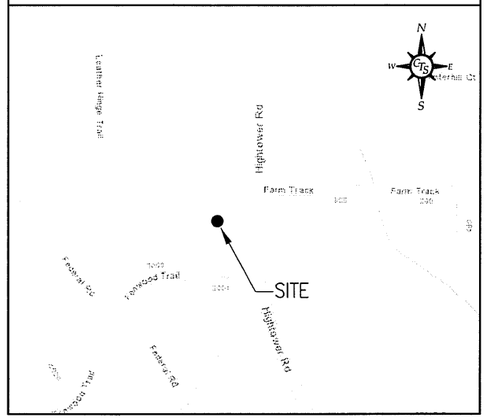
VICINITY MAP



DIRECTIONS TO THE SITE

FROM THE T-MOBILE OFFICE IN ATLANTA, GEORGIA: TAKE HEAD NORTH ON CONCOURSE PKWY NE AND TURN RIGHT TOWARD HAMMOND DR NE. TURN LEFT ONTO HAMMOND DR NE AND TURN RIGHT ONTO THE GEORGIA 400 N RAMP AND MERGE ONTO US-19 N AND TAKE EXIT 6 FOR NORTHRIDGE RD. TURN SLIGHT RIGHT ONTO NORTHRIDGE RD AND TAKE THE 1ST RIGHT ONTO DUNWOODY PL. TURN RIGHT ONTO ROSWELL RD AND CONTINUE ONTO S ATLANTA ST. TURN LEFT ONTO GA-120 W AND TURN RIGHT ONTO WILLEO RD. TURN RIGHT ONTO COLEMAN RD AND TAKE THE 2ND LEFT ONTO HIGHTOWER RD. THE DESTINATION WILL BE ON THE LEFT.

T-Mobile® South, LLC

WILLEO CREEK 2
9AT0289B
SITE MODERNIZATION

9870 HIGHTOWER ROAD
ROSWELL, GA 30075

SITE SUMMARY

SITE TYPE:	SITE MODERNIZATION
TOWER TYPE:	WATER TANK
TOWER LATITUDE:	34° 01' 16.01" (NAD 83)
TOWER LONGITUDE:	84° 23' 05.08" (NAD 83)
ZONING JURISDICTION:	CITY OF ROSWELL
ZONING CLASSIFICATION:	E2
PARCEL TAX I.D.:	LOT#266, 1ST DISTRICT

OCCUPANCY NOTE:
THIS FACILITY IS AN UNOCCUPIED TELECOMMUNICATIONS SWITCH THAT WILL ONLY BE OCCUPIED FOR BRIEF INTERVALS WHEN MAINTENANCE OR EQUIPMENT UPGRADES ARE REQUIRED. ONCE CONSTRUCTION AND FULLY OPERATIONAL, THE FACILITY WILL BE OCCUPIED FOR LESS THAN 8 HOURS AT A TIME. SANITARY SEWER IS NOT REQUIRED.

SITE SUMMARY NOTE:
INFORMATION SHOWN IN THIS SECTION WAS PROVIDED BY OTHERS AND HAS NOT BEEN VERIFIED BY COMPASS.

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

PLUMBING REQUIREMENTS:
FACILITY HAS NO SANITARY OR POTABLE WATER.

PROJECT DIRECTORY

APPLICANT: T-MOBILE SOUTH, LLC
ONE RAVINIA DRIVE
SUITE 1000
ATLANTA, GA 30346
CONTACT: KIMBERLY ADAMS
(404) 226-8915

SITE DESIGN: COMPASS TECHNOLOGY SERVICES
5449 BELLS FERRY ROAD
ACWORTH, GEORGIA 30102
DESIGN MANAGER: JOHN CUNNINGHAM
(770) 701-2500 EXT. 141

OWNER: CITY OF ROSWELL
38 HILL STREET
ROSWELL, GA 30075
CONTACT: CITY ADMINISTRATOR
TEL: 770-209-7979

UNDERGROUND SERVICE ALERT
CALL TOLL FREE
1-800-282-7411
THREE WORKING DAYS BEFORE YOU DIG

SHEET INDEX

	SITE SPECIFIC SHEETS	REV.	DATE
T-1	TITLE SHEET	4	09/04/12
C-1	COMPOUND PLAN	2	08/27/12
C-2	EQUIPMENT PLANS	2	08/27/12
S-1	TOWER ELEVATION & ANTENNA ORIENTATION	2	08/27/12
S-2	ANTENNA & COAXIAL CABLE SCHEDULE	3	09/04/12
S-3	ANTENNA MOUNT DETAIL	2	08/27/12
E-1	GENERAL ELECTRICAL NOTES & SYMBOLS	1	08/27/12
E-2	PLUMBING DIAGRAM	1	08/27/12

DEVELOPMENT MANAGER
SIGNATURE DATE

PROPERTY/ TOWER OWNER
SIGNATURE DATE

SITE ACQUISISTION MANAGER
SIGNATURE DATE

CONSTRUCTION MANAGER
SIGNATURE DATE

RF ENGINEER
SIGNATURE DATE

OPERATIONS MANAGER
SIGNATURE DATE

DRAWINGS PLOTTED TO SCALE ON 11x17 SHEETS

PREPARED BY
compass TECHNOLOGY SERVICES
5449 Bells Ferry Road
Acworth, Georgia 30102
770-701-2500 Fax 770-701-2501
WALTER MATHEWS PRATHER, P.E.
GEORGIA P.E. No. 19114

DESIGN REVISIONS

NO.	DATE	REVISIONS	BY
4	09/04/12	ISSUED FOR CONSTRUCTION	TDM
3	08/27/12	ISSUED FOR CONSTRUCTION	BB
2	08/13/12	ISSUED FOR CONSTRUCTION	TDM
1	07/30/12	ISSUED FOR CONSTRUCTION	MEF
0	07/02/12	ISSUED FOR CONSTRUCTION	TME

NOT VALID WITHOUT SIGNATURE AND DATE

ENGINEER SEAL
GEORGIA REGISTERED NO. 19114 PROFESSIONAL ENGINEER W.M. PRATHER

PREPARED FOR
T-Mobile® South, LLC
ONE RAVINIA DRIVE · SUITE 1000
ATLANTA, GEORGIA 30346
PHONE: (770) 604-8980
FAX: (770) 350-3049

