ABBREVIATIONS

A.B.	ANCHOR BOLT
A.G.L.	ABOVE GROUND LEVEL
ADJ.	ADJUSTABLE
ALUM.	ALUMINUM
APPROX.	APPROXIMATE
ARCH.	ARCHITECTURAL
A.S.	AS SHOWN
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
BLK.	BLOCK
BLKG.	BLOCKING
BMU	BRICK MASONRY UNIT
B.O.	BOTTOM OF
BOT.	BOTTOM
B.T.S.	BASE TRANSCEIVER STATION
BTWN	BETWEEN
CAB.	CABINET
C.I.P.	CAST IN PLACE
CLG.	CEILING
CLR.	CLEAR
C/L	CENTERLINE
C.M.U	CONCRETE MASONRY UNIT
COL.	COLUMN
CONC.	CONCRETE
CONN.	CONNECTION
C.J.	CONSTRUCTION JOINT
CONT.	CONTINUOUS
CTR.	CENTER
Cu	COPPER
DBL.	DOUBLE
DET.	DETAIL
DIA.	DIAMETER
DIM.	DIMENSION
DWG.	DRAWING
(E)	EXISTING
EA.	EACH
ELEC.	ELECTRICAL
E.O.S.	EDGE OF SLAB
ELEV.	ELEVATION
EMBED.	EMBEDMENT
EQ.	EQUAL
EQUIP.	EQUIPMENT
EXIST.	EXISTING
EXP. JT	EXPANSION JOINT
EXT.	EXTERIOR
F.O.	FACE OF
F.O.C.	FACE OF CONCRETE
F.O.M.	FACE OF MASONRY
F.O.S.	FACE OF STUD
F.O.W.	FACE OF WALL
FIN. FLR	FINISHED FLOOR
FLR	FLOOR
FTG.	FOOTING
GA.	GAUGE
GALV.	GALVANIZED
GLB	GLU-LAMINATED BEAM
GRND	GROUND
HORIZ.	HORIZONTAL
HT	HEIGHT
I.D.	INSIDE DIAMETER
INCL.	INCLUDE
LONG.	LONGITUDINAL
MAS.	MASONRY
MAX.	MAXIMUM
M.B.	MACHINE BOLT
MECH.	MECHANICAL
MFR.	MANUFACTURER
MIN.	MINIMUM
MISC.	MISCELLANEOUS
MTL.	METAL
(N)	NEW
N.E.C.	NATIONAL ELECTRIC CODE
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
NO.	NUMBER
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
OPP.	OPPOSITE
P.C.S.	PERSONAL COMMUNICATIONS SERVICES
PL	PLATE
PR.	PAIR
PLY.	PLYWOOD
RDWD	REDWOOD
REINF.	REINFORCE
REQ'D	REQUIRED
S.A.D.	SEE ARCH. DWGS.
SCHED.	SCHEDULE
SEC.	SECTION
S.F.	SQUARE FOOT
SHT.	SHEET
SHT'G	SHEATHING
SIM.	SIMILAR
SQ.	SQUARE
S.S.	STAINLESS STEEL
S.S.D.	SEE STRUCTURAL DRAWINGS
STD.	STANDARD
STL.	STEEL
STRUCT.	STRUCTURAL
T. & G.	TONGUE & GROOVE
TGL	TEMPERED GLASS
TINND	TINNED
T.O.	TOP OF
T.O.C.	TOP OF CONCRETE
T.O.M.	TOP OF MASONRY
T.O.S.	TOP OF SLAB
T.O.W.	TOP OF WALL
TS.	TUBE STEEL
T. & B.	TOP AND BOTTOM
TYP.	TYPICAL
U.B.C.	UNIFORM BUILDING CODE
U.O.N.	UNLESS OTHERWISE NOTED
VERT.	VERTICAL
V.I.F.	VERIFY IN FIELD
W/	WITH
W/O	WITHOUT
W.O.	WHERE OCCURS
WD	WOOD

DIGALERT
DIAL TOLL FREE
1-800-227-2600
AT LEAST TWO WORKING DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

LTE RF INFORMATION ONLY

SECTOR	AZIMUTH	CENTERLINE	# OF ANTENNAS	ANTENNA MODEL #	# OF FIBER LINES	FIBER DIAMETER	FIBER LENGTH
A	20°	16'	1	POWERWAVE P65-17-XLH-RR	2	7/8"	25'
B	290°	16'	1	POWERWAVE P65-17-XLH-RR	2	7/8"	25'
C	180°	10'	1	POWERWAVE P65-17-XLH-RR	2	7/8"	100'
GPS	N/A	15'	1	SYMMETRICOM 58532A GPS L1	COAX 1	COAX 5/8"	COAX 15'

at&t

AT&T MOBILITY
4430 ROSEWOOD DRIVE
PLEASANTON, CALIFORNIA 94588

CCL0080 / CNU0080 / SF0080
MORAGA

1199 ALTA MESA DR
MORAGA , CA 94556

SYMBOLS AND MATERIALS

NEW ANTENNA
EXISTING ANTENNAS
ASPHALT
CONCRETE
ELECTRIC BOX
LIGHT POLE
FND. MONUMENT
SPOT ELEVATION
SET POINT
—A—A— COAX CABLE RUN TO ANTENNA
—P—P— ELECTRICAL CONDUIT
—T—T— TELEPHONE CONDUIT
CENTER LINE
PROPERTY LINE

GRID REFERENCE
DETAIL REFERENCE (DET. / SHT.)
DETAIL IN SECTION (DET. / SHT.)
PARTIAL HEIGHT SECTION (DET. / SHT.)
FULL HEIGHT SECTION (DET.)
SCHEDULE ITEM SEE PLAN
REVISION (#)
ELEVATION (####)
SHEET NOTE
MATCH LINE
WORK POINT

GROUT OR PLASTER
(E) BRICK
(E) MASONRY
CONCRETE
EARTH
GRAVEL
PLYWOOD
SAND
WOOD CONT.
WOOD BLOCKING
STEEL

PROJECT SUMMARY

APPLICANT/LESSEE:

at&t
AT&T MOBILITY
4430 ROSEWOOD DRIVE
PLEASANTON, CA 94588

PROPERTY OWNER: RUSSELL & JOAN BRUZZONE
899 HOPE LANE
LAFAYETTE, CA 94545

PROJECT DESCRIPTION:

THE PROJECT CONSISTS OF THE INSTALLATION OF (1) EQUIPMENT UNIT (6601 LTE) AND ONE SURGE PROTECTION UNIT TO BE INSTALLED WITHIN AN EXISTING EQUIPMENT SHELTER. ADDITION OF (2) NEW ANTENNAS ON NEW PIPE MOUNTS, MOUNTED TO (E) SHETLER. REPLACMENT OF (1) EXISTING ANTENNA AND ADDITION OF (1) GPS ANTENNA. ADDITION OF (6) RRUS, (6) RETS, (6) FIBER LINES AND (6) POWER LINES TO EXISTING ANTENNA ARRAYS UPON (E) SHELTER AND HILLSIDE.

SHEET INDEX

T1 TITLE SHEET
A1 SITE PLAN
A2 EQUIPMENT PLAN AND ANTENNA PLAN
A3 ELEVATIONS
A4 DETAILS
N1 NOTES
N2 NOTES
N3 NOTES
N4 NOTES
N5 NOTES

SITE QUALIFICATION PARTICIPANTS

MARK THIEME ARCHITECT
77 Solano Square
Suite 134
Benicia, Ca 94510
Fon: 707.748.7150
Fax: 707.641.0102

Trillium Telecom Services
5912 Bolsa Ave, Suite 202
Huntington Beach, CA 92649
(714) 799-2000

SITE ACQUISITION
TOM JOHNSON
PHONE: (714) 206-2879

CONSTRUCTION MANAGER
SILVON GREEN
PHONE: (845) 978-4243

LAND USE PLANNER
VALERIE TALLERICO
PHONE: (714) 414-5618

DESIGNER
JOSHUA BINGAMON
PHONE: (909) 268-9892

CODE COMPLIANCE

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

1. 2010 CALIFORNIA ADMINISTRATIVE CODE (INCL. TITLES 24 & 25).
2. 2010 CALIFORNIA BUILDING CODE
3. 2010 CALIFORNIA ELECTRICAL CODE
4. 2010 CALIFORNIA MECHANICAL CODE
5. 2010 CALIFORNIA PLUMBING CODE
6. LOCAL FIRE CODES & NFPA
7. LOCAL BUILDING CODES
8. CITY/COUNTY ORDINANCES
9. ANSI/EIA-TIA-222-G

ALONG WITH ANY OTHER APPLICABLE LOCAL & STATE LAWS AND REGULATIONS

ACCESSIBILITY REQUIREMENTS

THIS FACILITY IS UNMANNED & NOT FOR HUMAN HABITATION. ACCESSIBILITY ACCESS & REQUIREMENTS ARE NOT REQUIRED IN ACCORDANCE WITH CALIFORNIA STATE ADMINISTRATIVE CODE, TITLE 24 PART 2, SECTION 1105B.3.4.2, EXCEPTION 1

VICINITY MAP

PROJECT INFORMATION

SITE ADDRESS

1199 ALTA MESA DR
MORAGA , CA 94556

APN: 258-160-062

TOTAL LEASED AREA:
EXISTING: 500 SQ FT (NO CHANGE)

APPLICANT

AT&T
4430 ROSEWOOD DR. BLDG 3, 6TH FLOOR
PLEASANTON, CA 94588

POWER: PG&E

TELEPHONE: AT&T

AT&T RF SITE DESIGN FORM
OCTOBER 19TH, 2010 RFDS 8.4
(OBTAIN CURRENT RF DESIGN)

DATUM POINTS

NAD83 DATUM

LAT. N 37° 50' 12.0114"
LONG. W -122° 7' 3"

DECIMAL LAT. 37.83667
DECIMAL LONG. -122.11750

JURISDICTION:
TOWN OF MORAGA

COUNTY:
CONTRA COSTA

CURRENT ZONING:
R-1

REVISIONS MTA 1016.0040

DATE	DESCRIPTION	REV.
11/21/10	80% CONSTRUCTION	
11/22/10	90% CONSTRUCTION	
01/12/11	100% CONSTRUCTION	

AT&T Project No. CNU0080
AT&T Site Name. MORAGA
AT&T Site City. MORAGA
Trillium Project No. CNU0080
Date 11/21/10
DRAWN JMB
REVIEWED MT

Trillium Telecom Services
5912 Bolsa Ave, Suite 202
Huntington Beach, CA 92649
(714) 799-2000

at&t
AT&T MOBILITY
4430 ROSEWOOD DRIVE
PLEASANTON, CA 94588

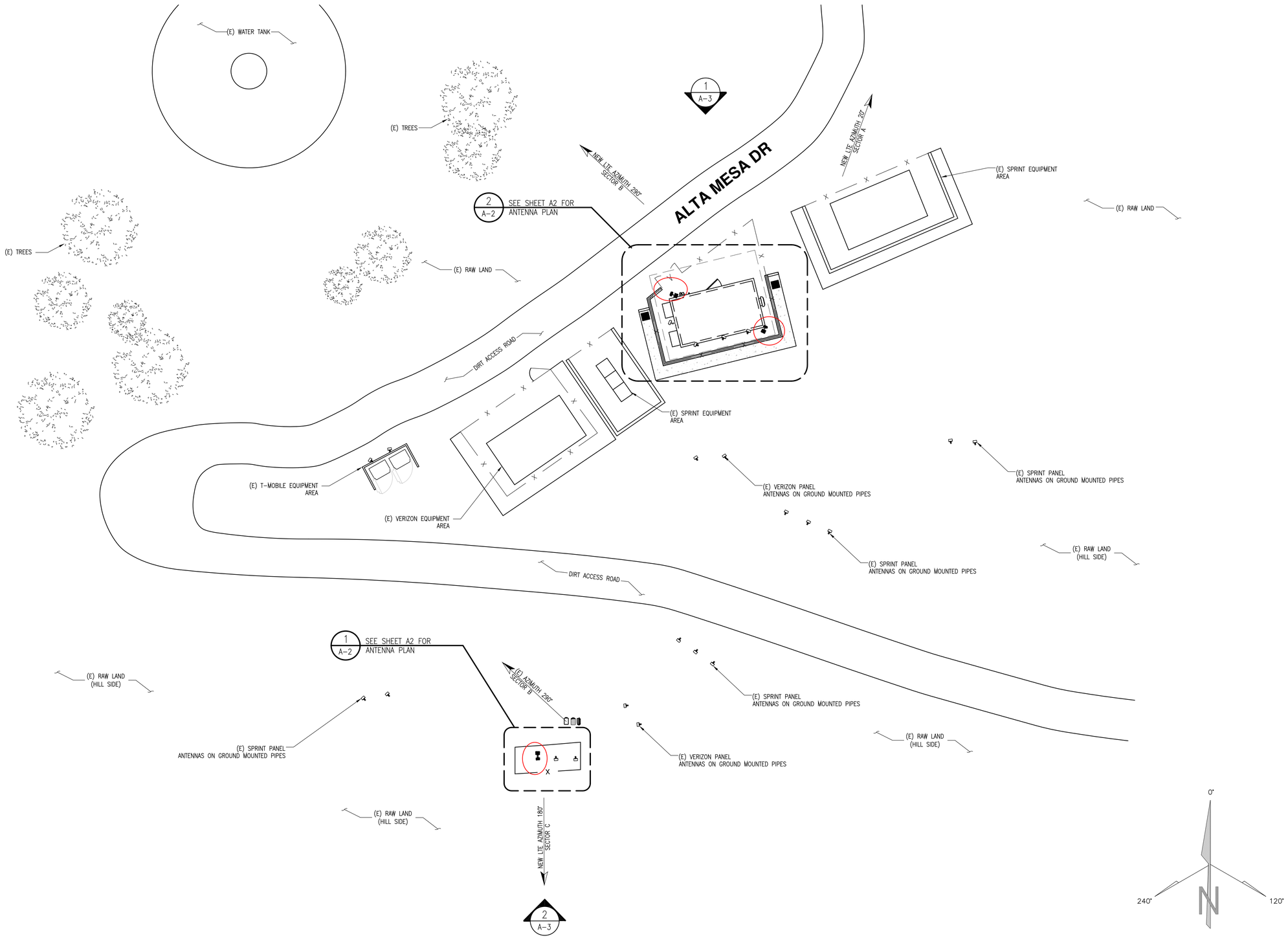
SEAL:

REGISTERED ARCHITECT
MARK L. THIEME, RA
NO. C-18,164
REN. 31 MAY 2011
STATE OF CALIFORNIA

CCL0080 / CNU0080 / SF0080
MORAGA
1199 ALTA MESA DR
MORAGA, CA 94556

SHEET TITLE:
TITLE SHEET

SHEET NUMBER:
T1



SITE PLAN

SCALE: 3/32"=1'-0" 8' 0 4' 8' 16' 32'

1

REVISIONS MTA 1016.0040

DATE	DESCRIPTION	REV.
11/21/10	80% CONSTRUCTION	
11/22/10	90% CONSTRUCTION	
01/12/11	100% CONSTRUCTION	

AT&T Project No. CNU0080
AT&T Site Name. MORAGA
AT&T Site City. MORAGA
Trillium Project No. CNU0080
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PLEASANTON, CA 94588

SEAL:

LICENSED ARCHITECT
MARK L THIEME RA
NO. C-18,164
REN. 31 MAY 2011
STATE OF CALIFORNIA

CCL0080 / CNU0080 / SF0080

MORAGA

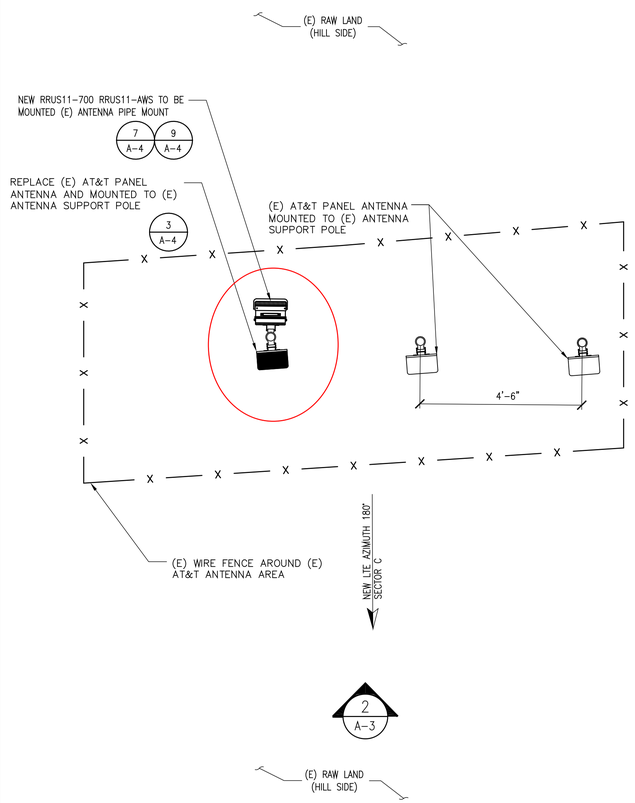
1199 ALTA MESA DR
MORAGA, CA 94556

SHEET TITLE:

SITE PLAN

SHEET NUMBER:

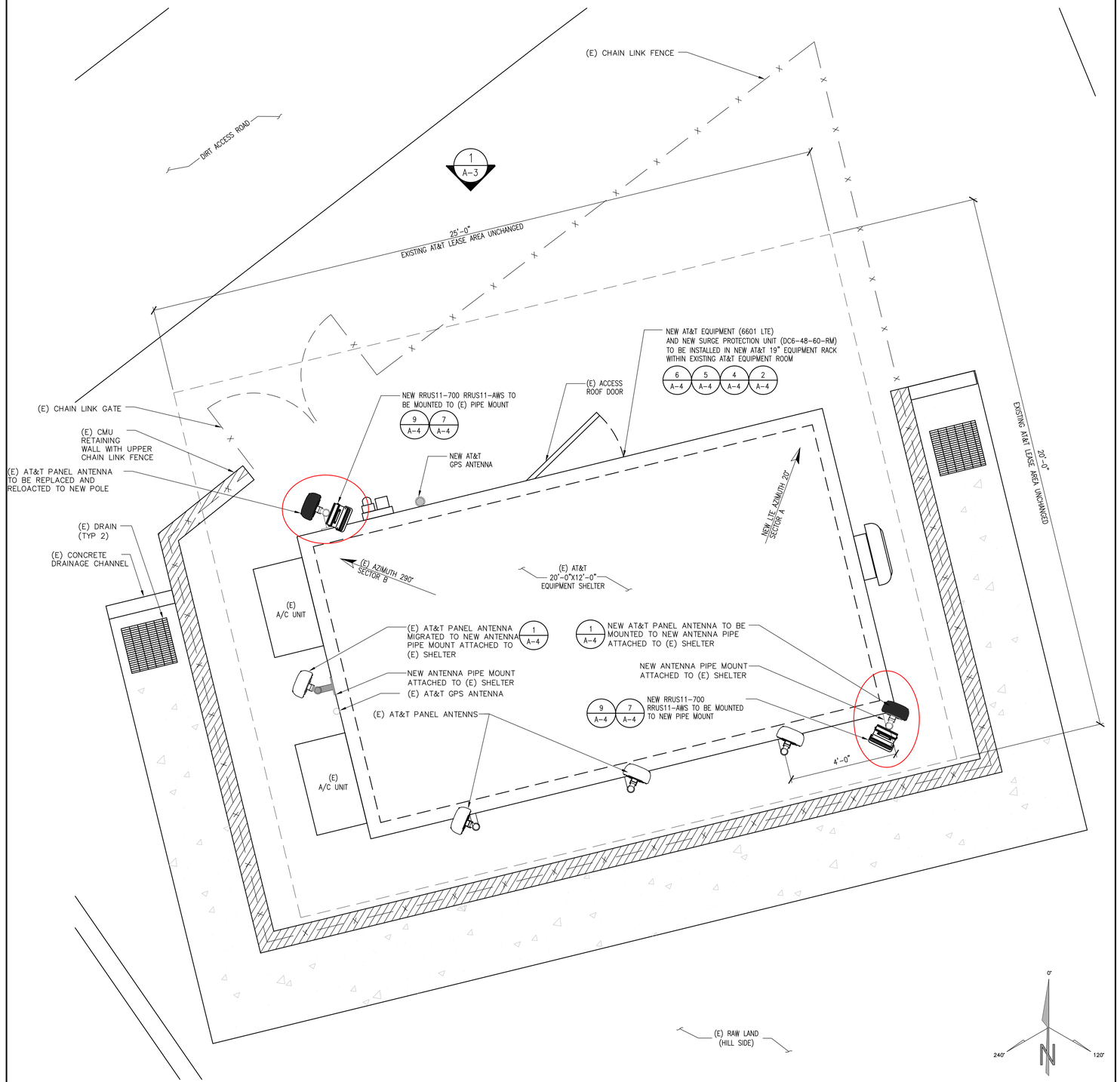
A1



ANTENNA PLAN SECTOS 'A' AND 'C'

SCALE: 1/2"=1'-0" 0 1' 2'

1



ANTENNA PLAN SECTOS 'A' AND 'B'

SCALE: 1/2"=1'-0" 0 1' 2'

2

REVISIONS MTA 1016.0040

DATE	DESCRIPTION	REV.
11/21/10	80% CONSTRUCTION	
11/22/10	90% CONSTRUCTION	
01/12/11	100% CONSTRUCTION	

AT&T Project No. CNU0080
AT&T Site Name. MORAGA
AT&T Site City. MORAGA
Trillium Project No. CNU0080
Date 11/21/10
DRAWN JMB
REVIEWED MT

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REN. 31 MAY 2011
STATE OF CALIFORNIA

CCL0080 / CNU0080 / SF0080

MORAGA

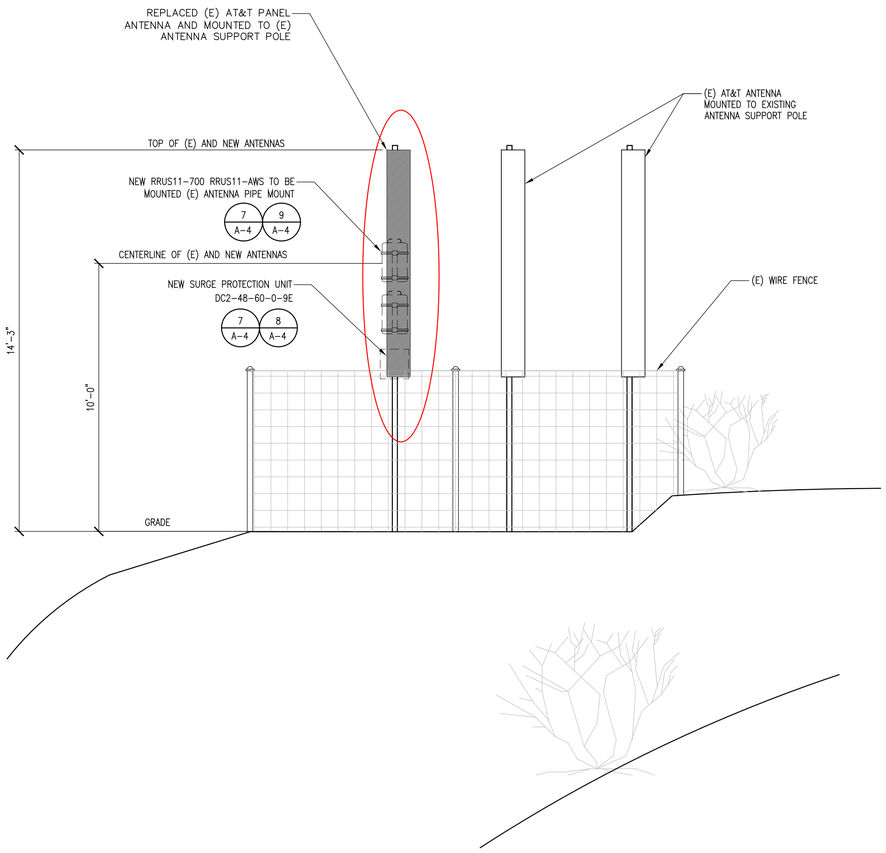
1199 ALTA MESA DR
MORAGA, CA 94556

SHEET TITLE:

EQUIPMENT PLAN AND ANTENNA PLAN

SHEET NUMBER:

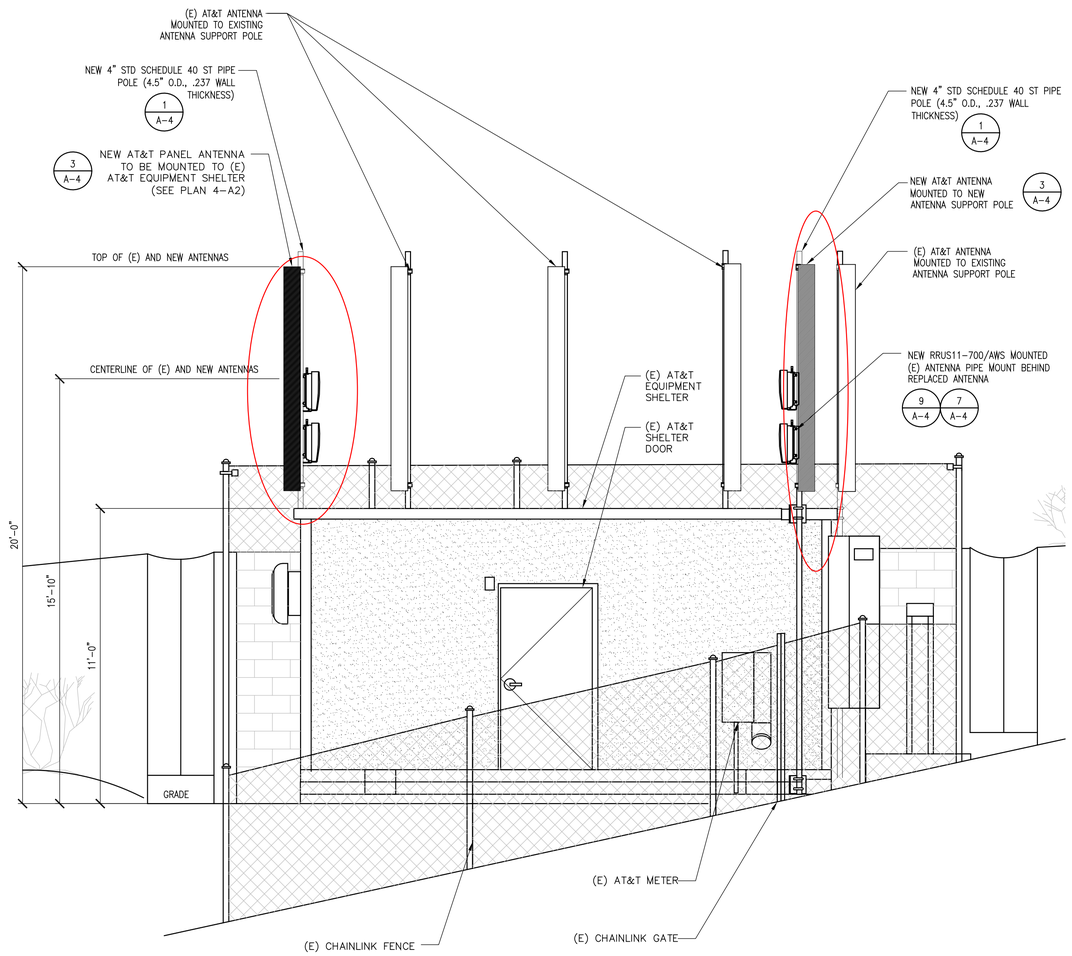
A2



SOUTH ELEVATION

SCALE: 3/32"=1'-0" 8' 0 4' 8'

2



NORTH ELEVATION

SCALE: 3/32"=1'-0" 8' 0 4' 8'

1

REVISIONS MTA 1016.0040

DATE	DESCRIPTION	REV.
11/21/10	80% CONSTRUCTION	
11/22/10	90% CONSTRUCTION	
01/12/11	100% CONSTRUCTION	

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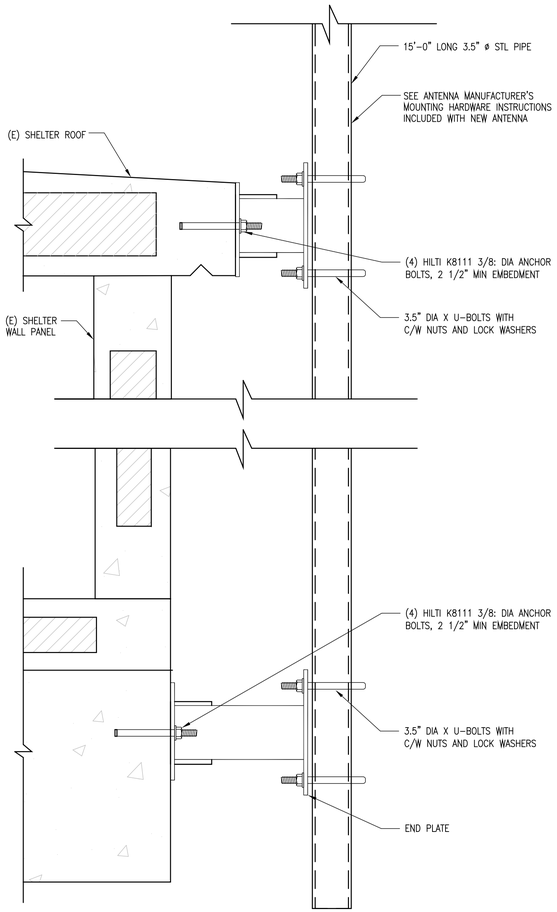
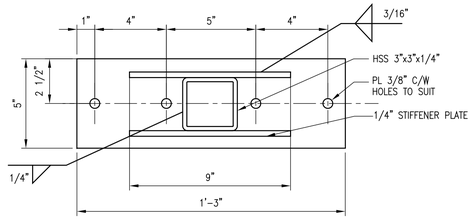
NO. C-18,164
REN. 31 MAY 2011
STATE OF CALIFORNIA

CCL0080 / CNU0080 / SF0080
MORAGA
1199 ALTA MESA DR
MORAGA, CA 94556

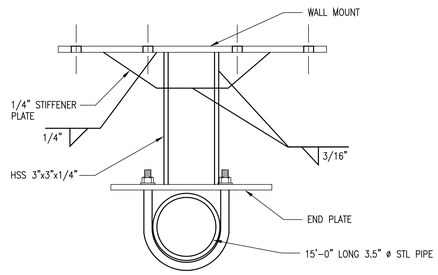
SHEET TITLE:
ELEVATIONS

SHEET NUMBER:
A3

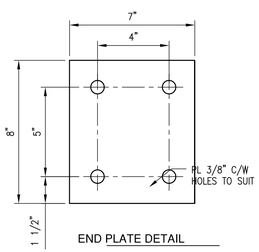




WALL PLATE DETAIL



TOP VIEW



END PLATE DETAIL

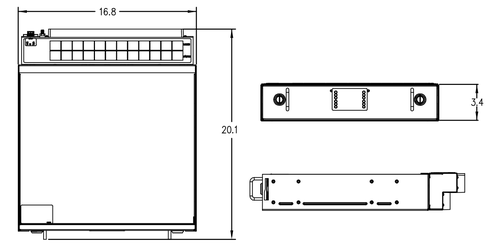
ANTENNA SUPPORT @ SHELTER — SCALE: N.T.S — 1

ELECTRICAL SPECIFICATIONS	
MODEL NUMBER	DC6-48-60-RM
NOMINAL OPERATING VOLTAGE	48 VDC
NOMINAL DISCHARGE CURRENT (IN)	20 KA 8/20 MS
MAXIMUM DISCHARGE CURRENT (IMAX) PER NEMA LS-1	40 KA 8/20 MS
MAXIMUM CONTINUOUS OPERATING VOLTAGE (UC)	75 VDC
VOLTAGE PROTECTION RATING	400 V
NUMBER OF RADIOS PROTECTED	6

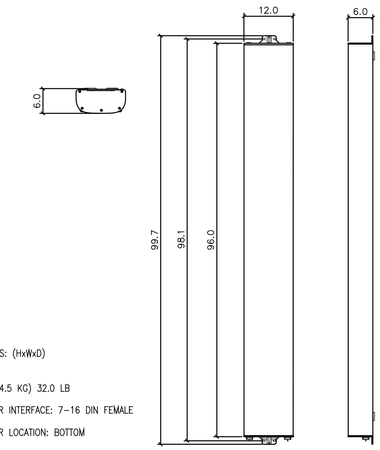
PLEASE USE PART NUMBER DC3-48-60-RMU WHEN ORDERING DC CIRCUIT MODULE KIT TO PROTECT AN ADDITIONAL 3 RADIOS.

