

SCOPE OF WORK

THE PURPOSE OF THIS PROJECT IS AS FOLLOWS:

TOWER SCOPE OF WORK:

- REMOVE (3) ANTENNAS
- REMOVE (3) RRHs
- RELOCATE (3) ANTENNAS
- RELOCATE (3) TMAs
- INSTALL (6) ANTENNAS
- INSTALL (6) RRHs
- INSTALL (1) SURGE SUPPRESSOR
- INSTALL (2) DC TRUNKS & (1) FIBER TRUNK

GROUND SCOPE OF WORK:

- INSTALL (1) FSM4 W/(1) AMIA, (1) ABIL & (1) ASIK IN (E) LTE RACK
- INSTALL (12) PROPOSED PS-R-CNTRL COMMSCOPE POWER SHIFT MODULES IN (E) DC RACK

DC POWER PLAN REVIEW:

- RECTIFIER & CONVERTERS; INSTALL (1) NEW VERTIV NETSURE 7100 [NEQ.15917] -48VDC POWER PLANT OUTFITTED WITH (9) EA. HE 2KW -48VDC RECTIFIERS [NEQ.15930] & (5) EA. HE 1.5KW -48VDC/+24VDC CONVERTER MODULES [NEQ.15929] PER AT&T INSTALL (5) CONVERTERS, CALCULATIONS SHOWING (4) NEEDED TO SATISFY N+1

BATTERY CHECK:

- PASSES BATTERY RESERVE CAPACITY @ 4.70 HRS. REUTILIZE (20) EXISTING MARATHON M12V155FT BATTERIES. INSTALL (1) NEW SEISMIC-RATED BATTERY RACK, REINSTALL EXISTING BATTERIES IN NEW RACK AND RECONFIGURE BATTERIES AS (5) STRINGS @ 48VDC NOMINAL

HVAC

- PASSES HVAC TONNAGE CAPACITY; THERE ARE (2) EXISTING 5-TON HVAC UNITS

RFDS INFO:

ID: 3183483 VER: 1.00
DATE 06/07/2019

PROJECT DIRECTORY

TOWER OWNER:	CROWN CASTLE 2055 S. STEARMAN DRIVE CHANDLER, AZ 85286 CONTACT: NICOLE RUSSELL PHONE: (602) 845-1766
APPLICANT:	AT&T MOBILITY CORP. 161 INVERNESS DRIVE WEST, 2ND FLOOR ENGLEWOOD, CO 80112 CONTACT: CONNOR RICHARDS PHONE: (303) 828-7114
A&E FIRM:	TELCYTE INFRASTRUCTURE SERVICES 2227 W PECOS RD, SUITE 4 CHANDLER, AZ 85227 CMUELLER@TELCYTE.COM

GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION, THEREFORE HANDICAP ACCESS IS NOT REQUIRED. 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.



CALL COLORADO ONE CALL
(800) 922-1987
CALL 3 WORKING DAYS
BEFORE YOU DIG!



CONSTRUCTION DRAWINGS

AT&T SITE NUMBER:

COL02029

AT&T FA NUMBER:

10093745

PROJECT ID AND PACE NUMBER:

LTE 3C: MRUTH024855

LTE 4C: MRUTH024953

CROWN CASTLE SITE NAME:

CORRAL BLUFFS

CROWN CASTLE SITE NUMBER:

855759

CROWN CASTLE APPLICATION:

PENDING

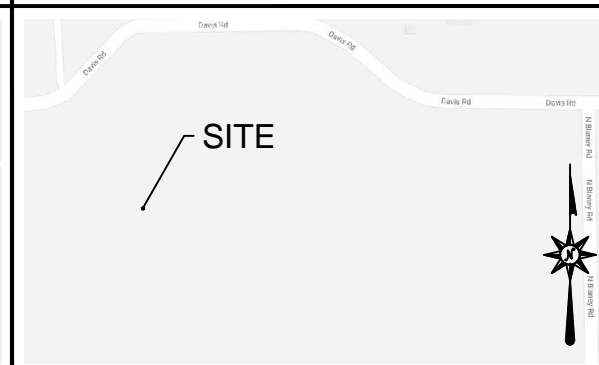
SITE ADDRESS:

BLANEY ROAD
COLORADO SPRINGS, CO 80929
(COUNTY OF EL PASO)

VICINITY MAP



LOCAL MAP



DIRECTIONS TO THE SITE FROM AT&T OFFICE:

HEAD NORTHEAST TOWARD INVERNESS DR W 203 FT, TURN LEFT TOWARD INVERNESS BLVD 85 FT, TURN RIGHT ONTO INVERNESS BLVD 128 FT, TURN LEFT AT THE 1ST CROSS STREET ONTO INVERNESS DR W 0.2 MI, TURN LEFT ONTO E DRY CREEK RD 0.2 MI, MERGE ONTO I-25 S 0.3 MI, MERGE ONTO I-25 S 42.7 MI, TAKE EXIT 153 0.7 MI, CONTINUE ONTO INTERQUEST PKWY 1.9 MI, TURN RIGHT ONTO CO-21 S 1.0 MI, STAY ON CO-21 S 4.0 MI, TAKE THE WOODMEN ROAD EXIT 0.4 MI, TURN LEFT ONTO E WOODMEN RD 5.7 MI, SLIGHT RIGHT 0.1 MI, CONTINUE ONTO FOXTAIL MEADOW LN 0.2 MI, TURN LEFT ONTO ROLLING THUNDER WAY 0.2 MI, CONTINUE ONTO OLD MERIDIAN RD 0.2 MI, CONTINUE ONTO MERIDIAN RD 1.5 MI, TURN LEFT ONTO GARRETT RD 1.0 MI, TURN RIGHT ONTO E BLANEY RD 2.0 MI, TURN LEFT ONTO BLANEY RD S 0.4 MI, TURN RIGHT ONTO HOOFFBEAT RD 1.0 MI, CONTINUE ONTO DAVIS RD 0.2 MI

CODE COMPLIANCE

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

- 2017 PIKES PEAK REGIONAL BUILDING CODE
- 2015 INTERNATIONAL FIRE CODE
- 2015 INTERNATIONAL FUEL GAS CODE
- 2015 INTERNATIONAL MECHANICAL CODE
- 2015 INTERNATIONAL EXISTING BUILDING CODE
- 2015 INTERNATIONAL PROPERTY MAINTENANCE CODE
- 2017 NATIONAL ELECTRICAL CODE
- ANSI/TIA/EIA-222-H
- LOCAL BUILDING CODE
- CITY/COUNTY ORDINANCES
- FAA COMPLIANCE
- FCC COMPLIANCE

PERMITTING/ZONING APPROVAL:

SIGNATURE _____ DATE _____

LANDLORD APPROVAL:

SIGNATURE _____ DATE _____

AT&T PROJECT MANAGER APPROVAL:

SIGNATURE _____ DATE _____

SITE SUMMARY

SITE TYPE:	UPGRADE
TYPE OF OCCUPANCY:	TELECOMMUNICATIONS
TOWER TYPE:	GUYED TOWER
TOWER LATITUDE:	38°52'00.1"N (38.8666833)°
TOWER LONGITUDE:	104°34'34.6"W (-104.5762711)°
AMSL:	6,645'±
ZONING JURISDICTION:	COUNTY OF EL PASO
COUNTY:	EL PASO
PARCEL NUMBER:	4405001001
POWER COMPANY:	MOUNTAIN VIEW ELECTRIC (800) 388-9881
TELEPHONE COMPANY:	CENTURYLINK 281-359-9519
PROPERTY OWNER:	WASTE MANAGEMENT OF COLO INC PO BOX 1450 CHICAGO IL, 60690-1450
24 HOUR NOC CONTACT:	(800) 783-7011
GATE COMBINATION:	7011

SHEET INDEX

SHEET NO.	DESCRIPTION	REV. NO.	REVISION DATE
T-1	TITLE SHEET	0	12/03/19
GN-1	GENERAL NOTES	0	12/03/19
GN-2	GENERAL NOTES	0	12/03/19
S-1	SITE PLAN	0	12/03/19
C-1	COMPOUND PLANS	0	12/03/19
C-2	EQUIPMENT PLANS	0	12/03/19
C-3	TOWER ELEVATIONS	0	12/03/19
C-4	ANTENNA LAYOUTS	0	12/03/19
C-5	FINAL RF EQUIPMENT SCHEDULE	0	12/03/19
C-6	ANTENNA DETAILS	0	12/03/19
G-1	GROUNDING NOTES & DETAILS	0	12/03/19
G-2	GROUNDING DETAILS	0	12/03/19

PREPARED FOR:



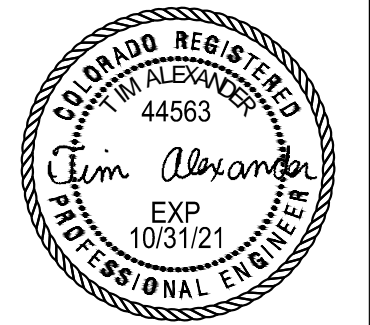
PREPARED FOR:



PREPARED BY:



2227 W. PECOS ROAD, SUITE 4,
CHANDLER AZ 85224



SIGNED, 3 DEC 2019

DRAWN BY: _____ AK
CHECKED BY: _____ CW
APPV'D: _____ CM

SUBMITTALS

DATE	DESCRIPTION	REV	ISSUED BY
09/18/19	PRELIMINARY CD'S	A	JM
12/03/19	FINAL CD'S	0	AK

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. REPRODUCTION OR CAUSING TO BE REPRODUCED THE WHOLE OR ANY PART OF THESE DRAWINGS WITHOUT THE PERMISSION OF TELCYTE IS PROHIBITED.

AT&T SITE NUMBER:

COL02029

CROWN SITE NAME:

CORRAL BLUFFS

CROWN SITE NUMBER:

855759

SITE ADDRESS:

BLANEY ROAD
COLORADO SPRINGS, CO 80929

SHEET TITLE

TITLE
SHEET

SHEET NUMBER

T-1

GENERAL NOTES:

1. EVERY EFFORT HAS BEEN MADE IN THE CONSTRUCTION DOCUMENTS TO PROVIDE A COMPLETE SCOPE OF WORK. MINOR DISCREPANCIES IN THE DRAWINGS AND/OR SPECIFICATIONS SHALL NOT EXCUSE CONTRACTORS FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
2. ALL REFERENCES TO OWNER HEREIN SHALL BE CONSTRUED TO MEAN THE CARRIER OR ITS DESIGNATED REPRESENTATIVE.
3. BIDDING REQUIREMENTS

a. PRIOR TO THE SUBMISSION OF BIDS, VISIT THE JOB SITE TO BECOME FAMILIAR WITH ALL CONDITIONS AFFECTING THE PROPOSED PROJECT. VISIT THE SITE WITH THE CONSTRUCTION DOCUMENTS TO VERIFY FIELD DIMENSIONS AND CONDITIONS TO CONFIRM THAT THE PROJECT WILL BE ACCOMPLISHED AS SHOWN.

b. PROVIDE NOTIFICATION TO OWNER IN WRITING OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO SUBMISSION OF PRICE PROPOSAL. IN THE EVENT OF DISCREPANCIES, PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED OTHERWISE.

c. WHEN TOWER IS OWNED BY A THIRD PARTY, CONTACT TOWER OWNER REPRESENTATIVE FOR PARTICIPATION IN BID WALK.

d. WHERE ANCHORING TO A CONCRETE ROOF SLAB, CONFIRM (PRIOR TO SUBMITTING BID) THE PRESENCE OF POST TENSION TENDONS. INCLUDE PROVISIONS FOR X-RAY PROCEDURES TO LOCATE THE TENDONS PRIOR TO CONSTRUCTION.
4. DRAWINGS ARE NOT TO BE SCALED. WRITTEN DIMENSIONS TAKE PRECEDENCE. CONSTRUCTION DOCUMENTS ARE INTENDED FOR DIAGRAMMATIC PURPOSES ONLY, UNO.
5. FIELD VERIFY ALL DIMENSIONS, ELEVATIONS AND EXISTING CONDITIONS PRIOR TO BEGINNING ANY MATERIALS ORDERING, FABRICATION OR CONSTRUCTION WORK ON THIS PROJECT. BRING ANY DISCREPANCIES IMMEDIATELY TO THE ATTENTION OF THE OWNER AND RESOLVE BEFORE PROCEEDING WITH THE WORK.
6. FURNISH ALL MATERIALS, EQUIPMENT, LABOR, AND ANY REQUIREMENTS NECESSARY TO COMPLETE PROJECT AS DESCRIBED IN THE CONSTRUCTION DOCUMENTS.
7. SUPERVISE AND DIRECT THE PROJECT DESCRIBED IN THE CONSTRUCTION DOCUMENTS. PROVIDE ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
8. ALL WORK PERFORMED ON THE PROJECT AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES APPLICABLE TO THE WORK.
9. CONSTRUCTION COORDINATION REQUIREMENTS

a. NOTIFY OWNER OF ANY DISCREPANCIES PRIOR TO START OF WORK.

b. OBTAIN ALL PERMITS. SCHEDULE AND COORDINATE ALL INSPECTIONS.

c. PROVIDE, AT THE PROJECT SITE, A FULL, CURRENT SET OF CONSTRUCTION DOCUMENTS FOR USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.

d. RECEIVE WRITTEN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DOCUMENTS.

e. PERFORM WORK DURING OWNER’S PREFERRED HOURS TO AVOID DISTURBING NORMAL BUSINESS.

f. PROVIDE FALL PROTECTION IN ACCORDANCE WITH FEDERAL, STATE, LOCAL, AND OWNER REQUIREMENTS.

g. IF FAA LIGHTING AND MARKING IS PRESENT ON SITE AND IS POWERED BY ELECTRICAL SERVICE THAT IS TO BE INTERRUPTED, MAINTAIN THE NECESSARY LIGHTS DURING CONSTRUCTION AND NOTIFY THE PROPER AUTHORITIES IN THE EVENT OF A DISRUPTION.

h. PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2–A OR 2–A10BC WITHIN 75 FEET TRAVEL DISTANCE TO ALL PORTIONS OF PROJECT AREA DURING CONSTRUCTION.

i. STRUCTURAL COMPONENTS OF ADJACENT FACILITIES SHALL NOT BE ALTERED BY THIS CONSTRUCTION PROJECT, UNO. ENSURE THAT EXCAVATION DOES NOT AFFECT ADJACENT STRUCTURES.

j. SEAL ALL PENETRATIONS THROUGH FIRE–RATED AREAS WITH U.L. LISTED OR FIRE MARSHALL–APPROVED MATERIALS, IF APPLICABLE.

k. BURIED UTILITIES MAY EXIST IN THE AREA AND UTILITY INFORMATION SHOWN MAY NOT BE COMPLETE. CONTACT THE UTILITY LOCATE SERVICE A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION.

l. COORDINATE ALL POWER INSTALLATION WITH POWER COMPANY AS REQUIRED. REPORT POWER INSTALLATION COORDINATION SOLUTION(S) TO OWNER.

m. PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.

n. KEEP GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, AND RUBBISH. REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY OR PREMISES. SITE SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.

o. MAINTAIN THE INTEGRITY OF THE BUILDING ENVELOPE AND CONSTRUCT BARRIERS IN THE AREA OF WORK TO PREVENT DAMAGE FROM WEATHER AS WELL AS FROM CONSTRUCTION DUST AND DEBRIS.
10. INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO MANUFACTURER’S SPECIFICATIONS, UNO, OR WHERE LOCAL CODES OR ORDINANCES DIRECT OTHERWISE.
11. PROPOSED CELLULAR EQUIPMENT AND FIXTURES WILL BE FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR, UNLESS NOTED OTHERWISE.

