

at&t

BLACK FOREST
7113 MARSHBERN COURT
COLORADO SPRINGS, COLORADO 80908
FA#: 10093683
NOVA PROJECT ID: WES-MW-06907
MW PTN: 3755A0LF7E | MW PACE: MRUTH038364
COU2037

MasTec
Network Solutions
 3350 E BIRCH ST, SUITE 101
 BREA, CALIFORNIA 92821

PROPRIETARY INFORMATION

THE INFORMATION CONTAINED IN THIS SET OF CONSTRUCTION DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO AT&T WIRELESS IS STRICTLY PROHIBITED.



PREPARED FOR



APPROVALS

GAMALIEL AGUILAR	03/04/20
90% CDS	DATE
GAMALIEL AGUILAR	04/10/20
100% CDS	DATE
GAMALIEL AGUILAR	04/10/20
100% CDS WITH STRUCTURALS	DATE
ALLAN WALKER	03/23/20
CONSTRUCTION	DATE
SITE ACQUISITION	DATE

PROJECT NAME
MICROWAVE UPGRADE

SITE NAME
BLACK FOREST/COU2037

FA NUMBER
10093683

7113 MARSHBERN COURT
 COLORADO SPRINGS, COLORADO 80908

DRAWING DATES

03/04/20	90% CD REVIEW (P1-B1)
04/10/20	100% FINAL CDS (P1-B2)
09/28/20	COUNTY COMMENTS (P1-B3)

SHEET TITLE

TITLE SHEET

T-1

SPECIAL INSPECTIONS

- | | |
|---|---|
| 1 CONCRETE | 13.1 VERIFY SOIL CONDITIONS ARE SUBSTANTIALLY IN CONFORMANCE WITH THE SOIL INVESTIGATION REPORT |
| 2 BOLTS INSTALLED IN CONCRETE | 13.2 VERIFY THAT FOUNDATION EXCAVATIONS EXTEND TO PROPER DEPTH AND BEARING STRATA |
| 3 CONCRETE MOMENT-RESISTING SPACE FRAME | 13.3 PROVIDE SOIL COMPACTION TEST RESULTS, DEPTH OF FILL, RELATIVE DENSITY, BEARING VALUES |
| 4 REINFORCING STEEL AND PRESTRESSING STEEL | 13.4 PROVIDE SOIL EXPANSION TEST RESULTS, EXPANSION INDEX, RECOMMENDATIONS FOR FOUNDATIONS, ON-GRADE FLOOR SLAB DESIGN FOR EACH BUILDING SITE |
| 5.1 ALL STRUCTURAL WELDING | 14 SMOKE CONTROL SYSTEM |
| 5.2 WELD TESTING DUCTILE MOMENT-RESISTING STEEL FRAME | 15 SPECIAL CASES (DESCRIBE) |
| 5.3 WELDING REINFORCING STEEL | 16 OFF-SITE FABRICATION OF BUILDING COMPONENTS |
| 6 HIGH-STRENGTH BOLTING | 17 OTHER SPECIAL INSPECTIONS AS REQUIRED BY DESIGNER |
| 7 STRUCTURAL MASONRY | |
| 8 REINFORCED GYPSUM CONCRETE | |
| 9 INSULATING CONCRETE FILL | |
| 10 SPRAY-APPLIED FIREPROOFING | |
| 11 DEEP FOUNDATIONS (PILING, DRILLED & CAISSONS) | |
| 12 SHOTCRETE | |

NO.	DESCRIPTION OF TYPE OF INSPECTION REQUIRED, LOCATION, REMARKS.

CONSULTANT TEAM

CLIENTS REPRESENTATIVE:

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DEVELOPMENT SUMMARY

APPLICANT: AT&T MOBILITY
 188 IVERNESS DRIVE WEST, SUITE 400
 ENGLEWOOD, COLORADO 80112

PROPERTY OWNER: GEORGE GLINASTIS
 651 CORPORATE CIRCLE
 GOLDEN, COLORADO 80401

TOWER OWNER: AMERICAN TOWER CORPORATION
 TOWER ID #: CO-88791

OTHER ON-SITE TELECOM FACILITIES: YES

ASSESSORS PARCEL NUMBER: 51320-00-002

LATITUDE: 39° 02' 46.50" N 39.04625°

LONGITUDE: 104° 41' 39.80" W -104.69439°

LAT/LONG TYPE: NAD-83

ELEVATION: ±7618.0' AMSL

EXISTING ZONING: A-3

PROPOSED PROJECT AREA: NO INCREASE IN S.F.

EXISTING TYPE OF CONSTRUCTION: TYPE V-B

PROPOSED TYPE OF CONSTRUCTION: TYPE V-B

EXISTING OCCUPANCY: U-2

PROPOSED OCCUPANCY: U-2

JURISDICTION: EL PASO

SHEET INDEX

- T-1 TITLE SHEET
 T-2 SPECIFICATIONS AND NOTES
- A-1 SITE PLAN
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 A-3 ANTENNA DETAILS
 A-3.1 DETAILS
 A-4 SPECIFICATIONS
 A-5 ANTENNA MOUNTING DETAILS
 A-5.1 ANTENNA MOUNTING DETAILS

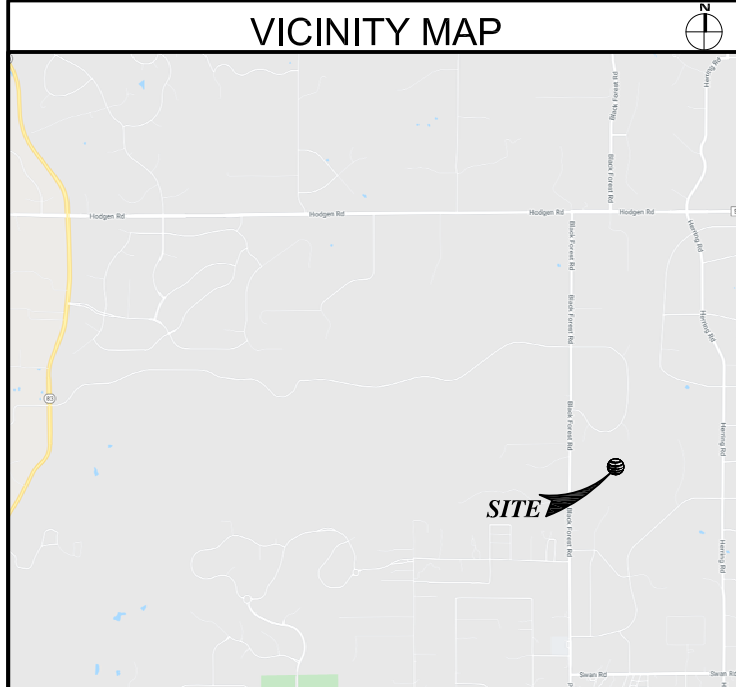
APPLICABLE CODES

ALL WORK SHALL COMPLY WITH THE FOLLOWING APPLICABLE CODES:

- 2015 INTERNATIONAL BUILDING CODE
- 2015 INTERNATIONAL RESIDENTIAL CODE
- 2015 INTERNATIONAL MECHANICAL CODE
- 2015 INTERNATIONAL FUEL GAS CODE
- 2015 INTERNATIONAL EXISTING BUILDING CODE
- 2015 INTERNATIONAL ENERGY CONSERVATION CODE

IN THE EVENT OF CONFLICT, THE MOST RESTRICTIVE CODE SHALL PREVAIL

VICINITY MAP



PRECON NOTES

- CONTACT AMERICAN TOWER FIELD TECHNICIAN TO SCHEDULE PRE-CON 48 HOURS PRIOR TO REQUESTED MOBILIZATION ON SITE.

PROJECT DESCRIPTION

AT&T MOBILITY PROPOSES TO MODIFY AN EXISTING UNMANNED WIRELESS COMMUNICATIONS FACILITY. THIS MODIFICATION WILL CONSIST OF THE FOLLOWING:

TO ELBERT SOUTH:

- INSTALL NEW AT&T 6'-0"Ø MICROWAVE ANTENNA AT 272'-0" RAD-CENTER.
- INSTALL NEW (1) AT&T EW-63 WAVEGUIDE.

FINAL DESIGN TO BE (1) EW-63 WAVEGUIDE.

ACCESSIBILITY DISCLAIMER

THIS PROJECT IS AN UNOCCUPIED WIRELESS PCS TELECOMMUNICATIONS FACILITY AND IS EXEMPT FROM DISABLED ACCESS REQUIREMENTS.

SCALE

THE DRAWING SCALES SHOWN IN THIS SET REPRESENT THE CORRECT SCALE ONLY WHEN THESE DRAWINGS ARE PRINTED IN A 11"x17" OR 24"x36" FORMAT. IF THIS DRAWING SET IS NOT 11"x17" OR 24"x36", THIS SET IS NOT TO SCALE.

GENERAL SPECIFICATIONS

- THE LATEST EDITION OF THE AMERICAN INSTITUTE OF ARCHITECTS DOCUMENT A201 "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION" ARE INCLUDED IN THESE SPECIFICATIONS AS IF COMPLETELY REPRODUCED HEREIN.
- THIS FACILITY IS AN UNOCCUPIED PCS TELECOMMUNICATIONS SITE AND IS EXEMPT FROM DISABLED ACCESS REQUIREMENTS.
- PRIOR TO THE SUBMISSION OF BIDS, THE CONTRACTORS PARTICIPATING SHALL VISIT THE JOB SITE AND FAMILIARIZE THEMSELVES WITH ALL FIELD CONDITIONS AFFECTING THE PROPOSED PROJECT INCLUDING DEMOLITION, ELECTRICAL, MECHANICAL AND STRUCTURAL INSTALLATIONS, AS WELL AS WITH THE CONSTRUCTION AND CONTRACT DOCUMENTS AND SHALL CONFIRM THAT THE PROJECT CAN BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. SHOULD ANY ERRORS, OMISSION, OR DISCREPANCIES BE FOUND, THE GENERAL CONTRACTOR SHALL IMMEDIATELY NOTIFY AT&T MOBILITY CONSTRUCTION MANAGER AND THE ARCHITECT IN WRITING. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL INCLUDE THE MORE COSTLY OR EXTENSIVE WORK IN THE BID, UNLESS SPECIFICALLY DIRECTED OTHERWISE. IF A DISCREPANCY EXISTS AND THE PROJECT MANAGER AND ARCHITECT ARE NOT NOTIFIED, THE GENERAL CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL COSTS INCURRED TO REPAIR OR CORRECT ALL PROBLEMS THAT RESULT.
- DRAWINGS SHALL NOT BE SCALED. THESE DRAWINGS ARE INTENDED TO BE DIAGRAMMATIC ONLY. FIGURED DIMENSIONS HAVE PRECEDENCE OVER DRAWING SCALE AND DETAIL DRAWINGS HAVE PRECEDENCE OVER SMALL SCALE DRAWINGS. CONTRACTOR SHALL CHECK ACCURACY OF ALL DIMENSIONS IN THE FIELD. UNLESS SPECIFICALLY NOTED, DO NOT FABRICATE ANY MATERIALS, OR BEGIN ANY CONSTRUCTION UNTIL THE ACCURACY OF DRAWING DIMENSIONS HAS BEEN VERIFIED AGAINST ACTUAL FIELD DIMENSIONS.
- THE CONTRACTOR SHALL INCLUDE IN HIS OR HER BID ALL MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE THE WORK AS INDICATED OR IMPLIED BY THESE DRAWINGS.
- CONTRACTOR SHALL NOTIFY THE AT&T MOBILITY CONSTRUCTION MANAGER, THE PROPERTY OWNER AND THE ARCHITECT IF ANY DETAILS ARE CONSIDERED IMPRACTICAL, UNSUITABLE, UNSAFE, NOT WATERPROOF, OR NOT WITHIN CUSTOMARY TRADE PRACTICE. IF WORK IS PERFORMED, IT WILL BE ASSUMED THAT THERE IS NO OBJECTION TO ANY DETAIL. DETAILS ARE INTENDED TO SHOW THE END RESULT OF THE DESIGN. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB CONDITIONS, AND SHALL BE INCLUDED AS PART OF THE WORK.
- EXISTING ELEVATIONS AND LOCATIONS TO BE JOINED SHALL BE VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION. IF THEY DIFFER FROM THOSE SHOWN ON THE PLANS, THE CONTRACTOR SHALL NOTIFY THE AT&T MOBILITY CONSTRUCTION MANAGER AND THE ARCHITECT SO THAT MODIFICATIONS CAN BE MADE BEFORE PROCEEDING WITH THE WORK.
- THE CONTRACTOR SHALL VERIFY ALL TELEPHONE & RADIO EQUIPMENT LAYOUTS, SPECIFICATIONS, PERFORMANCE, INSTALLATION AND FINAL LOCATIONS WITH AT&T MOBILITY CONSTRUCTION MANAGER PRIOR TO BEGINNING WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK WITH ERICSSON RADIO SYSTEMS.
- ALL SYMBOLS & ABBREVIATIONS USED ON THE DRAWINGS ARE CONSIDERED CONSTRUCTION STANDARDS. IF THE CONTRACTOR HAS QUESTIONS REGARDING THEIR EXACT MEANING, THE AT&T MOBILITY CONSTRUCTION MANAGER AND THE ARCHITECT SHALL BE NOTIFIED FOR CLARIFICATION BEFORE THE CONTRACTOR PROCEEDS WITH THE WORK.
- THE CONTRACTOR SHALL OBTAIN AND PAY FOR PERMITS, LICENSES AND INSPECTIONS NECESSARY FOR PERFORMANCE OF THE WORK AND INCLUDE THOSE IN THE COST OF THE WORK TO AT&T MOBILITY.
- THE CONTRACTOR SHALL PROVIDE CONTINUOUS SUPERVISION WHILE ANY SUBCONTRACTORS OR WORKMEN ARE IN THE SITE AND SHALL SUPERVISE AND DIRECT ALL WORK, USING HIS BEST SKILL AND ATTENTION. HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, PROCEDURES AND SEQUENCES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
- WORKMANSHIP THROUGHOUT SHALL BE OF THE BEST QUALITY OF THE TRADE INVOLVED, AND SHALL MEET OR EXCEED THE FOLLOWING MINIMUM REFERENCE STANDARDS FOR QUALITY AND PROFESSIONAL CONSTRUCTION PRACTICE:

