



**REVIEW BY FORT BEND COUNTY COMMISSIONERS COURT**

**Fort Bend County Engineering Department**  
301 Jackson Suite 401  
Richmond, Texas 77469  
281.633.7500  
Permits@fortbendcountytexas.gov

- Right of Way Permit**
- Commercial Driveway Permit**

Permit No: 2016-10751

**Applicant:** Crown Castle NG General LLC/Shift Companies

**Job Location Site:** SOUTH OF S.E.C. OF CINCO RANCH BLVD AND GASTON RD, KATY, TX 77494

**Bond No.** [REDACTED] **Date of Bond:** 5/12/2014 **Amount:** \$50,000.00

The above applicant came to make use of certain Fort Bend County property subject to, "The Order Regulating the Laying, Construction, Maintenance, and Repair of Buried Cables, Conduits, and Pole Lines, In, Under, Across or Along Roads, Streets, Highways, and Drainage Ditches in Fort Bend County, Texas, Under the Jurisdiction of the Commissioners Court of Fort Bend County, Texas," as passed by the Commissioners Court of Fort Bend County, Texas, of the Minutes of the Commissioners Court of Fort Bend County, Texas, to the extent that such order is not inconsistent with Chapter 181, Vernon's Texas Statutes and Codes Annotated.

**Notes:**

1. Evidence of review by the Commissioners Court must be kept on the job site and failure to do so constitutes grounds for job shutdown.
2. Written notices are required:
  - a. 48 hours in advance of construction start up, and
  - b. When construction is completed and ready for final inspection, submit notification to Permit Administrator thru [MyGovernmentOnline.org](http://MyGovernmentOnline.org) portal.
3. This permit expires one (1) year from date of permit if construction has not commenced.

On this 13th day of December, 2016, Upon Motion of Commissioner Meyers, seconded by Commissioner Patterson, duly put and carried, it is ORDERED, ADJUDGED AND DECREED that said notice of said above purpose is hereby acknowledged by the Commissioners Court of Fort Bend County, Texas, and that said notice be placed on record according to the regulation order thereof.

**Signature**

Presented to Commissioners Court and approved.

By: Charles O. Ay  
for County Engineer

Date Recorded 12-21-16 Comm. Court No. 13Q

By: N/A  
Drainage District Engineer/Manager

Clerk of Commissioners Court  
By: Arinda Wilkins  
Deputy



**PERMIT APPLICATION REVIEW FORM FOR  
CABLE, CONDUIT, AND POLE LINE ACTIVITY  
IN FORT BEND COUNTY**

**Fort Bend County  
Engineering Department**  
301 Jackson Suite 401  
Richmond, Texas 77469  
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The following "Notice of Proposed Cable, Conduit, and/or Pole Line activity in Fort Bend County" and accompanying attachments have been reviewed and the notice conforms to appropriate regulations set by Commissioner's Court of Fort Bend County, Texas.

**(1) COMPLETE APPLICATION FORM:**

- a. Name of road, street, and/or drainage ditch affected.
- b. Vicinity map showing course of directions
- c. Plans and specifications

**(2) BOND:**

- County Attorney, approval when applicable.
- Perpetual bond currently posted. Bond No: [REDACTED] Amount: \$50,000.00
- Performance bond submitted. Bond No: \_\_\_\_\_ Amount: \_\_\_\_\_
- Cashier's Check Check No: \_\_\_\_\_ Amount: \_\_\_\_\_

**(3) DRAINAGE DISTRICT APPROVAL (WHEN APPLICABLE):**

\_\_\_\_\_  
Drainage District Approval

\_\_\_\_\_  
Date

**We have reviewed this project and agree it meets minimum requirements.**

*Charles O. [Signature]*

\_\_\_\_\_  
Permit Administrator

*12/4/16*

\_\_\_\_\_  
Date

# SHIFT

November 28, 2016

Carmen Escobar, CFM  
Permit Administrator  
Fort Bend County Engineering  
301 Jackson St, Richmond, TX 77469

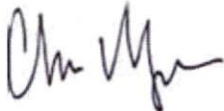
**RE: Cinco Ranch Traffic Control Plan  
- Shift Project #160614**

Carmen,

Per our conversation on the phone, the work we are doing in the ROW will not require any road closures. There is no TCP required, the contractor will take adequate measure to ensure they are not impeding the public way.

Please let me know if you need anything else.