12. ANY SUBSTITUTIONS OF MATERIALS AND/OR EQUIPMENT, MUST BE APPROVED BY OWNER.
13. DOCUMENT ALL CHANGES MADE IN THE FIELD BY MARKING UP THE APPROVED CONSTRUCTION DRAWINGS AND SUBMITTING THE REDLINED SET TO OWNER UPON COMPLETION. DOCUMENT ALL WORK PERFORMED WITH PHOTOGRAPHS TO BE SUBMITTED WITH REDLINED CONSTRUCTION DRAWINGS.
14. PROVIDE SUPPORTS FOR CABLES TO THE ELEVATION OF ALL INITIAL AND FUTURE ANTENNAS IN ACCORDANCE WITH ALL MANUFACTURER’S REQUIREMENTS.
15. CONFIRM THAT THE REQUIREMENTS OF THE STRUCTURAL ANALYSIS, MOUNT ANALYSIS AND ANY ASSOCIATED MODIFICATIONS HAVE BEEN FOLLOWED AND COMPLETED AS REQUIRED TO SUPPORT THE EQUIPMENT ASSOCIATED WITH THIS PROJECT.

ABBREVIATIONS

A/C	AIR CONDITIONING	MGR	MANAGER
AFF	ABOVE FINISHED FLOOR	MIN	MINIMUM
AGL	ABOVE GROUND LEVEL, ABOVE GRADE LEVEL	MISC	MISCELLANEOUS
AWS	ADVANCED WIRELESS SERVICE	NA	NOT APPLICABLE
BBU	BATTERY BACKUP UNIT	NIC	NOT IN CONTRACT
BLDG	BUILDING	NO	NUMBER
BLK	BLOCKING	NTS	NOT TO SCALE
CLG	CEILING	OC	ON CENTER
CLR	CLEAR	OD	OUTSIDE DIAMETER
CONC	CONCRETE	PCS	PERSONAL COMMUNICATION SERVICE
CONT	CONTINUOUS	PDU	POWER DISTRIBUTION UNIT
D	DEPTH	PROJ	PROJECT
DBL	DOUBLE	PROP	PROPERTY
DEG	DEGREE	PT	PRESSURE TREATED
ø, DIA	DIAMETER	PVC	POLYVINYL CHLORIDE
DIAG	DIAGONAL	REQ	REQUIRED
DN	DOWN	RF	RADIO FREQUENCY
DET	DETAIL	RM	ROOM
DWG	DRAWING	RO	ROUGH OPENING
E	EXISTING	RRH	REMOTE RADIO HEAD
EA	EACH	SHT	SHEET
ELEV, EL	ELEVATION	SIM	SIMILAR
ELEC	ELECTRICAL	SPEC	SPECIFICATION
EQ	EQUAL	SF	SQUARE FOOT
EQUIP	EQUIPMENT	SS	STAINLESS STEEL
EXT	EXTERIOR	STL	STEEL
FIF	FIBER INTERFACE FRAME, FACILITY INTERFACE FRAME	SUSP	SUSPENDED
FIN	FINISH	TMA	TOWER MOUNTED AMPLIFIER
FLUOR	FLUORESCENT	TND	TINNED
FLR	FLOOR	TYP	TYPICAL
FT	FOOT, FEET	UMTS	UNIVERSAL MOBILE TELECOMMUNICATION SERVICE
GA	GAUGE	UNO	UNLESS NOTED OTHERWISE
GALV	GALVANIZED	VERT	VERTICAL
GC	GENERAL CONTRACTOR	W/	WITH
GRND	GROUND	W/O	WITHOUT
GSM	GLOBAL SYSTEM MOBILE	WCS	WIRELESS COMMUNICATION SERVICE
GYP	GYPSUM BOARD	WP	WATER PROOF
HORZ	HORIZONTAL		
HR	HOOR		
HT	HEIGHT		
ID	INSIDE DIAMETER		
IN	INCH, INCHES		
INSUL	INSULATION		
INT	INTERIOR		
L	LENGTH		
LBS	POUNDS		
LTE	LONG TERM EVOLUTION		
MAX	MAXIMUM		
MECH	MECHANICAL		
MTL	METAL		
MFR	MANUFACTURER		

PROJECT NOTES

1. THE FOLLOWING INFORMATION HAS BEEN PROVIDED BY CROWN CASTLE FOR THIS PROJECT AND HAS NOT BEEN FIELD VERIFIED AS PART OF THIS PROJECT.

a. SITE LAYOUT INFORMATION AND ORIENTATION

b. EXISTING TOWER, MOUNT AND EQUIPMENT ELEVATIONS

c. DESIGN PACKAGE BASED ON THE APPLICATION #: PENDING v0
2. A STRUCTURAL ANALYSIS TO DETERMINE THE TOWER CAPACITY TO SUPPORT THIS PROPOSED EQUIPMENT WAS PERFORMED FOR CROWN CASTLE OUTSIDE THE SCOPE OF THIS PROJECT.

a. STRUCTURAL ANALYSIS BY: BLACK & VEATCH

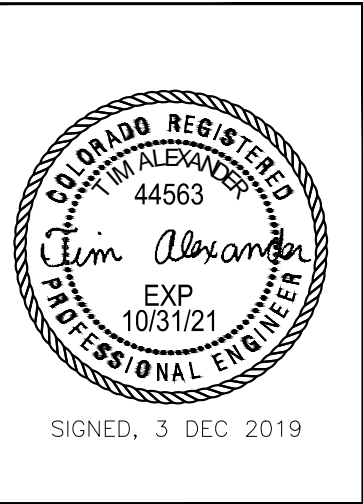
b. DATED: 10/30/19

c. RESULTS: PASSING
3. A MOUNT ANALYSIS TO DETERMINE THE MOUNT CAPACITY TO SUPPORT THIS PROPOSED EQUIPMENT WAS PERFORMED FOR CROWN CASTLE OUTSIDE THE SCOPE OF THIS PROJECT.

a. MOUNT ANALYSIS BY: B+T GRP

b. DATED: 11/26/19

c. RESULTS: PASSING
4. CONFIRM THAT THE REQUIREMENTS OF THE STRUCTURAL ANALYSIS AND ANY ASSOCIATED MODIFICATIONS HAVE BEEN FOLLOWED AND COMPLETED AS REQUIRED TO SUPPORT THE EQUIPMENT ASSOCIATED WITH THIS PROJECT.



DRAWN BY: AK

CHECKED BY: CW

APPV'D: CM

SUBMITTALS				
DATE	DESCRIPTION	REV	ISSUED BY	
09/18/19	PRELIMINARY CD'S	A	JM	
12/03/19	FINAL CD'S	0	AK	

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AT&T SITE NUMBER:
COL02029

CROWN SITE NAME:
CORRAL BLUFFS

CROWN SITE NUMBER:
855759

SITE ADDRESS:
BLANEY ROAD
COLORADO SPRINGS, CO 80929

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-1

SITE NOTES:

1. WHEN SITE WORK IS INCLUDED IN SCOPE:

a. CLEAR AND GRUB SITE OF ALL VEGETATION, PAVING, GRAVEL BASE AND OTHER DEBRIS NOT TO REMAIN. SUBGRADES ARE TO BE SET PRIOR TO LANDSCAPE INSTALLATION.

b. PROVIDE ELEVATION OF SUBGRADE WITHIN 0.10 FOOT OF ELEVATIONS SHOWN ON PLAN MINUS DEPTH OF TOPSOIL, FILL, AND MULCH.

c. ROUGH GRADE ALL AREAS WITHIN 1 FOOT OF ELEVATIONS INDICATED BEFORE PLANTING. PROVIDE POSITIVE DRAINAGE AWAY FROM EQUIPMENT SLABS, BUILDINGS AND THROUGH ALL PLANTER AREAS TO AVOID LOW SPOTS AND STANDING WATER.

d. BLEND NEW GRADES NATURALLY INTO EXISTING GRADES.

e. MAINTAIN POSITIVE DRAINAGE ON THE SITE AT ALL TIMES.

f. IF REQUIRED, MAINTAIN CONTINUOUS EROSION CONTROL ON THE DOWNSTREAM SIDE OF THE SITE.

g. IN LANDSCAPE AREAS, FINISH GRADES ARE TO FOLLOW THE GRADES AND EDGE DETAILS INDICATED AND BE MOUNDED 6 INCHES IN THE CENTER OF THE BED ABOVE THE EDGE OF THE LANDSCAPE AREA.

h. DO NOT PLACE FILL OR EMBANKMENT MATERIAL ON FROZEN GROUND. DO NOT PLACE FROZEN MATERIALS, SNOW OR ICE IN ANY FILL OR EMBANKMENT.

i. NOTIFY OWNER IF MODIFICATIONS TO THE PROPOSED GRADING SEEM NECESSARY AND OBTAIN APPROVAL PRIOR TO START OF WORK.
2. FOOTINGS SHALL BEAR ON FIRM, NATURAL, UNDISTURBED SOIL, OR ON ENGINEERED FILL (COMPACTED TO 95% ASTM D1557). ENSURE THAT EXCAVATIONS ARE FREE OF ORGANIC MATERIAL, DEBRIS, OR OTHER FOREIGN MATERIAL. NOTIFY OWNER IF ANY UNUSUAL CONDITIONS ARE ENCOUNTERED.
3. FILL AND SLAB BASE MATERIAL SHALL BE 3/4" MINUS CRUSHED ROCK PLACED IN 8" (MAXIMUM) LOOSE LIFTS AND COMPACTED TO 98% ASTM D1557.

CONCRETE NOTES:

1. CONCRETE AND REINFORCING SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

CONCRETE CONSTRUCTION	ACI 318, f'c=4 KSI, UNO
CEMENT	ASTM C150, PORTLAND CEMENT TYPE II, UNO
REINFORCING STEEL	ASTM A615 (INCLUDING SUPPLEMENT S1), GRADE 60, fy=60 KSI, UNO
WELDED WIRE FABRIC	ASTM A185
SPIRAL REINFORCEMENT	ASTM A615, GRADE 60, fy=60 KSI
ANCHOR BOLTS	ASTM A307
GRADE 60 REBAR WELDING	ASTM A706

NOTES: ANY BARS SO NOTED ON THE DRAWINGS SHALL BE GRADE 40, fy=40 KSI. REINFORCING COMPLYING WITH ASTM A615(S1) MAY BE WELDED ONLY IF MATERIAL PROPERTY REPORTS INDICATING CONFORMANCE WITH WELDING PROCEDURES SPECIFIED IN A.W.S. D14 ARE SUBMITTED.

