PROJECT INFORMATION

APPLICANT/LEASSEE:	
NAME:	AT&T MOBILITY
ADDRESS:	1801 VALLEY VIEW LANE
CITY, STATE, ZIP:	FARMERS BRANCH, TX 75234
CONTACT:	
PHONE:	
TOWER OWNER:	
NAME:	CITY OF UNIVERSITY PARK
ADDRESS:	
CITY, STATE, ZIP:	
CONTACT:	
PHONE:	
PROPERTY OWNER:	
NAME:	CITY OF UNIVERSITY PARK
ADDRESS:	
CITY, STATE, ZIP:	
CONTACT:	
PHONE:	
SCOPE OF WORK:	COLOCATION ON EXISTING WATER TOWER
LATITUDE:	32° 51' 54.22" (NAD83)
LONGITUDE:	-96° 47' 25.00" (NAD83)
AMSL:	613' (NAD88)
JURISDICTION:	CITY OF UNIVERSITY PARK
TELEPHONE CO.:	UNKNOWN
POWER CO.:	UNKNOWN

DRIVING DIRECTIONS

DEPART 1801 VALLEY VIEW LN, DALLAS, TX 75234 [1801 VALLEY VIEW LN, DALLAS, TX 75234]
ON VALLEY VIEW LN (SOUTH-WEST)0.3 MI
TURN LEFT (SOUTH) ONTO LUNA RD0.9 MI
TURN LEFT (EAST) ONTO LYNDON B JOHNSON FWY [I-635 E]76 YDS
MERGE ONTO LYNDON B JOHNSON FWY [FOREST LN]142 YDS
TAKE RAMP (LEFT) ONTO I-635 [LBJ FWY]5.3 MI-635 E / I-35E
AT EXIT 220, TURN RIGHT ONTO RAMP0.3 MIDALLAS NORTH TOLLWAY SOUTH / DALLAS PKWY
KEEP LEFT TO STAY ON RAMP0.3 MIDALLAS NORTH TOLLWAY SOUTH
TOLL ROAD* MERGE ONTO DALLAS NORTH TOLLWAY3.8 MI
KEEP LEFT ONTO RAMP0.3 MISR-12 LOOP / NW HWY
KEEP STRAIGHT ONTO LOCAL ROAD(S)21 YDS
TURN LEFT (EAST) ONTO SR-12 LOOP [W NORTHWEST HWY]1.1 MI
TURN RIGHT (SOUTH) ONTO THACKERY ST, THEN IMMEDIATELY TURN LEFT (EAST) ONTO NORTHWEST PKWY0.1 MI
TURN RIGHT (SOUTH) ONTO LOCAL ROAD(S)32 YDS
ARRIVE 32.86506°N 96.79028°W

at&t

1801 VALLEY VIEW LANE
FARMERS BRANCH, TX 75234

SITE NAME

UNIVERSITY PARK WATER TOWER

SITE ADDRESS

3533 E. NORTHWEST PKWY
DALLAS, TX 75225
(DALLAS COUNTY)

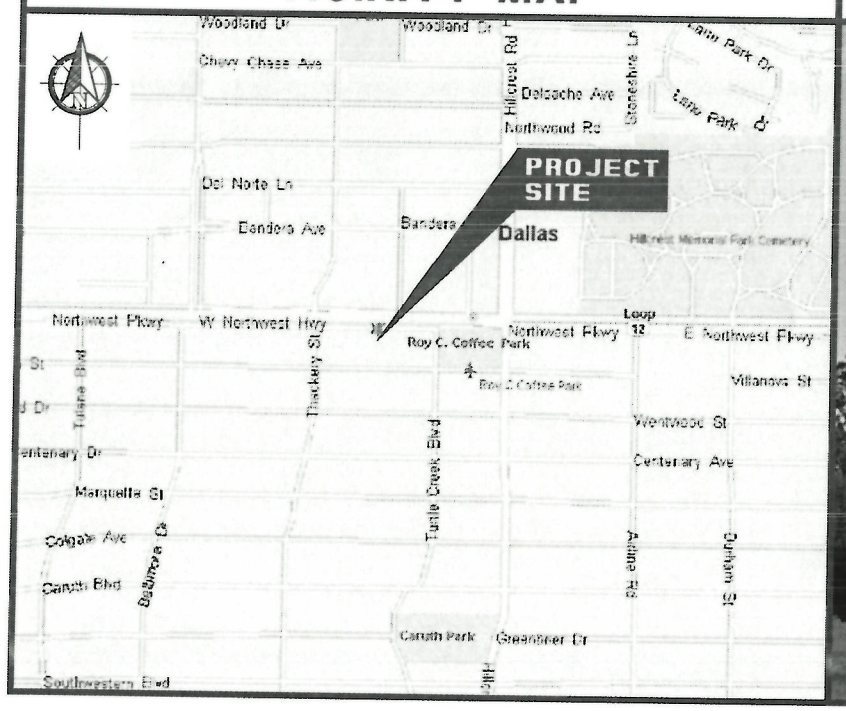
APPROVALS

AT&T CONSTRUCTION MGR.	AT&T ENGINEER
AT&T CONSTRUCTION MGR.	CONTRACTOR
PROPERTY OWNER	CONTRACTOR

SHEET INDEX

NO.	DESCRIPTION	REV
T01	TITLE SHEET	2
N01	GENERAL NOTES	2
C01	OVERALL SITE PLAN	0
C02	DETAIL SITE PLAN	1
C03.0	ELEVATION / ANTENNA ORIENTATION	2
C03.1	ANTENNA CONFIGURATION	0
C04	DETAILS	0
C05	DETAILS	2
E01	ELECTRICAL SITE PLAN	0
E02	ELECTRICAL RISER DIAGRAM	0
E03	ELECTRICAL GROUNDING PLAN	0
E04	ELECTRICAL DETAILS	0
E05	ELECTRICAL DETAILS	0
E06	ELECTRICAL SPECIFICATIONS	0

VICINITY MAP



SITE PHOTO

DESIGN TEAM

ENGINEER:	
NAME:	THE CELERIS GROUP, INC.
ADDRESS:	2000 E. LAMAR BLVD., STE. 550
CITY, STATE, ZIP:	ARLINGTON, TX 76006
CONTACT:	MARK STAPLETON
PHONE:	817-446-1700

STATE OF TEXAS
ZHENJING GUO
84667
LICENSED
PROFESSIONAL ENGINEER
8/21/2017

BUILDING CODES

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AND RELATED AMENDMENTS AS ADOPTED BY THE CITY:

1. CURRENT ADA AND TAS REQUIREMENTS
2. 2015 IBC
3. 2012 IPC
4. 2006 IFC
5. 2012 IECC
6. 2012 IMC
7. 2014 NEC

IF YOU DIG IN ANY STATE DIAL 811 FOR THE LOCAL "ONE CALL CENTER" IT'S THE LAW

THE UTILITIES SHOWN HEREIN ARE FOR THE CONTRACTORS CONVENIENCE ONLY. THERE MAY BE OTHER UTILITIES NOT SHOWN ON THESE PLANS. THE ENGINEER/SURVEYOR ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS SHOWN AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL THE UTILITIES WITHIN THE LIMITS OF THE WORK. ALL DAMAGE MADE TO THE EXISTING UTILITIES BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

REVISIONS	DATE
0 ISSUED FOR CONSTRUCTION	08/03/17
1 ISSUED FOR CONSTRUCTION	08/14/17
2 ISSUED FOR CONSTRUCTION	08/21/17

CELERIS PROJECT NO.: 16-8534

CELERIS GROUP
CONSULTING ENGINEERS
2000 E. Lamar Blvd., Suite 550
Arlington, TX 76006
Office: 817.446.1700
Fax: 817.460.0677
TX Firm Reg. # F-13992

CELT - 1203-2013

at&t
1801 VALLEY VIEW LANE
FARMERS BRANCH, TX 75234

SITE NAME
UNIVERSITY PARK
WATER TOWER

DRAWN BY: KDR
CHECKED BY: ZG
DATE: 08/21/17
PLOT SCALE: 1:2
DRAWING NAME: TITLE SHEET
SHEET No.: T01

1. GENERAL REQUIREMENTS

A. PURPOSE AND INTENT

1. THE DRAWING AND SPECIFICATIONS ARE INTENDED TO BE FULLY EXPLANATORY AND SUPPLEMENTARY. HOWEVER, SHOULD ANYTHING BE SHOWN, INDICATED, OR SPECIFIED ON ONE AND NOT THE OTHER, IT SHALL BE DONE THE SAME AS IF SHOWN, INDICATED, OR SPECIFIED IN BOTH. SHOULD THERE BE ANY DISCREPANCIES BETWEEN REQUIREMENTS SHOWN IN BOTH, THE MORE STRINGENT REQUIREMENTS SHALL APPLY.

2. THE INTENTION OF THE DOCUMENTS IS TO INCLUDE ALL LABOR AND MATERIALS REASONABLY NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK AS STIPULATED IN THE CONTRACT.

B CONFLICTS

1. VERIFY ALL MEASUREMENTS AT THE SITE BEFORE ORDERING MATERIAL OR DOING ANY WORK. NO EXTRA CHARGE OR COMPENSATION WILL BE ALLOWED DUE TO DIFFERENCES BETWEEN ACTUAL DIMENSIONS OR DIMENSIONS SHOWN ON PLANS. SUBMIT NOTICE OF ANY DISCREPANCY IN DIMENSIONS OR OTHERWISE TO AT&T FOR RESOLUTION BEFORE PROCEEDING WITH THE WORK.

2. NO PLEA OF IGNORANCE OF CONDITIONS THAT EXIST, OR OF DIFFICULTIES OF CONDITIONS THAT MAY BE ENCOUNTERED, OR OF ANY OTHER RELEVANT MATTER CONCERNING 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 OF THE CONSTRUCTION DOCUMENTS GOVERNING THE WORK.

C. CLEANING

1. KEEP THE SITE FREE FROM ACCUMULATION OF WASTE AND RUBBISH CAUSED BY EMPLOYEES AT THE COMPLETION OF THE WORK, REMOVE ALL WASTE AND NON-CONSTUCTION MATERIAL, INCLUDING ALL CONTRACTOR TOOLS, SCAFFOLDING, AND SURPLUS MATERIAL AND LEAVE SITE CLEAN AND READY FOR USE.

D CODES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR FOLLOWING ALL LAWS, REGULATIONS, AND RULES PROMULGATED BY FEDERAL STATE AND LOCAL AUTHORITIES WITH JURISDICTION OVER THE SALTIER THIS RESPONSIBILITY IS IN EFFECT REGARDLESS OF WEATHER THE LAW, ORDINANCE, REGULATION OR RULE IS MENTIONED IN THESE SPECIFICATIONS.

E. UCENSING

CONTRACTOR SHALL HAVE AND MAINTAIN A VALID CONTRACTOR'S LICENSE FOR THE LOCATION IN WHICH THE WORK IS TO BE PERFORMED. FOR JURISDICTIONS THAT LICENSE INDIVIDUAL TRADES, THE TRADESMAN OR SUBCONTRACTOR PERFORMING THOSE TRADES SHALL BE LICENSED RESEARCH AND COMPLY WITH THE LICENSING LAWS, PAY LICENSE FEES, AND SELECT AND INFORM SUBCONTRACTORS REGARDING THESE LAWS.

F. OSHA

FOLLOW ALL APPLICABLE RULES AND REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATIONS AND STATE LAWS BASED IN 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 AT ALL TIMES DURING CONSTRUCTION.

G PHOTOS

PROVIDE PHOTOGRAPHIC EVIDENCE OF ALL FOUNDATION INSTALLATION, GROUNDING, AND TRENCHING AFTER PLACEMENT OF UTILITIES PRIOR TO BACKFILL.

H. BUILDING PERMITS

1. CONTRACTOR WILL SUBMIT CONSTRUCTION DOCUMENTS TO THE JURISDICTIONAL AUTHORITY FOR PLAN CHECK AND REVIEW. CONTRACTOR WILL SUBMIT LICENSING AND WORKMAN'S COMPENSATION INFORMATION TO THE JURISDICTION AS REQUIRED TO OBTAIN THE BUILDING PERMIT. CONTRACTOR SHALL COORDINATE AND SCHEDULE REQUIRED INSPECTIONS AND POST REQUIRED PERMITS AT THE JOB SITE. COMPLY WITH SPECIFIC PROJECT.RELATIED REQUESTS AND SUGGESTION MADE BY BUILDING INSPECTOR, AND INFORM CONSTRUCTION MANAGER OF ANY SUCH WORK THAT MAY BE BEYOND THE SCOPE OF THE CONTRACT OR DEVIATE FROM THE CONSTRUCTION DOCUMENTS. AT&T WILL REIMBURSE THE CONTRACTOR FOR FEES, FOR PLAN REVIEW, BUILDING PERMIT CONNECTIONS, AND INSPECTION. (INCLUDED IN THE BASE PROPOSAL)

I. ZONING REGULATIONS AND CONDITIONAL USE PERMITS

1. CONTRACTOR 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 CONSTRUCTION MANAGER WILL INFORM THE CONTRACTOR OF THESE REQUIREMENTS AT THE PRE-BID MEETING OR AS SHOWN IN THE CONSTRUCTION DOCUMENTS.

J. FAA PERMIT AND TOWER LIGHTING

1. REFER TO CONSTRUCTION DOCUMENTS AND CONSTRUCTION MANAGER FOR FAA AND STATE LIGHTING REQUIREMENTS. CONTRACTOR SHALL PROVIDE TEMPORARY FM APPROVED LIGHTING UNTIL PERMANENT LIGHTING IS OPERATIONAL.

K. TOWER SECURITY

1. IF REQUIRED, TOWER MUST BE FENCED, TEMPORARILY OR PERMANENTLY WITHIN 24 HOURS OF ERECTION. DO NOT ALLOW THE GATE ACCESSING THE TOWER AREA TO REMAIN OPEN OR UNATTENDED ANY TIME FOR ANY REASON. KEEP THE GATE CLOSED AND LOCKED WHEN NOT IN USE.

L. SITE CONTROL

1. THE CONTRACTOR IS COMPLETELY RESPONSIBLE FOR CONTAINMENT OF SEDIMENT AND CONTROL OF EROSION AT THE SITE. ANY DAMAGE TO ADJACENT OR DOWNSTREAM PROPERTIES WILL BE CORRECTED BY THE CONTRACTOR AT NO EXPENSE TO AT&T.

2. THE CONTRACTOR IS TO MAINTAIN ADEQUATE DRAINAGE AT ALL TIMES. DO NOT ALLOW WATER TO STAND OR POND. ANY DAMAGE TO STRUCTURES OR WORK ON THE SITE CAUSED BY INADEQUATE MAINTENANCE OF DRAINAGE PROVISIONS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND ANY COST ASSOCIATED WITH REPAIRS FOR SUCH DAMAGE WILL BE AT THE CONTRACTOR'S EXPENSE.

3. ALL WASTE MATERIAL SHALL BE PROPERLY DISPOSED OF OFF-SITE OR AS DIRECTED BY THE CONSTRUCTION MANAGER AND IN ACCORDANCE WITH JURISDICTIONAL AUTHORITIES.

M. LIVESTOCK PROTECTION

1. PROTECT AND SECURE LIVESTOCK. MAINTAIN AND SECURE EXISTING PERIMETER FENCING AND OR GATED ENCLOSURES.

2. SITE PREPARATION

A. SCOPE OF WORK INCLUDES

1. PROTECTION OF EXISTING TREES, VEGETATION AND LANDSCAPING MATERIALS WHICH MIGHT BE DAMAGED BY CONSTRUCTION ACTIVITIES

2. TRIMMING OF EXISTING TREES AND VEGETATION AS REQUIRED FOR PROTECTION DURING CONSTRUCTION ACTIVITIES.

3. CLEARING AND GRUBBING OF STUMPS, VEGETATION, DEBRIS, RUBBISH, DESIGNATED TREES AND SITE IMPROVEMENTS.

4. TOPSOIL STRIPPING AND STOCKPILING.

5. TEMPORARY EROSION CONTROL, SILTATION CONTROL, AND DUST CONTROL CONFORMING TO LOCAL REQUIREMENTS AS APPLICABLE.

6. TEMPORARY PROTECTION OF ADJACENT PROPERTY, STRUCTURES, BENCHMARKS, AND MONUMENTS.

7. PROTECTION AND TEMPORARY RELOCATION, STORAGE AND RE-INSTALIATION OF EXISTING FENCING AND OTHER SITE IMPROVEMENTS SCHEDULED FOR REUSE.

