Planning & Economic Development Division
218-730-5580 | planning@duluthmn.gov
Room 160 | 411 West First Street | Duluth, Minnesota 55802
www.duluthmn.gov

Staff Report for PLSUP-2602-0033

Application Information:

Application Type: Special Use Permit for Wireless Facility
Location of Subject: 2299 Commonwealth Ave
Legal Description: 010-2746-01290

Applicant: AT&T
Applicant Contact: n/a
Agent: Jason Hall
Agent Contact: n/a

Staff Contact: Chris Lee, clee@duluthmn.gov

Deadline for Action:
Application Date: February 26, 2026
Date Extension Letter Mailed: March 6, 2026
60 Days: April 27, 2026
120 Days: June 26, 2026

Site Visit Date: March 27, 2026
Sign Notice Date: March 31, 2026

Neighbor Letter Date: March 19, 2026
Number of Letters Sent: 4

Proposal:

Applicant is seeking special use permit to install a new collar mount platform with 9 antenna to the existing 190' tower and a new generator on the ground inside an expanded compound.

Recommended Action:

Staff recommends approval.

Zoning and Land Use:

	Current Zoning	Existing Land Use	Future Land Use Map Designation
Subject	MU-B	Telecom Facility	General Industrial
North	MU-B	Storage Facility	General Industrial
South	MU-B	Storage Facility	General Industrial
East	I-G	Warehouse	General Industrial
West	MU-B	Storage Facility	General Industrial

Summary of Code Requirements:

50-20.4.E. Major utility or wireless telecommunications facility.

UDC Section 50-37.10. Special Use Permits. The Planning Commission shall approve the application or approve it with modifications if the commission determines that the application meets the following criteria: 1. The application is consistent with the Comprehensive Land Use Plan; 2. The application complies with all applicable provisions of this Chapter, including without limitation any use-specific standards applicable to the proposed use, development or redevelopment, and is consistent with any approved district plan for the area; 3. Without limiting the previous criteria, the commission may deny any application that would result in a random pattern of development with little contiguity to existing or programmed development or would cause anticipated negative fiscal or environmental impacts on the community.

Comprehensive Plan Governing Principle and/or Policies and Current History (if applicable):

Principle #1 – Reuse previously developed lands – This wireless utility is being installed to an existing tower that has been in operation since the early 2000's.

Future Land Use: General Industrial – Areas for manufacturing, processing, and other activities that may have off-site impacts and are generally isolated or buffered from other uses. Sites should have direct access to major regional transportation facilities and other infrastructure.

History: The property has been in use as cell tower since. The adjacent properties under the same ownership contain mini storage that was constructed in 2022.

Review and Discussion Items:

Staff finds:

1. The applicant is proposing to install a new collar mount with 9 new antennas units along with accessory equipment (Remote Radio Units, cabling, mounting brackets) to an existing tower. A new ground mounted generator will be installed with a small expansion of the existing fenced in compound.
2. The existing tower is compliant with existing special use permits.
3. The applicant has presented plans that meet the use specific standards outlined in 50-20.4.E. The facility meets the location standards for co-locating on existing facilities.
4. The city has the ability to regulate land use; however, the FCC preempts local review on the potential environmental effects of radio frequency (RF) emissions, assuming that the provider is in compliance with the Commission's RF rules. This facility is categorically excluded and will be in full compliance with the current FCC RF emissions guidelines. Applicant has agreed to perform, and provide written documentation, of a post construction RF emissions compliance.
5. Based on the design and locations of the proposed facilities, staff are not anticipating any visual impact and are not recommending any additional screening requirements.
6. No public, agency, or City comments were received at the time of drafting this report.
7. Per UDC Section 50-37.1.N, approved special use permit lapse if the project or activity authorized by the permit or variance is not begun within one-year.

Staff Recommendation:

Based on the above findings, Staff recommends that Planning Commission approve the special use permit with the following conditions:

1. The project must be constructed and limited to the plans submitted with the application.
2. The permit will lapse if no activity takes place within 1 year of approval
3. Any alterations to the approved plans that do not alter major elements of the plan may be approved by the Land Use Supervisor without further Planning Commission approval; however, no such administrative approval shall constitute a variance from the provisions of Chapter 50.

Staff Report Map for PLSUP-2602-0003:

Figure 1.
Aerial imagery captured in 2025, showing a proposed co-location by AT&T on an existing tower on the southwest corner of 2299 Commonwealth Ave. No change to tower height or ground space.

Disclaimer for Externally Sourced Application Files

We strive to ensure digital accessibility for all users and comply with the Americans with Disabilities Act (ADA) and Web Content Accessibility Guidelines (WCAG) standards. The following documents are provided in the original format in which they were submitted. If you require an accessible version or alternative format, please contact us at **info@duluthmn.gov**.

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PREFORMED 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 THESE CODES.

BUILDING CODE:	2020 MINNESOTA BUILDING CODE
PLUMBING CODE:	2020 MINNESOTA PLUMBING CODE
MECHANICAL CODE:	2020 MINNESOTA MECHANICAL CODE
ELECTRICAL CODE:	2023 NATIONAL ELECTRICAL CODE
FIRE & SAFETY CODE:	2020 MINNESOTA FIRE CODE

PROJECT TEAM

APPLICANT:	AT&T MOBILITY 7900 XERXES AVE S, 3RD FLOOR BLOOMINGTON, MN 55431 PM: VERNA SIN, VG4773@ATT.COM CM: JOHN O'BRIEN, JO9302@ATT.COM
PROJECT MANAGEMENT:	SMARTLINK JACKEE SPOHR JACQUELYN.SPOHR@SMARTLINKGROUP.COM (248) 798-1419
CONSTRUCTION MANAGEMENT:	MASTEC SOLUTIONS DYLAN DAVIS DYLAN.DAVIS@MASTEC.COM (318) 505-3307
ARCHITECT ENGINEERING:	JOHN M. BANKS 604 FOX GLEN BARRINGTON, IL 60010 CONTACT: JOHN M. BANKS PHONE: (847) 212-8354

SITE INFORMATION

STRUCTURE LANDLORD:	CROWN CASTLE
LANDLORD SITE NUMBER:	823693
LANDLORD CONTACT:	MEGAN HARTZ - (877) 486-9377 megan.hartz@crowncastle.com
E911 ADDRESS:	2299 COMMONWEALTH AVENUE DULUTH, MN 55808
JURISDICTION:	CITY OF DULUTH
PARCEL #:	010-2746-01290
CURRENT ZONING:	MU-B (MIXED USE BUSINESS PARK)
EXISTING USE:	STORAGE / COMMUNICATIONS FACILITY
PROPOSED USE:	STORAGE / COMMUNICATIONS FACILITY
LATITUDE (NAD 83):	46.6792° / 46° 40' 45.12"
LONGITUDE (NAD 83):	-92.2278° / -92° 13' 40.08"
SITE ELEVATION:	±687.0' A.M.S.L.
POWER PROVIDER:	MN POWER

ACCESSIBILITY REQUIREMENTS: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. ACCESSIBILITY IS NOT REQUIRED.

REFERENCE NOTES

THESE PLANS WERE COMPLETED PER FINAL/APPROVED LTE 4C(FIRSTNET)/5G NR RADIO/5G NR 1SR CBAND RFDS ID# RFDS-26125 V:7.00 DATED TBD.

CONTRACTOR SHALL REQUEST CURRENT RFDS & WORKBOOK FROM CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION.

GC SHALL REVIEW AND COMPLY WITH THE MOUNT STRUCTURAL ANALYSIS COMPLETED BY JOHN M. BANKS ARCHITECT DATED (PENDING)

A STRUCTURAL ANALYSIS OF THE TOWER SHALL BE COMPLETED PRIOR TO THE START OF ANY CONSTRUCTION.

ANY DEVIATION THAT DIFFERS SUBSTANTIALLY FROM WHAT IS SHOWN ON THE CONSTRUCTION DRAWINGS MUST BE APPROVED BY THE ENGINEER OF RECORD. NO CHANGES THAT ALTER THE CHARACTER OF THE WORK CAN BE MADE DURING CONSTRUCTION WITHOUT ISSUING A CHANGE ORDER. CONTACT JOHN BANKS – PHONE: (847) 212–8354

AT&T

SITE NAME: DULUTH BECKS RD
FA LOCATION: 15201479/SITE ID: MNL98601A
SITE ADDRESS: 2299 COMMONWEALTH AVENUE DULUTH, MN 55808
STRUCTURE: 190'-0" SELF SUPPORT TOWER
USID: 306489

VICINITY MAP

LOCAL MAP

PROJECT DESCRIPTION

INSTALLATION OF AN UNMANNED TELECOMMUNICATIONS FACILITY, BASED ON DE130 SCOPING DATED ---- CONSISTING OF THE FOLLOWING SCOPE:

ANTENNA LOCATION:

INSTALL:
- (3) SECTOR FRAMES
- (9) CELLMAX 120726 ANTENNAS
- (3) ERICSSON AIR6472 B77G B77M ANTENNAS WITH INTEGRATED RADIO
- (3) ERICSSON 4890 B25/B66A RRH IN POSITION 3
- (3) ERICSSON 4494 B14/B29 RRH IN POSITION 3
- (3) ERICSSON 4490 B5/B12A RRH IN POSITION 1
- (3) COMMSCOPE RRU MOUNTS
- (2) RAYCAP DC9-48-60-24-8C-EV
- (1) 24-PAIR FIBER TRUNK
- (4) DC POWER TRUNKS

EQUIPMENT LOCATION:

INSTALL:
- (1) 3-BAY W.U.C. AND GENERATOR ON EQUIPMENT PLATFORM WITH CANOPY
- (1) ICE BRIDGE
- (1) GPS ANTENNA
- (1) UTILITY H-FRAME

GENERAL CONTRACTOR NOTES

DO NOT SCALE THESE DRAWINGS

THESE PLANS ARE FORMATTED TO BE FULL SIZE AT 24" x 36", CONTRACTORS SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR MATERIAL ORDERS OR BE RESPONSIBLE FOR THE SAME.

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.

STATEMENTS

STRUCTURAL ANALYSIS IS NOT WITHIN THE SCOPE OF WORK CONTAINED IN THE DRAWINGS SET. FOR ANALYSIS OF EXISTING AND/OR PROPOSED COMPONENTS, REFER TO STRUCTURAL ANALYSIS PROVIDED UNDER SEPARATE COVER.

ANTENNA MOUNT ANALYSIS IS NOT WITHIN THE SCOPE OF WORK CONTAINED IN THIS DRAWING SET. FOR ANALYSIS OF MOUNT TO SUPPORT EXISTING AND/OR PROPOSED COMPONENTS, REFER TO ANTENNA MOUNT STRUCTURAL ANALYSIS PROVIDED UNDER SEPARATE COVER.

DRIVING DIRECTIONS

SCAN FOR DRIVING DIRECTIONS:

811 Know what's below. Call before you dig.

TO OBTAIN LOCATION OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN MINNESOTA, CALL GOPHER STATE ONE CALL

TOLL FREE: 1-800-252-1166 OR
FAX A LOCATE: 1-800-236-4967

www.gopherstateonecall.org

MINNESOTA STATUTE REQUIRES MIN OF 48 HOURS NOTICE BEFORE YOU EXCAVATE

SHEET INDEX

AT&T

smartlink
10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847–277–0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS
ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847–212–8354

REVISIONS

REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA"

SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

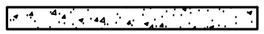
ABBREVIATIONS:

A.B.	ANCHOR BOLT	EXP.	EXPANSION	P/C	PRECAST CONCRETE
A.BV.	ABOVE	EXST.	(E) EXISTING	PCS	PERSONAL COMMUNICATION SERVICES
ACCA	ANTENNA CABLE COVER ASSEMBLY	FAB.	FABRICATION(OR)		
ADD'L	ADDITIONAL	F.F.	FINISH FLOOR	PLY.	PLYWOOD
A.F.F.	ABOVE FINISHED FLOOR	F.G.	FINISH GRADE	PPC	POWER PROTECTION CABINET
A.F.G.	ABOVE FINISHED GRADE	FIN.	FINISH(ED)	PRC	PRIMARY RADIO CABINET
ALUM.	ALUMINUM	FLR.	FLOOR	P.S.F.	POUNDS PER SQUARE FOOT
ALT.	ALTERNATE	FLS.	FOUNDATION	P.S.I.	POUNDS PER SQUARE INCH
ANT.	ANTENNA	F.O.C.	FACE OF CONCRETE	P.T.	PRESSURE TREATED
APPRX.	APPROXIMATE(LY)	F.O.M.	FACE OF MASONRY	PLY.	POWER (CABINET)
ARCH.	ARCHITECT(URAL)	F.O.S.	FACE OF STUD	QTY.	QUANTITY
AWG.	AMERICAN WIRE GAUGE	F.O.W.	FACE OF WALL	RAD.	(R) RADIUS
BLDG.	BUILDING	F.S.	FINISH SURFACE	REF.	REFERENCE
BLK.	BLOCK	FT. (')	FOOT (FEET)	REINF.	REINFORCEMENT(ING)
BLKG.	BLOCKING	FTG.	FOOTING	REQ'D.	REQUIRED
BM.	BEAM	G.	GROWTH (CABINET)	RGS	RIGID GALVANIZED STEEL
B.N.	BOUNDARY NAILING	GA.	GAUGE	SCH.	SHEDULE
B.T.C.W.	BARE TINNED COPPER WIRE	GL.	GALVANIZE(D)	SHT.	SHEET
B.O.F.	BOTTOM OF FOOTING	G.F.I.	GROUND FAULT CIRCUIT INTERRUPTER	SIM.	SIMILAR
B/U	BACK-UP CABINET			SPEC.	SPECIFICATIONS
CAB.	CABINET	GLB. (GLU-LAM)	GLUE LAMINATED BEAM	SQ.	SQUARE
CANT.	CANTILEVER(ED)	G.P.S.	GLOBAL POSITIONING SYSTEM	S.S.	STAINLESS STEEL
C.I.P.	CAST IN PLACE	GRND.	GROUND	STD.	STANDARD
CLG.	CEILING	HDR.	HEADER	STL.	STEEL
CLR.	CLEAR	HGR.	HANGER	STRUC.	STRUCTURAL
COL.	COLUMN	HT.	HEIGHT	TEMP.	TEMPORARY
CONC.	CONCRETE	ICGB.	ISOLATED COPPER GROUND BUS	THK.	THICK(NESS)
CONN.	CONNECTION(OR)	IN. (")	INCH(ES)	T.N.	TOE NAIL
CONST.	CONSTRUCTION	INT.	INTERIOR	T.O.A.	TOP OF ANTENNA
CONT.	CONTINUOUS	LB. (#)	POUND(S)	T.O.C.	TOP OF CURB
d	PENNY (NAILS)	L.B.	LAG BOLTS	T.O.F.	TOP OF FOUNDATION
DBL.	DOUBLE	L.F.	LINEAR FEET (FOOT)	T.O.P.	TOP OF PLATE (PARAPET)
DEPT.	DEPARTMENT	L.	LONG(ITUDINAL)	T.O.S.	TOP OF STEEL
D.F.	DOUGLAS FIR	MAS.	MASONRY	T.O.W.	TOP OF WALL
DIA.	DIAMETER	MAX.	MAXIMUM	TYP.	TYPICAL
DIAG.	DIAGONAL	M.B.	MACHINE BOLT	U.G.	UNDERGROUND
DIM.	DIMENSION	MECH.	MECHANICAL	U.L.	UNDERWRITERS LABORATORY
DWG.	DRAWING(S)	MFR.	MANUFACTURER	U.N.O.	UNLESS NOTIFIED OTHERWISE
DWL.	DOWEL	MIN.	MINIMUM	V.I.F.	VERIFY IN FIELD
EA.	EACH	MISC.	MISCELLANEOUS	W	WIDE (WIDTH)
EL.	ELEVATION	MTL.	METAL	w/	WITH
ELEC.	ELECTRICAL	(N)	NEW	WD.	WOOD
ELEV.	ELEVATION	NO. (#)	NUMBER	W.P.	WEATHERPROOF
E.M.T.	ELECTRICAL METALLIC TUBING	N.T.S.	NOT TO SCALE	WT.	WEIGHT
E.N.	EDGE NEAR	O.C.	ON CENTER	℄	CENTERLINE
ENG.	ENGINEER	OPNG.	OPENING	ℙ	PLATE, PROPERTY LINE
EQ.	EQUAL	(P)	PROPOSED		

SYMBOLS LEGEND:

SECTION LINE

ELEVATION



CONCRETE

EARTH

GRAVEL

ICE BRIDGE / CABLE TRAY

MATCH LINE

GROUND CONDUCTOR

OVERHEAD SERVICE CONDUCTORS

TELEPHONE CONDUIT

POWER CONDUIT

COAXIAL CABLE

CHAIN LINK FENCE

WOOD FENCE

(E) EXISTING EQUIPMENT

(R) EQUIPMENT TO BE REMOVED

(N) EQUIPMENT TO BE INSTALLED

(RL) EQUIPMENT RELOCATED

AT&T

smartlink
10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847–277–0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS
ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847–212–8354

REVISIONS

REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA"

SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-1

NOTICE

Beyond This Point you are entering a controlled area where RF emissions *may exceed* the FCC General Population Exposure Limits.

Follow all posted signs and site guidelines for working in a RF environment.

Ref: 47CFR 1.1307(b)

CAUTION

Beyond This Point you are entering a controlled area where RF emissions *may exceed* the FCC Occupational Exposure Limits.

Obey all posted signs and site guidelines for working in a RF environment.

Ref: 47CFR 1.1307(b)

ALERTING SIGNS

WARNING!

DANGER DO NOT TOUCH TOWER!

SERIOUS "RF" BURN HAZARD!

MAINTAIN AN ADEQUATE CLEARANCE BETWEEN TOWER SUPPORTS AND GUY WIRES

FAILURE TO OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN A RADIO FREQUENCY ENVIRONMENT COULD RESULT IN SERIOUS INJURY. CONTACT CURRENT MAY EXCEED LIMITS PRESCRIBED IN ANSI/EEE C95.1-1992 FOR CONTROLLED ENVIRONMENTS.

AT&T

ALERTING SIGN

Property of AT&T

Authorized Personnel Only

In case of emergency, or prior to performing maintenance on this site, call 800-638-2822 and reference cell site number _____

FA# _____

AT&T

INFO SIGN #4

INFORMATION

AT&T Mobility operates telecommunications antennas at this location. Remain at least 3 feet away from any antenna and obey all posted signs.

Contact the owner(s) of the antenna(s) before working closer than 3 feet from the antenna.

Contact AT&T Mobility at 800-638-2822 prior to performing any maintenance or repairs near AT&T Mobility antennas.

This is Site#_____
Contact the management office if this door/hatch/gate is found unlocked.

INFORMACION

En esta propiedad se ubican antenas de telecomunicationes operadas por AT&T Mobility. Favor mantener una distancia de no menos de 3 pies y obedecer todos los avisos.

Comuniquese con el propictario o los propicatarios de las antenas antes de trabajar o caminar a una distancia de menos de 3 pies de la antena.

Comuniquese con AT&T Mobility 800-638-2822 antes de realizar cualquier mantenimiento o reparaciones cerca de la antenas de AT&T Mobility.

Esta es la estacion base numero _____

Favor conmicarse con la oficina de la administracion del edificio si esta puerta o compuerta se encuentra sin candado.

INFO SIGN #1

INFORMATION

ACTIVE ANTENNAS ARE MOUNTED

- ☐ ON THE OUTSIDE OF THIS BUILDING
- ☐ BEHIND THIS PANEL
- ☐ ON THIS STRUCTURE

STAY BACK A MINIMUM OF 3 FEET FROM THESE ANTENNAS

Contact AT&T Mobility at 800-638-2822 and follow their instructions prior to performing any maintenance or repairs closer than 3 feet from the antennas.

This is AT&T Mobility site# _____

INFO SIGN #2

STAY BACK 3 FEET FROM ANTENNA

AT&T

INFO SIGN #3

ALERTING SIGN
(FOR CELL SITE BATTERIES)

ALERTING SIGN
(FOR DIESEL FUEL)

ALERTING SIGN
(FOR PROPANE)

GENERAL SIGNAGE GUIDELINES

Structure Type	INFO SIGN #1	INFO SIGN #2	INFO SIGN #3	INFO SIGN #4	Striping	NOTICE SIGN	CAUTION SIGN
Towers							
Monopole/Monopine/Monopalm	entrance gates, shelter doors **OR** on the outdoor cabinets	climbing side of the Tower	On backside of Antennas	entrance gates, shelter doors **OR** on the outdoor cabinets			At the height of the first climbing step, min. 9ft above ground
SCE Towers/ Towers with high voltage	entrance gates, shelter doors **OR** on the outdoor cabinets	climbing side of the Tower	On backside of Antennas	entrance gates, shelter doors **OR** on the outdoor cabinets			At the height of the first climbing step, min. 9ft above ground
Light Poles / Flag Poles	entrance gates, shelter doors **OR** on the outdoor cabinets	on the pole, no less than 3ft below the Antenna and no less than 9ft above ground	On backside of Antennas	entrance gates, shelter doors **OR** on the outdoor cabinets			
Utility Wood Poles (JPA)	entrance gates, shelter doors **OR** on the outdoor cabinets	on the pole, no less than 3ft below the Antenna and no less than 9ft above ground	On backside of Antennas	entrance gates, shelter doors **OR** on the outdoor cabinets		If GP max value of MPE at antenna level is: 0-99%: Notice sign; over 99%: Caution sign at no less than 3ft below antenna and 9ft above ground	
Microcells mounted on non-JPA poles	entrance gates, shelter doors **OR** on the outdoor cabinets	on the pole, no less than 3ft below the Antenna and no less than 9ft above ground	On backside of Antennas	entrance gates, shelter doors **OR** on the outdoor cabinets		Notice or Caution sign at no less than 9ft above ground: only if the exposure exceeds 90% of the General Public exposure at 6ft above ground or at outside surface of adjacent buildings	
Roof Tops							
At all access points to the roof	X			X			
On Antennas	X		X	X			
Concealed Antennas	X	X		X			
antennas mounted facing outside the building	X	X		X			
antennas on support structure	X	X		X			
Roofview Graph:							
Radiation area is within 3ft from antenna	X	adjacent to each antenna		X		either Notice or Caution sign (based on Roofview results) at antennas/barrier	
Radiation area is beyond 3ft from antenna	X	adjacent to each antenna		X	diagonal, yellow striping as to Roofview graph		
Church Steeples	Access to steeple	adjacent to antennas if antennas are concealed	On backside of Antennas	Access to steeple			Caution sign at the antennas
Water Stations	Access to ladder	adjacent to antennas if antennas are concealed	On backside of Antennas	Access to ladder			Caution sign beside Info sign #1, min. 9ft above ground

Notes for Rooftop sites:

1. Either NOTICE or CAUTION signs need to be posted at each sector as close as possible to: the outer edge of the striped off area or the outer antennas of the sector.
2. If Roofview shows: only blue = Notice Sign, blue and yellow = Caution Sign, only yellow = Caution Sign to be installed.
3. Should the required striping area interfere with any structures or equipment (A/C, vents, roof hatch, doors, other antennas, dishes, etc.), please notify AT&T to modify the striping area, prior to starting the work

SIGNAGE GUIDELINES CHART

AT&T

smartlink

10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC

604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847-277-0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847-212-8354

REVISIONS

REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA"

SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-2

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR / CM – **MASTEC**
   SUB-CONTRACTOR – **PER TRADE**
   OWNER – **AT&T**
2. SITE WORK (IF APPLICABLE) SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
3. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO DEPICT THE DESIGN INTENT OF THE INSTALLATION.
4. ANY MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
5. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
6. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL DOCUMENT & PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
7. CONTRACTOR / SUBCONTRACTOR SHALL RESTORE AND REPAIR ANY DAMAGED AREAS CAUSED BY CONSTRUCTION.
8. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH CONSTRUCTION. CONTRACTOR SHALL VERIFY EXISTING BURIED AND OVERHEAD UTILITIES PRIOR TO EXCAVATION. CONTRACTOR SHALL REPAIR ANY UTILITIES DAMAGED DURING THE COURSE OF CONSTRUCTION AND COORDINATE ANY REPAIRS WITH UTILITY COMPANY.
9. N /A
10. N/A
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY.

SITE PREPARATION:

SUB-CONTRACTOR'S SCOPE OF WORK

1. PROTECTION OF EXISTING TREES,VEGETATION AND LANDSCAPING MATERIALS WHICH MIGHT BE DAMAGED BY CONSTRUCTION ACTIVITIES.
2. CLEARING AND GRUBBING OF STUMPS, VEGETATION, DEBRIS, RUBBISH, DESIGNATED TREES, AND SITE IMPROVEMENTS.
3. TOPSOIL STRIPPING AND STOCKPILING.
4. TEMPORARY PROTECTION OF ADJACENT PROPERTY, STRUCTURES, BENCHMARKS, AND MONUMENTS.

SUB-CONTRACTORS QUALITY ASSURANCE

1. SUB-CONTRACTOR SHALL BE COMPLETELY RESPONSIBLE FOR CONTAINMENT OF SEDIMENT AND CONTROL OF EROSION ON SITE, ANY DAMAGE TO ADJACENT OR DOWNSTREAM PROPERTIES WILL BE CORRECTED BY THE SUB-CONTRACTOR AT NO EXPENSE TO THE OWNER.
2. SUB-CONTRACTOR SHALL MAINTAIN ADEQUATE DRAINAGE AT ALL TIMES. DO NOT ALLOW WATER TO STAND OR POND. ANY DAMAGE TO STRUCTURES OR WORK ON SITE CAUSED BY INADEQUATE MAINTENANCE OF DRAINAGE WILL BE THE RESPONSIBILITY OF THE SUB-CONTRACTOR AND COST ASSOCIATED WITH REPAIRS FOR SUCH DAMAGE WILL BE AT THE SUB-CONTRACTORS EXPENSE.

SITE WORK:

EARTHWORK AND DRAINAGE

PART 1 – GENERAL

1. WORK INCLUDED: SEE SITE PLAN.
2. DESCRIPTIONS

ACCESS DRIVE W/ TURNAROUND AREA, LEASE AREA, AND IF APPLICABLE UNDERGROUND UTILITY EASEMENTS ARE TO BE CONSTRUCTED TO PROVIDE A WELL DRAINED, EASILY MAINTAINED, EVEN SURFACE FOR MATERIAL AND EQUIPMENT DELIVERIES AND MAINTENANCE PERSONNEL ACCESS.

3. QUALITY ASSURANCE
   A. APPLY SOIL STERILIZER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS (AS NEEDED).
   B. APPLY AND MAINTAIN GRASS SEED AS RECOMMENDED BY THE SEED PRODUCER (IF REQUIRED).
   C. PLACE AND MAINTAIN VEGETATION LANDSCAPING, IF INCLUDED WITHIN THE CONTRACT, AS RECOMMENDED BY NURSERY INDUSTRY STANDARDS.
4. SEQUENCING
   A. CONFIRM SURVEY STAKES AND SET ELEVATION STAKES PRIOR TO ANY CONSTRUCTION.
   B. COMPLETELY GRUB THE ACCESS DRIVE W/ TURNAROUND, UNDERGROUND UTILITY EASEMENTS, (IF APPLICABLE) AND LEASE AREA PRIOR TO FOUNDATION CONSTRUCTION, PLACEMENT OF BACKFILL AND SUB-BASE MATERIAL.
   C. CONSTRUCT TEMPORARY CONSTRUCTION AREA ALONG ACCESS DRIVE.
   D. BRING THE LEASE AREA AND ACCESS DRIVE W/ TURNAROUND TO BASE COURSE ELEVATION PRIOR TO INSTALLING FOUNDATION.
   E. APPLY SOIL STERILIZER PRIOR TO PLACING BASE MATERIALS.
   F. GRADE, SEED, FERTILIZE, AND MULCH ALL AREAS DISTURBED BY CONSTRUCTION (INCLUDING UNDERGROUND UTILITY EASEMENTS) IMMEDIATELY AFTER BRINGING LEASE AREA AND ACCESS DRIVE W/ TURNAROUND TO BASE COURSE ELEVATION, WATER TO ENSURE GROWTH.
   G. REMOVE GRAVEL FROM TEMPORARY CONSTRUCTION ZONE TO AN AUTHORIZED AREA OR AS DIRECTED BY PROJECT MANAGER.
   H. AFTER APPLICATIONS OF FINAL SURFACES, APPLY SOIL STERILIZER TO STONE SURFACES.
5. SUBMITTALS
   A. BEFORE CONSTRUCTION IF LANDSCAPING IS APPLICABLE TO THE CONTRACT, SUBMIT TWO COPIES OF THE LANDSCAPE PLAN UNDER NURSERY LETTERHEAD. IF A LANDSCAPE ALLOWANCE WAS INCLUDED IN THE CONTRACT, PROVIDE AN ITEMIZED LISTING OF PROPOSED COSTS ON NURSERY LETTERHEAD (REFER TO PLANS FOR LANDSCAPING REQUIREMENTS).
   B. AFTER CONSTRUCTION
      1. MANUFACTURER'S DESCRIPTION OF PRODUCT AND WARRANTY STATEMENT ON SOIL STERILIZED.
      2. MANUFACTURER'S DESCRIPTION OF PRODUCT ON GRASS SEED AND FERTILIZE
      3. LANDSCAPING WARRANTY STATEMENT.
6. WARRANTY
   A. IN ADDITION TO THE WARRANTY ON ALL CONSTRUCTION COVERED IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL REPAIR ALL DAMAGE AND RESTORE AREA AS CLOSE TO ORIGINAL CONDITION AS POSSIBLE AT SITE AND SURROUNDINGS.
   B. SOIL STERILIZATION APPLICATION TO GUARANTEE VEGETATION FREE ROAD AND SITE AREAS FOR ONE YEAR FROM DATE OF FINAL INSPECTION.
   C. DISTURBED AREAS WILL REFLECT GROWTH OF NEW GRASS COVER PRIOR TO FINAL INSPECTION.
   D. LANDSCAPING, IF INCLUDED WITHIN THE SCOPE OF THE CONTRACT, WILL BE GUARANTEED FOR ONE YEAR FROM DATE OF FINAL INSPECTION.

PART 2 – PRODUCTS

1. MATERIALS
   A. SOIL STERILIZER SHALL BE EPA-REGISTERED, PRE-EMERGENCE LIQUID:

   TOTAL KILL PRODUCT 910 EPA 10292-7
   PHASAR CORPORATION P.O. BOX 5123 DEARBORN, MI 48128 (313) 563-8000
   AMBUSH HERBICIDE EPA REGISTERED
   FRAMAR INDUSTRIAL PRODUCTS 1435 MORRIS AVE. UNION, NJ 07083
   (800) 526-4924

   B. ROAD AND SITE MATERIALS SHALL CONFORM TO TDOT SPECIFICATIONS FILL MATERIAL (UNLESS OTHERWISE NOTED) – ACCEPTABLE SELECT FILL SHALL BE IN ACCORDANCE WITH STATE DEPARTMENT OF HIGHWAY AND TRANSPORTATION STANDARD SPECIFICATIONS.

   C. SOIL STABILIZER FABRIC SHALL BE MIRAFI – 500X.

PART 3 – EXECUTION

1. INSPECTIONS

LOCAL BUILDING INSPECTORS SHALL BE NOTIFIED NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS, UNLESS OTHERWISE SPECIFIED BY JURISDICTION.

2. PREPARATION
   A. CLEAR TREES, BRUSH AND DEBRIS FROM LEASE AREA, ACCESS DRIVE W/ TURN-AROUND AND UNDER GROUND UTILITY EASEMENTS AS REQUIRED FOR CONSTRUCTION. B. PRIOR TO OTHER EXCAVATION AND CONSTRUCTION, GRUB ORGANIC MATERIAL TO A MINIMUM OF SIX (6) INCHES BELOW GRADE.
   C. UNLESS OTHERWISE INSTRUCTED BY CONTRACTOR, TRANSPORT ALL REMOVED TREES, BRUSH AND DEBRIS FROM THE PROPERTY TO AN AUTHORIZED LANDFILL.
   D. PRIOR TO PLACEMENT OF FILL OR BASE MATERIALS, ROLL THE SOIL.
   E. WHERE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, LINE THE AREAS WITH STABILIZER MAT PRIOR TO PLACEMENT OF FILL OR BASE MATERIAL.
3. INSTALLATION
   A. GRADE OR FILL THE LEASE AREA AND ACCESS DRIVE W/ TURNAROUND AS REQUIRED IN ORDER THAT UPON DISTRIBUTION OF SPOILS, RESULTING FROM EXCAVATIONS, THE RESULTING GRADE WILL CORRESPOND WITH SAID SUB-BASE COURSE. ELEVATIONS ARE TO BE CALCULATED FROM BENCHMARK, FINISHED GRADES, OR INDICATED SLOPES.
   B. CLEAR EXCESS SPOILS, IF ANY, FROM JOB SITE AND DO NOT SPREAD BEYOND THE LIMITS OF PROJECT AREA UNLESS AUTHORIZED BY PROJECT MANAGER AND AGREED TO BY LANDOWNER.
   C. BRING THE ACCESS DRIVE W/ TURNAROUND TO BASE COURSE ELEVATION TO FACILITATE CONSTRUCTION AND OBSERVATION DURING CONSTRUCTION OF THE SITE.
   D. AVOID CREATING DEPRESSIONS WHERE WATER MAY POND.
   E. THE CONTRACT SHALL INCLUDE GRADING, BANKING, AND DITCHING, UNLESS OTHERWISE INDICATED.
   F. WHEN IMPROVING AN EXISTING ACCESS DRIVE, GRADE THE EXISTING DRIVE TO REMOVE ANY ORGANIC MATTER AND SMOOTH THE SURFACE BEFORE PLACING FILL OR STONE.
   G. PLACE FILL OR STONE IN SIX (6) INCH MAXIMUM LIFTS, AND COMPACT BEFORE PLACING NEXT LIFT.
   H. THE TOP SURFACE COURSE, SHALL EXTEND A MINIMUM OF ONE (1) FOOT BEYOND THE SITE FENCE (UNLESS OTHERWISE NOTED) AND SHALL COVER THE AREA AS INDICATED.
   I. APPLY RIPRAP TO THE SIDE SLOPES OF ALL FENCED SITE AREAS, PARKING AREAS, AND ALL OTHER SLOPES GREATER THAN 2:1.
   J. APPLY RIPRAP TO THE SIDES OF DITCHES OR DRAINAGE SWALES.
   K. RIPRAP ENTIRE DITCH FOR SIX (6) FEET IN ALL DIRECTIONS AT CULVERT OPENINGS.
   L. APPLY SEED, FERTILIZER, AND STRAW COVER TO ALL OTHER DISTURBED AREAS, DITCHES, AND DRAINAGE SWALES, NOT OTHERWISE RIPRAPPED.
   M. UNDER NO CIRCUMSTANCES WILL DITCHES, SWALES, OR CULVERTS BE PLACED SO THAT THEY DIRECT WATER TOWARDS, OR PERMIT STANDING WATER IMMEDIATELY ADJACENT TO SHELTER OR EQUIPMENT. IF DESIGNS OR ELEVATIONS ARE IN CONFLICT WITH THIS, ADVISE CONSTRUCTION MANAGER IMMEDIATELY.
   N. IN DITCHES WITH SLOPES GREATER THAN 10%, MOUND DIVERSIONARY HEADWALLS IN THE DITCH AT CULVERT ENTRANCES. POSITION THE HEADWALL AT AN ANGLE NO GREATER THAT 60 DEGREES OFF THE DITCH LINE. RIPRAP THE UPSTREAM SIDE OF THE HEADWALL AS WELL AS THE DITCH FOR SIX (6) FEET ABOVE THE CULVERT ENTRANCE.
   O. APPLY SEED AND FERTILIZER TO SURFACE CONDITIONS WHICH WILL ENCOURAGE ROOTING. RAKE AREAS TO BE SEEDED TO EVEN THE SURFACE AND LOOSEN THE SOIL.
   P. SOW SEED IN TWO DIRECTIONS IN TWICE THE QUANTITY RECOMMENDED BY THE SEED PRODUCER.
   Q. ENSURE GROWTH OF SEEDED AND LANDSCAPED AREAS, BY WATERING, UP TO THE POINT OF RELEASE FROM THE CONTRACT. CONTINUE TO REWORK THE BARE AREAS UNTIL COMPLETE COVERAGE IS OBTAINED.
4. FIELD QUALITY CONTROL

   COMPACT SOILS TO MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D-1557. AREAS OF SETTLEMENT WILL BE EXCAVATED AND REFILLED AT CONTRACTOR'S EXPENSE. INDICATE PERCENTAGE OF COMPACTION ACHIEVED ON AS-BUILT DRAWINGS.