2. CONCRETE PROTECTION (COVER) FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

FOOTINGS AND OTHER UNFORMED SURFACES, EARTH FACE	3"
FORMED SURFACES EXPOSED	(≥ #6 BARS) 2"
TO EARTH OR WEATHER	(≤ #5 BARS) 1 1/2"
SLABS AND WALLS	(INTERIOR FACE) 3/4"

3. AIR ENTRAIN ALL CONCRETE WITH SURFACES EXPOSED TO WEATHER WITH AN AIR-ENTRAINING AGENT CONFORMING TO ASTM C260, C494, C618, C989 AND C1017. AIR ENTRAIN CONCRETE EXPOSED TO FREEZING AND THAWING WHILE MOIST IN ACCORDANCE WITH ACI 318, SECTION 4.4.1.
4. DETAIL REINFORCING STEEL (INCLUDING HOOKS AND BENDS) IN ACCORDANCE WITH AC1 315 AND 318. LAP ALL CONTINUOUS REINFORCEMENT AT LEAST 30 BAR DIAMETERS OR A MINIMUM OF 2'-0". PROVIDE CORNER BARS AT ALL WALL AND FOOTING INTERSECTIONS. LAP CORNER BARS AT LEAST 30 BAR DIAMETERS OR A MINIMUM OF 2'-0". LAP ADJACENT MATS OF WELDED WIRE FABRIC A MINIMUM OF 8" AT SIDES AND ENDS.
5. PERFORM WELDING OF GRADE 60 REINFORCING BARS (IF REQUIRED) USING LOW HYDROGEN ELECTRODES. PERFORM WELDING OF GRADE 40 REINFORCING BARS (IF REQUIRED) USING E70 XX ELECTRODES. DO NOT WELD WITHIN 4" OF COLD BENDS IN REINFORCING STEEL.
6. DO NOT FIELD BEND REINFORCING PARTIALLY EMBEDDED IN CONCRETE UNLESS SPECIFICALLY SO DETAILED OR APPROVED BY THE ENGINEER.
7. SUPPORT BARS ON CHAIRS OR DOBIE BRICKS.
8. FURNISH NON-SHRINK GROUT BY AN APPROVED MANUFACTURER. MIX AND PLACE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED RECOMMENDATIONS. GROUT STRENGTH SHALL BE AT LEAST EQUAL TO THE MATERIAL ON WHICH IT IS PLACED (4 KSI, MINIMUM).
9. ALL EXPANSION ANCHORS TO BE HILTI BRAND, UNO. TEST ADHESIVE ANCHORS TO CONFIRM CAPACITY UNLESS WAIVED BY ENGINEER AND LOCAL JURISDICTION.

STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

WIDE FLANGE SHAPES

SHAPES, PLATES, ANGLES, & RODS

SPECIAL SHAPES AND PLATES

PIPE COLUMNS

STRUCTURAL TUBING

ANCHOR BOLTS

CONNECTION BOLTS

ASTM A992, GRADE 50

ASTM A36, Fy 36 KSI

ASTM A572, Fy 50 KSI

ASTM A53, GR B, Fy 35 KSI

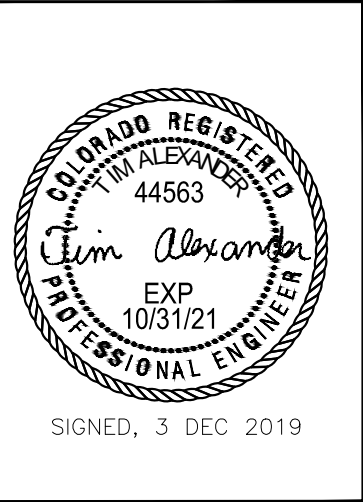
ASTM A500, GR B, Fy 46KSI

ASTM A307

ASTM A325 TWIST-OFF
2. BASE STRUCTURAL STEEL DESIGN, FABRICATION AND ERECTION (INCLUDING FIELD WELDING, HIGH STRENGTH FIELD BOLTING, EXPANSION BOLTS, AND THREADED EXPANSION ANCHORS) ON THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" LATEST EDITION.
3. HOT DIP GALVANIZE AFTER FABRICATION PER A123/A123M-00 ALL STEEL EXPOSED TO WEATHER AND WHERE NOTED.
4. CONFORM TO ALL AISC AND AWS STANDARDS FOR WELDING. PERFORM WELDING BY ANSI/AWS D1.1 CERTIFIED WELDERS USING E70 XX ELECTRODES. USE ONLY PRE-QUALIFIED WELDS AS DEFINED BY AWS.
5. PROVIDE COLD-FORMED STEEL FRAMING MEMBERS OF THE SHAPE, SIZE, AND GAGE SHOWN ON THE PLANS. PROVIDE MINIMUM SECTION PROPERTIES INDICATED. ALL COLD-FORMED STEEL FRAMING SHALL CONFORM TO THE AISI "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS."
6. FOR BOLTED CONNECTIONS, USE 3/4" DIA., BEARING-TYPE, A325 BOLTS WITH A MINIMUM OF TWO BOLTS, UNO.
7. FOR NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING, USE 5/8" DIA. A307 BOLTS, UNO.
8. PREPARE AND PAINT IN ACCORDANCE WITH THE PAINT MANUFACTURERS WRITTEN INSTRUCTIONS, UNO.
9. TOUCH UP ALL FIELD DRILLING, WELDING AND CUT SURFACES WITH 2 COATS OF GALVACON (ZINC RICH PAINT) OR APPROVED EQUAL.

SPECIAL INSPECTIONS:

1. WHEN REQUIRED, PROVIDE SPECIAL INSPECTIONS PERFORMED BY AN INDEPENDENT INSPECTOR, APPROVED BY OWNER'S REPRESENTATIVE AND THE LOCAL JURISDICTION.
2. THE SPECIAL INSPECTOR SHALL PROVIDE A COPY OF THE REPORT TO THE OWNER'S REPRESENTATIVE, STRUCTURAL ENGINEER, CONTRACTOR, AND BUILDING OFFICIAL.



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CHECKED BY:CW

APPV'D:CM

SUBMITTALS				
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CROWN SITE NAME:

CORRAL BLUFFS

CROWN SITE NUMBER:

855759

SITE ADDRESS:

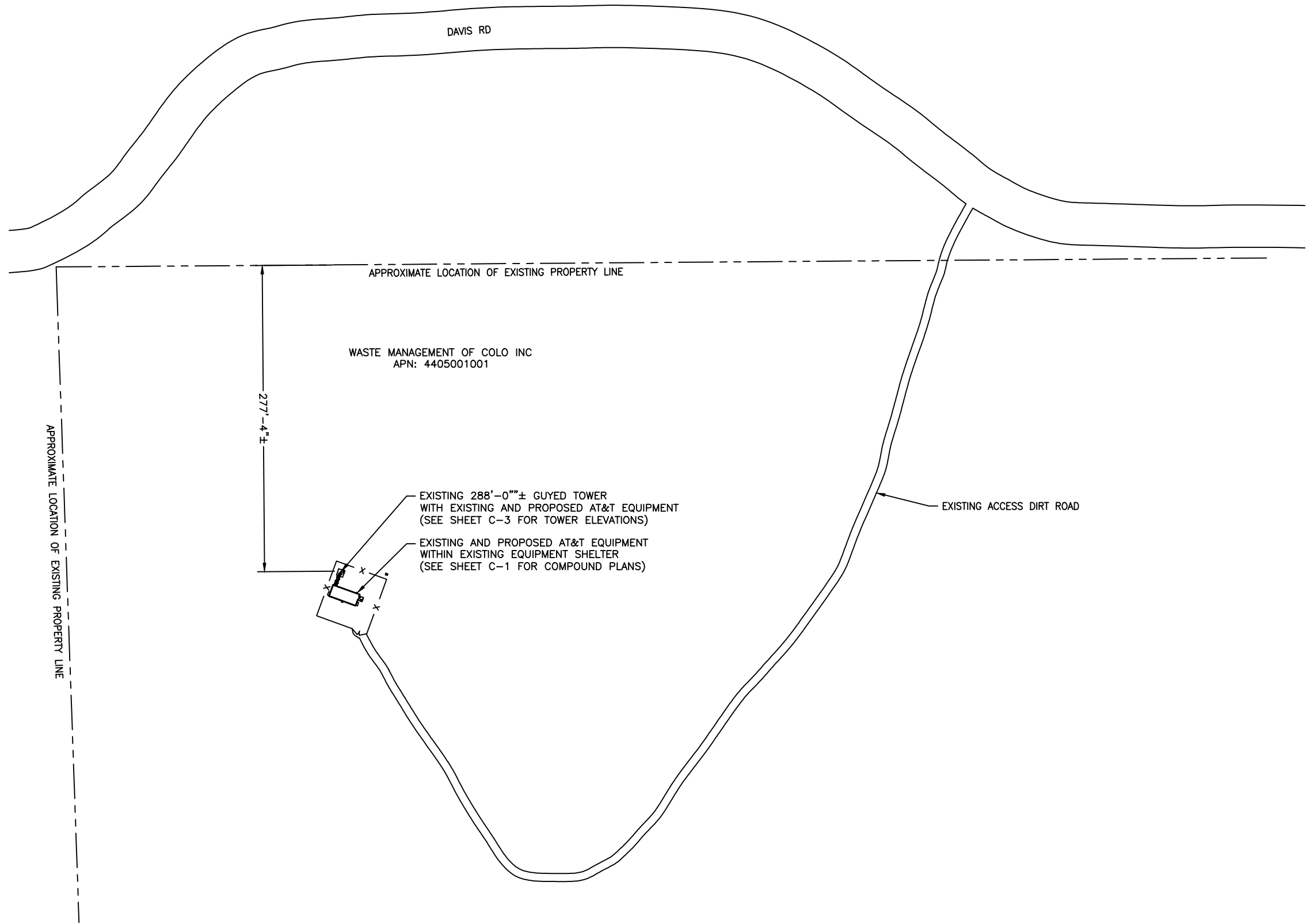
BLANEY ROAD
COLORADO SPRINGS, CO 80929

SHEET TITLE

GENERAL NOTES

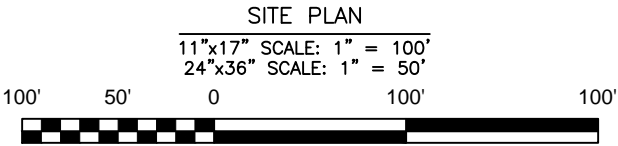
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GN-2



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PREPARED FOR:

PREPARED BY:

2227 W. PECOS ROAD, SUITE 4,
CHANDLER AZ 85224

SIGNED, 3 DEC 2019

DRAWN BY: AK
CHECKED BY: CW
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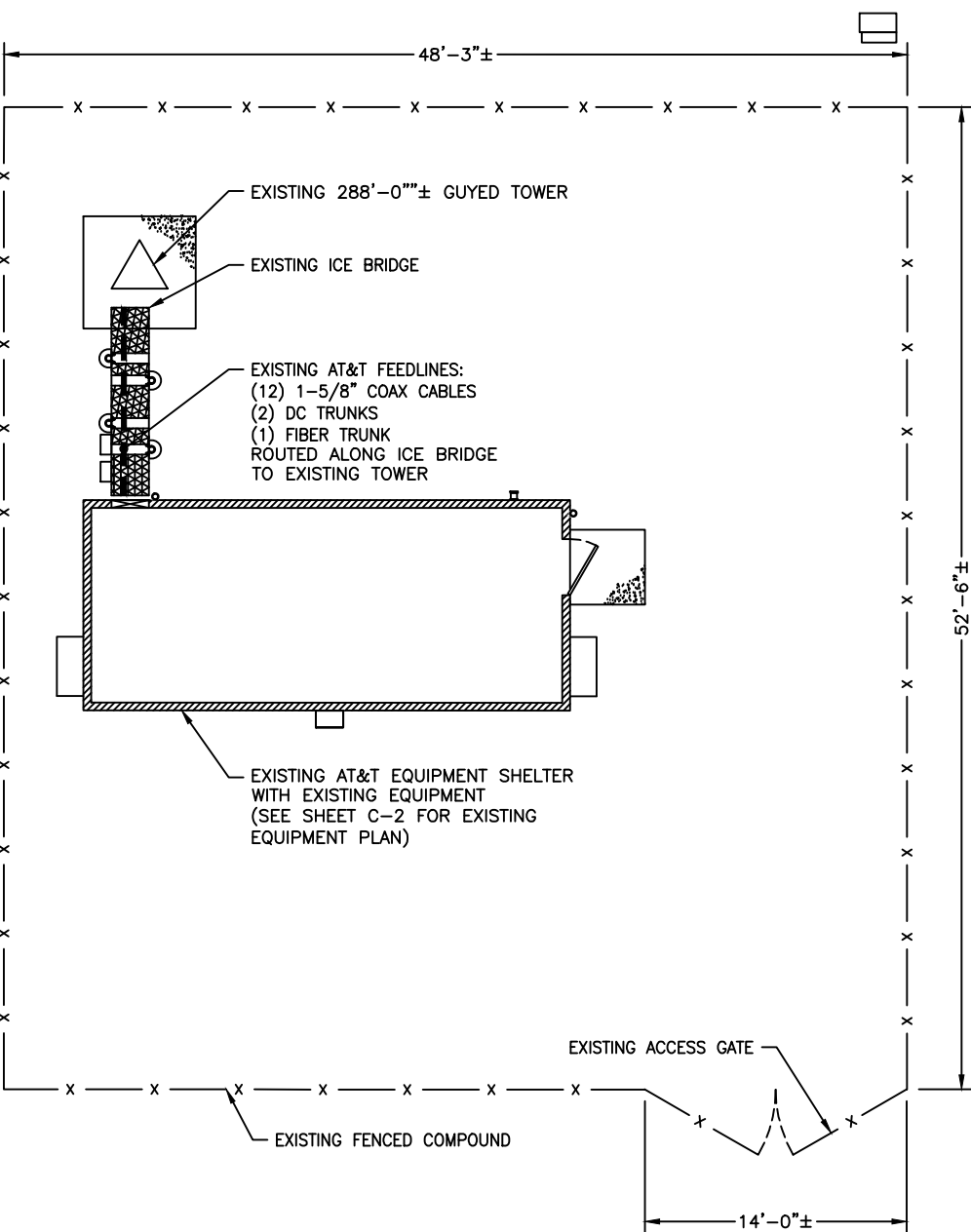
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855759