8. REMOVAL AND LEGAL DISPOSAL OF CLEARED MATERIALS.

B. PRODUCTS AND MATERIALS (AS APPROVED BY CONSTRUCTION MANAGER OR AS NOTED IN CONSTRUCTION DOCUMENTS.)

1. MATERIALS USED FOR TREE PROTECTION, EROSION CONTROL, SILTATION CONTROL, AND DUST CONTROL

3. EARTHWORK

A. SCOPE OF WORK INCLUDES

1. EXCAVATION, TRENCHING, FILLING, COMPACTION, AND GRADING FOR STRUCTURES, SITE IMPROVEMENTS AND UTILITIES

2. MATERIALS FOR SUB-BASE, DRAINAGE, BACKFILL AND GRAVEL FOR SLABS, PAVEMENTS AND IMPROVEMENTS.

3. ROCK EXCAVATION WITHOUT BLASTING.

4. SUPPLY OF ADDITIONAL MATERIALS FROM OFFSITE AS REQUIRED.

5. REMOVAL AND LEGAL DISPOSAL OF EXCAVATED MATERIALS AS REQUIRED.

B. QUALITY ASSURANCE

1. COMPACTION:

   A. UNDER STRUCTURES, BUILDING SLABS, PAVEMENTS AND WALKWAYS WILL OBTAIN A 95 PERCENT COMPACTION AT A MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557 OR WITHIN PLUS OR MINUS 3 PERCENT OF OPTIMUM MOISTURE CONTENT.

2. GRADING TOLERANCES OUTSIDE BUILDING LINES:

   A. LAWNS, UNPAVED AREAS AND WALKS PLUS OR MINUS 1 INCH

   B. UNDER PAVEMENTS, PLUS OR MINUS 1/2 INCH.

3. GRADING TOLERANCES FOR FILL UNDER ALL CONCRETE APPLICATIONS:

   A. PLUS OR MINUS 1/2 INCH MEASURED WITH 10 FOOT STRAIGHTEDGE.

C. PRODUCTS AND MATERIALS (AS APPROVED BY CONSTRUCTION MANAGER OR AS NOTED IN CONSTRUCTION DOCUMENTS.)

1. SUB-BASE MATERIAL: GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE OR SLAG, AND NATURAL SAND.

2. WASHED MATERIAL, EVENLY GRADED MIXTURE OF CRUSHED STONE OR GRAVEL WITH 95 PERCENT PASSING A 1-1/2 INCH SIEVE.

3. GRADING MATERIAL WILL CONSIST OF SATISFACTORY NATIVE OR IMPORTED SOIL MATERIALS FREE OF CLAY, ROCK OR GRAVEL NOT LARGER THAN 2 INCHES IN ANY DIMENSION. DEBRIS, WASTE, FROZEN MATERIALS AND OTHER UNSUITABLE MATERIALS WILL NOT BE ALLOWED FOR USE. IMPORTED MATERIALS SHALL HAVE A CLAY CONTENT NO MORE THAN 5 PERCENT.

4. GRAVEL MATERIAL: EVENLY GRADED MIXTURE OF CRUSHED STONE OR GRAVEL WITH 95 PERCENT PASSING A 1-1/2 INCH SIEVE.

5. GEOTEXTILE FABRIC. AS PER CONSTRUCTION DOCUMENTS.

D. CLEARING AND GRUBBING

1. REMOVE ALL VEGETATION AND MATERIALS AS REQUIRED. REMOVE STUMPS COMPLETELY UNDER FOUNDATIONS AND ROADWAY. DISPOSE OF CLEARING AND GRUBBING OFF-SITE OR IN AN ON-SITE LOCATION APPROVED BY CONSTRUCTION MANAGER.

E STRIPPING

1. STRIP NOT LESS THAN 3 INCHES OF SOD AND TOPSOIL FROM AREAS THAT WILL UNDERLAY GRAVEL, PAVEMENT, NEW STRUCTURES OR NEW EMBANKMENTS. STOCKPILE STRIPPING ON-SITE FOR RE-USE IN FINAL LANDSCAPING.

F. COMMON EXCAVATION

1. EXCAVATE TO DEPTH, LINES AND GRADES SHOWN ON THE PLANS OR AS OTHERWISE SPECIFIED

2. TEMPORARILY STOCKPILE ON-SITE EXCAVATION AT AN APPROVED LOCATION WITHIN THE WORK AREA UNTIL SITE GRADING IS COMPLETE. STOCKPILE SHALL NOT EXCEED 15 FEET IN HEIGHT.

3. LEGALLY DISPOSE OF EXCESS COMMON EXCAVATION OFF-SITE.

G. EMBANKMENT

1. CONSTRUCT EMBANKMENT TO THE LINES AND GRADE SHOWN ON THE DRAWINGS.

2. CONSTRUCT EMBANKMENT FROM ON-SITE EXCAVATION MATERIALS WHEN SUITABLE. USE IMPORTED BACKFILL ONLY AFTER AVAILABLE ON-SITE EXCAVATION MATERIALS HAVE BEEN USED.

3. CONSTRUCT IN LIFTS OF NOT MORE THAN 12 INCHES IN LOOSE DEPTH. THE FULL WIDTH OF THE CROSS SECTION SHALL BE BROUGHT UP UNIFORMLY.

4. 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. SUCH OPERATIONS SHALL BE INCLUDED IN THE APPROPRIATE BID ITEM. SHOULD THE MATERIAL BE TO WET TO PERMIT PROPER COMPACTION, IT IS THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE MATERIAL WITH AN ACCEPTABLE MOISTURE CONTENT.

5. DO NOT PLACE FROZEN MATERIAL IN THE EMBANKMENT AND DO NOT PLACE EMBANKMENT MATERIAL UPON FROZEN MATERIAL.

6. CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF EMBANKMENTS AND THE REPLACEMENT OF ANY PORTION WHICH HAS BECOME DISPLACED DUE TO THE CONTRACTOR'S OPERATIONS.

7. START LAYERS IN THE DEEPEST PORTION OF THE FILL AND AS PLACEMENT PROGRESSES, CONSTRUCT LAYERS APPROXIMATELY PARALLEL TO THE FINISHED GRADE LINE.

8. ROUTE EQUIPMENT, BOTH LOADED AND EMPTY, OVER THE FULL WIDTH OF EMBANKMENT TO ENSURE UNIFORMITY OF MATERIAL PLACEMENT.

9. COMPACT EMBANKMENT UNDERLYING NEW GRAVEL PAVING, FLOOR SLABS AND STRUCTURES TO A 95 PERCENT COMPACTION AT A MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557 OR WITHIN PLUS OR MINUS 3 PERCENT OF OPTIMUM MOISTURE CONTENT. COMPACT NON-STRUCTURAL AREA EMBANKMENTS TO A MINIMUM OF 90 PERCENT OF ASTM D-1557.

H. SITE GRADING

1. USING ON-SITE 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 CONSTRUCTION MANAGER.

2. GRADE SURFACES TO DRAIN AND ELIMINATE ANY PONDING OR EROSION

3. ELIMINATE WHEEL RUTS BY REGRADING.

4. COMPACT AREAS OF UNDERLYING NEW GRAVEL, PAVING, FLOOR SLABS AND STRUCTURES TO A 95 PERCENT COMPACTION AT A MAXIMUM DRY DENSITY AS DETERMINED BY THE ASTM D-1557 OR WITHIN PLUS OR MINUS 3 PERCENT OF OPTIMUM MOISTURE CONTENT.

5. CONSTRUCT FINISHED SURFACE OF SITE GRADING AREAS WITHIN ONE INCH FROM SPECIFIED GRADE

I. SUBGRADE PREPARATION

1. SHAPE TOP OF SUBGRADE TO THE LINES AND GRADES SHOWN ON THE DRAWINGS.

2. MAINTAIN TOP OF SUBGRADE IN A FREE-DRAINING CONDITION.

3. DO NOT STOCKPILE MATERIALS ON TOP OF SUBGRADE UNLESS AUTHORIZED BY CONSTRUCTION MANAGER.

4. COMPACT THE TOP 12 INCHES OF SUBGRADE TO A 95 PERCENT COMPACTION AT A MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557 OR WITHIN PLUS OR MINUS 3 PERCENT OF THE OPTIMUM MOISTURE CONTENT

5. CONSTRUCT TOP OF SUBGRADE WITHIN ONE INCH OF ESTABLISHED GRADE AND CROSS-SECTION.

J GEOTEXTILE FABRIC

1. LAY GEOTEXTILE FABRIC OVER COMPACTED SUBGRADE IN THE COMPOUND AREA AND UNDER LENGTH OF ROAD (WHEN REQUIRED). LAP ALL JOINTS TO A MINIMUM OF 36 INCHES.

K. GRAVEL SURFACING

1. CONSTRUCT GRAVEL SURFACING AREAS USING CRUSHED AGGREGATE BASE AND FINISH COURSES AS SPECIFIED BY CONSTRUCTION MANAGER. SPREAD GRAVEL AND RAKE TO OBTAIN A UNIFORM SURFACE AREA

L. LANDSCAPING

1. FURNISH, INSTALL AND MAINTAIN LANDSCAPE WORK AS SHOWN AND OR REQUIRED WITHIN THE CONSTRUCTION DOCUMENTS OR AS SPECIFIED IN THE CONSTRUCTION SPECIFICATIONS.

M. CONCRETE FORM WORK

1. FORMS: SMOOTH AND FREE OF SURFACE IRREGULARITIES. UTILIZE FORM RELEASE AGENTS.
2. CHAMFER EXPOSED EDGES OF ALL TOWER FOUNDATION SHALL RECEIVE A 3/4" X 3/4" 45 DEGREE CHAMFER. OTHER EXPOSED EDGES SHALL RECEIVE A TOOLED RADIUS FINISH.
3. UPON COMPLETION, REMOVE ALL FORMS INCLUDING THOSE CONCEALED OR BURIED.
4. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL REQUIREMENTS

5. GENERAL NOTES:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL PLAN SHEETS AND SPECIFICATIONS AND COORDINATE HIS WORK WITH THE WORK OF ALL OTHER CONTRACTORS TO ENSURE THAT WORK PROGRESSION IS NOT INTERRUPTED.
2. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING A NEAT AND ORDERLY SITE. YARD AND GROUNDS CONTRACTOR SHALL REMOVE AND DISPOSE OFF SITE ALL RUBBISH, WASTE MATERIALS, LITTER AND ALL FOREIGN SUBSTANCES. REMOVE PETROCHEMICAL SPILLS, STAINS AND OTHER FOREIGN DEPOSITS. RAKE GROUNDS TO A SMOOTH EVEN-TEXTURED SURFACE.
3. THE PLANS SHOW SOME KNOW SUBSURFACE STRUCTURES ABOVE GROUND STRUCTURES AND/OR UTILITIES BELIEVED TO EXIST IN THE WORKING AREA. EXACT LOCATION OF WHICH MAY VARY FROM THE LOCATIONS INDICATED, IN PARTICULAR, THE CONTRACTOR IS WARNED THAT THE EXACT OR EVEN APPROXIMATE LOCATIONS OF SUCH PIPELINES, SUBSURFACE STRUCTURES AND/OR UTILITIES IN THE AREA MAY BE SHOWN OR MAY NOT BE SHOWN AND IT SHALL BE HIS RESPONSIBILITY TO PROCEED WITH GREAT CARE IN EXCAVATION ANY WORK. 48 HOURS BEFORE YOU DIG, DRILL OR BLAST CALL LOCAL UTILITY LOCATOR COMPANY.
4. THE OWNER OR OWNER'S REPRESENTATIVE SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT THE EXPRESSED APPROVAL OF THE OWNER OR THE OWNER'S REPRESENTATIVE.
5. THE CONTRACTOR IS INSTRUCTED TO COOPERATE WITH ANY AND ALL OTHER CONTRACTORS PERFORMING WORK ON THIS JOB SITE DURING THE PERFORMANCE OF THIS CONTRACT
6. THE CONTRACTOR SHALL RESTORE ALL DAMAGED, PUBLIC OR PRIVATE, PROPERTY TO AT LEAST AS GOOD OF CONDITION AS BEFORE DISTURBED AS DETERMINED BY THE OWNER OR OWNER'S REPRESENTATIVE
7. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIRED PERMITS.
8. THE CONTRACTOR SHALL PROTECT EXISTING PROPERTY LINE MONUMENTATION ANY MONUMENTATION DISTURBED OR DESTROYED, AS JUDGED BY THE OWNER OR OWNER'S REPRESENTATIVE SHALL BE REPLACED.
9. ALL TRENCH EXCAVATION AND ANY REQUIRED SHEETING AND SHORING SHALL BE DONE IN ACCORDANCE WITH OSHA REGULATIONS FOR CONSTRUCTION.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING AND THE MAINTENANCE OF SURFACE DRAINAGE DURING THE COURSE OF WORK.
11. ALL UTILITY WORK INVOLVING CONNECTIONS TO EXISTING SYSTEMS SHALL BE COORDINATED WITH THE OWNER OR OWNER'S REPRESENTATIVE AND THE UTILITY OWNER BEFORE EACH AND EVERY CONNECTION TO EXISTING SYSTEMS IS MADE.
12. MAINTAIN FLOW FOR ALL EXISTING UTILITIES.
13. ALL SITE FILL SHALL MEET SELECTED FILL STANDARDS AS DEFINED BY THE OWNER OR OWNER'S REPRESENTATIVE ON THE DRAWINGS OR GEOTECHNICAL REPORT RECOMMENDATIONS
14. CONTRACTOR TO GRADE ALL AREAS OF THE SITE TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE BUILDING OR EQUIPMENT PAD AND THE TOWER.
15. IF NECESSARY, THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING AND REGRADING ROADWAY AND ANY DISTURBED AREAS FOLLOWING INSTALLATION OF UTILITIES.
16. NO COMMERCIAL MESSAGES TO BE DISPLAYED ON TOWER
17. WATER AND SEWER SERVICES ARE NOT REQUIRED FOR THIS DEVELOPMENT
18. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIALS UNLESS NOTED.
19. THE CONTRACTOR SHALL FURNISH SANITARY FACILITIES FOR PERSONNEL DURING CONSTRUCTION.
20. ALL PEDESTAL PENETRATIONS SHALL BE APPROVED PRIOR TO CUTTING / DRILLING BY THE TANK MANUF. LANDMARK STRUCTURES 8177-439-8888
21. ALL PENETRATIONS SHALL BE PERMANENTLY SEALED FOLLOWING CABLE INSTALLATION TO PREVENT BUGS AND VERMIN FROM ENTERING THE TOWER.
22. ALL CABLES SHALL BE LABELED AT ENTRY AND EXIT POINTS ON THE PEDESTAL, LABEL TO BE PERMANENT.
23. ALL CABLES SHALL BE RUN PARALLEL AND PLUMB TO STRUCTURAL MEMBERS
24. CABLES AND EQUIP. MAY NOT BE ATTACHED TO LADDERS, STANDOFFS, HANDRAILS, PIPING RUNS WALKWAYS OR OTHER WATER TOWER FACILITIES.
25. GROUNDING BUS FOR CELLULAR EQUIP. SHALL NOT BE ATTACHED TO TOWER GROUND LOOP OR ANY EXPOSED TOWER STEEL.