NRCA	NATIONAL ROOFING CONTRACTORS ASSOCIATION O'HARE INTERNATIONAL CENTER 10255 W. HIGGINS ROAD, SUITE 600 ROSEMONT, IL 60018	ROOFING & WATERPROOFING NOTES
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION 4201 LAFAYETTE CENTER DRIVE CHATILLY, VA 22021-1209	
ITLP	INTERNATIONAL INSTITUTE FOR LATH AND PLASTER 820 TRANSFER ROAD ST. PAUL, MN 55114-1406	
- INSTALL ALL EQUIPMENT AND MATERIALS PER THE LATEST EDITION OF THE MANUFACTURER'S INSTALLATION SPECIFICATIONS UNLESS SPECIFICALLY OTHERWISE INDICATED, OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
- THE CONTRACTOR SHALL VERIFY, COORDINATE, AND PROVIDE ALL NECESSARY BLOCKING, BACKING, FRAMING, HANGARS OR OTHER SUPPORTS FOR ALL ITEMS REQUIRING THE SAME.
- THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL GIVE ALL NOTICES AND SHALL COMPLY WITH ALL APPLICABLE LOCAL CODES, REGULATIONS, LAWS AND ORDINANCES AS WELL AS STATE DEPARTMENT OF INDUSTRIAL REGULATIONS AND DIVISION OF INDUSTRIAL SAFETY (OSHA) REQUIREMENTS.
- THE CONTRACTOR SHALL PROTECT THE PROPERTY OWNERS, AND AT&T MOBILITY PROPERTY FROM DAMAGE WHICH MAY OCCUR DURING CONSTRUCTION. ANY DAMAGE TO NEW AND EXISTING FINISHES, CONSTRUCTION, STRUCTURE, LANDSCAPING, CURBS, STAIRS, OR EQUIPMENT, ETC. SHALL BE IMMEDIATELY REPAIRED OR REPLACED TO THE SATISFACTION OF AT&T MOBILITY, AND THE PROPERTY OWNER'S REPRESENTATIVE, AT THE EXPENSE OF THE CONTRACTOR.

- PENETRATION AT FIRE RATED ASSEMBLIES
- AT THE AT&T MOBILITY PROJECT MANAGER'S DIRECTION, THE CONTRACTOR SHALL PROVIDE "HILTI" HIGH PERFORMANCE FIRE STOP SYSTEM #FS601 AT ALL FIRE RATED PENETRATIONS INSTALLED PER MANUFACTURER'S LATEST INSTALLATION SPECIFICATIONS.
 - ALL PENETRATIONS THROUGH FIRE RATED ASSEMBLIES SHALL BE CONSTRUCTED SO AS TO MAINTAIN AN EQUAL OR GREATER FIRE RATING.

PAINTING NOTES & SPECIFICATIONS

- A. GENERAL
- ALL PAINT PRODUCT LINES SHALL BE SHERWIN WILLIAMS UNLESS SPECIFICALLY NOTED OTHERWISE.
 - CONTRACTOR SHALL PREPARE ALL SURFACES AND APPLY ALL FINISHES PER LATEST EDITION OF MANUFACTURER'S SPECIFICATIONS.
 - COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS REGARDING SUFFICIENT DRYING TIME BETWEEN COATS WITH PROVISIONS AS RECOMMENDED BY MANUFACTURER FOR EXISTING WEATHER CONDITIONS.
 - FINISH COLOR AND TEXTURE OF ALL PAINTED SURFACES SHALL MATCH EXISTING ADJACENT SURFACES UNLESS OTHERWISE NOTED.
 - ALL PAINT MATERIAL DATA SHEETS SHALL BE PROVIDED TO THE AT&T MOBILITY CONSTRUCTION MANAGER.
 - PREPARE PREVIOUSLY PAINTED SURFACE BY LIGHT SANDING WITH 400 GRIT SANDPAPER AND NON-HYDROCARBON WASH. PREPARE GALVANIZED SURFACES BY ACID ETCH OR SOLVENT CLEANING IN ACCORDANCE WITH SSPC-SPI.
 - FURNISH DROP CLOTHES, SHIELDS, MASKING AND PROTECTIVE METHODS TO PREVENT SPRAY OR DROPPINGS FROM DAMAGING ADJACENT SURFACES AND FACILITIES.
 - APPLY PAINT BY AIRLESS SPRAY, SANDING LIGHTLY BETWEEN EACH SUCCEEDING ENAMEL COAT ON FLAT SURFACES. APPLY MATERIAL TO ACHIEVE A COATING NO THINNER THAN THE DRY FILM THICKNESS INDICATED.
 - APPLY BLOCK FILTER TO CONCRETE BLOCK CONSTRUCTION AT A RATE TO ENSURE COMPLETE COVERAGE WITH PORES COMPLETELY FILLED.
 - CONTRACTOR SHALL CORRECT RUNS, SAGS, MISSES AND OTHER DEFECTS INCLUDING INADEQUATE COVERAGE AS DIRECTED BY THE AT&T MOBILITY CONSTRUCTION MANAGER. REPAINT AS NECESSARY TO ACHIEVE SURFACES WHICH ARE SMOOTH, EVENLY COATED WITH UNIFORM SHEEN AND FREE FROM BLEMISHES.
- B. PAINTING SCOPE
- PAINT THE FOLLOWING MATERIALS AND SYSTEMS CHECKED BELOW WITH THE COATING SYSTEM INDICATED.
- | PAINTING SCOPE | | | | | |
|--|--|----------------|-------|--------------|-----|
| SURFACE TO BE PAINTED | | COATING SYSTEM | PAINT | DO NOT PAINT | N/A |
| BTS UNIT | | | | | |
| ALL EQUIPMENT & CABINETS OTHER THAN THE BTS UNIT | | | | | |
| ANTENNA COVERS, TILT BRACKETS, MOUNTING BRACKETS AND | | | | | |
| ADJACENT HANGARS, CHUTES AND GABLE COVERS EXPOSED | | | | | |
| TO WIND, EXPOSED CONDUIT AND HANGERS, ETC. | | | | | |
| FINISHES WITH TRIM AND OTHER METAL SURFACES | | | | | |
| STUCCO, CONCRETE, CONCRETE BLOCK AND | | | | | |
| CONCRETE TYPE III SYSTEMS | | | | | |
| PLYWOOD, LUMBER AND ROOF TRIM INCLUDING | | | | | |
| THE BACK SIDE OF ALL SCREENWALLS | | | | | |
| SPRINKLERS | | | | | |
| CONCRETE POLES | | | | | |
| METAL POLES AND METAL POLE STAND-OFF | | | | | |
- C. COATING SYSTEM SPECIFICATIONS
- DTM ACRYLIC COATING (SERIES B66) BY SHERWIN WILLIAMS CO. 1MIL DFT PER COAT APPLIED IN TWO COATS OVER DTM BONDING PRIMER (B66A50).
 - 100% ACRYLIC, LATEX COATING EQUIVALENT TO A-100 (SERIES A-82) BY SHERWIN WILLIAMS CO. 1 MIL DFT PER COAT APPLIED IN TWO COATS OVER SPECIFIED PRIMER.
- PAINT & PRIMER
- D. ANTENNAS
- PRIMER - KEM AQUA E61-W525
TOPCOAT - COROTHANE II B65W200/B60V22
- BTS CABINET
- PRIMER - KEM AQUA E61-W525
TOPCOAT - COROTHANE II B65W200/B60V22
- COAXIAL JUMPER CABLES
- PRIMER - AS REQUIRED FOR ADHESION. APPLY ONE COAT OF KEM AQUA WATER REDUCIBLE PRIMER E61W25 REDUCED 25%
TOPCOAT - 2 COATS COROTHANE II POLYURETHANE B65W200/B60V2
- RAW STEEL
- PRIMER - KEM BOND HS B50WZ4, DMT ACRYLIC PRIMER
TOPCOAT - 2 COATS COROTHANE II POLYURETHANE B65W200/B60V2
- GALVANIZED METAL
- ACID ETCH WITH COMMERCIAL ETCH OR VINEGAR PRIMER COAT AND FINISH COAT (GALVITE HIGH SOLIDS OR DTM PRIMER/FINISH)
- STAINLESS STEEL
- PRIMER - OTM WASH PRIMER, B71Y1
TOPCOAT - 2 COATS COROTHANE II POLYURETHANE B65W200/B60V2
- PRE-PRIMED STEEL
- TOUCH UP ANY RUST OR UN-PRIMED STEEL WITH KEM BOND HS, S50WZ4
- ALUMINUM & COPPER
- PRIMER - DTM WASH PRIMER, B71Y1
TOPCOAT - 2 COATS COROTHANE II POLYURETHANE B65W200/B60V2
- CONCRETE MASONRY
- PRIMER - PRO MAR EXTERIOR BLOCK FILLER
TOPCOAT - 2 COATS A-100 LATEX HOUSE & TRIM, SHEEN TO MATCH
- CONCRETE STUCCO(EXISTING)
- 2 COATS A-100 LATEX HOUSE & TRIM, SHEEN TO MATCH
- STUCCO
- PRIMER - PRO MAR MASONRY CONDITIONER B-46-W21000
TOPCOAT - SUPERPAINT A-80 SERIES A-89 SATIN A-84 GLOSS
- WOOD
- PRIMER - A-100 EXTERIOR ALKYD W009D PRIMER Y-24W20
TOPCOAT - 2 COATS A-100 LATEX HOUSE & TRIM SHEEN TO MATCH ADJACENT SURFACES
- GLU-LAM BEAMS
- PRIMER - A-100 EXTERIOR ALKYD WOOD PRIMER Y-24W20 TWO COATS SHOP APPLIED PER GLU-LAM MANUFACTURER'S SPECIFICATIONS
TOPCOAT - SUPERPAINT A-80 SERIES A-89 SATIN A-84 GLOSS TWO COATS OR FIELD APPLIED AT CONTRACTOR'S OPTION
- SHOP
- FIELD CUTS/DAMAGE(PRIOR TO PRIME & PAINT)
- FIRST & SECOND COAT - CUPRINOL CLEAR WOOD PRESERVATIVE #158-0356 ALL PENETRATIONS INTO FINISHED CLU-LAMS SHALL BE CAULKED WITH "SIKAFLEX" SEALANT
- STEEL TOUCH UP
- STEEL THAT HAS BEEN WELDED, CUT OR SCRATCHED IN THE FIELD SHALL BE TOUCHED UP WITH COLD GALVANIZED PAINT