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SHEET TITLE
SITE PLAN

SHEET NUMBER
S-1

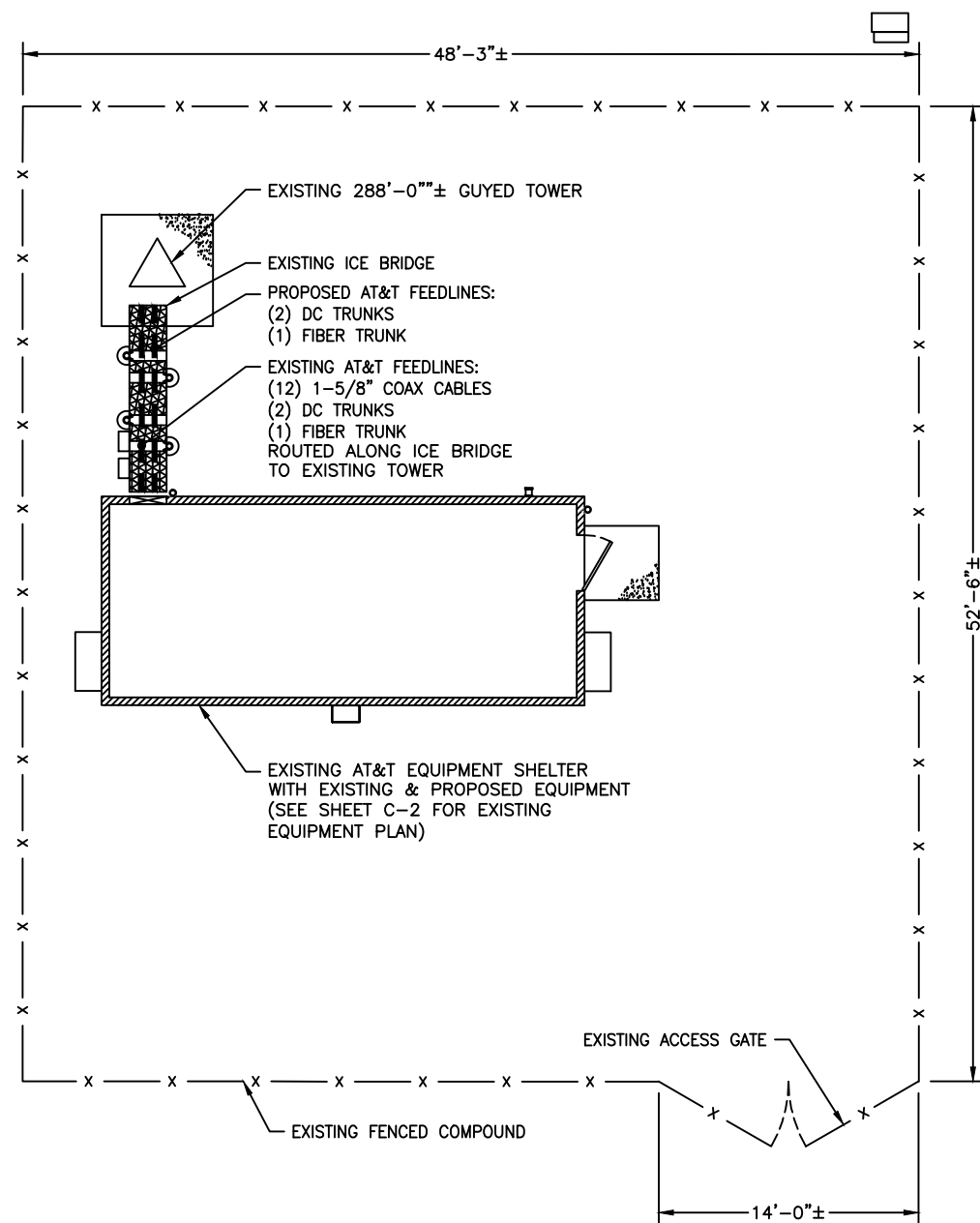
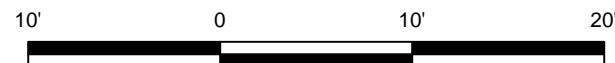


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EXISTING COMPOUND PLAN

11"x17" SCALE: 1" = 10'
24"x36" SCALE: 1" = 5'



PROPOSED COMPOUND PLAN

11"x17" SCALE: 1" = 10'
24"x36" SCALE: 1" = 5'



PREPARED FOR:



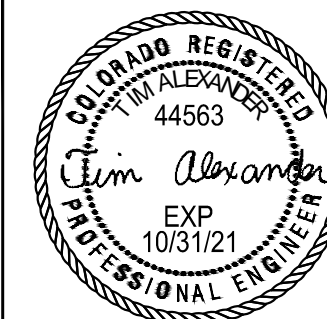
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PREPARED BY:



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CROWN SITE NUMBER:

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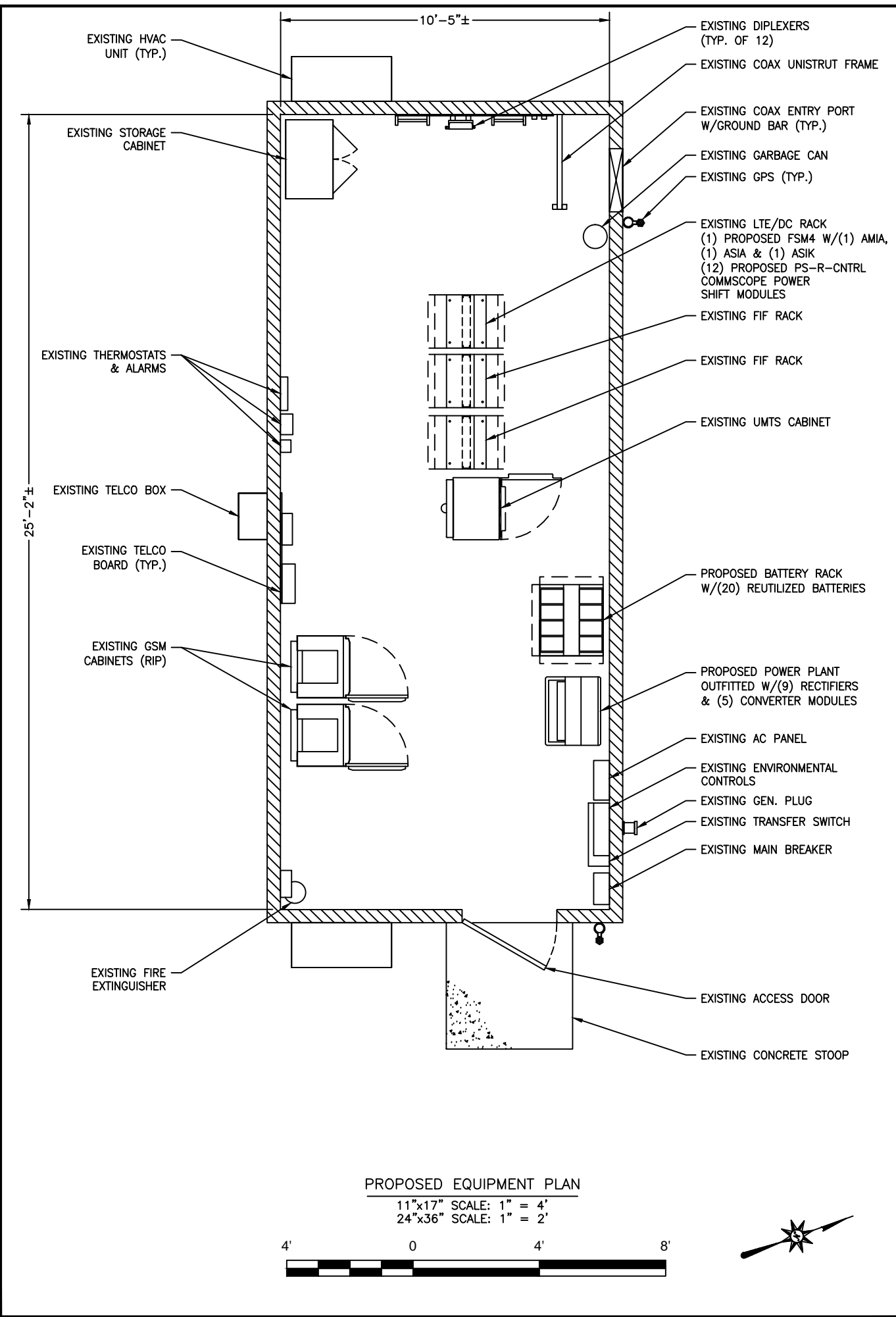
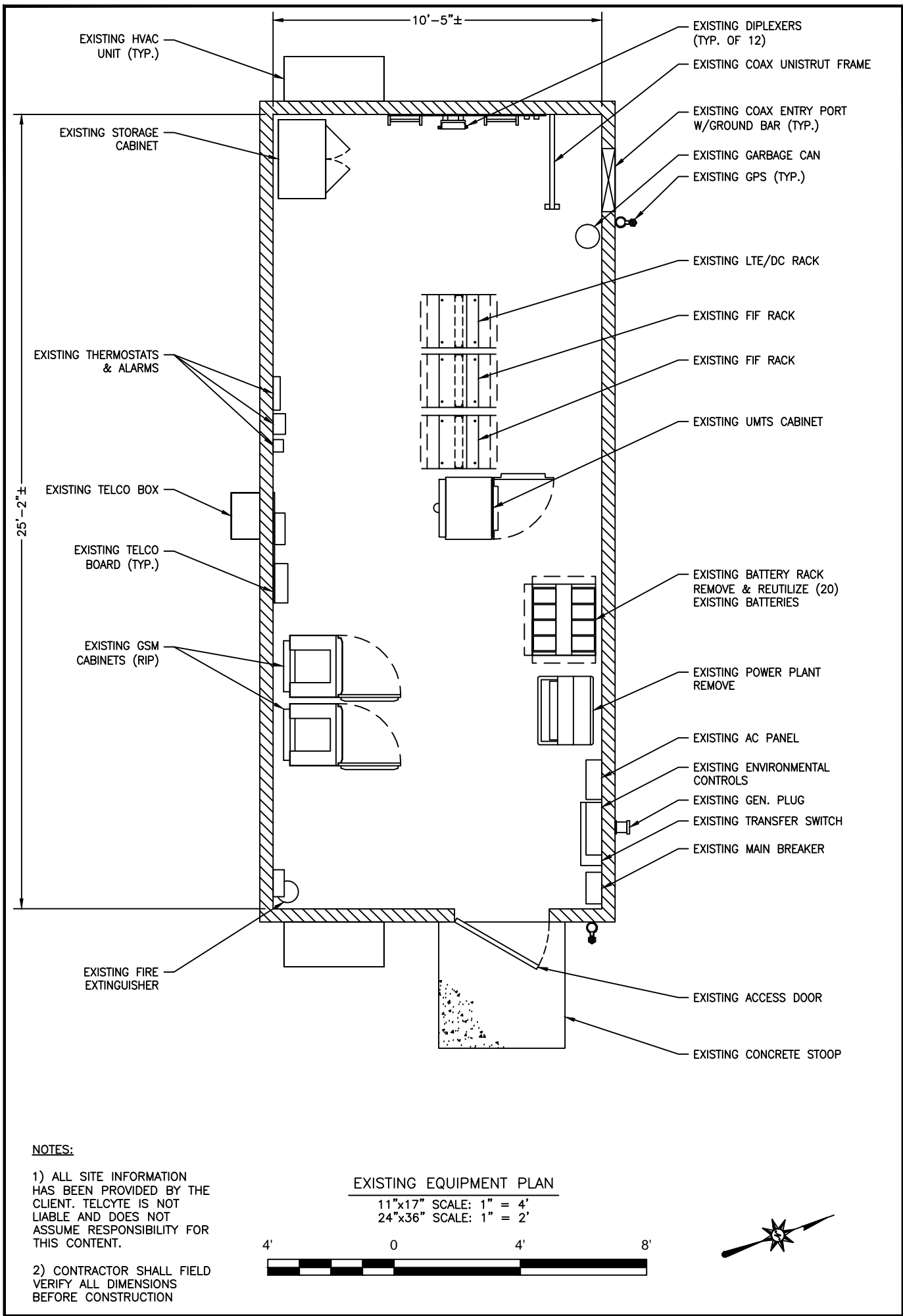
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COLORADO SPRINGS, CO 80929

SHEET TITLE

COMPOUND PLANS

SHEET NUMBER

C-1



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PREPARED FOR:

