T - Mobile -

ATC ASSET #: 280216

SITE NAME: **WOLF CREEK RELO** SITE NUMBER:

SL03051A

FILE NAME:

SL03051A_WOLF CREEK RELO_FCD_092517

LOCATION:

4909 N WILLOW BROOK LN, EDEN, UT 84310

100' MONOPOLE CO-LOCATION

TOWER OWNER: AMERICAN TOWER 10 PRESIDENTIAL WAY SITE ADDRESS: 4909 N WILLOW BROOK LN EDEN, UT 84310 COUNTY: LATITUDE: LONGITUDE: -111.82952

SITE INFORMATION

GROUND ELEVATION: 5069' AMSL OCCUPANCY TYPE: UNMANNED ZONING JURISDICTION: WEBER COUNTY

ZONING CODE: PARCEL NUMBER: CV-2 223000001

POWER PROVIDER: ROCKY MOUNTAIN POWER TELCO PROVIDER: CENTURYLINK

CONTACT INFORMATION

A&E SERVICES:

POWDER RIVER ENGINEERING SERVICES, LLC. 219 S. WOODDALE AVE. EAGLE, ID 83616

CONTACT: TODD ROTGE PHONE: 541.647.2777

EMAIL: todd.rotge@powderriverdev.com

POWDER RIVER ENGINEERING SERVICES, LLC. 219 S. WOODDALE AVE. EAGLE. ID 83616

CONTACT: DONALD W. GEORGE. PE. SE. MLSE PHONE: 208.938.8844

EMAIL: don.george@powderriverdev.com

APPLICANT:

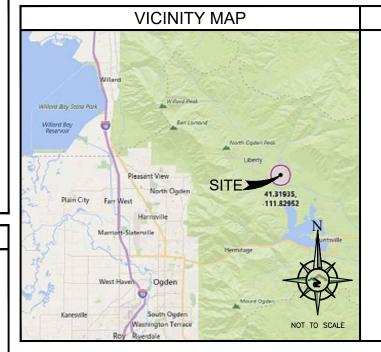
T-MOBILE WEST LLC 8960 NE ALDERWOOD RD. PORTLAND, OR 97220 CONTACT:

PHONE:

APPLICANT:

AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801 CONTACT: BRANDI SAVAGE PHONE: 425.306.6965

EMAIL: brandi.savage@americantower.com





DRIVING DIRECTIONS

DIRECTIONS FROM SALT LAKE CITY INTERNATIONAL AIRPORT:

DEPART SALT LAKE CITY AIRPORT TERMINAL DRIVE, 1.5 MI. TAKE RAMP LEFT FOR I-80 EAST TOWARD PROVO / SALT LAKE CITY / OGDEN, 1.6 MI. AT EXIT 117, TAKE RAMP RIGHT FOR I-215 NORTH TOWARD OGDEN, 6.7 MI. TAKE RAMP FOR I-15 NORTH, 10.8 MI. AT EXIT 324, TAKE RAMP RIGHT FOR US-89 NORTH TOWARD SO. OGDEN, 10.7 MI. TAKE RAMP RIGHT FOR I-84 EAST TOWARD EVANSTON / MORGAN, 4.4 MI. AT EXIT 92, TAKE RAMP RIGHT TOWARD MTN GREEN / HUNTSVILLE, 0.2 MI. TURN LEFT ONTO UT-167 / NORTH HIGHWAY 167, 361 FT. TURN RIGHT TO STAY ON UT-167 / WEST OLD HIGHWAY ROAD, 1.5 MI. TURN LEFT TO STAY ON UT-167 / NORTH TRAPPERS LOOP ROAD, 9.5 MI. TURN LEFT ONTO UT-39 / EAST 900 SOUTH, 3.7 MI. TURN RIGHT ONTO UT-158, 1.3 MI. KEEP RIGHT TO STAY ON UT-158 / NORTH UT-158, 4.3 MI. TURN LEFT ONTO WILLOWBROOK LANE, 108 FT. TURN LEFT INTO STORAGE UNITS TO LOCATION.

DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME

	DRAWING INDEX	
SHEET NO.	DESCRIPTION	REV
T-1	TITLE SHEET	1
GN-1	GENERAL NOTES	0
GN-2	GENERAL NOTES	0
C-1	ENLARGED SITE PLAN	0
C-2	PROPOSED EQUIPMENT PLAN	0
C-3	ELEVATION & ANTENNA PLAN	0
C-3.1	RFDS SPECIFICATIONS	0
C-3.2	CABLE SPECIFICATIONS	0
C-4	EQUIPMENT DETAILS	0
C-5	EQUIPMENT DETAILS	0
C-6	EQUIPMENT DETAILS	0
C-7	EQUIPMENT DETAILS	0
E-1	ELECTRICAL DETAILS	0
E-2	PANEL SCHEDULE	0
E-3	GROUNDING DETAILS	0
E-4	GROUNDING PLANS	0

DRAWING INDEX

SCOPE OF WORK

INSTALL (3) SECTOR MOUNTS, (6) ANTENNAS, (9) RRUS AND (2) HYBRID CABLE AT ANTENNA LEVEL. INSTALL (1) EQUIPMENT SHELTER IN EXISTING

APPLICABLE CODES

BUILDING CODE 2015 IBC ELECTRICAL CODE 2014 OESC

T··Mobile·





	LIC	ENSE #:	C-3	065
			REVISIONS	
	REV	DATE	DESCRIPTION	INT
	1	09/25/17	REVISIONS	JHT
	0	08/16/17	100% CONSTRUCTION	JHT
	В	08/11/17	ISSUED FOR REVIEW 90%	LDL
	Α	06/20/17	ISSUED FOR REVIEW 90%	LDL



T-MOBILE #: SL03051A

ATC #: 280216

4909 N WILLOW BROOK LN EDEN, UT 84310

SHEET TITLE:

TITLE SHEET

T-1

SHEET NUMBER:

GENERAL NOTES

GENERAL NOTES

1. THE CONTRACTOR'S SCOPE OF WORK SHALL INCLUDE ALL ITEMS
DEFINED IN THE CONTRACT DOCUMENTS. THE CONTRACT DOCUMENTS
INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING: THE CONTRACT,
SPECIFICATIONS AND CONSTRUCTION DRAWINGS.

2. ALL EQUIPMENT SUPPLIED BY THE OWNER SHALL BE PICKED UP BY THE CONTRACTOR AT THE APPROPRIATE WAREHOUSE.

3. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL WORK 4. THE CONTRACTOR SHALL PROVIDE ON—SITE SUPERVISION AT ALL TIMES WHILE THE WORK IS BEING PERFORMED AND SHALL DIRECT ALL WORK, USING HIS BEST SKILL AND ATTENTION. HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, PROCEDURES AND SEQUENCES FOR COORDINATING ALL PORTIONS OF THE

WORK UNDER THE CONTRACT.

5. THE CONTRACTOR SHALL VISIT THE JOB SITE TO REVIEW THE SCOPE OF WORK AND EXISTING JOB SITE CONDITIONS INCLUDING, BUT NOT LIMITED TO, MECHANICAL, ELECTRICAL SERVICE AND OVERALL COORDINATION. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO SUBMITTING HIS BID. ANY DISCREPANCIES, CONFLICTS OR OMISSIONS, ETC., SHALL BE REPORTED TO THE T-MOBILE CONSTRUCTION SUPERVISOR BEFORE PROCEEDING WITH THE WORK. 6. THE CONTRACTOR SHALL PROTECT ALL AREAS FROM DAMAGE WHICH MAY OCCUR DURING CONSTRUCTION. ANY DAMAGE TO NEW AND EXISTING CONSTRUCTION, STRUCTURE, LANDSCAPING OR EQUIPMENT SHALL BE IMMEDIATELY REPAIRED OR REPLACED TO THE SATISFACTION OF THE TENANT, BUILDING OWNER OR OWNER'S REPRESENTATIVE AT THE

EXPENSE OF THE CONTRACTOR.

7. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES, WHETHER SHOWN HEREON OR NOT, AND TO PROTECT THEM FROM DAMAGE. THE CONTRACTOR SHALL BEAR ALL EXPENSES FOR REPAIR OR REPLACEMENT OF UTILITIES OR OTHER PROPERTY DAMAGED IN

CONJUNCTION WITH THE EXECUTION OF WORK.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE
SECURITY OF THE SITE WHILE THE JOB IS IN PROGRESS AND UNTIL THE

JOB IS COMPLETED.

9. THE CONTRACTOR SHALL PROVIDE TEMPORARY WATER, POWER AND 9. THE CONTRACTOR SHALL PROVIDE TEMPORART WATER, POWER AND TOILET FACILITIES AS REQUIRED BY THE CITY OR GOVERNING AGENCY.

10. THE CONTRACTOR AND ALL SUBORDINATE CONTRACTORS SHALL COMPLY WITH ALL LOCAL AND STATE REGULATIONS.

11. THE CONTRACTOR SHALL OBTAIN AND PAY FOR PERMITS, LICENSES AND INSPECTIONS NECESSARY FOR PERFORMANCE OF THE WORK AND NECESSARY FOR DESTRUCTIONS NECESSARY FOR PERFORMANCE OF THE WORK AND NECESSARY FOR DESTRUCTIONS NECESSARY FOR PERFORMANCE OF THE WORK AND

AND INSPECTIONS NECESSARY FOR PERFORMANCE OF THE WORK AND INCLUDE THOSE IN THE COST OF THE WORK TO T-MOBILE.

12. FIGURED DIMENSIONS HAVE PRECEDENCE OVER DRAWINGS SCALE, AND DETAIL DRAWINGS HAVE PRECEDENCE OVER SMALL DRAWINGS. CHECK ACCURACY OF ALL DIMENSIONS IN THE FIELD. UNLESS SPECIFICALLY NOTED, DO NOT FABRICATE ANY MATERIALS OFF SITE, NOR DO ANY NOTED, DO NOT FABRICATE ANY MATERIALS OFF STIE, NOR DO ANY CONSTRUCTION UNTIL THE ACCURACY OF DRAWING DIMENSIONS HAVE BEEN VERIFIED AGAINST ACTUAL FIELD DIMENSIONS.

13. THE CONTRACTOR SHALL NOTIFY THE T—MOBILE CONSTRUCTION SUPERVISOR OF ANY CONFLICTS OR DISCREPANCIES IN THE CONTRACT DOCUMENTS OR FIELD CONDITIONS PRIOR TO EXECUTING THE WORK IN

QUESTION.

14. THE CONTRACTOR SHALL NOTIFY THE T-MOBILE CONSTRUCTION SUPERVISOR IF DETAILS ARE CONSIDERED UNSOUND, UNSAFE, NOT WATERPROOF, OR NOT WITHIN CUSTOMARY TRADE PRACTICE. IF WORK IS PERFORMED, IT WILL BE ASSUMED THAT THERE IS NO OBJECTION TO THE DETAIL. 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.

15. 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 T-MOBILE CONSTRUCTION SUPERVISOR SO THAT MODIFICATIONS CAN BE MADE BEFORE PROCEEDING WITH THE WORK.

16. ALL SYMBOLS AND ABBREVIATIONS USED ON THE DRAWINGS ARE CONSTRUCTION SUPERVISOR SHALL NOTIFY THE CONTRACTOR HAS QUESTIONS REGARDING THEIR EXACT MEANING, THE T-MOBILE CONSTRUCTION SUPERVISOR SHALL NOTIFY THE CONTRACTOR HAS QUESTIONS REGARDING THEIR EXACT MEANING, THE T-MOBILE

CONSTRUCTION SUPERVISOR SHALL BE NOTIFIED FOR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.

17. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BLOCKING,

BACKING, FRAMING, HANGERS OR OTHER SUPPORT FOR ALL OTHER ITEMS REQUIRING THE SAME. 18. CITY APPROVED PLANS SHALL BE KEPT IN A PLAN BOX AND SHALL NOT BE USED BY WORKMEN. ALL CONSTRUCTION SETS SHALL REFLECT SAME INFORMATION. AT ALL TIMES THESE ARE TO BE UNDER THE CARE

THE JOB SUPERINTENDENT.

D. DESIGN DRAWINGS ARE DIAGRAMMATIC ONLY AND SHALL BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION CONDITIONS WILL PERMIT. ANY ERROR, OMISSION, OR DESIGN DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE T -MOBILE CONSTRUCTION SKOUGHT TO THE ATTENTION OF THE T -MOBILE CONSTRUCTION.
SUPERVISOR FOR CLARIFICATION OR CORRECTION BEFORE CONSTRUCTION.
20. AS-BUILTS REQUIREMENTS: DO NOT USE RECORD DOCUMENTS FOR CONSTRUCTION PURPOSES. PROTECT RECORD DOCUMENTS FROM DETERNORATION AND LOSS IN A SECURE, FIRE-RESISTANT LOCATION.
PROVIDE ACCESS TO RECORD DOCUMENTS FOR THE T-MOBILE PROVIDE ACCESS TO RECORD DOCUMENTS FOR THE T-MOBILE
CONSTRUCTION SUPERVISOR'S REFERENCE DURING NORMAL WORKING
HOURS, MAINTAIN A CLEAN, UNDAMAGED SET OF BLUE OR BLACK LINE
PRINTS OF CONTRACT DRAWINGS AND SHOP DRAWINGS, MARK THE SET TO
SHOW THE ACTUAL INSTALLATION WHERE THE INSTALLATION VARIES
SUBSTANTIALLY FROM THE WORK AS ORIGINALLY SHOWN, MARK WHICH
PROMITTED TO THE WORK AS ORIGINALLY SHOWN, MARK WHICH SUBSTANTIALLY FROM THE WORK AS ORIGINALLY SHOWN. MARK WHICH DRAWINGS IS MOST CAPABLE OF SHOWING CONDITIONS FULLY AND ACCURATELY. WHERE SHOP DRAWINGS ARE USED, RECORD A CROSS—REFERENCE AT THE CORRESPONDING LOCATION ON THE CONTRACT DRAWINGS. GIVE PARTICULAR ATTENTION TO CONCEALED ELEMENTS THAT WOULD BE DIFFICULT TO MEASURE AND RECORD AT A LATER DATE. MARK WOULD BE DIFFICULT TO MEASURE AND RECORD AT A LATER DATE. MARK RECORD SETS WITH RED ERASABLE PENCIL. USE OTHER COLORS TO DISTINGUISH BETWEEN VARIATIONS IN SEPARATE CATEGORIES OF THE WORK. MARK NEW INFORMATION THAT IS IMPORTANT TO THE OWNER BUT WAS NOT SHOWN ON THE CONTRACT DRAWINGS, DETAILS OR SHOP DRAWINGS. NOTE RELATED CHANGE ORDER NUMBERS WHERE APPLICABLE. NOTE RELATED RECORD DRAWING INFORMATION AND PRODUCT DATA, UPON COMPLETION OF THE WORK, SUBMIT ONE (1) COMPLETE SET OF RECORD DOCUMENTS TO THE T-MOBILE CONSTRUCTION SUPERVISOR FOR THE

PART 1: GENERAL

PART 1: GENERAL 1.1 SCOPE: CLEARING, GRUBBING, STRIPPING, EROSION CONTROL, SURVEY, LAYOUT, SUB GRADE PREPARATION, FINISH GRADING AND SECURITY FENCE, AS REQUIRED BY CONSTRUCTION DRAWINGS AND DETAIL DRAWINGS. 1.2 REFERENCES

DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS FOR THE STATE IN WHICH THE PROJECT IS LOCATED.

