FOR THE CONSTRUCTION RFDS.

NOTES:
 1. ALL INFORMATION ON THIS PAGE IS PROVIDED BY VERIZON WIRELESS AND/OR OTHERS AND IS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. CONTRACTOR SHALL CONTACT THE VERIZON WIRELESS CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION FOR ALL DETAILED ANTENNA, AND COAX CABLE INFORMATION.
 2. REFER TO STRUCTURAL ANALYSIS BY TANK OWNER FOR ANALYSIS OF EXISTING WATER TANK AND CORRAL.
 3. IT IS UNDERSTOOD THAT KIMLEY-HORN MAKES NO WARRANTY, EITHER EXPRESSED OR IMPLIED, FINDINGS, DESIGNS, RECOMMENDATIONS, SPECIFICATIONS, OPINION, OR PROFESSIONAL ADVICE RELATING TO THE STRUCTURAL ADEQUACY OF THE PROPOSED TOWER OR ATTACHMENT OF ANTENNAS OR OTHER APPURTENANCES.

NOTE: GENERAL CONTRACTOR TO INSTALL RAYCAP OVP, NUMBER AND TYPE PER VERIZON CONSTRUCTION MANAGER.



2 WATER TANK TOWER ELEVATION - W VIEW (FACING E)
C7 NOT TO SCALE
NOTES:

1. ALL EXISTING ATTACHMENTS TO TANK BASED ON STRUCTURAL ANALYSIS BY OTHERS (SEE GENERAL NOTE 1.07, SHEET N1).
2. THE TANK ELEVATION SHOWN ABOVE IS FOR REFERENCE ONLY.
3. COAX/FIBER CABLE LENGTHS ARE APPROXIMATE. CONTRACTOR TO VERIFY CORRECT LENGTH IN FIELD AT TIME OF CONSTRUCTION.
4. FOR CLARITY, EXISTING STRUCTURES NOT SHOWN.
5. PROPOSED ANTENNAS WILL BE LIGHT GRAY IN COLOR.



PROJECT INFORMATION:
 SITE NAME: OVERHILLS
 SITE No.: 30356
 PROJECT #: 20141092521
 6792 OVERHILLS RD
 SPRING LAKE, NC 28390
 HARNETT COUNTY

PLANS PREPARED BY:
Kimley»Horn
 11720 AMBER PARK DRIVE, SUITE 600
 ALPHARETTA, GA 30009
 PHONE: 770-619-4280
 WWW.KIMLEY-HORN.COM
 NC License F-0102

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0	04/23/21	CONSTRUCTION	DMF

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KHA PROJECT NUMBER:
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 TDM CDS

SHEET TITLE:
ANTENNA AND TOWER ELEVATION DETAILS

SHEET NUMBER:
C7

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PROJECT INFORMATION:

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SITE No.: 30356
PROJECT #: 20141092521
6792 OVERHILLS RD
SPRING LAKE, NC 28390
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KHA PROJECT NUMBER:

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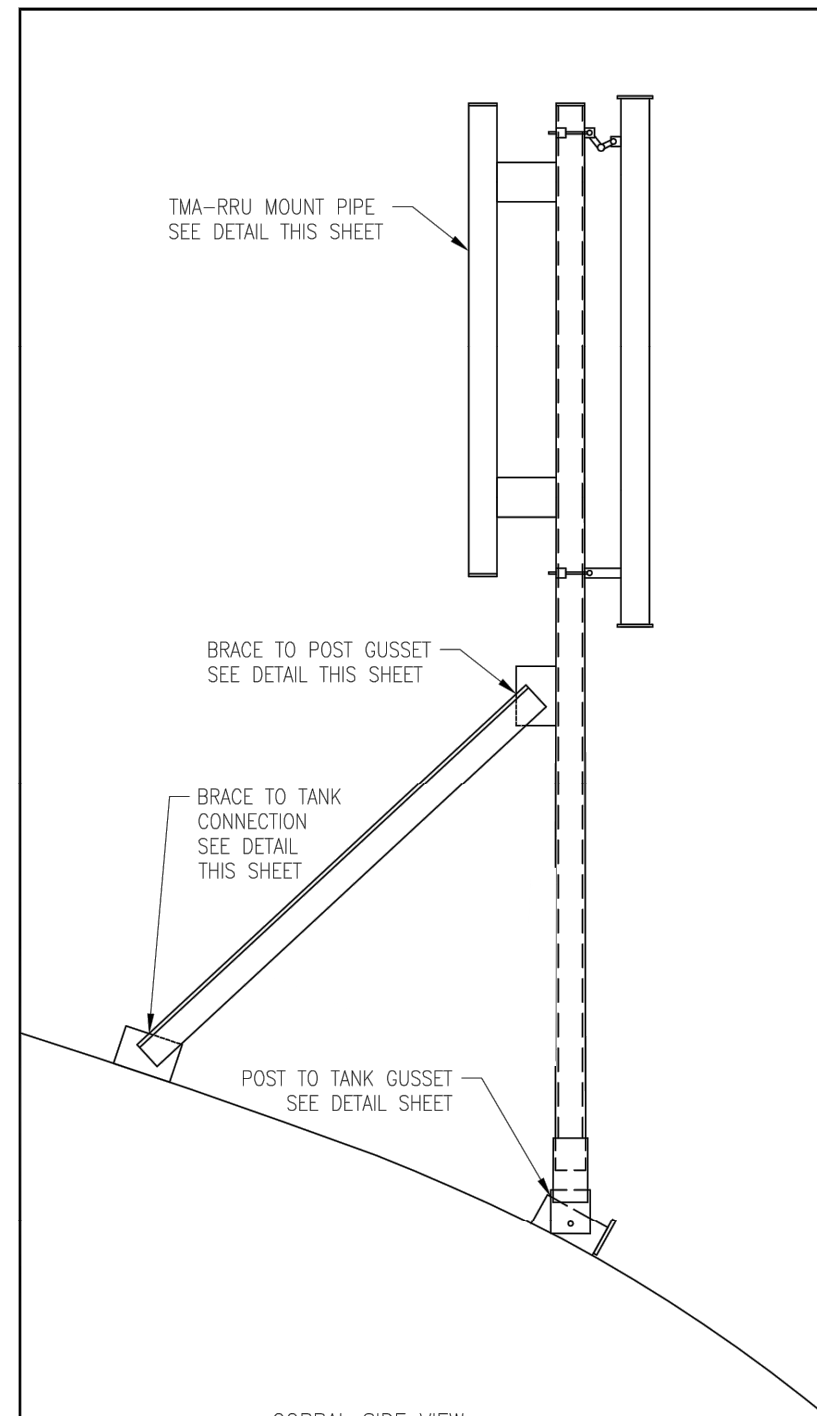
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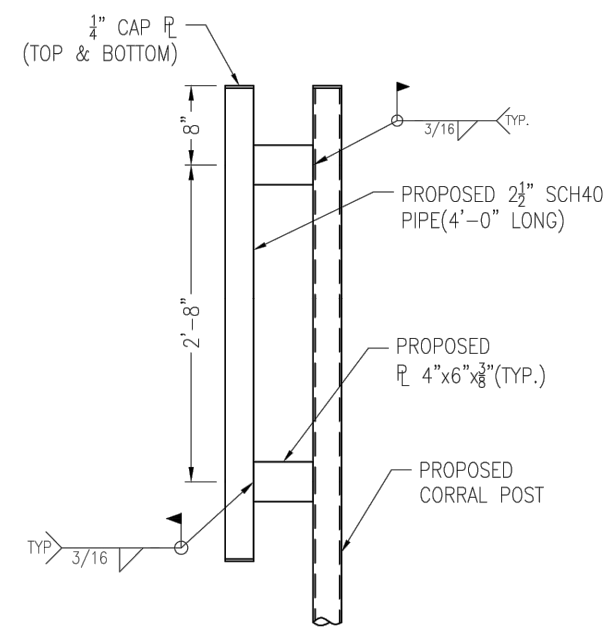
CORRAL DETAILS

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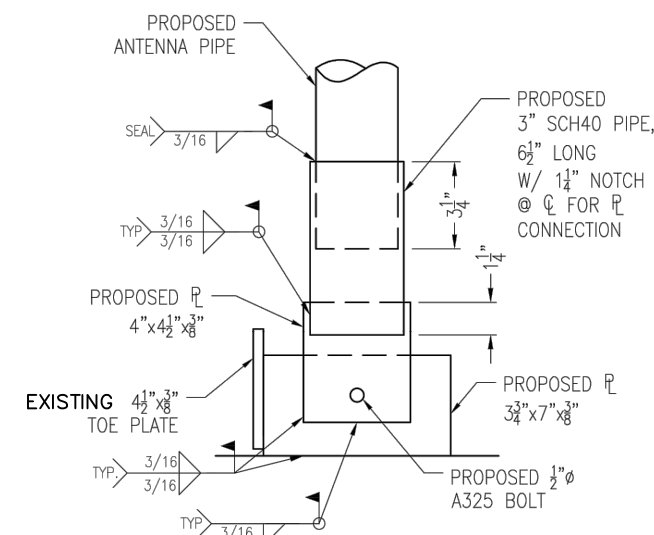
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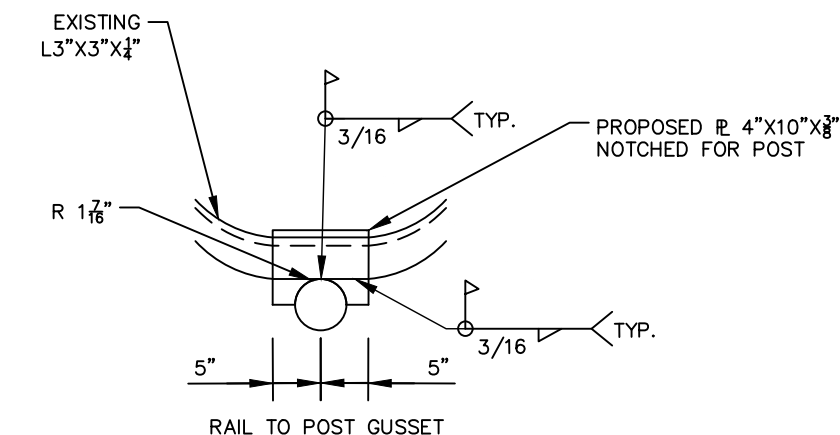
CORRAL SIDE VIEW



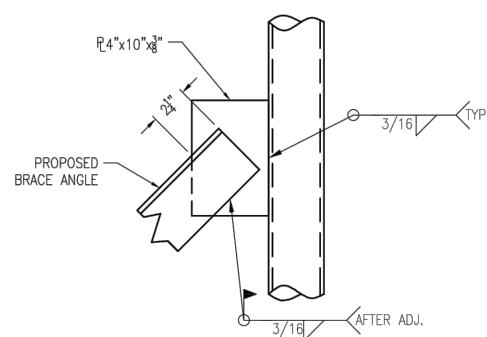
TMA/RRU MOUNTING DETAIL



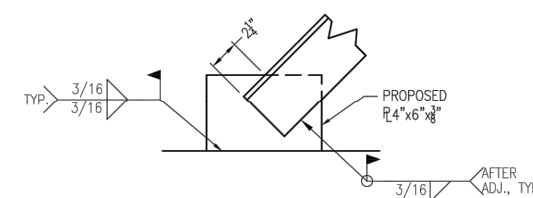
POST TO TANK GUSSET



RAIL TO POST GUSSET



BRACE TO POST GUSSET



BRACE TO TANK CONNECTION

UTILITY SERVICE COMPANY, INC 1230 PEACHTREE STREET, NE SUITE 1100 ATLANTA, GEORGIA 30309 PHONE: 678-235-0280 FAX: 888.600.5876	CORRAL MOUNTING STANDARD		DRAWN BY: BMS DATE: 12/8/16	NO.: REVISION DESCRIPTION	BY: DATE:
	PROPRIETARY AND CONFIDENTIAL <small>THIS DRAWING IS THE PROPERTY OF UTILITY SERVICE GROUP AND IS TO BE USED ONLY IN CONNECTION WITH THE PERFORMANCE OF WORK BY UTILITY SERVICE CO., INC. REPRODUCTION IN WHOLE OR IN PART IS EXPRESSLY FORBIDDEN.</small>		TITLE: ELEVATION AND DETAILS DWG No: COMM-CM-03	CHKD BY: DVD DATE: 12/8/16	SCALE: NONE FILE: NONE
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- REFER TO STRUCTURAL ANALYSIS BY TANK OWNER FOR ANALYSIS OF EXISTING TANK.
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1 CORRAL ELEVATION (SECTION VIEW)
C8 NOT TO SCALE

PROJECT INFORMATION:

SITE NAME:
OVERHILLS
SITE No.: 30356
PROJECT #: 20141092521
6792 OVERHILLS RD
SPRING LAKE, NC 28390
HARNETT COUNTY

PLANS PREPARED BY:

Kimley»Horn

11720 AMBER PARK DRIVE, SUITE 600
ALPHARETTA, GA 30009
PHONE: 770-619-4280
WWW.KIMLEY-HORN.COM
NC License F-0102

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0	04/23/21	CONSTRUCTION	DMF

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REQUIRED

KHA PROJECT NUMBER:

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DRAWN BY: CHECKED BY:

TDM

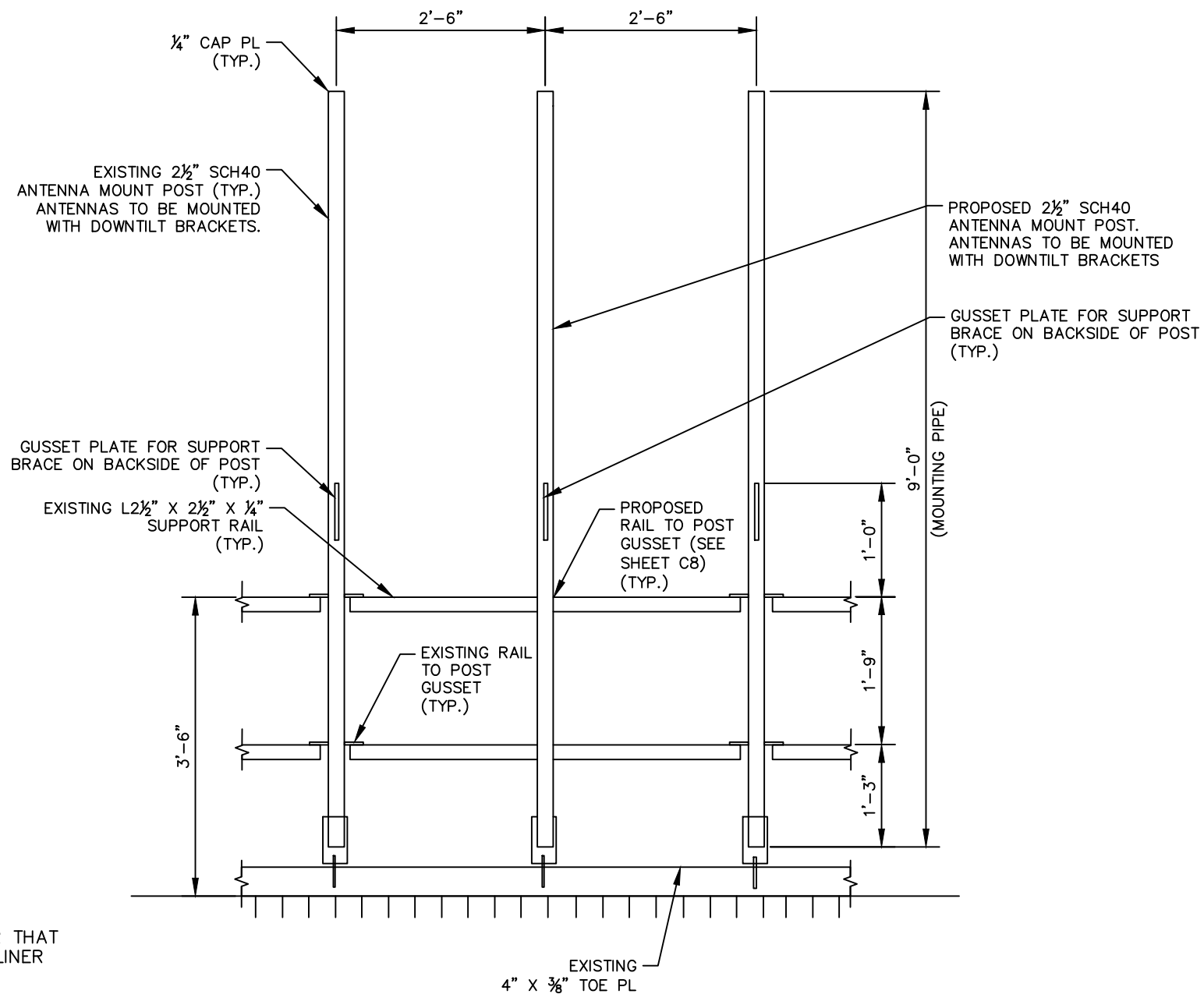
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SHEET TITLE:

CORRAL DETAILS

SHEET NUMBER:

C8.1



NOTE:

1. WELDING SHALL BE DONE IN A MANNER THAT LIMITS HEAT BUILD-UP AND REDUCES LINER DAMAGE.
2. INTERIOR COATING DAMAGE SHALL BE REPAIRED PER TANK OWNER'S SURFACE PREPARATION AND COATING SPECIFICATIONS.

