# ENGINEERING

2015 INTERNATIONAL BUILDING CODE NEW YORK EDITION 2014 NATIONAL ELECTRIC CODE TIA/EIA-222-G OR LATEST EDITION

# **GENERAL NOTES**

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE; NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

# **PROJECT DESCRIPTION**

COLLOCATION OF EXISTING TELECOMMUNICATIONS FACILITY INCLUDING INSTALLATION OF (12) NEW ANTENNAS (4 PER SECTOR), (12) RADIO HEAD UNITS (4 PER SECTOR), ASSOCIATED SURGE SUPPRESSION AND APPURTENANCES ON PROPOSED ANTENNA PLATFORM ON EXISTING 140' MONOPOLE, AS WELL AS THE INSTALLATION OF A NATURAL GAS GENERATOR AND NEW EQUIPMENT IN NEW EQUIPMENT SHELTER WITHIN EXISTING FENCED COMPOUND.

# SITE INFORMATION

PROPERTY OWNER:	CORTLANDT TOWN CENTER, LLC 3121 E. MAIN STREET MOHEGAN LAKE, NY 10547
SITE ADDRESS:	3105 E. MAIN STREET MOHEGAN LAKE, NY 10547
APPLICANT:	NEW CINGULAR WIRELESS PCS, LLC (AT&T) ONE AT&T WAY BEDMINSTER, NJ 07921
TOWER OWNER:	CROWN CASTLE
TOWER OWNER SITE ID:	BU# 822188
JURISDICTION:	TOWN OF CORTLANDT
LATITUDE (NAD 83):	41°18'28.53"N
LONGITUDE (NAD 83):	73°52'15.8124"W
ZONING:	CD (DESIGNED COMMERCIAL)
SECTION:	24.10
BLOCK:	1
LOTS:	1 & 1.2

# PROJECT CONTACTS

A/E:

RF:

CONSTRUCTION:

SITE ACQUISITION:

COM-EX ENGINEERING OF NY, PLLC 862-209-4300 DANIEL PANESSO BLACK & VEATCH PHONE: 913-458-1821 ROBIN NEGRON BLACK & VEATCH 913-458-1808 RAY HARRIS BLACK & VEATCH 913-458-1847

# RF DATA NOTE

DESIGN BASED ON RF DATA SHEET, VERSION 01, DATED 03/06/18 & UPDATED ON 03/12/18. CONTRACTOR SHALL OBTAIN LATEST RF DATA SHEET AND CONFIRM SAME WITH BLACK & VEATCH RF AND CONSTRUCTION MANAGER PRIOR TO START OF CONSTRUCTION.

IF USING 11"x17" PLOT, DRAWINGS WILL BE HALF SCALE

# CONTACT INFORMATION

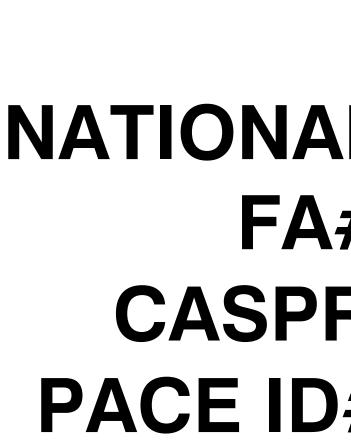
ENGINEER:

COM-EX ENGINEERING OF NY, PLLC 309 BAILEY ROAD PURLING, NY 12470 NICHOLAS D. BARILE

PHONE:

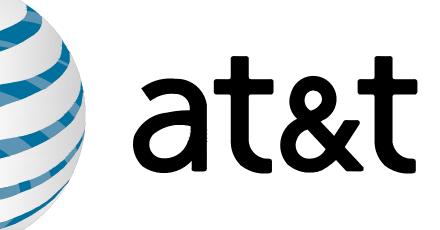
CONTACT:

862-209-4300





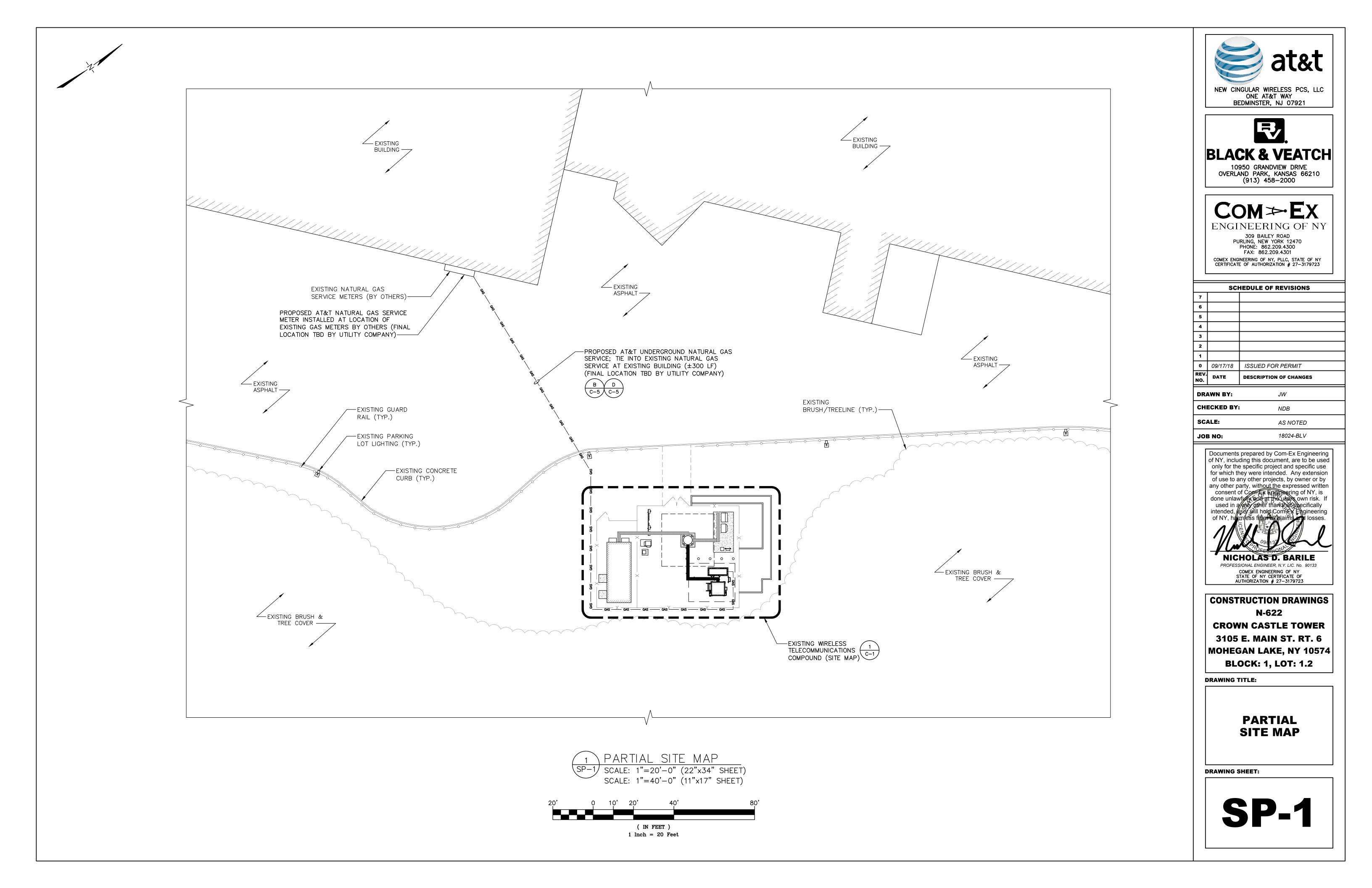
# DIRECTIONS FROM NEAREST AT&T OFFICE: LOCUST AVE. 15. TURN RIGHT ONTO US-6 E. 16. TURN RIGHT ONTO CANAL, FOLLOW TO SITE.



# NSB NATIONAL SITE-ID #: N-622 FA#: 10594698 CASPR#: 2191642168 **PACE ID#: MRNYC006056**

CONTRACTOR T		N. ALL DOCUMENTS ARE		BLAC 10 OVERL ENGI PU COMEX ENG	be b
AT&T RF EN	GINEER:	DATE:		SC	HEDULE OF REVISIONS
B&V CONSTRU	JCTION:	DATE:	7 6		
			5		
B&V SITE AC	CQ:	DATE:	4		
			2		
			0	09/17/18	ISSUED FOR PERMIT
	DRAWING INDEX		REV. NO.	DATE	DESCRIPTION OF CHANGES
SHEET NO:	SHEET TITLE		DR	AWN BY:	JW
			СН	ECKED BY	• NDB
T-1 SP-1	TITLE SHEET PARTIAL SITE MAP		SC	ALE:	AS NOTED
C-1	COMPOUND MAP & GENERAL NOTES		JO	B NO:	18024-BLV
C-2	FINAL ELEVATION				prepared by Com-Ex Engineering
C-3 C-4	ANTENNA LAYOUTS EQUIPMENT DETAILS			only for th	ding this document, are to be used e specific project and specific use
C-5	EQUIPMENT DETAILS			of use to a	hey were intended. Any extension any other projects, by owner or by
S-1	SHELTER DETAILS			any other p	of Com-Ex Engineering of NY, is
S-2 RF-1	SHELTER FOUNDATION DETAILS			used in a	with other projects, by owner of by party, without the expressed written of Come at the users own risk. If way other than the users own risk. If way other that the users own risk. If way other the users own risk. If way other that the users own risk. If way ot
E-1	ELECTRICAL NOTES & DETAILS			of NY, ha	mess from the comercial send losses.
E-2	ELECTRICAL DC ONE-LINE DIAGRAMS			$\Lambda$	
G-1 G-1.1	GROUNDING DETAILS GROUNDING DETAILS				
G-1.2	EQUIPMENT GROUNDING PLAN				HOLAS D. BARILE
GN-1	GENERAL CONSTRUCTION NOTES				SIONAL ENGINEER, N.Y. LIC. No. 90133 COMEX ENGINEERING OF NY STATE OF NY CERTIFICATE OF
					UTHORIZATION # 27-3179723
				CONST	RUCTION DRAWINGS
					N-622
				CROW	IN CASTLE TOWER
				3105	E. MAIN ST. RT. 6
				MOHE	GAN LAKE, NY 10574
				BL	OCK: 1, LOT: 1.2
				DRAWING	
				T	ITLE SHEET
			ן   ן		
	DO NOT SCALE DRAWING	5			
	ACTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSION				
	E & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITI BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIE			DRAWING	SHEET:
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			1 1 1		
	811 or (800) 962-7962 WWW.DIGSAFELYNEWYORK.C	ОМ			

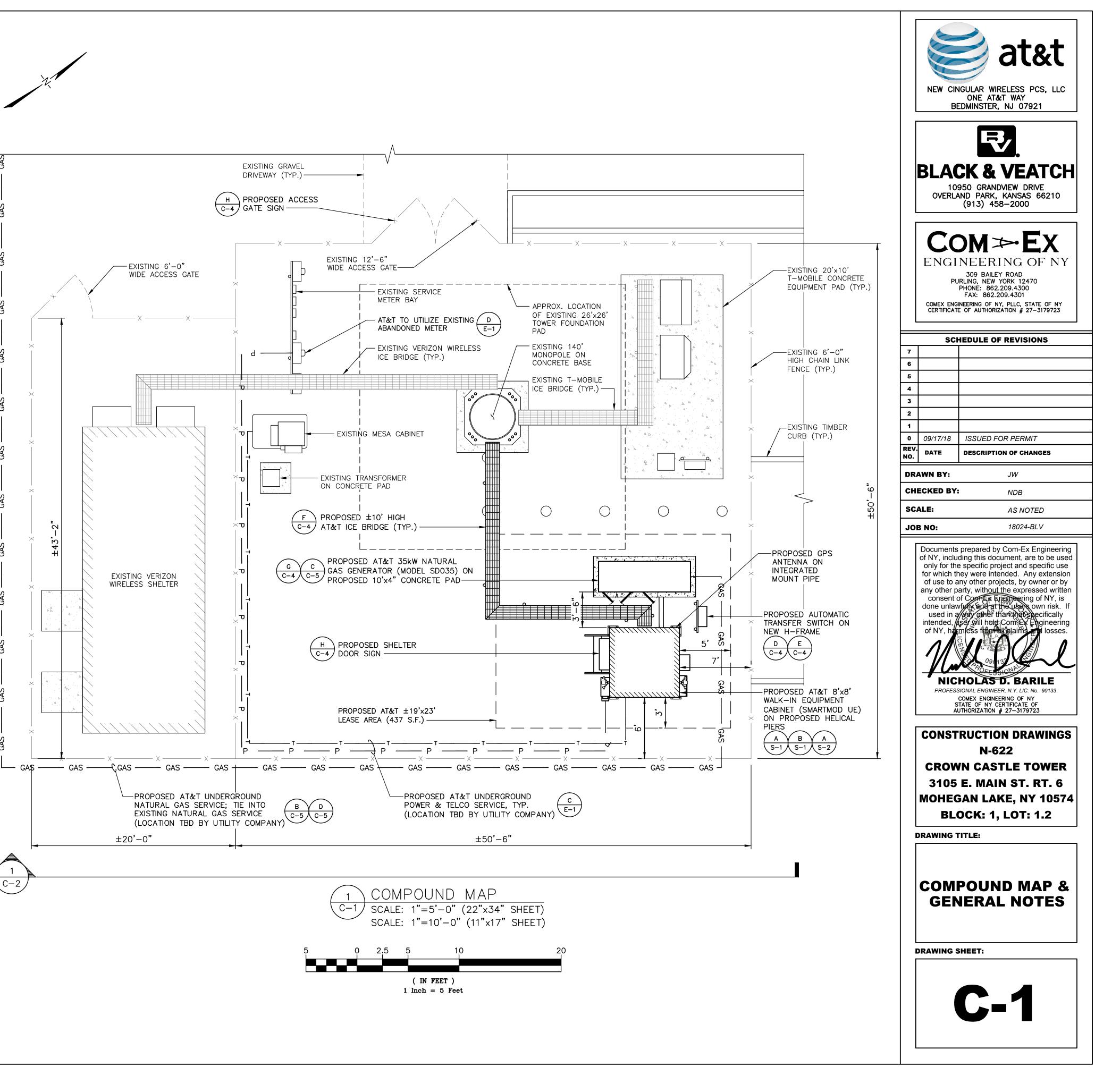
. HEAD SOUTH 2. SLIGHT RIGHT ONTO AT&T WAY 3. MERGE ONTO US-202 S/US-206 S. 4. TURN LEFT ONTO SCHLEY MOUNTAIN RD. 5. USE LEFT LANE TO TAKE I-287 N. 6. USE THE RIGHT LANE TO CONTINUE ON I-87 S. 7. TAKE EXIT 8A FOR NY-119/SAW MILL PKWY N TOWARD ELMSFORD. 8. KEEP LEFT, FOLLOW SIGNS FOR KATONAH, SAW MILL PKWY N/SAW MILL RIVER PKWY N. 9. USE THE RIGHT 2 LANES TO TAKE RAMP TO TACONIC PKWY/ALBANY. 10. TAKE THE BEAR MTN PKWY EXIT TOWARD US-202/NY-35/PEEKSKIL. 11. CONTINUE ONTO BEAR MOUNTAIN STATE PKWY. 12. TURN RIGHT ONTO US-202 W. 13. TURN RIGHT ONTO BEAR MOUNTAIN ST PKWY. 14. TURN RIGHT ONTO