B. ASTM (AMERICAN SOCIETY FOR TESTING AND

MATERIALS) OSHA (OCCUPATIONAL SAFETY AND HEALTH

ADMINISTRATION)

D. AASHTO (AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS)

1.3 INSPECTION AND TESTING

A. FIELD TESTING OF EARTHWORK, AGGREGATE BASE COURSE, COMPACTION, AND CONCRETE TESTING SHALL BE PERFORMED BY THE CONTRACTOR'S INDEPENDENT TESTING

B. ALL WORK SHALL BE INSPECTED AND RELEASED BY THE T-MOBILE CONSTRUCTION SUPERVISOR WHO SHALL CARRY OUT THE GENERAL INSPECTION OF THE WORK WITH SPECIFIC CONCERN TO PROPER PERFORMANCE OF THE WORK AS SPECIFIED AND/OR CALLED FOR ON THE DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DRAWINGS. II IS THE CONTRACTOR'S RESPONSIBILITY REQUEST TIMELY INSPECTIONS PRIOR TO PROCEEDING WITH FURTHER WORK THAT WOULD MAKE PARTS OF THE WORK INACCESSIBLE OR DIFFICULT TO INSPECT.

1.4 SITE MAINTENANCE AND PROTECTION

A. PROVIDE ALL NECESSARY JOB SITE MAINTENANCE

FROM COMMENCEMENT OF THE WORK UNTIL COMPLETION

OF THE CONTRACT.

B. CONTACT THE ONE-CALL UTILITY LOCATION SERVICE

B. CONTACT THE ONE—CALL UTILITY LOCATION SERVICE PRIOR TO ANY EXCAVATING ACTIVITIES TO HAVE LOCATIONS OF UNDERGROUND UTILITIES VERIFIED.

C. AVOID DAMAGE TO THE SITE INCLUDING EXISTING FACILITIES, STRUCTURES, TREES AND SHRUBS DESIGNATED TO REMAIN. TAKE PROTECTIVE MEASURES TO PREVENT EXISTING FACSIMILES THAT ARE NOT DESIGNATED FOR REMOVAL FROM BEING DAMAGED BY THE WORK.

D. KEEP SITE FERE OF ALL PONDING WATER D. KEEP SITE FREE OF ALL PONDING WATER.

E. PROVIDE EROSION CONTROL MEASURES IN ACCORDANCE WITH THE DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS FOR THE STATE IN WHICH THE PROJECT IS LOCATED. F. PROVIDE AND MAINTAIN ALL TEMPORARY FENCING,

F. PROVIDE AND MAINTAIN ALL TEMPOTART TEMPOTARS, BARRICADES, WARNING SIGNALS AND SIMILAR DEVICES NECESSARY TO PROTECT LIFE AND PROPERTY DURING THE ENTIRE PERIOD OF CONSTRUCTION. REMOVE ALL SUCH DEVICES UPON COMPLETION OF THE WORK. PART II: PRODUCTS

PART II: PRODUCTS
2.1 SUITABLE BACK FILL: EXCAVATED INORGANIC MATERIAL,
COHESIVE AND NON-COHESIVE MATERIALS, INCLUDING
GRAVEL, SAND, INORGANIC LEAN CLAY, GRAVEL SILT, GRAVEL
CLAY, SAND CLAY, SAND SILT OR SILT CLAY MATERIAL FREE
FROM FROZEN LUMPS, REFUSE, STONES OR ROCKS LARGER THAN 3-INCHES IN ANY DIMENSION OR OTHER MATERIAL THAT MAY MAKE THE INORGANIC MATERIAL UNSUITABLE FOR BACKFILL OR FILL MATERIAL AS DETERMINED BY THF -MOBILE CONSTRUCTION SUPERVISOR AND GEOTECHNICAL

2.2 UNSUITABLE MATERIALS: TOP SOIL, HIGH AND MODERATELY PLASTIC SILTS AND CLAY, MATERIAL CONTAINING REFUSE, FROZEN LUMPS, DEMOLISHED BITUMINOUS MATERIAL, VEGETATIVE MATTER, WOOD, STONES IN EXCESS OF 3-INCHES IN ANY DIMENSION AND DEBRIS AS DETERMINED BY THE CONSTRUCTION SUPERVISOR AND T -MOBILE GEOTECHNICAL ENGINEER. TYPICALLY, THESE WILL BE SOILS CLASSIFIED AS PT, MH, CH, OH, ML OR OL.

2.3 GEOTEXTILE FABRIC: MIRAFI 500X OR APPROVED EQUIVALENT

2.4 PLASTIC MARKING TAPE: SHALL BE ACID— AND ALKALI-RESISTANT POLYETHYLENE FILM, SPECIFICALLY MANUFACTURED FOR MARKING AND LOCATING UNDERGROUND UTILITIES, 6-INCHES WIDE WITH A MINIMUM THICKNESS OF 0.004-INCH. TAPE SHALL HAVE MINIMUM STRENGTH OF 1500 PSI IN BOTH DIRECTIONS AND MANUFACTURED WITH INTEGRAL WIRES,FOIL PSI IN BOTH DIRECTIONS AND MANUFACTURED WITH INTEGRAL WIRES, FOIL BACKING OR OTHER MEANS TO ENABLE DETECTION BY A METAL DETECTOR WHEN BURIED UP TO 3 FEET DEEP. THE METALLIC CORE OF THE TAPE SHAL BE ENCASED IN A PROTECTIVE JACKET OR PROVIDED WITH OTHER MEANS TO PROTECT IT FROM CORROSION, TAPE COLOR SHALL BE RED FOR ELECTRIC UTILITIES. AND ORANGE FOR TELECOMMUNICATION UTILITIES. SECURITY FENCE

PROVIDE AND INSTALL THE GALVANIZED FENCE WITH ASSOCIATED POSTS, RAILS, BRACES, FABRIC, TERMINAL POST, GATES, DROP BAR AND BARBED WIRE. USE APPLICABLE PROVISIONS OF ASTM FOR MATERIALS. B. FABRIC SHALL BE HEAVY GALVANIZED CHAIN LINK FENCE, CONFORMING TO ASTM A392 2—INCH MESH 9 GAUGE WIRE (0.148 INCHES DIAMETER) WITH THE TOP AND BOTTOM SELVAGES TWISTED AND BARBED.

C. POSTS

1. LINE POST FOR FABRIC UP TO 8 FEET HIGH SHALL BE 2-3/8 INCH O.D.

2. END CORNER, PULL POST AND GATE POST SHALL BE 2-7/8 INCH O.D.

ALL POSTS SHALL BE SCHEDULE 40 GALVANIZED STEEL PIPE IN ACCORDANCE WITH ASTM. A 12D, A570 AND A525. FOR FENCE OVER 8 FEET HIGH, SIZE POST ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

D. TOP RAILS SHALL CONFORM TO 1-1/4 INCH (1.66 INCH O.D.), SCHEDULE 40 GALVANIZED STEEL PIPE IN ACCORDANCE WITH ASTM 4 A12D.

E. TENSION WIRE SHALL BE 7 GAUGE U.S. STEEL WIRE GALVANIZED IN ACCORDANCE WITH ASTM 4 A16. COATING CLASS III.

E. IENSION WIRE SHALL BE / GAUGE U.S. SIEEL WIRE GALVANIZED IN ACCORDANCE WITH ASTM 4116, COATING CLASS III.

F. BRACE BANDS, TENSION BANDS AND TENSION BARS SHALL BE FABRICATED OF 1/8 INCH BY 7/B INCH GALVANIZED STEEL WITH GALVANIZED STEEL CARRIAGE BOLTS AND NUTS IN ACCORDANCE WITH ASTM4 A123. TENSION BARS SHALL BE 1/4 INCH BY 3/4 INCH GALVANIZED STEEL BAR IN ACCORDANCE WITH ASTM A153. FABRIC TIES SHALL BE CLASS I GALVANIZED STEEL WIRE NO LESS THAN 9

H. POST TOPS SHALL BE PRESSED STEEL OR MALLEABLE IRON AND SHALL BE

N. FOST TOPS SHALL BE PRESSED STEEL OR MALLEABLE INON AND SHALL BE GALVANIZED PER ASTM A15J.

I. BARBED WIRE SHALL CONSIST OF DOUBLE STRANDED 12 1/2 GAUGE WIRE ASTM A121, CLASS 3 WITH 4-POINT BARBS SPACED 5 INCHES APART. THE TOP 1 FOOT OF THE FENCE SHALL CONSIST OF 3 STRANDS OF BARBED WIRE ATTACHED TO 45 DEGREE ANGLE, HEAVY-PRESSED ARMS CAPABLE OF WITHSTANDING WITHOUT FAILURE 250 POUNDS DOWNWARD PULL AT THE OUTERMOST END OF THE ARM J. GATE MATERIALS, SUCH AS FABRIC, BOLTS, NUTS, TENSION BARS AND BARBED WIRE SHALL BE CONSISTENT WITH FENCE MATERIALS. PART III: EXECUTION

3.1 GENERAL

A. BEFORE STARTING GENERAL SITE PREPARATION ACTIVITIES, INSTALL EROSION AND SEDIMENT CONTROL MEASURES. THE WORK AREA SHALL BE CONSTRUCTED AND MAINTAINED IN SUCH CONDITION THAT IN THE EVENT OF RAIN THE SITE WILL BE WELL DRAINED AT ALL TIMES.

B. PERFORM ALL SURVEY, LAYOUT, STAKING AND MARKING TO ESTABLISH AND

MAINTAIN ALL LINES, GRADES, ELEVATIONS AND BENCHMARKS NEEDED FOR EXECUTION

OF THE WORK.

C. CLEAR AND GRUB THE AREA WITHIN THE LIMITS OF THE SITE AND ONLY THE IMMEDIATE SURROUNDINGS NECESSARY TO COMPLETE THE WORK. REMOVE TREES, BRUSH, STUMPS, RUBBISH AND OTHER DEBRIS AND VEGETATION RESTING ON OR PROTRUDING THROUGH THE SURFACE OF THE SITE AREA TO BE CLEARED AND

GRUBBED.

1. REMOVE THE FOLLOWING MATERIALS TO A DEPTH OF NO LESS THAN 12-INCHES BELOW THE ORIGINAL GROUND SURFACE: ROOTS, STUMPS AND OTHER DEBRIS, BRUSH AND REFUSE EMBEDDED IN OR PROTRUDING THROUGH THE GROUND SURFACE. RAKE, DISK OR PLOW THE AREA TO A DEPTH OF NO LESS THAN 6-INCHES, AND REMOVE UP TO A DEPTH OF 12-INCHES AII ROOTS AND OTHER DEBRIS THEREBY EXPOSED.

2. REMOVE TOPSOIL MATERIALS COMPLETELY FROM THE SURFACE UNTIL THE SOIL NO LONGER MEETS THE DEFINITION OF TOPSOIL. AVOID MIXING TOPSOIL WITH SUBSOIL OR OTHER EXCAVATED MATERIALS. TOPSOIL SHALL BE STOCKPILED SEPARATELY FOR REUSE, AS DIRECTED BY THE CONSTRUCTION SUPERVISOR.

3. EXCEPT WHERE EXCAVATION TO GREATER DEPTH IS INDICATED, FILL DEPPRESSIONS RESULTING FROM CLEARING, GRUBBING AND DEMOLITION DEPRESSIONS RESULTING FROM CLEARING, GRUBBING AND DEMOLITION COMPLETELY WITH SUITABLE FILL.

D. REMOVE FROM THE SITE AND DISPOSE IN AN AUTHORIZED LANDFILL AII DEBRIS

RESULTING FROM CLEARING AND GRUBBING OPERATIONS. BURNING IS NOT PERMITTED. E. PRIOR TO EXCAVATING, THOROUGHLY EXAMINE THE AREA TO BE EXCAVATED AND/OR TRENCHED TO VERIFY THE LOCATIONS OF FEATURES INDICATED ON THE AND/OR IRENDED TO VERIFY THE LOCATIONS OF FEATURES INDICATED ON THE DRAWINGS, AND ASCERTAIN THE EXISTENCE AND LOCATION OF ANY STRUCTURE, UNDERGROUND STRUCTURE, CULVERT, STREAM CROSSING OR OTHER ITEM NOT SHOWN THAT MIGHT AFFECT OR INTERFERE WITH THE NEW CONSTRUCTION. NOTIFY THE T—MOBILE CONSTRUCTION SUPERVISOR OF ANY OBSTRUCTIONS THAT WILL PREVENT ACCOMPLISHMENT OF THE WORK AS INDICATED ON THE DRAWINGS.

F. SEPARATE AND STOCKPILE AII EXCAVATED MATERIALS SUITABLE FOR BACK FILL.
ALL EXCESS EXCAVATED AND UNSUITABLE MATERIALS SHALL BE DISPOSED OF IN AN
AREA DESIGNATED BY THE T-MOBILE CONSTRUCTION SUPERVISOR. (UNSUITABLE MATERIAL MAY BE REQUIRED TO BE REMOVED FROM THE SITE.) 3.2 STRUCTURAL EXCAVATION

3.2 SINUCIUMAL EXCAVATIONS SHALL BE CUT TO FIRM MATERIAL HAVING A SAFE BEARING VALUE OF 3000 PSF AND SHALL BE FREE OF ALL LOOSE AND WET MATERIALS. IF THE BOTTOM OF THE EXCAVATION IS NOT FIRM AND STABLE, OVER-EXCAVATE AN ADDITIONAL 12 INCHES, COMPACT SUB-GRADE AND FILL WITH 12 INCHES OF SELECT STRUCTURAL FILL.

INCHES OF SELECT STRUCTURAL FILL.

B. AFTER EXCAVATION, THE EXPOSED SOILS SHALL BE INSPECTED AND TESTED AND ANY UNSUITABLE DEPOSITS REMOVED AS DIRECTED TO REACH SUITABLE BEARING SOIL ALL OVER—EXCAVATED AREAS SHALL. BE BACK FILLED WITH SELECT STRUCTURAL FILL OR WITH LEAN CONCRETE FILL TO THE ELEVATION OF THE BOTTOM OF FOOTING OR FOUNDATION AS INDICATED ON THE DRAWINGS.

C. PRIOR TO PLACEMENT OF CONC. FOUNDATIONS, THE SURFACE ON WHICH THE CONCRETE IS TO BE PLACED SHALL. BE COMPACTED TO A MINIMUM OF 95% OF THE MODIFIED PROCTOR DENSITY BY THE MODIFIED PROCTOR TEST, ASTM 4D15.7.

D. NO. FOUNDATIONS OR STRUCTURES SHALL BE CONSTRUCTED NINTIL THE PASS.

MODIFIED PROCTOR DENSITY BY THE MODIFIED PROCTOR TEST, ASIM4 DISSY.

D. NO FOUNDATIONS OR STRUCTURES SHALL BE CONSTRUCTED UNTIL THE BASE
MATERIALS HAVE BEEN INSPECTED BY THE T-MOBILE CONSTRUCTION SUPERVISOR.