1 CORRAL ELEVATION (FRONT VIEW)
C8.1 NOT TO SCALE

PROJECT INFORMATION:

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OVERHILLS
SITE No.: 30356
PROJECT #: 20141092521
6792 OVERHILLS RD
SPRING LAKE, NC 28390
HARNETT COUNTY

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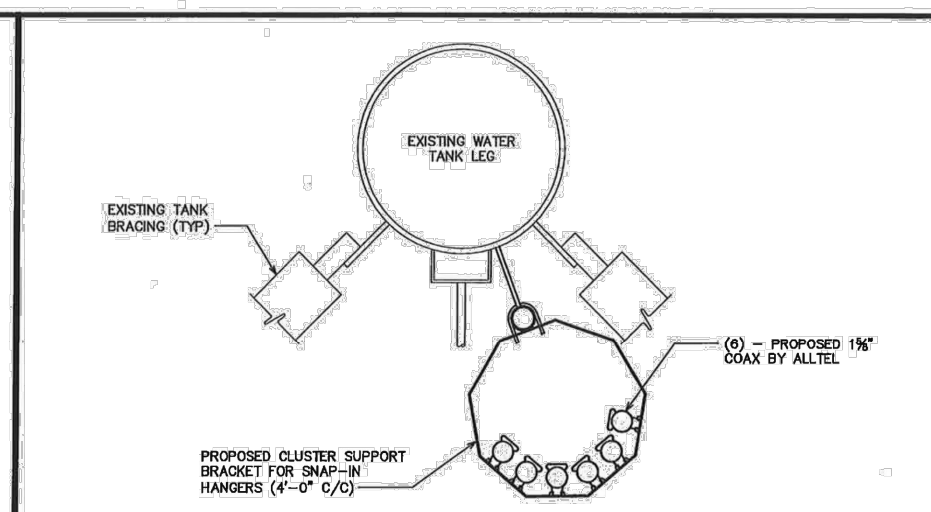
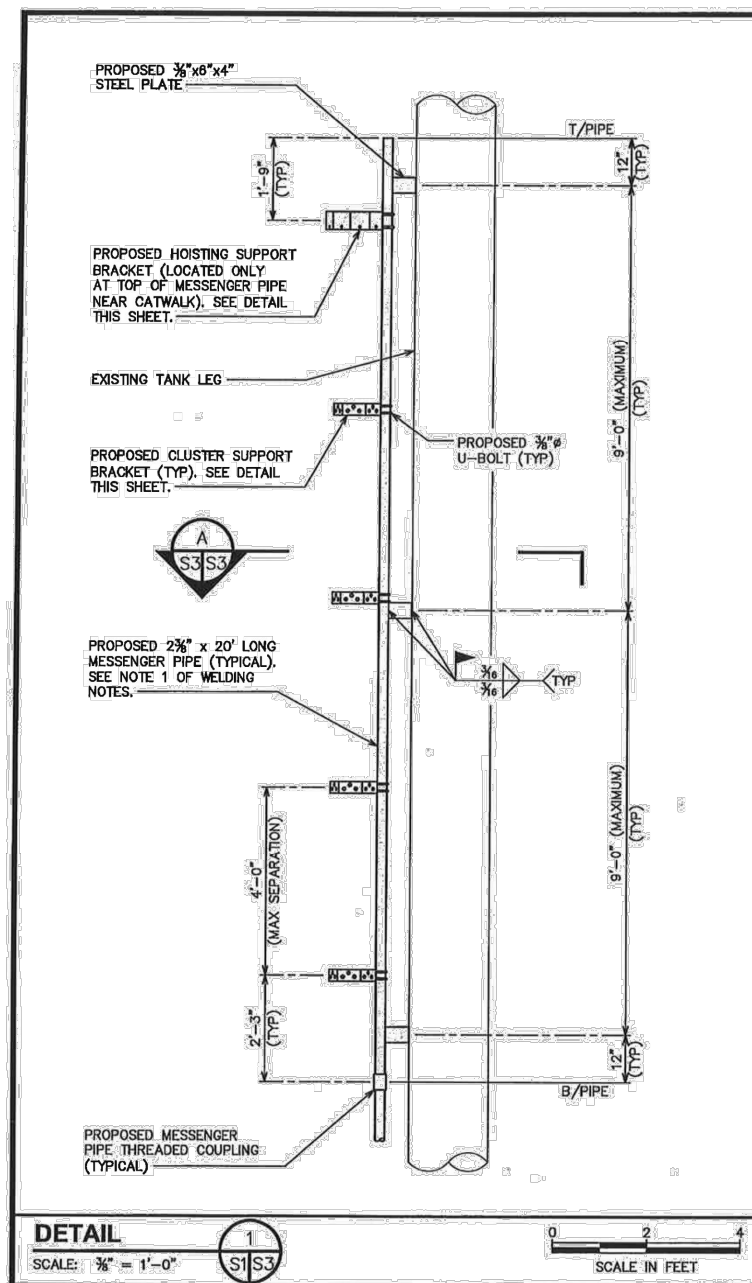
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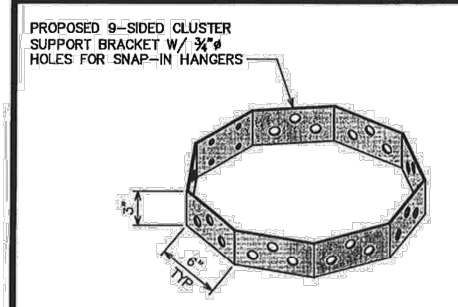
BRACKET DETAILS

SHEET NUMBER:

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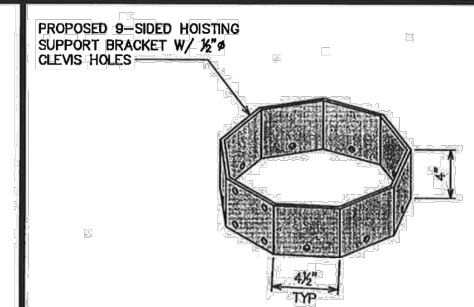
SECTION
SCALE: 1" = 1'-0"
SCALE IN FEET



CLUSTER SUPPORT BRACKET
SCALE: N.T.S.

1. CLUSTER MOUNT TO BE ATTACHED TO INSIDE OF WATER TANK LEG, SEE DETAIL ON THIS SHEET, THE INSIDE FACE OF THE LEG BEING MORE PARTICULARLY DEFINED AS THE EXTERIOR PORTION OF THE CROSS-SECTION OF THE LEG THAT FACES TOWARD THE CENTER OF THE TANK AND EXTENDS FROM HORIZONTAL STRUT CONNECTION TO HORIZONTAL STRUT CONNECTION.
2. ALL METAL (EXPOSED), AND MOUNTS SHALL BE PAINTED TO MATCH THE WATER TANK PER OWNER'S PAINT SPECIFICATIONS.
3. ORIENT COAX MOUNT TO CLEAR EXISTING BRACING.

COAX CABLE NOTES
SCALE: N.T.S.



HOISTING SUPPORT BRACKET
SCALE: N.T.S.

1. THE CONTRACTOR SHALL REMOVE GALVANIZING FROM PIPE AS NECESSARY TO PREVENT ZINC CONTAMINATION OF WELD.
2. THE CONTRACTOR SHALL WELD A TAB TO THE MESSENGER PIPE A MAXIMUM OF 1'-0" FROM THE BOTTOM OF THE LOWEST MESSENGER PIPE AND A MAXIMUM OF 1'-0" FROM THE TOP OF THE HIGHEST MESSENGER PIPE.

WELDING NOTES
SCALE: N.T.S.

NOTE:
CONTRACTOR TO USE HINGED CLUSTER
SUPPORT BRACKET IF AVAILABLE

1 BRACKET DETAILS
C9 NOT TO SCALE

PROJECT INFORMATION:

SITE NAME:
OVERHILLS
SITE No.: 30356
PROJECT #: 20141092521
6792 OVERHILLS RD
SPRING LAKE, NC 28390
HARNETT COUNTY

PLANS PREPARED BY:

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KHA PROJECT NUMBER:

018985426

DRAWN BY: CHECKED BY:

TDM CDS

SHEET TITLE:

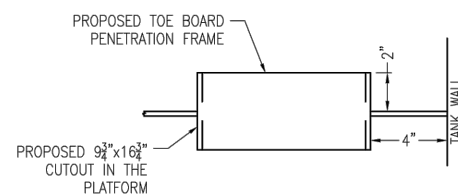
**BALCONY AND
DOME MOUNTING
DETAILS**

SHEET NUMBER:

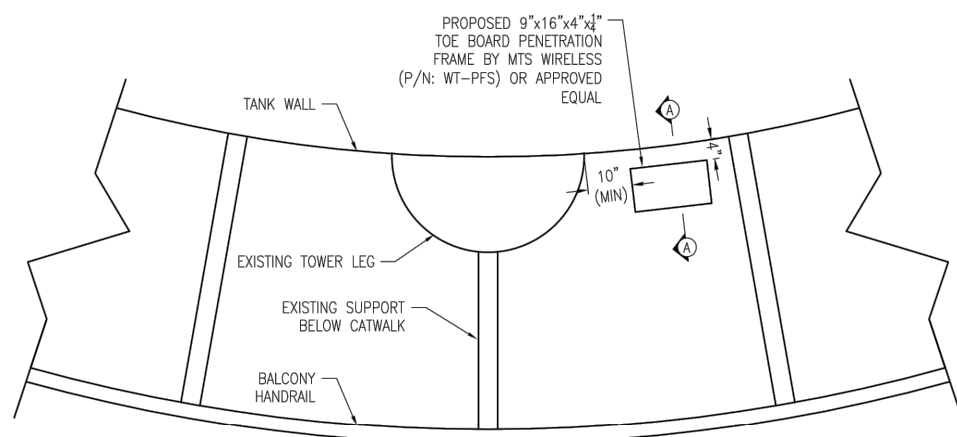
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NOTES:

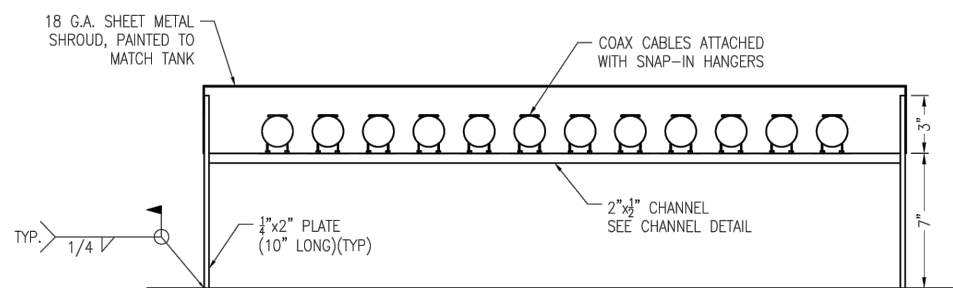
1. PRIOR TO PERFORMING THE CUTOUT IN THE CATWALK PLATE, THE CONTRACTOR SHALL VERIFY THE CUTOUT IS A CLEAR DISTANCE OF 6" FROM ANY SUPPORT BENEATH THE CATWALK.
2. ALL WELDING SHALL BE DONE IN A MANNER THAT LIMITS HEAT BUILD-UP AND REDUCES LINER DAMAGE.
3. INTERIOR COATING DAMAGE SHALL BE REPAIRED PER TANK OWNER'S SURFACE PREPARATION AND COATING SPECIFICATIONS.



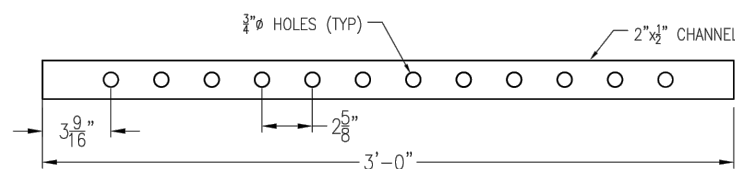
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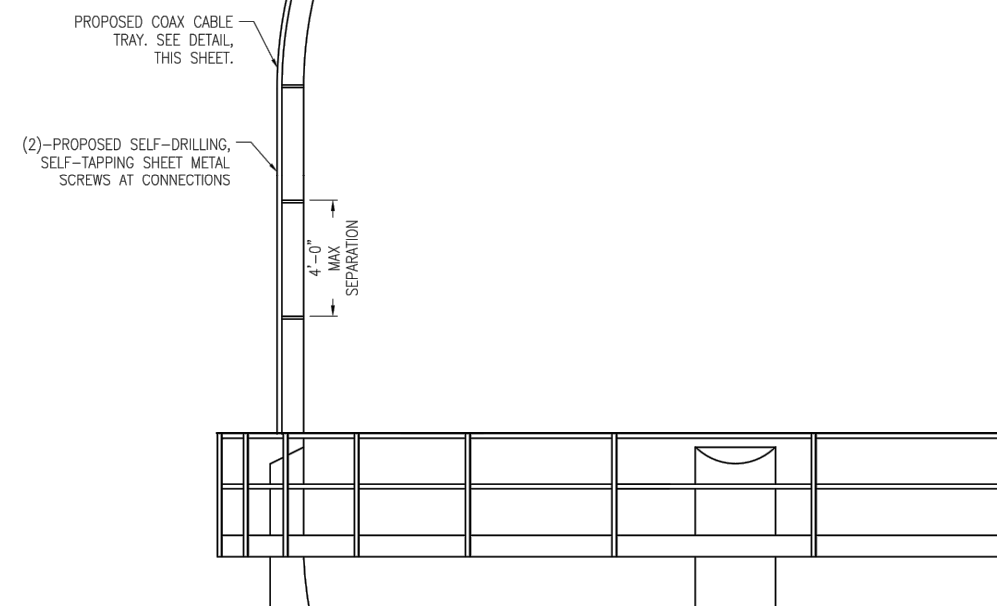
BALCONY PENETRATION PLAN



SECTION B-B



CHANNEL DETAIL



COAX CABLE TRAY ELEVATION

UTILITY SERVICE COMPANY, INC 1230 PEACHTREE STREET, NE SUITE 1100 ATLANTA, GEORGIA 30309 PHONE: 678-235-0280 FAX: 888.600.5876	COAX CABLE SUPPORT STANDARD		DRAWN BY: BMS DATE: 12/8/16	NO.: REVISION DESCRIPTION BY: DATE
	PROPRIETARY AND CONFIDENTIAL		CHKD BY: DVD DATE: 12/8/16	
	TITLE: BALCONY AND DOME MOUNTING DETAILS		SCALE: NONE FILE: NONE	
	DWG No: COMM-CS-01		DO NOT SCALE ALL DIMENSIONS IN INCHES, UNLESS NOTED OTHERWISE	

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C10

BALCONY AND DOME MOUNTING DETAILS

NOT TO SCALE

PROJECT INFORMATION:

SITE NAME:
OVERHILLS
SITE No.: 30356
PROJECT #: 20141092521
6792 OVERHILLS RD
SPRING LAKE, NC 28390
HARNETT COUNTY

PLANS PREPARED BY:

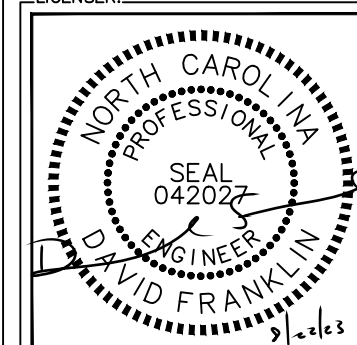
Kimley»Horn

11720 AMBER PARK DRIVE, SUITE 600
ALPHARETTA, GA 30009
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REV: DATE: ISSUED FOR: BY:

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0	04/23/21	CONSTRUCTION	DMF

LICENSER:



KHA PROJECT NUMBER:

018985426

DRAWN BY: CHECKED BY:

TDM CDS

SHEET TITLE:

MECHANICAL PLAN

SHEET NUMBER:

M1

KEY NOTES - CONDUIT, CONDUCTORS, & MISC

- (A) 1" SCHEDULE 40 STEEL PIPE. PIPE MATERIAL TO COMPLY WITH SECTION 403.4.2 OF THE 2018 NORTH CAROLINA FUEL GAS CODE. PIPE SIZED FOR AN INLET PRESSURE OF 11" IN W.C.I AND A MAXIMUM LENGTH OF 50 LF.
- (B) 1" POLYETHYLENE PIPE WITH A TRACER WIRE. PIPE MATERIAL TO COMPLY WITH SECTION 403.6 OF THE 2018 NORTH CAROLINA FUEL GAS CODE. PIPE SIZED FOR INLET PRESSURE OF 11" IN W.C. AND MAXIMUM LENGTH OF 50 LF. TRACER WIRE SHALL COMPLY WITH SECTION 404.17.3 OF 2018 NORTH CAROLINA FUEL GAS CODE.
- (C) 4" SCHEDULE 80 PVC SLEEVE.
- (D) CONNECTIONS TO BE MADE WITH FLEXIBLE FITTINGS.