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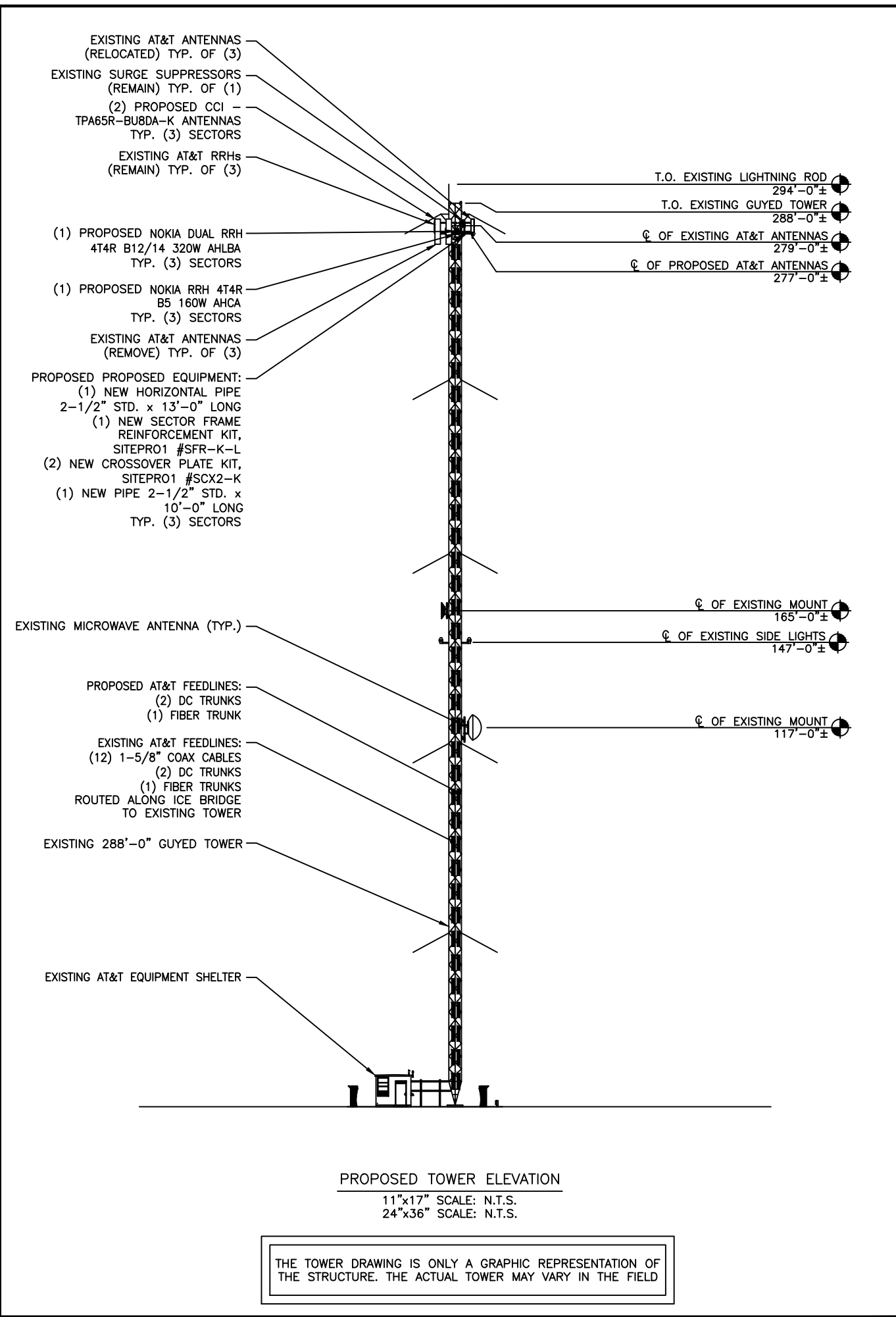
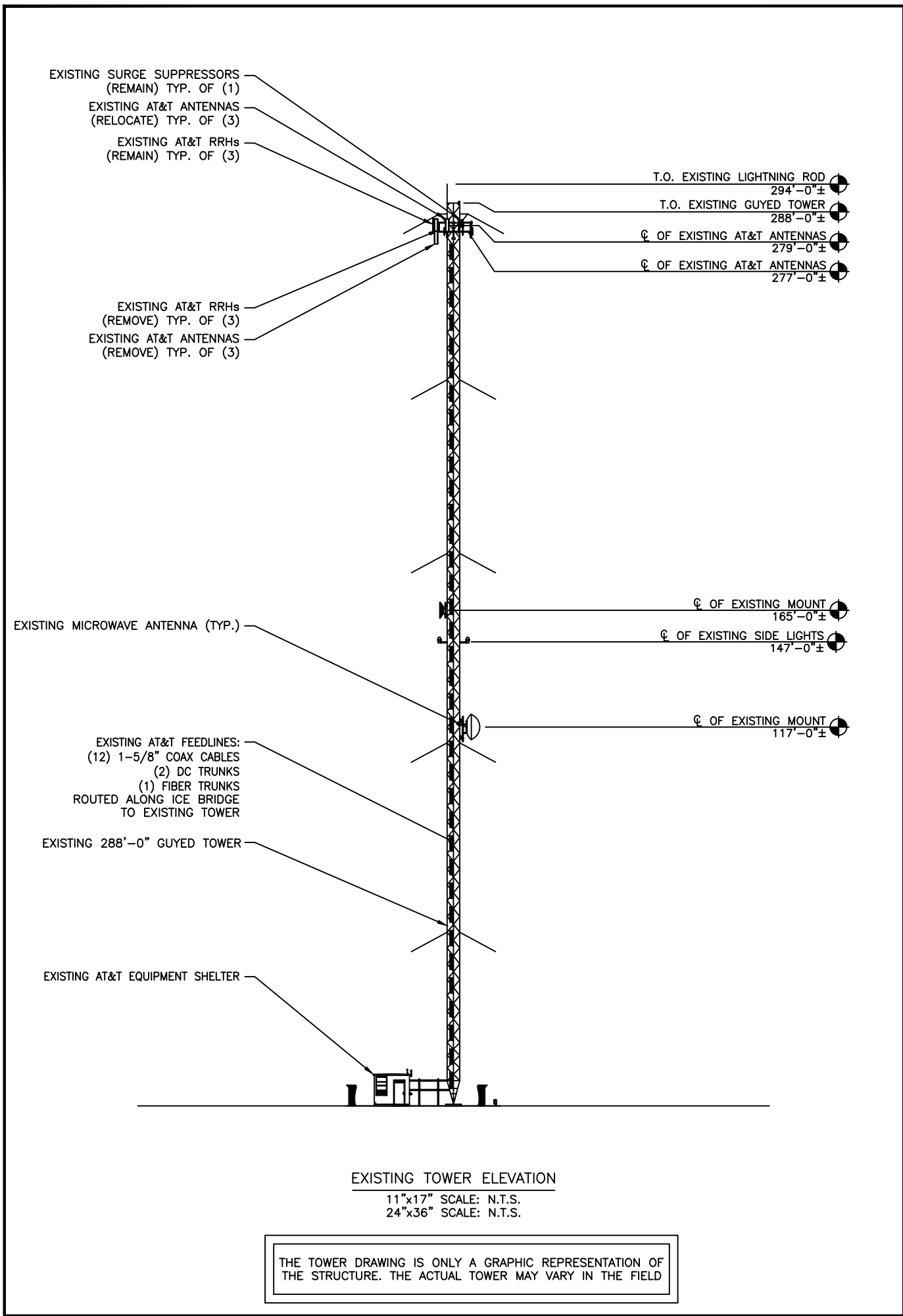
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CORRAL BLUFFS

CROWN SITE NUMBER:
855759

SITE ADDRESS:
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SHEET TITLE
EQUIPMENT PLANS

SHEET NUMBER
C-2



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PREPARED FOR:

PREPARED BY:

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CHANDLER AZ 85224

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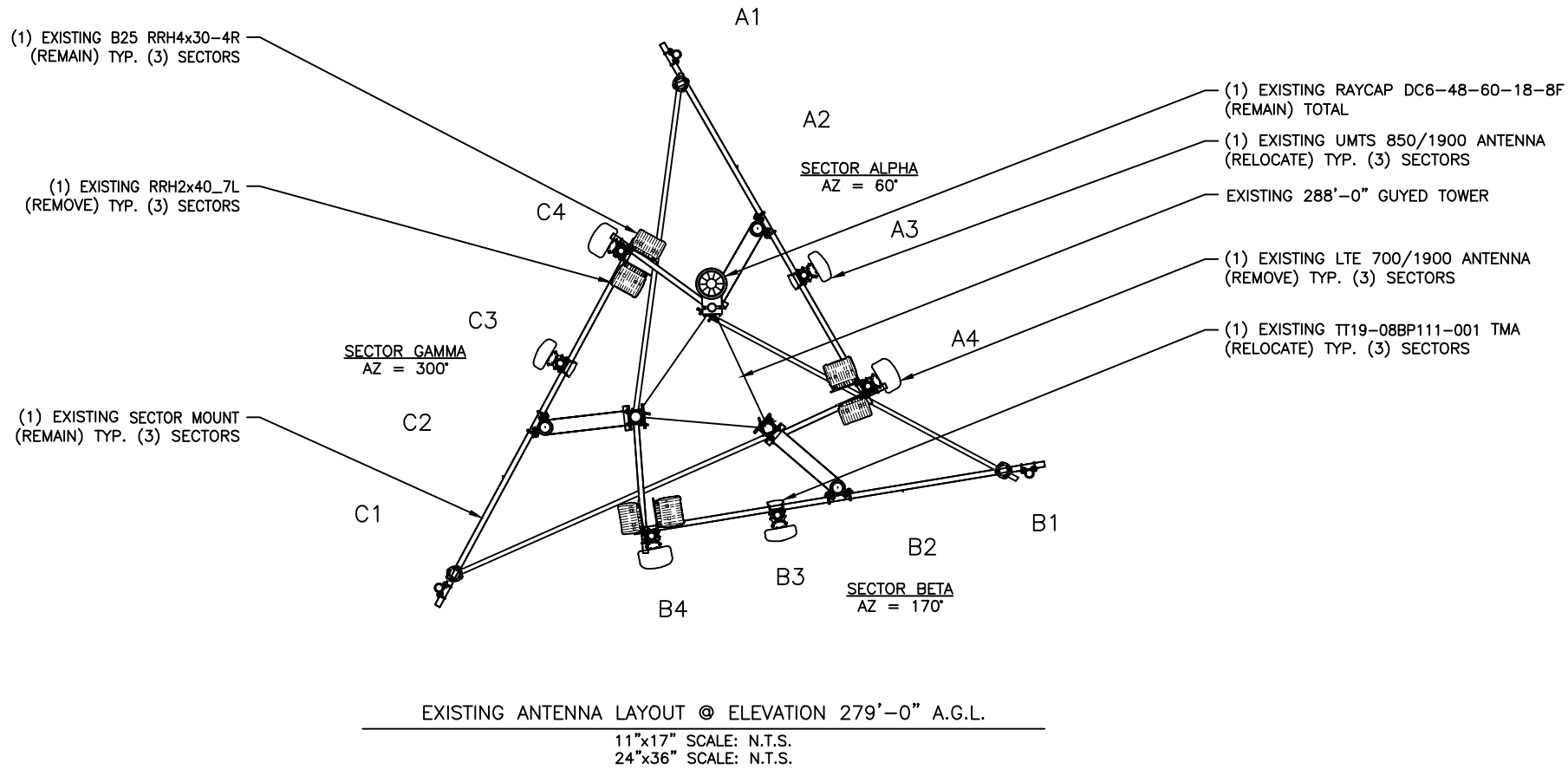
CROWN SITE NAME:
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CROWN SITE NUMBER:
855759

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SHEET TITLE
TOWER ELEVATIONS

SHEET NUMBER
C-3



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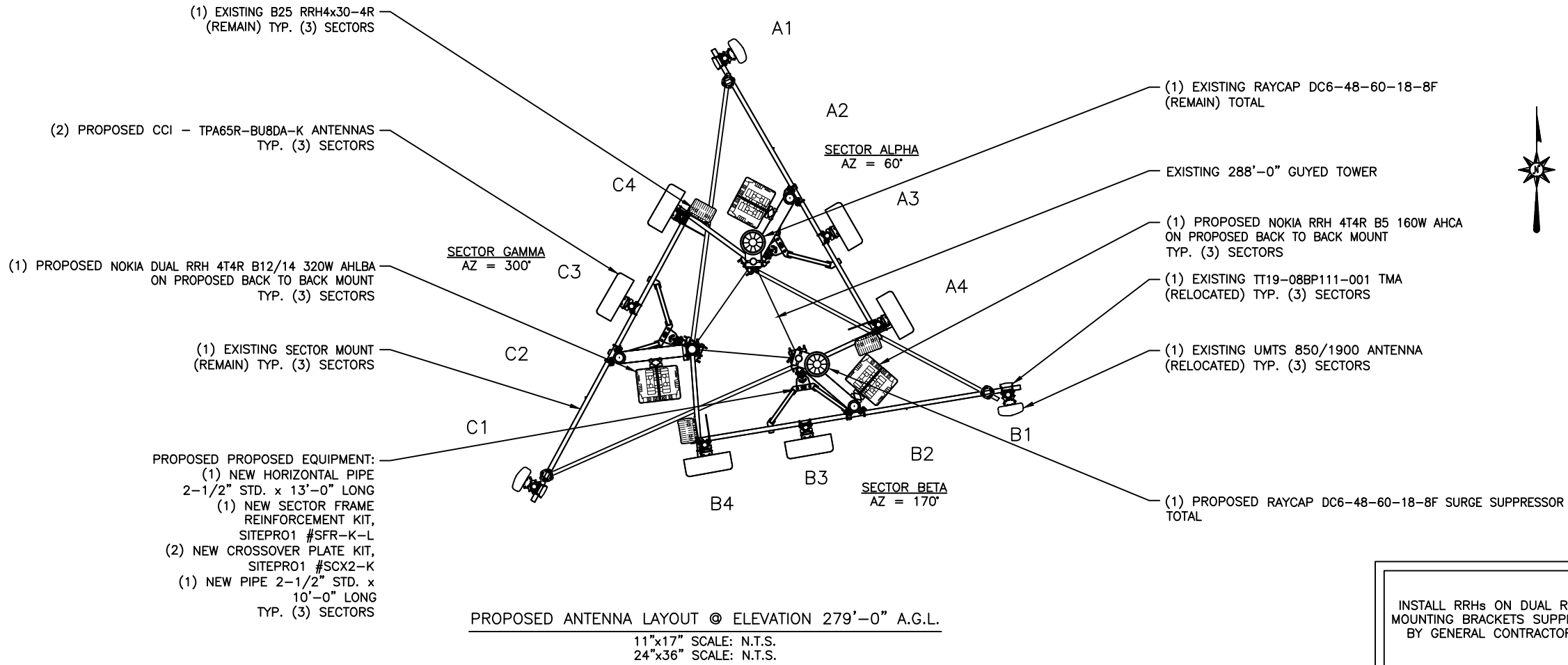
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CROWN SITE NUMBER:
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SHEET TITLE
ANTENNA LAYOUTS

SHEET NUMBER
C-4



INSTALL RRHs ON DUAL RRH MOUNTING BRACKETS SUPPLIED BY GENERAL CONTRACTOR.