5. PROTECTION
   A. PROTECT SEEDED AREAS FROM EROSION BY SPREADING STRAW TO A UNIFORM LOOSE DEPTH OF 1-2 INCHES, STAKE AND TIE DOWN AS REQUIRED. USE OF EROSION CONTROL MESH OR MULCH NET WILL BE AN ACCEPTABLE ALTERNATE.
   B. ALL TREES PLACED IN CONJUNCTION WITH A LANDSCAPE CONTRACT WILL BE WRAPPED, TIED WITH HOSE PROTECTED WIRE, AND SECURED TO 2" X 2" X 4'-0" WOODEN STAKES EXTENDING TWO-FEET INTO THE GROUND ON FOUR SIDES OF THE TREE.
   C. PROTECT ALL EXPOSED AREAS AGAINST WASHOUTS AND SOIL EROSION. PLACE STRAW BALES AT THE INLET APPROACH TO ALL NEW OR EXISTING CULVERTS. WHERE THE SITE OR ROAD AREAS HAVE BEEN ELEVATED IMMEDIATELY ADJACENT TO THE RAIL LINE, STAKE EROSION CONTROL FABRIC FULL LENGTH IN THE SWALE TO PREVENT CONTAMINATION OF THE RAIL BALLAST. ALL EROSION CONTROL METHODS SHALL CONFORM TO APPLICABLE BUILDING CODE REQUIREMENTS.

TRENCHING:

MATERIALS SUB-CONTRACTOR SHALL:

1. FILL MATERIAL SHALL BE OBTAINED TO THE MAXIMUM EXTENT POSSIBLE FROM EXCAVATIONS ON SITE. THE STRUCTURAL FILL SHOULD BE SAND AND SHALL BE APPROVED BY THE CONSTRUCTION MANAGER AND SHALL CONFORM TO LOCAL GOVERNING JURISDICTION AND UTILITY COMPANY REQUIREMENTS. THE FILL MATERIAL SHALL CONTAIN NO ORGANIC MATERIAL, ROCKS, OR OBJECTIONABLE MATERIALS AND/OR MATERIALS DESIGNATED AS HAZARDOUS OR INDUSTRIAL BY THE EPA. THE FILL MATERIAL SHALL CONTAIN FINES SUFFICIENT TO FILL ALL VOIDS IN THE MATERIAL. BACKFILL OR BORROW SOIL SHALL BE PLACED IN 6" LOOSE LIFTS.

PIPE DETECTION AND IDENTIFICATION SUB-CONTRACTOR SHALL:

1. UTILIZE WARNING TAPE. ALL UTILITY SERVICE TRENCHES SHALL BE MARKED WITH WARNING TAPE.

TRENCH EXCAVATION SUB-CONTRACTOR SHALL:

1. DIG TRENCH TO LINES AND GRADES SHOWN ON THE PLANS OR AS DIRECTED BY THE CONSTRUCTION MANAGER.
2. TRENCH LENGTH SHALL BE SUFFICIENT TO ALLOW FOR SATISFACTORY CONSTRUCTION AND INSPECTION OF THE PROJECT WITHOUT ENDANGERING OTHER CONSTRUCTION WORK OR ADJACENT FACILITIES.
3. DISPOSAL OF EXCESS AND UNSUITABLE EXCAVATION MATERIAL PROPERLY AS DIRECTED BY THE CONSTRUCTION MANAGER.
4. USE HAND TRENCHING METHODS FOR EXCAVATION THAT CANNOT BE ACCOMPLISHED WITHOUT ENDANGERING EXISTING OR NEW STRUCTURES AND OTHER FACILITIES.

TRENCH PROTECTION SUB-CONTRACTOR SHALL:

1. PROVIDE MATERIALS, LABOR, AND EQUIPMENT NECESSARY TO PROTECT TRENCHES AT ALL TIMES.
2. SHEETING AND BRACING TO MEET OR EXCEED OSHA REQUIREMENTS.

BACKFILLING SUB-CONTRACTOR SHALL:

1. NOTIFY THE CONSTRUCTION MANAGER AT LEAST 24 HOURS IN ADVANCE OF BACKFILLING.
2. BACKFILL TRENCH WITH LIFTS UP TO 6" LOOSE MEASURE.
3. PROTECT CONDUIT FROM LATERAL MOVEMENT AND DAMAGE FROM IMPACT OR UNBALANCED LOADING TO AVOID DISPLACEMENT OF CONDUIT AND/OR STRUCTURES. DO NOT FREE FALL BACKFILL INTO TRENCH UNTIL AT LEAST 6" OF COVER IS OVER CONDUIT.

COMPACTION SUB-CONTRACTOR SHALL:

1. COMPACT BACKFILL TO 95% MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557 WITH PLUS OR MINUS 3% OF OPTIMUM MOISTURE CONTENT.
2. IF REQUIRED COMPACTION DENSITY HAS NOT BEEN OBTAINED REMOVE THE BACKFILL FROM THE TRENCH OR STRUCTURE, REPLACE WITH APPROVED BACKFILL AND RE-COMPACT AS SPECIFIED.
3. ANY SUBSEQUENT SETTLEMENT OF TRENCH OR STRUCTURE BACKFILL DURING THE MAINTENANCE PERIOD SHALL BE CONSIDERED THE RESULT OF IMPROPER COMPACTION AND SHALL PROMPTLY CORRECTED.

FENCING AND GATE(S)

PART 1 – GENERAL

1. WORK INCLUDED SEE PLAN FOR SITE AND LOCATION OF FENCE AND GATE(S).
2. QUALITY ASSURANCE ALL STEEL MATERIALS UTILIZED IN CONJUNCTION WITH THIS SPECIFICATION WILL BE GALVANIZED OR STAINLESS STEEL. WEIGHT OF ZINC COATING ON THE FABRIC SHALL NOT BE LESS THAN 12 OUNCES PER SQUARE FOOT OF MATERIAL COVERED. POSTS SHALL BE HOT-DIPPED IN GRADE 'E' ZINC, 18 OUNCES PER SQUARE FOOT.
3. SEQUENCING IF THE SITE AREA HAS BEEN BROUGHT UP TO SURFACE COURSE ELEVATION (PRIOR TO THE FENCE CONSTRUCTION), FENCE POST EXCAVATION SPOILS MUST BE CONTROLLED TO PRECLUDE CONTAMINATION OF SAID SURFACE COURSE.
4 SUBMITTALS
   A. MANUFACTURER'S DESCRIPTIVE LITERATURE.
   B. CERTIFICATE OR STATEMENT OF COMPLIANCE WITH THE SPECIFICATIONS.

PART 2 – PRODUCTS

1. FENCE MATERIAL
   A. ALL FABRIC WIRE, RAILS, HARDWARE, AND OTHER STEEL MATERIALS SHALL BE HOT-DIPPED GALVANIZED.
   B. FABRIC SHALL BE SIX-FOOT HIGH TWO-INCH CHAIN LINK MESH OF NO. 9 GAUGE (0.148") WIRE. THE FABRIC SHALL HAVE A KNUCKLED FINISH FOR THE TOP SELVAGES. FABRIC SHALL CONFORM TO THE SPECIFICATIONS OF ASTM A-392 CLASS 1.
   C. BARBED WIRE SHALL BE DOUBLE-STRAND, 12-1/2 GAUGE TWISTED WIRE, WITH 14-GAUGE, 4-POINT ROUND BARBS SPACED ON FIVE-INCH CENTERS.
   D. ALL POSTS SHALL BE SCHEDULE – 40 MECHANICAL SERVICE PIPE AND SHALL BE TYPE 1 ASTM A-128 AND OF THE FOLLOWING DIAMETER POST 2" SCHEDULE 40 (2 3/8" O.D.) CORNER 3" SCHEDULE 40 (3 1/2" O.D.) GATE 3" SCHEDULE 40 (3 1/2" O.D.)
   E. GATE POSTS SHALL BE EXTENDED 12 INCHES, INCLUDING DOME CAP, TO PROVIDE FOR ATTACHMENT OF BARBED WIRE.
   F. ALL TOP AND BRACE RAILS SHALL BE 1⅜" DIAMETER SCHEDULE – 40 MECHANICAL-SERVICE PIPE.
   G. GATE FRAMES AND BRACES SHALL BE 1.90 INCH DIAMETER SCHEDULE 40 MECHANICAL-SERVICE PIPE. FRAMES SHALL HAVE WELDED CORNERS.
   H. GATE FRAMES SHALL HAVE A FULL-HEIGHT VERTICAL BRACE, AND A FULL-WIDTH HORIZONTAL BRACE, SECURED IN PLACE BY USE OF GATE BRACE CLAMPS.
   I. GATE HINGES SHALL BE MERCHANTS METAL MODEL 64386 HINGE ADAPTER WITH MODEL 6409, 188-DEGREE ATTACHMENT.
   J. THE GUIDE (LATCH ASSEMBLY) SHALL BE HEAVY INDUSTRIAL DOUBLE GATE LATCH. SEE DETAIL.
   K. LATCHES AND STOPS SHALL BE PROVIDED FOR ALL GATES.
   L. PLUNGER ROD COMPLETE WITH RECEPTOR TO BE PROVIDED AT THE INACTIVE LEAF OF ALL DOUBLE GATE INSTALLATIONS.
   M. ALL STOPS SHALL HAVE KEEPERS CAPABLE OF HOLDING THE GATE LEAF IN THE OPEN POSITION
   N. A NO. 7 GAUGE ZINC COATED TENSION WIRE SHALL BE USED AT THE BOTTOM OF THE FABRIC, TERMINATED WITH BAND CLIPS AT CORNER AND GATE POSTS. ATOP EACH LINE/CORNER POST.
   O. A SIX-INCH BY 1/2-INCH DIAMETER EYEBOLT TO HOLD TENSION WIRE SHALL BE PLACED AT LINE POSTS.
   P. STRETCHER BARS SHALL BE 3/16-INCH BY 3/4-INCH OR HAVE EQUIVALENT CROSS-SECTIONAL AREA.
   Q. ALL CORNER GATE AND PANELS SHALL HAVE A 3/8-INCH TRUSS ROD WITH TURNBUCKLES.
   R. ALL POSTS EXCEPT GATE POSTS SHALL HAVE A COMBINATION CAP AND BARBED WIRE SUPPORTING ARM. GATE POSTS SHALL HAVE A DOME CAP.
   S. OTHER HARDWARE INCLUDES BUT MAY NOT BE LIMITED TO TIE CLIPS, BAND CLIPS AND TENSION BAND CLIPS.
   T. BARBED WIRE GATE GUARDS SHALL BE FITTED WITH DOME CAPS.
   U. BARBED WIRE SUPPORT ARMS SHALL BE PRESSED STEEL COMPLETE WITH SET BOLT AND LOCK WIRE IN THE ARM.
   V. ALL CAPS SHALL BE MALLEABLE IRON, DOME OR ACORN SHAPED AS REQUIRED BY PIPE SIZE.
   W. WHERE THE USE OF CONCERTINA HAS BEEN SPECIFIED, 24-INCH DIAMETERS COIL. BARBED TAPE, STAINLESS STEEL, CYCLONE FENCE MODEL G8P TO TYPE III SHALL BE FURNISHED. IT SHALL BE SUPPORTED ABOVE THE TOP RAIL BY USE OF SIX(6) WIRE BARBED WIRE ARMS POSITIONED ATOP EACH LINE/CORNER POST.

AT&T

smartlink
10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847-277-0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS
ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847-212-8354

REVISIONS

REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA"

SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

PART 3 – EXECUTION

1. INSPECTION

TO CONFIRM PROPER DEPTH AND DIAMETER OF POST HOLE EXCAVATIONS. ALL POST HOLES WILL BE EXCAVATED AS PER CONSTRUCTION DOCUMENTS.

2. INSTALLATION

A. FOUNDATIONS SHALL HAVE A MINIMUM SIX (6) INCH CONCRETE COVER UNDER POST.
B. ALL FENCE POSTS SHALL BE VERTICALLY PLUMB ; ONE QUARTER (1/4) INCH
C. AT CORNER POSTS, GATE POSTS, AND SIDES OF GATE FRAME, FABRIC SHALL BE ATTACHED WITH STRETCHER AND TENSION BAND–CLIPS AT FIFTEEN(15) INCH INTERVALS.
D. AT LINE POSTS, FABRIC SHALL BE ATTACHED WITH BAND–CLIPS AT FIFTEEN (15) INCH INTERVALS.
E. FABRIC SHALL BE ATTACHED TO BRACE RAILS, TENSION WIRE AND TRUSS RODS WITH TIE–CLIPS AT TWO (2) FOOT INTERVALS.
F. A MAXIMUM GAP OF ONE INCH WILL BE PERMITTED BETWEEN TIE CHAIN LINE FABRIC AND THE FINAL GRADE.
G. GATE SHALL BE INSTALLED SO LOCKS ARE ACCESSIBLE FROM BOTH SIDES.
H. GATE HINGE BOLTS SHALL HAVE THEIR THREADS PEENED OR WELDED TO PREVENT UNAUTHORIZED REMOVAL.
I. CONCRETE TO BE A MINIMUM OF 3,000 PSI.

3. PROTECTION

UPON COMPLETION OF ERECTION, INSPECT FENCE MATERIAL AND PAINT FIELD CUTS OR GALVANIZING BREAKS WITH ZINC–BASED PAINT, COLOR TO MATCH THE GALVANIZED METAL.

APPLICABLE STANDARDS

ASTM–A120	SPECIFICATION FOR PIPE, STEEL BLACK AND HOT–DIPPED ZINC COATED (GALVANIZED) WELDED AND SEAMLESS, FOR ORDINARY USES.
ASTM–A123	ZINC (HOT–DIP GALVANIZED) COATING ON IRON AND STEEL PRODUCTS.
ASTM–A153	STANDARD SPECIFICATION FOR ZINC COATING (HOT–DIP) ON IRON AND STEEL HARDWARE.
ASTM–A392	SPECIFICATION FOR ZINC–COATED STEEL CHAIN LINK FENCE FABRIC.
ASTM–A491	SPECIFICATION FOR ALUMINUM–COATED STEEL CHAIN LINK FENCE FABRIC
ASTM–A525	STANDARD SPECIFICATION FOR STEEL SHEET ZINC COATED (GALVANIZED) BY THE HOT–DIPPED PROCESS.
ASTM–A570	SPECIFICATION FOR HOT–ROLLED CARBON STEEL SHEET AND STRIP. STRUCTURAL QUALITY.
ASTM–A535	SPECIFICATION FOR ALUMINUM COATED STEEL BARBED WIRE.
FEDERAL SPECIFICATION AND ACCESSORIES)	RR–F–191– FENCING, WIRE AND POST METAL (AND GATES, CHAIN LINK FENCE FABRIC,

METALS

PART 1 – GENERAL

SECTION INCLUDES:

1. STRUCTURAL STEEL FRAMING MEMBERS, BASE PLATES, PLATES, BARS, THREADED STRUCTURAL FASTENERS, ANTENNA SUPPORT ASSEMBLIES, GRATING, STEEL PLATFORMS AND PEDESTAL SUPPORTS, AND GROUTING UNDER BASE PLATES.

QUALITY ASSURANCE

1. FABRICATE STRUCTURAL STEEL MEMBERS IN ACCORDANCE WITH AISC SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS.
2. PERFORM DESIGN UNDER DIRECT SUPERVISION OF A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE.

PART 2 – PRODUCTS

1. MATERIALS:

A. STRUCTURAL STEEL MEMBERS: ASTM A572, GRADE 50
B. STRUCTURAL TUBING: ASTM A500, GRADE B
C. PIPE: ASTM A53, TYPE E OR S, GRADE B
D. BOLTS, NUTS, AND WASHERS: ASTM A325
E. ANCHOR BOLTS: ASTM A307
F. WELDING MATERIALS: AWS D1.1, TYPE REQUIRED FOR MATERIALS BEING WELDED
G. GROUT: NON–SHRINK TYPE, PREMIXED COMPOUND CONSISTING OF NONMETALLIC AGGREGATE, CEMENT, WATER REDUCING AND PLASTICIER ADDITIVES, CAPABLE OF DEVELOPING A MINIMUM COMPRESSIVE STRENGTH OF 7000 psi AT 28 DAYS.
H. SHOP AND TOUCH–UP PRIMER: SSPC 15, TYPE 1, RED OXIDE
I. TOUCH–UP PRIMER FOR GALV. SURFACES: ZINC RICH TYPE

2. FABRICATION: CONTINUOUSLY SEAL JOINTED MEMBERS BY CONTINUOUS WELDS. GRIND EXPOSED WELDS SMOOTH.

3. FINISH:

A. PREPARE STRUCTURAL COMPONENT SURFACES IN ACCORDANCE WITH SSPC SP–1 TO SP–10 PROCEDURES.
B. STRUCTURAL STEEL MEMBERS SHALL BE HOT DIPPED GALVANIZED.

PART 3 – EXECUTION

EXAMINATION AND PREPARATION:

1. VERIFY THAT THE FIELD CONDITIONS ARE ACCEPTABLE TO PERFORM THE WORK.

ERECTION:

1. ALLOW FOR ERECTION LOADS. PROVIDE TEMPORARY BRACING TO MAINTAIN FRAMING IN ALIGNMENT UNTIL COMPLETION OF ERECTION AND INSTALLATION OF PERMANENT BRIDGING AND BRACING.
2. NO UNAUTHORIZED WELDING SHALL BE PERFORMED ON CROWN CASTLE USA, INC TOWERS. ALL OTHER WELDING SHALL BE IN ACCORDANCE WITH AMERICAN WELDING SOCIETY AWS 01.1 STRUCTURAL STEEL WELDING CODE–STEEL WELD ELECTRODES SHALL BE E70XX.
3. DO NOT FIELD CUT OR ALTER STRUCTURAL MEMBERS WITHOUT APPROVAL OF THE ARCHITECT/ENGINEER.
4. AFTER ERECTION, TOUCH–UP WELDS, ABRASIONS, AND SURFACES NOT SHOP PRIMED OR GALVANIZED WITH ZINC RICH PAINT (ALL EXISTING AND NEW AREAS).

FIELD QUALITY CONTROL:

1. FIELD INSPECTION OF MEMBERS, CONNECTIONS, WELDS AND BOLT / NUT TORQUE .

CONCRETE:

PART 1 – GENERAL

1. WORK INCLUDES FORMWORK, REINFORCEMENT, ACCESSORIES, CAST–IN–PLACE CONCRETE, FINISHING, AND CURING.

2. INSPECTIONS

A. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING BUILDING DEPARTMENT INSPECTIONS REQUIRED FOR THE SCOPE OF WORK BEING PERFORMED.

B. ALL REINFORCING STEEL SHALL BE INSPECTED AND APPROVED BY THE CONTRACTOR CONSTRUCTION MANAGER PRIOR TO PLACEMENT OF CONCRETE.

C. THE CONTRACTOR CONSTRUCTION MANAGER SHALL BE NOTIFIED NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS.

3. QUALITY ASSURANCE

A. CONSTRUCT AND ERECT CONCRETE FORM WORK IN ACCORDANCE WITH ACI 301 AND ACI 318.

B. PERFORM CONCRETE REINFORCING WORK IN ACCORDANCE WITH ACI 301, ACI 318, AND ASTM A184.

C. PERFORM CAST–IN–PLACE CONCRETE WORK IN ACCORDANCE WITH ACI 301, ACI 318, AND ACI 117–90.

4. SUBMITTALS

SUBMIT CONCRETE MIX DESIGN AND REINFORCING STEEL SHOP DRAWINGS FOR APPROVAL BY CONTRACTOR CONSTRUCTION MANAGER/ENGINEER. THE SHOP DRAWINGS SHALL BE SUBMITTED IN EH FORM OF TWO (2) CONCRETE MIX DESIGN INFORMATION SHEETS AND TWO (2) BLUELINE DRAWINGS FOR REINFORCING STEEL.

PART 2 – PRODUCTS

1. REINFORCEMENT MATERIALS

A. REINFORCEMENT STEEL, ASTM A615, 60KSI YIELD GRADE, REINFORCING STEEL RODS, PLAIN FINISH.

B. WELDED STEEL WIRE FABRIC ASTM A185 PLAIN TYPE, IN FLAT SHEETS, PLAIN FINISH.

C. CHAIRS, BOLSTERS, BAR SUPPORTS, SPACERS, SIZED AND SHAPED FOR SUPPORTS OF REINFORCING.

D. FABRICATE CONCRETE REINFORCING IN ACCORDANCE WITH ACI 315, AND ACI 318, AND ASTM A184.

2. CONCRETE MATERIALS

A. CEMENT: ASTM C150, PORTLAND TYPE.

B. FINE AND COURSE AGGREGATES: ASTM C33 – MAXIMUM SIZE OF CONCRETE AGGREGATE SHALL NOT EXCEED ONE (1) INCH SIZE SUTABLE FOR INSTALLATION METHOS UTILIZED FOR ONE–THIRD CLEAR DISTANCE BEHIND OR BETWEEN REINFORCING.

C. WATER: CLEAN AND NOT DETRIMENTAL TO CONCRETE.

D. AIR ENTRAINING ADMIZTURE: ASTM C260.

E. BONDING AGENT: LATEX EMULSION FOR BONDING NEW TO OLD CONCRETE AS MANUFACTURED BY DAYTON SUPERIOR.

F. NON–SHRINK GROUT: PREMIXED COMPOUND CONSISTING OF NONMETALLIC AGGREGATE, CEMENT, WATER REDUCING AND PLASTICISING AGENTS.

3. CONCRETE MIX

A. CONCRETE MATERIALS SHALL CONFORM TO THE APPROPRIATE A.C.I. REQUIREMENTS FOR EXPOSED STRUCTURAL CONCRETE.

B. MIX AND DELIVER CONCRETE IN ACCORDANCE WITH ASTM C94, ALT, 3.

C. PROPORTIONS OF CONCRETE MATERIALS SHALL BE SUITABLE FOR THE INSTALLATION METHOD UTILIZED AND SHALL RESULT IN DURABLE CONCRETE FOR LOCAL ANTICIPATED AGGRESSIVE ACTIONS. THE DURABILITY REQUIREMENTS OF ACI 318 CHAPTER F4 SHALL BE SATASFIED BASED ON THE CONDITIONS EXPECTED AT THE SITE. PROVIDE CONCRETE AS FOLLOWS:
   1. COMPRESSIVE STRENGTH 4000 PSI AT 28 DAYS.
   2. SLUMP : 3 INCHES.

EXECUTION:

1. INSERTS, EMBEDDED COMPONENTS AND OPENINGS

A. THE CONTRACTOR SHALL COORDINATE AND CROSS CHECK ARCHITECTURAL, BUILDING AND ELECTRICAL DRAWINGS FOR OPENINGS, SLEEVES, ANCHORS, HANGERS, AND OTHER ITEMS RELATED TO CONCRETE WORK AND SHALL ASSUME FULL RESPONSIBILITY FOR THE PROPER LOCATION BEFORE PLACING CONCRETE.

B. PROVIDE FORMED OPENINGS WHERE REQUIRED FOR WORK TO BE EMBEDED IN AND PASSING THROUGH CONCRETE MEMBERS.

C. COORDINATE WORK OF OTHER SECTIONS IN FORMING AND SETTING OPENINGS, SLOTS, RECESSES, CHASES, SLEEVES, BOLTS, ANCHORS, AND OTHER INSERTS.

D. INSTALL CONCRETE ACCESSORIES STRAIGHT, LEVEL ND PLUMB.

2. REINFORCEMENT PLACEMENT

A. PLACE REINFORCEMENT, SUPPORTED AND SECURED AGAINST DISPLACEMENT.

B. ENSURE REINFORCING IS CLEAN, FREE OF LOOSE SCALE, DIRT, OR OTHER FOREIGN COATINGS.

C. WELDING IS PROHIBITED ON REINFORCING STEEL AND EMBEDMENTS.

D. MINIMUM CONCRETE COVER FOR REINFORCING SHALL BE 3 INCHES UNLESS NOTED OTHERWISE.

E. CONCRETE COVER FROM TOP OF FOUNDATION TO ENDS OF VERTICAL REINFORCEMENT SHALL NOT EXCEED 3 INCHES OR BE LESS THAN 2 INCHES.

3. PLACING CONCRETE

A. VIBRATE ALL CONCRETE.

B. ALL CONCRETE WORK SHALL ADHERE TO THE LATEST A.C.I. STANDARDS FOR WINTER POURING AND CURING PROCEDURES IF SEASONAL CONDITIONS APPLY.

4. CURING

A. AFTER PLACEMENT, PROTECT CONCRETE FROM PREMATURE DRYING.

B. MAINTAIN CONCRETE WITH MINIMAL MOISTURE LOSS AT RELATIVELY CONSISTENT TEMPERATURE FOR A PERIOD NECESSARY FOR HYDRATION OF CEMENT AND HARDENING OF CONCRETE.

5. PROVIDE HAND RUBBED SMOOTH FINISH TO ALL EXPOSED VERTIACAL FORMED CONCRETE SURFACES.

6. FIELD QUALITY CONTROL

A. SUBMIT THREE (3) CONCRETE TEST CYLINDERS – TAKEN EVERY 15 CUBIC YARDS OR LESS. SUBMIT CONCRETE TESTS TO THE PROJECT MANAGER IN ACCORDANCE TO ASTM C–31 AND C–39.

B. SUBMIT ONE (1) ADDITIONAL TEST CYLINDER – TAKEN DURING COLD WEATHER POURS, AND CURED ON JOB SITE UNDER THE SAME CONDITIONS AS THE CONCRETE IT REPRESENTS.

C. SUBMIT ONE (1) SLUMP TEST – TAKEN FOR EACH SET OF TEST CYLINDERS TAKEN.

7. DEFECTIVE CONCRETE

MODIFY OR REPLACE CONCRETE NOT CONFORMING TO REQUIRED SPECIFICATIONS, DETAILS OR ELEVATIONS AS DIRECTED BY THE CONTRACTOR CONSTRUCTION MANAGER.

GENERAL ELECTRICAL NOTES:

1. ALL ELECTRICAL MATERIALS, EQUIPMENT AND INSTALLATION PROCEDURES TO CONFORM WITH CONTRACTOR SPECIFICATIONS.
2. CONTRACTOR SHALL PERFORM ALL VERIFICATION TESTS AND EXAMINATION WORK PRIOR TO THE ORDERING OF THE ELECTRICAL EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE ENGINEER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.
3. ALL MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, NFPA, AND 'UL' LISTED.
4. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED PER THE NEC, AND ALL APPLICABLE LOCAL CODES.
5. ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE A MINIMUM INTERRUPTING RATING OF 42,000 AIC.
6. FOR COMPLETE INTERNAL WIRING AND ARRANGEMENT REFER TO VENDOR PRINTS PROVIDED BY CONTRACTOR FOR BTS CABINET.
7. PATCH, REPAIR, AND PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF THE ELECTRICAL WORK.
8. PROVIDE CONTRACTOR WITH ONE SET OF COMPLETE ELECTRICAL 'AS–BUILT' DRAWINGS AT THE COMPLETION OF THE JOB SHOWING ACTUAL ROUTINGS AND WIRING CONNECTIONS.
9. ALL SINGLE–PHASE SELF CONTAINED METER CONNECTION DEVICES MUST INCLUDE HORN TYPE BY–PASS PROVISION SO THAT SERVICES WILL NOT BE INTERRUPTED WHEN A METER IS REMOVED FROM THE SOCKET.
10. ALL EQUIPMENT PUNCH OUTS AND CONDUITS (USED AND SPARE) TO BE RODENT PROOFED WITH CAPS, STEEL MESH, AND/OR FOAM FILL BY CONTRACTOR AS NEEDED.
11. NO SPOILS TO BE LEFT ON SITE WITHOUT THE WRITTEN CONSENT OF THE LANDOWNER.
12. CONTRACTOR TO PROVIDE 2 PHENOLIC LABELS AT METER ONE TO IDENTIFY 'CONTRACTOR DISCONNECT' AND THE OTHER TO GIVE THE SITE ADDRESS.
13. ALL CONTRACTOR FURNISHED MATERIALS AND EQUIPMENT SPECIFIED ON THE PROJECT SHALL BE NEW AND UNUSED, OF CURRENT MANUFACTURE AND OF THE HIGHEST GRADE.