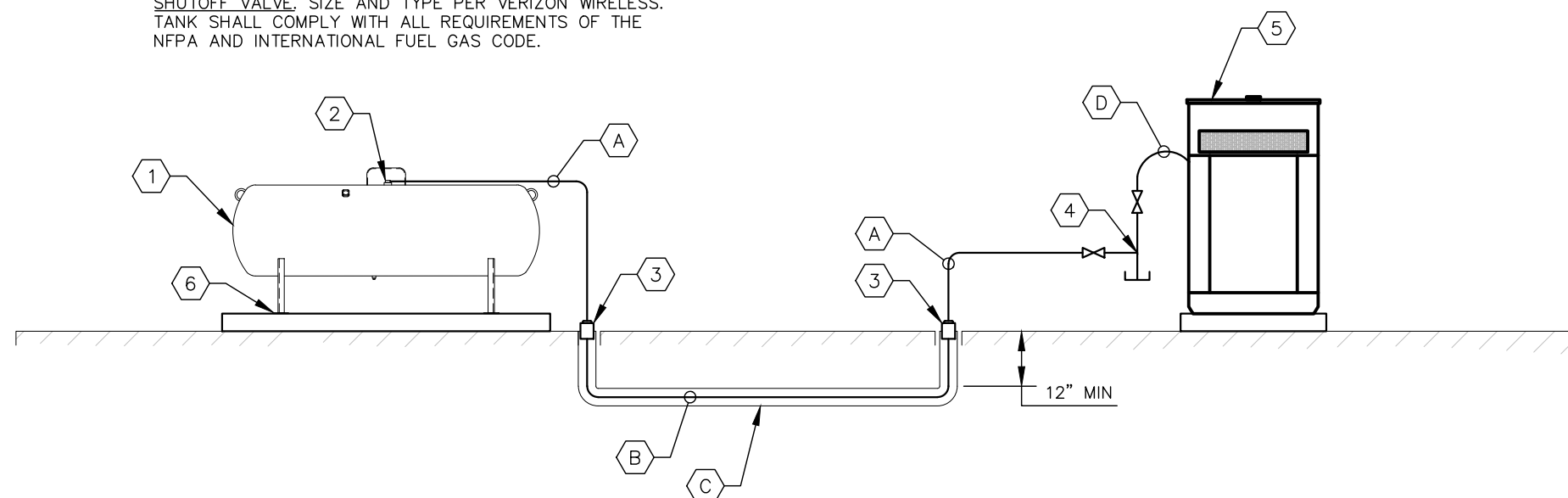
KEY NOTES - EQUIPMENT

- (1) LIQUID PROPANE TANK WITH AN INTEGRAL MANUAL SHUTOFF VALVE. SIZE AND TYPE PER VERIZON WIRELESS. TANK SHALL COMPLY WITH ALL REQUIREMENTS OF THE NFPA AND INTERNATIONAL FUEL GAS CODE.
- (2) FIRST STAGE REGULATOR PER NFPA 58 SECTION 6.8.1.1.
- (3) 4" PVC CAP.
- (4) PROPOSED VALVE, DRIP LEG, SECOND STAGE REGULATOR, AND FLEXIBLE CONNECTORS. ALL MATERIALS SHALL BE INSTALLED PER THE 2018 NORTH CAROLINA FUEL GAS CODE.
- (5) PROPOSED LP GENERATOR.

ADDITIONAL NOTES

1. UPON COMPLETION OF ASSEMBLY, PIPING SYSTEMS (INCLUDING HOSE) SHALL BE TESTED AND PROVED FREE OF LEAKS IN ACCORDANCE WITH SECTION 406 OF THE 2018 NORTH CAROLINA FUEL GAS CODE.
2. GENERATOR SUPPLY LINE UPSTREAM OF SECOND STAGE REGULATOR SIZED FOR 632 THOUSAND BTU AT 30 FEET MAXIMUM PIPING LENGTH. LINES SIZED PER TABLES 402.4(28) AND 402.4(35) OF THE 2018 NORTH CAROLINA FUEL GAS CODE. IF THE INSTALLATION OF THE SERVICE LINE CANNOT BE MADE WITHIN 30 FEET, THE CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO ORDERING MATERIALS TO RECEIVE DIRECTION.
3. COORDINATE ALL ROUTING WITH OTHER TRADES SHOWN ON CIVIL AND ELECTRICAL DRAWINGS.
4. MINIMUM SEPARATION BETWEEN POINT OF DISCHARGE OF CONTAINER PRESSURE RELIEF VALVE, VENT OF A FIXED MAXIMUM LIQUID LEVEL GAUGE ON A CONTAINER, AND THE CONTAINER FILLING CONNECTION TO EXTERIOR SOURCES SHALL BE NO LESS THAN FIVE FEET TO ANY SPARK SOURCE. NOTE THAT THIS SEPARATION IS DETERMINED BY SECTION 6.26.3 OF THE NFPA AND IS ONLY VALID IF A MANUAL SHUT OFF VALVE IS INSTALLED.

LIQUID PROPANE TANK WITH AN INTEGRAL MANUAL SHUTOFF VALVE. SIZE AND TYPE PER VERIZON WIRELESS. TANK SHALL COMPLY WITH ALL REQUIREMENTS OF THE NFPA AND INTERNATIONAL FUEL GAS CODE.



1 MECHANICAL PLAN AND NOTES
M1 NOT TO SCALE

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ELECTRICAL NOTES

1.00 CODES, STANDARDS, & SPECIFICATIONS

- 1.01 IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL MATERIALS AND LABOR RELATED DIRECTLY OR INDIRECTLY TO ALL ELECTRICAL WORK DOCUMENTED IN THESE DRAWINGS SHALL BE PROVIDED AND PERFORMED IN CONFORMANCE WITH ALL CURRENT GOVERNING CODES, STANDARDS, AND PROFESSIONAL STANDARD OF CARE TO INCLUDE THE AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM), UNDERWRITERS LABORATORY (UL), NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA), AMERICAN STANDARDS ASSOCIATION (ASA), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), AND THE NATIONAL ELECTRICAL CODE (NEC).
- 1.02 MATERIALS SHALL BE NEW AND SHALL CONFORM TO ALL APPLICABLE CURRENT GOVERNING STANDARDS ESTABLISHED FOR EACH ITEM BY ASTM, UL, NEMA, ASA, AND NFPA.
- 1.03 ALL ELECTRICAL WORK SHALL COMPLY WITH ALL APPLICABLE STATE, COUNTY, AND MUNICIPAL CODES AND ORDINANCES, AS WELL AS ALL CURRENT GOVERNING STANDARDS AND PRACTICES AS REQUIRED BY NEC, NEMA, ANSI, NFPA, UBC, UL, IEEE, AND THE LOCAL UTILITY COMPANY.
- 1.04 ALL ELECTRICAL GROUNDING SHALL COMPLY WITH THE CURRENT EDITION OF THE NEC.
- 1.05 CONTRACTOR SHALL MAINTAIN UL LISTED FIRE RATINGS AT ALL WALL PENETRATIONS.
- 1.06 CONTRACTOR SHALL MAINTAIN A MINIMUM CLEARANCE OF 36" IN FRONT OF ALL ELECTRICAL EQUIPMENT AS REQUIRED BY NEC. MINIMUM CLEARANCE SHALL BE OBSERVED FOR BOTH THE FRONT AND THE REAR OF THE METER H-FRAME RACK AND THE EQUIPMENT H-FRAME RACK.

2.00 GENERAL

- 2.01 CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITS AND ASSOCIATED FEES RELATED TO THE PROJECT AND SHALL DELIVER A COPY OF ALL PERMITS TO THE VERIZON REPRESENTATIVE.
- 2.02 CONTRACTOR SHALL SCHEDULE AND SHOULD ATTEND ALL INSPECTIONS REQUIRED BY THE JURISDICTION HAVING AUTHORITY.
- 2.03 CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, TOOLS, ACCESSORIES, ETC., FOR A COMPLETE WORKING ELECTRICAL INSTALLATION.
- 2.04 ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH APPLICABLE BUILDING CODES AND LOCAL ORDINANCES, INSTALLED IN A NEAT MANNER, AND SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER.
- 2.05 CONTRACTOR SHALL PROTECT ADJACENT EQUIPMENT AND FINISHES FROM DAMAGE AND SHALL REPAIR TO ORIGINAL CONDITION ANY ITEMS DAMAGED AS A RESULT OF THE WORK.
- 2.06 CONTRACTOR SHALL REPAIR ANY LANDSCAPING DISTURBED DURING CONSTRUCTION.
- 2.07 IF CONDUIT RUNS HAVE MORE THAN THREE (3) CONSECUTIVE 90 DEGREE TURNS, THE CONTRACTOR SHALL INSTALL PULL BOXES AS REQUIRED BY NEC.
- 2.08 CONTRACTOR SHALL INDICATE THE LOCATION OF ALL CAPPED UNDERGROUND SPARE CONDUIT ON THE RECORD DRAWINGS SUBMITTED TO THE OWNER.
- 2.09 CONTRACTOR SHALL COORDINATE EXACT ROUTING OF CONDUIT WITH OWNER. ALL CONDUIT SHALL BE ROUTED WITHIN 3 FEET, EITHER SIDE, OF PERIMETER FENCING.

3.00 MATERIALS

- 3.01 ALL EQUIPMENT AND MATERIALS SHOWN SHALL BE CONSIDERED NEW UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS.
- 3.02 FINAL CONNECTIONS OF EQUIPMENT SHALL BE PER MANUFACTURER'S APPROVED WIRING DIAGRAMS, DETAILS, AND INSTRUCTIONS. THE ELECTRICAL CONTRACTOR SHALL PROVIDE MATERIALS AND EQUIPMENT COMPATIBLE WITH EQUIPMENT SUPPLIED BY VERIZON.
- 3.03 CONTRACTOR SHALL PROVIDE AN UPDATED PANELBOARD DIRECTORY FOR THE PANEL FROM WHICH THE NEW VERIZON EQUIPMENT CIRCUIT WILL BE CONNECTED. CONTRACTOR SHALL SUBMIT UPDATED DIRECTORY IN A PLASTIC COVER TO THE BUILDING OWNER FOR APPROVAL PRIOR TO INSTALLATION.
- 3.04 CONTRACTOR SHALL FIELD DETERMINE ACTUAL CONDUIT ROUTING AND SHALL OBTAIN APPROVAL FROM THE TOWER OWNER OF THE PROPOSED ROUTING PRIOR TO CONDUIT INSTALLATION.
- 3.05 ALL CONDUCTORS SHALL BE COPPER WITH THWN INSULATION AND ALL TERMINATIONS SHALL BE RATED FOR AT LEAST 75 DEGREES CELSIUS.
- 3.06 ALL NEUTRAL CONDUCTORS SHALL HAVE WHITE INSULATION. ALL GROUND CONDUCTORS SHALL HAVE GREEN INSULATION. COLOR TAPE IDENTIFICATION OF THESE CONDUCTORS IS NOT PERMITTED.
- 3.07 CONTRACTOR SHALL SEAL ALL CONDUITS ENTERING AN ENCLOSURE WITH CONDUIT SEALANT THAT IS COMPATIBLE WITH THE INSULATION OF THE CONDUCTORS IN THE CONDUIT.
- 3.08 CONDUIT RUNS SHALL HAVE A CONTINUOUS DOWNWARD SLOPE AWAY FROM ALL EQUIPMENT TO PREVENT WATER INFILTRATION.
- 3.09 ALL CONDUIT SHALL BE SCHEDULE 40 PVC UNLESS NOTED OTHERWISE ON THE PLANS. WHEN CONDUIT IS ROUTED UNDER A ROADWAY, SCHEDULE 80 PVC CONDUIT SHALL BE UTILIZED. MANUFACTURED BEND RADII SHALL BE PER NEC.
- 3.10 CONTRACTOR SHALL PROVIDE TWO (2) 200 POUND TEST POLYETHYLENE PULL CORDS IN ALL CONDUITS AND ALL INNERDUCTS. PULL CORDS SHALL BE SECURED AT EACH END OF CONDUIT RUNS. ALL SPARE CONDUIT ENDS SHALL BE CAPPED WITH MANUFACTURED PVC FITTINGS.
- 3.11 CONTRACTOR SHALL BOND EACH METALLIC CONDUIT ENTERING A METALLIC ENCLOSURE WITH A #8 MIN AWG INSULATED COPPER BONDING JUMPER PER NEC. CONTRACTOR SHALL BOND ALL ELECTRICAL EQUIPMENT TO THE H-FRAME RACK ON WHICH EQUIPMENT IS MOUNTED WITH #8 MIN AWG INSULATED COPPER BONDING JUMPERS PER NEC.
- 3.12 CONTRACTOR SHALL IDENTIFY THE END OF ALL SPARE UNDERGROUND CONDUITS AND PROVIDE AND INSTALL 90 DEGREE ELBOWS WITH VERTICAL CONDUIT EXTENSIONS TO EXTEND 3" ABOVE FINISHED CRUSHED AGGREGATE GRADE. CONTRACTOR SHALL TERMINATE CONDUITS WITH MANUFACTURED CONDUIT CAPS THAT THE CONTRACTOR HAS PAINTED ORANGE.
- 3.13 CONTRACTOR SHALL PROVIDE AND INSTALL AN ENGRAVED PHENOLIC PLATE ON THE FRONT OF THE INTEGRATED LOAD CENTER. THE WORDING ON THE PLATE SHALL READ AS FOLLOWS: "MAXIMUM DRAW OF ALL RECTIFIERS AND EQUIPMENT ON THE LOAD CENTER CANNOT EXCEED 50kW. IF ADDITIONAL POWER IS REQUIRED, THE EXISTING 50kW GENERATOR MUST BE REPLACED."

4.00 PRE-CONSTRUCTION COORDINATION

- 4.01 CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID AND NOTE EXISTING CONDITIONS THAT MIGHT AFFECT THEIR WORK. ALL SUCH CONDITIONS SHALL BE REPORTED TO THE ENGINEER PRIOR TO BID.
- 4.02 THE CONTRACTOR SHALL PROVIDE A UTILITY LOCATOR AND SHALL VERIFY THE ACTUAL LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES. ANY DAMAGE TO EXISTING UTILITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- 4.03 CONTRACTOR SHALL VERIFY, PRIOR TO ROUGH-IN, THAT SITE CONDITIONS ALLOW FOR THE PLACEMENT OF THE ELECTRICAL EQUIPMENT AS SHOWN ON THE PLANS.
- 4.04 CONTRACTOR SHALL COORDINATE WITH LOCAL ELECTRICAL UTILITY REGARDING THE EXACT LOCATION OF THE TRANSFORMER, ALL METERING REQUIREMENTS, AND CONDUIT ROUTING BETWEEN TRANSFORMER AND METER.
- 4.05 CONTRACTOR SHALL COORDINATE WITH LOCAL TELCO UTILITY REGARDING THE EXACT LOCATION OF THE TELCO SERVICE ENTRY POINT.
- 4.06 CONTRACTOR SHALL COORDINATE WITH AUTHORITY HAVING JURISDICTION REGARDING LOCAL FROST LINE REQUIREMENTS FOR RACEWAY MATERIAL SELECTION AND INSTALLATION.
- 4.07 CONTRACTOR SHALL PERFORM AN ARC FLASH ANALYSIS AT THE INTEGRATED LOAD CENTER AND PROVIDE ARC FLASH LABEL PER NEC.
- 4.08 ALL CIRCUIT BREAKERS AND EQUIPMENT SHALL HAVE A MINIMUM AIC RATING OF 10,000 AMPS. IF THE RATING OF THE UTILITY TRANSFORMER PROVIDING THE ELECTRICAL SERVICE IS GREATER THAN 75 kVA, THE CONTRACTOR SHALL PERFORM A SHORT CIRCUIT ANALYSIS TO DETERMINE THE REQUIRED AIC RATING FOR THE CIRCUIT BREAKERS AND EQUIPMENT. PRIOR TO PURCHASING EQUIPMENT, THE CONTRACTOR SHALL CONTACT THE ELECTRIC UTILITY AND OBTAIN IN WRITING THE MAXIMUM AVAILABLE FAULT CURRENT (AFC) AT THE UTILITY SERVICE POINT. PROVIDE MAX. AFC SIGNAGE AS REQUIRED PER NEC 110.24. THE CONTRACTOR SHALL ENSURE ALL ELECTRICAL EQUIPMENT, CIRCUIT BREAKERS, DISCONNECTS, FUSES, AND PANELBOARDS HAVE A FAULT CURRENT INTERRUPTING RATING GREATER THAN THE AVAILABLE FAULT CURRENT.