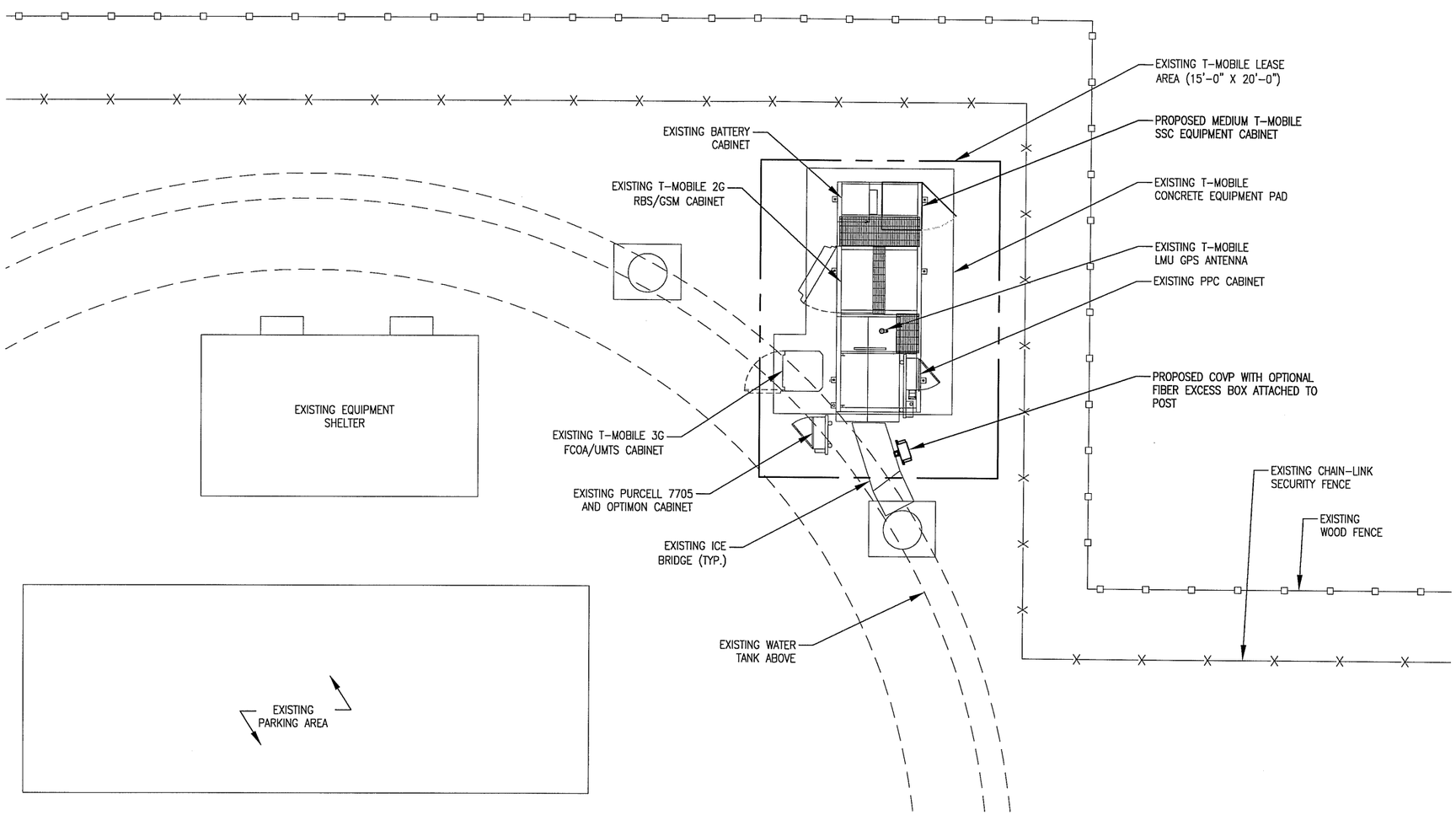
SITE NUMBER: 9AT0289B
SITE NAME: WILLEO CREEK 2

PREPARED BY
APPROVED BY: M. PRATHER
DESIGNED BY: T. MERCHANT
PROJECT NO: 100396
DATE: 05/30/12

SHEET NAME: TITLE SHEET
SHEET NUMBER: T-1

NOTES:

1. CONTRACTOR TO FIELD COORDINATE EXACT LOCATION OF PROPOSED COVP AND OPTIONAL FIBER EXCESS BOX WITH EXISTING CONDITIONS ON SITE.
2. PROPOSED EQUIPMENT SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.



N
W CTS E
S

1 SITE PLAN
SCALE: 1/8" = 1'-0"
0 1' 2' 4' 8'

THE CONTRACTOR SHALL VISIT THE SITE BEFORE BIDDING ON THE WORK CONTAINED WITHIN THIS DESIGN PACKAGE. DISCREPANCIES AND OMISSIONS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO BIDDING.

NOTE:

THIS SITE DESIGN HAS BEEN PREPARED WITHOUT THE BENEFIT OF AN AS-BUILT SURVEY. SLIGHT VARIATIONS MAY EXIST BETWEEN THIS SITE PLAN AND TRUE DIMENSIONS IN THE FIELD. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS.

DRAWINGS PLOTTED TO SCALE ON 11x17 SHEETS

PREPARED BY
compass TECHNOLOGY SERVICES
5449 Bells Ferry Road
Acworth, Georgia 30102
770-701-2500 Fax 770-701-2501
WALTER MATHEWS PRATHER, P.E.
GEORGIA P.E. No. 19114

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ENGINEER SEAL
GEORGIA REGISTERED No. 19114 PROFESSIONAL ENGINEER W. M. PRATHER
8-28-12

PREPARED FOR
T-Mobile South, LLC
ONE RAVINIA DRIVE - SUITE 1000
ATLANTA, GEORGIA 30346
PHONE: (770) 804-8980
FAX: (770) 350-3049

