

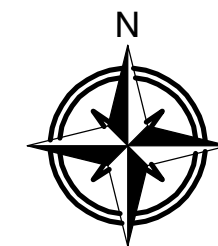
CODE COMPLIANCE

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

- COMAR 9.12.53, ADAAG & FHAG
- 2018 ICC INTERNATIONAL BUILDING CODE INCORPORATING MONTGOMERY COUNTY AMENDMENTS PUBLISHED PER ER #31-19
- 2018 ICC INTERNATIONAL RESIDENTIAL CODE
- 2018 ICC INTERNATIONAL EXISTING BUILDING GAS CODE
- MBRC MARYLAND BUILDING REHABILITATION CODE
- 2012 IGCC GREEN BUILDING CODE
- 2018 ICC INTERNATIONAL ENERGY CONSERVATION
- 2018 ICC INTERNATIONAL FUEL/GAS CODE
- 2018 ICC INTERNATIONAL MECHANICAL CODE
- 2017 NFPA 70 NATIONAL ELECTRICAL CODE
- 2013 NFPA 72
- 2013 COMAR NFPA 72
- 2015 NFPA 1 & 101
- WSSC PLUMBING CODE
- WSSC FUEL GAS CODE
- 2013 NFPA 13D
- 2013 COMAR NFPA 13D
- 2013 NFPA 13/13R
- 2013 COMAR NFPA 13/13R
- TIA-222-H-2016

SCOPE OF WORK

SCOPE OF WORK CONSISTS OF INSTALLING A NEW STRAND MOUNT AND AUXILIARY EQUIPMENT ON NEW STRAND / MESSENGER CABLE. STRAND / MESSENGER CABLE WILL BE ATTACHED TO EXISTING WOODEN UTILITY POLE. NEW ANTENNA, DIPLEXER, AND RADIO SHALL BE MOUNTED ON A PROPOSED BRACKET MOUNT AND THE BRACKET MOUNT, SPLICE BOX, AND POWER CONVERTER WILL ALL BE MOUNTED ON NEW STRAND / MESSENGER CABLE.



DPS BATCH STAMP

CROWN CASTLE FIBER LLC
SITE NAME: MNG-423
1006 LARCH AVENUE
TAKOMA PARK, MD 20912
JURISDICTION: MONTGOMERY COUNTY -
MDOT(SHA)
PROPOSED STRAND MOUNT

INDEX OF SHEETS

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G-1	GROUNDING DETAILS
TCP-1	TRAFFIC CONTROL PLANS

NODE:
MNG-423 (802417-3164)

ENGINEER:



NB+C ENGINEERING SERVICES, LLC.
6095 MARSHALEE DRIVE, SUITE 300
ELK RIDGE, MD 21075
(410) 712-7082

OWNER/DEVELOPER:



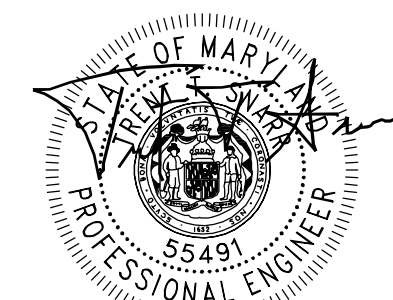
CROWN CASTLE FIBER LLC
10980 GRANTCHESTER WAY, 4TH FLOOR
COLUMBIA, MD 21044

TITLE:

MNG-423

1006 LARCH AVENUE
TAKOMA PARK, MD 20912
JURISDICTION: MONTGOMERY COUNTY -
MDOT (SHA)

LATITUDE: 38.977576°
LONGITUDE: -76.991567°



PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 55491, EXPIRATION DATE 01/08/2024.

ENGINEER OF RECORD

TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

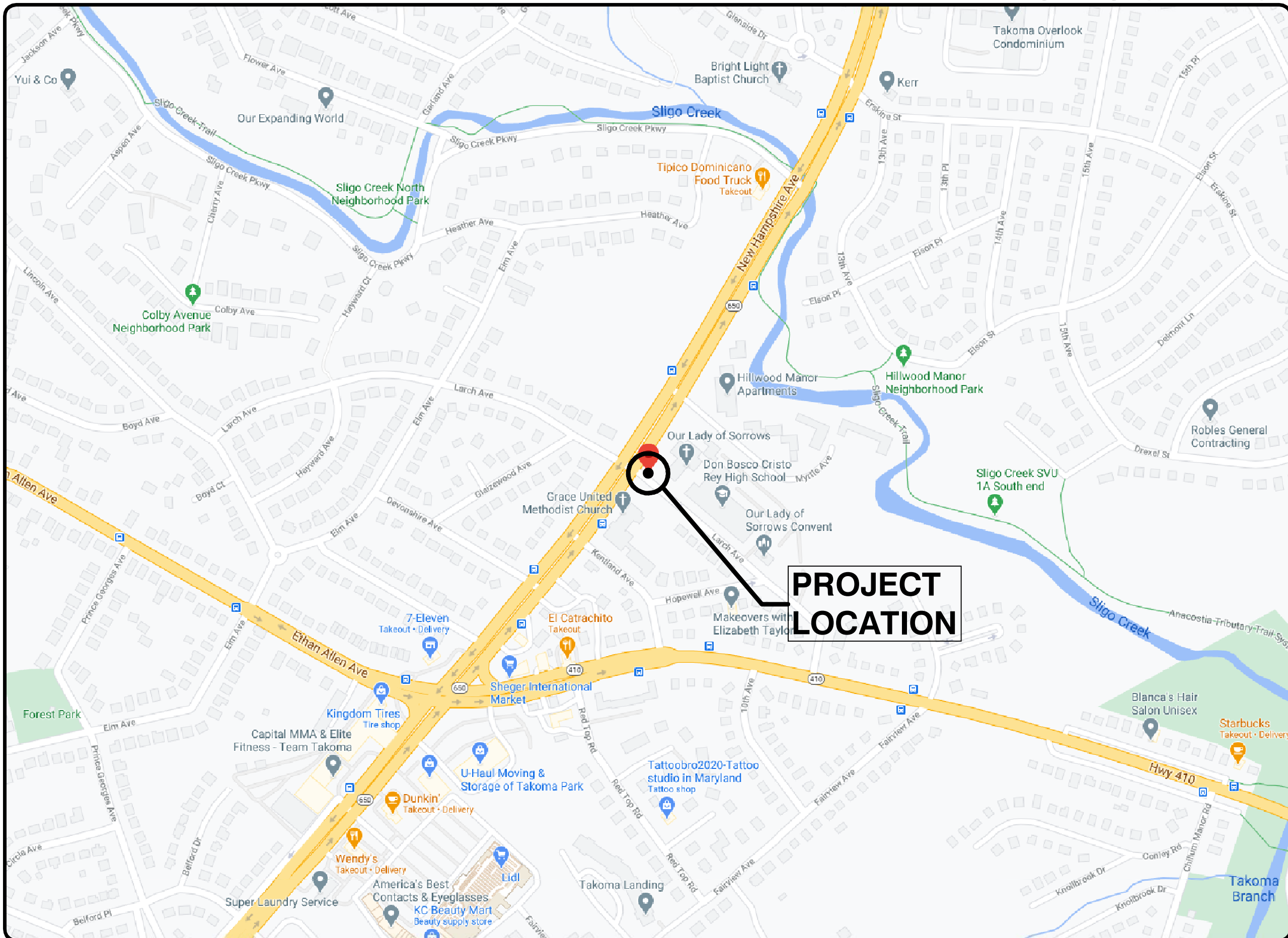
REVISIONS

REV	DATE	DESCRIPTION	BY
6	03-23-22	CLIENT COMMENTS	LAT
5	03-10-22	REVISED POLE NUMBER	SDR
4	10-07-21	ADDRESS REVISION	JED
3	03-25-21	CLIENT COMMENTS	SDR
2	02-01-21	EQUIPMENT REVISION	JED
1	02-28-19	CLIENT COMMENTS	MB
0	01-10-19	FINAL	MB

DRAWN BY:	CHECKED BY:	APPROVED BY:
AMM	SDR	SDR

PROJECT NUMBER:	100505
FILE NAME:	STRAND MOUNT ENG. DWG
DATE DRAWN:	11-20-18
SCALE:	AS SHOWN

SHEET:
T-1

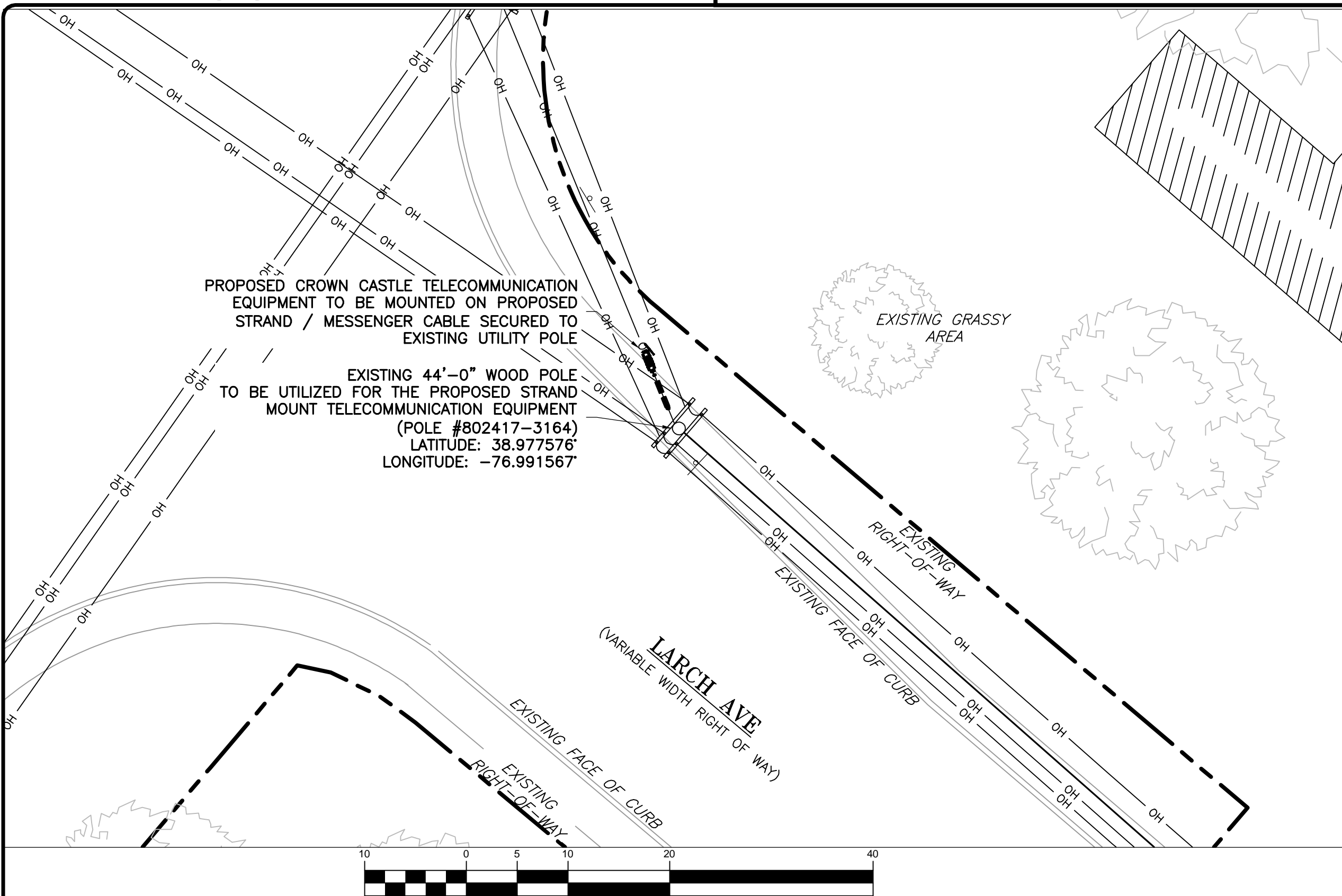


LOCATION MAP

NODE LOCATION:
LATITUDE: 38.977576°N (N 38° 58' 39.273")
LONGITUDE: -76.991567W (W -76° 59' 29.6412")



Know what's below.
Call before you dig.



THESE DRAWINGS ARE SCALED TO FULL SIZE AT 22"X34" AND HALF SIZE AT 11"X17". CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE DESIGNER / ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR MATERIAL ORDERS OR BE RESPONSIBLE FOR THE SAME. CONTRACTOR SHALL USE BEST MANAGEMENT PRACTICE TO PREVENT STORM WATER POLLUTION DURING CONSTRUCTION.

NODE PLACEMENT

1006 LARCH AVE
POLE TAG ID: 802417-3164
PEPCO FACILITY ID: 802417-3164
ZONING CLASSIFICATION = R60

CROWN CASTLE FIBER LLC
GENERAL NOTES

NODE:
MNG-423 (802417-3164)

ENGINEER:



NB+C ENGINEERING SERVICES, LLC
6095 MARSHALEE DRIVE, SUITE 300
ELKRIDGE, MD 21075
(410) 712-7092

OWNER/DEVELOPER:



CROWN CASTLE FIBER LLC
10980 GRANTCHESTER WAY, 4TH FLOOR
COLUMBIA, MD 21044

TITLE: MNG-423

1006 LARCH AVENUE
TAKOMA PARK, MD 20912
JURISDICTION: MONTGOMERY COUNTY -
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WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED
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DRAWN BY:	CHECKED BY:	APPROVED BY:
AMM	SDR	SDR

PROJECT NUMBER:	100505
FILE NAME:	STRAND MOUNT ENG. DWG
DATE DRAWN:	11-20-18
SCALE:	AS SHOWN

SHEET:

GN-1

GENERAL NOTES:

1. THE CONTRACTOR SHALL GIVE ALL NOTICE AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY AGENCIES, STATE, FEDERAL AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK, THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAS MADE EVERY EFFORT TO SET FORTH THE SCOPE OF CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM THE EVENT OF DISCREPANCY. ANY IMPROVEMENTS SHALL BE IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING AND WRITING THE CROWN CASTLE CONSTRUCTION MANAGER OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCY, THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN, EXCEPT FOR FIBER OPTIC CABLE AND OTHER MATERIALS IDENTIFIED BY CROWN CASTLE.
5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
6. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWING/CONTRACT DOCUMENTS.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATION UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
8. THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPON THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATION AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
9. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTIONS MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING, AND KEEPING A COPY ON SITE, ALL PERMITS AND INSPECTION WHICH MAY BE REQUIRED FOR THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
11. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION OR ON ABOUT THE PROPERTY TO ORIGINAL OR BETTER CONDITION.
12. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAR AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DEBRIS, DURING CONSTRUCTION AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
13. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
14. THE CONTRACTOR SHALL NOTIFY THE CROWN CASTLE CONSTRUCTION MANAGER WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOTED UNDER MATERIALS TO COORDINATE ANY CONFLICT OF THE WORK THAT IS IN CONFLICT UNTIL IS RESOLVED BY THE CROWN CASTLE CONSTRUCTION MANAGER.
15. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE PROJECT.
16. OWNER/CONTRACTOR SHALL CONTACT ONE CALL MINIMUM 72 HOURS PRIOR TO THE START OF CONSTRUCTION FOR LOCATION OF EXISTING UNDERGROUND UTILITIES.
17. SUBMITTAL OF BID INDICATES THAT THE CONTRACTOR IS COGNIZANT OF ALL JOB SITE CONDITIONS AND WORK TO BE PERFORMED UNDER THIS CONTRACT.
18. THESE PLANS ARE DIAGRAMMATIC ONLY, FOLLOW AS CLOSELY AS POSSIBLE.
19. CONTRACTOR SHALL COORDINATE ALL WORK BETWEEN TRADES AND ALL OTHER SCHEDULING AND PROVISIONARY CIRCUMSTANCES SURROUNDING THE PROJECT.
20. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION CONSTRUCTION TOOLS, TRANSPORTATION, ETC. FOR COMPLETE AND FUNCTIONALLY OPERATING SYSTEMS. EXISTING AND NEW CABLE SHALL BE THROUGHOUT AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.
21. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION. LEGALLY DISPOSE OF ALL REMOVED, UNUSED AND EXCESS MATERIAL GENERATED BY THE WORK OF THIS CONTRACT. DELIVER ITEMS INDICATED ON THE DRAWINGS TO THE OWNER IN GOOD CONDITION. OBTAIN SIGNED RECEIPT UPON DELIVERY.
22. AFTER COMPLETION OF CONSTRUCTION, RED LINED AS-BUILT DRAWINGS SHALL BE PROVIDED TO CROWN CASTLE CONSTRUCTION MANAGER.