8921 RESEARCH DRIVE
CHARLOTTE, NORTH CAROLINA 28262

PROJECT INFORMATION:

SITE NAME:
OVERHILLS
SITE No.: 30356
PROJECT #: 20141092521
6792 OVERHILLS RD
SPRING LAKE, NC 28390
HARNETT COUNTY

PLANS PREPARED BY:

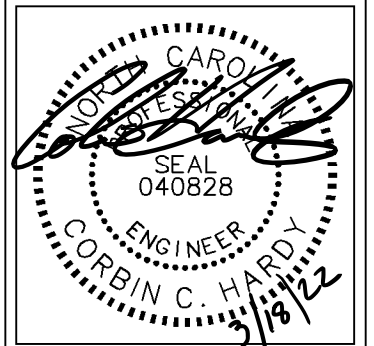


11720 AMBER PARK DRIVE, SUITE 600
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NC License F-0102

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KHA PROJECT NUMBER:

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TDM CDS

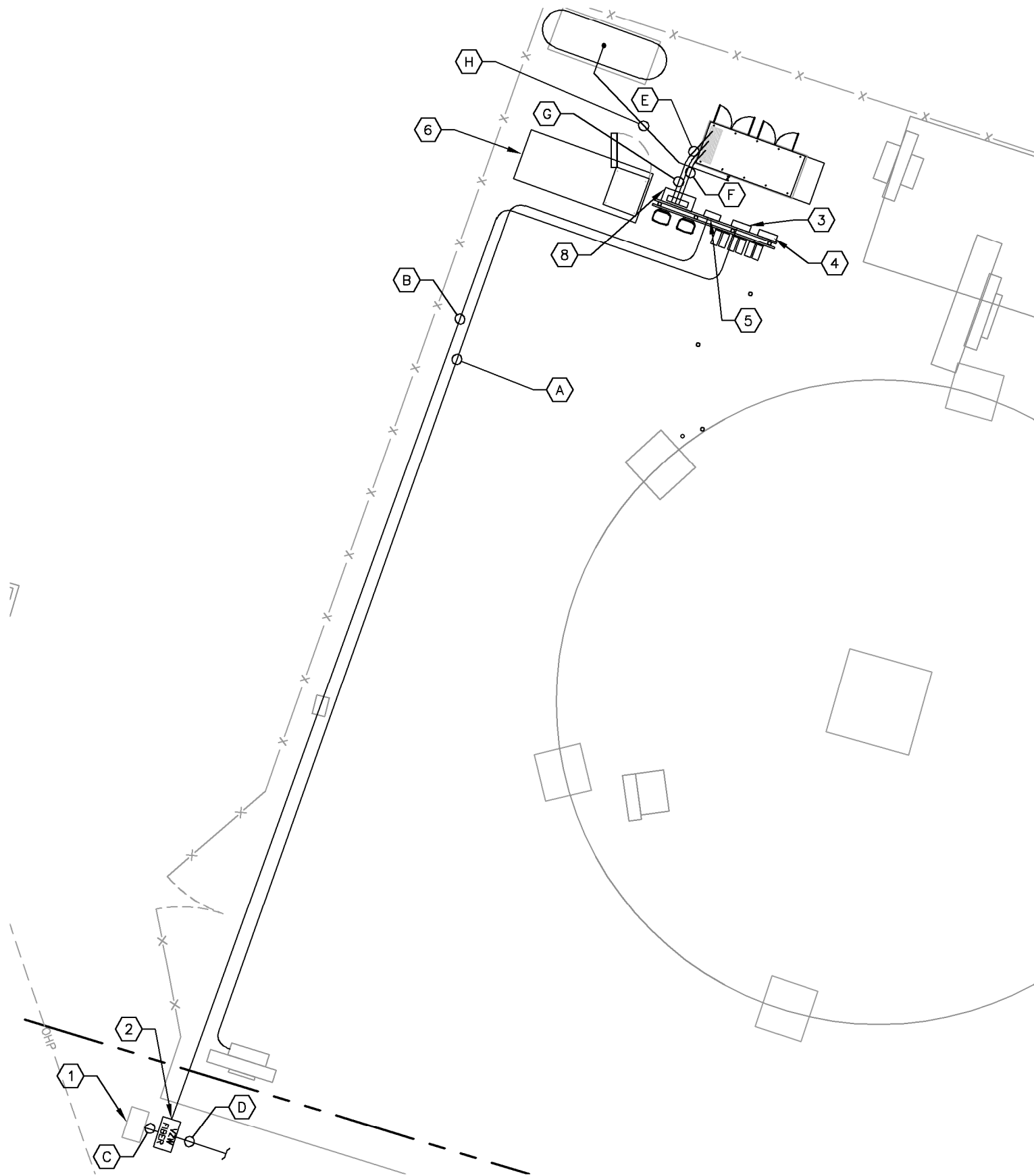
SHEET TITLE:

ELECTRICAL
NOTES

SHEET NUMBER:

E1

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1 UTILITY SERVICE ROUTING PLAN
E2 SCALE: 1" = 10'

KEY NOTES - ELECTRICAL EQUIPMENT

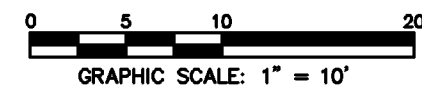
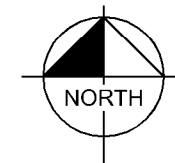
- ① EXISTING LIT FIBER HANDHOLE/PEDESTAL. (CONTRACTOR TO CONFIRM EXISTENCE AND LOCATION).
- ② TRAFFIC RATED TELCO VAULT LABELED "VZW FIBER". (SEE NOTE 4.05 ON SHEET E1)
- ③ TELCO BOX (SEE SHEETS C3 & C4).
- ④ CIENA UNIT, IF NEEDED (SEE SHEETS C3 & C4).
- ⑤ DISCONNECT (SEE SHEETS C3 & C4).
- ⑥ VERIZON CONCRETE EQUIPMENT PAD (SEE SHEET C5).
- ⑦ KEY NOTE NOT USED.
- ⑧ INTEGRATED LOAD CENTER (SEE SHEETS C3 & C4).

KEY NOTES - CONDUIT, CONDUCTORS, & MISC.

- A 2" PVC POWER CONDUIT FROM EXISTING METER RACK TO EQUIPMENT RACK (SEE TRENCH DETAIL 2/E6).
- B TWO (2) 2" PVC TELCO CONDUIT, WITH TWO (2) PULL ROPES (SEE TRENCH DETAIL 2/E6).
- C 4" PVC BRIDGE FIBER CONDUIT. (IF NO EXISTING LIT FIBER HANDHOLE/PEDESTAL IS PRESENT CONTRACTOR TO PROVIDER A 5' LONG CAPPED STUB BRIDGE CONDUIT).
- D TWO (2) 2" PVC CONDUITS FROM RIGHT OF WAY W/TWO (2) PULL ROPES (SEE TRENCH DETAIL 2/E6 AND SHEET E3).
- E 2" PVC CONDUIT FOR ROUTING POWER CONDUCTOR TO THE GENERATOR. (SEE TRENCH DETAIL 2/E7).
- F 1" PVC CONDUIT FOR ROUTING GENERATOR CONTROL AND ALARM SIGNAL CABLES TO THE GENERATOR (SEE TRENCH DETAIL 2/E6).
- G 1" PVC CONDUIT FOR ROUTING POWER CONDUCTOR TO THE GENERATOR BATTERY CHARGER AND THE GENERATOR BLOCK HEATER (SEE TRENCH DETAIL 2/E6).
- H PROPANE TANK SERVICE LINE (SEE SHEET M1)

NOTES:

GENERAL CONTRACTOR IS TO CONFIRM WITH VERIZON CONSTRUCTION MANAGER WHETHER INSTALLATION OF THE TWO (2) 2" CONDUITS TO THE RIGHT OF WAY WILL BE PART OF THE INITIAL CONSTRUCTION.



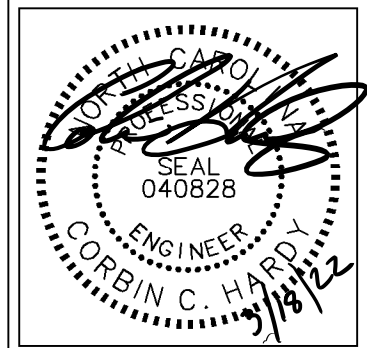
PROJECT INFORMATION:
 SITE NAME:
 OVERHILLS
 SITE No.: 30356
 PROJECT #: 20141092521
 6792 OVERHILLS RD
 SPRING LAKE, NC 28390
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PLANS PREPARED BY:
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SHEET TITLE: _____

**UTILITY SERVICE
 ROUTING PLAN**

SHEET NUMBER:
E2



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CHARLOTTE, NORTH CAROLINA 28262

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PLANS PREPARED BY:

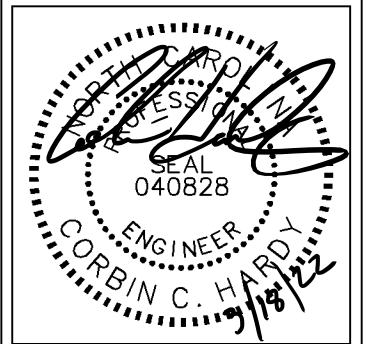


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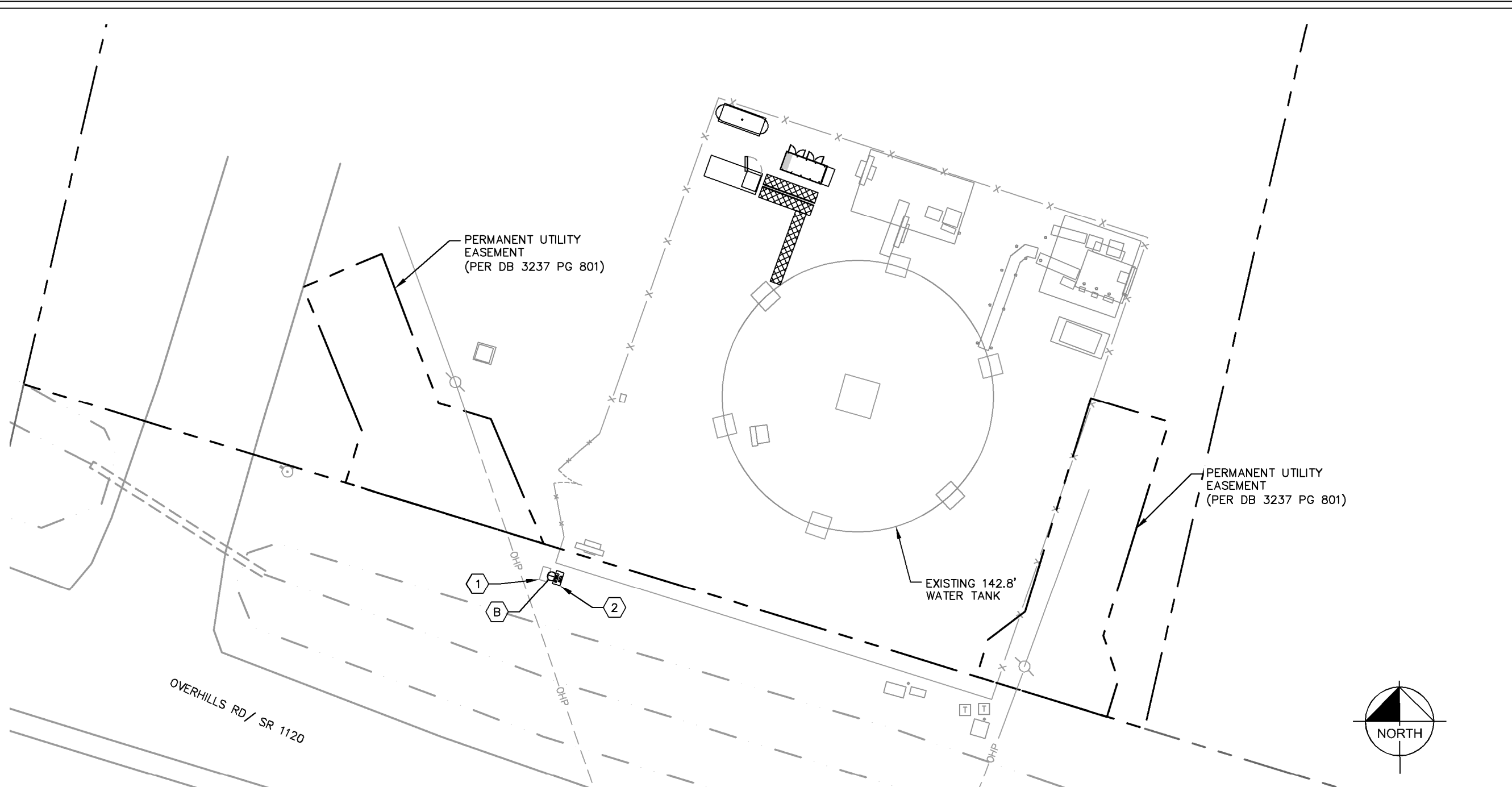
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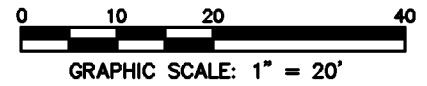
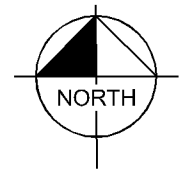
OVERALL UTILITY
ROUTING SERVICE
PLAN

SHEET NUMBER:

E3



1 OVERALL UTILITY SERVICE ROUTING PLAN
E3 SCALE: 1" = 20'



KEY NOTES - ELECTRICAL EQUIPMENT

- 1 EXISTING ONE FIBER HANDHOLE (CONTRACTOR TO CONFIRM EXISTENCE AND LOCATION)
- 2 TRAFFIC RATED TELCO VAULT LABELED "VZW FIBER". (SPACED EVERY 500', AT MAJOR TRANSITIONS, AND AS NEEDED TO ALLOW DAR FIBER TO BE PULLED)(SEE NOTE 4.05 ON SHEET E1)

KEY NOTES - CONDUIT, CONDUCTORS, & MISC.

- A TWO (2) 2" PVC CONDUIT FOR "VZW FIBER" WITH TWO (2) PULL ROPES. (SEE DETAIL 2/E6); GENERAL CONTRACTOR TO CONFIRM NEED FOR CONDUITS TO RIGHT OF WAY AND HANDHOLE AT RIGHT OF WAY WITH VERIZON CONSTRUCTION MANAGER.
- B 4" PVC BRIDGE FIBER CONDUIT. (IF NO EXISTING ONE FIBER HANDHOLE IS PRESENT BRIDGE CONDUIT WILL BE BY OTHERS).

NOTES:

GENERAL CONTRACTOR IS TO CONFIRM WITH VERIZON CONSTRUCTION MANAGER WHETHER INSTALLATION OF THE TWO (2) 2" CONDUITS WILL BE PART OF THE INITIAL CONSTRUCTION.
PROPOSED VERIZON TELCO VAULT WITHIN RIGHT OF WAY LOCATED APPROXIMATELY 35° 15' 24.00"N, 78° 57' 57.70"W BASED ON GOOGLE EARTH IMAGERY.