SITE NUMBER
9AT0289B

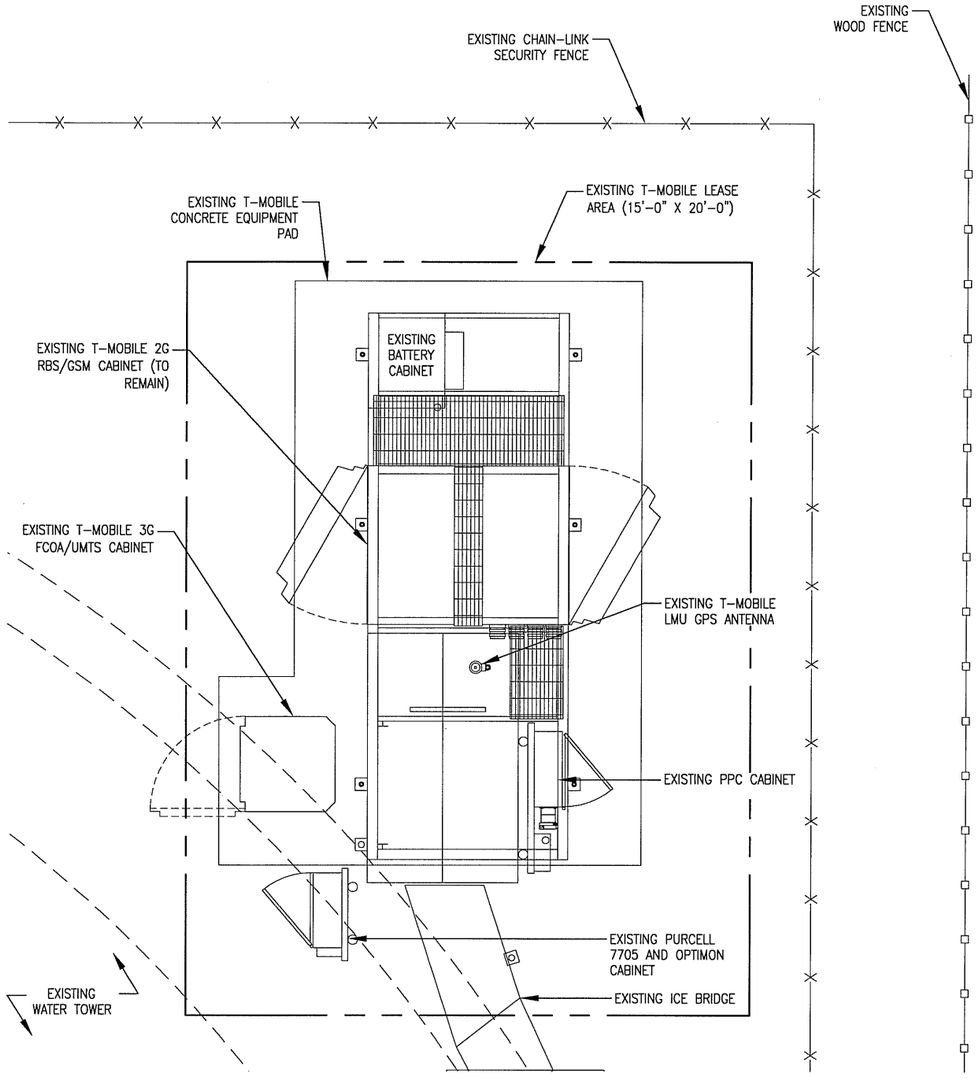
SITE NAME
WILLEO CREEK 2

PREPARED BY

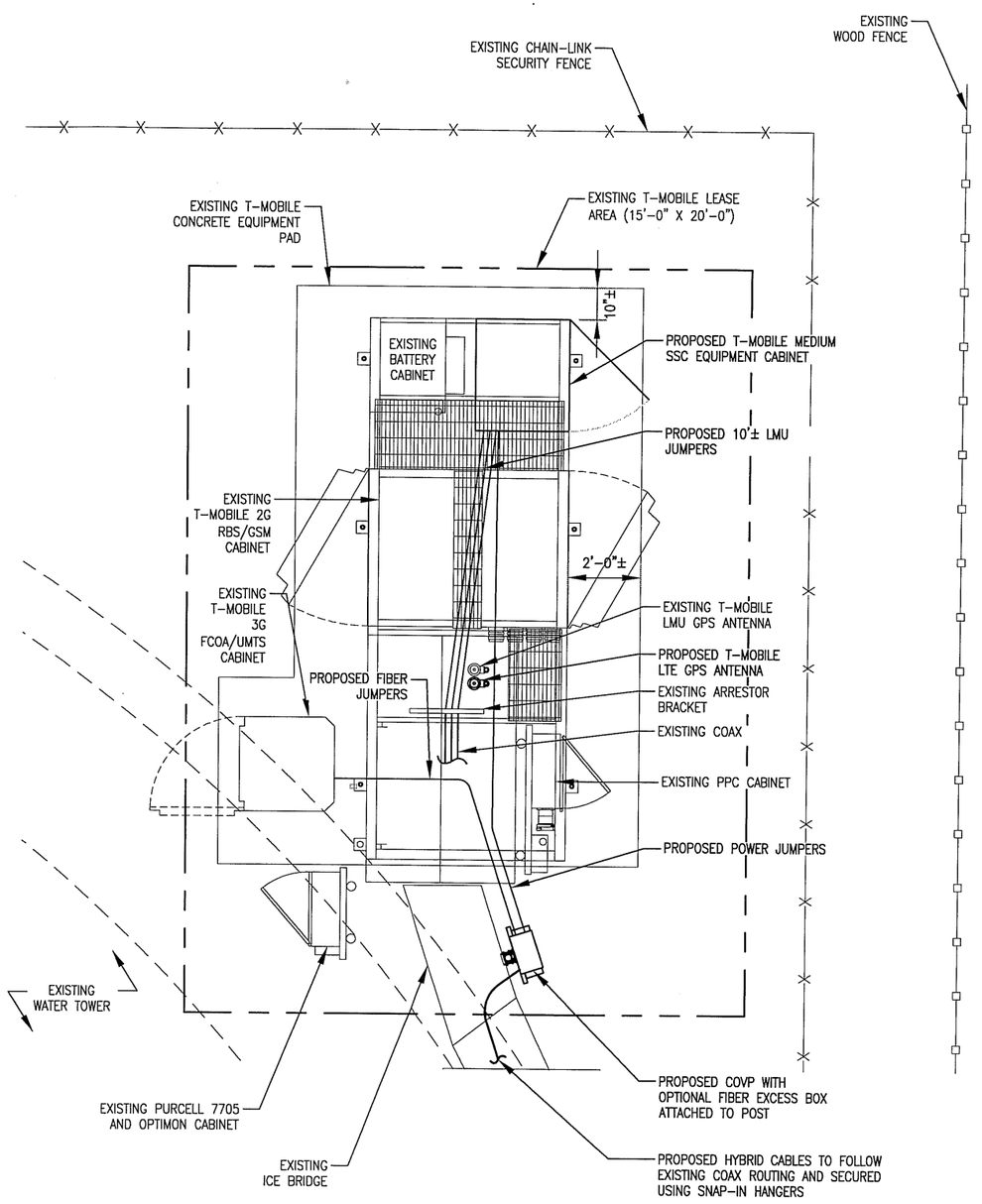
APPROVED BY:	M. PRATHER
DESIGNED BY:	T. MERCHANT
PROJECT NO:	100396
DATE:	05/30/12

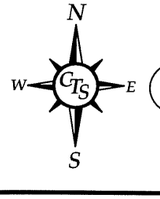
SHEET NAME
SITE PLAN AND NOTES

SHEET NUMBER
C-1



1 EXISTING EQUIPMENT LAYOUT PLAN
SCALE: 1/4" = 1'-0"
0 6" 1' 2' 4'





2 PROPOSED EQUIPMENT LAYOUT PLAN
SCALE: 1/4" = 1'-0"
0 6" 1' 2' 4'

DRAWINGS PLOTTED TO SCALE ON 11x17 SHEETS

PREPARED BY
compass TECHNOLOGY SERVICES
5449 Bells Ferry Road
Acworth, Georgia 30102
770-701-2500 Fax 770-701-2501
WALTER MATHEWS PRATHER, P.E.
GEORGIA P.E. No. 19114

DESIGN REVISIONS

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1	07/30/12	ISSUED FOR CONSTRUCTION	MEF
0	07/02/12	ISSUED FOR CONSTRUCTION	TME

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ENGINEER SEAL
GEORGIA REGISTERED No. 19114 PROFESSIONAL ENGINEER W. M. PRATHER
8.29.12

PREPARED FOR
T-Mobile South, LLC
ONE RAVINIA DRIVE SUITE 1000
ATLANTA, GEORGIA 30346
PHONE: (770) 604-8980
FAX: (770) 350-3049

SITE NUMBER
9AT0289B

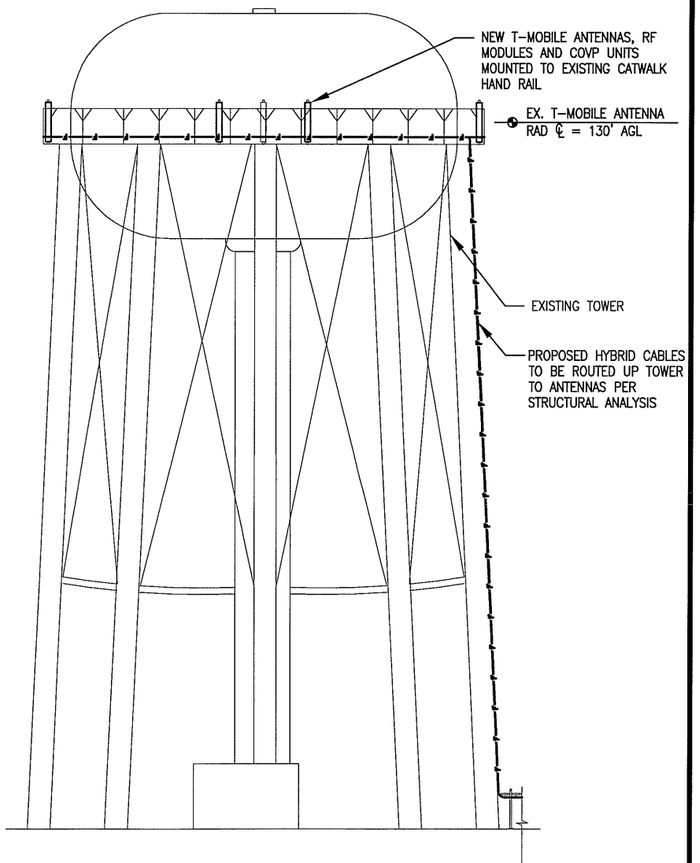
SITE NAME
WILLEO CREEK 2

PREPARED BY

APPROVED BY:	M. PRATHER
DESIGNED BY:	T. MERCHANT
PROJECT NO:	100396
DATE:	05/30/12

SHEET NAME
EQUIPMENT PLANS

SHEET NUMBER
C-2



1 TOWER ELEVATION
NOT TO SCALE

NOTE:

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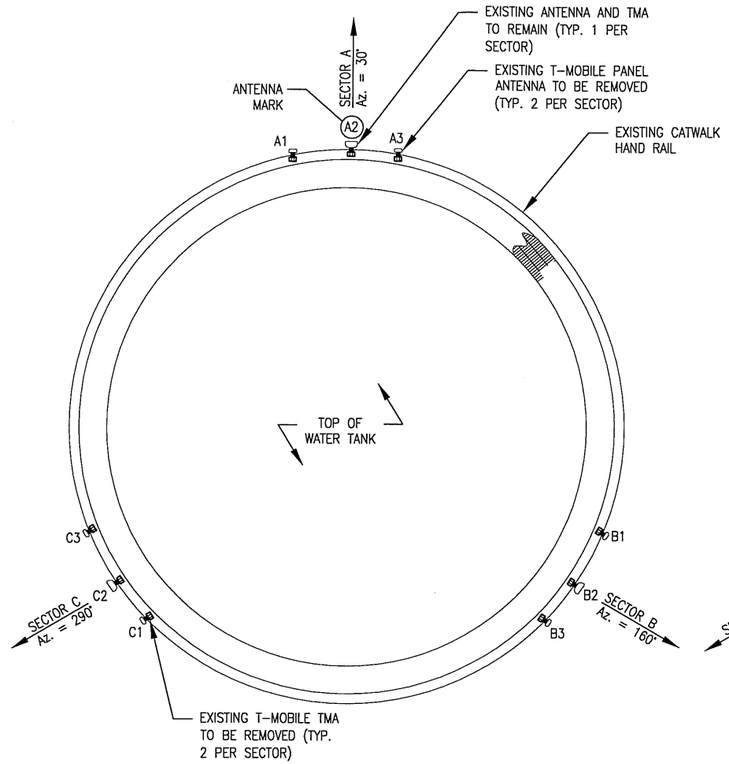
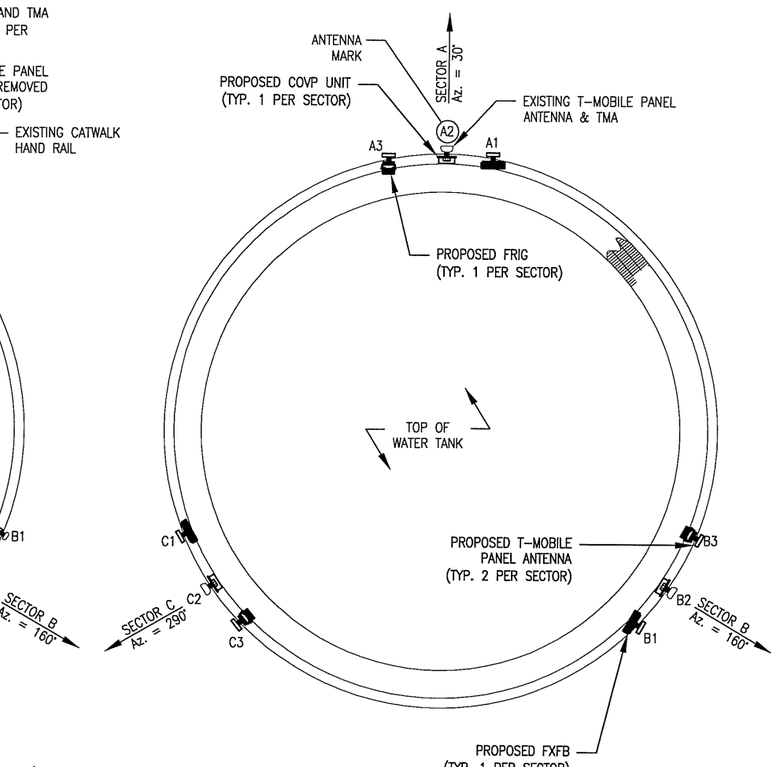


2 EXISTING ANTENNA ORIENTATION
SCALE: NOT TO SCALE



3 PROPOSED ANTENNA ORIENTATION
SCALE: NOT TO SCALE

NOTES:

1. CONTRACTOR TO FIELD COORDINATE EXACT LOCATION OF PROPOSED FXFB, FRIG AND COVP UNITS WITH EXISTING CONDITIONS ON TOWER.
2. PROPOSED EQUIPMENT SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. ALL HARDWARE FASTENERS SHALL BE HIGH STRENGTH (A325, A36).
3. DRILLING OF EXISTING STEEL MEMBERS IS NOT PERMITTED.
4. BOND PROPOSED EQUIPMENT TO EXISTING SECTOR GROUND BAR PER MANUFACTURER'S SPECIFICATIONS. PROVIDE ADDITIONAL SECTOR GROUND BARS AS REQUIRED.
5. ALL ANTENNAS, CABLES, AND MOUNTS SHALL BE INSTALLED IN ACCORDANCE WITH THE TOWER ENGINEER'S RECOMMENDATIONS IN A MANNER CONSISTENT WITH THE STRUCTUR ANALYSIS REPORT.
6. THIS ANTENNA ORIENTATION PLAN IS SCHEMATIC. THE CONTRACTOR SHALL VERIFY TOWER ORIENTATION AND FIELD COORDINATE REQUIRED ADJUSTMENTS TO ACHIEVE THE DESIRED ANTENNA AZIMUTHS.
7. TOWER STRUCTURAL ANALYSIS BY OTHERS.
8. CONTRACTOR TO CONTACT T-MOBILE FOR UP-TO-DATE RF DESIGN DATA. NOTIFY ENGINEER IF CONFLICT EXISTS.
9. HYBRID CABLE LENGTH FROM OVP TO RRU SHALL NOT EXCEED 15'.
10. COAX JUMPER LENGTH FROM RRU TO ANTENNA SHALL NOT EXCEED 15'.

PREPARED BY
compass TECHNOLOGY SERVICES
5449 Bells Ferry Road
Acworth, Georgia 30102
770-701-2500 Fax 770-701-2501
WALTER MATHEWS PRATHER, P.E.
GEORGIA P.E. No. 19114

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0	07/02/12	ISSUED FOR CONSTRUCTION	TME

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ENGINEER SEAL
GEORGIA REGISTERED NO. 19114 PROFESSIONAL ENGINEER W.M. PRATHER
8.26.12

PREPARED FOR
T-Mobile South, LLC
ONE RAVINIA DRIVE . SUITE 1000
ATLANTA, GEORGIA 30346
PHONE: (770) 804-8980
FAX: (770) 350-3049

SITE NUMBER
9AT0289B

SITE NAME
WILLEO CREEK 2

PREPARED BY

APPROVED BY:	M. PRATHER
DESIGNED BY:	T. MERCHANT
PROJECT NO:	100396
DATE:	05/30/12

SHEET NAME
TOWER ELEVATION & ANTENNA INFORMATION

SHEET NUMBER
S-1

2A_U2100 ON GROUND – TOWER TOP EQUIPMENT SCHEDULE (RE: Atlanta Modernization Tracker_PRFDS V13_4_08302012)

ANTENNA SECTOR	ANTENNA MARK	ANTENNA MODEL	ANTENNA AZIMUTH	RRU MODEL	TMA MODEL	TOWER TOP COVP MODEL	ANTENNA CABLE DESCRIPTION
ALPHA	A3	(1) RFS APX17DWVS – (P)	30°	(1) FRIG – (P)	–	(1) TOP COVP – (P)	–
	A2	(1) RFS APXV18–206517S–C – (E)	30°	–	(1) RFS ATMAA 1412D–1A20 – (E)		(1) 1.24" x 175 LF LOW CAPACITY HYBRID CABLE – (P) (2) 1–5/8" DIA. U2100 COAX CABLE – (E)
	A1	(1) RFS APX17DWVS – (P)	30°	(1) FXFB – (P)	–		(2) 1–5/8" DIA. E911 COAX CABLE – (E)
BETA	B3	(1) RFS APX17DWVS – (P)	160°	(1) FRIG – (P)	–	(1) TOP COVP – (P)	–
	B2	(1) RFS APXV18–206517S–C – (E)	160°	–	(1) RFS ATMAA 1412D–1A20 – (E)		(1) 1.24" x 200 LF LOW CAPACITY HYBRID CABLE – (P) (2) 1–5/8" DIA. U2100 COAX CABLE – (E)
	B1	(1) RFS APX17DWVS – (P)	160°	(1) FXFB – (P)	–		(2) 1–5/8" DIA. E911 COAX CABLE – (E)
GAMMA	C3	(1) RFS APX17DWVS – (P)	290°	(1) FRIG – (P)	–	(1) TOP COVP – (P)	–
	C2	(1) RFS APXV18–206517S–C – (E)	290°	–	(1) RFS ATMAA 1412D–1A20 – (E)		(1) 1.24" x 250 LF LOW CAPACITY HYBRID CABLE – (P) (2) 1–5/8" DIA. U2100 COAX CABLE – (E)
	C1	(1) RFS APX17DWVS – (P)	290°	(1) FXFB – (P)	–		(2) 1–5/8" DIA. E911 COAX CABLE – (E)