3.3 STRUCTURAL FILL: All COMPACTED FILL SHALL BE PLACED IN LAYERS NOT
EXCEEDING A LOOSE THICKNESS AND COMPACTED TO A MINIMUM DENSITY OF 95%
OF THE MODIFIED PROCTOR DENSITY OBTAINED IN ACCORDANCE WITH ASTM4 D-1557. 3.4 BACK FILL AS SOON AS PRACTICAL AFTER COMPLETING CONSTRUCTION OF THE RELATED STRUCTURE, INCLUDING EXPIRATION OF THE SPECIFIED MINIMUM CURING PERIOD FOR CAST—IN—PLACE CONCRETE, BACKFILL THE EXCAVATION WITH APPROVED MATERIAL TO RESTORE THE REQUIRED FINISH GRADE.

1. PRIOR TO PLACING BACKFILL AROUND STRUCTURES, ALL FORMS SHALL HAVE BEEN REMOVED AND THE EXCAVATION CLEANED OF ALL TRASH, DEBRIS AND UNSUITABLE MATERIALS. 2. BACK FILL BY PLACING AND COMPACTING SUITABLE BACKFILL MATERIAL OR SELECT GRANULAR BACKFILL MATERIAL, WHEN REQUIRED, IN UNIFORM HORIZONTAL LAYERS OF NO GREATER THAN 8-INCH LOOSE THICKNESS. WHERE HAND-OPERATED COMPACTORS ARE USE THE FILL MATERIALS SHALL BE PLACED IN LIFTS NOT TO EXCEED FOUR INCHES IN LOOSE

WHENEVER THE DENSITY TESTS INDICATE THAT THE CONTRACTOR HAS NOT OBTAINED THE 3. WHENEVER THE DENSITY TESTS INDICATE THAT THE CONTRACTOR HAS NOT DETAINED THE SPECIFIED DENSITY, THE SUCCEEDING LAYER SHALL NOT BE PLACED UNTIL THE SPECIFICATION REQUIREMENTS ARE MET UNLESS OTHERWISE AUTHORIZED BY THE GEOTECHNICAL ENGINEER. THE CONTRACTOR SHALL TAKE WHATEVER APPROPRIATE ACTION IS NECESSARY, SUCH AS DISKING AND DRYING, ADDING WATER OR INCREASING THE COMPACTIVE EFFORT. B. THOROUGHLY COMPACT EACH LAYER OF BACKFILL TO A MINIMUM OF 90% OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE MODIFIED PROCTOR TEST C. DO NOT PLACE

UNTIL THE CONCRETE HAS CURED FOR AT LEAST 7 DAYS OR COMPRESSIVE STRENGTH TESTS INDICATE THAT THE CONCRETE HAS ACHIEVED MORE THAN BOX OF ITS SPECIFIED 28 DAY COMPRESSIVE STRENGTH.

3.5 TRENCH EXCAVATION

A. UTILITY TRENCHES SHALL BE EXCAVATED TO THE LINES AND GRADES SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE T-MOBILE CONSTRUCTION SUPERVISOR, PROVIDE SHORING. SHEETING AND BRACING AS REQUIRED TO PREVENT CAVING OR SLOUGHING OF THE TRENCH

WAILS. B. THE TRENCH WIDTH EXTENDS A MINIMUM OF 6 INCHES BEYOND EACH OUTSIDE EDGE OF

THE CONDUIT OR OUTERMOST CONDUIT, WHICHEVER IS APPLICABLE.

C. WHEN SOFT, YIELDING OR OTHERWISE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED AT THE REQUIRED TRENCH BOTTOM ELEVATION, OVER-EXCAVATE THE TRENCH TO A DEPTH OF N LESS THAN 12 INCHES BELOW THE REQUIRED ELEVATION AND BACKFILL WITH GRANULAR BEDDING MATERIAL 3.6 TRENCH BACK FILL

A. PROVIDE GRANULAR BEDDING MATERIAL IN ACCORDANCE WITH THE SPECIFICATIONS, DRAWINGS AND THE UTILITY REQUIREMENTS.

B. NOTIFY THE T-MOBILE CONSTRUCTION SUPERVISOR 24 HOURS IN ADVANCE OF BACK

CONDUCT UTILITY CHECK TESTS BEFORE BACK FILLING BACK FILL AND COMPACT

C. CONDUCT UNITH CHEEVE TESTS BEFORE BACK FILLING BACK FILL AND COMPACT TRENCH BEFORE ACCEPTANCE TESTING.

D. PLACE GRANULAR TRENCH BACKFILL UNIFORMLY ON BOTH SIDES OF THE CONDUITS IN 6-INCH UNCOMPACTED LIFTS UNTIL 12 INCHES OVER THE CONDUITS. SOLIDLY RAM AND TAMP BACKFILL INTO SPACES AROUND THE CONDUITS.

PROTECT CONDUIT FROM LATERAL MOVEMENT, DAMAGE FROM IMPACT OR UNBALANCED

ABOVE THE CONDUIT EMBEDMENT ZONE, PLACE AND COMPACT SATISFACTORY BACKFILL MATERIAL IN 9-INCH MAXIMUM LOOSE THICKNESS LIFTS TO RESTORE THE REQUIRED FINISHED

MATERIAL IN 9-INCH MAXIMUM LOUSE INICKNESS LITTS TO RESTORE THE MEASURE SURFACE GRADE.

G. COMPACT FINAL TRENCH BACKFILL TO A DENSITY EQUAL TO OR GREATER THAN THAT OF THE EXISTING UNDISTURBED MATERIAL IMMEDIATELY ADJACENT TO THE TRENCH BUT NO LESS THAN A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE MODIFIED

THAN A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE MODIFIED PROCTOR TEST, ASTM D1557
3.7 AGGREGATE ACCESS ROAD AND SITE
A. CLEAR, GRUB, STRIP AND EXCAVATE FOR THE ACCESS ROAD AND TOWER COMPOUND TO THE LINES AND GRADES INDICATED ON THE DRAWINGS. SCARIFY TO A DEPTH OF 6 INCHES AND PROOF—ROLL ALL HOLES, RUTS, SOFT PLACES AND OTHER DEFECTS SHALL BE CORRECTED.
B. THE ENTIRE SUB GRADE SHALL BE COMPACTED TO NOT LESS THAN 95:2:OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE MODIFIED PROCTOR TEST, ASTM D 1557.
C. AFTER PREPARATION OF THE SUB GRADE IS COMPLETED, THE GEOTEXTILE FABRIC SHALL BE INSTALLED TO THE LIMITS INDICATED ON THE DRAWINGS BY ROLLING THE FABRIC OUT LONGITUDINALLY ALONG THE ROADWAY OR SITE. THE FABRIC SHALL NOT BE DRAGGED ACROSS THE SUB GRADE PLACE THE ENTIRE ROLL IN A SINGLE OPERATION, ROLLING THE MATERIAL AS SMOOTHLY AS POSSIBLE. SMOOTHLY AS POSSIBLE.

1. OVERLAPS PARALLEL TO THE ROADWAY AND SITE WILL BE PERMITTED AT THE CENTERLINE

SMOOTHLY AS POSSIBLE.

1. OVERLAPS PARALLEL TO THE ROADWAY AND SITE WILL BE PERMITTED AT THE CENTERLINE AND AT LOCATIONS BEYOND THE ROADWAY OR SITE SURFACE WIDTH (I.E., WITHIN THE SHOULDER WIDTH) ONLY. NO LONGITUDINAL OVERLAPS SHALL BE LOCATED BETWEEN THE CENTERLINE AND THE SHOULDER. PARALLEL OVERLAPS SHALL BE A MINIMUM OF 3 FEET WIDE.

2. TRANSVERSE (PERPENDICULAR TO THE ROADWAY) OVERLAPS AT THE END OF A ROLL SHALL OVERLAP SHALL BE PINNED WITH STAPLES OR NAILS BETWEEN 10 AND 12 INCHES LONG TO INSURE STABLE POSITIONING DURING PLACEMENT OF AGGREGATE. PIN LONGITUDINAL SEAMS AT 25-FOOT CENTERS AND TRANSVERSE SEAMS EVERY 5 FEET ON CENTER.

D. THE AGGREGATE SUB BASE, BASE AND SURFACE COURSES SHALL BE CONSTRUCTED IN LAYERS NOT MORE THAN 4 INCHES (COMPACTED) THICKNESS. AGGREGATE TO BE PLACED ON GEOTEXTILE FABRIC SHALL BE END—DUMPED ON THE FABRIC FROM THE FREE END OF THE FABRIC OR OVER PREVIOUSLY PLACED AGGREGATE. AT NO TIME SHALL EQUIPMENT, EITHER DUMPING THE AGGREGATE OR GRADING THE AGGREGATE, BE PERMITTED ON THE ROADWAY OR COMPOUND WITH LESS THAN 8 INCHES OF MATERIAL COVERING THE FABRIC TO NOT LESS THAN 8 INCHES OF MATERIAL COVERING THE FABRIC TO NOT LESS THAN 8 INCHES OF MATERIAL COVERING THE FABRIC TO NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE MODIFIED PROCTOR TEST, ASTM4 D. 1557.

ASTM4 D 1557. 3.8 FINISH GRADING 3.8 FINISH GRADING
A. PERFORM ALL FINISHED GRADING TO PROVIDE SMOOTH, EVEN SURFACE AND SUBSURFACE
DRAINAGE OF THE ENTIRE AREA WITHIN THE LIMITS OF CONSTRUCTION. GRADING SHALL BE
COMPATIBLE WITH ALL SURROUNDING TOPOGRAPHY AND STRUCTURES.

3. UTILIZE SATISFACTORY FILL MATERIALS RESULTING FROM THE EXCAVATION WORK IN THE CONSTRUCTION OF FILLS, EMBANKMENTS AND FOR THE REPLACEMENT OF REMOVED UNSUITABLE

REPAIR ALL ACCESS ROADS AND SURROUNDING AREAS USED DURING THE COURSE OF

C. REPAIR AII ACCESS ROADS AND SURROUNDING AREAS USED DURING THE COURSE OF THIS WORK TO THEIR ORIGINAL CONDITION.

3.9 SECURITY FENCE
A. THE BOTTOM OF THE FENCE SHALL BE 2 INCHES BELOW THE TOP OF THE COMPOUND GRAVEL IF THE SITE CROSSES FEATURES SUCH AS DRAINAGE DITCHES, ETC., THE FENCE SHALL SPAN THE DEPRESSION, CLOSE THE SPACE BELOW THE BOTTOM OF THE FENCE WITH EXTRA FENCE FABRIC OR BARBED WIRE AS DIRECTED BY THE T—MOBILE CONSTRUCTION SUPERVISOR, PRIOR TO PLACING COMPONENTS SUCH AS FABRIC, RAILS, TENSION WIRE AND GATES, ENSURE THAT THE CONCRETE POST FOUNDATION HAS REACHED AT LEAST 75% OF ITS DESIGN STRENGTH OR HAS CURED A MINIMUM OF 7 DAYS AFTER SETTING THE POST.

B. FURNISH GATES WITH NECESSARY FITTINGS AND HARDWARE. HINGES SHALL ALLOW SWING GATES TO SWING 180 DEGREES, PLUNGER BARS SHALL HAVE TOP, BOTTOM AND MIDDLE LOCKING POINTS WITH THE MIDDLE POINT ARRANGED FOR PADLOCKING. GATES SHALL HAVE KEEPERS ON EACH LEAF THAT ENGAGE AUTOMATICALLY WHEN THE GATE IS SWUNG OPEN. REPAIR GALVANIZED COATING DAMAGED IN THE FIELD WITH METHODS AND TECHNIQUES AS RECOMMENDED BY THE MANUFACTURER.

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REV	DATE	DESCRIPTION	INT
1	09/25/17	REVISIONS	JHT
0	08/16/17	100% CONSTRUCTION	JHT
В	08/11/17	ISSUED FOR REVIEW 90%	LDL
Α	06/20/17	ISSUED FOR REVIEW 90%	LDL



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SITE INFORMATION

T-MOBILE #: SL03051A

ATC #: 280216

4909 N WILLOW BROOK LN EDEN. UT 84310

SHEET TITLE:

GENERAL NOTES

SHEET NUMBER:

GN-1

SCALE:

PROJECT SPECIFICATION 16000 (ELECTRICAL)

PART 1: GENERAL
1.1 SCOPE' THIS SPECIFICATION DESCRIBES THE MINIMUM REQUIREMENT FOR

INSTALLATION OF ALL ELECTRICAL SYSTEMS.

1.2 REFERENCES: THE PUBLICATIONS LISTED BELOW FORM PART OF THIS SPECIFICATION.

EACH PUBLICATION SHALL BE THE LATEST REVISION AND ADDENDUM IN EFFECT ON THE DATE THIS SPECIFICATION IS ISSUED FOR CONSTRUCTION, UNLESS NOTED OTHERWISE. EXCEPT AS MODIFIED BY THE REQUIREMENTS SPECIFIED HEREIN, OR THE DETAILS OF THE DRAWINGS, WORK INCLUDED IN THIS SPECIFICATION SHALL CONFORM TO THE APPLICABLE PROVISIONS OF THESE PUBLICATIONS.

A. ANSI (AMERICAN NATIONAL STANDARDS INSTITUTE)
B. NESC (NATIONAL ELECTRICAL SAFETY CODE), LATEST EDITION
C. NEC (NATIONAL ELECTRICAL CODE), LATEST EDITION
D. NFPA 70 (NATIONAL FIRE PROTECTION ASSOCIATION)

E. OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION), INCLUDING ALL APPLICABLE AMENDMENTS

F. U.L. (UNDERWRITERS LABORATORIES)
1.3 SYSTEM DESCRIPTION

DESIGN REQUIREMENTS: THE CONTRACTOR SHALL INSTALL UNDERGROUND ELECTRICAL AND TELEPHONE CONDUITS AND CABLE AS SPECIFIED HEREIN AND AS SHOWN ON THE

B. PERFORMANCE REQUIREMENTS: WHEN FINISHED, WORK SHALL BE IN A COMPLETE AND UNDAMAGED STATE, AS REQUIRED IN THE CONTRACT DOCUMENTS. PART II: PRODUCTS

A. ITEMS SHALL BE NEW AND SHALL BE INSTALLED ONLY IF IN FIRST-CLASS CONDITION.

B. SUBSTITUTIONS FOR MATERIAL WILL BE PERMITTED ONLY BY WRITTEN APPROVAL OF THE T-MOBILE CONSTRUCTION SUPERVISOR.

17 IN THE CONTRACTOR SHALL PROVIDE ALL MATERIAL EXCEPT AS SPECIFIED IN THE CONTRACT DOCUMENTS. ALL MATERIAL SHALL BE APPROVED AND LISTED BY OR BEAR THE U.L. LABEL, AND WILL COMPLY WITH ANSI, IEEE AND NEMA STANDARDS WHERE APPLICABLE.