STRUCTURAL SPECIFICATIONS

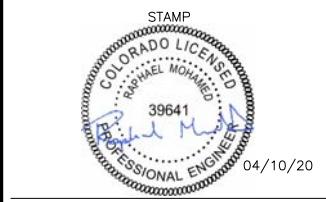
- A. GENERAL
- PRECEDENCE: UNLESS OTHERWISE SHOWN OR SPECIFIED, THE FOLLOWING GENERAL NOTES SHALL APPLY. INFORMATION ON THESE DRAWINGS SHALL HAVE THE FOLLOWING PRECEDENCE.
 - ALL DIMENSIONS TO TAKE PRECEDENCE OVER SCALE SHOWN ON PLANS, SECTIONS AND DETAILS.
 - NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.
 - MATERIAL NOTES AND SPECIFICATIONS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER THE SPECIFICATIONS.
 - OTHER TRADES: SEE THE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS NOT SHOWN.
 - CONCRETE IN CONTACT WITH EARTH, UNFORMED 3"
2"
 - CONCRETE IN CONTACT WITH EARTH, FORMED 1-1/2"
2"
 - WALL, EXTERIOR FACE 1-1/2"
1"
 - WALL, INTERIOR FACE 3/4"
3/4"
 - STRUCTURAL SLABS 3/4"
3/4"
 - JOISTS 1-1/2"
1-1/2"
 - BEAMS, GIRDERS & COLUMNS
 - GENERAL DETAILS AND NOTES ON THESE SHEETS SHALL APPLY UNLESS SPECIFICALLY SHOWN OR NOTED OTHERWISE. CONSTRUCTION DETAILS NOT FULLY SHOWN OR NOTED SHALL BE SIMILAR TO DETAILS SHOWN FOR SIMILAR CONDITIONS.
 - SHORING: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL ALL TEMPORARY BRACING AND SHORING TO INSURE THE SAFETY OF THE WORK UNTIL IT IS IN ITS COMPLETED FORM. THIS INCLUDES UNDERPINNING EXISTING FOOTINGS WHERE APPLICABLE.
 - SAFETY: THESE STRUCTURAL DRAWINGS REPRESENT THE FINISHED STRUCTURE. UNLESS OTHERWISE INDICATED, THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION.
 - WATERPROOFING: WATERPROOFING AND DRAINAGE, DETAILS AND SPECIFICATIONS, ALTHOUGH SOMETIMES SHOWN ON STRUCTURAL DRAWING ARE OF GENERAL INFORMATION PURPOSES ONLY. WATERPROOFING AND DRAINAGE ARE SOLELY THE DESIGN RESPONSIBILITY OF THE ARCHITECT.
 - STEEL
 - ALL STRUCTURAL STEEL SECTIONS AND WELDED PLATE MEMBERS SHALL CONFORM TO ASTM A-36 AND BE FABRICATED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE AISC.
 - ALL BOLTS SHALL CONFORM TO ASTM A-307 UNLESS OTHERWISE NOTED ON PLANS.
 - STEEL PIPE COLUMNS SHALL BE GRADE "B" CONFORMING TO ASTM A53.
 - STEEL TUBING SHALL BE GRADE "B" CONFORMING TO ASTM A500.
 - ALL WELDING SHALL BE DONE BY THE SHIELDED ARC METHOD. ALL WELDERS SHALL BE PROPERLY QUALIFIED AND BE PRE-APPROVED. SURPLUS METAL SHALL BE DRESSED OFF TO SMOOTH, EVEN SURFACES WHERE WELDS ARE NOT EXPOSED TO VIEW. ALL WELDING SHALL COMPLY WITH THE LATEST A.W.S. SPECIFICATIONS.
 - THE FOLLOWING WELDING EQUIPMENT MUST BE USED:
 - 250 AMP WELDERS.
 - ROD OVENS.
 - GRINDERS.
 - NO BUZZ BOXES SHALL BE USED.
 - ALL STRUCTURAL STEEL SHALL MILL CERTIFICATION. MILL CERTIFICATION SHALL BE KEPT ON THE JOB SITE FOR EXAMINATION BY THE DESIGN ENGINEER AND THE CITY INSPECTOR.
 - STEEL THAT HAD BEEN WELDED, CUT OR SCRATCHED IN THE FIELD SHALL BE TOUCHED UP WITH COLD GALVANIZING PAINT.
 - WELDING INDICATED IN THESE DRAWINGS IS DESIGNED FOR ONE HALF OF ALLOWABLE CODE STRESSES UNLESS SPECIFICALLY NOTED "FULL STRESS" AT END OF WELD SYMBOL.
 - CONCRETE
 - STRENGTH: CONCRETE FOR THE PROJECT SHALL HAVE THE FOLLOWING ULTIMATE COMPRESSIVE STRENGTH AT AGE OF 28 DAYS:

LOCATION	STRENGTH	WT.	SLUMP	ADMIXTURE
A. SLAB&FOOTING 3000PSI	150PCF	4"	NONE	
 - INSPECTION: CONCRETE WITH SPECIFIED STRENGTH GREATER THAN 2500PSI SHALL BE CONTINUOUSLY INSPECTED DURING PLACEMENT BY A DEPUTY INSPECTOR EMPLOYED BY A TESTING LABORATORY APPROVED BY THE BUILDING DEPT.
 - REBAR GRADES: REINFORCING STEEL SHALL BE CLEAN PREFORMED BARS CONFORMING TO ASTM A615 AS FOLLOWS:
 - #4 & SMALLER BARS.....GRADE 40
 - #5 & LARGER BARS.....GRADE 60
 - ALL BARS AT CAISSON FOOTING...GRADE 60
 - FOUNDATIONS & SLABS: TYPE V, LOW ALKALI, CONFORMING TO ASTM C-150. PIER/CAISSON FOOTINGS: TYPE V, LOW ALKALI, CONFORMING TO ASTM C-150.
 - AGGREGATE: USED IN THE CONCRETE SHALL CONFORM TO ASTM C-33. USE ONLY AGGREGATES KNOWN NOT TO CAUSE EXCESSIVE SHRINKAGE. THE MAXIMUM SIZE AGGREGATE IN CONCRETE WORK SHALL BE THE FOLLOWING:
 - FOUNDATIONS & SLABS 9" OR LESS: 3/4" GRAVEL
 - PIER/CAISSON FOOTING: 1" GRAVEL
 - SHALL BE CLEAN AND FREE FROM DELETERIOUS AMOUNT OF ACIDS, ALKALIS, ORGANIC MATERIALS AND SHALL BE SUITABLE FOR HUMAN CONSUMPTION.
 - MIXING: PREPARATION OF CONCRETE SHALL CONFORM TO ASTM C-94. NO MORE THAN 90 MINUTES SHALL ELAPSE BETWEEN CONCRETE BATCHING AND CONCRETE PLACEMENT UNLESS APPROVED BY A TESTING AGENCY.
 - SEGREGATION OF AGGREGATES: CONCRETE SHALL NOT BE FLOPPED THROUGH REINFORCING STEEL (AS IN WALLS, COLUMNS, CAISSON, AND DROP CAPITALS) SO AS TO CAUSE SEGREGATION OF AGGREGATES. USE HOPPERS, CHUTES, TRUNKS OR PUMP HOSE SO THAT THE FREE UNCONFINED FALL OF CONCRETE SHALL NOT EXCEED 5 FT.
 - SPICES OF REINFORCING STEEL SHALL BE LAPPED A MINIMUM OF 30 DIAMETERS AND SECURELY WIRED TOGETHER. SPLICES OF ADJACENT REINFORCING BARS SHALL BE STAGGERED WHEREVER POSSIBLE.
 - REAR CLEARANCE: MINIMUM COVERAGE FOR JOISTS, BEAMS, GIRDERS AND COLUMNS SHALL BE TO FACE OF STIRRUPS OR TIES. UNLESS OTHERWISE NOTED, CONCRETE COVERAGE FOR REINFORCING BARS TO FACE OF BAR SHALL BE AS FOLLOWS:
 - CONCRETE IN CONTACT WITH EARTH, UNFORMED 3"
2"
 - CONCRETE IN CONTACT WITH EARTH, FORMED 1-1/2"
2"
 - WALL, EXTERIOR FACE 1-1/2"
1"
 - WALL, INTERIOR FACE 3/4"
3/4"
 - STRUCTURAL SLABS 3/4"
3/4"
 - JOISTS 1-1/2"
1-1/2"
 - BEAMS, GIRDERS & COLUMNS
 - PENETRATIONS: NO SLEEVES OR CHASES SHALL BE PLACED IN BEAMS, SLABS, WALLS AND COLUMNS, EXCEPT THOSE SHOWN ON THE CONTRACTOR SHALL OBTAIN PRIOR APPROVAL FOR INSTALLATIONS OF ANY ADDITIONAL SLEEVES OR CHASES. ALL PLUMBING, ELECTRICAL AND MECHANICAL OPENINGS SHALL BE SLEEVES. CORING IS NOT ALLOWED UNLESS PRIOR APPROVAL IS OBTAINED FROM THE STRUCTURAL ENGINEER.
 - EMBEDDED ITEMS: CONDUIT PLACED IN A CONCRETE SLAB SHALL NOT HAVE AN OUTSIDE DIAMETER GREATER THAN 1/4 THE THICKNESS OF THE SLAB. CONDUIT SHALL NOT BE EMBEDDED IN A SLAB THAT IS LESS THAN 3-1/2" THICK, UNLESS SLAB IS LOCALLY THICKENED. MINIMUM CLEAR DISTANCE BETWEEN CONDUITS SHALL BE SIX INCHES.
 - ANCHORING: ALL ANCHOR BOLTS, REINFORCING STEEL, DOWELS, INSERTS, ETC., SHALL BE WELL SECURED IN POSITION PRIOR TO PLACING CONCRETE. NO REPOSITIONING DURING CONCRETE POUR IS ALLOWED.
 - CURING: SLABS SHALL BE SPRAYED WITH A CURING COMPOUND IMMEDIATELY AFTER FINISHING. CURING COMPOUNDS USED ON CONCRETE WHERE TILE OR FLOOR COVERING IS TO BE BONDED TO THE CONCRETE SURFACE SHALL BE APPROVED BY THE TILE OR FLOOR COVERING MANUFACTURER. KEEP SLAB WET FOR 7 DAY MINIMUM PERIOD.
 - CONSOLIDATION: ALL CONCRETE SHALL BE VIBRATED AS IT IS BEING PLACED WITH ELECTRICALLY OPERATED VIBRATING EQUIPMENT.
 - TIMBER



3350 E BIRCH ST, SUITE 101
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APPROVALS

GAMALIEL AGUILAR	03/04/20
90% CDS	DATE
GAMALIEL AGUILAR	04/10/20
100% CDS	DATE
GAMALIEL AGUILAR	04/10/20
100% CDS WITH STRUCTURALS	DATE
ALLAN WALKER	03/23/20
CONSTRUCTION	DATE
SITE ACQUISITION	DATE

PROJECT NAME
MICROWAVE UPGRADE

SITE NAME
BLACK FOREST/COU2037

FA NUMBER
10093683

7113 MARSHBERN COURT
COLORADO SPRINGS, COLORADO 80908

DRAWING DATES	
03/04/20	90% CD REVIEW (P1-B1)
04/10/20	100% FINAL CDS (P1-B2)
09/28/20	COUNTY COMMENTS (P1-B3)