NOTE: (P) DENOTES PROPOSED EQUIPMENT; (E) DENOTES EXISTING EQUIPMENT

EQUIPMENT NOTES:

1. THE HYBRID CABLE LENGTH SHOW IS ONLY AN ESTIMATE AND SHOULD NOT BE USED FOR ORDERING MATERIALS. CONFIRM THE REQUIRED HYBRID CABLE LENGTH WITH T–MOBILE PRIOR TO ORDERING OR INSTALLATION.
2. THE CONTRACTOR SHALL TEST THE OPTICAL FIBER AFTER INSTALLATION IN ACCORDANCE WITH T–MOBILE STANDARDS AND SUPPLY THE RESULTS TO T–MOBILE.
3. THE CONTRACTOR SHALL CONFIRM THE TOWER TOP EQUIPMENT LIST ABOVE WITH THE FINAL T–MOBILE RFDS PRIOR TO INSTALLATION.
4. ALL EXISTING AND PROPOSED ANTENNA CABLES SHALL BE COLOR CODED PER T–MOBILE STANDARDS.
5. REFER TO NOKIA SIEMENS NETWORKS EQUIPMENT INSTALLATION STANDARDS FOR ADDITIONAL INFORMATION.
6. REFER TO EQUIPMENT MANUFACTURER'S SPECIFICATION SHEETS FOR ADDITIONAL INFORMATION NOT LISTED ABOVE.

2A_U2100 ON GROUND TOWER LOADING SUMMARY

EQUIPMENT TYPE	EXISTING QUANTITY	REMOVE QUANTITY	ADD QUANTITY	TOTAL QUANTITY
PANEL ANTENNA	9	6	6	9
COAX CABLE	18	6	0	12
TMA	9	6	0	3
FRIA/E	0	0	0	0
FRIG	0	0	3	3
FXFB	0	0	3	3
HYBRID CABLE	0	0	3	3
TOP COVP	0	0	3	3
BOTTOM COVP	0	0	1	1

1 ANTENNA & COAXIAL CABLE SCHEDULE
SCALE: N/A

DRAWINGS PLOTTED TO SCALE ON 11x17 SHEETS

PREPARED BY
compass TECHNOLOGY SERVICES
5449 Bells Ferry Road
Acworth, Georgia 30102
770-701-2500 Fax 770-701-2501
WALTER MATHEWS PRATHER, P.E.
GEORGIA P.E. No. 19114

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0	07/02/12	ISSUED FOR CONSTRUCTION	TME

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ENGINEER SEAL
GEORGIA REGISTERED No. 19114 PROFESSIONAL ENGINEER W.M. PRATHER
9-4-12

PREPARED FOR
T-Mobile
South, LLC
ONE RAVINIA DRIVE - SUITE 1000
ATLANTA, GEORGIA 30346
PHONE: (770) 604-6980
FAX: (770) 350-3049

SITE NUMBER
9AT0289B

SITE NAME
WILLEO CREEK 2

PREPARED BY

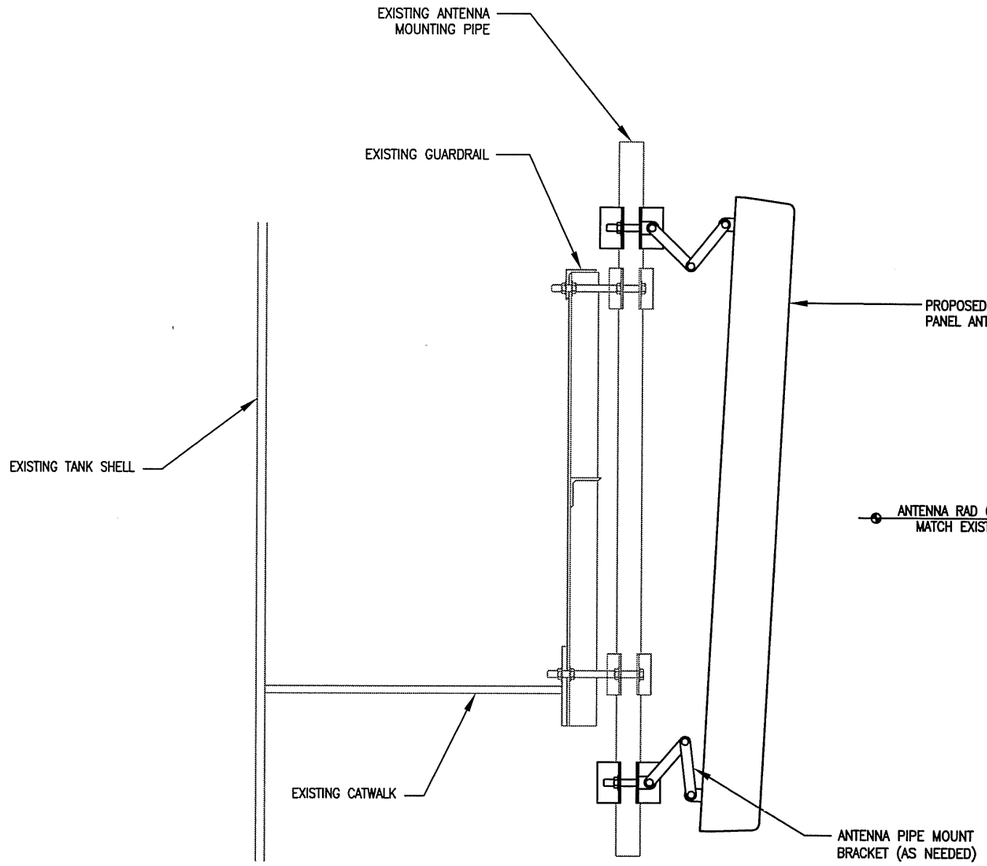
APPROVED BY:	M. PRATHER
DESIGNED BY:	T. MERCHANT
PROJECT NO:	100396
DATE:	05/30/12

SHEET NAME
ANTENNA & COAXIAL CABLE SCHEDULE

SHEET NUMBER
S-2

NOTES:

1. ALL COMPONENTS AND HARDWARE SHALL BE OF A SUITABLE MATERIAL OR TREATED TO RESIST CORROSION.
2. SEAL AROUND ALL PENETRATIONS WITH A UL LISTED SILICONE SEALANT.



1 ANTENNA MOUNT DETAIL
SCALE: NOT TO SCALE

NOTE:
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DRAWINGS PLOTTED TO SCALE ON 11x17 SHEETS

PREPARED BY
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GEORGIA P.E. No. 19114

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ENGINEER SEAL
GEORGIA REGISTERED NO. 19114 PROFESSIONAL ENGINEER W.M. PRATHER

PREPARED FOR
T-Mobile South, LLC
ONE RAVINIA DRIVE - SUITE 1000
ATLANTA, GEORGIA 30346
PHONE: (770) 604-8980
FAX: (770) 350-3049

SITE NUMBER
9AT0289B

SITE NAME
WILLEO CREEK 2

PREPARED BY

APPROVED BY:	M. PRATHER
DESIGNED BY:	T. MERCHANT
PROJECT NO:	100396
DATE:	05/30/12

SHEET NAME
ANTENNA MOUNT DETAIL

SHEET NUMBER
S-3

GENERAL ELECTRICAL NOTES:

1. SCOPE: PROVIDE LABOR, MATERIALS, AND EQUIPMENT, ETC., REQUIRED TO COMPLETE THE INSTALLATION SHOWN ON THE DRAWINGS.
2. CODES AND STANDARDS: INSTALLATION SHALL COMPLY WITH APPLICABLE LAWS AND ORDINANCES, UTILITY COMPANY REGULATIONS, AND APPLICABLE REQUIREMENTS OF LATEST EDITIONS OF:
   A. NFC – NATIONAL FIRE CODES
   B. UL – UNDERWRITERS LABORATORIES
   C. NEC – NATIONAL ELECTRICAL CODE
   D. NEMA – NATIONAL ELECTRIC MANUFACTURERS ASSOCIATION
   E. OSHA – OCCUPATIONAL SAFETY AND HEALTH ACT
   F. SBC – STANDARD BUILDING CODE
3. PERMITS: OBTAIN AND PAY FOR REQUIRED PERMITS, LICENSES, FEES, INSPECTIONS, ETC.
4. COORDINATION: COORDINATE WORK WITH OTHER TRADES.
5. SUBMITTALS: SUBMIT BROCHURES FOR APPROVAL ON SERVICE DISCONNECTING MEANS AND OTHER MAJOR SYSTEM COMPONENTS.
6. EXISTING SERVICES: DO NOT INTERRUPT EXISTING SERVICES WITHOUT WRITTEN PERMISSION OF THE OWNER.
7. EQUIPMENT: CONNECT ELECTRICALLY OPERATED EQUIPMENT.
8. RECORD DRAWINGS: MAINTAIN A RECORD OF ALL CHANGES & SUBSTITUTIONS BETWEEN WORK AS SPECIFIED AND INSTALLED. RECORD CHANGES ON A CLEAN SET OF CONTRACT DOCUMENTS WHICH SHALL BE TURNED OVER TO THE CONSTRUCTION MANAGER UPON COMPLETION OF THE PROJECT.
9. IDENTIFICATION: IDENTIFY SERVICE DISCONNECTING MEANS WITH PERMANENT NAMEPLATE.
10. GUARANTEE/WARRANTY: GUARANTEE INSTALLATION TO BE FREE OF DEFECTS, SHORTS, GROUNDS, ETC., FOR A PERIOD OF ONE YEAR. FURNISH WARRANTY SO THE DEFECTIVE MATERIAL AND/OR WORKMANSHIP WILL BE REPAIRED IMMEDIATELY UPON NOTIFICATION AT NO COST TO THE OWNER FOR PERIOD OF WARRANTY.
11. CUTTING AND PATCHING: PROVIDE CUTTING REQUIRED TO DO THE WORK. DO NOT CUT MAJOR STRUCTURAL ELEMENTS WITHOUT APPROVAL. PATCHING SHALL BE OF QUALITY EQUAL TO AND OF MATCHING APPEARANCE WITH EXISTING CONSTRUCTION.
12. DITCHING AND BACKFILL: PROVIDE FOR ALL UNDERGROUND INSTALLED CONDUIT AND/OR CABLES.
13. RACEWAYS: UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC CONDUIT (MEET NEMA TC2 – 1990). EXPOSED CONDUIT SHALL BE RIGID GALVANIZED STEEL CONDUIT BEFORE RISING ABOVE GRADE. PLUG AND CAP EACH END OF SPARE AND EMPTY CONDUITS AND PROVIDE TWO SEPARATE PULL STRINGS – 200 LB. TEST POLYETHYLENE CORD. ALL CONDUIT BENDS SHALL BE A MINIMUM OF 24" RADIUS. RGS CONDUITS, WHEN SPECIFIED, SHALL MEET UL–6 FOR GALVANIZED STEEL. ALL FITTINGS SHALL BE SUITABLE FOR USE WITH THREADED RIGID CONDUIT.
14. SUPPORTS: AS REQUIRED BY THE NEC.
15. CONDUCTORS: USE 98% CONDUCTIVITY COPPER WITH TYPE XHHW–2 INSULATION, 600 VOLT, COLOR CODED. USE SOLID CONDUCTORS FOR WIRE UP TO AND INCLUDING NO. 8 AWG. USE STRANDED CONDUCTORS FOR WIRE ABOVE NO. 8 AWG.
16. CONNECTORS FOR POWER CONDUCTORS: USE PRESSURE TYPE INSULATED TWIST–ON CONNECTORS FOR #10 AWG AND SMALLER. USE SOLDERLESS MECHANICAL TERMINAL LUGS FOR #8 AWG AND LARGER.
17. SERVICE: 240/120V, SINGLE PHASE, 3 WIRE CONNECTION AVAILABLE FROM UTILITY COMPANY. COORDINATE AND PAY ALL FEES.
18. TELEPHONE SERVICE: PROVIDE EMPTY CONDUITS WITH PULL WIRES AS INDICATED ON DRAWINGS.
19. UTILITY FRAME METER CENTER: (AS REQUIRED) PROVIDED BY OWNER, INSTALLED BY CONTRACTOR. THE ELECTRICAL DESIGN ON THESE DRAWINGS IS BASED ON A METER CENTER CONFIGURED AS FOLLOWS:
    A. A NEMA 3R ENCLOSURE, MOUNTED ON THE FRONT SIDE OF AN EQUIPMENT FRAME INCORPORATING 120/240V, 200A METER SOCKETS AND CIRCUIT BREAKER HOUSINGS. EACH METER/CIRCUIT BREAKER COMBINATION SHALL PROVIDE SERVICE TO ONE (1) CARRIER (OR TOWER LIGHTING AS REQUIRED). METERS ARE TO BE PROVIDED BY LOCAL POWER COMPANY.
    B. TOWERS REQUIRING FAA LIGHTING SHALL BE ALLOCATED ONE METER SOCKET AND CIRCUIT BREAKER HOUSING IN THE METER BANK. CIRCUIT BREAKER TO BE SIZED AS REQUIRED FOR TOWER LIGHTING EQUIPMENT. METER IS TO BE PROVIDED BY LOCAL POWER COMPANY.
20. UTILITY FRAME TELCO CABINET (AS REQUIRED): PROVIDED BY OWNER, INSTALLED BY CONTRACTOR. THE ELECTRICAL DESIGN ON THESE DRAWINGS IS BASED ON A TELCO CABINET CONFIGURED AS FOLLOWS:
    A. A NEMA 3R ENCLOSURE SHALL INCLUDE A 3/4" THICK PLYWOOD BACKBOARD SIZED TO FIT CABINET. A PREWIRED 20A, 120V, GFCI DUPLEX RECEPTACLE, SURGE PROTECTORS, AND A GROUND BAR. TELCO CABINET SHALL BE MOUNTED TO THE UTILITY SERVICE FRAME.
    B. THE TELEPHONE CABINET SHALL ACCOMMODATE ALL TELEPHONE LINES (PROPOSED AND FUTURE) AND CONNECTIONS FOR THEM.
21. PPC CABINET: PPC CABINET SHALL BE MOUNTED TO THE EQUIPMENT SLED SERVICE FRAME. THE ENCLOSURE DESIGN ON THESE DRAWINGS IS BASED ON A NORTHERN TECHNOLOGIES PPC CABINET CONFIGURED AS FOLLOWS:
    A. PPC CABINET SHALL BE NEMA 3R RATED AND HAVE A DOOR TO ALLOW ACCESS TO INTERNAL COMPONENTS.
    B. THE PPC ENCLOSURE SHALL INCLUDE A 120/240V, 1 PHASE, 200A MAIN BREAKER ELECTRICAL PANEL WITH SURGE PROTECTION AND WITH CIRCUIT BREAKERS AS REQUIRED FOR SLED ELECTRICAL LOADS. SURGE PROTECTION, AN INTERIOR 20A/120V DUPLEX RECEPTACLE, AND EXTERIOR WEATHERPROOF 20A/120V DUPLEX RECEPTACLE SHALL ALSO BE INCLUDED.
    C. PROVIDE A GROUND WIRE SIZED PER NEC IN ALL CIRCUITS OVER 20 AMPS AND IN ALL CIRCUIT RUNS IN PVC.
    D. PPC ENCLOSURE SHALL INCLUDE A 3/4" THICK PLYWOOD BACKBOARD SIZED TO FIT CABINET AND SHALL ACCOMMODATE ALL TELEPHONE LINES (PROPOSED AND FUTURE) AND CONNECTIONS FOR THEM. IT SHALL ALSO INCLUDE 2 TELCO GROUND BARS AND PROVIDE MOUNTING SPACE FOR ALARM EQUIPMENT.

THE CONTRACTOR SHALL VISIT THE SITE BEFORE BIDDING ON THE WORK CONTAINED WITHIN THIS DESIGN PACKAGE. DISCREPANCIES AND OMISSIONS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO BIDDING.