**GENERAL NOTES:** 

- SUBJECT PROPERTY IS KNOWN AS SECTION 24.10, BLOCK 1, LOTS 1 & 1.2 AS SHOWN ON THE OFFICIAL TOWN OF CORTLANDT TAX MAPS.
- CONTRACTOR SHALL NOT COMMENCE ANY WORK UNTIL HE OBTAINS, AT HIS OWN EXPENSE, ALL INSURANCE REQUIRED BY NEW CINGULAR WIRELESS, PCS, LLC (AT&T), THE PROPERTY OWNER AND/OR PROPERTY MANAGEMENT COMPANY.
- THE PROPOSED WIRELESS IMPROVEMENTS ARE NOT INTENDED FOR PERMANENT EMPLOYEE OCCUPANCY AND THEREFORE POTABLE WATER, SANITARY SEWERS, ADDITIONAL SITE PARKING AND HANDICAP ACCESS ARE NOT REQUIRED.
- THIS FACILITY SHALL BE VISITED ON AN AVERAGE OF ONCE EVERY SIX (6) WEEKS FOR MAINTENANCE AND SHALL BE MONITORED FROM A REMOTE FACILITY.
- FINAL CONNECTION TO ELECTRICAL AND TELEPHONE TO BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANY.
- THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL ALL CONDITIONS OF APPROVAL HAVE BEEN SATISFIED AND EACH OF THE DRAWINGS HAVE BEEN REVISED TO INDICATE "ISSUED FOR CONSTRUCTION".
- SITE INFORMATION SHOWN OBTAINED FROM A LIMITED SITE VISIT BY COM-EX CONSULTANTS ON 03/12/18. ADDITIONAL SITE INFORMATION OBTAINED FROM "LEASE EXHIBIT, SITE # N-622", PREPARED BY COM-EX CONSULTANTS, DATED 03/21/18.
- 8. THIS PLAN IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
- 9. THE PROPOSED IMPROVEMENTS WILL CAUSE ONLY A "DE MINIMIS" INCREASE IN STORMWATER RUNOFF. THEREFORE, NO DRAINAGE STRUCTURES ARE PROPOSED.
- 10. NO NOISE, VIBRATIONS, SMOKE, DUST, OR ODOR WILL RESULT FROM THIS FACILITY.
- 11. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE STREET SIGNS OF ANY TYPE.
- 12. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES.
- 13. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITIES OR OTHER PUBLIC AUTHORITIES.
- 14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL. STATE, COUNTY OR MUNICIPAL AUTHORITIES.
- 15. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK. MINOR OMISSIONS OR ERRORS IN THE BID DOCUMENTS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THIS PROJECT IN ACCORDANCE WITH THE OVERALL INTENT OF THESE DRAWINGS.
- 16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED AS A RESULT OF CONSTRUCTION OF THIS FACILITY.
- 17. THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- 18. THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING A BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- 19. POWER TO THE FACILITY WILL BE MONITORED BY A SEPARATE METER.
- 20. CONTRACTOR SHALL VERIFY ANTENNA ELEVATION AND AZIMUTH WITH RF ENGINEERING PRIOR TO INSTALLATION.
- 21. DESIGN REQUIREMENTS PER INTERNATIONAL BUILDING CODE 2015 NJ EDITION AND THE EIA/TIA-222-G STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES.
- 22. ALL STRUCTURAL ELEMENTS SHALL BE HOT DIPPED GALVANIZED STEEL.
- 23. CONTRACTOR SHALL MAKE A UTILITY "ONE CALL" (800-272-1000) TO LOCATE ALL UTILITIES PRIOR TO EXCAVATING.
- 24. IF ANY PIPING EXISTS BENEATH THE SITE AREA, CONTRACTOR MUST LOCATE IT AND CONTACT OWNERS REPRESENTATIVE.
- 25. THE CONSTRUCTION CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ALL CONSTRUCTION MEANS AND METHODS. THE CONSTRUCTION CONTRACTOR IS ALSO RESPONSIBLE FOR ALL JOB SITE SAFETY.
- 26. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES AND EXISTING CONDITIONS AT THE SITE PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA AND SUBMIT TO THE ENGINEER ANY DISCREPANCIES FROM THE DRAWINGS.
- 27. THE CONTRACTOR IS TO REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. THE CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUB-CONTRACTORS AND RELATED PARTIES. THE SUB-CONTRACTOR SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.
- 28. THE CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON THE SITE AT ALL TIMES AND INSURE THE DISTRIBUTION OF NEW DRAWINGS TO SUB-CONTRACTORS AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONTRACT AREA. THE CONTRACTOR SHALL FURNISH 1 SET OF REDLINE "AS-BUILT" DRAWINGS TO THE CLIENT UPON COMPLETION OF THE WORK.
- 29. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK.
- 30. ALL MATERIAL PROVIDED BY THE CLIENT IS TO BE REVIEWED BY THE CONTRACTOR AND ALL APPLICABLE SUB-CONTRACTORS PRIOR TO INSTALLATION. ANY DEFICIENCIES TO PROVIDE MATERIALS SHALL BE BROUGHT TO THE CONSTRUCTION MANAGER'S ATTENTION IMMEDIATELY.
- 31. THE MATERIALS INSTALLED SHALL MEET REQUIREMENTS OF CONTRACTORS DOCUMENTS. NO SUBSTITUTIONS ARE ALLOWED.
- 32. THE CONTRACTOR SHALL COORDINATE ALL CIVIL, STRUCTURAL AND ELECTRICAL DRAWINGS FOR THE LOCATIONS OF ALL OPENINGS, RECESSES, BUILT-IN WORK, ETC ..
- 33. THE CONTRACTOR SHALL RECEIVE CLARIFICATION AND AUTHORIZATION IN WRITING TO PROCEED BEFORE STARTING WORK ON ANY ITEMS NOT CLEARLY DEFINED OR IDENTIFIED BY THE CONSTRUCTION DOCUMENTS.
- 34. ERECTION SHALL BE DONE IN A WORKMANLIKE MANNER BY COMPETENT EXPERIENCED WORKMEN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST-ACCEPTED PRACTICE. ALL MEMBERS SHALL BE LAND PLUMB AND TRUE AS INDICATED ON THE DRAWINGS.
- 35. THE CONTRACTOR SHALL COORDINATE HIS WORK AND SCHEDULE HIS ACTIVITIES AND WORKING HOURS IN ACCORDANCE WITH THE REQUIREMENTS OF THE PROPERTY OWNER AND/OR PROPERTY MANAGEMENT COMPANY.
- 36. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK WITH THE WORK OF OTHERS AS IT MAY RELATE TO RADIO EQUIPMENT, ANTENNAS AND ANY OTHER PORTIONS OF THE WORK.
- 37. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY INDICATED OR WHERE LOCAL CODES OR REGULATIONS MAY TAKE PRECEDENCE.
- 38. THE CONTRACTOR SHALL REPAIR ALL EXISTING SURFACES DAMAGED DURING CONSTRUCTION SUCH THAT THEY MATCH AND BLEND WITH ADJACENT SURFACES.
- 39. THE CONTRACTOR SHALL KEEP CONTRACT AREA CLEAN, HAZARD FREE AND DISPOSE OF ALL DEBRIS AND RUBBISH. EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY OF THE OWNER SHALL BE REMOVED. LEAVE PREMISES IN CLEAN CONDITIONS AND FREE FROM PAINT SPOTS, DUST OR SMUDGES OF ANY NATURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL ITEMS UNTIL COMPLETION OF CONSTRUCTION.
- 40. BEFORE FINAL ACCEPTANCE OF THE WORK, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT, TEMPORARY WORKS, UNUSED AND USELESS MATERIALS, RUBBISH AND TEMPORARY STRUCTURES.
- 41. TECHNICIAN TO PARK IN ANY AVAILABLE PARKING SPOT. NO NEW PARKING IS PROPOSED.
- 42. NO LANDSCAPING IS PROPOSED UNDER THIS APPLICATION.

C-2



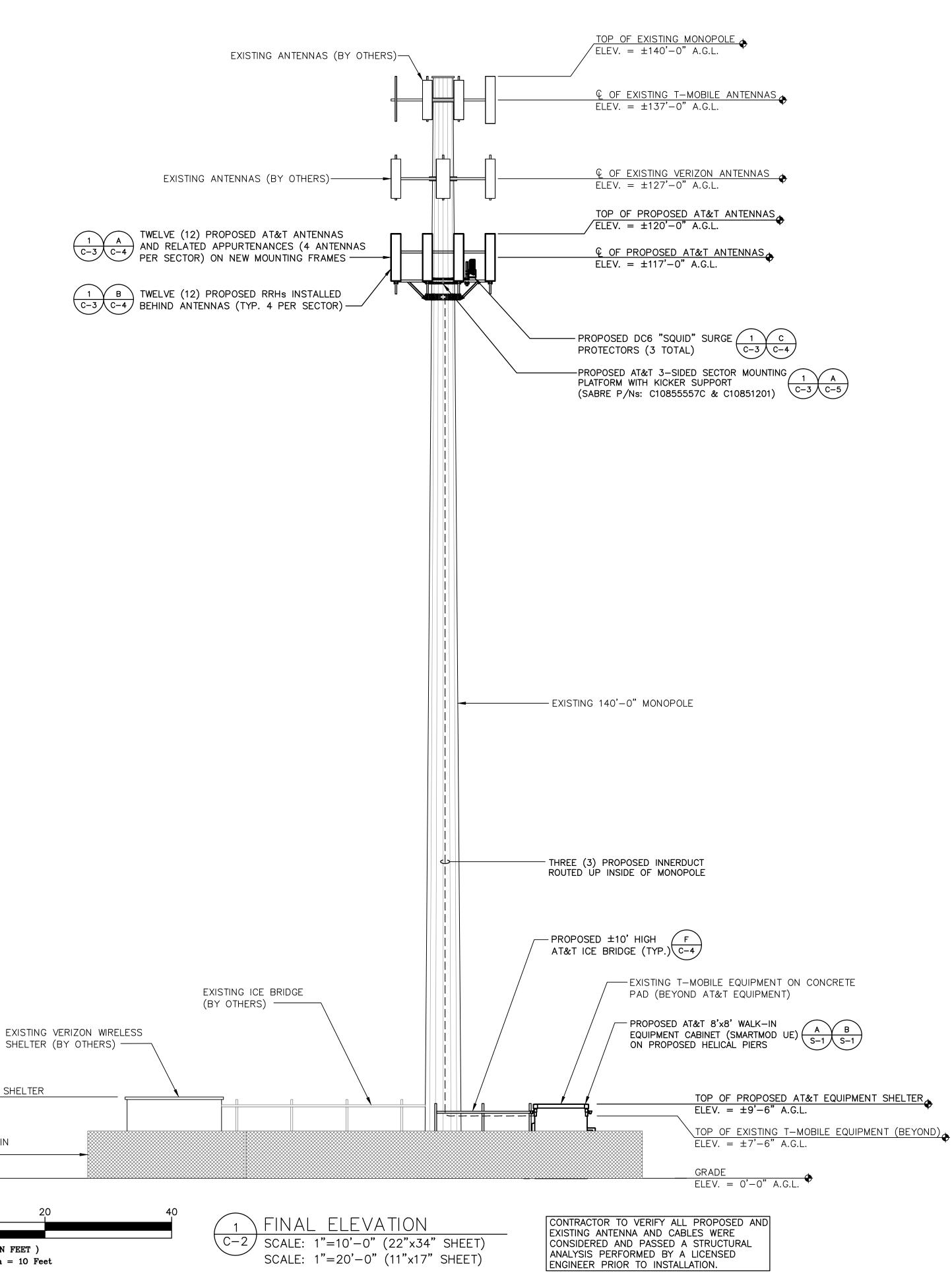
#### **ELEVATION GENERAL NOTES**

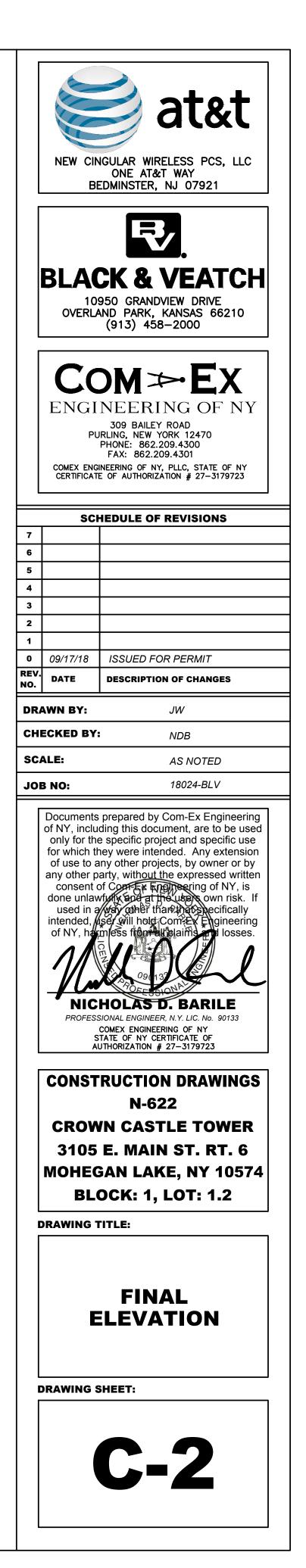
- 1. ALL PROPOSED GROUNDING BAR DOWNLEADS ARE TO BE TERMINATED TO THE EXISTING ADJACENT GROUNDING BAR DOWNLEADS A MINIMUM DISTANCE OF 4'-0" BELOW GROUNDING BAR. TERMINATIONS MAY BE EXOTHERMIC OR COMPRESSION.
- 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ANTENNA AND THE COAX CONFIGURATION IS THE CORRECT MAKE AND MODELS, PRIOR TO INSTALLATION.
- 3. ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER TOWER MANUFACTURER'S SPECIFICATION & RECOMMENDATIONS.
- 4. CONTRACTOR SHALL REFERENCE THE TOWER STRUCTURAL ANALYSIS REPORT (PREPARED BY TOWER ENGINEERING PROFESSIONALS, DATED JUNE 14, 2017, FOR AT&T SITE M0109-FORT MONMOUTH RELO.) FOR DIRECTIONS ON CABLE DISTRIBUTION, ROUTING, AND ANTENNA CONFIGURATION.
- 5. DISTANCE FROM RRHs TO SURGE ARRESTOR TO BE A MAXIMUM OF 16 FEET.

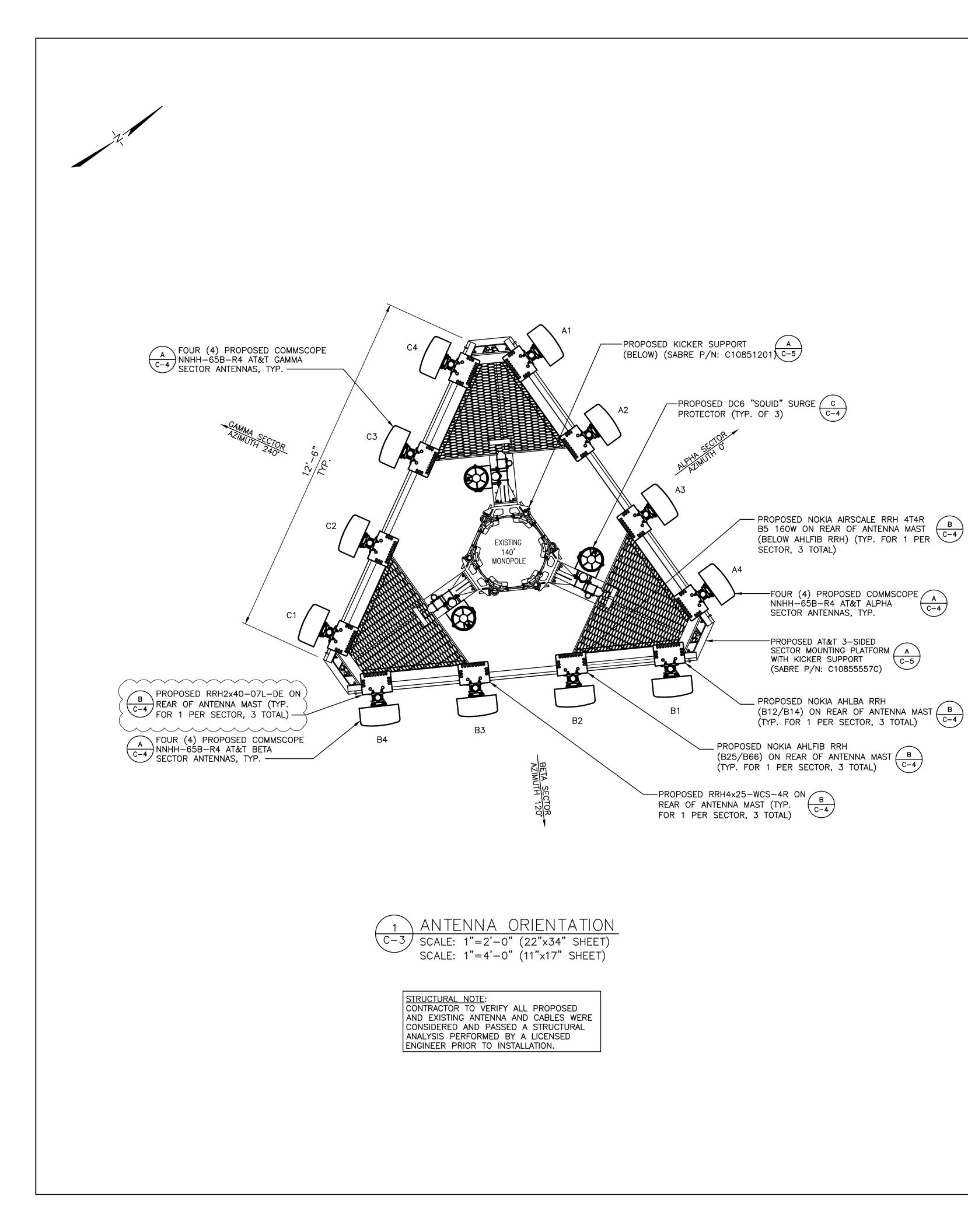
• TOP OF EXISTING VERIZON EQUIPMENT SHELTER ELEV. =  $\pm 10'-4"$  A.G.L.