1. ALL UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC, SIZED AS SHOWN ON

2. ALL EXTERIOR ABOVEGROUND CONDUIT SHALL BE PER LOCAL CODE REQUIREMENTS.

2. ALL EXTERIOR ABOVEGROUND CONDUIT STALL BE FER ECOAL CODE INCADA
3. ALL INTERIOR CONDUIT SHALL BE EAT WITH COMPRESSION—TYPE FITTINGS.
4. LIQUID—TIGHT FLEXIBLE METALLIC CONDUIT SHALL BE USED FOR OUTDOOR

4. LIQUID—INGHI FLEXIBLE METALLIC CONDOIT SHALL BE USED FOR OUTDOOR LOCATIONS WHERE FLEXIBLE CONNECTION IS REQUIRED.

B. CABLES CONDUCTORS FOR GENERAL WIRING SHALL BE NEC STANDARD ANNEALED COPPER WIRE WITH NEC 600 VOLT INSULATION.

1. #B AND LARGER—STRANDED TYPE, THHN OR THWN

2. #10 AND SMALLER—SOLID TYPE THHN OR THWN

CONDUCTORS IN CONDUIT IN OR ADJACENT TO HIGH HEAT SOURCE SHALL BE TYPE XHHW

CONDUCTORS IN CONDUITS ABOVE ROOF, ON TOP OF ROOF OR INSIDE BUILT-UP ROOFING MATERIAL SHALL BE TYPE XHHW

CO. CONVENIENCE OUTLET, UNLESS NOTED OTHERWISE, SURFACE—MOUNTED OUTLETS FOR EXTERIOR LOCATIONS SHALL BE FERALOY, CAD/ZINC ELECTROPLATED WITH THREADED HUBS OR CONDUIT ENTRANCES DRILLED AND TAPPED. ALL COVERS SHALL BE SELF—CLOSING AND GASKETED. SURFACE MOUNTED OUTLETS FOR INTERIOR LOCATIONS SHALL BE GALVANIZED, PRESSED STEEL WITH COVER PLATE, SIERRA PLASTIC STYLE, IVORY

D. COAXIAL CABLE SUPPORTS 1. ALL WAVE GUIDE SUPPORTS SHALL BE
MANUFACTURED TO MEET ALL COAX MINIMUM BENDING REQUIREMENTS WAVE GUIDES, AND
B1587 FOR 6 WAVE GUIDES. SUPPORTS SHALL BE PROVIDED 3'-0" ON CENTERS. PART III: EXECUTION

A. BEFORE LAYING OUT WORK, EXERCISE PROPER PRECAUTION TO VERIFY EACH

MEASUREMENT. B. USE EXTREME CAUTION BEFORE EXCAVATING IN EXISTING AREAS TO LOCATE EXISTING UNDERGROUND SERVICES.

3.2 INSPECTION

A. A VISUAL CHECK OF ELECTRICAL AND TELEPHONE CABLES, CONDUITS AND OTHER ITEMS SHALL BE MADE BY A T-MOBILE CONSTRUCTION SUPERVISOR BEFORE THESE ITEMS ARE PERMANENTLY INSTALLED. THE CONTRACTOR SHALL NOTIFY THE T-MOBILE CONSTRUCTION SUPERVISOR

24 HOURS PRIOR TO TRENCH BACK FILL

A. TRENCHING, BACK FILLING, BEDDING AND COMPACTING SHALL COMPLY WITH SITE

A. IRENCHING, BACK FILLING, BEDDING AND COMPACTING SHALL COMPLY WITH SHE WORK SPECIFICATIONS.

B. DIG TRENCHES TO THE REQUIRED DEPTH AS SHOWN ON THE DRAWINGS WITHOUT POCKETS OR DIPS. REMOVE LARGE STONES FROM THE BOTTOM OF THE TRENCH AND FIRMLY TAMP LOOSE FILL IN THE BOTTOM BEFORE CONDUIT IS LAID.

C. INSTALL UNDERGROUND CONDUIT WITH A MINIMUM 3-INCH TO 100-FOOT SLOPE OR

TO A SLOPE SHOWN ON THE DRAWINGS D. UNLESS SHOWN OTHERWISE ON THE DRAWINGS, TERMINATE AND CAP ALL STUB-UPS

D. UNLESS SHOWN OTHERWISE ON THE DRAWINGS, TERMINATE AND CAP ALL STOB-UPS
12 INCHES ABOVE FINISHED GRADE ELEVATION.

E. WHEREVER CONDUITS CROSS UNDER ROADWAYS, USE GALVANIZED RIGID STEEL
CONDUITS IN ALL CASES, EXTENDING 5 FEET BEYOND THE EDGE OF THE ROAD BED.
MINIMUM DEPTH FOR CONDUIT SHALL BE 4 FEET BELOW ROADWAY GRADE.

F. MARK UNDERGROUND CONDUITS WITH A 6-INCH WIDE RED POLYETHYLENE TAPE
BURIED 6 INCHES UNDER THE SURFACE DIRECTLY OVER THE CONDUITS. MARK THE TAPE

THUS: CAUTION—BURIED ELECTRICAL CABLE.
G. FOR SEALING CONDUITS, USE ONLY NON—THERMOPLASTIC COMPOUNDS SUCH AS J.M.

DUXSEAL, OR AN APPROVED SUBSTITUTE. THE COMPOUND SHALL HAVE NO EFFECT ON RUBBER OR RUBBER-LIKE INSULATIONS, LEAD, ALUMINUM OR FERROUS ALLOYS; IT SHALL BE INSOLUBLE IN WATER AND WITHSTAND MAXIMUM TEMPERATURE RANGES OF THE LOCALITY. H. COAXIAL — REFER TO NOKIA ANTENNA AND COAXIAL CABLE INSULATION PROCEDURES. . ANTENNA — REFER TO NOKIA ANTENNA AND COAXIAL CABLE INSULATION PROCEDURES. I. LNA/MHA — REFER TO NOKIA ANTENNA AND COAXIAL CABLE INSULATION PROCEDURES END OF ELECTRICAL SPECIFICATIONS

PROJECT SPECIFICATION 16670 (GROUNDING)

1.1 SCOPE

A. THIS SPECIFICATION PRESCRIBES THE REQUIREMENTS FOR FURNISHING, INSTALLATION AND TESTING
OF THE GROUNDING CABLE, CONNECTORS AND ASSOCIATED COMPONENTS AS INDICATED ON THE DRAWINGS.

8. APPLICATIONS OF ELECTRICAL GROUNDING AND BONDING WORK SPECIFIED IN THIS SPECIFICATION INCLUDE THE FOLLOWING:

I. FENCE AND GATE POSTS

ELECTRICAL POWER SYSTEMS
GROUNDING ELECTRODES

GROUND BUS BAR SERVICE EQUIPMENT

MONOPOLE/LATTICE TOWER

ICE BRIDGÉ

1.2 REFERENCES: THE PUBLICATIONS LISTED BELOW FORM PART OF THIS SPECIFICATION. EACH PUBLICATION SHALL BE THE LATEST REVISION AND ADDENDUM IN EFFECT ON THE DATE THIS SPECIFICATION IS ISSUED FOR CONSTRUCTION, UNLESS NOTED OTHERWISE. EXCEPT AS MODIFIED BY THE REQUIREMENTS SPECIFIED HEREIN, OR THE DETAILS OF THE DRAWINGS, WORK INCLUDED IN THIS SPECIFICATION SHALL CONFORM TO THE APPLICABLE PROVISIONS OF THESE PUBLICATIONS.

(AMERICAN NATIONAL STANDARDS INSTITUTE)

ANSI (AMERICAN NATIONAL STANDARDS INSTITUTE)
IEEE (INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS)
NEC (NATIONAL ELECTRICAL CODE), LATEST EDITION
NEMA (NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION)
NESC (NATIONAL ELECTRICAL SAFETY CODE), LATEST EDITION

F. OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION)
G. U.L. (UNDERWRITERS LABORATORIES)

H. APPLICABLE LOCAL CODES AND ORDINANCES

PART II' PRODUCTS

2.1 MATERIALS' EXCEPT AS OTHERWISE INDICATED, PROVIDE ELECTRICAL GROUNDING AND BONDING SYSTEMS INDICATED; WITH ASSEMBLY OF MATERIAL, INCLUDING, BUT NOT LIMITED TO, BONDING STSIEMS INDICALED; WITH ASSEMBLT OF MATERIAL, INCLUDING, BUT NOT LIMITED TO, GROUNDING ELECTRODES, BONDING JUMPER AND ADDITIONAL ACCESSORIES NEEDED FOR A COMPLETE INSTALLATION. WHERE MORE THAN ONE TYPE COMPONENT PRODUCT MEETS INDICATED REQUIREMENTS, SELECTION IS INSTALLER'S OPTION. WHERE MATERIALS OR COMPONENTS ARE NOT INDICATED, PROVIDE PRODUCTS WHICH COMPLY WITH NEC, U.L. AND IEEE REQUIREMENTS AND WITH ESTABLISHED INDUSTRY STANDARDS FOR THOSE APPLICATIONS INDICATED GROUNDING

A. GROUNDING

1. THE EQUIPMENT SHALL BE GROUNDED AS FOLLOWS, AS SHOWN ON THE DRAWINGS AND IN COMPLIANCE WITH NEC ARTICLE 250 AND STATE AND LOCAL CODES.

2. GROUND RODS AND QUANTITY SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC. THE CONTRACTOR SHALL PERFORM A GROUND-RESISTANCE—TO—EARTH TEST. SHOULD THE INSTALLATION HAVE A RESISTANCE OF 5 OHMS OR MORE, CONTRACTOR SHALL INSTALL MORE GROUND RODS AS NECESSARY SO THAT THE OVERALL GROUND—TO—EARTH RESISTANCE IS LESS THAN 5 OHMS.

3. INSTALL ELECTRICAL GROUNDING AND BONDING SYSTEMS AS INDICATED, IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, NEC'S "STANDARD OF INSTALLATION," AND IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT PRODUCTS COMPLY WITH REQUIREMENTS.

4. CORDINATE WITH OTHER FLECTRICAL WORK AS NECESSARY TO INSTALLATION OF 4. COORDINATE WITH OTHER ELECTRICAL WORK AS NECESSARY TO INTERFACE INSTALLATION OF ELECTRICAL GROUNDING AND BONDING SYSTEMS.

5. INSTALL GROUND CONDUCTORS A MINIMUM OF 36 INCHES BELOW FINISHED GRADE WHICH ENCIRCLES THE TOWER AND EQUIPMENT AND ARE CONNECTED TO EACH DRIVEN GROUND ROD. ENCIRCLES THE TOWER AND EQUIPMENT AND ARE CONNECTED TO EACH DRIVEN GROUND ROD. GROUND TEENCH SHALL BE AT LEAST 24 INCHES AWAY FROM FOUNDATIONS.

6. TIGHTEN GROUNDING AND BONDING CONNECTORS, INCLUDING SCREWS AND BOLTS, IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED TORQUE TIGHTENING VALUE FOR CONNECTORS AND BOLTS. WHERE MANUFACTURER'S TORQUING REQUIREMENTS ARE NOT INDICATED, TIGHTEN CONNECTIONS TO COMPLY WITH TIGHTENING TORQUE VALUE SPECIFIED IN U.L. 486A TO ASSURE PERMANENT AND EFFECTIVE GROUNDING.
7. APPLY CORROSION—RESISTANT FINISH (NO—OX) TO FIELD—CONNECTIONS, AT COPPER GROUND

BARS AND PLACES WHERE FACTORY APPLIED PROTECTIVE COATING HAVE BEEN DESTROYED, WHICH ARE SUBJECTED TO CORROSIVE AND/OR OXIDATION PROCESS. 8. ON EXISTING LATTICE TOWERS, WATER TOWERS AND ROOF TOPS WHEN A NEW GROUNDING SYSTEM IS INSTALLED, THE CONTRACTOR SHALL TIE THE NEW GROUND SYSTEM TO THE EXISTING

WATER TOWER, LATTICE TOWER STRUCTURAL STEEL OR BUILDING STRUCTURAL STEEL AS THE CASE MAY BE AT LEAST AT ONE LOCATION SO THAT THEY ARE AT THE SAME POTENTIAL.

B. GROUND RODS 1. GROUND RODS SHALL BE 5/8" DIAMETER 8'-0" LONG, COPPER CLAD DRIVEN ROD(S). 2. GROUND ROD(S) SHALL BE LOCATED AT THE PERIMETER OF EQUIPMENT AS TO CREATE A GROUND RING AS SHOWN ON THE DRAWINGS.

3. GROUND ROD(S) SHALL BE SPACED AT A MINIMUM SPACING OF 8'-0" AND A MAXIMUM SPACING OF 10'-0".

GROUND RODS SHELL BE BURIED BELOW THE FROSTLINE. AT NO TIME SHALL THIS DEPTH BE

LESS THAN 18" BELOW FINISHED GRADE.

5. GROUND RODS WHICH CANNOT BE DRIVEN STRAIGHT DOWN THE ENTIRE (10) FEET, SHALL BE DRIVEN AT AN ANGLE NOT GRATER THAN 45 DEGREES (NEC 250-83 AND 250-84).

6. GROUND ROD LOCATIONS SHALL BE NOTED ON THE AS-BUILT DRAWING COMPLETE WITH DIMENSIONS

. PROVIDE GROUND TEST WELLS AS SHOWN ON THE CONSTRUCTION DRAWINGS

C. GROUND CONDUCTOR

1. ALL DIRECT BURIED GROUND CONDUCTORS SHALL BE TINNED SOLID (#2 AWG) WIRE.
BURIED GROUND CONDUCTOR SHALL BE INSTALLED AT MINIMUM DEPTH OF 36" BELOW

2. ALL SUB GRADE GROUND CONNECTIONS SHALL BE MADE THROUGH THE USE OF EXOTHERMIC WELD PROCESS. CONNECTIONS SHALL INCLUDE ALL CABLE TO CABLE SPLICES, TEES AND ALL GROUND ROD CONNECTIONS. MOLD, WELD KITS, ETC., SHALL BE MANUFACTURED BY CADWELD AND SHALL BE INSTALLED AS PER THE MANUFACTURER'S

3. GROUND CONDUCTORS SHALL BE ROUTED IN THE SHORTEST AND STRAIGHTEST DISTANCES POSSIBLE TO MINIMIZE TRANSIENT VOLTAGE RISES. CONDUCTORS SHALL BE INSTALLED AS FOLLOWS'

A. ALL GROUND CONDUCTORS SHALL FOLLOW A CONTINUOUS DOWNWARD PATTERN TO THE GROUND SOURCE. (NEVER RUN GROUND CONDUCTOR IN AN UPWARD DIRECTION.)
B. CONDUCTORS SHALL BE INSTALLED WITH A MINIMUM OF 12 INCH MINIMUM BENDING

C. WHEN THE MINIMUM BENDING RADIUS CANNOT BE ACHIEVED, GROUND CABLES SHALL BE ROUTED AT 90 DEGREE BENDS WITH THE USE OF EXOTHERMIC CONNECTIONS AT 90 DEGREES. THE INTENT IS TO ELIMINATE THE CABLE BEND RADIUS AND REPLACE THE RADIUS WITH AN EXOTHERMIC CONNECTION. PART III: FXFCUTION

A. ALL SURFACES TO WHICH GROUND CONNECTIONS WILL BE MADE SHALL BE FREE OF

PAINT, GALVANIZING DIRECT CORROSION ETC ..
B. ALL METAL SURFACES EXPOSED ON GROUNDING SHALL BE EITHER COLD GALVANIZE. OR PAINTED TO MATCH ORIGINAL SURFACE.