GENERAL GROUNDING NOTES:

1. SITE GROUNDING SHALL COMPLY WITH T–MOBILE GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH T–MOBILE GROUNDING CHECKLIST, LATEST VERSION. WHEN NATIONAL AND LOCAL GROUNDING CODES ARE MORE STRINGENT THEY SHALL GOVERN.
2. GROUND RODS:
   A. 5/8" x 10' LONG COPPER CLAD STEEL
   B. STANDARD SPACING: 10'
   C. TOP SHALL BE A MINIMUM OF 2'–6" BELOW BASE OF GRAVEL
3. GROUND CONDUCTORS:
   A. #2 BARE TINNED SOLID COPPER UNLESS INDICATED OTHERWISE
   B. WHEN DIRECTION OF CONDUCTOR CHANGES, IT SHALL BE DONE GRADUALLY
   C. ALL GROUNDING CONDUCTORS SHALL RUN THROUGH PVC SLEEVES WHEREVER CONDUCTORS RUN THROUGH CONCRETE SLABS.
   D. GROUND RINGS SHALL BE BURIED A MINIMUM OF 2'–6" BELOW BASE OF GRAVEL. GROUND RINGS SHALL BE LOCATED A MINIMUM OF 2'–0" FROM OUTSIDE EDGE OF CABINETS, TOWER FOUNDATION, AND OTHER SITE OBJECTS.
4. GROUND CONNECTIONS:
   A. ALL CONNECTIONS SHALL BE EXOTHERMIC (CADWELD OR EQUIVALENT) UNLESS INDICATED OTHERWISE.
   B. ALL MATERIALS USED SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS.
   C. CONNECTIONS AT GROUND BARS AND SERVICE DISCONNECTING MEANS SHALL CONSIST OF LUGS CADWELDED TO GROUND CONDUCTORS UNLESS INDICATED OTHERWISE. LUGS SHALL BE ATTACHED TO GROUND BARS USING STAINLESS STEEL OR HOT–DIPPED GALVANIZED STEEL BOLTS, NUTS, AND LOCKWASHERS.
5. COAXIAL TRANSMISSION LINE GROUNDING:
   A. VERTICAL RUNS THAT ARE 200' OR LESS SHALL REQUIRE A GROUNDING KIT AT THE TOP AND BOTTOM OF TOWER.
   B. VERTICAL RUNS THAT ARE GREATER THAN 200' SHALL REQUIRE A GROUNDING KIT (IN ADDITION TO THE ABOVE) FROM THE TOP EVERY 150' TOWARDS THE GROUND UNTIL THE DISTANCE IS LESS THAN 150' FROM THE GROUND (NOT FOR MONOPOLES).
   C. SURGE ARRESTOR IS PROVIDED BY OTHERS AND INSTALLED BY CONTRACTOR. CONTRACTOR SHALL MAKE ALL CONNECTIONS REQUIRED FOR INSTALLATION.
   D. ALL GROUNDING KITS SHALL BE PROVIDED BY OTHERS AND INSTALLED BY CONTRACTOR.
6. MISCELLANEOUS ITEMS TO BE CONNECTED TO THE GROUNDING SYSTEM:
   A. ANY METAL FENCE POST WITHIN 6' OF THE GROUND RING.
   B. TRANSMISSION LINE ENTRANCE HATCH.
   C. METAL CABINET PARTS NOT GROUNDED BY THE INTERNAL GROUND RING.
   D. METAL FUEL STORAGE TANKS.
   E. ANY SIGNIFICANT METAL OBJECT WITHIN 6' OF THE EXTERNAL GROUNDING SYSTEM OR ANY OTHER GROUNDED OBJECT.
   F. EXTERIOR ICE SHIELDS.
   G. GENERATOR AND SUPPORT SKID OR BASE AND SWITCH.
7. INSTALLATION AND TESTING:
   A. CONTRACTOR SHALL NOTIFY CONSTRUCTION MANAGER IMMEDIATELY IF THERE ARE ANY DIFFICULTIES INSTALLING GROUNDING SYSTEM DUE TO FIELD CONDITIONS.
   B. CONTRACTOR SHALL NOT COVER UP GROUND RING AND CONNECTIONS UNTIL AN INSPECTION HAS BEEN PERFORMED. COORDINATE INSPECTION WITH CONSTRUCTION MANAGER.
   C. PROVIDE TESTING OF GROUNDING SYSTEM AS DIRECTED BY CONSTRUCTION MANAGER.
8. THE MAXIMUM ALLOWABLE RESISTANCE READING SHALL BE 5 OHMS TO GROUND. IF THE RESISTANCE OF THE ENTIRE GROUNDING SYSTEM AS MEASURED AT THE ARRESTOR BRACKET EXCEEDS 5.0 OHMS, THE ELECTRICAL CONTRACTOR AND OWNER'S REPRESENTATIVE SHALL BE NOTIFIED SO THAT ADDITIONAL GROUND LOCATIONS CAN BE UTILIZED.
9. ALL EXPOSED GROUND LEADS TO GROUND RING, PLACED IN CONCRETE, SHALL BE ENCASED IN 3/4" FLEXIBLE CONDUIT, SEAL TYPE OR SIMILAR.
10. ALL GROUND WIRE CONNECTIONS TO EQUIPMENT GROUND RING THAT ARE RUNNING ABOVE GROUND SHALL BE RUN INSIDE SEALTIGHT FLEX CONDUIT.
11. ALL CONNECTIONS ABOVE GROUND EXCEPT CONNECTIONS TO GROUND BARS OR ARRESTOR BRACKET SHALL BE WITH DOUBLE LUG CONNECTORS. CONNECTIONS TO GROUND BARS & ARRESTORS SHALL BE CADWELD.
12. COMPACT BACKFILL OF ALL TRENCHES FOR GROUNDING RING. SITE SOIL OR #57 STONE MAY BE USED FOR BACKFILL MATERIALS. CONTRACTOR SHALL OBTAIN APPROVAL FOR BACKFILL MATERIALS TO BE USED FROM CONSTRUCTION MANAGER.
13. CONTRACTOR SHALL PROVIDE S.S. FLAT & LOCK WASHERS AS REQUIRED FOR COMPLETE INSTALLATION OF GROUND LEADS AT GROUND BUS.

ABBREVIATIONS

AFG	ABOVE FINISHED GRADE
A	AMP(S)
AIC	AMPERE INTERRUPTING CAPACITY
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BCW	BARE COPPER WIRE
C	CONDUIT
DWG	DRAWING
G	GROUND
GEN	GENERATOR
GND	GROUND
GPS	GLOBAL POSITIONING SYSTEM
HZ	HERTZ
KWH	KILOWATT HOUR
MIN	MINIMUM
NTS	NOT TO SCALE
P	POLE
PH	PHASE
PCS	PERSONAL COMMUNICATION SYSTEM
PPC	POWER/PROTECTION CABINET
PVC	POLYVINYL CHLORIDE
REP	REPRESENTATIVE
RGS	RIGID GALVANIZED STEEL
RWY	RACEWAY
SCH	SCHEDULE
SPE	SERVICE PROTECTION ENCLOSURE
TBD	TO BE DETERMINED
TYP	TYPICAL
UG	UNDERGROUND
V	VOLT(S)

SYMBOLS LEGEND

- METER
- DISCONNECT SWITCH
- EXPOSED RACEWAY
- UNDERGROUND RACEWAY
- CONDUIT TURNED TOWARD VIEWER
- 5/8"ø x 10'–0" GROUND ROD
- GROUND ROD TEST WELL
- GROUNDING CONDUCTOR
- GROUND CONNECTION
- GROUND BAR

DRAWINGS PLOTTED TO SCALE ON 11x17 SHEETS

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GEORGIA P.E. No. 19114

DESIGN REVISIONS

NO.	DATE	REVISIONS	BY
1	08/27/12	ISSUED FOR CONSTRUCTION	BB
0	07/02/12	ISSUED FOR CONSTRUCTION	TME

NOT VALID WITHOUT SIGNATURE AND DATE

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SITE NAME: WILLEO CREEK 2

PREPARED BY

APPROVED BY:	M. PRATHER
DESIGNED BY:	T. MERCHANT
PROJECT NO:	100396
DATE:	05/30/12

SHEET NAME: GENERAL ELECTRICAL NOTES AND SYMBOLS
SHEET NUMBER: E-1

POWER NOTES:

(P1) INSTALL NEW 100A/2P BREAKER IN EXISTING AC POWER PANEL. CONSOLIDATE OR REMOVE EXISTING BREAKERS AS REQUIRED BY T-MOBILE CONSOLIDATION PLAN.