GROUNDING NOTES:

1. GROUNDING SHALL COMPLY WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.
2. ALL GROUNDING DEVICES SHALL BE U.L. APPROVED OR LISTED FOR THEIR INTENDED USE.
3. ALL WIRES SHALL BE AWG THHN/THWN COPPER UNLESS NOTED OTHERWISE.
4. GROUNDING CONNECTIONS TO GROUND RODS, GROUND RING WIRE AND POLE BARS, SHALL BE EXOTHERMIC ("CADWELDS") UNLESS OTHERWISE SPECIFIED. CLEAN SURFACES TO SHINY METAL WHERE GROUND WIRES ARE CADWELDED TO GALVANIZED SURFACES, SPRAY CADWELD WITH GALVANIZING PAINT.
5. GROUNDING CONNECTIONS TO GROUND BARS ARE TO BE TWO-HOLE BRASS MECHANICAL CONNECTORS WITH STAINLESS STEEL HARDWARE (INCLUDING SCREW SET). CLEAN GROUND BAR TO SHINY METAL. AFTER MECHANICAL CONNECTION, TREAT WITH PROTECTIVE ANTIOXIDANT COATING.
6. ROUTE GROUNDING CONDUCTORS THE SHORTEST AND STRAIGHTEST PATH POSSIBLE. BEND GROUNDING LEADS WITH A MINIMUM 12" RADIUS.
7. INSTALL #2 AWG GREEN-INSULATED STRANDED WIRE FOR ALL GROUNDING. #2 TINNED WIRE FOR SOLID COPPER WIRE FOR BELOW GRADE GROUNDING UNLESS OTHERWISE NOTED.
8. REFER TO GROUNDING PLAN FOR GROUND BAR LOCATIONS. GROUNDING CONNECTIONS SHALL BE EXOTHERMIC TYPE ("CADWELDS") TO ANTENNA MOUNTS AND GROUND RING. REMAINING GROUNDING CONNECTIONS SHALL BE COMPRESSION FITTINGS. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO-HOLE LUGS.
9. THE GROUND ELECTRODE SYSTEM SHALL CONSIST OF DRIVEN GROUND RODS POSITIONED ACCORDING TO GROUNDING PLAN. GROUNDING RODS SHALL BE 5/8"x10"-0" COPPER CLAD STEEL INTERCONNECTED WITH #2AWG BARE, TINNED SOLID COPPER WIRE BURIED 36" BELOW GRADE. BURY GROUND RODS A MAXIMUM OF 15' APART, AND A MINIMUM OF 6' APART.
10. IF ROCK IS ENCOUNTERED GROUND RODS SHALL BE PLACED AT AN OBLIQUE ANGLE NOT TO EXCEED 45°.
11. EXOTHERMIC WELDS SHALL BE MADE IN ACCORDANCE WITH ERICO PRODUCTS BULLETIN A-AT OR EQUAL.
12. CONSTRUCTION OF GROUND RING AND CONNECTIONS TO EXISTING GROUND RING SYSTEM SHALL BE DOCUMENTED WITH PHOTOGRAPHS PRIOR TO BACKFILLING SITE. PROVIDE PHOTOS TO THE CROWN CASTLE CONSTRUCTION MANAGER.
13. ALL GROUND LEADS EXCEPT THOSE TO THE EQUIPMENT ARE TO BE #2 TINNED SOLID COPPER WIRE. ALL EXTERIOR GROUND BARS TINNED COPPER.
14. PRIOR TO INSTALLING LUGS ON GROUND WIRES, APPLY THOMAS & BETTS KOPR-SHIELD (TM OF JET LUBE INC.). PRIOR TO BOLTING GROUND WIRE LUGS TO GROUND BARS, APPLY KOPR-SHIELD OR EQUAL.
15. ENGAGE AN INDEPENDENT ELECTRICAL TESTING FIRM TO TEST AND VERIFY THAT IMPEDANCE DOES NOT EXCEED 25 OHMS TO GROUND. RECORDS OF FALL OF POTENTIAL TEST. TEST SHALL BE WITNESSED BY A CROWN CASTLE REPRESENTATIVE, AND RECORDED ON THE "GROUND RESISTANCE TEST" FORM.
16. WHERE BARE COPPER GROUND WIRES ARE ROUTED FROM ANY CONNECTION ABOVE GRADE TO GROUND RING, INSTALL WIRE IN 3/4" PVC SLEEVE, FROM 1' BELOW GRADE AND SEAL TOP WITH SILICONE MATERIAL.
17. PREPARE ALL BONDING SURFACES FOR GROUNDING CONNECTIONS BY REMOVING ALL PAINT AND CORROSION DOWN TO SHINY METAL. FOLLOWING CONNECTION, APPLY AN APPROPRIATE ANTI-OXIDIZATION PAINT.

GROUNDING GUIDELINES:

ALL EQUIPMENT THAT IS INSTALLED AND MAY CAUSE ANY KIND OF ELECTRICAL CHARGE OR BUILD UP MUST HAVE PROPER AND ADEQUATE GROUNDING IN PLACE TO PREVENT FROM EQUIPMENT DAMAGE AND SHOCK HAZARDS.

RRH'S

MUST BE GROUND TO A MAIN BUSS BAR OR HOME RUN GROUND FROM THE GROUND PIN OR STUD THAT IS ON THE CHASSIS. IF ANY EQUIPMENT HAS A GROUND POINT ON IT, IT SHOULD BE GROUND TO THE SAME POINT. THE GROUND SHOULD FOLLOW LOW LOSS GUIDELINES ON EQUIPMENT GROUNDING. NORMALLY THE STANDARD IS 6 UV RATED STRANDED GROUND CABLE TO BE USED ON RH'S. THE LUG NEEDS TO FIT THE PROPER CABLE SIZE AS WELL AS THE HOLE SIZE OF THE EQUIPMENT. IF THERE IS ONLY ONE HOLE IN ONE HOLE LUG, IF IT HAS A PLACE FOR TWO HOLE LUG THEN THAT SHOULD BE USED. (I.E. COMSCOPES ION M HAS A SINGLE STUD GROUND, TE PRISM HAS A GROUND FOR A 2 HOLE LUG). DO NOT CUT THE LUGS TO FIT. THEY MAKE THE SAME SIZES. ORDER THE CORRECT ONE AND ATTACH IT PROPERLY.

SURGE ARRESTORS

IF IT HAS A PLACE FOR A GROUND — GROUND IT.

MAST PIPES

ALL MAIST PIPES SHOULD BE GROUND WITH BEAR METAL ON THE PLACE THE GROUND IS ATTACHED AND THEN COLD GALVANIZATION OVER THE BARE METAL TO PREVENT RUST. THE GROUND CAN BE ATTACHED MECHANICALLY OR AN EXOTHERMIC WELD (CAD WELD) MAY BE USED. IF THE MAIST PIPE IS THE TALLEST POINT ON A BUILDING IT SHOULD ALSO HAVE A LIGHTNING ROD ATTACHED TO IT AS WELL.

DIPLEXERS/DUPLEXERS/SPLITTERS/PASSIVE COMPONENTS

IF IT HAS A PLACE FOR A GROUND TO BE INSTALLED -
INSTALL IT.

ANY STRUCTURE OR FRAME SHOULD HAVE #2 GROUND WIRE, I.E. MAST PIPES, OUTDOOR ENCLOSURES, SHROUDS, BUSS BAR HOME RUN TO EARTH GROUND. ALL EQUIPMENT HAS #6 TO BUSS BARS.

DPS BATCH STAMP

ALL BUSS BARS NEED TO HAVE A LINK TO AN EARTH-
GROUND SYSTEM AND MUST BE ISOLATED IF MOUNTED ON
ANYTHING THAT MAY RETAIN AN ELECTRIC CHARGE. NO
EXCEPTIONS. ALL EQUIPMENT SHOULD RUN TO BUSS BARS.
WASHERS SANDWICHING THE LUGS) FROM THE FRONT AND BACK.
WASHERS SANDWICHING THE LUGS) FROM THE FRONT AND BACK. NOT
OVERLAPPING CAUSING IT TO HOLD OR PIN DOWN OTHER
LUGS ON THE BAR. THERE SHOULD ALWAYS BE A LOCK
WASHER CLOSEST TO THE NUT ON THE BOLT FOR A LUG.
NEVER IS IT OK TO STACK LUGS ON TOP OF EACH OTHER.
IF THERE ARE TWO LUGS ON ONE BOLT, THERE SHOULD BE
TWO WASHERS AND TWO NUTS. THEY SHOULD ALL BE
THEY SHOULD ALL HAVE A DIRECT CONTACT TO A BUSS BAR
WITH NO-OX COATED BETWEEN THE LUG AND THE BUSS BAR.
ALL LUGS SHOULD HAVE HEAT SHRINK OVER THE
LUG (UNLESS IT'S NON-JACKETED WIRE). THE LUG NEEDS TO
BE GRIND IT'S SECURE WITH THE PROPER EYE OF THE
NUT. NOT CHANCE. NEVER CRIED. THERE SHOULD BE
A MINIMUM OF 1/2 INCH BARE CABLE SHOWING (SHINER)
MORE THAN 1/16 INCH BARE CABLE SHOWING (SHINER)
BETWEEN THE JACKET AND THE LUG. INSIDE LUGS SHOULD
HAVE CLEAR HEAT SHRINK TO INSPECT THE CRIMPS AND
SHINERS. INSIDE LUGS SHOULD HAVE INSPECTION WINDOWS
TO INSURE THE CRIMPS ARE PROPER. THE LUGS MUST
BE PROPERLY INSTALLED. OUTDOOR LUGS MAY
HAVE BLACK OR GREEN HEAT SHRINK.

WEATHER SEAL GUIDELINES:

BUTYL

1. PRE. WRAP ALL CONNECTIONS WITH BLACK ELECTRICAL TAPE TO COVER ALL METAL SHOWING TO PREVENT DAMAGE TO CONNECTOR WHEN WEATHER SEAL IS TO BE REMOVED 3/4 INCH OR 2 INCH TAPE CAN BE USED FOR THIS PROCESS.
 2. WRAP CONNECTIONS WITH BUTYL WEATHER SEALANT WITH TWO LAYERS TO FORM A CONE LIKE SHAPE. OVER LAPPING THE LAYERS BY AT LEAST 50% WOULD SEAL TO PROPER SHAPE. THIS STEP IS CRUCIAL OR THE BUTYL WILL LEAK OVER TIME.
 3. WRAP SEALANT WITH 2 LAYERS OF 2 INCH TAPE. (YOU CAN CUT INTO STRIPS IN TIGHT AREAS). FIRST WRAP SHOULD BE PULLED SMOOTH TO MAKE FINAL WRAPS CLEAN AND CRISP. 2ND WRAP SHOULD BE PULLED TIGHTER THAN FIRST. 3RD WRAP SHOULD NOT PROPERLY (CONE LIKE) SHAPE. OVER LAPPING TAPE SHOULD COVER AT LEAST 50% OF EACH LAYER OF TAPE PRIOR.
 4. UPON COMPLETION OF 2 LAYERS OF 2 INCH TAPE. FINALIZE WITH AT LEAST 3 LAYERS OF 3/4 INCH TAPE. EACH WRAP OF TAPE SHOULD BE PULLED TIGHTER THAN WRAP BEFORE TO SQUEEZE SEALANT INTO A MOLD AND NOT WEATHER SEALANT FROM LEAKING OUT. EACH LAYERS OVER TIME. EACH LAYER SHOULD COVER PRIOR LAYERS AT LEAST 50%.
 5. OVERLAP THE TAPE 50% OF THE PREVIOUS LAYER.
 6. ALWAYS FINISH THE LAST WRAP OF TAPE GOING UP TO CREATE A SHINGLING OF THE TAPE SO IN THE WEATHER ANYTHING THAT RUNS DOWN THE CABLE WILL NOT LEAK INTO THE SEALANT. CUT THE END OF THE TAPE AND LAY IT ONTO THE FINISH. DO NOT STRETCH THE END OF THE TAPE. THIS WILL CAUSE THE TAPE TO PULL OFF OVER TIME AND CREATE A FLAGGING AFFECT.
- FUSION TAPE**
1. CHECK TO MAKE SURE ALL CONNECTORS ARE TORQUED TO PROPER SPECIFICATIONS BEFORE YOU BEGIN.
 2. NOTE: THIS STEP DOES NOT NEED A CURTSY WRAP. BECAUSE THE TAPE DOES NOT ACTUALLY ADHERE TO THE CONNECTOR ITSELF BUT BURN FUSION TAPE. ALSO KNOWN AS "SELF-AMALGAMATING TAPE."
 3. WRAP CONNECTIONS FUSION TAPE SEALANT WITH TWO LAYERS TO FORM A CONE LIKE SHAPE. FUSION TAPE MUST OVER LAP AT LEAST 50% TO FORM A PROPER SEAL. COVER ALL OF THE BARE METAL SHOWING (AT LEAST 1-1/2 INCH PAST END OF CONNECTOR.)
 4. IF THIS "TAPE" IS NOT PULLED TIGHT WHILE WRAPPING YOU WILL NOT CREATE A PROPER SEAL, IT MUST BE STRETCHED TO CREATE BOND TO ITSELF.
 5. WRAP AT LEAST 2 LAYERS OF 3/4 INCH TAPE. EACH LAYER SHOULD COVER AT LEAST 50% OF PREVIOUS TAPE WRAP.
 6. ALWAYS FINISH THE LAST WRAP OF TAPE GOING UP TO CREATE A SHINGLING OF THE TAPE SO IN THE WEATHER ANYTHING THAT RUNS DOWN THE CABLE WILL NOT LEAK INTO THE SEALANT. CUT THE END OF THE TAPE AND LAY IT ONTO THE FINISH. DO NOT STRETCH THE END OF THE TAPE. THIS WILL CAUSE THE TAPE TO PULL OFF OVER TIME AND CREATE A FLAGGING AFFECT.

HEAT SHRINK

1. PRE WRAP ALL CONNECTIONS WITH BLACK ELECTRICAL TAPE TO COVER ALL METAL SHOWING TO PREVENT DAMAGE TO CONNECTOR WHEN WEATHER SEAL IS TO BE USED. REMOVE 1/4-1/2 INCH OR 2 INCH TAPE CAN BE USED FOR THIS PROCESS.
2. USE ONLY OUTDOOR RATED HEAT SHRINK THAT HAS THE SELF-ADHESIVE WHEN HEATED PROPERLY. THIS IS WHAT WILL CREATE THE SEAL TO THE CONNECTOR.
3. MAKE SURE THE HEAT SHRINK COVERS ALL OF THE COUPLERS AND CONNECTIONS. HEAT THE HEAT SHRINK TO SHRINK IT TIGHTLY TO THE CONNECTIONS AND GLETS. MAKE SURE THE HEAT SHRINK IS SEALED TOP AND BOTTOM OF THE CONNECTIONS. ALSO CHECK TO MAKE SURE HEAT SHRINK WAS NOT OVER HEATED AND THERE ARE NO BREAKS IN SEAL THROUGH-OUT THE SHRINKING TUBING.

ANDREWS CLAM SHELL

1. PROPERLY TORQUE CONNECTOR TO SPECIFICATION.
2. APPLY ONE LAYER OF 3/4 INCH BLACK TAPE AROUND ENTIRE CONNECTOR ENDING AT LEAST 1-1/2 INCHES PAST TOP AND BOTTOM OF CONNECTOR TO PREVENT ANY MOISTURE FROM STICKING TO THE CONNECTOR.
3. INSPECT THE DEVICE TO MAKE SURE IT IS NOT CHIPPED, CRACKED OR ANY SIGNS OF NEGLIGENCE THAT WILL TAKE AWAY FROM MAKING A FULL SEAL AROUND THE CONNECTOR.
4. USE ONLY CORRECT SIZE PER CABLE AND CONNECTOR TYPE: 1/2 INCH 1/2 INCH 1/2 INCH NOT 7/8TH FOR 1/2 INCH.
5. FOLLOW DIRECTIONS THAT COME WITH PRODUCT - MOST OF THEM WILL TYPE SEALANT DEVICES WRAP AROUND OR CLAMP AROUND A CONNECTION POINT.

GROUNDING AND BONDING NOTE:
GENERAL CONTRACTOR SHALL FOLLOW ALL
CONSTRUCTION GUIDELINES PER CROWN
CASTLE'S GROUNDING AND BONDING
REQUIREMENTS FOR STRAND MOUNT NODES
(oDAS) – DOCUMENT 337910.

CROWN CASTLE FIBER LLC
GENERAL NOTES

6. BE CAREFUL WHEN SETTING LOCKING DEVICE INTO PLACE ON CLAMP SHELLS. CHECK TO BE SURE PLASTIC AND TEND TO BREAK OR CRACK IN EXTREME WEATHER CONDITIONS WHEN LOCKING DEVICE CLOSED TO CREATE THE SEAL.) IF THE LOCKING MECHANISM CRACKS OR BREAKS, REPLACE IT. DO NOT TAPE THE CLAMP CLOSED OR TRY TO RE-ENGINEER IT.