EXISTING 6'-0 HIGH CHAIN LINK FENCE (TYP.)-

( IN FEET ) 1 Inch = 10 Feet







	PROPOSE	D ANTENNA	A AND	TRANSM	ISSION CA
SECTOR		TECHNOLOGY	ANTENNA		
SECTOR	ANTENNA TYPE	TECHNOLOGI	AZIMUTH	LENGTH	
A1	NNHH-65B-R4	LTE 700/1900/AWS	0°	±185'	
A2	NNHH-65B-R4	LTE	0°	±185'	(1) 2" INI
A3	NNHH-65B-R4	LTE	0°	±185'	
A4	NNHH-65B-R4	LTE 700/WCS	0°	±185'	
B1	NNHH-65B-R4	LTE 700/1900/AWS	120°	±185'	
B2	NNHH-65B-R4	LTE	120°	±185'	(1) 2" INI
B3	NNHH-65B-R4	LTE	120°	±185'	
B4	NNHH-65B-R4	LTE 700/WCS	120°	±185'	
C1	NNHH-65B-R4	LTE 700/1900/AWS	240°	±185'	
C2	NNHH-65B-R4	LTE	240 <b>°</b>	±185'	(1) 2" INI
C3	NNHH-65B-R4	LTE	240°	±185'	
C4	NNHH-65B-R4	LTE 700/WCS	240°	±185'	
GPS	TBD	TBD	N/A	15'	

### ANTENNA MOUNTING NOTE

- 1. DESIGN AND CONSTRUCTION OF ANTENNA SUPPORTS SHALL CONFORM TO CURRENT ANSI
- 2. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH
- IRON AND STEEL PRODUCTS", UNLESS NOTED OTHERWISE. 3. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORE
- IRON AND STEEL HARDWARE", UNLESS NOTED OTHERWISE.
- 4. DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORD
- 5. ALL ANTENNA MOUNTS SHALL BE INSTALLED WITH LOCK NUTS, DOUBLE NUTS AND SHAL
- 6. CONTRACTOR SHALL INSTALL ANTENNA PER MANUFACTURER'S RECOMMENDATION FOR INST7. ALL UNUSED PORTS ON ANY ANTENNAS SHALL BE TERMINATED WITH A 50-OHM LOAD T
- PRIOR TO SETTING ANTENNA AZIMUTHS AND DOWNTILTS, ANTENNA CONTRACTOR SHALL CH ENSURE THAT THEY ARE PLUMB. ANTENNA AZIMUTHS SHALL BE SET FROM TRUE NORTH
- THE RFDS. ANTENNA DOWNTILTS SHALL BE WITHIN +/- 0.5% AS DEFINED BY THE RFDS 9. JUMPERS FROM THE TMA'S MUST TERMINATE TO OPPOSITE POLARIZATION'S IN EACH SEC
- 10. CONTRACTOR SHALL RECORD THE SERIAL #, SECTOR, AND POSITION OF EACH ACTUATOR INFORMATION TO AT&T.
- 11. TMA'S SHALL BE MOUNTED ON PIPE DIRECTLY BEHIND ANTENNAS AS CLOSE TO ANTENNA 12. ANTENNAS SHALL HAVE A 4'-0'' MIN CENTER TO CENTER HORIZONTAL SEPARATION.

### TORQUE REQUIREMENTS:

- 1. ALL RF CONNECTIONS SHALL BE TIGHTENED BY A TORQUE WRENCH.
- 2. ALL RF CONNECTIONS, GROUNDING HARDWARE AND ANTENNA HARDWARE SHALL HAVE A LINE FROM BOTH SIDES OF THE CONNECTION.
- A. RF CONNECTION BOTH SIDES OF THE CONNECTOR.
- B. GROUNDING AND ANTENNA HARDWARE ON THE NUT SIDE STARTING FROM THE THREADS SURFACE: GROUND BAR, ANTENNA BRACKET METAL.
- 3. ALL 8M ANTENNA HARDWARE SHALL BE TIGHTENED TO 9 LB-FT (12 NM).
- 4. ALL 12M ANTENNA HARDWARE SHALL BE TIGHTENED TO 43 LB-FT (58 NM).
- 5. ALL GROUNDING HARDWARE SHALL BE TIGHTENED UNTIL THE LOCK WASHER COLLAPSES
- 6. ALL DIN TYPE CONNECTIONS SHALL BE TIGHTENED TO 18-22 LB-FT (24.4 29.8 NM)
- 7. ALL N TYPE CONNECTIONS SHALL BE TIGHTENED TO 15-20 LB-IN (1.7 2.3 NM).

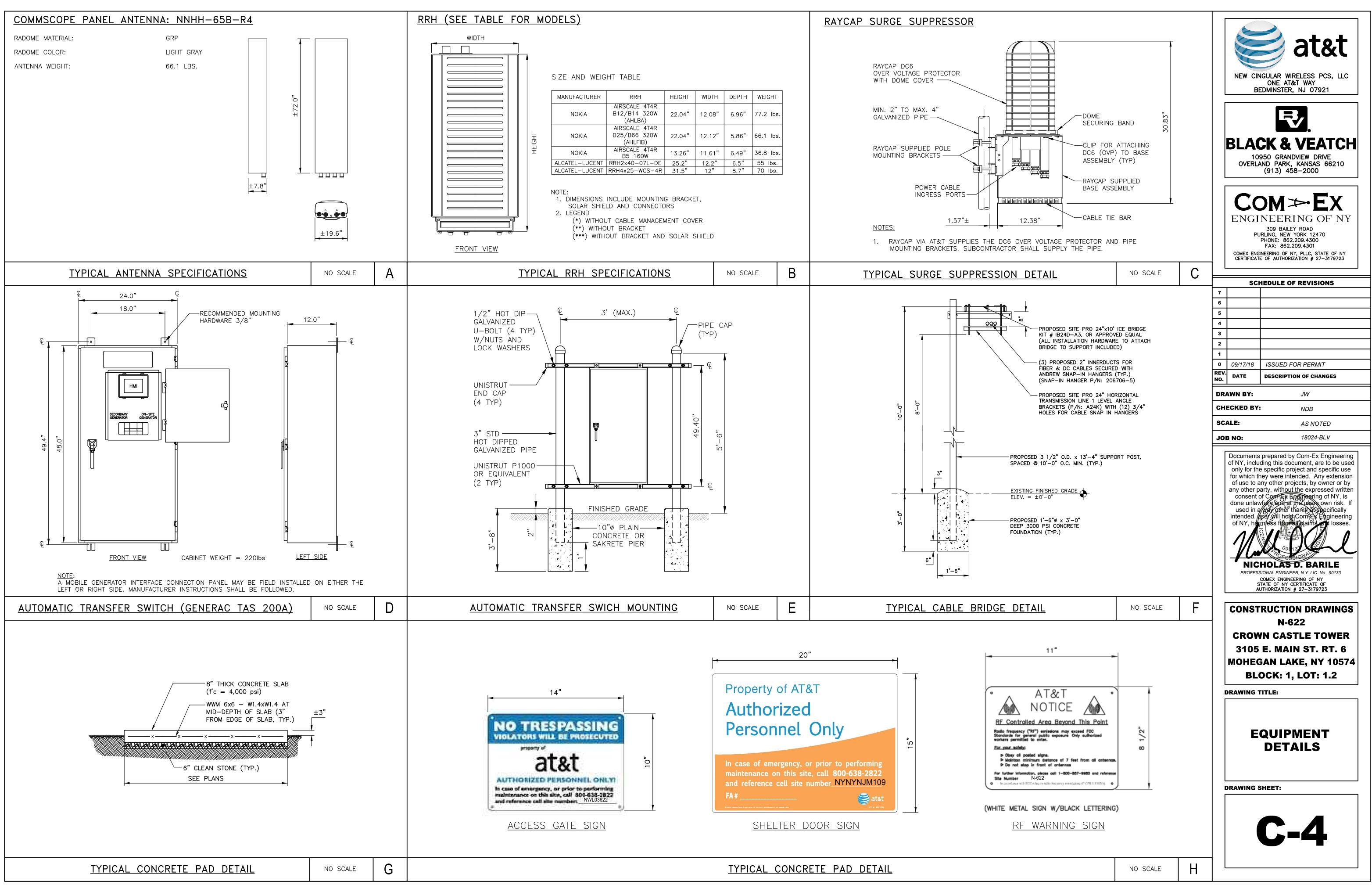
## FIBER & POWER CABLE MOUNTIN

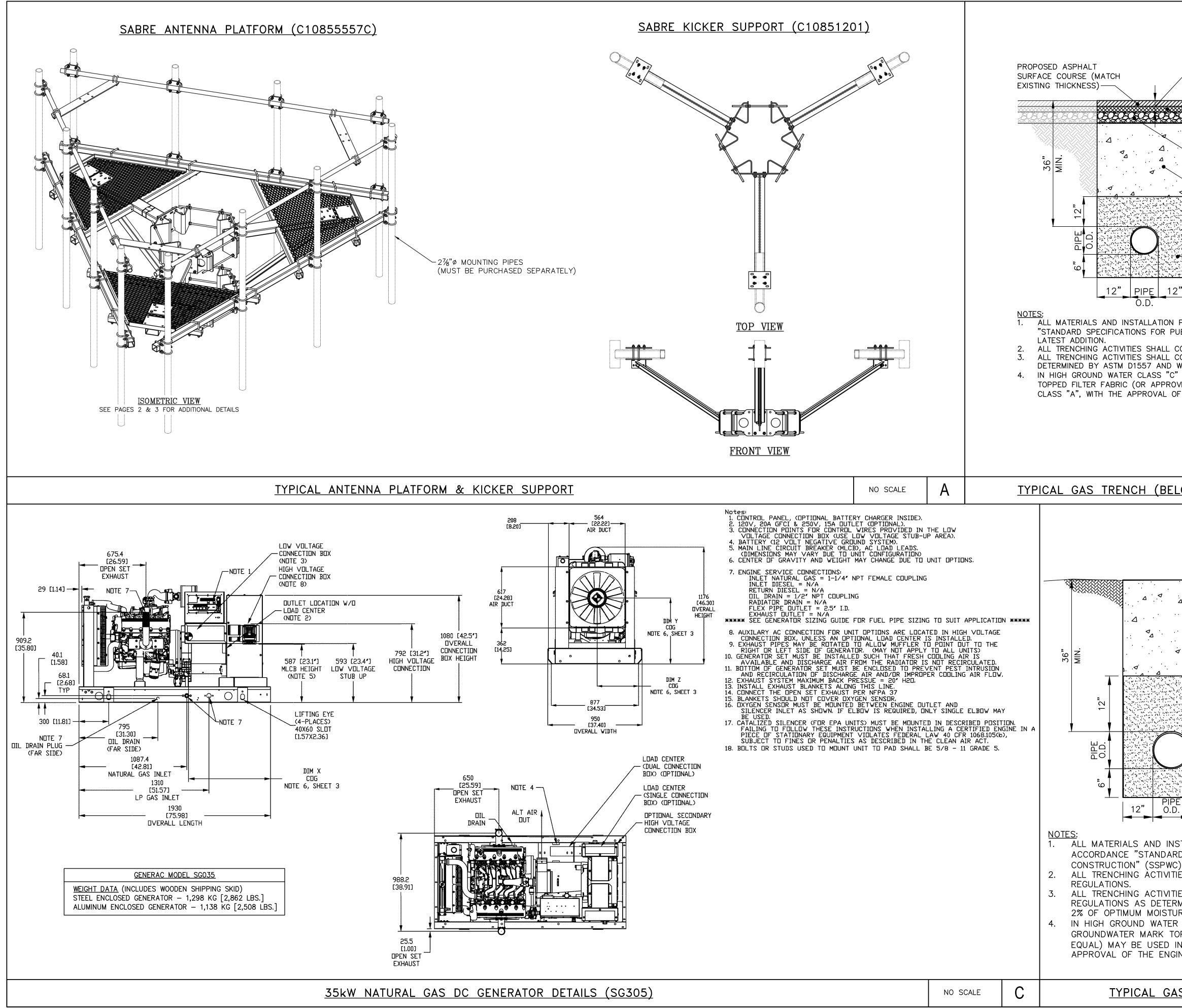
- THE FIBER OPTIC TRUNK CABLES SHALL BE INSTALLED INTO CONDUITS, CHANNEL CABLE OPTIC TRUNK CABLES INTO A CABLE TRAY SYSTEM, THEY SHALL BE INSTALLED INTO AN INSTALLED BETWEEN THE 600 VOLT CABLES AND THE INTER DUCT IN ORDER TO SEGREG SHALL HAVE APPROVED CABLE RESTRAINTS EVERY (60) SIXTY FEET AND SECURELY FAST ARTICLE 770 RULES SHALL APPLY.
- 2. THE TYPE TC-ER CABLES SHALL BE INSTALLED INTO CONDUITS, CHANNEL CABLE TRAYS, INTERVALS NOT EXCEEDING (6) SIX FEET. AN EXCEPTION; WHERE TYPE TC-ER CABLES A SHALL BE PERMITTED TO MAKE A TRANSITION BETWEEN CONDUITS, CHANNEL CABLE TRAY EQUIPMENT OR DEVICES, A DISTANCE (6) SIX FEET SHALL NOT BE EXCEEDED WITHOUT ( 336 AND 392 RULES SHALL APPLY.
- 3. WHEN INSTALLING OPTIC FIBER TRUNK CABLES OR TYPE TC-ER CABLES INTO CONDUITS

## GENERAL ANTENNA NOTE

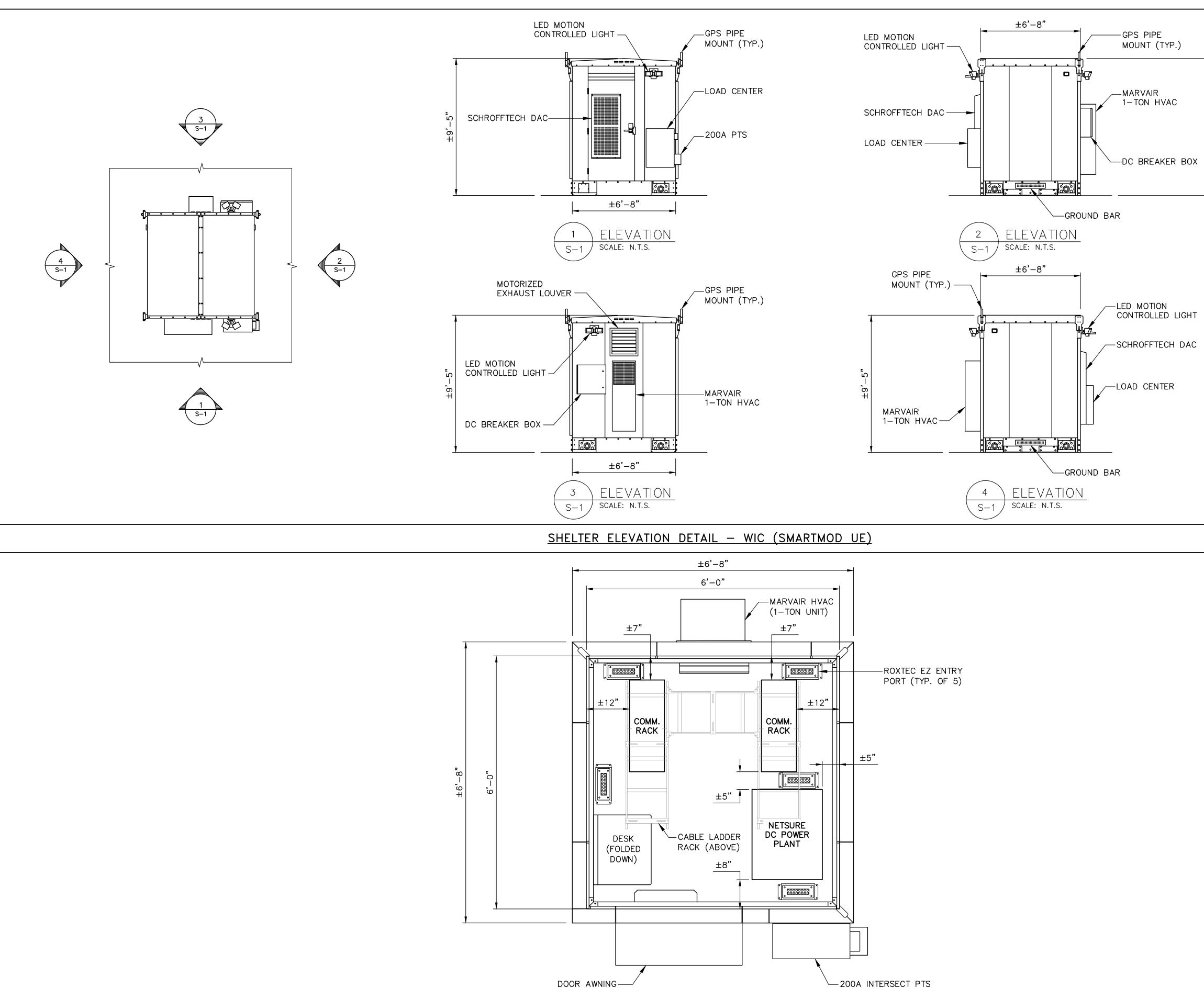
- 1. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ANTENNA, TMAS, DIPLEXERS, AND CO INSTALLATION.
- 2. ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER
- 3. CONTRACTOR SHALL REFERENCE THE TOWER STRUCTURAL ANALYSIS/DESIGN DRAWINGS FO 4. ALL OUTDOOR RF CONNECTORS/CONNECTIONS SHALL BE WEATHERPROOFED, EXCEPT THE
- INSTALLATION AND FINAL CONNECTIONS ARE MADE. BUTYL TAPE SHALL HAVE A MINIMUM ( AND EACH LAYER SHALL BE WRAPPED THREE TIMES. WEATHERPROOFING SHALL BE SMOO' ALLOWED.
- 5. IF REQUIRED TO PAINT ANTENNAS AND/OR COAX:
- A. TEMPERATURE SHALL BE ABOVE 50° F. B. PAINT COLOR MUST BE APPROVED BY BUILDING OWNER/LANDLORD.
- C. FOR REGULATED TOWERS, FAA/FCC APPROVED PAINT IS REQUIRED.
- D. DO NOT PAINT OVER COLOR CODING OR ON EQUIPMENT MODEL NUMBERS.

