

# CITY OF DEER PARK

## Specific Use Permit



LN- 002330 -2018

PERMIT #: LN- 002330 -2018

PROJECT:

ISSUED DATE:

EXPIRATION DATE :

PROJECT ADDRESS:

6911 1/2 SH 225 W

OWNER NAME: Aqua Solutions

CONTRACTOR: AT&T

ADDRESS: 6915 Highway 225

ADDRESS: 6911 1/2 Hwy 225

CITY: Deer Park

CITY: DEER PARK

STATE : TX

STATE : TX

ZIP: 77536

ZIP: 77536

PHONE:

### PROJECT DETAILS

PROPOSED USE: SQ FT: 0  
DESCRIPTION: Specific Use Permit For A Cell Tower VALUATION : \$ 0.00

### PERMIT FEES

TOTAL FEES : \$ 1,000.00 PAID: \$ 1,000.00 BALANCE: \$ 0.00

### ALL PERMITS MUST BE POSTED ON THE JOBSITE AND VISIBLE FROM THE STREET

### NOTICE

THIS PERMIT BECOMES NULL AND VOID IF WORK OR CONSTRUCTION AUTHORIZED IS NOT COMMENCED WITHIN 6 MONTHS, OR IF CONSTRUCTION OR WORK IS SUSPENDED OR ABANDONED FOR A PERIOD OF 1 YEAR AT ANY TIME AFTER WORK IS STARTED. ALL PERMITS ARE SUBJECT TO THE FOLLOWING :

- ALL WORK MUST COMPLY WITH THE BUILDING , ELECTRICAL, PLUMBING, AND MECHANICAL CODES ADOPTED BY THE CITY OF DEER PARK AT THE TIME THE PERMIT IS ISSUED .
- IT IS THE RESPONSIBILITY OF THE OWNER/CONTRACTOR TO COMPLY WITH ALL STATE & FEDERAL DISABILITY REQUIREMENTS.
- ENCROACHMENTS OF EASEMENTS AND RIGHT-OF-WAYS ARE NOT ALLOWED .

I HEREBY CERTIFY THAT I HAVE READ AND EXAMINED THIS DOCUMENT AND KNOW THE SAME TO BE TRUE AND CORRECT . ALL PROVISIONS OF LAWS AND ORDINANCES GOVERNING THIS TYPE OF WORK WILL BE COMPLIED WITH WHETHER SPECIFIED HEREIN OR NOT . GRANTING OF A PERMIT DOES NOT PRESUME TO GIVE AUTHORITY TO VIOLATE OR CANCEL THE PROVISION OF ANY OTHER STATE OR LOCAL LAW REGULATING CONSTRUCTION OR THE PERFORMANCE OF CONSTRUCTION .

*BY MAIL*

SIGNATURE OF CONTRACTOR OR AUTHORIZED AGENT

DATE

APPROVED BY

DATE

**TO SCHEDULE NEXT DAY INSPECTIONS CALL BY 4PM 281-478-7270  
ALL REINSPECTIONS ARE SUBJECT TO A \$45.00 REINSPECTION FEE**

You can request a morning or afternoon inspection and we will do our best to accommodate you but there are no guarantees, it will depend on the volume of inspections scheduled that day.

710 E San Augustine Deer Park, TX 77536 Fax 281-478-0394  
www.deerparktx.gov/publicworks



AT&T Mobility  
11930 Airline Dr.  
Room 210  
Houston, TX 77037

November 5, 2018

Deer Park City Council  
Larry Brotherton/Chief Building Official  
710 E. San Augustine  
Deer Park, Texas 77536

RE: Specific Use Permit

Dear Deer Park City Council,

AT&T is proposing a new constructed 180' Self Support telecommunications tower located at 6911 HWY 225 in Deer Park, Texas. The legal description is Tract 10C-2, Abstract 646, George Ross Survey in Harris County. This site would replace the existing cell site that we are collocated on .26 miles to the south east. The fees, costs, and contractual provisions required by the tower owner for us to remain collocated on the existing structure are unreasonable. AT&T needs to reduce our monthly rent expenditures at this location, thus a relocation is the most appropriate cost-effective move.

In compliance with the city's zoning use of the proposed location AT&T is in the area that is zoned for light industrial and refinery. AT&T has been granted a letter from the landlord for permission to build a tower on the land. AT&T has also obtained an executed Option and Land Lease, that grants AT&T (tenant) approximately 3,600 sq. ft of the leased site.

For AT&T to continue to provide continued coverage to our subscribers and constituents in this area AT&T has provided this information with the full intent of meeting the spirit and letter of the code for which this application is being submitted. AT&T is supplying all relevant information for this project to be reviewed by the City of Deer Park.

Thank you,

A handwritten signature in cursive script that reads "JoyLee Owings".

JoyLee Owings  
Sr Real Estate & Construction Mgr

AT&T Site Number HX0713, FA 14520886



# AQUA SOLUTIONS, INC.

P.O. Box 70, Deer Park, TX 77536. Ph(800)256-2586 Fax(281)479-2790

Visit our website at [www.aquasolutions.org](http://www.aquasolutions.org)

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**DATE** 10/08/18

**TOTAL PAGES:** 1

**TO:** City of Deer Park-City Council

**FROM:** Chris Bedford  
Aqua Solutions, Inc.  
PH: 281-479-2569

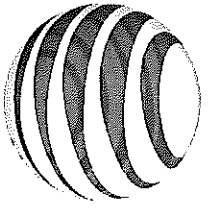
**RE:** Specific Use Permit

Mastec and New Cingular Wireless have my permission to request a Specific Use Permit for 3,600 square feet on George Ross Survey, A-646 of Harris County, Texas

Thanks,

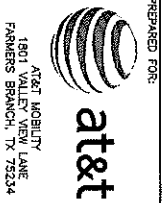
A handwritten signature in black ink, appearing to read 'Chris Bedford', written in a cursive style.

Chris Bedford



at&t

SITE NAME: ATC GS ICE HOUSE RELO  
SITE NUMBER: HX0713 (HX0549)  
STRUCTURE TYPE: SELF SUPPORT TOWER  
FA CODE: 14520886



AT&T MOBILITY  
1801 VALLEY VIEW LANE  
FARMERS BRANCH, TX 75234

2018 NSB PTN: 3063A0G201

THESE DRAWINGS ARE BASED ON RFD'S VERSION 11.0. DATE UPDATED 9/28/2018  
GENERAL CONTRACTOR TO VERIFY AND INCORPORATE MOST RECENT VERSION  
OF THE RFD'S WITH TILLMAN INFRASTRUCTURE PRIOR TO CONSTRUCTION.



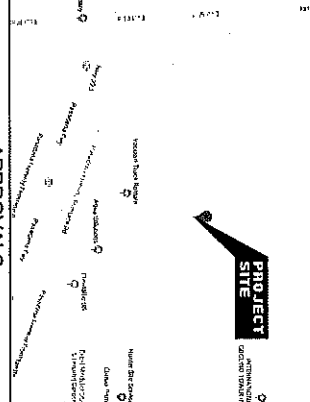
PROJECT INFORMATION

SITE NAME: ATC GS ICE HOUSE RELO  
SITE NUMBERS: HX0713 (HX0549)  
911 ADDRESS: 6911 HWY 225  
DEER PARK, TX 77536  
LATITUDE: 29.708887 (29° 42' 31.88")  
LONGITUDE: -98.099483 (95° 05' 54.54")  
GROUND ELEVATION: 28' ASL  
JURISDICTION: CITY OF DEER PARK  
STRUCTURE TYPE: SELF SUPPORT TOWER

DRIVING DIRECTIONS

DEPART GRAND TAMPICO INTERNATIONAL:  
GET ON I-45 N FROM AIRPORT BLVD AND MONROE  
BLVD. MAIN LANE. TAKE TX-225 E TO PASADENA CRT  
TOWARD INDEPENDENCE PARKWAY FROM TX-225 E  
1.4MILE (1.3MI), CONTINUE ON PASADENA FREEWAY  
PROCEED RR TO YOUR DESTINATION MAIN (0.5MI).  
ARRIVE ON SITE.

VICINITY MAP



SHEET INDEX

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E3.1	GROUNDING DETAILS
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NOTE: DRAWING SCALES ARE FOR 22 X34" SHEETS UNLESS OTHERWISE NOTED.	

SCOPE OF WORK

1. THE WIRELESS COMMUNICATIONS ROUTING IS NOT FINISHED FOR TILLMAN COMPANY
2. INSULATION OF (2) PANEL ANTENNAS
3. INSULATION OF (3) REB-11 (1 PER SECTOR)
4. INSULATION OF (3) REB-448 BBS (1 PER SECTOR)
5. INSULATION OF (3) REB-445 BBS (1 PER SECTOR)
6. INSULATION OF (3) REB-318 BBS (1 PER SECTOR)
7. INSULATION OF (3) REB-312 (1 PER SECTOR)
8. INSULATION OF (3) REB-312 (1 PER SECTOR)
9. INSULATION OF (3) REB-312 (1 PER SECTOR)
10. INSULATION OF (3) REB-312 (1 PER SECTOR)
11. INSULATION OF (3) REB-312 (1 PER SECTOR)
12. INSULATION OF (3) REB-312 (1 PER SECTOR)
13. INSULATION OF (1) POLY POWER 15W DC GENERATOR W/ 3X4X4 PLATEM VEH HELD ACCESS
14. INSULATION OF (1) POLY POWER 15W DC GENERATOR W/ 3X4X4 PLATEM VEH HELD ACCESS

CONTACTS

**APPLICANT:**  
AT&T MOBILITY  
1801 VALLEY VIEW LANE  
FARMERS BRANCH, TX 75234

**PROPERTY OWNER:**  
THOMAS CHRIS BEERFORD  
6913 HIGHWAY 225  
DEER PARK, TX 77536

**TOWER OWNER:**  
TILLMAN INFRASTRUCTURE  
152 W. 57TH ST, 3TH FL  
NEW YORK, NY 10019

**CONSULTANT:**  
AT&T YOUNG  
SW REGION--CONSTRUCTION PROJECT MANAGER  
PHONE: 817-680-7442  
EMAIL: gyswain@tiltmaninfrastructure.com

APPROVALS	DATE
AT&T REBL ESTATE	
AT&T RF ENGINEERING	
AT&T CONSTRUCTION MANAGER	
AT&T OPERATIONS	
CONSTRUCTION MANAGER	
PROPERTY OWNER	

CONTRACTOR	DATE
THE ABOVE PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION OF THE PROJECT AND TO OBTAIN ALL NECESSARY PERMITS FROM THE LOCAL BUILDING DEPARTMENT AND ANY AGENCIES OR MODIFICATIONS.	
<b>SITE ACCESS PROCEDURES</b>	

**STATE OF TEXAS**  
TILLMAN INFRASTRUCTURE  
106713  
LICENSED PROFESSIONAL ENGINEER  
9/6/18

**LEVELLS**  
1915 W. 222. STE. 301  
CANTON RIDGE, TX 77246  
CONSULTING ENGINEER, INC.  
PH: (281) 542-9911  
F: 3346

APPROVED BY: [Signature]  
DATE DRAWN: 04/23/18  
REVISION: [Table]



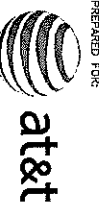
**POWER COMPANY:**  
AT&T YOUNG & RUBICAM  
PH: 817-680-4100

**ARCHITECT/ENGINEER:**  
LEVELLS CONSULTING ENGINEERS  
19315 FM 2252, SUITE 301  
CANTON RIDGE, TX 77246  
PHONE: 210-542-9911

**TELEPHONE COMPANY:**  
AT&T  
PHONE: 1-800-298-2020

**COVER SHEET**  
SHEET NUMBER: T1.0

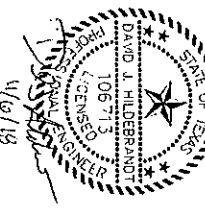




AT&T LOGILITY  
1801 VALLEY VIEW LANE  
FARMERS BRANCH, TX 75234



SITE NAME:  
**ATC GS ICE HOUSE RELO**  
SITE NUMBER:  
**HX0713 (HX0549)**  
SITE ADDRESS:  
6911 HWY 225  
DEER PARK, TX 77236  
HARRIS COUNTY



**LEVELS**  
CONSULTING ENGINEER, INC.  
1915 SAUL ZIEGLER DRIVE  
DALLAS, TEXAS 75235  
PHONE: (214) 342-5947  
FAX: (214) 342-5948

NO.	DESCRIPTION	BY	DATE
0	ISSUED FOR CONSTRUCTION	IL	04/23/18
1	REV B25	IL	02/14/18
2	REV B25	WS	11/07/18

APPROVED BY: TH  
DATE DRAWN: 04/23/18

SHEET NUMBER: **N1.1**

GENERAL NOTES

D. BACKFILL MATERIALS WILL CONSIST OF: SANSFACTORY NON-COHESIVE SAND OR SANDSTONE SOIL MATERIALS FREE OF CLAY, ROCK OR GRAVEL NOT LARGER THAN 4 INCHES IN ANY DIMENSION, DEBRIS, WASTE, FROZEN MATERIALS, AND OTHERS THAT ARE UNSUITABLE MATERIALS. IMPROVED MATERIAL SHALL HAVE A CLAY CONTENT OF NO MORE THAN 5 PERCENT.

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

F. GEOTECHNICAL FABRIC: AS PER CONSTRUCTION DOCUMENTS.

**3.4. CLEANING AND GRADING BEFORE ALL EXCAVATION AND MATERIALS AS REQUIRED. CLEANING AND GRADING BEFORE EXCAVATION OR IN AN ON-SITE LOCATION APPROVED BY THE CONSTRUCTION MANAGER.**

**3.5. STRIPPIERS:**  
STRIP NOT LESS THAN 3 INCHES OF SOO AND TOPSOIL FROM AREAS THAT WILL UNDERLIE GRAVEL PAVEMENT, NEW STRUCTURES OR NEW EMBANKMENTS. STOCKPILE STRIPPER ON-SITE FOR RE-USE IN FINAL LANDSCAPING.

**3.6. COMMON EXCAVATION:**

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

B. 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.

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

**3.7. EMBANKMENT:**

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

B. USE IMPROVED BACKFILL ONLY AFTER AVAILABLE ON-SITE EXCAVATION MATERIALS HAVE BEEN USED.

C. CONTRACTOR IN CUTS OF NOT MORE THAN 12 INCHES IN LOOSE DEPTH, THE FULL WIDTH OF THE CROSS SECTION SHALL BE BROUGHT UP UNIFORM.

D. MATERIAL SHALL NOT BE PLACED IN LINES AND SHALL BE NEARLY HORIZONTAL. MATERIAL SHALL BE PLACED IN LAYERS AND SHALL BE NEARLY HORIZONTAL. WEEDING OR SORTING OF THE MATERIAL AND MANIPULATION TO SECURE A UNIFORM MIXTURE CONTENT THROUGHOUT THE LAYER MAY BE REQUIRED. SUCH OPERATIONS SHALL BE INCLUDED IN THE APPROPRIATE BID ITEM. SHOULD THE MATERIAL BE TOO WET FOR PLACEMENT, CONTRACTOR SHALL BE RESPONSIBLE TO WET THE MATERIAL WITH AN APPROPRIATE AMOUNT OF WATER UNDER THE CONTROL OF THE CONSTRUCTION MANAGER.

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

F. 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.

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

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

I. CONTACT 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 % OF ASTM D-1557.

**3.8. SITE GRADINGS:**

A. 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.

B. GRADE SURFACES TO BEAN AND EXHAUSTIVE ANY PONDING OR EROSION.

C. EXHAUSTIVE WHEEL WASHES BY REGRADING.

D. CONTACT AREAS 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.

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

**3.9. SIBERGRADE OPERATIONS:**

A. SHAPE TOP OF SIBERGRADE TO THE LINES AND GRADES SHOWN ON THE DRAWINGS.

B. MAINTAIN TOP OF SIBERGRADE TO A FREE-DRAINING CONDITION.

C. DO NOT STOCKPILE MATERIALS ON TOP OF SIBERGRADE UNLESS AUTHORIZED BY CONSTRUCTION MANAGER.

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

E. CONSTRUCT TOP OF SIBERGRADE WITHIN ONE INCH OF ESTABLISHED GRADE AND CROSS-SECTION.

**3.10. SECURITY FENCING:**

A. LAY GEOTECHNICAL FABRIC OVER COMPACTED SIBERGRADE AS PER CONSTRUCTION DOCUMENTS IN THE COMPOUND AREA AND UNDER LENGTH OF ROAD (WHERE REQUIRED). LAP ALL JOINTS TO A MINIMUM OF 26 INCHES.

**3.11. GRAVEL SUBGRADE:**

A. CONSTRUCT GRAVEL SPREADING AREAS USING CRUSHED AGGREGATE BASE AND FINISH GRADES AS SPECIFIED BY CONSTRUCTION MANAGER OR CONSTRUCTION DOCUMENTS.

B. SPREAD GRAVEL AND BASE TO OBTAIN A UNIFORM SURFACE AREA.

**3.12. TRENCHING:**  
CALL LOCAL UNDERGROUND UTILITY LOCATING SERVICE BEFORE ANY EXCAVATION OR TRENCHING.

**3.13. MATERIALS:**

FILL MATERIALS SHALL BE OBTAINED FROM POSSIBLE FROZEN MATERIALS EXCAVATED FROM EXCAVATION OR STOCKPILE. FILL MATERIALS SHALL BE APPROVED BY THE CONSTRUCTION MANAGER AND SHALL CONFORM TO LOCAL GOVERNING JURISDICTIONS AND UTILITY COMPANY REQUIREMENTS. THE FILL MATERIAL SHALL CONTAIN NO ORGANIC MATERIAL OR ROCKS, NOR SHALL CONTAIN MATERIALS THAT ARE HARMFUL TO THE ENVIRONMENT. PROTECTION AGAINST LEACHING OR MATERIALS SHALL CONTAIN FINES SUFFICIENT TO FILL ALL Voids IN THE MATERIAL LAYS WHEN UTILIZING HEAVY OR COMPACTOR EQUIPMENT OR 8 INCH LOOSE LIFTS WHEN UTILIZING HAND OPERATED EQUIPMENT.

**3.14. PIPE DETECTION AND REMEDIATION:**

A. UTILIZING WAPPING 14" x 1/4" ALL ELECTRIC SERVICE TRENCHES SHALL BE MARKED WITH WARNING TAPE.

**3.15. TRENCH EXCAVATION:**

A. DIG TRENCH TO LINES AND GRADES SHOWN ON THE PLANS OR AS DIRECTED BY CONSTRUCTION MANAGER.

B. TRENCH LENGTH SHALL BE SUFFICIENT TO ALLOW FOR SATISFACTORY CONSTRUCTION AND INSPECTION OF THE PROJECT WITHOUT ENDANGERING OTHER CONSTRUCTION WORK OR ADJACENT FACILITIES.

C. DISPOSE OF EXCESS AND UNSUITABLE EXCAVATION MATERIAL PROPERLY, AS DIRECTED BY CONSTRUCTION MANAGER.

D. USE HAND METHODS FOR EXCAVATION THAT CANNOT BE ACCOMPLISHED WITHOUT ENDANGERING EXISTING OR NEW STRUCTURES OR OTHER FACILITIES.