7. ONCE THE CLAMP IS ON AND LOCKED AROUND THE CONNECTOR THE PROCESS IS COMPLETE.

PPC BOOT

1. PLACE BOOT OVER CABLE BEFORE CONNECTOR IS ATTACHED TO CABLE. THIS IS ONLY RATED FOR PPC TYPE CONNECTORS. (NOTE: IF THIS STEP IS SKIPPED OR NOT COMPLETED BEFORE MAKING A CONNECTOR THE SUBCONTRACTOR WILL NOT BE ABLE TO USE THE BOOT STYLE DEVICE TO SEAL THE CONNECTOR. IT IS NOT RECOMMENDED TO WASTE A CONNECTOR AND CUT IT OFF AND START AT STEP NO. 1 AGAIN. SINCE PPC CONNECTORS ARE NOT REUSABLE AND CAN GET QUITE EXPENSIVE, DO NOT TRY TO STRETCH THE BOOT TO SLIDE IT OVER THE CONNECTION.)
2. PLACE THE BOOT OVER THE CABLE, AND THEN MAKE THE CONNECTOR.
3. TORQUE THE CONNECTION TO PROPER SPECIFICATIONS.
4. SLIDE BOOT UP TO COVER THE ENTIRE CONNECTOR, FOLLOWING THE PPC GUIDELINES.
5. THIS PROCESS IS COMPLETE AT THIS TIME.

ELECTRICAL NOTES

1. SUBMITTAL OF BID INDICATES THAT THE CONTRACTOR IS COGNIZANT OF ALL JOB SITE CONDITIONS AND WORK TO BE PERFORMED UNDER THIS CONTRACT.
2. CONTRACTOR SHALL PERFORM ALL VERIFICATIONS, OBSERVATION TESTS, AND EXAMINATION WORK PRIOR TO ORDERING OF ANY EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE PROJECT MANAGER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.
3. VERIFY HEIGHTS WITH PROJECT MANAGER PRIOR TO INSTALLATION.
4. THESE PLANS ARE DIAGRAMMATIC ONLY, FOLLOW AS CLOSELY AS POSSIBLE.
5. CONTRACTOR SHALL COORDINATE ALL WORK BETWEEN TRADES AND ALL OTHER SCHEDULING AND PROVISIONARY CIRCUMSTANCES SURROUNDING THE PROJECT.
6. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION CONSTRUCTION TOOLS, TRANSPORTATION, ETC., FOR COMPLETE AND FUNCTIONALLY OPERATING SYSTEMS ENERGIZED AND READY FOR USE THROUGHOUT AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.
7. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. ELECTRICAL MATERIALS SHALL BE LISTED AND APPROVED BY UNDERWRITER'S LABORATORIES AND SHALL BEAR THE INSPECTION LABEL "J" WHERE SUBJECT TO SUCH APPROVAL. MATERIALS SHALL MEET WITH APPROVAL OF ALL COVERING BODIES HAVING JURISDICTION OVER THE CONSTRUCTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH ALL CURRENT APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA AND NBFU. ALL MATERIALS AND EQUIPMENT SHALL BE APPROVED FOR THEIR INTENDED USE AND LOCATION.
8. ALL WORK SHALL COMPLY WITH ALL APPLICABLE GOVERNING STATE, COUNTY AND CITY CODES AND OSHA, NFPA, NEC & ASHRAE REQUIREMENTS.
9. ENTIRE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE THE JOB IS ACCEPTANCE. ALL WORK, MATERIAL AND EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED AT ONCE, UPON WRITTEN NOTIFICATION, AT THE EXPENSE OF THE CONTRACTOR.
10. PROPERLY SEAL ALL PENETRATIONS. PROVIDE UL LISTED FIRE-STOPS WHERE PENETRATIONS ARE MADE THROUGH FIRE-RATED ASSEMBLIES. WATER-TIGHT USING SILICONE SEALANT.
11. LOCATE ALL PENETRATIONS SUCH THAT ALL REINFORCEMENT CONTAINED WITHIN THE EXISTING BUILDING CONSTRUCTION REMAINS INTACT AND UNDISTURBED. SUBMIT LOCATING METHOD TO THE PROJECT MANAGER FOR APPROVAL PRIOR TO EXECUTION.
12. DELIVER ALL BROCHURES, OPERATING MANUALS, CATALOGS AND SHOP DRAWINGS TO THE PROJECT MANAGER AT JOB COMPLETION. PROVIDE MAINTENANCE MANUALS FOR MECHANICAL EQUIPMENT. AFFIX MAINTENANCE LABELS TO MECHANICAL EQUIPMENT.
13. ALL CONDUCTORS SHALL BE COPPER. MINIMUM CONDUCTOR SIZE SHALL BE #12 AWG., UNLESS OTHERWISE NOTED. CONDUCTORS SHALL BE TYPE THHW, RATED IN ACCORDANCE WITH NEC 110-14(C).
14. ALL CIRCUIT BREAKERS, FUSES & ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THE MAXIMUM INTERRUPTING CURRENT TO WHICH THEY MAY BE SUBJECTED.
15. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE; ARTICLES 250 & 810 AND THE UTILITY COMPANY STANDARDS.
16. CONDUIT: ALL ABOVE GRADE CONDUITS SHALL BE RIGID & LFMC TO 6' AS STATED BELOW:

- A. RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR. RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE 1/2 LAPPED WRAPPED WITH HUNTS WRAP PROCESS NO. 3.
- B. ELECTRICAL METALLIC TUBING SHALL HAVE U.L. LABEL. FITTINGS SHALL BE GLAND RING COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS.
- C. LIQUID-TIGHT FLEXIBLE METAL CONDUIT SHALL BE U.L. LISTED AND SHALL BE USED AT FINAL CONNECTIONS TO MECHANICAL EQUIPMENT & RECTIFIERS AND WHERE PERMITTED BY CODE. ALL CONDUIT IN EXCESS OF SIX FEET IN LENGTH SHALL CONTAIN A FULL-SIZE GROUND CONDUCTOR.

- D. CONDUIT RUNS SHALL BE SURFACE MOUNTED ON CEILINGS OR WALLS UNLESS NOTED OTHERWISE. ALL CONDUIT SHALL RUN PARALLEL OR PERPENDICULAR TO WALLS, FLOOR, CEILING, OR BEAMS. VERIFY EXACT ROUTING OF ALL EXPOSED CONDUIT WITH THE PROJECT MANAGER PRIOR TO INSTALLING.

- E. PVC CONDUIT MAY BE PROVIDED ONLY WHERE SHOWN, OR IN UNDERGROUND INSTALLATIONS. PROVIDE UV-RESISTANT CONDUIT WHERE EXPOSED TO THE ATMOSPHERE. PROVIDE GROUND CONDUCTOR IN ALL PVC RUNS; EXCEPT WHERE PERMITTED BY CODE TO OMIT.

17. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PHENOLIC PLASTIC NAMEPLATES. METER, DISCONNECT, ETC. BACKGROUND SHALL BE BLACK WITH WHITE LETTERS; EXCEPT AS REQUIRED BY CODE TO FOLLOW A DIFFERENT SCHEME.

18. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL OF POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO PROJECT MANAGER. GROUNDING SYSTEM RESISTANCE SHALL NOT EXCEED 5 OHMS. IF THE RESISTANCE VALUE IS EXCEEDED, NOTIFY THE PROJECT MANAGER FOR FURTHER INSTRUCTION ON METHODS FOR REDUCING THE RESISTANCE VALUE.

19. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION. LEGALLY DISPOSE OF ALL REMOVED, UNUSED AND EXCESS MATERIAL GENERATED BY THE WORK OF THIS CONTRACT. DELIVER ITEMS INDICATED ON THE DRAWINGS TO THE OWNER IN GOOD CONDITION. OBTAIN SIGNED RECEIPT UPON DELIVERY.

20. COORDINATE WITH UTILITY COMPANY FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOKUP COSTS SHALL BE PAID BY THE CONTRACTOR.

21. VERIFY ALL EXISTING CIRCUITRY PRIOR TO REMOVAL AND NEW WORK. MAINTAIN POWER TO ALL OTHER AREAS & CIRCUITS NOT SCHEDULED FOR REMOVAL.

22. RED LINED AS-BUILT PLANS SHALL BE PROVIDED TO THE CONSTRUCTION MANAGER UPON REQUEST.

PEPCO GUIDELINES:

STRUCTURAL

1. ANTENNA SUPPORT POLES SHALL BE DESIGNED TO WITHSTAND THE HEAVY LOAD CASE AS DEFINED IN NATIONAL ELECTRIC SAFETY CODE (NESC) RULE 250B. IF ANY PART OF THE ANTENNA SUPPORTPOLE PROJECTS OVER SIXTY FEET ABOVE THE GROUND, THEN THE POLE SHALL BE DESIGNED TO WITHSTAND THE NESC EXTREME WIND LOAD CASE, AS DEFINED IN RULE 250C AND NESC FIGURE 250-2(B) (120 MPH WIND SPEED). THE SPECIFIED OVERLOAD CAPACITY FACTOR FOR THE NESC LOAD CASES, ARE SPECIFIED IN SECTION 28 OF THE NESC.

2. POLES REPLACED (TO SUPPORT ANTENNAS) SHALL BE DESIGNED FOR AT LEAST GRADE B CONSTRUCTION. POLES THAT ARE NOT REPLACED AND WILL SERVE AS SUPPORTS FOR ANTENNAS CAN BE DESIGNED FOR GRADE C CONSTRUCTION PROVIDED THAT APPROPRIATE RELATED STRENGTH REDUCTION FACTORS ARE APPLIED.

3. ALL POLES REPLACED TO SUPPORT ANTENNAS SHALL BE CLASS 1 OR LARGER. INSTALLATIONS THAT REQUIRE POLES LARGER THAN A CLASS 1 SHALL USE AN APPROPRIATE POLE CLASS HEIGHT AND TYPE APPROVED BY STANDARDS. THE DESIGN OF THE STEEL POLE AT A MINIMUM SHALL MEET THE STRENGTH REQUIREMENTS OF THE NEXT HIGHER ANSI WOOD POLE CLASS.

- a. TO MAINTAIN RELIABILITY AND ACCOMMODATE GEOMETRIC ALTERATIONS, ALL 69KV CANDIDATE POLES WILL BE CHANGED TO A TALLER CLASS 1 OR LARGER POLE.

- b. EXCEPTIONS WILL BE CONSIDERED ON A CASE-BY-CASE BASIS, WHEN THE EXISTING 69KV POLE MEETS OR EXCEEDS THE SPECIFICATIONS TO BE OBTAINED IN THIS SPECIFICATION WITHOUT REPLACING THE POLE. ALL EXCEPTIONS TO THE REQUIREMENT TO REPLACE POLES THAT CARRY 69KV FEEDERS ARE SOLELY AT THE DISCRETION OF PEPCO.

4. ALL HARDWARE USED TO SUPPORT THE ANTENNA SHALL BE GALVANIZED, IN NEW CONDITION AND CAPABLE OF WITHSTANDING ALL DESIGNED LOADS.

5. LOCK WASHERS SHALL BE USED ON ALL THRU BOLTS USED TO CONNECT ANTENNA SUPPORT BRACKETS AND OTHER CARRIER EQUIPMENT TO THE POLE.

6. SPLIT BOLTS WITH WASHERS SHALL BE INSTALLED PERPENDICULAR TO THE ANTENNA SUPPORT BRACKET BOLTS.

7. THE ANTENNA SUPPORT BRACKET SHALL BE ABLE TO WITHSTAND THE NESC HIGH WIND DESIGN LOADS SPECIFIED ABOVE.

8. ALL STRUCTURAL AND DESIGN ANALYSIS SHALL BE PERFORMED BY THE CARRIER AND BE REVIEWED BY PEPCO'S DISTRIBUTION ENGINEERING DEPARTMENT. PEPCO SHALL PROVIDE REQUESTED DATA FOR SUCH ANALYSIS AND RESERVES THE RIGHT TO VALIDATE THE ANALYSIS. DESIGNS MUST PASS THE STRUCTURAL ANALYSIS REQUIREMENTS BEFORE PROCEEDING TO THE FINAL DESIGN PHASE OR CONSTRUCTION.

9. CARRIER SHALL PROVIDE AND OWN ALL POLE TOP EXTENSIONS USED TO SUPPORT ANTENNAS ABOVE THE PEPCO OVERHEAD COVERED CONDUCTORS (SECONDARY OR PRIMARY VOLTAGES). THE CONDITION OF THE MOUNTING SURFACE AT THE TOP OF THE POLE SHALL BE INSPECTED BY APPROVED PEPCO PERSONNEL. IF ANY DETEIORATION IS FOUND, THE POLE SHALL BE REPLACED BEFORE MOUNTING. POLE TOP EXTENSIONS SHALL BE AT LEAST 5' BUT NOT TO EXCEED 8'; AND NOT BE USED IN THE FOLLOWING INSTANCES:

- a. TO SUPPORT ELECTRICAL CONDUCTORS.
- b. TO SUPPORT ANTENNAS ON 69KV POLES.
10. THE LOWEST GROUNDED POINT OF A CARRIER'S EQUIPMENT SHALL MAINTAIN THE FOLLOWING MINIMUM SEPARATIONS:
- AT LEAST 4FT FOR OVERHEAD SECONDARY FACILITIES.
 - AT LEAST 8FT FOR OVERHEAD PRIMARY FACILITIES.
- CLEARANCES SHALL BE INCREASED AS REQUIRED, FOR BUCKET ACCESS.
11. POLE ANALYSIS SHALL BE BASED ON FIELD MEASUREMENTS.

DPS BATCH STAMP

SAFETY:

1. AUTHORIZED PEPCO PERSONNEL SHALL INSTALL ALL THE EQUIPMENT SUCH AS ANTENNA SUPPORT BRACKETS, ANTENNAS, JUMPERS AND COAXIAL CABLE AND APPROPRIATE CHANNEL RISER, WHICH ARE DESIGNED TO BE ABOVE THE COMMUNICATION AND SAFETY ZONES ON EACH POLE.
2. BOTH RF AND POWER SUPPLY DISCONNECT SWITCHES SHALL BE PROVIDED. THE RF DISCONNECT SWITCH SHALL BE A "LOCK-OUT" TYPE TO MAKE THE EQUIPMENT FREQUENCY (RF) TRANSMITTER EQUIPMENT INOPERABLE, SUCH THAT ELECTRIC UTILITY CREWS WILL HAVE TOTAL CONTROL OVER OPERATION OF THE EQUIPMENT. THE "LOCK-OUT" DEVICE SHALL BE DESIGNED INTO ANY SYSTEM DEPLOYED IN PEPCO'S SERVICE TERRITORY. THE DISCONNECT MECHANISM SHALL BE OF A CLEARLY VISIBLE MECHANICAL TYPE. PEPCO PERSONNEL MUST BE ABLE TO CLEARLY DETERMINE BY VISIBLE MEANS THAT THE RF OUTPUT OF THE SUBJECT SYSTEM IS DISABLED. THE SWITCHING MECHANISM REQUIRED TO DISABLE THE RF TRANSMITTER SHALL BE CLEARLY MARKED WITH SIGNAGE AND IT SHALL BE LOCATED OUTSIDE THE MAXIMUM PERMISSIBLE RF EXPOSURE (SAFE APPROACH) DISTANCE/RADIUS FROM THE ANTENNA. A "KEEP-OUT" TAG SHALL BE PLACED ON THE DISCONNECTING DEVICES DURING SERVICE ON THE POLE.
3. AN RF SIGN SHALL BE PLACED ON THE POLE AND SHALL INDICATE THE SAFE/MINIMUM APPROACH DISTANCE FROM THE ANTENNA BASED ON THE MAXIMUM PERMISSIBLE EXPOSURE LIMITS AS INDICATED IN TABLE 1 OF FCC'S RULE 47C.F.R.1.1310, IEEE C95.1 AND IEEE C95.5 (AS APPLICABLE) IN CONJUNCTION WITH ITS EFFECTIVE SOTROPIC RADIATED POWER (EIRP) VALUE AND THE OPERATIONAL FREQUENCY. THE SIGN SHALL INDICATE THE CARRIER'S NAME, AND 24-HOUR SYSTEM OPERATOR CONTACT INFORMATION, SO THAT NOTIFICATION CAN BE GIVEN TO THE APPROPRIATE PERSONNEL. IT SHALL BE AT LEAST 9" X 11" SIZE AND SHALL COMPLY WITH IEEE C95.2 STANDARDS. IN ADDITION, AN RF MAXIMUM PERMISSIBLE EXPOSURE (MPE) REPORT MUST BE SUBMITTED TO PEPCO.

4. ANY TREE TRIMMING REQUIRED FOR ANTENNA FACILITIES ABOVE THE COMMUNICATION ZONE WILL BE PERFORMED BY PEPCO AT THE CARRIER'S EXPENSE.

5. CARRIER PERSONNEL ARE NOT PERMITTED TO ACCESS THE POLE ABOVE THE COMMUNICATIONS ZONE. ONLY APPROVED PEPCO PERSONNEL OR CONTRACTORS UNDER THE DIRECTION OF AN AUTHORIZED PEPCO EMPLOYEE ARE PERMITTED TO ACCESS THIS SECTION OF THE POLE.