AT&T

smartlink
10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847–277–0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS
ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847–212–8354

REVISIONS

REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA"

SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

GENERAL ELECTRICAL NOTES:

1. ALL ELECTRICAL MATERIALS, EQUIPMENT AND INSTALLATION PROCEDURES TO CONFORM WITH CONTRACTOR SPECIFICATIONS.
2. CONTRACTOR SHALL PERFORM ALL VERIFICATION TESTS AND EXAMINATION WORK PRIOR TO THE ORDERING OF THE ELECTRICAL EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE ENGINEER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.
3. ALL MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, NFPA, AND 'UL' LISTED.
4. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED PER THE NEC, AND ALL APPLICABLE LOCAL CODES.
5. ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE A MINIMUM INTERRUPTING RATING OF 42,000 AIC.
6. FOR COMPLETE INTERNAL WIRING AND ARRANGEMENT REFER TO VENDOR PRINTS PROVIDED BY CONTRACTOR FOR BTS CABINET.
7. PATCH, REPAIR, AND PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF THE ELECTRICAL WORK.
8. PROVIDE CONTRACTOR WITH ONE SET OF COMPLETE ELECTRICAL 'AS-BUILT' DRAWINGS AT THE COMPLETION OF THE JOB SHOWING ACTUAL ROUTINGS AND WIRING CONNECTIONS.
9. ALL SINGLE-PHASE SELF CONTAINED METER CONNECTION DEVICES MUST INCLUDE HORN TYPE BY-PASS PROVISION SO THAT SERVICES WILL NOT BE INTERRUPTED WHEN A METER IS REMOVED FROM THE SOCKET.
10. ALL EQUIPMENT PUNCH OUTS AND CONDUITS (USED AND SPARE) TO BE RODENT PROOFED WITH CAPS, STEEL MESH, AND/OR FOAM FILL BY CONTRACTOR AS NEEDED.
11. NO SPOILS TO BE LEFT ON SITE WITHOUT THE WRITTEN CONSENT OF THE LANDOWNER.
12. CONTRACTOR TO PROVIDE 2 PHENOLIC LABELS AT METER ONE TO IDENTIFY 'CONTRACTOR DISCONNECT' AND THE OTHER TO GIVE THE SITE ADDRESS.
13. ALL CONTRACTOR FURNISHED MATERIALS AND EQUIPMENT SPECIFIED ON THE PROJECT SHALL BE NEW AND UNUSED, OF CURRENT MANUFACTURE AND OF THE HIGHEST GRADE.
14. ALL EQUIPMENT, MATERIAL AND THE INSTALLATION METHODS SPECIFIED ON THE PROJECT DRAWINGS SHALL BE DESIGNED AND FABRICATED IN COMPLIANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL CODES AND REGULATIONS, AND APPROPRIATE INDUSTRIAL CONSENSUS STANDARDS AND CODES INCLUDING ANSI, IEEE, NEMA, NFPA AND UL, ALL AS REVISED AS OF THE DATE OF THIS WORK PACKAGE.
15. ALL ELECTRICAL ITEMS BOTH CONTRACTOR AND OWNER FURNISHED SHALL BE CHECKED FOR AGREEMENT WITH THE PROJECT DRAWINGS AND SPECIFICATIONS AND SHALL BE VISUALLY INSPECTED TO ENSURE THAT EQUIPMENT IS UNDAMAGED AND IS IN PROPER ALIGNMENT, INSTALLED PER MANUFACTURER'S INSTRUCTIONS, ELECTRICAL CONNECTIONS ARE TIGHT AND PROPERLY INSULATED WHERE REQUIRED, FUSES ARE OF THE PROPER TYPE AND SIZE, AND ELECTRICAL ENCLOSURES ARE OF THE PROPER NEMA TYPE.
16. NOTIFY OWNER IN WRITING OF ALL DISCREPANCIES BETWEEN DRAWINGS / SPECIFICATIONS AND FIELD INSTALLATIONS, OR IF THE VISUAL INSPECTIONS SHOW DAMAGE OR IMPROPER INSTALLATION.
17. THE EQUIPMENT AND MATERIALS SHALL BE FURNISHED AND INSTALLED TO OPERATE SAFELY AND CONTINUOUSLY WITH NO PROTECTION FROM THE WEATHER.
18. ELECTRICAL WORK REPRESENTED ON THE PROJECT DRAWINGS IS SHOWN DIAGRAMMATICALLY. EXACT LOCATIONS AND ELEVATIONS OF ELECTRICAL EQUIPMENT SHALL BE DETERMINED IN THE FIELD AND VERIFIED WITH THE OWNER'S REPRESENTATIVE.
19. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF TEMPORARY, IF REQUIRED, AND PERMANENT POWER WITH THE LOCAL UTILITY COMPANY. THE TEMPORARY POWER AND ALL HOOKUP COSTS ARE TO BE PAID BY THE CONTRACTOR.
20. PROVIDE MOLDED CASE, BOLT ON, THERMAL MAGNETIC TRIP, SINGLE TWO OR THREE POLE CIRCUIT BREAKERS. MULTIPLE POLE CIRCUIT BREAKERS SHALL BE SINGLE HANDLE COMMON TRIP. SHORT CIRCUIT INTERRUPTING RATING SHALL BE AS REQUIRED FOR AVAILABLE FAULT CURRENTS. ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE A SHORT CIRCUIT INTERRUPTING RATING EQUAL TO OR GREATER THAN THAT SHOWN ON THE PROJECT DRAWINGS.
21. CONTRACTOR SHALL PERFORM ALL EXCAVATION, TRENCHING, BACKFILLING, AND REMOVAL OF DEBRIS IN CONNECTION WITH THE ELECTRICAL WORK IN ACCORDANCE WITH THE PROJECT DRAWINGS. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF UNDERGROUND UTILITIES AND GROUND WITH THE FOUNDATION INSTALLATION. HAND DIGGING WILL BE REQUIRED IN THE COMPOUND ONLY.
22. CONTRACTOR SHALL PROVIDE ALL NECESSARY SUPPORTS FOR EQUIPMENT INSTALLED AS PART OF THIS PROJECT. SUPPORTS SHALL CONSIST OF GALVANIZED STEEL FRAMES, PLATES, BRACKETS, RACKS AND OTHER SHAPES OF ADEQUATE SIZE AND FASTENED WITH BOLTS, SCREWS OR BY WELDING TO PROVIDE RIGID SUPPORT.
23. CONTRACTOR SHALL CALL THE APPROPRIATE UTILITIES PROTECTION SERVICE BEFORE ANY UNDERGROUND WORK IS PERFORMED, SUCH AS TRENCHING, EXCAVATING, AND DRIVING GROUNDING RODS.
24. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENTLY ENGRAVED LAMINATED PHENOLIC NAMEPLATES. (MINIMUM LETTER HEIGHT SHALL BE 1/2") NAMEPLATES SHALL BE FASTENED WITH STAINLESS STEEL SCREWS AND AS PER CONTRACTOR SPECIFICATIONS.

GENERAL RACEWAY NOTES:

1. CONDUIT AND CONDUIT FITTINGS SHALL MEET ANSI AND NEC STANDARDS FOR MATERIAL AND WORKMANSHIP AND SHALL BE UL LISTED.
   A. RIGID STEEL CONDUIT SHALL CONFORM TO ANSI C801 AND REQUIREMENTS OF NEC, PARAGRAPH 346 AND BE STANDARD WEIGHT, MILD RIGID STEEL, HOT DIP GALVANIZED WITH INSIDE AND OUTSIDE FINISHED WITH A PROTECTIVE ZINC COATING. COUPLING ELBOWS AND BENDS SHALL MEET THESE SAME REQUIREMENTS. FITTINGS SHALL BE OF THE GALVANIZED IRON OR STEEL THREADED TYPE.
   B. PVC CONDUIT SHALL CONFORM TO UL STANDARD 651-89 AND THE REQUIREMENTS OF NEC, PARAGRAPH 347. CONDUIT SHALL BE HEAVY WALL TYPE, SCHEDULE 40 OR 80, AND SUNLIGHT RESISTANT. FITTINGS SHALL BE OF THE UNTHREADED SOLVENT CEMENT TYPE.
   C. EMT CONDUIT (FOR USE BEHIND WALLS OR ABOVE SUSPENDED CEILINGS ONLY). ELECTRIC METALLIC TUBING SHALL CONFORM TO ANSI C803 AND THE REQUIREMENTS OF NEC, PARAGRAPH 348 AND BE PROTECTED ON EXTERIOR WITH A ZINC COATING AND ON INTERIOR SURFACES WITH EITHER A ZINC COATING OR LACQUER ENAMEL. FITTINGS SHALL BE ZINC COATED STEEL.
2. MINIMUM CONDUIT SIZE SHALL BE 3/4", SIZES NOT SHOWN ON DRAWINGS SHALL BE PER NEC.
3. ALL SPARE CONDUITS SHALL HAVE A METALLIC PULL WIRE.
4. CONDUIT SUPPORTS SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR AND IN ACCORDANCE WITH THE NEC.
5. UNDERGROUND CONDUITS.
   A. INSTALL A WARNING TAPE TWELVE INCHES ABOVE EACH CONDUIT OR SET OF CONDUITS.
   B. IDENTIFY EACH CONDUIT AT BOTH ENDS. INSTALL MINIMUM OF 3'-0" BELOW THE FINISHED GRADE, OR DEEPER IF NOTED ON PLAN DRAWINGS.
   C. SLOPE A MINIMUM OF 4" PER 100'-0" TO DRAIN AWAY FROM BUILDINGS AND EQUIPMENT.
   D. USE MANUFACTURED ELECTRICAL ELBOWS AND FITTINGS FOR BELOW GRADE BENDS.
   E. MAKE JOINTS AND FITTINGS WATERTIGHT ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
   F. INSTALL A COUPLING BEFORE EACH WALL PENETRATION.
   G. RESTORE SURFACE FEATURES DISTURBED BY EXCAVATION (AND TRENCHING) IN ALL AREAS.

GENERAL CONDUCTOR NOTES:

1. ALL POWER, CONTROL AND COMMUNICATION WIRING SHALL MEET NEMA-WC, ASTM, UL, AND NEC STANDARDS FOR MATERIAL AND WORKMANSHIP UNLESS OTHERWISE SPECIFIED.
   A. SERVICE ENTRANCE CONDUCTORS SHALL BE COPPER, 600 VOLT, SUNLIGHT RESISTANT, SUITABLE FOR WET LOCATIONS, TYPE USE-2. THE GROUNDED NEUTRAL CONDUCTOR SHALL BE IDENTIFIED WITH A WHITE MARKING AT EACH TERMINATION.
   B. CONDUCTORS FOR FEEDER AND BRANCH CIRCUITS SHALL BE COPPER 600 VOLT, TYPE THHN / THWN WITH A MINIMUM SIZE OF #12 AWG.
2. ALL CONDUCTOR ACCESSORIES INCLUDING CONNECTORS, TERMINATIONS, INSULATING MATERIALS, SUPPORT GRIPS, MARKER AND CABLE TIES SHALL BE FURNISHED AND INSTALLED SUPPLIER'S INSTALLATION INSTRUCTIONS SHALL BE OBTAINED FOR CABLE ACCESSORIES. THESE INSTRUCTIONS SHALL BE IN THE POSSESSION OF THE CRAFTSMAN WHILE INSTALLING THE ACCESSORIES AND SHALL BE AVAILABLE TO THE COMPANY FOR REFERENCE.
3. WHERE POSSIBLE, NO. 6 AWG AND SMALLER WIRE SHALL BE COLORED CODED BY THE COLOR OF THE INSULATION COVERING. COLOR CODING OF WIRE LARGER THAN NO. 6 AWG MAY BE BY MEANS OF SELF-ADHESIVE WRAP AROUND TYPE MARKERS, PER NEC.
4. TERMINAL CONNECTOR FOR CONDUCTORS 8 AWG AND LARGER SHALL BE PRESSURE OR BOLTED CLAMP TYPE BURNDY QUIKLUG, VARILUG OR ACCEPTABLE EQUAL: OR COMPRESSION TYPE, BURNDY TYPE YAV OR YA (LONG BARREL), PANDUIT TYPE LCA OR LCC, OR ACCEPTABLE EQUAL. ACCEPTABLE CONNECTORS INCLUDED WITH COMPANY-FURNISHED EQUIPMENT MAY BE USED.
5. TERMINATION PROVISIONS OF EQUIPMENT FOR CIRCUITS RATED 100 AMPERES OR LESS OR MARKED FOR NOS. 14 THROUGH 1 CONDUCTORS, SHALL BE USED ONLY FOR CONDUCTORS RATED 66°C (140°F). CONDUCTORS WITH HIGHER TEMPERATURE RATINGS SHALL BE PERMITTED, PROVIDED THE AMPACITY OR THE CONDUCTOR SIZE USED.
6. TERMINATION PROVISIONS OF EQUIPMENT FOR CIRCUITS RATED OVER 100 AMPERES, OR MARKED FOR CONDUCTORS LARGER THAN NO.1 SHALL BE USED ONLY FOR CONDUCTORS RATED 75°C (167°F) CONDUCTORS WITH HIGHER TEMPERATURE RATINGS SHALL BE PERMITTED, PROVIDED THE AMPACITY OF EACH CONDUCTOR IS DETERMINED BASED UPON THE 75°C (167°F) AMPACITY OF THE CONDUCTOR SIZE USED.
7. ALL 600 VOLT OR LESS WIRING, WHERE COMPRESSION TYPE CONNECTORS ARE USED, SHALL BE INSULATED WITH AT LEAST ONE TURN OF 'SCOTCHFILL' ELECTRICAL INSULATING PUTTY AND THEN COVERED WITH TWO HALF TURNS OF TAPE SIMILAR TO 3M COMPANY'S '33 PLUS (33+) PLASTIC TAPE OR 88 OUTDOOR TAPE.
8. TERMINAL CONNECTORS FOR CONDUCTORS SMALLER THAN 8 AWG SHALL BE COMPRESSION TYPE CONNECTORS SIZED FOR THE CONDUCTOR AND THE TERMINAL. THE CONNECTORS SHALL BE CONSTRUCTED OF FINE GRADE HIGH CONDUCTIVITY COPPER IN ACCORDANCE WITH QQ-C-516 AND SHALL BE TIN-PLATED IN ACCORDANCE WITH MIL-T-10727. THE INTERIOR SURFACE OF THE CONNECTOR WIRE BARREL SHALL BE SERRATED AND THE EXTERIOR SURFACE OF THE CONNECTOR WIRE BARREL SHALE BE PROVIDED WITH CRIMP GUIDES.

GENERAL GROUNDING NOTES:

1. ALL WORK SHALL COMPLY WITH THE LATEST CONTRACTOR GROUNDING SPECIFICATIONS AND REQUIREMENTS.
2. ALL METALLIC COMPONENTS ON THE SITE MUST BE GROUNDED TO THE GROUND RING. THIS INCLUDES STEEL CONDUITS USED TO DELIVER THE TELCO AND POWER UTILITY LINES TO THE SITE OR USED TO PROVIDE ACCESS BY UTILITIES OR CONTRACTORS TO THE VARIOUS CABINETS.
3. ALL GROUND LEADS ABOVE GRADE SHALL BE INSTALLED IN 1/2" SEAL TIGHT.
4. WHEN EARTH RESISTANCE TEST INDICATES THAT THE SOIL IS ABOVE MINIMUM ALLOWABLE RESISTANCE, THAN THE CONTRACTOR SHALL ESTIMATE THE TYPE, NUMBER AND ARRANGEMENT OF EARTH ELECTRODES. CONTRACTOR SHALL ALSO CONSIDER COMPANY'S SITE SPECIFIC APPROACHES FOR IMPROVING EARTH RESISTANCE AT THE SITE BY METHODS INDICATED BELOW:

   RAW LAND
   A. USE MULTIPLE RODS
   B. LENGTHEN THE EARTH ELECTRODE
   C. TREAT THE SOIL
   D. USE CHEMICAL RODS
5. THE CONTRACTOR MUST VERIFY THAT NEW GROUNDING SYSTEM RESISTANCE IS EQUAL TO OR LESS THAN FIVE (5) OHMS PER CONTRACTOR SPECIFICATIONS.
6. RUN ALL GROUND WIRES IN AN ORGANIZED MANNER, AVOID CROSSING OF WIRES WHEREVER POSSIBLE. DO NOT RUN WIRES OVER CONCRETE SLAB.
7. INSTALL ALL GROUND WIRES IN A DOWNWARD SLOPE FOR MAXIMUM LIGHTNING PROTECTION.
8. MAINTAIN ALL MINIMUM BENDING RADII OF THE GROUNDING WIRES.
9. DO NOT REMOVE MORE INSULATION FROM THE GROUND WIRES THAN NECESSARY WHEN CADWELDING OR CRIMPING IF EXCESS INSULATION IS REMOVED, THE CONNECTION WILL BE CONSIDERED UNACCEPTABLE AND WILL BE CORRECTED PER THE CONTRACTOR REPRESENTATIVES'S DIRECTION.
10. DOWN LEAD FOR ANTENNA SECTORS MUST BE CONNECTED DIRECTLY TO THE GROUND RING.
11. ALL BASE TRANSCEIVER SITE EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH THE INTERNATIONAL ELECTRICAL CODE (NEC), AND THE LATEST EDITION OF LIGHTNING PROTECTION CODE NFPA 780 AND CONTRACTOR STANDARDS.
12. THE ELECTRICAL SERVICE TO THE SITE SHALL BE GROUNDED AT THE SERVICE DISCONNECTING MEANS REQUIRED IN ARTICLE 250 OF THE NATIONAL ELECTRIC CODE, IN ACCORDANCE WITH ANY LOCAL CODE.
13. ALL UNDERGROUND (BELOW GRADE) GROUNDING CONNECTIONS SHALL BE MADE BY THE CADWELD PROCESS (MECHANICAL LUG ATTACHMENTS BELOW GRADE ARE NOT ACCEPTABLE). CONNECTIONS SHALL INCLUDE ALL CABLE SPLICES (TEES, X'S, ETC.) ALL CABLE CONNECTIONS TO GROUND RODS, GROUND ROD SPLICES, AND LIGHTING PROTECTION SYSTEM AS INDICATED. ALL MATERIALS USED (MOLDS, WELDING METALS, TOOLS, ETC.) SHALL BE BY CADWELD AND INSTALLED PER MANUFACTURERS RECOMMENDATION AND PROCEDURES.
14. ALL GROUNDING AND BONDING CONDUCTORS THAT ARE CONNECTED ABOVE GRADE INTERIOR TO A BUILDING SHALL BE CONNECTED USING TWO HOLE CRIMP TYPE (COMPRESSION) CONNECTORS FOR #2 AND #6 AWG INSULATED COPPER CONDUCTOR.
15. ALL GROUNDING CONNECTIONS, INTERIOR AND EXTERIOR, MADE THROUGHOUT THIS DOCUMENT SHALL BE MADE USING AN ANTI-OXIDATION COMPOUND, THE ANTI-OXIDATION COMPOUND SHALL BE 'THOMAS AND BETTS' KOPR-SHIELD (TIM OF JET LUBE, INC.) THERE IS NO EQUIVALENT FOR THIS PRODUCT: NO OTHER COMPOUND WILL BE ACCEPTED. COAT ALL WIRES BEFORE LUGGING. COAT ALL SURFACES BEFORE CONNECTING.
16. ALL CONNECTIONS SHALL BE MADE TO BARE METAL. ALL PAINTED SURFACES SHALL BE FIELD INSPECTED AND MODIFIED TO ENSURE PROPER CONTACT PRIOR TO CADWELD, GALVANIZING SHALL BE REMOVED BY GRINDING SURFACE TO BARE METAL 'SLAG' FROM CADWELD MUST BE REMOVED AND WELD SHALL BE SPRAYED WITH COLD GALVANIZE AFTER COMPLETION.

GENERAL GROUNDING NOTES CONTINUED:

17. FERROUS METAL CLIPS WHICH COMPLETELY SURROUND THE GROUNDING CONDUCTOR SHALL NOT BE USED. CLIPS OF THE FOLLOWING MATERIALS AND TYPES MAY BE USED TO SUPPORT GROUNDING CONDUCTORS.
   - PLASTIC CLIPS
   - STAINLESS STEEL CLIPS WHICH DO NOT COMPLETELY SURROUND THE GROUNDING CONDUCTOR.
   - FERROUS METAL CLIPS WHICH DO NOT COMPLETELY SURROUND THE GROUNDING CONDUCTOR.
18. ALL BELOW GRADE GROUNDING CONDUCTORS SHALL BE BARE SOLID COPPER WIRE. ABOVE-GRADE GROUNDING CONDUCTORS MAY BE EITHER OR AS INDICATED ON THE DRAWINGS:
   - BARE TINNED SOLID COPPER WIRE
   - THWN-INSULATED, CONTINUOUS GREEN COLOR, SOLID COPPER WIRE
   - THWN-INSULATED, CONTINUOUS GREEN COLOR STRANDED COPPER WIRE

   A. THE UNDERGROUND GROUND RING SHALL HAVE A #2 AWG BARE TINNED SOLID COPPER WIRE.
   B. #2 THWN SHALL BE STRANDED COPPER WITH GREEN THWN INSULATION SUITABLE FOR WET INSTALLATION (OR SOME ABOVE GROUND APPLICATIONS, I.E. INDOOR GROUNDING RING)
   C. #2 BARE TINNED COPPER SHALL BE SOLID. ALL BURIED WIRE SHALL MEET THIS CRITERIA INCLUDING CABLE TRAY GROUNDING WIRES AND WIRES INDICATED ON THE DRAWINGS.

(THE MINIMUM BEND RADIUS IS 8" FOR #6 AWG AND SMALLER, AND 12 INCHES FOR WIRE LARGER THAN #6 AWG)

19. ALL HARDWARE, BOLTS, NUTS, WASHERS, AND LOCK WASHERS SHALL BE 18-8 STAINLESS STEEL. EVERY CONNECTION SHALL BE (BOLT-FLATWASHER-BUSS-LUG-FLATWASHER-LOCKWASHER-NUT), IN THAT EXACT ORDER WITH NUT FACING OUTWARD, BACK TO BACK LUGGING SHALL BE (BOLT-FLATWASHER-LUG-FLATWASHER-LUG -BUSS-LUG-FLATWASHER-LOCK WASHER-NUT), IN THAT EXACT ORDER IS ACCEPTED WHERE NECESSARY TO CONNECT MANY LUGS TO A BUSS BAR. STACKING OF LUGS, BUS-LUG-LUG, IS NOT ACCEPTABLE.
20. THE COMPRESSION GROUND LUG FOR #2 AWG BARE SOLID GROUNDING CONDUCTORS SHALL BE BURNDY TYPE YA3C-2TC.
21. THE ANTENNA CABLES SHALL BE GROUNDED AT THE TOP AND BOTTOM OF THE VERTICAL RUN. THE ANTENNA CABLE SHIELD SHALL BE BONDED TO A COPPER GROUND BUS AT THE LOWEST POINT OF THE VERTICAL RUN. THE ANTENNA CABLE SHIELD SHALL BE GROUNDED JUST BEFORE ENTERING THE BTS. GROUNDING KITS ON COAX CABLE SHALL HAVE A MINIMUM BEND OF 6" AND SHALL BE KEPT AS CLOSE TO VERTICAL AS POSSIBLE. FLAT WASHER SUPPLIED WITH GROUND KITS MUST BE REPLACED WITH SMALLER STAINLESS STEEL FLAT WASHERS, WASHERS MUST REMAIN FLAT AGAINST GROUND BAR, ALL FASTENERS MUST BE STAINLESS STEEL AND KOPR-SHIELD MUST BE USED ON BOTH SIDES OF THE GROUND BAR.

AT&T

smartlink
10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847-277-0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS
ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847-212-8354

REVISIONS

REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA"

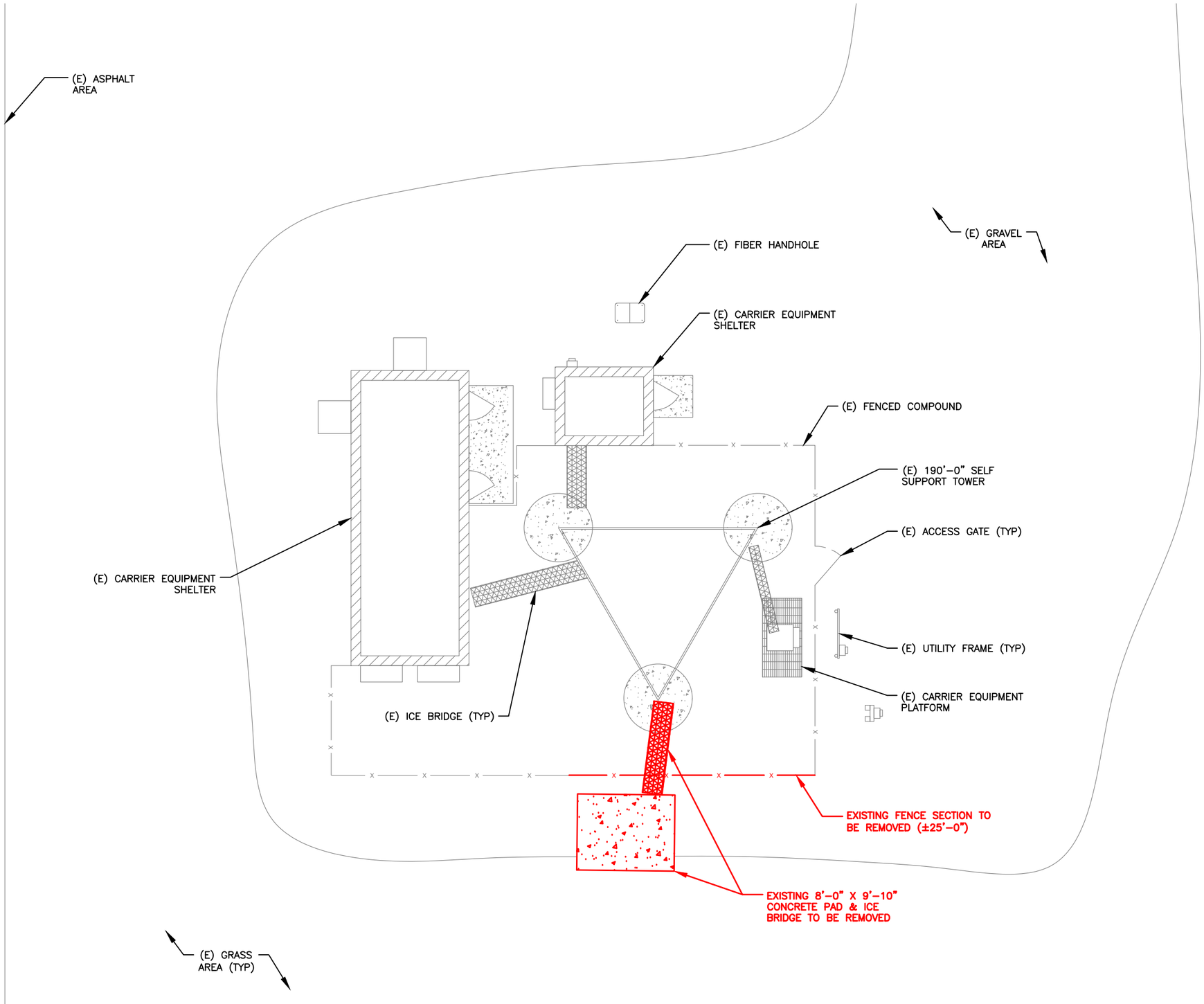
SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-5



1 EXISTING COMPOUND PLAN

0 1.5' 3' 5'

SCALE: 3/16" = 1'-0" (24x36)
(OR) 3/32" = 1'-0" (11x17)

AT&T

smartlink
10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847-277-0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS
ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847-212-8354

REVISIONS

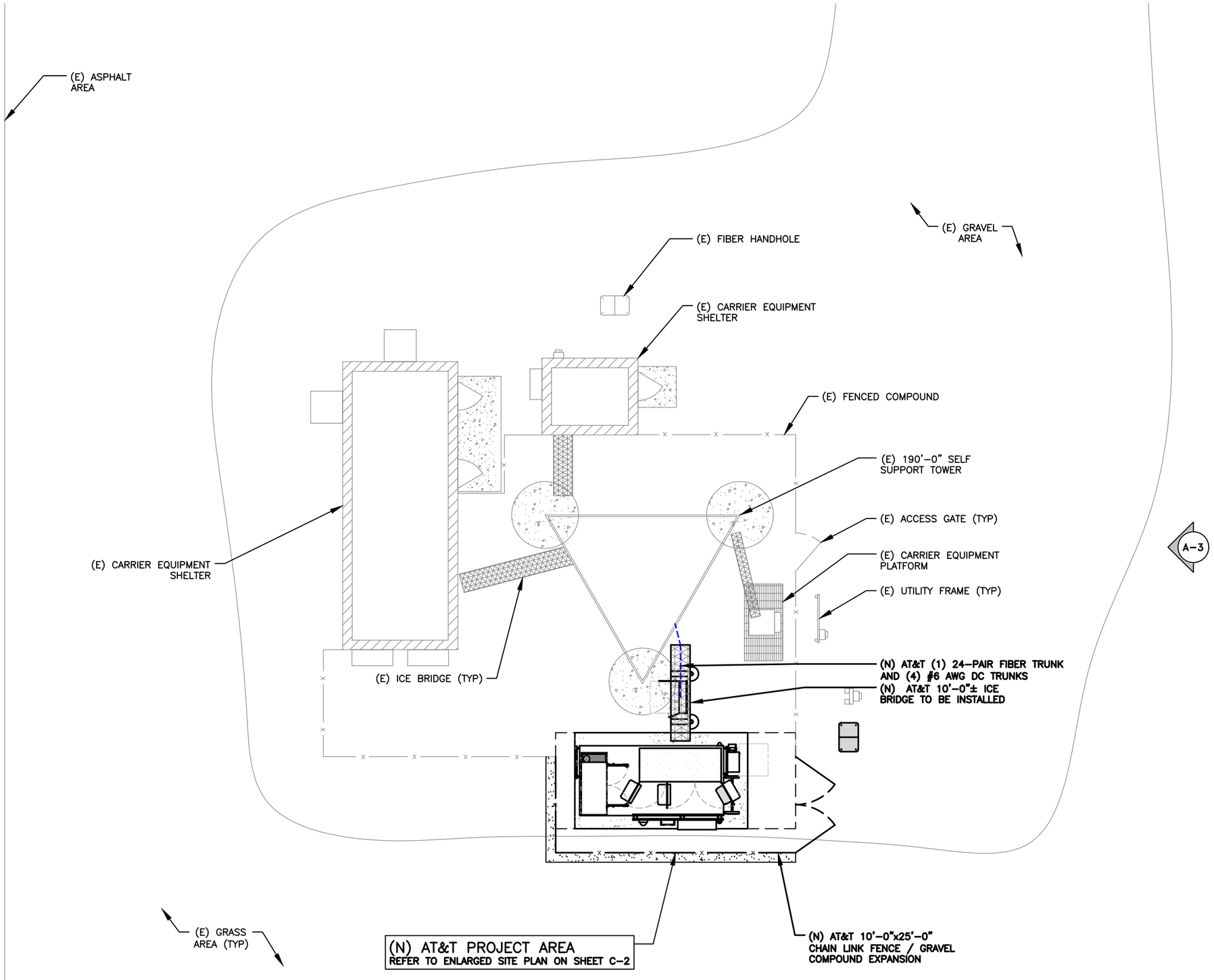
REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

SHEET TITLE
EXISTING COMPOUND PLAN

SHEET NUMBER
C-1



1 PROPOSED COMPOUND PLAN

0 1.5' 3' 5'

SCALE: 3/16" = 1'-0" (24x36)
(OR) 3/32" = 1'-0" (11x17)

AT&T

smartlink
10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847-277-0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS
ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847-212-8354

REVISIONS

REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA"

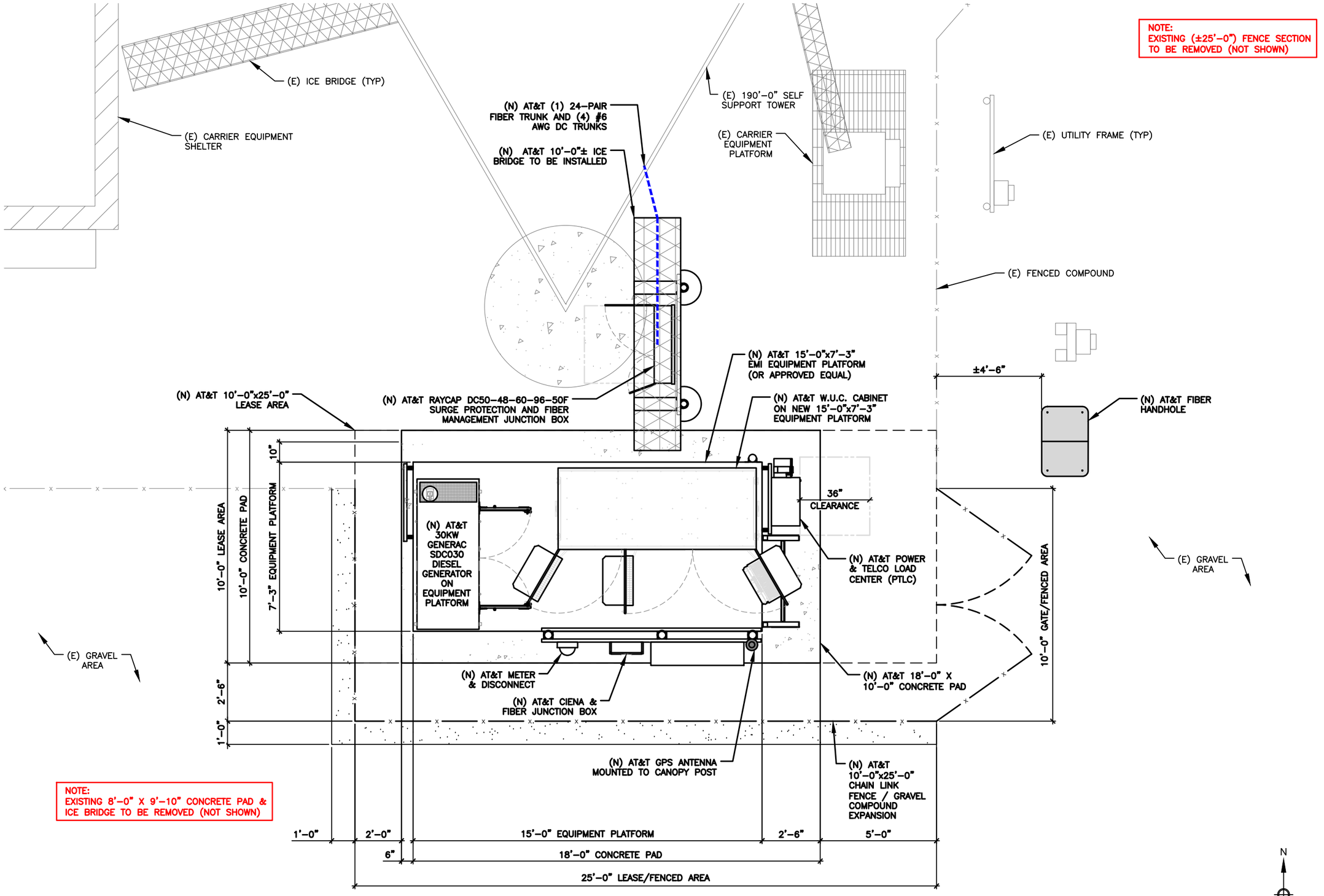
SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

SHEET TITLE

PROPOSED COMPOUND PLAN

SHEET NUMBER

C-1.1



1 EQUIPMENT PLAN

0 6" 1' 2'

SCALE: 1/2" = 1'-0" (24x36)
(OR) 1/4" = 1'-0" (11x17)

AT&T

smartlink
10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847-277-0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847-212-8354

REVISIONS

REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

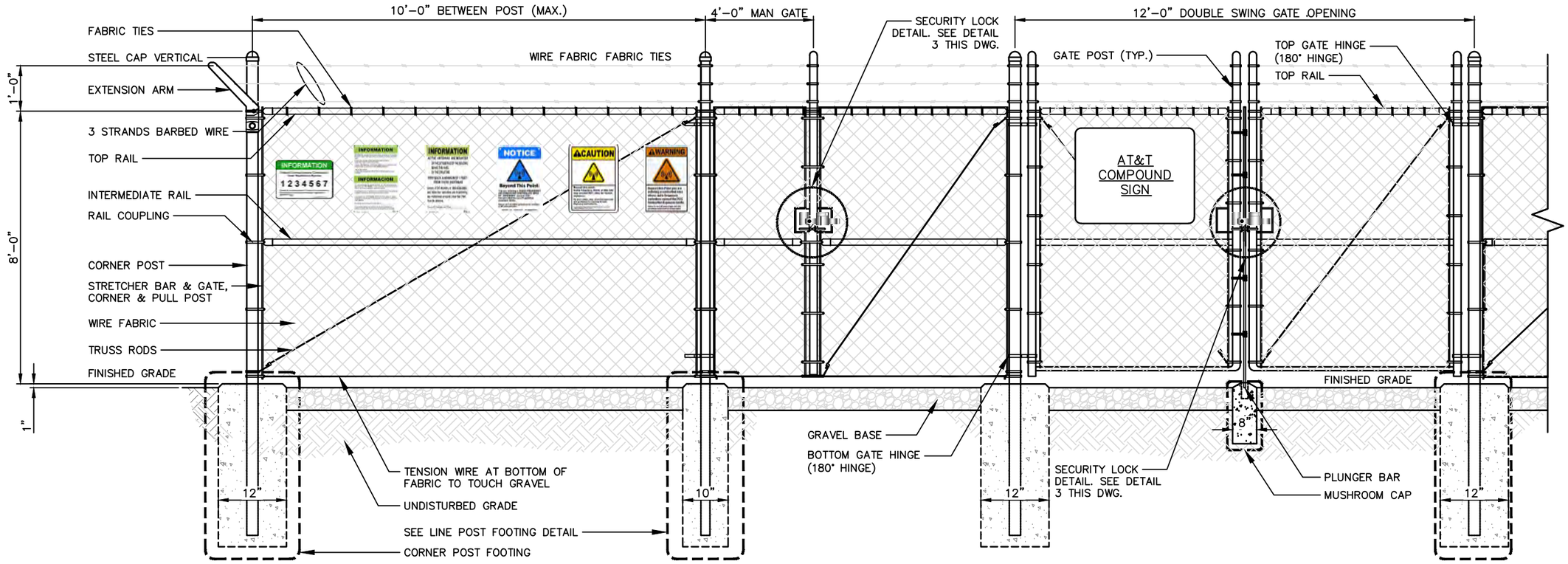
NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA"

SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

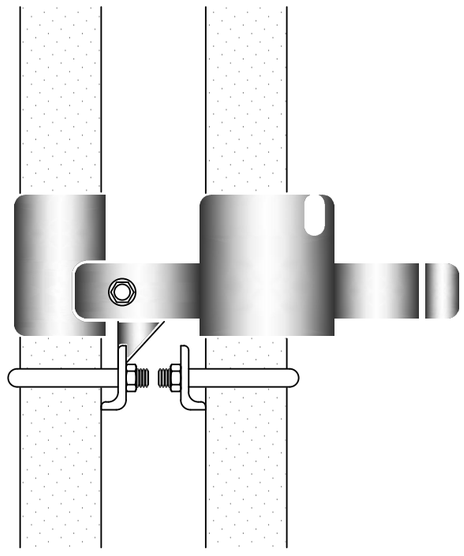
SHEET TITLE
EQUIPMENT PLAN

SHEET NUMBER
C-2



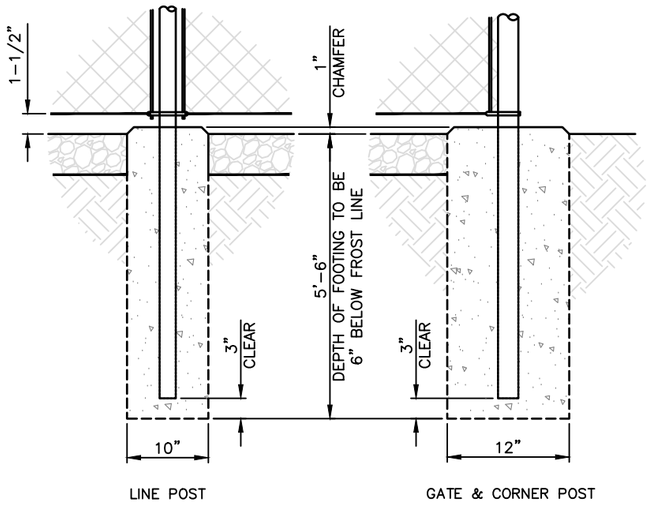
4 FENCE/GATE & GATE STOP DETAIL
N.T.S.