**3.16. TRENCH PROTECTION:**

A. PROVIDE MATERIALS, LABOR AND EQUIPMENT NECESSARY TO PROTECT TRENCHES AT ALL TIMES.

B. SHEETING AND BRACING (MEET OR EXCEED OSHA REQUIREMENTS).

**3.17. BACKFILLING:**

A. NOTIFY THE CONSTRUCTION MANAGER AT LEAST 24 HOURS IN ADVANCE OF BACKFILLING.

B. BACKFILL TRENCH WITH LIFTS UP TO 12 INCHES, LOOSE MEASURE.

C. PROTECT CONDUIT FROM LATERAL MOVEMENT DAMAGE FROM VIBRATIONS OR DO NOT FREE FALL BACKFILL INTO TRENCH UNTIL AT LEAST 12 INCHES OF COVER IS OVER THE CONDUIT.

**3.18. COMPACTION:**

A. COMPACT BACKFILL 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.

B. IF REQUIRED COMPACTION DENSITY HAS NOT BEEN OBTAINED, REMOVE THE BACKFILL FROM THE TRENCH OR STRUCTURE, REPLACE WITH APPROVED MATERIAL AND REWORK AS SPECIFIED.

C. ANY SUBSEQUENT SETTLEMENT OF TRENCH OR STRUCTURE BACKFILL DURING MAINTENANCE PERIOD SHALL BE CORRECTED THE RESULT OF IMPROPER COMPACTION AND SHALL BE PROMPTLY CORRECTED.

**3.19. CHAIN LINK FENCES AND GATES:**

**3.20. GENERAL:**

A. PROVIDE CHAIN LINK FENCES AND GATES AS COMPLETE UNITS BY A SINGLE SUPPLIER INCLUDING NECESSARY ERECTION ACCESSORIES, FITTINGS AND FASTENERS.

B. PROVIDE AND MATERIALS (AS APPROVED BY CONSTRUCTION MANAGER OR AS WITHIN CONSTRUCTION DOCUMENTS)

C. CHAIN LINK FENCES AND GATES AS COMPLETE UNITS BY A SINGLE SUPPLIER INCLUDING NECESSARY ERECTION ACCESSORIES, FITTINGS AND FASTENERS.

D. KNOCKED AT ONE SWAGE AND TRINCHED AT THE OTHER.

E. STEEL FABRIC:

F. COMPPLY WITH CHAIN LINK FENCE MANUFACTURERS INSTITUTE (CLFM) PRODUCT MANUAL AND ONE PIECE OF FABRIC HEIGHTS. WIRE SIDE INCLUDES ZINC OR ALUMINUM COATING.

G. FRAMEWORK AND ACCESSORIES:

H. GENERAL REQUIREMENTS: EXCEPT AS INDICATED OTHERWISE CONFORM TO THE CHAIN LINK FENCE MANUFACTURERS INSTITUTE (CLFM) PRODUCT MANUAL INCLUDING FRAME II.

I. STRENGTH REQUIREMENTS FOR POSTS AND RAILS CONFORMING TO ASTM F 669:

- TYPE 1 PIPE: NOT-DIPPER GALVANIZED STEEL PIPE CONFORMING TO ASTM F 1081 PLANE END; STANDARD WEIGHT (SCHEDULE 40) WITH NOT LESS THAN 18 OZ. ZINC PER SQ. FT. OF SURFACE AREA COATED.
- PLAINEST COMPLY WITH ASTM F 596 HILL FINISHED ALUMINUM OR GALVANIZED STEEL TO CONPLY WITH MANUFACTURERS REQUIREMENTS.
- TOP RAIL MANUFACTURERS LONGEST LENGTHS WITH EXPANSION TYPE COUPLINGS APPROXIMATELY 6 INCHES LONG FOR EACH JOINT. PROVIDE WEBS FOR ATTACHING TO RAIL SECURED TO EACH GATE (SECTION 1.4) AND END POST. GALVANIZED PER ASTM F 1081 TYPE 1 OR II STEEL PIPE OR 1.25 INCH X 1.25 INCH ROLL-FORMED C SECTIONS WEIGHING 1.35 PER FT.
- SMALL GATES:
- CONPLY WITH ASTM F 5000, PROVIDE HARDWARE AND ACCESSORIES FOR EACH GATE GALVANIZED PER ASTM F 1033, AND IN ACCORDANCE WITH THE FOLLOWING:  
1. HINGES: NON LIFT-OFF TYPE. OFFSET TO PERMIT 90 DEG. GATE OPENING.  
2. LATCH: WTS MULTI-LOCKING DEVICE W/ C-4477 OR APPROVED EQUAL.  
3. KEYP: PROVIDE KEYPERS FOR VEHICLE GATES, WHICH AUTOMATICALLY ENGAGES GATE LEAF AND HOLDS IT IN OPEN POSITION UNTIL MANUALLY RELEASED.

J. CONCRETE:

K. PROVIDE CONCRETE CONSISTING OF PORTLAND CEMENT, AGGREGATES AND WATER TO FORM CONCRETE WITH A MINIMUM OF 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI.

**3.21. LANDSCAPING:**

A. FINISH, INSTALL AND MAINTAIN LANDSCAPE WORK AS SHOWN AND OR REQUIRED WITHIN THE CONSTRUCTION DOCUMENTS OR AS SPECIFIED IN THE AT&T WIRELESS CONSTRUCTION SPECIFICATIONS.

**3.22. CONCRETE FORMWORK:**

A. FORMS: SMOOTH AND FREE OF SURFACE IRREGULARITIES. UTILIZE FORM RELEASE AGENTS.

B. CHAMFER: EXPOSED EDGES OF ALL TOWER FOUNDATIONS SHALL RECEIVE A 3/4" BY 3/4" 45 DEGREE CHAMFER. OTHER EXPOSED EDGES SHALL RECEIVE A TYPICAL RADIUS FINISH.

C. UPON COMPLETION, REMOVE ALL FORMS, INCLUDING THOSE CONCEALED OR BURIED.

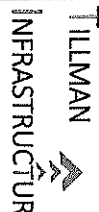
D. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL REQUIREMENTS.

E. CONCRETE BEHIND/BEFORE/IN.

F. REFER TO STRUCTURAL DRAWINGS FOR ALL REQUIREMENTS.



AT&T MOBILITY  
1801 VALLEY VIEW LAKE  
FARMERS BRANCH, TX 75234



SITE NAME  
**ATC GS ICE  
HOUSE RELO**  
SITE NUMBER  
**HX0713 (HX0549)**  
SITE ADDRESS:  
6811 HWY 225  
DEER PARK, TX 77536  
HARRIS COUNTY



**LEVELS**  
CONSULTING ENGINEERS, INC.  
19315 FM 2232, STE. 301  
CADDEN RIDGE, TX 75834  
PH: (281) 943-9111  
F: 336-6

NO	DESCRIPTION	REVISION	BY	DATE
1	ISSUED FOR CONSTRUCTION	L	04/23/18	
2	REV RNS	L	03/14/18	
3	REV RNS	NS	11/07/15	

SHEET TITLE  
**GENERAL NOTES**  
SHEET NUMBER  
**N12**

**9.0. CAST IN PLACE CONCRETE**

FOR STRUCTURAL CONCRETE (FOOTINGS, FOUNDATIONS, ETC.), REFER TO STRUCTURAL DRAWINGS FOR REQUIREMENTS. FOR ANY MISCELLANEOUS CONCRETE, REFER TO SPECIFICATION BOOK OR OBTAIN REQUIREMENTS FROM CONSTRUCTION MANAGER.  
 ALL CONCRETE SHALL COMPLY WITH ASTM C94 UNLESS NOTED OTHERWISE.

**B. MINIMUM COMPRESSIVE STRENGTH (FCI) AT 28 DAYS: 4000 PSI FOR TOWER CONSTRUCTION DOCUMENTS.**  
**C. AIR ENTRAINMENT:**  
 PROVIDE 4 TO 8% AIR ENTRAINMENT FOR ALL CONCRETE SUBJECT TO FREEZE-THAW CYCLE.

**D. CONCRETE TESTING:**  
 ALL FOUNDATION CONCRETE SHALL BE TESTED BY AN INDEPENDENT TESTING AGENCY APPROVED BY THE CONSTRUCTION MANAGER. ALL STRUCTURAL TOWER FOUNDATION CONCRETE MUST BE EQUIPPED FOR BUILDING PROS. ARE NOT REQUIRED TO BE TESTED. ALL OTHER CONCRETE SHALL BE TESTED IN ACCORDANCE WITH THE MINIMUM OF 5 CYLINDERS (2-7" DIA, 2-28" DIA, 1-SPREAD) FOR EACH CAST POOR, OR FOR EVERY 50 YARDS PLACED, WHICHEVER IS GREATER. ADDITIONAL TESTS OR CYLINDERS MAY BE REQUIRED BY CONSTRUCTION MANAGER. A SLUMP, AIR, AND TEMPERATURE TEST SHALL BE REQUIRED AT THE LOCATION OF EACH POUR. ALL TESTS SHALL BE REPORTED TO THE TESTING AGENCY WITHIN 24 HOURS OF LAB TEST. CONCRETE CONSIDERED BEING LESS THAN DESIRABLE BY CONCRETE SPECIFICATION STANDARDS. THE TESTING AGENCY HAS THE AUTHORITY TO NOT ACCEPT CONCRETE RESPONSIBLE FOR ANY CONCRETE NOT MEETING THESE STANDARDS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF THE TESTING AGENCY. A MINIMUM OF 24 HOURS IN ADVANCE OF EACH FOUNDATION POUR, TEST REPORTS SHALL BE FORWARDED TO ARIET CONSTRUCTION MANAGER WITHIN 24 HOURS OF LAB TEST.

**E. VIBRATE ALL CONCRETE USING SUFFICIENT HIGH FREQUENCY LOW AMPLITUDE MECHANICAL VIBRATION TYPE VIBRATORS. INSERT VIBRATORS IN CONCRETE AT REGULAR INTERVALS AND OVER ENTIRE SURFACE TO SOLIDLY FILL CONCRETE. AT AND BETWEEN REINFORCEMENT BARS AND INTO CORNERS AND IRREGULARITIES. VIBRATORS SHALL BE USED TO CONSOLIDATE CONCRETE. VIBRATION SHALL BE STOPPED AS LATE AS THE RUNNING VIBRATOR WILL SINK THROUGH UPPER LAYERS OF ITS WEIGHT STOP BREAKING THE LEVELING SURFACE. DO NOT OVER VIBRATE AS THIS MAY CAUSE SEGREGATION.**

**F. FINISHING EXPOSED CONCRETE SURFACES:**

1. THESE PROVISIONS APPLY TO ALL EXPOSED AND ALL FINISH CONCRETE EXTERIOR OR INTERIOR UNLESS SPECIFICALLY DETAILED OTHERWISE. PERFORM PROCEDURES PRIOR TO APPLICATION OF ANY CURING COMPOUNDS.
  2. ALL SURFACES THOROUGHLY CLEAN OFF ALL STAINS, SPATTER AND LOOSE MATERIAL.
  3. FIN, RIDGES AND HIGH SPOTS, HONE SMOOTH WITH ABRASIVE POWER GRINDERS WHILE CONCRETE IS GREEN, IMMEDIATELY AFTER FORM REMOVAL.
  4. FILL THE HOLES AND DEEP DEPRESSIONS, FLUSH THOROUGHLY WITH CLEAN WATER AND TAMP TO OVERFILL WITH DRYPACK. CURE 10 DAYS AND HONE FLUSH AND SMOOTH.
  5. ROCK POCKETS, HONEYCOMB, SAND STREAKS, DEBRIS AND VOIDS, CUT OUT AT LEAST 1 INCH DEEP WITH SIDES PERPENDICULAR TO SURFACE. FLUSH PASTE AND TAMP TO OVERFILL WITH CLEAN WATER. CURE 10 DAYS AND HONE FLUSH AND SMOOTH.
- G. CONTRACTOR SHALL VERIFY ALL SIZES AND LOCATIONS OF ALL ELECTRICAL OPENINGS AND ALL OTHER SERVICES TO BE INSTALLED. CONTRACTOR SHALL VERIFY ALL DRAWINGS AND LOCATIONS OF ALL UTILITIES. CONTRACTOR SHALL REFER TO DRAWINGS OF OTHER TRADES AND VENDOR DRAWINGS FOR ALL SERVICES TO BE INSTALLED. CONTRACTOR SHALL VERIFY ALL SERVICES PRIOR TO POURING CONCRETE. THE INDEPENDENT TESTING AGENCY SHALL VERIFY ALL FOUNDATION STEEL AND FOUNDATION SUBGRADE.**
- 10.0. STRUCTURAL STEEL**
- MEET OR EXCEED MANUFACTURER'S RECOMMENDATIONS.**
- A. UNLESS OTHERWISE NOTED, ALL DETAILS, FABRICATION, AND PLACING OF REINFORCED CONCRETE SHALL CONFORM TO THE FOLLOWING STANDARDS. PROVIDE FOR DETAILING REINFORCED CONCRETE STRUCTURES (ACI 318).
  - B. ALL REINFORCING STEEL SHALL BE NEW BILLET STEEL, CONFORMING TO ASTM A-616, GRADE 60, DEWELDED.
  - C. HEATING AND BENDING OF BARS IS PROHIBITED WITH THE EXCEPTION OF WRITTEN APPROVAL BY THE STRUCTURAL ENGINEER.
  - D. ALL REINFORCEMENT BARS TO BE FREE FROM LOOSE RUST AND SCALE.

**E. UNLESS OTHERWISE NOTED, ALL REINFORCEMENT SHALL HAVE A MINIMUM CONCRETE COVERAGE OF 3 INCHES. THIS MAY REQUIRE SPACERS AND CHAIRS AS REQUIRED BY TESTING AGENCY OR CONSTRUCTION MANAGER.**

**F. SPICES IN REINFORCEMENT STEEL ARE PROHIBITED UNLESS APPROVED BY CONSTRUCTION MANAGER. ALL SPICES MUST FIRST MEET ALL APPLICABLE ASTM STANDARDS FOR SPICING.**

**11.0. BIDDING NOTES:**  
 MEET ALL APPLICABLE CODES, REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS AND ARIET WIRELESS CONSTRUCTION SPECIFICATIONS.

**GENERATOR SPECIFICATIONS:**

1. SWITCHES AND STANDOFF FEATURES:
    - A. CYCLO CHAIRING.
    - B. ALUMINUM HORN WITH SILENCING SWITCH.
    - C. VOLTAGE ADJUSTING RHEOSTAT.
    - D. OVERVOLTAGE PROTECTION.
    - E. REBATE TWO-WIRE AUTO START SYSTEM.
    - F. LAMP TEST SWITCH.
    - G. RUN-OFF-RESET/AUTO SWITCH (ENGINE START).
    - H. ENGINE COOL DOWN TIMER (5 MINUTES).
  2. ERROR-PROOF WIRING HARNESS FOR ELECTRICAL CONNECTIONS.
  3. PANEL LAMPS.
  4. DC CIRCUIT PROTECTION.
- UNIT ACCESSORIES:**
1. WEATHER HOUSING-STANDARD WITH ROOF MOUNTED SILENCER.
  2. MOUNTED CRITICAL GRADE EXHAUST SILENCER.
  3. TAIL PIPE AND RAIN CAP.
- COOLING SYSTEM ACCESSORIES:**
1. UNIT MOUNTED RADATOR.
  2. ENGINE BLOCK HEATER.
- ELECTRICAL ACCESSORIES:**
1. FLEXIBLE FUEL LINES.
  2. ENGINE BLOCK HEATER.
  3. SUBBASE FUEL TANK-172 GALLONS.
  4. DOUBLE WALL CONSTRUCTION WITH LEAK DETECTION MONITOR.
  5. U/L 142 ULSTD.
  6. FUEL LEVEL GAUGE.
  7. LOW FUEL LEVEL ALARM.
  8. FILL PIPE EXTENDED 102 INTO TANK.
  9. HIGH-FUEL LEVEL ALARM-SET AT 95%.
  10. 7.5 GALLON LOCKABLE FILL WITH SPILL CONTAINMENT.
- ANTENNA & COAX NOTES:**
1. VERIFY EACH COAX LENGTH, DIAMETER, ROUTING, COLOR CODING AND ALL APPROPRIATIONS.
  2. THE MAXIMUM COAXIAL CABLE LENGTH AND CORRESPONDING COAXIAL DIAMETER IS SHOWN ON 42.0. THIS CABLE LENGTH IS TO BE USED FOR FABRICATION OR PURCHASE OF CABLE. CABLE LENGTH(S) MUST BE VERIFIED. COAXIAL CABLE SHALL BE PROVIDED BY ARIET.
  3. ALL COAX CABLES SHALL UTILIZED GROUND KITS, GROUNDED AS FOLLOWS:
    - A. NEAR ANTENNA RAD CENTER ELEVATION.
    - B. MIDDLE OF TOWER (MID-HEIGHT OF ANTENNA). IF CABLE RUN IS OVER 200'-0".
    - C. BOTTOM OF TOWER.
    - D. AT MASTER GROUND BAR 3'-0" FROM MABS-8BU CABINET.

**4. ALL TOP JUMBERS SHALL BE LENGTHS AS SHOWN AND INSTALLED BY CONTRACTOR.**

**5. ALL CABLES SHALL BE COLOR CODED AS SHOWN ON SHEET RFI.0 AN IN ACCORDANCE WITH ARIET SPECIFICATIONS.**

**6. BANDING SHALL BE IN ACCORDANCE WITH SHEET 42.0, RFI.0 AND AS FOLLOWS:**

- A. MAIN LINE COLOR BANDS SHALL BE 2" WIDE MAINTAIN 1" SPACING BETWEEN COLOES.
- B. FREQUENCY COLOR BANDS SHALL BE 2" WIDE WITH NO SPACE BETWEEN COLOES.
- C. JUMPER COLOR BANDS SHALL BE 1" WIDE WITH 1" SPACE.
- D. START COLOR BANDS 2' BEYOND WEATHERPROOFING.
- E. START SELECTOR COLOR NEXT TO END CONNECTIONS.