6. WHEN REQUIRED, ALL PERMITS SHALL BE COORDINATED BETWEEN THE CARRIER AND PEPCO'S APPROPRIATE SYSTEM DESIGN DEPARTMENT.

7. EQUIPMENT INSTALLED BELOW THE SAFETY ZONE SHALL BE MAINTAINED BY THE CARRIER.

8. IF AN ANTENNA POLE IS DAMAGED DUE TO HEAVY STORMS, PEPCO WILL NOTIFY THE CARRIER, USING THE PHONE NUMBER PROVIDED ON THE CAUTION SIGN BUT SHALL NOT BE RESPONSIBLE FOR ANY EQUIPMENT.

9. TO ACCOMMODATE FUTURE PEPCO POLE REPLACEMENTS, THE CARRIER SHALL AGREE TO TRANSFER THEIR EQUIPMENT WITHIN 30 DAYS OF NOTIFICATION OF SUCH WORK.

CLEARANCES:

1. RF CAUTION SIGNAGE SHALL BE PLACED OUTSIDE THE SAFE APPROACH DISTANCE RADIUS OF THE ANTENNA.

2. THE SEPARATION OF ANTENNA MOUNTING BRACKET PARTS FROM UNPROTECTED ENERGIZED RIGID CONDUCTOR MOUNTED ON THE SAME POLE SHALL BE AT LEAST 40" FOR DP (48" FOR PEPCO).

3. CLEARANCES AT THE SUPPORT AND MID-SPAN SHALL NOT BE REDUCED, BUT SHALL BE INCREASED AS REQUIRED FOR BUCKET ACCESS.

4. FIBER OPTIC WIRE SHALL BE INSTALLED IN THE COMMUNICATION ZONE WITH 12 INCHES OF SEPARATION FROM OTHER THIRD PARTY COMMUNICATION CONDUCTORS AND SHALL MAINTAIN AT LEAST 40" FOR DP (48" FOR PEPCO) OF SEPARATION FROM THE LOWEST SECONDARY CONDUCTOR FOR NEW POLE INSTALLATIONS AND 40 INCHES FOR EXISTING INSTALLATIONS.

5. AN ANTENNA MOUNTED BELOW PEPCO'S SECONDARY CONDUCTORS WILL MAINTAIN CLEARANCES OF NO LESS THAN 40" FOR DP (48" FOR PEPCO) BETWEEN THE LOWEST SUPPLY CONDUCTOR AND THE HIGHEST POINT OF THE ANTENNA.

6. WIRELESS CARRIER'S EQUIPMENT BOX MAY BE MOUNTED AS LOW TO GROUND LEVEL AS PRACTICAL (PER RECOMMENDATION BY PEPCO FIELD PERSONNEL) IF POLE IS AT LEAST 4.5' AWAY FROM THE CURB OR ROAD.

WIFI DEVICES:

1. WIFI REFERS TO DEVICES THAT MEET IEEE 802.11 STANDARDS.

2. IF MOUNTED ON A STREETLIGHT BRACKET, THE POWER VOLTAGE REQUIREMENTS OF THE RF DEVICE MUST MATCH THE EXISTING STREETLIGHT VOLTAGE. THE PHOTOCELL POWER TAP CONNECTOR SHALL BE APPROVED BY THE CARRIER AND MUST MEET ANSI C136 REQUIREMENTS.

3. A MAXIMUM OF 1 WIFI DEVICE IS ALLOWED PER CANDIDATE POLE.

4. GROUNDING OF MOUNTING BRACKETS (INCLUDING STREETLIGHT BRACKET) SHALL BE AS SHOWN ON DRAWINGS. THE WIRELESS CARRIER SHALL SUPPLY THE WEIGHT OF THE PROPOSED EQUIPMENT. THE EXISTING BRACKET MUST BE STRUCTURALLY SUFFICIENT TO SUPPORT THE PROPOSED DEVICE. STREETLIGHT BRACKETS WILL NOT BE CHANGED TO ACCOMMODATE THE DEVICE.

5. NESC AND MAXIMUM RF EXPOSURE LIMIT CLEARANCES IN ALL DIRECTIONS SHALL BE MET.

GROUNDING AND BONDING NOTE:
GENERAL CONTRACTOR SHALL FOLLOW ALL CONSTRUCTION GUIDELINES PER CROWN CASTLE'S GROUNDING AND BONDING REQUIREMENTS FOR STRAND MOUNT NODES (oDAS) – DOCUMENT 337910.

NODE:
MNG-423 (802417-3164)

ENGINEER:

NB+C™
TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, LLC.
6095 MARSHALEE DRIVE, SUITE 300
ELK RIDGE, MD 21075
(410) 712-7082

OWNER/DEVELOPER:

CROWN CASTLE

CROWN CASTLE FIBER LLC
10980 GRANTCHESTER WAY, 4TH FLOOR
COLUMBIA, MD 21044

TITLE:

MNG-423

1006 LARCH AVENUE
TAKOMA PARK, MD 20912
JURISDICTION: MONTGOMERY COUNTY -
MDOT (SHA)

LATITUDE: 38.977576°
LONGITUDE: -76.991567°



PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 55491, EXPIRATION DATE 01/08/2024

ENGINEER OF RECORD

TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

REVISIONS

REV	DATE	DESCRIPTION	BY
6	03-23-22	CLIENT COMMENTMS	LAT
5	03-10-22	REVISED POLE NUMBER	SDR
4	10-07-21	ADDRESS REVISION	JED
3	03-25-21	CLIENT COMMENTS	SDR
2	02-01-21	EQUIPMENT REVISION	JED
1	02-28-19	CLIENT COMMENTS	MB
0	01-10-19	FINAL	MB

DRAWN BY:	CHECKED BY:	APPROVED BY:
AMM	SDR	SDR

PROJECT NUMBER:	100505
FILE NAME:	STRAND MOUNT ENG. DWG
DATE DRAWN:	11-20-18
SCALE:	AS SHOWN

SHEET:

GN-2

CROWN CASTLE FIBER LLC
SITE PLAN

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PROJECT NUMBER: 100505

FILE NAME: STRAND MOUNT ENG. DWG

DATE DRAWN: 11-20-18

SCALE: AS SHOWN

SHEET:

C-1

LEGEND

	IRON BAR/PIPE		GAS LINE
	WATER VALVE		EXISTING TELCO
	UTILITY POLE		OVERHEAD WIRE
	FIRE HYDRANT		UNDERGROUND WIRE
	TREES/LANDSCAPING		PROPOSED CONTOURS
	MANHOLES		EXISTING CONTOURS
	PROPERTY LINE		OVERHEAD ELECTRIC
	ADJACENT PROPERTY LINE		OVERHEAD FIBER
	PROPERTY SETBACK LINE		UNDERGROUND ELECTRIC
	RIGHT OF WAY		UNDERGROUND FIBER
	ZONING DISTRICT LINE		CHAIN LINK FENCE
	ELECTRIC		TREE LINE

DPS BATCH STAMP

PROPOSED CROWN CASTLE TELECOMMUNICATION
EQUIPMENT TO BE MOUNTED ON PROPOSED
STRAND / MESSENGER CABLE SECURED TO
EXISTING UTILITY POLE

EXISTING 44'-0" WOOD POLE
TO BE UTILIZED FOR THE PROPOSED STRAND
MOUNT TELECOMMUNICATION EQUIPMENT
(POLE #802417-3164)
LATITUDE: 38.977576°
LONGITUDE: -76.991567°

PROPOSED 3/8" EHS SPAN GUY
CONNECTED TO ADJACENT POLE

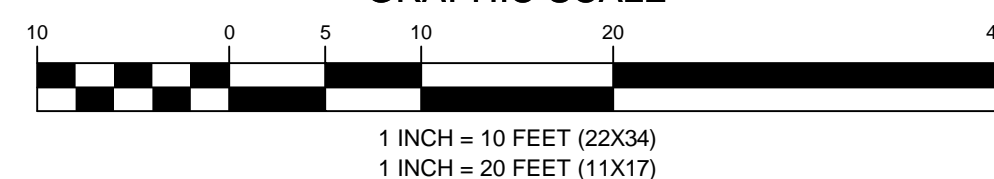
NOTE:

EXISTING UTILITY INFORMATION SHOWN REPRESENTS THE BEST DATA AVAILABLE
FROM EXISTING DOCUMENTATION AND FIELD EVIDENCE. ALL LOCATIONS
SHOULD BE CONSIDERED APPROXIMATE, AND A FIELD INVESTIGATION MUST BE
PERFORMED IN THE VICINITY OF ANY CONSTRUCTION ACTIVITIES. NOTE THAT
THESE PLANS MAY NOT SHOW ALL UTILITIES THAT ARE PRESENT AT THE SITE.

THE CONSTRUCTION MANAGER SHALL
COORDINATE POWER AND TELCO UTILITY
ROUTING TO THE PROPOSED EQUIPMENT
CABINET PRIOR TO CONSTRUCTION.

1
C-1
SITE PLAN
SCALE: 1" = 10' (22X34)
SCALE: 1" = 20' (11X17)

GRAPHIC SCALE



CROWN CASTLE FIBER LLC
ENLARGED SITE PLAN

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MNG-423 (802417-3164)

ENGINEER:

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TOTALLY COMMITTED.

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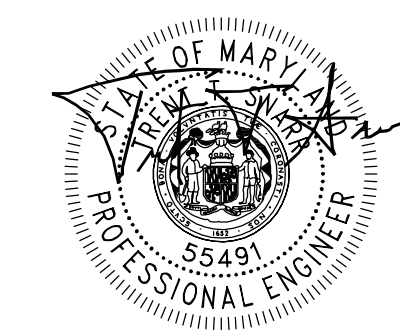
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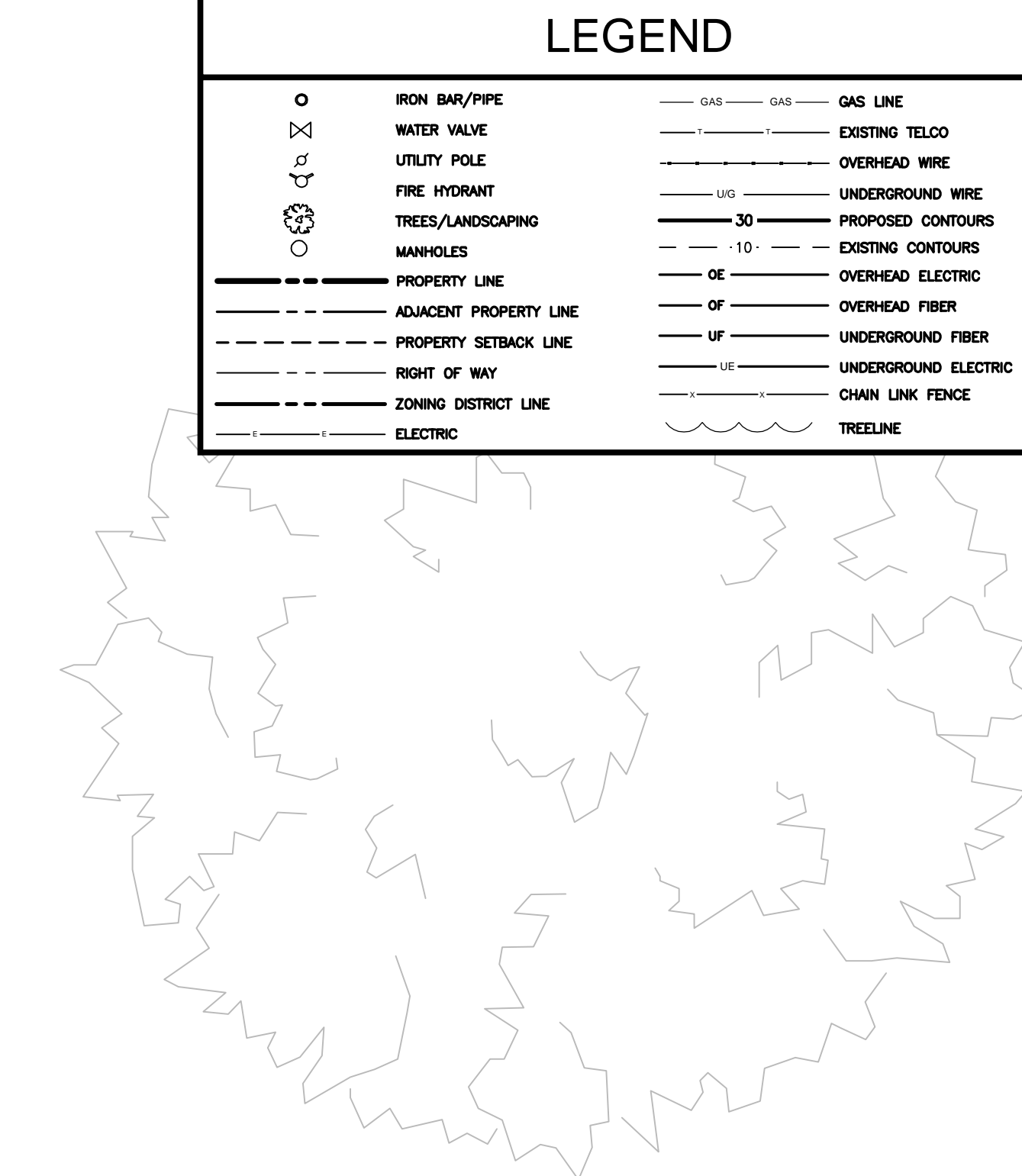
FILE NAME: STRAND MOUNT ENG. DWG

DATE DRAWN: 11-20-18

SCALE: AS SHOWN

SHEET:

C-2



LEGEND

	IRON BAR/PIPE		GAS LINE
	WATER VALVE		EXISTING TELCO
	UTILITY POLE		OVERHEAD WIRE
	FIRE HYDRANT		UNDERGROUND WIRE
	TREES/LANDSCAPING		PROPOSED CONTOURS
	MANHOLES		EXISTING CONTOURS
	PROPERTY LINE		OVERHEAD ELECTRIC
	ADJACENT PROPERTY LINE		OVERHEAD FIBER
	PROPERTY SETBACK LINE		UNDERGROUND FIBER
	RIGHT OF WAY		UNDERGROUND ELECTRIC
	ZONING DISTRICT LINE		CHAIN LINK FENCE
	ELECTRIC		TREELINE

PROPOSED CROWN CASTLE ERICSSON 6523
SEMI-INTEGRATED PANEL ANTENNA
MOUNTED TO PROPOSED BRACKET MOUNT

PROPOSED CROWN CASTLE ERICSSON DIPLEX
FILTER B2+B66/B30 (4-2) DIPLEXER
MOUNTED TO PROPOSED BRACKET MOUNT

PROPOSED CROWN CASTLE ERICSSON 4402 RADIO MOUNTED
TO PROPOSED BRACKET MOUNT

PROPOSED CROWN CASTLE BRACKET
MOUNT SECURED TO PROPOSED
STRAND/MESSENGER CABLE

PROPOSED CROWN CASTLE
SPLICE BOX MOUNTED TO PROPOSED
STRAND/MESSENGER CABLE

PROPOSED CROWN CASTLE CONVERTER UNIT
(ALPHA MODEL #LPR48-150-IP68)
MOUNTED TO PROPOSED
STRAND/MESSENGER CABLE

PROPOSED CROWN CASTLE CABLE
DISCONNECT SWITCH
(ALPHA MODEL #EPO/D-2-PR)
MOUNTED TO PROPOSED
STRAND/MESSENGER CABLE

EXISTING 44'-0" WOOD POLE
TO BE UTILIZED FOR THE PROPOSED STRAND
MOUNT TELECOMMUNICATION EQUIPMENT
(POLE #802417-3164)
LATITUDE: 38.977576°
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PROPOSED 3/8" EHS SPAN GUY
CONNECTED TO ADJACENT POLE

DPS BATCH STAMP

EXISTING GRASSY
AREA

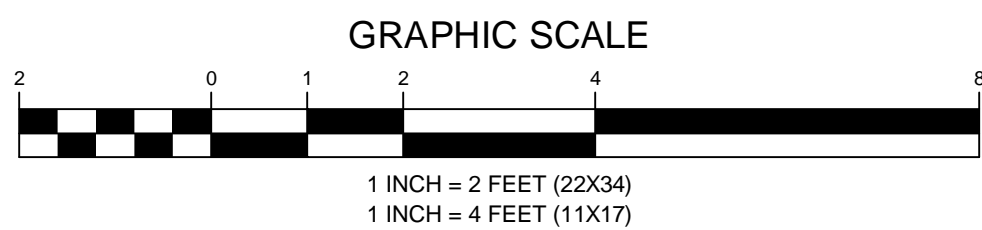
EXISTING
RIGHT-OF-WAY

EXISTING SIDEWALK

EXISTING FACE OF CURB

LARCH AVE

1
C-2
SITE PLAN
SCALE: 1" = 2' (22X34)
SCALE: 1" = 4' (11X17)



NOTE:

EXISTING UTILITY INFORMATION SHOWN REPRESENTS THE BEST DATA AVAILABLE
FROM EXISTING DOCUMENTATION AND FIELD EVIDENCE. ALL LOCATIONS
SHOULD BE CONSIDERED APPROXIMATE, AND A FIELD INVESTIGATION MUST BE
PERFORMED IN THE VICINITY OF ANY CONSTRUCTION ACTIVITIES. NOTE THAT
THESE PLANS MAY NOT SHOW ALL UTILITIES THAT ARE PRESENT AT THE SITE.