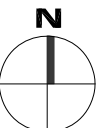
SHEET TITLE

SPECIFICATIONS AND NOTES

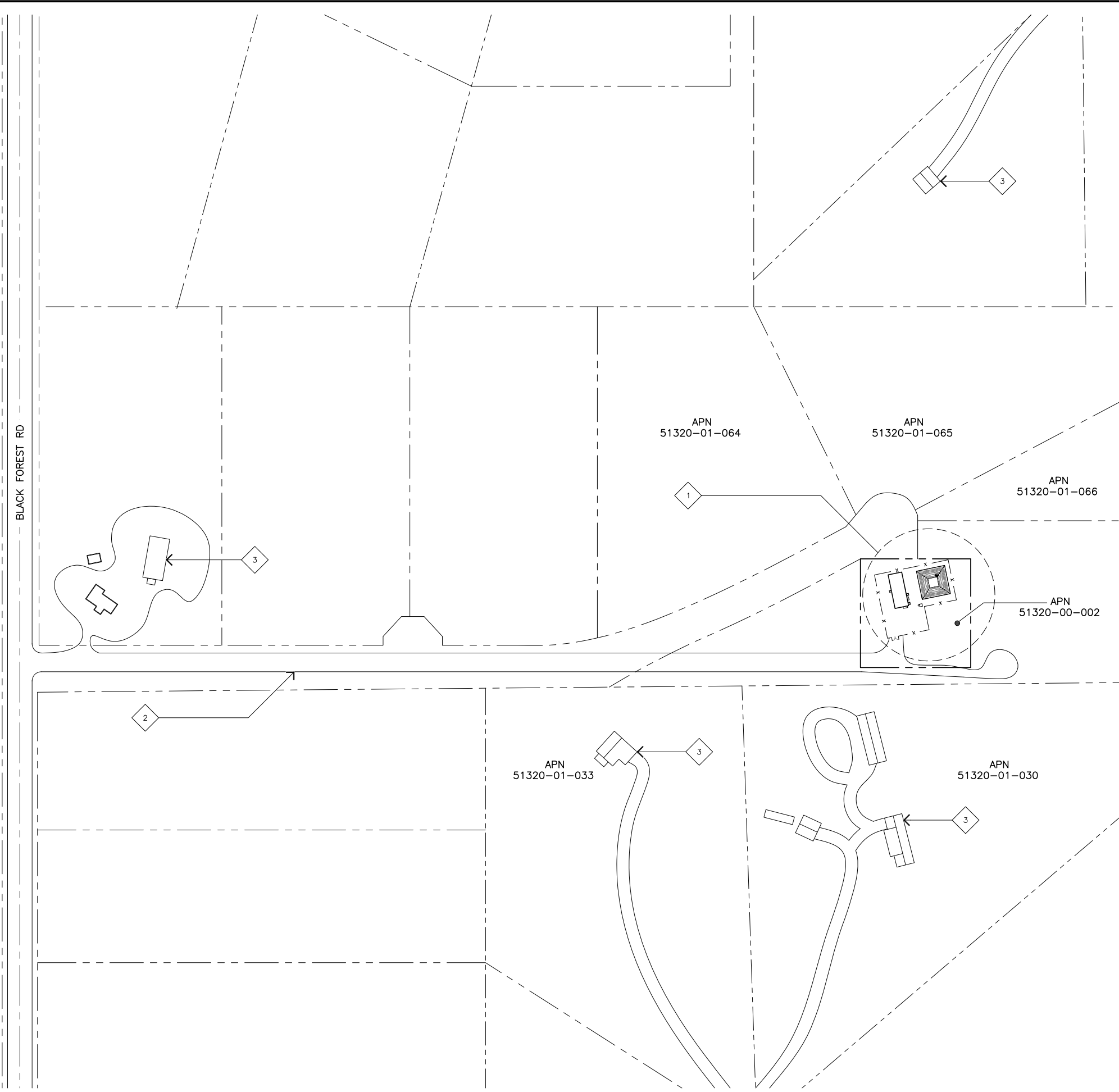
T-2

SITE PLAN KEYNOTES

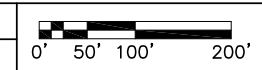
- 1 (E) AT&T LEASE AREA WITHIN (E) COMPOUND; SEE SHEET A-1.1.
- 2 (E) ACCESS ROAD.
- 3 (E) BUILDING.



SITE PLAN



11X17 SCALE: 1" = 200'
24X36 SCALE: 1" = 100'



1

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SHEET TITLE

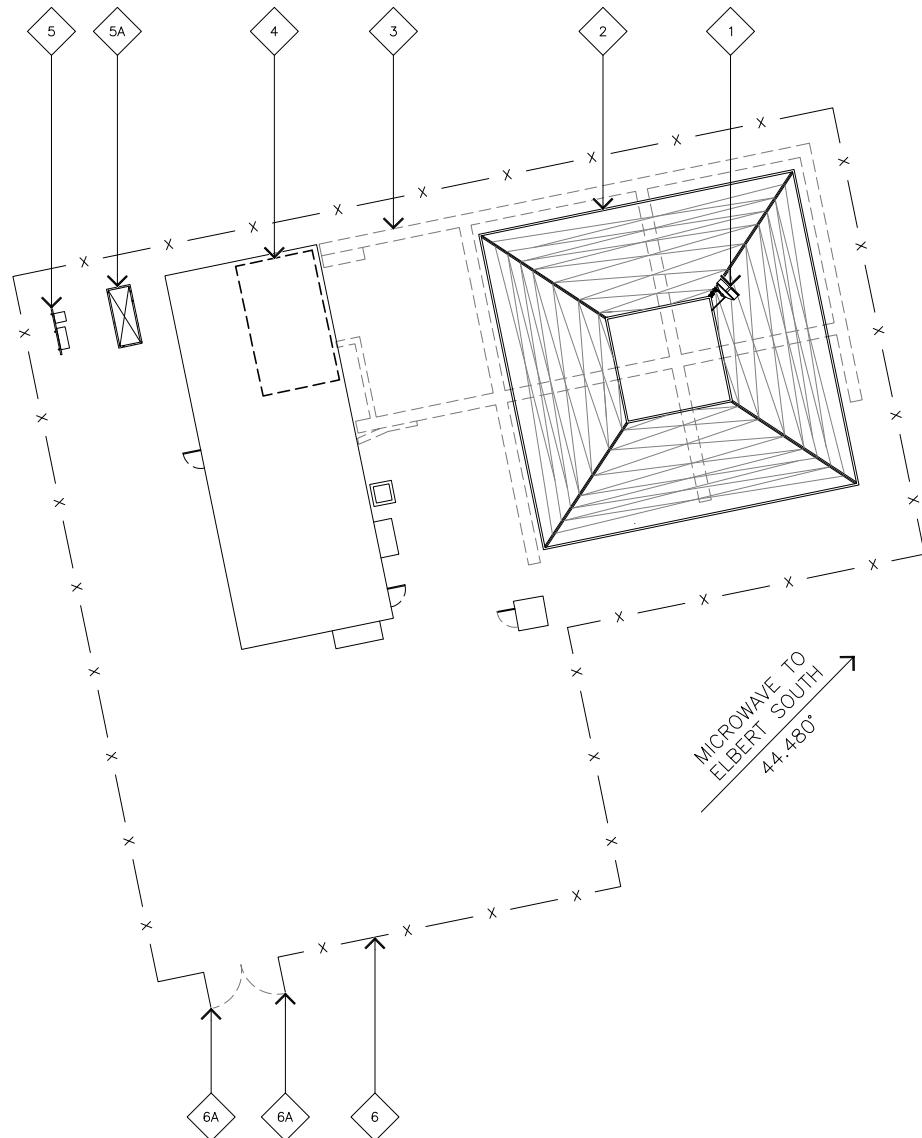
SITE PLAN

A-1

JOB NUMBER: 21253

ENLARGED SITE PLAN KEYNOTES

- 1 (N) AT&T 6'-0"Ø MICROWAVE ANTENNA MOUNTED TO (E) LATTICE TOWER; SEE DETAIL 2/A-3.
- 2 (E) LATTICE TOWER.
- 3 (E) AT&T ICE BRIDGE.
- 4 (E) AT&T EQUIPMENT AREA WITHIN (E) BUILDING; SEE DETAIL 1/A-1.1.
- 5 (E) H-FRAME.
- 5A (E) GENERATOR.
- 6 (E) CHAIN-LINK FENCE ENCLOSURE WITH BARBED WIRE.
- 6A (E) CHAIN-LINK ACCESS GATE.



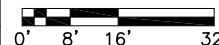
ENLARGED SITE PLAN GENERAL NOTES

- A. OTHER CARRIER ANTENNAS NOT SHOWN FOR CLARITY.
- B. GROUND ALL (N) EQUIPMENT AND COAX PER DETAIL 3/A-3.
- C. OTHER CARRIER ANTENNAS NOT SHOWN FOR CLARITY.
- D. CONTRACTOR TO PROVIDE ALL LABOR TO INSTALL COAX, RETS AND ANTENNAS.
- E. CONTRACTOR TO PROVIDE ALL COAX, CONNECTORS, ANCILLARY EQUIPMENT (INCLUDING WEATHER STRIPPING, GROUND KITS, ETC.).
- F. CONTRACTOR TO COLOR CODE ALL COAX. COLORED BANDS OF TAPE ON COAX IDENTIFY SECTOR, FREQUENCY, TECHNOLOGY, AND TRANSMIT GROUP AS FOLLOWS ON ALL COAX MODIFIED OR INSTALLED ONLY.
- G. WHEN ANTENNA LINES ARE DIPLEXED, THE COLOR CODE OF THE HIGHEST FREQUENCY PREVAILS (I.E. UMS DIPLEXED WITH TDMA SHOULD HAVE COLOR 4 BANDS).
- H. ALL ANTENNAS AND ANTENNA CABLE SHALL BE FURNISHED BY CONTRACTOR AND INSTALLED BY ANTENNA INSTALLATION CONTRACTOR.
- I. PRIOR TO PLACEMENT OF ANTENNA POLE MOUNTS, THE CONTRACTOR SHALL VERIFY THAT THE AZIMUTH AND DIMENSIONS SHOWN ON THE PLANS MATCH ACTUAL FIELD CONDITIONS. ALLOWABLE TOLERANCE: HORIZONTAL ALIGNMENT = ±5'; VERTICAL ALIGNMENT = ±1'.
- J. ANTENNA INSTALLATION CONTRACTOR SHALL PROVIDE ALL CONDUIT, CABLE TRAY, GROUNDS, ETC. FOR COMPLETE INSTALLATION OF ANTENNAS AND CABLES SHOWN AND INTENDED AS REQUIRED FOR A COMPLETE OPERATING SYSTEM IN ACCORDANCE WITH CONTRACTOR STANDARDS.
- K. IN NO CASE SHALL THERE BE ANY MORE THAN TWO (2) 90° TURNS (OR EQUIVALENT) IN ANY CONTINUOUS LENGTH OF CONDUIT BETWEEN PULL BOXES OR SIMILAR FEATURES.
- L. ANTENNA CONDUIT SHALL ONLY INCLUDE FACTORY-MADE LARGE RADIUS SWEEPS AT ALL CHANGES IN DIRECTION. SWEEP RADIUS SHALL BE 18" MINIMUM ABOVE GROUND AND 36" MINIMUM BELOW GROUND.
- M. CONDUIT SHALL BE 3"Ø MINIMUM. ALL UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC. ALL EXPOSED CONDUIT ABOVE GRADE LEVEL SHALL BE IMC OR RIGID GALVANIZED. ALL EXPOSED CONDUIT PROTECTED IN A BUILDING OR ON A ROOF SHALL BE EMT OR UV STABILIZED PAINTED SCHEDULE 80 PVC.
- N. IN HIGH TRAFFIC AREAS OR WHERE SUSCEPTIBLE TO DAMAGE CONTRACTOR SHALL PROVIDE FORMED 14 GA. GALVANIZED SHEET METAL COVER OVER COAXIAL CABLE ROUTES. WHERE CABLE IS RUN ON THE WALL, ATTACH UNISTRUT TO WALL AND COVER WITH 14 GA. GALVANIZED FORMED SHEET METAL COVER OR MATERIAL AS DIRECTED BY CONTRACTOR CONSTRUCTION MANAGER.
- O. VERIFY ROUTE AND LENGTH OF CABLE PRIOR TO CUTTING. ADJUST INDICATED ROUTE AS REQUIRED TO CLEAR (E) EQUIPMENT AT FACILITIES.
- P. MAXIMUM LENGTH OF 7/8" COAX CABLE SHALL BE 140'-0". MAXIMUM LENGTH OF 1-1/4" COAX CABLE SHALL BE 190'-0". MAXIMUM LENGTH OF 1-5/8" COAX CABLE SHALL BE 235'-0".
- Q. VERIFY MODEL NUMBERS OF ANTENNAS WITH CONTRACTOR SERVICES.
- R. THE CONTRACTOR SHALL PROVIDE TESTING OF ANTENNAS AND SHALL PROVIDE DOCUMENTATION TO THE CONTRACTOR PROJECT MANAGER.
- S. GENERAL CONTRACTOR TO VERIFY ALL TORQUE TOLERANCES PER THE MANUFACTURERS SPECIFICATIONS AND RECOMMENDATIONS.