SUPPRESSION CONNECTION METHOD	¼"SINGLE LUG
STORAGE TEMPERATURE	-70° C TO + 80° C
OPERATING TEMPERATURE	-40° C TO + 80° C
ENVIRONMENTAL RATING	INDOOR ONLY
WEIGHT*	30 LBS (133.45 N)

STAND-ALONE MODULE KIT WEIGHS 4 LBS



DC6-48-60-RM (IN CABINET) — SCALE: N.T.S — 2



-DIMENSIONS: (HxWxD) 96x12x6"

-WEIGHT (14.5 KG) 32.0 LB

-CONNECTOR INTERFACE: 7-16 DIN FEMALE

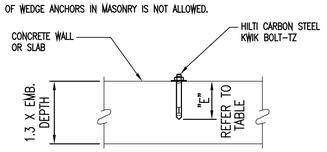
-CONNECTOR LOCATION: BOTTOM

-CONNECTOR QUANTITY: 4

POWERWAVE P65-17-XLH-RR — SCALE: N.T.S — 3

NOTES:

1. THE CONTRACTOR SHALL ACCURATELY LOCATE ALL EXISTING REINFORCING BY FERROSCAN OR EQUIVALENT METHODS. NO REBAR OR TENDONS SHALL BE CUT. ALL EXPENSES RELATED TO REPAIR OF CUT REBAR OR TENDONS SHALL BE ENTIRELY AT THE EXPENSE OF THE CONTRACTOR.
2. SPECIAL INSPECTION IS REQUIRED FOR INSTALLATION OF ANCHORS.
3. INSTALLATION OF WEDGE ANCHORS IN MASONRY IS NOT ALLOWED.

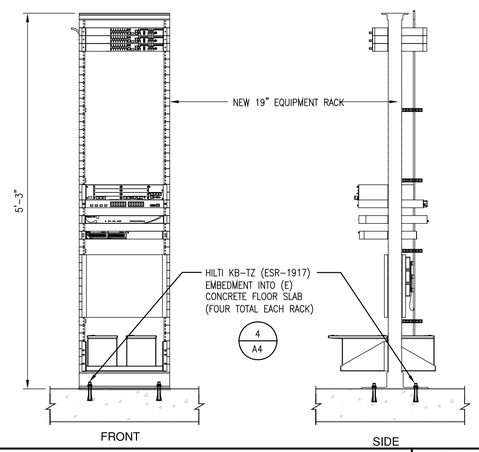


ANCHOR SCHEDULE (1)

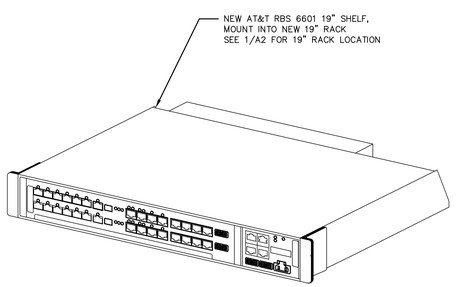
BOLT DIA.	HOLE DIA.	"E" EMBEDMENT
3/8"	3/8"	2 1/2"
1/2"	1/2"	3 1/4"
5/8"	5/8"	4 1/2"
3/4"	3/4"	5"

3.0005,14,16:(1) INFORMATION SHOWN IN THIS TABLE IS IN ACCORDANCE WITH: ICC ESR-1917 & LARR-25701
(2) USE MANUFACTURER RECOMMENDED ANCHOR BOLT DIAMETER. IF NONE RECOMMENDED, USE 1/2"ø ANCHORS FOR EQUIPMENT U.N.O.

HILTI KWIK BOLT - TZ — SCALE: N.T.S — 4



NEW EQUIPMENT RACK — SCALE: N.T.S — 5

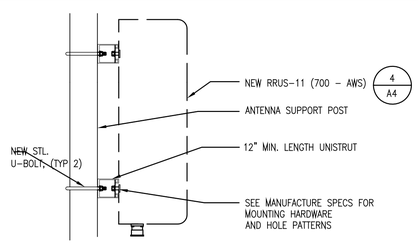


RBS 6601 WITH 2XDUL 20

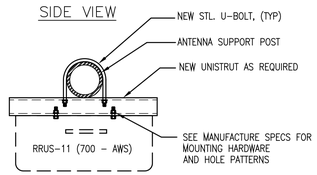
ISOMETRIC VIEW

- -48 DC MAINS (TWO WIRE)
- FOOTPRINT: 2.6" X 19" X 14"
- 1.5 U HEIGHT AND 19" RACK MOUNTABLE
- 48V VDC (1 X 15 - 20 AMP BREAKER) - DC CABLE SIZE 4 MM2

LTE 6601 PANEL — SCALE: N.T.S — 6



SIDE VIEW



NOTE:
DETAIL 8/A4 WILL USE THIS SAME MOUNT

PLAN VIEW

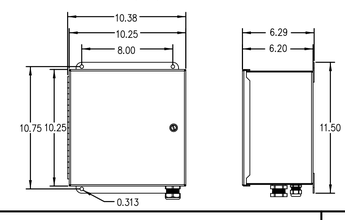
RRUS-11 @ ANTENNA POST — SCALE: N.T.S — 7

ELECTRICAL SPECIFICATIONS	
MODEL NUMBER	DC2-48-60-0-9E*
PROTECTOR TYPE	IEC 61643-1 CLASS II
NOMINAL OPERATING VOLTAGE	48 VDC
PROTECTION MODES	-48 V TO RETURN, RETURN TO GROUND -2 CIRCUITS
NOMINAL DISCHARGE CURRENT (IN)	20 KA 8/20 MS
MAXIMUM DISCHARGE CURRENT (IMAX) PER NEMA LS-1	60 KA 8/20 MS
MAXIMUM CONTINUOUS OPERATING VOLTAGE (UC)	75 VAC, 100 VDC
VOLTAGE PROTECTION LEVEL (UP)	500 V

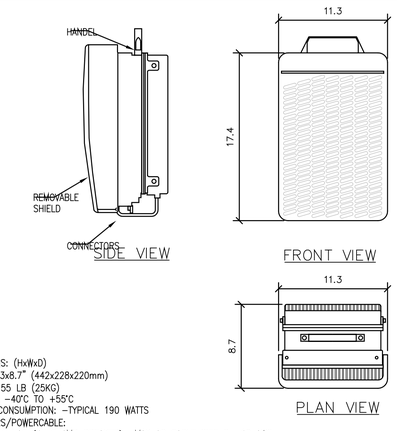
*MODULE ASSEMBLY PART # - DC2-48-60-0-9E-U. FIELD UPGRADABLE, PREWIRED MODULE PACKAGE FOR 1 REMOTE RADIO

MECHANICAL SPECIFICATIONS	
SUPPRESSION CONNECTION METHOD	COMPRESSION LUG, #14 TO #2 AWG
WEIGHT**	16 LBS
STORAGE TEMPERATURE	-70° C TO +80° C
OPERATING TEMPERATURE	-40° C TO +80° C
ENVIRONMENTAL RATING	NEMA 4

**DC2-48-60-0-9E-U MODULE ASSEMBLY WEIGHS 1 LB (4.45N)



DC2-48-60-0-9E (AT ANTENNA) — SCALE: N.T.S — 8



DIMENSIONS: (HxWxD)
-17.4x11.3x8.7" (442x228x220mm)
-WEIGHT: 55 LB (25KG)
-CLIMATE: -40°C TO +55°C
-POWER CONSUMPTION: -TYPICAL 190 WATTS
-BREAKERS/POWERCABLE:
120-250 VAC (1X30 AMP BREAKER) -MAX AC CABLE SIZE 8 -10 AWG
-48 VDC (1X25 AMP BREAKER)
ERICSSON 12 AWG SHIELD POWER CABLE (SCREW PLINT CONNECTOR)

RRUS-11 (700 - AWS) — SCALE: N.T.S — 9

MTA 1016.0040

REVISIONS

DATE	DESCRIPTION	REV.
11/21/10	80% CONSTRUCTION	
11/22/10	90% CONSTRUCTION	
01/12/11	100% CONSTRUCTION	

AT&T Project No. CNU0080
AT&T Site Name. MORAGA
AT&T Site City. MORAGA
Trillium Project No. CNU0080
Date 11/21/10
DRAWN JMB
REVIEWED MT

Trillium Telecom Services
5912 Bolsa Ave, Suite 202
Huntington Beach, CA 92649
(714) 799-2000

at&t
AT&T MOBILITY
4430 ROSEWOOD DRIVE
PLEASANTON, CA 94588

SEAL:

CCL0080 / CNU0080 / SF0080

MORAGA

1199 ALTA MESA DR
MORAGA, CA 94556

SHEET TITLE:

DETAILS

SHEET NUMBER:

A4

SECTION 01010
SUMMARY OF WORK

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDE:

A. Drawings are not to be scaled; written dimensions take precedence. This set of plans is intended to be used for diagrammatic purposes only, unless noted otherwise. The General Contractor's scope of work shall include furnishing all materials, equipment, labor and anything else deemed necessary to complete installations as described herein.

B. The Contractors involved shall visit the job site and familiarize themselves with all conditions affecting the proposed project, with the construction and contract documents, and confirm that the project may be accomplished as shown prior to proceeding with construction. Any errors, omissions, or discrepancies are to be brought to the attention of the Engineer.

C. The Contractor shall supervise and direct the project described herein. The Contractor shall be solely responsible for all construction means, methods, techniques, sequences and procedures and for coordinating all portions of the work under the contract.

D. The Contractor shall familiarize himself with, and install all equipment and materials according to the manufacturer's/vendor's specifications unless noted otherwise or where local codes or ordinances take precedence.

E. General Contractor shall provide at the project site a full set of construction documents updated with the latest revisions and addendum or clarifications for the use by all personnel involved with the project.

F. The existing structural components of this project site/facility are not to be altered by this construction project unless noted otherwise.

G. Details included herein are intended to show the end result of design. Minor modifications may be required to suit job conditions or situations, and such modifications shall be included as part of the scope of work.

H. Seal penetrations through fire–rated areas with U.L. listed or Fire Marshall approved materials if applicable to this facility and/or project site.

I. The Contractor shall make necessary provisions to protect exiting improvements, easements, paving, curbing, etc. during construction. Upon completion of work, Contractor shall repair any damage that may have occurred due to construction on or about the property.

J. The Engineer has made every effort to set forth in the construction and contract documents the complete scope of work. Contractors are nevertheless cautioned that minor omissions or errors in the drawings and or specifications shall not excuse said Contractor from completing the project and improvements in accordance with the intent of these documents. The Contractor shall bear the responsibility of notifying (in writing) the Engineer of any conflicts, errors, or omissions prior to the submission of Contractor's proposal. In the event of discrepancies, the Contractor shall price the more costly or extensive work, unless directed otherwise.

K. The General Contractor shall receive written authorization to proceed with construction, prior to starting work on any item that is not clearly defined by the construction drawings/contract documents.

L. These specifications are intended to be explanatory and supplementary to the construction drawings. Some sections included in the specifications (those between 1300 and 9900) may not apply to all antenna sites. Contractor is to review the specifications to determine which sections apply. The contractor shall bear the responsibility of notifying the Engineer of any questions regarding which sections do not apply to a given antenna site.

1.02 CONFLICTS

A. Verify all measurements at the site before ordering any materials or doing any work. No extra charge or compensation shall be allowed due to difference between actual dimensions and dimensions indicated on the construction drawings. Submit any such discrepancy in dimensions to AT&T WIRELESS for consideration before proceeding with the work in the affected areas.

B. No plea of ignorance of conditions that exist, or of difficulties or conditions that may be encountered or of any other relevant matter concerning the work to be performed in the execution of the work will be accepted as an excuse for any failure or omission on the part of the Contractor to fulfill every detail of all the requirements governing the work.

1.03 STORAGE

Store all materials in a level and dry fashion so as to not obstruct the flow of other work, per all vendor recommendations. Do not use building for storage of Contractor's tools or materials. Provide secure location for storage of tools and materials elsewhere on site.

1.04 CLEANING

Keep site free from accumulation of waste materials or rubbish and at the completion of the work, remove all rubbish from the site, including all tools, scaffolding and surplus materials and leave the work clean and ready for use.

1.05 RELATED DOCUMENTS AND COORDINATION

General construction, electrical, structural and antenna drawings are interrelated. In performance of the work, the Contractor must refer to all drawings. All coordination is the responsibility of the Contractor.

1.06 TREE PROTECTION

A. Where it is necessary to excavate, drill for footings, or otherwise disturb ground adjacent to existing trees, use all possible care to avoid injury to trees and tree roots. Do not stockpile materials, or allow vehicular traffic, or any other cause of compaction, beneath the canopy of any trees.

B. Any pruning required involving branches greater than one (1) inch in diameter shall be performed by a Certified Arborist.

SECTION 01060
REGULATORY AND SECURITY REQUIREMENTS

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS:

All work performed on project and materials installed shall be in strict accordance with all applicable codes, regulations and ordinances. Contractor shall give all notices and comply with all laws, ordinances, rules, regulations and lawful orders of any public authority, municipal and utility company specifications, and local and state jurisdictional codes bearing on the performance of the work.

1.02 LICENSING:

Contractor shall have valid Contractor's license for the location in which the work is to be performed. For jurisdictions that license individual trades, the tradesman or subcontractors performing those trades shall be licensed. Contractor is responsible for researching and complying with licensing laws, for paying license fees, and for selecting and informing subcontractors with respect to these laws.

1.03 OSHA:

Follow all applicable rules and regulations of the Occupational Safety and Health Administration, and the State laws based on the federal Occupational Safety and Health Act. These regulations include, but are not limited to regulations dealing with tower construction and safety, excavations and trenching, and work in confined spaces. Ensure that employees and subcontractors wear hard hats, safety vests, and safety glasses at all times during construction.

1.04 BUILDING PERMITS:

AT&T WIRELESS will submit plans and specifications to the jurisdictional authority for plan check and review. The Contractor is responsible for submitting licensing and Workman's Compensation information to the jurisdiction as required to obtain building permit. Coordinate and schedule required inspections and post required permits at the job site. Comply with specific project–related requests and suggestions made by building inspector, and inform Project Manager of any such work that may be beyond the scope of the contract or at variance with the plans and specifications. AT&T WIRELESS will reimburse Contractor for plan review fee, building permit fee, connection fees, and inspections fees.

1.05 ZONING REGULATIONS AND CONDITIONAL USE PERMITS:

AT&T WIRELESS will submit for and obtain all Zoning and Conditional Use Permits. Some use permits may have specific requirements for the site related to construction, such as noise regulations, hours of work, access limitations, etc. The Project Manager will inform the Contractor of these requirements.

SECTION 01065
DEFINITIONS AND STANDARDS

PART 1 – GENERAL

1.01 DEFINITIONS:

Except as specifically defined otherwise, the following definitions apply generally to the work.

A.. Project Manager: The designated AT&T WIRELESS Technical Representative.

B. Directed, Requested, Approved, Accepted, etc: These terms imply "by the Project Manager" unless otherwise indicated.

C. Approved by Project Manager: In no case, releases Contractor from responsibility to fulfill requirements of Contract Documents.

D. Furnish: Supply and deliver to project site, ready for unloading, unpacking, assembly, installation, and similar subsequent requirements.

E. Install: Operations at project site, including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, clearing, and similar requirements.

F. Provide: Furnish and install, complete and ready for intended use.

1.02 FORMAT AND SPECIFICATION EXPLANATIONS

A. Specifications Text Format: Imperative language is directed at Contractor, unless otherwise noted.

B. Overlapping/Conflicting Requirements: Most stringent language generally written directly into Contract Documents clearly indicates that a less stringent requirement is unacceptable. Refer uncertainties to Project Manager for decision before proceeding.