2

STATE OF TEXAS
ZHENJING GUO
84667
LICENSED
PROFESSIONAL ENGINEER
8/21/2017

REVISIONS		DATE
0	ISSUED FOR CONSTRUCTION	08/03/17
1	ISSUED FOR CONSTRUCTION	08/14/17
2	ISSUED FOR CONSTRUCTION	08/21/17

CELERIS PROJECT NO.: 16-8534

CELERIS GROUP
CONSULTING ENGINEERS
2000 E. Lamar Blvd., Suite 550
Arlington, TX 76006
Office: 817.446.1700
Fax: 817.460.0677
TX Firm Reg. # F-13992

at&t
1801 VALLEY VIEW LANE
FARMERS BRANCH, TX 75234

SITE NAME
UNIVERSITY PARK
WATER TOWER

DRAWN BY:	KDR
CHECKED BY:	ZG
DATE	08/21/17
PLOT SCALE	1:2
DRAWING NAME	GENERAL NOTES
SHEET No.	N01

N MN
3°43' E
NORTH

WEST NORTHWEST HWY

WEST NORTHWEST HWY

(E) WATER TOWER

(N) AT&T EQUIPMENT CABINETS

(E) WATER TOWER ACCESS DRIVE

1 OVERALL SITE PLAN
SCALE: (34" X 22") 1"=30'-0"
SCALE: (17" X 11") 1"=60'-0"

SCALE (FEET)
0 30 60 90 120

STATE OF TEXAS
ZHENJING GUO
84667
LICENSED
PROFESSIONAL ENGINEER
8/3/2017

REVISIONS	DATE
0 ISSUED FOR CONSTRUCTION	08/03/17

CELERIS PROJECT NO.: 16-8534

CELERIS GROUP
CONSULTING ENGINEERS
2000 E. Lamar Blvd., Suite 550
Arlington, TX 76006
Office: 817.446.1700
Fax: 817.460.0677
TX Firm Reg. # F-13992

at&t
1801 VALLEY VIEW LANE
FARMERS BRANCH, TX 75234

SITE NAME
UNIVERSITY PARK
WATER TOWER

DRAWN BY:	KDR
CHECKED BY:	ZG
DATE	08/03/17
PLOT SCALE	1:2
DRAWING NAME	OVERALL SITE PLAN
SHEET No.	C01

N MN
3°43' E
NORTH

(E) WATER TOWER PEDESTAL WALL

(N) U/G CONDUIT ROUTING FROM EQUIPMENT TO TOWER BASE

(N) POWER CABINET ON 3'X3' PRECAST CONC. PAD

(N) 10' LONG UTILITY RACK FOR (N) EQUIPMENT

(2) NEW PURCELL CABINETS ON (N) UTILITY RACK

(2) NEW HOFFMAN BOXES ON (N) UTILITY RACK

(N) METER AND DISCONNECT ON (N) UTILITY RACK

(N) 14'-0" LEASE AREA

(N) 8'-0" LEASE AREA

(E) WATER TOWER ACCESS DRIVE

(E) FENCE

(E) LINE OF O/H TANK ABOVE

NOTE: CONTRACTOR SHALL SCHEDULE ACCESS INSIDE THE WATER TOWER WITH THE CITY INFRASTRUCTURE MAINTENANCE SUPERINTENDENT AT 214-987-5465

(E) POWER POLE

(E) O/H POWER LINES AND O/H TELCO LINES

STATE OF TEXAS
ZHENJING GUO
84667
LICENSED
PROFESSIONAL ENGINEER
8/14/17

1 DETAIL SITE PLAN
SCALE: (34" X 22") 1/4"=1'-0"
SCALE: (17" X 11") 1/8"=1'-0"
GRAPHIC SCALE
0' 2' 4' 8' 12'

REVISIONS	DATE
0 ISSUED FOR CONSTRUCTION	08/03/17
1 ISSUED FOR CONSTRUCTION	08/14/17

CELERIS PROJECT NO.: 16-8534

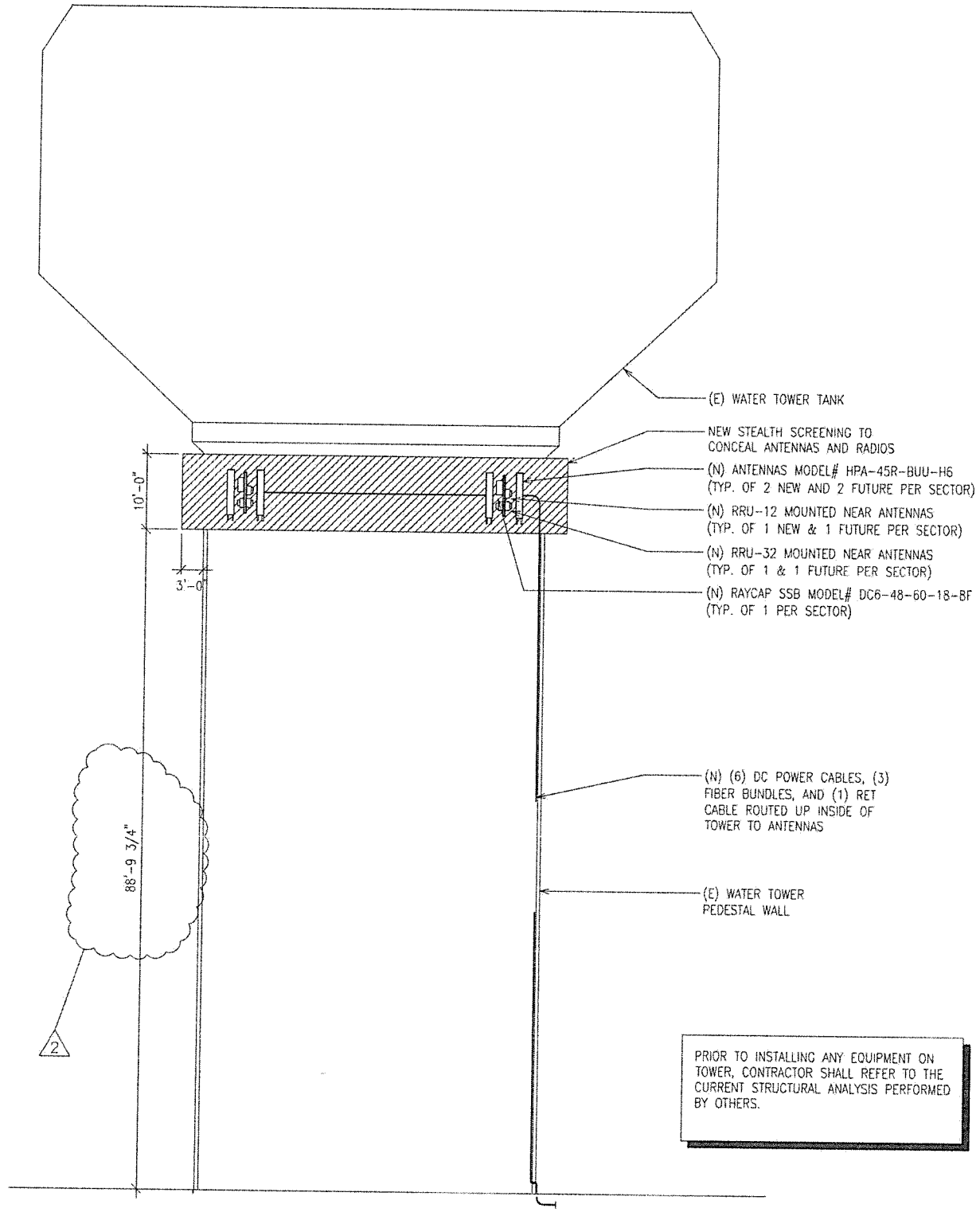
CELERIS GROUP
CONSULTING ENGINEERS
2000 E. Lamar Blvd., Suite 550
Arlington, TX 76006
Office: 817.446.1700
Fax: 817.460.0677
TX Firm Reg. # F-13992

at&t
1801 VALLEY VIEW LANE
FARMERS BRANCH, TX 75234

SITE NAME
UNIVERSITY PARK WATER TOWER

DRAWN BY:	KDR
CHECKED BY:	ZG
DATE	08/14/17
PLOT SCALE	1:2
DRAWING NAME	DETAIL SITE PLAN
SHEET No.	C02

NOTE: CONTRACTOR SHALL X-RAY AND LOCATE ALL EXISTING REINFORCING AND CABLES BEFORE INSTALLATION OF CONNECTIONS. CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES IN ORDER TO ENSURE THE EXISTING REINFORCING AND CABLES ARE NOT DAMAGED DURING INSTALLATION OF CONNECTIONS

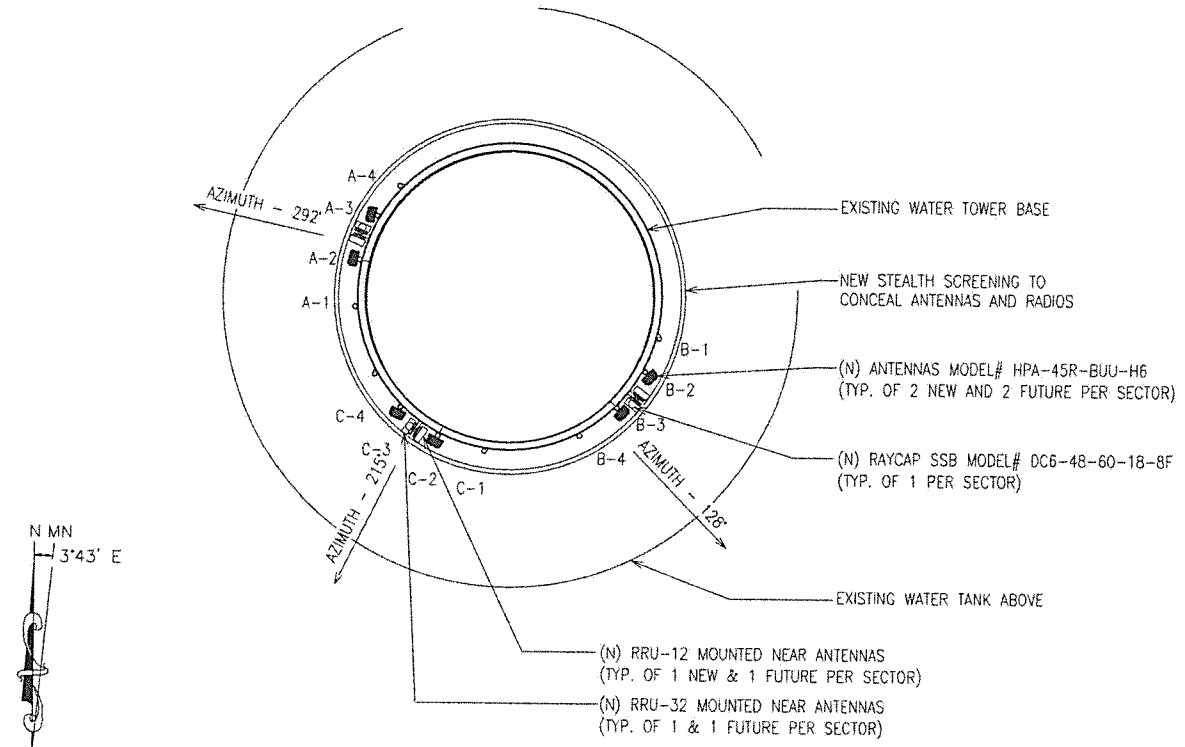


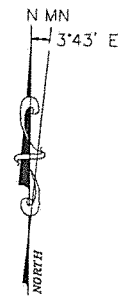
PRIOR TO INSTALLING ANY EQUIPMENT ON TOWER, CONTRACTOR SHALL REFER TO THE CURRENT STRUCTURAL ANALYSIS PERFORMED BY OTHERS.

1 TOWER ELEVATION
SCALE (22" X 34"): 1"=10'-0"
SCALE (11" X 17"): 1"=20'-0"

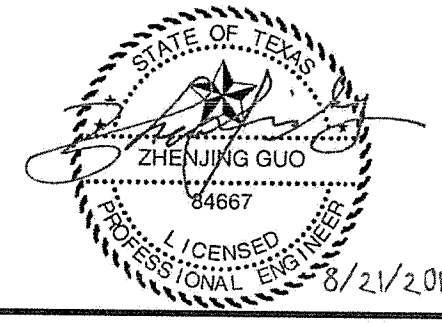
GRAPHIC SCALE
0' 10' 20' 30' 40'

NOTE:
BEFORE INSTALLING ANY EQUIPMENT CONTRACTOR MUST CHECK WITH AT&T PROJECT MANAGER AND AT&T RF ENGINEER FOR MOST RECENT RF CONFIGURATION SHEET.





2 ANTENNA ORIENTATION
SCALE: NTS



REVISIONS		DATE
0	ISSUED FOR CONSTRUCTION	08/03/17
1	ISSUED FOR CONSTRUCTION	08/14/17
2	ISSUED FOR CONSTRUCTION	08/21/17

CELERIS PROJECT NO.: 16-8534

CELERIS GROUP
CONSULTING ENGINEERS
2000 E. Lamar Blvd., Suite 550
Arlington, TX 76006
Office: 817.446.1700
Fax: 817.460.0677
TX Firm Reg. # F-13992

at&t
1801 VALLEY VIEW LANE
FARMERS BRANCH, TX 75234

SITE NAME
UNIVERSITY PARK WATER TOWER

DRAWN BY:	KDR
CHECKED BY:	ZG
DATE	08/21/17
PLOT SCALE	1:2
DRAWING NAME	ELEVATION / ANTENNA ORIENTATION
SHEET No.	C03.0

ANTENNA NUMBER	COAX COLOR CODE	ANTENNA INFO.		AZIMUTH	RAD CENTER	700/850		1900/HB		COAX INFO.	
		MAKE	MODEL			ELEC. DOWNTILT	MECH. DOWNTILT	ELEC. DOWNTILT	MECH. DOWNTILT	SIZE	LENGTH
A-1	RD										
	RD/RD										
A-2	RD/OR	CCI	HPA-45R-BUU-H6	292°	90'	0°	0°	0°	0°	SEE CABLE NOTES	
	RD/OR/WH										
A-3	RD/WH	CCI	HPA-45R-BUU-H6	292°	90'	0°	0°	0°	0°	SEE CABLE NOTES	
	RD/RD/WH/WH										
A-4	RD/WH										
	RD/RD/WH/WH										
B-1	RD										
	RD/RD										
B-2	RD/OR	CCI	HPA-45R-BUU-H6	128°	90'	0°	0°	0°	0°	SEE CABLE NOTES	
	RD/OR/WH										
B-3	RD/WH	CCI	HPA-45R-BUU-H6	128°	90'	0°	0°	0°	0°	SEE CABLE NOTES	
	RD/RD/WH/WH										
B-4	RD/WH										
	RD/RD/WH/WH										
G-1	RD										
	RD/RD										
G-2	RD/OR	CCI	HPA-45R-BUU-H6	215°	90'	0°	0°	0°	0°	SEE CABLE NOTES	
	RD/OR/WH										
G-3	RD/WH	CCI	HPA-45R-BUU-H6	215°	90'	0°	0°	0°	0°	SEE CABLE NOTES	
	RD/RD/WH/WH										
G-4	RD/WH										
	RD/RD/WH/WH										

CABLE NOTE	TYPE OF CABLE	CABLE INFO.	QTY	LENGTH
NOTE 1	FIBER	1/2"	3	ALPHA 160'±, BETA 130'±, GAMMA 110'±
NOTE 2	DC POWER	3/4"	6	ALPHA 160'±, BETA 130'±, GAMMA 110'±
NOTE 3	RET CABLE	3/8"	1	ALPHA 160'±, BETA 130'±, GAMMA 110'±

NOTES:
1. LENGTHS POSED ON THIS CHART ARE ESTIMATED FROM AVAILABLE INFORMATION
2. TYPES AND SIZES OF THE ANTENNA CABLES ARE BASED ON THE ESTIMATED LENGTH OF THE CABLES. CONTRACTOR TO VERIFY ALL ACTUAL LENGTHS IN THE FIELD PRIOR TO INSTALLATION AND NOTIFY THE AT&T FIELD ENGINEER FOR VERIFICATION OF SIZES OF CABLES.
3. CONTRACTOR TO PROVIDE AS-BUILTS FOR THE LENGTH OF CABLES UPON COMPLETION OF INSTALLATION.