THE CONSTRUCTION MANAGER SHALL
COORDINATE POWER AND TELCO UTILITY
ROUTING TO THE PROPOSED EQUIPMENT
CABINET PRIOR TO CONSTRUCTION.

CROWN CASTLE FIBER LLC
EXISTING ELEVATIONS

DPS BATCH STAMP

NODE:
MNG-423 (802417-3164)

ENGINEER:

NB+C
TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, LLC.
6095 MARSHALEE DRIVE, SUITE 300
ELK RIDGE, MD 21075
(410) 712-7082

OWNER/DEVELOPER:

**CROWN
CASTLE**

CROWN CASTLE FIBER LLC
10980 GRANTCHESTER WAY, 4TH FLOOR
COLUMBIA, MD 21044

TITLE:

MNG-423

1006 LARCH AVENUE
TAKOMA PARK, MD 20912
JURISDICTION: MONTGOMERY COUNTY -
MDOT (SHA)

LATITUDE: 38.977576°
LONGITUDE: -76.991567°



PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS
WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED
PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND,
LICENSE NO. 55491, EXPIRATION DATE 01/08/2024

ENGINEER OF RECORD

TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

REVISIONS

REV	DATE	DESCRIPTION	BY
6	03-23-22	CLIENT COMMENTS	LAT
5	03-10-22	REVISED POLE NUMBER	SDR
4	10-07-21	ADDRESS REVISION	JED
3	03-25-21	CLIENT COMMENTS	SDR
2	02-01-21	EQUIPMENT REVISION	JED
1	02-28-19	CLIENT COMMENTS	MB
0	01-10-19	FINAL	MB

DRAWN BY:

AMM

CHECKED BY:

SDR

APPROVED BY:

SDR

PROJECT NUMBER: 100505

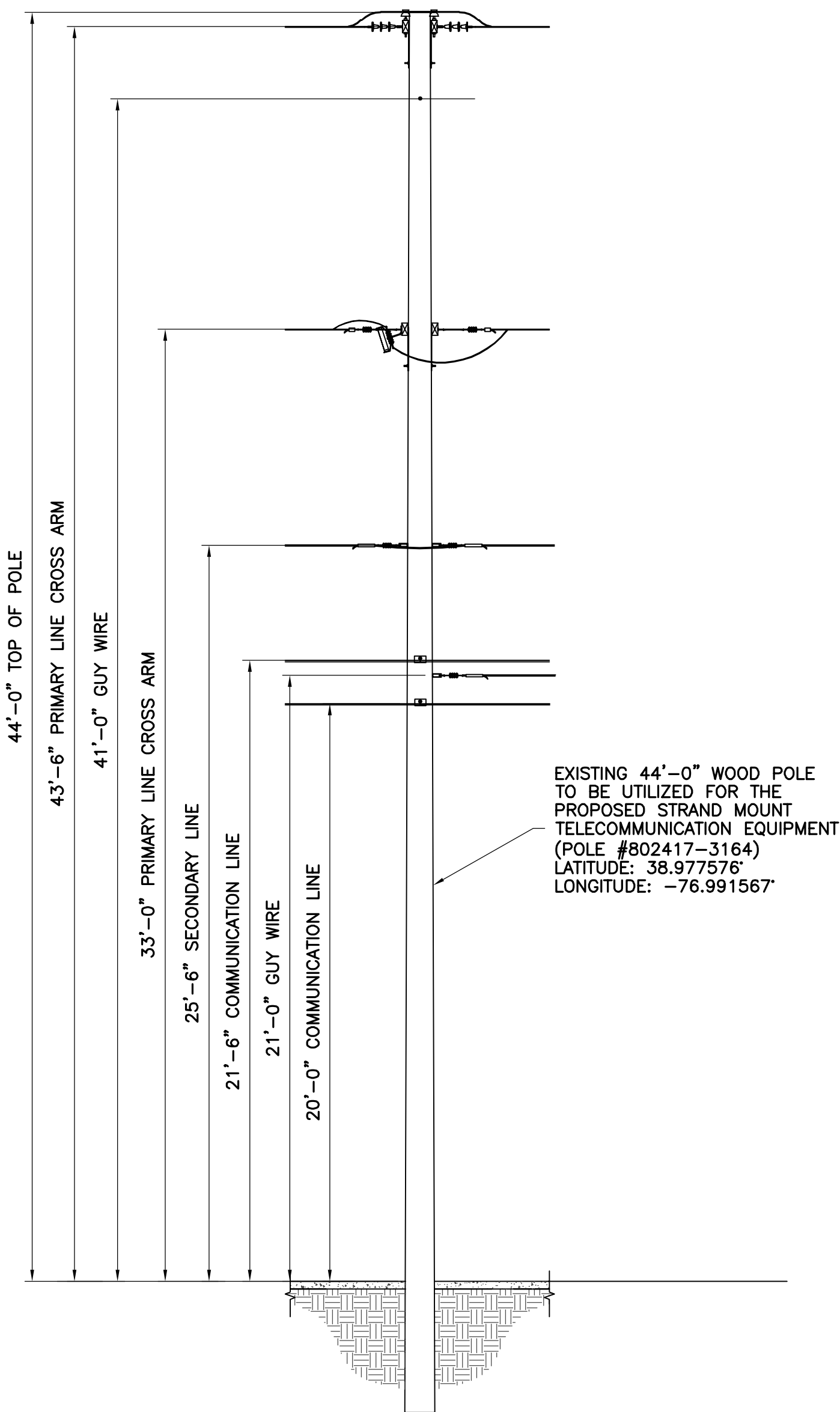
FILE NAME: STRAND MOUNT ENG. DWG

DATE DRAWN: 11-20-18

SCALE: AS SHOWN

SHEET:

C-3



2 POLE ELEVATION (LOOKING NORTH)

SCALE: 1/4" = 1' (22X34)
SCALE: 1/8" = 1' (11X17)

GRAPHIC SCALE



1/4 INCH = 1 FOOT (22X34)
1/8 INCH = 1 FOOT (11X17)

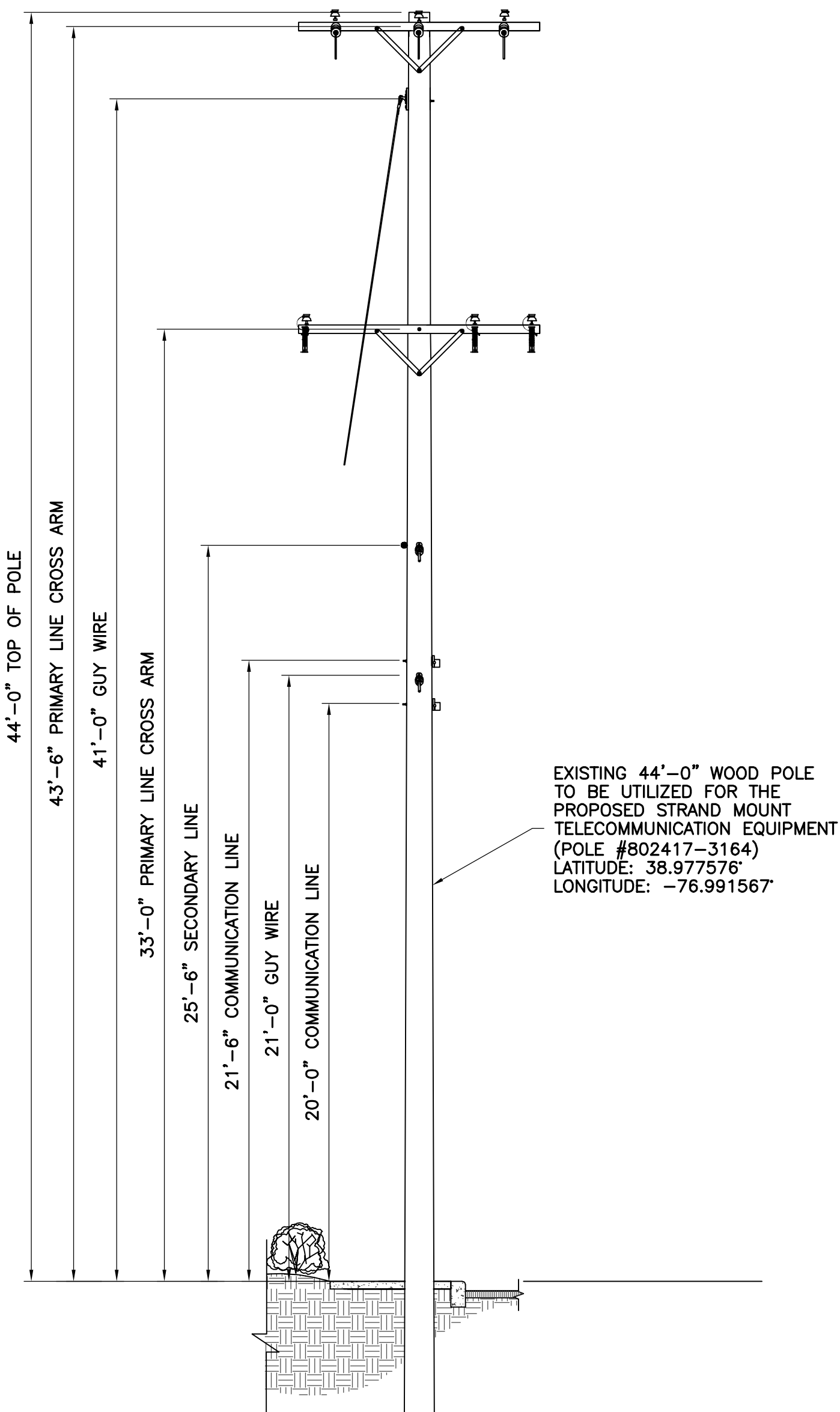


1 EXISTING CONDITIONS (LOOKING EAST)

NOT TO SCALE

MOUNTING NOTE:

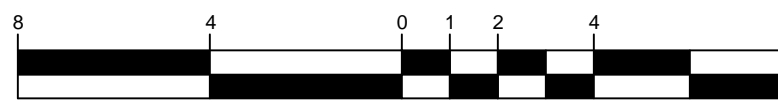
IF FIELD CONDITIONS DO NOT ALLOW FOR
INSTALLATION AS DIRECTED, CONTRACTOR IS TO
CONTACT ENGINEER FOR FURTHER INSTRUCTION.



3 POLE ELEVATION (LOOKING EAST)

SCALE: 1/4" = 1' (22X34)
SCALE: 1/8" = 1' (11X17)

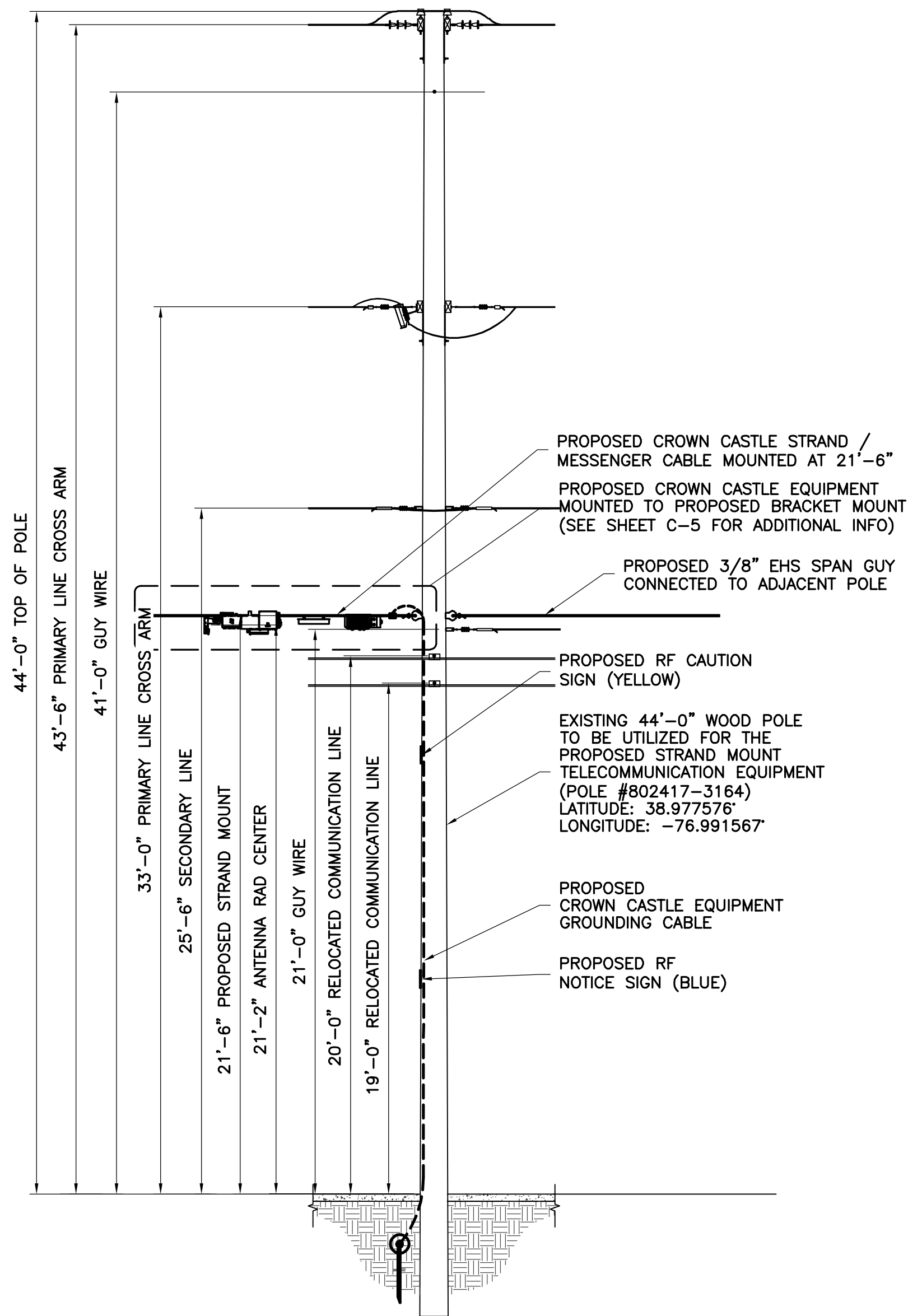
GRAPHIC SCALE



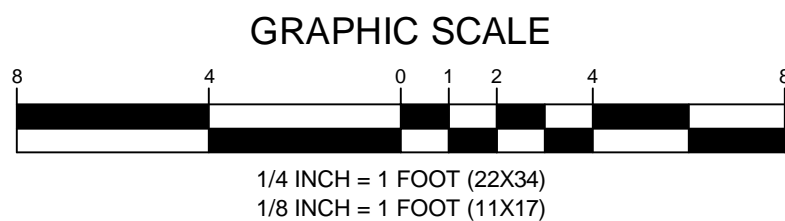
1/4 INCH = 1 FOOT (22X34)
1/8 INCH = 1 FOOT (11X17)