NO SCALE



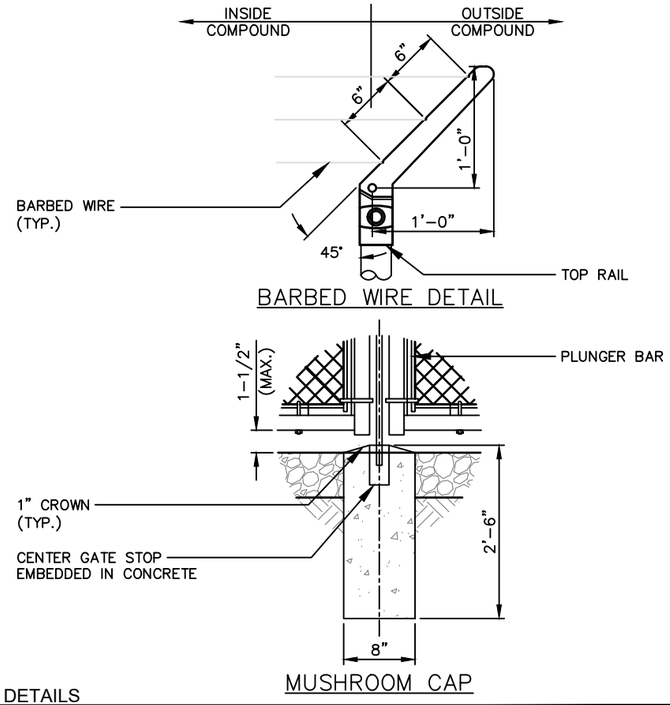
3 STRONGHOLD LATCH DETAIL
N.T.S.

NO SCALE



2 POST FOOTING DETAIL
N.T.S.

NO SCALE



1 DETAILS
N.T.S.

NO SCALE

AT&T

smartlink
10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847-277-0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS
ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847-212-8354

REVISIONS

REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

SHEET TITLE

FENCE DETAILS

SHEET NUMBER

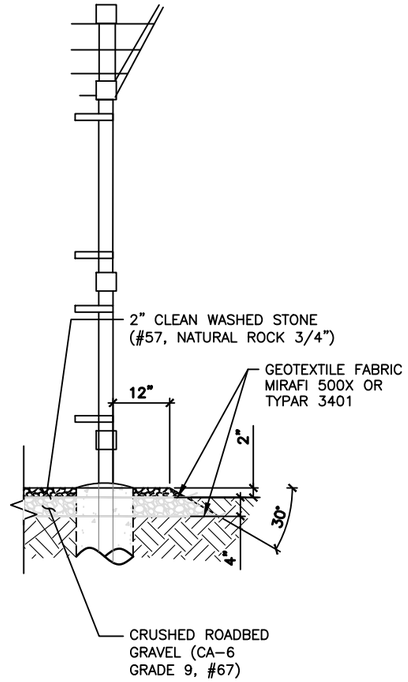
C-3

5 NOT USED
N.T.S.

NO SCALE

4 NOT USED
N.T.S.

NO SCALE

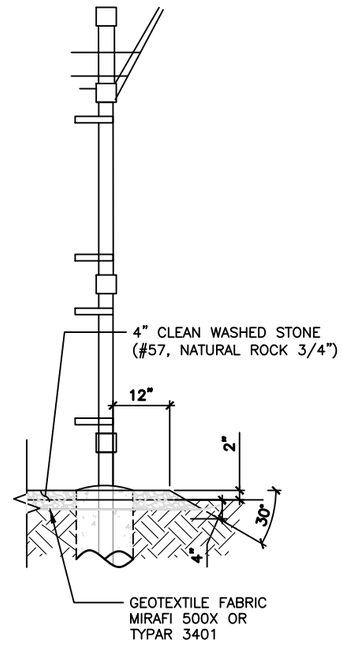


2 ALTERNATE COMPOUND GRAVEL DETAIL
N.T.S.

NO SCALE

3 NOT USED
N.T.S.

NO SCALE



1 TYPICAL COMPOUND GRAVEL DETAIL
N.T.S.

NO SCALE

AT&T

smartlink
10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847-277-0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS
ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847-212-8354

REVISIONS

REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA"

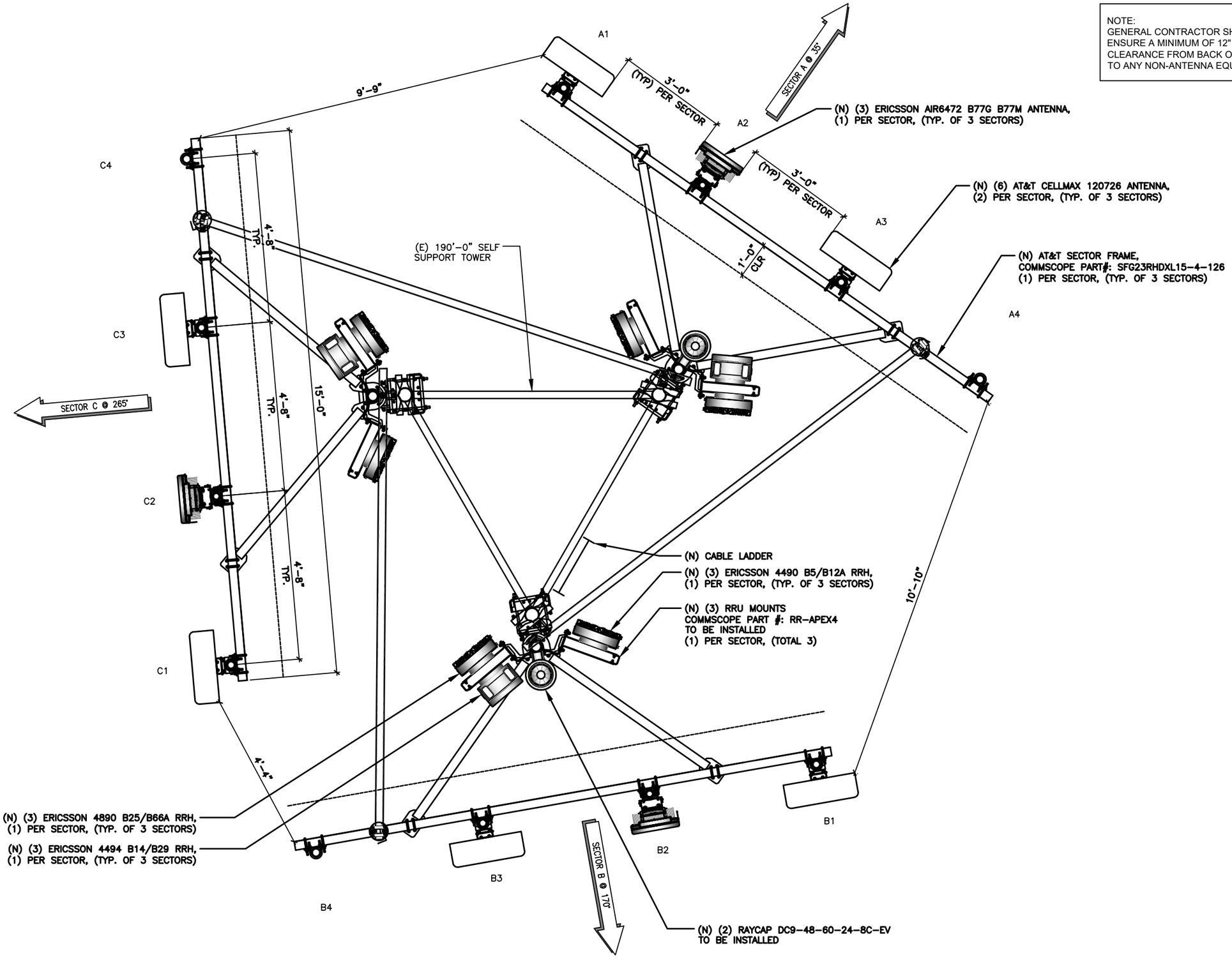
SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

SHEET TITLE

SITE DETAILS

SHEET NUMBER

C-4



NOTE:
GENERAL CONTRACTOR SHALL ENSURE A MINIMUM OF 12" CLEARANCE FROM BACK OF MOUNT TO ANY NON-ANTENNA EQUIPMENT

N

1 ANTENNA PLAN

0 3" 6" 1'

SCALE: 3/4 = 1'-0" (24x36)
(OR) 3/8" = 1'-0" (11x17)

AT&T

smartlink
10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847-277-0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847-212-8354

REVISIONS

REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA"

SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

SHEET TITLE

ANTENNA PLAN

SHEET NUMBER

A-1

NOTE:
1. CONTRACTOR TO REFER TO AT&T'S MOST CURRENT RADIO FREQUENCY DATA SHEET (RFDS) PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO USE ROSENBERGER FIBER LINE HANGER COMPONENTS (OR ENGINEER APPROVED EQUAL).

FINAL ANTENNA AND TRANSMISSION EQUIPMENT REQUIREMENTS (VERIFY WITH LATEST RFDS)

SECTOR	RAD CENTER	POSITION	ANTENNA TILT		AZIMUTH	ANTENNA MODEL	TECHNOLOGY	RRH / TMA	SURGE & DISTRIBUTION	
			MECH	ELEC					MODEL	CABLE (QTY) TYPES
A	133'-0"	1	–	–	35°	CELLMAX 120726 (LxWxH = 96.0"x24"x8")	LTE	ERICSSON 4490 B5/B12A	(2) RAYCAP DC9-48-60-24-8C-EV	(4) #6 AWG DC POWER TRUNKS (1) 24-PAIR FIBER TRUNK
	133'-0"	2	–	–	35°	ERICSSON AIR6472 B77G B77M W/INTEGRATED RRU (LxWxH = 30.4"x15.9"x8.1")	5G C-BAND	–		
	133'-0"	3	–	–	35°	CELLMAX 120726 (LxWxH = 96.0"x24"x8")	LTE	ERICSSON 4494 B14/B29 ERICSSON 4890 B25/B66A		
	–	4	–	–	–	–	–	–		
B	133'-0"	1	–	–	170°	CELLMAX 120726 (LxWxH = 96.0"x24"x8")	LTE	ERICSSON 4490 B5/B12A		
	133'-0"	2	–	–	170°	ERICSSON AIR6472 B77G B77M W/INTEGRATED RRU (LxWxH = 30.4"x15.9"x8.1")	5G C-BAND	–		
	133'-0"	3	–	–	170°	CELLMAX 120726 (LxWxH = 96.0"x24"x8")	LTE	ERICSSON 4494 B14/B29 ERICSSON 4890 B25/B66A		
	–	4	–	–	–	–	–	–		
C	133'-0"	1	–	–	265°	CELLMAX 120726 (LxWxH = 96.0"x24"x8")	LTE	ERICSSON 4490 B5/B12A		
	133'-0"	2	–	–	265°	ERICSSON AIR6472 B77G B77M W/INTEGRATED RRU (LxWxH = 30.4"x15.9"x8.1")	5G C-BAND	–		
	133'-0"	3	–	–	265°	CELLMAX 120726 (LxWxH = 96.0"x24"x8")	LTE	ERICSSON 4494 B14/B29 ERICSSON 4890 B25/B66A		
	–	4	–	–	–	–	–	–		

1 ANTENNA & RRH REQUIREMENTS

SCALE
N.T.S.

AT&T

smartlink
10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847-277-0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS
ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847-212-8354

REVISIONS

REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

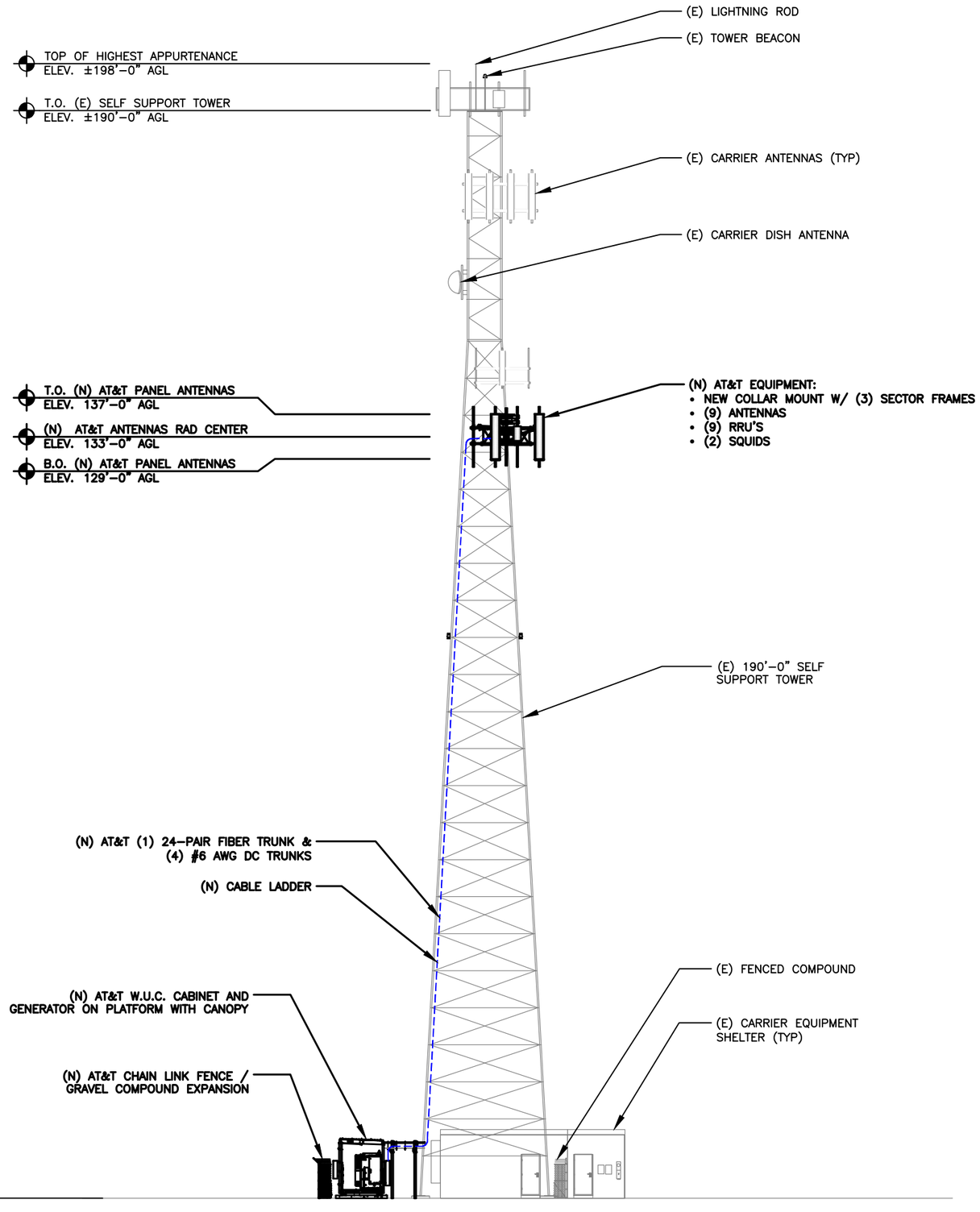
NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA"

SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

SHEET TITLE
ANTENNA & RRH REQUIREMENTS

SHEET NUMBER
A-2



1 ELEVATION

SCALE
N.T.S.

AT&T

smartlink
10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847-277-0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS
ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847-212-8354

REVISIONS

REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

SHEET TITLE
ELEVATION

SHEET NUMBER
A-3

12 NOT USED
N.T.S.

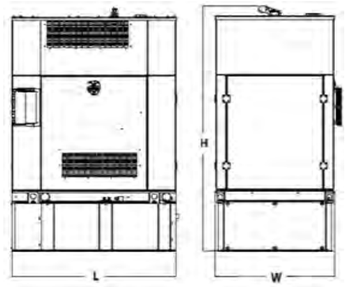
9 NOT USED
N.T.S.

6 GENERATOR SPECIFICATIONS
N.T.S.

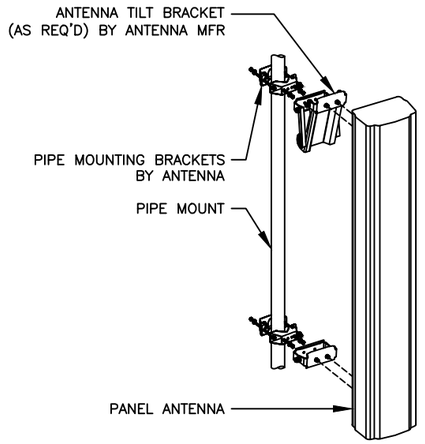
GENERAC SDC030 2.2L 30KW GENERATOR

LEVEL 2 SOUND ATTENUATED ENCLOSURE

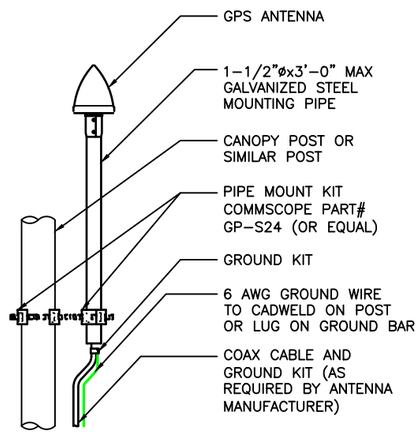
Run Time - Hours	Usable Capacity - gal (L)	L x W x H - in	Weight - lbs
No Tank	-	60.7 x 34.5 x 72.6	1623 (736)
19	50 (189)	60.7 x 34.5 x 90.9	2095 (950)
54	145 (549)	60.7 x 34.5 x 109.6	2394 (1086)



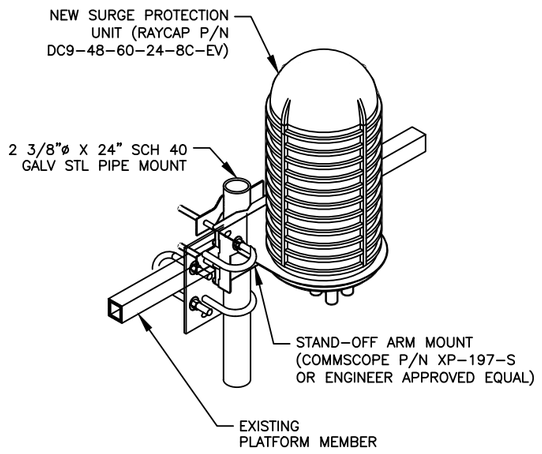
3 ANTENNA MOUNTING DETAIL
N.T.S.



11 GPS ANTENNA DETAIL
N.T.S.

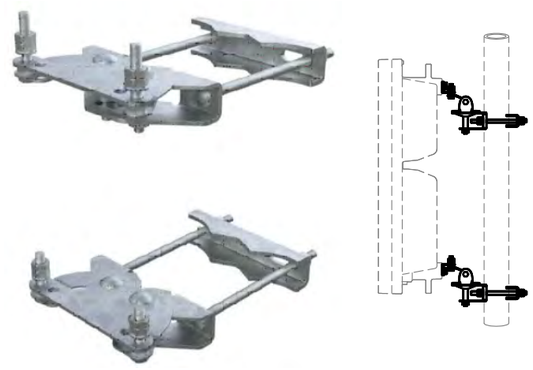


8 SURGE PROTECTION DETAIL
N.T.S.



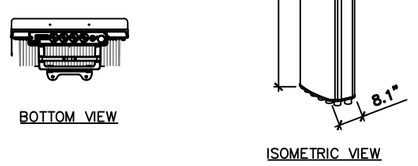
5 AIR ANTENNA MOUNTING KIT SPECIFICATIONS
CONMAT 84908 / ITEM NUMBER CEQ.52480

MANUFACTURER:	ERICSSON
MODEL NO.:	SXK1092064/1
WEIGHT:	10.6 LBS



2 ANTENNA SPECIFICATIONS
N.T.S.

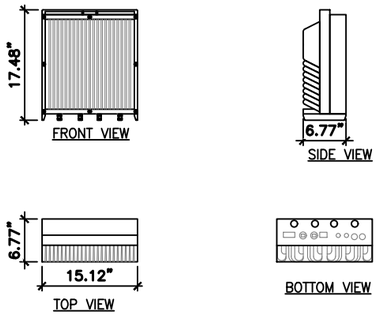
MANUFACTURER:	ERICSSON
MODEL NO.:	AIR 6472 B77G B77M
WEIGHT:	81.9 LBS
BAND:	MULTI–BAND
POLARIZATION:	DUAL
FREQUENCIES:	3700–3980MHz



10 RRUS SPECIFICATIONS
N.T.S.

ERICSSON RRUS 4490 B5/B12A
DIMENSIONS, HxWxD: 17.48"x15.12"x6.77"

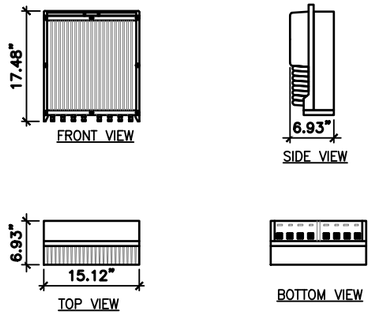
WEIGHT, WITHOUT
MOUNTING KIT: 31 kg (68.3 lbs)



7 RRUS SPECIFICATIONS
N.T.S.

ERICSSON RRUS 4890 B25/B66A
DIMENSIONS, HxWxD: 17.48"x15.12"x6.93"

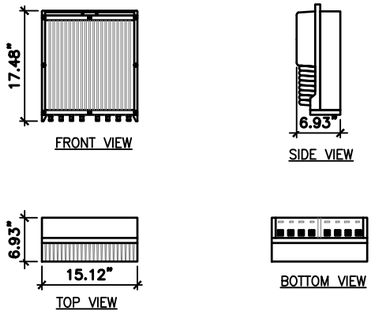
WEIGHT, WITHOUT
MOUNTING KIT: ±31 kg (68.3 lbs)



4 RRUS SPECIFICATIONS
N.T.S.

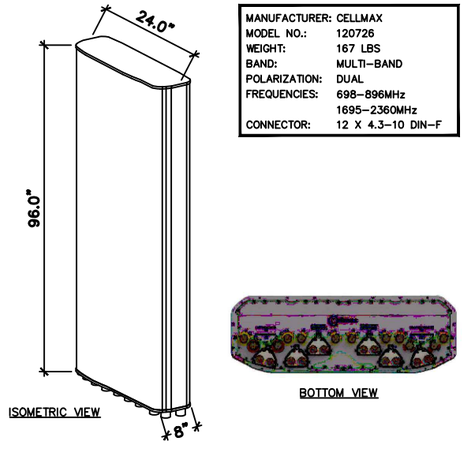
ERICSSON RRUS 4494 B14
DIMENSIONS, HxWxD: 17.48"x15.12"x6.93"

WEIGHT, WITHOUT
MOUNTING KIT: ±31 kg (68.3 lbs)



1 PANEL ANTENNA DETAIL
CONMAT N/A / ITEM NUMBER N/A

MANUFACTURER:	CELLMAX
MODEL NO.:	120726
WEIGHT:	167 LBS
BAND:	MULTI–BAND
POLARIZATION:	DUAL
FREQUENCIES:	698–896MHz
	1695–2360MHz
CONNECTOR:	12 X 4.3–10 DIN–F



AT&T

smartlink
10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847–277–0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS
ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847–212–8354

REVISIONS

REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA"

SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

SHEET TITLE

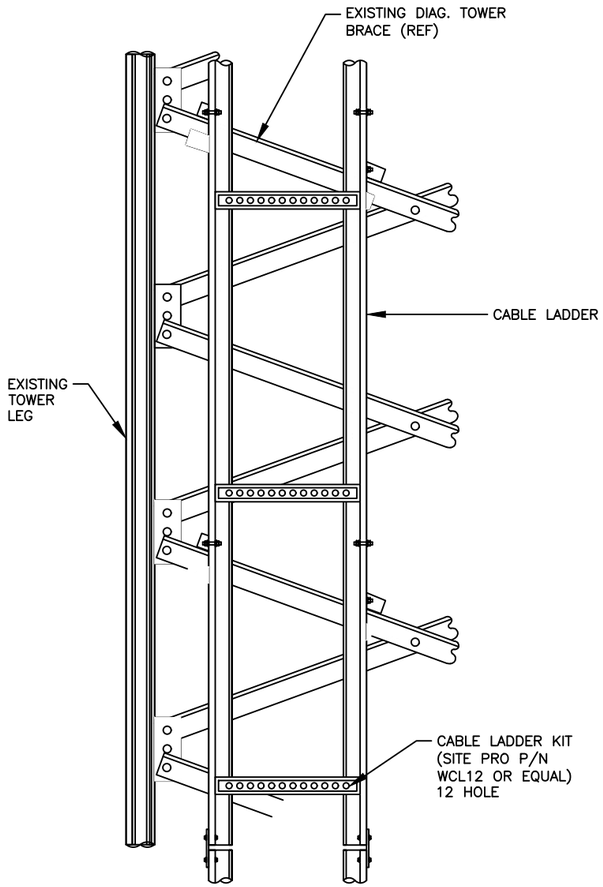
DETAILS

SHEET NUMBER

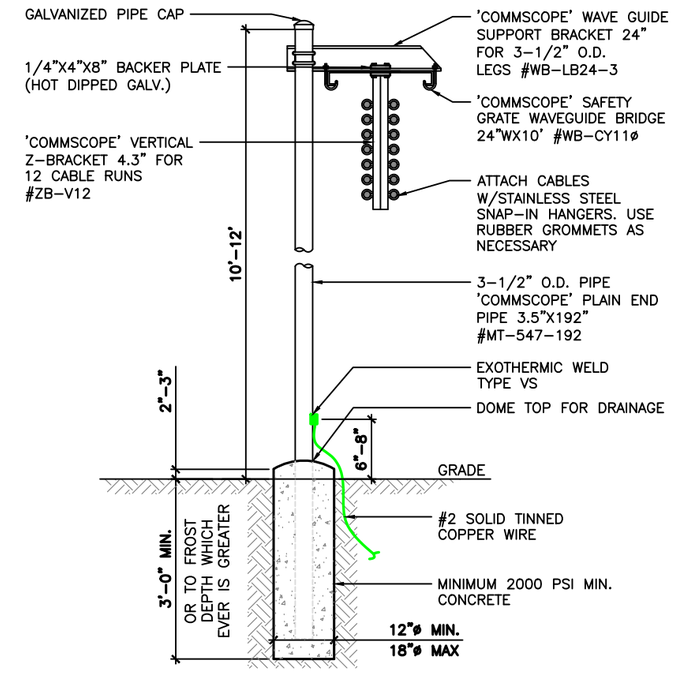
D-1

5 NOT USED
N.T.S.

3 NOT USED
N.T.S.



4 NOT USED
N.T.S.



2 ICE BRIDGE DETAIL
N.T.S.

1 CABLE LADDER DETAIL
N.T.S.

AT&T

smartlink
10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847-277-0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS
ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847-212-8354

REVISIONS

REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

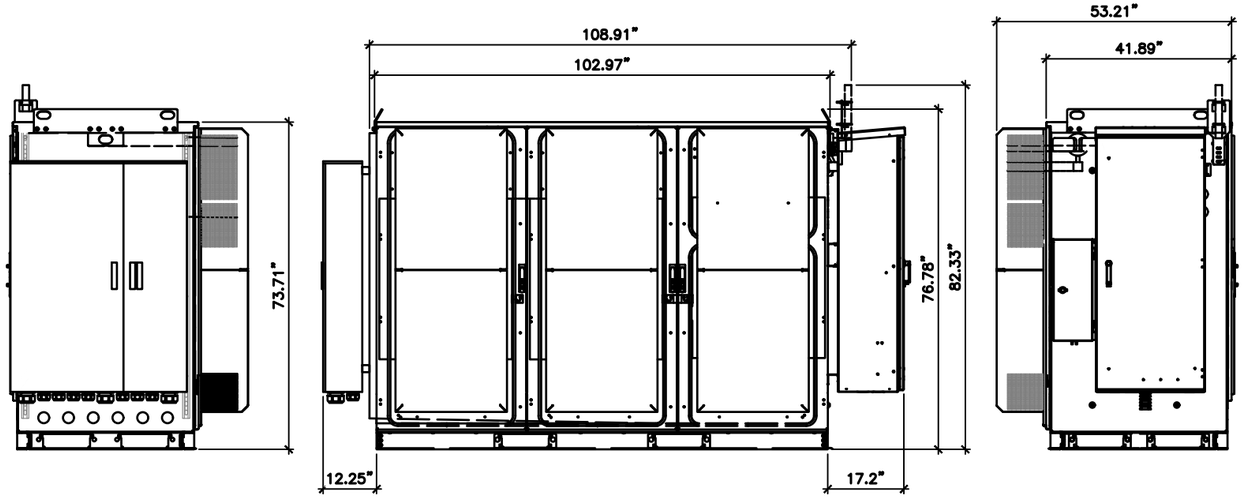
SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

SHEET TITLE

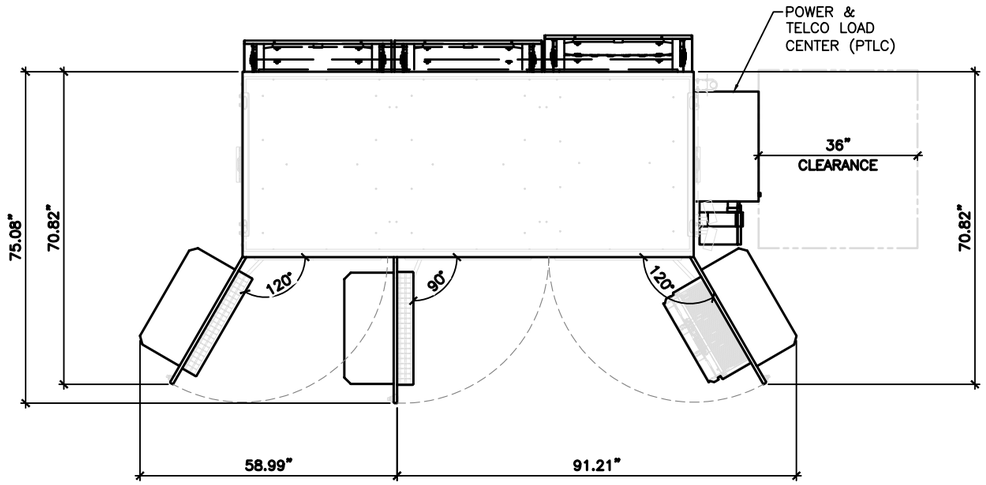
DETAILS

SHEET NUMBER

D-2



LEFT VIEW | FRONT VIEW | RIGHT VIEW

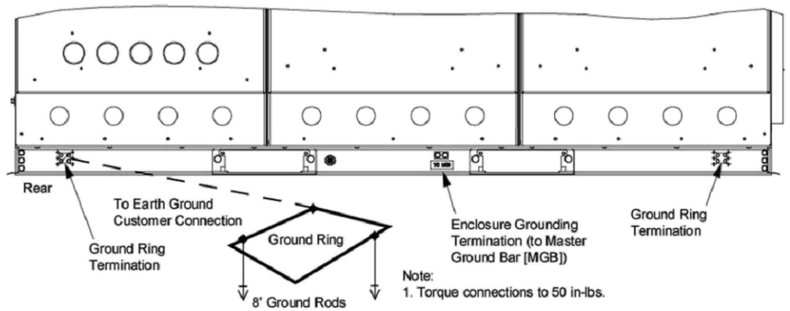


TOP VIEW

SPECIFICATIONS:

VENDOR:	VERTIV 3-BAY ENCLOSURE
DIMENSIONS (HxWxD):	82.33" x 102.97" x 53.21"
WEIGHT:	SHIPPING: 1,642 lbs
LIFT:	2,842 lbs
	ON PAD: 4,442 lbs (incl. BATTERIES & 1,200 lbs CUSTOMER EQUIP)
LIFT:	COOL WHITE

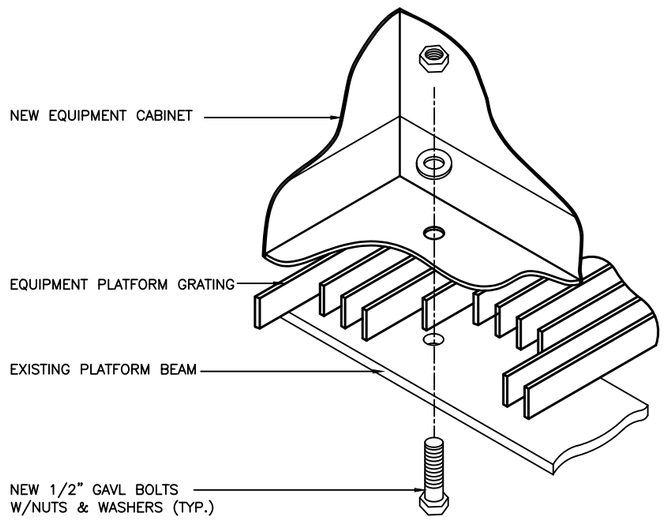
3 WALK UP CABINET (W.U.C.) DETAIL
N.T.S. — NO SCALE



External Grounding: At the center rear of the enclosure's mounting plinth is a grounding location that provides 3/8-16 threaded holes for installation of a customer provided two-hole lug with 3/8-inch mounting holes on 1-inch spacing. This is used to provide a connection from the mounting plinth to the MGB. Also provided on the rear of the enclosure's mounting plinth, at each end, are ground pad termination points that provide 3/8-16 threaded holes for installation of customer provided two-hole lugs with 3/8-inch mounting holes on 1-inch spacing.