(P) = PROPOSED									
FINAL ANTENNA & CABLE SCHEDULE									
SECTOR	MARK	BAND	ANTENNA MAKE/MODEL	ANTENNA HEIGHT	ANTENNA AZIMUTH	TMA QTY./TYPE	RADIO QTY./TYPE	SURGE PROTECTION QTY./TYPE	CABLE QTY./TYPE
ALPHA	A1	UMTS 850/1900	POWERWAVE – P65–15–XLH–RR	279’–0”	60°	(1) TT19–08BP111–001	–	(1) DC6–48–60–18–8F	(4) 1–5/8” COAX CABLES (1) FIBER TRUNKS (2) DC TRUNKS
	A2	–	–	–		–			
	A3	LTE 850/5G 850	(P) CCI – TPA65R–BU8DA–K	277’–0”		–	(P) (1) NOKIA RRH 4T4R B5 160W AHCA		
	A4	LTE 700/1900	(P) CCI – TPA65R–BU8DA–K			–	(P) (1) NOKIA DUAL RRH 4T4R B12/14 320W AHLBA (1) RRH4x30–4R		
BETA	B1	UMTS 850/1900	POWERWAVE – P65–15–XLH–RR	279’–0”	170°	(1) TT19–08BP111–001	–	(P) (1) DC6–48–60–18–8F	(4) 1–5/8” COAX CABLES (P) (1) FIBER TRUNKS (P) (2) DC TRUNKS
	B2	–	–	–		–			
	B3	LTE 850/5G 850	(P) CCI – TPA65R–BU8DA–K	277’–0”		–	(P) (1) NOKIA RRH 4T4R B5 160W AHCA		
	B4	LTE 700/1900	(P) CCI – TPA65R–BU8DA–K			–	(P) (1) NOKIA DUAL RRH 4T4R B12/14 320W AHLBA (1) RRH4x30–4R		
GAMMA	C1	UMTS 850/1900	POWERWAVE – P65–15–XLH–RR	279’–0”	300°	(1) TT19–08BP111–001	–	–	(4) 1–5/8” COAX CABLES
	C2	–	–	–		–			
	C3	LTE 850/5G 850	(P) CCI – TPA65R–BU8DA–K	277’–0”		–	(P) (1) NOKIA RRH 4T4R B5 160W AHCA		
	C4	LTE 700/1900	(P) CCI – TPA65R–BU8DA–K			–	(P) (1) NOKIA DUAL RRH 4T4R B12/14 320W AHLBA (1) RRH4x30–4R		

PREPARED FOR:



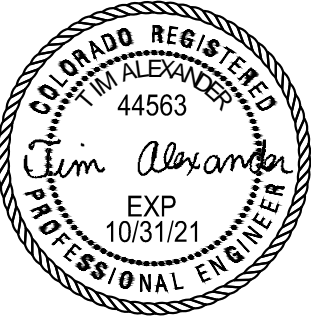
PREPARED FOR:



PREPARED BY:



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CHANDLER AZ 85224



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APPV'D:CM

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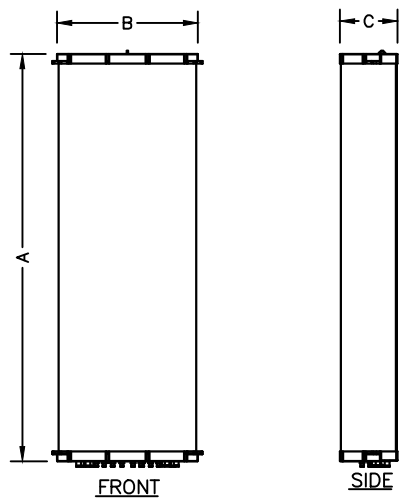
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CORRAL BLUFFS

CROWN SITE NUMBER:
855759

SITE ADDRESS:
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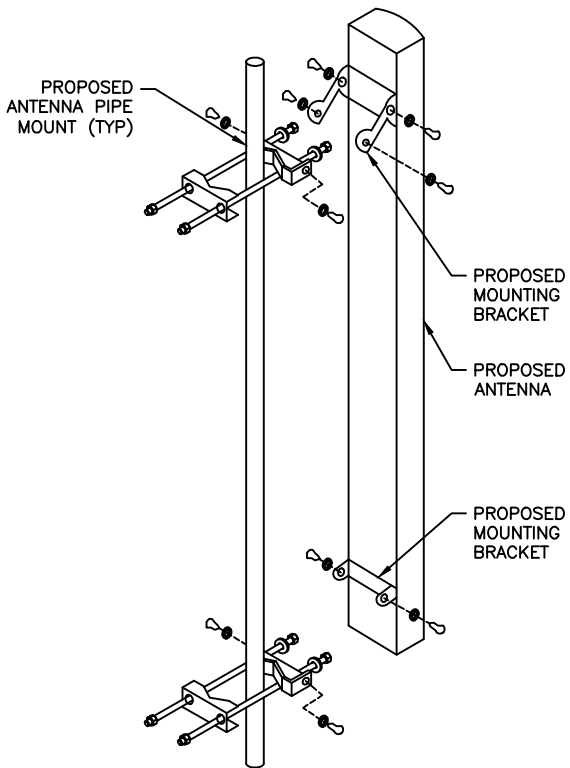
SHEET TITLE
FINAL RF EQUIPMENT SCHEDULE

SHEET NUMBER
C-5

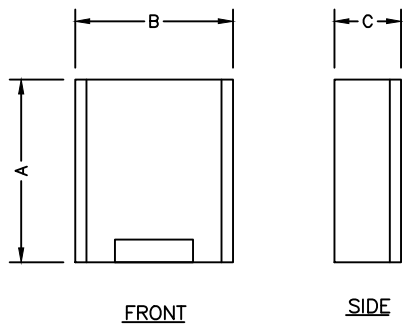


ANTENNA SPECIFICATIONS				
MODEL	LENGTH (A)	WIDTH (B)	DEPTH (C)	WEIGHT (lb)
CCI – TPA65R–BU8DA–K	96.0"	21.0"	7.8"	82.5

ANTENNA SPECIFICATIONS
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.

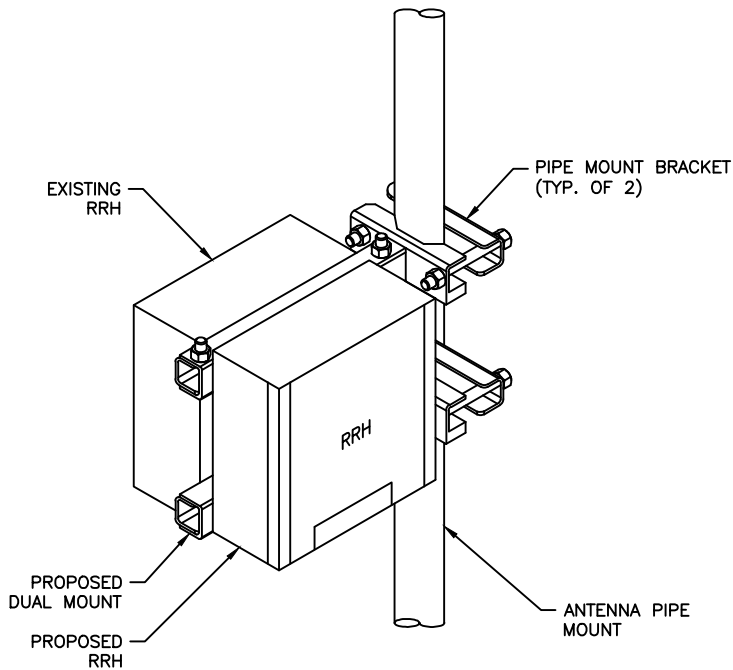


ANTENNA MOUNTING
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.



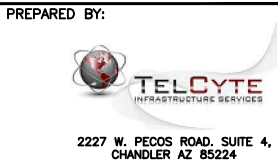
RADIO SPECIFICATIONS				
MODEL	LENGTH (A)	WIDTH (B)	DEPTH (C)	WEIGHT (lb)
NOKIA – 4T4R B12/B14 AHLBA	28.70"	15.35"	9.45"	101.40
NOKIA – 4T4R B5 AHCA	13.30"	11.60"	6.50"	35.27

RADIO SPECIFICATIONS
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.



- NOTES:
- RRH MANUFACTURER VIA AT&T SUPPLIES RRH, RRH PIPE–MOUNTING BRACKET. SUBCONTRACTOR SHALL SUPPLY PIPE AND INSTALL ALL MOUNTING HARDWARE INCLUDING RRH PIPE–MOUNTING BRACKET.
 - FOR PIPE DIAMETERS FROM 6" TO 15", AT&T CAN SUPPLY A PAIR OF PIPE MOUNTING METAL BANDS WITH BOLTING WELDMENT.
 - NO PAINTING OF THE RRH OR SOLAR SHIELD IS ALLOWED

DUAL RRH MOUNTING BRACKET
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.



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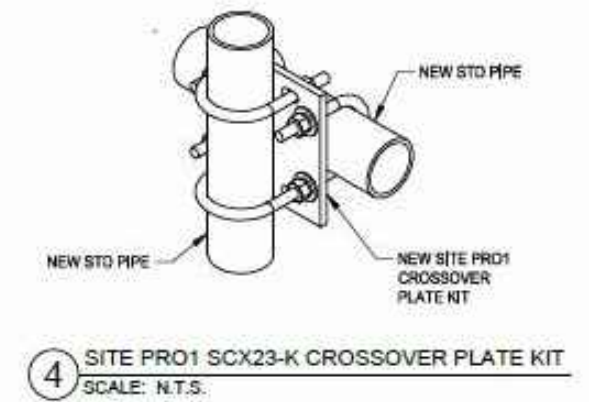
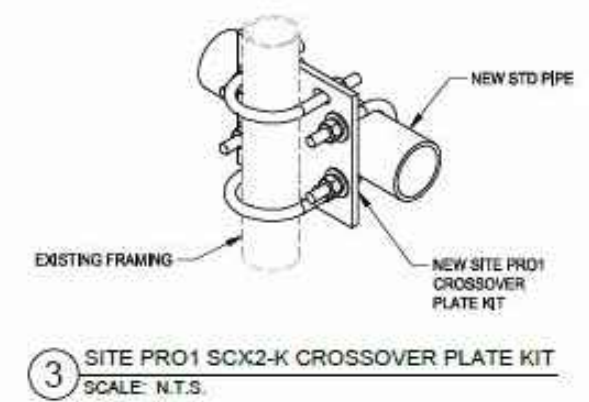
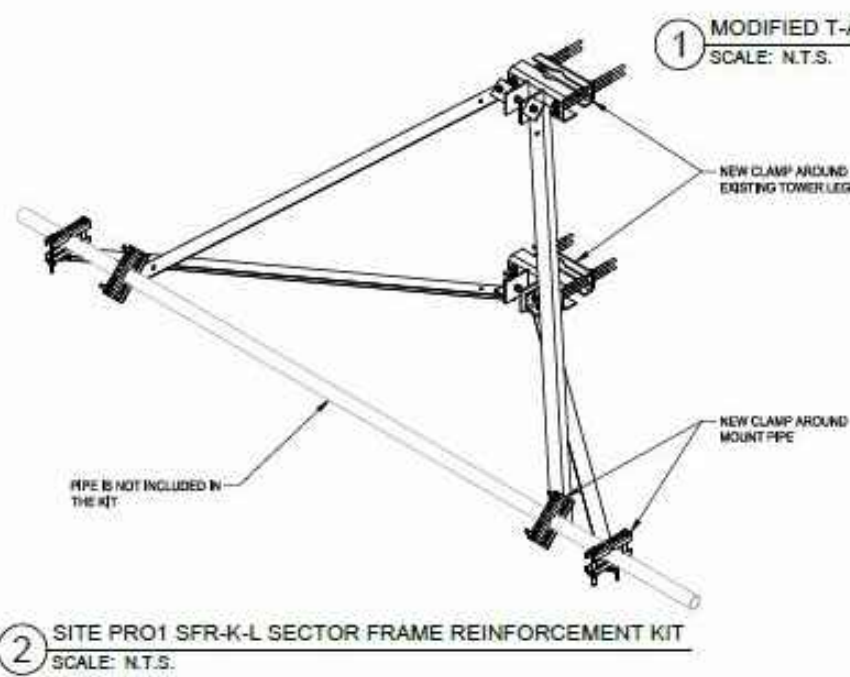
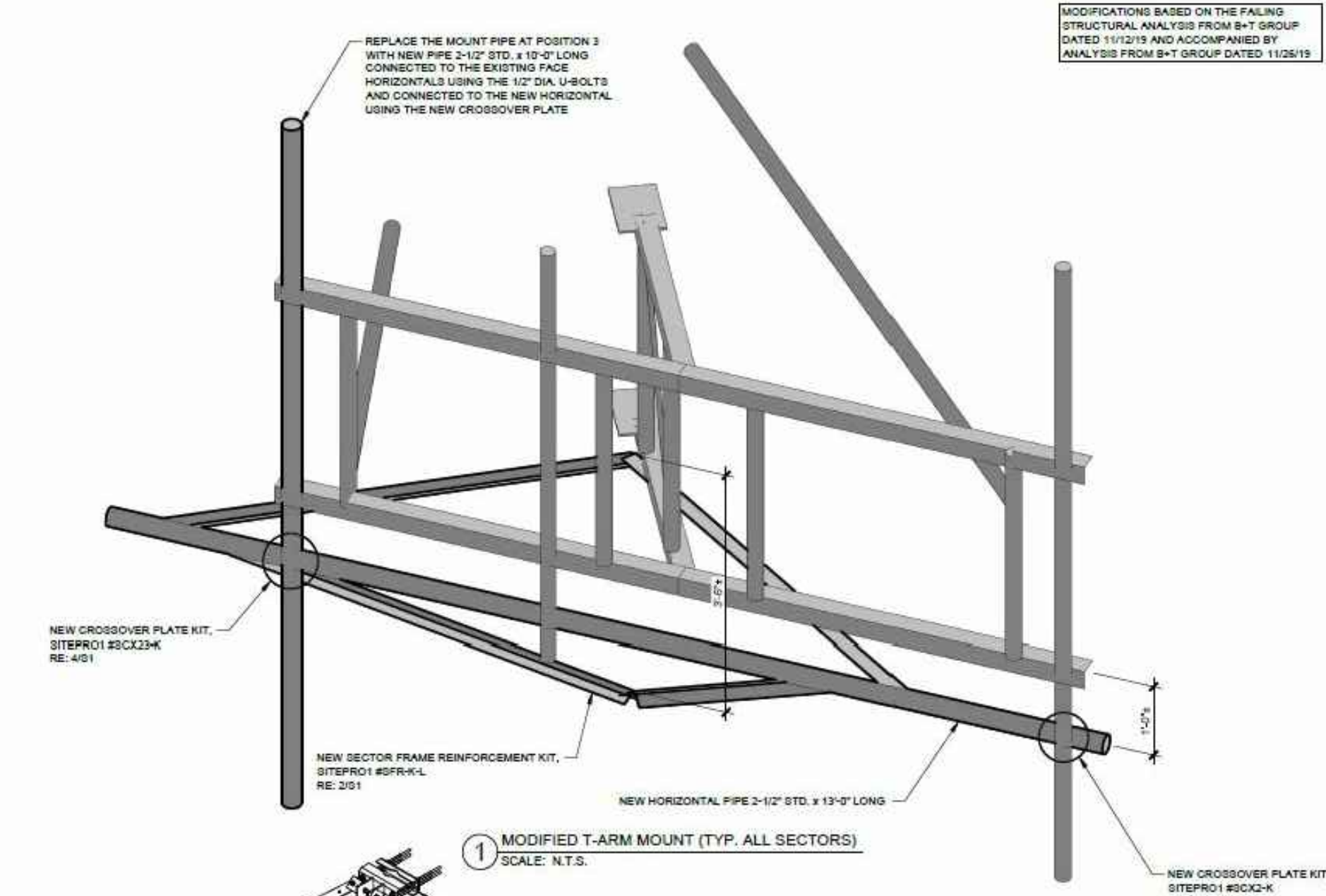
CROWN SITE NAME:
CORRAL BLUFFS