1 ANTENNA CONFIGURATION
SCALE: NTS

STATE OF TEXAS
ZHENJING GUO
84667
LICENSED
PROFESSIONAL ENGINEER
8/3/2017

REVISIONS	DATE
0 ISSUED FOR CONSTRUCTION	08/03/17

CELERIS PROJECT NO.: 16-8534

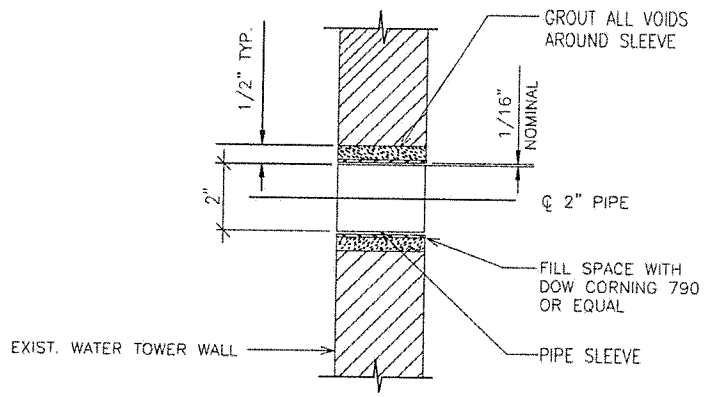
CELERIS GROUP
CONSULTING ENGINEERS
2000 E. Lamar Blvd., Suite 550
Arlington, TX 76006
Office: 817.446.1700
Fax: 817.460.0677
TX Firm Reg. # F-13992

at&t
1801 VALLEY VIEW LANE
FARMERS BRANCH, TX 75234

SITE NAME
UNIVERSITY PARK
WATER TOWER

DRAWN BY: KDR
CHECKED BY: ZG
DATE: 08/03/17
PLOT SCALE: 1:2
DRAWING NAME:
SHEET No.: C03.1

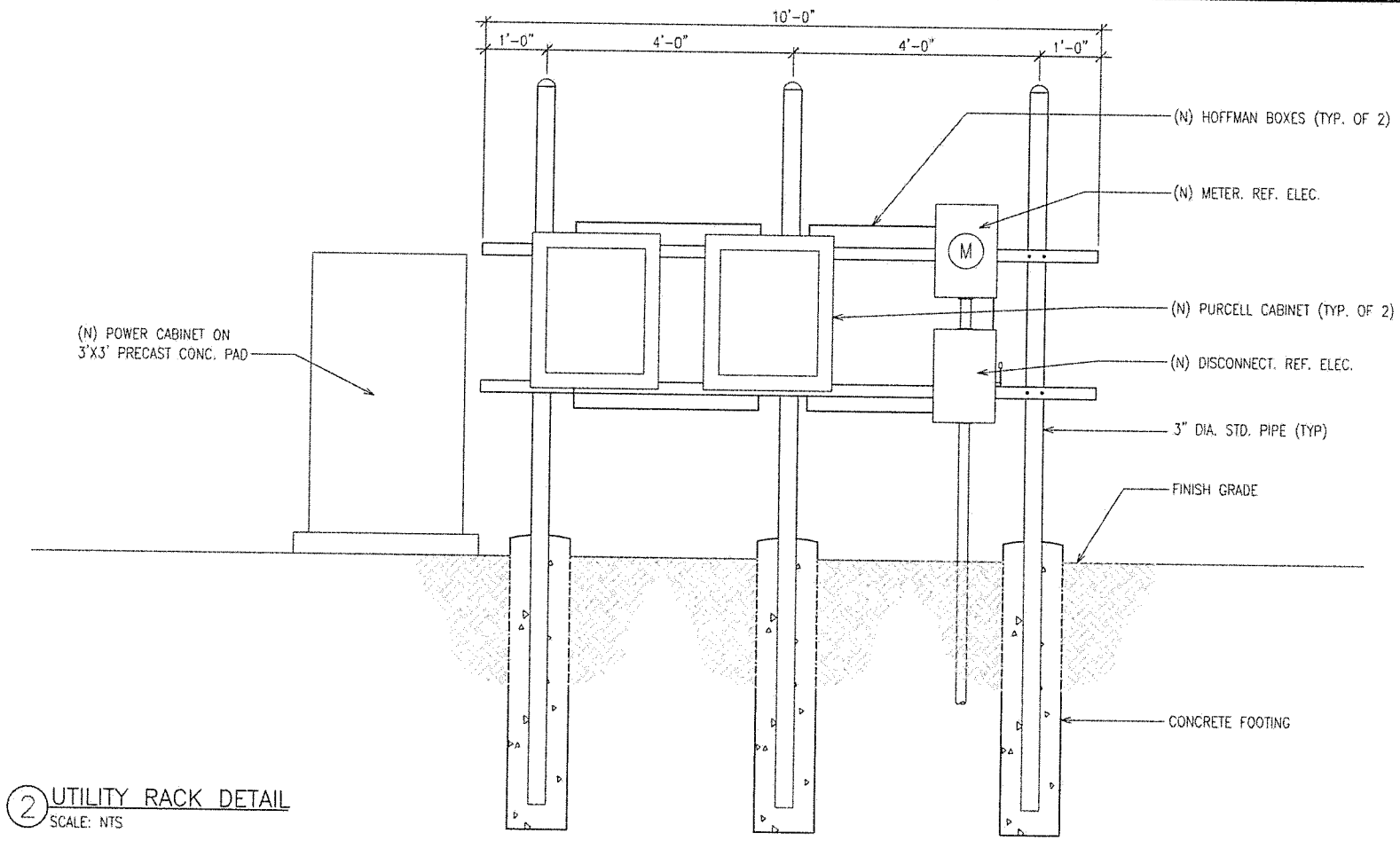
NOTE:
CONTRACTOR SHALL SEAL NEW PORTS WEATHERTIGHT AFTER INSTALLATION OF THE CABLES



NOTES: (FOR FIRE-RATED WALL ONLY)

1. PIPE ANCHORAGE IS REQUIRED NEARBY TO PREVENT PIPE MOVEMENT THROUGH PENETRATION.
2. CABLES WITHIN CONDUIT PENETRATION SHALL BE FIRE SEALED AFTER INSTALLATION
3. CONTRACTOR TO VERIFY EXIST. REINFORCING IN EXIST. TOWER WALLS BEFORE CORE DRILLING (TYP.)

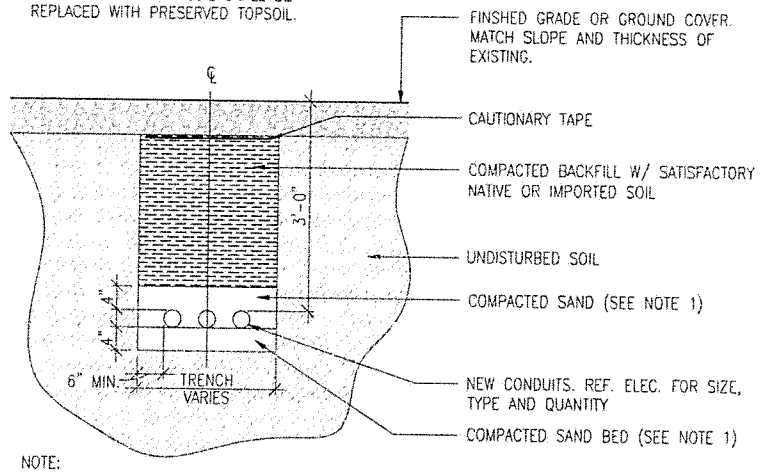
1 CABLE PENETRATION AT BASE OF TOWER
SCALE: NTS



2 UTILITY RACK DETAIL
SCALE: NTS

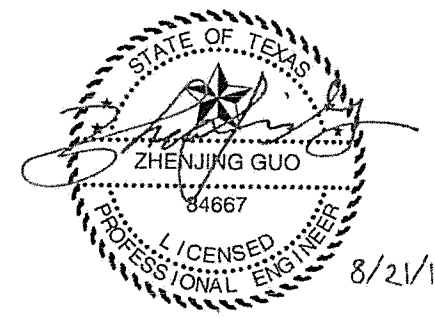
3 NOT USED
SCALE: NTS

NOTE:
DOUBLE CUT WITH TOP 1.5' OF TOP SOIL ON ONE SIDE OF THE TRENCH AND BOTTOM EXCAVATION MATERIAL ON OPPOSITE SIDE. TOP SOIL SHALL BE REPLACED WITH PRESERVED TOPSOIL.



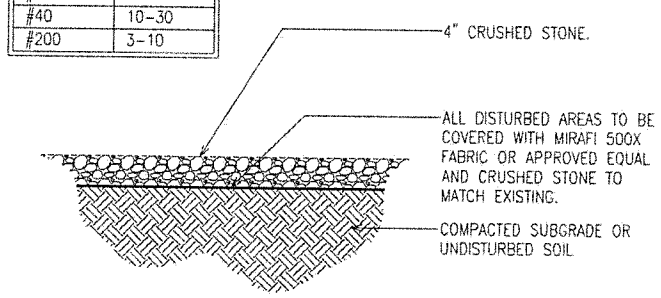
NOTE:
1. LEAN CONCRETE, RED-COLORED TOP, MAY BE USED IN PLACE OF COMPACTED SAND.

4 UTILITY TRENCH DETAIL
SCALE: NTS



CLASS 7 GRADIATION SCHEDULE	
SIEVE SIZE	% PASSING
1 1/2"	100
1"	60-100
3/4"	50-90
3/8"	--
#4	25-55
#10	--
#40	10-30
#200	3-10

NOTE:
MINIMUM STONE THICKNESS SHALL BE 4" OF CLASS 7 OR OTHER APPROVED MATERAIL. (SEE GRADIATION SCHEDULE THIS SHEET)



5 GEOTEXTILE FABRIC DETAIL
SCALE: NTS

REVISIONS	DATE
0 ISSUED FOR CONSTRUCTION	08/03/17
1 ISSUED FOR CONSTRUCTION	08/14/17
2 ISSUED FOR CONSTRUCTION	08/21/17

CELERIS PROJECT NO.: 16-8534

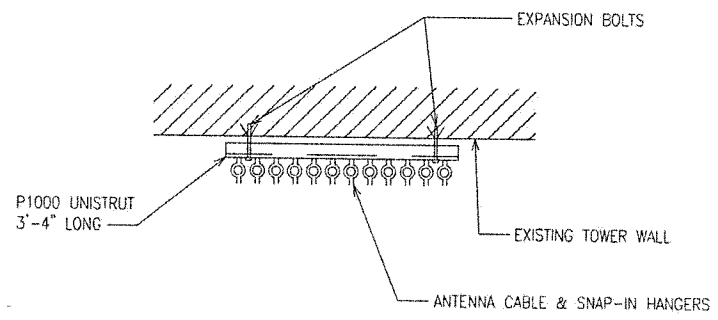
CELERIS GROUP
CONSULTING ENGINEERS
2000 E. Lamar Blvd., Suite 550
Arlington, TX 76006
Office: 817.446.1700
Fax: 817.460.0577
TX Firm Reg. # F-13992

at&t
1801 VALLEY VIEW LANE
FARMERS BRANCH, TX 75234

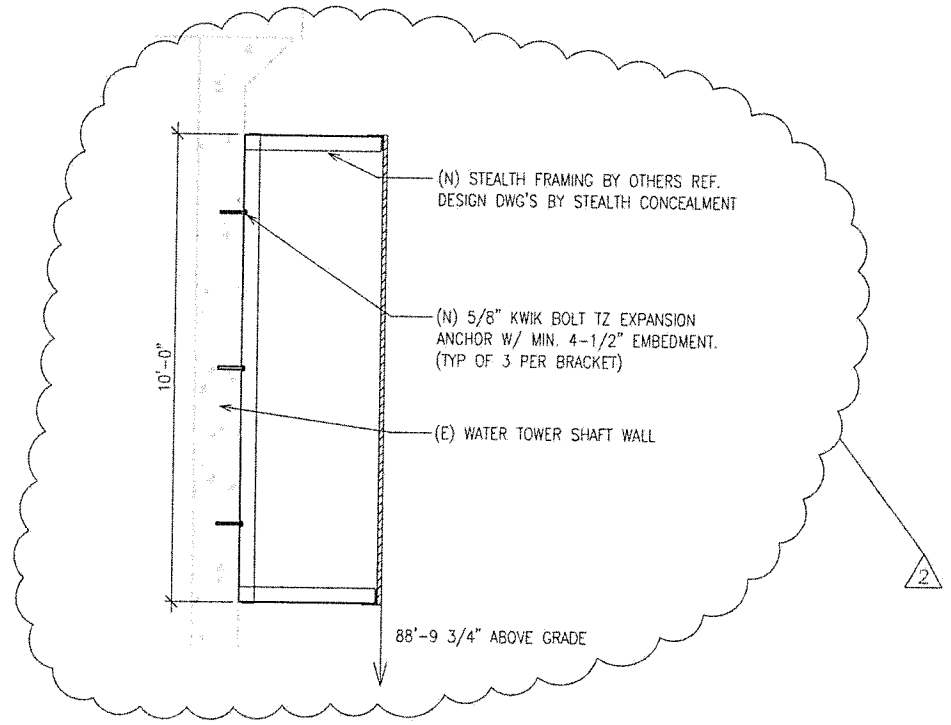
SITE NAME
UNIVERSITY PARK WATER TOWER

DRAWN BY: KDR
CHECKED BY: ZG
DATE: 08/21/17
PLOT SCALE: 1:2
DRAWING NAME: DETAILS
SHEET No.: C04

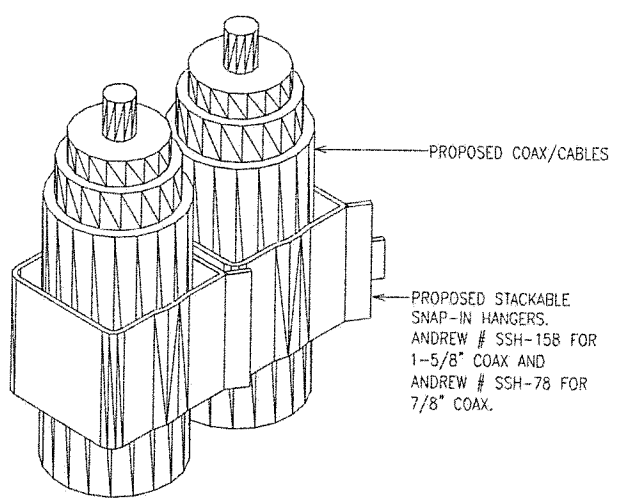
NOTE: THE DRILLING OF THE CONCRETE SHALL BE LIMITED TO EXPANSION ANCHORS UP TO 1/2" DIAMETER AND ONLY TO THE DEPTH REQUIRED FOR APPROPRIATE ANCHORAGE OF THE BRACKETS AND THE BRACKETS SHOULD BE SPACED AS FAR APART AS PRACTICALLY POSSIBLE.



1 COAX MOUNT DETAIL INSIDE TOWER WALL
SCALE: NTS

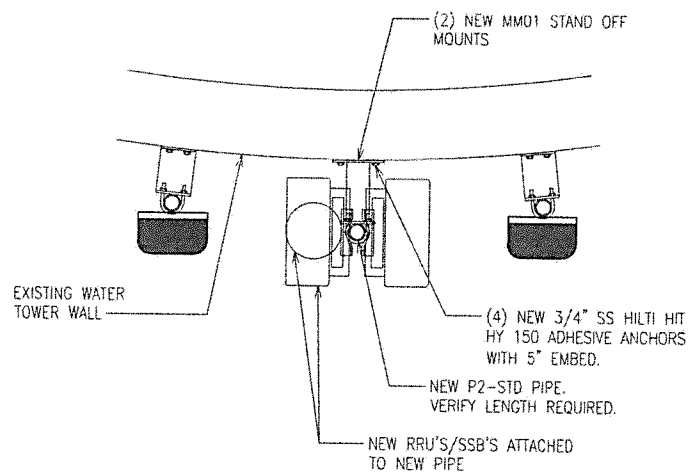


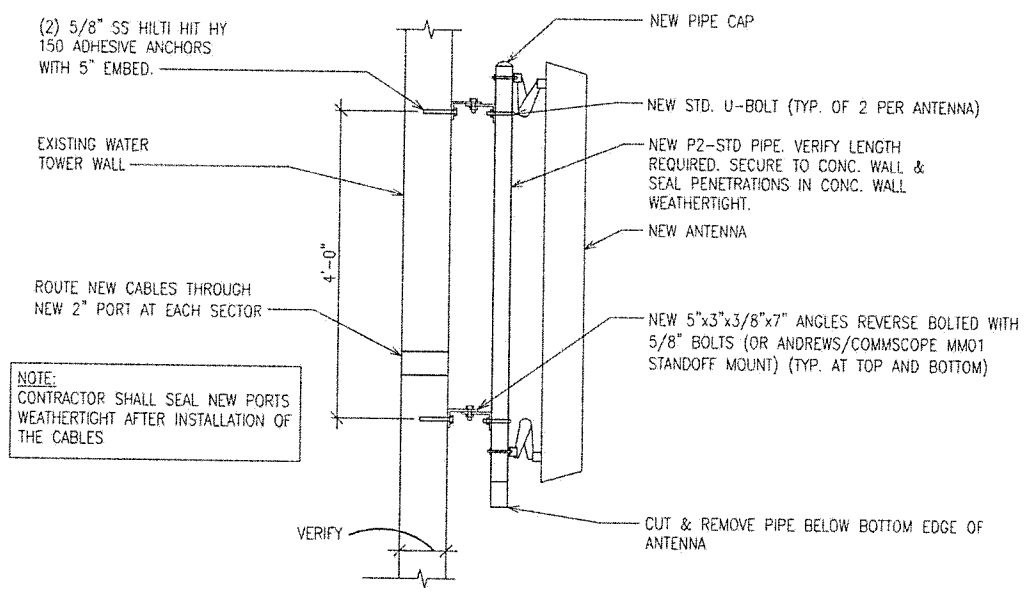
2 NOT USED
SCALE: NTS



3 DETAIL - SNAP-IN HANGERS
SCALE: NTS

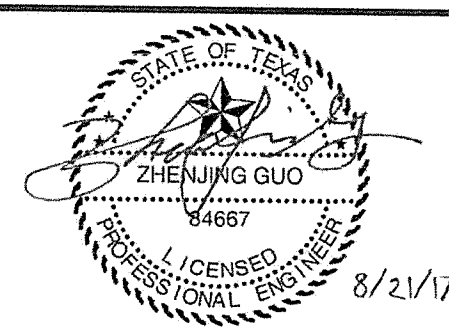
NOTE: CONTRACTOR SHALL X-RAY AND LOCATE ALL EXISTING REINFORCING AND CABLES BEFORE INSTALLATION OF CONNECTIONS. CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES IN ORDER TO ENSURE THE EXISTING REINFORCING AND CABLES ARE NOT DAMAGED DURING INSTALLATION OF CONNECTIONS