	at&t
BLES REQUIREMENT	
TRANSMISSION CABLE	NEW CINGULAR WIRELESS PCS, LLC
TYPE	ONE AT&T WAY BEDMINSTER, NJ 07921
ERDUCT WITH (1) FIBER TRUNK & (2) DC TRUNKS	
	BLACK & VEATCH 10950 GRANDVIEW DRIVE OVERLAND PARK, KANSAS 66210 (913) 458-2000
IERDUCT WITH (1) FIBER TRUNK & (2) DC TRUNKS	
ERDUCT WITH (1) FIBER TRUNK & (2) DC TRUNKS	ENGINEERING OF NY 309 BAILEY ROAD PURLING, NEW YORK 12470 PHONE: 862.209.4300 FAX: 862.209.4301
½" CABLE	COMEX ENGINEERING OF NY, PLLC, STATE OF NY CERTIFICATE OF AUTHORIZATION # 27-3179723
	SCHEDULE OF REVISIONS
	7
	6
<u>ES:</u>	5 4
I/TIA-222 OR APPLICABLE LOCAL CODES. ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON	3 2
DANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON	1           0         09/17/18         ISSUED FOR PERMIT
ANCE WITH ASTM A780.	REV. NO. DATE DESCRIPTION OF CHANGES
L BE TORQUED TO MANUFACTURER'S RECOMMENDATIONS.	DRAWN BY: JW
TALLATION AND GROUNDING.	CHECKED BY: NDB
TO ENSURE ANTENNAS PERFORM AS DESIGNED. HECK THE ANTENNA MOUNT FOR TIGHTNESS AND	SCALE: AS NOTED
AND BE ORIENTED WITHIN $+/-5\%$ AS DEFINED BY 5. REFER TO ND-00246.	JOB NO: 18024-BLV
R INSTALLED AT THE ANTENNAS AND PROVIDE THE A AS FEASIBLE IN A VERTICAL POSITION.	Documents prepared by Com-Ex Engineering of NY, including this document, are to be used only for the specific project and specific use for which they were intended. Any extension of use to any other projects, by owner or by any other party, without the expressed written consent of Com-Ex Engineering of NY, is done unlawfully and at the users own risk. If used in a way other than the specifically
TORQUE MARK INSTALLED IN A CONTINUOUS STRAIGHT	of NY, harmless from all relains and losses.
	NICHOLAS D. BARILE PROFESSIONAL ENGINEER, N.Y. LIC. No. 90133 COMEX ENGINEERING OF NY STATE OF NY CERTIFICATE OF AUTHORIZATION # 27-3179723
AND THE GROUNDING HARDWARE IS NO LONGER LOOSE. ).	CONSTRUCTION DRAWINGS N-622
IG NOTES:	CROWN CASTLE TOWER
TRAYS, OR CABLE TRAY. WHEN INSTALLING FIBER INTER DUCT AND A PARTITION BARRIER SHALL BE GATE CABLE TYPES. OPTIC FIBER TRUNK CABLES ENED TO THE CABLE TRAY SYSTEM. NFPA 70 (NEC)	3105 E. MAIN ST. RT. 6 MOHEGAN LAKE, NY 10574 BLOCK: 1, LOT: 1.2
, OR CABLE TRAY AND SHALL BE SECURED AT ARE NOT SUBJECT TO PHYSICAL DAMAGE, CABLES YS, OR CABLE TRAY WHICH ARE SERVING UTILIZATION CONTINUOUS SUPPORTING. NFPA 70 (NEC) ARTICLES	DRAWING TITLE:
, NFPA 70 (NEC) ARTICLE 300 RULES SHALL APPLY.  S: DAX CONFIGURATION, MAKE AND MODELS PRIOR TO	ANTENNA LAYOUT
TOWER MANUFACTURER'S RECOMMENDATIONS. OR DIRECTIONS ON CABLE DISTRIBUTION/ROUTING.	
RET CONNECTORS, USING BUTYL TAPE AFTER OF ONE-HALF TAPE WIDTH OVERLAP ON EACH TURN OTH WITHOUT BUCKLING. BUTYL BLEEDING IS NOT	DRAWING SHEET:



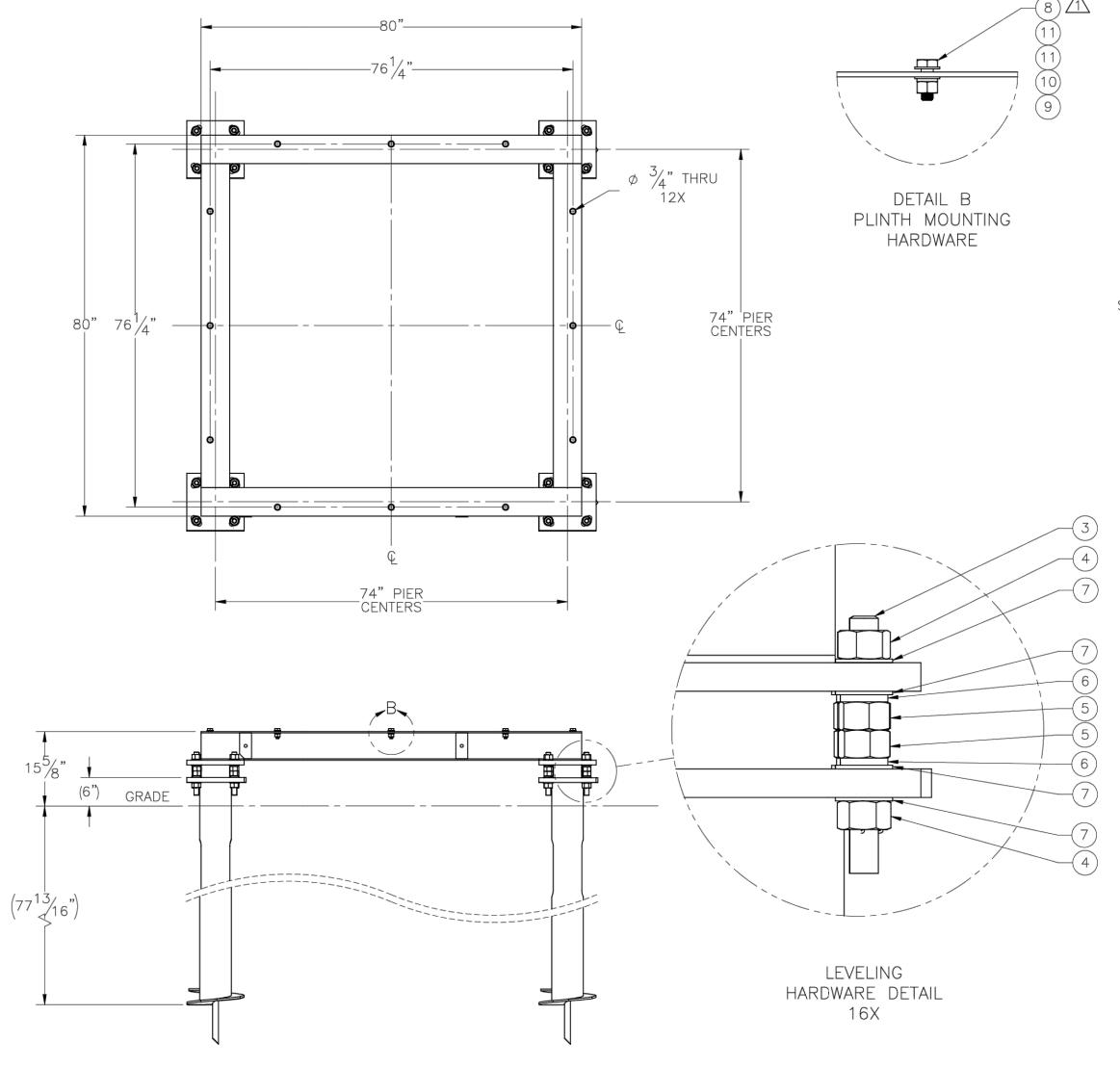


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## <u>SHELTER LAYOUT - WIC (SMARTMOD UE)</u>

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STAIR MOUNTPLATES	
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	ITEM NO.	QTY REQD	PART NUMBER	DESCRIPTION	LENGTH	W
	1	1	W-000-357	WIC PLATFORM		52
	2	4	400-000-1017	6" X 7', 1" BASE, 1" HDW - HEL. PIER		1
	3	16	002-0AT-H000	ROD, THREADED, 1.00"—8 X 9.00" LG, ASTM A193 B7, GALV		2
	4	32	002-0NG-0000	NUT, HX, ANCO LOCK, 1.00-8UNC, GR 2H, GALV		(
	5	32	002-0NG-0008	NUT, HX, 1.00"-8UNC, GR 2H, GALV		(
	6	32	002-0LW-G008	WASHER, SPLIT LOCK, 1.00", GALV		(
	7	64	002-0FW-G009	WASHER, FLAT, 1.00", F436, GALV		(
$\bigwedge$	8	12	COMMON	BOLT, HX HD, .625-11UNC X 1.75" LG, ASTM A325, GALV		(
	9	12	COMMON	NUT, HX, .625-11UNC, GR DH, GALV		(
$\wedge$	10	13	002-0LW-G004	WASHER, SPLIT LOCK, .625 INCH, GALV		(
$\bigwedge$	11	24	002-0FW-G004	WASHER, FLAT, .625", ASTM F436, GALV		(
			·			

<u>NOTES:</u>

1. HELICAL PIERS & SHELTER BASE ASSEMBLY SHALL BE MANUFACTURED BY ELECTRO MECHANICAL INDUSTRIES, INC.

2. CONTRACTOR SHALL INSTALL HELICAL PIERS TO THE TORQUE REQUIREMENTS SPECIFIED BY THE MANUFACTURER.

3. DEPTH OF HELICAL PIERS SHALL BE AS REQUIRED TO MEET THE MANUFACTURER'S SPECIFIED TORQUE REQUIREMENTS.

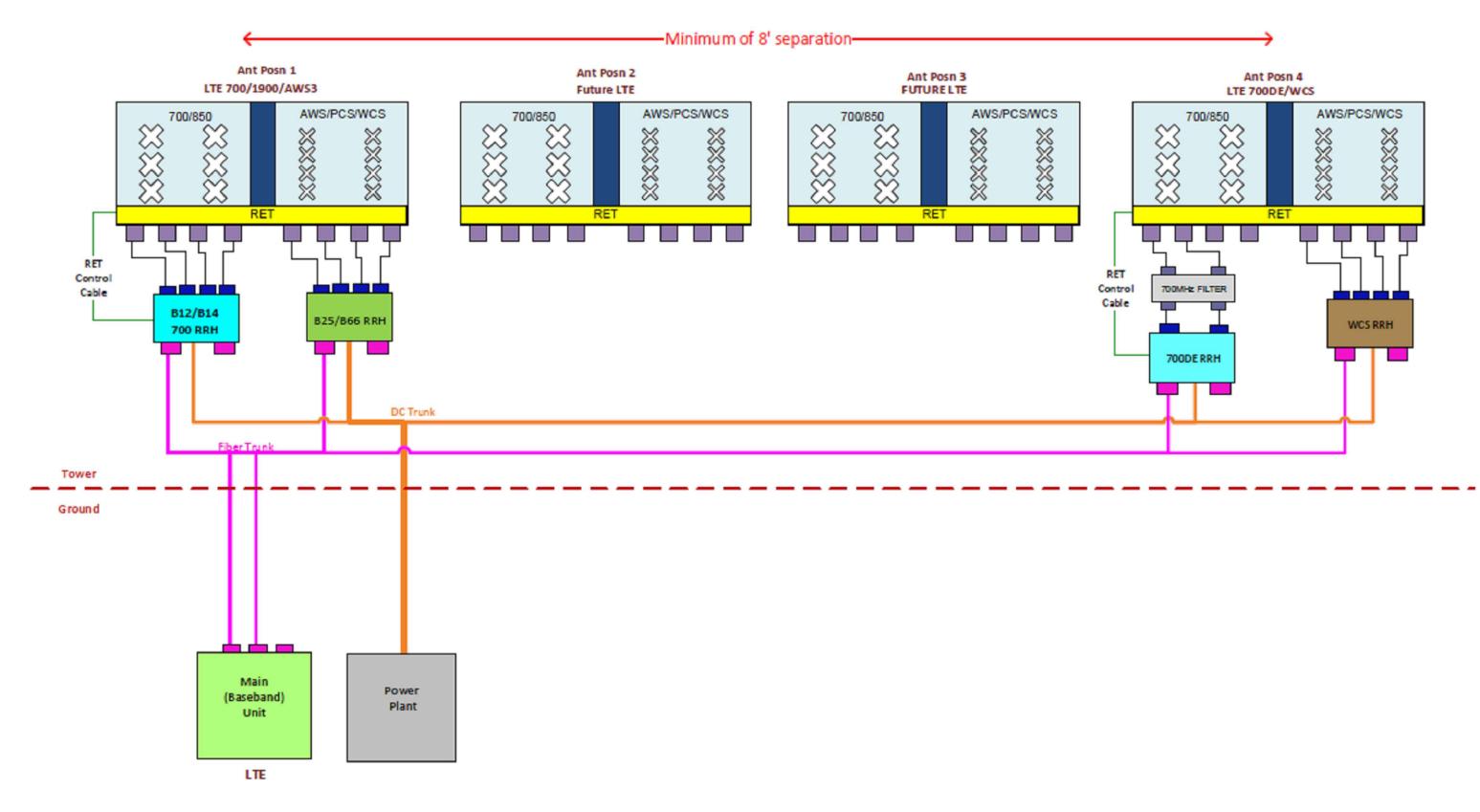
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		CROW 3105	RUCTION DRAWINGS N-622 IN CASTLE TOWER E. MAIN ST. RT. 6		
			GAN LAKE, NY 10574 OCK: 1, LOT: 1.2		
			SHELTER DUNDATION DETAILS		
	ן נ נ	DRAWING S	BHEET:		
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NO SCALE

### NOTES:

- 1. GRAY (Gr) TAPING SHALL BE USED FOR 700 MHZ AND PURPLE TAPING SHALL BE USED FOR AWS. TAPING SHALL FOLLOW AT&T STANDARD N000027 REV.1.7.
- 2. SCHEMATIC SHOWN TYPICAL FOR EACH DC-6 SURGE SUPPRESSOR.



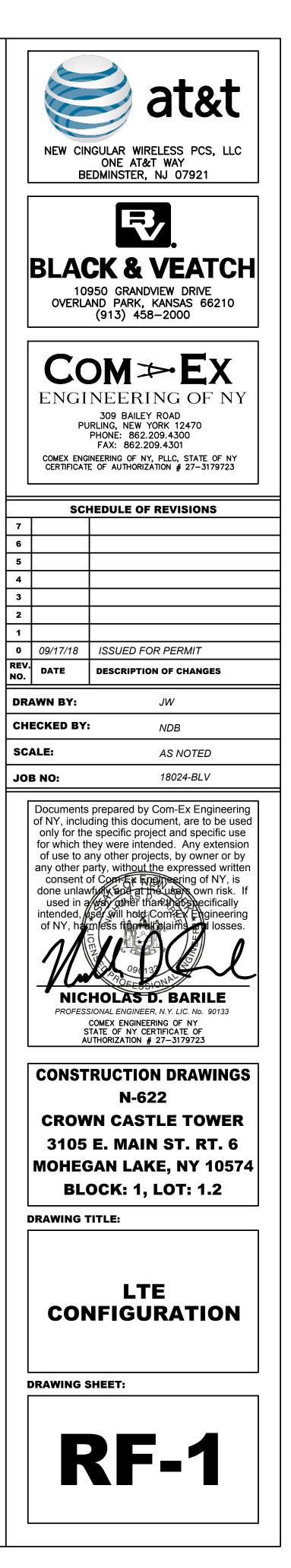
\* Lines showing connections between RRH and Antenna are for block diagram purposes only. For actual connections refer to Nokia field guides and notices.