CROWN CASTLE FIBER LLC
PROPOSED ELEVATIONS

DPS BATCH STAMP



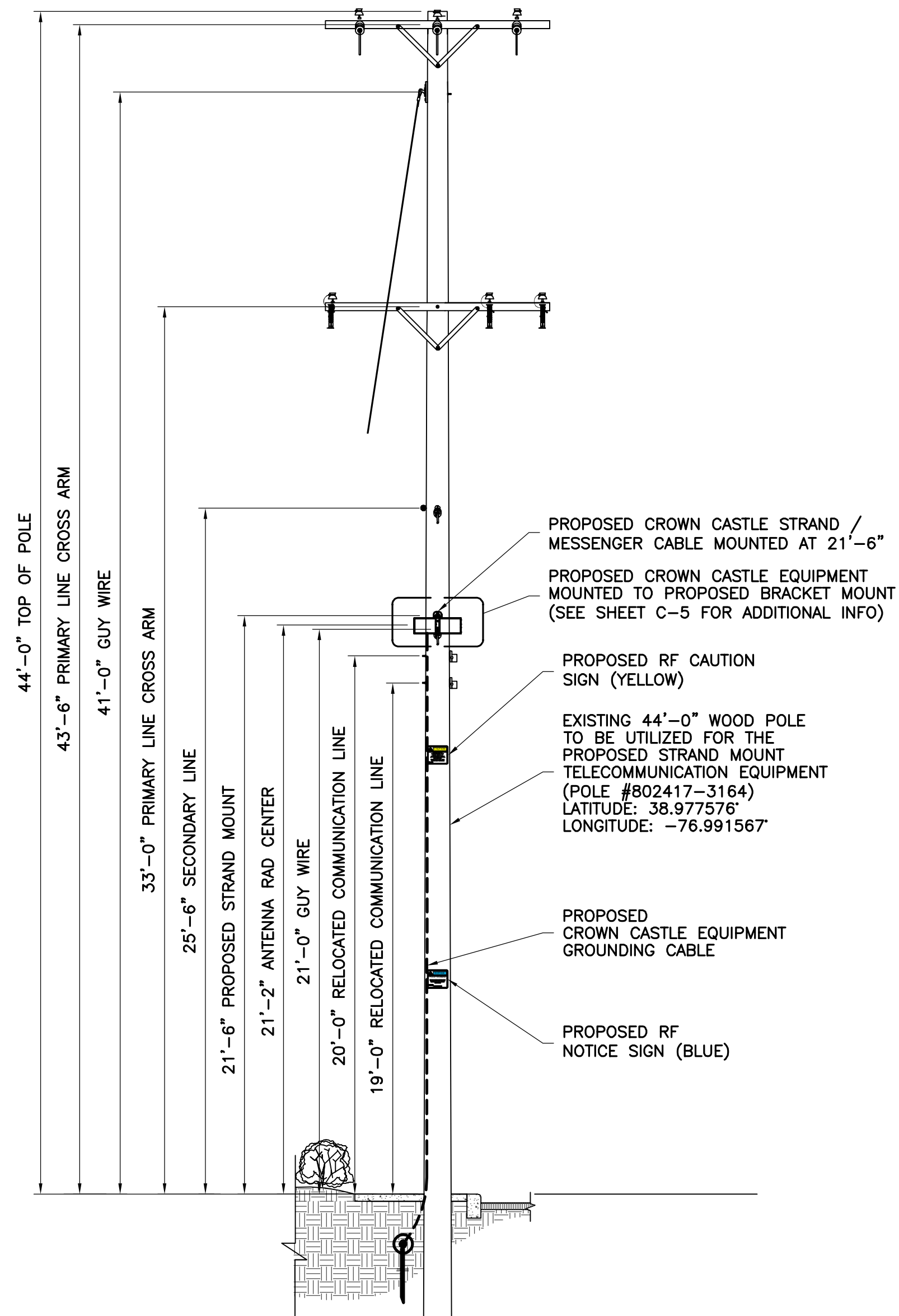
1 POLE ELEVATION (LOOKING NORTH)
C-4
SCALE: 1/4" = 1' (22X34)
SCALE: 1/8" = 1' (11X17)



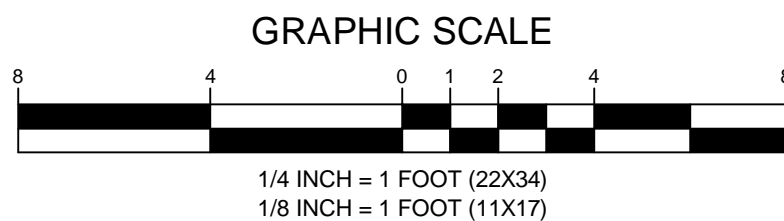
ANTENNA AZIMUTH SHALL BE SET TO 50°

MOUNTING NOTE:

IF FIELD CONDITIONS DO NOT ALLOW FOR INSTALLATION AS DIRECTED, CONTRACTOR IS TO CONTACT ENGINEER FOR FURTHER INSTRUCTION.



2 POLE ELEVATION (LOOKING EAST)
C-4
SCALE: 1/4" = 1' (22X34)
SCALE: 1/8" = 1' (11X17)



RF SIGNAGE SHOULD FOLLOW THE GUIDELINES BELOW. THESE GUIDELINES INCLUDE COLORS TO ALERT PEOPLE OF THE DANGER AND INFORMATION ABOUT SAFE DISTANCES. SIGNS SHOULD BE PLACED IN READABLE PLACES, IN AREAS WHERE A PERSON CAN READ THEM IN A SAFE LOCATION.

SEN. POP. OK	OKUP. POP.	COLOR	SIGN
YES	YES	GREEN	INFORMATION
NO	YES	BLUE	NOTICE
YES	NO	YELLOW	CAUTION
NO	NO	RED	WARNING

1. INCLUDE GENERAL POPULATION STAND OFF DISTANCE.
2. INCLUDE BOTH GENERAL POPULATION AND OCCUPATIONAL POPULATION STAND OFF DISTANCE.
3. INCLUDE SPHERICAL STAND OFF DISTANCES. ALL WARNING SIGNS MUST BE REVIEWED WITH CROWN CASTLE NATIONAL RF FOR APPROVAL.

FOR MORE INFORMATION CALL THE NUMBER BELOW:
Site ID # 888-632-0931

RF EXPOSURE AT THIS SITE DOES NOT EXCEED THE FCC PUBLIC EXPOSURE STANDARD AND NO SPECIAL PRECAUTIONS ARE REQUIRED FOR WORK NEAR ANTENNAS.

THE "INFORMATION" SIGN MUST BE POSTED ON OR NEAR THE ANTENNA NEAR THE BOTTOM OF THE POLE OR ON THE ANTENNA ANY TIME THERE IS A ZONE NEAR THE ANTENNA THAT EXCEEDS THE GENERAL POPULATION (GP) LIMIT. IF THERE ARE NO ZONES THAT EXCEED THE GP LIMIT, THE "NOTICE" SIGN SHALL NOT BE USED.

THE "NOTICE" SIGN MUST BE POSTED NEAR THE BOTTOM OF THE POLE OR ON THE ANTENNA ANY TIME THERE IS AN AREA THAT EXCEEDS THE GENERAL PUBLIC EXPOSURE LIMIT. THE "CAUTION" SIGN MUST BE POSTED ON THE ANTENNA ANY TIME THERE IS AN AREA THAT EXCEEDS THE GENERAL PUBLIC EXPOSURE LIMIT. THE "KEEP-BACK" DISTANCE FOR THE GP LIMIT MUST BE FILLED IN ON THE SIGN. THE DATE REPORT MUST CLEARLY STATE THAT THE GENERAL PUBLIC LIMIT KEEP BACK DISTANCE WHEN IT IDENTIFIES THIS SIGN FOR POSTING.

Keep Back & FT From This Antenna. FCC RF Public Exposure Limits May Be Exceeded Within This Distance. Call 888-632-0931 For Instructions. Qualified Wire Workers. FCC Occupational Limits May Be Exceeded Within This Distance.

Site ID # 888-632-0931

NODE:
MNG-423 (802417-3164)

ENGINEER:

NB+C
TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, LLC.
6095 MARSHALEE DRIVE, SUITE 300
ELK RIDGE, MD 21075
(410) 712-7082

OWNER/DEVELOPER:

CROWN CASTLE

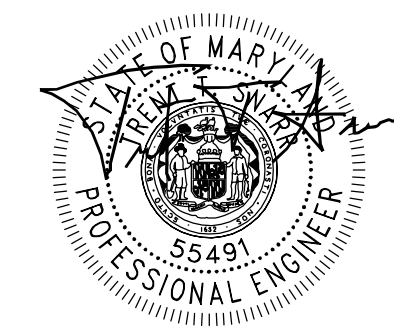
CROWN CASTLE FIBER LLC
10980 GRANTCHESTER WAY, 4TH FLOOR
COLUMBIA, MD 21044

TITLE:

MNG-423

1006 LARCH AVENUE
TAKOMA PARK, MD 20912
JURISDICTION: MONTGOMERY COUNTY -
MDOT (SHA)

LATITUDE: 38.977576°
LONGITUDE: -76.991567°



PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 55491, EXPIRATION DATE 01/08/2024.

ENGINEER OF RECORD

TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

REVISIONS

REV	DATE	DESCRIPTION	BY
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3	03-25-21	CLIENT COMMENTS	SDR
2	02-01-21	EQUIPMENT REVISION	JED
1	02-28-19	CLIENT COMMENTS	MB
0	01-10-19	FINAL	MB

DRAWN BY: CHECKED BY: APPROVED BY:

AMM

SDR

SDR

PROJECT NUMBER: 100505

FILE NAME: STRAND MOUNT ENG. DWG

DATE DRAWN: 11-20-18

SCALE: AS SHOWN

SHEET:

C-4

CROWN CASTLE FIBER LLC
ENLARGED ELEVATION

NODE:
MNG-423 (802417-3164)

ENGINEER:



OWNER/DEVELOPER:



TITLE:

MNG-423

1006 LARCH AVENUE
TAKOMA PARK, MD 20912
JURISDICTION: MONTGOMERY COUNTY -
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ENGINEER OF RECORD

TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

REVISIONS

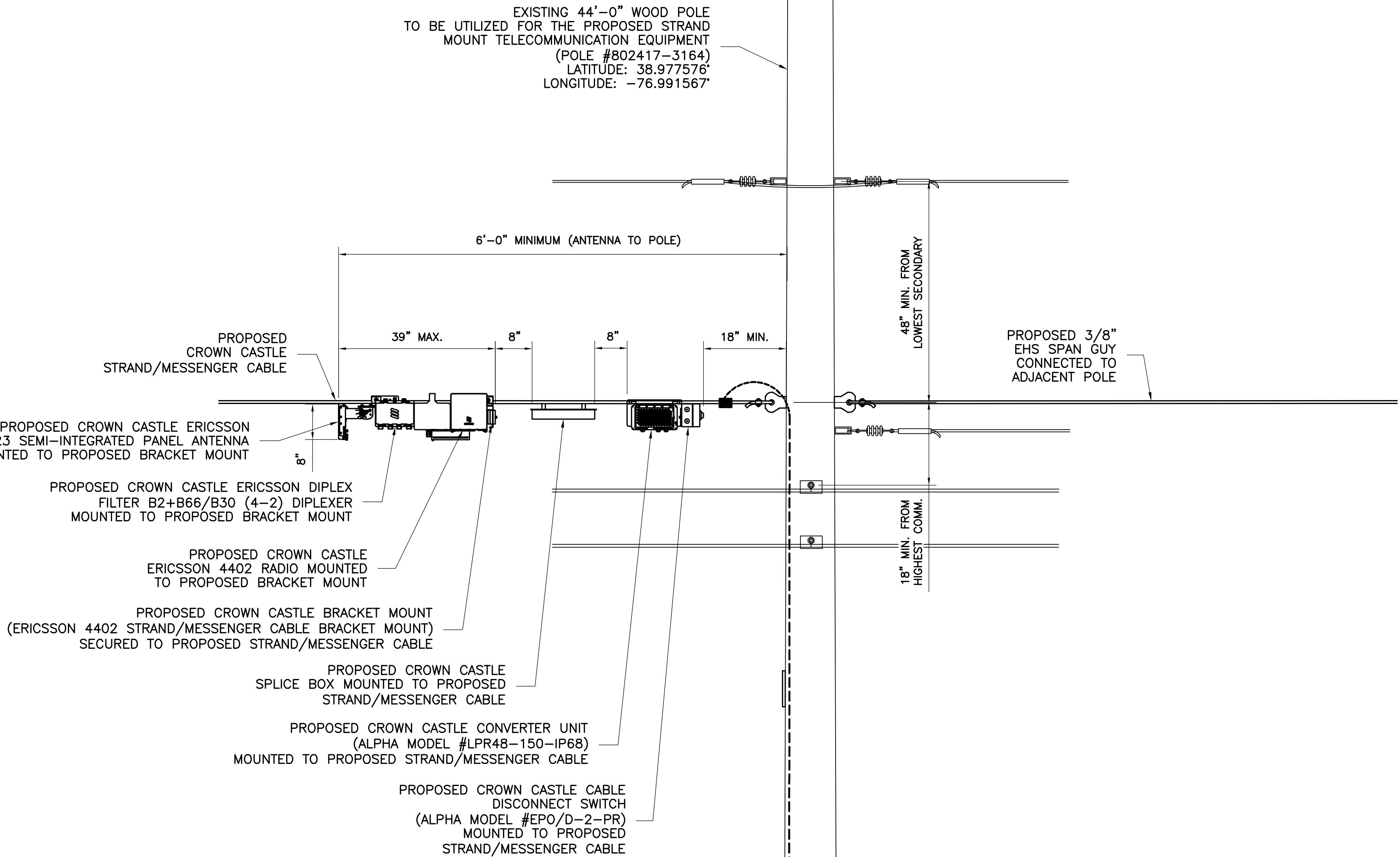
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2	02-01-21	EQUIPMENT REVISION	JED
1	02-28-19	CLIENT COMMENTS	MB
0	01-10-19	FINAL	MB

DRAWN BY:	CHECKED BY:	APPROVED BY:
AMM	SDR	SDR

PROJECT NUMBER:	100505
FILE NAME:	STRAND MOUNT ENG. DWG
DATE DRAWN:	11-20-18
SCALE:	AS SHOWN

SHEET:

C-5



MOUNTING NOTE:

IF FIELD CONDITIONS DO NOT ALLOW FOR
INSTALLATION AS DIRECTED, CONTRACTOR IS TO
CONTACT ENGINEER FOR FURTHER INSTRUCTION.

1 CARRIER ELEVATION
C-5 NTS

ENGINEER:



TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, LLC.
6095 MARSHALEE DRIVE, SUITE 300
ELK RIDGE, MD 21075
(410) 712-7082

OWNER/DEVELOPER:



CROWN CASTLE

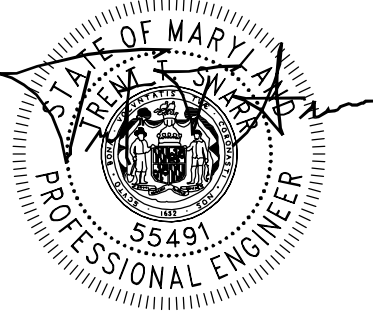
CROWN CASTLE FIBER LLC
10980 GRANTCHESTER WAY, 4TH FLOOR
COLUMBIA, MD 21044

TITLE:

MNG-423

1006 LARCH AVENUE
TAKOMA PARK, MD 20912
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LICENSE #55491

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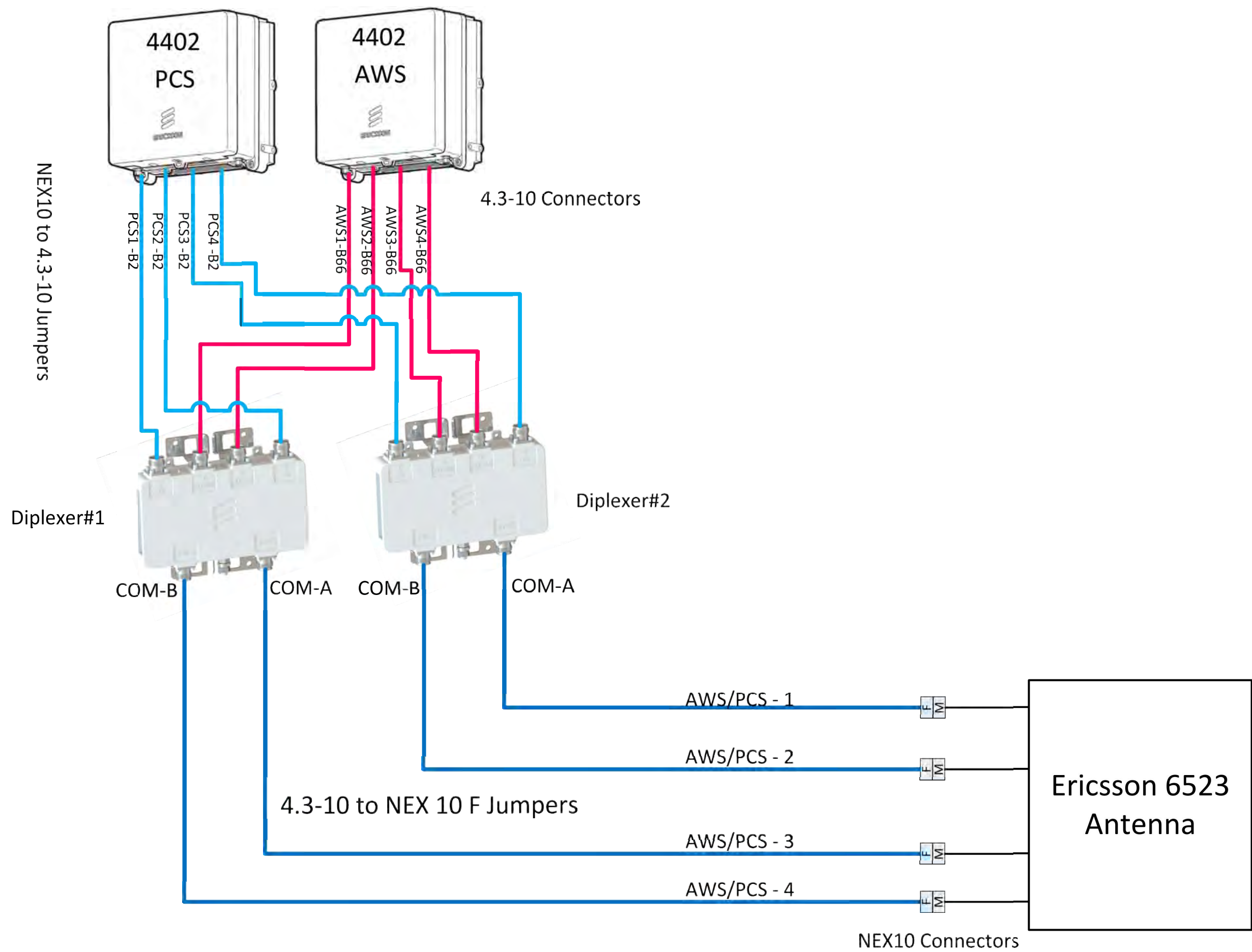
DRAWN BY:	CHECKED BY:	APPROVED BY:
AMM	SDR	SDR