2 CABINET GROUNDING DETAILS
N.T.S. — NO SCALE

CONTRACTOR TO VERIFY ALL CABINET ANCHOR POINTS ALIGN WITH PLATFORM BEAMS



1 CABINET MOUNTING SPECIFICATIONS
N.T.S. — NO SCALE

AT&T

smartlink
10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847-277-0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS
ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847-212-8354

REVISIONS

REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA"

SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

SHEET TITLE
CABINET DETAILS

SHEET NUMBER
D-3

180" x 87 ¼" WUC/Combo Platform with Canopy & Optional Wing Kit for 30kW Genset

Part Number		Elevation
AT&T- CEQ.53654	EMI- 1000-0010-0102-FC ⭳	Ground
AT&T- CEQ.53679	EMI- 1000-0010-0102-SC ⭳	Ground
AT&T- CEQ.56505	EMI- 1000-0010-0102-04-FC ⭳	4 ft
AT&T- CEQ.56504	EMI- 1000-0010-0102-04-SC ⭳	4 ft

⭳ Click the **EMI** part number to download drawing.

Description
OD cabinet equipment platform w/canopy 180" x 87 ¼". Includes stair kit, lighting, and unistruts.

Special Notes
FC - Factory Configured - pre-assembled unit SC - Site Configured - on-site assembly 4 ft elevated unit uses ladder for compact footprint

Part Number	
AT&T- CEQ.53681	EMI- 1000-0020-0032 ⭳

Description
OD cabinet platform 30kW generator extension with two 12" extension wings set.

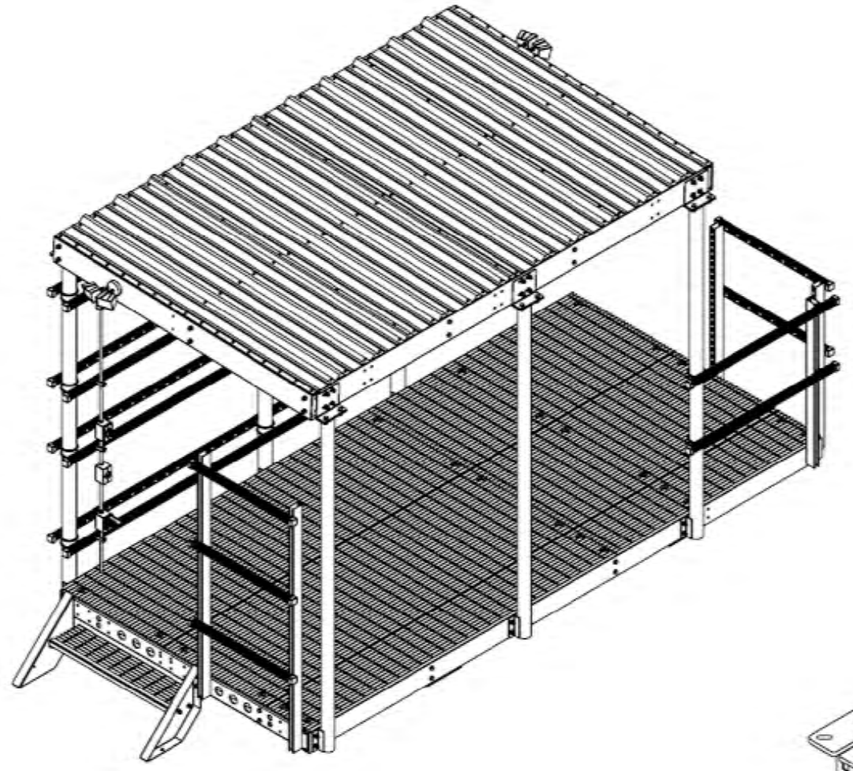
Helical and Concrete Foundations Sold Seperately

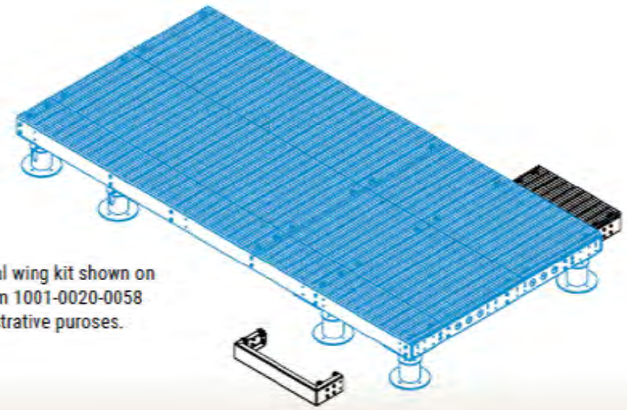
Part Number	
AT&T- CEQ.53658	EMI- 1008-0050-0011 ⭳

Description
10" dia. x 10' high helical foundation (4 unit kit), single stud leveling.

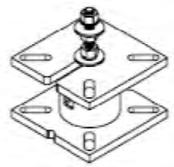
Part Number	
AT&T- CEQ.53682	EMI- 1008-0030-0005 ⭳

Description
6" dia. x 8' high concrete mount extension with single stud leveling hardware. (4 unit Kit)





Optional wing kit shown on platform 1001-0020-0058 for illustrative puroses.



1 EQUIPMENT PLATFORM DETAILS
N.T.S.

NO SCALE

AT&T

smartlink
10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847-277-0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS
ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847-212-8354

REVISIONS

REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

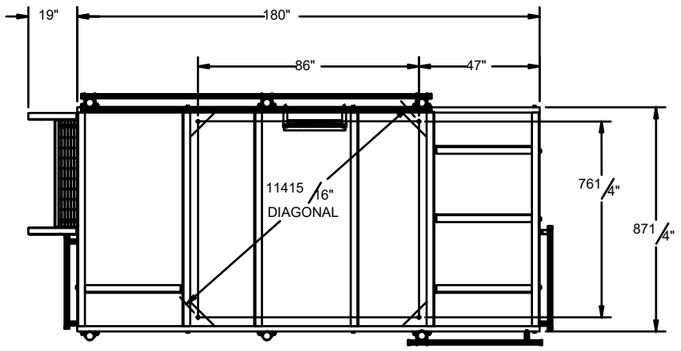
NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

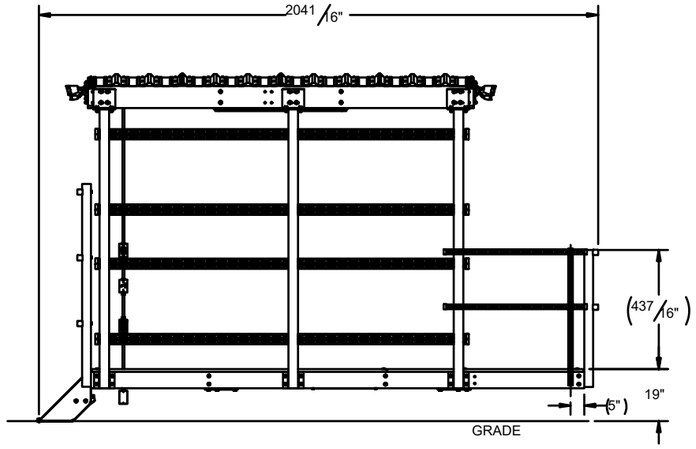
SHEET TITLE
EQUIPMENT PLATFORM DETAILS

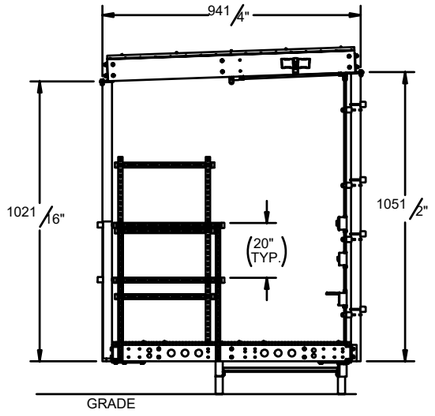
SHEET NUMBER
D-4

REVISIONS					
REV.	DCN #	DESCRIPTION	DATE	BY	APPROVED
23	01205	ADDED RODENT GUARD P-006-606.	01/04/2023	JTR	JPB



CANOPY & GRATING
HIDDEN FOR CLARITY





ITEM NO.	QTY REQD	PART NUMBER	DESCRIPTION	LENGTH	WEIGHT
1	1	1001-0020-0056	EMERSON BOLT TOGETHER PLATFORM 87" X 180"		1600.8
2	1	1001-0030-0029	BOLT TOGETHER CANOPY 140.875" X 87.1875''		931.9
3	1	1003-0020-0002	1 TREAD STAIR ASS'Y (42" WIDE)		55.4
4	1	1000-0000-0119	ELECTRICAL KIT		20.8
5	3	P-006-282	VERT. HANDRAIL, UNISTRUT	50"	12.2
6	3	P-006-283	SHORT SIDE MOUNTING RAIL, UNISTRUT	36"	4.1
7	8	P-006-284	LONG SIDE MOUNTING RAIL, UNISTRUT	136"	15.6
8	2	P-006-286	LONG SIDE HANDRAIL, UNISTRUT	52"	6.0
9	2	P-006-285	SHORT SIDE HANDRAIL, UNISTRUT	40"	4.6
10	2	P-006-281	VERT. MOUNTING RAIL, UNISTRUT	74"	18.0
11	4	A-000-250	CORNER FOOT MOUNT ASSY, 2 LEVELING WASHERS		14.1
12	1	1000-0000-0075	GROUND BAR KIT		8.84
13	12	002-0BG-0258	HB, .375-16 X 4.50 LG., PT X 1.00, GR. 5, HDG	4.50	0.159
14	64	002-0NG-0018	NUT, HEX, .375-16UNC, GR 5, GALV		0.02
15	76	002-0FW-G005	WASHER, FLAT, .375, GALV		0.01
16	64	002-0LW-G005	WASHER, SPLIT LOCK, .375, GALV		0.01
17	26	002-00U-G046	U-BOLT, .375-16 X 1.75 THD LNG., 3.625 I.D X 5.25 HT, GALV		0.052
18	2	002-0SW-H001	WASHER, SQUARE, .50" ID X 2" X .25"		0.27
19	30	309-000-0008	STRUT CHANNEL CAP 1.625" X 1.625"		0.05
20	10	002-0BG-0010	HHB, .500-13 X 1.50 LG., PT X 1.00, A325, HDG	1.50	0.14
21	12	002-0BG-0012	BOLT, HX HD, .500-13UNC X 1.75 LG, ASTM A325, GALV		0.2
22	44	002-0FW-G002	FW, .50, F436, HDG		0.02
23	22	002-0LW-G002	WASHER, SPLIT LOCK, .500", GALV		0.01
24	22	002-0NG-0010	NUT, HEX, .500-13UNC, GR 2H, GALV		0.06
25	1	P-006-606	RODENT GUARD	36"	2.7

23 1

NOTES:

1. OPTIONAL PLATE PROVIDED IF REQUIRED FOR GENERATOR.

SURFACE FINISH: UNLESS OTHERWISE SPECIFIED	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVALS	DATE
MATERIAL: SEE PARTS LIST	TOLERANCES: .0 ±.06, .00 ±.015, .000 ±.005	DRAWN: J. CRITELLI	10/23/2018
THIRD ANGLE PROJECTION	FRACTIONS ±1/16	CHECKER: C. SANCHEZ	11/1/2018
	ANGLES ±.25°	ENGINEER: J. BREEN	11/24/2018
NEXT ASSY / USED ON	HOLES: DRILLED OR PUNCHED +1/32	PRODUCTION: J. SUNDERLAND	11/24/2018
APPLICATIONS	BURNED ±1/32		

ELECTRO MECHANICAL INDUSTRIES, INC.
11230 NEESHAW DRIVE
HOUSTON, TEXAS 77065
1-800-453-0050

TITLE: 87" X 180" BOLT TOGETHER PLATFORM

SIZE	DRAWING NO.	REV
B	1000-0010-0102	23

SCALE: 1:45 | WEIGHT: 2920.8 lbs. | SHEET 1 OF 4

1 EQUIPMENT PLATFORM DETAILS
N.T.S.

NO SCALE

AT&T

smartlink
10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847-277-0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS
ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847-212-8354

REVISIONS

REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

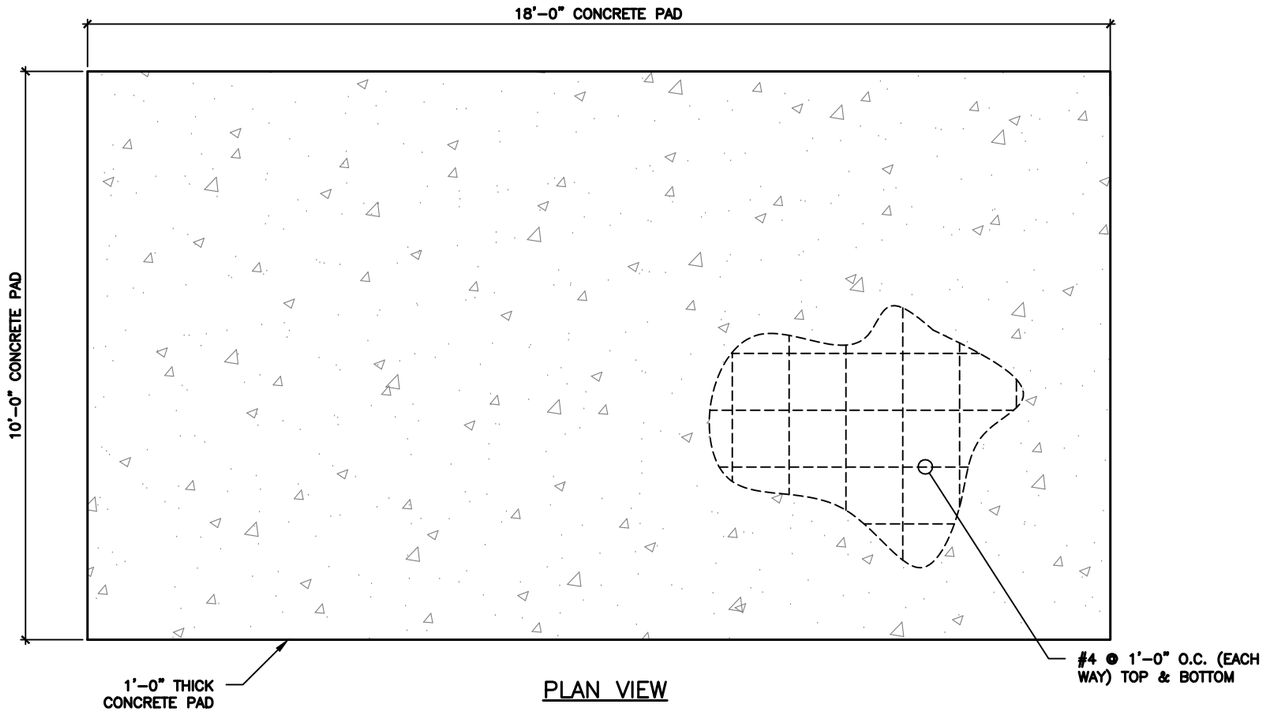
NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA"

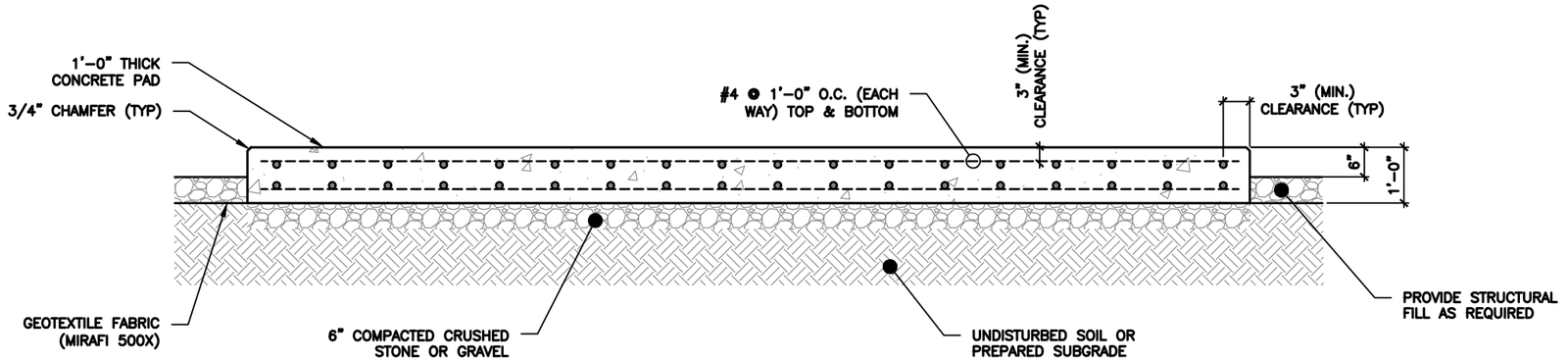
SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

SHEET TITLE
EQUIPMENT PLATFORM DETAILS

SHEET NUMBER
D-5



PLAN VIEW



SECTION VIEW (TYP)

1 CONCRETE PAD DETAILS

0 3" 6" 1'

SCALE: 3/4 = 1'-0" (24x36)
(OR) 3/8" = 1'-0" (11x17)

AT&T

smartlink
10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847-277-0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS
ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847-212-8354

REVISIONS

REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA"

SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

SHEET TITLE
CONCRETE PAD DETAILS

SHEET NUMBER
D-6

NOTES:

1.0 GENERAL
- 1.1 ALL METRIC DIMENSIONS ARE IN BRACKETS
- 1.2 FOR PATENT INFO :https://www.cs-pat.com

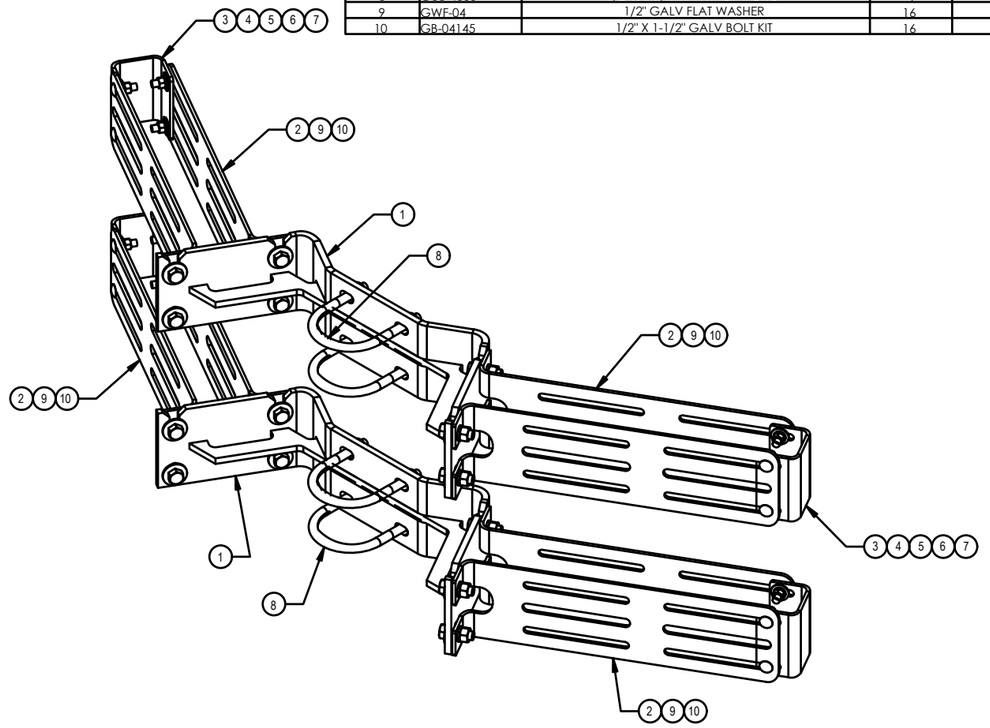
2.0 DESIGN NOTES

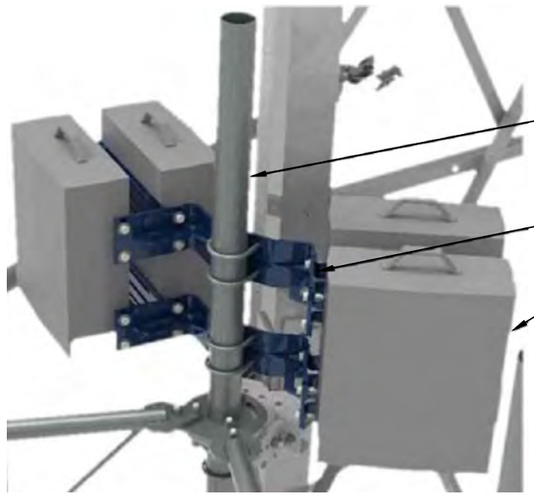
3.0 MANUFACTURING/SPECIAL REQUIREMENTS

4.0 TEST

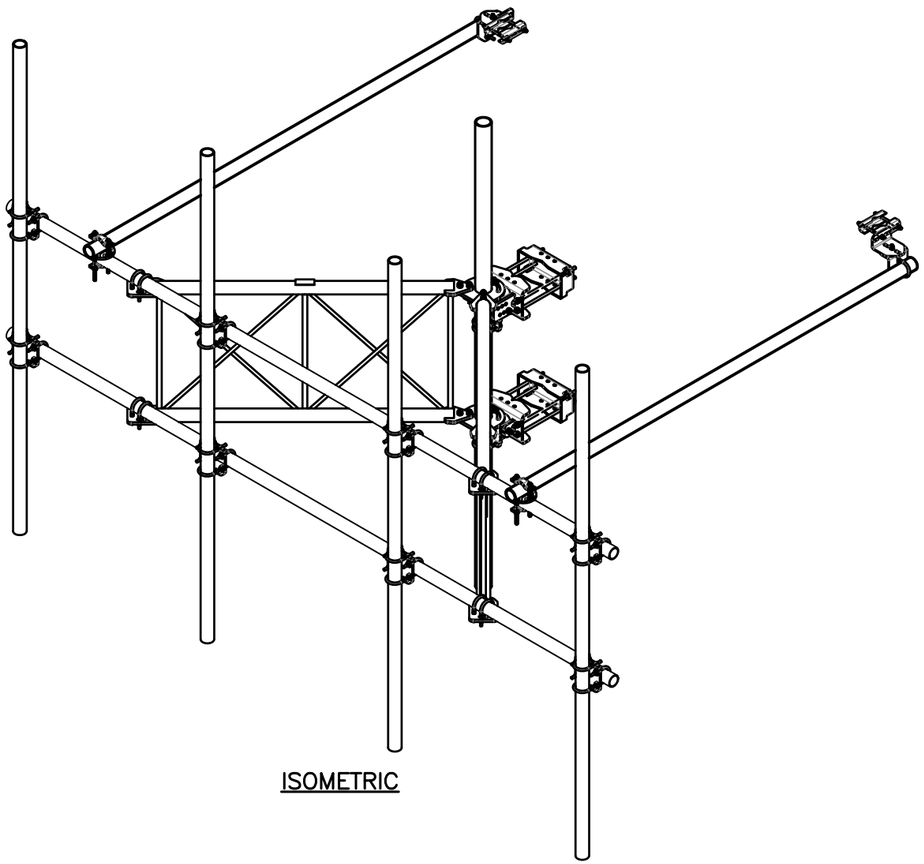
5.0 PACKAGING

ITEM	PART NO.	DESCRIPTION	QTY.	NOTE NO.
1	RRAPEX-0100	WELDMENT, RRAPEX BRACKET	2	
2	MTC378909	RRU HANGER	8	
3	RRFA-0001-00	BRACKET, RRU MOUNT SMALL STABILIZER	4	
4	MTC8196	3/8 X 1-1/4" Carriage Bolt	16	
5	GWF-03	3/8" GALV FLAT WASHER	16	
6	GWL-03	3/8" GALV LOCK WASHER	16	
7	GN-03	3/8" GALV HEX NUT	16	
8	GUB-4355	1/2" X 3-5/8" X 5" GALV U-BOLT	4	
9	GWF-04	1/2" GALV FLAT WASHER	16	
10	GB-04145	1/2" X 1-1/2" GALV BOLT KIT	16	

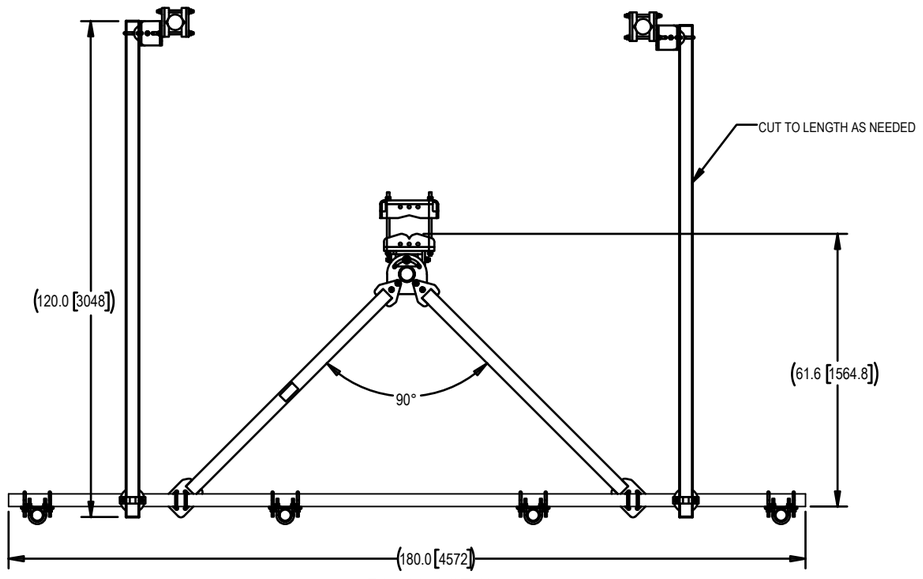




1 RRU MOUNT DETAIL
N.T.S.



ISOMETRIC



PLAN VIEW

2 SFG23RHDXL15-4-126 SECTOR FRAMES DETAIL
N.T.S.

SCALE N.T.S.

COMMSCOPE, INC. OF NORTH CAROLINA

TOLERANCES
0 PLACE X ± .25 | 2 PLACE .XX ± 0.06
1 PLACE .X ± 0.12 | ANGLES ± 2°

SAP MATERIAL MASTER: RR-APEX4

FINISH: GALV A123

MATERIAL: A1011/A1018

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE PER ASME Y14.5M-1994

	NAME	DATE
CE	RJC	08/10/20
RW	CAMPBELLCON	08/13/2020
RV		
AD	MC1107	08/13/2020
RE	BCROSS	08/13/2020

ECN 008000042229

TITLE: APEX 4 RRU MOUNTING

SCALE: 1:4

DOCUMENT NO.: RR-APEX4

DENSITY	lbs/in³
MASS	83.15 lbs
VOLUME	294.12 in³
SURFACE AREA	2892.51 in²
HEIGHT	
LENGTH	
WIDTH	

SIZE: C | WORK AREA 24

MODEL VERSION	MODEL STATUS	MODEL REVISION	DRAWING VERSION	DRAWING STATUS	DRAWING REVISION
00	RE	A	00	RE	A

SHEET 1 OF 3

SCALE N.T.S.