ENLARGED SITE PLAN

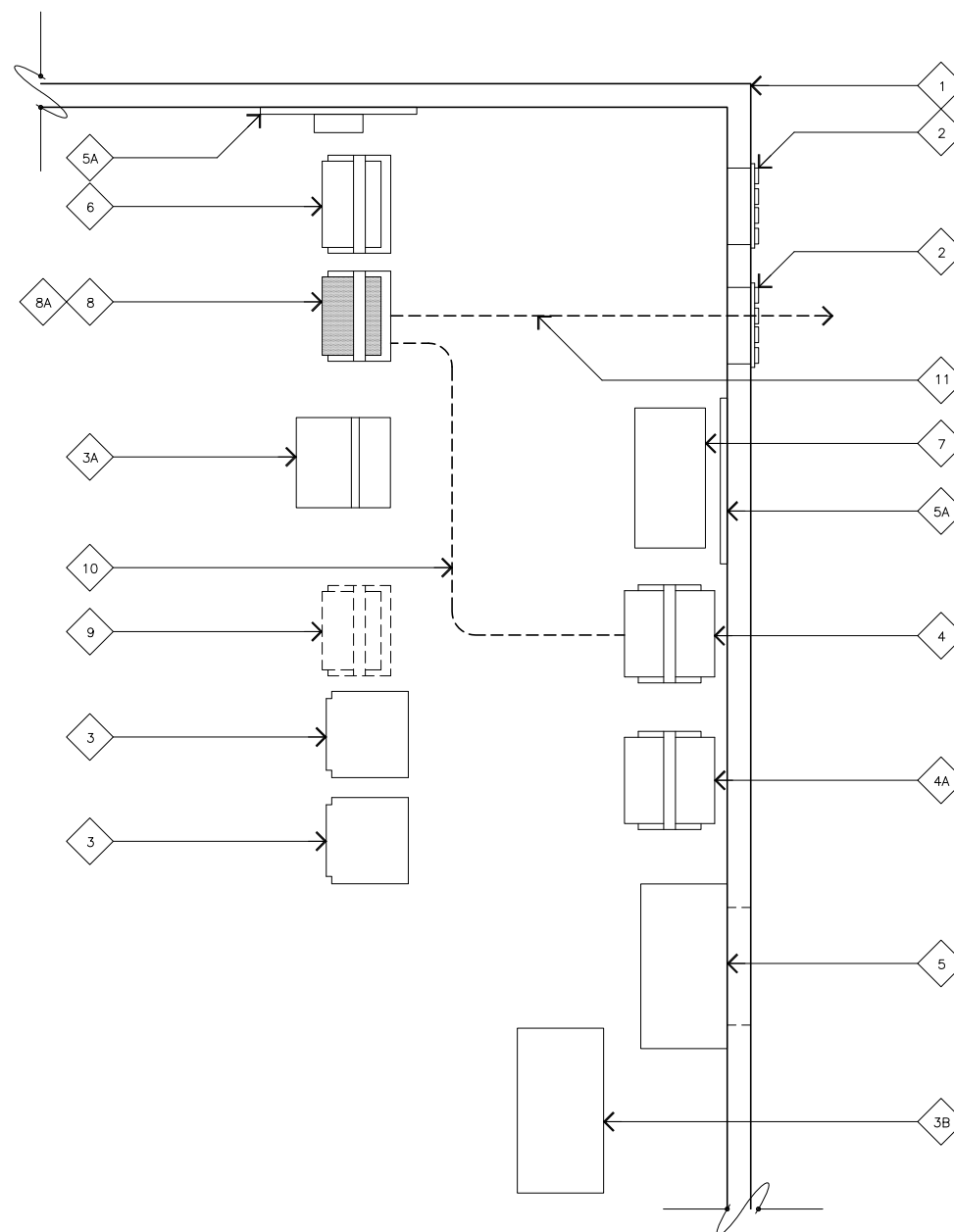
11X17 SCALE: 1/32" = 1'-0"
24X36 SCALE: 1/16" = 1'-0"



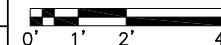
2

EQUIPMENT PLAN KEYNOTES

- 1 (E) AT&T EQUIPMENT SHELTER.
- 2 (E) AT&T ENTRY PORT.
- 3 (E) AT&T GSM EQUIPMENT CABINET.
- 3A (E) AT&T UMS EQUIPMENT CABINET.
- 3B (E) AT&T EQUIPMENT CABINET.
- 4 (E) AT&T DC POWER PLANT.
- 4A (E) AT&T BATTERY RACK.
- 5 (E) INTERIOR MOUNTED HVAC UNIT.
- 5A (E) AT&T TELCO BACKBOARD.
- 6 (E) AT&T LTE DATA RACK.
- 7 (E) STORAGE CABINET.
- 8 (N) AT&T MICROWAVE RADIO EQUIPMENT MOUNTED IN (E) DATA RACK. IF INSUFFICIENT SPACE, MOUNT IN (N) 19" DATA RACK, AS SHOWN.
- 8A (N) AT&T 24VDC TO -48VDC CONVERTER IN (E) DATA RACK, IF REQUIRED.
- 9 (N) 19" DATA RACK, IF REQUIRED.
- 10 (N) AT&T DC CABLE FROM (E) 24VDC POWER CABINET TO (N) -48VDC CONVERTER, IF REQUIRED.
- 11 (N) (1) AT&T EW-63 WAVEGUIDE; SEE SHEET A-4.



11X17 SCALE: 1/4" = 1'-0"
24X36 SCALE: 1/2" = 1'-0"



1

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SITE NAME
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7113 MARSHBURN COURT
COLORADO SPRINGS, COLORADO 80908

DRAWING DATES

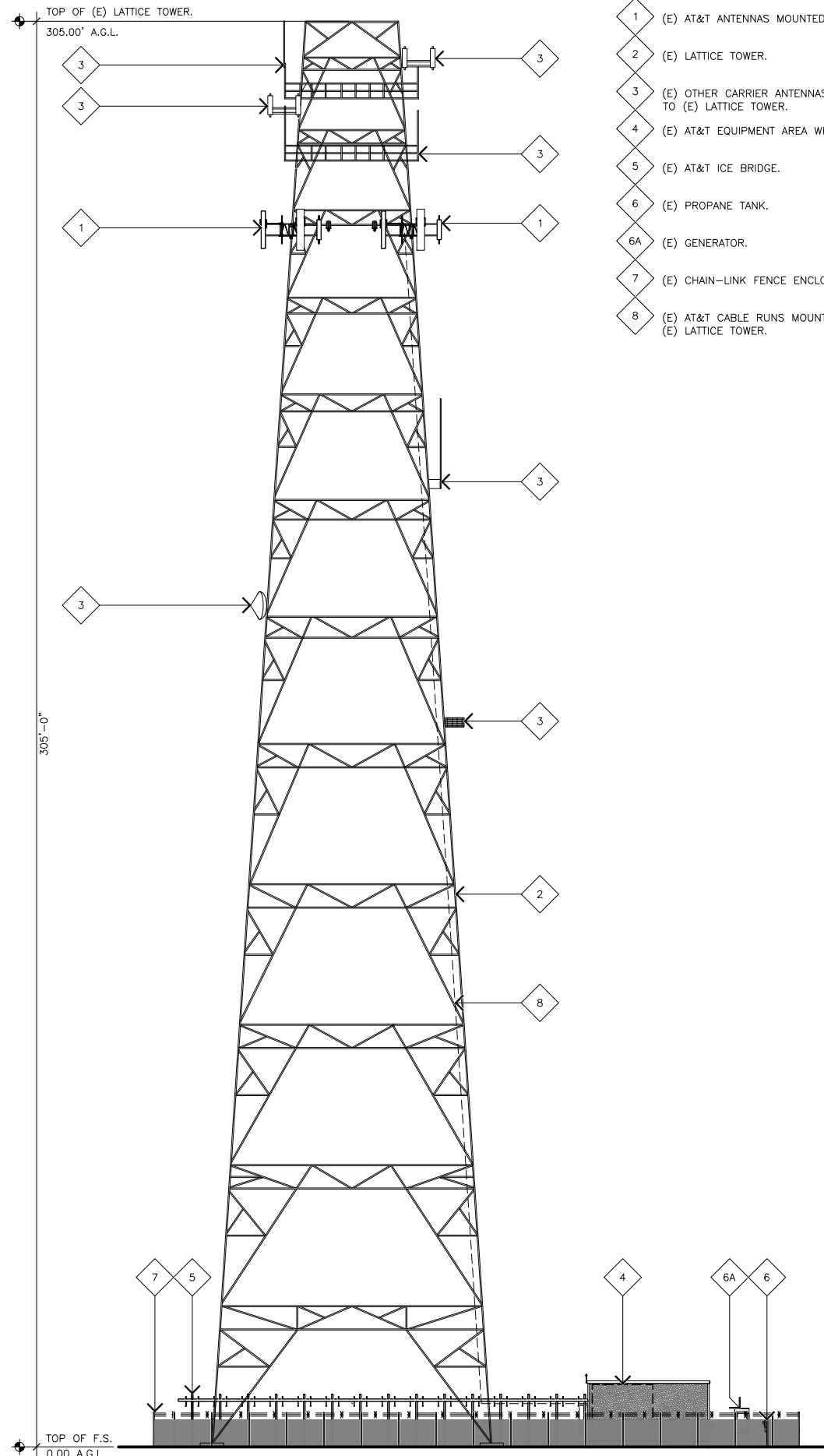
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09/28/20	COUNTY COMMENTS (P1-B3)

SHEET TITLE

**ENLARGED SITE AND
EQUIPMENT PLAN**

A-1.1

JOB NUMBER: 21253

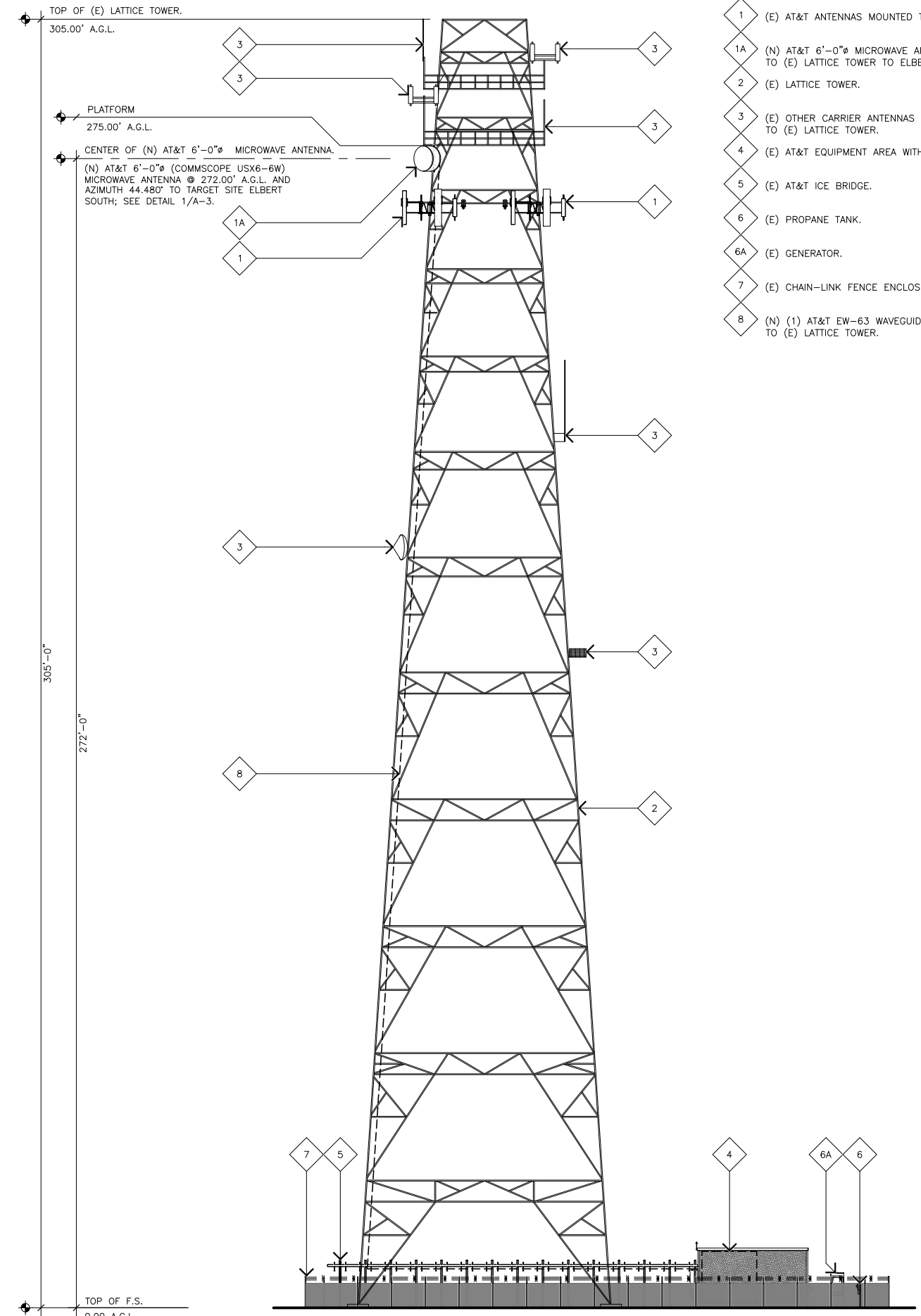


EXISTING NORTH ELEVATION

11X17 SCALE: 1/32" = 1'-0"
 24X36 SCALE: 1/16" = 1'-0"
 0' 8' 16' 32'

2

- EXISTING ELEVATION KEYNOTES**
- 1 (E) AT&T ANTENNAS MOUNTED TO (E) LATTICE TOWER.
 - 2 (E) LATTICE TOWER.
 - 3 (E) OTHER CARRIER ANTENNAS MOUNTED TO (E) LATTICE TOWER.
 - 4 (E) AT&T EQUIPMENT AREA WITHIN (E) BUILDING.
 - 5 (E) AT&T ICE BRIDGE.
 - 6 (E) PROPANE TANK.
 - 6A (E) GENERATOR.
 - 7 (E) CHAIN-LINK FENCE ENCLOSURE.
 - 8 (E) AT&T CABLE RUNS MOUNTED TO (E) LATTICE TOWER.