Thank you,



Chris Myers  
Principal  
SHIFT Companies



**PROJECT NAME:** CINCO RANCH EXPANSION  
**PROJECT ADDRESS:** CINCO RANCH BLVD AND GASTON RD  
**PROJECT TYPE:** METAL SLIMLINE POLE  
**HUB AREA:** CINCO RANCH - HGCW  
**NODE #(s):** **CCR-37**  
**COORDINATES:** LAT: 29.725078, LONG: -95.80162

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**FORT BEND COUNTY ENGINEER**  
 ENGINEER: *Richard W. Stokes, P.E., P.Eng.*  
 For: Richard W. Stokes, P.E.  
 DATE: 11/17/16  
 THESE SIGNATURES ARE VOID IF CONSTRUCTION HAS NOT COMMENCED IN (1) YEAR FROM DATE OF APPROVAL.  
 APPROVED: *[Signature]*  
 Development Coordinator  
 DATE: 11/17/16

TEAM MEMBER'S REVIEW	REVIEWED/DATE
R.F. ENGINEERING	
PRODUCT MANAGEMENT	
NETWORK REAL ESTATE TEAM	
UTILITY TEAM	
IMPLEMENTATION	
OPERATIONS	

PROJECT TEAM	
<b>ARCHITECT</b>	<b>OWNER INFO</b>
Company: SHIFT CONSULTING Address: 7333 E MONTE VISTA RD, SCOTTSDALE, AZ 85257 Phone Number: 480.264.0829 Fax Number: 480.264.0163 Contact: CHRIS MYERS	Company: CROWN CASTLE Address: 1220 AUGUSTA DR, HOUSTON, TX 77057 Phone #: 817-449-3113 Email: BARRY.CAMPALU@CROWNCASTLE.COM Contact: BARRY CAMPALU
<b>STRUCTURAL</b>	<b>RF ENGINEER</b>
Company: T.B.D. Address: Phone Number: Fax Number: Contact:	Company: CROWN CASTLE Address: 1220 AUGUSTA DR, HOUSTON, TX 77057 Phone Number: Fax Number: Contact:
<b>FIBER ENGINEERING</b>	
Company: TDC2 Address: 710 EAST PARK BLVD, SUITE 110, PLANO, TX 75074 Phone: 972-423-9000 Email: info@tdc2.com Contact: SCOTT CRUM	

PROJECT SUMMARY	
<b>PROJECT NAME:</b> CINCO RANCH EXPANSION	<b>APPLICANT:</b> CROWN CASTLE 1220 AUGUSTA DR, HOUSTON, TX 77057 CONTACT: BARRY CAMPALU
<b>PROJECT AREA:</b> CINCO RANCH - HGCW	<b>CODES:</b> 2009 INTERNATIONAL BUILDING CODE (IBC) 2009 INTERNATIONAL ENERGY CONSERVATION CODE (IECC) 2008 NATIONAL ELECTRICAL CODE (NEC) 2008 NATIONAL ELECTRICAL SAFETY CODE (NESC)
<b>JURISDICTION:</b> FORT BEND COUNTY ENGINEERING DEPT. 1124 BLUME RD, ROSENBERG, TX 77471 PH: 281-633-7500 CONTACT: JOHNNY ORTEGA	<b>PLUMBING REQUIREMENTS:</b> FACILITY HAS NO PLUMBING.
<b>HANDICAPPED REQUIREMENTS:</b> -FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. -HANDICAPPED ACCESS REQUIREMENTS ARE NOT REQUIRED.	<b>POWER COMPANY:</b> CENTERPOINT ENERGY 5431 HIGHWAY BLVD, KATY, TX 77464 PH: 281-320-6275 CONTACT: KEN CORTEZ

NOTE: NOT ALL SITES ARE INCLUDED IN THIS SET. SEE NODE #S ABOVE FOR SITES THAT ARE IN THIS SET.



**PROJECT DESCRIPTION**  
 CROWN CASTLE PROPOSES TO PROVIDE AN ENHANCED RESIDENTIAL WIRELESS COMMUNICATIONS SYSTEM FOR THE KATY, TEXAS AREA. THE SYSTEM WILL IMPROVE CELLULAR COMMUNICATIONS AND INCREASE CALL CAPACITY. THE NETWORK AND ASSOCIATED EQUIPMENT HAVE BEEN DESIGNED TO MINIMIZE VISUAL IMPACTS IN URBAN SETTINGS. THE PROPOSED SYSTEM WILL PROVIDE A CELLULAR NETWORK THAT CAN BE UTILIZED SIMULTANEOUSLY BY DIFFERENT LICENSED TELECOMMUNICATIONS COMPANIES.  
 A SUBJECT NODE WILL CONSIST OF NEW METAL SLIMLINE POLE. THEY WILL HAVE GROUND MOUNTED RADIO EQUIPMENT INSIDE A CABINET WITH A METER AND DISCONNECT ATTACHED. THERE WILL ALSO BE POLE TOP ANTENNAS CONCEALED IN SHRUBS.



CROWN CASTLE  
 600 E. JOHN CARPENTER HWY.  
 SUITE 500  
 IRVING, TX 75062

RECORD DRAWING ISSUE DATE: 10/14/16

RECORD DRAWING DRAFTING ONLY



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RELEASE	
DATE	SUBMITTAL
6/23/10	1ST CITY SUBMITTAL
10/16/16	2ND CITY SUBMITTAL