AT&T

smartlink
10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847-277-0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS
ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847-212-8354

REVISIONS

REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA"

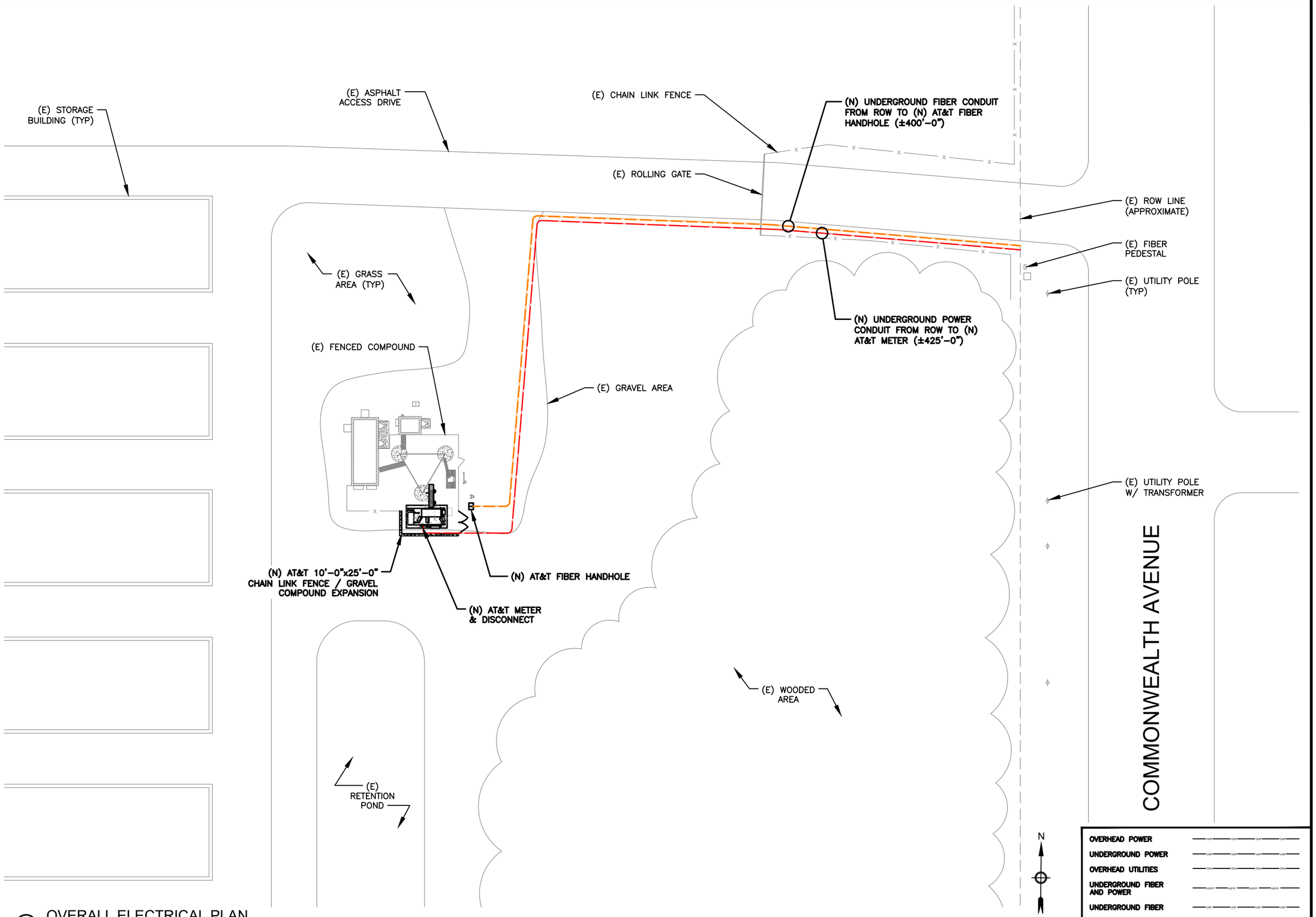
SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

SHEET TITLE

MOUNT DETAILS

SHEET NUMBER

D-7



1 OVERALL ELECTRICAL PLAN

20' 0 10' 20'

SCALE: 1" = 20'-0" (24x36)
(OR) 1/2" = 20'-0" (11x17)

LEGEND

- OVERHEAD POWER
- UNDERGROUND POWER
- OVERHEAD UTILITIES
- UNDERGROUND FIBER AND POWER
- UNDERGROUND FIBER

AT&T

smartlink
10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847-277-0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847-212-8354

REVISIONS

REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

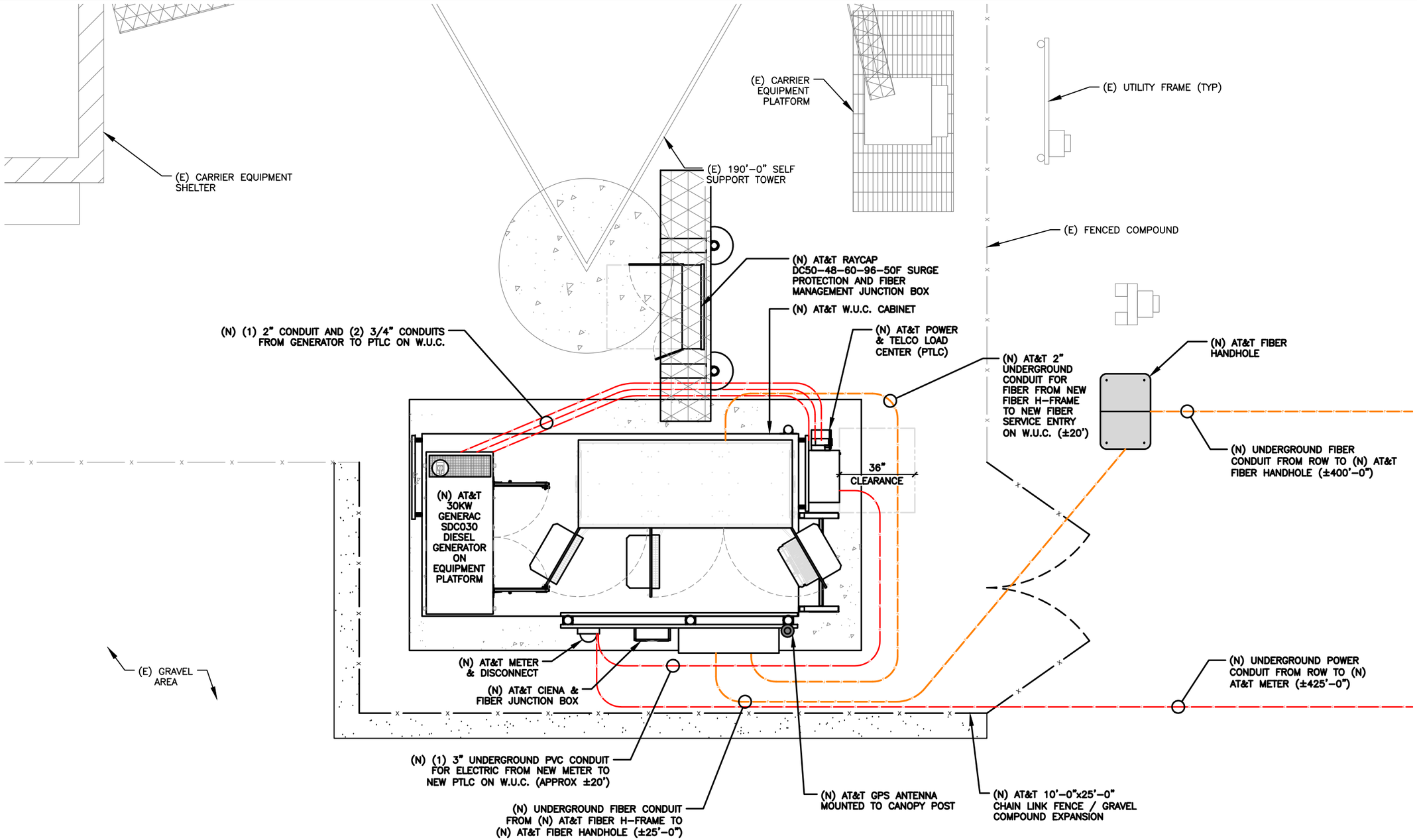
SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

SHEET TITLE

OVERALL ELECTRICAL PLAN

SHEET NUMBER

E-1



1 ELECTRICAL PLAN

0 6" 1' 2'

SCALE: 1/2" = 1'-0" (24x36)
(OR) 1/4" = 1'-0" (11x17)

LEGEND

- OVERHEAD POWER
- UNDERGROUND POWER
- OVERHEAD UTILITIES
- UNDERGROUND FIBER AND POWER
- UNDERGROUND FIBER

AT&T

smartlink
10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847-277-0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847-212-8354

REVISIONS

REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA"

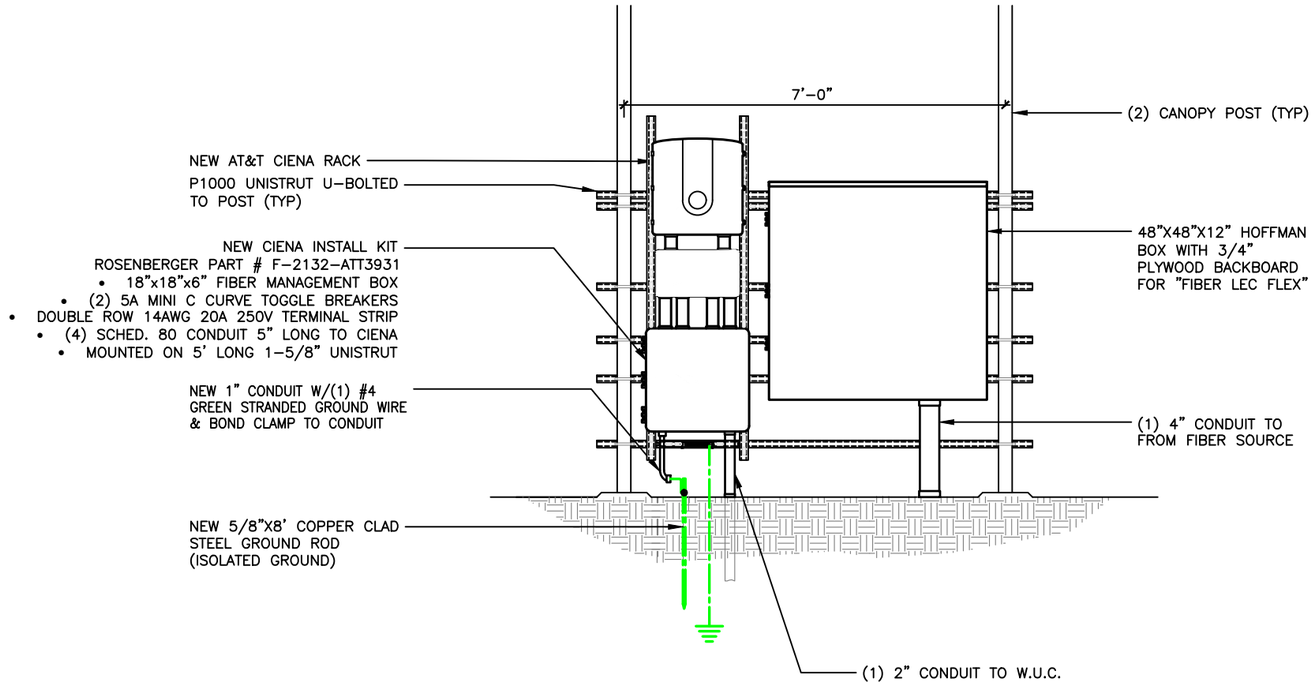
SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

SHEET TITLE

ELECTRICAL PLAN

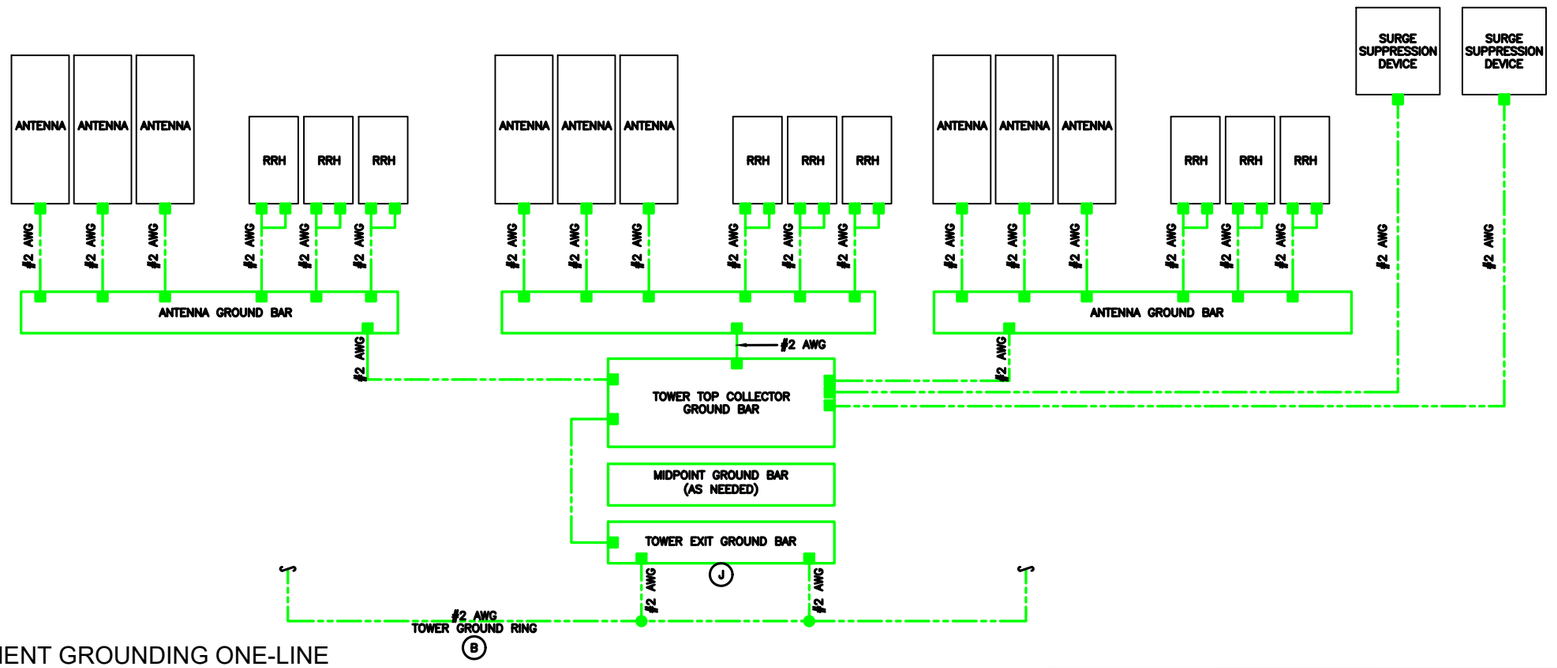
SHEET NUMBER

E-1.1



2 H-FRAME DETAIL (TYP)

SCALE N.T.S.



1 TOWER ANTENNA EQUIPMENT GROUNDING ONE-LINE

N.T.S.

SCALE N.T.S.

AT&T

smartlink
10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847-277-0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847-212-8354

REVISIONS

REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

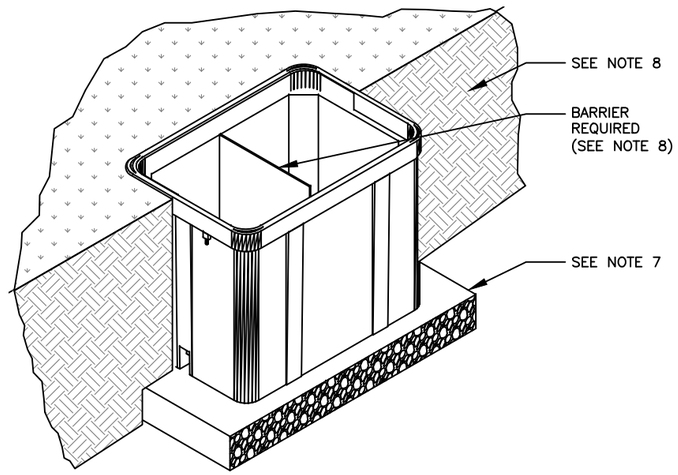
SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

SHEET TITLE

ELECTRICAL DETAILS

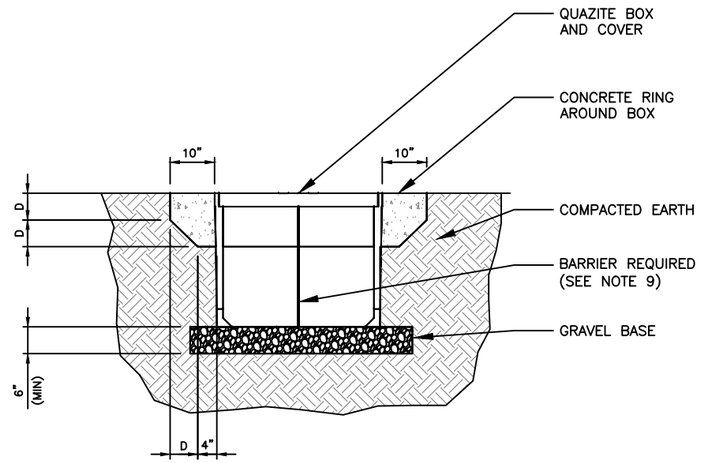
SHEET NUMBER

E-2



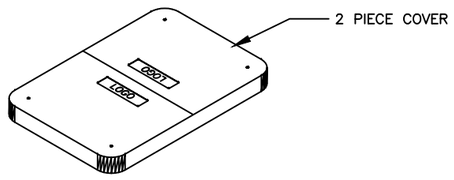
5 CONCRETE COLLAR APPLICATION MOUNTED IN COMPACTED SOIL

SCALE N.T.S.



3 CONCRETE COLLAR APPLICATION MOUNTED IN COMPCTED SOIL

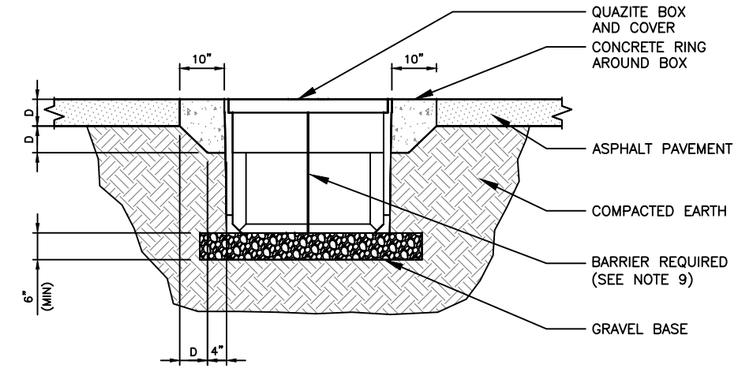
SCALE N.T.S.



4 TOWER ANTENNA EQUIPMTN GROUNDING ONE-LINE

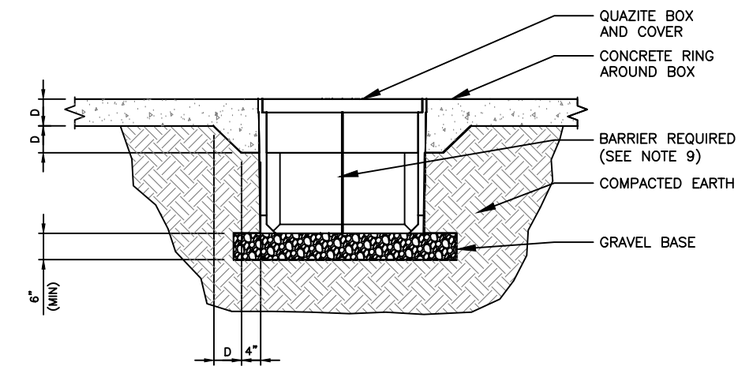
N.T.S.

SCALE N.T.S.



2 CONCRETE COLLAR APPLICATION MOUNTED IN ASPHALT PAVEMENT

SCALE N.T.S.



1 PG BOX WITH NO CONCRETE COLLAR MOUNTED IN CONCRETE PAVEMENTS

SCALE N.T.S.

1. CONCRETE COLLARS MAY BE DESIRED FOR INSTALLATIONS IN DRIVEWAYS, PARKING LOTS AND OFF-ROADWAY APPLICATIONS WHERE SUBJECT TO OCCASIONAL NON-DELIBERATE TRAFFIC. THIS APPLIES TO BOXES MADE FROM ANY MATERIAL TO PROVIDE ADDED PROTECTION FOR THE TOP LID. THIS IS NOT NECESSARY IN GRASSY AREAS OR AREAS SUBJECT TO PEDESTRIAN TRAFFIC.
2. CONCRETE ENCASEMENT TO BE 3,000 PSI MIN.
3. CONCRETE ENCASEMENT COLLAR DIMENSION "D" TO BE EQUAL TO DESIGN PAVEMENT DEPTH.
4. PAVEMENT AND SUBGRADE TO BE SHOWN ON THE ENGINEERING PLANS.
5. EXCAVATE THE HOLE APPROXIMATELY 6 TO 8" DEEPER THAN SUGGESTED HAND HOLE BURIAL DEPTH.
6. COMPACT THE SUBSOIL WITH A BACK-HOE OR A HYDRAULIC TAMPER. ADD APPROXIMATELY 6 TO 8" OF GRAVEL TO THE BOTTOM OF HOLE
7. PLACE THE HAND HOLE ON THE LEVELED GRAVEL BED. LEVEL THE HAND HOLE.
8. BACK-FILL WITH LOOSE EARTH MATERIAL UP TO THE TOP SURFACE OF THE HAND HOLE. DO NOT BACK-FILL WITH CHUNKS OF FROZEN MATERIAL OR LARGE ROCKS NEXT TO THE GROUND SLEEVE. PACK THE BACK-FILL MATERIAL BY FOOT TAMPING, NO MACHINE TAMPING.
9. **PROVIDE BARRIER HUBBELL QUAZITE # PG 2436BC30 OR APPROVED 24"X36"X30" UL TIER 22 HAND HOLE.**

NOTES

AT&T

smartlink
10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847-277-0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847-212-8354

REVISIONS

REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA"

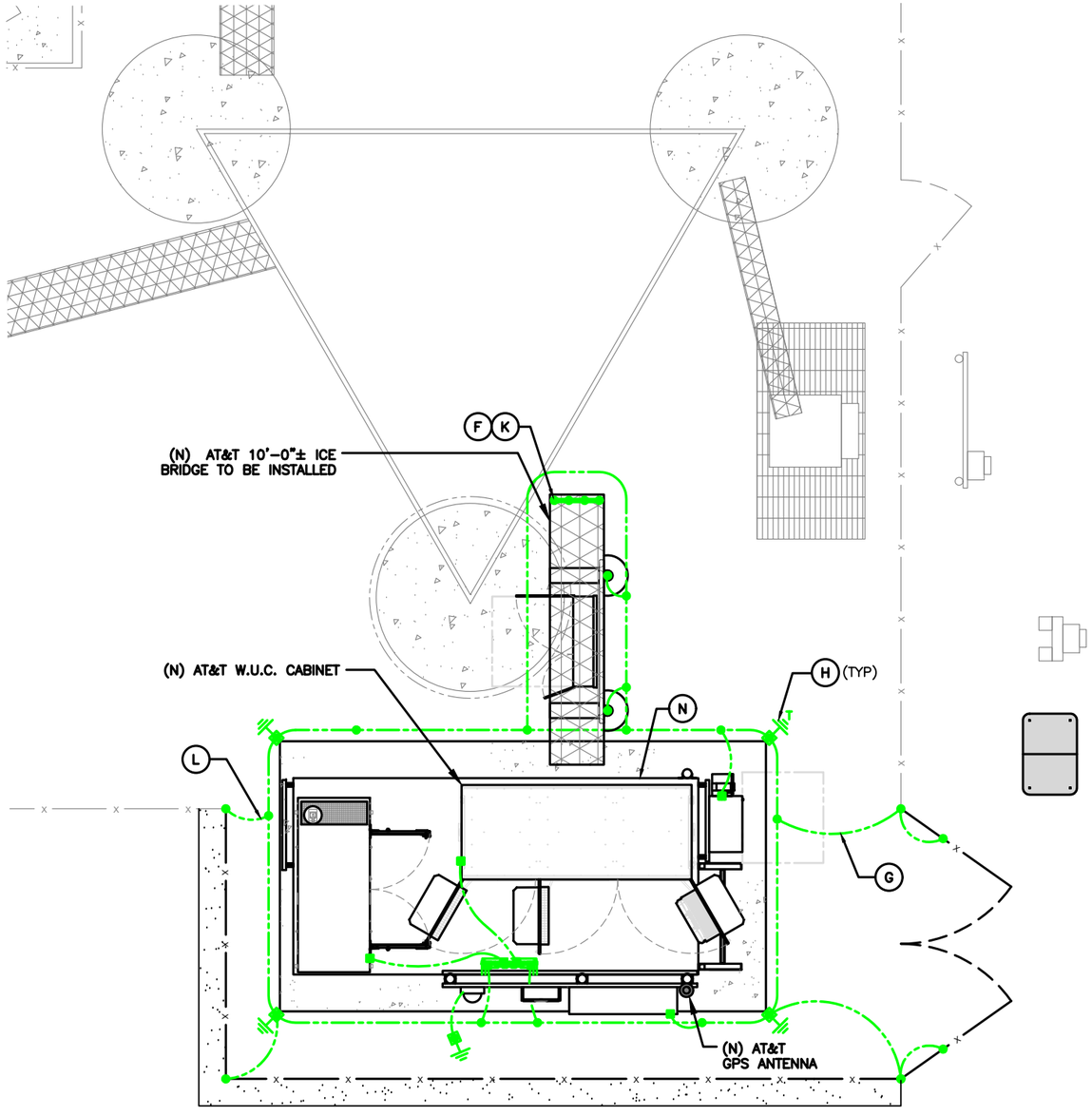
SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

SHEET TITLE

ELECTRICAL DETAILS

SHEET NUMBER

E-3



1 COMPOUND GROUNDING PLAN

0 1' 2' 3'

SCALE: 3/8" = 1'-0" (24x36)
(OR) 3/16" = 1'-0" (11x17)

(A) **GROUNDING BAR:** EXTEND TWO (2) #2 AWG TINNED CU CONDUCTOR FROM BURIED GROUNDING RING UP TO THE HATCHPLATE GROUNDING BAR AND MAKE A MECHANICAL CONNECTION.

(B) **GROUND ROD:** COPPER CLAD STEEL 5/8" (10) TEN FEET LONG. ALL GROUNDING RODS MAY BE INSTALLED WITH INSPECTION SLEEVES.

(C) **ICE BRIDGE SUPPORT POST GROUNDING:** EXTEND #2 AWG TINNED CU CONDUCTOR FROM BURIED GROUNDING RING TO ALL ICE BRIDGE SUPPORT POSTS AND EXOTHERMICALLY WELD.

(D) **FENCE GROUNDING:** IF FENCE IS WITHIN 6' OF GROUNDING RING, EXTEND #2 AWG TINNED CU CONDUCTOR FROM BURIED GROUNDING RING TO FENCE POSTS EXOTHERMICALLY WELDED. FENCING FABRIC SHALL BE GROUNDED AT ADJACENT CORNER POST. (2) REQ'D. GROUND INTERMEDIATE POST TO MAINTAIN 25'-0" MAX SPACING.

(E) PROPOSED TOWER GROUNDING: EXTEND TWO (2) #2 AWG TINNED CU CONDUCTOR FROM BURIED GROUNDING RING AND CONNECT TO THE PROPOSED TOWER. FOLLOW MANUFACTURERS RECOMMENDATIONS FOR GROUNDING CONNECTIONS TO THE TOWER. (APPLICABLE TO NEW TOWERS ONLY.)

(F) **ANTENNA GROUNDING BAR:** EXTEND TWO (2) #2 AWG TINNED CU CONDUCTOR FROM BURIED GROUNDING RING AND CONNECT TO THE PROPOSED ANTENNA GROUNDING BAR. MOUNT GROUNDING BAR DIRECTLY TO TOWER. SECURE TO TOWER WITH STAINLESS STEEL MOUNTING MATERIAL.

(G) **GATE GROUNDING:** EXTEND #2 AWG TINNED CU CONDUCTOR FROM BURIED GROUNDING RING TO GATE POSTS AND EXOTHERMICALLY WELD. SEE DETAIL G-6.

(H) **TEST GROUND ROD WITH INSPECTION SLEEVE:** COPPER CLAD STEEL 5/8" DIA. TEN (10) FEET LONG WITH INSPECTION SLEEVE.

(J) **MASTER GROUNDING BAR:** EXTEND TWO (2) #2 AWG TINNED CU CONDUCTORS FROM BURIED GROUNDING RING UP TO MASTER GROUNDING BAR & MAKE A EXOTHERMIC CONNECTIONS.

(K) **GROUNDING BAR LOCK BOX:** TESSCO PART # 351546: INSTALL PER MANUFACTURER REQUIREMENTS.

(L) **TIE INTO GROUNDING RING:** (2) REQ'D

(M) **ANTENNA GROUNDING BAR:** EXTEND TWO (2) #2 AWG TINNED CU CONDUCTOR FROM BURIED GROUNDING RING AND CONNECT TO THE PROPOSED ANTENNA GROUNDING BAR. MOUNT GROUNDING BAR DIRECTLY TO TOWER. SECURE TO TOWER WITH STAINLESS STEEL MOUNTING MATERIAL.

(N) **PROPOSED EQUIPMENT CABINET:** SEE MANUFACTURER SPECIFICATIONS FOR ALL INTERIOR EQUIPMENT GROUNDING.

KEYNOTES

1. GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY. FOR GROUNDING DETAILS SEE DRAWINGS **E-6 THROUGH E-7.**
2. TESTING SHALL BE PERFORMED AT ALL SITES WHERE MODIFICATIONS OR ADDITIONS ARE MADE TO THE EXISTING GROUNDING SYSTEM AND SHALL BE IN ACCORDANCE WITH AT&T GROUNDING AND BONDING STANDARDS TP-76416. THE CONTRACTOR SHALL SUPPLY AT&T WITH RESULTS FROM PRE-CONSTRUCTION AND POST-CONSTRUCTION OHM TESTING (GROUNDING) RESULTS AND BE IN COMPLIANCE WITH AT&T GROUNDING AND BONDING STANDARDS TP-76416.
3. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE A "FALL OF POTENTIAL" TEST ON THE PROPOSED SUPPLEMENTAL GROUNDING FIELD PRIOR TO FINAL CONNECTION OF THE GROUNDING SYSTEM TO EQUIPMENT. THE TEST SHALL BE PERFORMED BY A QUALIFIED AND CERTIFIED TESTING AGENT. PROVIDE INDEPENDENT TEST RESULTS TO THE PROJECT MANAGER FOR REVIEW. THE GROUNDING SYSTEM RESISTANCE TO EARTH GROUNDING SHALL NOT EXCEED (5) OHMS. IF THE GROUNDING TEST EXCEEDS THE MAXIMUM OF (5) OHMS, THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ADDITIONAL GROUNDING RODS AND CONNECTIONS AS REQUIRED TO MEET THE (5) OHMS' MAXIMUM.
4. THE INSPECTOR HAVING JURISDICTION SHALL INSPECT ALL GROUNDING CONNECTIONS FOR TIGHTNESS. EXOTHERMIC WELDED CONNECTIONS SHALL BE APPROVED BEFORE BEING PERMANENTLY CONCEALED.
5. FOR ALL CONNECTIONS TO THE GROUNDING RING, SEE THE SHELTER MANUFACTURER'S DRAWINGS.
6. **WHEN AN EXISTING METER RACK IS BEING UTILIZED AND A NEW METER IS INSTALLED IN THE EXISTING METER RACK, THE GROUNDING RODS, AND GROUNDING CONDUCTORS OF THE EXISTING GROUNDING RING, SHALL BE EXTENDED TO THE PROPOSED GROUNDING RING AND BECOME A COMPLETE GROUNDING SYSTEM.**
7. CONTRACTOR SHALL GROUND ALL EQUIPMENT INCLUDING ANTENNAS, RET MOTORS, TMA'S, COAX CABLES AND RET CONTROL CABLES AS A COMPLETE SYSTEM. GROUNDING SHALL BE EXECUTED BY QUALIFIED WIREMEN IN COMPLIANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
8. **FOR GROUNDING INSTALLATIONS WHICH HAVE A LIMITED AREA AND IS BEING REQUIRED TO BE INSTALLED WITHIN THE LEASE AREA ONLY, THE GROUNDING RING CONDUCTORS CAN BE INSTALLED UNDER THE SHELTER'S FOOTINGS.**
8. **MAIN GROUNDING CONDUCTORS SHALL BE ROUTED AND BONDED TO ALL EFFECTIVE GROUNDING PATHS IN ACCORDANCE WITH AT&T** GROUNDING AND BONDING **SPECIFICATION 6.8.2 STATED IN** TP-76416. **THE NEW GROUNDING SYSTEM SHALL BE BONDED (2 PLACES) TO ALL EXISTING GROUNDING SYSTEMS, INCLUDING BUT NOT LIMITED TO BUILDING STEEL STRUCTURE, LIGHTNING PROTECTION SYSTEMS, BUILDING MAIN GROUNDING SYSTEM AND/OR MAIN WATER SUPPLY IF APPLICABLE.**
9. **BUILDINGS AND/OR NEW TOWERS GREATER THAN 75 FEET IN HEIGHT AND THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 AWG COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). SEE** AT&T GROUNDING AND BONDING STANDARDS TP-76416 **SPECIFICATION 6.3.2.2.**

NOTES

- EXOTHERMIC TYPE CONNECTIONS
- COMPRESSION TYPE CONNECTIONS
- CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
- GROUND ROD WITH INSPECTION SLEEVE
- **TEST GROUND ROD WITH INSPECTION SLEEVE**
- **EXOTHERMIC WITH INSPECTION SLEEVE**
- **GROUNDING CONDUCTOR**
- **GROUNDING BAR**

LEGEND

AT&T

smartlink
10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847-277-0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847-212-8354

REVISIONS

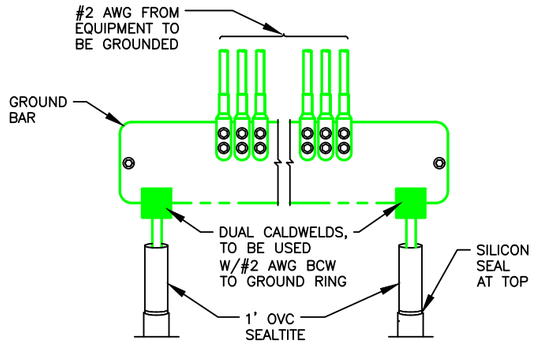
REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

SHEET TITLE
COMPOUND GROUNDING PLAN

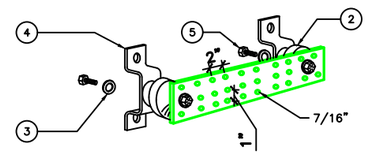
SHEET NUMBER
E-4



NOTE:
1. CONTRACTOR TO UTILIZE KOPR-SHIELD (THANS & BETTS) ON ALL LUG CONNECTIONS OR APPROVED EQUAL.
2. ALL LUGS TO BE DUAL HOLE LONG BARREL AND CRIMPED TWICE WITH MFR'S RECOMMENDED TOOL.

5 GROUND BAR CONNECTION
N.T.S.

3 NOT USED
N.T.S.

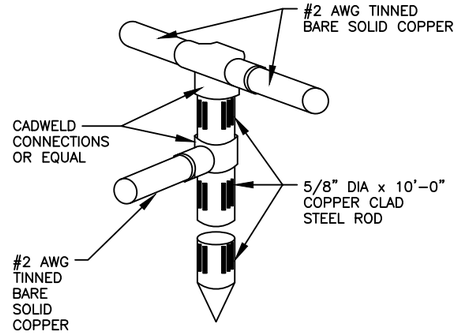


LEGEND

1. COPPER GROUND BAR, "X1/4"X20". NEWTON INSTRUMENT CO. CAT. NO. B-6142 OR EQUAL. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION. (ACTUAL GROUND BAR SIZE WILL VARY BASED ON NUMBER OF GROUND CONNECTORS)
2. INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4 OR EQUAL
3. 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO, 3015-8 OR EQUAL
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT. NO. A-6056 OR EQUAL
5. 5/8"-11X1" HHCS BOLTS, NEWTON INSTRUMENT CO. CAT. NO. 3012-1 OR EQUAL
6. INSULATORS SHALL BE ELIMINATED WHEN BONDING DIRECTLY TO TOWER/XXX STRUCTURE. CONNECTION TO TOWER/XXX STRUCTURE SHALL BE PER MANUFACTURERS RECOMMENDATIONS.

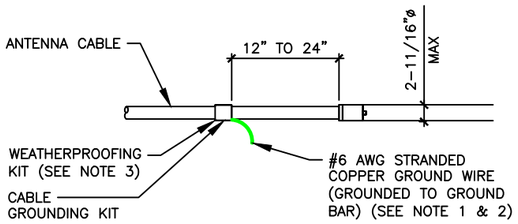
NOTE: ALL HARDWARE SHALL BE STAINLESS STEEL

4 GROUND BAR DETAIL
N.T.S.



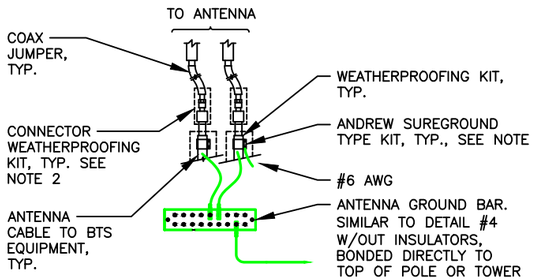
2 GROUND ROD DETAIL
N.T.S.