PROPOSED NORTH ELEVATION

11X17 SCALE: 1/32" = 1'-0"
 24X36 SCALE: 1/16" = 1'-0"
 0' 8' 16' 32'

1

- PROPOSED ELEVATION KEYNOTES**
- 1 (E) AT&T ANTENNAS MOUNTED TO (E) LATTICE TOWER.
 - 1A (N) AT&T 6'-0" MICROWAVE ANTENNA MOUNTED TO (E) LATTICE TOWER TO ELBERT SOUTH.
 - 2 (E) LATTICE TOWER.
 - 3 (E) OTHER CARRIER ANTENNAS MOUNTED TO (E) LATTICE TOWER.
 - 4 (E) AT&T EQUIPMENT AREA WITHIN (E) BUILDING.
 - 5 (E) AT&T ICE BRIDGE.
 - 6 (E) PROPANE TANK.
 - 6A (E) GENERATOR.
 - 7 (E) CHAIN-LINK FENCE ENCLOSURE.
 - 8 (N) (1) AT&T EW-63 WAVEGUIDE MOUNTED TO (E) LATTICE TOWER.

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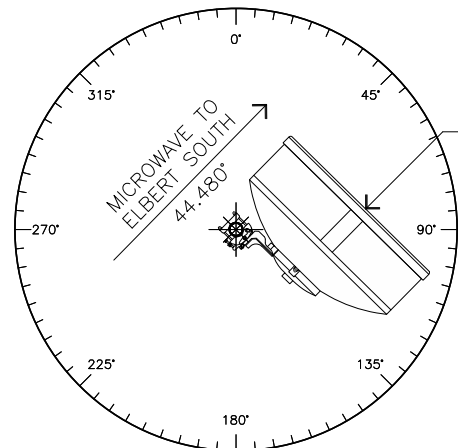
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SHEET TITLE
EXISTING & PROPOSED ELEVATIONS

A-2



(N) AT&T 6'-0" MICROWAVE ANTENNA.

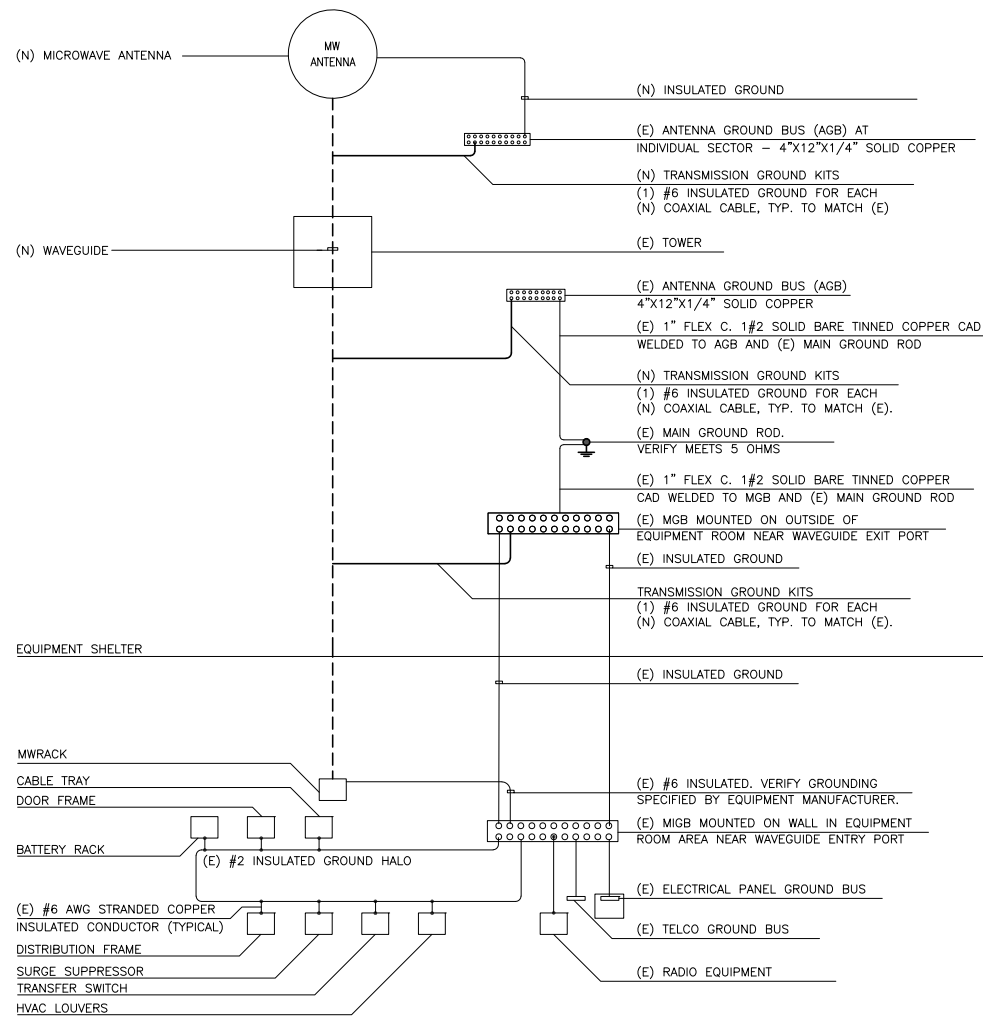
MICROWAVE SCHEDULE						
ANTENNA MODEL	ANTENNA AZIMUTH	RAD CENTER	CABLE TYPE	QTY	ODU TYPE	QTY
COMMSCOPE USX6-6W	44.480°	272'-0"	EW-63 WAVEGUIDE	1	-	-



MICROWAVE AZIMUTH

SCALE: NONE

4



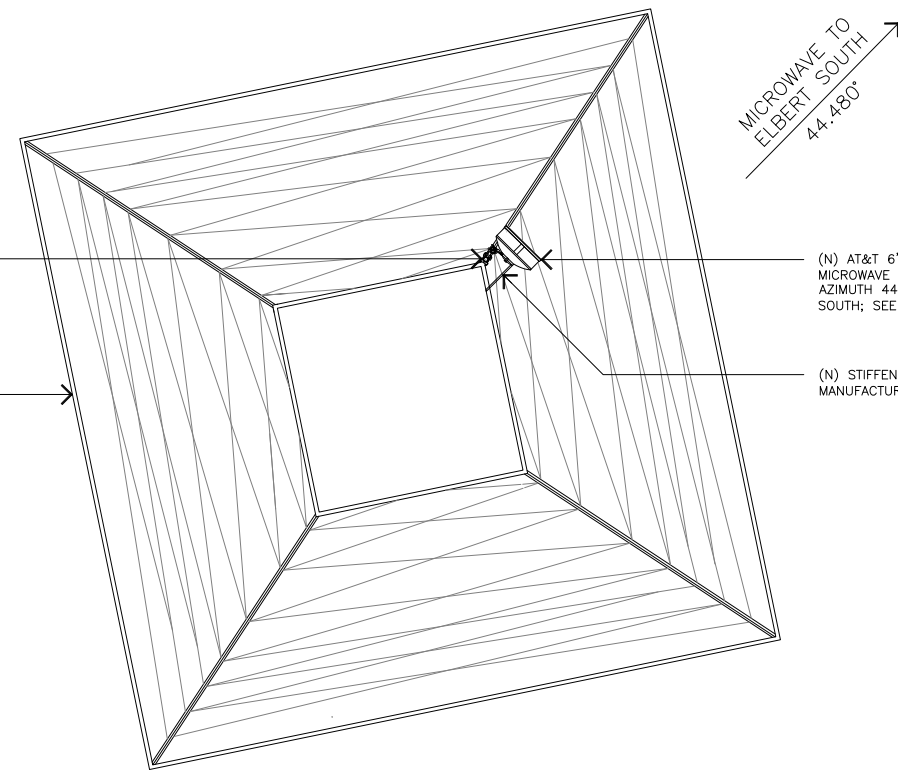
GENERAL NOTES:

1. SPLICE GROUND CONNECTIONS.
2. FOLLOW COAXIAL CABLE MANUFACTURERS RECOMMENDATIONS (TYPICAL)
3. ALL INSULATED GROUND WIRES TO BE STRANDED, AWG WIRE UNLESS NOTED OTHERWISE.
4. THIS IS TYPICAL FOR ONE SECTOR OF ANTENNAS. SEE PLANS FOR NUMBER OF SECTORS.
5. NUMBER OF COAX IS DIAGRAMATIC.
6. EXISTING DIPLXER'S AND EXISTING TMA'S NOT SHOWN FOR CLARITY.

GROUNDING SYSTEM SCHEMATIC

SCALE: NONE

3



(N) AT&T PIPE MOUNT; SEE DETAIL 1/A-3.

(E) LATTICE TOWER.

(N) AT&T 6'-0" (COMMSCOPE USX6-6W) MICROWAVE ANTENNA @ 272.00' A.G.L. AND AZIMUTH 44.480° TO TARGET SITE ELBERT SOUTH; SEE DETAIL 1/A-3.

(N) STIFFENER ARM. INSTALL PER MANUFACTURER'S SPECIFICATIONS.

MICROWAVE TO ELBERT SOUTH
44.480°

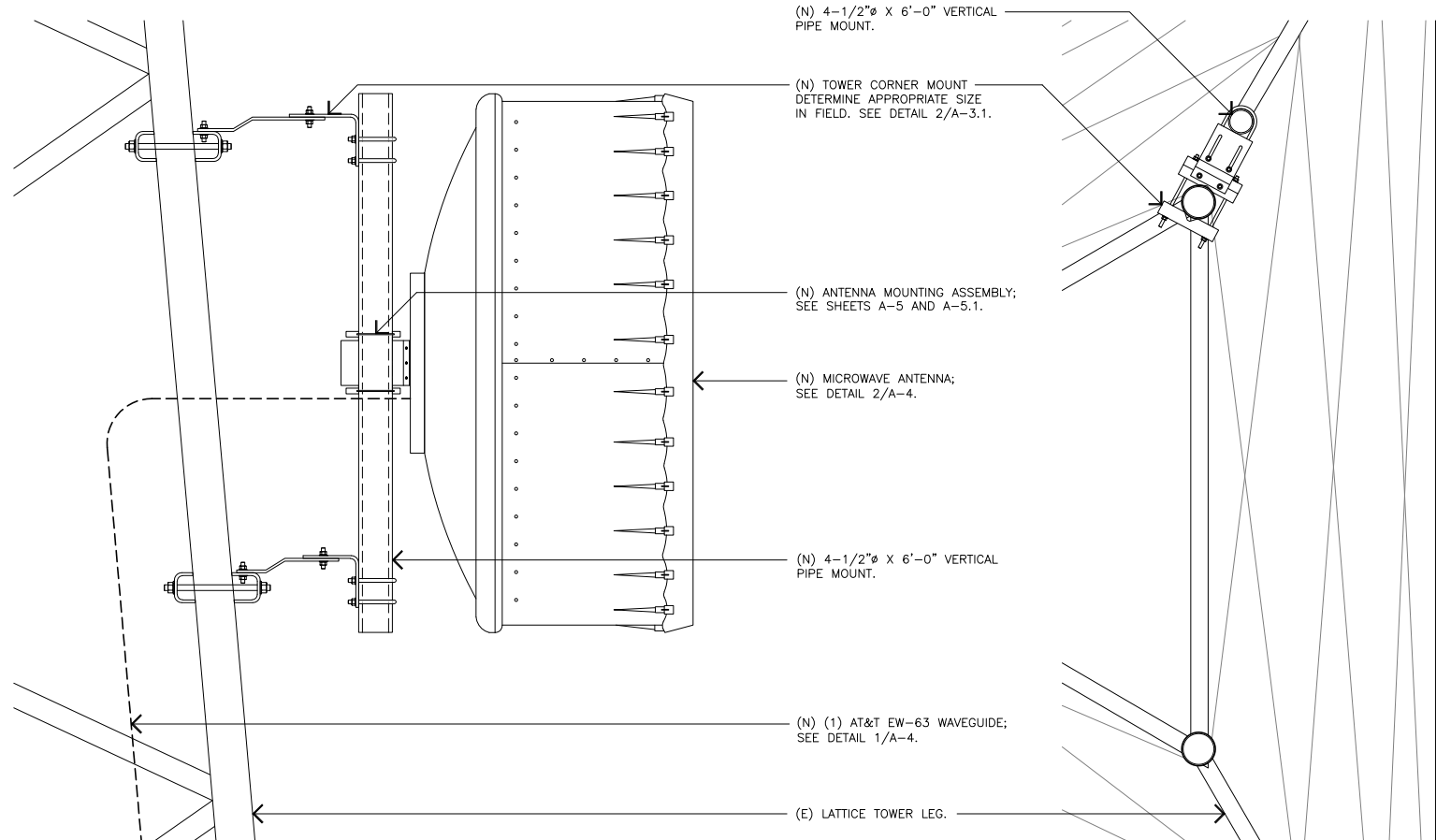
STIFFENER ARM SCHEDULE

SIZE OF MICROWAVE ANTENNA	NUMBER OF STIFFENER ARMS
1'-0" TO 2'-7"	NONE
3'-0" TO 4'-0"	1
6'-0"	2
8'-0" TO 10'-0"	3
12'-0" +	4

ANTENNA PLAN

SCALE: NONE

2



(N) 4-1/2" X 6'-0" VERTICAL PIPE MOUNT.