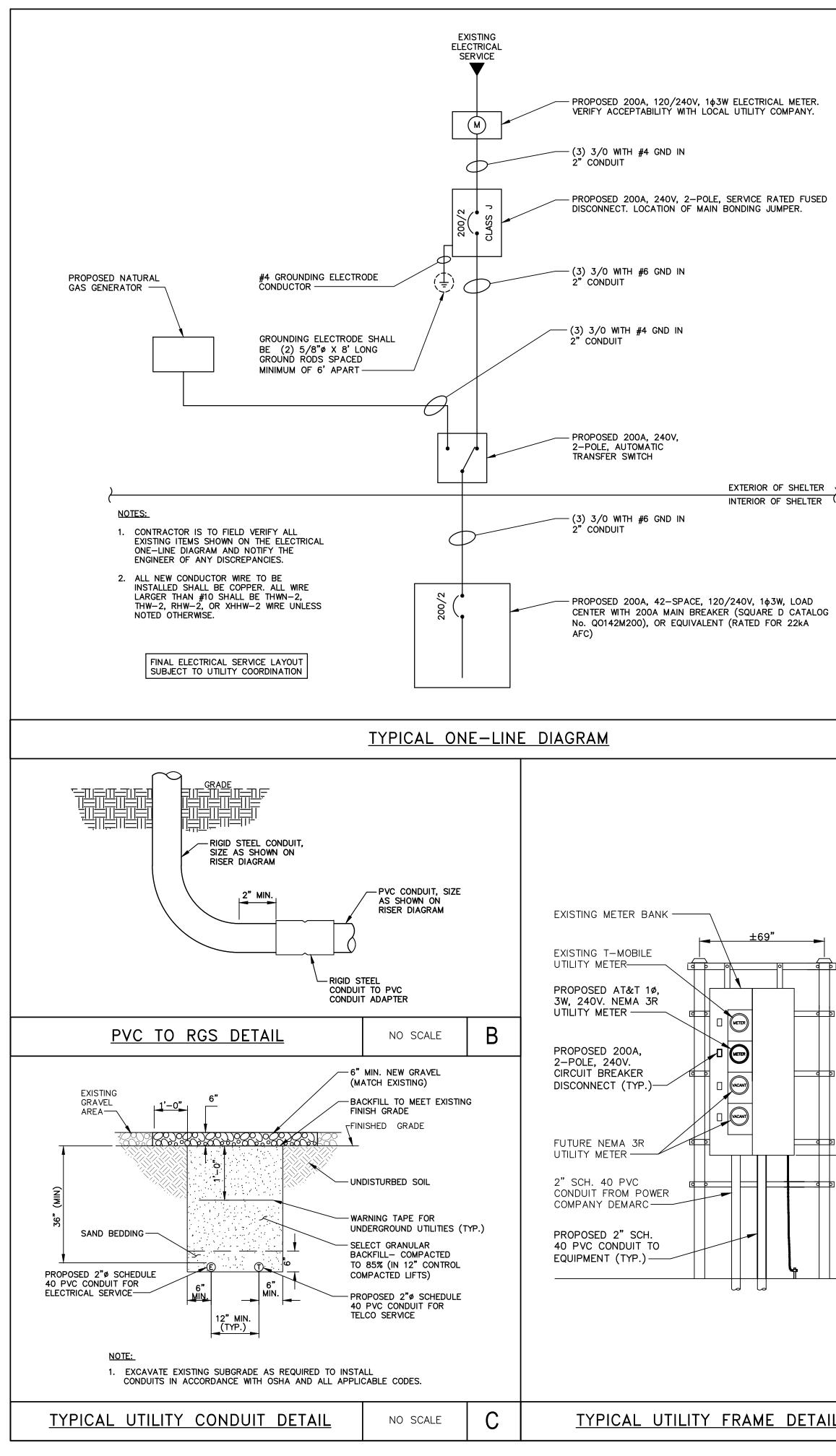
#### Proposed Configuration – SECTORS A, B, C

ANTENNAS, CONNECTORS, & CABLE CONFIGURATION NO SCALE

## ABBREVIATIONS:

R	RED
В	BLUE
G	GREEN
GR	GRAY





	NO SCALE	
<b>'</b>		

FINAL ELECTRICAL SERVICE LAYOUT SUBJECT TO UTILITY COORDINATION d FINISHED GRADE

1. GENERAL REQUIREMENTS: 1.1 THE WORK TO BE DONE UNDER THIS PROJECT INCLUDES PROVIDING ALL EQUIPMENT. MATERIALS. LABOR AND SERVICES. AND PERFORMING ALL OPERATIONS FOR COMPLETE AND OPERATING SYSTEMS. ANY WORK NOT SPECIFICALLY COVERED BUT NECESSARY TO COMPLETE THIS INSTALLATION, SHALL BE PROVIDED. ALL EQUIPMENT AND WIRING TO BE NEW AND PROVIDED UNDER THIS CONTRACT UNLESS OTHERWISE NOTED. 1.2 ENTIRE INSTALLATION, INCLUDING MATERIALS, EQUIPMENT AND WORKMANSHIP, SHALL CONFORM TO THE 2011 EDITION OF THE NATIONAL ELECTRIC CODE (NEC) AS WELL AS ALL APPLICABLE LAWS AND REGULATIONS AND REGULATORY BODIES HAVING JURISDICTION OVER THIS WORK: 1.3 THE TERM "FURNISH" SHALL MEAN TO OBTAIN AND SUPPLY TO THE JOB SITE. THE TERM "INSTALL" SHALL MEAN TO FIX IN POSITION AND CONNECT FOR USE. THE TERM "PROVIDE" SHALL MEAN TO FURNISH AND INSTALL. THE TERM "CONTRACTOR" SHALL MEAN ELECTRICAL CONTRACTOR. 1.4 ONLY WRITTEN CHANGES AND/OR MODIFICATIONS APPROVED BY THE ENGINEER, CONSULTING ENGINEER OR OWNER'S REPRESENTATIVE WILL BE RECOGNIZED. 1.5 THE ELECTRICAL CONTRACTOR SHALL SUBMIT, FOR THE ENGINEER'S APPROVAL, DETAILED SHOP DRAWINGS OF ALL EQUIPMENT SPECIFIED. 1.6 CONTRACTOR SHALL COORDINATE WITH SPECIFICATIONS PROVIDED BY OTHER TRADES. 1.7 PROVIDE OPERATING AND MAINTENANCE MANUALS, PER SPECIFICATIONS, AND GIVE INSTRUCTIONS TO USER FOR ALL EQUIPMENT AND SYSTEMS PROVIDED UNDER THIS CONTRACT AFTER ALL ARE CLEANED AND OPERATING. 1.8 KEEP PREMISES FREE FROM RUBBISH. REMOVE ALL ELECTRICAL RUBBISH FROM SITE. 1.9 ALL WORK SHALL BE INSTALLED CONCEALED UNLESS OTHERWISE NOTED. 1.10 THE WORK SHALL INCLUDE ALL PANELS, DEVICES, FEEDERS AND BRANCH CIRCUIT WIRING AS REQUIRED FOR THE DISTRIBUTION SYSTEM INDICATED AND CALLED FOR ON THE DRAWINGS, REQUIRED BY SPECIFICATIONS AND AS NECESSARY FOR COMPLETE FUNCTIONAL SYSTEMS PRESENTED AND INTENDED. .11 THE CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR, TOOLS, EQUIPMENT, CONSUMABLES AND SERVICES REQUIRED FOR OBTAINING, DELIVERY, INSTALLATION, CONNECTION, DISCONNECTION, REMOVAL, RELOCATION, REPAIR, REPLACEMENT, TESTING AND COMMISSIONING OF ALL EQUIPMENT AND DEVICES INCLUDED IN OR NECESSARY FOR THE WORK, AS APPLICABLE. THIS INCLUDES SCAFFOLDING, LADDERS, RIGGING, HOISTING, ETC. 1.12 ELECTRICAL WORK SHALL INCLUDE ALL REQUIRED CUTTING, PATCHING AND THE FULL RESTORATION OF WALL AND FLOOR STRUCTURE AND SURFACES. ALL EQUIPMENT, WALLS, FLOORS, ETC. DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED TO THE SATISFACTION OF THE OWNER, AT THE CONTRACTORS EXPENSE .13 BEFORE SUBMITTING HIS BID, THE CONTRACTOR SHALL FULLY ACQUAINT HIMSELF/HERSELF WITH THE JOB CONDITIONS AND DIFFICULTIES THAT WILL PERTAIN TO THE EXECUTION OF THIS WORK. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED, WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE. 1.14 THE CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING UTILITIES. .15 UPON COMPLETION OF THE ELECTRICAL WORK, THE CONTRACTOR SHALL TEST THE COMPLETE ELECTRICAL SYSTEM FOR SHORTS, GROUNDS, AND PROPER OPERATION, IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE. 1.16 UPON COMPLETION OF WORK, THE CONTRACTOR SHALL CLEAN AND ADJUST ALL EQUIPMENT AND LIGHTING AND TEST SYSTEMS TO THE SATISFACTION OF OWNER AND ENGINEER. RESULTS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL .17 THE CONTRACTOR SHALL FIELD VERIFY DIMENSIONS OF FINISHED CONSTRUCTION PRIOR TO FABRICATION AND INSTALLATION OF FIXTURES AND EQUIPMENT. 1.18 EXACT ROUTING OF CONDUITS AND "MC" CABLES SHALL BE DETERMINED IN THE FIELD. .19 IF THE OWNER AND/OR HIS REPRESENTATIVE CONSIDERS ANY WORK TO BE INFERIOR, THE RESPECTIVE CONTRACTOR SHALL REPLACE SAME WITH CONTRACT STANDARD WORK WITHOUT ADDITIONAL CHARGE. ALL WORK SHALL BE DONE IN A NEAT, WORKMANLIKE MANNER, LEFT CLEAN AND FREE FROM DEFECTS, AND COMPLETELY OPERABLE. 1.20 THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AS SHOWN ON THE DRAWINGS AND/OR AS SPECIFIED. ALL MATERIALS SHALL BE NEW, AND BEAR THE UL LABEL. ALL WORK SHALL BE GUARANTEED BY THE CONTRACTOR FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER. 1.21 DRAWINGS ARE TO BE CONSIDERED DIAGRAMMATIC, AND SHALL BE FOLLOWED AS CLOSELY AS CONDITIONS ALLOW TO COMPLETE THE INTENT OF THE CONTRACT. THE DRAWINGS AND WORK 1.23 ENGINEER WILL MAKE A FINAL INSPECTION WITH THE OWNER AND CONTRACTOR AND WILL NOTIFY AS ARE NECESSARY TO COMPLETE SUCH WORK OR REMEDY SUCH DEFICIENCIES. DENSITY IN EACH LAYER OF SIX (6) INCH DEPTH. CONDUIT SHALL BE MINIMUM 36" BELOW FINISHED GRADE. 2. PROJECT COORDINATION: DISCREPANCIES, PRIOR TO COMMENCING WITH THE WORK. 2.2 THE CONTRACTOR SHALL REVIEW AND COORDINATE WITH THE DOCUMENTS OF ALL TRADES.

- SPECIFICATIONS COMPLIMENT ONE ANOTHER, AND WHAT IS SHOWN ON THE DRAWINGS AND NOT MENTIONED IN THE SPECIFICATIONS, AND VICE VERSA, IS TO BE INCLUDED IN THE SCOPE OF
- 1.22 ALL EQUIPMENT CONNECTIONS SHALL BE INSTALLED PER APPLICABLE SEISMIC REQUIREMENTS.
- THE CONTRACTOR IN WRITING OF ALL PARTICULARS IN WHICH THIS INSPECTION REVEALS THAT THE WORK IS INCOMPLETE OR DEFECTIVE. THE CONTRACTOR SHALL IMMEDIATELY TAKE SUCH MEASURES
- 1.24 THE CONTRACTOR SHALL PERFORM ALL EXCAVATION. TRENCHING AND BACKFILL REQUIRED FOR ELECTRICAL WORK. BACKFILL SHALL BE SUITABLE MATERIAL PROPERLY COMPACTED TO 95%
- 2.1 THE CONTRACTOR SHALL VERIFY FIELD CONDITIONS AT THE SITE AND NOTIFY THE OWNER OF ANY
- 2.3 THE CONTRACTOR SHALL FURNISH A SCHEDULE INDICATING HIS PORTION OF TIME, WITHIN THE OVERALL SCHEDULE, REQUIRED TO COMPLETE THE WORK, IN CONJUNCTION WITH ALL TRADES. ALL WORK THAT MAY AFFECT OPERATION OF BUILDING SYSTEMS SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE
- 2.4 SHUT DOWN OF POWER SHALL BE COORDINATED WITH THE OWNER, ARCHITECT AND PROJECT MANAGER AT LEAST 14 WORKING DAYS PRIOR TO SHUT DOWN. SHUT DOWNS LONGER THAN 2 DAYS SHALL BE COORDINATED WITH THE ABOVE PERSONNEL AT LEAST ONE MONTH IN ADVANCE. TEMPORARY POWER FOR CONSTRUCTION SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR FOR SHUT DOWNS OVER 2 DAYS.
- 2.5 ALL CONDUITS AND DEVICE BOXES SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR, INCLUDING ALL TECHNOLOGY CONDUITS AND BOXES.
- 2.6 THE CONTRACTOR SHALL CONTACT THE BUILDING MANAGER TO OBTAIN A COPY OF THE GENERAL REQUIREMENTS AND/OR CONDITIONS TO BE USED FOR THIS PROJECT.
- 2.7 INSTALL NEW WORK AND CONNECT TO EXISTING WORK WITH MINIMUM INTERFERENCE TO EXISTING FACILITIES. ALARM AND EMERGENCY SYSTEMS SHALL NOT BE INTERRUPTED. TEMPORARY SHUT DOWNS OF ANY SYSTEM SHALL BE COORDINATED WITH AND APPROVED BY THE OWNER AND ARCHITECT

3. PROTECTION OF WORK:

3.1 EFFECTIVELY PROTECT ALL MATERIALS AND EQUIPMENT FROM ENVIRONMENTAL AND PHYSICAL DAMAGE UNTIL FINAL ACCEPTANCE. CLOSE AND PROTECT ALL OPENINGS DURING CONSTRUCTION. PROVIDE NEW MATERIALS AND EQUIPMENT TO REPLACE ITEMS DAMAGED.

. WARRANTIES AND BONDS:

4.1 ALL MATERIALS, EQUIPMENT AND WORKMANSHIP SHALL BE GUARANTEED IN WRITING FOR A MINIMUM OF ONE YEAR AFTER FINAL ACCEPTANCE BY OWNER.

4.2 OBTAIN AND DELIVER TO THE OWNER'S REPRESENTATIVE ALL GUARANTEES AND CERTIFICATES OF COMPLIANCE.

5. PERMITS:

D

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CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS AND INSPECTION FEES FOR ELECTRICAL WORK.

6. RACEWAYS:

- DAMAGE
- FLEXIBLE CONDUIT IS SPECIFICALLY PROHIBITED.
- FACILITATE INSTALLATION OF WIRES.
- IN AN APPROVED MANNER.
- 6.6 ARRANGEMENT OF CONDUIT AND EQUIPMENT SHALL BE AS INDICATED, UNLESS MODIFICATION IS REQUIRED TO AVOID INTERFERENCES.

ROOMS, BASEMENTS AND CRAWL SPACES MAY BE SURFACE MOUNTED.

- SMALLER
- LOCATION AND IDENTIFICATION OF UNDERGROUND CONDUIT INSTALLATION.
- SEALANT.
- AT RIGHT ANGLES TO BUILDING LINES.
- RATED NEMA 4X.

7. GROUNDING:

BY ARTICLE 250, OF THE NEC, AND AS SPECIFIED HEREIN.

CONDUCTOR.

8. WIRING:

- MAY SHARE GROUND AND NEUTRAL CONDUCTORS.
- VOLTAGE DROP.
- #10 AWG.

9. PANELBOARDS:

- 9.4 CIRCUIT NUMBERS SHOWN SHALL BE GENERALLY FOLLOWED. HOWEVER, CONTRACTOR IS FOR BALANCING PHASES.
- ACTUALLY FURNISHED.

6.1 ALL CONDUIT SHALL BE MINIMUM SIZE OF 3/4" FOR POWER CIRCUITS AND CONTROL CIRCUITS EXCEPT WHERE FLEXIBLE CONDUIT IS CALLED FOR ON PROJECT DOCUMENTS. ALL EXTERIOR EXPOSED CONDUIT SHALL BE GRC (GALVANIZED RIGID METAL CONDUIT). ALL UNDERGROUND, IN SLAB OR UNDER SLAB SHALL BE RNC (RIGID NONMETALLIC CONDUIT). CHANGE TO RIGID METALLIC CONDUIT OR INTERMEDIATE METALLIC CONDUIT BEFORE EXITING OUT OF CONCRETE OR PENETRATING A WALL, FLOOR OR ROOF. EMT IS ALLOWED IN INTERIOR DRY LOCATIONS WHERE NOT SUBJECT TO

6.2 ALL FLEXIBLE CONDUIT IN WET OR DRY AREAS SHALL BE LIQUID TIGHT CONDUIT. NONMETALLIC

6.3 CONDUIT SHALL BE RUN AT RIGHT ANGLES AND PARALLEL TO BUILDING LINES, SHALL BE NEATLY RACKED AND SECURELY FASTENED. JUNCTION BOXES SHALL BE PROVIDED WHERE REQUIRED TO

6.4 ALL CONDUIT AND ELECTRICAL EQUIPMENT SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE

6.5 ALL EMPTY RACEWAYS SHALL BE FURNISHED WITH A 200 LB. TEST NYLON DRAG LINE.

6.7 ALL RACEWAY AND WIRING SHALL BE CONCEALED IN FINISHED AREAS. RACEWAY IN MECHANICAL

6.8 FOR CONDUITS CROSSING EXPANSION JOINTS, PROVIDE EXPANSION FITTINGS FOR SIZE 1-1/4", AND LARGER. PROVIDE SECTIONS OF FLEXIBLE CONDUIT WITH GROUNDING JUMPERS FOR SIZES 1" AND

6.9 THE CONTRACTOR SHALL SEAL ALL PENETRATIONS THROUGH FIRE RATED WALLS AND FLOORS WITH APPROVED FIRE RATED SEALANT. ALL PENETRATIONS THROUGH ALL WALLS AND FLOORS SHALL BE SEALED. FOR ALL SLAB PENETRATIONS THE METHOD, DEPTHS AND LOCATIONS SHALL BE PRE-APPROVED BY THE BUILDING ENGINEER PRIOR TO THE START OF WORK.