NOTE:
CONTRACTOR SHALL SEAL NEW PORTS WEATHERTIGHT AFTER INSTALLATION OF THE CABLES

5 ANTENNA/RRU/SSB MOUNT DETAILS
SCALE: NTS



REVISIONS	DATE
0 ISSUED FOR CONSTRUCTION	08/03/17
1 ISSUED FOR CONSTRUCTION	08/14/17
2 ISSUED FOR CONSTRUCTION	08/21/17

CELERIS PROJECT NO.: 16-8534

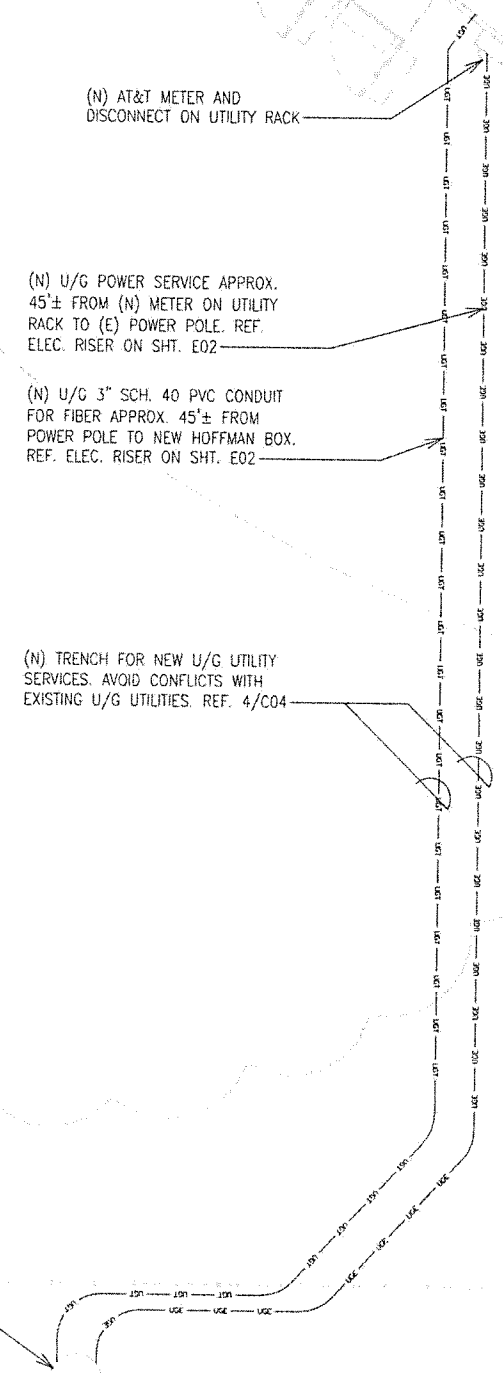
CELERIS GROUP
CONSULTING ENGINEERS
2000 E. Lamar Blvd., Suite 550
Arlington, TX 76006
Office: 817.446.1700
Fax: 817.460.0677
TX Firm Reg. # F-13992

at&t

1801 VALLEY VIEW LANE
FARMERS BRANCH, TX 75234

SITE NAME
UNIVERSITY PARK
WATER TOWER

DRAWN BY:	KDR
CHECKED BY:	ZG
DATE	08/21/17
PLOT SCALE	1:2
DRAWING NAME	DETAILS
SHEET No.	C05



1 ELECTRICAL SITE PLAN
SCALE: NTS

GENERAL NOTES

1. IT IS THE ELECTRICAL CONTRACTORS RESPONSIBILITY TO CONTACT THE SERVING POWER COMPANY AS SOON AS THE WORK IS SCHEDULED FOR THIS SITE. CONTRACTOR SHALL INFORM THEM OF THE CONDITIONS SPECIFIC TO THIS SITE AND COORDINATE THE PROPOSED ROUTING OF CONDUITS, TERMINATION OF CONDUITS, POWER (VOLTAGE AND KVA) REQUIRED AND SCHEDULED DATE OF ACTIVATION.
2. ROUTING OF UNDERGROUND UTILITIES IS APPROXIMATE; CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES AND SHALL BE EXTREMELY CAUTIOUS WHEN EXCAVATING TO AVOID DISRUPTION OF POWER OR TELEPHONE SERVICE OF OTHER TENANTS ON THE SITE. FAILURE TO OBSERVE THIS REQUIREMENT SHALL LEAVE THIS CONTRACTOR LIABLE FOR LOSS OF SERVICE (REVENUE) OF ANY SITE OCCUPANT.
3. CONTRACTOR SHALL PROVIDE ALL CONDUIT, WIREWAYS, CABINETS, ETC. AS REQUIRED BY SERVING ELECTRICAL UTILITY COMPANY.
4. DO NOT SCALE PLANS; SITE VERIFY EXISTING CONDITIONS.
5. ELECTRICAL SERVICE SIZE IS NOMINAL FOR BIDDING PURPOSE ADJUST SIZE IF REQ'D BY A.H.J. OR TO MEET VOLTAGE DROP PERMITTED BY NFPA-70, ART 215.
6. PROVIDE PULLBOX AS SHOWN OR WHERE TOTAL CONDUIT BENDS EXCEED 360° AND/OR LENGTH OF CONDUIT EXCEEDS 200 FT. (200 FT. MAX. PERMITTED BETWEEN PULL BOXES) LOCATE PULLBOXES TO PROVIDE UNIFORM PULLING TENSION.
7. REFER TO NOTES 2, 3, & 4 SHEET E02 AND SECTION 16130 OF ELECTRICAL SPECS ON SHEET E06 FOR RACEWAY MATERIALS REQUIRED.
8. THIS PROJECT REQUIRES EVALUATION FOR PROPOSED NEW SERVICE BY THE LOCAL POWER CO. PRIOR TO STARTING ANY WORK THE CONTRACTOR SHALL CONTACT THE POWER CO. AND COORDINATE THE POINTS OF SERVICE DEMARCATION. CONTRACTOR SHALL INCLUDE ANY UTILITY COMPANY CHARGES FOR ESTABLISHING THESE SERVICES.
9. NEW TRENCH FOR THE BURIED CONDUIT AND GROUNDING CONDUCTORS SHALL BE WIDE ENOUGH TO PERMIT CONNECTIONS TO BE MADE AND INSPECTED BY AUTHORITIES HAVING JURISDICTION; BACKFILL SHALL BE NON-CORROSIVE, LOW RESISTIVITY, FREE OF DEBRIS AND STONES, TAMPED DOWN IN LAYERS NOT TO EXCEED 6" DEEP AND COMPACTED TO 95% OF ORIGINAL DENSITY.

STATE OF TEXAS
ROBERTO TORRES
83419
LICENSED PROFESSIONAL ENGINEER

8/3/17

REVISIONS	DATE
0 ISSUED FOR CONSTRUCTION	08/03/17

CELERIS PROJECT NO.: 16-8534

CELERIS GROUP
CONSULTING ENGINEERS
2000 E. Lamar Blvd., Suite 550
Arlington, TX 76006
Office: 817.446.1700
Fax: 817.460.0677

Torres Engineering Services, Inc.
8237 Delafield Dr.
Ft. Worth, Texas 76131
(682) 556-0848
Registration No. F-10147

at&t
1801 VALLEY VIEW LANE
FARMERS BRANCH, TX 75234

SITE NAME
UNIVERSITY PARK
WATER TOWER

DRAWN BY:	KDR
CHECKED BY:	RT
DATE	08/03/17
PLOT SCALE	1:2
DRAWING NAME	ELECTRICAL SITE PLAN
SHEET No.	E01

NOTES: BY REFERENCE

1. NEW POWER CABINET
2. NOT USED
3. REFER TO GROUND ROD WITH ACCESS AREA DETAIL 2/E04.
4. NEW AT&T 200AMP 240V 1ø3W METER SOCKET IN EXISTING METER BASE BY ELECTRIC SERVICE PROVIDER.
5. NOT USED
6. 2" SCH. 40 PVC CONDUIT WITH 3-3/0, 1#2G TYPE THWN FROM GENERATOR SLAB TO AUTOMATIC TRANSFER SWITCH FOR POWER.
7. 5/8" DIAMETER X 10' COPPER CLAD GROUND RODS. DRIVE TOP TO 18" BELOW SURFACE. INSTALL GROUND ROD INSPECTION PORT (RE: 2/E04).
8. GROUNDING ELECTRODE CONDUCTOR (#1/0 CU) IN 3/4" PROTECTIVE CONDUIT.
9. NOT USED
10. NOT USED
11. PROVIDE 3-3/0, 1#2G TYPE THWN IN 2" CONDUIT (IMC ABOVE GRADE, SCHED. 40 PVC BELOW GRADE).
12. NOT USED
13. 3/4" SCH. 40 PVC CONDUIT FROM GENERATOR SLAB TO AUTOMATIC TRANSFER SWITCH FOR 2 WIRE START (ROUTE CONDUIT TO NEW ATS ON SHELTER).
14. 3/4" SCH. 40 PVC CONDUIT FROM GENERATOR SLAB TO 1C LOCATION FOR ALARMING PURPOSES (ROUTE TO TELCO ENTRY AT SHELTER).

PANEL "A" TOTAL CONNECTED LOAD = 20 KVA

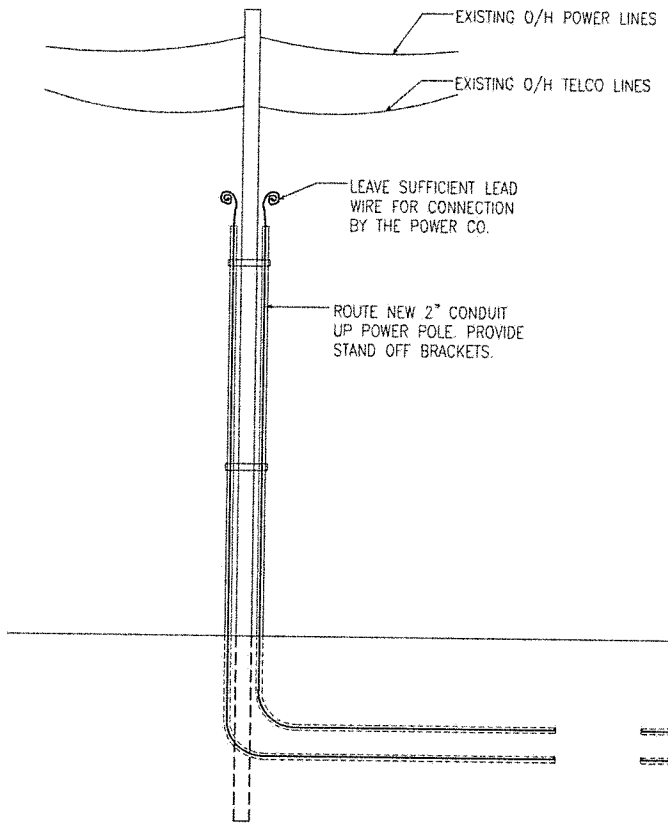
VOLTS/PHASE/WIRE 120/240V. 1 PH. 3W. NEMA			PANEL SIZE & TYPE 200A*		MAIN TYPE 200A MCB		*CABINET INSIDE INTERSECT	MIN. SC CAP >AVAIL FAULT CURRENT FROM POWER COMPANY		NOTES: SERVICE ENTRANCE RATED AS REQUIRED			FED FROM INTERSECT: REFER TO ELECTRICAL RISER DIAGRAM		
NO	TRIP**	SERVES	A	B	N	A	B	N	SERVES	TRIP**	NO
1	20	RECTIFIER #1	2400			1200			INTERIOR LIGHTS	20	2
3	20	RECTIFIER #2		2400			720		RECEPTACLES	20	4
5	20	RECTIFIER #3	2400			2500			A/C UNIT #1	2P / 30	6
7	20	RECTIFIER #4		2400			2500		↓		8
9	20	RECTIFIER #5	2400			2500			A/C UNIT #2	2P / 30	10
11	20	RECTIFIER #6		2400			2500		↓		12
13	20	RECTIFIER #7	2400								14
15	20	RECTIFIER #8		2400							16
17	↓	SPACE ↓									
29		SPACE							SPACE		30

SYMBOLS LIST AND ABBREVIATIONS

----------	DIRECT BURIED BARE GROUND WIRE
— — — —	UNDERGROUND ELECTRICAL CONDUIT AND FEEDER
—·—·—·—	UNDERGROUND TELEPHONE CO. CONDUIT TO TELCO DEMARK POINT
———————	GROUNDING RING
▬ ● ▲	CONNECTION (CADWELD OR EXOTHERMIC WELD TO STRUCTURE OR DEVICE
◉	GROUNDING PORT, SEE DETAIL 2 SHEET E04 ⏚ GROUND POINT SEE GROUNDING PLAN
▟	CONNECTION TO GROUND RING OR GROUND ROD. EXOTHERMIC WELD OR AS REQUIRED BY AUTHORITY HAVING JURISDICTION
▣	PULL BOX NOMINAL 24"x24"x36" DEEP (WITH TRAFFIC LID WHERE VEHICULAR TRAFFIC IS LIKELY)
X|II	INDICATES 2 HOT, 1 NEUTRAL, & 1 GROUND IN CONDUIT
A.H.J.	AUTHORITY HAVING JURISDICTION
CM	CONSTRUCTION MANAGER OR AGENT FOR AT&T

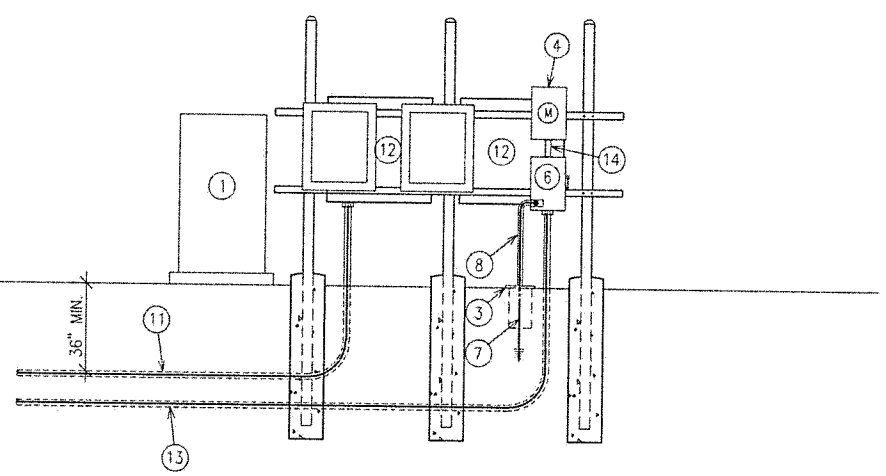
GENERAL NOTES:

1. REFER TO GENERAL NOTES, SHEET E01 FOR SITE COORDINATION REQUIREMENTS.
2. COORDINATE WITH CONSTRUCTION MANAGER TO OBTAIN CURRENT APPLICABLE TOWER GROUNDING REQUIREMENTS FROM AT&T WIRELESS.
3. USE TINNED COPPER (SOLID) FOR EXTERIOR GROUNDING (TYPICALLY #2 OR AS NOTED); USE STRANDED COPPER WIRE FOR GROUNDING WHERE NOT EXPOSED AND NOT IN CONTACT WITH EARTH (SEE NOTE 4 BELOW)
4. BURY ALL BARE GROUND WIRES 30" BELOW GRADE. LOCATE NO CLOSER THAN 3' FROM FENCE OR 24" FROM FOUNDATIONS. SLEEVE ALL FOUNDATIONS. CADWELD AND TEST CONDUCTIVITY OF ALL GROUND TIE POINTS.
5. TO MINIMIZE LIGHTNING DAMAGE, NO SHARP BENDS PERMITTED IN ANY WIRING, INCLUDING GROUNDING.
6. GROUND RODS TO BE COPPER CLAD STEEL 5/8" DIAMETER X 10'-0" LONG WITH TOPS BURIED 18" MINIMUM BELOW FINISHED GRADE, CADWELD TO GROUND RING. RODS SHALL BE SPACED 10' TO 15' ON CENTER ALONG THE GROUND RING.
7. PRIME AND EPOXY PAINT ALL EXPOSED CONDUIT TO MATCH EXTERIOR OF EQUIPMENT BUILDING.
8. ELECTRICAL CONTRACTOR SHALL CONNECT EXTERIOR GROUNDING WIRE TO GROUND RING INSIDE EQUIPMENT BUILDING. TOWER CONTRACTOR SHALL MAKE ALL ABOVE GROUND CONNECTIONS TO TOWER BUS BARS, AND WAVEGUIDE BRIDGES AT TIME OF CONNECTION TO TOWER. ONE CONNECTION TO THE TOWER BASE SHALL BE A MECHANICAL TYPE, ALL OTHERS SHALL BE CADWELDED. (SEE NOTE 10 BELOW)
9. CIVIL CONSTRUCTION CONTRACTOR SHALL BURY ALL GROUND RINGS. CIVIL CONSTRUCTION CONTRACTOR SHALL CADWELD PIGTAILS FOR ALL ABOVE GROUND CONNECTIONS AT TIME OF GROUND RINGS INSTALLATION.
10. PROTECT AND SUPPORT ALL WIRING SUCH THAT IT WILL NOT VIBRATE AGAINST OTHER METALLIC OBJECTS AND SUCH THAT THERE ARE NO SHARP BENDS (NOMINAL RADIUS 6" MIN.) CADWELD ALL CONNECTIONS WHERE POSSIBLE. AT TOWER OR LOCATION OF MULTIPLE CADWELD CONNECTIONS, IT MAY BE PERMISSIBLE TO MECHANICALLY BOLT A BUSS BAR TO GROUND OR TO SUPPORT STRUCTURE.