**7. FINAL COAXIAL ANTENNA CABLE SIZES SHALL BE DETERMINED BY ARIET ENGINEER. SEE ANTENNA SCHEDULE SHEET 42.0. BASE ON FINAL CABLE RUN LENGTHS DETERMINED BY ARIET.**

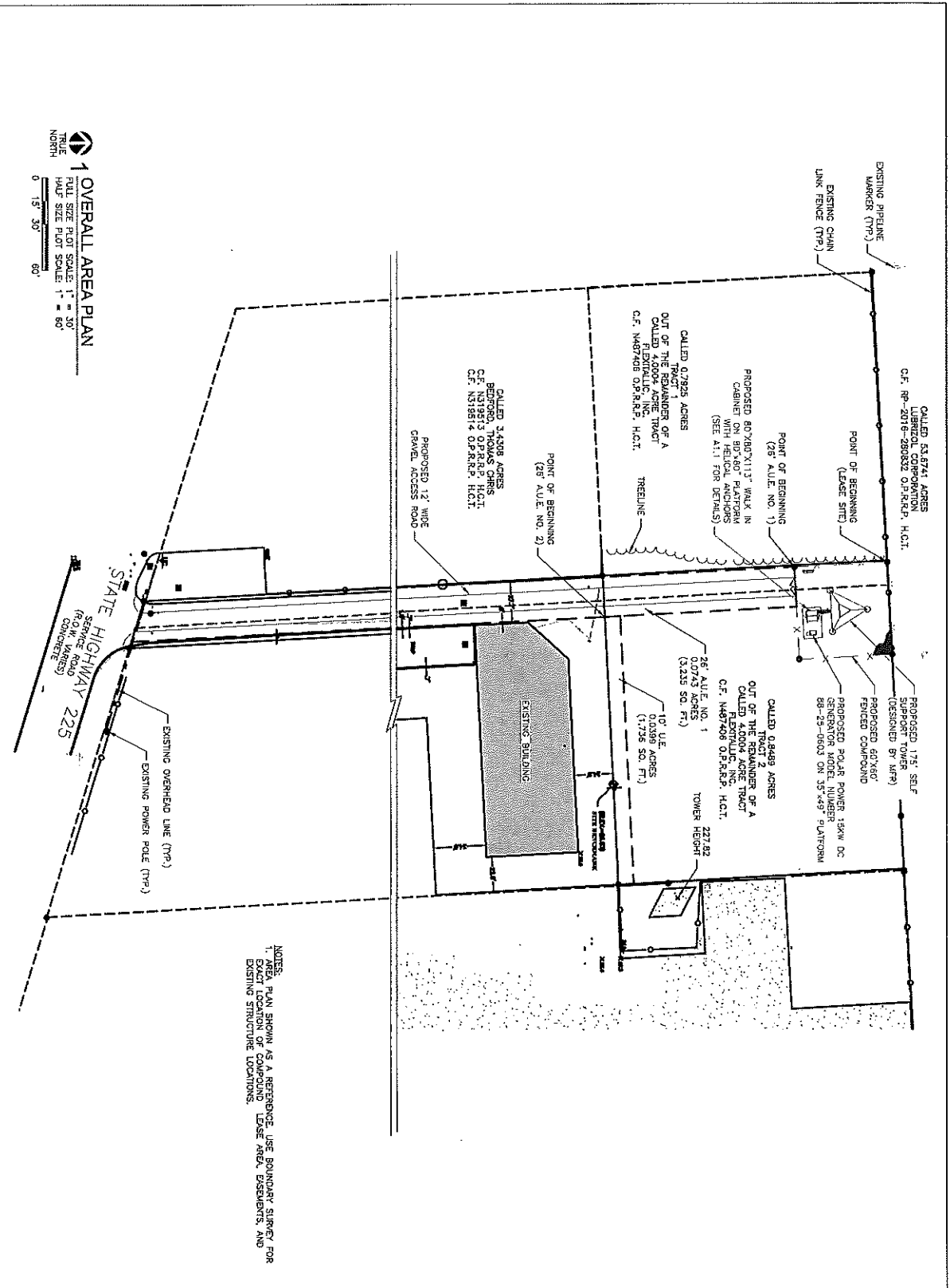
**8. SEE CONSTRUCTION MANAGER FOR ANTENNA SUPPORT ASSEMBLY TYPE.**

**9. ALL COAXIAL CABLE WILL BE SECURED TO THE DESIGNED SUPPORT STRUCTURE AT 18" INTERVALS. FASTENERS SHALL BE PROVIDED BY THE CONTRACTOR. SEE DRAWING DETAILS OF THE SUPPORT STRUCTURAL REPORT BY OTHERS.**

**10. PROVIDE AT LEAST 6" OF SLOTTED IN THE MAIN COAXIAL CABLES AT THE ANTENNA MOUNTING ELEVATION TO PROVIDE FOR FUTURE CONNECTION RE-DEPENDENT.**







PREPARED FOR:  
  
 at&t  
 1801 VALLEY VIEW BLVD  
 FARMERS BRANCH, TX 75234

**TILLMAN**  
 INFRASTRUCTURE

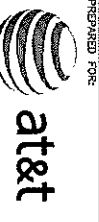
SITE NAME:  
**ATC GS ICE HOUSE RELO**  
 SITE NUMBER:  
**HX0713 (HX0549)**  
 SITE ADDRESS:  
 6911 HWY 225  
 DEER PARK, TX 77536  
 HARRIS COUNTY

STATE OF TEXAS  
 COUNTY OF HARRIS  
 DAVID J. HILDEBRANDT  
 106713  
 LICENSED SURVEYOR  
 4/6/18

**LEVELS**  
 CONSULTING ENGINEERS, INC.  
 10315 FM 2202, STE. 301  
 GARDEN RIDGE, TX 77066  
 PH: (281) 562-9911  
 FAX: (281) 562-9912

DATE DRAWN:	04/23/18
DATE APPROVED:	04/23/18
DRAWN BY:	TL
APPROVED BY:	TL
NO DESCRIPTION:	REVISION
BY DATE	
0 ISSUED FOR CONSTRUCTION	04/23/18
1 NEW RFS	02/12/18
2 NEW RFS	11/07/18

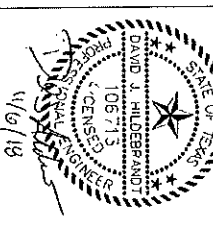
SHEET TITLE:  
**OVERALL AREA PLAN**  
 SHEET NUMBER:  
**A0.0**



AT&T MOBILITY  
1801 WILLET LANE  
FARMERS BRANCH, TX 75234



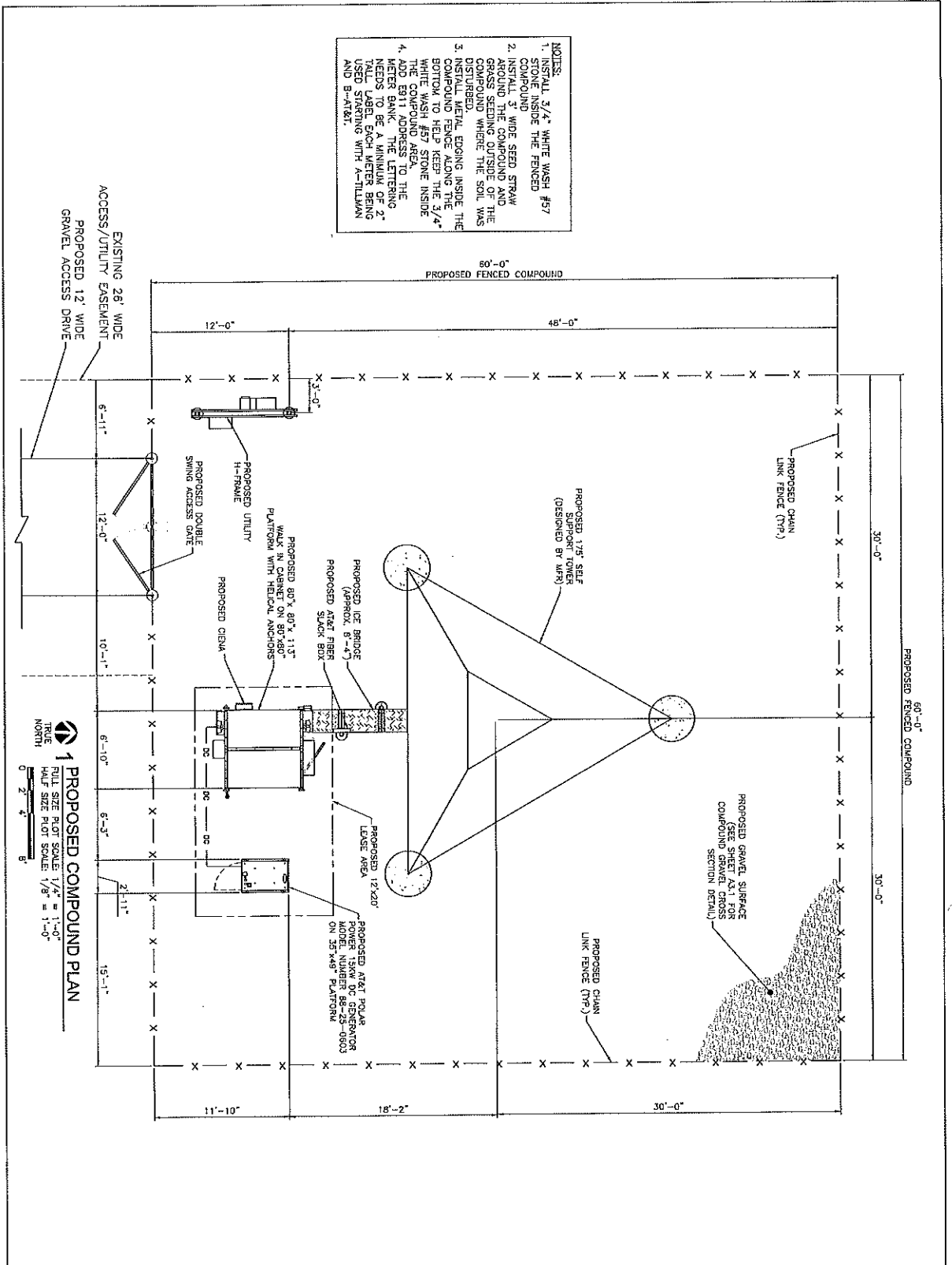
SITE NAME:  
**ATC GS ICE HOUSE RELO**  
SITE NUMBER:  
**HX0713 (HX0549)**  
SITE ADDRESS:  
6911 HWY 225  
DEER PARK, TX 77536  
HARRIS COUNTY



**TALLEY'S**  
CONSULTING ENGINEERS, INC.  
1918 FM 2223, STE. 301  
CADDEN RIDGE, TX 77566  
PH: (281) 542-3911  
F: 53364

DATE DRAWN: 04/23/18  
APPROVED BY: TH  
BY DATE  
NO DESCRIPTION  
0 ISSUED FOR CONSTRUCTION 04/23/18  
1 NEW RFS 03/14/18  
2 NEW RFS 11/07/18

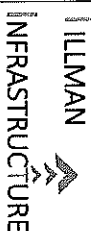
SHEET TITLE:  
**PROPOSED COMPOUND PLAN**  
SHEET NUMBER:  
**A1.0**



- NOTES:
1. INSTALL 3/4" WHITE WASH #57 STONE INSIDE THE FENCED COMPOUND.
  2. INSTALL 1/2" WIDE SEED STRAW AROUND THE COMPOUND AND GRASS SEEDING OUTSIDE OF THE COMPOUND WHERE THE SOIL WAS DISTURBED.
  3. INSTALL METAL EDGING INSIDE THE COMPOUND FENCE ALONG THE BOTTOM AND TOP OF THE 1/2" WIDE WHITE WASH AND STONE INSIDE THE COMPOUND AREA.
  4. ADD 8911 ADDRESS TO THE METER BANK. THE LETTERING NEEDS TO BE A MINIMUM OF 2" TALL LABEL EACH METER BEING USED STARTING WITH A-TILLMAN AND B-T&T.



AT&T MOBILITY  
1001 VALLEY VIEW LANE  
FARMERS BRANCH, TX 75234



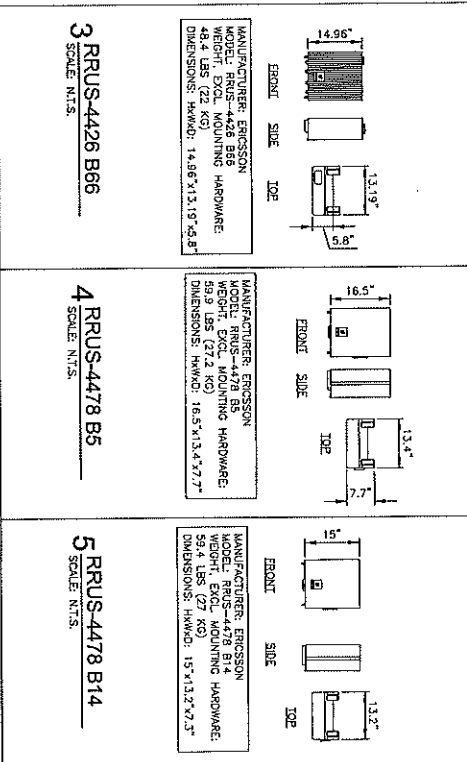
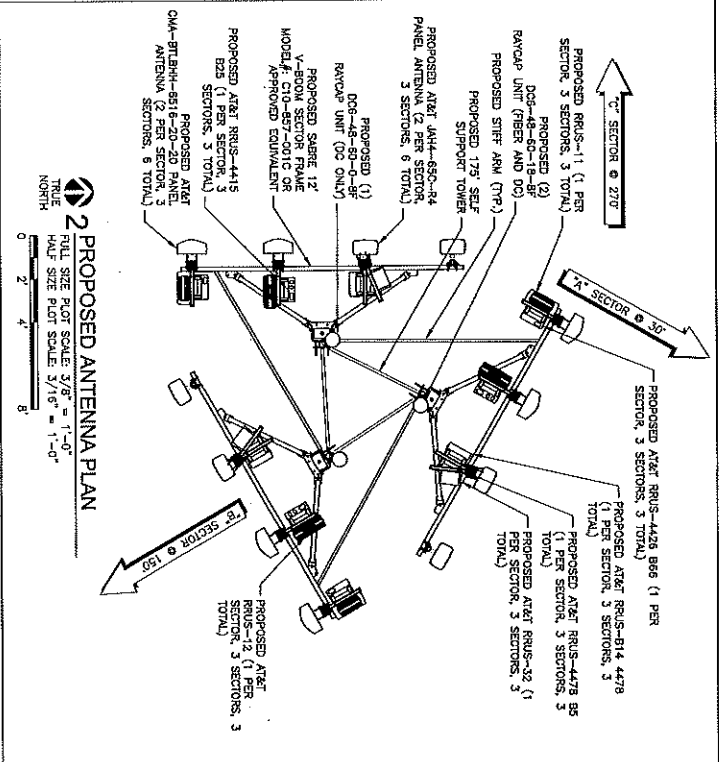
SITE NAME:  
**AT&T G5 ICE HOUSE RELO**  
SITE NUMBER:  
**HX0713 (HX0549)**  
SITE ADDRESS:  
6911 HWY 225  
DEER PARK, TX 77535



**LEVELLS**  
CONSULTING ENGINEERS, INC.  
19315 FM 2023, STE. 201  
GARDEN RIDGE, TX 77563  
PHONE: (504) 562-5911  
FAX: (504) 562-5946

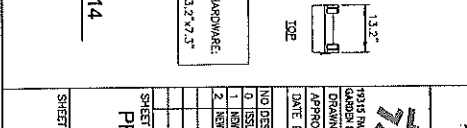
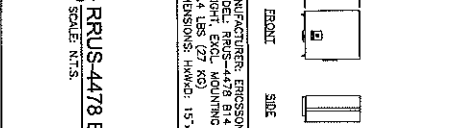
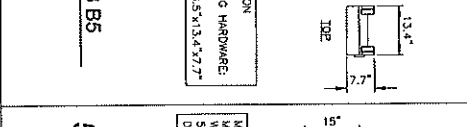
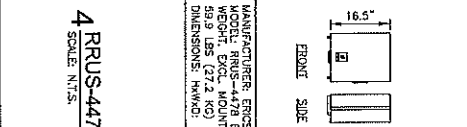
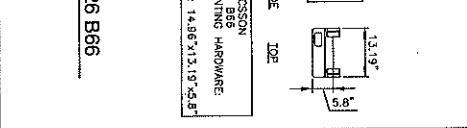
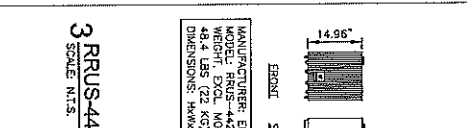
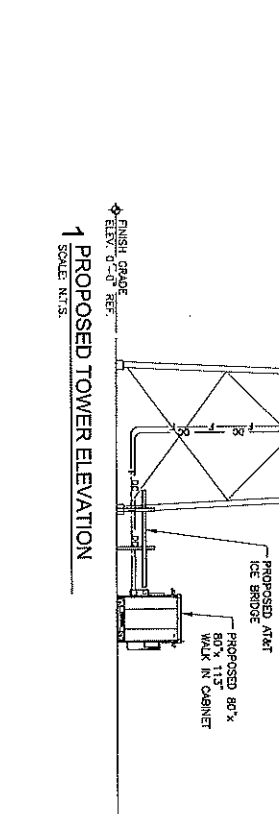
NO.	DESCRIPTION	REVISION	BY	DATE
0	ISSUED FOR CONSTRUCTION	IL	DA/23/18	
1	NEW REVISION	IL	03/14/18	
2	NEW REVISION	WS	11/07/18	

SHEET TITLE:  
**PROPOSED TOWER ELEVATION AND ANTENNA PLAN**  
SHEET NUMBER:  
**A2.0**

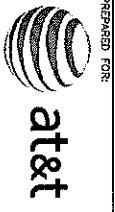


STRUCTURAL ANALYSIS PERFORMED BY OTHERS. CONTRACTOR TO THOROUGHLY REVIEW AND ADHERE TO THE STRUCTURAL ANALYSIS SPECIFIC TO THIS PROJECT. REFER TO THE ANALYSIS FOR STRUCTURAL INFORMATION INCLUDING: MOUNTING TYPES, ANTENNA DETAILS AND HEIGHTS, CABLE ROUTING, ETC. ANY DISCREPANCY AND/OR OVERLAP SHOULD BE BROUGHT TO THE ATTENTION OF THE ARCHITECT IMMEDIATELY PRIOR TO BIDDING AND INSTALLATION.