6.10 THE CONTRACTOR SHALL INSTALL DETECTABLE UNDERGROUND TAPES FOR THE PROTECTION,

6.11 EXACT ROUTING OF CONDUITS AND CABLES SHALL BE DETERMINED IN FIELD.

6.12 ALL PENETRATIONS THROUGH FLOORS SHALL BE FIRE STOPPED AND SEALED WITH APPROVED

6.13 ELECTRICAL RACEWAY CONNECTIONS TO VIBRATING EQUIPMENT AND MACHINERY SUCH AS MOTORS, TRANSFORMERS, ETC., SHALL BE MADE WITH FLEXIBLE LIQUID TIGHT METALLIC CONDUIT.

6.14 SECURE ALL SUPPORTS TO BUILDING STRUCTURE UTILIZING TOGGLE BOLTS IN HOLLOW MASONRY, EXPANSION SHIELDS OR INSERTS IN CONCRETE AND BRICK. MACHINE SCREWS IN METAL, BEAM CLAMPS IN FRAMEWORK AND WOOD SCREWS IN WOOD. NAILS, RAWL PLUGS AND WOOD PLUGS ARE NOT PERMITTED. WHERE REQUIRED BY STRUCTURE, PROVIDE THRU BOLTS AND FISH PLATES. SUPPORT RACEWAY RISERS AT EACH FLOOR LEVEL. RUN EXPOSED RACEWAYS PARALLEL WITH OR

6.15 DO NOT RUN RACEWAYS CLOSER THAN 6 INCHES WHEN PARALLEL TO HOT WATER OR STEAM PIPES. WHEN CROSSING WATER OR STEAM PIPES CROSS A MINIMUM OF 3 INCHES ABOVE. IF CROSSING BELOW IS UNAVOIDABLE, PROVIDE DRIP SHIELDS EXTENDING 6 INCHES BEYOND THE WATER OR STEAMPIPE. BOXES INSTALLED IN PROXIMITY TO WATER OR STEAM PIPE SHALL BE

7.1 PROVIDE A COMPLETE EQUIPMENT GROUND SYSTEM FOR THE ELECTRICAL SYSTEM AS REQUIRED

7.2 ALL BRANCH CIRCUITS FOR POWER WIRING SHALL CONTAIN A COPPER GROUND WIRE. NO FLEXIBLE METAL CONDUIT OF ANY KIND OR LENGTH SHALL BE USED AS THE EQUIPMENT GROUNDING

8.1 ALL WIRE SHALL BE COPPER WITH TYPE THNN/THWN 600 VOLT INSULATION, MINIMUM #12 AWG FOR POWER AND LIGHTING CIRCUITS AND #16 AWG FOR CONTROL CIRCUITS.

8.2 UNDER NO CIRCUMSTANCES SHALL FEEDERS BE SPLICED.

8.3 ALL COMPUTER CIRCUITS SHALL HAVE SEPARATE NEUTRAL CONDUCTORS. ALL OTHER CIRCUITS

8.4 WHERE EQUIPMENT, LIGHTING FIXTURES AND WIRING DEVICES ARE SHOWN WITH CIRCUIT NUMBERS ONLY, THE MINIMUM BRANCH CIRCUITING REQUIREMENTS SHALL BE AS FOLLOWS: A. BRANCH CIRCUIT BREAKERS (120 VOLT) - 1P, 20A

B. HOMERUNS TO PANEL BOARD'S SHALL CONTAIN NO MORE THAN THREE CIRCUITS. 8.5 CONTRACTOR SHALL INCREASE SIZE OF CIRCUIT WIRING/CONDUCTORS TO COMPENSATE FOR

8.6 WIRE SIZES SHALL BE INCREASED TO COMPENSATE FOR VOLTAGE DROP AS FOLLOWS: A. 120V AND 208V CIRCUITS LONGER THAN 80' SHALL UTILIZE MIN. B. 208V CIRCUITS LONGER THAN 150' SHALL UTILIZE MIN. #10 AWG.

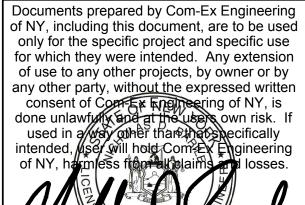
9.1 PANELBOARDS: SWITCHING UNITS SHALL BE 120/240V, 1-PHASE, 3-WIRE, 200A, 45 KAIC CIRCUIT BREAKER TYPE UNLESS OTHERWISE NOTED ON PANEL SCHEDULES. BUS BARS SHALL BE HARD DRAWN COPPER, MINIMUM 98% CONDUCTIVITY, AND SILVER OR TIN-PLATED JOINTS. CABINETS SHALL BE GALVANIZED SHEET STEEL BACK BOX, WITH DOOR AND TRIM AND LAPPED AND WELDED CORNERS. HARDWARE SHALL BE CHROME-PLATED WITH FLUSH LOCK/LATCH HANDLE ASSEMBLY (UP TO 48 IN. HIGH DOORS) OR VAULT HANDLE, LOCK AND 3-POINT CATCH (LARGER THAN 48 IN HIGH DOORS). HINGES SHALL BE SEMI-CONCEALED, 5-KNUCKLE STEEL WITH NONFERROUS PINS, 180 DEGREE OPENING, LOCATED A MAXIMUM 26 IN. ON CENTERS. PROVIDE DOOR-IN-DOOR CONSTRUCTION. MINIMUM GUTTER SPACES FOR LIGHTING PANELS SHALL BE 5- BOTTOM. DIRECTORY HOLDER SHALL BE METAL FRAME WITH CLEAR PLASTIC, TRANSPARENT COVER.

9.2 PROVIDE A NEW TYPE WRITTEN CIRCUIT DIRECTORY FOR EACH PANEL AFFECTED BY THIS PROJECT.

RESPONSIBLE FOR BALANCING LOADS ON ALL PHASES AND MAY ALTER ASSIGNMENT OF CIRCUITS

9.5 CIRCUIT SCHEDULES ARE INTENDED TO REPRESENT THE GENERAL WIRING NEEDS OF THE EQUIPMENT SERVICED FROM THE PANEL. THE EXACT CIRCUIT ARRANGEMENT WILL BE DETERMINED BY PANEL SHOP DRAWING AND ARRANGEMENT WILL BE DETERMINED BY PANEL SHOP DRAWING AND PANELS

at& NEW CINGULAR WIRELESS PCS, LLC ONE AT&T WAY BEDMINSTER. NJ 07921 Ę **BLACK & VEATCH** 10950 GRANDVIEW DRIVE OVERLAND PARK, KANSAS 66210 (913) 458-2000 COM≯EX ENGINEERING OF NY 309 BAILEY ROAD PURLING, NEW YORK 12470 PHONE: 862.209.4300 FAX: 862.209.4301 COMEX ENGINEERING OF NY, PLLC, STATE OF NY CERTIFICATE OF AUTHORIZATION # 27-3179723 SCHEDULE OF REVISIONS 2 0 09/17/18 ISSUED FOR PERMIT DATE **DESCRIPTION OF CHANGES** NO. **DRAWN BY:** JW **CHECKED BY:** NDB SCALE: AS NOTED **JOB NO:** 18024-BLV



NICHOLAS D. BARILE PROFESSIONAL ENGINEER, N.Y. LIC. No. 90133 COMEX ENGINEERING OF NY STATE OF NY CERTIFICATE OF AUTHORIZATION # 27-3179723

**CONSTRUCTION DRAWINGS** N-622 **CROWN CASTLE TOWER** 3105 E. MAIN ST. RT. 6 **MOHEGAN LAKE, NY 10574** 

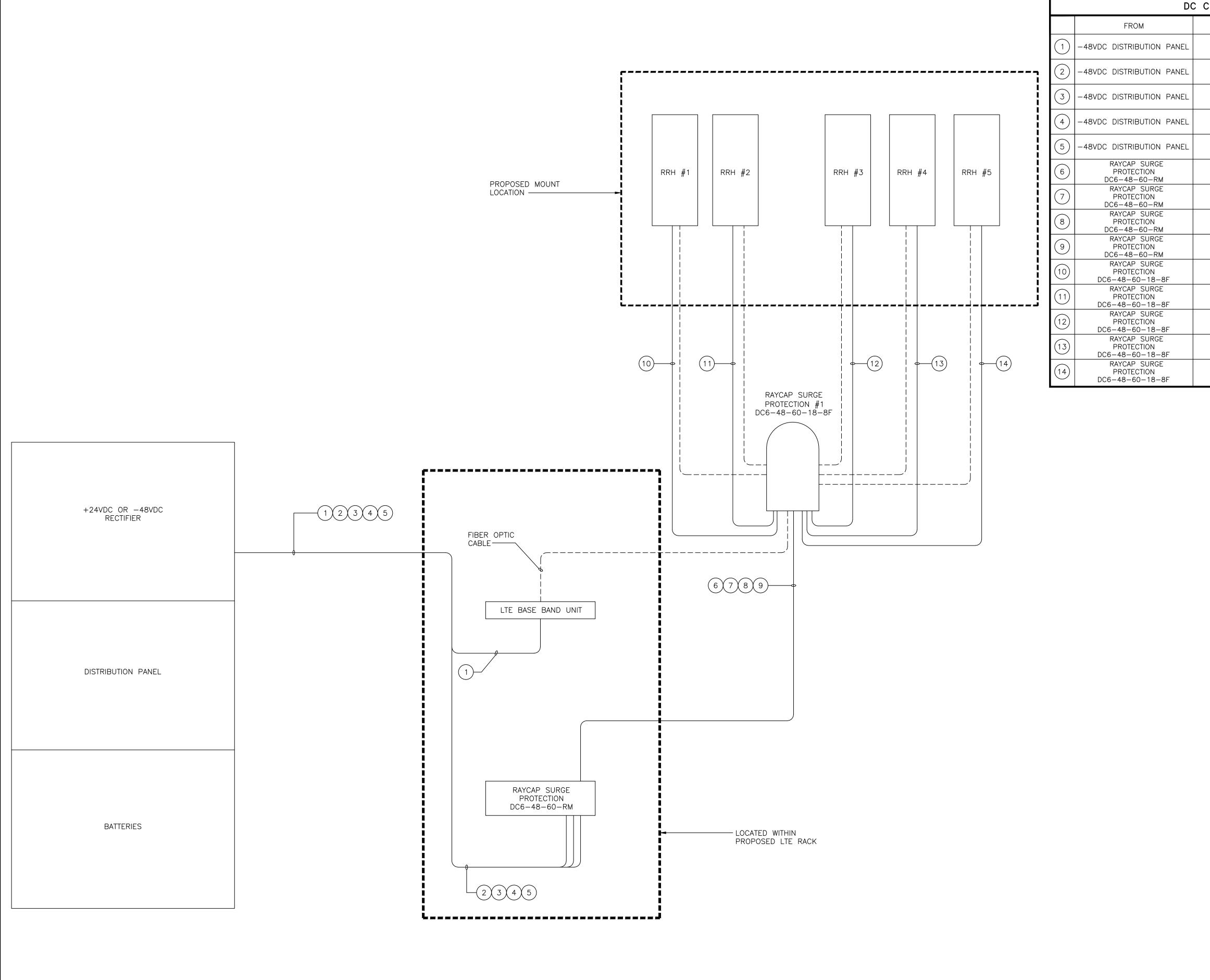
**BLOCK: 1, LOT: 1.2** 

DRAWING TITLE:

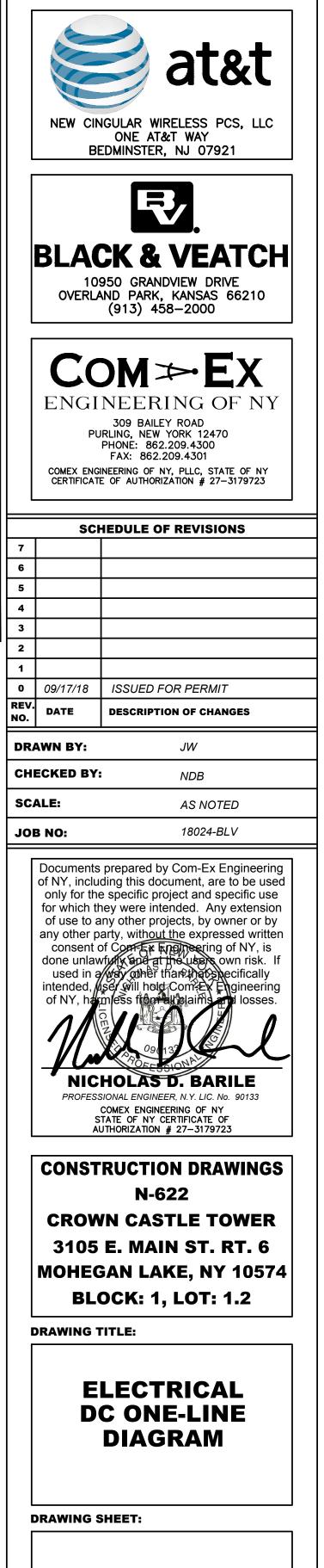
ELECTRICAL **NOTES &** DETAILS

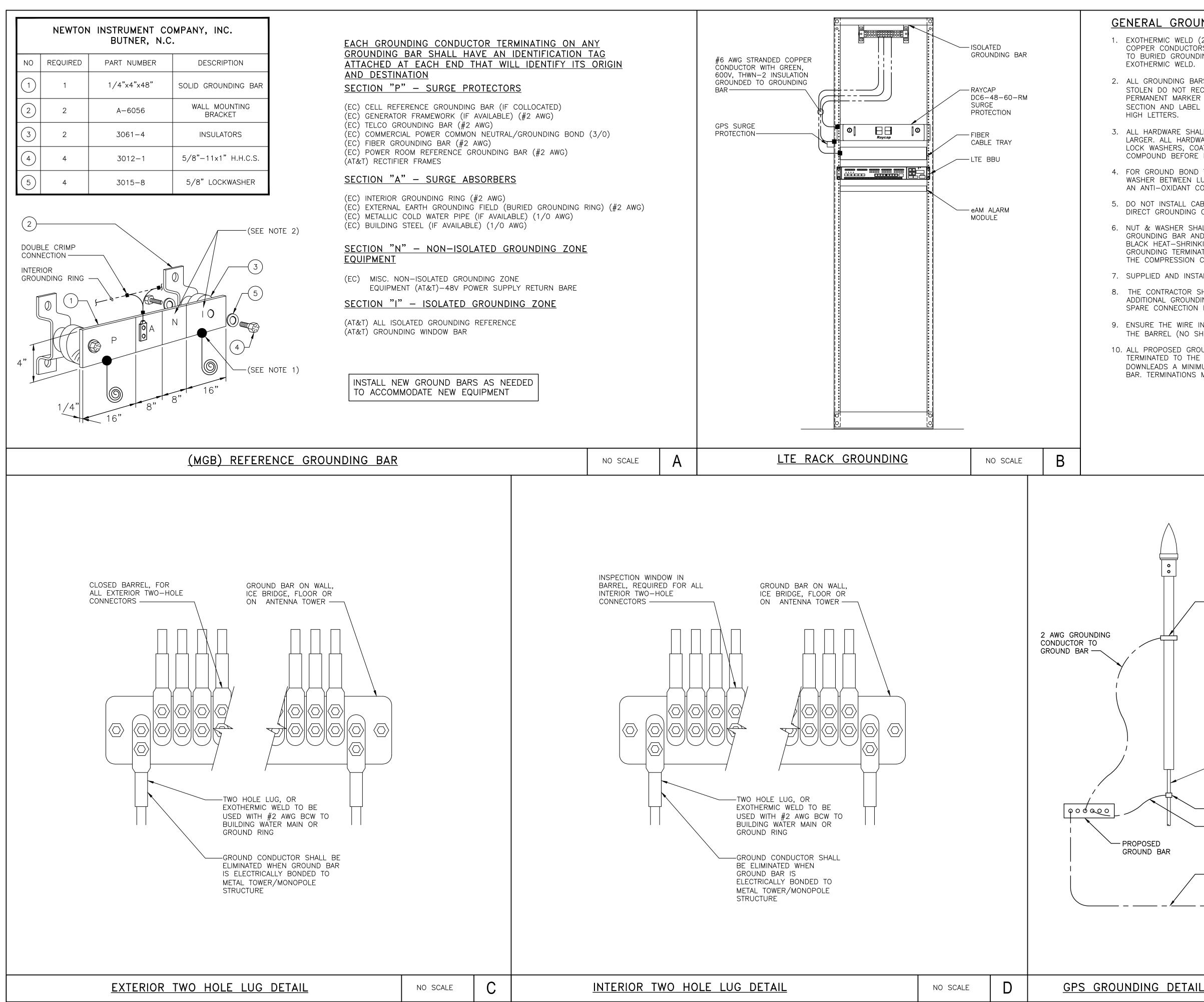
**DRAWING SHEET:** 





CIRCUIT SCHEDULE	
ТО	CONFIGURATION
LTE BASE BAND UNIT	(1) 2-#10 THHN/THWN/VW-1 TYPE TC-ER DC CABLE
RAYCAP SURGE PROTECTION DC6-48-60-RM	(1) 2-#10 THHN/THWN/VW-1 TYPE TC-ER DC CABLE
RAYCAP SURGE PROTECTION DC6-48-60-RM	(1) 2-#10 THHN/THWN/VW-1 TYPE TC-ER DC CABLE
RAYCAP SURGE PROTECTION DC6-48-60-RM	(1) 2-#10 THHN/THWN/VW-1 TYPE TC-ER DC CABLE
RAYCAP SURGE PROTECTION DC6-48-60-RM	(1) 2-#10 THHN/THWN/VW-1 TYPE TC-ER DC CABLE
RAYCAP SURGE PROTECTION DC6-48-60-18-8F	(1) 6-#8 THHN/THWN/VW-1 TYPE TC-ER DC CABLE
RAYCAP SURGE PROTECTION DC6-48-60-18-8F	(1) 6-#8 THHN/THWN/VW-1 TYPE TC-ER DC CABLE
RAYCAP SURGE PROTECTION DC6-48-60-18-8F	(1) 6-#8 THHN/THWN/VW-1 TYPE TC-ER DC CABLE
RAYCAP SURGE PROTECTION DC6-48-60-18-8F	(1) 6-#8 THHN/THWN/VW-1 TYPE TC-ER DC CABLE
RRH REMOTE RADIO HEAD #1	(1) 2-#12 THHN/THWN/VW-1 TYPE TC-ER DC CABLE
RRH REMOTE RADIO HEAD #2	(1) 2-#12 THHN/THWN/VW-1 TYPE TC-ER DC CABLE
RRH REMOTE RADIO HEAD #3	(1) 2-#12 THHN/THWN/VW-1 TYPE TC-ER DC CABLE
RRH REMOTE RADIO HEAD #4	(1) 2-#12 THHN/THWN/VW-1 TYPE TC-ER DC CABLE
RRH REMOTE RADIO HEAD <b>#</b> 5	(1) 2-#12 THHN/THWN/VW-1 TYPE TC-ER DC CABLE