NOTES:

1. VERIFY ALL EXISTING UNDERGROUND. UTILITIES BEFORE TRENCHING.
2. ELECTRICAL CONTRACTOR SHALL CONTACT POWER CO. & TELE. CO. & VERIFY EXACT ROUTING/SIZES & CONDITIONS BEFORE TRENCHING.
3. INSTALL ALL CONDUITS & EQUIPMENT AS SPECIFIED BY POWER CO. & TELE. CO.
4. PROVIDE NYLON PULL STRINGS ON ALL EMPTY CONDUITS.



1 RISER DIAGRAM
SCALE: NTS

STATE OF TEXAS
ROBERTO TORRES
83419
LICENSED PROFESSIONAL ENGINEER

8/3/17

REVISIONS	DATE
0 ISSUED FOR CONSTRUCTION	08/03/17

CELERIS PROJECT NO.: 16-8534

CELERIS GROUP
CONSULTING ENGINEERS
2000 E. Lamar Blvd., Suite 550
Arlington, TX 76006
Office: 817.446.1700
Fax: 817.460.0677

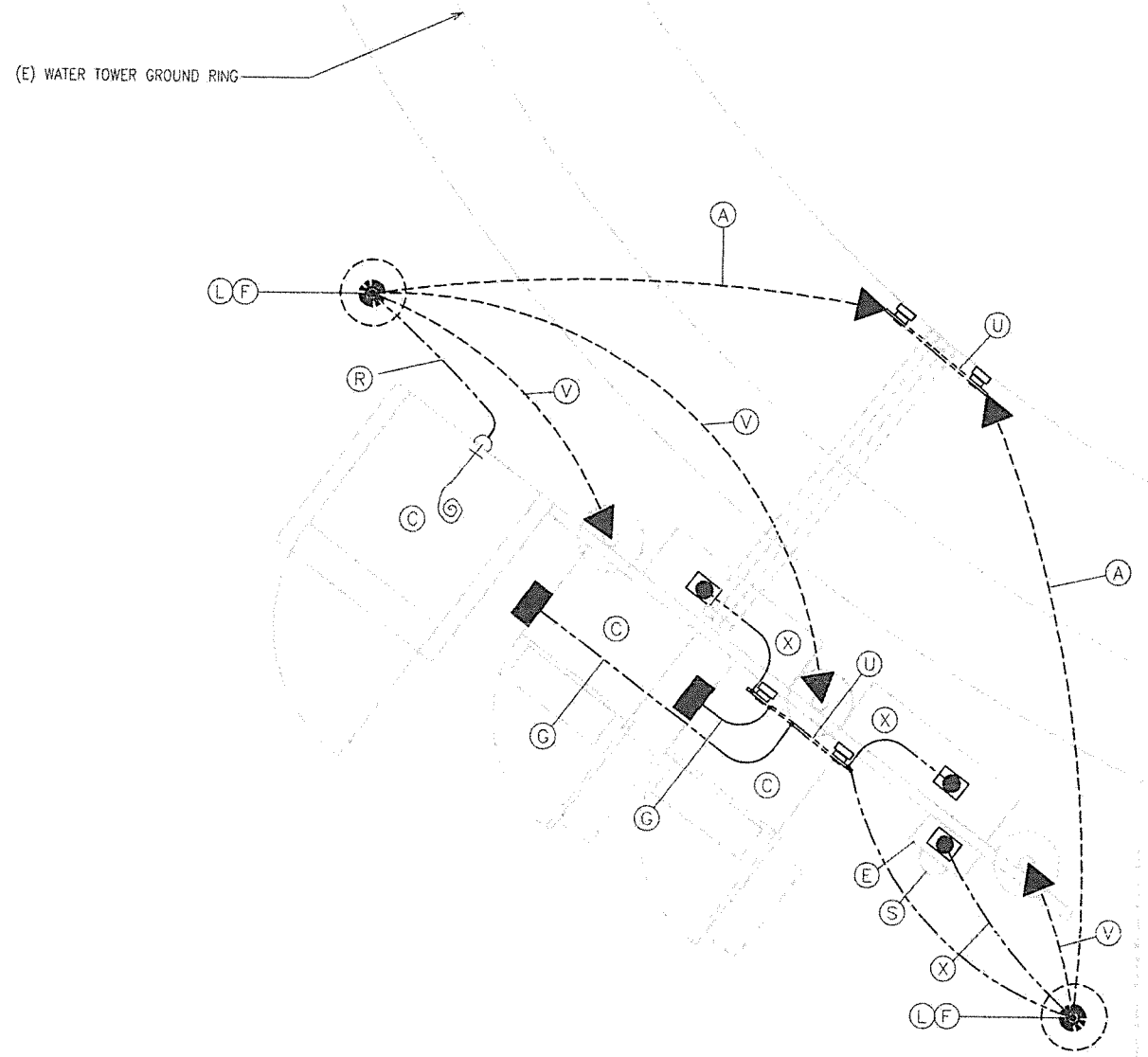
Torres Engineering Services, Inc.
8237 Delafield Dr.
Ft. Worth, Texas 76131
(682) 556-0848
Registration No. F-10147

at&t

1801 VALLEY VIEW LANE
FARMERS BRANCH, TX 75234

SITE NAME
UNIVERSITY PARK WATER TOWER

DRAWN BY:	KDR
CHECKED BY:	RT
DATE	08/03/17
PLOT SCALE	1:2
DRAWING NAME	ELECTRICAL RISER DIAGRAM
SHEET No.	E02



1 GROUNDING PLAN
SCALE: NTS

NOTES: REFERENCED TO GROUNDING PLAN

(A) #2 AWG SOLID TINNED COPPER GROUND WIRE 30" MINIMUM BELOW GRADE. CADWELD TO EACH GROUND ROD SHOWN. LOCATE 24" MINIMUM FROM NEW BUILDING FOUNDATION.

(B) #2 BARE SOLID TINNED COPPER GROUND WIRE 18" MINIMUM BELOW GRADE OR 6" BELOW FROST LINE, WHICHEVER IS GREATER. CADWELD TO GATE AND CORNER FENCE POSTS. PROVIDE FLEXIBLE BRAIDED JUMPER AT GATES.

(C) NEW ERICSSON EQUIPMENT CABINETS.

(D) NOT USED

(E) NEW SERVICE ENTRANCE DISCONNECT SWITCH.

(F) 5/8" DIAMETER X 10' COPPER CLAD GROUND ROD. DRIVE TO 18" BELOW SURFACE. REFER TO 3/E04. WHERE LOCATED AT GROUND RING EVENLY SPACE GROUND RODS SIMILAR TO THAT SHOWN BELOW BUT TYPICALLY TWICE THE GROUND ROD LENGTH BUT NO MORE THAN 1 1/2" THAT LENGTH.

(G) #2 AWG SOLID TINNED COPPER GROUND WIRE. CONNECT TO GROUND RING AND STEEL REBAR IN CONCRETE FOUNDATION. EXOTHERMICALLY WELD, TEST FOR RESISTANCE. VERIFY WELD NON-POROUS OR RE-WELD.

(H) NOT USED

(I) #2 AWG SOLID TINNED COPPER GROUND WIRE 18" BELOW GRADE FOR CONNECTION TO ICE BRIDGE SUPPORT POSTS.

(J) NOT USED

(K) NOT USED

(L) REFER TO GROUND ROD WITH ACCESS AREA DETAIL 2/E04.

(M) NOT USED

(N) PROVIDE "INTERSECT" PANEL, 200A, 1Ø3W, 240V COMBINATION MANUAL TRANSFER SWITCH, SURGE PROTECTOR, PANELBOARD "A" AND. REFER TO PANEL SCHEDULE FOR CIRCUIT BREAKERS.

(O) INTERLOCKED 240V, 200A GENERATOR RECEPTACLE

(P) #2 BARE SOLID TINNED COPPER GROUND WIRE IN 3/4" PVC CONDUIT FROM INTERSECT PANEL DOWN TO GROUND RING AND CADWELD.

(Q) VERIFY ACTUAL MOUNTING LOCATION WITH AT&T WIRELESS CONSTRUCTION.

(R) #2 TINNED COPPER GROUND WIRE 18" BELOW GRADE. PROVIDE SIGNIFICANT LEAD WIRE FOR CABINET CONNECTION

(S) NEW METER BASE AND JAWS BY E.C. AS APPROVED BY LOCAL ELECTRIC SERVICE PROVIDER

(T) PROVIDE #6 AWG BARE SOLID TINNED COPPER GROUND WIRE FROM GROUND RING TO TELEPHONE CABINET GROUND BAR. PROVIDE 3/4" PVC SLEEVE WHERE ABOVE GRADE.

(U) NEW 30" x 4" x 1/4" PRE-DRILLED COPPER ANTENNA GROUND BAR. PROVIDE STAND OFF ISOLATORS. VERIFY EXACT LOCATION WITH AT&T WIRELESS.

(V) #2 BARE SOLID TINNED COPPER GROUND WIRE FROM UTILITY RACK SUPPORT POSTS DOWN TO GROUND RING. PROVIDE CADWELD CONNECTIONS.

(W) #2 BARE SOLID, TINNED COPPER GROUND WIRE EXOTHERMICALLY CADWELDED TO TOWER GROUND RING.

(X) 1#2 AWG GEC (GROUNDING ELECTRODE CONDUCTOR) DOWN IN 3/4" CONDUIT TO 10' GROUND ROD. CONNECT WITH MECHANICAL COUPLING IN GROUND INSPECTION PORT OR AS DIRECTED BY CODE ENFORCEMENT AUTHORITY HAVING JURISDICTION.

STATE OF TEXAS
ROBERTO TORRES
83419
LICENSED PROFESSIONAL ENGINEER

8/3/17

REVISIONS	DATE
0 ISSUED FOR CONSTRUCTION	08/03/17

CELERIS PROJECT NO.: 16-8534

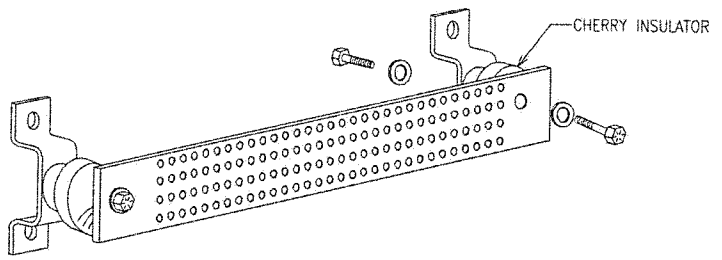
CELERIS GROUP
CONSULTING ENGINEERS
2000 E. Lamar Blvd., Suite 550
Arlington, TX 76006
Office: 817.446.1700
Fax: 817.460.0677

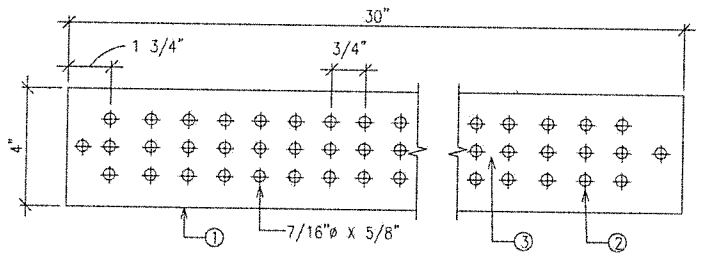
Torres Engineering Services, Inc.
8237 Delafield Dr.
Ft. Worth, Texas 76131
(682) 556-0848
Registration No. F-10147

at&t
1801 VALLEY VIEW LANE
FARMERS BRANCH, TX 75234

SITE NAME
UNIVERSITY PARK
WATER TOWER

DRAWN BY:	KDR
CHECKED BY:	RT
DATE	08/03/17
PLOT SCALE	1:2
DRAWING NAME	ELECTRICAL GROUNDING PLAN
SHEET No.	E03

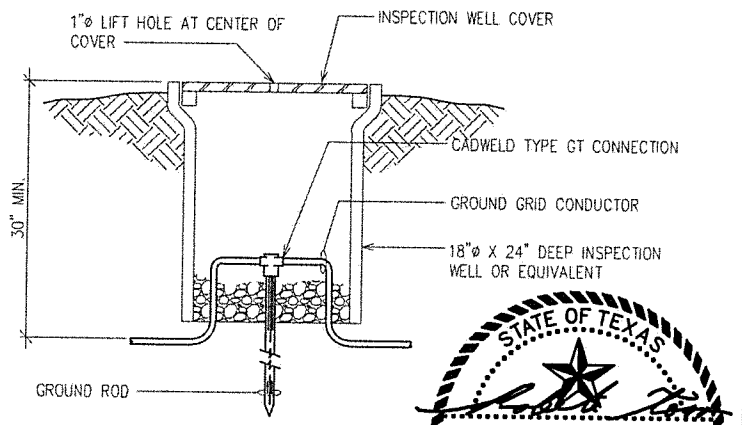




NOTES:

1. TINNED COPPER GROUND BUSS BAR, 1/4"X4"X30", WITH NON-INSULATED MOUNTING KIT OR EQUIVALENT.
2. GROUND BAR SHALL BE SIZED TO ACCOMMODATE ALL GROUNDING CONNECTIONS REQUIRED PLUS PROVIDE 50% SPARE CAPACITY
3. APPLY CONDUCTIVE LUBRICANT (NO-OX COMPOUND OR APPROVED EQUIVALENT) TO EXPOSED AREA OF GROUND BAR.