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PROJECT INFORMATION:

SITE NAME:
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SITE No.: 30356
PROJECT #: 20141092521
6792 OVERHILLS RD
SPRING LAKE, NC 28390
HARNETT COUNTY

PLANS PREPARED BY:

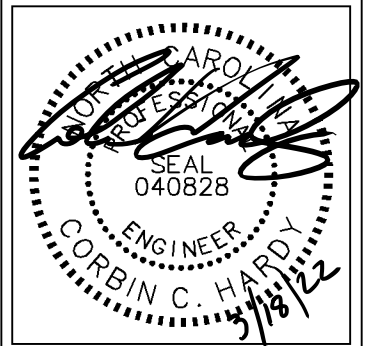
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SHEET TITLE:

**ELECTRICAL
SINGLE LINE
DIAGRAM**

SHEET NUMBER:

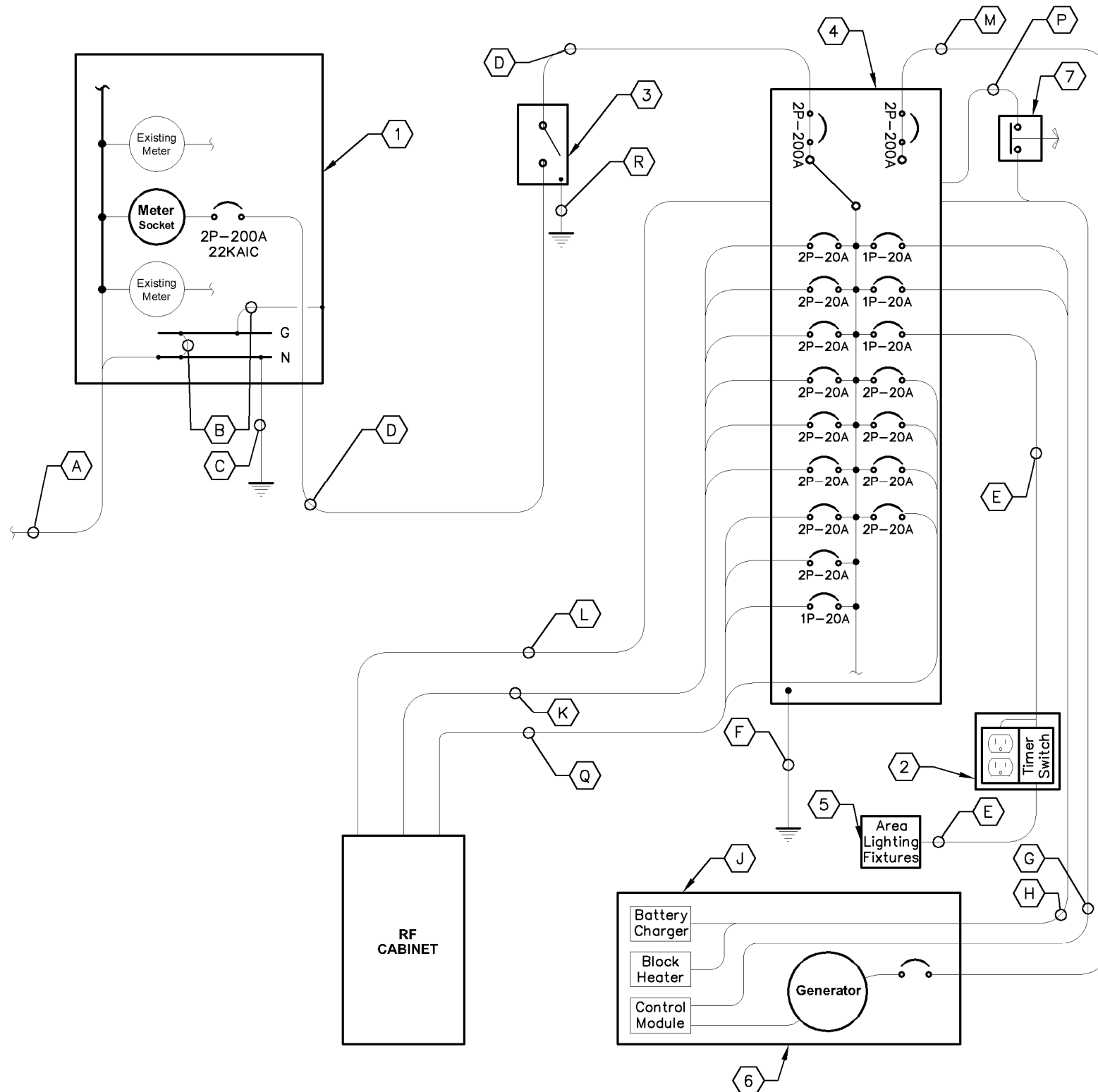
E4

KEY NOTES - CONDUIT, CONDUCTORS, & MISC

- (A) EXISTING CONDUITS WITH INCOMING SERVICE LATERALS BY LOCAL UTILITY FOR 120/240 VOLT SINGLE PHASE SERVICE.
- (B) EXISTING BONDING OF GROUND BUS TO NEUTRAL BUS AND BONDING OF GROUND BUS TO ENCLOSURE.
- (C) EXISTING GROUND ELECTRODE CONDUCTOR BONDED TO GROUND ROD VIA EXOTHERMIC WELD.
- (D) THREE (3) 3/0 CONDUCTORS AND ONE (1) #6 AWG GROUND IN 2" CONDUIT.
- (E) TWO (2) #12 AWG CONDUCTORS AND ONE (1) #12 AWG GROUND IN 1" CONDUIT.
- (F) ONE (1) #2 AWG BARE TINNED COPPER FROM GROUNDING LUG IN ILC TO GROUND ROD, EXOTHERMIC WELD TO GROUND ROD.
- (G) AUTOMATIC TRANSFER SWITCH ALARM AND GENERATOR CONTROL CABLES IN 1" CONDUIT.
- (H) FOUR (4) #12 CONDUCTORS AND ONE (1) #12 AWG GROUND IN 1" CONDUIT.
- (J) THE GENERATOR, WHEN UTILIZING A TWO POLE ATS WITH A SOLID NEUTRAL, IS NOT A SEPARATELY DERIVED SYSTEM. THEREFORE, DO NOT BOND THE NEUTRAL TO THE GROUND AT THE GENERATOR.
- (K) TWELVE (12) #10 AWG THHN CONDUCTORS AND THREE (3) #10 AWG EG IN 2" PVC CONDUIT.
- (L) ALARM CABLES IN 1" CONDUIT.
- (M) THREE (3) 3/0 AWG CONDUCTORS AND ONE (1) #4 AWG EG IN 2" CONDUIT. VERIFY GENERATOR BREAKER DOES NOT EXCEED 200 AMPS.
- (N) 1" PVC CONDUIT FOR POWER CABLES FROM INTEGRATED LOAD CENTER TO HAZARD LIGHTING CONTROL PANEL.
- (P) 1" PVC CONDUIT FOR ROUTING POWER CONDUCTORS FROM THE ILC TO THE EMERGENCY GENERATOR STOP SWITCH.
- (Q) TWELVE (12) #10 AWG THHN CONDUCTORS AND THREE (3) #10 AWG FOR RECTIFIERS AND TWO (2) #10 THHN CONDUCTORS AND ONE (1) #10 AWG FOR CABINET MOUNTED GFI OUTLET, ALL IN ONE 2" PVC CONDUIT.
- (R) ONE (1) - #2 AWG BARE TINNED COPPER FROM GROUNDING LUG IN DISCONNECT SWITCH TO GROUND RING, EXOTHERMIC WELD TO GROUND RING.

KEY NOTES - ELECTRICAL EQUIPMENT

- (1) EXISTING 3-WIRE, SINGLE PHASE, 120/240 VOLT, MULTI-GANG METER CENTER IN NEMA 3R ENCLOSURE, SE RATED. CONTRACTOR SHALL FURNISH AND INSTALL 200 AMP CIRCUIT BREAKER AT METER BASE IF NOT ALREADY EXISTING.
- (2) 20 AMP GFCI DUPLEX OUTLET RECEPTACLE AND TIMER SWITCH, ENERLITES HET06 SERIES (OR APPROVED EQUIVALENT) IN LOCKABLE NEMA 3R ENCLOSURE.
- (3) FURNISH AND INSTALL SE RATED 240 V, 200 AMP, 2 POLE, FUSIBLE DISCONNECT IN NEMA 3R ENCLOSURE. FUSED AT 200 AMPS.
- (4) 200 AMP, 120/240 VOLT, ILC WITH 42 SPACE PANEL AND AUTOMATIC TRANSFER SWITCH. ALL CIRCUIT BREAKERS SHALL BE RATED 10KAIC MINIMUM. ILC IS FURNISHED BY VZW AND INSTALLED BY GENERAL CONTRACTOR.
- (5) FURNISH AND INSTALL ONE (1) AREA LIGHTS, (LITHONIA HFR-250M-TA120-DNA-LP1) (OR APPROVED EQUIVALENT).
- (6) 50 KW PROPANE GENERATOR, CONTRACTOR SHALL COORDINATE SPECIFIC GENERATOR CONFIGURATION WITH OWNER AND INSTALL THE GENERATOR IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. GENERATOR BREAKER SIZED AND PROVIDED BY GENERATOR MANUFACTURER.
- (7) EMERGENCY GENERATOR STOP SWITCH IN NEMA 3R ENCLOSURE. FURNISHED BY VERIZON AND INSTALLED BY CONTRACTOR.



REQUIRED SIGNAGE PER NEC 702 AT SERVICE DISCONNECT

"WARNING: Shock hazard exists if grounding electrode conductor or bonding jumper connection in this equipment is removed while alternate source(s) is energized. Opening the equipment disconnect will cause the stand-by generator to start. To remove power entirely from the equipment, the generator must be turned OFF using emergency stop switch."

REQUIRED SIGNAGE PER NEC 702 AT SERVICE DISCONNECT & INTEGRATED LOAD CENTER

"NOTE: Emergency power is supplied by a stand-by generator located behind Verizon equipment rack."

1
E4 ELECTRICAL SINGLE LINE DIAGRAM
NOT TO SCALE

PANEL SCHEDULE - VERIZON INTEGRATED LOAD CENTER

Voltage: 240/120 Volts
Phase, Wires: Single Phase, 3 Wire
Mounting Type: Surface
Enclosure Type: NEMA 3R

MCB Size: 200 Amps
AIC Rating: 10,000 Amps min
Bus Rating: 200 Amps
Neutral Rating: 100%

Load Served	Load (kVA)		Circuit Bkr Size	Ckt Nbr	Phase		Ckt Nbr	Circuit Bkr Size	Load (kVA)		Load Served
	A	B			A	B			A	B	
RECTIFIER 1	1.78		2P-20	1	A	B	2	1P-20	0.58		AREA LIGHTS/GFCI
		1.78									4
RECTIFIER 2	1.78		2P-20	5	A	B	6	1P-20	0.30		GEN BATTERY CHARGER
		1.78									8
RECTIFIER 3	1.78		2P-20	9	A	B	10	1P-20	0.18		CAB DUPLEX OUTLET
		1.78									12
RECTIFIER 4	1.78		2P-20	13	A	B	14	2P-20	1.78		RECTIFIER 9
		1.78									
RECTIFIER 5	1.78		2P-20	17	A	B	18	2P-20	1.78		RECTIFIER 10
		1.78									
RECTIFIER 6	1.78		2P-20	21	A	B	22	2P-20	0.00		RECTIFIER 11 (SPARE)
		1.78									
RECTIFIER 7	1.78		2P-20	25	A	B	26	2P-20	0.00		RECTIFIER 12 (SPARE)
		1.78									
RECTIFIER 8	1.78		2P-20	29	A	B	30	----	0.00		SPACE
		1.78									
SPACE	0.00		----	33			34	----	0.00		SPACE
SPACE		0.00	----	35			36	----	0.00		SPACE
SPACE	0.00		----	37			38	----	0.00		SPACE
TVSS (INTERNAL TO ILC)		0.00	2P-30	39	A	B	40	----		0.00	SPACE
	0.00									42	
Sub-Total (kVA)	14.24	14.24							4.62	5.06	Sub-Total (kVA)

LOAD SUMMARY

Load Description	Connected Load (kVA)		Demand Factor	Demand Load (kVA)	
	A	B		A	B
RECTIFIERS/EQUIP	17.80	17.80	1.00	17.80	17.80
LARGEST MOTOR	0.00	0.00	1.00	0.00	0.00
ALL OTHER MOTORS	0.00	0.00	1.00	0.00	0.00
LIGHTING	0.40	0.00	1.25	0.50	0.00
DUPLEX RECEPTACLES	0.36	0.00	1.00	0.36	0.00
TOTAL MISCELLANEOUS	0.30	1.50	1.00	0.30	1.50

Total Power per Phase	18.96	19.30	kVA
Total Demand Current per Phase	158.00	161.00	Amps
Total Demand Power	38.26		kVA

A	B
18.86	19.30
38.16	
Total Connected (kVA)	

*NOTE: CIRCUIT LOAD AND DEMAND FACTOR PROVIDED BY VERIZON.

1
E5
PANEL SCHEDULE
 NOT TO SCALE



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 OVERHILLS
SITE No.: 30356
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 6792 OVERHILLS RD
 SPRING LAKE, NC 28390
 HARNETT COUNTY

PLANS PREPARED BY:

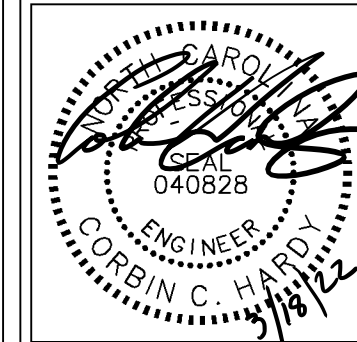


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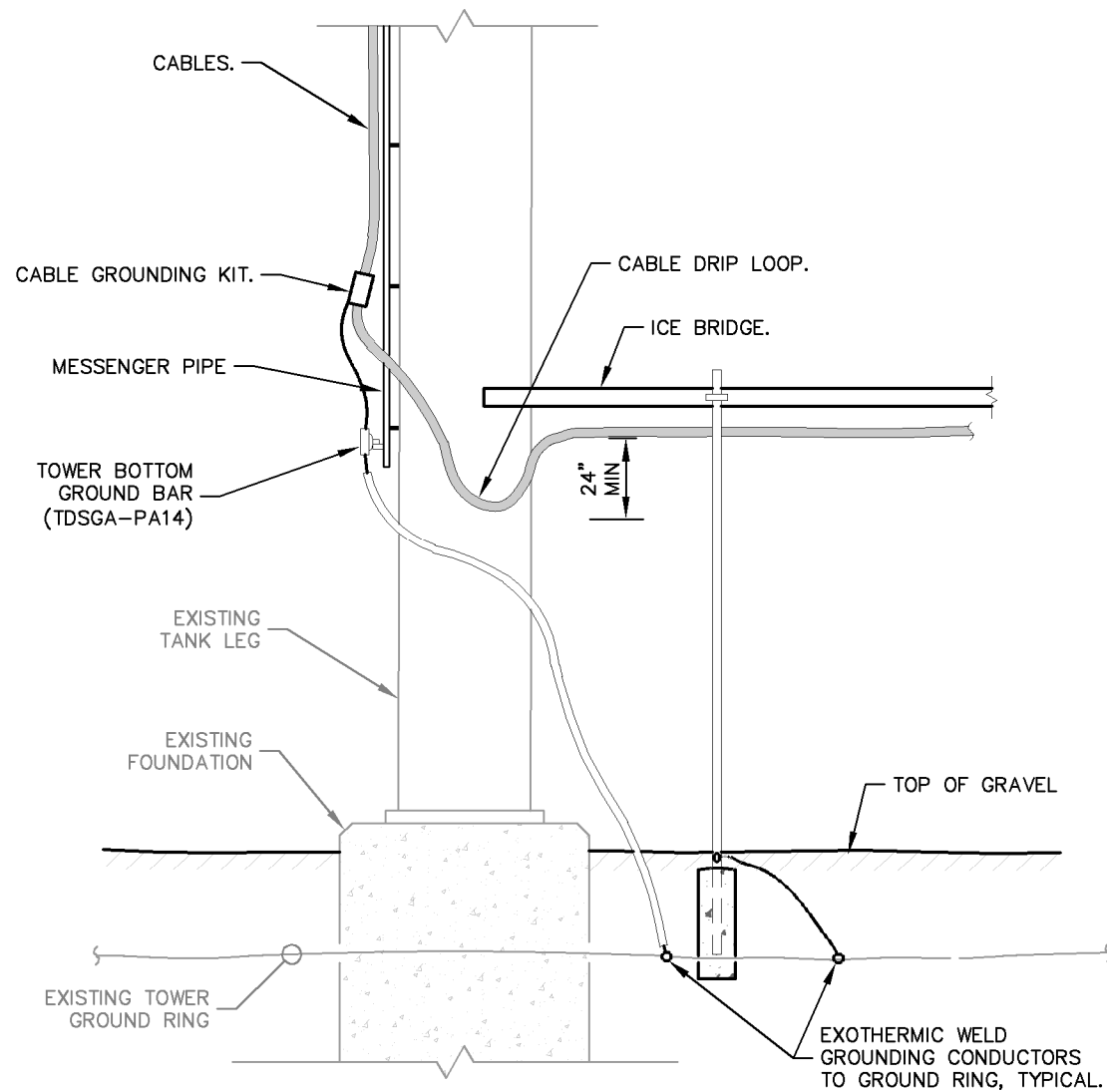
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PANEL SCHEDULE