## **GENERAL GROUNDING NOTES:**

1. EXOTHERMIC WELD (2) TWO, #2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUNDING BAR. ROUTE CONDUCTORS TO BURIED GROUNDING RING AND PROVIDE PARALLEL

2. ALL GROUNDING BARS SHALL BE STAMPED IN TO THE METAL "IF STOLEN DO NOT RECYCLE." THE CONTRACTOR SHALL USE PERMANENT MARKER TO DRAW THE LINES BETWEEN EACH SECTION AND LABEL EACH SECTION ("P", "A", "N", "I") WITH 1"

3. ALL HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.

4. FOR GROUND BOND TO STEEL ONLY: INSERT A CADMIUM FLAT WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.

5. DO NOT INSTALL CABLE GROUNDING KIT AT A BEND AND ALWAYS DIRECT GROUNDING CONDUCTOR DOWN TO GROUNDING BUS.

6. NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUNDING BAR AND BOLTED ON THE BACK SIDE. INSTALL BLACK HEAT-SHRINKING TUBE, 600 VOLT INSULATION, ON ALL GROUNDING TERMINATIONS. THE INTENT IS TO WEATHERPROOF THE COMPRESSION CONNECTION.

7. SUPPLIED AND INSTALLED BY CONTRACTOR.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUNDING BAR AS REQUIRED. PROVIDING 50% SPARE CONNECTION POINTS.

9. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).

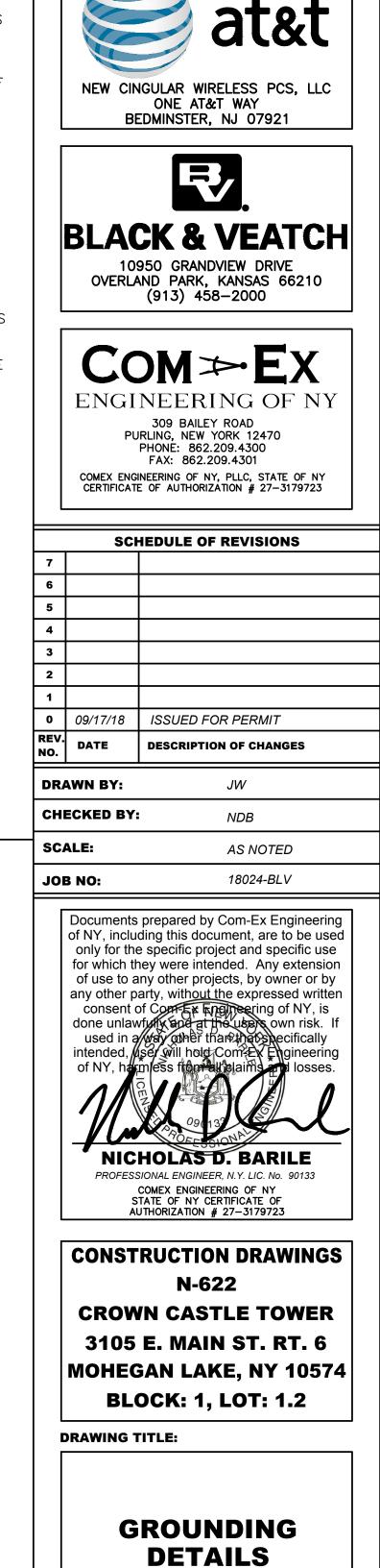
10. ALL PROPOSED GROUNDING BAR DOWNLEADS ARE TO BE TERMINATED TO THE EXISTING ADJACENT GROUNDING BAR DOWNLEADS A MINIMUM DISTANCE OF 4'-0" BELOW GROUNDING BAR. TERMINATIONS MAY BE EXOTHERMIC OR COMPRESSION.

> - CABLE TO PIPE CONNECTOR BURNDY TYPE GAR (TYP 2 PLCS)

> > 1/2 Ø COAX CABLE JUMPER

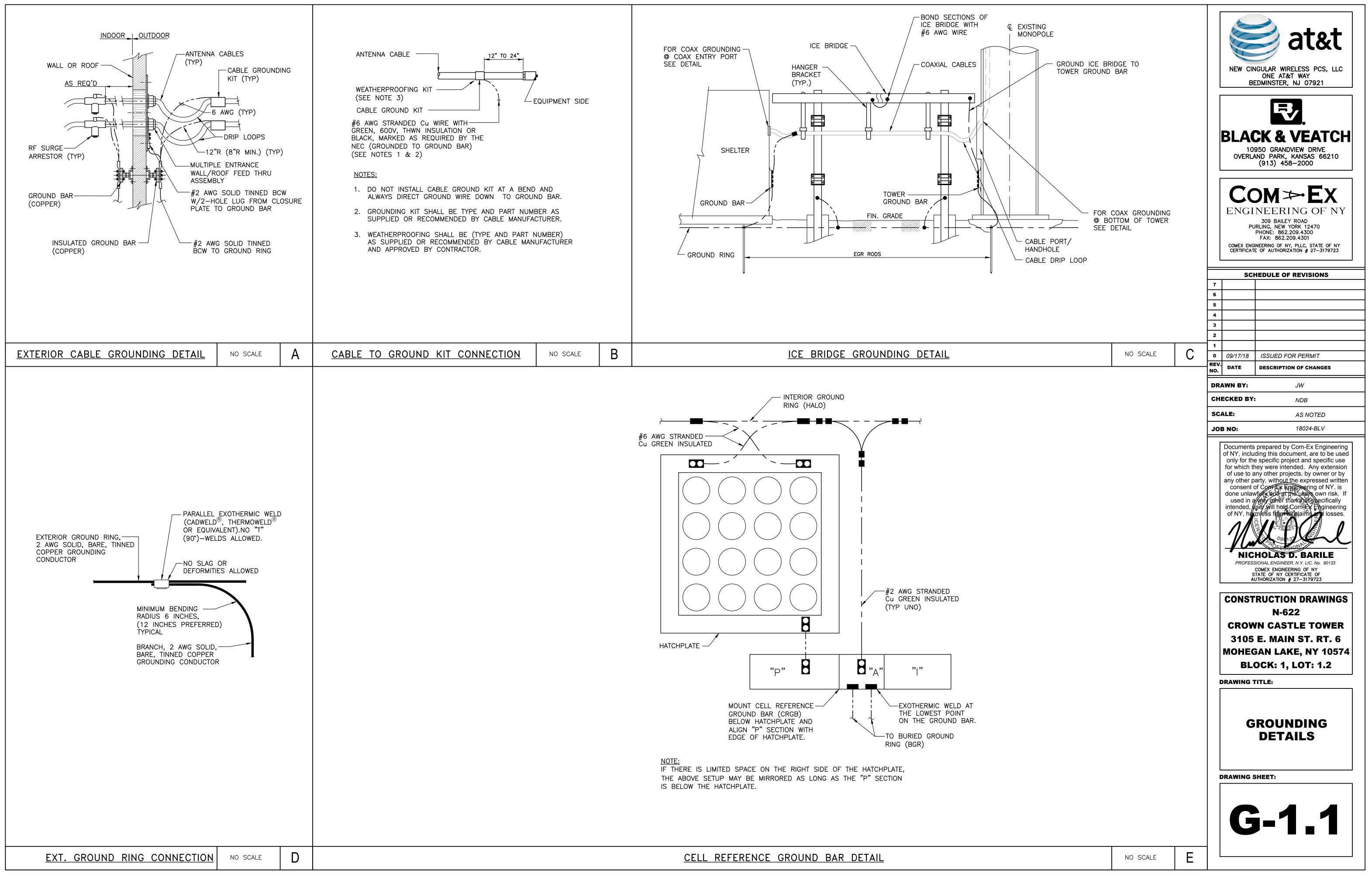
GROUND KIT #6 AWG GROUNDING CABLE (PROVIDED WITH KIT)

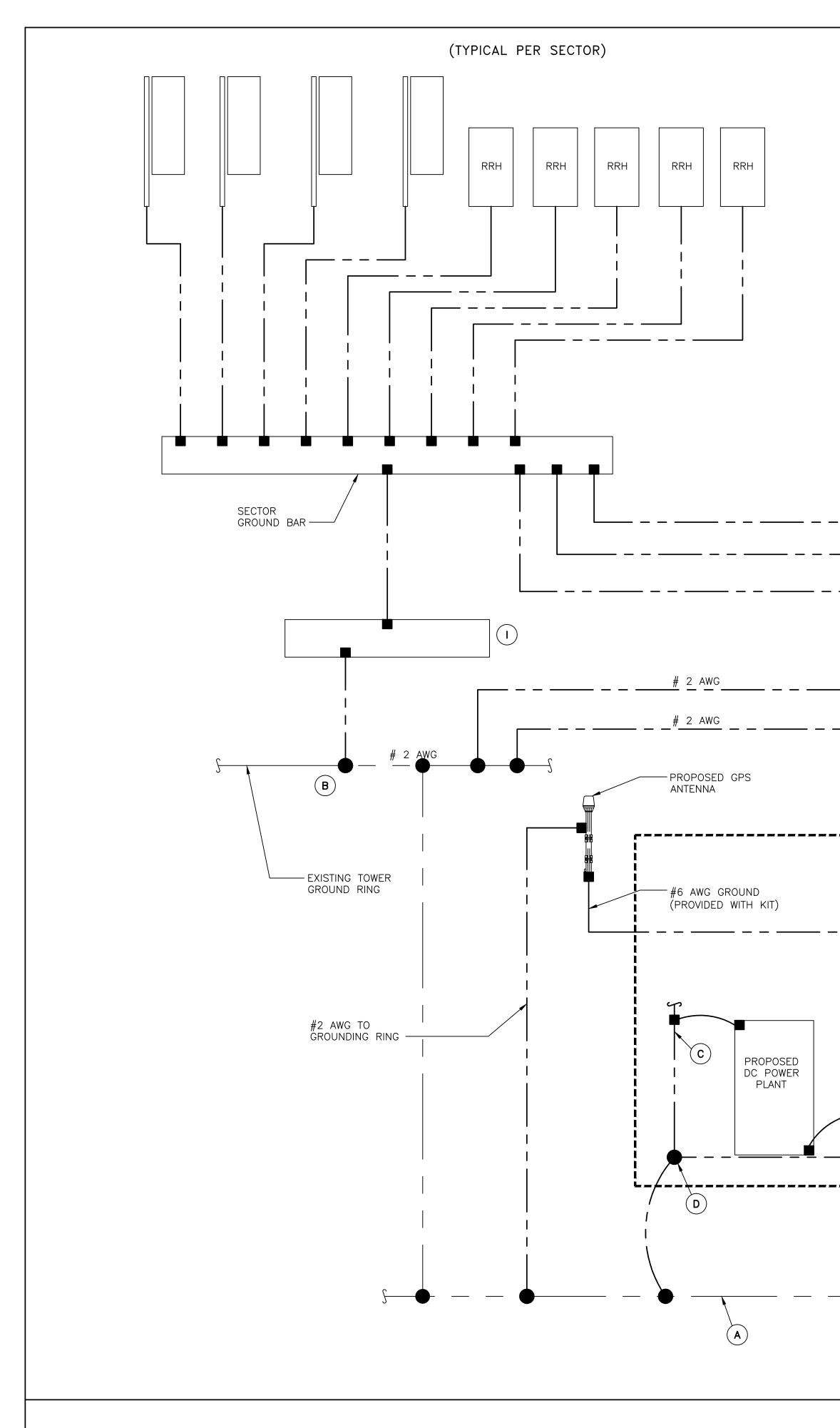
-2 AWG BARE TIN COPPER TO GROUND BAR



DRAWING SHEET:

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				NOTES: 1. GROUNDING IS SHOWN
	SURGE SUPPRESSION DEVICE	SURGE SUPPRESSION DEVICE	SURGE SUPPRESSION DEVICE	<ol> <li>CONTRACTOR SHALL GR GROUNDING SHALL BE GROUNDING AND BONDI MANUFACTURER'S SPECI</li> <li>ALL GROUNDING CONDU CONDUCTORS SHALL BE</li> </ol>
				GROUNDING KEY NOTES:
				A EXTERIOR GROUND RING: # LEAST 36 INCHES BELOW G APPROXIMATELY 24 INCHES (ATT-TP-76416 2.2.3.5/7.5
				B EXISTING TOWER GROUND R THE TOWER RING GROUND USING MINIMUM #2 AWG SC
				C INTERIOR GROUND RING: #2 CONDUCTOR EXTENDED ARC NON-TELECOMMUNICATIONS SHALL BE GROUNDED TO T GREEN INSULATED CONDUCT
				D BOND TO INTERIOR GROUND BONDS SHALL BE PROVIDED GROUND RING, LOCATED AT 7.5.2.2)
				E GROUND ROD: UL LISTED C EIGHT FEET LONG. ALL GRO SLEEVES. GROUND RODS SI CONDUCTOR. (ATT-TP-7641
		J 		F CELL REFERENCE GROUND COMMUNICATIONS EQUIPMEN STRANDED GREEN INSULATE WITH (2) #2 SOLID TINNED
				G HATCH PLATE GROUND BAR AWG STRANDED GREEN INSI AND A CELL REFERENCE GI CONNECTED TO THE HATCH TWO #2 AWG STRANDED GR
				H EXTERIOR CABLE ENTRY PO THE CELL SITE BUILDING. E COPPER CONDUCTORS WITH (ATT-TP-76416 7.6.7.2)
				I TOWER EXIT GROUND BAR: GROUND RING. (ATT-TP-76
				(J) TELCO GROUND BAR: BOND EXTERIOR GROUND RING. (A
	ROPOSED SHELTER			(K) FRAME BONDING: THE BONE BE THE GROUND BUS THAT FRAMEWORK. BOND THE FR REFERENCE GROUND BAR.
				L INTERIOR UNIT BONDS: MET LOCATED WITH THE AREA O STRANDED GREEN INSULATE (ATT-TP-76416 7.12.3.1)
				M EXTERIOR UNIT BONDS: MET BUILDING, SHALL BE BONDE 7.4.2.6)
	#_2_A	NG	K	N ICE BRIDGE SUPPORTS: EAC GROUND RING WITH #2 AW EXOTHERMIC WELDS AT BOT (ATT-TP-76416 7.4.2.6)
F CELL REFERE	NCE GROUND BAR	FIF RACK		
£				
			— — <u> </u>	
		Ē	Ŭ	

#### SHELTER/ANTENNA SITE:

DIAGRAMMATICALLY ONLY.

ROUND ALL EQUIPMENT AS A COMPLETE SYSTEM. IN COMPLIANCE WITH NEC SECTION 250 AND AT&T DING REQUIREMENTS (ATT-TP-76416) AND CIFICATIONS.

UCTORS SHALL BE COPPER; NO ALUMINUM E USED.

#2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT GRADE, OR 6 INCHES BELOW THE FROST LINE AND S FROM THE EXTERIOR WALL OR FOOTING. .5.1)

RING: AT LEAST TWO BONDS SHALL BE MADE BETWEEN SYSTEM AND THE BUILDING RING GROUND SYSTEM SOLID COPPER CONDUCTORS. (ATT-TP-76416 7.5.1)

2 AWG STRANDED GREEN INSULATED COPPER OUND THE PERIMETER OF THE EQUIPMENT AREA. ALL RELATED METALLIC OBJECTS FOUND WITHIN A SITE THE INTERIOR GROUND RING WITH #6 AWG STRANDED OTOR. (ATT-TP-76416 7.6.4)

RING: #2 AWG SOLID TINNED COPPER WIRE PRIMARY AT LEAST AT FOUR POINTS ON THE INTERIOR THE CORNERS OF THE BUILDING. (ATT-TP-76416

COPPER CLAD STEEL. MINIMUM 5/8" DIAMETER BY OUND RODS SHALL BE INSTALLED WITH INSPECTION SHALL BE DRIVEN TO THE DEPTH OF GROUND RING 16 1.4 / 7.5.1)

BAR: POINT OF GROUND REFERENCE FOR ALL NT FRAMES. ALL BONDS ARE MADE WITH #2 AWG ED COPPER CONDUCTORS. BOND TO GROUND RING D COPPER CONDUCTORS. (ATT-76416 7.6.5)

R: BOND TO THE INTERIOR GROUND RING WITH TWO #2 SULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE GROUND BAR ARE BOTH PRESENT, THE CRGB MUST BE H-PLATE AND TO THE INTERIOR GROUND RING USING GREEN INSULATED COPPER CONDUCTORS.