C. Minimum Requirements: Indicated requirements are for a specific minimum acceptable level of quality/quantity, as recognized in the industry. Actual work must comply (within specified tolerances), or may exceed minimums within reasonable limits. Refer uncertainties to Project Manager before proceeding.

1.03 STANDARDS AND REGULATIONS

A. Industry Standards: Applicable standards of construction industry have same force and effect on performance of the Work as if copied directly into Contract Documents or published therewith. Standard referenced in Contract Documents or different standards may contain overlapping or conflicting requirements. Comply with standards in effect as of the contract documents unless otherwise indicated.

B. Trade Union Jurisdictions: Maintain current information on jurisdiction matters, regulations, actions and pending actions; and administer performance of Work in a manner which will minimize possibility of disputes, conflicts, or losses.

SECTION 01300
SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

PART 1 – GENERAL

1.01 SUMMARY OF THE PRINCIPAL SUBMITTALS REQUIRED FOR THE WORK:

03000 Structural Concrete and Concrete Patching Materials
– Product Data; Mix Design; Truck Delivery Tickets

03000 Non–Structural Concrete
– Save all bags of concrete, grout, and cement mixes

05000 Metal Fabrications
– Product Data; Shop Drawings

07000 Joint Sealers
– Product Data

09000 Painting
– Product Data

16000 Electrical Panels, Meterbase
– Manufacturer's name, catalog cut sheets

16000 Buried PVC Conduit
– Manufacturer's name, catalog cut sheets

Miscellaneous submittals are work–related, non–administrative submittals that do not fit in the previous categories including, but not limited to, the following:

1. Maintenance agreements.
2. Survey data and reports.
3. Project photographs.
4 Testing and certification reports.
5. Record drawings.
6. Field measurement data.
7. Operating and maintenance manuals.
8. Keys and other security protection devices.
9. Maintenance tools and spare parts.
10. Overrun stock.
11. Permits. licenses, certificates, releases, jurisdictional settlements, notices, judgements.

1.02 SUBMITTAL REQUIREMENTS

A. Coordination of Submittal Times: Prepare and transmit each submittal to the Project Manager sufficiently in advance of the scheduled performance of related work and other applicable activities.

B. Review Time: Allow sufficient time so that the installation will not be delayed as a result of the time required to properly process submittals, including time for resubmittal, if necessary. Advise the Project Manager on each submittal, as to whether processing time is critical to the progress of the work, and if the work would be expedited if processing time could be shortened.

C. Submittal Preparation: Mark each submittal with a permanent identification label. Provide the following information on the label for proper processing and recording of action taken:

1. Project Name
2. Date
3. Name and address of Project Manager
4. Name and address of Contractor
5. Name and address of Subcontractor
6. Name and address of Supplier
7. Name and address of Manufacturer
8. Number of appropriate specification section
9. Drawing number and detail references, as appropriate
10. Similar definitive information as necessary

Provide a space on the label for the Contractor's review and approval markings, and a space for the Project Manager's "action" markings.

D. Submittal Transmittal: Transmit each submittal from the Contractor to the Project Manager, and to other destinations as indicated, by use of a transmittal form. Submittals received from sources other than the Contractor will be returned to the Contractor "without action".

1.03 MISCELLANEOUS SUBMITTALS

A. Inspection and Test Reports: Classify each inspection and test report as being either "shop drawing" or "product data," depending upon whether the report is specially prepared for the project, or a standard publication of workmanship control testing at point of production. Process inspection and test reports accordingly.

B. Survey Data: Provide, on a 24"x36" drawing, final as–built field measurements, locations, and underground utilities from locations shown on Contract Documents. Legal boundary survey by Contractor is not required.

SECTION 01400
QUALITY CONTROL SERVICES

PART 1 – GENERAL

1.01 DESCRIPTION OF REQUIREMENTS:

A. The Contractor is responsible for maintaining and controlling the quality of all construction undertaken on an ongoing basis. Additional quality control and quality assurance requirements are intended to supplement the Contractor's quality activities, not substitute for them.

B. Quality control services include inspections, tests, reports, and related actions performed by independent agencies and governing authorities, as well as those performed directly by the Contractor. Required inspection and testing services will assist in the determination of probable compliance of the work with specified requirements. These required services do not relieve the Contractor of responsibility for compliance with Contract Documents.

1.02 REQUIRED QUALITY CONTROL TESTS:

A. Retain, coordinate, and pay for testing of structural concrete by testing laboratory approved in advance by the Project Manager. Required tests include temperature, slump, and compresssive strength tests of structural concrete from each batch truck.

B. Re–test Responsibility: Where results of required inspections or tests prove unsatisfactory and do not indicate compliance of work with the Contract Document requirements, the re–tests are the responsibility of the Contractor, regardless of whether the original test was the Contractor's responsibility where required tests were performed on original work.

C. Coordination: Cooperate with testing agencies and assist them with such auxiliary services as are reasonably requested. Notify the testing agency sufficiently in advance to schedule personnel. Contractor and testing agencies shall coordinate the sequence of their activities to accommodate required services with a minimum of delay in progress of the Work, and to avoid removing and replacing work to accommodate inspections and tests.

1.03 SUBMITTALS

See Section 01300 for general submittal requirements. Submit a certified report of each inspection, test or similar service, directly to the Project Manager. Submit additional copies of each report directly to the governing authority when so directed.

SECTION 02200
EARTHWORK

PART 1 – GENERAL

1.01 DESCRIPTION

A. This section describes clearing and grubbing, stripping, excavation, fill, grading, subgrade preparation, and construction of gravel paving areas.

1.02 REFERENCED STANDARDS

A. AASHTO – American Association of State Highway and Transportation Officials

B. ASTM – American Society for Testing and Materials

PART 2 – PRODUCTS

2.01 DEFINITIONS

A. CLEARING AND GRUBBING – Trees, stumps, brush, roots larger than one inch in diameter, other vegetation and debris removed.

B. STRIPPING – Grass, sod and other types of vegetation removed.

C. COMMON EXCAVATION – Material, regardless of condition, excavated from the work area that is not classified elsewhere.

D. UNSUITABLE EXCAVATION – Material excavated from the site that the Project Manager has determined is not usable as subgrade or fill.

E. CRUSHED AGGREGATE – Clean, washed, crushed rock (not gravel) grade 3/4" minus, having a maximum of 5 percent passing No. 200 sieve.

F. GRAVEL PAVING – CRUSHED AGGREGATE BASE COURSE: Same as E above except 1–1/2"–0", with CRUSHED AGGREGATE FINISH COURSE: Same as E above.

G. GEOTEXTILE FABRIC – Mirafi 500X or approved equal.

.PART 3 – EXECUTION

3.01 GENERAL

A. The Project Manager will designate the disposition and determine the suitability of products.

B. The right is reserved to make minor adjustments or revisions in line or grades, if found necessary as the work progresses.

C. No excavation or stripping shall be started until the contractor has staked out the proposed work.

D. Suspend earthwork when satisfactory results cannot be obtained because of rain, freezing weather, or other unsatisfactory conditions.

E. Drag, blade or slope the grade to provide proper surface drainage. Install temporary drains and drainage ditches to intercept or divert surface water which may affect the progress or condition of the work.

3.02 CLEARING AND GRUBBING

A. Remove clearing and grubbing materials to a depth of one foot below original ground.

B. Remove stumps completely.

C. Dispose of clearing and grubbing materials off site.

3.03 STRIPPING

A. Strip approximately 6 inches of sod and topsoil from areas that will underlay new gravel pavement, new structures, or new embankments.

B. Dispose of stripping off site.

3.04 EXCAVATION AND FILL

A. Excavate to the depth, lines, and grades shown on the drawings or as otherwise specified.

B. Dispose of excess common excavation off site.

C. Fill as required to the lines and grade shown on the drawings utilizing common excavation materials.

D. Fill in lifts of not more than 8 inches in loose depth. The full width of the cross section shall be brought up uniformly.

E. Material shall be placed in layers and shall be near optimum moisture content before rolling to obtain the prescribed compaction. Wetting or drying of the material and manipulation to secure a uniform moisture content throughout the layer may be required.

F. Start layers in the deepest portion of the fill, and as placement progresses, construct layers approximately parallel to the finished grade line.

G. Compact each lift as follows:

1. Fill material underlying new gravel paving, slabs, and structures shall be compacted to a minimum of 95 percent of AASHTO T–99.

2. Fill material outside the limit of new gravel paving, slabs, and structures shall be compacted to a minimum of 90 percent of AASHTO T–99.

3.05 SITE GRADING

A. Using common excavation materials, shape, trim, finish, and compact surface areas to conform to the lines, grades, and cross–sections shown on the drawings or as designated by the Project Manager.

B. Grade surfaces to drain.

C. The finished surface of site grading areas shall not be more than 0.08 foot from specified grade.

3.06 GRAVEL PAVING

A. Subgrade shall be accepted by the Project Manager before construction of gravel paving course begins.

B. Construct gravel paving areas using Crushed Aggregate base and finish courses specified.

C. Construct gravel paving in two lifts as shown on drawings.

D. Compact each lift 95 percent maximum density as determined by AASHTO T–99.

E. Density of in–place compacted gravel paving will be measure in accordance with ASTM D 2922.

F. The finished top base course when tested with a Contractor furnished 12–foot straightedge shall not vary from the testing edge by more than 0.04 foot at any point, and shall be within 0.04 foot of specified grade.

3.07 DEWATERING

A. Furnish adequate pumping and piping equipment to handle water disposal and take all precautions to prevent water from entering the excavation.

B. Use well points, wells, etc. to lower and maintain the static ground water level to at least 1 foot below the bottom of the excavation.

C. Keep excavation free of water while being prepared for foundations and until backfill has been completed.

D. Dispose of water, providing erosion protection from pump discharge and protecting adjacent properties at all times.

MTA 1016.0040

REVISIONS

DATE	DESCRIPTION	REV.
11/21/10	80% CONSTRUCTION	
11/22/10	90% CONSTRUCTION	
01/12/11	100% CONSTRUCTION	

AT&T Project No. CNU0080
AT&T Site Name. MORAGA
AT&T Site City. MORAGA
Trillium Project No. CNU0080
Date 11/21/10
DRAWN JMB
REVIEWED MT

Trillium Telecom Services
5912 Bolsa Ave, Suite 202
Huntington Beach, CA 92649
(714) 799-2000

at&t

AT&T MOBILITY
4430 ROSEWOOD DRIVE
PLEASANTON, CA 94588

SEAL:

REGISTERED ARCHITECT
MARK L. THIEME, RA
NO. C-18,164
REN. 31 MAY 2011
STATE OF CALIFORNIA

CCL0080 / CNU0080 / SF0080

MORAGA

1199 ALTA MESA DR
MORAGA, CA 94556

SHEET TITLE:

NOTES

SHEET NUMBER:

N1

SECTION 02221
TRENCHING, BACKFILLING, AND COMPACTING

PART 1 – GENERAL

1.01 DESCRIPTION

A. This section describes excavating and backfilling required for underground utilities and structures.

1.02 REFERENCED STANDARDS

A. AASHTO – American Association of State Highway and Transportation Officials

B. ASTM – American Society for Testing and Materials

PART 2 – PRODUCTS

2.01 TRENCH STABILIZATION

A. 6" – 3/4" pit run or crushed rock. Not more than 10 percent passing a #200 sieve.

2.02 BEDDING

A. Crushed Aggregate. Crushed rock, 3/4" – 0" for sewer pipe and water lines.

2.03 BACKFILL

A. Native (Non–Traffic Areas)

1. Approved trench excavation material. Material shall not contain particles larger than 3/4".

B. Imported (Traffic Areas)

1. Crushed aggregate: Crushed rock, 3/4" – 0" for sewer pipe and water lines. Water lines and conduits shall be covered 6 inches, minimum, with 3/4" – 0" before changing to another material.

2. Sand conforming to the following gradation limits determined by OSHD Section 0036.10 and AASHTO T 27:

SIEVE SIZE	PERCENT PASSING
No. 10	95 – 100
No. 40	50 – 100
No. 60	20 – 40
No. 200	0 – 5

2.04 PIPE DETECTION & IDENTIFICATION

A. Utility Warning Tape

1. Low–density polyethylene plastic, nominally 6 inches wide and 4 mils thick imprinted continuously along its length with: "CAUTION – STOP DIGGING – BURIED (WATER), (SEWER), (ELECTRIC), (GAS), LINE BELOW" or similar.

2. Tape color codes:

a. Electric = Red

b. Telephone/Signal = Orange

3. Acceptable products/manufacturers:

a. Brady "Identoline"

b. Services and Materials "Buried Underground Tape"

c. Somerset (Thomas & Betts) "Protect–A–Line"

d. Or equal

B. Utility Detector Wire

1. Furnish and install vinyl–coated, 16–gauge copper wire. Match the above color codes for each respective utility as required by local utility and plumbing code.

PART 3 EXECUTION

3.01 TRENCH EXCAVATION

A. Dig trench to lines and grades established on the drawings or as directed by the Project Manager.

B. Trench width shall be as follows:

1. Not less than the outside diameter of the pipe plus 12 inches.

2. Not more than the inside diameter of the pipe plus 30 inches, to a point 12 inches (minimum) above the top of the pipe, unless otherwise approved.

C. Trench length shall be sufficient to allow for satisfactory construction and inspection of the project, without endangering other construction work or adjacent facilities.

D. Separate and stockpile approved trench excavation material for reuse as backfill.

E. Haul other excess trench excavation material and unsuitable excavation material off property and dispose of.

F. Use hand methods for excavation that cannot be accomplished without endangering existing or new structures or other facilities.

3.02 REMOVAL AND REPLACEMENT OF UNSUITABLE MATERIAL

A. Unsuitable Trench Excavation

1. Remove and haul off property.

2. Replace with excess approved common excavation material from other portions of the project or imported backfill as directed by the Project Manager.

3. Compact as specified below.

B. Unsuitable Trench Bottom

1. Excavate to lines and limits established and approved by the Project Manager. Dispose of properly.

2. Backfill with trench stabilization material and compact as specified.

3.03 DEWATERING

A. Per Section 02200, EARTHWORK.

3.04 TRENCH PROTECTION

A. Provide materials, labor, and equipment necessary to protect trenches at all times.

B. Sheeting and Bracing

1. Furnish and install sheeting and bracing as required to prevent caving or sloughing of trench walls.

2. Solid–sheet trench, if necessary, to preserve a suitable grade for the pipe. Drive far enough below grade to prevent inflow of material from outside of trench lines.

3. Remove sheeting and bracing from trench before or during backfilling operations unless directed otherwise by the Project Manager.

3.05 PIPE BEDDING

A. Bed pipe as shown on the drawings or, if not shown on drawings, according to requirements of local jurisdiction.

B. Place bedding material to a uniform grade. Compact to 95 percent of maximum density as measured by AASHTO T–99.

C. Shape bottom of trench or bedding so that the lower quarter of the pipe circumference is in continuous contact with the bottom of the trench.

3.06 BACKFILLING

A. Notify the Project Manager at least 24 hours in advance of backfilling.

B. Conduct utility check tests before backfilling. Backfill and compact trench before acceptance testing.

C. Place pipe zone backfill uniformly on both sides of the pipe in 6–inch uncompacted lifts until 12 inches over the pipe.

D. Solidly ram and tamp backfill into spaces around pipe and related structures.

E. Backfill trench with lifts up to 6 inches, loose measure.

F. Protect pipe from lateral movement, damage from impact, or unbalanced loading to avoid displacement of pipe and structures.

G. Do not free fall backfill into trench until at least 3 feet of cover is over the pipe.

3.07 COMPACTION

A. Compact backfill deeper than 3 feet below subgrade to 90 percent of maximum density as measured by AASHTO T–99, unless directed otherwise by Project Manager.

B. Compact the backfill from subgrade to a depth of 3 feet below subgrade to 95 percent of maximum density as measured by AASHTO T–99, unless directed otherwise by Project Manager.

C. If required compaction density has not been obtained, remove the backfill from trench or structure, replace with approved backfill, and recompact to the specified density. In no case will excavation, pipe–laying, or other operation be allowed to proceed until the specified compaction is attained.

D. Any subsequent settlement of trench or structure backfill during the maintenance period shall be considered to be the result of improper compaction and shall be promptly corrected.