CROWN SITE NUMBER:
855759

SITE ADDRESS:
BLANEY ROAD
COLORADO SPRINGS, CO 80929

SHEET TITLE
ANTENNA DETAILS

SHEET NUMBER
C-6



MODIFICATIONS BASED ON THE FAILING
STRUCTURAL ANALYSIS FROM B+T GROUP
DATED 11/12/19 AND ACCOMPANIED BY
ANALYSIS FROM B+T GROUP DATED 11/26/19

GENERAL NOTES

- 1.1 CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO THE MOBILIZING ON THE SITE FOR INSTALLATION OF THE MOUNT MODIFICATION AND SHALL NOTIFY THE ENGINEER OF RECORD IF THE FIELD CONDITIONS VARY FROM WHAT IS SHOWN ON THE DRAWINGS. IN ADDITION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD PRIOR TO MOBILIZING AT THE SITE IF THE MOUNT REINFORCEMENT SHOWN WILL NEED TO BE REVISED TO SATISFY FIELD CONDITIONS.
- 1.2 CONTRACTOR SHALL RELOCATE NON-ANTENNA EQUIPMENT ALONG THE EXISTING PIPE MOUNT THAT IT IS MOUNTED TO, TO ALLOW FOR INSTALLATION OF MOUNT REINFORCEMENT. ENGINEER OF RECORD WILL BE NOTIFIED IF NON-ANTENNA EQUIPMENT NEEDS TO BE RELOCATED TO ANY OTHER EXISTING MEMBERS TO ALLOW FOR INSTALLATION OF MOUNT MODIFICATION.
- 1.3 MODIFICATION SHALL BE COMPLETED PRIOR TO ADDING THE PROPOSED APPURTENANCES.
- 1.4 ALL WORK SHALL COMPLY WITH THE TIA-222-H STANDARD, ANSI/TIA-322 AND ANSI/ASSE A10.48, AS WELL AS ANY OTHER GOVERNING BUILDING CODES.
- 1.5 FIELD WORK WILL BE DONE AROUND EXISTING COAXIAL CABLE AND EQUIPMENT. ALL WORK SHALL BE DONE IN A MANNER SUCH THAT NO DAMAGE OCCURS TO THE EXISTING EQUIPMENT OR THE STRUCTURE. A MINIMUM OF TWO COATS OF ZINGA COLD GALVANIZING COMPOUND (OR APPROVED EQUIVALENT) SHALL BE APPLIED TO ANY FIELD CUTS OR FIELD DRILLED HOLES.
- 1.7 THE USE OF A GAS TORCH OR WELDER WILL NOT BE PERMITTED ON THE TOWER WITHOUT THE CONSENT OF THE OWNER.
- 1.8 ALL FIELD CONNECTIONS SHALL BE MADE WITH A325N BOLTS, U.N.O.
- 1.9 IN LIEU OF TEMPORARY BRACING, CONTRACTOR MAY HAVE A STABILITY ANALYSIS PERFORMED BY AN ENGINEER LICENSED IN THE STATE THE TOWER IS LOCATED. THE ANALYSIS SHALL USE A MINIMUM WIND SPEED OF 45 mph (3-SEC) PER ANSI/TIA-322 AND ANSI/ASSE A10.48.
- 1.10 ALL CUTTING AND WELDING ACTIVITIES SHALL BE CONDUCTED IN ACCORDANCE WITH COUSA POLICY "CUTTING AND WELDING PLAN" (DOC #ENG-PLN-10015) ON AN ONGOING BASIS THROUGHOUT THE ENTIRE LIFE OF THE PROJECT.
- 1.11 DIMENSIONS WITH "±" MUST BE WITHIN 3" OF THE INDICATED DIMENSION.

FABRICATION

- 2.1 ALL WORK SHALL BE DONE IN ACCORDANCE WITH A.I.S.C. "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS."
- 2.2 STRUCTURAL STEEL SHALL MEET THE FOLLOWING SPECIFICATIONS:

STEEL PIPE, U.N.O.	YIELD	ASTM SPECS
	35ksi	A53 GR.B
- 2.3 ALL NEW MATERIAL INCLUDING STRUCTURAL STEEL AND FASTENERS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 AND A153.
- 2.4 WELDING SHALL MEET ANSI/AWS D1.1 STRUCTURAL WELDING CODE (LATEST REVISION). ELECTRODES SHALL BE E80 SERIES.
- 2.5 CONTRACTOR SHALL PROVIDE SHOP FABRICATION DRAWINGS TO B+T GROUP 5 DAYS PRIOR TO FABRICATION.

PREPARED FOR:

PREPARED FOR:

PREPARED BY:

2227 W. PECOS ROAD, SUITE 4,
CHANDLER AZ 85224

SIGNED, 3 DEC 2019

DRAWN BY: AK
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APPV'D: CM

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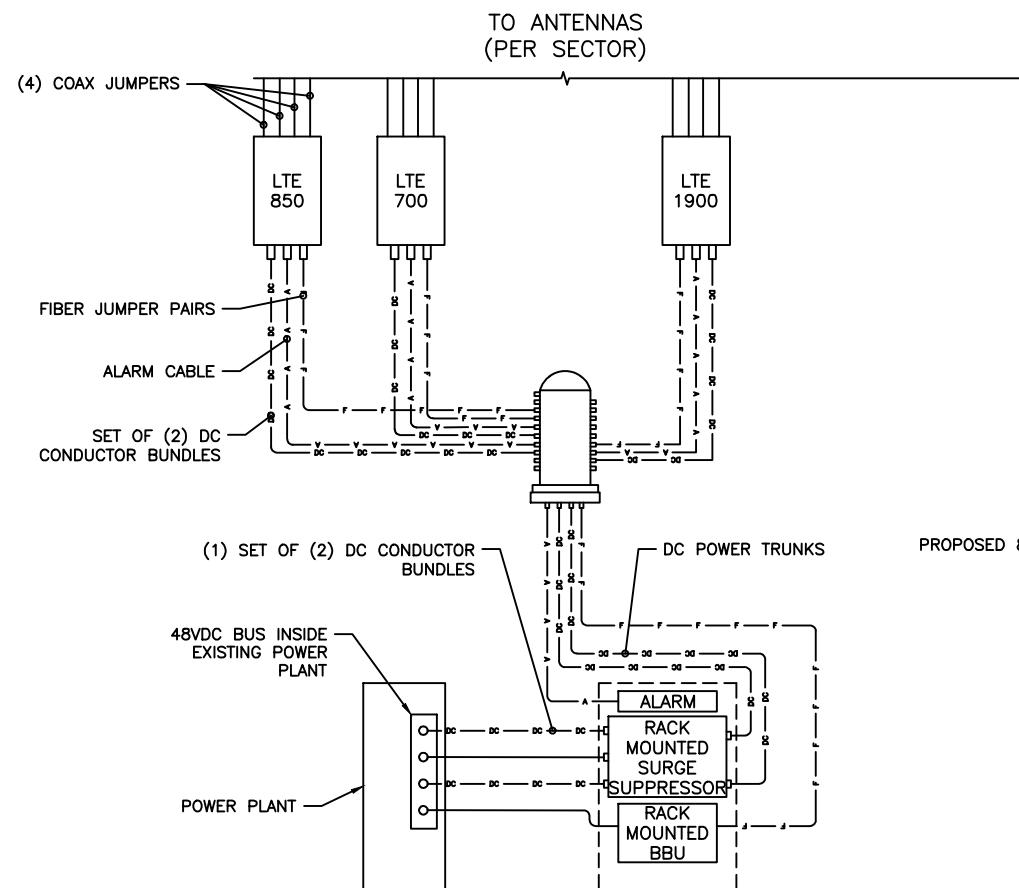
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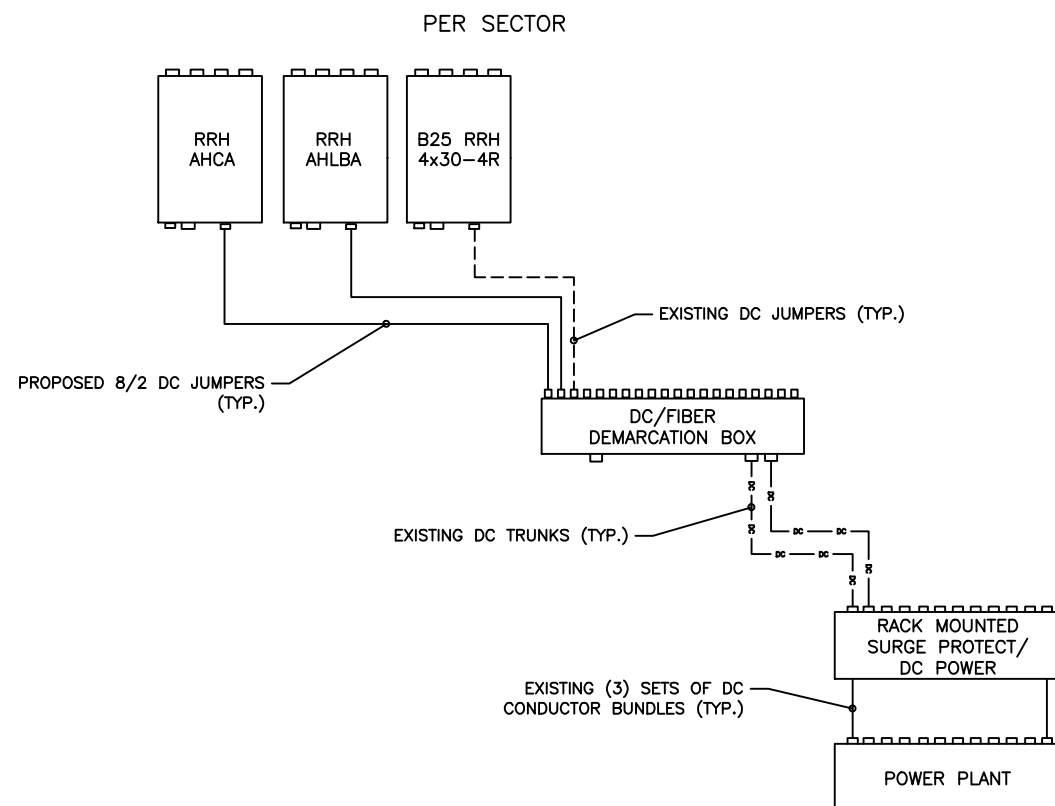
SHEET TITLE
ANTENNA DETAILS

SHEET NUMBER
C-7



DC & FIBER SYSTEM SCHEMATIC

11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.



DC WIRING DIAGRAM

11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.

NOTES:

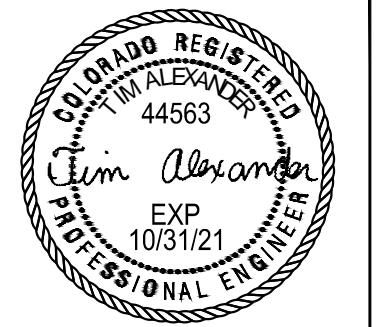
1. REFER TO CHART FOR CABLE QUANTITIES, SIZES AND LENGTHS.
2. CABLE LENGTH CALCULATIONS ASSUMES TRUNK CABLE SIZE OF 8-AWG.