- ANTENNA MOUNTING NOTES:**
1. ALL MOUNTING ARE TO BE ESTABLISHED
  2. GROUNDING FROM THE TRUE NORTH HEADING
  3. PRIOR TO INSTALLATION OF ANTENNAS
  4. CONTRACTOR SHALL REFER TO TOWER
  5. DESIGN AND CONSTRUCTION OF ANTENNA
  6. ALL STEEL MATERIALS SHALL BE GALVANIZED
  7. ALL WELDS SHALL BE GALVANIZED
  8. ALL ANTENNA MOUNTS SHALL BE INSTALLED PER
  9. ALL ANTENNA MOUNTS SHALL BE INSTALLED PER
  10. MINIMUM HORIZONTAL SPACING SHALL BE



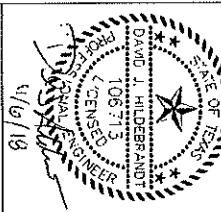
MANUFACTURER:	EROSION
MODEL: RRUS-4426 B66	MODELS: RRUS-4426 B66
WEIGHT, EXCL. MOUNTING HARDWARE: 49.4 LBS (22 KG)	WEIGHT, EXCL. MOUNTING HARDWARE: 49.4 LBS (22 KG)
DIMENSIONS: HAWK: 14.96" X 13.19" X 1.8"	DIMENSIONS: HAWK: 14.96" X 13.19" X 1.8"



AT&T MOBILITY  
1801 VALLEY VIEW LANE  
FARMERS BRANCH, TX 75234



SITE NAME:  
ATC GS ICE  
HOUSE RELO  
SITE NUMBER:  
HX0713 (HX0549)  
SITE ADDRESS:  
6911 HWY 225  
DEER PARK, TX 77236  
HARRIS COUNTY



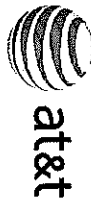
**LEVELS**  
CONSULTING ENGINEERS, INC.  
19115 FM 2202, STE. 301 PH: (281) 542-2971  
GARLAND, TEXAS 77546 F: 33644  
DRAWN BY: TL  
APPROVED BY: TH  
DATE DRAWN: 04/23/18

NO.	DESCRIPTION	REV	DATE
0	ISSUED FOR CONSTRUCTION	1	04/23/18
1	REV RDS	1	03/14/18
2	REV RDS	1	07/17/18

SHEET NUMBER:  
**A2.1**

Section 17A - FINAL TOWER CONFIGURATION - SECTOR A (OR OWN)

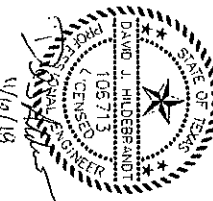
ANTENNA POSITION 0 (Left to Right from Back of Antenna (Unless otherwise specified))	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5
ANTENNA WAVE - MODEL CPL-51T-BR-NR-10220A-15-RET	CPL-51T-BR-NR-10220A-15-RET	CPL-51T-BR-NR-10220A-15-RET	JHM-4820-24 COMMSCOPE	JHM-4820-24 COMMSCOPE	
ANTENNA VENDOR: OMA	OMA	OMA	68X12.8X2.4	68X12.8X2.4	
ANTENNA SIZE (H x W x D) 20X14.20X2.4	20X14.20X2.4	20X14.20X2.4	67.2	67.2	
ANTENNA WEIGHT: 88	88	88	88	88	
AZIMUTH: 90	30	30	90	90	
MAGNETIC DECLINATION					
RADIATION CENTER (HxW)	188	188	188	188	
ANTENNA TYP HEIGHT					
MECHANICAL DOWN TILT					
FEDER ANGLE/INT					
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)					
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)					
HORIZONTAL SEPARATION from CL CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)					
HORIZONTAL SEPARATION from CL CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)					
HORIZONTAL SEPARATION from ANOTHER ANTENNA (Label antenna # if of interest)					
Antenna RET Head (QTY/MODEL)					
DR. EXER. (QTY/MODEL)					
DR. EXER. (QTY/MODEL)					
DC BLOCK (QTY/MODEL)					
THALUMA (QTY/MODEL)					
CURRENT DIRECTORS FOR TMA (QTY/MODEL)					
PSU FOR TMA (QTY/MODEL)					
FILTER (QTY/MODEL)					
SQUID (QTY/MODEL)					
FIBER TRUNK (QTY/MODEL)					
DC TRUNK (QTY/MODEL)					
REPTER (QTY/MODEL)					
RRF - 700 band (QTY/MODEL)	RRF-11 E 912			514-4478	
RRF - 800 band (QTY/MODEL)				4479 88	
RRF - 900 band (QTY/MODEL)				4479 88	
RRF - AWS band (QTY/MODEL)				4479 88	
RRF - WCS band (QTY/MODEL)				RRF-5-22	



AT&T MOBILITY  
1801 FARMERS LANE  
FARMERS BRANCH, TX 75754



SITE NAME:  
**ATC GS ICE  
HOUSE RELO**  
SITE NUMBER:  
**HX0713 (HX0549)**  
SITE ADDRESS:  
6911 HWY 225  
DEER PARK, TX 77536  
HARRIS COUNTY



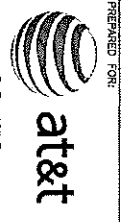
**WLEVELS**  
1915 FM 2252, STE 301  
DARTER RIDGE, TX 78206  
PH: (210) 542-5911  
FAX: (210) 542-5944

NO	DESCRIPTION	BY	DATE
0	ISSUED FOR CONSTRUCTION	IL	04/23/18
1	REV RFS	IL	05/15/18
2	REV RFS	MS	11/07/18

SHEET NUMBER:  
**A2.2**

**Section 17B - FINAL TOWER CONFIGURATION - SECTOR B**

ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5
ANTENNA MAKE: MODEL ANTENNA MAKE: MODEL	ANTENNA MAKE: MODEL ANTENNA MAKE: MODEL	ANTENNA MAKE: MODEL ANTENNA MAKE: MODEL	ANTENNA MAKE: MODEL ANTENNA MAKE: MODEL	ANTENNA MAKE: MODEL ANTENNA MAKE: MODEL
ANTENNA SIZE H x W x D ANTENNA WEIGHT #L	ANTENNA SIZE H x W x D ANTENNA WEIGHT #L	ANTENNA SIZE H x W x D ANTENNA WEIGHT #L	ANTENNA SIZE H x W x D ANTENNA WEIGHT #L	ANTENNA SIZE H x W x D ANTENNA WEIGHT #L
MAGNETIC DECLINATION	MAGNETIC DECLINATION	MAGNETIC DECLINATION	MAGNETIC DECLINATION	MAGNETIC DECLINATION
RADIATION CENTER (FEET)	RADIATION CENTER (FEET)	RADIATION CENTER (FEET)	RADIATION CENTER (FEET)	RADIATION CENTER (FEET)
ANTENNA TIP HEIGHT	ANTENNA TIP HEIGHT	ANTENNA TIP HEIGHT	ANTENNA TIP HEIGHT	ANTENNA TIP HEIGHT
MECHANICAL DOWN TILT	MECHANICAL DOWN TILT	MECHANICAL DOWN TILT	MECHANICAL DOWN TILT	MECHANICAL DOWN TILT
FEEDER AMOUNT	FEEDER AMOUNT	FEEDER AMOUNT	FEEDER AMOUNT	FEEDER AMOUNT
VERTICAL SEPARATION from ANTENNA ABOVE (FEET to FEET)	VERTICAL SEPARATION from ANTENNA ABOVE (FEET to FEET)	VERTICAL SEPARATION from ANTENNA ABOVE (FEET to FEET)	VERTICAL SEPARATION from ANTENNA ABOVE (FEET to FEET)	VERTICAL SEPARATION from ANTENNA ABOVE (FEET to FEET)
VERTICAL SEPARATION from ANTENNA BELOW (FEET to FEET)	VERTICAL SEPARATION from ANTENNA BELOW (FEET to FEET)	VERTICAL SEPARATION from ANTENNA BELOW (FEET to FEET)	VERTICAL SEPARATION from ANTENNA BELOW (FEET to FEET)	VERTICAL SEPARATION from ANTENNA BELOW (FEET to FEET)
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)	HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)	HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)	HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)	HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)	HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)	HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)	HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)	HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)
HORIZONTAL SEPARATION from ANOTHER ANTENNA (shortest distance # 1 of the two)	HORIZONTAL SEPARATION from ANOTHER ANTENNA (shortest distance # 1 of the two)	HORIZONTAL SEPARATION from ANOTHER ANTENNA (shortest distance # 1 of the two)	HORIZONTAL SEPARATION from ANOTHER ANTENNA (shortest distance # 1 of the two)	HORIZONTAL SEPARATION from ANOTHER ANTENNA (shortest distance # 1 of the two)
SURGE ARRESTOR (QTY/MODEL)	SURGE ARRESTOR (QTY/MODEL)	SURGE ARRESTOR (QTY/MODEL)	SURGE ARRESTOR (QTY/MODEL)	SURGE ARRESTOR (QTY/MODEL)
DIPLEXER (QTY/MODEL)	DIPLEXER (QTY/MODEL)	DIPLEXER (QTY/MODEL)	DIPLEXER (QTY/MODEL)	DIPLEXER (QTY/MODEL)
Antenna RET CONTROL UNIT (QTY/MODEL)	Antenna RET CONTROL UNIT (QTY/MODEL)	Antenna RET CONTROL UNIT (QTY/MODEL)	Antenna RET CONTROL UNIT (QTY/MODEL)	Antenna RET CONTROL UNIT (QTY/MODEL)
DC BLOCK (QTY/MODEL)	DC BLOCK (QTY/MODEL)	DC BLOCK (QTY/MODEL)	DC BLOCK (QTY/MODEL)	DC BLOCK (QTY/MODEL)
TRIAL/VALVE (QTY/MODEL)	TRIAL/VALVE (QTY/MODEL)	TRIAL/VALVE (QTY/MODEL)	TRIAL/VALVE (QTY/MODEL)	TRIAL/VALVE (QTY/MODEL)
CURRENT INJECTORS FOR TMA (QTY/MODEL)	CURRENT INJECTORS FOR TMA (QTY/MODEL)	CURRENT INJECTORS FOR TMA (QTY/MODEL)	CURRENT INJECTORS FOR TMA (QTY/MODEL)	CURRENT INJECTORS FOR TMA (QTY/MODEL)
POU FOR TMA (QTY/MODEL)	POU FOR TMA (QTY/MODEL)	POU FOR TMA (QTY/MODEL)	POU FOR TMA (QTY/MODEL)	POU FOR TMA (QTY/MODEL)
FILTER (QTY/MODEL)	FILTER (QTY/MODEL)	FILTER (QTY/MODEL)	FILTER (QTY/MODEL)	FILTER (QTY/MODEL)
1500 (QTY/MODEL)	1500 (QTY/MODEL)	1500 (QTY/MODEL)	1500 (QTY/MODEL)	1500 (QTY/MODEL)
FIBER TRUNK (QTY/MODEL)	FIBER TRUNK (QTY/MODEL)	FIBER TRUNK (QTY/MODEL)	FIBER TRUNK (QTY/MODEL)	FIBER TRUNK (QTY/MODEL)
DC TRUNK (QTY/MODEL)	DC TRUNK (QTY/MODEL)	DC TRUNK (QTY/MODEL)	DC TRUNK (QTY/MODEL)	DC TRUNK (QTY/MODEL)
REPEATER (QTY/MODEL)	REPEATER (QTY/MODEL)	REPEATER (QTY/MODEL)	REPEATER (QTY/MODEL)	REPEATER (QTY/MODEL)
RFR - 700 band (QTY/MODEL)	RFR - 700 band (QTY/MODEL)	RFR - 700 band (QTY/MODEL)	RFR - 700 band (QTY/MODEL)	RFR - 700 band (QTY/MODEL)
RFR - 450 band (QTY/MODEL)	RFR - 450 band (QTY/MODEL)	RFR - 450 band (QTY/MODEL)	RFR - 450 band (QTY/MODEL)	RFR - 450 band (QTY/MODEL)
RFR - 1500 band (QTY/MODEL)	RFR - 1500 band (QTY/MODEL)	RFR - 1500 band (QTY/MODEL)	RFR - 1500 band (QTY/MODEL)	RFR - 1500 band (QTY/MODEL)
RFR - AWS band (QTY/MODEL)	RFR - AWS band (QTY/MODEL)	RFR - AWS band (QTY/MODEL)	RFR - AWS band (QTY/MODEL)	RFR - AWS band (QTY/MODEL)
RFR - WCS band (QTY/MODEL)	RFR - WCS band (QTY/MODEL)	RFR - WCS band (QTY/MODEL)	RFR - WCS band (QTY/MODEL)	RFR - WCS band (QTY/MODEL)



AT&T MOBILITY  
1801 VALLEY VIEW AVE  
FARMERS BRANCH, TX 75234

**TILLMAN**  
INFRASTRUCTURE

SITE NAME  
**ATC GS ICE  
HOUSE RELO**

SITE NUMBER  
**HX0713 (HX0649)**

SITE ADDRESS:  
8911 HWY 225  
DEER PARK, TX 77536  
HARRIS COUNTY



**LEVELLS**  
CONSULTING ENGINEERS, INC.  
1915 N. 222<sup>ND</sup> ST. #21  
GARDEN RIDGE, TX 75046  
PHONE: (214) 943-9911  
FAX: (214) 943-4666

DATE DRAWN: 04/23/18

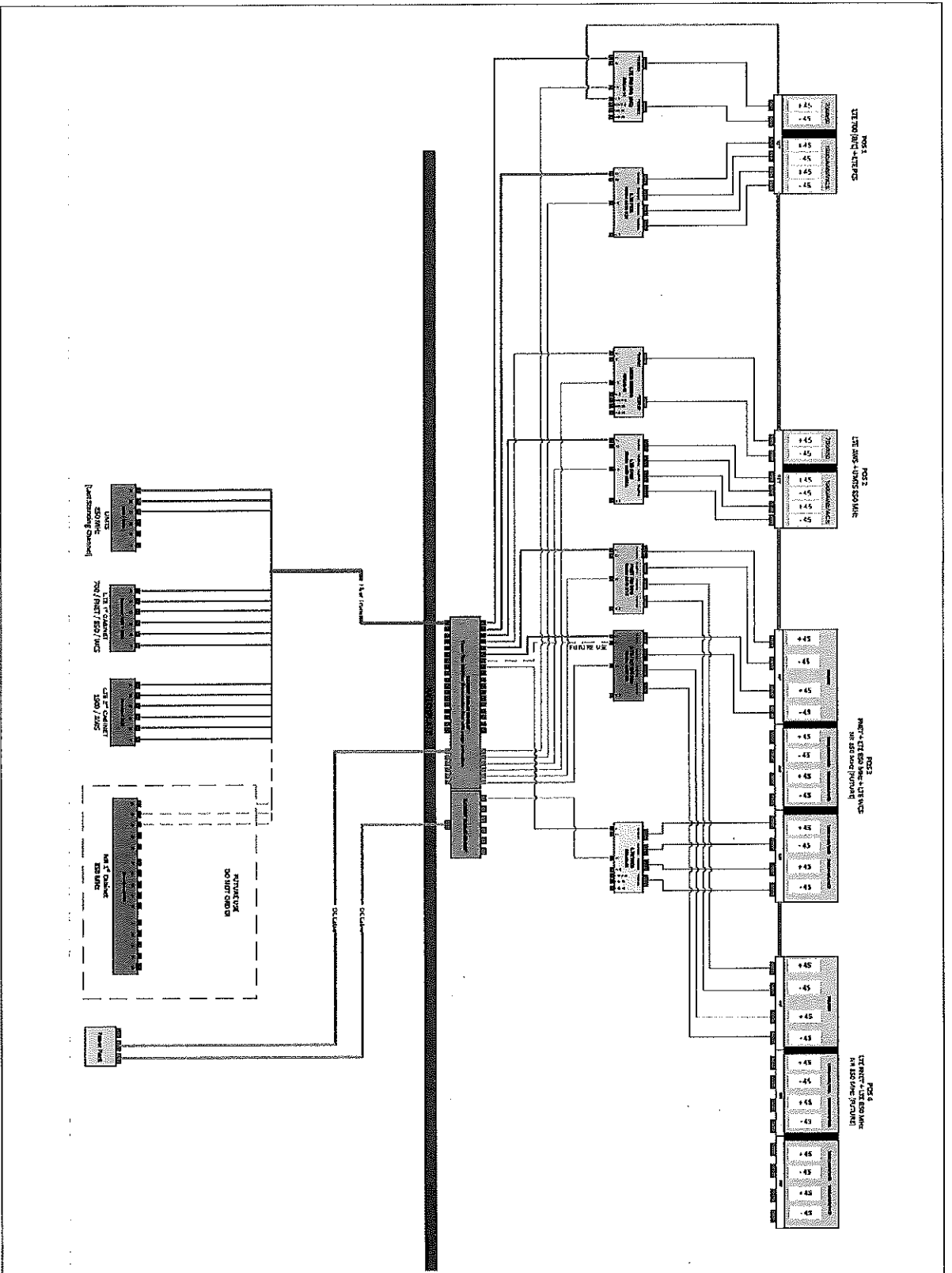
NO.	DESCRIPTION	BY	DATE
0	ISSUED FOR CONSTRUCTION	TL	04/23/18
1	REV RFS	TL	03/14/18
2	REV RFS	WS	11/07/18

SHEET TITLE  
**ANTENNA  
CONFIGURATION  
(SECTOR C)**

SHEET NUMBER:  
**A2.3**

**Section 17C - FINAL TOWER CONFIGURATION - SECTOR C**

ANTENNA POSITION 3: (Unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5
ANTENNA MAKE / MODEL ANTENNA VENDOR ANTENNA SIZE IN L x W x H ANTENNA WEIGHT	ORA-5T1E-H185153220A15, NET ORA 72X18.0X7.5 88	ORA-5T1E-H185153220A15, NET ORA 72X18.0X7.5 88	JN4455C-R6 COMSCOPE 88X13.8X8.2 87.2	JN4455C-R6 COMSCOPE 88X13.8X8.2 87.2	JN4455C-R6 COMSCOPE 88X13.8X8.2 87.2
MAGNETIC DECLINATION					
RADIATION CENTER (feet)	148	148	148	148	148
ANTENNA TP HEIGHT					
MECHANICAL DOWN TILT					
FEEDER AMOUNT					
VERTICAL SEPARATION from ANTENNA ABOVE (T1 to T2)					
VERTICAL SEPARATION from ANTENNA BELOW (T2 to T3)					
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTRUM) to CENTRUM					
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTRUM) to CENTRUM					
HORIZONTAL SEPARATION from CLOSEST ANTENNA to ANOTHER ANTENNA (unless antenna #1 & #4 of linked)					
Surge Arrestor (QTY/MODEL)					
DiPLEN (QTY/MODEL)					
DC BLOCK (QTY/MODEL)					
TRAP (QTY/MODEL)					
CURRENT INJECTOR FOR TMA (QTY/MODEL)					
PDU FOR TMA (QTY/MODEL)					
FILTER (QTY/MODEL)					
SQUID (QTY/MODEL)					
FIBER TRUNK (QTY/MODEL)					
DC TRUNK (QTY/MODEL)					
REPEATER (QTY/MODEL)					
RFR - 700 band (QTY/MODEL)					
RFR - 850 band (QTY/MODEL)					
RFR - 900 band (QTY/MODEL)					
RFR - AWS band (QTY/MODEL)					
RFR - AWS band (QTY/MODEL)					
RFR - AWS band (QTY/MODEL)					
RFR - AWS band (QTY/MODEL)					



PREPARED FOR: **at&t**  
 AT&T MOBILITY  
 1801 WALLEY VEE LANE  
 FARMERS BRANCH, TX 75234

**TILLMAN**  
 INFRASTRUCTURE

SITE NAME:  
**ATC GS ICE**  
**HOUSE RELO**  
 SITE NUMBER:  
**HX0713 (HX0549)**  
 SITE ADDRESS:  
 6811 HWY 225  
 DEER PARK, TX 77536  
 HARRIS COUNTY

STATE OF TEXAS  
 DIMITRI L. HILDEBRANDT  
 106713  
 LICENSED PROFESSIONAL ENGINEER  
 11/6/18

**LEVELS**  
 CONSULTING ENGINEERS, INC.  
 13115 FM 2252, STE. 301  
 GARDEN RIDGE, TX 77565  
 PH: (281) 546-3911  
 F: 73646  
 DRAWN BY: JL  
 APPROVED BY: TH  
 DATE DRAWN: 04/23/18