EXAMINE AREAS AND CONDITIONS UNDER WHICH ELECTRICAL GROUNDING AND BONDING CONNECTIONS ARE TO BE MADE AND NOTIFY T-MOBILE CONSTRUCTION SUPERVISOR IN WRITING OF CONDITIONS DETRIMENTAL TO PROPER COMPLETION OF WORK. DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE B. THE CONTRACTOR SHALL NOTIFY THE T-MOBILE CONSTRUCTION SUPERVISOR 24 HOURS PRIOR TO TRENCH BACK FILL ALL WORK DONE BELOW FINISHED GRADE SHALL BE INSPECTED BY THE AERIAL CONSTRUCTION SUPERVISOR DURING THAT PERIOD OR THE CONTRACTOR SHALL PROCEED.
3.3 GROUND TESTING

A. THE CONTRACTOR SHALL TEST THE GROUND ELECTRODE ROD RESISTANCE IN ACCORDANCE WITH THE METHODS OF MEASUREMENT SHOWN IN THE FALL OF POTENTIAL

B. TEST INSTRUMENTS SHALL OPERATE AT A FREQUENCY OTHER THAN 60 HERTZ AND

B. IEST INSTRUMENTS SHALL OPERATE AT A FREQUENCY OTHER THAN 60 HERIZ AND SHALL CONTAIN STRAY CURRENT AND DC FILTERS, FAULT CURRENT PROTECTION AND HAVE SENSITIVITY TO OPERATE A LOW SIGNAL STRENGTH.
C. PRIOR TO TESTING, THE CONTRACTOR SHALL DE-ENERGIZE ALL POWER SOURCES, DISCONNECT THE ELECTRODE CONDUCTOR FROM THE GROUND ROD, WEAR HIGH VOLTAGE RUBBER SAFETY GLOVES AND WILL NOT HANDLE TEST INSTRUMENTS IF AT ALL POSSIBLE. D. GROUND TESTS ARE TO BE PERFORMED BY QUALIFIED PERSONS FAMILIAR WITH THE CONSTRUCTION AND OPERATION OF THE EQUIPMENT AND THE HAZARDS INVOLVED. E. AN INDEPENDENT, APPROVED OUTSIDE FIRM SHALL PERFORM THE GROUND TEST AS OUTLINED. ALL TEST RESULTS SHALL BE FORWARDED TO THE T-MOBILE CONSTRUCTION SUPERVISOR FOR APPROVAL

END OF GROUNDING SPECIFICATIONS

CLOSE OUT DOCUMENTATION
CLOSEOUT BOOK CONTAINING THE FOLLOWING'

1. AS BUILT DESIGN DRAWINGS
2. SWEEP TEST RESULTS

4. PHOTO DOCUMENTATION OF

UNDERGROUND CONDUITS AND GROUND RING
ANTENNA, COAXV\L, JUMPER ATTACHMENTS AND GROUND KIT ATTACHMENTS
ANTENNA DOWN TILT MEASUREMENT USING AN INCLINOMETER ON THE BACK

PLANE OF THE ANTENNA

— GROUND BAR ATTACHMENTS

SIGNED OFF PERMIT CARDS
CERTIFICATE OF OCCUPANCY

RETURN OF KEYS AND/OR ACCESS AUTHORIZATION

B. ORIGINAL BUILDING PERMIT

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LIC	ENSE #:	C-3	065
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1	09/25/17	REVISIONS	JHT
0	08/16/17	100% CONSTRUCTION	JHT
В	08/11/17	ISSUED FOR REVIEW 90%	LDL
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SITE INFORMATION

T-MOBILE #: SL03051A

ATC #: 280216

4909 N WILLOW BROOK LN EDEN. UT 84310

SHEET TITLE:

GENERAL NOTES

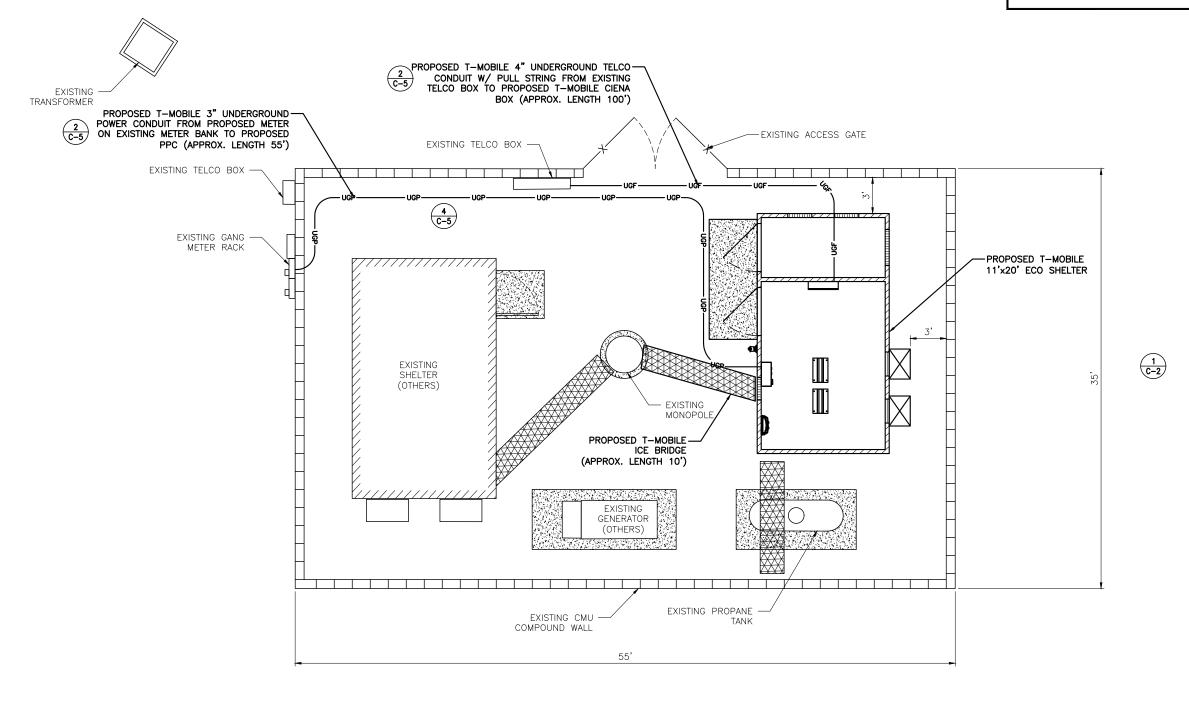
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SCALE:

GN-2

DISCLAIMER:

THESE DRAWINGS WERE PRODUCED WITHOUT THE BENEFIT OF A CURRENT LAND SURVEY. ALL PROPERTY LINES, EASEMENTS, SETBACKS, AND DIMENSIONS SHOWN SHALL BE VERIFIED PRIOR TO START OF CONSTRUCTION. POWDER RIVER DEVELOPMENT SERVICES, LLC. DOES NOT GUARANTEE THE ACCURACY OF SAID PROPERTY LINES, EASEMENTS, SETBACKS, AND DIMENSIONS SHOWN.



THE UTILITIES AS SHOWN ON THIS SET OF DRAWINGS WERE DEVELOPED FROM THE INFORMATION AVAILABLE. THE INFORMATION PROVIDED IS NOT IMPLIED NOR INTENDED TO BE A COMPLETE INVENTORY OF THE UTILITIES IN THIS AREA. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL UTILITIES (WHETHER SHOWN OR NOT) AND PROTECT SAID UTILITIES FROM ANY DAMAGE CAUSED BY CONTRACTOR'S ACTIVITIES.







SHEET NUMBER:

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LIC	LICENSE #: C-3065		
REVISIONS			
REV	DATE	DESCRIPTION	INT
1	09/25/17	REVISIONS	JHT
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T-MOBILE #: SL03051A

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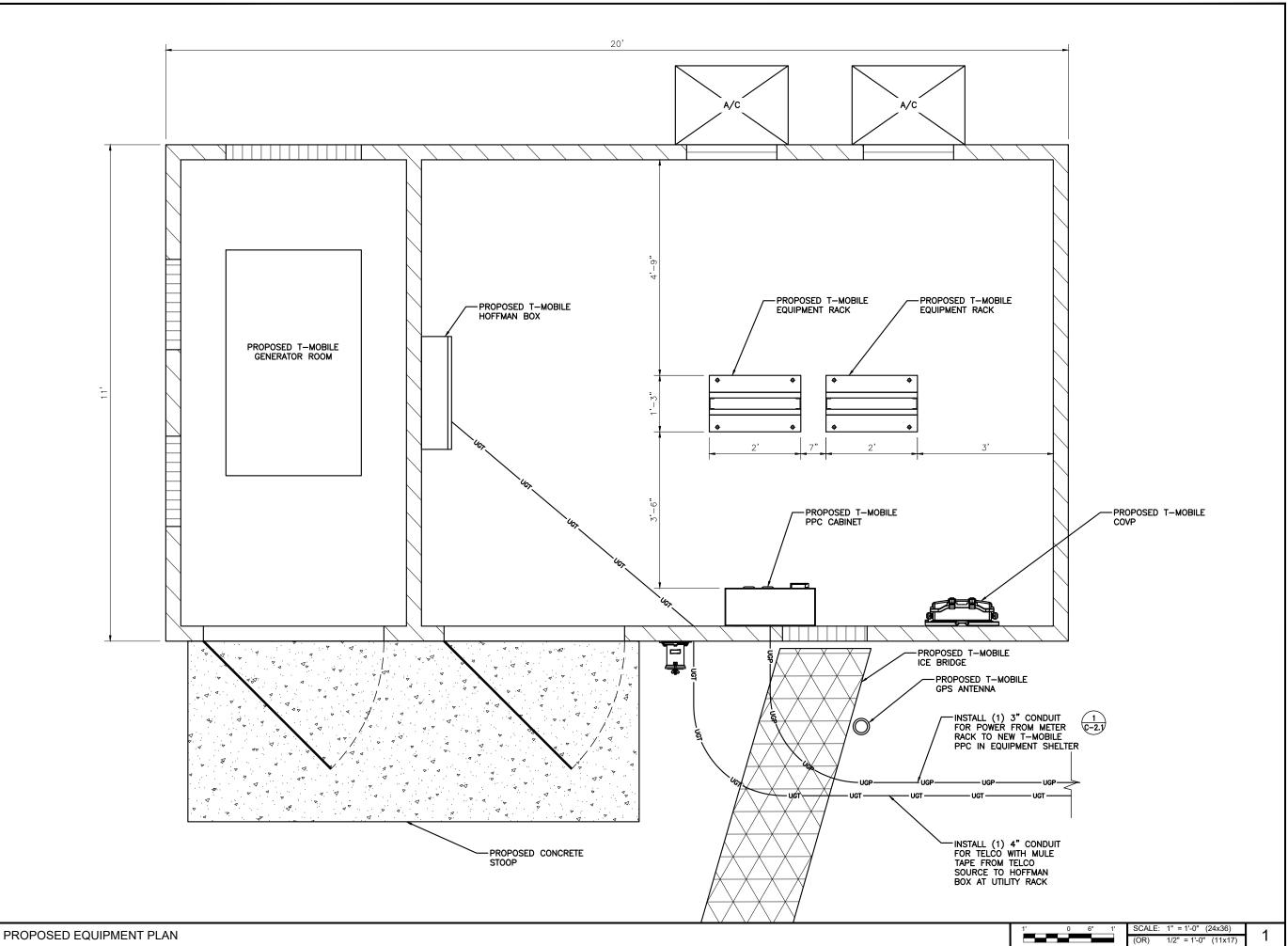
4909 N WILLOW BROOK LN EDEN, UT 84310

SHEET TITLE:

ENLARGED SITE PLAN

C-1

ENLARGED SITE PLAN







LIC	LICENSE #: C-30		
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1	09/25/17	REVISIONS	JHT
0	08/16/17	100% CONSTRUCTION	JHT
В	08/11/17	ISSUED FOR REVIEW 90%	LDL
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SITE INFORMATION

T-MOBILE #: SL03051A

ATC #: 280216

4909 N WILLOW BROOK LN EDEN, UT 84310

SHEET TITLE:

PROPOSED EQUIPMENT PLAN

SHEET NUMBER:

C-2

THE INFORMATION CONTAINED IN THIS SET OF CONSTRUCTION DOCUMENTS IS PROPRIETARY BY NATURE ANY LISE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO CARRIER SERVICES IS STRICTLY PROHIBIT



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COMMSCOPE

FHH-65C-R3

STRUCTURAL ANALYSIS MUST BE PERFORMED ON ALL ROOFTOPS, FLAGPOLES, LIGHT POLES, AND TOWER SITES BEFORE INSTALLATION OF NEW ANTENNAS, RADIO UNITS, ETC.

PROPOSED ANTENNA SCHEDULE GAMMA (BLUE) A-1 A-2 A-2 U19/L21 L700 L700 145° 250°

250°

85'-0"

COMMSCOPE

FHH-65C-R3

85'-0"

CELLMAX

CMA-BDHH/6521/E0-6

PROPOSED T-MOBILE--PROPOSED T-MOBILE ANTENNA (2 PER SECTOR, 6 TOTAL) PROPOSED T-MOBILE RRU UNITS (3 PER SECTOR, 9 TOTAL) -PROPOSED T-MOBILE ANTENNA PLATFORM MC-HP125-12-96

A-1

U19/L21

145°

85'-0"

CELLMAX

CMA-BDHH/6521/E0-6

±100'-0"

ALPHA (RED)

A-2

L700

10°

85'-0"

COMMSCOPE

FHH-65C-R3

A-1

U19/L21

10°

85'-0"

CELLMAX

CMA-BDHH/6521/E0-6

ANTENNA POSITION

RAD CENTER (AGI

CABLE LENGTH

ANTENNA TYPE

AZIMUTH

MODEL



TOWER ELEVATION (PROPOSED)

T.O. EXISTING MONOPOLE EL. 100'-0" (AGL)

€ EXISTING ANTENNAS (OTHERS)
EL. 96'-0" (AGL)

€ PROPOSED T-MOBILE ANTENNA

EL. 85'-0" (AGL)

EXISTING EQUIPMENT -SHELTER (OTHERS)

ANTENNA PLAN (PROPOSED)

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1 09/25/17 REVISIONS JH
0 08/16/17 100% CONSTRUCTION JH
B 08/11/17 ISSUED FOR REVIEW 90% LD
A 06/20/17 ISSUED FOR REVIEW 90% LD