(N) TOWER CORNER MOUNT DETERMINE APPROPRIATE SIZE IN FIELD. SEE DETAIL 2/A-3.1.

(N) ANTENNA MOUNTING ASSEMBLY; SEE SHEETS A-5 AND A-5.1.

(N) MICROWAVE ANTENNA; SEE DETAIL 2/A-4.

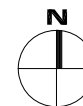
(N) 4-1/2" X 6'-0" VERTICAL PIPE MOUNT.

(N) (1) AT&T EW-63 WAVEGUIDE; SEE DETAIL 1/A-4.

(E) LATTICE TOWER LEG.

ELEVATION VIEW

PLAN VIEW
ANTENNAS NOT SHOWN FOR CLARITY

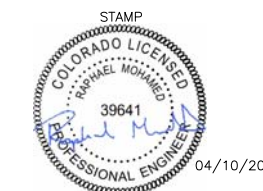


MICROWAVE ANTENNA DETAIL

SCALE: NONE

1

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SHEET TITLE

ANTENNA DETAILS

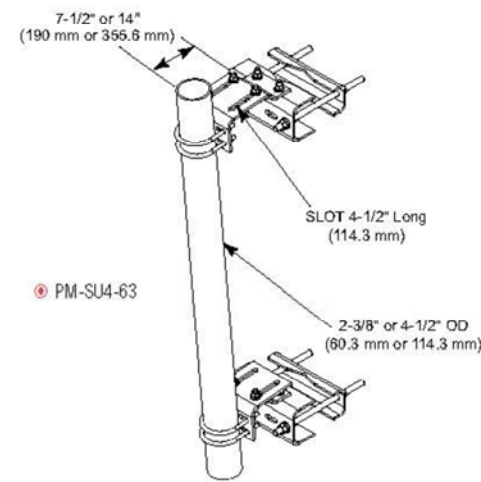
A-3

Universal Sliding Pipe Mount Kits

Application: Lattice towers
Size: 2-3/8" (60.3 mm) OD or 4-1/2" (114.3 mm) OD
Design: Pipe with saddle mount and adjustable clamps
Feature: Universal sliding bracket with up to 7° of taper
Mounts to: Straight or tapered legs up to 16" (406.4 mm) OD, 16" (406.4 mm) angle 60°, or 12" (304.8 mm) angle 90°
Material: Hot dip galvanized steel
Includes: Universal saddle mount, sliding pipe mount brackets, with or without pipe
Order Separately: Pipes for base kits

Wind Rating*: 120 mph (BWS) per latest revision of TIA/EIA-222 at 150' AGL

*Typical installation of one 8' microwave antenna with stiff arm



Part Number	Description	Weight, lb (kg)
-------------	-------------	-----------------

Universal Sliding Pipe Mount Kits, for Round or 60° Angle Legs up to 8" (203.2 mm), or 6" (152.4 mm) 90° Angle Legs, 2-3/8" (60.3 mm) Antenna Mounting Pipe

PM-SU2-B	Base Kit, Order Pipe Separately, Kit of 2	80 (32.3)
PM-SU2-72	2-3/8" OD x 72" (60.3 mm OD x 1.8 m)	101 (45.8)
PM-SU2-96	2-3/8" OD x 96" (60.3 mm OD x 2.4 m)	114 (51.7)

Universal Sliding Pipe Mount Kits, for Round or 60° Angle Legs up to 16" (406.4 mm), or 12" (304.8 mm) 90° Angle Legs, 2-3/8" (60.3 mm) Antenna Mounting Pipe

PML-SU2-B	Base Kit, Order Pipe Separately, Kit of 2	80 (32.3)
PML-SU2-72	2-3/8" OD x 72" (60.3 mm OD x 1.8 m)	101 (45.8)
PML-SU2-96	2-3/8" OD x 96" (60.3 mm OD x 2.4 m)	114 (51.7)

Universal Sliding Pipe Mount Kits, for Round or 60° Angle Legs up to 8" (203.2 mm), or 6" (152.4 mm) 90° Angle Legs, 14" (355.6 mm) Stand-off, 2-3/8" (60.3 mm) Antenna Mounting Pipe

PM-SU2L-B	Base Kit, Order Pipe Separately, Kit of 2	90 (40.9)
PM-SU2L-72	2-3/8" OD x 72" (60.3 mm OD x 1.8 m)	110 (49.9)
PM-SU2L-96	2-3/8" OD x 96" (60.3 mm OD x 2.4 m)	121 (54.9)

Universal Sliding Pipe Mount Kits, for Round or 60° Angle Legs up to 16" (406.4 mm), or 12" (304.8 mm) 90° Angle Legs, 14" (355.6 mm) Stand-off, 2-3/8" (60.3 mm) Antenna Mounting Pipe

PML-SU2L-B	Base Kit, Order Pipe Separately, Kit of 2	90 (40.9)
PML-SU2L-72	2-3/8" OD x 72" (60.3 mm OD x 1.8 m)	110 (49.9)
PML-SU2L-96	2-3/8" OD x 96" (60.3 mm OD x 2.4 m)	121 (54.9)

Universal Sliding Pipe Mount Kits, for Round or 60° Angle Legs up to 8" (203.2 mm), or 6" (152.4 mm) 90° Angle Legs, 4-1/2" (114.3 mm) Antenna Mounting Pipe

PM-SU4-B	Base Kit, Order Pipe Separately, Kit of 2	81 (36.8)
PM-SU4-63	4-1/2" OD x 63" (114.3 mm OD x 1.6 m)	138 (62.6)
PM-SU4-96	4-1/2" OD x 96" (114.3 mm OD x 2.4 m)	169 (76.7)

Universal Sliding Pipe Mount Kits, for Round or 60° Angle Legs up to 16" (406.4 mm), or 12" (304.8 mm) 90° Angle Legs, 4-1/2" (114.3 mm) Antenna Mounting Pipe

PML-SU4-B	Base Kit, Order Pipe Separately, Kit of 2	81 (36.8)
PML-SU4-63	4-1/2" OD x 63" (114.3 mm OD x 1.6 m)	138 (62.6)
PML-SU4-96	4-1/2" OD x 96" (114.3 mm OD x 2.4 m)	169 (76.7)

Universal Sliding Pipe Mount Kits, for Round or 60° Angle Legs up to 8" (203.2 mm), or 6" (152.4 mm) 90° Angle Legs, 14" (355.6 mm) Stand-off 4-1/2" (114.3 mm) Antenna Mounting Pipe

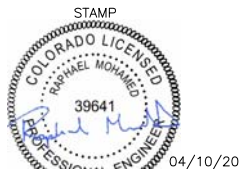
PM-SU4L-B	Base Kit, Order Pipe Separately, Kit of 2	90 (40.9)
PM-SU4L-63	4-1/2" OD x 63" (114.3 mm OD x 1.6 m)	145 (65.8)
PM-SU4L-96	4-1/2" OD x 96" (114.3 mm OD x 2.4 m)	175 (79.4)

Universal Sliding Pipe Mount Kits, for Round or 60° Angle Legs up to 16" (406.4 mm), or 12" (304.8 mm) 90° Angle Legs, 14" (355.6 mm) Stand-off, 4-1/2" (114.3 mm) Antenna Mounting Pipe

PML-SU4L-B	Base Kit, Order Pipe Separately, Kit of 2	90 (40.9)
PML-SU4L-63	4-1/2" OD x 63" (114.3 mm OD x 1.6 m)	145 (65.8)
PML-SU4L-96	4-1/2" OD x 96" (114.3 mm OD x 2.4 m)	175 (79.4)

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GAMALIEL AGUILAR	04/10/20
100% CDS WITH STRUCTURALS	DATE
ALLAN WALKER	03/23/20
CONSTRUCTION	DATE
SITE ACQUISITION	DATE

PROJECT NAME
MICROWAVE UPGRADE

SITE NAME
BLACK FOREST/COU2037

FA NUMBER
10093683

7113 MARSHBERN COURT
 COLORADO SPRINGS, COLORADO 80908

DRAWING DATES

03/04/20	90% CD REVIEW (P1-B1)
04/10/20	100% FINAL CDS (P1-B2)
09/28/20	COUNTY COMMENTS (P1-B3)

SHEET TITLE

DETAILS

A-3.1

USX6-6W-6GR



1.8m | 6ft Sentinel® Ultra High Performance, Super High XPD Antenna

Product Classification

Brand	Sentinel®
Product Type	Microwave antenna

General Specifications

Antenna Type	USX - Sentinel® Ultra High Performance, Super High XPD Antenna
Diameter, nominal	1.8 m 6 ft
Packing	Standard pack
Radome Color	Gray
Radome Material	Fabric
Reflector Construction	One-piece reflector
Antenna Input	CPR137G
Antenna Color	Gray
Antenna Type	USX - Sentinel® Ultra High Performance, Super High XPD Antenna
Diameter, nominal	1.8 m 6 ft
Polarization	Dual

Mechanical Specifications

Fine Azimuth Adjustment	±5°
Fine Elevation Adjustment	±15°
Mounting Pipe Diameter	50 mm–115 mm 2.0 in–4.5 in
Net Weight	90 kg 198 lb
Side Struts, Included	1
Side Struts, Optional	1
Wind Velocity Operational	180 km/h 112 mph
Wind Velocity Survival Rating	200 km/h 124 mph

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TALLEY

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Product Specifications



EW63

EW63, HELIAX® Standard Elliptical Waveguide



CHARACTERISTICS

Construction Materials

Jacket Material	PE
Conductor Material	Corrugated copper
Jacket Color	Black

Dimensions

Cable Volume	855.0 L/km 9.2 ft ³ /kft
Cable Weight	0.76 kg/m 0.51 lb/ft
Diameter Over Jacket (E Plane)	51.10 mm 2.01 in
Diameter Over Jacket (H Plane)	29.50 mm 1.16 in

Environmental Specifications

Installation Temperature	-40 °C to +60 °C (-40 °F to +140 °F)
Operating Temperature	-55 °C to +85 °C (-67 °F to +185 °F)
Storage Temperature	-70 °C to +85 °C (-94 °F to +185 °F)

General Specifications

Brand	HELIAX®
-------	---------

Mechanical Specifications

Maximum Twist	3.00 °/m 1.00 °/ft
Minimum Bend Radius, Multiple Bends (E Plane)	260.00 mm 10.00 in
Minimum Bend Radius, Multiple Bends (H Plane)	740.00 mm 29.00 in
Minimum Bend Radius, Single Bend (E Plane)	180.00 mm 7.00 in
Minimum Bend Radius, Single Bend (H Plane)	510.00 mm 20.00 in

Standard Conditions

Attenuation, Ambient Temperature	24 °C 75 °F
Average Power, Ambient Temperature	40 °C 104 °F
Average Power, Temperature Rise	42 °C 76 °F

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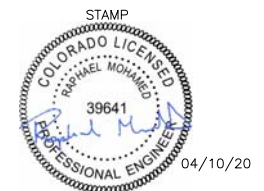
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09/28/20	COUNTY COMMENTS (P1-B3)

SHEET TITLE

SPECIFICATIONS

Installation Instructions



TMW Antenna Bulletin 102344 page 1 of 12
Tower Mount for 6ft (1.8m) Antennas.
Andrew Institute offers installation training.