NO.	DESCRIPTION	BY	DATE
0	ISSUED FOR CONSTRUCTION	JL	04/23/18
1	REV BNS	JL	03/14/18
2	REV BNS	NS	11/07/18

SHEET NUMBER:  
**A2.4**

PLUMBING DIAGRAM



**TILLMAN**  
INFRASTRUCTURE

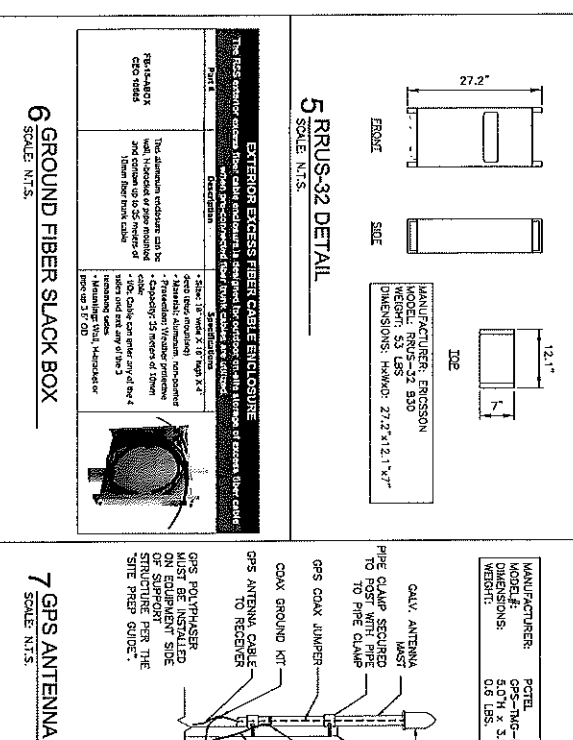
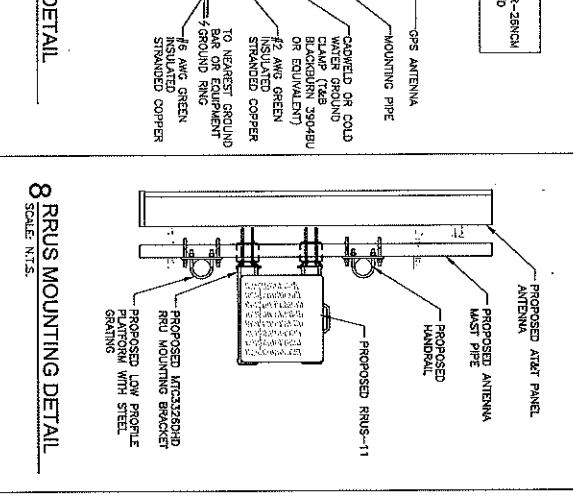
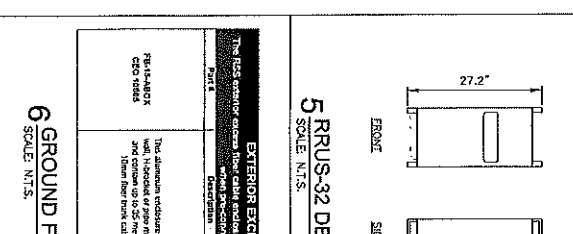
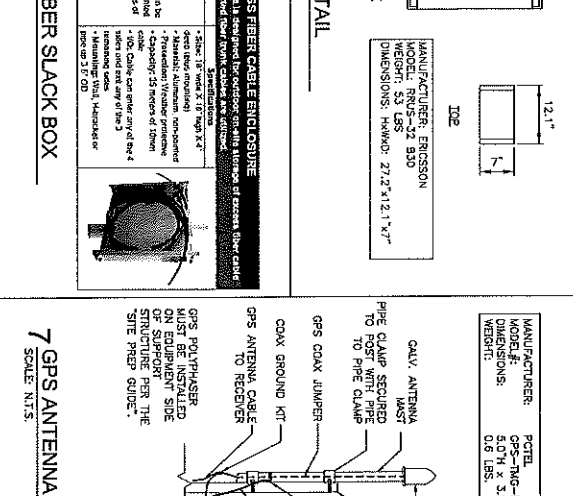
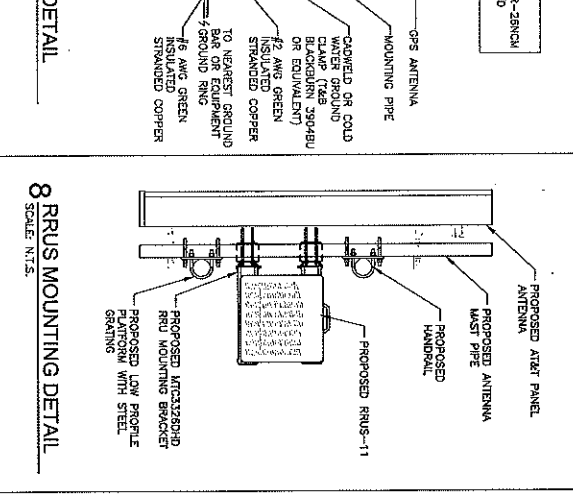
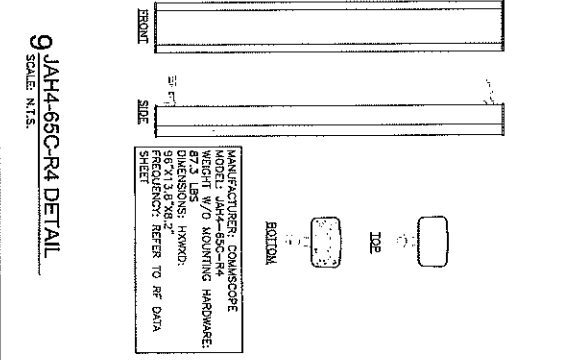
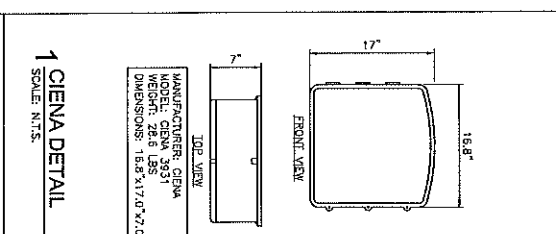
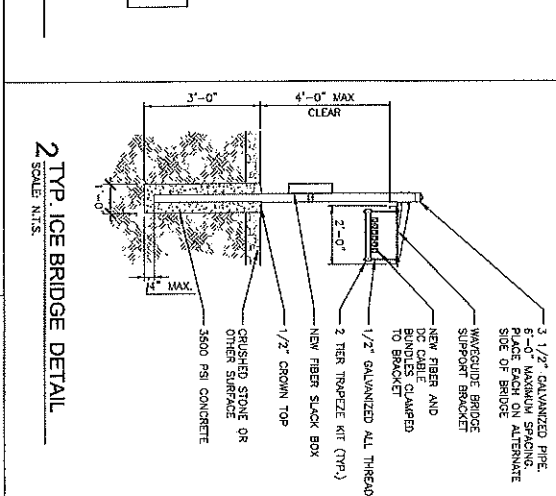
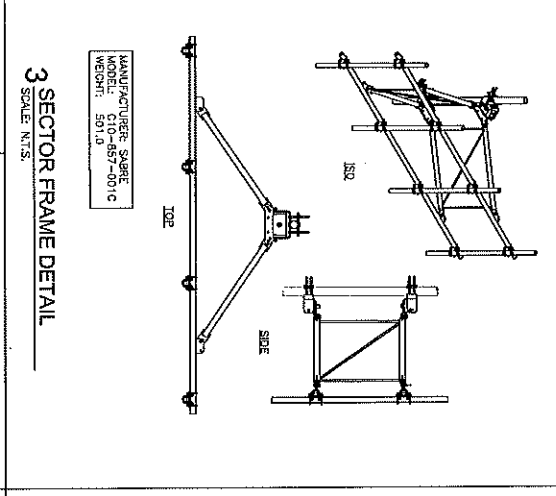
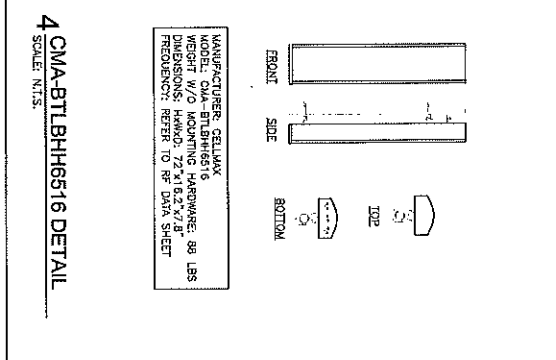
SITE NAME:  
**ATC GS ICE HOUSE RELO**  
SITE NUMBER:  
**HX0713 (HX0549)**  
SITE ADDRESS:  
6911 HWY 225  
DEER PARK, TX 77535  
HARRIS COUNTY



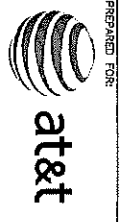
**LEVELS**  
10515 FM 2202, STE. 301  
CADDEN RIDGE, TX 77656  
PH: (713) 943-9711  
F: 33646  
CONSULTING ENGINEERS, INC.

NO.	DESCRIPTION	REVISION	BY	DATE
0	ISSUED FOR CONSTRUCTION		TH	04/23/18
1	REV 805		TH	02/14/18
2	REV 805		WS	11/07/19

SHEET NUMBER:  
**A3.0**  
EQUIPMENT  
DETAILS



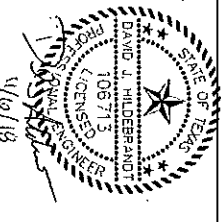




AT&T MOBILITY  
1801 VALLEY VIEW LANE  
FARMERS BRANCH, TX 75234

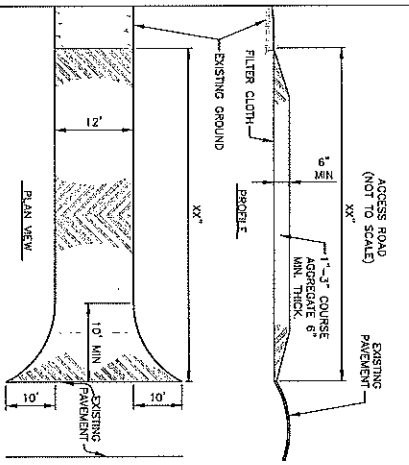
TILLMAN  
INFRASTRUCTURE

SITE NAME  
ATC GS ICE  
HOUSE RELO  
SITE NUMBER  
HX0713 (HX0549)  
SITE ADDRESS:  
6911 HWY 225  
DEER PARK, TX 77536  
HARRIS COUNTY

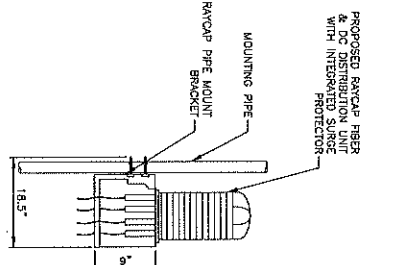


**LEVELS**  
CONSULTING ENGINEERS, INC.  
1915 N. 223<sup>RD</sup>. STE. 301  
GARDEN ROSE, TX 77666  
PH: (281) 942-9911  
FAX: (281) 942-9911  
DATE DRAWN: 04/23/18  
APPROVED BY: JH  
NO. DESCRIPTION REVISION BY DATE  
0 ISSUED FOR CONSTRUCTION 04/23/18  
1 REV RDS 02/14/18  
2 REV RDS 11/07/18

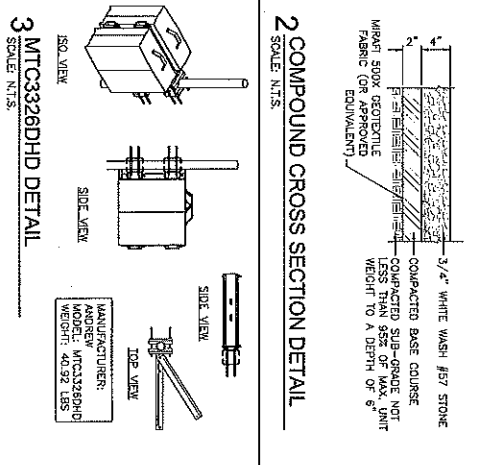
SHEET TITLE  
SITE DETAILS  
SHEET NUMBER:  
A3.1



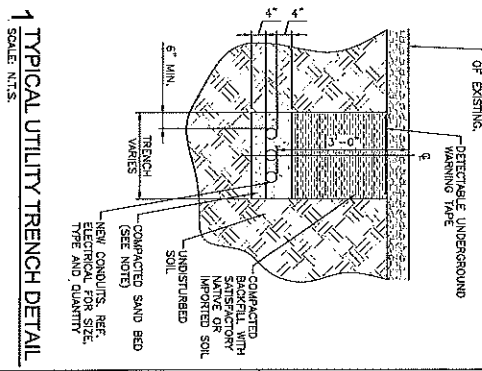
5 GRAVEL ACCESS DRIVEWAY DETAIL  
SCALE N.T.S.



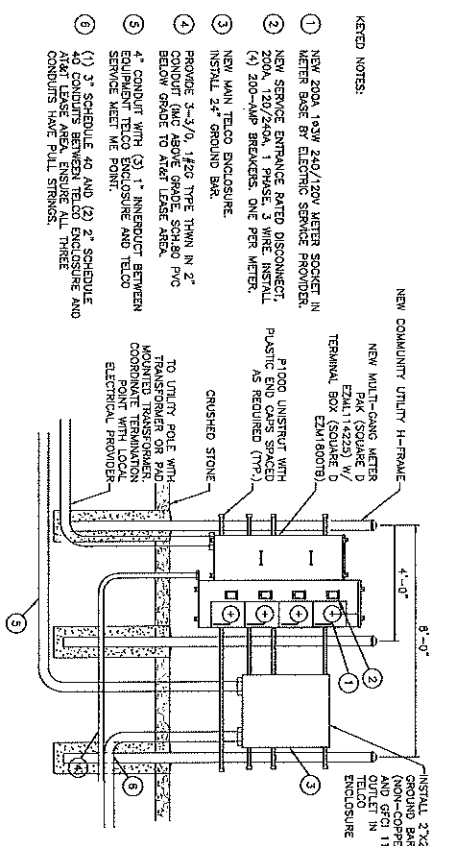
4 RAYCAP "SQUID" DETAIL  
SCALE N.T.S.



2 COMPOUND CROSS SECTION DETAIL  
SCALE N.T.S.



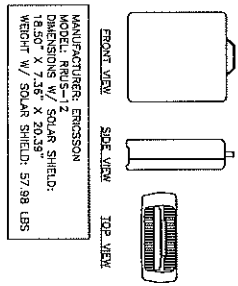
1 TYPICAL UTILITY TRENCH DETAIL  
SCALE N.T.S.



- KEYED NOTES:
- 1 NEW 200A 103W 240/120V METER SOCKET IN METER BASE BY ELECTRIC SERVICE PROVIDER.
  - 2 200A, 120/240V, 1 PHASE, 3 WIRE INSTALL (4) 200-AWP BREAKERS, ONE PER METER.
  - 3 NEW MAIN TIELO ENCLOSURE.
  - 4 PROVIDE 3-3/8" 1/2"Z TYPE THIN IN 2" CONDUIT (N/C ABOVE GRADE, SCHED 40 BELOW GRADE TO AIRL LEASE AREA).
  - 5 4" CONDUIT WITH (3) 1" MINERDUCT BETWEEN EQUIPMENT TIELO ENCLOSURE AND TIELO SERVICE MEET ME POINT.
  - 6 (1) 3" SCHEDULE 40 AND (2) 2" SCHEDULE 40 CONDUITS BETWEEN TIELO ENCLOSURE AND AIRL LEASE AREA. ENSURE ALL THREE CONDUITS HAVE PULL STRINGS.

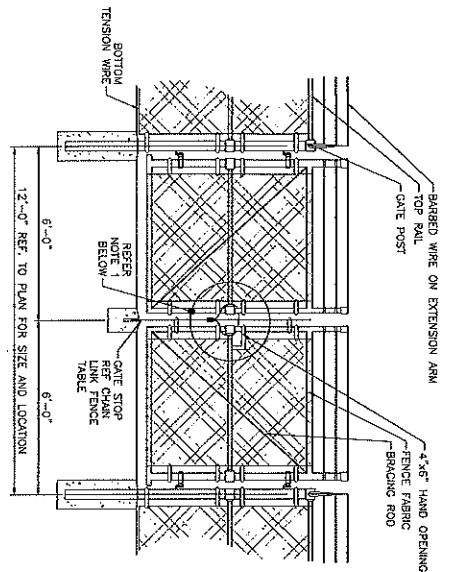
- NOTES:
- CONFIGURATION OF SERVICE LATERAL SHOW FOR REFERENCE. COORDINATE EXACT REQUIREMENTS WITH UTILITY PROVIDER.
1. VERIFY ALL EXISTING UNDERGROUND UTILITIES BEFORE TRENCHING.
  2. ELECTRICAL CONTRACTOR SHALL CONTACT POWER CO. & TELE. CO. AND VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES.
  3. INSTALL ALL CONDUITS & EQUIPMENT AS SPECIFIED BY POWER CO. & TELE. CO.
  4. PROVIDE NYLON PULL STRINGS ON ALL EMPTY CONDUITS.

6 MULTI-TENANT UTILITY H-FRAME DETAIL  
SCALE N.T.S.

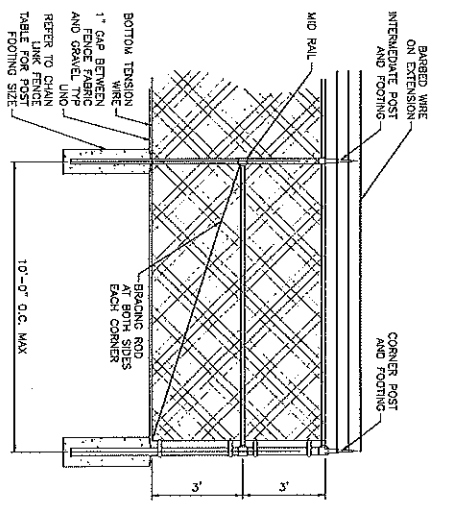


7 RRUS-12 DETAIL  
SCALE N.T.S.

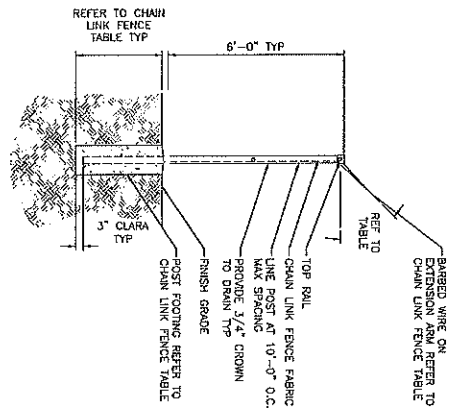
7 RRUS-12 DETAIL  
SCALE N.T.S.



1 TYPICAL GATE DETAIL  
SCALE: N.T.S.



2 TYPICAL FENCE CORNER DETAIL  
SCALE: N.T.S.

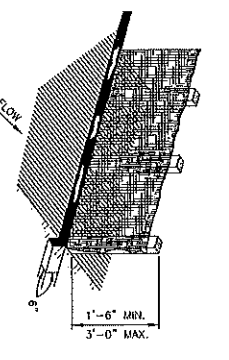
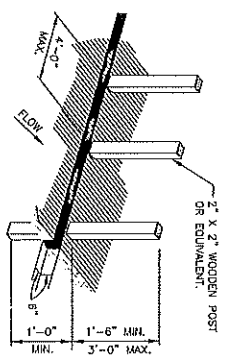


3 TYPICAL FENCE POST DETAIL  
SCALE: N.T.S.

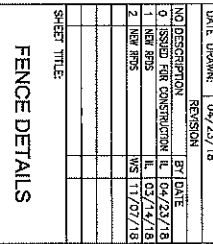
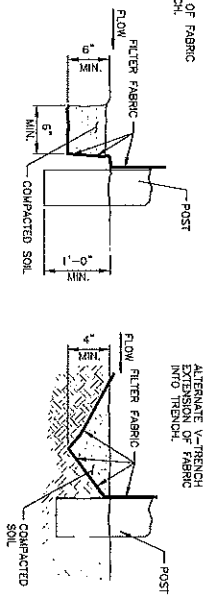
COMPONENT	DIMENSIONS	HARDWARE AND FEATURES
FENCE FABRIC	6" HIGH, 9 GA., 2"x2" ZINC	SELVEDGE TOP AND BOTTOM
BARBED WIRE	STAMPED STEEL WITH WALLEABLE IRON BASE	THREE (3) RUNS
EXTENSION ARM	3" STD. GA. (SCH 40) PIPE	45 DEGREE ANGLE OUTWARD
END AND CORNER POSTS	2" STD. GA. (SCH 40) PIPE	35"x10" CONCRETE FOOTING
LINE POSTS	4" STD. GA. (SCH 40) PIPE	48"x12" CONCRETE FOOTING
DRIVEWAY GATE POSTS	3" STD. GA. (SCH 40) PIPE	35"x12" CONCRETE FOOTING
WALKWAY GATE POSTS	1 1/2" STD. GA. (SCH 40) PIPE	ATTACHED WITH PROPER FITTING
TOP RAILS	1 1/2" STD. GA. (SCH 40) PIPE	ATTACHED WITH PROPER FITTING
BRACE RODS	3/8" CARBON STEEL	ATTACHED WITH PROPER FITTING
BOTTOM TENSION WIRE	7 GA. 1900 LB. TENSILE STRENGTH FABRIC	ALL SIDES
TENSION BARS	3/16" x 3/4" FULL HEIGHT OF	SPACE TENSION BARS AT 15" +/- 0.0.
TENSION WIRE	9 GA. ALUMINUM	12" O.C. FOR LINE POSTS AND GATES, 24" O.C. FOR RAILS AND TENSION WIRES. WELDED ASS'N TO END GA. AND SILVER PAINT ALL JOINTS.
GATE FRAME	2" STD. GA. (SCH 40) PIPE	PER POST DIAMETER
POST RAIL AND GATE FITTINGS	AS REQUIRED	STAMPED STEEL OR WALLEABLE CASTING
GATE HINGES	AS REQUIRED	OFFSET TYPE WITH 180 DEGREE SWING
DOUBLE GATE LATCH	AS REQUIRED	DUCKBILL LATCH ON ACTIVE LEAF, DROP BOLTS ON BOTH LEAVES
GATE STOPS (CLOSED POSITION)	AS REQUIRED	MUSHROOM STOP SET IN CONCRETE
GATE STOPS (OPEN POSITION)	AS REQUIRED	AS REQUIRED
LOCK CHAIN	3/8" SIZE, 36" LONG	HOT DIPPED GALVANIZED OR WHPL COATED

4 FENCE SPECIFICATION TABLE  
SCALE: N.T.S.

- GENERAL NOTES: AT 4-FEET MAXIMUM SPACING, IF FACTORY PREASSEMBLED FENCE WITH SUPPORT POSTS, SPACING OF POSTS MAY BE INCREASED TO 8 FEET MAXIMUM.
- WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER, OVERLAP 6 INCHES TO 8 INCHES AND ATTACH TO THE POSTS.
- REMOVE SPURTS DEPOSITS WHERESLUT DEPTH REACHES ONE-THIRD OF THE HEIGHT OF THE FENCE.