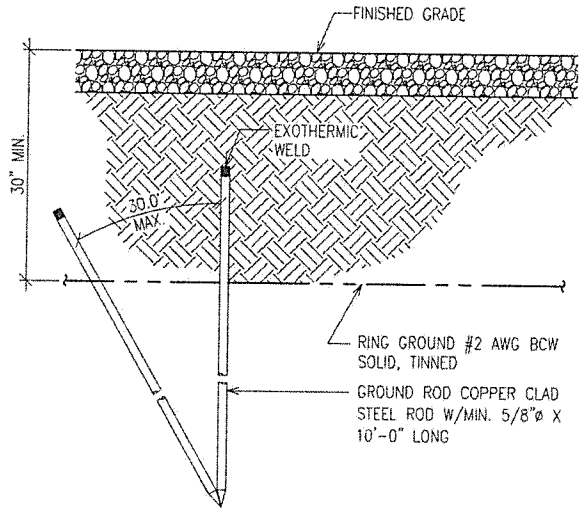
(1) MASTER GROUND BAR DETAIL
SCALE: NTS



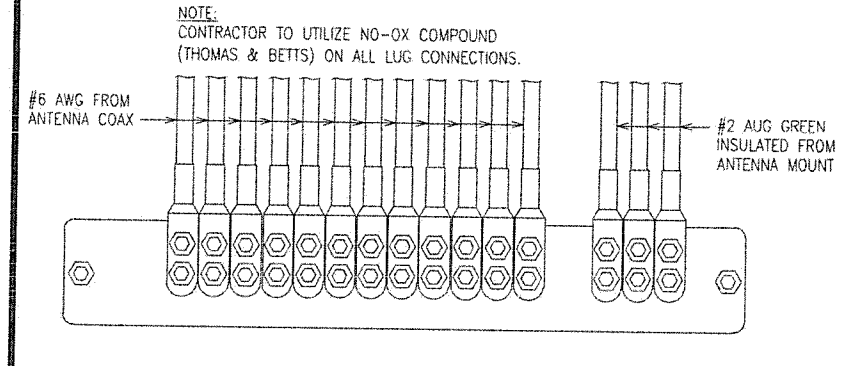
STATE OF TEXAS
ROBERTO TORRES
83419
LICENSED PROFESSIONAL ENGINEER

8/3/17

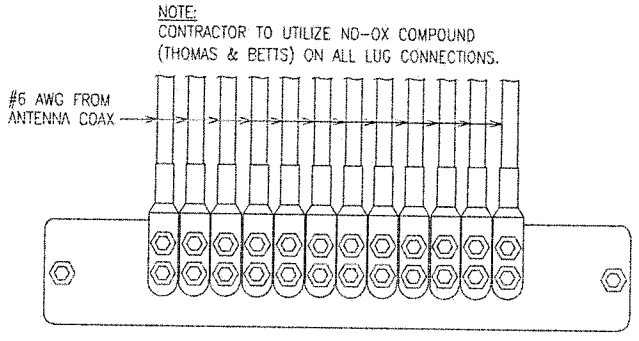
(2) INSPECTION WELL DETAIL
SCALE: NTS



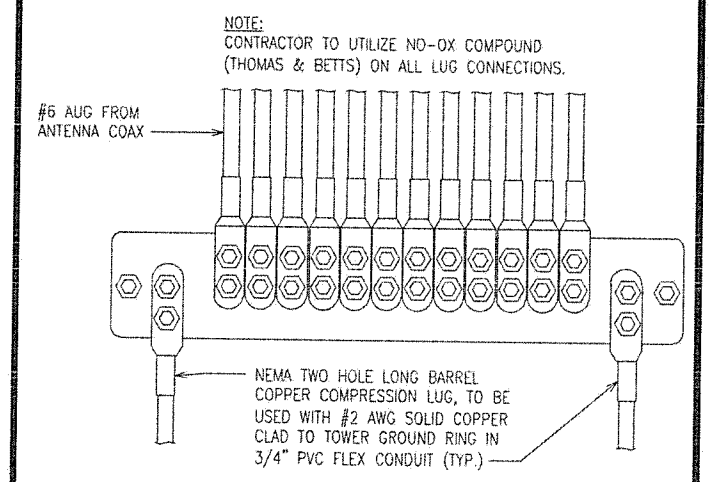
(3) GROUND ROD DETAIL
SCALE: NTS



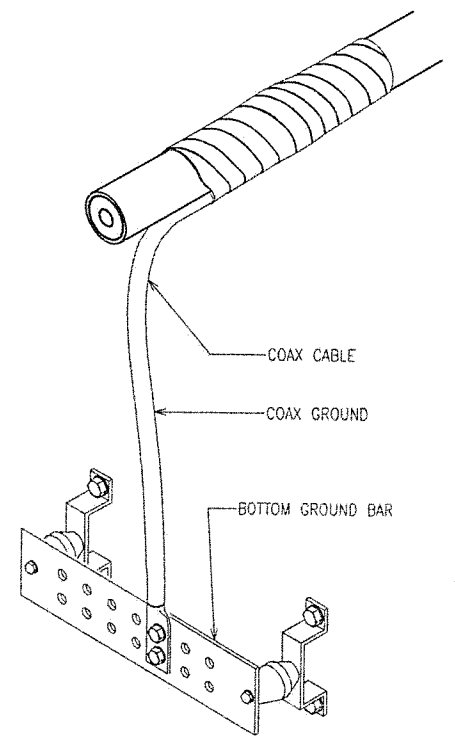
(4) UPPER GROUND BAR DETAIL
SCALE: NTS



(5) MIDDLE GROUND BAR DETAIL (IF REQUIRED)
SCALE: NTS



(6) LOWER GROUND BAR DETAIL
SCALE: NTS



(7) COAX GROUNDING DETAIL
SCALE: NTS

REVISIONS	DATE
0 ISSUED FOR CONSTRUCTION	08/03/17

CELERIS PROJECT NO.: 16-8534

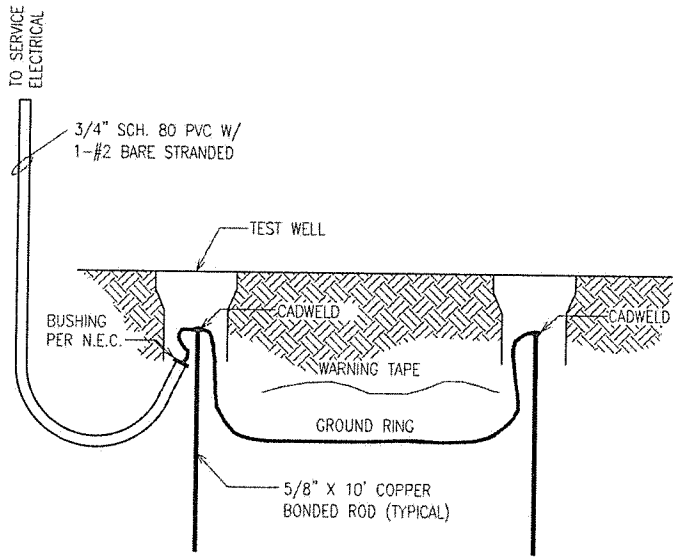
CELERIS GROUP
CONSULTING ENGINEERS
2000 E. Lamar Blvd., Suite 550
Arlington, TX 76006
Office: 817.446.1700
Fax: 817.460.0677

Torres Engineering Services, Inc.
8237 Delafield Dr.
Ft. Worth, Texas 76131
(682) 556-0848
Registration No. F-10147

at&t
1801 VALLEY VIEW LANE
FARMERS BRANCH, TX 75234

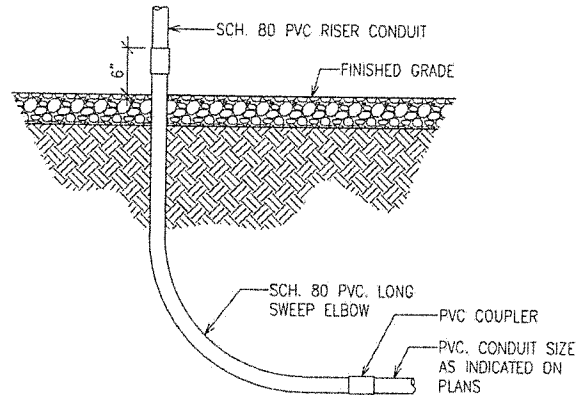
SITE NAME
UNIVERSITY PARK
WATER TOWER

DRAWN BY:	KDR
CHECKED BY:	RT
DATE	08/03/17
PLOT SCALE	1:2
DRAWING NAME	ELECTRICAL DETAILS
SHEET No.	E04



1 GROUNDING ELECTRODE DETAIL
SCALE: NTS

2 NOT USED
SCALE: NTS

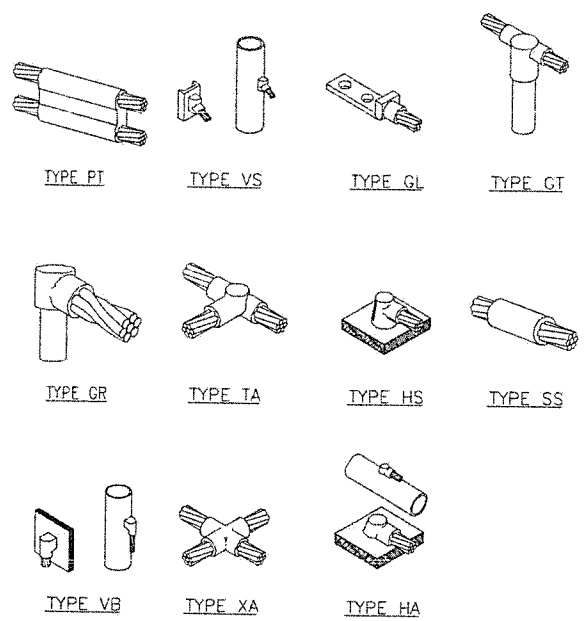


3 CONDUIT TRANSITION DETAIL
SCALE: NTS

4 NOT USED
SCALE: NTS

STATE OF TEXAS
ROBERTO TORRES
83419
LICENSED PROFESSIONAL ENGINEER

8/3/17



5 CADWELD CONNECTIONS
SCALE: NTS

REVISIONS	DATE
0 ISSUED FOR CONSTRUCTION	08/03/17

CELERIS PROJECT NO.: 16-8534

CELERIS GROUP
CONSULTING ENGINEERS
2000 E. Lamar Blvd., Suite 550
Arlington, TX 76006
Office: 817.446.1700
Fax: 817.460.0677

Torres Engineering Services, Inc.
8237 Delafield Dr.
Ft. Worth, Texas 76131
(682) 556-0848
Registration No. F-10147

at&t
1801 VALLEY VIEW LANE
FARMERS BRANCH, TX 75234

SITE NAME
UNIVERSITY PARK WATER TOWER

DRAWN BY:	KDR
CHECKED BY:	RT
DATE	08/03/17
PLOT SCALE	1:2
DRAWING NAME	ELECTRICAL DETAILS
SHEET No.	E05

DIVISION 16 ELECTRICAL SPECIFICATIONS

16000 SCOPE OF WORK:

1. THE REQUIREMENTS PRESENTED IN THESE SPECIFICATIONS PERTAINS TO ELECTRICAL INSTALLATION OF A COMPLETELY NEW POWER RACEWAY SYSTEM FOR THE AT&T WIRELESS INSTALLATION TO THE EXTENT REQUIRED BY THESE CONTRACT DOCUMENT.

   IN GENERAL, THE ELECTRICAL CONTRACTOR (HEREAFTER ALTERNATELY REFERRED TO AS 'CONTRACTOR') SHALL PROVIDE OR RESTORE THE FOLLOWING EXISTING SYSTEMS:
   A. CONDUIT AND RACEWAYS FOR ALL DEVICES, EQUIPMENT, GROUND BUSSES AND GROUND RODS INDICATED ON THE ELECTRICAL PLANS.
   B. CONTRACTOR SHALL RUN FEEDERS SHOWN TO SUPPLY POWER TO ALL EQUIPMENT INDICATED PRIOR TO BID. CONTRACTOR SHALL DETERMINE ANY ADDITIONAL POWER OR GROUNDING WHICH MAY BE REQUIRED DEPENDING ON EQUIPMENT SPECIFIC TO TO THIS SITE AND BUILDING ENCLOSURE.

2. CONTRACTOR(S) WISHING TO BID THIS WORK SHALL BE ABLE TO DEMONSTRATE A MINIMUM OF 5 YEARS PREVIOUS EXPERIENCE WITH THIS TYPE OF PROJECT AND SHALL, IF REQUESTED, SUPPLY DOCUMENTATION TO SUPPORT THIS REQUIREMENT OF QUALIFICATION.

3. EACH QUALIFIED BIDDER SHALL OBTAIN ALL PROPER BID FORMS AND SHALL VISIT THE SITE TO DETERMINE ACTUAL EXISTING CONDITIONS PRIOR TO PREPARING A BID.

4. CONTRACTOR SHALL NOTE THAT IF THIS CURRENTLY HOSTS ONE OR MORE OTHER TENANTS WITH TELEPHONE AND/OR ELECTRICAL SERVICE, CONTRACTOR SHALL NOT CAUSE LOSS OF POWER, COMMUNICATION OR ANY REQUIRED SERVICES TO AT&T WIRELESS OR ANY OTHER SITE OCCUPANT IN ANY MANNER WITHOUT EXPRESS WRITTEN DIRECTION BY AT&T WIRELESS CONSTRUCTION SUPERVISION. THE CONTRACTOR SHALL BE LIABLE FOR ANY LOSS OF REVENUE TO ANY SITE OCCUPANT BECAUSE OF ANY NONSCHEDULED OUTAGES AS DETERMINED BY CONTRACT AGREEMENT WITH AT&T WIRELESS.

16001 GENERAL: IT IS THE INTENTION OF THESE SPECIFICATIONS AND THE RELATED PLANS TO SHOW COMPLETE, PROPERLY FUNCTIONING SYSTEMS. ALL SYSTEMS, WIRING AND RACEWAYS SHALL BE INSTALLED PER NFPA-70 (APPLICABLE) AND AUTHORITY HAVING JURISDICTION

16002 SPECIAL CONDITIONS FOR ELECTRICAL WORK:

1. THE CONSTRUCTION DOCUMENTS INCLUDING BUT NOT LIMITED TO THESE PLANS, SPECIFICATIONS, AND CONTRACTS ARE ISSUED FOR INFORMATION TO BE COMPLIED WITH BY THE ELECTRICAL CONTRACTOR AND ANY OR ALL SUBCONTRACTORS AND TRADES EMPLOYED ON THIS PROJECT BY THE ELECTRICAL CONTRACTOR, HEREAFTER REFERRED TO AS CONTRACTOR.

2. THE TERM "CONTRACTOR" IN THIS SECTION REFERS TO THE CONTRACTOR WHOSE WORK IS COVERED BY THIS ELECTRICAL SPECIFICATION.

3. ALL WORK SHALL BE DONE AND TESTED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND WITH LOCAL AND NATIONAL CODES. REPORT SUPPOSED CONFLICTS WITH PLANS AND SPECIFICATIONS IMMEDIATELY TO THE CONSTRUCTION SUPERINTENDENT WHO WILL ISSUE INSTRUCTIONS OR ADDENDA TO RESOLVE SUCH CONFLICT IN NO CASE SHALL A CONTRACTOR BASE ITS BID ON WORK THAT WILL NOT BE ACCEPTABLE TO CODE AND THESE CONTRACT DOCUMENTS. NO CONSIDERATION SHALL BE GIVEN TO REQUESTS FOR EXTRA COMPENSATION TO BRING THE BASE WORK INTO CONFORMANCE WITH THESE DOCUMENTS.

4. ALL MATERIAL FOR WHICH THERE IS A CATEGORY FOR TESTING BY UL OR CSA SHALL BE SO TESTED, LISTED AND LABELED.

5. AS MENTIONED ABOVE, IT IS THE INTENT OF THESE DOCUMENTS TO PRODUCE A COMPLETE AND FINISHED ELECTRICAL SYSTEM TO THE EXTENT SHOWN IN THESE CONTRACT DOCUMENTS. THE AT&T WIRELESS CONSTRUCTION MANAGER SHALL BE THE FINAL AUTHORITY FOR ACCEPTANCE OF THE WORK. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COORDINATING HIS WORK WITH OTHER TRADES AND WITH HIS SUBCONTRACTORS AS NECESSARY TO PROVIDE A FINAL AND COMPLETE ELECTRICAL INSTALLATION.

6. THE CONTRACTOR SHALL EMPLOY ONLY SKILLED, EXPERIENCED, AND WHEN REQUIRED, LICENSED SUB CONTRACTORS AND WORKERS. MATERIALS AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS, IN ACCORDANCE WITH THE BEST TRADE PRACTICES AND IN A NEAT AND WORKMAN LIKE MANNER. WORK WHICH IN THE OPINION OF THE CONSTRUCTION MANAGER DOES NOT CONFORM TO THE INTENT OF THESE PLANS AND SPECIFICATIONS SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.

7. THE PLANS AND DETAILS ARE DIAGRAMMATIC IN NATURE COORDINATE THE LOCATION OF ITEMS NOT CLEARLY DIMENSIONED WITH THE CONSTRUCTION SUPERINTENDENT.

8. SECURE ALL NECESSARY PERMITS, LICENSES AND INSPECTIONS AND PAY ALL REQUIRED FEES, TESTS AND WAGE SCALES THAT MAY BE REQUIRED. THE CONTRACTOR SHALL INCLUDE THE FINAL INSPECTION CERTIFICATE IN FINAL DOCUMENTS.

9. THE CONTRACTOR IS RESPONSIBLE FOR UNDERSTANDING THE EXISTING SITE CONDITIONS. HE SHALL VISIT THIS SITE (BY APPOINTMENT) AT ANY REASONABLE TIME.