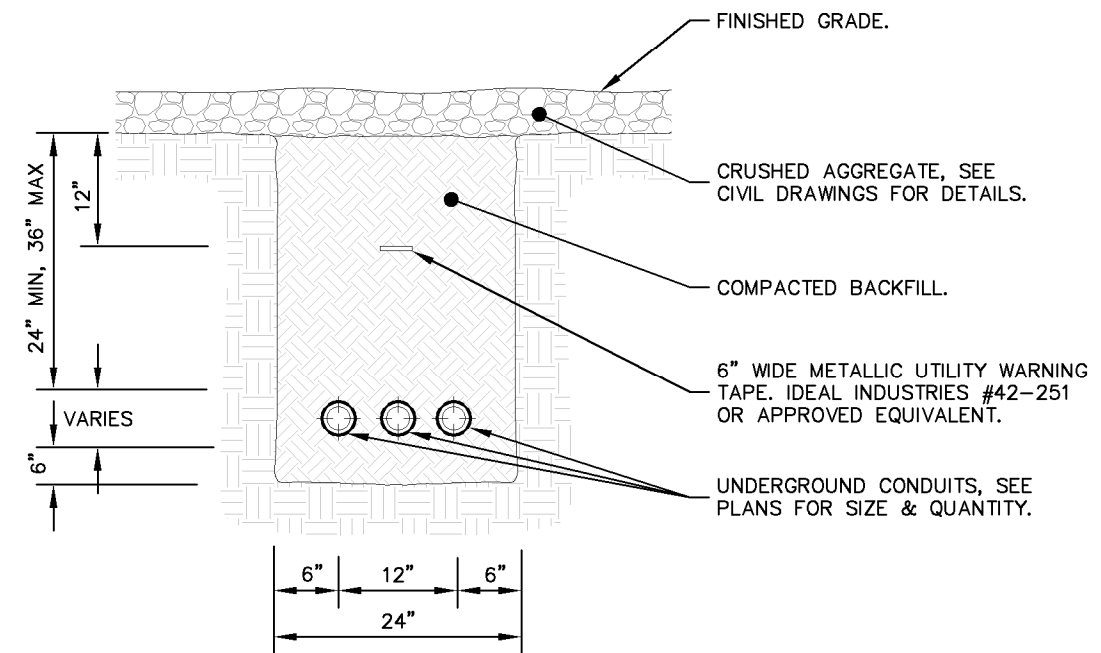
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1 DRIP LOOP DETAIL
E6 NOT TO SCALE



- NOTES:
1. IF GROUND SURFACE IS OTHER THAN NEWLY GRAVELED AREA. CONTRACTOR IS TO RESTORE TO ORIGINAL CONDITION.
 2. PROVIDE PVC CONDUIT BELOW GRADE EXCEPT AS NOTED BELOW.
 3. PROVIDE SCHEDULE 40 OR SCHEDULE 80 PVC CONDUIT & ELBOWS AT STUB UP LOCATIONS (I.E. POLES, EQUIPMENT, ETC.)
 4. PROVIDE SCHEDULE 80 PVC CONDUIT BELOW PARKING LOTS AND ROADWAYS.

2 TYPICAL TRENCH DETAIL
E6 NOT TO SCALE



8821 RESEARCH DRIVE
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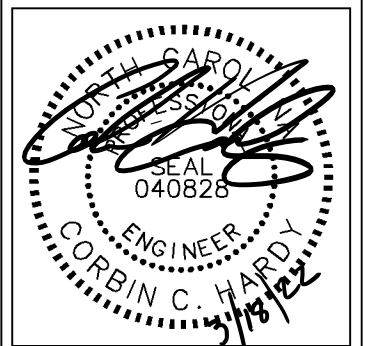


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SHEET TITLE:

ELECTRICAL
DETAILS

SHEET NUMBER:

E6

GROUNDING NOTES

1. THE GROUND RING SHALL CONSIST OF #2 AWG BARE SOLID TINNED COPPER (STC) CONDUCTOR, UNLESS NOTED OTHERWISE, BURIED AT 30" BELOW FINISHED GRADE (OR BELOW FROST LINE). LOCATE 24" MINIMUM AND 36" MAXIMUM FROM EQUIPMENT PAD AND FROM TOWER FOUNDATION. ALL CONNECTIONS SHALL BE MADE USING A PARALLEL TYPE EXOTHERMIC WELD, UNLESS NOTED OTHERWISE. WHERE THE GROUND RING DISTURBS EXISTING SITE GROUNDING, CONNECT GROUND RING TO EXISTING SITE CONDUCTORS SO AS TO MAINTAIN THE CONTINUITY OF THE EXISTING GROUND SYSTEM.
2. INSTALL GROUND RODS AS SHOWN AND AS REQUIRED. GROUND RODS TO BE COPPER CLAD STEEL, 5/8" DIAMETER AND 10FT IN LENGTH. SPACING BETWEEN GROUND RODS SHALL BE 10FT MINIMUM AND 15FT MAXIMUM. TOP OF GROUND ROD TO BE 30" MINIMUM BELOW GRADE (OR BELOW FROST LINE). BOND TOP OF GROUND ROD TO GROUND WIRE WITH EXOTHERMIC WELD. DO NOT EXOTHERMICALLY WELD ANYTHING TO GROUND ROD EXCEPT GROUND WIRE WHICH PASSES OVER TOP OF GROUND ROD (CLAMPED CONNECTIONS TO GROUND ROD PER TOWER MANUFACTURERS DETAILS ARE ACCEPTABLE).
3. EQUIPMENT GROUND RING SHALL HAVE A MINIMUM OF 4 GROUND RODS, INSTALLED AT THE CORNERS OF THE GROUND RING PLUS ADDITIONAL RODS AS REQUIRED TO COMPLY WITH THE SPACING REQUIREMENTS.
4. EQUIPMENT GROUND RING AND TOWER GROUND RING SHALL BE BONDED TOGETHER WITH TWO #2 STC GROUND LEADS, TYPICALLY ONE ON EACH SIDE OF ICE BRIDGE.
5. MINIMUM BEND RADIUS FOR #2 AWG GROUND WIRE IS 12", EXCEPT USE 24" FOR EQUIPMENT PAD GROUND RINGS.
6. GROUND ALL EXTERIOR EXPOSED METAL OBJECTS. USE TWO HOLE LUGS FOR CONNECTION TO FLAT METAL SURFACES. USE ONLY STAINLESS STEEL HARDWARE ON ALL MECHANICAL CONNECTIONS. CLEAN ALL SURFACES (AND STRIP PAINTED SURFACES) TO BARE BRIGHT METAL PRIOR TO MAKING GROUND CONNECTIONS. APPLY ANTI-OXIDE COMPOUND TO ALL CONNECTIONS. APPLY ZINC RICH PAINT (COLD GALV.) TO ALL EXOTHERMIC WELDS, AND TO ANY METAL EXPOSED BY CLEANING, STRIPPING, GRINDING, CUTTING OR DRILLING.
7. ALL GROUNDING CONDUCTORS ABOVE GRADE SHALL BE RUN IN 3/4" FLEXIBLE PVC CONDUIT. CONDUIT SHALL BEGIN WITHIN 3/4" OF ABOVE GROUND CONNECTION POINT, SHALL EXTEND 24" BELOW GRADE MINIMUM, AND SHALL BE FILLED WITH SEALANT AT ABOVE GROUND CONNECTION POINT. SECURE CONDUIT EVERY 24" ON VERTICAL RUNS AND EVERY 36" ELSEWHERE WITH NON-METALLIC TIES.
8. MOUNT TDSGA-PA14 TOWER BOTTOM GROUND BAR ON MESSENGER PIPE DIRECTLY BELOW COAX CABLES COMING OFF BANJO BRACKETS.
9. AT EQUIPMENT AREA, INSTALL TDSGA-PA14 EXTERIOR GROUND BAR (THRU-BOLTED STYLE) AT BASE OF (2) INTERIOR H-FRAME POSTS AND AT TOP OF ICE BRIDGE POST WHICH IS NEAREST TO (BUT CLOSER TO TOWER THAN) THE COAX CABLE TERMINATION. MOUNT GROUND BAR TO H-FRAME POSTS AT 6" ABOVE GRAVEL AND TO ICE BRIDGE POST AT 6FT ABOVE GRAVEL.
10. ALL ICE BRIDGE SECTIONS ARE TO BE JUMPERED TOGETHER WITH #2 WIRE, EITHER BARE TINNED COPPER OR GREEN INSULATED STRANDED. ICE BRIDGE SHALL BE GROUNDED AT EACH END WITH #2 STC WIRE LUGGED TO ICE BRIDGE AND EXOTHERMICALLY WELDED TO UPPER PORTION OF NEAREST ICE BRIDGE POST. ICE BRIDGE SECTIONS ABOVE H-FRAME SHALL BE BONDED TO EACH OTHER WITH JUMPERS AT EACH END - THIS ASSEMBLY WILL BE CONSIDERED AS A SINGLE ICE BRIDGE SECTION FOR GROUNDING PURPOSES.
11. BOND EACH ICE BRIDGE POST, H-FRAME POST OR DEDICATED GROUNDING POST TO BURIED GROUNDING SYSTEM WITH #2 STC LEAD EXOTHERMICALLY WELDED TO POST BELOW TOP OF GRAVEL AND EXOTHERMICALLY WELDED TO GROUND RING. EACH POST TO HAVE SEPARATE GROUND LEAD DIRECTLY TO GROUND RING - DO NOT DAISY CHAIN POSTS TOGETHER.
12. BOND EACH RF CABINET TO EQUIPMENT GROUND RING WITH #2 AWG TINNED SOLID BARE COPPER CONDUCTOR LUGGED TO CABINET BODY AND EXOTHERMICALLY WELDED TO GROUND RING. LUG TO CABINET BODY USING LOCATION AT WHICH STUDS ON CABINET CHASSIS HAVE DIRECT GROUND WIRE CONNECTION TO CABINET INTERNAL GROUND BAR. RUN CONDUIT AND CONDUCTOR ACROSS BACK OF CABINET (DO NOT RUN TOWARDS NEAREST CORNER OF CABINET AND THEN BEND GROUND WIRE SHARPLY), ACROSS CONCRETE PAD BELOW CABLE LADDER, THEN DOWN INTO GRAVEL AREA.
13. BOND EACH BATTERY CABINET TO GROUND RING WITH #2 AWG TINNED SOLID BARE COPPER CONDUCTOR LUGGED TO CABINET BODY AND EXOTHERMICALLY WELDED TO GROUND RING. RUN GROUND LEAD IN FLEX CONDUIT ALONG BACK OF RBA72 CABINET, ACROSS CONCRETE PAD BELOW CABLE LADDER, THEN DOWN INTO GRAVEL AREA. CONNECT TWO HOLE LUG TO BACK OF CABINET AT FACTORY PROVIDED GROUNDING STUDS.
14. BOND GENERATOR TO GROUND RING WITH #2 STC AT TWO DIAGONALLY OPPOSITE LOCATIONS BY DRILLING AND BOLTING TWO HOLE LUG TO FINS ON GENERATOR BASE STRUCTURE. GROUND LEADS SHOULD TAKE SHORTEST PATH ACROSS CONCRETE PAD TO GRAVEL AREA, THEN CONTINUE TO GROUND RING.
15. WHERE PROPANE TANK IS INSTALLED TO FUEL GENERATOR, BOND PROPANE TANK TO GROUND RING WITH A SINGLE #2 STC CLAMPED TO FILLER PIPE OF PROPANE TANK AND EXOTHERMICALLY WELDED TO GROUND RING. GROUND LEAD SHOULD RUN TO TANK SUPPORT AND TAKE SHORTEST PATH ACROSS CONCRETE PAD TO GRAVEL AREA, THEN CONTINUE TO GROUND RING. IF PROPANE TANK FUEL LINE IS METALLIC AND CROSSES EQUIPMENT GROUND RING, BOND FUEL LINE TO EQUIPMENT GROUND RING WHERE THE TWO LINES CROSS WITH A SINGLE #2 STC CLAMPED TO FUEL LINE AND EXOTHERMICALLY WELDED TO GROUND RING.
16. BOND GPS ANTENNA AND GPS ANTENNA MOUNT TO TSDGA GROUND BAR AT BOTTOM OF H-FRAME POST WITH #2 GREEN INSULATED STRANDED GROUND WIRE.
17. ANY METAL FENCE POST WITHIN 6FT OF A GROUNDED METAL OBJECT SHALL BE BONDED TO THE EQUIPMENT GROUND RING WITH #2 STC CLAMPED OR EXOTHERMICALLY WELDED TO THE POST AND EXOTHERMICALLY WELDED TO GROUND RING. ANY FENCE WITH METAL LINE POSTS WITHIN 6FT OF THE GROUND RING SHALL HAVE THE LINE POSTS BONDED TO THE GROUND RING WITH #2 STC WITH #2 STC CLAMPED OR EXOTHERMICALLY WELDED TO THE POST AND EXOTHERMICALLY WELDED TO GROUND RING AT 20FT MAXIMUM INTERVALS AS MEASURED ALONG THE LENGTH OF THE FENCE.
18. WHERE GROUND BASED RRU'S, RAYCAP OVP'S OR DIPLEXERS ARE INSTALLED AT THE EQUIPMENT AREA, BOND EACH COMPONENT TO NEAREST TDSGA GROUND BAR BELOW THE COMPONENT WITH #2 GREEN INSULATED STRANDED GROUND WIRE. SINGLE HOLE LUG OR RING TYPE CONNECTOR IS SUITABLE FOR CONNECTION TO GROUNDING STUD ON EACH COMPONENT.
19. NOTIFY VZW CM TO INSPECT GROUND RING BEFORE BACKFILLING. CONTRACTOR SHALL HIRE A 3RD PARTY TO PERFORM AN IEEE81 FALL OF POTENTIAL METHOD GROUND TEST. MAXIMUM ALLOWABLE RESISTANCE TO GROUND IS 5 OHMS. PROVIDE ADDITIONAL GROUND SYSTEM COMPONENTS AS REQUIRED TO ACHIEVE THIS VALUE.
20. REFER TO TOWER GROUNDING DIAGRAM AND NOTES FOR GROUND SYSTEM REQUIREMENTS ON THE TOWER.
21. GROUNDING OF ALL ELECTRICAL EQUIPMENT SHALL BE AS PER NEC, MUNICIPAL AND UTILITY COMPANY REQUIREMENTS.