5 SILT FENCE DETAIL  
SCALE: N.T.S.



FENCE DETAILS  
SHEET NUMBER: A3.2



AT&T MOBILITY  
1801 VALLEY VIEW LANE  
FARMERS BRANCH, TX 75234

TILLMAN  
INFRASTRUCTURE

SITE NAME:  
ATC GS ICE  
HOUSE RELO  
SITE NUMBER:  
HX0713 (HX0549)

SITE ADDRESS:  
8911 HWY 225  
DEER PARK, TX 77236  
HARRIS COUNTY



LEVELS  
CONSULTING ENGINEERS, INC.  
1915 FM 2212, STE. 201  
GARDEN GROVE, TX 77246  
DRAWN BY: TL  
DATE DRAWN: 04/23/18

NO.	DESCRIPTION	REVISION	BY	DATE
0	ISSUED FOR CONSTRUCTION		TL	04/23/18
1	NEW RFS		TL	05/14/18
2	NEW RFS		TL	11/07/18

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REV.	DATE	DESCRIPTION	BY	APPROVED
3	08/04/19	ADDED 5/8" WIC MOUNTING HARDWARE	5.21.18	PCG

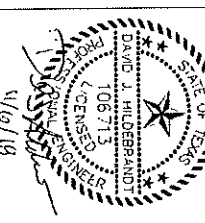
PREPARED FOR:



AT&T MOBILITY  
1801 WILLOW LANE  
FARMERS BRANCH, TX 75234

**TULLMAN**  
INFRASTRUCTURE

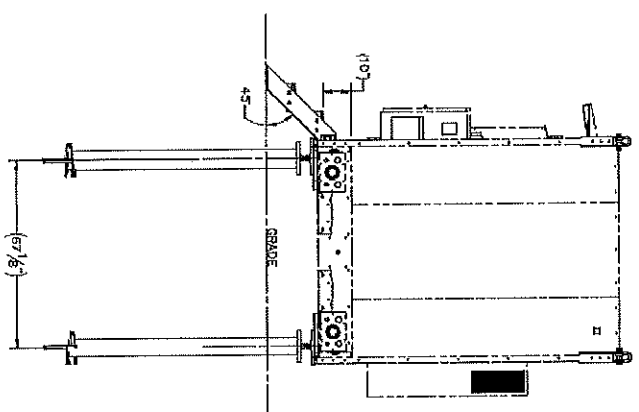
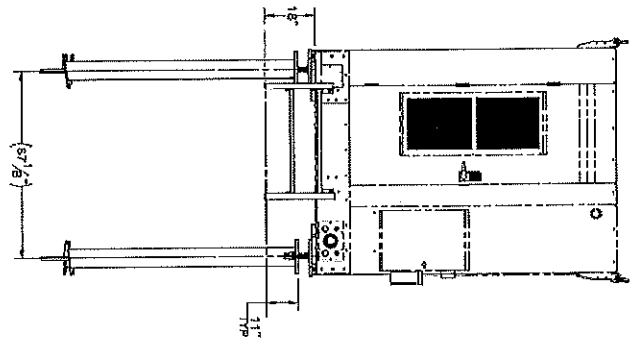
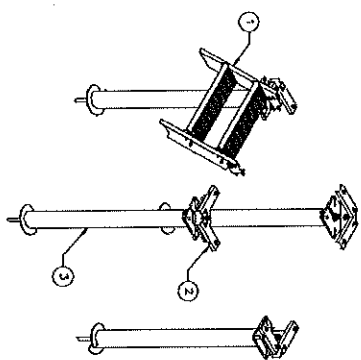
SITE NAME:  
**ATC GS ICE HOUSE RELO**  
SITE NUMBER:  
**HX0713 (HX0549)**  
SITE ADDRESS:  
6811 HWY 225  
DEER PARK, TX 77536  
HARRIS COUNTY



**TLEVELLS**  
CONSULTING ENGINEERS, INC.  
1915 FM 2322, STE. 301  
DUNN ISLAND, TX 77568  
PH: (281) 942-5911  
FAX: (281) 942-5912

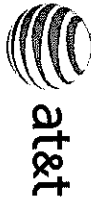
NO.	DESCRIPTION	BY	DATE
1	ISSUED FOR CONSTRUCTION	TH	04/23/18
2	REV BSS	TH	02/14/18
3	REV BSS	TH	11/07/18

SHEET TITLE:  
**EQUIPMENT DETAILS**  
SHEET NUMBER:  
**A3.3**



NO.	QTY.	PART NUMBER	DESCRIPTION	WEIGHT
1	1	1003-0900-0016	WIC 2-STEP STAIRS KIT, 45 DEGREE	103.1
2	4	W-000-771	ATT WIC HELICAL ADAPTER WELDMENT	45.0
3	4	1008-0000-0015	6" X 7" HELICAL SINGLE STUD OPTION	172.4
4	4	002-04T-0030	ROD THERWELDER, 1.00"-8 X 3.00" LG, ASTM A193 B7.7 CALV	1.50
5	8	002-0N0-0000	NUT, HK, ANCO LOCK, 1.00"-BUNC, CR 2H, CALV	0.43
6	8	002-0N0-0008	NUT, HK, 1.00"-BUNC, CR 2H, CALV	0.42
7	8	002-01W-0008	WASHER, SPALT LOCK, 1.00", CALV	0.08
8	8	002-09W-0024	WASHER, FLAT, 1.00", F435, CALV	0.07
9	8	002-09W-0008	WASHER, FLAT, .625", ASTM F436, CALV	0.06
10	32	002-09W-0004	BOLT, FK, RD, .625"-11UNC X 1.75" LG, ASTM A325.	0.03
11	16	002-08C-0033	WASHER, SPALT LOCK, .825 INCH, CALV	0.03
12	16	002-01W-0004	NUT, HK, .925"-11UNC, CR DR, CALV	0.03
13	16	002-0N0-0011	NUT, HK, .925"-11UNC, CR DR, CALV	0.12

REV.	DATE	DESCRIPTION	BY	APPROVED
1	04/23/18	ISSUED FOR CONSTRUCTION	TH	TH
2	02/14/18	REV BSS	TH	TH
3	11/07/18	REV BSS	TH	TH



AT&T MOBILITY CARE  
1801 WALKER BLVD  
FARMERS BRANCH, TX 75234

**TILLMAN**  
INFRASTRUCTURE

SITE NAME:  
**ATC GS ICE HOUSE RELO**  
SITE NUMBER:  
**HX0713 (HX0549)**

SITE ADDRESS:  
8911 HWY 225  
DEER PARK, TX 77538  
HARRIS COUNTY



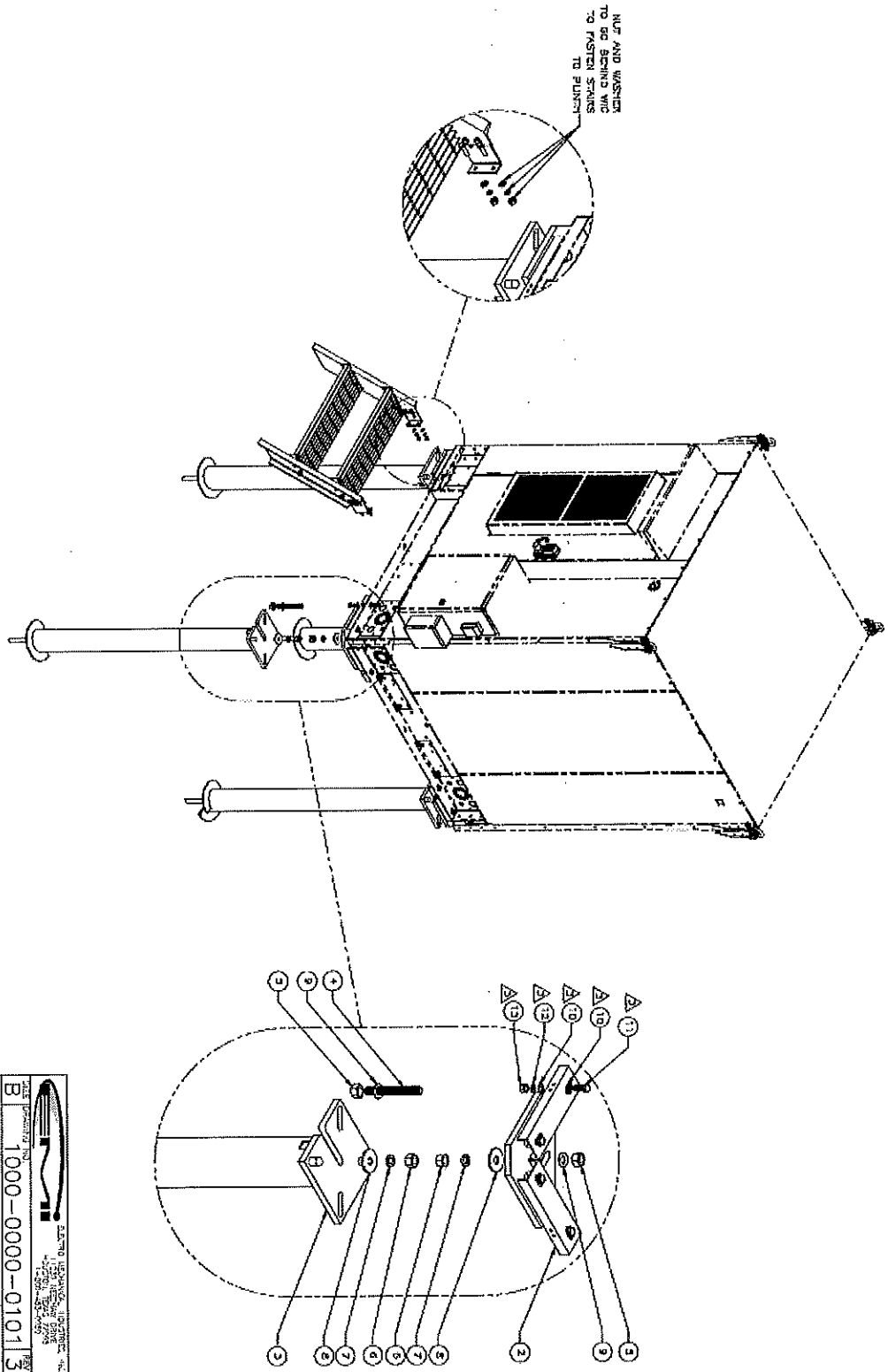
**TYLEVELLS**  
CONSULTING ENGINEERS, INC.  
1915 FM 225, STE. 301  
GARDEN RIDGE, TX 77046  
PH: (281) 424-9911  
F: (281) 424-9946

NO	DESCRIPTION	BY	DATE
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1	REV RFS	EL	03/14/18
2	REV RFS	MS	11/07/18

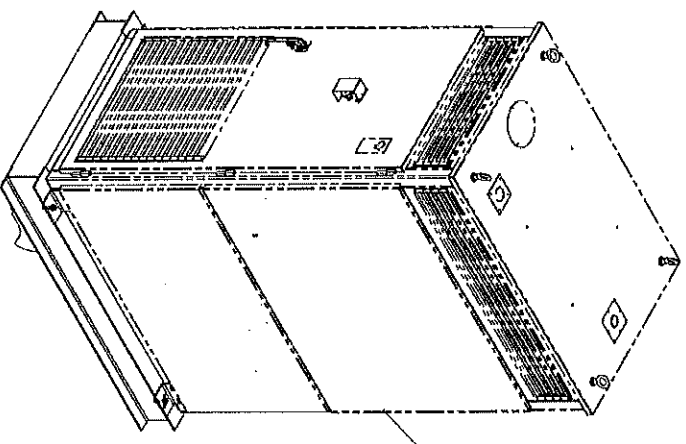
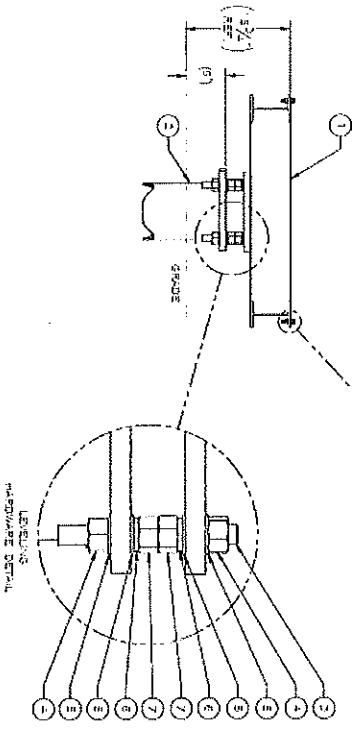
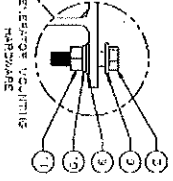
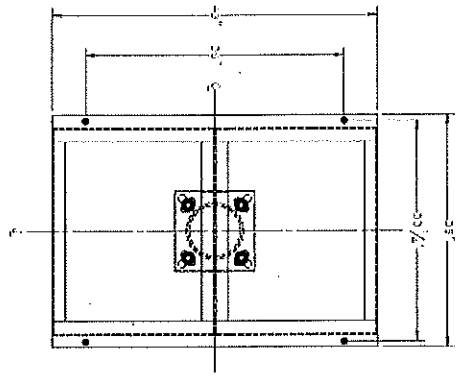
DATE DRAWN:	REVISION:
04/23/18	
APPROVED BY:	TH
DRAWN BY:	EL

SHEET NUMBER:  
**A3.4**

TILLMAN INFRASTRUCTURE ENGINEERS, INC.  
 1801 WALKER BLVD  
 FARMERS BRANCH, TX 75234  
 SCALE: 1/2" = 1'-0"  
 1000-0000-0101 | 3  
 SHEET 3 OF 3



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ITEM	QTY	PART NUMBER	DESCRIPTION	UOM	QTY
1	1	W-000-474	GENERATOR FRAME WELDMENT	EA	1
2	1	409-000-1013	HEXAGONAL PIPE, 3" X 7/8" BAGE	EA	1
3	4	002-0AT-H000	WASHER, FLAT, 1.00" DIA X 1.300" LG, A37M	EA	4
4	8	002-0NG-0000	NUT, HEX, A37M LOCK, 1.00" DIA, GR 2H, GALV	EA	8
5	16	002-0FW-0009	WASHER, FLAT, 1.00", F456, GALV	EA	16
6	8	002-0LW-0008	WASHER, SPLIT LOCK, 1.00", GALV	EA	8
7	8	002-0NG-0008	NUT, HEX, 1.00" DIA, GR 2H, GALV	EA	8
8	4	COMMON	SOLENOID, 1.50" DIA, 1.50" LG, GR 2H, GALV	EA	4
9	8	COMMON	WASHER, SPLIT LOCK, .4375 INCH, ZINC PLTD	EA	8
10	4	COMMON	WASHER, FLAT, .4375 INCH, ZINC PLTD	EA	4
11	4	COMMON	NUT, HEX, .4375-14 UNC, GR 8, ZINC	EA	4

**AT&T MOBILITY**  
 1801 VALLEY VIEW LANE  
 FARMERS BRANCH, TX 75234

**AT&T**

**TILLMAN**  
 INFRASTRUCTURE

SITE NAME:  
**ATC GS ICE**  
 HOUSE RELO  
 SITE NUMBER:  
 HX0713 (HX0649)  
 SITE ADDRESS:  
 6811 HWY 225  
 DEER PARK, TX 77538  
 HARRIS COUNTY

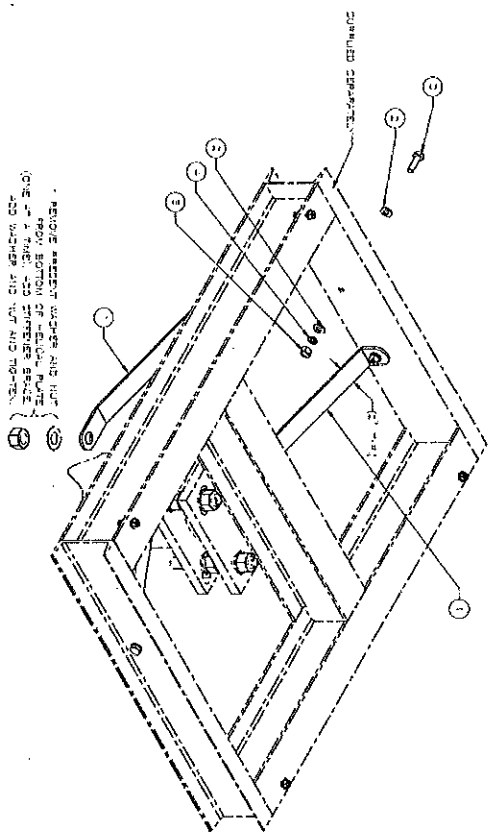
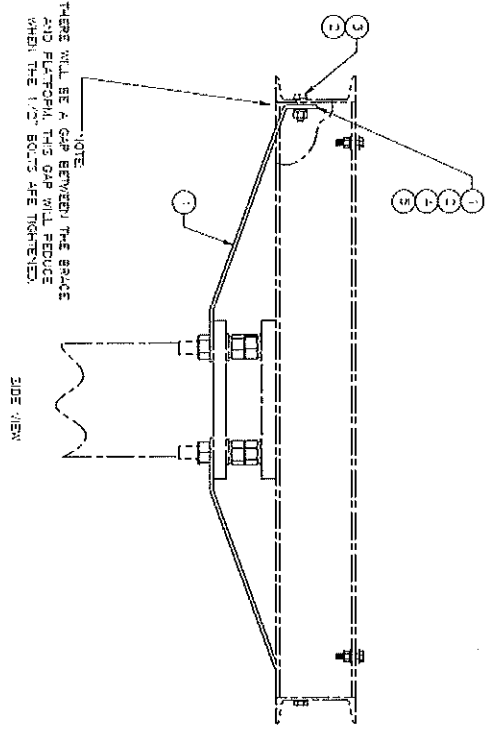
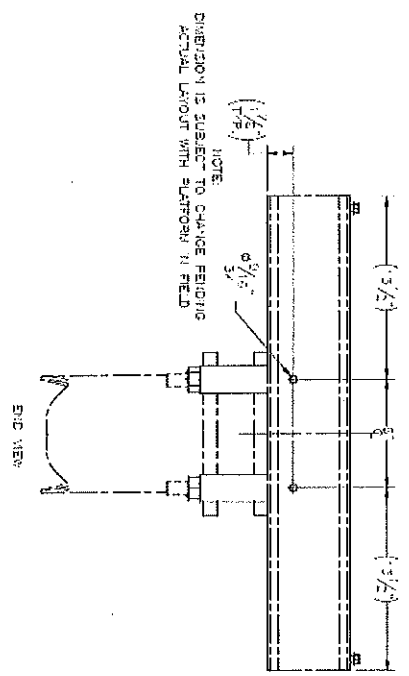
STATE OF TEXAS  
 PROFESSIONAL ENGINEER  
 DAVID W. HILDEBRANDT  
 LICENSE NO. 106713  
 1/6/18