3.08 PIPE DETECTION & IDENTIFICATION

A. Utility Warning Tape

1. Bury warning tape 12 to 20 inches above underground piping runs.

2. Align parallel to and within 12 inches of centerline of pipe and/or conduit runs.

B. Utility Detector Wire

1. Install utility detector for non–metallic and for non–continuous metallic utility runs (those with insulated connections and/or non–metallic inserts, for example.)

2. Place detector wire 12 to 20 inches over the pipe runs and align within 12 inches of the pipe centerline.

3. Run detector wire the full length of the installed pipe. Clearly mark or splice into the serving utilities tracer wire, when present.

SECTION 02444
FENCES AND GATES

PART 1 – GENERAL

1.01 DESCRIPTION

A. Provide chain link fence and chain link gates at locations indicated. See drawings for nominal heights and fence fabric requirements.

1.02 QUALITY ASSURANCE

A. Manufacturer: U.S. Steel Cyclone Fence Division or approved equal.

B. Allowable tolerances: Install mesh not more than 1/2" above top of concrete foundations and install posts not more than 1/2" from design lines and locations. Plumb posts to within 1/4" in 10'. Plumb and level gates to within 1/4" in 10'.

C. Test requirements for weight of coating on zinc–coated (galvanized) iron or steel articles: ASTM A90–81.

1.03 SUBMITTAL

Submit parts list for all major parts and materials; descriptive data of installation methods and procedures; and drawings of fence and gate installations.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Per Chain Link Fence Manufacturers Institute Product Manual for Type I fencing unless noted below. Minimum requirements for materials not specified in above noted manufacturer's specifications.

1. Gate framing and bracing: Swing gate per ASTM F–900 specifications. Frame Members: Round tubular steel, 1/90" O.D., 2.72 lb./ft.

2. Fence framing and bracing: Steel pipe corner and end posts; line posts and post braces; steel pipe top rails; flatbar stretcher bars. See table of minimum dimensions and weights in this Section below.

3. Post caps: Iron or steel, weathertight, toprail encompassing, with barbed–wire supporting arms.

4. Ties, bands and/or clips: Per qualified manufacturer's standard. Where manufacturer's specifications state no standard for ties, bands and/or clips.: Of adequate strength in sufficient number for attaching the fabric and stretcher bars to all line and terminal posts at intervals not exceeding 15'. Tension bands and brace bands formed from flat or beveled steel of minimum thickness 0.115" ñ 0.005" after galvanizing with minimum width of 7/8" ñ 0.15".

5. Fabric: Helically woven into diamond mesh of galvanized carbon steel wire meeting requirements of F.S. RR F 0019/1A, Type I. Zinc coating weight: Minimum 2.0 oz. of ASTM B6 slab zinc/sq. ft. of uncoated wire surface. Gauge includes zinc coating.

a. Fence and gate:

1. Height: As shown (ñ") and with fabric in one piece. 96", nominal, one piece.

2. Selvages: Knuckled at top and twisted barbs at bottom.

3. Gauge and mesh: 9 gauge (0.148") x 2" mesh.

6. Accessories:

a. Barbed wire arm.

b. Barbed wire.

c. Redwood or vinyl slats.

7. Other metal items:

a. Bottom tension wire: No. 7 gauge. Galvanized steel: 2.0 oz./ sq. ft.

b. Equip each gate post, end post, pull post and both sides of corner posts with brace rails and adjustable 3/8" diameter truss rod.

8. Dimensions and weights, minimum, when not other wise stated in qualified manufacturer's specifications for type of fence required:

Use and section for type 1 fencing	Outside Dia. (or dimensions nominal)	Weight (Pounds per foot nominal)
GATE POSTS..... Round	4.00"	9.10
END, CORNER AND PULL POSTS for fabric heights: 6'–12'.....Round	2.875"	5.79
INTERMEDIATE POSTS for fabric heights: 6'–12'.....Round	2.375"	3.65

NOTE: Where no tolerances are specified in this table or elsewhere in this specification, standard commercial tolerances apply. Note #4 of ASTM A120 applies only to weight tolerances.

9. Zinc coating on iron and steel parts, except fabric: Zinc coated after fabrication.

a. Round section members: Per ASTM A120–84 (1.8 oz./sq.ft.)

b. Other parts: Per ASTM A153–82 (1987), but no item to show less than 1.0 oz./sq. ft.

PART 3 EXECUTION

3.01 PREPARATION

A. Verify that final grading and soil compaction work in fence location is completed and correct before commencing fence installation.

B. Layout for posts and gates as shown. Space posts at intervals shown, otherwise space at 10'0" o.c. as measured parallel to surface of ground. Locate corner posts at positions where fence changes direction more than 10 degrees.

C. Set posts in holes and fill holes with concrete to 1/2" above required grade for abutting earth. Tamp concrete to consolidate. Plumb and level posts. Crown top surface of concrete to shed water. Hold bottom of post above bottom of hole at required height for post top. Form exposed–to–view portions of concrete to regular, symmetrical shape.

D. Couple sections of top rail at approximately 20'0" o.c. (+1.0") and pass top rail through loop at each line post.

E. Brace gate and corner posts with brace rails and permanent tension rods and brace end posts with trussed tension rods.

F. Fence fabric: Make no horizontal joints in vertical fabric.

1. Stretch fabric between 0" and 1/2" of top of concrete post base.

2. Position fabric between 0" and 1/2" of top of concrete post base.

3. Join ends of fabric by weaving with single strand of fabric wire to form continuous mesh pattern with selvage twisted to match balance of fabric.

4. Attach fabric to terminal posts using tension bars and tension bands at 15" o.c. maximum, or if cyclone Type II Post, attach fabric directly to post.

5. Attach fabric to line posts using wire ties or clips, spacing 15" o.c., maximum.

6. Place bottom tension wire up 4" from bottom of fabric, except no tension wire required at gates.

7. Attach bottom edge of fabric to bottom tension wire at 24" o.c., maximum

G. Gates: Provide all swinging gates with latches and fence at gates with hold–open keepers. Install ground set gate items in minimum of 1/2 cu. ft. of concrete. Form exposed–to–view portions of concrete to regular, symmetrical shape.

H. Fabric and post placement: Unless otherwise shown, place thus:

1. Install 3–strand barbed wire on top of all fencing with manufacturer's standard 45 degree supporting arms capable of supporting a 250 pound load applied to the outer strand. Slope barbed wire away from site.

SECTION 03100
CONCRETE FORMWORK

PART 1 – GENERAL

1.01 SECTION INCLUDES:

A. Formwork for cast–in–place concrete, with shoring, bracing, and anchorage.

B. Openings, holes and blockouts for other affected work.

C. Form accessories.

D. Stripping forms.

1.02 WORK INSTALLED BUT FURNISHED UNDER OTHER SECTIONS

A. Section 05500 – Metal Fabrications: Metal fabrication attached to formwork.

1.03 RELATED WORK

A. Section 03200 – Concrete Reinforcement.

B. Section 03300 – Cast–In–Place Concrete.

1.04 REFERENCES

A. ACI 301– Specifications for Structural Concrete for Buildings.

B. ACI 347 – Recommended Practice for Concrete Formwork.

1.05 SYSTEM DESCRIPTION

A. Design, engineer, and construct formwork, shoring, and bracing to meet design and code requirements, so that resultant concrete conforms to required shapes, lines, and dimensions.

1.06 QUALITY ASSURANCE

A. Construct and erect concrete formwork in accordance with ACI 301 and 347.

PART 2 – PRODUCTS

2.01 FORM MATERIALS

A. Steel: Minimum 16 gauge sheet, well matched, tight fitting, stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of finished surfaces.

B. Plywood: Douglas Fir MDO grade; sound, undamaged sheets with straight edges.+

PART 3 EXECUTION

3.01 INSPECTION

A. Verify lines, levels, and measurements before proceeding with formwork.

3.02 PREPARATION

A. Earth forms permitted only for on–grade concrete, and may only be used where earth can be maintained to profiles indicated on drawings.

B. Hand–trim sides and bottoms of earth forms, where used, remove loose dirt and debris prior to placing concrete.

C. Minimize form joints. Symmetrically align joints. Seal joints where seepage would adversely affect adjacent surfaces.

D. Arrange and assemble formwork to permit dismantling so that concrete is not damaged during its removal.

E. Arrange forms to allow stripping without removal of principal shores, where required to remain in place.

3.03 ERECTION

A. Provide bracing to ensure stability of formwork. Strengthen formwork liable to be overstressed by construction loads.

B. Construct formwork to maintain tolerances in accordance with ACI 301.

C. Provide chamfer strips at all concrete edges; use 3/4" x 3/4" except as noted on drawings.

3.04 APPLICATION OF FORM RELEASE AGENT

A. Apply form release agent on formwork in accordance with manufacturer's instructions. Apply prior to placing reinforcing steel, anchoring devices, and embedded items.

3.05 INSERTS, EMBEDDED PARTS. AND OPENINGS

A. Provide formed openings where required for work embedded in or passing through concrete.

B. Coordinate work of other Sections in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors, and other inserts.

C. Install accessories in accordance with manufacturer's instructions, level and plumb. Ensure items are not disturbed during concrete placement.

3.06 FORM REMOVAL

A. Notify Project Manager prior to removing formwork.

B. Do not remove forms, shoring and bracing until concrete has sufficient strength to support its own weight, and construction and design loads which may be imposed upon it.

C. Remove formwork progressively so no unbalanced loads are imposed on structure.

D. Do not damage concrete surfaces during form removal.

REVISIONS MTA 1016.0040

DATE	DESCRIPTION	REV.
11/21/10	80% CONSTRUCTION	
11/22/10	90% CONSTRUCTION	
01/12/11	100% CONSTRUCTION	

AT&T Project No. CNU0080
AT&T Site Name. MORAGA
AT&T Site City. MORAGA
Trillium Project No. CNU0080
Date 11/21/10
DRAWN JMB
REVIEWED MT

Trillium Telecom Services
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AT&T MOBILITY
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PLEASANTON, CA 94588

SEAL:

LICENSED ARCHITECT MARK L. THIEME, RA NO. C-18,164 REN. 31 MAY 2011 STATE OF CALIFORNIA

CCL0080 / CNU0080 / SF0080

MORAGA

1199 ALTA MESA DR
MORAGA, CA 94556

SHEET TITLE:

NOTES

SHEET NUMBER:

N2

SECTION 03200
CONCRETE REINFORCEMENT

PART 1 – GENERAL

1.01 SECTION INCLUDES:

A. Reinforcing steel.

B. Support chairs, bolsters, bar supports, and spacers, for supporting reinforcement.

1.02 RELATED WORK

A. Section 03100 – Concrete Formwork.

B. Section 03300 – Cast-in-Place Concrete.

1.03 REFERENCES

A. ACI 301– Specifications for Structural Concrete for Buildings.

B. ACI 315 – Details and Detailing of Concrete Reinforcement.

C. ANSI/AWS D1.4 – Structural Welding Code, Reinforcing Steel.

D. RSI – Manual of Practice

E. CRSI 65 – Recommended Practice for Placing Reinforcing.

F. ASTM A615 – Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.

G. ASTM A706 – Standard Specification for Low-alloy Steel Deformed Bars for Concrete Reinforcement.

H. ASTM A775/A775M-90 – Standard Specification for Epoxy-Coated Reinforcing Steel.

1.04 QUALITY ASSURANCE

A. Perform concrete reinforcement work in accordance with CRSI Manual of Standard Practice.

B. Conform to ACI 301 and 315.

1.05 SUBMITTALS

A. SHOP DRAWINGS – Submit shop drawings in accordance with Section 01300. Indicate sizes, spacings, locations and quantities of reinforcing steel, bending and cutting schedules, splicing, spacing, supporting and spacing devices.

B. CERTIFICATES – Submit mill test certificates of supplied concrete reinforcing, indicating physical and chemical analysis.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Reinforcing Steel: ASTM A615 (ASTM A706 where reinforcing will be welded), grade 60 billet-steel deformed reinforcing bards, uncoated finish.

2.02 ACCESSORY MATERIALS

A. Tie Wire: Minimum 16 gauge annealed type.

B. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for strength and support of reinforcement during installation and placement of concrete. Chair and spacers shall be galvanized and plastic-coated. Bar supports shall have radius bearing legs. Plastic coating shall not be less than 3/32" thick, shall extend to the full reinforcing steel cover and shall not chip, peel crack or deform under ordinary job conditions and temperatures. Only metal which has been protected by galvanizing and plastic coating shall be placed within the outer concrete cover indicated on the plans.

2.03 FABRICATION

A. Fabricate in accordance with ACI 315, providing concrete cover specified on drawings.

B. Locate reinforcing splices not indicated on drawings at points of minimum stress. Indicate location of splices on shop drawings.

C. Weld reinforcing, where specified, in accordance with ANSI/AWSD 1.4.

PART 3 EXECUTION

3.01 INSTALLATION

A. Before placing concrete, clean reinforcement of foreign particles or coatings.

B. Place, support, and secure reinforcement against displacement. Do not deviate from alignment or measurement.

SECTION 03300
CAST-IN-PLACE CONCRETE

PART 1 – GENERAL

1.01 SECTION INCLUDES:

A. Cast-in-place concrete slabs (and walls or curbs, if any).

1.02 RELATED WORK

A. Section 03100 – Concrete Formwork.

B. Section 03200 – Concrete Reinforcement.

C. Section 05500 – Metal Fabrications.

1.03 REFERENCES

A. ACI 301– Specifications for Structural Concrete for Buildings.

B. ASTM C33 – Concrete Aggregates.

C. ASTM C94 – Ready-Mixed Concrete.

D. ASTM C150 – Portland Cement.

E. ASTM C260 – Air-Entraining Admixtures for Concrete.

F. ASTM C494 – Chemical Admixtures for Concrete.

G. California Building Code (CBC) and Standards, 1995 Edition.

1.04 QUALITY ASSURANCE

A. Perform work in accordance with ACI 301 and 1995 CBC and 1994 UBC Standards.

B. Obtain materials from same source throughout the Work.

1.05 REGULATORY REQUIREMENTS

A. Conform to 1995 CBC.

1.06 TESTS

A. Sampling and testing will be performed in accordance with Section 01400, Quality Control Services, and in accordance with ACI 301 and UBC 1903.8.

B. Tests of cement and aggregates may be performed to ensure conformance with requirements stated herein.

C. Three concrete test cylinders will be taken for every 50 or less cubic years of concrete place each day. Test one cylinder at 7 days. If 7-day test for f'c is less than 85% of specified compressive strength, f'c, then test both remaining cylinders at 28 days.

D. One additional test cylinder will be taken during cold weather and cured on site under same conditions as concrete it represents. This cylinder will be tested at 7 days.

E. One slump test shall be taken for each set of test cylinders taken.

1.07 SUBMITTALS

A. Concrete mix design: See 2.04 for requirements.

B. Cement, coarse and fine aggregate, add mixtures: Evidence of conformance to the referenced standards and requirements.

PART 2 – PRODUCTS

2.01 CONCRETE MATERIALS

A. Cement: ASTM C150, moderate – Type II Portland type; grey color, in conformance with UBC Standard No. 19-1. Low alkali cement shall not contain more than 0.6 percent total alkali when calculated as sodium oxide, as determined by the method given in "Methods of Chemical Analysis of Hydraulic Cement," ASTM C114.

B. Fine and Coarse Aggregates: ASTM C33. Max. aggregate size 3/4". Where "low-shrinkage concrete" is specified on drawings, coarse aggregate shall be crushed granite as supplied by Granite Rock or approved equal, and fine aggregate shall be Olympic sand, or approved equal.

C. Water: Clean, potable and not detrimental to concrete.

2.02 ADMIXTURES

A. Air Entrainment: ASTM C260.

B. Chemical Admixture: ASTM C494, as required for specific designs.

C. Pozzolans: ASTM C618.

2.03 ACCESSORIES

A. Bonding Agent: Two component modified epoxy resin or approved equal or better.

B. Grout: Non-shrink, non-metallic premixed compound consisting of non-metallic aggregate, cement, water-reducing and plasticizing agents; compressive strength of 6800 psi at 28 days; as manufactured by 5-Star, Master Builders or approved equal.