T-MOBILE #: SL03051A

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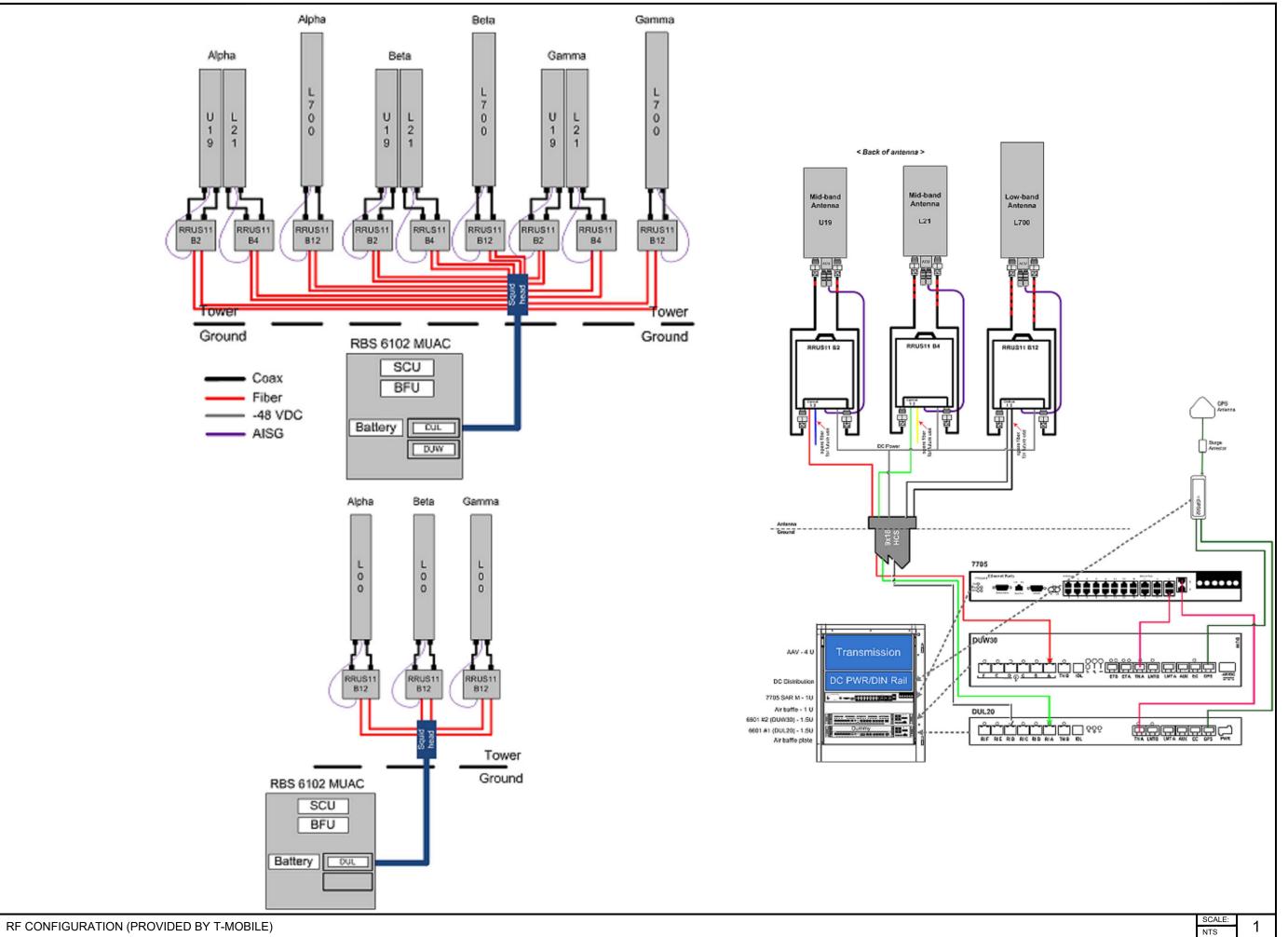
ELEVATION & ANTENNA PLAN

SHEET NUMBER:

C-3

-PROPOSED T-MOBILE HYBRID CABLE ROUTED ACCORDING TO ATC STRUCTURAL ANALYSIS

-PROPOSED T-MOBILE EQUIPMENT AREA







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SITE INFORMATION

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RFDS SPECIFICATIONS

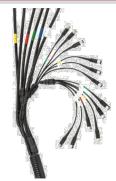
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HB114-05U9S18-30M

RADIO FREQUENCY SYSTEMS The Clear Choice®

HYBRIFLEX® RRH Hybrid Feeder Cabling Solution 9x18, 10 AWG, 1-1/4", Single-Mode Fiber, 30m



6x12 HYBRIFLEX Pictured

RFS' HYBRIFLEX Remote Radio Head (RRH) hybrid feeder cabling solution combines optical fiber and DC power for RRHs in a single lightweight aluminum corrugated cable, making it the world's most innovative solution for RRH deployments.It was developed to reduce installation complexity and costs at Cellular

HYBRIFLEX allows mobile operators deploying an RRH architecture to standardize the RRH installation process and eliminate the need for and cost of cable grounding HYBRIFLEX combines optical fiber (multi-mode or single-mode) and power in a single corrugated cable. It eliminates the need for junction boxes and can connect multiple RRHs with a single feeder. Standard RFS CELLFLEX® accessories can be used with HYBRIFLEX cable. Both pre-connectorized and on-site options are

FEATURES / BENEFITS

- Aluminum corrugated armor with outstanding bending characteristics → Minimizes installation time and enables mechanical protection and shielding Same accessories as 1-1/4" coaxial cable
- Outer conductor grounding -> Eliminates typical grounding requirements and saves on installation
- Lightweight solution and compact design → Decreases tower loading
- Robust cabling → Eliminates need for expensive cable trays and ducts
- Installation of tight bundled fiber optic cable pairs directly to the RRH → Reduces CAPEX and wind load by eliminating need for interconnection
- Optical fiber and power cables housed in single corrugated cable → Saves CAPEX by standardizing RRH cable installation and reducing installation
- Outdoor, black PE jacket → Ensures long-lasting cable protection

External Document Links

HB114-05U9S18-30M

Technical Features		
STRUCTURE		
Cable Type		HYBRIFLEX®
Size		1-1/4"
Length	m (ft)	30 (98)
MECHANICAL SPECIFICATIONS		
Outer Diameter Nominal	mm (in)	39 (1.54)
Cable Weight	kg/m (lb/ft)	1.341 (0.9)
Minimum Bending Radius, Single Bend	mm (in)	152 (6)
Minimum Bending Radius, Multi Bends	mm (in)	254 (10)
Recommended / Maximum Clamp Spacing		1 / 1.2 (3.25 / 4)
DC POWER CABLE SPECIFICATIONS		
Number of DC Pairs		9
Maximum DC-Resistance Power Cable	Ω/km (Ω/kft)	3.41 (1.04)
Cross Section of Power Cable	mm² (AWG)	5.3 (10)
DC Wire Jacket Material	()	PVC
DC Cable Diameter	mm (in)	4 (0.16)
DC Cable Jacket		PVC
DC Standards (Meets or Exceeds)		For use in UL 2822, PVC Nylon,
		RoHS/REACH Compliant
Break-out length (Top)	mm(in)	4000 (157)
Break-out length (Bottom)	mm(in)	150 (6)
DC Cable sealing method		Semi-rigid flame-retarded polyolefin, with hot melt adhesive
CARLE IACKET		polyolelin, with not melt auriesive
CABLE JACKET		lar.
UV-Protection Individual and External Jacket		Yes
ARMOR SPECIFICATIONS		
Armor Type		Corrugated Aluminum
Maximum DC-Resistance of Armor	Ω/km (Ω/kft)	0.9 (0.27)
Diameter Corrugated Armor	mm (in)	36 (1.42)
F/O CABLE SPECIFICATIONS		
F/O Cable Type		Single-mode
Number of F/O Pairs		18
Core/Clad	μm	9 /125
Single Bending Radius	mm (in)	137 (5.4)
F/O Standards (Meets or Exceeds)		UL Listed Type OFNR (UL1666) RoHS Compliant
Optical Loss	dB/Km	0.5 @ 1310 nm 0.5 @ 1550 nm
Fiber Termination End 1		ODC plug
Fiber Termination End 2		LC plug
FO Break-out length (Top)	mm(in)	500 (20)
FO Break-out length (Bottom)	mm(in)	1350 (53)
Cable sealing method		Semi-rigid flame-retarded polyolefin, with hot melt adhesive
TESTING AND ENVIRONMENTAL		
Storage Temperature	°C (°F)	-40 to 70 (-40 to 158)
Operation Temperature	°C (°F)	-40 to 65 (-40 to 149)
Installation Temperature	°C (°F)	-20 to 65 (-4 to 149)
ASSEMBLY LOSS		
Optical Insertion Loss, Assembly or Jumper		0.4 dB (typ)/0.95dB (max) @1310/1550
	-	
SYSTEM LOSS		

Installation Instructions Pre-packed HYBRIFLEX Kits and Accessories

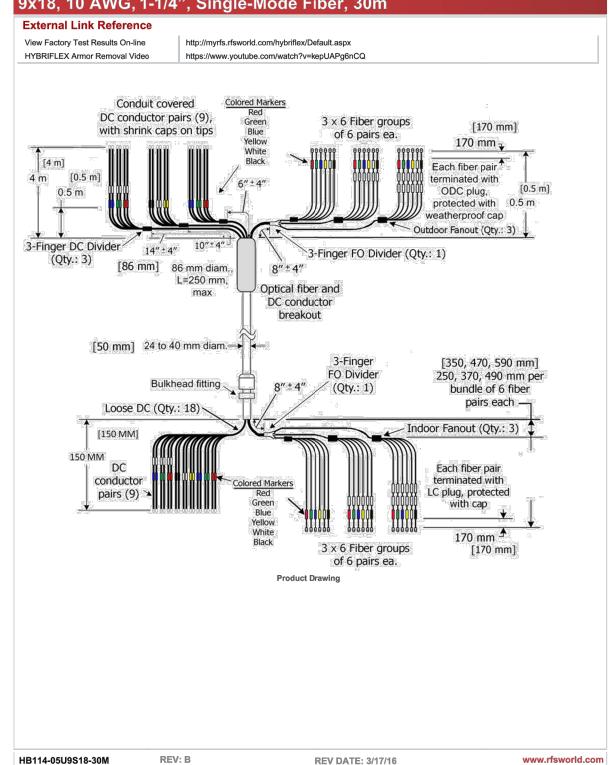
REV: B All information contained in the present datasheet is subject to confirmation at time of ordering

Page 1 of 2

www.rfsworld.com

PRODUCT DATASHEET HB114-05U9S18-30M **RADIO FREQUENCY SYSTEMS** The Clear Choice®

HYBRIFLEX® RRH Hybrid Feeder Cabling Solution 9x18, 10 AWG, 1-1/4", Single-Mode Fiber, 30m



All information contained in the present datasheet is subject to confirmation at time of ordering

Page 2 of 2

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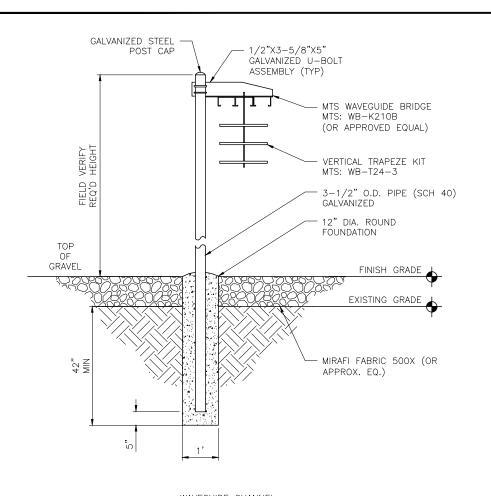
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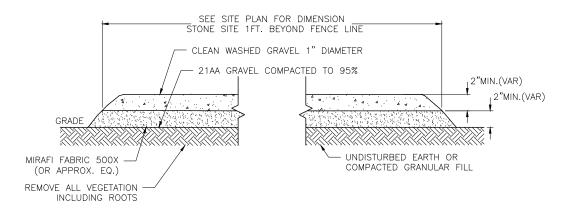
CABLE **SPECIFICATIONS**

SHEET NUMBER

C - 3.2

REV DATE: 3/17/16





WAVEGUIDE CHANNEL

12" BRIDGE SUPPORT P/N WB-LB12-3
24" BRIDGE SUPPORT P/N WB-LB24-3

4" GALVANIZED
STEEL POST CAP

HYBRID
CABLES

VERTICAL TRAPEZE
KIT MTS: WB-T24-3

3-1/2" SCH 40
GALVANIZED STEEL
ICE BRIDGE
SUPPORT POST

VS CADWELD #2 GND
WIRE FROM ICE
BRIDGE TO POST

VS CADWELD #2 AWG GROUND
WIRE 6" ABOVE GRADE FROM
POST TO GROUND RING

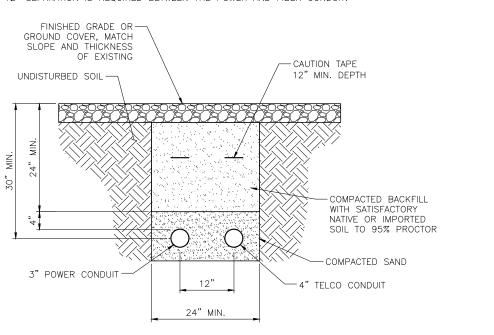
ICE BRIDGE DETAILS

SITE COMPOUND DETAIL SCALE: NTS

NOTES:

CONDUIT TRENCH DETAIL

- 1. LEAN CONCRETE, RED-COLORED TOP, MAY BE USED IN PLACE OF COMPACTED SAND.
- 2. IF POWER AND TELCO ARE PLACED IN THE SAME TRENCH, PER NEC CODE, A MINIMUM OF 12" SEPARATION IS REQUIRED BETWEEN THE POWER AND FIBER CONDUIT.



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SHEET NUMBER:

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NTS 4 CONDOLLING

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SCALE: NOT USED

CAC Model



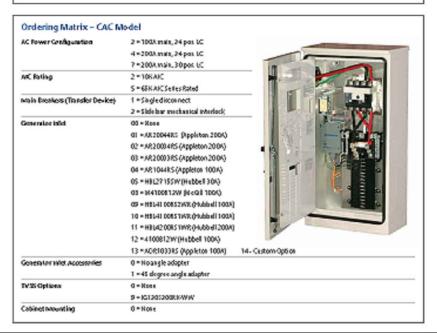
Standard Features - CAC Model

- Telco demarcation with optional telco cabinet
- NEMA 3R rainproof enclosure
- 3-point door closure with continuous
- hinge and heavy duty door gasket UL391 listed rain[drip hood provides
- 0.1"thickaluminum
- · Corrosion resistant powder coat paint
- · Wall/bracket or pad-mountable · Optional N-G banding jumper
- Mechanical interlock prevents simultaneous use of utility and generator power
- Brut eforce metal colde varistor surge suppression with easy to read LEO and remote status indication
- Generator receptable options include:
 1 00A or 200A, 1 00A C or 200AC, 690AC

Enclosure	AC Cabinet	Telico Cabineti
Cabinet Dimensions	39:00"Hx20:00"Wx 10:00"D	39.00"Hx20.00"Wx10.00"D
Weight	Approx. YS1bs.	Approx. 201bs.
External Material	D.1"thid; aluminum	0.1"thick(aluminum
Nousting	Yall or pad-mount (with optional pad-mounting base)	Wallerpad-mount (with optional pad-mounting base)
Cabinet Enclosure Type	One ACPowerTVSS cabinet (NEMA 18 type endocare)	Single cabinet (NESOA 38 type endouse)
Weather Protection	Sain Jdrip bood, rain tested per UL 251	UL SQ
Diectrical		
Operating Voltage	120(240 VMC single phase, 3 wire and ground	
Service	100 Amp or 200 Amp, utility(standby	
Disconnect	Side ber mechanical interlock;	
AXCRating	10MAYC 22MAYC 6SMAYC	
Load Ceater	200 Amp. 24 position 1-30 Amp double pole (ACTVSS) 1-15 Amp ring le pole (CFI receptacles)	
Bonding jumper	Optional H-Shonding jumper	
Standby Power Receptable	Appleton AR20044RS Standard (100A or 200A), 10kHC	
TVSS with Indicator Lights	Metal Coide Varietors (M CV) (16 M/) (Phase) Semote alarm contacts	
Grounding		Telco-ground bar
Security (padlodjable)	3-point door does re with 1/4 burn handle, 55 hings	1/4 turn handle, 15 binge
Safety Compliance	UL ES1, dead front with/boards	UL 50, cabinets and output bigger
Options	10,000 or 22,000, 65,000 AVC series rated Rad-in centing base (\$"thick) Various generator receptades offered	Telcotransient surge suppression Rad-mounting base (8"thicli) 20" deep cabinet base Cooling fans with thermostat

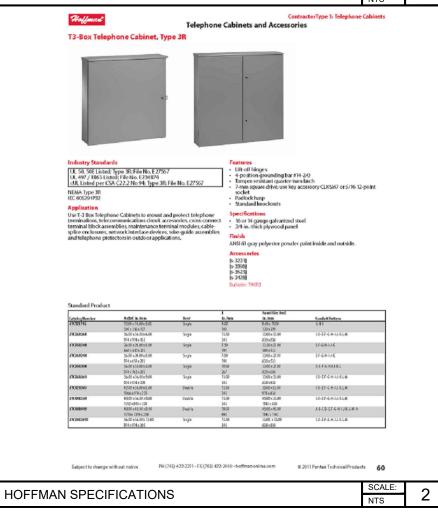
EMERSON.