7 NOT USED
N.T.S.



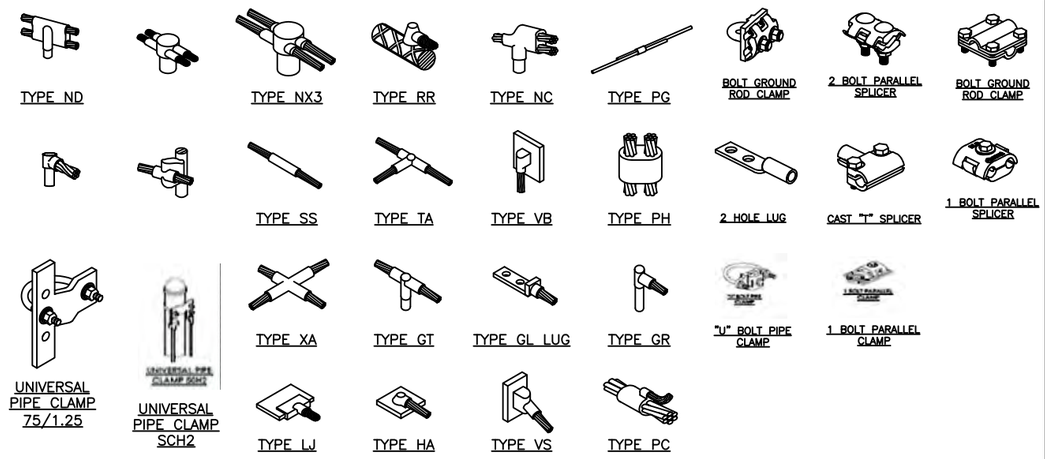
NOTE:
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
3. WEATHER PROOFING SHALL BE (TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.)

8 CONNECTION OF GROUND KIT TO ANTENNA CABLE
N.T.S.



NOTE:
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
2. WEATHER PROOFING SHALL BE ANDREW TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.

6 GROUND CONNECTION TO GROUND BAR
N.T.S.



1 TYPICAL MECHANICAL CONNECTIONS
N.T.S.

AT&T

smartlink
10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847-277-0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847-212-8354

REVISIONS

REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA"

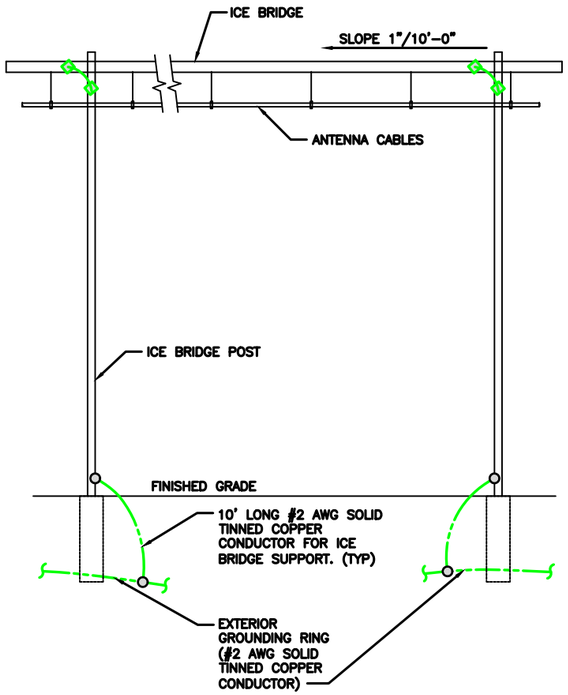
SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

SHEET TITLE

GROUNDING PLANS & NOTES

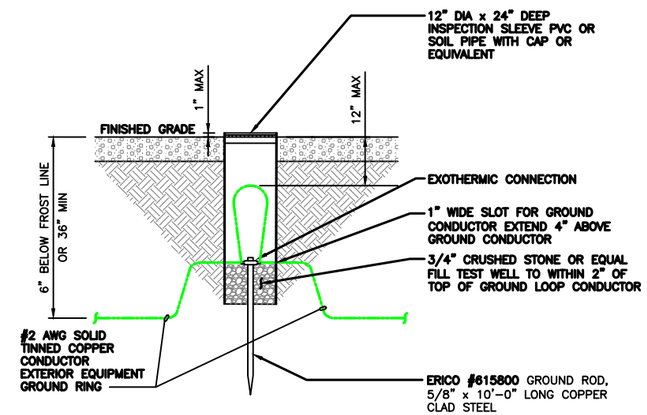
SHEET NUMBER

E-5



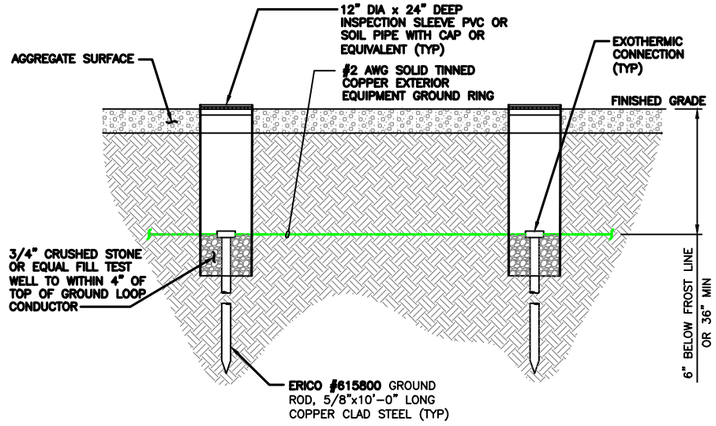
8 ICE BRIDGE DETAIL
N.T.S.

6 NOT USED
N.T.S.



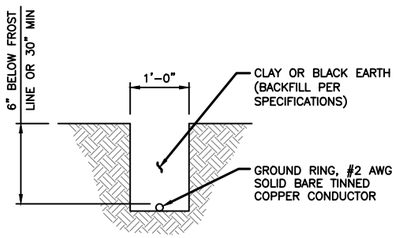
5 TEST GROUND ROD W/INSPECTION SLEEVE DETAIL
N.T.S.

3 NOT USED
N.T.S.

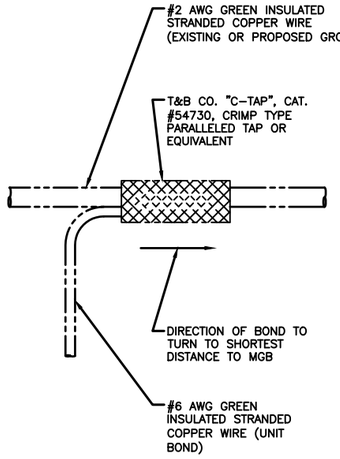


2 GROUNDING ROD W/INSPECTION SLEEVE DETAIL
N.T.S.

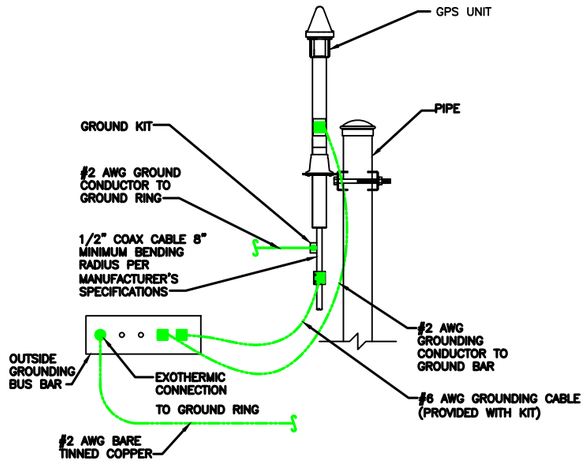
NOTE
1. NO GEOTECHNICAL REPORT WAS ISSUED FOR THIS SITE. ALL DESIGN WORK IS BASED ON ASSUMED SITE CONDITIONS.



7 GROUNDING TRENCH DETAIL
N.T.S.



4 GROUNDING WIRE CONNECTION DETAIL
N.T.S.



1 LTE GPS ANTENNA GROUNDING DETAIL
N.T.S.

AT&T

smartlink
10 CHURCH CIRCLE
ANNAPOLIS, MD 21401

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: 847-277-0070
EMAIL: AE@Westchesterservices.com

JOHN M. BANKS
ARCHITECT
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847-212-8354

REVISIONS

REV.	DATE	DESCRIPTION	BY
A	09/18/25	ISSUED FOR REVIEW	ATK
B	09/24/25	REVISION	ATK
C	11/21/25	REVISION	JM
D	01/15/26	REVISION	CG

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

SITE NUMBER: MNL98601A
SITE NAME: DULUTH BECKS RD
FA#: 15201479
2299 COMMONWEALTH AVENUE
DULUTH, MN 55808

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
E-6

IWM

AT&T

RFDS Details

WOID	Objective	Estimated SQIN	Current Task
RFDS-26125	Macro	14054	Supplier Approve Final RFDS

Issue Date	Last Workflow Date	Last Modified Date	Last Modified By	Assigned To	As-Built Source (Final)
28-Mar-2024	10-Nov-2025	10-Nov-2025	rf990n		-

Site Details

Site ID	USID	FA Code	ATOLL Site Name	Location Name	RF Engineer
SIMN003399	504861	15201479	MNL98601A	DULUTH BECKS RD	

Finance Region	Finance Market	Finance Submarket
MIDWEST	ND/SD/NE/MN/IA	MINNESOTA

Address	City	Site Lat Decimal	Site Long Decimal
2299 COMMONWEALTH AVENUE	DULUTH	46.6792	-92.2278

State	Zip	County	Structure Lat Decimal	Structure Long Decimal	Structure Type
MN	55808	ST. LOUIS	47.3550555555556	-91.2968611111111	MONOPOLE

Initiative/Project

ABM NSB

Directions

07/29/2024: ng600x
-- Updated RFDS with Final BBU configuration
-- RCN values updated as per NSB guidance

Job Detail

Planning Number	Planning Status	Product Group	Product Sub Group	Job ID	Bundle Position	Primary Job	Bundle Readiness	Spectrum
WR_-RUMW-24-29092	Issued	New Site	LTE Only 1C	WSUMW0038665	Primary	WSUMW0038665	-	700 MHz OFFSET LOWER_B+C (10 MHz) E-UTRA BAND 17
WR_-RUMW-24-29093	Issued	LTE Next Carrier	LTE 2C	WSUMW0038666	Secondary	WSUMW0038665	-	700 MHz UPPER D (10 MHz) Band 14
WR_-RUMW-24-29111	Issued	5G NR Radio	5G NR 1DR-1	WSUMW0038684	Secondary	WSUMW0038665	-	PCS MHz E+F (10Mhz) E-UTRA Band 2
WR_-RUMW-24-29110	Issued	5G NR Radio	5G NR 1DR-1 CBAND	WSUMW0038683	Secondary	WSUMW0038665	-	CBAND 4 GHz B4+B5+C1+C2 (80MHz) Band n77
WR_-RUMW-24-29104	Issued	5G NR Software Radio	5G NR 1DR-2	WSUMW0038677	Secondary	WSUMW0038665	-	850 MHz AL+AH (10MHz) E-UTRA Band 5
WR_-RUMW-24-29105	Issued	5G NR Software Radio	5G NR 1DR-2	WSUMW0038678	Secondary	WSUMW0038665	-	AWS1_3 A+B+H+I (30 MHz) Band 4_66
WR_-RUMW-24-29107	Issued	LTE Software Carrier	LTE 3C	WSUMW0038680	Secondary	WSUMW0038665	-	700 MHz DL-ONLY OFFSET D (5 MHz) E-UTRA BAND 29
WR_-RUMW-25-24293	Issued	5G NR Software Radio	5G NR 1DR-2 CBAND	WSUMW0061892	Secondary	WSUMW0038665	-	DoD 3.45 GHz C+D+E+F+G+H+I+J (80 MHz) Band n77

RF Inventory Details (Final)

Sec- Pos	Equipment Type	Vendor	Model	Linked Cells	Technology	RRH Position	Cascaded From/Cpri Info	Common Name	Status
A-1	ANTENNA	CELLMAX	120726	MNL98601_7A_1_A MNXN098601A_N005A_1_A		-	-/- -/-	-	NEW
A-1	RRH	ERICSSON	4490 B5/B12A	MNL98601_7A_1_A MNXN098601A_N005A_1_A	5G,LTE	TOP	NA	-	NEW
A-1	DC_TRUNK	ROSENBERGER	WR-VG66ST-BRD	-	-	-	-/- -/-	-	NEW
A-1	DC_TRUNK	ROSENBERGER	WR-VG66ST-BRD	-	-	-	-/- -/-	-	NEW
A-1	FIBER	ROSENBERGER	FB-L98B-034	-	-	-	-/- -/-	-	NEW
A-1	SQUID	RAYCAP	DC9-48-60-24-8C-EV	-	-	-	-/- -/-	-	NEW
A-2	INTEGRATED ANTENNA RADIO	ERICSSON	AIR6472 B77G B77M	MNXN098601A_N077A_1_A MNXN098601A_N077A_2_A	5G	TOP	NA	-	NEW
A-3	ANTENNA	CELLMAX	120726	MNL98601_2A_1_A MNL98601_2A_2_A MNL98601_7A_2_FA MNL98601_7A_3_EA MNL98601_9A_1_A	LTE	-	-/- -/-	-	NEW
A-3	RRH	ERICSSON	4890 B25/B66	MNL98601_2A_1_A MNL98601_2A_2_A MNL98601_9A_1_A	LTE	TOP	NA	-	NEW
A-3	RRH	ERICSSON	4494 B14/B29	MNL98601_7A_2_FA MNL98601_7A_3_EA	LTE	TOP	NA	-	NEW
B-1	ANTENNA	CELLMAX	120726	MNL98601_7B_1_A MNXN098601A_N005B_1_A		-	-/- -/-	-	NEW
B-1	RRH	ERICSSON	4490 B5/B12A	MNL98601_7B_1_A MNXN098601A_N005B_1_A	5G,LTE	TOP	NA	-	NEW
B-1	DC_TRUNK	ROSENBERGER	WR-VG66ST-BRD	-	-	-	-/- -/-	-	NEW
B-1	DC_TRUNK	ROSENBERGER	WR-VG66ST-BRD	-	-	-	-/- -/-	-	NEW
B-1	FIBER	ROSENBERGER	FB-L98B-034	-	-	-	-/- -/-	-	NEW

Sec- Pos	Equipment Type	Vendor	Model	Linked Cells	Technology	RRH Position	Cascaded From/Cpri Info	Common Name	Status
B-1	SQUID	RAYCAP	DC9-48-60-24-8 C-EV	-	-	-	-/- -/-	-	NEW
B-2	INTEGRATED ANTENNA RADIO	ERICSSON	AIR6472 B77G B77M	MNXN098601A_N077B_1_A MNXN098601A_N077B_2_A	5G	TOP	NA	-	NEW
B-3	ANTENNA	CELLMAX	120726	MNL98601_2B_1_A MNL98601_2B_2_A MNL98601_7B_2_FA MNL98601_7B_3_EA MNL98601_9B_1_A	LTE	-	-/- -/-	-	NEW
B-3	RRH	ERICSSON	4890 B25/B66	MNL98601_2B_1_A MNL98601_2B_2_A MNL98601_9B_1_A	LTE	TOP	NA	-	NEW
B-3	RRH	ERICSSON	4494 B14/B29	MNL98601_7B_2_FA MNL98601_7B_3_EA	LTE	TOP	NA	-	NEW
C-1	ANTENNA	CELLMAX	120706	MNL98601_7C_1_A MNXN098601A_N005C_1_A		-	-/- -/-	-	NEW
C-1	RRH	ERICSSON	4490 B5/B12A	MNL98601_7C_1_A MNXN098601A_N005C_1_A	5G,LTE	TOP	NA	-	NEW
C-1	DC_TRUNK	ROSENBERGER	WR-VG66ST-BRD	-	-	-	-/- -/-	-	NEW
C-1	DC_TRUNK	ROSENBERGER	WR-VG66ST-BRD	-	-	-	-/- -/-	-	NEW
C-1	FIBER	ROSENBERGER	FB-L98B-034	-	-	-	-/- -/-	-	NEW
C-1	SQUID	RAYCAP	DC9-48-60-24-8 C-EV	-	-	-	-/- -/-	-	NEW
C-2	INTEGRATED ANTENNA RADIO	ERICSSON	AIR6472 B77G B77M	MNXN098601A_N077C_1_A MNXN098601A_N077C_2_A	5G	TOP	NA	-	NEW
C-3	ANTENNA	CELLMAX	120706	MNL98601_2C_1_A MNL98601_2C_2_A MNL98601_7C_2_FA MNL98601_7C_3_EA MNL98601_9C_1_A	LTE	-	-/- -/-	-	NEW
C-3	RRH	ERICSSON	4890 B25/B66	MNL98601_2C_1_A MNL98601_2C_2_A MNL98601_9C_1_A	LTE	TOP	NA	-	NEW

Sec- Pos	Equipment Type	Vendor	Model	Linked Cells	Technology	RRH Position	Cascaded From/Cpri Info	Common Name	Status
C-3	RRH	ERICSSON	4494 B14/B29	MNL98601_7C_2_FA MNL98601_7C_3_EA	LTE	TOP	NA	-	NEW

Antenna Position Details - Sector A (Final)

Sec-Pos	A-1	A-2	A-3	-	-	-	-
Vendor	CELLMAX	ERICSSON	CELLMAX	-	-	-	-
Model	120726	AIR6472 B77G B77M	120726	-	-	-	-
Rad Center (Design)	133	133	133	-	-	-	-
Rad Center (As-Built)	-	-	-	-	-	-	-
Megnetic Declination	-	-	-	-	-	-	-
Tip Height	137	134.51	137	-	-	-	-
Azimuth (Design)	35	35	35	-	-	-	-
Azimuth (As-Built)	-	-	-	-	-	-	-
Antenna Size (H x W x D)	96*24*8.1	36.3*15.8*7.4	96*24*8.1	-	-	-	-
Antenna Weight	160	92.6	160	-	-	-	-
Mechanical Downtilt (Design)	0	0	0	-	-	-	-
Mechanical Downtilt (As-Built)	-	-	-	-	-	-	-
Linked Cells	MNL98601_7A_1_A MNXN098601A_N005A_1_A	MNXN098601A_N077A_1_A MNXN098601A_N077A_2_A	MNL98601_7A_2_FA MNL98601_7A_3_EA MNL98601_2A_1_A MNL98601_2A_2_A MNL98601_9A_1_A	-	-	-	-
Coax Amount	-	-	-	-	-	-	-
Vertical Separation from Antenna Above (Tip to Tip)	-	-	-	-	-	-	-
Vertical Separation from Antenna Below (Tip to Tip)	-	-	-	-	-	-	-

Horizontal Separation from Closest Antenna to Left (Centerline to Centerline)	-	-	-	-	-	-	-
Horizontal Separation from Closest Antenna to Right (Centerline to Centerline)	-	-	-	-	-	-	-
Horizontal Separation from Another Antenna (which antenna # / # of inches)	-	-	-	-	-	-	-

Antenna Position Details - Sector B (Final)

Sec-Pos	B-1	B-2	B-3	-	-	-	-
Vendor	CELLMAX	ERICSSON	CELLMAX	-	-	-	-
Model	120726	AIR6472 B77G B77M	120726	-	-	-	-
Rad Center (Design)	133	133	133	-	-	-	-
Rad Center (As-Built)	-	-	-	-	-	-	-
Megnetic Declination	-	-	-	-	-	-	-
Tip Height	137	134.51	137	-	-	-	-
Azimuth (Design)	170	170	170	-	-	-	-
Azimuth (As-Built)	-	-	-	-	-	-	-
Antenna Size (H x W x D)	96*24*8.1	36.3*15.8*7.4	96*24*8.1	-	-	-	-
Antenna Weight	160	92.6	160	-	-	-	-
Mechanical Downtilt (Design)	0	0	0	-	-	-	-
Mechanical Downtilt (As-Built)	-	-	-	-	-	-	-
Linked Cells	MNL98601_7B_1_A MNXN098601A_N005B_1_A	MNXN098601A_N077B_1_A MNXN098601A_N077B_2_A	MNL98601_7B_2_FA MNL98601_7B_3_EA MNL98601_2B_1_A MNL98601_2B_2_A MNL98601_9B_1_A	-	-	-	-
Coax Amount	-	-	-	-	-	-	-
Vertical Separation from Antenna Above (Tip to Tip)	-	-	-	-	-	-	-
Vertical Separation from Antenna Below (Tip to Tip)	-	-	-	-	-	-	-

Horizontal Separation from Closest Antenna to Left (Centerline to Centerline)	-	-	-	-	-	-	-
Horizontal Separation from Closest Antenna to Right (Centerline to Centerline)	-	-	-	-	-	-	-
Horizontal Separation from Another Antenna (which antenna # / # of inches)	-	-	-	-	-	-	-

Antenna Position Details - Sector C (Final)

Sec-Pos	C-1	C-2	C-3	-	-	-	-
Vendor	CELLMAX	ERICSSON	CELLMAX	-	-	-	-
Model	120706	AIR6472 B77G B77M	120706	-	-	-	-
Rad Center (Design)	133	133	133	-	-	-	-
Rad Center (As-Built)	-	-	-	-	-	-	-
Megnetic Declination	-	-	-	-	-	-	-
Tip Height	135.1	134.51	135.1	-	-	-	-
Azimuth (Design)	265	265	265	-	-	-	-
Azimuth (As-Built)	-	-	-	-	-	-	-
Antenna Size (H x W x D)	50.5*24*8	36.3*15.8*7.4	50.5*24*8	-	-	-	-
Antenna Weight	97	92.6	97	-	-	-	-
Mechanical Downtilt (Design)	0	0	0	-	-	-	-
Mechanical Downtilt (As-Built)	-	-	-	-	-	-	-
Linked Cells	MNL98601_7C_1_A MNXN098601A_N005C_1_A	MNXN098601A_N077C_1_A MNXN098601A_N077C_2_A	MNL98601_7C_2_FA MNL98601_7C_3_EA MNL98601_2C_1_A MNL98601_2C_2_A MNL98601_9C_1_A	-	-	-	-
Coax Amount	-	-	-	-	-	-	-
Vertical Separation from Antenna Above (Tip to Tip)	-	-	-	-	-	-	-
Vertical Separation from Antenna Below (Tip to Tip)	-	-	-	-	-	-	-

Horizontal Separation from Closest Antenna to Left (Centerline to Centerline)	-	-	-	-	-	-	-
Horizontal Separation from Closest Antenna to Right (Centerline to Centerline)	-	-	-	-	-	-	-
Horizontal Separation from Another Antenna (which antenna # / # of inches)	-	-	-	-	-	-	-

Local Market Notes

Sec-Pos	Vendor	Model	Local Market Notes 1	Local Market Notes 2	Local Market Notes 3
A-1	CELLMAX	120726	-	-	-
A-2	ERICSSON	AIR6472 B77G B77M	-	-	-
A-3	CELLMAX	120726	-	-	-
B-1	CELLMAX	120726	-	-	-
B-2	ERICSSON	AIR6472 B77G B77M	-	-	-
B-3	CELLMAX	120726	-	-	-
C-1	CELLMAX	120706	-	-	-
C-2	ERICSSON	AIR6472 B77G B77M	-	-	-
C-3	CELLMAX	120706	-	-	-

Port Level Details (Final)

Sec-Pos	Vendor	Model	Port	Cells	Gain	Elec Tilt	Azimuth Offset	Coax Type	Coax Length
A-1	CELLMAX	120726	1	MNL98601_7A_1_A MNXN098601A_N005A_1_A	-	2	-	FIBER	0
A-1	CELLMAX	120726	2	MNL98601_7A_1_A MNXN098601A_N005A_1_A	-	2	-	FIBER	0
A-1	CELLMAX	120726	3	MNL98601_7A_1_A MNXN098601A_N005A_1_A	-	2	-	FIBER	0
A-1	CELLMAX	120726	4	MNL98601_7A_1_A MNXN098601A_N005A_1_A	-	2	-	FIBER	0
A-2	ERICSSON	AIR6472 B77G B77M	1	MNXN098601A_N077A_1_A MNXN098601A_N077A_2_A	-	3	-	FIBER	0
A-2	ERICSSON	AIR6472 B77G B77M	2	MNXN098601A_N077A_2_A	-	3	-	FIBER	0
A-3	CELLMAX	120726	1	MNL98601_7A_2_FA MNL98601_7A_3_EA	-	2	-	FIBER	-
A-3	CELLMAX	120726	2	MNL98601_7A_2_FA MNL98601_7A_3_EA	-	2	-	FIBER	-
A-3	CELLMAX	120726	3	MNL98601_7A_2_FA	-	2	-	FIBER	-
A-3	CELLMAX	120726	4	MNL98601_7A_2_FA	-	2	-	FIBER	-
A-3	CELLMAX	120726	5	MNL98601_9A_1_A	-	2	-	FIBER	0
A-3	CELLMAX	120726	6	MNL98601_9A_1_A	-	2	-	FIBER	0
A-3	CELLMAX	120726	7	MNL98601_9A_1_A	-	2	-	FIBER	0
A-3	CELLMAX	120726	8	MNL98601_9A_1_A	-	2	-	FIBER	0
A-3	CELLMAX	120726	9	MNL98601_2A_1_A MNL98601_2A_2_A	-	2	-	FIBER	0
A-3	CELLMAX	120726	10	MNL98601_2A_1_A MNL98601_2A_2_A	-	2	-	FIBER	0
A-3	CELLMAX	120726	11	MNL98601_2A_1_A MNL98601_2A_2_A	-	2	-	FIBER	0
A-3	CELLMAX	120726	12	MNL98601_2A_1_A MNL98601_2A_2_A	-	2	-	FIBER	0

Sec-Pos	Vendor	Model	Port	Cells	Gain	Elec Tilt	Azimuth Offset	Coax Type	Coax Length
B-1	CELLMAX	120726	1	MNL98601_7B_1_A MNXN098601A_N005B_1_A	-	2	-	FIBER	0
B-1	CELLMAX	120726	2	MNL98601_7B_1_A MNXN098601A_N005B_1_A	-	2	-	FIBER	0
B-1	CELLMAX	120726	3	MNL98601_7B_1_A MNXN098601A_N005B_1_A	-	2	-	FIBER	0
B-1	CELLMAX	120726	4	MNL98601_7B_1_A MNXN098601A_N005B_1_A	-	2	-	FIBER	0
B-2	ERICSSON	AIR6472 B77G B77M	1	MNXN098601A_N077B_1_A MNXN098601A_N077B_2_A	-	3	-	FIBER	0
B-2	ERICSSON	AIR6472 B77G B77M	2	MNXN098601A_N077B_2_A	-	3	-	FIBER	0
B-3	CELLMAX	120726	1	MNL98601_7B_2_FA MNL98601_7B_3_EA	-	2	-	FIBER	-
B-3	CELLMAX	120726	2	MNL98601_7B_2_FA MNL98601_7B_3_EA	-	2	-	FIBER	-
B-3	CELLMAX	120726	3	MNL98601_7B_2_FA	-	2	-	FIBER	-
B-3	CELLMAX	120726	4	MNL98601_7B_2_FA	-	2	-	FIBER	-
B-3	CELLMAX	120726	5	MNL98601_9B_1_A	-	2	-	FIBER	0
B-3	CELLMAX	120726	6	MNL98601_9B_1_A	-	2	-	FIBER	0
B-3	CELLMAX	120726	7	MNL98601_9B_1_A	-	2	-	FIBER	0
B-3	CELLMAX	120726	8	MNL98601_9B_1_A	-	2	-	FIBER	0
B-3	CELLMAX	120726	9	MNL98601_2B_1_A MNL98601_2B_2_A	-	2	-	FIBER	0
B-3	CELLMAX	120726	10	MNL98601_2B_1_A MNL98601_2B_2_A	-	2	-	FIBER	0
B-3	CELLMAX	120726	11	MNL98601_2B_1_A MNL98601_2B_2_A	-	2	-	FIBER	0
B-3	CELLMAX	120726	12	MNL98601_2B_1_A MNL98601_2B_2_A	-	2	-	FIBER	0

Port Level Details (Final)

Sec-Pos	Vendor	Model	Port	Cells	Gain	Elec Tilt	Azimuth Offset	Coax Type	Coax Length
C-1	CELLMAX	120706	1	MNL98601_7C_1_A MNXN098601A_N005C_1_A	-	2	-	FIBER	0
C-1	CELLMAX	120706	2	MNL98601_7C_1_A MNXN098601A_N005C_1_A	-	2	-	FIBER	0
C-1	CELLMAX	120706	3	MNL98601_7C_1_A MNXN098601A_N005C_1_A	-	2	-	FIBER	0
C-1	CELLMAX	120706	4	MNL98601_7C_1_A MNXN098601A_N005C_1_A	-	2	-	FIBER	0
C-2	ERICSSON	AIR6472 B77G B77M	1	MNXN098601A_N077C_1_A MNXN098601A_N077C_2_A	-	3	-	FIBER	0
C-2	ERICSSON	AIR6472 B77G B77M	2	MNXN098601A_N077C_2_A	-	3	-	FIBER	0
C-3	CELLMAX	120706	1	MNL98601_7C_2_FA MNL98601_7C_3_EA	-	2	-	FIBER	-
C-3	CELLMAX	120706	2	MNL98601_7C_2_FA MNL98601_7C_3_EA	-	2	-	FIBER	-
C-3	CELLMAX	120706	3	MNL98601_7C_2_FA	-	2	-	FIBER	-
C-3	CELLMAX	120706	4	MNL98601_7C_2_FA	-	2	-	FIBER	-
C-3	CELLMAX	120706	5	MNL98601_9C_1_A	-	2	-	FIBER	0
C-3	CELLMAX	120706	6	MNL98601_9C_1_A	-	2	-	FIBER	0
C-3	CELLMAX	120706	7	MNL98601_9C_1_A	-	2	-	FIBER	0
C-3	CELLMAX	120706	8	MNL98601_9C_1_A	-	2	-	FIBER	0
C-3	CELLMAX	120706	9	MNL98601_2C_1_A MNL98601_2C_2_A	-	2	-	FIBER	0
C-3	CELLMAX	120706	10	MNL98601_2C_1_A MNL98601_2C_2_A	-	2	-	FIBER	0
C-3	CELLMAX	120706	11	MNL98601_2C_1_A MNL98601_2C_2_A	-	2	-	FIBER	0
C-3	CELLMAX	120706	12	MNL98601_2C_1_A MNL98601_2C_2_A	-	2	-	FIBER	0

Non RF Inventory Details (Final)

Equipment Type	Vendor	Model	Common Name	Equipment Configuration	Linked Cells	Technology	Equipment USID	Linked SideHaul	Status
BBU	ERICSSON	RAN PROCESSOR 6672	MNXN098601A,MNL 98601A	xxxxx / 1x6672 / xxxxx	MNL98601_2A_1_A MNL98601_2A_2_A MNL98601_2B_1_A MNL98601_2B_2_A MNL98601_2C_1_A MNL98601_2C_2_A MNL98601_7A_1_A MNL98601_7A_2_FA MNL98601_7A_3_EA MNL98601_7B_1_A MNL98601_7B_2_FA MNL98601_7B_3_EA MNL98601_7C_1_A MNL98601_7C_2_FA MNL98601_7C_3_EA MNL98601_9A_1_A MNL98601_9B_1_A MNL98601_9C_1_A MNXN098601A_N005A_1_A MNXN098601A_N005B_1_A MNXN098601A_N005C_1_A MNXN098601A_N077A_1_A MNXN098601A_N077A_2_A MNXN098601A_N077B_1_A MNXN098601A_N077B_2_A MNXN098601A_N077C_1_A MNXN098601A_N077C_2_A	5G,LTE	504861	-	NEW

Cell Details (Final)

Cell ID	BBU/CRGNB	RRH	Sector Position Port	Frequency	RCN	USeId	Status
MNL98601_2A_1_A	MNL98601A	4890 B25/B66	A-3-9,A-3-10,A-3-11,A-3-12	AWS	22	504861.A.AWS.4G.tmp2	NEW
MNL98601_2A_2_A	MNL98601A	4890 B25/B66	A-3-9,A-3-10,A-3-11,A-3-12	AWS	227	504861.A.AWS.4G.tmp1	NEW
MNL98601_2B_1_A	MNL98601A	4890 B25/B66	B-3-9,B-3-10,B-3-11,B-3-12	AWS	23	504861.B.AWS.4G.tmp2	NEW
MNL98601_2B_2_A	MNL98601A	4890 B25/B66	B-3-9,B-3-10,B-3-11,B-3-12	AWS	228	504861.B.AWS.4G.tmp1	NEW
MNL98601_2C_1_A	MNL98601A	4890 B25/B66	C-3-9,C-3-10,C-3-11,C-3-12	AWS	24	504861.C.AWS.4G.tmp1	NEW
MNL98601_2C_2_A	MNL98601A	4890 B25/B66	C-3-9,C-3-10,C-3-11,C-3-12	AWS	229	504861.C.AWS.4G.tmp2	NEW
MNL98601_7A_1_A	MNL98601A	4490 B5/B12A	A-1-1,A-1-2,A-1-3,A-1-4	700	15	504861.A.700.4G.tmp1	NEW
MNL98601_7A_2_FA	MNL98601A	4494 B14/B29	A-3-1,A-3-2,A-3-3,A-3-4	700	215	504861.A.700.4G.tmp2	NEW
MNL98601_7A_3_EA	MNL98601A	4494 B14/B29	A-3-1,A-3-2	700	186	504861.A.700.4G.tmp3	NEW
MNL98601_7B_1_A	MNL98601A	4490 B5/B12A	B-1-1,B-1-2,B-1-3,B-1-4	700	16	504861.B.700.4G.tmp1	NEW
MNL98601_7B_2_FA	MNL98601A	4494 B14/B29	B-3-1,B-3-2,B-3-3,B-3-4	700	216	504861.B.700.4G.tmp2	NEW
MNL98601_7B_3_EA	MNL98601A	4494 B14/B29	B-3-1,B-3-2	700	187	504861.B.700.4G.tmp3	NEW
MNL98601_7C_1_A	MNL98601A	4490 B5/B12A	C-1-1,C-1-2,C-1-3,C-1-4	700	17	504861.C.700.4G.tmp1	NEW
MNL98601_7C_2_FA	MNL98601A	4494 B14/B29	C-3-1,C-3-2,C-3-3,C-3-4	700	217	504861.C.700.4G.tmp3	NEW
MNL98601_7C_3_EA	MNL98601A	4494 B14/B29	C-3-1,C-3-2	700	188	504861.C.700.4G.tmp2	NEW
MNL98601_9A_1_A	MNL98601A	4890 B25/B66	A-3-5,A-3-6,A-3-7,A-3-8	1900	8	504861.A.1900.4G.tmp1	NEW
MNL98601_9B_1_A	MNL98601A	4890 B25/B66	B-3-5,B-3-6,B-3-7,B-3-8	1900	9	504861.B.1900.4G.tmp1	NEW