**LEVELS**  
 1915 FM 202, STE 301  
 CONDUITING SERVICES, INC.  
 GARDEN RIDGE, TX 77546  
 PHONE: (817) 542-9911  
 FAX: (817) 542-9946  
 DRAWN BY: IL  
 APPROVED BY: TH  
 DATE DRAWN: 04/23/18  
 REVISION:  
 1. NO DISCREPANCY  
 2. ISSUED FOR CONSTRUCTION IL 04/23/18  
 3. NEW REVISION IL 03/14/18  
 4. NEW REVISION WTS 11/07/18

SHEET TITLE:  
**GENERATOR PLATFORM**

EQUIPMENT DETAILS  
 SHEET NUMBER:  
**A3.5**

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ITEM NO.	PART NUMBER	DESCRIPTION	LENGTH	WEIGHT
1	P-001-783	STIFFENER GENERATOR PLATFORM	22 9/16"	3.1
2	002-00W-0002	WASHER, FLAT, .500", F436, GALV.		0.02
3	002-00B-0012	BOLT, HX HD, .500"-13UNC X 1.75 LG, ASTM A325, GALV.		0.16
4	002-00W-0002	WASHER, SPLIT LOCK, .500", GALV.		0.01
5	002-00N-0001	NUT, HEX, .500"-13UNC, GR DH, GALV.		0.05

DATE	DATE	DATE	DATE
APPROVED	DESIGNED	CHECKED	REVISIONS
DATE	DATE	DATE	DATE
BY	BY	BY	BY

**EQUIPMENT DETAILS**

SHEET NUMBER: **A3.6**

SHEET TITLE: **STIFFENER BRACE KIT**

**LEVELS**  
 CONSULTING ENGINEERS, INC.  
 1915 FM 2702, STE. 300  
 GARDEN HURST, TX 76044  
 P.O. BOX 242,911  
 F-13046

STATE OF TEXAS  
 PROFESSIONAL ENGINEER  
 DAVID J. HILDEBRANDT  
 106713  
 11/01/18

SITE NAME:  
**ATC GS ICE HOUSE RELO**

SITE NUMBER:  
**HX0713 (HX0549)**

SITE ADDRESS:  
 6911 HWY 225  
 DEER PARK, TX 77536  
 HARRIS COUNTY

**TILLMAN**  
 INFRASTRUCTURE

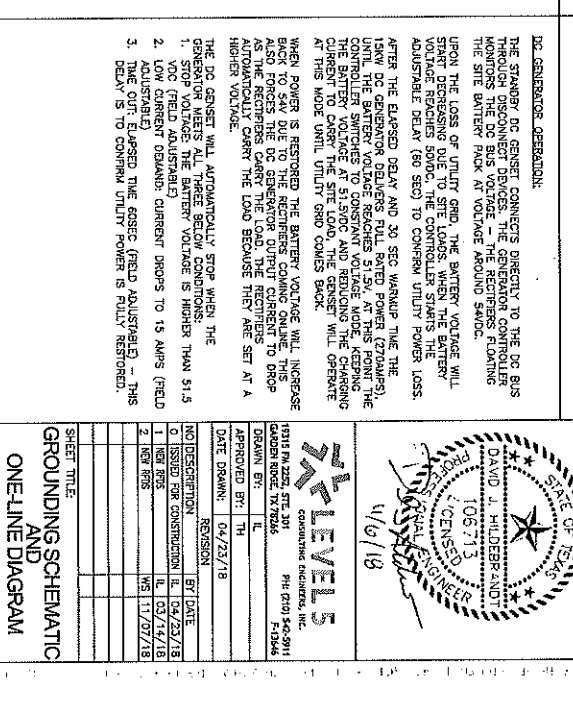
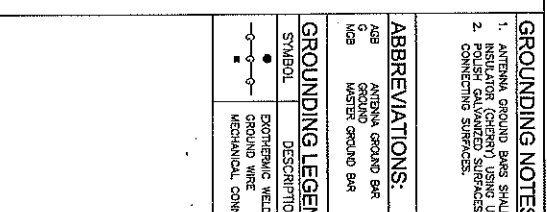
AT&T MOBILITY  
 1801 VALLEY VIEW LANE  
 FARMERS BRANCH, TX 75234

**at&t**

PREPARED FOR:



<b>GROUNDING NOTES:</b> 1. ANTENNA GROUND BARS SHALL BE INSTALLED WITHOUT INSULATOR/GENERAL SURFACING, LISTED MOUNTING DEVICES. 2. CONNECTING SURFACES.		<b>GROUNDING LEGEND:</b> <table border="1"> <thead> <tr> <th>SYMBOL</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td></td> <td>EXOTHERMIC WELD</td> </tr> <tr> <td></td> <td>GROUND WIRE</td> </tr> <tr> <td></td> <td>MECHANICAL CONNECTION</td> </tr> </tbody> </table>	SYMBOL	DESCRIPTION		EXOTHERMIC WELD		GROUND WIRE		MECHANICAL CONNECTION	<b>ABBREVIATIONS:</b> AGR ANTENNA GROUND BAR MGR MOUNTING GROUND BAR	<b>PREPARED FOR:</b>  AT&T MOBILITY 1801 VALLEY VIEW LANE FARMERS BRANCH, TX 75224							
SYMBOL	DESCRIPTION																		
	EXOTHERMIC WELD																		
	GROUND WIRE																		
	MECHANICAL CONNECTION																		
<b>DC GENERATOR OPERATION:</b> THE STANDBY DC GENSET CONNECTS DIRECTLY TO THE DC BUS THROUGH DISCONNECT SWITCHES. THE DC RECIPROCS FLOATING THE SITE BATTERY PACK AT VOLTAGE AROUND 50VDC. UPON THE LOSS OF UTILITY GRID, THE BATTERY VOLTAGE WILL DROP TO 45VDC. THE CONTROLLER STARTS THE BATTERY VOLTAGE RECHARGE 50VDC. THE CONTROLLER STARTS THE ADJUSTABLE DELAY (60 SEC) TO CONFIRM UTILITY POWER LOSS. AFTER THE DELAYED DELAY AND 30 SEC WARNING, THE THE 15KW DC GENERATOR DELIVERS FULL RATED POWER (220AMPS). UNTIL THE BATTERY VOLTAGE REACHES 51.5V, AT THIS POINT THE CONTROLLER SWITCHES TO CONSTANT VOLTAGE MODE, KEEPING CURRENT TO 51.5V. AFTER 15 MIN, THE GENSET WILL OPERATE IN THIS MODE UNTIL UTILITY GRID COMES BACK. WHEN POWER IS RESTORED, THE BATTERY VOLTAGE WILL INCREASE BACK TO 45VDC. THE RECIPROCS CURRENT DROPPING. THIS ALSO FORCES THE DC GENERATOR OUTPUT CURRENT TO DROP AUTOMATICALLY. CURRENT THE LOAD BECAUSE THEY ARE SET AT A HIGHER VOLTAGE. THE DC GENSET WILL AUTOMATICALLY STOP WHEN THE GENERATOR VOLTAGE IS THREE BELOW CONDITIONS: 1. VDC (FIELD ADJUSTABLE) 2. LOW CURRENT DEMAND: CURRENT DROPS TO 15 AMPS (FIELD ADJUSTABLE) 3. TIME OUT: EXPOSED THE GENSET (FIELD ADJUSTABLE) - THIS DELAY IS TO CONFIRM UTILITY POWER IS FULLY RESTORED.		AT&T INFRASTRUCTURE TILLMAN	SITE NAME: <b>AT&amp;T GSGICE HOUSE RELO</b> SITE NUMBER: <b>HX0713 (HX0549)</b> SITE ADDRESS: 6911 HWY 225 DEER PARK, TX 77535 HARRIS COUNTY																
		<b>REVISIONS</b> <table border="1"> <thead> <tr> <th>NO.</th> <th>DESCRIPTION</th> <th>BY</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>ISSUED FOR CONSTRUCTION</td> <td>IL</td> <td>04/23/18</td> </tr> <tr> <td>1</td> <td>NEW RWS</td> <td>IL</td> <td>03/14/18</td> </tr> <tr> <td>2</td> <td>NEW RWS</td> <td>MS</td> <td>11/07/18</td> </tr> </tbody> </table>		NO.	DESCRIPTION	BY	DATE	0	ISSUED FOR CONSTRUCTION	IL	04/23/18	1	NEW RWS	IL	03/14/18	2	NEW RWS	MS	11/07/18
NO.	DESCRIPTION	BY	DATE																
0	ISSUED FOR CONSTRUCTION	IL	04/23/18																
1	NEW RWS	IL	03/14/18																
2	NEW RWS	MS	11/07/18																



**GROUNDING SCHEMATIC ONE-LINE DIAGRAM**

SHEET NUMBER: **E2.0**

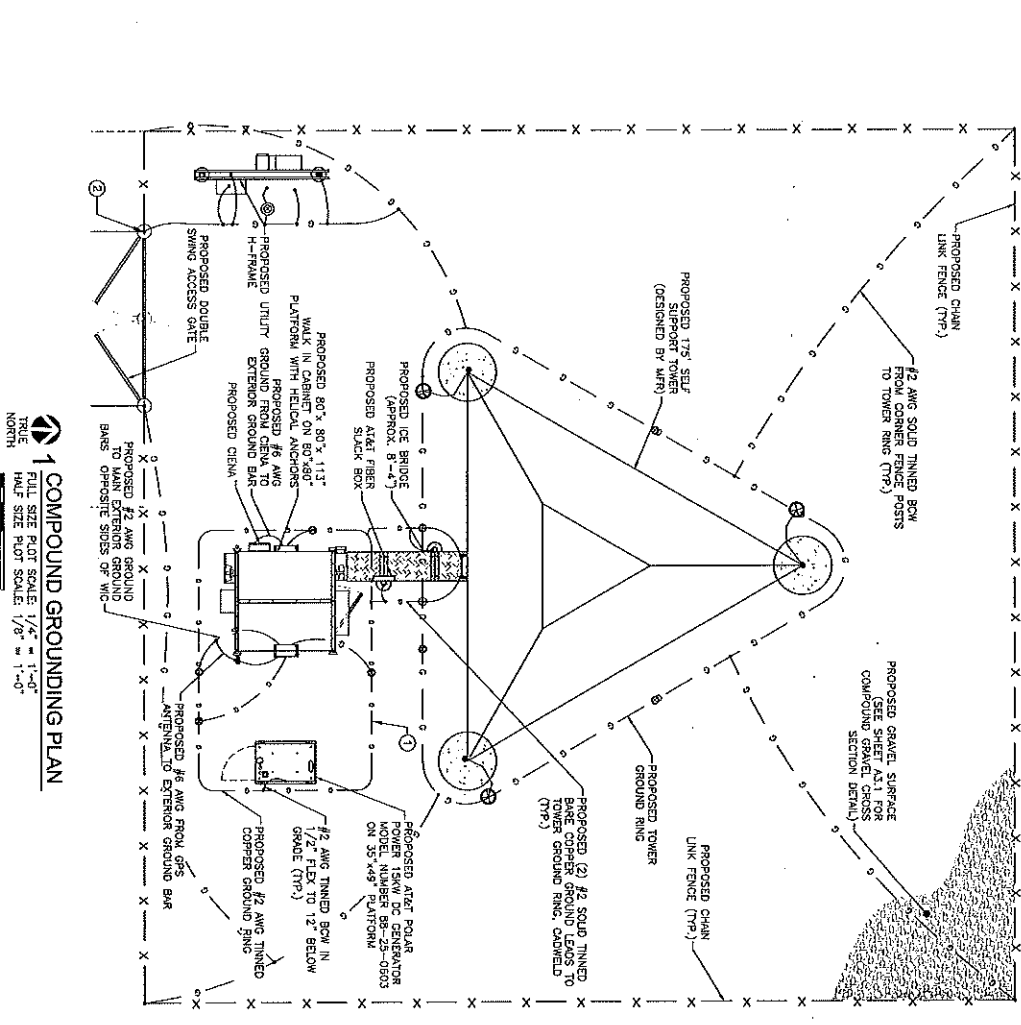


- GENERAL NOTES**
- REFER TO N SHEETS FOR SITE COORDINATION REQUIREMENTS.
  - COORDINATE WITH CONSTRUCTION MANAGER TO OBTAIN CURRENT APPLICABLE TOWER GROUNDING REQUIREMENTS FROM AT&T WIRELESS.
  - USE TINNED COPPER (SOLD) FOR EXTERIOR GROUNDING (SPECIALLY #2 OR AS NOTED); USE STRANDED COPPER WIRE FOR GROUNDING WHERE NOT EXPOSED AND NOT IN CONTACT WITH EARTH (SEE NOTE 4 BELOW).
  - BLURF ALL BARE GROUND WIRES MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE WHICHEVER IS GREATER. LOCATE NO CLOSER THAN 2" FROM FENCE OR 24" FROM FOUNDATIONS. SLEEVE ALL FOUNDATIONS, CROWNED AND TEST CONDUCTIVITY OF ALL GROUND TIE POINTS.
  - TO MINIMIZE LIGHTNING DAMAGE, NO SHARP BENDS PERMITTED IN ANY WIRING, INCLUDING GROUNDING.
  - GROUND RODS TO BE COPPER CLAD STEEL, 5/8" DIAWATER X 8'-0" LONG SPACED MIN. OF 10' APART WITH 16' PATTERN.
  - PRIME AND GPOXY PAINT ALL EXPOSED CONDUIT TO MATCH EXTENSION OF EQUIPMENT BUILDING.
  - ELECTRICAL CONTRACTOR SHALL CONNECT EXTERIOR GROUNDING WIRE TO GROUND RING INSIDE EQUIPMENT SHEDS. TOWER CONTRACTOR SHALL MAKE ALL ABOVE GROUND CONNECTIONS TO TOWER BUSB BARS AND WAREHOUSE BUNDLES AT THE TIME OF CONNECTION BE MECHANICAL TYPE. ALL OTHERS SHALL BE CO WELDED. SEE NOTE 10 BELOW.
  - ONCE CONSTRUCTION CONTRACTOR SHALL BLURF ALL GROUND RINGS AND CROWNED POINTS FOR ALL ABOVE GROUND CONNECTIONS AT THE TIME OF GROUND RING INSTALLATION. PROTECT AND SUPPORT ALL WIRING SUCH THAT IT WILL NOT VIBRATE/RUB AGAINST OTHER METALLIC SURFACES AND SUCH THAT THERE ARE NO SHARP BENDS (MINIMUM RADIUS 6" MIN).
  - CROWNED ALL CONNECTIONS WHERE POSSIBLE AT TOWER OR LOCATOR OF MULTIPLE CROWNED CONNECTIONS, IT MAY BE SUPPORTED TO PERMANENTLY BOLT A BUSB BAR TO GROUND OR TO SUPPORT STRUCTURE.
  - THE RESISTANCE BETWEEN ANY POINT ON THE GROUND SYSTEM AND CONSTRUCTION MANAGER IMMEDIATELY IF THIS IS NOT POSSIBLE DUE TO SOILD CONDITIONS FOR ALTERNATIVES.
  - GRND OFT GALVANIZED IN ASSPECT AREA, EXOTHERMICALLY WELD #8 CONDUCTOR AT 6 INCHES ABOVE GRADE ON FOUNDATION, WHICHEVER IS HIGHER. COLD-GALLY AFTER, EXOTHERMICALLY WELD OTHER END TO GROUND.
  - GROUND CONDUCTIONS ON EXTERIOR WALL OF SHELTER SHALL BE ENCASED IN 3/4" PVC CONDUIT TO GRADE MOUNT PVC WITH GALVANIZED "C" CLAMPS, SEAL TOP ENDS.
  - FOLLOWING COMPLETION OF WORK, CONDUCT GROUND TEST, SUBMIT WRITTEN TEST TO CONSTRUCTION MANAGER AND PROJECT MANAGER.
  - ALL GROUNDING SHALL BE IN ACCORDANCE WITH AT&T'S GROUNDING PRACTICES AND STANDARDS AND COMPLIANT WITH ALL STATE AND LOCAL CODES, AND THE NATIONAL ELECTRICAL CODE (NEC).
  - UNLESS NOTED OTHERWISE, ALL GROUNDING CONNECTIONS SHALL BE MADE BY AN EXOTHERMIC WELD.
  - NOTIFY THE CONSTRUCTION MANAGER 24 HOURS IN ADVANCE WHEN THE BURIED GROUND RING IS INSTALLED, SO THAT A REPRESENTATIVE CAN INSPECT THE GROUND RING BEFORE IT IS BACKFILLED WITH SOIL.