(P2) INSTALL (3) #3 AWG & (1) #8 GND. CONDUCTORS IN A 2" BURIED OR FLEX CONDUIT FROM THE EXISTING AC POWER PANEL TO THE PROPOSED SSC CABINET. TERMINATE CONDUCTORS IN SSC CABINET PER MANUFACTURER'S SPECIFICATIONS.

(P3) INSTALL NEW 1-1/2" DIA. FLEX CONDUIT FOR DC CONDUCTORS FROM THE NEW SSC CABINET TO THE EXISTING FCOA CABINET. SIZE DC CONDUCTORS AND BREAKERS PER MANUFACTURER'S SPECIFICATIONS.

TELCO NOTES:

(T1) INSTALL NEW 1-1/2" BURIED OR FLEX CONDUIT FROM THE EXISTING OPTIMAN CABINET TO THE NEW SSC CABINET FOR TELCO CABLE ROUTING.

(T2) INSTALL NEW 1-1/2" BURIED OR FLEX CONDUIT FROM THE NEW SSC CABINET TO THE EXISTING FCOA CABINET FOR TELCO CABLE ROUTING.

(T3) INSTALL NEW 1-1/2" BURIED OR FLEX CONDUIT FROM THE NEW SSC CABINET TO THE EXISTING RBS CABINETS FOR TELCO CABLE ROUTING.

(T4) EXISTING TELCO CONDUIT ROUTING (TYP.)

GROUNDING NOTES:

(G1) GROUND NEW SSC CABINET MAIN GROUND BAR TO EXISTING SITE GROUND RING WITH A #2 BARE TINNED SOLID COPPER GROUND WIRE. PROVIDE TWO HOLE LUG CONNECTION TO GROUND BAR AND CADWELD CONNECTION TO GROUND RING (TYP.)

(G2) GROUND NEW SSC CABINET CHASSIS TO EXISTING SITE GROUND RING WITH A #2 BARE TINNED SOLID COPPER GROUND WIRE. PROVIDE TWO HOLE LUG CONNECTION TO CABINET CHASSIS AND CADWELD CONNECTION TO GROUND RING (TYP.) *** ONLY REQUIRED IF SSC CABINET IS NOT INTERNALLY GROUNDED ***

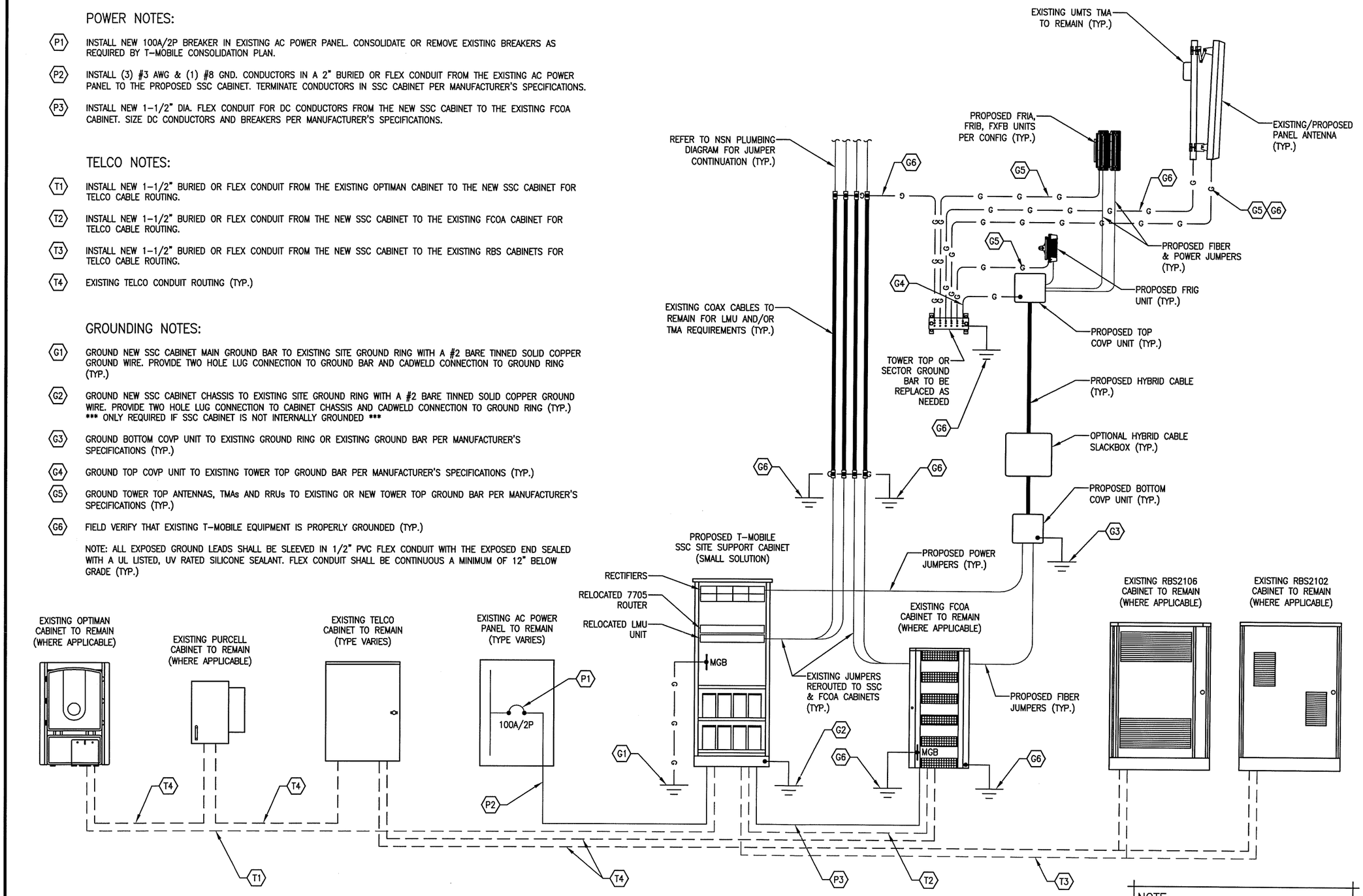
(G3) GROUND BOTTOM COVP UNIT TO EXISTING GROUND RING OR EXISTING GROUND BAR PER MANUFACTURER'S SPECIFICATIONS (TYP.)

(G4) GROUND TOP COVP UNIT TO EXISTING TOWER TOP GROUND BAR PER MANUFACTURER'S SPECIFICATIONS (TYP.)

(G5) GROUND TOWER TOP ANTENNAS, TMAs AND RRUs TO EXISTING OR NEW TOWER TOP GROUND BAR PER MANUFACTURER'S SPECIFICATIONS (TYP.)

(G6) FIELD VERIFY THAT EXISTING T-MOBILE EQUIPMENT IS PROPERLY GROUNDED (TYP.)

NOTE: ALL EXPOSED GROUND LEADS SHALL BE SLEEVED IN 1/2" PVC FLEX CONDUIT WITH THE EXPOSED END SEALED WITH A UL LISTED, UV RATED SILICONE SEALANT. FLEX CONDUIT SHALL BE CONTINUOUS A MINIMUM OF 12" BELOW GRADE (TYP.)



1 POWER, TELCO & GROUNDING SCHEMATIC ONE-LINE DIAGRAM
NOT TO SCALE

NOTE:
THIS DETAIL IS INTENDED TO SHOW THE GENERAL SITE POWER, TELCO & GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE T-MOBILE CM OF ANY CONFLICTS.

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SHEET NAME: PLUMBING DIAGRAM

SHEET NUMBER: E-2