Description
The following pages show the steps required to assemble and fit the antenna mount to a vertical pipe of diameter 48 to 115 mm (1.9 to 4.5"). This mount provides ±20° azimuth or ±15° elevation adjustment.

Notice
The installation, maintenance, or removal of antenna systems requires qualified, experienced personnel. Andrew installation instructions have been written for such personnel. Antenna systems should be inspected once a year by qualified personnel to verify proper installation, maintenance, and condition of equipment.

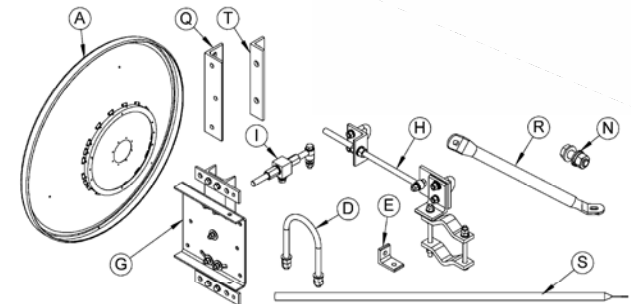
Andrew disclaims any liability or responsibility for the results of improper or unsafe installation practices.

Warning: Use protective wear to avoid skin contact with the pre-applied conductive grease on threads. Keep away from mouth. Wash thoroughly after use with liberal amounts of liquid soap and rinse with water. Do not store open near food or food sources. Dispose of empty or partially filled containers according to governmental regulations for petroleum products. Contents: oil, clay, and zinc dust.

TABLE 1- ANTENNA PARTS LIST

Item	Qty.	Description
A	1	REFLECTOR ASSY
D	3	U-BOLT
E	2	BRACKET
G	1	PANNING FRAME ASSY
H	1	AZIMUTH ADJUSTER
I	1	ELEVATION ADJUSTER
N	11	M12x35mm HEX HEAD BOLT*
	19	FLAT WASHER*
	11	SPRING WASHER*
	11	M12 NUT*
Q	1	MOUNTING ANGLE
R	1	STRENGTHENING STRUT
S	1	STRUT PIPE
T	1	SAFETY BRACKET

* = PART OF ACCESSORY KIT



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Customer Service 24 hours
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Other Europe: +44 592 782 612

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Installation Instructions

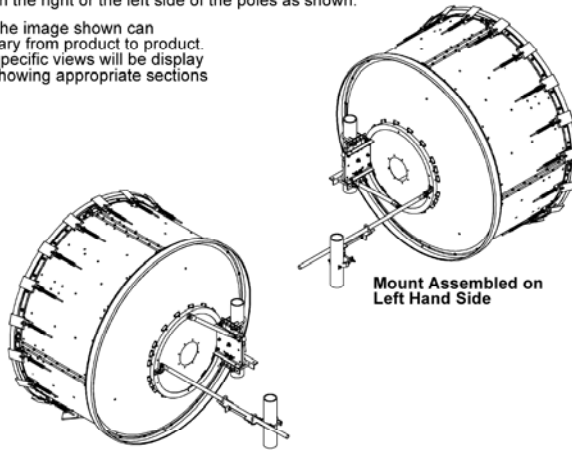


TMW Antenna Bulletin 102344 page 2 of 12
Tower Mount for 6ft (1.8m) Antennas.
Andrew Institute offers installation training.

Assembling the Mount

the antenna may be assembled with the mounts on the right or the left side of the poles as shown.

The image shown can vary from product to product. Specific views will be display showing appropriate sections



Mount Assembled on Right Hand Side

Note: only the left side assembly is described the right side assembly is identical except or the orientation of the strengthening strut - alternate steps and views will be shown.

Certain views have the antenna shields omitted for clarity.

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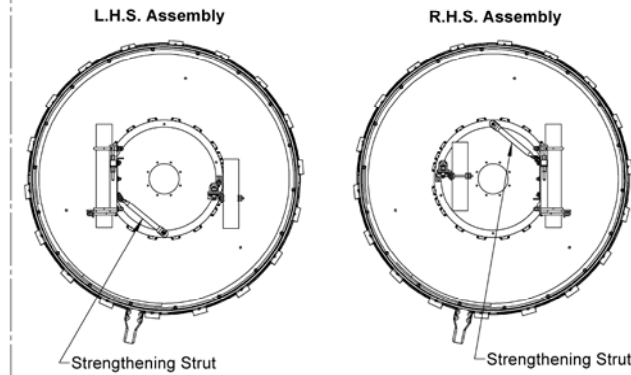
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Installation Instructions



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Tower Mount for 6ft (1.8m) Antennas.
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Orientation of Strengthening Strut Pipe on Mount



- For mounts assembled on the Left Hand Side - the strengthening strut item (R) is fitted to the Bottom of Reflector Backing Ring, as shown.
- For mounts assembled on the Right Hand Side - the strengthening strut item (R) is fitted to the Top of the Reflector Backing Ring, as shown.

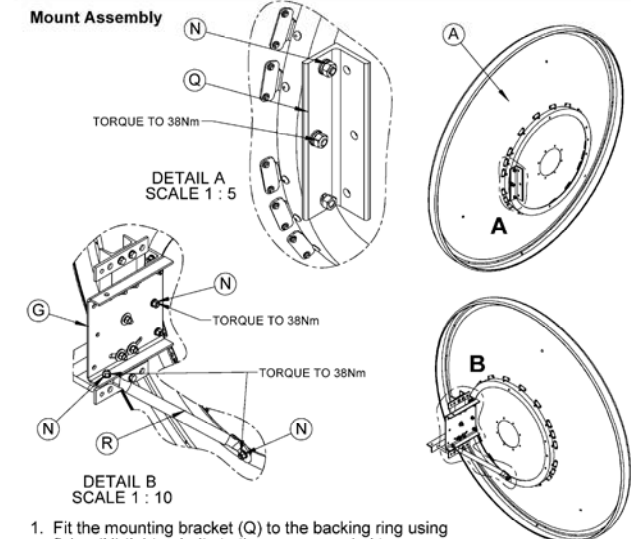
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Installation Instructions



TMW Antenna Bulletin 102344 page 4 of 12
Tower Mount for 6ft (1.8m) Antennas.
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- Fit the mounting bracket (Q) to the backing ring using fixing (N) tighten bolts to the recommended torque.
 - Fit the panning frame assy (G) to the mounting bracket (Q) using the fixings (N) tighten the bolts to the recommended torque.
- L.H.S. Mount only.**
- Fit the Strengthening Strut (R) to Mount using fixings (N) tighten the bolts to the recommended torque.

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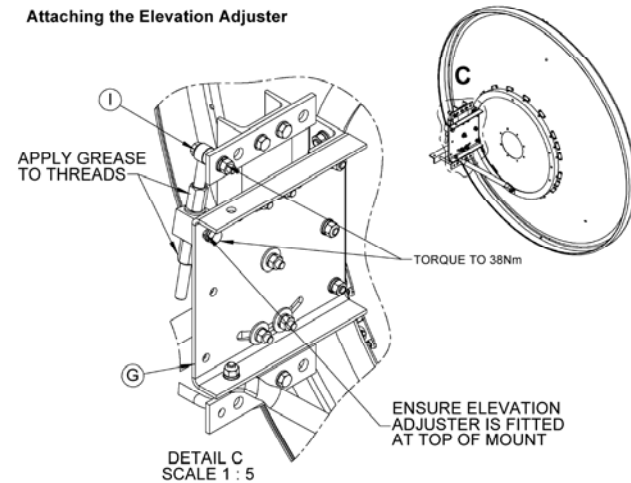
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Installation Instructions



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Tower Mount for 6ft (1.8m) Antennas.
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Attaching the Elevation Adjuster



- Fit elevation adjuster (I) to the position shown on the mount (G).
- Tighten all bolts and nuts to the elevation adjuster securely enough to allow for rotational movement whilst remaining adjuster attached.

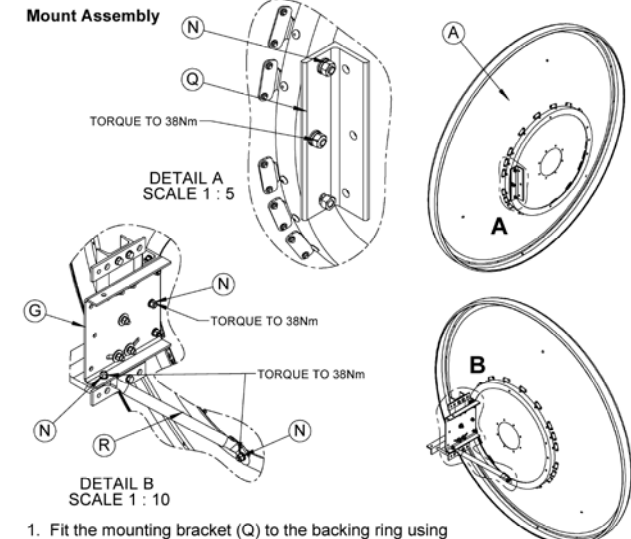
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Installation Instructions



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Tower Mount for 6ft (1.8m) Antennas.
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ANTENNA MOUNTING DETAILS

SCALE: 1
NONE

MasTec Network Solutions

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BREA, CALIFORNIA 92821

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SHEET TITLE

ANTENNA MOUNTING DETAILS

A-5

**Microwave Path Data Sheet
COMSEARCH**

Page 1 of 1

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(703)726-5810 www.comsearch.com

PCN Date: 04/08/2020
Job Number: 200408COMSKN01

Prev Job Num: 190830COMSKN01
RCN Number: 20040803

Administrative Information	BLACK FOREST CO	ELBERT SOUTH CO
City/County	Black Forest/El Paso	/Elbert
Status / License Basis	Engineering Proposal / PRIMARY OPERATION	Engineering Proposal / PRIMARY OPERATION
Call Sign		
Licensee Code	P2705A	P2705A
Licensee Name	New Cingular Wireless PCS LLC -Colo	New Cingular Wireless PCS LLC -Colo
Radio Service / Station Class	CF -- Point-to-Point Microwave, Common Carrier	FXO -- Fixed

Site Information	BLACK FOREST CO	ELBERT SOUTH CO
Latitude (NAD 83)	39 ° 2' 46.5" N	39 ° 10' 37.6" N
Longitude (NAD 83)	104 ° 41' 39.8" W	104 ° 31' 44.9" W
Ground Elevation (m/ft-AMSL)	2321.97 / 7618.0	2132.69 / 6997.0
Antenna Structure Registration #	1024235	
Path Azimuth (°)	44.480	224.584
Path Length (km / miles)	20.380 / 12.663	

Transmit Antenna	BLACK FOREST CO	ELBERT SOUTH CO
Manufacturer	57373A Commscope	57373A Commscope
Model	USX6-6W	USX6-6W
Gain(dBi) / Beamwidth(°) / Tilt(°)	38.8 / 1.80 / -0.58	38.8 / 1.80 / 0.44
Centerline (m / ft - AGL)	82.91 / 272.0	89.92 / 295.0

Receive Antenna	Same As Transmit
Manufacturer	
Model	
Gain (dBi) / Beamwidth (°)	
Centerline (m / ft - AGL)	

Diversity Receive Antenna
Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information	BLACK FOREST CO	ELBERT SOUTH CO
Manufacturer	TEET54 Nokia	TEET54 Nokia
Model	WVCE61-L2-512F30S-208	WVCE61-L2-512F30S-208
Model Description	Wavence MPT-HLC Fixed Modulation	Wavence MPT-HLC Fixed Modulation
Emission Designator / Modulation	30MOD7W 512 QAM	30MOD7W 512 QAM
Loading	1 CH DIG 208000.000	1 CH DIG 208000.000
Stability (%)	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	34.0	34.0
Received Level (dBm)	-35.7	-35.7
EIRP (dBm)	65.8	67.0
Fixed Loss: Tx / Common (dB)	0.0 / 7.0	0.0 / 5.8
Free Space Loss (dB)		134.5

Transmit Frequencies (MHz)	BLACK FOREST CO	ELBERT SOUTH CO
	6004.5000V(13T) 6063.8000V(15T)	6256.5400V(23T) 6315.8400V(25T)



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SHEET TITLE

PCN SHEET

A-6