ORT GROUND BARS: LOCATED AT THE ENTRANCE TO BOND TO GROUND RING WITH A #2 AWG SOLID TINNED H AND EXOTHERMIC WELD AND INSPECTION SLEEVE.

#2 AWG SOLID TINNED COPPER BOND TO THE TOWER 6416 7.55)

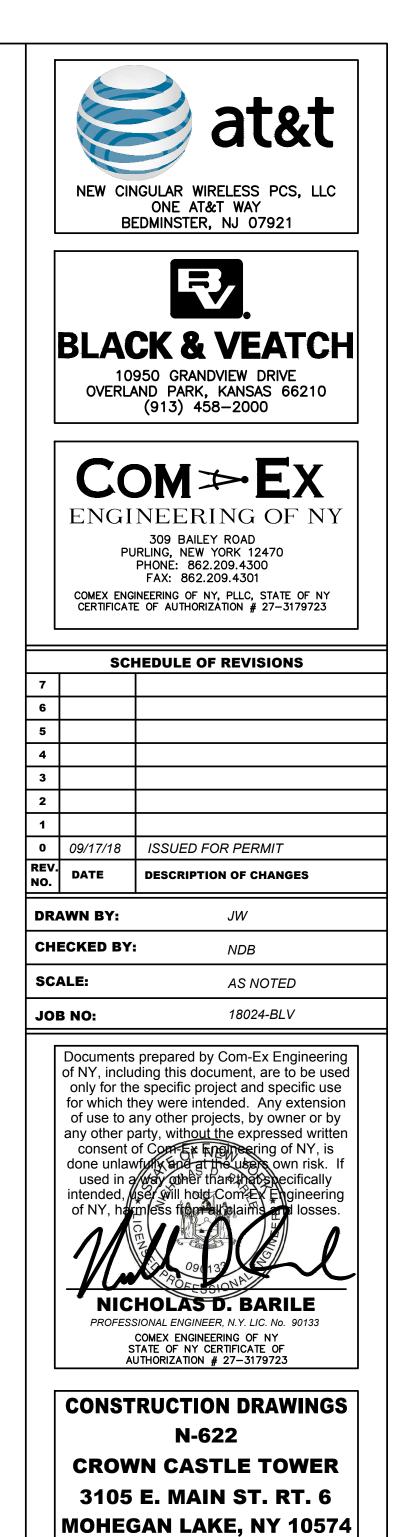
D TO BOTH CELL REFERENCE GROUND BAR AND ATT-TP-76416 7.6.8)

DING POINT FOR TELECOM EQUIPMENT FRAMES SHALL IS NOT ISOLATED FROM THE EQUIPMENTS METAL CAME GROUND BUS TO THE "I" SECTION OF THE CELL (ATT-TP-76416 7.8)

TAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS OF THE INTERIOR GROUND RING REQUIRE A #6 AWG ED COPPER BOND TO THE INTERIOR GROUND RING.

ETALLIC OBJECTS, EXTERNAL TO OR MOUNTED TO THE DED TO THE EXTERIOR GROUND RING. (ATT-TP-76416

ACH ICE BRIDGE LEG SHALL BE BONDED TO THE WG BARE TINNED COPPER CONDUCTOR. PROVIDE DTH THE ICE BRIDGE LEG AND BURIED GROUND RING.



DRAWING TITLE:

## EQUIPMENT GROUNDING PLAN

**BLOCK: 1, LOT: 1.2** 

DRAWING SHEET:



А

#### GENERAL CONSTRUCTION NOTES:

- 1. FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY: GENERAL CONTRACTOR - OVERLAND CONTRACTING INC. (B&V) CONTRACTOR: (CONSTRUCTION) OWNER – AT&T
- 2. ALL SITE WORK SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS AND AT&T PROJECT SPECIFICATIONS.
- GENERAL CONTRACTOR SHALL VISIT THE SITE AND SHALL FAMILIARIZE HIMSELF WITH ALL 3. CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS, DIMENSIONS, AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
- 4. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. GENERAL CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF WORK.
- ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY 5. SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES, AND APPLICABLE REGULATIONS.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE 7. ONLY UNLESS OTHERWISE NOTED. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS THE MINIMUM REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS, SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF WORK AND PREPARED BY THE ENGINEER PRIOR TO PROCEEDING WITH WORK.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH 8 MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE 9. CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE ENGINEER PRIOR TO PROCEEDING.
- 10. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF WORK AREA, ADJACENT AREAS AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFIRM TO ALL OSHA REQUIREMENTS AND THE LOCAL JURISDICTION.
- 11. GENERAL CONTRACTOR SHALL COORDINATE WORK AND SCHEDULE WORK ACTIVITIES WITH OTHER DISCIPLINES.
- 12. ERECTION SHALL BE DONE IN A WORKMANLIKE MANNER BY COMPETENT EXPERIENCED WORKMAN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST ACCEPTED PRACTICE. ALL MEMBERS SHALL BE LAID PLUMB AND TRUE AS INDICATED ON THE DRAWINGS.
- 13. SEAL PENETRATIONS THROUGH FIRE RATED AREAS WITH UL LISTED MATERIALS APPROVED BY LOCAL JURISDICTION. CONTRACTOR SHALL KEEP AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DEBRIS.
- 14. WORK PREVIOUSLY COMPLETED IS REPRESENTED BY LIGHT SHADED LINES AND NOTES. THE SCOPE OF WORK FOR THIS PROJECT IS REPRESENTED BY DARK SHADED LINES AND NOTES. CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR OF ANY EXISTING CONDITIONS THAT DEVIATE FROM THE DRAWINGS PRIOR TO BEGINNING CONSTRUCTION.
- 15. CONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO THE CONSTRUCTION MANAGER 48 HOURS PRIOR TO COMMENCEMENT OF WORK.
- 16. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
- 17. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
- 18. GENERAL CONTRACTOR SHALL COORDINATE AND MAINTAIN ACCESS FOR ALL TRADES AND CONTRACTORS TO THE SITE AND/OR BUILDING.
- 19. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SECURITY OF THE SITE FOR THE DURATION OF CONSTRUCTION UNTIL JOB COMPLETION.
- 20. THE GENERAL CONTRACTOR SHALL MAINTAIN IN GOOD CONDITION ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDENDA, AND CHANGE ORDERS ON THE PREMISES AT ALL TIMES.
- 21. THE GENERAL CONTRACTOR SHALL PROVIDE PORTABLE FIRE EXTINGUISHERS WITH A RATING OF NOT LESS THAN 2-A OT 2-A:10-B:C AND SHALL BE WITHIN 25 FEET OF TRAVEL DISTANCE TO ALL PORTIONS OF WHERE THE WORK IS BEING COMPLETED DURING CONSTRUCTION.
- 22. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS SHALL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION, B) CONFINED SPACE, C) ELECTRICAL SAFETY, AND D) TRENCHING & EXCAVATION.
- 23. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED, CAPPED, PLUGGED OR OTHERWISE DISCONNECTED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE RESPONSIBLE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE OWNER AND/OR LOCAL UTILITIES.
- 24. THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION.
- 25. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE FEDERAL AND LOCAL JURISDICTION FOR EROSION AND SEDIMENT CONTROL.
- 26. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUNDING. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

- JURISDICTION.

- PER MONTH, BY AT&T TECHNICIANS.

- GENERAL CONTRACTOR IMMEDIATELY.

- AND REQUIREMENTS.
- **RECOMMENDATIONS.**

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27. THE SUBGRADE SHALL BE BROUGHT TO A SMOOTH UNIFORM GRADE AND COMPACTED TO 95 PERCENT STANDARD PROCTOR DENSITY UNDER PAVEMENT AND STRUCTURES AND 80 PERCENT STANDARD PROCTOR DENSITY IN OPEN SPACE. ALL TRENCHES IN PUBLIC RIGHT OF WAY SHALL BE BACKFILLED WITH FLOWABLE FILL OR OTHER MATERIAL PRE-APPROVED BY THE LOCAL

28. ALL NECESSARY RUBBISH, STUMPS, DEBRIS, STICKS, STONES, AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LAWFUL MANNER.

29. ALL BROCHURES, OPERATING AND MAINTENANCE MANUALS, CATALOGS, SHOP DRAWINGS, AND OTHER DOCUMENTS SHALL BE TURNED OVER TO THE GENERAL CONTRACTOR AT COMPLETION OF CONSTRUCTION AND PRIOR TO PAYMENT.

30. CONTRACTOR SHALL SUBMIT A COMPLETE SET OF AS-BUILT REDLINES TO THE GENERAL CONTRACTOR UPON COMPLETION OF PROJECT AND PRIOR TO FINAL PAYMENT.

31. CONTRACTOR SHALL LEAVE PREMISES IN A CLEAN CONDITION.

32. THE PROPOSED FACILITY WILL BE UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SEWER SERVICE, AND IS NOT FOR HUMAN HABITAT (NO HANDICAP ACCESS REQUIRED).

33. OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION, APPROXIMATELY 2 TIMES

34. NO OUTDOOR STORAGE OR SOLID WASTE CONTAINERS ARE PROPOSED.

35. ALL MATERIAL SHALL BE FURNISHED AND WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST REVISION AT&T MOBILITY GROUNDING STANDARD "TECHNICAL SPECIFICATION FOR CONSTRUCTION OF GSM/GPRS WIRELESS SITES" AND "TECHNICAL SPECIFICATION FOR FACILITY GROUNDING". IN CASE OF A CONFLICT BETWEEN THE CONSTRUCTION SPECIFICATION AND THE DRAWINGS, THE DRAWINGS SHALL GOVERN.

36. CONTRACTORS SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS REQUIRED FOR CONSTRUCTION. IF CONTRACTOR CANNOT OBTAIN A PERMIT, THEY MUST NOTIFY THE

37. CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE ON A DAILY BASIS.

38. INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM SITE VISITS AND/OR DRAWINGS PROVIDED BY THE SITE OWNER. CONTRACTORS SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

39. NO WHITE STROBE LIGHTS ARE PERMITTED. LIGHTING IF REQUIRED, WILL MEET FAA STANDARDS

40. ALL COAXIAL CABLE INSTALLATIONS TO FOLLOW MANUFACTURER'S INSTRUCTIONS AND

ne Coax	ne Coax to TMAs/Diplexers or Antennas Color Code for Jumpers to TMAs & Diplexers - AND - to Hard-Line Coax to Single-Port Antennas																	
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				A5	LTE	700	TXD / RXD	Green	Green	Green	Green	Green	Green	Green	Green	Orange	Gray	
k diveri	isity lines with a si	ingle BROWN	ŀ	A5	LTE	2100	TXM/RXM	Green	Green	Green	Green	Green	Green	Green	Violet	Gray		
	~~	89 8		A5	LTE	2100	TXD / RXD	Green	Green	Green	Green	Green	Green	Green	Green	Violet	Gray	
					2000							2						
Blue	3 Blue	5 Blue	7 Blue	B1	GSM	850	TXM/RXM	Blue	Orange			-				-		-
Blue	4 Blue	6 Blue	8 Blue	B1	GSM	850	TXD / RXD	Blue	Blue	Orange								2
		10.00		B1	GSM	1900	TXM/RXM	Blue	Violet	NAN 9446					-			
				B1	GSM	1900	TXD / RXD	Blue	Blue	Violet								
to the le	eft <u>if γou are stan</u>	ding behind 1	the	B2	UMTS	850	TXM/RXM	Blue	Blue	Blue	Orange	Yellow						
ector,	at the	46952 58		B2	UMITS	850	TXD / RXD	Blue	Blue	Blue	Blue	Orange	Yellow					-
5 anter	nna is not typical l	but shown he	ere	B3	UMTS	1900	TXM/RXM	Blue	Blue	Blue	Blue	Blue	Violet	Yellow				
				B3	UMTS	1900	TXD/RXD	Blue	Blue	Blue	Blue	Blue	Blue	Violet	Yellow			1
				B5	LTE	700	TXM/RXM	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Orange	Gray		
N. R.	9			B5	LTE	700	TXD / RXD	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Orange	Gray	-
k diveri	isity lines with a si	ingle BROWIN	1	B5	LTE	2100	TXM/RXM	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Violet	Gray		
				B5	LTE	2100	TXD / RXD	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Violet	Gray	
Vhite	3 White	5 White	7 White	G1	GSM	850	TXM/RXM	White	Orange		e <u> </u>				r		-	
Vhite	4 White	6 White	8 White	G1	GSM	850	TXD / RXD	White	White	Orange					-		÷	6
		- O y y filees	0 vvince	G1	GSM	1900	TXM/RXM	White	Violet	Orange	1. J		é		<u>.</u>		. <u> </u>	
			<u>k</u>	G1	GSM	1900	TXD / RXD	White	White	Violet	-						0	-
50° 31	e e	8 9 96 63	4	G2	UMTS	850	TXM/RXM	White	White	White	Orange	Yellow					5	2
	eft <u>if γou are stan</u> o	<u>aing benina</u> t	ne	G2	UMTS	850	TXD / RXD	White	White	White	White	Orange	Yellow		-			
ector. E onton	nna is not typical l	hutahawa ha	and the second se	G3	UMITS	1900	TXM/RXM	White	White	White	White	White	Violet	Yellow			÷;	
Janter	па із постурісаї і	DUCSHOWITTIE	are in	G3	UMTS	1900	TXD / RXD	14	White	White	White	White	White		Yellow			
				G5	LTE	700	TXM/RXM	White	White	White	White	White	White	White	Orange	Gray		*
				G5	LTE	700	TXD / RXD	White	White	White	White	White	White	White	White	Orange	Gray	8
k diveri	isity lines with a si	ingle BROW/N	Ē	G5	LTE	2100	TXM/RXM	White	White	White	White	White	White	White	Violet	Gray	Oldy	÷
it diff of i				G5	LTE	2100	TXD / RXD	White	White	White	White	White	White	White	White	Violet	Gray	92
					<u> </u>		110 1 10 0									S. S. Landson		2
Red	3 Red	5 Red	7 Red	D1	GSM	850	TXM/RXM	Red	Orange				in in					
Red	4 Red	6 Red	8 Red	D1	GSM	850	TXD / RXD	Red	Red	Orange								
				D1	GSM	1900	TXM/RXM	Red	Violet									
1		11 <sup>1</sup> 1		D1	GSM	1900	TXD / RXD	Red	Red	Violet	·	· · · · · · · · · · · · · · · · · · ·						
o the le	eft if you are stand	ding hehind t	he	D2	UMTS	850	TXM/RXM	Red	Red	Red	Orange	Yellow						
ector.	ne <u>n you ure sunk</u>	ang berinia i		D2	UMTS	850	TXD / RXD	Red	Red	Red	Red	Orange	Yellow					
	nna is not typical ł	but shown he	ere in	D3	UMTS	1900	TXM/RXM	Red	Red	Red	Red	Red	Violet	Yellow		7		
	825			DB	UMTS	1900	TXD / RXD	Red	Red	Red	Red	Red	Red	Violet	Yellow			
				D5	LTE	700	TXM/RXM	Red	Red	Red	Red	Red	Red	Red	Orange	Gray		
				D5	LTE	700	TXD / RXD	Red	Red	Red	Red	Red	Red	Red	Red	Orange	Gray	
k diveri	isity lines with a si	ingle BROWN	l	D5	LTE	2100	TXM/RXM	Red	Red	Red	Red	Red	Red	Red	Violet	Gray		
				D5	LTE	2100	TXD / RXD	Red	Red	Red	Red	Red	Red	Red	Red	Violet	Gray	
rown	3 Brown	5 Brown	7 Brown	E1	GSM	850	TXIM/RXM	Brown	Orange									
rown	4 Brown	6 Brown	8 Brown	E1	GSM	850	TXD / RXD	Brown	Brown	Orange	1							-
		8.8		E1	GSM	1900		Brown	Violet		1				-			
				E1	GSM	1900	TXD / RXD	Brown	Brown	Violet								
o the le	eft <u>if you are stan</u> d	<u>ding behind</u> t	he	E2	UMTS	850	TXM/RXM	Brown	Brown	Brown	Orange	Yellow						-
ector.		4); 14		E2	UMTS	850	TXD / RXD	Brown	Brown	Brown	Brown	Orange	Yellow					
5 anten	na is not typical b	but shown he	ire in	E3	UMTS	1900		Brown	Brown	Brown	Brown	Brown	Violet	Yellow				
				E3	UMTS	1900	TXD / RXD	Brown	Brown	Brown	Brown	Brown	Brown	Violet	Yellow			÷
				E5	LTE	700	TXM/RXM	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Orange	Gray	_	
بنام ال	and the second second		ь.	E5	LTE	700	TXD / RXD	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Orange	Gray	-
k alveri	isity lines with a si	ingle BROWN	1	E5	LTE	2100		Brown	Brown	Brown	Brown	Brown	Brown	Brown	Violet	Gray	-	
				E5	LTE	2100	TXD/RXD	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Violet	Gray	