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PROJECT INFORMATION:

SITE NAME:
OVERHILLS
SITE No.: 30356
PROJECT #: 20141092521
6792 OVERHILLS RD
SPRING LAKE, NC 28390
HARNETT COUNTY

PLANS PREPARED BY:

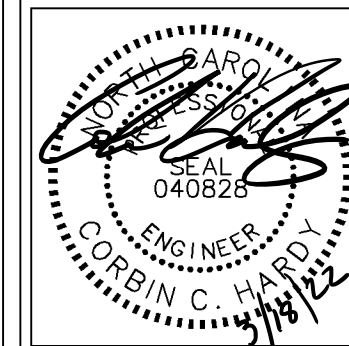


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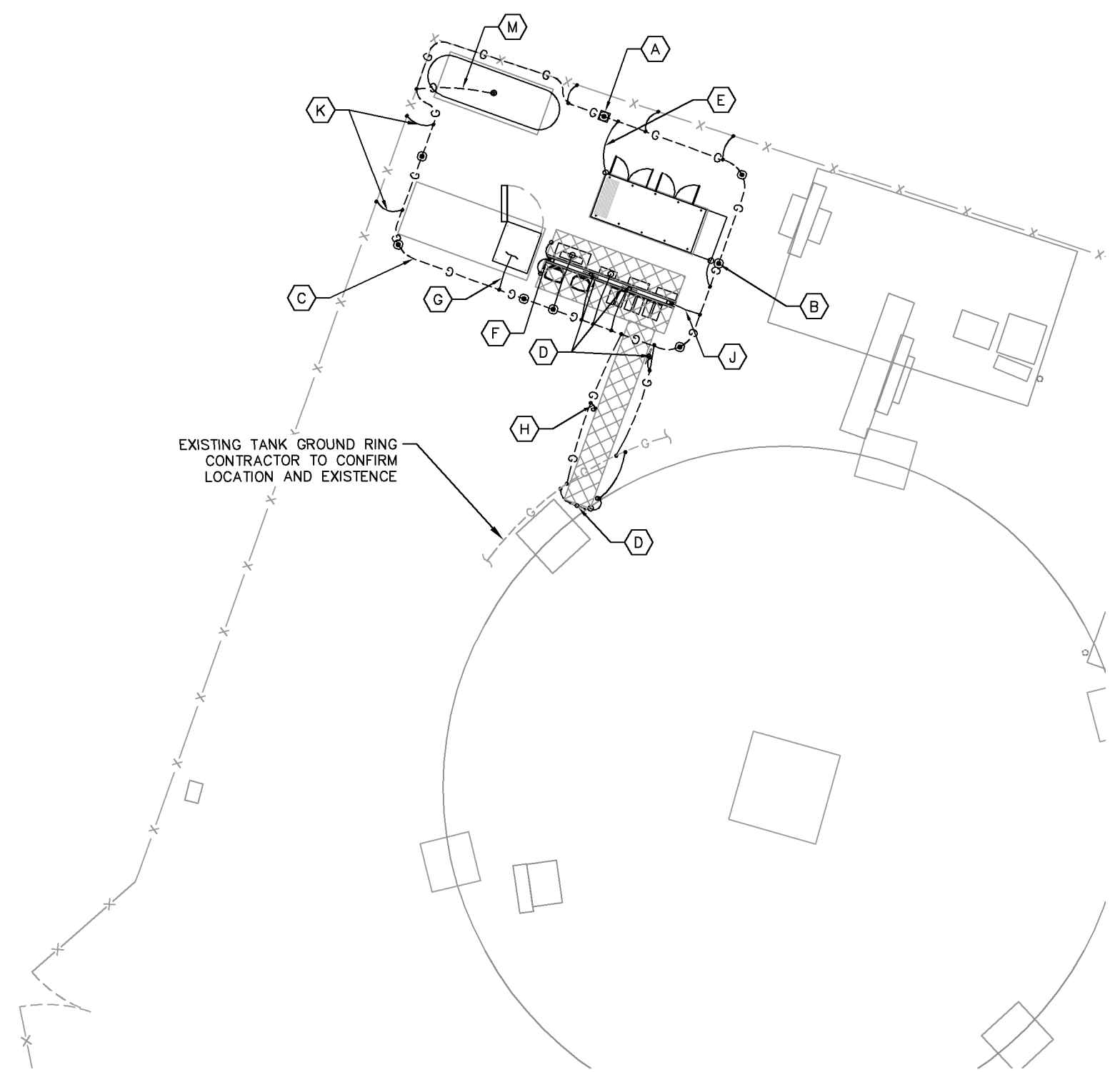
GROUNDING NOTES

SHEET NUMBER:

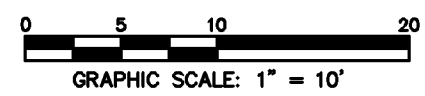
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1 GROUNDING PLAN
E8 SCALE: 1" = 10'



KEY NOTES - GROUNDING EQUIPMENT

- (A) GROUND ROD TEST WELL. (SEE DETAIL 1/E10).
- (B) GROUND ROD, TYPICAL. (SEE DETAIL 2/E10 AND NOTES 2 & 3 ON SHEET E7).
- (C) EQUIPMENT GROUND RING. (SEE NOTES 1, 3, 4, 5, 6, & 7 ON SHEET E7).
- (D) TDSGA-PA14 OR TDSGA-BC14 WHERE APPLICABLE. (SEE NOTES 8 & 9 ON SHEET E7).
- (E) GENERATOR GROUNDING
- (F) GPS ANTENNA GROUNDING. (SEE NOTE 16 ON SHEET E7).
- (G) RF CABINET GROUNDING. (SEE NOTE 12 ON SHEET E7).
- (H) ICE BRIDGE POST BONDED TO GROUND RING, TYPICAL. (SEE NOTES 10 & 11 ON SHEET E7).
- (J) RRUS AND OVP'S GROUNDING. (SEE NOTE 18 ON SHEET E7).
- (K) FENCE POST GROUNDING, TYPICAL. (SEE NOTE 17 ON SHEET E7).
- (L) REFER TO SHEETS E7, E9, E10, & E11 FOR GROUNDING NOTES, DETAILS, AND SPECIFICATIONS.
- (M) PROPANE TANK GROUNDING. (SEE NOTE 15 ON SHEET E7).

LEGEND:

- G---G--- GROUND RING
- G⊙---G--- GROUND ROD EXOTHERMICALLY WELDED TO GROUND RING
- EXOTHERMIC WELD
- ⊙ GROUND ROD TEST WELL (SEE DETAIL 1/E10)
- ~⊙ MECHANICAL CONNECTION

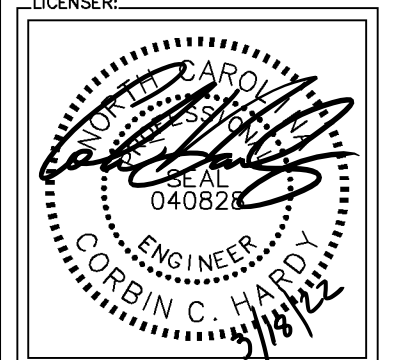


PROJECT INFORMATION:
 SITE NAME: OVERHILLS
 SITE No.: 30356
 PROJECT #: 20141092521
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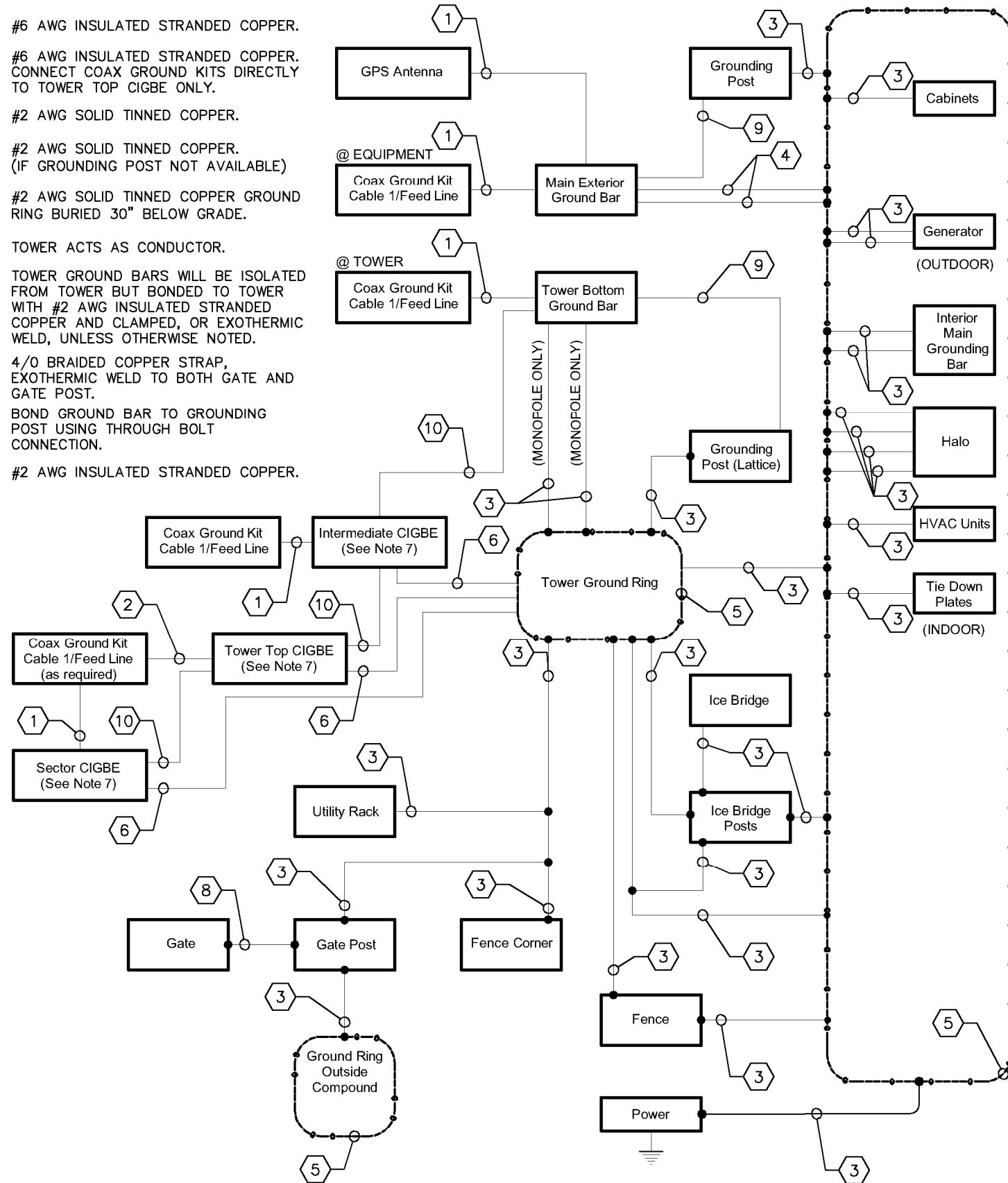
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SHEET TITLE:
GROUNDING PLAN

SHEET NUMBER:
E8

KEY NOTES - ELECTRICAL EQUIPMENT

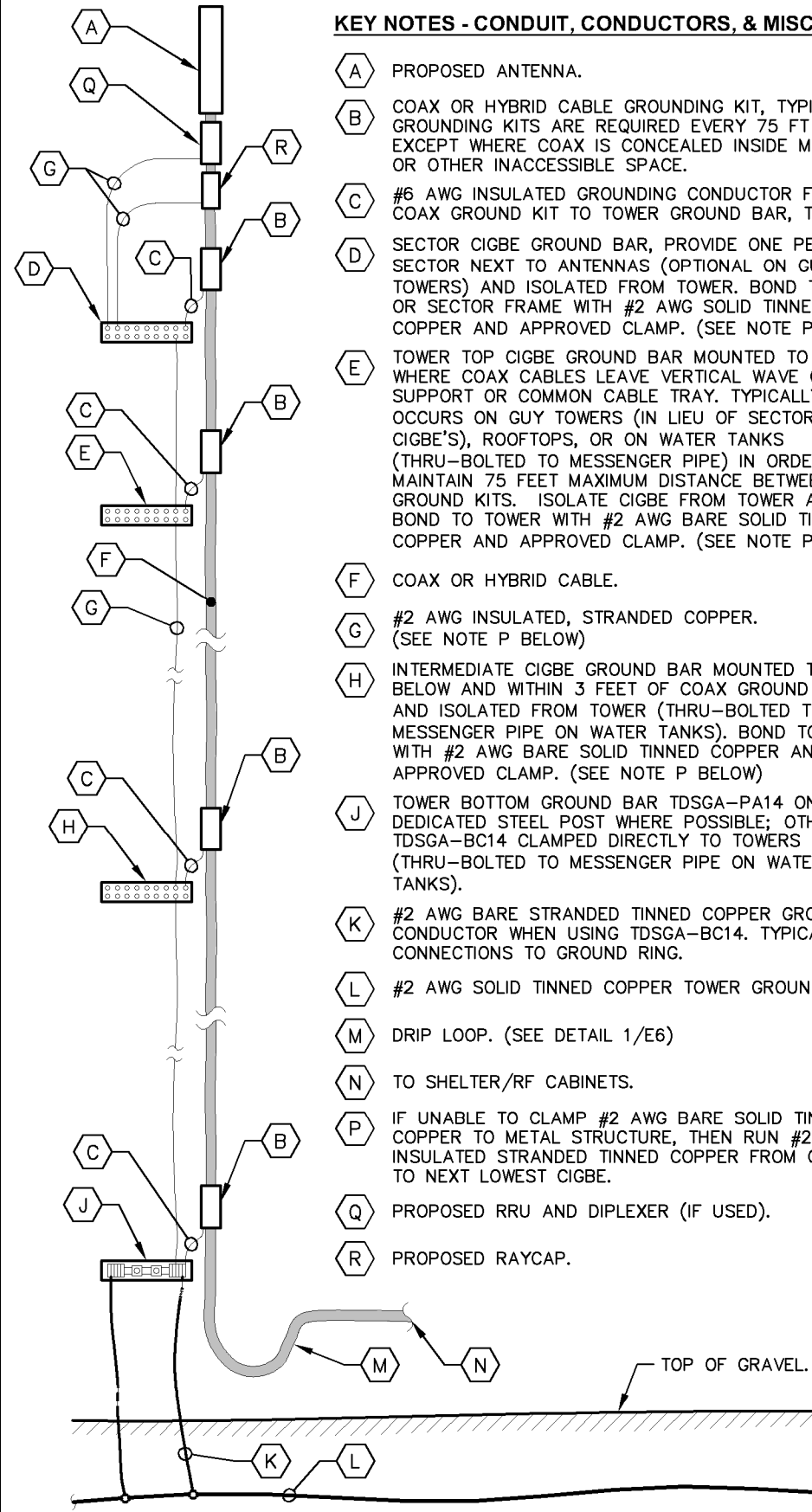
- 1 #6 AWG INSULATED STRANDED COPPER.
- 2 #6 AWG INSULATED STRANDED COPPER. CONNECT COAX GROUND KITS DIRECTLY TO TOWER TOP CIGBE ONLY.
- 3 #2 AWG SOLID TINNED COPPER.
- 4 #2 AWG SOLID TINNED COPPER. (IF GROUNDING POST NOT AVAILABLE)
- 5 #2 AWG SOLID TINNED COPPER GROUND RING BURIED 30" BELOW GRADE.
- 6 TOWER ACTS AS CONDUCTOR.
- 7 TOWER GROUND BARS WILL BE ISOLATED FROM TOWER BUT BONDED TO TOWER WITH #2 AWG INSULATED STRANDED COPPER AND CLAMPED, OR EXOTHERMIC WELD, UNLESS OTHERWISE NOTED.
- 8 4/0 BRAIDED COPPER STRAP, EXOTHERMIC WELD TO BOTH GATE AND GATE POST.
- 9 BOND GROUND BAR TO GROUNDING POST USING THROUGH BOLT CONNECTION.
- 10 #2 AWG INSULATED STRANDED COPPER.



1 GROUNDING SINGLE LINE DIAGRAM
E9 NOT TO SCALE

KEY NOTES - CONDUIT, CONDUCTORS, & MISC

- A PROPOSED ANTENNA.
- B COAX OR HYBRID CABLE GROUNDING KIT, TYPICAL. GROUNDING KITS ARE REQUIRED EVERY 75 FT MAXIMUM EXCEPT WHERE COAX IS CONCEALED INSIDE MONOPOLE OR OTHER INACCESSIBLE SPACE.
- C #6 AWG INSULATED GROUNDING CONDUCTOR FROM COAX GROUND KIT TO TOWER GROUND BAR, TYPICAL.
- D SECTOR CIGBE GROUND BAR, PROVIDE ONE PER SECTOR NEXT TO ANTENNAS (OPTIONAL ON GUYED TOWERS) AND ISOLATED FROM TOWER. BOND TO TOWER OR SECTOR FRAME WITH #2 AWG SOLID TINNED COPPER AND APPROVED CLAMP. (SEE NOTE P BELOW)
- E TOWER TOP CIGBE GROUND BAR MOUNTED TO TOWER WHERE COAX CABLES LEAVE VERTICAL WAVE GUIDE SUPPORT OR COMMON CABLE TRAY. TYPICALLY OCCURS ON GUY TOWERS (IN LIEU OF SECTOR CIGBE'S), ROOFTOPS, OR ON WATER TANKS (THRU-BOLTED TO MESSENGER PIPE) IN ORDER TO MAINTAIN 75 FEET MAXIMUM DISTANCE BETWEEN COAX GROUND KITS. ISOLATE CIGBE FROM TOWER AND BOND TO TOWER WITH #2 AWG BARE SOLID TINNED COPPER AND APPROVED CLAMP. (SEE NOTE P BELOW)
- F COAX OR HYBRID CABLE.
- G #2 AWG INSULATED, STRANDED COPPER. (SEE NOTE P BELOW)
- H INTERMEDIATE CIGBE GROUND BAR MOUNTED TO TOWER BELOW AND WITHIN 3 FEET OF COAX GROUND KITS AND ISOLATED FROM TOWER (THRU-BOLTED TO MESSENGER PIPE ON WATER TANKS). BOND TO TOWER WITH #2 AWG BARE SOLID TINNED COPPER AND APPROVED CLAMP. (SEE NOTE P BELOW)
- J TOWER BOTTOM GROUND BAR TDGSA-PA14 ON DEDICATED STEEL POST WHERE POSSIBLE; OTHERWISE TDGSA-BC14 CLAMPED DIRECTLY TO TOWERS STEEL (THRU-BOLTED TO MESSENGER PIPE ON WATER TANKS).
- K #2 AWG BARE STRANDED TINNED COPPER GROUNDING CONDUCTOR WHEN USING TDGSA-BC14. TYPICAL TWO CONNECTIONS TO GROUND RING.
- L #2 AWG SOLID TINNED COPPER TOWER GROUND RING.
- M DRIP LOOP. (SEE DETAIL 1/E6)
- N TO SHELTER/RF CABINETS.
- P IF UNABLE TO CLAMP #2 AWG BARE SOLID TINNED COPPER TO METAL STRUCTURE, THEN RUN #2 AWG INSULATED STRANDED TINNED COPPER FROM CIGBE TO NEXT LOWEST CIGBE.
- Q PROPOSED RRU AND DIPLEXER (IF USED).
- R PROPOSED RAYCAP.