CABLE LENGTH TABLE												
SECTOR	PDF	DISTANCE & CABLE TYPE		DC—6	DISTANCE & CABLE TYPE		SQUID	DISTANCE & CABLE TYPE		RRH	TOTAL CABLE LENGTH	FINAL VOLTAGE
ALPHA		14'	#12 AWG		328'	(2) #8 AWG		6'	#8 AWG		348'	NEEDS POWER SHIFT
BETA		14'	#12 AWG		328'	(2) #8 AWG		6'	#8 AWG		348'	NEEDS POWER SHIFT
GAMMA		14'	#12 AWG		328'	(2) #8 AWG		6'	#8 AWG		348'	NEEDS POWER SHIFT

LTE CONDUCTOR SIZES

11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.

CABLE COUNT	
QTY.	CABLE TYPE
2	FIBER TRUNK
4	DC TRUNK



SIGNED, 3 DEC 2019

DRAWN BY: AK
CHECKED BY: CW
APPV'D: CM

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09/18/19	PRELIMINARY CD'S			JM
12/03/19	FINAL CD'S	0		AK

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AT&T SITE NUMBER:
COL02029

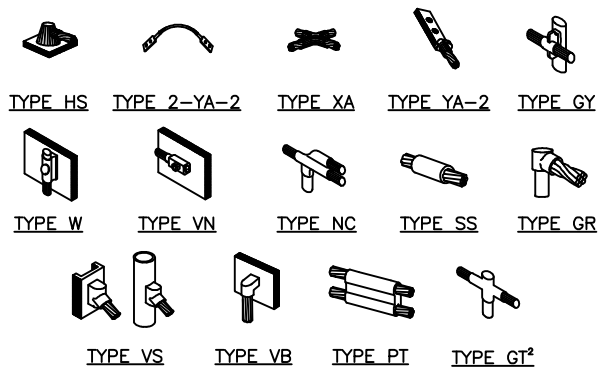
CROWN SITE NAME:
CORRAL BLUFFS

CROWN SITE NUMBER:
855759

SITE ADDRESS:
BLANEY ROAD
COLORADO SPRINGS, CO 80929

SHEET TITLE
GROUNDING NOTES
& DETAILS

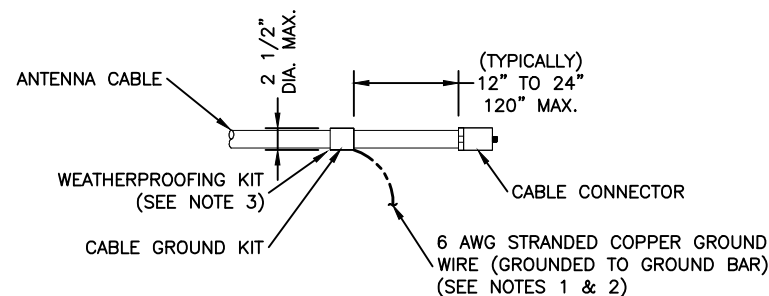
SHEET NUMBER
G-1



- NOTE:
1. ERICO EXOTHERMIC "MOLD TYPES" SHOWN HERE ARE EXAMPLES. CONSULT WITH CONSTRUCTION MANAGER FOR SPECIFIC MOLDS TO BE USED FOR THIS PROJECT.
 2. MOLD TYPE ONLY TO BE USED BELOW GRADE WHEN CONNECTING GROUND RING TO GROUND ROD.

CADWELDED GROUNDING CONNECTIONS

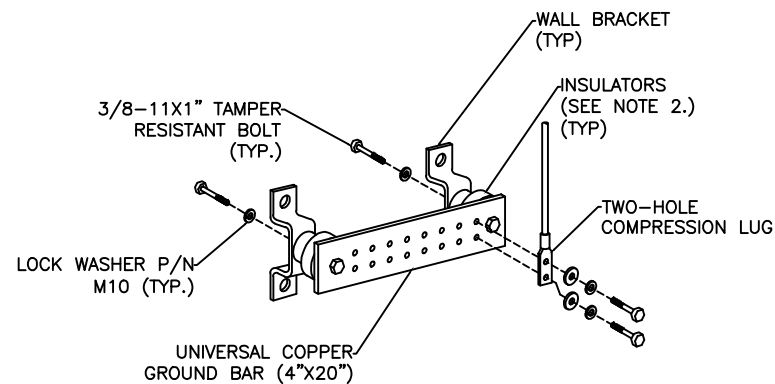
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.



- NOTES:
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. WEATHERPROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT BE USED.

CABLE GROUND KIT CONNECTION

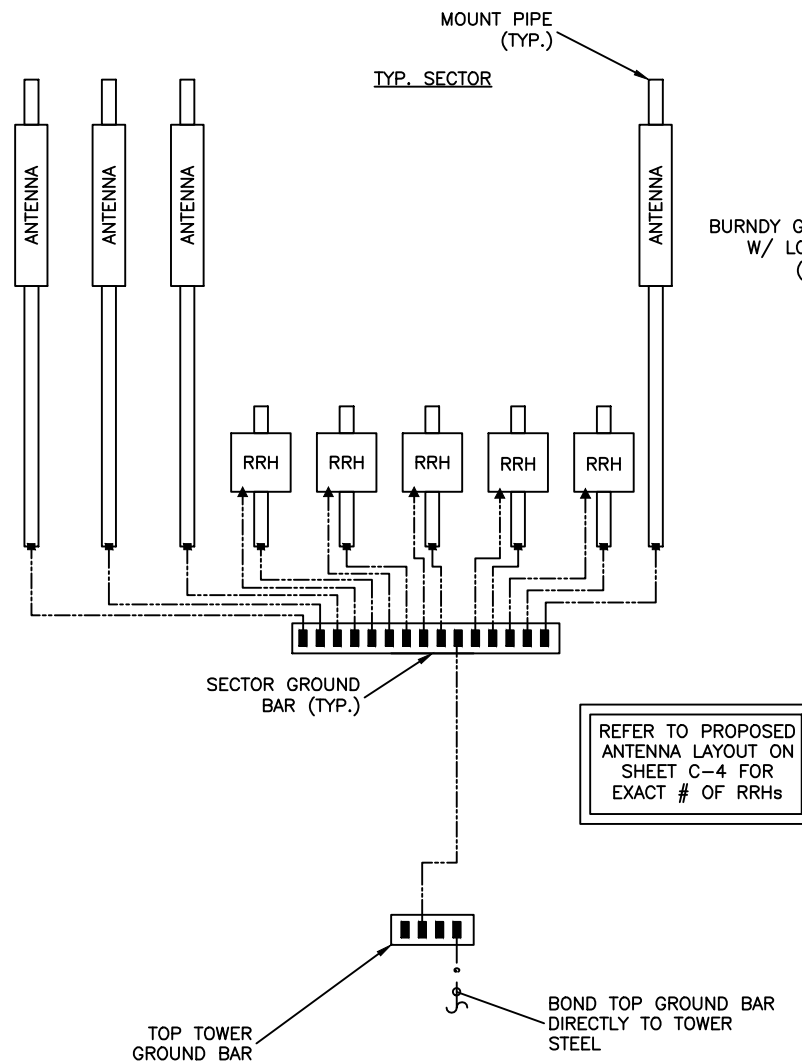
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.



- NOTE:
1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS-STD-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION. CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.
 2. OMIT INSULATOR WHEN MOUNTING TO TOWER STEEL OR PLATFORM STEEL. USE INSULATORS WHEN ATTACHING TO BUILDING OR SHELTERS.

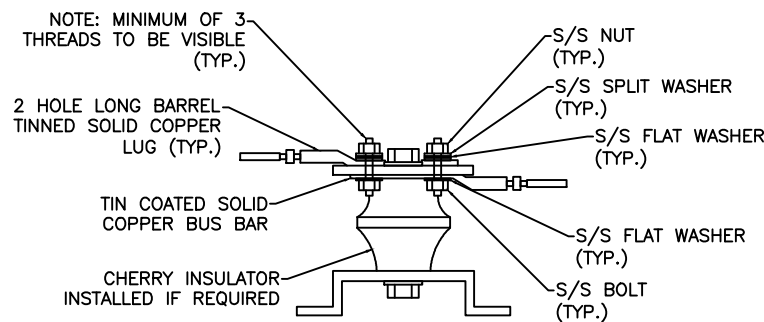
GROUND BAR DETAIL

11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.



CABLE AND GROUNDING RISER DIAGRAM

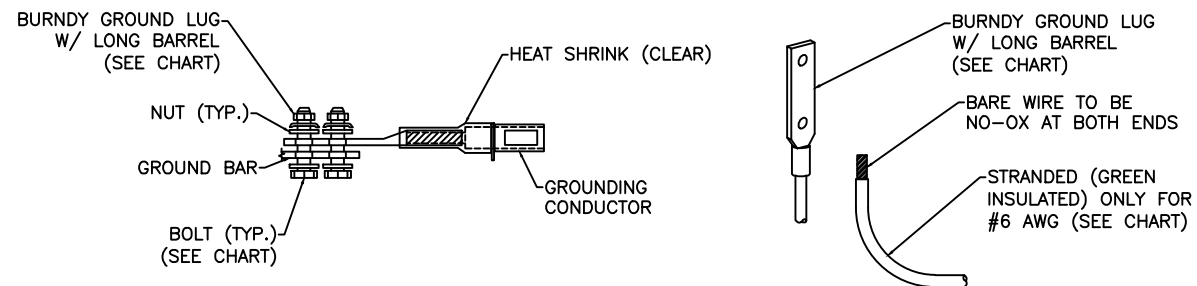
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.



LUG DETAIL

11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.

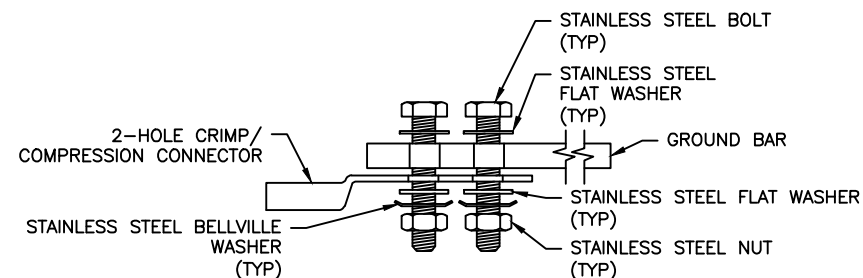
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT



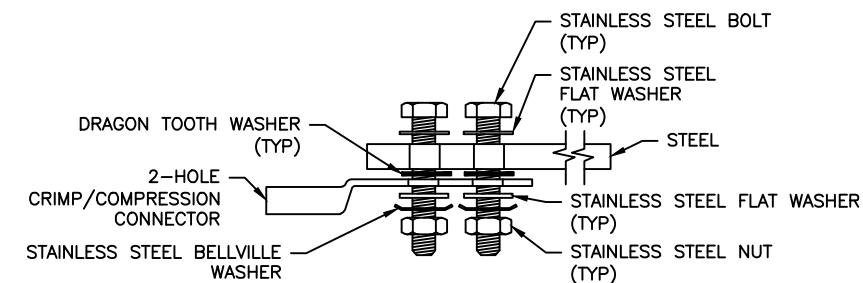
- NOTE:
1. ALL GROUNDING LUGS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. ALL HARDWARE BOLTS, NUTS, LOCK WASHERS SHALL BE STAINLESS STEEL. ALL HARDWARE ARE TO BE AS FOLLOWS: BOLT, FLAT WASHER, GROUND BAR, GROUND LUG, FLAT WASHER AND NUT.

MECHANICAL LUG CONNECTION

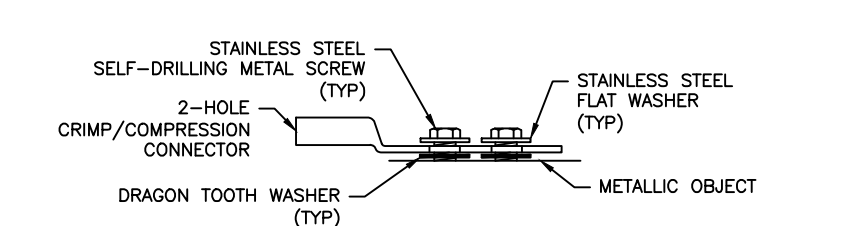
11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.



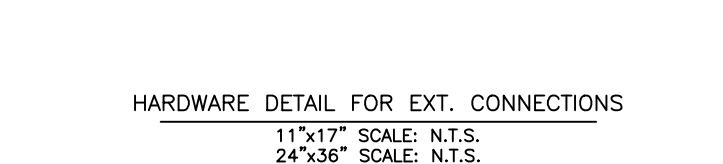
SINGLE CONNECTOR AT GROUND BARS



SINGLE CONNECTOR AT STEEL OBJECTS

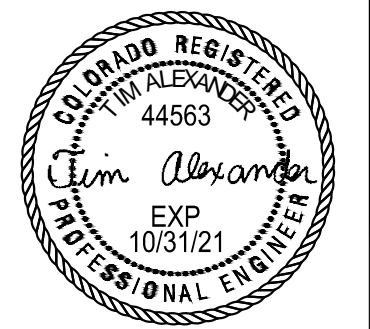
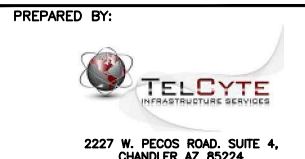


SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS



HARDWARE DETAIL FOR EXT. CONNECTIONS

11"x17" SCALE: N.T.S.
24"x36" SCALE: N.T.S.



SIGNED, 3 DEC 2019

DRAWN BY: AK
CHECKED BY: CW
APPV'D: CM

SUBMITTALS				
DATE	DESCRIPTION	REV	A	ISSUED BY
09/18/19	PRELIMINARY CD'S			JM
12/03/19	FINAL CD'S	0		AK

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COLORADO SPRINGS, CO 80929

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-2