C. Curing Membrane: 6 mil thick opaque polyethylene film.

D. Curing Compound: ConFilm or EcoFilm or approved equal.

2.04 CONCRETE MIX

A. Mix concrete in accordance with ASTM C94. Concrete mixes may be based upon previously proven mixes and material tests made by a recognized testing agency. The design of such mixes shall be based on the required 28-day strength, and shall take into consideration both the workability of the mix and the durability of the concrete.

B. The minimum 28-day compressive strength of structural concrete shall be as noted below except as otherwise noted on drawings.

– Caissons, columns, supported structural slabs 3,000 PSI
– Footings, pads, matt foundations, retaining walls 2,500 PSI

C. Use accelerating admixtures in cold weather only when approved by the Engineer. Use of admixtures will not relax cold weather placement requirements.

D. Use set-retarding mixtures during hot weather only when approved by the Engineer.

E. Add air entraining agent to concrete mix for concrete work only when approved by the Engineer.

F. Admixtures shall be subject to prior approval of the Engineer as follows:

1. Admixtures shall be shown capable of maintaining essentially the same composition and performance throughout the work as the product used in establishing concrete proportions.

2. Air-entraining admixtures shall conform to "Specification for Air-Entraining Admixtures for Concrete" ASTM C260.

3. Water reducing admixtures, retarding admixtures, accelerating admixtures, water-reducing and retarding admixtures, and water-reducing and accelerating admixtures shall conform to Specification for Chemical Admixtures for Concrete ASTM C494.

4. Fly ash or other pozzolans used as admixtures shall conform to Specifications for Fly Ash and Raw or Calcined Natural Pozzolans for Use in Portland Cement Concrete ASTM C618.

G. Design slump shall not exceed 4".

H. Water-cement ratio shall not exceed 0.46 for 3000 PSI and 0.54 for 2500 PSI concrete, and cement content shall be at least 560 pounds per cubic yard.

3.01 PLACING CONCRETE

A. Place concrete in accordance with ACI 301 and Section 1905 or 1995 CBC:

1. Before concrete is placed, all equipment for mixing and transporting the concrete shall be clean, all debris and ice shall be removed from the spaces to be occupied by the concrete, forms shall be properly coated, and the reinforcement shall be thoroughly clean of ice or other deleterious coatings.

2. Water shall be removed from the place of deposit before concrete is placed.

3. All laitance and other unsound material shall be removed from hardened concrete before additional concrete is placed.

4. Place bonding agent where specified on drawings.

5. All concrete shall be mixed until there is a uniform distribution of the materials and shall be discharged completely before the mixer is recharged, Ready-mixed concrete shall be mixed and delivered in accordance with the requirements set forth in UBC Standard No. 19-3.

6. Concrete shall be conveyed from mixer to place of final deposit by methods that will prevent separation or loss of materials.

7. Conveying equipment shall be capable of providing a supply of concrete at site of placement without separation of ingredients and without interruptions sufficient to permit loss of plasticity between successive increments.

8. Concrete shall be deposited as nearly as practicable in its final position to avoid segregation due to rehandling or flowing. The concreting shall be carried on at such a rate that the concrete is at all times plastic and flows readily into the spaces between the bars. No concrete that has partially hardened or been contaminated by foreign materials shall be deposited in the structure, nor shall retempered concrete or concrete which has been remixed after initial set be used unless approved by the Engineer.

9. In depositing concrete in walls or curbs, openings in forms, elephant trunks, tremies or other approved devices shall be used that will permit the concrete to be placed in a manner that will prevent segregation and accumulations or hardened concrete on the forms or metal reinforcement above the level of the concrete.

10. After concreting is started, it shall be carried on as a continuous operation until the placing of the section is completed. The top surfaces of vertically formed lifts shall be generally level. When construction joints are necessary, the shall be made in accordance with drawings. Where construction joints are desired and not shown, the method and location of the jointing is subject to review and approval by the Engineer.

11. All concrete shall be thoroughly consolidated by suitable means during placement and shall be thoroughly worked around the reinforcement and embedded fixtures and into the corners of the forms.

12. Where conditions make consolidation difficult, or where reinforcement is congested, batches of mortar containing the same proportions of cement, sand and water as used in the concrete shall first be deposited in the forms to a depth of at least 1 inch.

B. Hot Weather Placement: ACI 301 and Section 1905A.13 of 1995 CBC.

C. Cold Weather Requirements: Adequate equipment shall be provided for heating the concrete materials and protecting the concrete during freezing or near freezing weather. All concrete materials and all reinforcement, forms, fillers, and ground with which the concrete is to come in contact shall be free from frost. No frozen materials or materials containing ice shall be used. When depositing concrete during freezing or near-freezing weather, the mix shall have a temperature of at least 50 degrees F, but no more that 90 degrees F when cement is added. The concrete shall be maintained at a temperature of at least 50 degrees F for not less than 72 hours after placing or until it has thoroughly hardened. When necessary, concrete material shall be heated before mixing. Special precautions shall be taken for the protection of transit-mixed concrete.

D. Ensure reinforcement, inserts, embedded parts, and formed joints are not disturbed during concrete placement.

E. Maintain concrete cover around reinforcing as specified on the drawings.

F. Place concrete continuously between predetermined construction and control joints.

3.03 FINISHING

A. Provide concrete wall surfaces (if any) to be left exposed with smooth rubbed finish.

B. Provide Class A tolerances for slabs according to ACI 301.

C. Do not begin finishing operations on slabs until foot pressure from 150 lb. minimum person makes no more than a 1" depression in concrete, and bleed water has adequately evaporated or has been removed. After bull float but before power finishing, spray curing compound onto slab surface. After power troweling, apply light broom finish to exposed concrete horizontal surfaces only.

D. Pitch exposed concrete to not less than 1/8" per foot slope unless otherwise noted on drawings.

3.04 CURING

A. Concrete shall be maintained above 50 degrees F for 72 hours and in a moist condition for at least the first seven days after placing.

3.05 PATCHING AND REPAIRING

A. Patch imperfections including voids larger than 1/2", rock pockets, cracks, and elevations.

B. Repair or replace as directed by the Engineer all concrete not properly placed of the specified type.

C. Replace, or repair as directed by the Engineer, all concrete which does not meet specified 28-day compressive strength , f'c.

SECTION 05500
METAL FABRICATIONS

PART 1 – GENERAL

1.01 WORK INCLUDED:

A. Provide custom fabricated and factory built metal items as indicated on drawings and specified herein.

1.02 QUALITY ASSURANCE:

A. Welder Qualifications: Use only AWS certified welders.

1.03 REFERENCES:

A. American Society for Testing and Materials:
1. ASTM A36, Specification for Structural Steel.
2. ASTM A53, Specification for Welded and Seamless Steel Pipe.
3. ASTM A123, Specification for Zinc (Hot-Galvanized) Coatings on Products Fabricated from Rolled Pressed and Forged Steel Shapes, Plates, Bars, and strip.
4. ASTM A153, Specification for Zinc Coating (Hot Dip) on Iron and Steel hardware.
5. ASTM A307, Specification for Carbon Steel Externally Threaded Standard fasteneres.
6. ASTM A 86, Specification for Zinc Coating (Hot Dip) on Assembled Steel products.
7. ASTM A325, Specification for High-Strength Bolts for Structural Steel Joints, Including Suitable Nuts and Plain Hardened Washers.

1.04 SUBMITTALS:

A. Shop Drawings: Submit Drawings with complete details and instructions for fabrication, assembly and installation of custom fabricated items. Comply with Section 01300, Submittals.

B. Product Data: Submit product literature for factory fabricated items.

PART 2 – PRODUCTS

2.01 METAL MATERIALS:

A. Steel Plates, Shapes, Bars: ASTM A36

B. Structural Steel Pipe: ASTM A53, Type E and S, Grade A or B, Schedule 40, Fy=35 KSI.

2.02 CONNECTING AND FINISHING MATERIALS:

A. Standard Bolts: ASTM A307

B. High Strength Bolts: ASTM A325, Bearing or Friction type with load indicator washers where indicated on drawings only.

C. Electrodes: AWS A5.1, E60XX or AWS A5.1 or A5.5, E70XX.

D. Concrete Expansion Anchors: Kwik-Bolt II by Hilti, Red Head Wedge Anchors by ITT Phillips, Trubolt, or Dynabolt by Ramset.

E. Concrete Adhesive Anchors: Hilti HVA or Hilti HIT System with C-100 adhesive or approved equal.

2.03 CEMENT MATERIALS AND SEALANTS:

A. Anchoring Cement: Fast Setting Cement by Burke, Anker Tite by Concrete Products, Embeco 153 by Master Builders, Thoragrip by Standard Dry Wall.

B. Sealants:

1. Type for use with surfaces such as factory primed or finished metal, glass, and other surfaces: Approved by manufacturer unless otherwise specified. Use primer when required by manufacturer.

a. Silicone rubber: Exterior type at interior and exterior, one-part. G.E. Silpruf or Dow Corning 790 – in color as selected by Project Manager from manufacturer's standard colors.

2. Type for use on concrete and masonry surfaces: As recommended by manufacturer unless otherwise specified. Use primer recommended by manufacturer.

a. Urethane, two-part: Tremco Dymericor Sonneborn Sonolastic NP II in color as selected by Project Manager from manufacturer's standard colors. Not for use at plumbing fixtures.

3. Colors: Where more than one color is indicated above, the Project Manager will make selections. A different color may be required for each different combination of materials abutting joint.

2.04 STANDARD FACTORY FABRICATED ITEMS:

A. Provide and install the following pre-fabricated metal items as shown on drawings per manufacturer's written instructions.

1. Unistrut channels
2. All thread rods
3. Antenna mounting brackets/hardware
4. Cable bridge and support assemblies

2.05 CUSTOM FABRICATION PROCESS:

A. Standards: Comply with AWS Structural Welding Code D1.1 and AISC "Specifications for Architecturally Exposed Structural Steel".

B. Fabrication Requirements: Fabricate to dimensions required by field measuring existing substrates. Comply with shop drawings and referenced standards. Fabricated or welded construction, drill and tap as required to receive hardware. Include required anchors for building into other work.

C. Welded Joints: Form exposed connections with flush hairline joints. Weld corners and seams with shielded metal-arc process (SMAW). Grind exposed welds smooth. Provide 1/4 inch minimum fillet welds and full penetration butt welds.

D. Galvanized Shop Finish: Provide 2.0 mil zinc coating on all exposed exterior steel in accordance with ASTM A386 for assembled steel products, ASTM A153 for iron and steel hardware, or ASTM A123 for fabricated shapes, plates, bars and strip.

PART 3 – EXECUTION

30.1 INSTALLATION:

A. Standards: Comply with AISC specification and UBMC Standard 27-2.

B. Field Connections: Perform cutting, drilling, and fitting required for installation. Set work within 1 to 300 of designed location, alignment and elevation, measured from established lines and levels. Install anchorage devices and fasteners as required.

3.02 FIELD QUALITY CONTROL:

A. Weld Tests and Inspections:

1. Provide building code required tests and inspections prior to covering structural connections.

2. See Section 01400, Quality Control.

3.03 ADJUSTING AND CLEANING:

A. Adjusting: Correct or replace defective members and adjust alignment as required. Remove pits, bumps and irregular weld grinds from exposed surfaces.

B. Primer Touch-Up: Touch up shop primer on exposed interior steel after installation. Clean field welds, bolted connections and abraded areas, and apply same type primer paint as used in shop. Apply zinc rich primer to exposed exterior steel where galvanized finish was damaged or not applied.

C. Cleaning: Remove dirt and oil from metal items scheduled for field finishing.

3.04 PROTECTION:

A. Apply protecting material to face of metal in areas of potential galvanic activity between contacting dissimilar metal materials.

MTA 1016.0040

REVISIONS

DATE	DESCRIPTION	REV.
11/21/10	80% CONSTRUCTION	
11/22/10	90% CONSTRUCTION	
01/12/11	100% CONSTRUCTION	

AT&T Project No. CNU0080
AT&T Site Name. MORAGA
AT&T Site City. MORAGA
Trillium Project No. CNU0080
Date 11/21/10
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REVIEWED MT

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AT&T MOBILITY
4430 ROSEWOOD DRIVE
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SEAL:

LICENSED ARCHITECT
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1199 ALTA MESA DR
MORAGA, CA 94556

SHEET TITLE:
NOTES

SHEET NUMBER:
N3

PART 2 – PRODUCTS

2.01 PAINT SYSTEMS:

A. Paint system for ABS Plastic Face of Panel Antenna and/or FRP (Fiberglass Reinforced Plastic) Screens:

1. Primer: As required for adhesion, apply one coat of KEM AQUA One–Part, Water Reducible Primer E61 W525.

2. Top Coat: Two coats of POLANE HS PLUS 2 – Part Polyurethane Enamel, F63 Series matched to color and gloss as desired. Use V66–VB11 Accelerator as needed to speed drying time.

B. Paint system for Galvanized Steel:

1. Primer: One coat of KEM AQUA, one part water reducible wash primer E61–G520.

2. Top Coat: Two coats of POLANE HS PLUS2 – part Polyurethane enamel, F63 series matched to color and gloss as desired. Use V66–VB11 Accelerator as needed to speed drying time.

C. Paint system for B.T.S.:

1. Apply as necessary for hiding 1 – 2 coats POLANE HS PLUS 2–Part Polyurethane Enamel F63 Series matched to color and gloss as desired. Use V66 VB11 Accelerator as needed to speed drying time.

D. Paint system for Roof Striping:

1. Apply 4" stripes at 12" o.c. Sherwin Williams B66Y37 DTM ACRYLIC. Color to be OSHA SAFETY YELLOW. Letters to be 6" high.

E. Paint system for Coax Jumper Cables:

1. Primer: As required for adhesion, apply one coat of Kem Aqua Water Reducible Primer E61W525 reduced 5%.

2. Top Coat: 2 coats Corothane II Polyurethane B65W200/B60V2.

F. Paint system for Raw Steel:

1. Primer: DTM Primer, B66W1.

2. Top coat: 2 coats Corothane II Polyurethane B65W200/B60V2.

G. Paint system for Stainless Steel/Aluminum/Copper:

1. Primer: DTM Wash Primer, B71Y1.

2. Top Coat: 2 coats Corothane II Polyurethane B65W200/B60V2.

H. Paint system for Pre–primed Steel:

1. Primer: Touch up any rust or un–primed steel with Kem Bond HS, B50WZ4.

2. Top Coat: 2 coats Corothane II Polyurethane B65W200/B60V2.

I. Paint system for new CMU:

1. Primer: ProMar Block Filler, B25W25

2. Top Coat: 2 coats A–100 Latex House and Trim (sheen to match existing).

J. Paint system for existing Concrete and Cement Plaster:

1. 2 coats Latex House and Trim (sheen to match existing).

K. Paint system for Wood:

1. Primer: A–100 Alkyd Primer, Y24W20

2. Top Coat: 2 coats A––100 Latex House and Trim (sheen to match existing).

L. Alternate brush and/or roll paint system for A & B, above:

1. Approved spray is the preferred method of application for the paints specified above. This method provides the best overall component coverage and appearance in the least amount of time. However, should the use of spray become impossible to use in certain situations, the following topcoat system may be substituted for POLANE HS PLUS with the approval of the Project Manager.

COROTHANE II 2–Part Polyurethane B65 W200 Series/B60 V2. Note: Use same primer if required for ABS. For galvanized steel, substitute DTM One–part, Water Reducible Wash Primer B71 Y1. Application with brush or roller is less effective than spray.

2.02 CLEANING AGENT:

A. ACETONE, TOLUOL or methyl alcohol solvents.

PART 3 – EXECUTION

3.01 INSPECTION

A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

3.02 PREPARATION:

A. Protection: Prior to surface preparation and painting operations, completely mask, remove, and adequately protect items and surfaces adjacent to work of this contract, but not scheduled to receive paint.

B. ABS Plastic Antenna Housing: Before applying paint lightly scuff sand all surfaces of plastic antenna housing plastic with 400 grit sand paper. Clean all sanded surfaces by wiping down with light application of specified solvent.

C. Galvanized Metal: Solvent clean per SSPC–SP1. If metal has weathered at least six months, apply primer. If metal is new and/or is known to have chromate or silicate treatment, brush blasting per SSPC–SP7 may be required.