**GROUNDING LEGEND:**

SYMBOL	DESCRIPTION
●	EXOTHERMIC WELD
—●—	GROUND WIRE
—●—	MECHANICAL CONNECTION
○	GROUND ROD
○	GROUND ROD WITH INSPECTION SLEEVE

- PROVIDE A #2 AWG TINNED COPPER GROUND RING IN ACCORDANCE WITH NATIONAL AND LOCAL CODES AND AT&T STANDARDS. ENSURE WIC GROUND RING, HALO GROUND, AND ICE BRIDGE ARE BONDED TO TOWERS GROUND WELLS WITH TWO LEADS, EXOTHERMIC WELDS, AND APPROPRIATE INSPECTION WELLS.
- SEE SHEET E3.0 FOR FENCE AND GATE GROUNDING DETAILS



**1 COMPOUND GROUNDING PLAN**

FILE SIZE PLOT SCALE: 1/4" = 1'-0"  
 HALF SIZE PLOT SCALE: 1/8" = 1'-0"  
 NORTH

PREPARED FOR: **at&t** AT&T MOBILITY  
 1801 VALLEY VIEW LANE  
 FARMERS BRANCH, TX 75234

**TILLMAN** INFRASTRUCTURE

SITE NAME: **ATC GS ICE HOUSE RELO**  
 SITE NUMBER: **HX0713 (HX0549)**  
 SITE ADDRESS: 6911 HWY 225  
 DEER PARK, TX 77536  
 HARRIS COUNTY

**STATE OF TEXAS**  
 PROFESSIONAL ENGINEER  
 LICENSE NO. 106713  
 DAVID J. HILBERAND

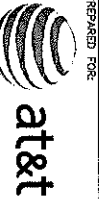
10/6/18

**LEVELS** CONSULTING ENGINEERS, INC.  
 9516 N. 2352, STE. 201  
 GARDEN RIDGE, TX 77346  
 PHONE: (817) 543-9911  
 FAX: (817) 543-9945

DATE DRAWN: 04/23/18  
 APPROVED BY: TH

NO.	DESCRIPTION	REVISION	BY	DATE
1	ISSUED FOR CONSTRUCTION	L	TH	04/23/18
2	REV R78	L	TH	03/14/18
3	REV R78	L	TH	03/14/18

SHEET TITLE: **COMPOUND GROUNDING PLAN**  
 SHEET NUMBER: **E2.1**



AT&T MOBILITY  
1801 MULLEN HWY. SUITE  
FARMERS BRANCH, TX 75234

TILLMAN  
INFRASTRUCTURE

SITE NAME:  
**ATC GS ICE  
HOUSE RELO**

SITE NUMBER:  
**HX0713 (HX0549)**

SITE ADDRESS:  
6911 HWY 225  
DEER PARK, TX 77556  
HARRIS COUNTY



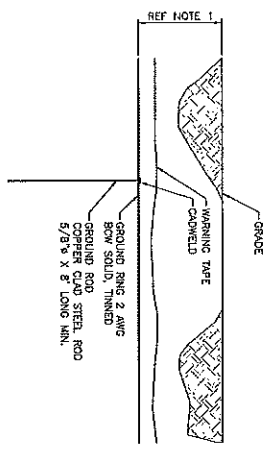
**TALLEVELS**  
CONSULTING ENGINEERS, INC.  
1915 N. 2322, STE. 301  
GARLAND RIDGE, TX 77834  
PH: (214) 542-9911  
F: (214) 542-9946

NO.	DESCRIPTION	REVISION	BY	DATE
0	ISSUED FOR CONSTRUCTION	IL		04/23/18
1	REV RFS	LS		03/14/18
2	REV RFS	WS		11/07/18

DATE DRAWN: 04/23/18  
APPROVED BY: TH  
DATE: 04/23/18

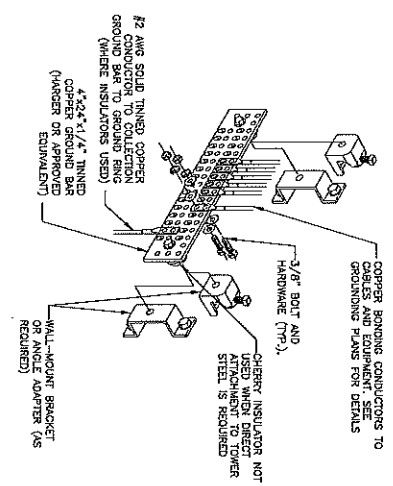
SHEET TITLE:  
**GROUNDING  
DETAILS**

SHEET NUMBER:  
**E3.0**

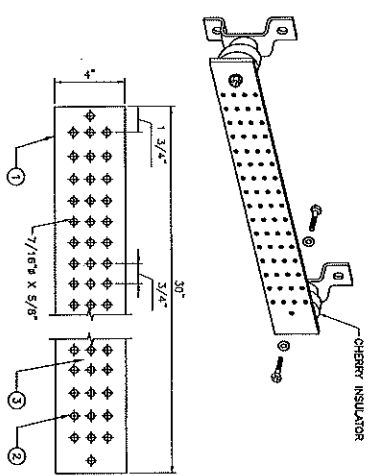


- NOTE:
1. DEPTH SHALL BE MIN. 30" OR 6" BELOW THE FROST LINE, WHICHEVER IS GREATER.
  2. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL.

**1 TYPICAL GROUND ROD DETAIL**  
SCALE: N.T.S.

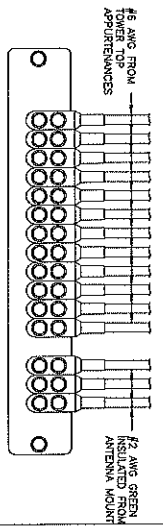


**2 GROUND BAR DETAIL**  
SCALE: N.T.S.



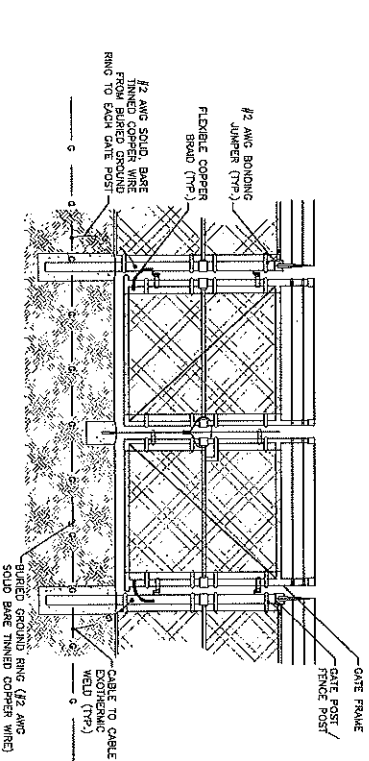
- NOTE:
- 1 TINNED COPPER GROUND BUSS BAR, 1/4" x 3/8", WITH NON-INSULATED MOUNTING KIT OR EQUIVALENT. SHALL BE SIZED TO ACCOMMODATE ALL GROUNDING CONNECTIONS.
  - 2 REQUIRED PLUS PROVIDE 50% SPARE CAPACITY.
  - 3 APPLY CONDUCTIVE LUBRICANT (NG-OX COMPOUND OR APPROVED EQUIVALENT) TO EXPOSED AREA OF GROUND BAR.

**3 TYPICAL EXTERIOR MAIN GROUND BAR DETAIL**  
SCALE: N.T.S.



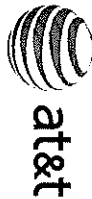
- NOTE:
- CONDUCTORS TO UTILIZE ANTI-OXIDATION COMPOUND (THOMAS & BETTS) ON ALL LUG CONNECTIONS.

**4 TYPICAL UPPER GROUND BAR DETAIL**  
SCALE: N.T.S.



- NOTE:
- A. THE FENCE RINGS CONDUIT SHALL BE ENCASED IN AN INTRINSICALLY SAFE CABLE.
  - B. AN INTERVAL NOT EXCEEDING 25 FEET BONDING SHALL BE MADE ACROSS GATE OPENINGS.
  - C. THE #2 AVG. COPPER BONDING JUMPER SHALL BE CONNECTED TO EACH GATE POST RING AND TO EACH GATE POST RING TO EACH GATE POST RING TO EACH GATE POST RING.
  - D. EXTERNAL WELDS OF CLAMP CONNECTORS LISTED FOR THE PURPOSE AND TO THE VERTICAL POLE WHICH IS BONDED TO THE BARE COPPER WIRE SHALL BE PROTECTED WITH AN ANTI-OXIDATION COMPOUND (THOMAS & BETTS) FOR THE PURPOSE.

**5 FENCE AND GATE GROUNDING DETAIL**  
SCALE: N.T.S.



AT&T MOBILITY LANE  
1801 VALLEY VIEW LANE  
FARMERS BRANCH, TX 75234

**TILLMAN**  
INFRASTRUCTURE

SITE NAME:  
**ATC GS ICE  
HOUSE RELO**

SITE NUMBER:  
**HX0713 (HX0549)**

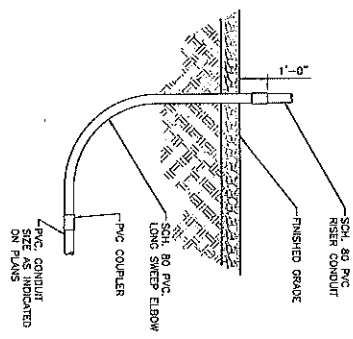
SITE ADDRESS:  
8911 HWY 225  
DEER PARK, TX 77536  
HARRIS COUNTY



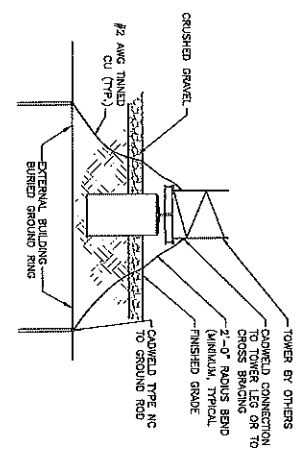
**KLEVELLS**  
CONSULTING ENGINEERS, INC.  
1915 FM 1225, STE. 201  
GARDNER HOLE, TX 77046  
PH: (281) 542-9111  
F13466

DATE DRAWN:	04/23/18
APPROVED BY:	TH
NO. DESCRIPTION	BY DATE
0 ISSUED FOR CONSTRUCTION	TL 04/23/18
1 REV RFS	TL 02/14/18
2 NEW RFS	MS 11/07/18

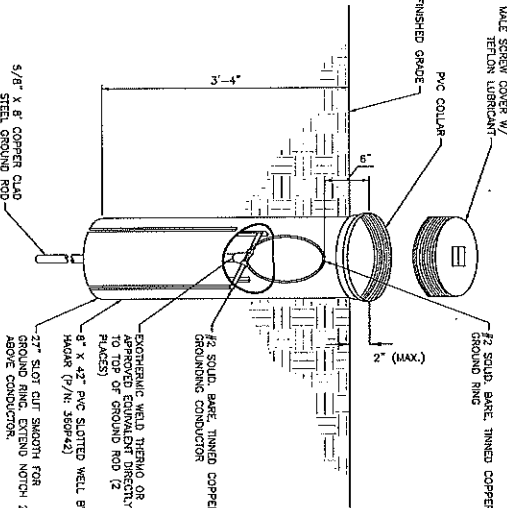
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**E3.1**



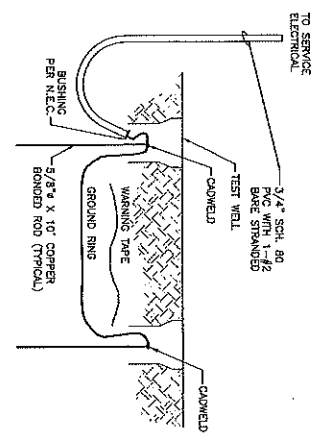
**3 TYPICAL CONDUIT TRANSITION DETAIL**  
SCALE: N.T.S.



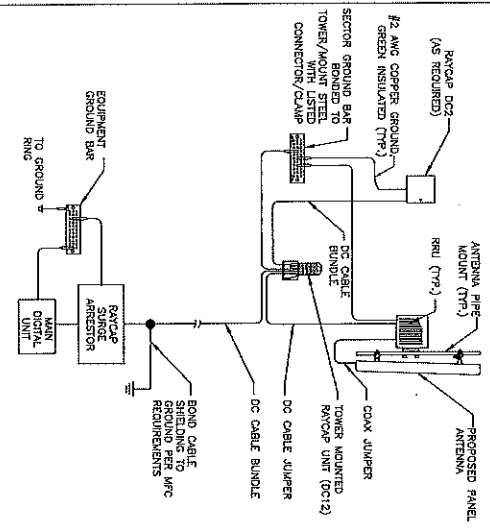
**2 TYPICAL TOWER GROUNDING DETAIL**  
SCALE: N.T.S.



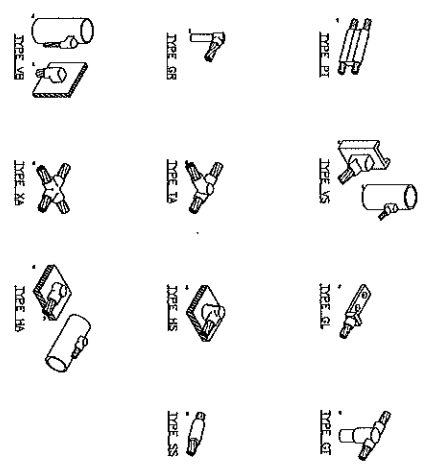
**4 TYPICAL INSPECTION WELL DETAIL**  
SCALE: N.T.S.



**1 TYPICAL GROUNDING ELECTRODE DETAIL**  
SCALE: N.T.S.




**5 TYPICAL GROUNDING SCHEMATIC - TOWER TOP RRU**  
SCALE: N.T.S.




**6 TYPICAL CADWELD CONNECTIONS**  
SCALE: N.T.S.


### DIVISION 16 ELECTRICAL SPECIFICATIONS

- 1600 SCOPE OF WORK:
  1. THE REQUIREMENTS PRESENTED IN THESE SPECIFICATIONS PERTAIN TO ELECTRICAL INSTALLATION OF A COMPLETE NEW POWER SYSTEM FOR THE AIRTEL OCCUPANTS. IN GENERAL, THE ELECTRICAL CONTRACTOR (HEREINAFTER REFERRED TO AS "CONTRACTOR") SHALL PROVIDE OR RESTORE THE FOLLOWING EXISTING SYSTEMS:
    - A. CONDUIT AND RACEWAYS FOR ALL DEVICES, EQUIPMENT, GROUND BUSSES AND EQUIPMENT INDICATED PRIOR TO BID. CONTRACTOR SHALL DETERMINE ANY ADDITIONAL POWER OR GROUNDING WHICH MAY BE REQUIRED DEPENDING ON EQUIPMENT SPECIFIC TO THIS SITE AND BUILDING ENVELOPE.
    - B. CONTRACTOR SHALL RUN FEEDERS SHOWN TO SUPPLY POWER TO ALL CONTRACTOR EQUIPMENT SPECIFIC TO THIS SITE.
  2. CONTRACTOR SHALL RUN FEEDERS SHOWN TO SUPPLY POWER TO ALL CONTRACTOR EQUIPMENT SPECIFIC TO THIS SITE.
  3. EACH QUALIFIED BIDDER SHALL OBTAIN ALL PROPER BIDDING AND SHALL VISIT THE PROJECT SITE TO VERIFY THE LOCATION AND DEPTH OF ALL EXISTING AND OCCUPANT UTILITIES PRIOR TO BIDDING. CONTRACTOR SHALL NOTIFY THE ARCHITECT IMMEDIATELY PRIOR TO BIDDING OF ANY OCCUPANT UTILITIES THAT MAY BE FOUND AT THE PROJECT SITE.
  4. CONTRACTOR SHALL NOTIFY THE ARCHITECT IMMEDIATELY PRIOR TO BIDDING OF ANY OCCUPANT UTILITIES THAT MAY BE FOUND AT THE PROJECT SITE.
  5. CONTRACTOR SHALL NOTIFY THE ARCHITECT IMMEDIATELY PRIOR TO BIDDING OF ANY OCCUPANT UTILITIES THAT MAY BE FOUND AT THE PROJECT SITE.
- 1601 GENERAL:
  1. IT IS THE INTENTION OF THESE SPECIFICATIONS AND THE RELATED PLANS TO SHOW COMPLETELY PROPERLY FUNCTIONING SYSTEMS. ALL SYSTEMS, WIRING AND EQUIPMENT SHALL BE INSTALLED PER NEPA-70 (APPLICABLE) AND AUTHORITY HAVING JURISDICTION.
  - 1.8002 SPECIAL CONDITIONS FOR ELECTRICAL WORK:
    1. THE CONTRACTOR DOCUMENTS INCLUDING BUT NOT LIMITED TO THESE PLANS, SPECIFICATIONS, AND CONTRACTS ARE ISSUED FOR INFORMATION TO BE COMPLETED BY THE ELECTRICAL CONTRACTOR AND ANY OF ALL SUBCONTRACTORS. AND THEREAFTER REFERRED TO AS CONTRACTOR, BY THE ELECTRICAL CONTRACTOR.
    2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF WORK AREAS AND SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR THE PROTECTION OF WORK AREAS.
    3. ALL WORK SHALL BE DONE AND TESTED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND WITH LOCAL AND NATIONAL CODES. REPORT SUPERSEDED CONFLICTS WITH PLANS AND SPECIFICATIONS IMMEDIATELY TO THE ARCHITECT. 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 BEST WORK INTO CONFORMANCE WITH THESE DOCUMENTS.
    4. ALL MATERIALS, METHODS AND WORKMANSHIP SHALL BE APPROVED BY THE ARCHITECT PRIOR TO THE START OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR THE PROTECTION OF WORK AREAS.
    5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR THE PROTECTION OF WORK AREAS.
  - 1.8002.1 ELECTRICAL INSTALLATION: 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 ACCORDANCE WITH LOCAL, STATE AND FEDERAL CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR THE PROTECTION OF WORK AREAS.
  2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR THE PROTECTION OF WORK AREAS.
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  4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR THE PROTECTION OF WORK AREAS.
- 1602.1 ELECTRICAL INSTALLATION: 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 ACCORDANCE WITH LOCAL, STATE AND FEDERAL CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR THE PROTECTION OF WORK AREAS.
- 1610.1 ELECTRICAL INSTALLATION: 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 ACCORDANCE WITH LOCAL, STATE AND FEDERAL CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR THE PROTECTION OF WORK AREAS.
- 1612.1 ELECTRICAL INSTALLATION: 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 ACCORDANCE WITH LOCAL, STATE AND FEDERAL CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR THE PROTECTION OF WORK AREAS.
- 1620.1 ELECTRICAL INSTALLATION: 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 ACCORDANCE WITH LOCAL, STATE AND FEDERAL CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR THE PROTECTION OF WORK AREAS.
- 1630.1 ELECTRICAL INSTALLATION: 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 ACCORDANCE WITH LOCAL, STATE AND FEDERAL CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR THE PROTECTION OF WORK AREAS.
- 1640.1 ELECTRICAL INSTALLATION: 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 ACCORDANCE WITH LOCAL, STATE AND FEDERAL CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR THE PROTECTION OF WORK AREAS.
- 1650.1 ELECTRICAL INSTALLATION: 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 ACCORDANCE WITH LOCAL, STATE AND FEDERAL CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR THE PROTECTION OF WORK AREAS.



1801 VALLEY VIEW LANE  
FARMERS BRANCH, TX 75234





STATE OF TEXAS  
PROFESSIONAL ENGINEER  
LICENSE NO. 106713  
10/6/13

DAVID J. HILDEBRANDT  
106713  
10/6/13  
DEER PARK, TX 77536  
DARRIS COUNTY

SITE NAME  
**ATC GSI CE**  
**HOUSE RELO**  
HX0713 (HX0549)  
SITE ADDRESS:  
6911 HWY 225  
DEER PARK, TX 77536  
DARRIS COUNTY

SHEET NUMBER:  
**E4.0**

CONTRACTOR: **TALLEVELS**  
CHARLETTOWN ENGINEERS, INC.  
1915 N. 1425, STE. 301  
CADDEN RIDGE, TX 77836  
PH: (281) 445-8711  
F: (281) 445-8712

NO. DESCRIPTION REVISION BY DATE  
1 0 1 USED FOR CONSTRUCTION 1 10/23/18  
2 1 NEW REVISION 1 11/07/19

DATE DRAWN: 04/23/18  
APPROVED BY: [Signature]  
DATE: [Signature]

PH 01.07.19 6:15  
LUBRIZOL CORP.  
29400 LAKELAND BLVD.  
WICKLIFFE, OH. 44092-2201

PH 01.07.19 6:15  
BEDFORD THOMAS C  
PO BOX 70  
DEER PARK, TX. 77536-0070

PH 01.07.19 6:15  
HERON INTERNATIONAL INC  
6961 HIGHWAY 225  
DEER PARK, TX. 77536-2414

PH 01.07.19 6:15  
BEDFORD T CHRIS  
6913 HIGHWAY 225  
DEER PARK, TX. 77536-2414

PH 01.07.19 6:15  
BATTLEGROUNDRoad PROP LLC  
305 WALKER CIR  
RICHLAND, MS. 39218-8411

PH 01.07.19 6:15  
FLEXITALLIC US LLC  
6915 HIGHWAY 225  
DEER PARK, TX. 77536-2414