PROJECT NUMBER:	100505
FILE NAME:	STRAND MOUNT ENG. DWG
DATE DRAWN:	11-20-18
SCALE:	AS SHOWN

SHEET:

D-1

DPS BATCH STAMP



ENGINEER:

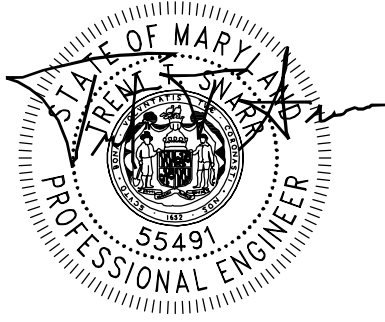


OWNER/DEVELOPER:



TITLE:

MNG-423
1006 LARCH AVENUE
TAKOMA PARK, MD 20912
JURISDICTION: MONTGOMERY COUNTY -
MDOT (SHA)
LATITUDE: 38.977576°
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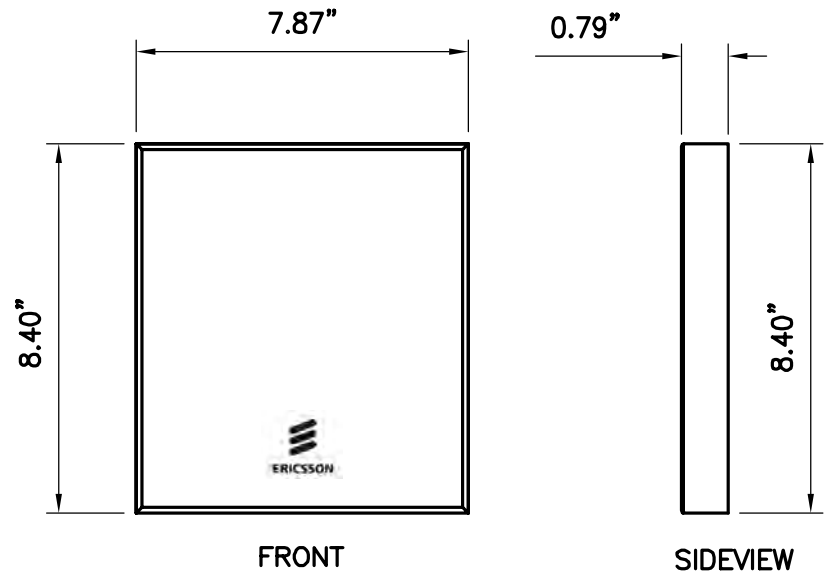
DRAWN BY:	CHECKED BY:	APPROVED BY:
AMM	SDR	SDR

PROJECT NUMBER:	100505
FILE NAME:	STRAND MOUNT ENG. DWG
DATE DRAWN:	11-20-18
SCALE:	AS SHOWN

SHEET:

D-2

DPS BATCH STAMP

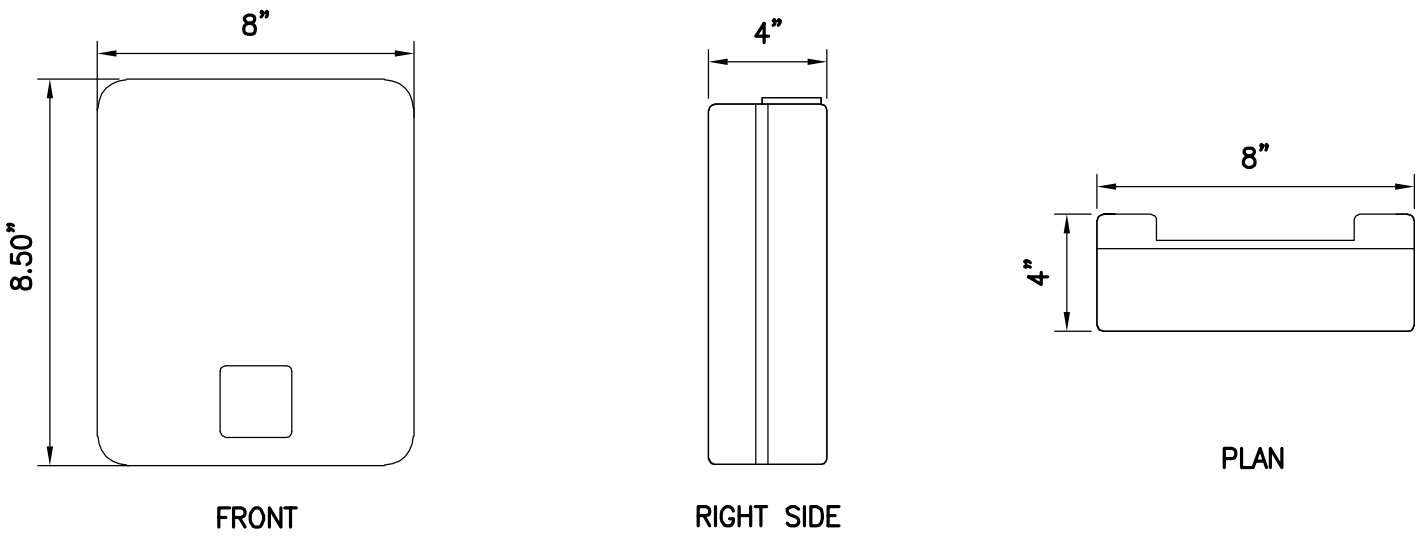


NUMBER OF REQUIRED ANTENNAS
1

ERICSSON 6523 ANTENNA	
WEIGHT	0.88 LBS.
DIMENSIONS (HxWxD)	8.40"x7.87"x0.79"

ANTENNA AZIMUTH SHALL BE SET TO 50°

1 ANTENNA DETAIL
D-2 NTS



SIZE AND WEIGHT TABLE, INCLUDING MOUNTING BRACKET AND ESTHETIC FRONT COVER

RRU	LENGTH	WIDTH	DEPTH	WEIGHT W/O BRACKET
RADIO 4402	8.5"	8"	4"	~11.2 LBS.
NUMBER OF REQUIRED RADIOS				
2				

NOTES:

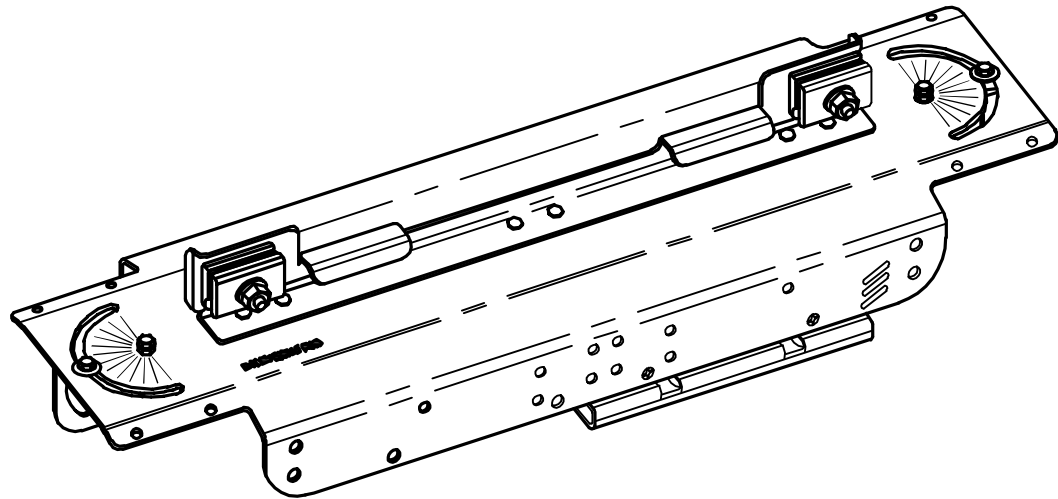
- DO NOT PAINT THE RRU. RRU SOLAR SHIELD CAN BE PAINTED PER MANUFACTURER'S METHOD OF PROCEDURE.

2 REMOTE EQUIPMENT HEAD DETAIL
D-2 NTS

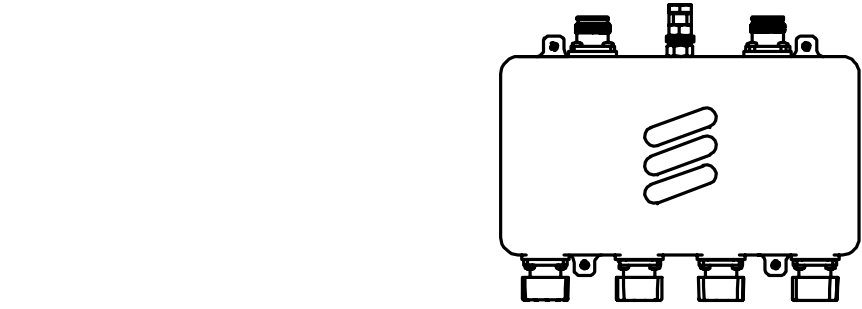
BILL OF MATERIALS

ITEM	PART NUMBER	DESCRIPTION
1	NTB 101 0450	Material Kit
	SXK 125 3187/5	KIT/SMALL CELL STRAND MOUNT, 3x 2203
	TSR 899 277/31	4.3-10(M) PP-4.3-10(F), 24INCH
	TSR 899 277/32	R/A4.3-109(M)PP TO 4.3-10(M)PP, 30INCH
	KRF 102 409/3	DIPLEX B2+B66/B30, 4.3-10
	130C-1X15FT	LINERLESS RUBBER TAPE 3/4"x15'
	1400-3/4x60FT	VINYL TAPE 3/4"x60FT
2		Panel Antenna
3		Equipment Kit

MECHANICAL PARTS (SXK 125 3187/6)



EQUIPMENT BRACKET ASSEMBLY (TOP VIEW)



DIPLEXER	LENGTH	WIDTH	DEPTH	WEIGHT
DIPLEX B2+B66/B30 (4-2)	8.27"	4.57"	1.71"	5.07 LBS.
NUMBER OF REQUIRED DIPLEXERS				
2				

3 DIPLEXER DETAIL
D-2 NTS

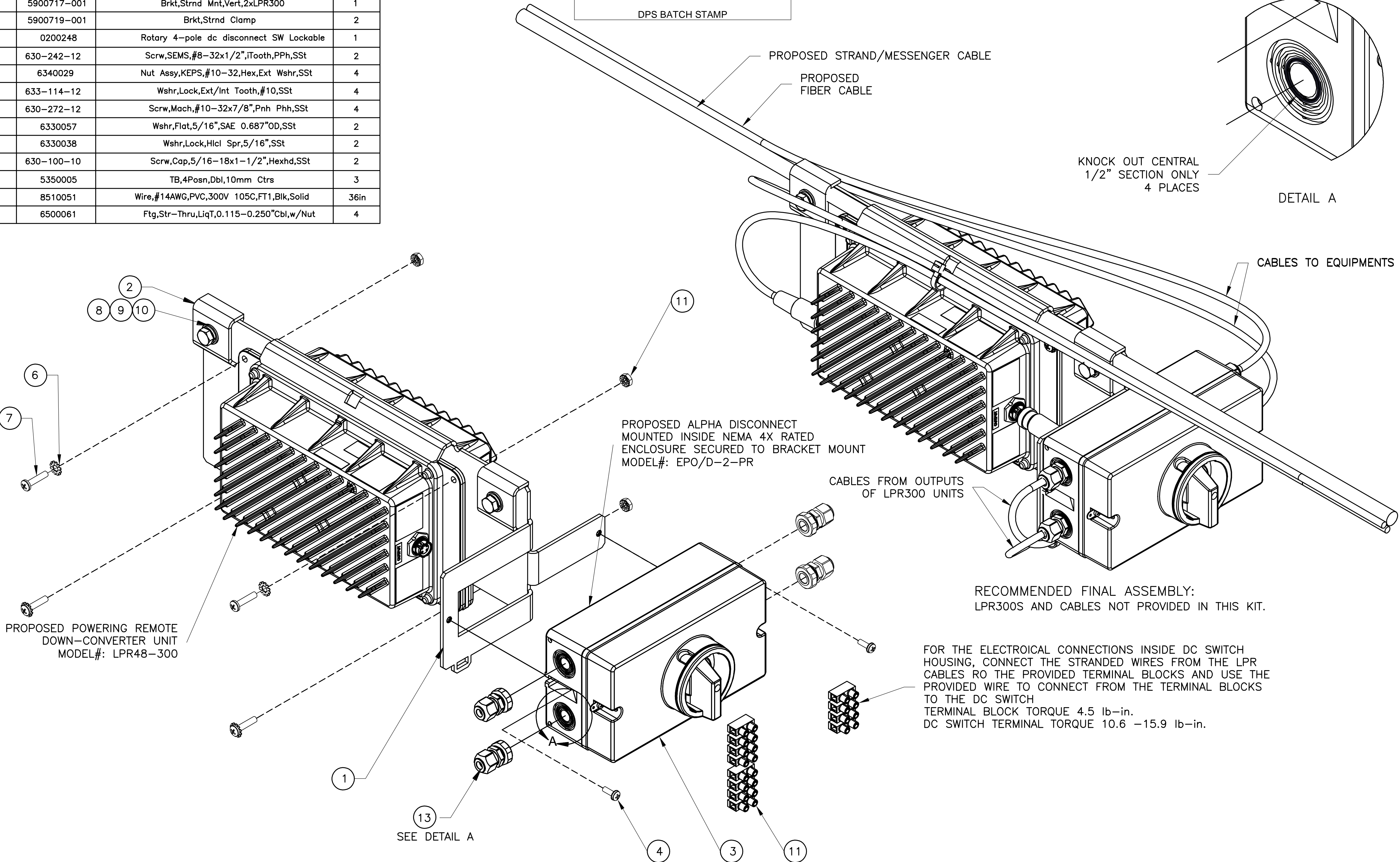
4 DUAL ANTENNA STRAND BRACKET MOUNT DETAIL
D-2 NTS

CROWN CASTLE FIBER LLC
POWER CONVERTER & DISCONNECT ASSEMBLY DETAILS

NODE:
MNG-423 (802417-3164)

KIT CONTENTS

ITEM	PART NUMBER	Description	QTY.
1	5900717-001	Brkt,Strnd Mnt,Vert,2xLPR300	1
2	5900719-001	Brkt,Strnd Clamp	2
3	0200248	Rotary 4-pole dc disconnect SW Lockable	1
4	630-242-12	Scrw,SEMS,#8-32x1/2",iTooth,PPh,SSt	2
5	6340029	Nut Assy,KEPS,#10-32,Hex,Ext Wshr,SSt	4
6	633-114-12	Wshr,Lock,Ext/Int Tooth,#10,SSt	4
7	630-272-12	Scrw,Mach,#10-32x7/8",Pnh Phh,SSt	4
8	6330057	Wshr,Flat,5/16",SAE 0.687"OD,SSt	2
9	6330038	Wshr,Lock,Hlcl Spr,5/16",SSt	2
10	630-100-10	Scrw,Cap,5/16-18x1-1/2",Hexhd,SSt	2
11	5350005	TB,4Posn,Dbl,10mm Ctrs	3
12	8510051	Wire,#14AWG,PVC,300V 105C,FT1,Blk,Solid	36in
13	6500061	Ftg,Str-Thru,LiqT,0.115-0.250"Cbl,w/Nut	4



1
D-3 NTS
POWER CONVERTER & DISCONNECT ASSEMBLY DETAILS

ENGINEER:



OWNER/DEVELOPER:



TITLE:

MNG-423

**1006 LARCH AVENUE
TAKOMA PARK, MD 20912
JURISDICTION: MONTGOMERY COUNTY -
MDOT (SHA)**

**LATITUDE: 38.977576°
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ENGINEER OF RECORD

TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

REVISIONS

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2	02-01-21	EQUIPMENT REVISION	JED
1	02-28-19	CLIENT COMMENTS	MB
0	01-10-19	FINAL	MB

DRAWN BY:

AMM

CHECKED BY:

SDR

APPROVED BY:

SDR

PROJECT NUMBER:

100505

FILE NAME:

STRAND MOUNT ENG. DWG

DATE DRAWN:

11-20-18

SCALE:

AS SHOWN

SHEET:

D-3

ENGINEER:



TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, LLC.
6095 MARSHALEE DRIVE, SUITE 300
ELK RIDGE, MD 21075
(410) 712-7092

OWNER/DEVELOPER:



CROWN CASTLE


CROWN CASTLE FIBER LLC
10980 GRANTCHESTER WAY, 4TH FLOOR
COLUMBIA, MD 21044

TITLE:

MNG-423

1006 LARCH AVENUE
TAKOMA PARK, MD 20912
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ENGINEER OF RECORD

TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

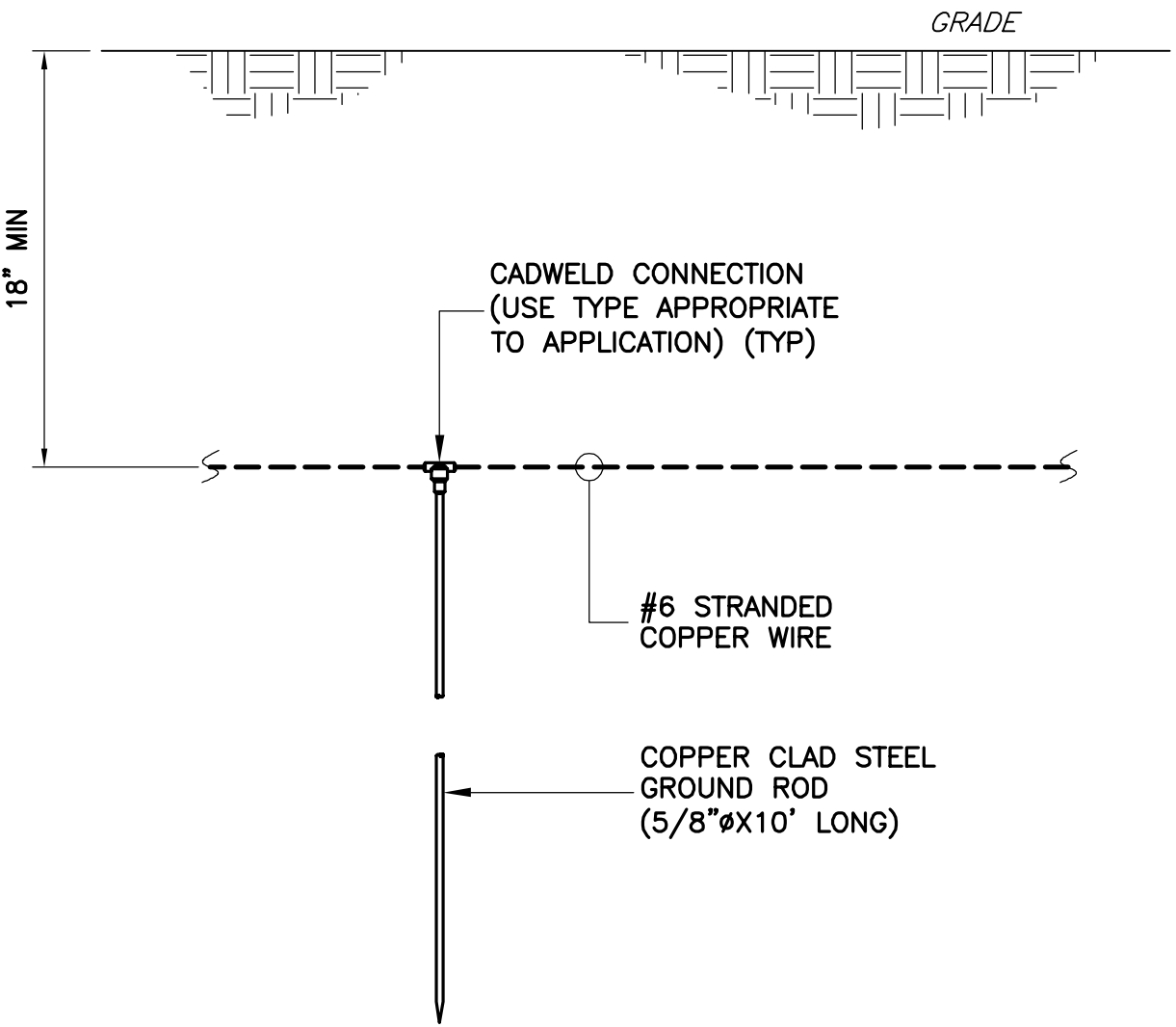
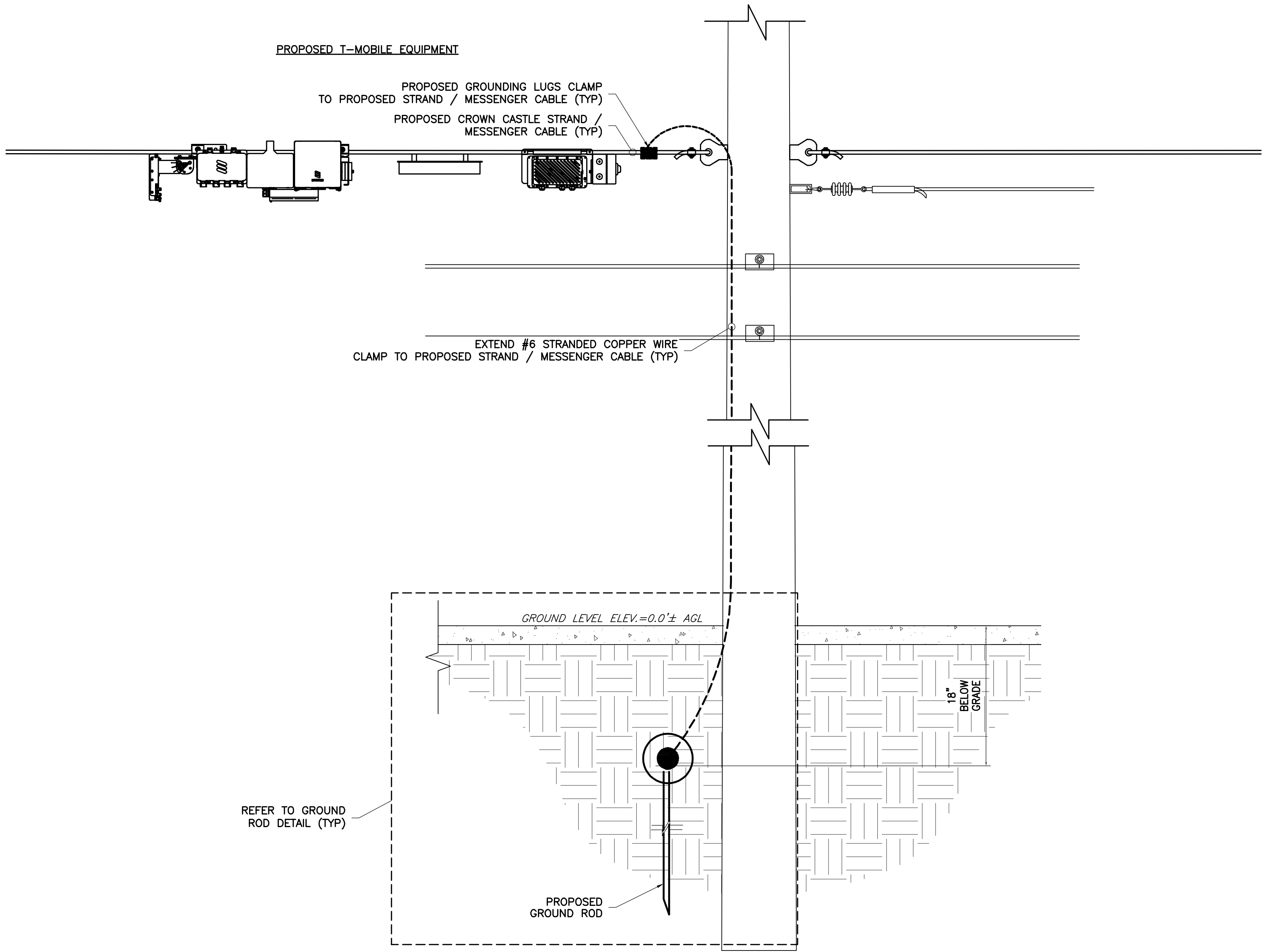
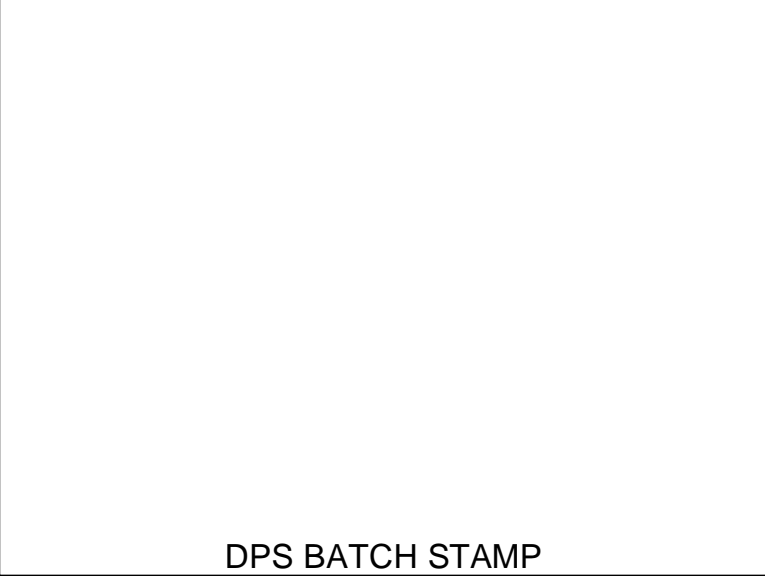
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DRAWN BY:	CHECKED BY:	APPROVED BY:
AMM	SDR	SDR

PROJECT NUMBER:	100505
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DATE DRAWN:	11-20-18
SCALE:	AS SHOWN

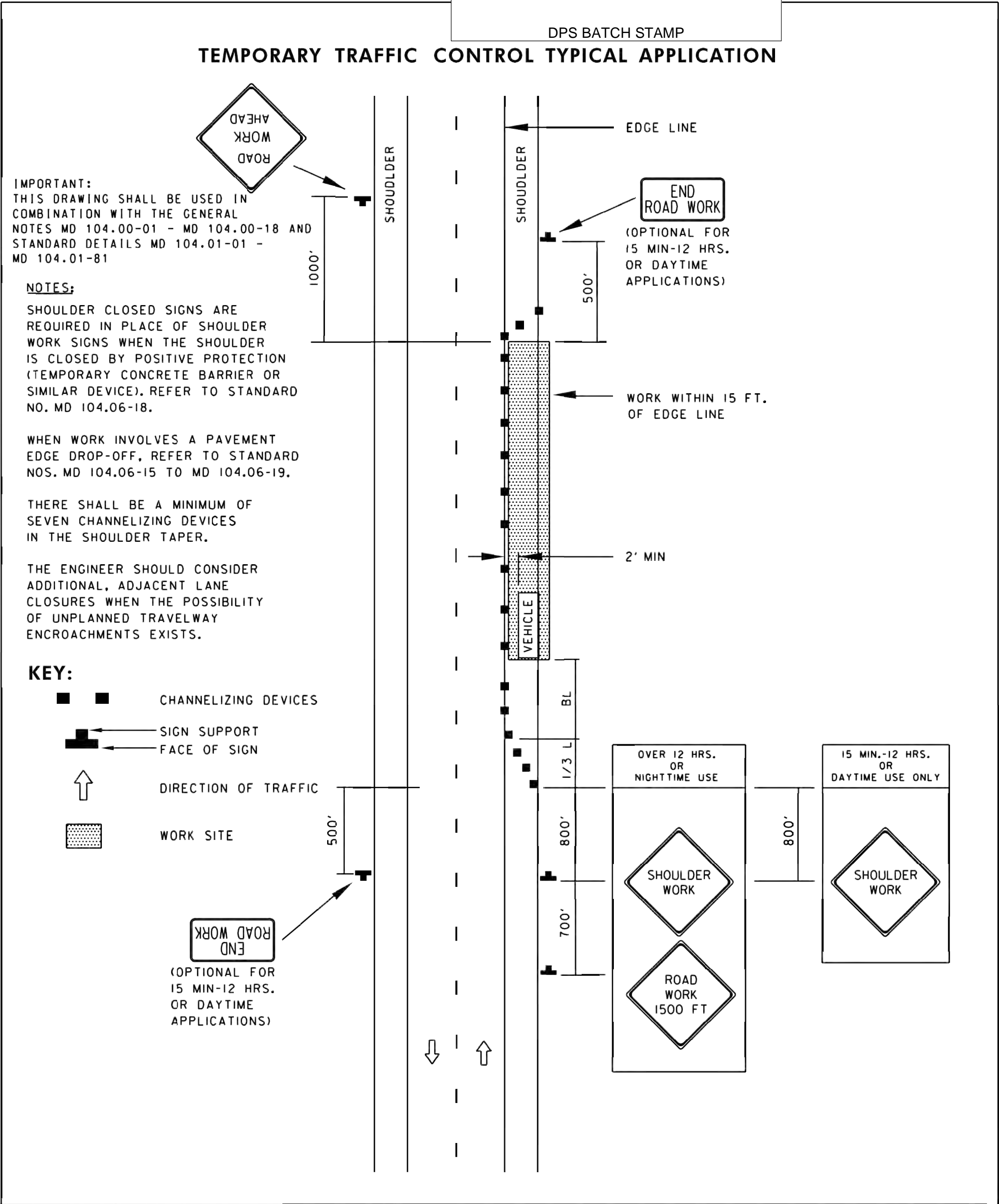
SHEET:

G-1



2
G-1
NTS
TYPICAL GROUND ROD DETAIL

1
G-1
NOT TO SCALE
GROUNDING RISER DIAGRAM



STANDARD NOTES:

- PARKING IS TO BE RESTRICTED 72 HOURS IN ADVANCE UNLESS THERE IS AN EMERGENCY.
- SIGNS SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ALL WORK AND REMOVED IMMEDIATELY AFTER COMPLETION OF ACTIVITIES.
- IF A SIGN IS NO LONGER REQUIRED IT WILL BE REMOVED.
- SIGNS SHALL BE MOUNTED ON SPRING LOADED STANDS.
- THE SPACING OF TRAFFIC CONES IS TO BE 10 FT.
- IN CASE OF ONE-WAY ROADWAY OMIT OPPOSITE SIGNAGE.
- * HAVE SIGNS ON BOTH SIDES OF ROADWAY APPROACHING WORK AHEAD.
- * IF A BUS ROUTE TRAVEL LANE MUST BE MINIMUM 11 FT. IN WIDTH.

KEEP AT LEAST 6' OF CLEARANCE IN SIDEWALK AND CROSSWALK FOR PEDESTRIANS.
FLAGGERS MUST HAVE ELECTRONIC COMMUNICATION.
STOP/SLOW SIGN SHOULD BE MOUNTED ON 5 FT. POLE.
MUST HAVE FIRE MARSHAL APPROVAL PRIOR TO ANY ROAD CLOSURES.

WORK DURATION	10 DAY(S)
SPEED LIMIT	25 MPH

ENGINEER:

NB+C
TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, LLC.
6095 MARSHALEE DRIVE, SUITE 300
ELK RIDGE, MD 21075
(410) 712-7082

OWNER/DEVELOPER:

CROWN CASTLE

CROWN CASTLE FIBER LLC
10980 GRANTCHESTER WAY, 4TH FLOOR
COLUMBIA, MD 21044

TITLE:

MNG-423

1006 LARCH AVENUE
TAKOMA PARK, MD 20912
JURISDICTION: MONTGOMERY COUNTY - MDOT (SHA)

LATITUDE: 38.977576°
LONGITUDE: -76.991567°

PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 55491, EXPIRATION DATE 01/08/2024

ENGINEER OF RECORD

TRENT TRAVIS SNARR, P.E.
MARYLAND PROFESSIONAL ENGINEER
LICENSE #55491

REVISIONS			
REV	DATE	DESCRIPTION	BY
6	03-23-22	CLIENT COMMENTS	LAT
5	03-10-22	REVISED POLE NUMBER	SDR
4	10-07-21	ADDRESS REVISION	JED
3	03-25-21	CLIENT COMMENTS	SDR
2	02-01-21	EQUIPMENT REVISION	JED
1	02-28-19	CLIENT COMMENTS	MB
0	01-10-19	FINAL	MB

DRAWN BY:	CHECKED BY:	APPROVED BY:
AMM	SDR	SDR

PROJECT NUMBER:	100505
FILE NAME:	STRAND MOUNT ENG. DWG
DATE DRAWN:	11-20-18
SCALE:	AS SHOWN

SHEET:

TCP-1

SPECIFICATION
104

CATEGORY CODE ITEMS

APPROVED
DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

SHA
State Highway Administration

APPROVAL • SHA	APPROVAL • FEDERAL
REVISIONS	HIGHWAY ADMINISTRATION
APPROVAL 8-20-03	APPROVAL 9-23-03
REVISED 8-11-10	REVISED 10-5-10
REVISED	REVISED
REVISED	REVISED

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

SHOULDER WORK/2-LANE, 2-WAY
EQL/LESS THAN 40 MPH

STANDARD NO. MD 104.02-02