Cell Details (Final)

Cell ID	BBU/CRGNB	RRH	Sector Position Port	Frequency	RCN	USeId	Status
MNL98601_9C_1_A	MNL98601A	4890 B25/B66	C-3-5,C-3-6,C-3-7,C-3-8	1900	10	504861.C.1900.4G.tmp1	NEW
MNXN098601A_N005A_1_A	MNXN098601A	4490 B5/B12A	A-1-1,A-1-2,A-1-3,A-1-4	850	9,999	504861.A.850.5G.tmp1	NEW
MNXN098601A_N005B_1_A	MNXN098601A	4490 B5/B12A	B-1-1,B-1-2,B-1-3,B-1-4	850	9,999	504861.B.850.5G.tmp1	NEW
MNXN098601A_N005C_1_A	MNXN098601A	4490 B5/B12A	C-1-1,C-1-2,C-1-3,C-1-4	850	9,999	504861.C.850.5G.tmp1	NEW
MNXN098601A_N077A_1_A	MNXN098601A	AIR6472 B77G B77M	A-2-1	CBAND	9,999	504861.A.CBAND.5G.tmp2	NEW
MNXN098601A_N077A_2_A	MNXN098601A	AIR6472 B77G B77M	A-2-1,A-2-2	CBAND	9,999	504861.A.CBAND.5G.tmp1	NEW
MNXN098601A_N077B_1_A	MNXN098601A	AIR6472 B77G B77M	B-2-1	CBAND	9,999	504861.B.CBAND.5G.tmp1	NEW
MNXN098601A_N077B_2_A	MNXN098601A	AIR6472 B77G B77M	B-2-1,B-2-2	CBAND	9,999	504861.B.CBAND.5G.tmp2	NEW
MNXN098601A_N077C_1_A	MNXN098601A	AIR6472 B77G B77M	C-2-1	CBAND	9,999	504861.C.CBAND.5G.tmp2	NEW
MNXN098601A_N077C_2_A	MNXN098601A	AIR6472 B77G B77M	C-2-1,C-2-2	CBAND	9,999	504861.C.CBAND.5G.tmp1	NEW

Leasing

Estimated SQIN	Estimated SQIN (Active)	Estimated SQIN (RIP)	Allowed SQIN	Overage SQIN	Overage Cost
14054	14054	0	0	0	-

Initiative Name	Initiative Guidance	Initiative Details URL
-	-	-

SQIN Calculation Details

Contract Company	Calculation Type	RAD Rule Used	Primary RAD Rule Applied	Monthly Cost per SQ IN	Equipment Covered in Contract
Unknown	Surface	UNKNOWN	-	$0	FIBER,DC_TRUNK,SQUID,RRH,ANTENNA

Calculated RAD Center(s)	Cable Estimated SQIN	Cable Allowed SQIN	Cable Overage SQIN	Cable Overage Cost
Not Applicable	5	0	5	-

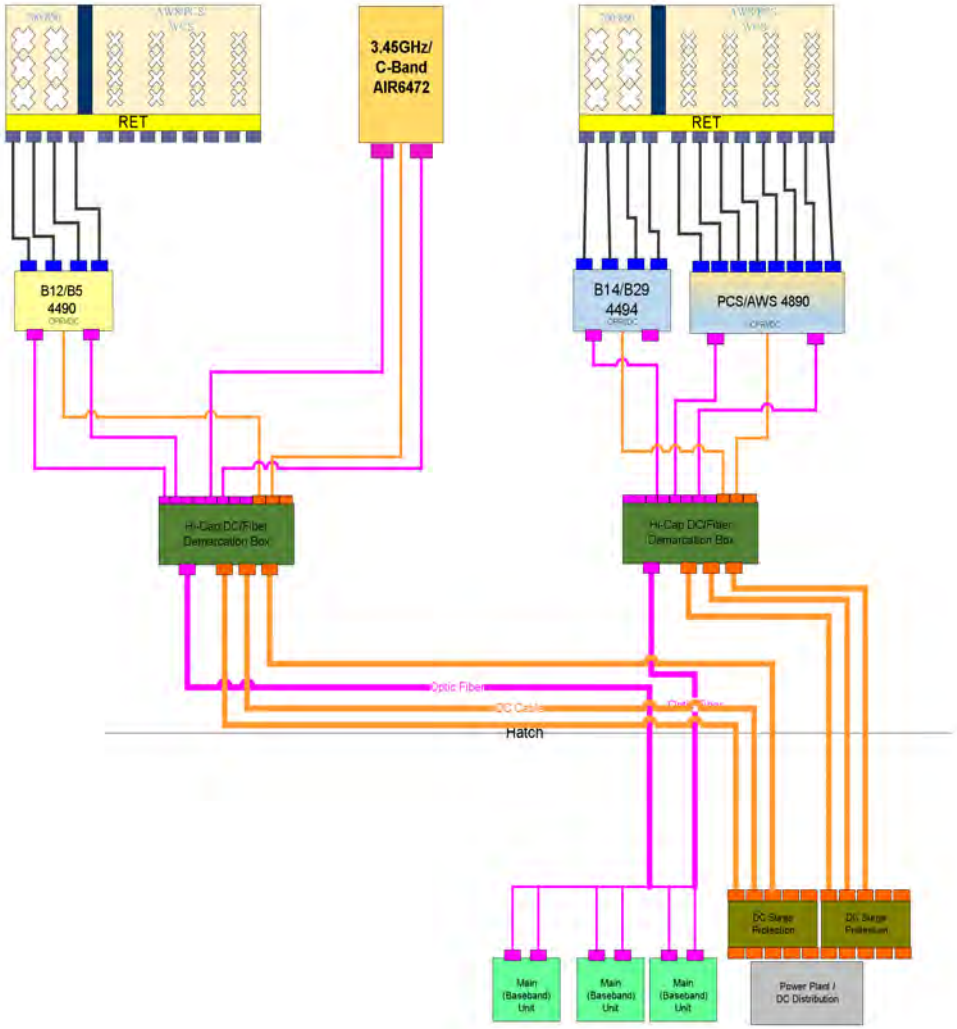
Equipment in the calculation : Active

From	Type	Model	Calculated RAD Center	Quantity	Dimensions	Calculated SQIN per Unit	Calculated SQIN per Unit
INPUT	ANTENNA	120706	133	2	0*0*0	1,150	2,300
INPUT	SQUID	DC9-48-60-24-8C-EV	133	3	0*0*0	364.5	1,093.5
INPUT	FIBER	FB-L98B-034	133	3	_*_*_	0.12	0.36
INPUT	RADIO	4490 B5/B12A	133	3	0*0*0	290	870
INPUT	RADIO	4890 B25/B66	133	3	0*0*0	290	870
INPUT	ANTENNA	120726	133	4	0*0*0	1,150	4,600
INPUT	DC_TRUNK	WR-VG66ST-BRD	133	6	_*_*_	0.72	4.34
INPUT	RADIO	4494 B14/B29	133	3	0*0*0	290	870
INPUT	ANTENNA	AIR6472 B77G B77M	133	3	0*0*0	1,150	3,450

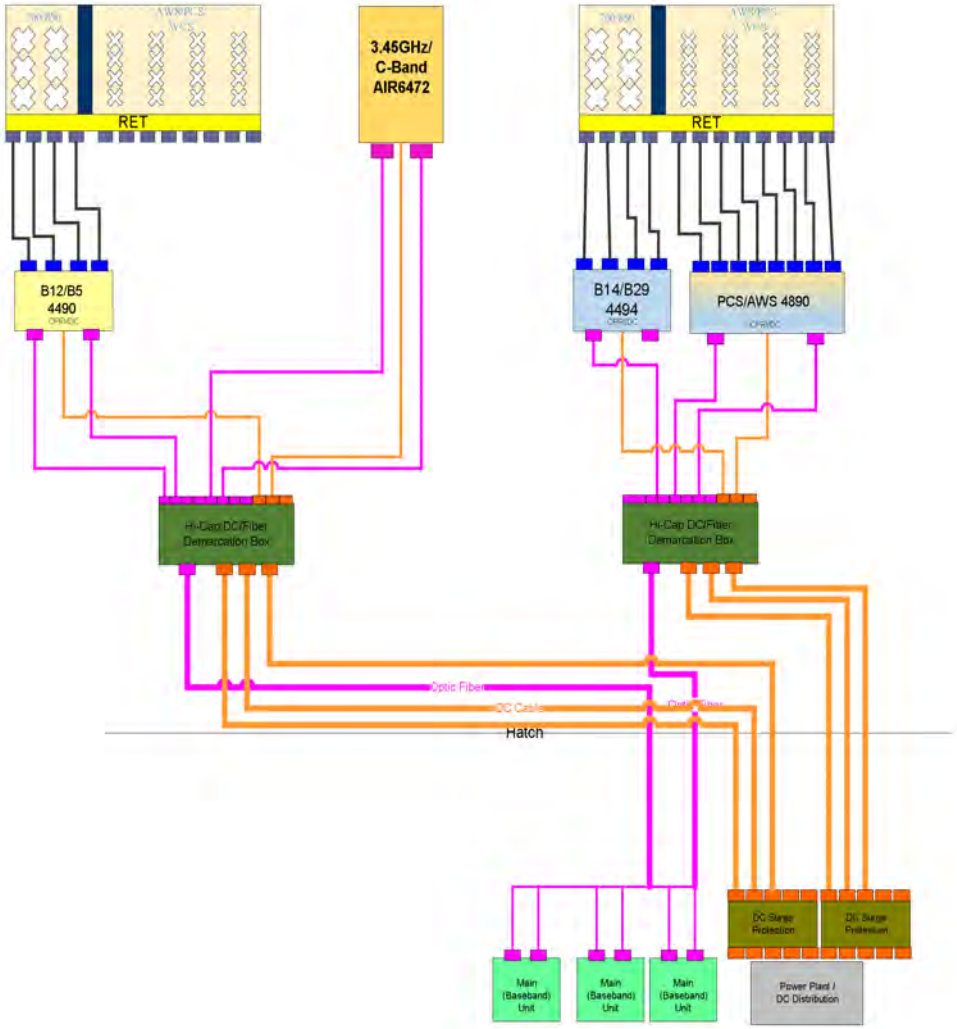
Notes

Date/Time	Creator	Category	Note
2025-06-02 19:36:38.0	cp9511	GenericComment	Updated Carrier and added plumbing diagram
2025-08-07 17:34:01.0	system.user	GenericComment	Previously associated job(s) [WSUMW0038670] are Suspended and have been removed from the RFDS. Please review RFDS design.
2025-08-12 13:28:12.0	cp9511	GenericComment	Added DOD 3.45 GHz with IWM number WSUMW0061892
2025-11-10 14:44:12.0	rf990n	GenericComment	updated antenna models, azimuths, RAD. Cellmax 120726/120726/12070635/170/265 , RAD=133'

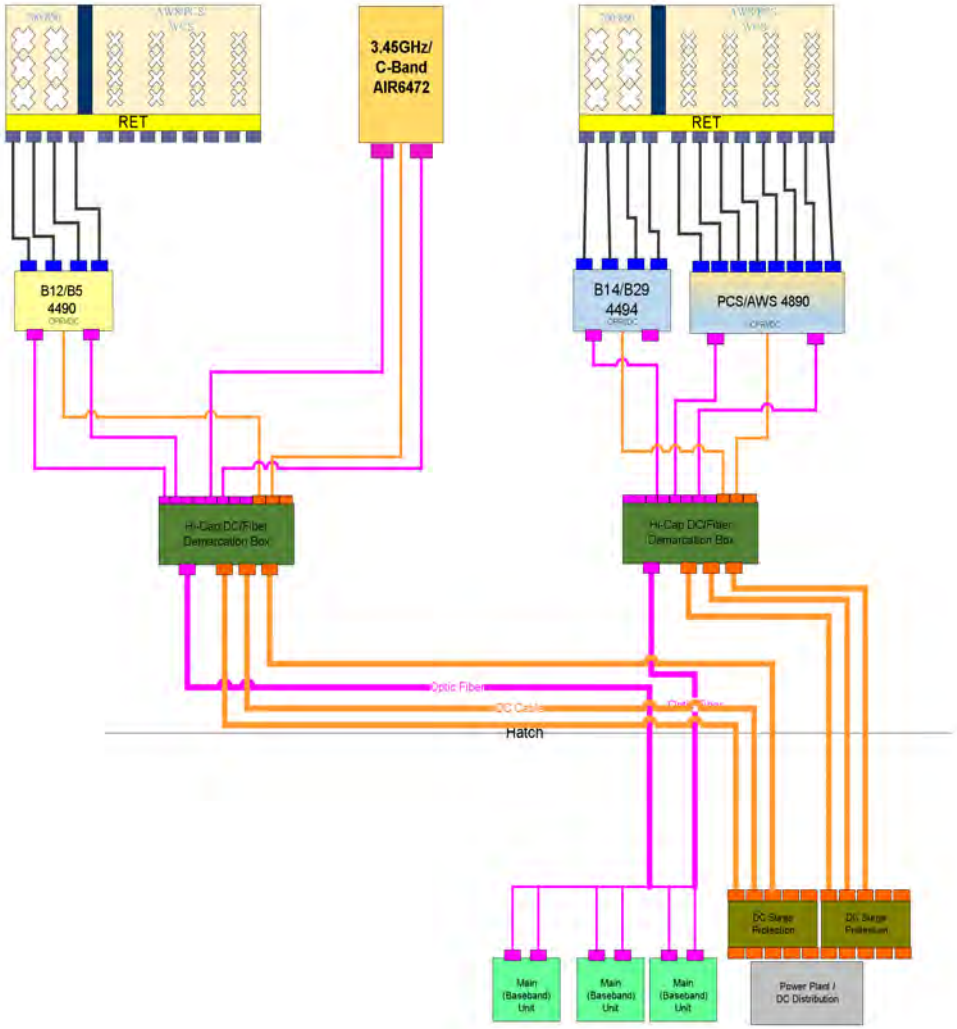
Sector A


RET
3.45GHz/
C-Band
AIR6472
RET
B12/B5
4490
B14/B29
4494
PCS/AWS 4890
Hi-Cap DC/Fiber
Demarcation Box
Hi-Cap DC/Fiber
Demarcation Box
Optic Fiber
DC Cable
Hatch
DC Surge
Protection
DC Surge
Protection
Main
(Baseband)
Unit
Main
(Baseband)
Unit
Main
(Baseband)
Unit
Power Plant /
DC Distribution

Sector B


RET
3.45GHz/
C-Band
AIR6472
RET
B12/B5
4490
B14/B29
4494
PCS/AWS 4890
Hi-Cap DC/Fiber
Demarcation Box
Hi-Cap DC/Fiber
Demarcation Box
Optic Fiber
DC Cable
Hatch
DC Surge
Protection
DC Surge
Protection
Main
(Baseband)
Unit
Main
(Baseband)
Unit
Main
(Baseband)
Unit
Power Plant /
DC Distribution

Sector C


RET
3.45GHz/
C-Band
AIR6472
RET
B12/B5
4490
B14/B29
4494
PCS/AWS 4890
Optic Fiber
Hatch
Main
(Baseband)
Unit
Main
(Baseband)
Unit
Main
(Baseband)
Unit
Power Plant /
DC Distribution

Inventory Changes

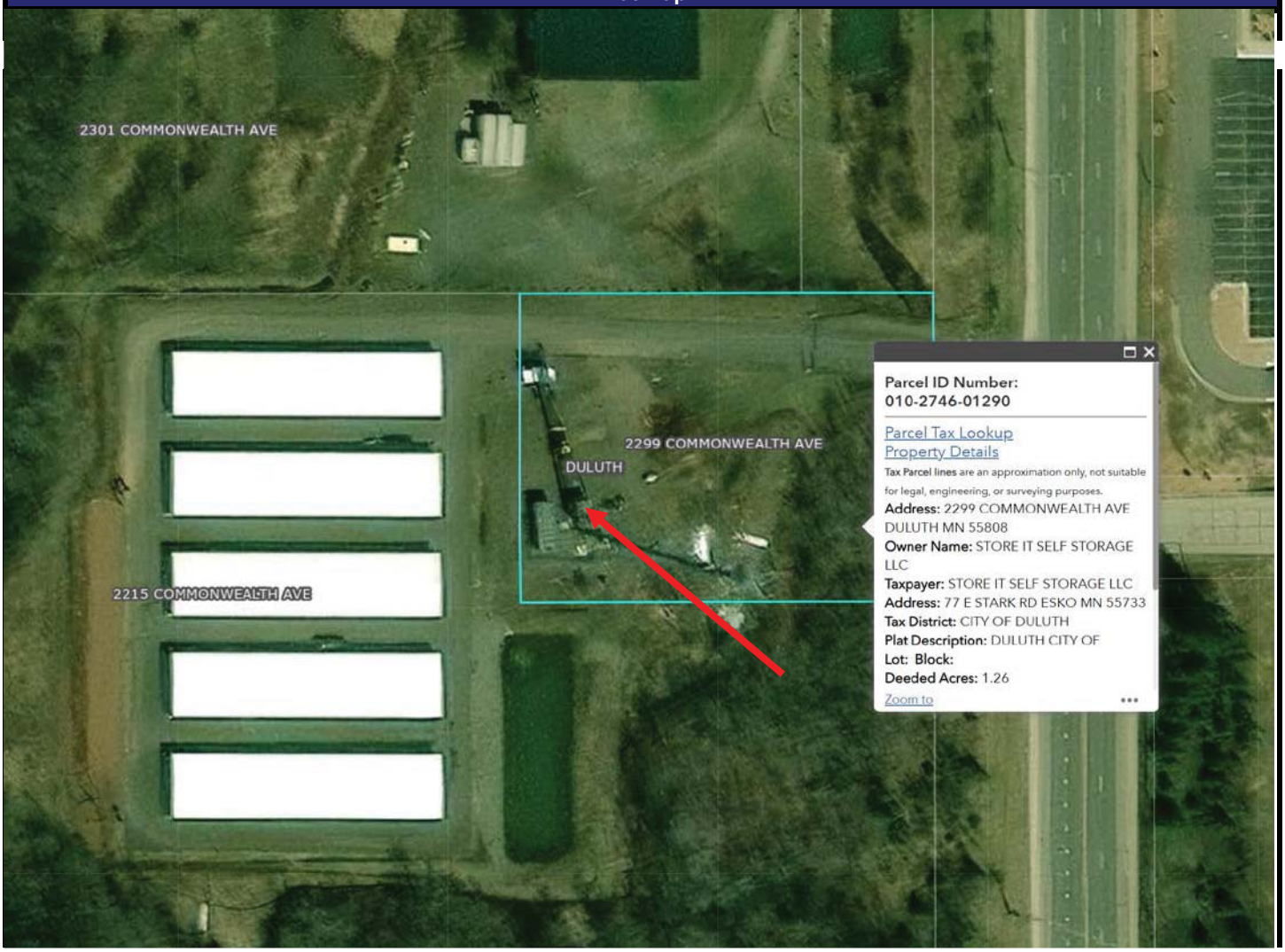
Change Type	Sec-Pos	Equipment Type	Common Name	Equipment Model	Updated Field	Old Value	New Value	Linked Cells
Add	A-1	RRH	-	4490 B5/B12A	-	-	-	MNL98601_7A_1_A MNXN098601A_N005A_1_A
Add	B-1	RRH	-	4490 B5/B12A	-	-	-	MNL98601_7B_1_A MNXN098601A_N005B_1_A
Add	C-1	RRH	-	4490 B5/B12A	-	-	-	MNL98601_7C_1_A MNXN098601A_N005C_1_A
Add	A-3	RRH	-	4494 B14/B29	-	-	-	MNL98601_7A_2_FA MNL98601_7A_3_EA
Add	B-3	RRH	-	4494 B14/B29	-	-	-	MNL98601_7B_2_FA MNL98601_7B_3_EA
Add	C-3	RRH	-	4494 B14/B29	-	-	-	MNL98601_7C_2_FA MNL98601_7C_3_EA
Add	A-3	RRH	-	4890 B25/B66	-	-	-	MNL98601_2A_1_A MNL98601_2A_2_A MNL98601_9A_1_A
Add	B-3	RRH	-	4890 B25/B66	-	-	-	MNL98601_2B_1_A MNL98601_2B_2_A MNL98601_9B_1_A
Add	C-3	RRH	-	4890 B25/B66	-	-	-	MNL98601_2C_1_A MNL98601_2C_2_A MNL98601_9C_1_A
Add	A-1	ANTENNA	-	120726	-	-	-	MNL98601_7A_1_A MNXN098601A_N005A_1_A
Add	A-2	INTEGRATED ANTENNA RADIO	-	AIR6472 B77G B77M	-	-	-	MNXN098601A_N077A_1_A MNXN098601A_N077A_2_A
Add	A-3	ANTENNA	-	120726	-	-	-	MNL98601_7A_2_FA MNL98601_7A_3_EA MNL98601_2A_1_A MNL98601_2A_2_A MNL98601_9A_1_A
Add	B-1	ANTENNA	-	120726	-	-	-	MNL98601_7B_1_A MNXN098601A_N005B_1_A
Add	B-2	INTEGRATED ANTENNA RADIO	-	AIR6472 B77G B77M	-	-	-	MNXN098601A_N077B_1_A MNXN098601A_N077B_2_A

Change Type	Sec-Pos	Equipment Type	Common Name	Equipment Model	Updated Field	Old Value	New Value	Linked Cells
Add	B-3	ANTENNA	-	120726	-	-	-	MNL98601_7B_2_FA MNL98601_7B_3_EA MNL98601_2B_1_A MNL98601_2B_2_A MNL98601_9B_1_A
Add	C-1	ANTENNA	-	120706	-	-	-	MNL98601_7C_1_A MNXN098601A_N005C_1_A
Add	C-2	INTEGRATED ANTENNA RADIO	-	AIR6472 B77G B77M	-	-	-	MNXN098601A_N077C_1_A MNXN098601A_N077C_2_A
Add	C-3	ANTENNA	-	120706	-	-	-	MNL98601_7C_2_FA MNL98601_7C_3_EA MNL98601_2C_1_A MNL98601_2C_2_A MNL98601_9C_1_A
Add	A-1	DC_TRUNK	-	WR-VG66ST-BRD	-	-	-	-
Add	A-1	DC_TRUNK	-	WR-VG66ST-BRD	-	-	-	-
Add	A-1	FIBER	-	FB-L98B-034	-	-	-	-
Add	A-1	SQUID	-	DC9-48-60-24-8C-EV	-	-	-	-
Add	B-1	DC_TRUNK	-	WR-VG66ST-BRD	-	-	-	-
Add	B-1	DC_TRUNK	-	WR-VG66ST-BRD	-	-	-	-
Add	B-1	FIBER	-	FB-L98B-034	-	-	-	-
Add	B-1	SQUID	-	DC9-48-60-24-8C-EV	-	-	-	-
Add	C-1	DC_TRUNK	-	WR-VG66ST-BRD	-	-	-	-
Add	C-1	DC_TRUNK	-	WR-VG66ST-BRD	-	-	-	-
Add	C-1	FIBER	-	FB-L98B-034	-	-	-	-
Add	C-1	SQUID	-	DC9-48-60-24-8C-EV	-	-	-	-

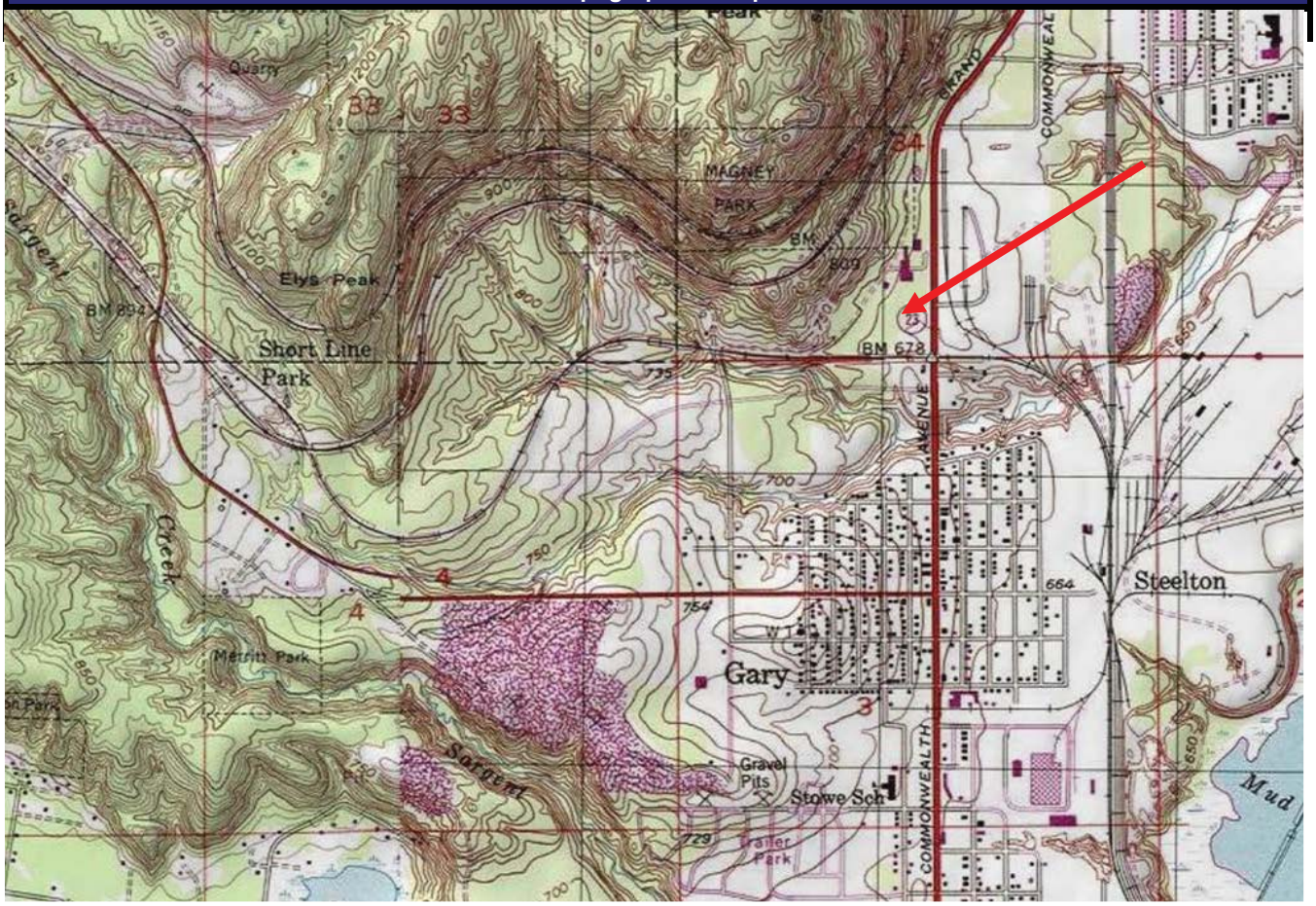
Inventory Changes

Change Type	Sec-Pos	Equipment Type	Common Name	Equipment Model	Updated Field	Old Value	New Value	Linked Cells
Add	-	BBU	MNXN098601A,MNL98601A	RAN PROCESSOR 6672	-	-	-	MNL98601_2A_1_A MNL98601_2A_2_A MNL98601_2B_1_A MNL98601_2B_2_A MNL98601_2C_1_A MNL98601_2C_2_A MNL98601_7A_1_A MNL98601_7A_2_FA MNL98601_7A_3_EA MNL98601_7B_1_A MNL98601_7B_2_FA MNL98601_7B_3_EA MNL98601_7C_1_A MNL98601_7C_2_FA MNL98601_7C_3_EA MNL98601_9A_1_A MNL98601_9B_1_A MNL98601_9C_1_A MNXN098601A_N005A_1_A MNXN098601A_N005B_1_A MNXN098601A_N005C_1_A MNXN098601A_N077A_1_A MNXN098601A_N077A_2_A MNXN098601A_N077B_1_A MNXN098601A_N077B_2_A MNXN098601A_N077C_1_A MNXN098601A_N077C_2_A

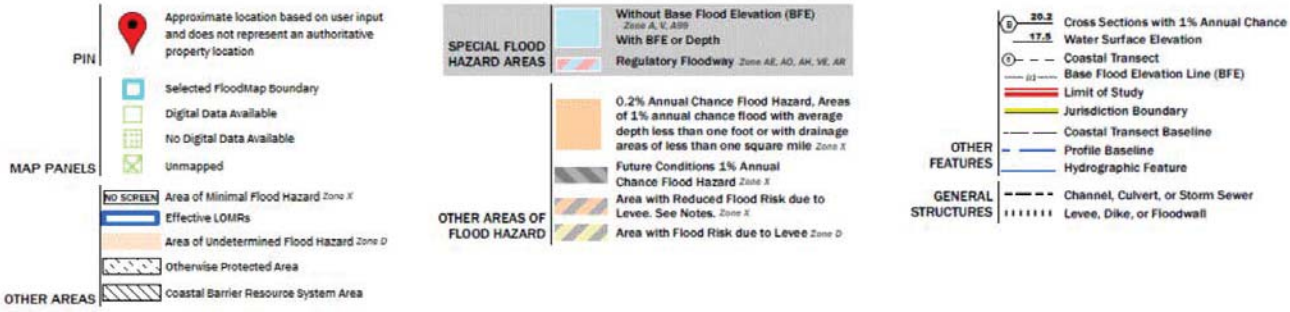
Plat Map


2301 COMMONWEALTH AVE
2299 COMMONWEALTH AVE
DULUTH
2215 COMMONWEALTH AVE
Parcel ID Number:
010-2746-01290
Parcel Tax Lookup
Property Details
Tax Parcel lines are an approximation only, not suitable for legal, engineering, or surveying purposes.
Address: 2299 COMMONWEALTH AVE DULUTH MN 55808
Owner Name: STORE IT SELF STORAGE LLC
Taxpayer: STORE IT SELF STORAGE LLC
Address: 77 E STARK RD ESKO MN 55733
Tax District: CITY OF DULUTH
Plat Description: DULUTH CITY OF
Lot: Block:
Deeded Acres: 1.26
Zoom to

Topographical Map



FEMA Flood Map



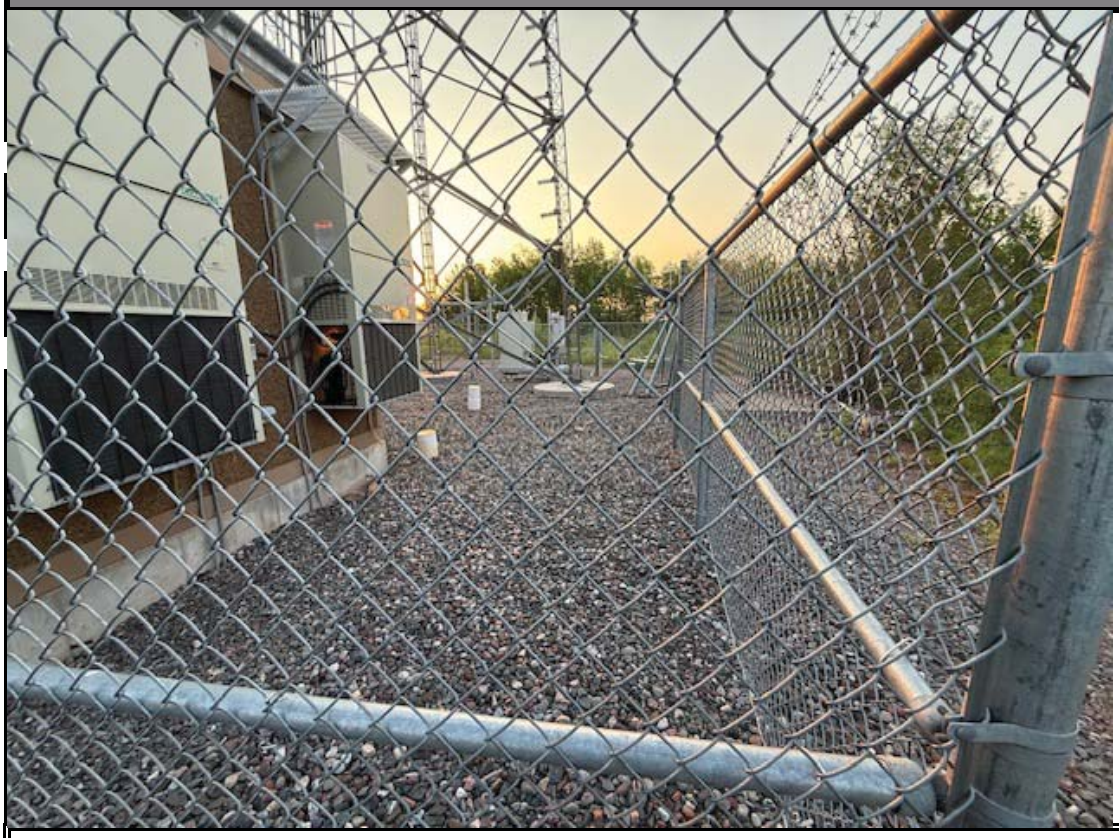
Directional photos looking towards the site, from the North and the South

VIEW OF THE SITE FROM THE NORTHEAST

VIEW OF THE SITE FROM THE SOUTHEAST

Directional photos looking towards the site, from the East and the West

VIEW OF THE SITE FROM THE EAST



VIEW OF THE SITE FROM THE WEST

Directional Photos looking from site, to North and to South

VIEW LOOKING NORTH FROM THE SITE

VIEW LOOKING SOUTH FROM THE SITE

INGRESS AND EGRESS PHOTOS

VIEW OF SITE INGRESS

VIEW OF SITE EGRESS

EQUIPMENT AND LEASE AREA PHOTOS

VIEW OF LEASE AREA

VIEW OF EQUIPMENT LOCATION