D. BTS surface preparation: Before applying paint, sand completely all surfaces of the BTS with 400 grit sand paper. Remove sand dust and lightly wipe down with recommended solvent. MASK LOUVERS ON DOOR TO PROTECT FROM OVER SPRAY.

E. Roof striping preparation: Brush loose roof gravel away from area of stripes and text. Clean area with appropriate cleaner before applying paint.

F. Coax Jumper Cables: Solvent clean per SSPC–SP1. Refer to 2.02 Cleaning Agents.

G. Raw Steel/Stainless Steel/Pre–primed Steel: Hand tool cleaning per SSPC–SP2.

H. Aluminum: Solvent cleaning per SSPC–SP1.

I. Copper: Solvent clean per SSPC–SP1. Refer to 2.02 Cleaning Agents.

J. CMU/Concrete & Cement Plaster: NACE Standard. RP–01–72 Power wash at 2,000 to 2,500 psi at 4–14 gallon per minute.

K. Wood: NACE Standard. RP–01–72 Power wash at 2,000 to 2,500 psi at 4–14 gallon per minute.

L. Caulking and Sealant: Apply caulking and sealant in a uniform and smooth manner in the locations as indicated on the drawings or as required for a complete and finished installation.

M. Correct minor defects and clean surfaces which affect work of this section.

3.03 PROTECTION:

A. Protect elements surrounding the work of this Section from damage or disfigurement.

B. Furnish drop cloths, shields and protective methods to prevent spray or droppings from disfiguring other surfaces.

C. Repair damage to other surfaces caused by work of this Section.

3.04 APPLICATION:

A. Sanding: Lightly sand surfaces, between coats, to produce an even, smooth finish.

B. Application of primers and paints shall be per manufacturer's written instructions.

C. Drying: Allow sufficient drying time between coats. Modify as recommended by manufacturer for existing weather conditions.

D. Environmental Conditions: Comply with manufacturer's recommendations for environmental conditions under which coating systems may be applied.

E. Touch–Up and Refinishing: Runs, sags, misses, holidays, stains and other defects in the painted surfaces, including inadequate coverage and mil thickness shall be satisfactorily touched up, or repainted as directed by Project Manager.

F. Reinstallation of removed items: Upon completion promptly reinstall items removed for painting, using workmen skilled in the particular trade.

3.05 CLEAN–UP:

A. As work proceeds, promptly remove paint where spilled, splashed, or spattered.

B. During progress of work maintain premises free of unnecessary accumulation of tools, equipment, surplus materials and debris.

C. Collect cotton waste, cloths and materials which may constitute a fire hazard, place in closed metal containers and remove daily from the job site.

SECTION 16000
ELECTRICAL

PART 1 – GENERAL

1.01 WORK INCLUDES: Furnishing materials, labor and equipment, required to install electrical work as indicated and as specified herein. The work in general shall consist of, but not be limited to, the following:

A. Provide electrical work, panel feeders, service, conduit and wiring for outlets and equipment.

B. Provide conduit, wire, raceways, and final connections for work specified under other sections of these specifications.

C. Provide telephone conduit with pull rope and Greenlee tape.

D. Provide grounding system as indicated and as specified herein.

E. Provide final connections to Owner–furnished equipment and equipment furnished under other divisions.

1.02 SUBMITTALS: Submit product data in accordance with Section 01300.

PART 2 – PRODUCTS

2.01 OPTION ONE – MODIFY SERVICE ENTRANCE DISTRIBUTION: Provide new service entrance distribution equipment as indicated. Section shall utilize fused switches or circuit breakers as shown on the drawing to match existing system. Branch devices shall be fusible type switches, quick–make, quick–break type, or circuit breaker, IF INDICATED.

2.02 OPTION TWO – Provide new 120/240 volt single phase, 3–wire, outdoor metering pedestal with 100 amp/2–pole service disconnect, 60 amp/2–pole generator disconnect, manual transfer interlock between the two disconnects, distribution circuit breakers, GFCI receptacle, meter socket and surge arrestor per Tesco drawing No. "Belltel", IF INDICATED.

2.03 OPTION THREE: Provide outdoor Tesco Slimline padmount panelboard per Option Two, minus metering and surge arrestor. Nominally 43" high, 12" wide and 8–1/2" deep, Tesco series 23–000, per Tesco drawing "PBMS–BX", IF INDICATED.

2.04 OPTION FOUR: Provide interior or exterior wallmount panelboard similar to Option Two, without metering and surge arrestor. Nominally 12" wide, 8–1/2" deep and 20" tall, NEMA 3R, Tesco 41–000 series, per Tesco drawing "PBMS–CX", IF INDICATED.

2.05 OPTION FIVE: Provide roof–mounted building branch panel with quick–make, quick–break arc quenching type breakers as indicated on drawings. Provide panel with door locks per Pacific Bell's requirements. Provide panel with typewritten circuit directory installed on door, identifying the use of the branch circuit. Tie bars to form two–pole breakers will not be accepted, IF INDICATED.

2.06 MANUFACTURERS: For Options One and Five, electrical equipment as manufactured by General Electric, Square D or approved equal will be acceptable for electrical distribution equipment. Should Tesco be indicated, this shall be the sole source.

2.07 TUBING AND CONDUIT

A. Electric Metallic Tubing: For all wire except in or under concrete, earth, fill, in masonry walls, in concrete walls, or sizes exceeding 2".

B. Rigid Galvanized Steel or IMC: For all wiring above grade exceeding 2" size and for all exposed conduit runs outside the building.

C. All underground conduits not under concrete shall be 24" below grade, unless otherwise noted.

D. Non–metallic Conduit: UL labeled schedule 40 PVC conduit may be used for underground runs. Provide rigid steel or IMC sweep elbows half–lap spiral wrapped with Scotch #51 to an over–all thickness of 40 mils for all bends. All non–metallic conduits shall have bond wire sized per the NEC.

E. Conduit Fittings: Provide watertight compression type conduit fittings for electrical metallic tubing installed in wet location. Malleable iron setscrew fittings may be used in dry locations. Fitting for rigid galvanized steel or IMC shall be threaded.

F. Install pull wire and Greenlee tape in all empty conduits.

G. Conduit bodies for 90 degree transition to be oversized pulling ells, for telephone.

2.08 WIRE AND CABLE

A. Provide soft drawn, annealed copper wire bearing the UL label.

B. Insulation: Provide the following:

1. Type XHHW insulated wire for conductors No. 2 AWG and larger.
2. Type THW or THHN/THWN for all wire smaller than No. 2 AWG.

C. Sizes: Provide no wire smaller than No. 12 AWG for receptacles or other circuits. Provide stranded wire for wire larger than No. 10 AWG.

D. Wire Manufacturers: Anaconda, Rome, General Cable, Southwire.

E. Grounding Conductors: As indicated.

F. Splices: Splices in branch circuits shall occur only where such circuits divide. Joints in wires No. 8 and smaller may be made with "Scotchblock" or "Wire Nut" connectors.

2.09 OUTLET BOXES

A. Provide plaster rings where surface is finished.

B. Four–inch Square or Rectangular Boxes: Galvanized steel as required.

C. Weatherproof for GFCI receptacles where indicated.

D. Junction and Pull Boxes: Provide with screw covers always accessible.

2.10 WIRING DEVICES

A. Weatherproof Receptacles: Hubbell 5352 with 5205 cover plate.

B. Other acceptable manufacturer is Arrow Hart.

2.11 CABLE TRAY

A. All cable tray shall be Aluminum, Ladder type construction, with inside depth of 3 inches, width as indicated, 9 inch rung spacing.

B. Where turns are involved, 24 inch radii shall apply to nominal 7/8" coaxial cable and 36 inch radii shall apply to nominal 1–5/8" coaxial cable. Degree of arc for horizontal elbows shall be 30, 45, 60 and 90 degrees as indicated or to suit application. When fixed elbows do not suffice adjustable horizontal elbows may be used.

C. Vertical elbows of appropriate width of 30, 45, 60 and 90 degrees of arc may be used, inside or outside of application.

D. Cable trays shall comply with NEMA VE–1. Load category shall be 75 pounds per linear foot, support span of 12 feet corresponding to Class Designation of 12B.

E. When run horizontally, cover shall be flat, solid with a flange, constructed of aluminum.

F. Provide and install all straight lengths, fittings, elbows and hardware for a complete and operable system.

G. Manufacturers: T. J. Cope, Inc., Globe Tray, B–line Systems, Chalfont Manufacturing Co., M.P. Husky Corp., P–W Western Inc. and Square D.

PART 3 – EXECUTION

3.01 VERIFICATION: Division 16 Contractor will examine the site and premises and verify existing conditions under which work will be performed, or that which will in any manner affect the work under the contract.

3.02 WORKMANSHIP: Perform work by skilled mechanics in accordance with all ordinances and regulations of State, County, and Municipal authorities, private utility company, and as indicated.

3.03 TUBING AND CONDUIT SIZING: Size tubing and conduit as indicated, and install so that conductors may be drawn in without injury or excessive strain. Tubing and conduit shall be secured to pull boxes, support boxes, and outlet boxes with galvanized locknuts and plastic bushing.

3.04 TUBING AND CONDUIT ROUTING: Run conduit concealed where possible indoors, principally in overhead and wall construction, chases and openings in walls, partitions, and floors. Provide for installation of conduits so as to minimize cutting and patching.

3.05 SUPPORTS: Support conduit not imbedded in concrete firmly. Secure by UL–listed conduit clamps and hangers, with spacing not exceeding values given in NEC determined by size and type conduit or tubing.

3.06 BONDING: Panelboard cabinets, equipment, enclosures, and the complete conduit system shall be bonded securely in accordance with pertinent sections of Article 250 of NEC. Bond electrically operated equipment housings and bond to the grounded conduit systems. Main grounding electrode shall conform to NEC 250–81(C) as indicated. Provide ground loop and ground rods, IF INDICATED.

3.07 DRAW WIRES OR CORDS: Draw No. 10 steel wire or 200 lb. tensile strength pull cord into conduit until conduit system is complete. Use approved pulling lubricant.

3.08 COLOR MARKING: Grounded conductors (neutrals) and grounding conductors (ground wires) shall be color marked per NEC. Color coding for conductor of 208 and 480 volt systems shall be:

120/240 Volt System	120/208 Volt System	480 Volt System
Neutral – White	Neutral – White	
Phase A – Black	Phase A – Black	Phase A – Brown
Phase B – Red	Phase B – Red	Phase B – Yellow
	Phase C – Yellow	Phase C – Purple
Ground – Green	Ground – Green	Ground – Green

3.09 TESTING: Follow "Testing Methods and Procedures: Section 10.0 of PBMS Document SD/0022 titled "PBMS Grounding and Lightning Protection Standard for BTS Sites", to obtain resistance to ground of 5 ohms or less. Alternatively, provide for an independent testing company such as Electrotest or Power Systems Testing to verify resistance to ground indicated on drawings is complied with. Should this value not be reached, provide and install additional ground rods or electrodes and conductors as needed to achieve proper value of resistance to ground.

Independent testing company to perform insulation resistance tests for that part of the system installed in this contract. Tests comply with requirements of International Electrical Testing Association, "Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems", for low voltage (600 volts maximum) cables. Cables that fail this test shall be replaced by Division 16 and retested.

SPECIAL REQUIREMENTS

ATTACHMENTS OF EQUIPMENT WEIGHING LESS THAN 400# AND SUPPORTED ON THE FLOOR OR ROOF STRUCTURE, FURNITURE OR TEMPORARY OR MOVABLE EQUIPMENT AND EQUIPMENT WEIGHING LESS THAN 20 POUNDS THAT IS SUPPORTED BY VIBRATION ISOLATION DEVICES OR SUSPENDED FROM THE ROOF, WALL OR FLOOR NEED NOT BE DETAILED ON THE PLANS. (CCR TITLE 24 PART 2 SECTION 1630A.1, EXCEPTION). HOWEVER, SUCH EQUIPMENT MUST BE SUPPORTED AND ANCHORED TO RESIST THE FORCES PRESCRIBED BY SECTION 1630A.2 AND THE ANCHORAGE SHALL BE APPROVED BY THE STRUCTURAL ENGINEER AND OSHPD AS PART OF FIELD REVIEWS/INSPECTIONS. THE SUPPORT AND ANCHORAGE OF SUCH ITEMS IS SUBJECT TO FIELD REVIEW AND APPROVAL EVEN IF THE DETAILS APPEAR ON THIS SET OR APPROVED DRAWINGS. THE INSPECTOR OF RECORD SHALL ASSURE THAT THE ABOVE REQUIREMENTS ARE ENFORCED.

WHEN INSTALLING DRILLED–IN ANCHORS AND/OR POWDER DRIVEN PINS IN EXISTING NON–PRESTRESSED REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. WHEN INSTALLING THEM INTO EXISTING PRESTRESSED CONCRETE (PRE–OR POST–TENSIONED), LOCATE THE PRESTRESSED TENDONS BY USING A NON–DESTRUCTIVE METHOD PRIOR TO INSTALLATION. EXERCISE EXTREME CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE TENDONS DURING INSTALLATION. MAINTAIN A MINIMUM CLEARANCE OF TWO INCHES BETWEEN THE REINFORCEMENT AND THE DRILLED–IN ANCHOR AND/OR PIN. DO NOT USE DRIVEN PINS WHEN STRUCTURE IS OCCUPIED.

MTA 1016.0040

REVISIONS

DATE	DESCRIPTION	REV.
11/21/10	80% CONSTRUCTION	
11/22/10	90% CONSTRUCTION	
01/12/11	100% CONSTRUCTION	

AT&T Project No. CNU0080
AT&T Site Name. MORAGA
AT&T Site City. MORAGA
Trillium Project No. CNU0080
Date 11/21/10
DRAWN JMB
REVIEWED MT

Trillium Telecom Services
5912 Bolsa Ave, Suite 202
Huntington Beach, CA 92649
(714) 799-2000

at&t

AT&T MOBILITY
4430 ROSEWOOD DRIVE
PLEASANTON, CA 94588

SEAL:

REGISTERED ARCHITECT
MARK L. THIEME, RA
NO. C–18,164
REN. 31 MAY 2011
STATE OF CALIFORNIA

CCL0080 / CNU0080 / SF0080

MORAGA

1199 ALTA MESA DR
MORAGA, CA 94556

SHEET TITLE:

NOTES

SHEET NUMBER:

N4

PART 2 – PRODUCTS

2.01 PAINT SYSTEMS:

A. Paint system for ABS Plastic Face of Panel Antenna and/or FRP (Fiberglass Reinforced Plastic) Screens:

1. Primer: As required for adhesion, apply one coat of KEM AQUA One–Part, Water Reducible Primer E61 W525.

2. Top Coat: Two coats of POLANE HS PLUS 2 – Part Polyurethane Enamel, F63 Series matched to color and gloss as desired. Use V66–VB11 Accelerator as needed to speed drying time.

B. Paint system for Galvanized Steel:

1. Primer: One coat of KEM AQUA, one part water reducible wash primer E61–G520.

2. Top Coat: Two coats of POLANE HS PLUS2 – part Polyurethane enamel, F63 series matched to color and gloss as desired. Use V66–VB11 Accelerator as needed to speed drying time.

C. Paint system for B.T.S.:

1. Apply as necessary for hiding 1 – 2 coats POLANE HS PLUS 2–Part Polyurethane Enamel F63 Series matched to color and gloss as desired. Use V66 VB11 Accelerator as needed to speed drying time.

D. Paint system for Roof Striping:

1. Apply 4" stripes at 12" o.c. Sherwin Williams B66Y37 DTM ACRYLIC. Color to be OSHA SAFETY YELLOW. Letters to be 6" high.

E. Paint system for Coax Jumper Cables:

1. Primer: As required for adhesion, apply one coat of Kem Aqua Water Reducible Primer E61W525 reduced 5%.

2. Top Coat: 2 coats Corothane II Polyurethane B65W200/B60V2.

F. Paint system for Raw Steel:

1. Primer: DTM Primer, B66W1.

2. Top coat: 2 coats Corothane II Polyurethane B65W200/B60V2.

G. Paint system for Stainless Steel/Aluminum/Copper:

1. Primer: DTM Wash Primer, B71Y1.

2. Top Coat: 2 coats Corothane II Polyurethane B65W200/B60V2.

H. Paint system for Pre–primed Steel:

1. Primer: Touch up any rust or un–primed steel with Kem Bond HS, B50WZ4.

2. Top Coat: 2 coats Corothane II Polyurethane B65W200/B60V2.

I. Paint system for new CMU:

1. Primer: ProMar Block Filler, B25W25

2. Top Coat: 2 coats A–100 Latex House and Trim (sheen to match existing).

J. Paint system for existing Concrete and Cement Plaster:

1. 2 coats Latex House and Trim (sheen to match existing).