10. LOCATIONS OF UTILITY CONNECTIONS SHOWN ON THE SITE ARE APPROXIMATE AND ARE BASED ON SITE OBSERVATIONS. ACTUAL UTILITY CONNECTIONS AND EXACT LOCATIONS MAY VARY SLIGHTLY. THE CONTRACTOR SHALL CONTACT THE UTILITY COMPANIES INVOLVED PRIOR TO BID TO CONFIRM THE ACTUAL CONDITIONS OF CONNECTION. THE CONTRACTOR SHALL INCLUDE IN HIS BID THE ACTUAL CONDITIONS OF CONNECTION AND ANY FEES REQUIRED BY THE UTILITY FOR PROPOSED NEW 200 AMP, 240/120 VAC SINGLE PHASE UTILITY SERVICE THE CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL COMPANY CONCERNING ITEMS WHICH HE MUST PROVIDE AND THE CONSTRUCTION SCHEDULE.

11. AFTER COMPLETION OF THE WORK AND BEFORE FINAL INSPECTION, THE CONTRACTOR SHALL THOROUGHLY CLEAN EACH EXPOSED DEVICE, PIECE OF EQUIPMENT AND FIXTURE TO THE SATISFACTION OF THE CONSTRUCTION SUPERINTENDENT.

12. THE CONTRACTOR SHALL SUBMIT ALL MATERIALS LISTED BELOW TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION. FAILURE TO OBTAIN APPROVAL ON MATERIAL SHALL BE CAUSE FOR CONTRACTOR TO REMOVE ANY MATERIALS NOT APPROVED AND REPLACE THEM AT HIS OWN EXPENSE AND WITH NO ALLOWANCE IN THE TIME ALLOWED FOR CONSTRUCTION.
   SUBMITTALS: (PROVIDE IN QUANTITY REQUESTED BY THE CONSTRUCTION MANAGER)

   THE FOLLOWING MINIMUM ITEMS SHALL BE SUBMITTED AT THE SAME TIME UNDER ONE COVER IN THE ORDER LISTED:

   TAB ONE: WIRE, CONDUIT, GROUND RODS, GROUND BUSSES, ELECTRICAL (CAD) WELD DEVICES, METALLIC SHEATHED FLEXIBLE CONDUIT, OUTLET AND PULL BOXES.

   TAB TWO: SWITCHES, ENCLOSURES, CABINETS, TIMERS, AND RECEPTACLES

   TAB THREE: PANEL BOARDS, DISCONNECT SWITCHES (DESIGNATE USE OF EACH), FUSES, AND CIRCUIT BREAKERS OR OTHER CONTROL DEVICES.

13. THE CONTRACTOR SHALL GUARANTEE THAT ALL WORK PERFORMED UNDER THIS CONTRACT IS FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR ONE YEAR (MINIMUM) FOLLOWING FINAL ACCEPTANCE BY THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL RESPOND TO REQUESTS FOR SERVICE IN A TIMELY MANNER APPROPRIATE TO THE SERVICE REQUESTED, THE CONTRACTOR SHALL IMMEDIATELY REPAIR OR REPLACE ANY ITEMS FOUND TO BE DEFECTIVE WITHIN THE GUARANTEE PERIOD AT NO COST TO THE OWNER.

14. THE CONTRACTOR SHALL MAINTAIN ON THE SITE A SET OF CONSTRUCTION DOCUMENTS MARKED IN RED TO SHOW THE ACTUAL CONDITIONS OF CONSTRUCTION. LOCATIONS OF EQUIPMENT AND ROUTING OF SYSTEMS SHALL BE ACCURATELY RECORDED DURING THE COURSE OF CONSTRUCTION. CONTRACTOR SHALL FORWARD A REPRODUCIBLE COPY OF THE RECORD DRAWINGS TO AT&T WIRELESS AT THE COMPLETION OF CONSTRUCTION AND SHALL MAINTAIN THE ORIGINAL RECORD DRAWINGS FOR USE DURING THE GUARANTEE PERIOD. FINAL PAY REQUEST SHALL NOT BE APPROVED WITHOUT THIS FINALIZED INFORMATION IN ACCORDANCE WITH AT&T WIRELESS CLOSE OUT INSTRUCTIONS.

15. IN ADDITION TO THE ABOVE REQUIRED RECORD DRAWINGS, THE CONTRACTOR SHALL FURNISH TO AT&T WIRELESS AT THE COMPLETION OF THE WORK THE FOLLOWING DOCUMENTS:

   TEST REPORTS, WARRANTIES, OPERATIONS AND MAINTENANCE MANUALS AND INFORMATION:

   A. A CERTIFICATE OF GUARANTEE/WARRANTY SHOWING THE DATES OF BEGINNING AND ENDING OF THE WARRANTY
   B. DOCUMENTS PERTINENT TO THE GUARANTEES AND WARRANTIES OF MANUFACTURERS.
   C. WRITTEN INSTALLATION INSTRUCTIONS FOR EQUIPMENT INSTALLED ON THE PROJECT.
   D. THREE SETS OF CUT SHEETS FOR EACH PIECE OF EQUIPMENT INSTALLED FOR ELECTRICAL SYSTEMS.
   E. CERTIFIED RESISTANCE MEASUREMENT DATA AND DRAWINGS USED DURING CONSTRUCTION.

16. ALL MATERIALS SHALL BE NEW AND OF DOMESTIC, OR IF APPROVED, NAFTA MANUFACTURE. ALL ITEMS OF THE SAME TYPE ON THE PROJECT SHALL BE OF THE SAME MANUFACTURER.

17. PRODUCTS OF VARIOUS MATERIALS AND EQUIPMENT ARE SPECIFIED IN ORDER TO ESTABLISH A STANDARD OF QUALITY AND A BASIS OF DESIGN. OTHER SIMILAR MATERIALS MAY BE ACCEPTABLE AS SUBSTITUTIONS PROVIDED THEY MEET THE SAME STANDARDS OF QUALITY AND DESIGN CRITERIA IN THE OPINION OF THE ENGINEER ALTERNATE ITEMS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION. THE DECISION OF THE ENGINEER REGARDING ACCEPTABILITY SHALL BE FINAL. THE CONTRACTOR SHALL BEAR ALL COSTS, INCLUDING THAT OF OTHER TRADES AND THE DESIGN TEAM, ASSOCIATED WITH ACCOMMODATIONS FOR PERMITTED SUBSTITUTIONS.

16123 WIRE AND CABLE

1. ALL WIRE AND CABLE SHALL BE COPPER OF AT LEAST 98% CONDUCTIVITY.
2. ALL INSULATION SHALL BE TYPE THWN EXCEPT TYPE THW MAY BE USED FOR SIZES LARGER THAN #6 AWG.
3. NO WIRE SMALLER THAN #12 AWG MAY BE USED EXCEPT THAT CONTROL CIRCUIT MAY BE #14.
4. A STRICT METHOD OF COLOR CODING SHALL BE MAINTAINED UNLESS THE AUTHORITY HAVING JURISDICTION HAS A DIFFERENT STANDARD, THE FOLLOWING SHALL BE MAINTAINED: A PHASE: BLACK; B PHASE: RED; (AND WHERE USED,) C PHASE: BLUE; NEUTRAL: WHITE; GROUND: GREEN; SWITCH LEG: BROWN; TRAVELERS: BROWN.
5. WIRE CONNECTORS FOR #8 AND SMALLER MAY BE SPRING STEEL CONNECTORS. SPLIT BOLT CONNECTORS WITH RUBBER AND VINYL TAPE SHALL BE USED FOR SIZES LARGER THAN #8 POWER DISTRIBUTION BLOCKS MAY BE USED FOR ANY SIZE CONDUCTOR FOR WHICH IT IS LISTED.
6. UL LISTED WIRE PULLING LUBRICANT SHALL BE USED ON ALL RACEWAY INSTALLATIONS.

16130 RACEWAY SYSTEMS

1. ALL WIRING ABOVE GRADE OR OTHERWISE EXPOSED SHALL BE IN METALLIC CONDUIT. TYPE MC CABLE OR FLEXIBLE CONDUIT MAY NOT BE USED UNLESS SHOWN OR REQUIRED BY THESE SPECIFICATIONS EMT, GALVANIZED INTERMEDIATE AND RIGID CONDUIT ARE ALL ACCEPTABLE WIRING MATERIALS FOR ABOVE GRADE PROVIDED THEY ARE ACCEPTABLE TO LOCAL CODE ENFORCEMENT.
2. ALL FITTINGS SHALL BE COMPRESSION TYPE OR SCREW TYPE AND MAY NOT BE DIE CAST SET SCREW.
3. CONDUIT BELOW GRADE SHALL BE SCHEDULE 40 PVC WITH MATCHING FITTINGS EXCEPT THAT ELBOWS AND VERTICAL CONDUITS IN CONTACT WITH EARTH WHICH ARE LIKELY TO BE DAMAGED BY EXCESSIVE PULLING ROPE TENSION MAY BE PLASTIC WRAPPED INTERMEDIATE OR RIGID GALVANIZED STEEL.
4. EXPOSED CONDUIT OUTDOORS ABOVE GRADE OR IN DAMP LOCATIONS SHALL BE GALVANIZED RIGID STEEL OR INTERMEDIATE METALLIC CONDUIT.
5. ULTRAVIOLET PROTECTED PLASTIC COATED FLEXIBLE METAL CONDUIT MAY BE USED WHERE INDICATED AND OTHERWISE FOR THE CONNECTION OF ROTATING OR VIBRATING EQUIPMENT. SUCH EQUIPMENT LOCATED OUTDOORS OR IN DAMP LOCATIONS SHALL BE CONNECTED WITH LIQUID TIGHT FLEXIBLE METAL CONDUIT USING LISTED FITTINGS.
6. MINIMUM COVER FOR OUTDOOR CONDUITS SHALL BE 36 INCHES. NOTE: UTILITY CONDUITS MAY HAVE A GREATER DEPTH REQUIREMENT.

16250 GROUNDING

1. ALL EQUIPMENT AND SERVICE ENTRANCE GROUNDING SHALL BE PER NFPA-70 CURRENT EDITION AS ADOPTED BY LOCAL AUTHORITY HAVING JURISDICTION ON THIS PROJECT. PER ARTICLE 250 AS WELL AS OTHER APPLICABLE STANDARDS SUCH AS THE NATIONAL ELECTRICAL SAFETY CODE, NFPA 780 (LIGHTNING PROTECTION) AND AT&T WIRELESS STANDARDS ON EQUIPMENT GROUNDING.

16400 WIRING DEVICES

1. ALL WIRING DEVICES SHALL BE SPECIFICATION GRADE RATED AT 20 AMPS.
2. PROVIDE DEVICES AS SHOWN ON DOCUMENTS. CONSULT WITH CONSTRUCTION MANAGER AND OTHER TRADES FOR EXACT LOCATION OF OUTLETS. WHERE OUTLETS SERVE A SPECIFIC PIECE OF EQUIPMENT AND WHERE POSSIBLE, CONCEAL OUTLET BEHIND THAT EQUIPMENT.

16500 PANEL BOARDS: VERIFY PROVIDED BY AT&T WIRELESS (OR CONTRACTOR) AND INSTALLED BY THIS CONTRACTOR.

1. VERIFY THAT THE INTERRUPTING RATING OF CIRCUIT BREAKERS SHALL BE GREATER THAN THE AVAILABLE FAULT CURRENT. VERIFY THE AVAILABLE FAULT CURRENT WITH THE SERVING ELECTRICAL UTILITY.
2. PROVIDE SOLID NEUTRALS ON ALL PANELS AND MAIN SERVICE ENTRANCE DISCONNECT (IF MAIN SERVICE DISCONNECT REQUIRED).
3. PROVIDE 1" BLACK MICARTA TAGS WITH 1/2" WHITE LETTERS FOR EACH PANELBOARD AND DISCONNECT MATCHING PROJECT DOCUMENTATION. TAGS SHALL BE "POP-RIVETTED" THROUGH PANEL COVER.

16600 LIGHTING FIXTURES (IF SHOWN)

1. PROVIDE LIGHTING FIXTURES AS SHOWN ON THE DOCUMENTS. QUESTIONS ON LIGHT FIXTURE TYPES SHALL BE DIRECTED TO AT&T WIRELESS FOR CLARIFICATION. THE CONTRACTOR SHALL PROVIDE ALL LIGHTING FIXTURES.
2. FASTEN EACH LIGHTING FIXTURE TO AN OUTLET BOX OR STRUCTURAL FRAMING. INCLUDE ALL NECESSARY HARDWARE AND SUPPORTING DEVICES TO ACCOMPLISH THIS.
3. PROVIDE NEW LAMPS OF THE TYPE RECOMMENDED BY THE PLANS AND SPECIFICATION AT THE TIME OF FINAL ACCEPTANCE.
4. ALL LIGHTING FIXTURES SHALL BE CLEAN AND FULLY OPERATIONAL AT THE TIME OF FINAL ACCEPTANCE.

16700 EQUIPMENT CONNECTIONS

1. PROVIDE ELECTRICAL POWER AND LIGHTING CONNECTIONS FOR ALL EQUIPMENT ON THE PROJECT WHETHER FURNISHED BY THIS CONTRACTOR OR OTHERS.
2. CAREFULLY RESEARCH THE DOCUMENTS AND CONSULT WITH OTHERS TO DETERMINE THE REQUIREMENTS FOR CONNECTIONS.

16900 SPECIAL MODULAR CELL INSTALLATION GROUNDING INTEGRITY AND IMPEDANCE TESTING:

1. CONTRACTOR SHALL PRESENT MEASUREMENTS SHOWING CERTIFIED THIRD PARTY GROUND IMPEDANCE TESTING AS REQUIRED BY THE CONTRACT DOCUMENTATION. TESTING PER ANSI/IEEE STD 81-1983, IEEE GUIDE FOR MEASURING EARTH RESISTIVITY SHALL BE AS APPROVED BY AT&T WIRELESS CONSTRUCTION MANAGEMENT.
2. THIS INSTALLATION SHALL BE GROUNDED WITH AN INTEGRATED (MULTI-POINT) GROUNDING SYSTEM.
3. SURGE PROTECTION SHALL BE AT&T WIRELESS APPROVED EQUIPMENT. IT SHALL BE BONDED TO A GROUND BAR AT THE SERVICE ENTRANCE POINT THAT IS CONNECTED DIRECTLY TO THE GROUNDING ELECTRODE SYSTEM.
4. REVIEW EXISTING INSTALLATION AND FOLLOW AT&T WIRELESS CELL SITE GROUNDING AND LIGHTNING PROTECTION STANDARDS REPORT PERCEIVED DIFFICULTIES WITH MEETING THIS CRITERIA WITH AT&T WIRELESS CONSTRUCTION MANAGEMENT. OTHER REQUIRED STANDARDS SHALL BE: NFPA-780 STANDARD FOR INSTALLATION OF LIGHTNING SYSTEMS AND POLY PHASE EQUIPMENT; AND, THE GROUNDS FOR LIGHTNING PROTECTION AND EMP PROTECTION", SECOND ED. BY ROGER R. BLOCK.
5. THE ELECTRICAL CONTRACTOR SHALL PROVIDE BONDING STRAPS, CAD WELDING AND HARDWARE FOR EACH SEPARATE PIECE OF THE EQUIPMENT MOUNTING PLATFORM TO ASSURE THAT ALL PIECES ARE ELECTRICALLY CONNECTED. SUCH CONNECTIONS SHALL BE MADE AND TESTED TO DEMONSTRATE LOW ELECTRICAL RESISTANCE ACCEPTABLE TO AT&T WIRELESS BETWEEN ANY TWO POINTS ON THE PLATFORM, MOUNTS OR STRUCTURE.

STATE OF TEXAS
ROBERTO TORRES
83419
LICENSED PROFESSIONAL ENGINEER

8/3/17

REVISIONS	DATE
0 ISSUED FOR CONSTRUCTION	08/03/17

CELERIS PROJECT NO.: 16-8534

CELERIS GROUP
CONSULTING ENGINEERS
2000 E. Lamar Blvd., Suite 550
Arlington, TX 76006
Office: 817.446.1700
Fax: 817.460.0677

Torres Engineering Services, Inc.
8237 Delafield Dr.
Ft. Worth, Texas 76131
(682) 556-0848
Registration No. F-10147

at&t
1301 VALLEY VIEW LANE
FARMERS BRANCH, TX 75234

SITE NAME
UNIVERSITY PARK
WATER TOWER

DRAWN BY:	KDR
CHECKED BY:	RT
DATE	08/03/17
PLOT SCALE	1:2
DRAWING NAME	ELECTRICAL SPECIFICATIONS
SHEET No.	E06