A small selection of	rmation - CAC products is listed be AC Model Ordering i	
Emerson Catalog number	Emerson Part number	Description
CACA22204090		100A slide bartsmifer device, 24-position load center, ADRIG4465, NOV
ACA45201090		200A slide bantransfer device, 24 position load center, AP2 0044RS, MOV
CACA45201190		2004 slide bantransfer device, 24 position load center, AR2 0044RS with 45 degree angle adaptet MOV
CACA75201090		2004 slide bar transfer device, 30-position load center, 482 004485, 100V



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ATC #: 280216

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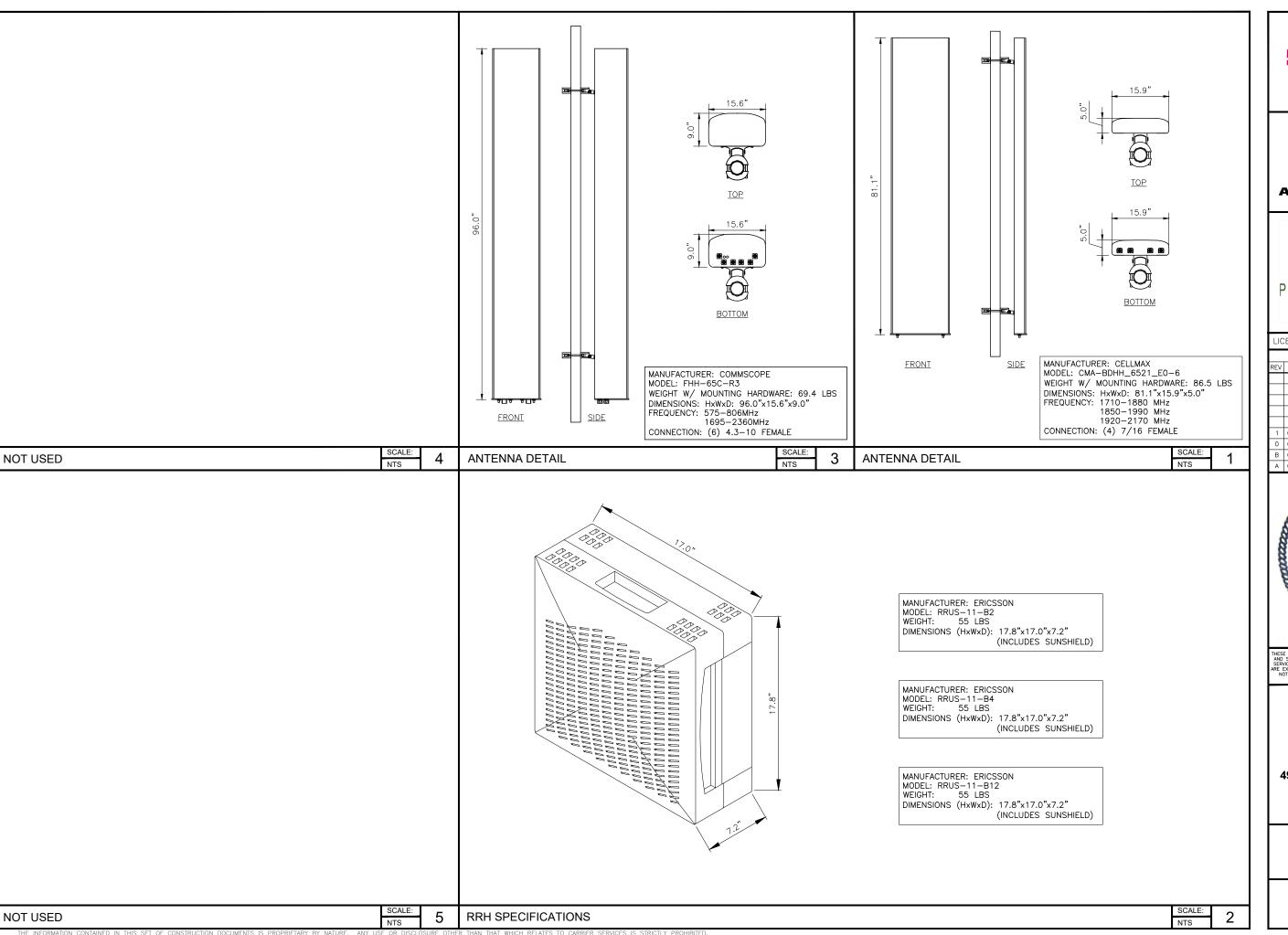
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EQUIPMENT DETAILS

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C-5

PPC SPECIFICATIONS







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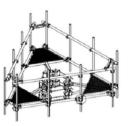
EQUIPMENT DETAILS

SHEET NUMBER:

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Product Specifications





MC-HP12S-12-96

3-Sector Monopole Co-location Platform Kit, 10 in to 30 in OD, 12 ft 6 in face, includes

Dimensions

Face Width 3.8 m | 12.5 ft Mounting Diameter, maximum 762.0 mm | 30 in Mounting Diameter, minimum 254.0 mm | 10 in Pipe Outer Diameter 60.3 mm | 2 3/8 in 2438.4 mm | 96.0 in Height Weight 971.1 kg | 2141.0 lb Width 3810.0 mm | 150.0 in

Environmental Specifications

Man Rating 250 lb vertical man load at 15 mph (BWS)

120 mph (BWS) at 100 ft AGL | 140 mph (3-second gust) at 150 ft AGL using Exposure D Wind Rating

TIA/EIA-222 Wind Rating Test Method

General Specifications

Product Type Co-location platform Pipe Length 2438.4 mm | 96.0 in

Pipe, quantity

Includes Plain end pipes (12) | Platform | Rail | Ring mount

Hot dip galvanized steel Material Type

Monopole, 254-762 mm (10-30 in) OD Mounting

Package Quantity Sectors, quantity 3

* Footnotes

Man Rating BWS-Base Wind Speed

BWS-Base Wind Speed; FBC-Florida Building Code Wind Rating

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page 1 of 1 March 30, 2017

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PROPOSED T-MOBILE
METER

P\Quention\Projects\1707\470 T-Media\2017 3LC\200216 3L00514 Liberty\100 - Edialog Data\103-Protect\200216-280-M0_3725-2017_05_18_01_02_14_pag

20A OUTDOOR GFCI/SWITCH COMBO

MANUFACTURER:

MIDWEST ELECTRIC PRODUCTS

(OR EQUIVALENT)
DDEL: U010S010GRP

DIMENSIONS: 5"x7"
WEIGHT: 4.5 LBS
AMPS: 20

EXISTING UTILITY RACK

VOLTS:

REPLACE THE STANDARD SWITCH SUPPLIED WITH THE ENCLOSURE WITH AN INTERMATIC 20A, SPST, SPRING WOUND TIMER SWITCH WITH A RANGE FROM 0 TO 2 HOURS (INTERMATIC PART NO. FF2H) OR EQUIVALENT. THE SWITCH SHALL NOT HAVE A HOLD FEATURE TO OVERIDE THE TIMER.

CONTRACTOR IS RESPONSIBLE TO COORDINATE INSTALL OF ELECTRICAL METER WITH UTILITY COMPANY AND VERIFY INSTALLATION WITH T-MOBILE.

ELECTRICAL CONTRACTOR NOTE:

THESE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC ONLY AND SHOW THE GENERAL INTENT OF THE FINAL ARRANGEMENTS OF ELECTRICAL SYSTEMS, EQUIPMENT AND CONNECTIONS. IT IS THE INTENT OF THESE ELECTRICAL DRAWINGS TO REQUIRE APPROPRIATE ELECTRICAL WORK TO COMPLETELY FACILITATE THE ELECTRICAL REQUIREMENTS FOR THE NEW TENANT (T—MOBILE). SOME OF THE ELECTRICAL WORK SHOWN IS EXISTING AND SHALL REMAIN IN PLACE AND NEW WORK ADDED TO ACCOMMODATE T—MOBILE ELECTRICAL REQUIREMENTS. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING ELECTRICAL EQUIPMENT AND WIRING AND ADD NEW WORK AS REQUIRED TO COMPLETE THE T—MOBILE ELECTRICAL REQUIREMENTS. IT IS NOT INTENDED TO SHOW EXISTING ELECTRICAL WORK EXACTLY AS IS BUT TO SHOW THE INTENT ONLY. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY FOR ADDED LOAD (T—MOBILE). VERIFY ELECTRICAL AND TELCO SERVICE SIZE AND CAPACITY. GENERAL NOTES:

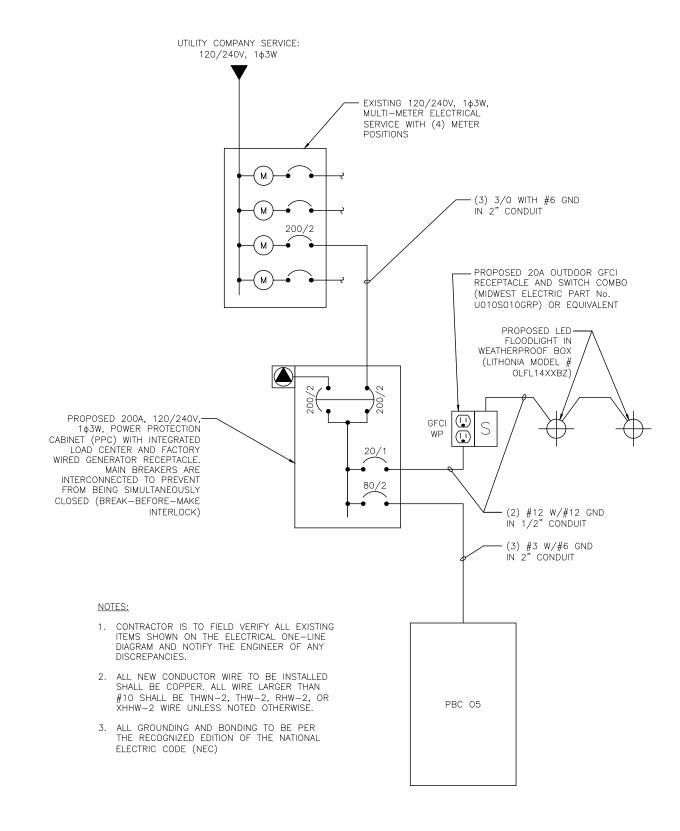
- 1. ALL WORK IS TO COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE (NEC) AND ANY LOCAL ORDINANCES, CODES AND ALL OTHER ADMINISTRATIVE AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL FURNISH AND PAY FOR ALL PERMITS AND
- 2. ALL EQUIPMENT AND MATERIAL FURNISHED AND INSTALLED UNDER THIS CONTRACT SHALL BE UNDERWRITERS LABORATORIES (UL) LISTED, NEW FREE FROM DEFECTS AND SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE BY OWNER OR HIS REPRESENTATIVE. SHOULD ANY TROUBLE DEVELOP DURING THIS PERIOD DUE TO FAULTY WORKMANSHIP, MATERIAL OR EQUIPMENT, THE CONTRACTOR SHALL FURNISH ALL NECESSARY MATERIALS AND LABOR TO CORRECT THE TROUBLE WITHOUT COST TO THE OWNER.

 3. ALL WORK SHALL BE EXECUTED IN A WORKMAN-LIKE MANNER AND SHALL PRESENT A NEAT MECHANICAL APPEARANCE WHEN COMPLETED.
- 3. ALL WORK SHALL BE EXECUTED IN A WORKMAN-LIKE MANNER AND SHALL PRESENT A NEAT MECHANICAL APPEARANCE WHEN COMPLETED CONTRACTOR SHOULD AVOID DAMAGE TO EXISTING UTILITIES WHEREVER POSSIBLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING RELATED TO ELECTRICAL WORK, AND SHALL RESTORE ALL EXISTING LANDSCAPING, SPRINKLER SYSTEMS, CONDUITS, WIRING, PIPING, ETC. DAMAGED BY THE ELECTRICAL WORK TO MATCH CONDITIONS.
- 4. ELECTRICAL WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED TO COMPLETE ELECTRICAL POWER AND LIGHTING SYSTEMS, TELEPHONE AND COMMUNICATION SYSTEMS, PANEL BOARDS, CONDUIT, CONTROL WIRING,
- GROUNDING, ETC. AS INDICATED ON ELECTRICAL DRAWINGS AND/OR AS REQUIRED BY GOVERNING CODES.

 5. PRIOR TO INSTALLING ANY ELECTRICAL WORK, THE CONTRACTOR SHALL VISIT THE JOB SITE AND VERIFY EXISTING SITE LOCATIONS AND CONDITIONS AND UTILITY SERVICE REQUIREMENTS OF THE JOB, AND BY REFERENCE TO ENGINEERING AND EQUIPMENT SUPPLIERS DRAWINGS. SHOULD THERE BE ANY QUESTION OR PROBLEM CONCERNING THE NECESSARY PROVISIONS TO BE MADE, PROPER DIRECTIONS SHALL BE OBTAINED BEFORE PROCEEDING WITH ANY WORK.
- 6. PROVIDE POWER AND TELEPHONE TO SERVICE POINTS PER UTILITY COMPANY REQUIREMENTS. CONTRACTOR SHALL CONTACT UTILITY SERVICE PLANNERS AND OBTAIN ALL SERVICE REQUIREMENTS AND INCLUDE COSTS OF SUCH IN THEIR BID.
- 7. SERVICE EQUIPMENT SHALL HAVE A SHORT CIRCUIT WITHSTAND RATING EQUAL TO OR EXCEEDING THE MAXIMUM AVAILABLE FAULT CURRENT AT THE SUPPLY TERMINAL ON THE UTILITY TRANSFORMER. SECONDARY, THE INSULATION SHALL BE FREE FROM ANY SHORT CIRCUITS AND GROUNDS
- 8. WHERE APPLICABLE CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITY COMPANY REGARDING REQUIREMENTS AND INSTALLATION OF A CT CABINET.