K. Paint system for Wood:

1. Primer: A–100 Alkyd Primer, Y24W20

2. Top Coat: 2 coats A––100 Latex House and Trim (sheen to match existing).

L. Alternate brush and/or roll paint system for A & B, above:

1. Approved spray is the preferred method of application for the paints specified above. This method provides the best overall component coverage and appearance in the least amount of time. However, should the use of spray become impossible to use in certain situations, the following topcoat system may be substituted for POLANE HS PLUS with the approval of the Project Manager.

COROTHANE II 2–Part Polyurethane B65 W200 Series/B60 V2. Note: Use same primer if required for ABS. For galvanized steel, substitute DTM One–part, Water Reducible Wash Primer B71 Y1. Application with brush or roller is less effective than spray.

2.02 CLEANING AGENT:

A. ACETONE, TOLUOL or methyl alcohol solvents.

PART 3 – EXECUTION

3.01 INSPECTION

A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

3.02 PREPARATION:

A. Protection: Prior to surface preparation and painting operations, completely mask, remove, and adequately protect items and surfaces adjacent to work of this contract, but not scheduled to receive paint.

B. ABS Plastic Antenna Housing: Before applying paint lightly scuff sand all surfaces of plastic antenna housing plastic with 400 grit sand paper. Clean all sanded surfaces by wiping down with light application of specified solvent.

C. Galvanized Metal: Solvent clean per SSPC–SP1. If metal has weathered at least six months, apply primer. If metal is new and/or is known to have chromate or silicate treatment, brush blasting per SSPC–SP7 may be required.

D. BTS surface preparation: Before applying paint, sand completely all surfaces of the BTS with 400 grit sand paper. Remove sand dust and lightly wipe down with recommended solvent. MASK LOUVERS ON DOOR TO PROTECT FROM OVER SPRAY.

E. Roof striping preparation: Brush loose roof gravel away from area of stripes and text. Clean area with appropriate cleaner before applying paint.

F. Coax Jumper Cables: Solvent clean per SSPC–SP1. Refer to 2.02 Cleaning Agents.

G. Raw Steel/Stainless Steel/Pre–primed Steel: Hand tool cleaning per SSPC–SP2.

H. Aluminum: Solvent cleaning per SSPC–SP1.

I. Copper: Solvent clean per SSPC–SP1. Refer to 2.02 Cleaning Agents.

J. CMU/Concrete & Cement Plaster: NACE Standard. RP–01–72 Power wash at 2,000 to 2,500 psi at 4–14 gallon per minute.

K. Wood: NACE Standard. RP–01–72 Power wash at 2,000 to 2,500 psi at 4–14 gallon per minute.

L. Caulking and Sealant: Apply caulking and sealant in a uniform and smooth manner in the locations as indicated on the drawings or as required for a complete and finished installation.

M. Correct minor defects and clean surfaces which affect work of this section.

3.03 PROTECTION:

A. Protect elements surrounding the work of this Section from damage or disfigurement.

B. Furnish drop cloths, shields and protective methods to prevent spray or droppings from disfiguring other surfaces.

C. Repair damage to other surfaces caused by work of this Section.

3.04 APPLICATION:

A. Sanding: Lightly sand surfaces, between coats, to produce an even, smooth finish.

B. Application of primers and paints shall be per manufacturer's written instructions.

C. Drying: Allow sufficient drying time between coats. Modify as recommended by manufacturer for existing weather conditions.

D. Environmental Conditions: Comply with manufacturer's recommendations for environmental conditions under which coating systems may be applied.

E. Touch–Up and Refinishing: Runs, sags, misses, holidays, stains and other defects in the painted surfaces, including inadequate coverage and mil thickness shall be satisfactorily touched up, or repainted as directed by Project Manager.

F. Reinstallation of removed items: Upon completion promptly reinstall items removed for painting, using workmen skilled in the particular trade.

3.05 CLEAN–UP:

A. As work proceeds, promptly remove paint where spilled, splashed, or spattered.

B. During progress of work maintain premises free of unnecessary accumulation of tools, equipment, surplus materials and debris.

C. Collect cotton waste, cloths and materials which may constitute a fire hazard, place in closed metal containers and remove daily from the job site.

SECTION 16000
ELECTRICAL

PART 1 – GENERAL

1.01 WORK INCLUDES: Furnishing materials, labor and equipment, required to install electrical work as indicated and as specified herein. The work in general shall consist of, but not be limited to, the following:

A. Provide electrical work, panel feeders, service, conduit and wiring for outlets and equipment.

B. Provide conduit, wire, raceways, and final connections for work specified under other sections of these specifications.

C. Provide telephone conduit with pull rope and Greenlee tape.

D. Provide grounding system as indicated and as specified herein.

E. Provide final connections to Owner–furnished equipment and equipment furnished under other divisions.

1.02 SUBMITTALS: Submit product data in accordance with Section 01300.

PART 2 – PRODUCTS

2.01 OPTION ONE – MODIFY SERVICE ENTRANCE DISTRIBUTION: Provide new service entrance distribution equipment as indicated. Section shall utilize fused switches or circuit breakers as shown on the drawing to match existing system. Branch devices shall be fusible type switches, quick–make, quick–break type, or circuit breaker, IF INDICATED.

2.02 OPTION TWO – Provide new 120/240 volt single phase, 3–wire, outdoor metering pedestal with 100 amp/2–pole service disconnect, 60 amp/2–pole generator disconnect, manual transfer interlock between the two disconnects, distribution circuit breakers, GFCI receptacle, meter socket and surge arrestor per Tesco drawing No. "Belltel", IF INDICATED.

2.03 OPTION THREE: Provide outdoor Tesco Slimline padmount panelboard per Option Two, minus metering and surge arrestor. Nominally 43" high, 12" wide and 8–1/2" deep, Tesco series 23–000, per Tesco drawing "PBMS–BX", IF INDICATED.

2.04 OPTION FOUR: Provide interior or exterior wallmount panelboard similar to Option Two, without metering and surge arrestor. Nominally 12" wide, 8–1/2" deep and 20" tall, NEMA 3R, Tesco 41–000 series, per Tesco drawing "PBMS–CX", IF INDICATED.

2.05 OPTION FIVE: Provide roof–mounted building branch panel with quick–make, quick–break arc quenching type breakers as indicated on drawings. Provide panel with door locks per Pacific Bell's requirements. Provide panel with typewritten circuit directory installed on door, identifying the use of the branch circuit. Tie bars to form two–pole breakers will not be accepted, IF INDICATED.

2.06 MANUFACTURERS: For Options One and Five, electrical equipment as manufactured by General Electric, Square D or approved equal will be acceptable for electrical distribution equipment. Should Tesco be indicated, this shall be the sole source.

2.07 TUBING AND CONDUIT

A. Electric Metallic Tubing: For all wire except in or under concrete, earth, fill, in masonry walls, in concrete walls, or sizes exceeding 2".

B. Rigid Galvanized Steel or IMC: For all wiring above grade exceeding 2" size and for all exposed conduit runs outside the building.

C. All underground conduits not under concrete shall be 24" below grade, unless otherwise noted.

D. Non–metallic Conduit: UL labeled schedule 40 PVC conduit may be used for underground runs. Provide rigid steel or IMC sweep elbows half–lap spiral wrapped with Scotch #51 to an over–all thickness of 40 mils for all bends. All non–metallic conduits shall have bond wire sized per the NEC.

E. Conduit Fittings: Provide watertight compression type conduit fittings for electrical metallic tubing installed in wet location. Malleable iron setscrew fittings may be used in dry locations. Fitting for rigid galvanized steel or IMC shall be threaded.

F. Install pull wire and Greenlee tape in all empty conduits.

G. Conduit bodies for 90 degree transition to be oversized pulling ells, for telephone.

2.08 WIRE AND CABLE

A. Provide soft drawn, annealed copper wire bearing the UL label.

B. Insulation: Provide the following:

1. Type XHHW insulated wire for conductors No. 2 AWG and larger.
2. Type THW or THHN/THWN for all wire smaller than No. 2 AWG.

C. Sizes: Provide no wire smaller than No. 12 AWG for receptacles or other circuits. Provide stranded wire for wire larger than No. 10 AWG.

D. Wire Manufacturers: Anaconda, Rome, General Cable, Southwire.

E. Grounding Conductors: As indicated.

F. Splices: Splices in branch circuits shall occur only where such circuits divide. Joints in wires No. 8 and smaller may be made with "Scotchblock" or "Wire Nut" connectors.

2.09 OUTLET BOXES

A. Provide plaster rings where surface is finished.

B. Four–inch Square or Rectangular Boxes: Galvanized steel as required.

C. Weatherproof for GFCI receptacles where indicated.

D. Junction and Pull Boxes: Provide with screw covers always accessible.

2.10 WIRING DEVICES

A. Weatherproof Receptacles: Hubbell 5352 with 5205 cover plate.

B. Other acceptable manufacturer is Arrow Hart.

2.11 CABLE TRAY

A. All cable tray shall be Aluminum, Ladder type construction, with inside depth of 3 inches, width as indicated, 9 inch rung spacing.

B. Where turns are involved, 24 inch radii shall apply to nominal 7/8" coaxial cable and 36 inch radii shall apply to nominal 1–5/8" coaxial cable. Degree of arc for horizontal elbows shall be 30, 45, 60 and 90 degrees as indicated or to suit application. When fixed elbows do not suffice adjustable horizontal elbows may be used.

C. Vertical elbows of appropriate width of 30, 45, 60 and 90 degrees of arc may be used, inside or outside of application.

D. Cable trays shall comply with NEMA VE–1. Load category shall be 75 pounds per linear foot, support span of 12 feet corresponding to Class Designation of 12B.

E. When run horizontally, cover shall be flat, solid with a flange, constructed of aluminum.

F. Provide and install all straight lengths, fittings, elbows and hardware for a complete and operable system.

G. Manufacturers: T. J. Cope, Inc., Globe Tray, B–line Systems, Chalfont Manufacturing Co., M.P. Husky Corp., P–W Western Inc. and Square D.

PART 3 – EXECUTION

3.01 VERIFICATION: Division 16 Contractor will examine the site and premises and verify existing conditions under which work will be performed, or that which will in any manner affect the work under the contract.

3.02 WORKMANSHIP: Perform work by skilled mechanics in accordance with all ordinances and regulations of State, County, and Municipal authorities, private utility company, and as indicated.

3.03 TUBING AND CONDUIT SIZING: Size tubing and conduit as indicated, and install so that conductors may be drawn in without injury or excessive strain. Tubing and conduit shall be secured to pull boxes, support boxes, and outlet boxes with galvanized locknuts and plastic bushing.

3.04 TUBING AND CONDUIT ROUTING: Run conduit concealed where possible indoors, principally in overhead and wall construction, chases and openings in walls, partitions, and floors. Provide for installation of conduits so as to minimize cutting and patching.

3.05 SUPPORTS: Support conduit not imbedded in concrete firmly. Secure by UL–listed conduit clamps and hangers, with spacing not exceeding values given in NEC determined by size and type conduit or tubing.

3.06 BONDING: Panelboard cabinets, equipment, enclosures, and the complete conduit system shall be bonded securely in accordance with pertinent sections of Article 250 of NEC. Bond electrically operated equipment housings and bond to the grounded conduit systems. Main grounding electrode shall conform to NEC 250–81(C) as indicated. Provide ground loop and ground rods, IF INDICATED.

3.07 DRAW WIRES OR CORDS: Draw No. 10 steel wire or 200 lb. tensile strength pull cord into conduit until conduit system is complete. Use approved pulling lubricant.

3.08 COLOR MARKING: Grounded conductors (neutrals) and grounding conductors (ground wires) shall be color marked per NEC. Color coding for conductor of 208 and 480 volt systems shall be:

120/240 Volt System	120/208 Volt System	480 Volt System
Neutral – White	Neutral – White	
Phase A – Black	Phase A – Black	Phase A – Brown
Phase B – Red	Phase B – Red	Phase B – Yellow
	Phase C – Yellow	Phase C – Purple
Ground – Green	Ground – Green	Ground – Green

3.09 TESTING: Follow "Testing Methods and Procedures: Section 10.0 of PBMS Document SD/0022 titled "PBMS Grounding and Lightning Protection Standard for BTS Sites", to obtain resistance to ground of 5 ohms or less. Alternatively, provide for an independent testing company such as Electrotest or Power Systems Testing to verify resistance to ground indicated on drawings is complied with. Should this value not be reached, provide and install additional ground rods or electrodes and conductors as needed to achieve proper value of resistance to ground.

Independent testing company to perform insulation resistance tests for that part of the system installed in this contract. Tests comply with requirements of International Electrical Testing Association, "Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems", for low voltage (600 volts maximum) cables. Cables that fail this test shall be replaced by Division 16 and retested.

SPECIAL REQUIREMENTS

ATTACHMENTS OF EQUIPMENT WEIGHING LESS THAN 400# AND SUPPORTED ON THE FLOOR OR ROOF STRUCTURE, FURNITURE OR TEMPORARY OR MOVABLE EQUIPMENT AND EQUIPMENT WEIGHING LESS THAN 20 POUNDS THAT IS SUPPORTED BY VIBRATION ISOLATION DEVICES OR SUSPENDED FROM THE ROOF, WALL OR FLOOR NEED NOT BE DETAILED ON THE PLANS. (CCR TITLE 24 PART 2 SECTION 1630A.1, EXCEPTION). HOWEVER, SUCH EQUIPMENT MUST BE SUPPORTED AND ANCHORED TO RESIST THE FORCES PRESCRIBED BY SECTION 1630A.2 AND THE ANCHORAGE SHALL BE APPROVED BY THE STRUCTURAL ENGINEER AND OSHPD AS PART OF FIELD REVIEWS/INSPECTIONS. THE SUPPORT AND ANCHORAGE OF SUCH ITEMS IS SUBJECT TO FIELD REVIEW AND APPROVAL EVEN IF THE DETAILS APPEAR ON THIS SET OR APPROVED DRAWINGS. THE INSPECTOR OF RECORD SHALL ASSURE THAT THE ABOVE REQUIREMENTS ARE ENFORCED.

WHEN INSTALLING DRILLED–IN ANCHORS AND/OR POWDER DRIVEN PINS IN EXISTING NON–PRESTRESSED REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. WHEN INSTALLING THEM INTO EXISTING PRESTRESSED CONCRETE (PRE–OR POST–TENSIONED), LOCATE THE PRESTRESSED TENDONS BY USING A NON–DESTRUCTIVE METHOD PRIOR TO INSTALLATION. EXERCISE EXTREME CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE TENDONS DURING INSTALLATION. MAINTAIN A MINIMUM CLEARANCE OF TWO INCHES BETWEEN THE REINFORCEMENT AND THE DRILLED–IN ANCHOR AND/OR PIN. DO NOT USE DRIVEN PINS WHEN STRUCTURE IS OCCUPIED.

MTA 1016.0040

REVISIONS

DATE	DESCRIPTION	REV.
11/21/10	80% CONSTRUCTION	
11/22/10	90% CONSTRUCTION	
01/12/11	100% CONSTRUCTION	

AT&T Project No. CNU0080
AT&T Site Name. MORAGA
AT&T Site City. MORAGA
Trillium Project No. CNU0080
Date 11/21/10
DRAWN JMB
REVIEWED MT

Trillium Telecom Services
5912 Bolsa Ave, Suite 202
Huntington Beach, CA 92649
(714) 799-2000

at&t
AT&T MOBILITY
4430 ROSEWOOD DRIVE
PLEASANTON, CA 94588

SEAL:

REGISTERED ARCHITECT
MARK L. THIEME, RA
NO. C–18,164
REN. 31 MAY 2011
STATE OF CALIFORNIA

CCL0080 / CNU0080 / SF0080

MORAGA

1199 ALTA MESA DR
MORAGA, CA 94556

SHEET TITLE:

NOTES

SHEET NUMBER:

N5