2 COAX-TOWER GROUNDING SCHEMATIC
E9 NOT TO SCALE



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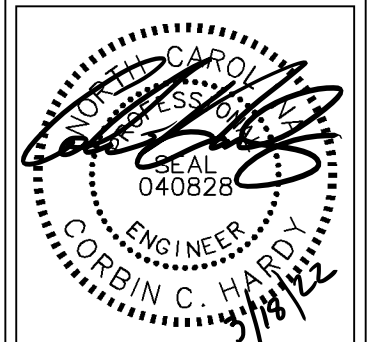


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SHEET TITLE:

GROUNDING
SINGLE LINE
DIAGRAM

SHEET NUMBER:

E9



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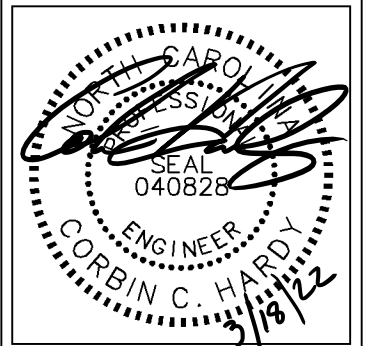


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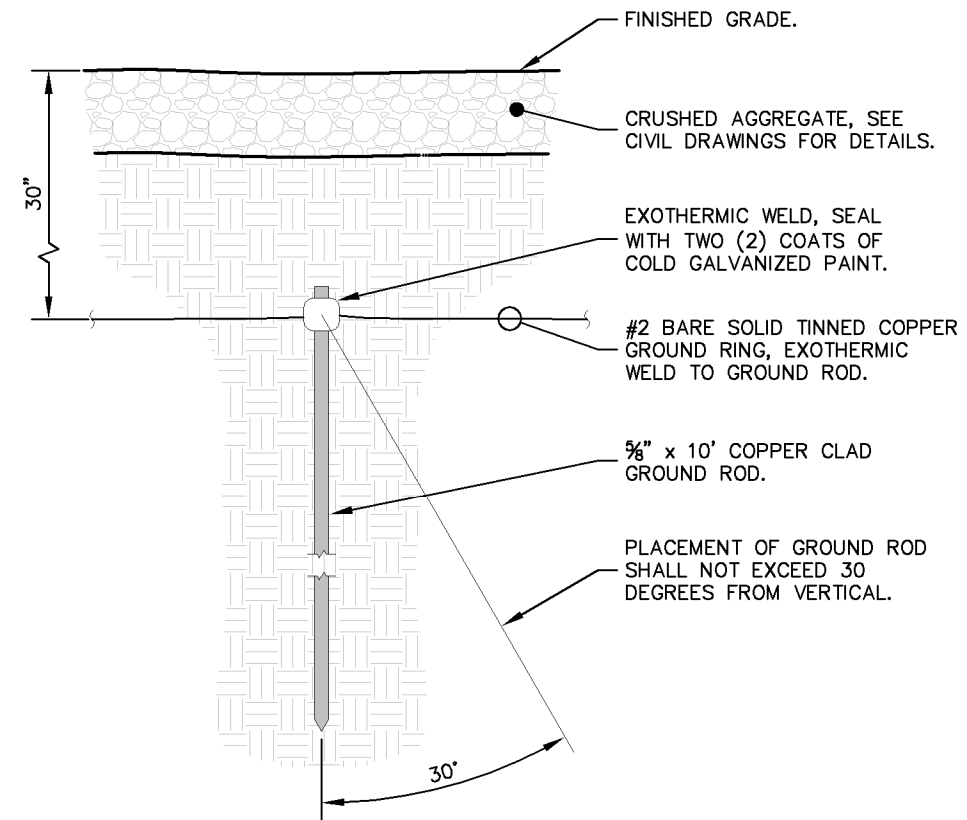
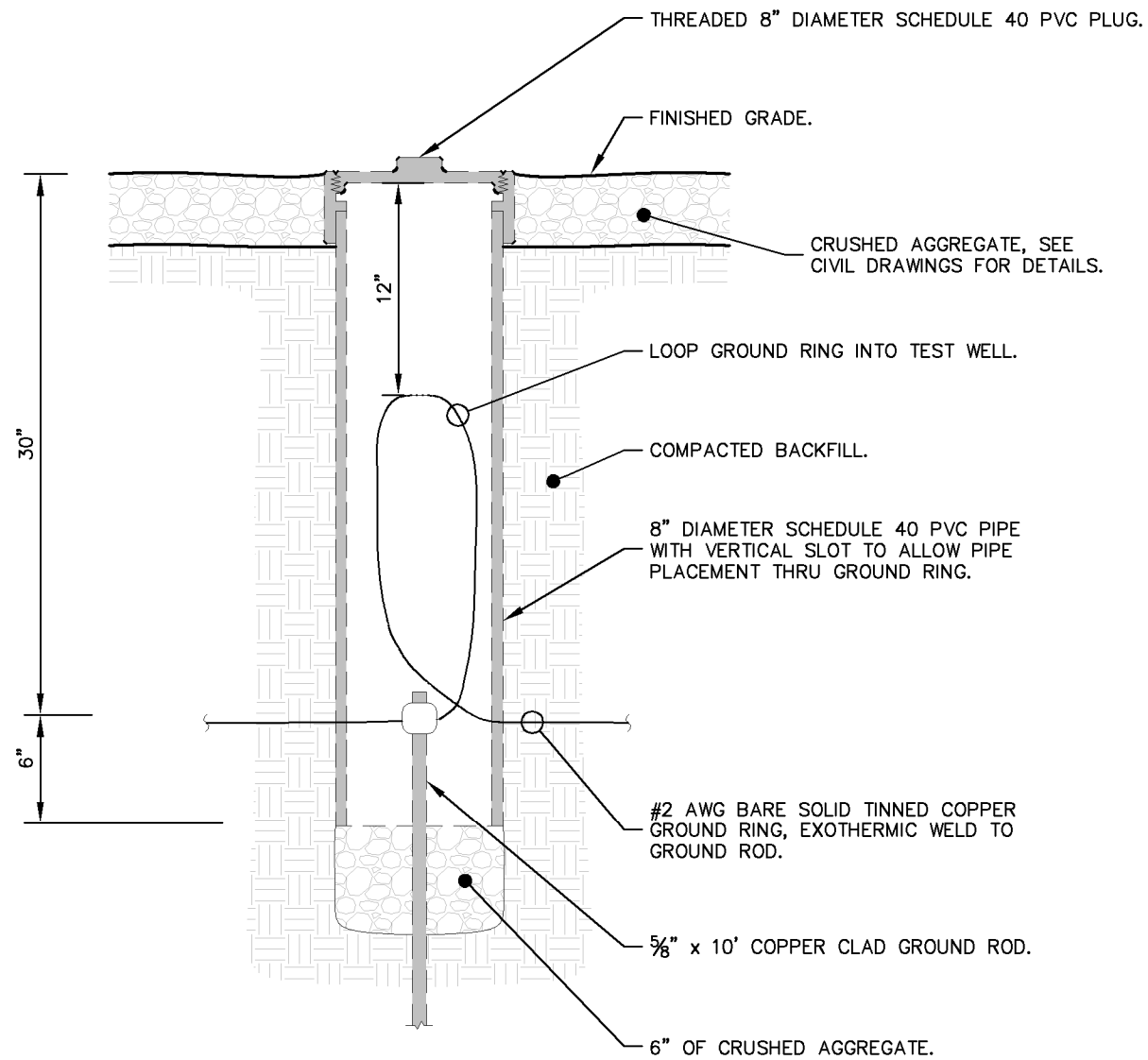
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SHEET TITLE:

GROUNDING
DETAILS

SHEET NUMBER:

E10



1 GROUND ROD TEST WELL DETAIL
E10 NOT TO SCALE

2 GROUND ROD INSTALLATION DETAIL
E10 SCALE: NTS

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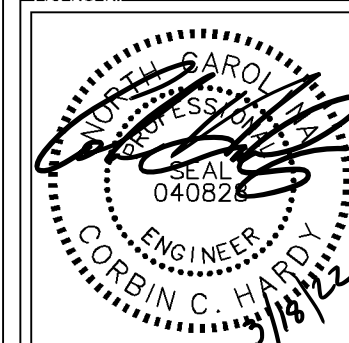
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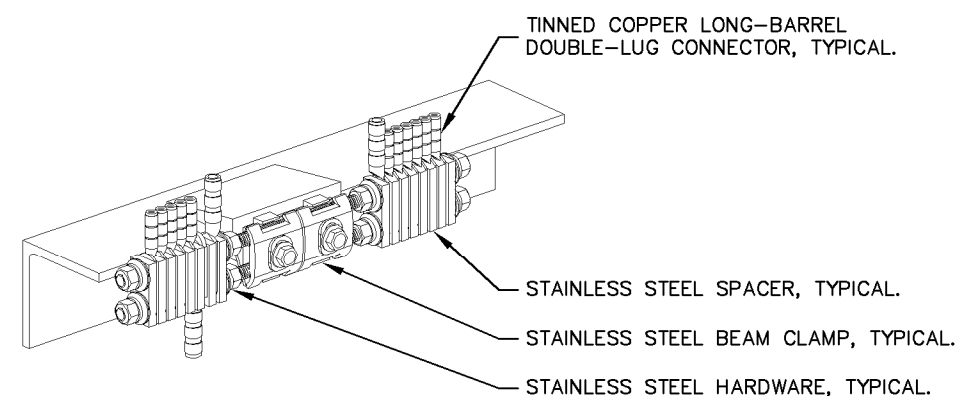
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**GROUNDING
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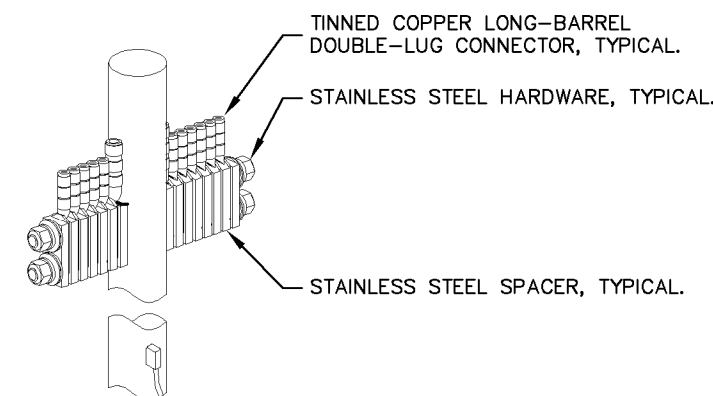
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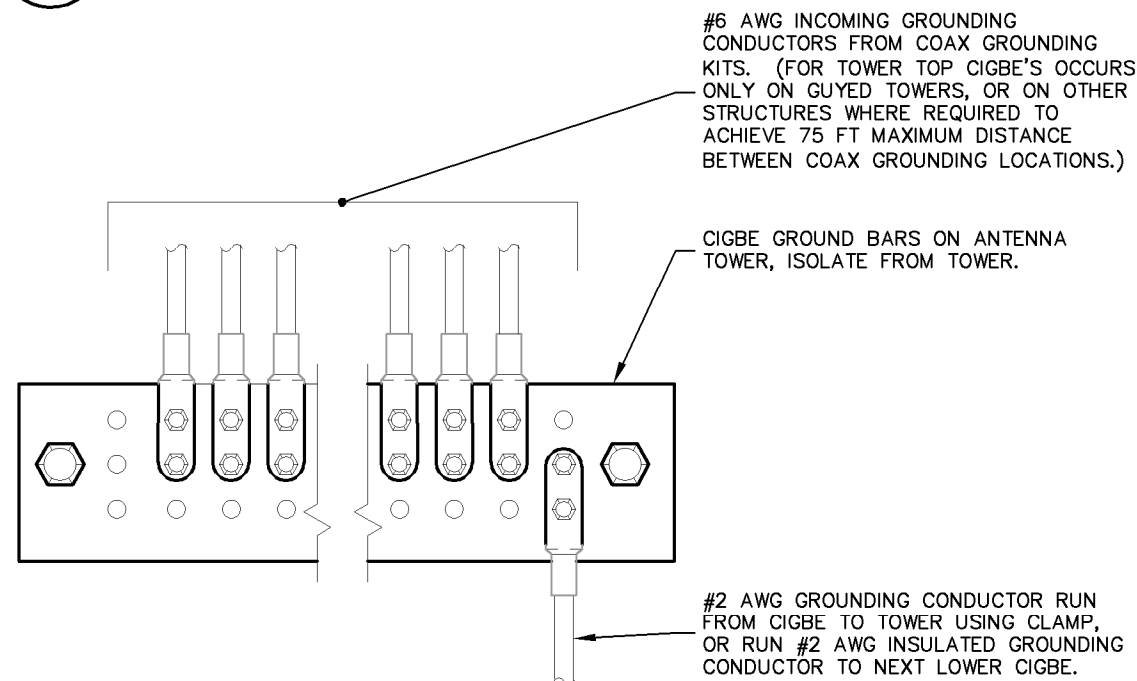
1 BAR NONE GROUNDED BEAM CLAMP (TDSGA-BC14)

E11 SCALE: NTS



2 BAR NONE POST MOUNTED (TDSGA-PA14)

E11 SCALE: NTS

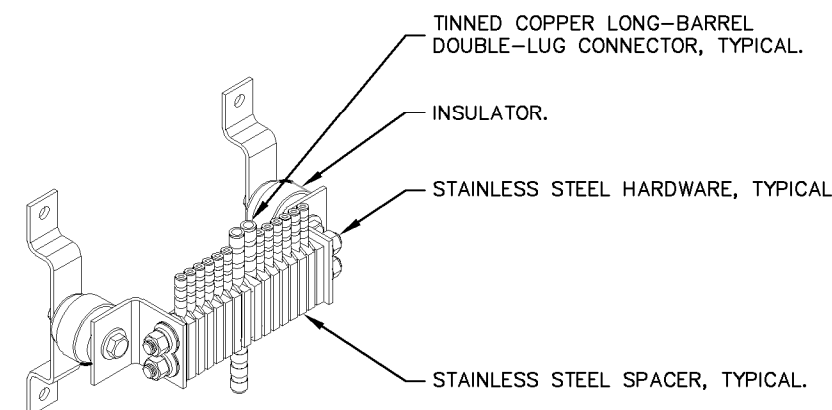


3 ANTENNA GROUND WIRE INSTALLATION DETAIL

E11 SCALE: NTS

NOTES:

1. ALL CIGBE GROUND BARS ON TOWER ARE TO BE ERICO TDSGA. TYPICALLY USE TDSGA-WB17 ISOLATED FROM UNISTRUT BRACKET.
2. IF CIGBE CANNOT BE CONNECTED TO TOWER WITH #2 AWG GROUNDING CONDUCTOR, VIA CLAMP OR EXOTHERMIC WELD, THEN RUN #2 AWG BLACK GROUND LEAD FROM CIGBE DOWN TO NEXT LOWER CIGBE. SECURE GROUND LEAD WITH NON-METALIC TIES AT SAME SPACING AS COAX SUPPORTS.



4 BAR NONE INSULATED (TDSGA-WB17)

E11 SCALE: NTS