E.ECTRICAL NOTES:

- 1. ALL WIRES SHALL BE STRANDED COPPER WITH THHN/THWN AND 600 VOLTS INSULATION. ALL GROUND CONDUCTORS TO BE PROPERLY SIZED COPPER. (STRANDED OR SOLID).
- 2. IN THE EVENT OF ANY CONFLICT OR INCONSISTENCY BETWEEN ITEMS SHOWN ON THE PLANS AND/OR SPECIFICATIONS, THE NOTE, SPECIFICATION OR CODE WHICH PRESCRIBES AND ESTABLISHES THE HIGHEST STANDARD OF PERFORMANCE SHALL PREVAIL.
- 3. SERVICE CONDUITS SHALL HAVE NO MORE THAN (4) 90° BENDS IN ANY SINGLE RUN. THE CONTRACTOR SHALL PROVIDE PULL BOXES AS NEEDED WHERE CONDUIT REQUIREMENTS EXCEED THESE CONDITIONS. PULL WIRES AND CAPS SHALL BE PROVIDED AT ALL SPARE CONDUITS FOR FUTURE USE.
- 4. ALL COAX, POWER AND TELEPHONE SYSTEM CONDUITS SHALL HAVE A MINIMUM 24" SCH. 80 PVC RADIUS SWEEPS TO EQUIPMENT, PULL BOXES, MONOPOLES, ETC., UNLESS OTHERWISE NOTED, OR AS REQUIRED BY UTILITY COMPANIES.
- 5. ALL CONDUIT AND NIPPLE ENTRIES TO CABINET AND METER BOXES WILL BE MADE WITH WEATHERPROOF HUBS, CONNECTORS OR LOCKNUTS LISTED FOR THE APPLICATIONS WITH NON-METALLIC BUSHINGS.
- 6. ONLY ONE SERVICE ALLOWED PER LUG. ALL GROUNDING AND BONDING MUST COMPLY WITH NEC 250 REQUIRED
- 7. UPON COMPLETION OF THE JOB, THE CONTRACTOR SHALL FURNISH AS-BUILT DRAWINGS TO THE OWNER.









LIC	LICENSE #: C-306						
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В	08/11/17	ISSUED FOR REVIEW 90%	LDL				
Α	06/20/17	ISSUED FOR REVIEW 90%	LDL				



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SITE INFORMATION

T-MOBILE #: SL03051A

ATC #: 280216

4909 N WILLOW BROOK LN EDEN, UT 84310

SHEET TITLE:

ELECTRICAL DETAILS

SHEET NUMBER:

__

SCALE:

NTS

E-1

PLATFORM UTILITY RACK

THE INEQUIATION CONTAINED IN THIS SET OF CONSTRUCTION DOCUMENTS IS DECORPTED BY NATURE ANY LISE OF DISCLOSURE OTHER THAN THAT WHICH BELIEFE TO CARRIED SERVICES IS STRICTLY DECLINATED.

MAIN: 200 AMP MAIN BREAKER V			VOLTAG	VOLTAGE/PHASE: 120/240V, 1-PHASE, 3-WIRE				AIC RATING: 10,000 AMPS			
MOUNTING: INSIDE PPC CABINET			ENCLOSURE: NEMA 3R				SURGE PROTECTION DEVICE: YES				
DESCRIPTION	LOAD (VA)	C or NC	C/B	CIR No.	LOAD A-PHASE) (VA) B-PHASE	CIR No.	C/B	C or NC	LOAD (VA)	DESCRIPTION
	6240	С		1	6240	D-PHASE	2	- 30	NC	0	
PBC 05	6240	С	80	3		6240	4		NC	0	SURGE PROTECTION DEVICE
				5	380		6	20	NC	380	GFCI RECEPTACLE AND LIGHTS
				7		0	8				
				9	0		10				
				11		0	12				
				13	0		14				
				15		0	16				
				17	0		18				
				19		0	20				
				21	0		22				
				23		0	24				
			BASE LO	4D (VA) =	6620	6240					
25% OF CONTINUOUS LOAD (VA) =				1560	1560	"C" DESIGNATION IDENTIFIES CONTINUOUS LOADS AND MOTOR LOADS AS REQUIRED BY SECTIONS 230.42 AND 430.24 OF THE NEC					
TOTAL LOAD (VA) =				8180	7800						
TOTAL LOAD (A) =				69	65						





LICENSE #: C-3065							
REVISIONS							
REV	DATE	DESCRIPTION	INT				
_	00 /05 /47	PE VOICE CO					
1	09/25/17	REVISIONS	JHT				
0	08/16/17	100% CONSTRUCTION	JHT				
в	08/11/17	ISSUED FOR REVIEW 90%	LDL				
Α	06/20/17	ISSUED FOR REVIEW 90%	LDL				



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SITE INFORMAT

T-MOBILE #: SL03051A

ATC #: 280216

4909 N WILLOW BROOK LN EDEN, UT 84310

SHEET TITLE:

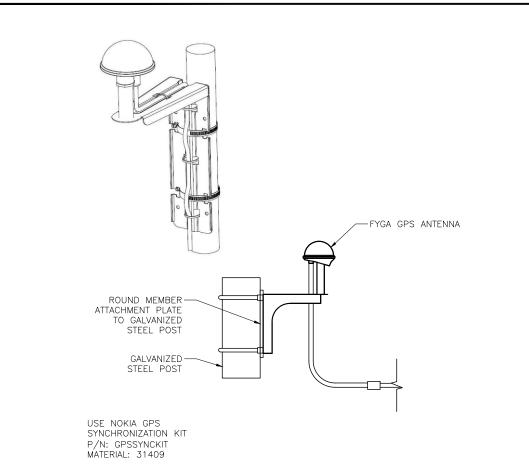
PANEL SCHEDULE

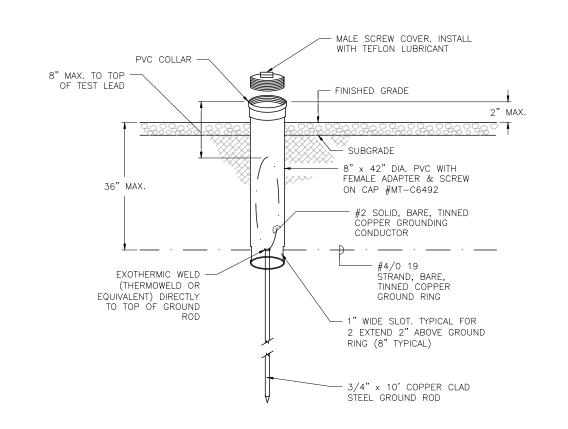
SHEET NUMBER:

NTS

E-2

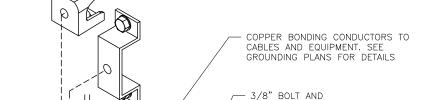
PANEL SCHEDULE





SCALE: SCALE: **GPS GROUNDING DETAIL** 3 **TEST WELL DETAIL** 1

NOTES:



CHERRY BUSS BAR INSULATOR (TYP OF 2). NOT USED WHEN DIRECT ATTACHMENT TO TOWER STEEL IS REQUIRED

WALL-MOUNT BRACKET

OR ANGLE ADAPTER

(AS REQUIRED)

HARDWARE (TYP.)

4"x24"x1/4" TINNED COPPER -GROUND BAR (HAGER OR APPROVED EQUIVALENT)

#2 AWG SOLID TINNED COPPER CONDUCTOR TO MAIN GROUND BAR OR EXISTING GROUND RING (TYP.). CADWELD TO BUSS BAR AND GROUND RING

GROUND BAR DETAIL



TYPE 2-YA-2

TYPE GT



TYPE VS







TYPE PT

SCALE:

NTS

2

GROUNDING **DETAILS** SHEET NUMBER:

E-3

1. CADWELD "TYPES" SHOWN ARE EXAMPLES. CONSULT WITH CONSTRUCTION MANAGER FOR SPECIFIC TYPES OF CADWELDS TO BE USED FOR THIS PROJECT.

2. CADWELDING IS NOT ALLOWED ON CROWN CASTLE TOWERS.





TYPE YGHC



TYPE YA-2

CADWELD CONNECTION TYPES NTS

AMERICAN TOWER®



T··Mobile·

LIC	LICENSE #: C-3065						
	REVISIONS						
REV	DATE	DESCRIPTION	INT				
1	09/25/17	REVISIONS	JHT				
0	08/16/17	100% CONSTRUCTION	JHT				
В	08/11/17	ISSUED FOR REVIEW 90%	LDL				
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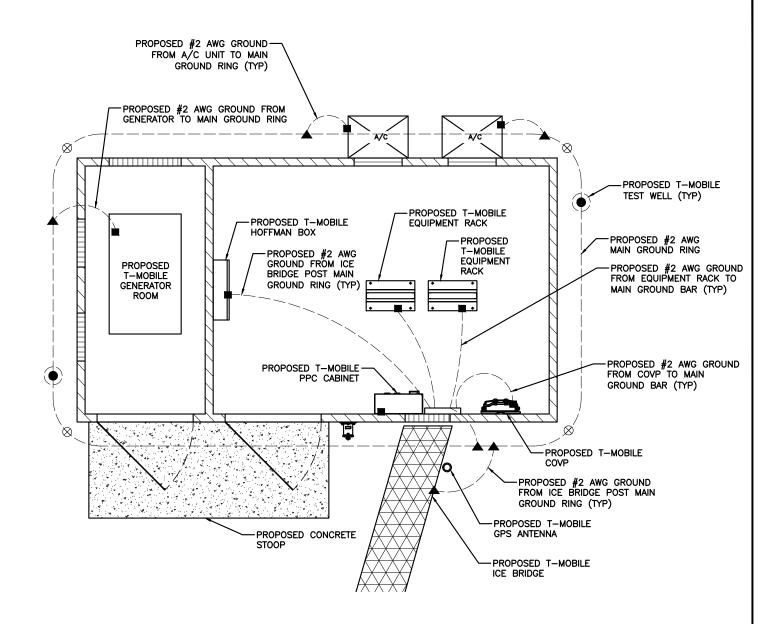


T-MOBILE #: SL03051A

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SHEET TITLE:

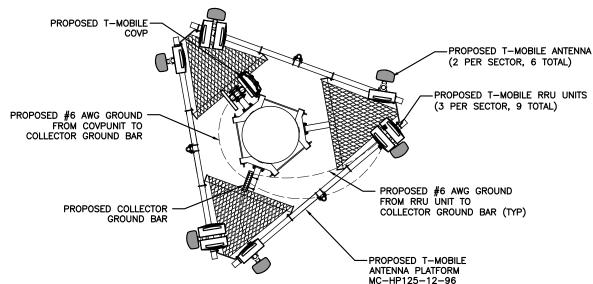


IMPORTANT GROUNDING/CABLE NOTES:

- INSTALL (2) GROUND BARS AT THE BOTTOM OF THE TOWER (EVEN WITH SHORT ICE BRIDGE RUNS), ONE GROUND BAR AT THE TOWER AND ONE AT THE PLATFORM. IF SITE IS A ROOFTOP AND THE EQUIPMENT IS IN THE PENTHOUSE, T-MOBILE REQUIRES ONE GROUND BAR ON THE OUTSIDE OF THE PORT ENTRY AND ONE ON THE INSIDE NEAR THE CABINET. MONOPOLE JOBS WILL REQUIRE SECTORIZED GROUNDING, WHICH WILL REQUIRE (3) TOP BUSS BARS.
- T-MOBILE IS ELIMINATING THE HOME RUN GROUND WIRE FROM TOP BUSS BAR AND THE BOTTOM BUSS BAR ON TOWER SITES. ROOFTOPS ARE STILL REQUIRED TO HAVE SECTORIZED GROUND AND #2 INSULATED GROUND WIRE FROM SECTOR GROUNDS TO MAIN BUSS BARS AND BUILDING STEEL.
- REMOVE INSULATORS (CHERRIES) FROM THE BUSS BARS AND GROUND TO TOWER, TOP AND BOTTOM ON TOWER SITES ONLY.
- ALL EXPOSED GROUNDS TO BE DRESSED WITH SEAL TIGHT.
- ALL ICE BRIDGE POSTS ARE TO BE GROUNDED WITH #2 SOLID AND DRESSED IN WITH SEAL TIGHT.
- TWO OF THE FOUR PLATFORM POSTS NEED TO BE GROUNDED DIAGONALLY.
- BOTTOM BUSS BAR IS TO HAVE TWO #2 GROUND LEADS DRESSED IN WITH SEAL TIGHT.
- THE DISTANCE BETWEEN TRAPEZE HANGERS ON ICE BRIDGE IS 4'-0".
- THE DISTANCE BETWEEN BUTTERFLIES AND CABLE STAND-OFFS IS 4'-0".
- 10. THE DISTANCE BETWEEN CONVENTIONAL AND/OR SNAP-HANGERS ON 1/2" JUMPERS SHALL BE NO MORE THAN 3'-0" AT THE TOP AND 2'-0" FEET ON THE BOTTOM JUMPERS PER MANUFACTURER'S RECOMMENDATION.
- 11. NO HYBRID CABLES SHOULD TOUCH METAL OR STEEL. THE USE OF STANDOFF BRACKETS IS REQUIRED.
- 12. T-MOBILE WOULD LIKE TO SHORTEN THE TOP JUMPER TO 4'-0" SUREFLEX INSTEAD OF 6'-0". JUMPERS SHOULD NOT BE CURLED UP OR COILED TO ELIMINATE SLACK.
- 13. GRAVEL UNDER ALL PLATFORMS IS REQUIRED.

EQUIPMENT GROUNDING PLAN (TYPICAL)

14. HYBRID AND JUMPER LINES SHOULD BE DRESSED IN ON THE SIDE OR BOTTOM OF T-BOOMS, NEVER ON TOP WHERE SOMEONE WOULD WALK



GENERAL GROUNDING NOTES:

- 1. GROUNDING SHALL COMPLY WITH NEC, T-MOBILE AND NSN STANDARDS. CONTRACTOR SHALL VERIFY EXISTING GROUNDING CONDITIONS. CORRECTING ANY DEFICIENCIES TO BE INCLUDED IN ORIGINAL PRICING AND CORRECT DEFICIENCIES DURING NEW CONSTRUCTION. INCLUDING MISSING GROUND BARS, BAD GROUND WELDS, MISSING GROUND LEADS OR BROKEN GROUND LEADS, ETC.
- 2. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/ GROUND BARS AND THE GROUND RING, SHALL BE #2 AWG SOLID TIN PLATED COPPER IN 3/4" PROTECTIVE PVC UNLESS OTHERWISE INDICATED.
- 3. APPROVED ANTIOXIDANT COATINGS (NO-OX) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS
- 4. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED. IN ALL CASES, BENDS SHALL BE MADE WITH A MINIMUM BEND RADIUS OF 12 INCHES.
- 5. ALL TOWER TOP GROUND WIRES SHALL BE SUPPORTED EVERY TWO FEET.

LEGEND:

EXISTING GROUND RING

CADWELD CONNECTION (EXOTHERMIC WELD)

MECHANICAL CONNECTION

GROUND ROD

TEST WELL

. ONLY ONE (1) T-MOBILE SECTOR SHOWN W/ GROUNDING FOR CLARITY.

NTS

SHEET TITLE: **GROUNDING**

> **PLANS** SHEET NUMBER

SITE INFORMATION

T-MOBILE #: SL03051A

ATC #: 280216

4909 N WILLOW BROOK LN

EDEN, UT

84310

T··Mobile·

AMERICAN TOWER[®]

POWDER RIVER

Engineering Services, LLC www.powderriverdev.com

REVISIONS

100% CONSTRUCTION

ONAL ENG

No. 7745817-2202

B 08/11/17 ISSUED FOR REVIEW 90% A 06/20/17 ISSUED FOR REVIEW 90%

LICENSE #:

DATE

0 08/16/17

1 09/25/17 REVISIONS

E-4

ANTENNA GROUNDING PLAN (TYPICAL) NTS

MATION CONTAINED IN THIS SET OF CONSTRUCTION DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO CARRIEF