REVISIONS		
NO.	DATE	COMMENT
10	10/16/16	CITY COMMENTS

**PROJECT NAME**  
 CINCO RANCH EXPANSION

**NODE ADDRESS**

**NODE #:** CCR-37  
 CINCO RANCH BLVD AND GASTON RD

**HUB AREA**  
 CINCO RANCH - HGCW

**SHIFT JOB NUMBER** IN HOUSE  
 150602 DRAWN BY: PA  
 CHECKED BY: CM

**SHEET TITLE**  
 TITLE SHEET

**SHEET NUMBER** **PAGE**  
 T1.1 1 OF 14

PLOT SCALE: 1:1 @ 24x36; 1:2 @ 11x17

<b>PART 2 - EXECUTION</b>	
<b>2.1 EXECUTION</b>	<p>A. (1) Main ground from the antenna mounting bracket at the top of the pole to the main ground bus bar (TMGB) (location defined below). Main vertical ground shall consist of a #2 solid bare copper cable. Bare ground shall be protected by a PVC U-Guard to the top of the pole and extend every 24" with corrosion resistant (aluminum galvanized) sleeve. #2 solid bare copper cable is highly susceptible to theft and may be a bit expensive to run to top of pole. #2 is cheaper and less likely to be stolen. Bare ground may also be installed to provide theft susceptible to theft.</p> <p>B. Ground rod shall be in 4" depth minimum and copper clad.</p> <p>C. Provide (1) main ground from the main ground bus bar (TMGB) (location defined below) to a ground rod at the pole base. Main ground vertical shall consist of a #2 solid bare copper cable. Lead ground shall be protected by a PVC U-Guard to the bottom of the pole and steps every 24" with corrosion resistant (aluminum galvanized) sleeves.</p> <p>D. Ground rod shall be in 4" depth minimum and copper clad.</p> <p>E. Ground rod shall be placed per NEC code with regards to depth and distance from wood poles.</p> <p>F. #2 ground shall be attached directly to the ground rod via Cast Wedge</p> <p>G. Main ground vertical shall be attached directly to a ground bus bar (TMGB) (location defined below) to the pole base. Method of contact shall be 2" zinc plated lug (Brazers) to the main ground bus (TMGB) on the left or top of pole depending on the orientation of the TMGB.</p> <p>H. Main ground vertical shall be attached to the Antenna mounting bracket and be attached directly to the Antenna Bracket via a self tapping bolt or screw. A washer must be added to the top of bolt or screw to avoid damage to the lug wire insulating a mount hole.</p> <p>I. TMGB shall be installed above the Channel cabinet below the WRN cabinet, directly to the second pole structure.</p> <p>J. All pole required devices, including but not limited to: antenna mounts and antennas, mounting brackets, cables, shall be connected to the TMGB with a #4 copper braided cable UV coated and green in color.</p> <p>K. All pole required devices, including but not limited to: antenna mounts and antennas, mounting brackets, cabinets shall be connected to the TMGB using compression type, 3 hole compression lugs.</p> <p>1. Conductor lugs must attach to the Bus bar with two front facing up and one with both leads are on the back side of the bus bar.</p> <p>2. Stripping of conductor lugs is prohibited.</p> <p>3. Placement of conductor lugs on front and rear face of grounding bar is permitted.</p> <p>4. Any modifications to the conductor lugs is prohibited, including but not limited to grinding, cutting or sanding.</p> <p>5. Conductor lugs must be placed with even spacing and must not come in contact with another conductor lug.</p> <p>6. Bottom wire of each conductor lugs should be placed on the bottom side of the bus bar.</p> <p>7. All conductor lugs shall have two (2) compressions per lug.</p> <p>8. All conductor lugs must have NO QR applied to any side which contact another metal to avoid corrosion including and especially the conductors in the compression area.</p> <p>9. All conductor lugs must be properly sealed from weather with heat shrink.</p> <p>10. All conductor lugs must be attached using 3/8" hardware #2 per each lug and in the following manner:</p> <ol style="list-style-type: none"> <li>Flat washer on the top side of the lug</li> <li>Flat thru the lug hole facing outward</li> <li>Flat washer on the front side of the lug</li> <li>Lock Washer on the front side of the flat washer</li> <li>Flat thru the lug hole facing outward</li> <li>Flat washer on the back side of the lug</li> <li>All nuts on conductor bolts must be tightened so that the lock washers are completely compressed.</li> </ol> <p>M. No mechanical connections are acceptable except in the event of mechanical fastings being a integral part of the product from the factory - i.e. Channel cabinet #4 ground lugs on each side of the cabinet.</p> <p>N. Excess wires on Channel must be ground up to a 6" length.</p> <p>O. All lead wires must be isolated with zinc or lead product to prevent corrosion.</p> <p>P. All exposed metallic surfaces must be sprayed with a protective coating such as Zinc II.</p> <p>Q. All ground wires to equipment must be labeled with ground tags.</p> <p>1. Exposed "hot" conductors are prohibited if in excess of 1/16" in or inch.</p>

<b>PART 3 - TESTING AND DOCUMENTATION</b>	
<b>3.1 TESTING</b>	<p>D. Drive to ground is required for acceptance. #6 Ohm ohmmeter or meter with above measurement. Additional ground rods will be added to the field and #6 Ohm is achieved.</p>
<b>3.2 DOCUMENTATION</b>	<p>A. Photos of test results are required as well as test results in formal document form. Submit result of test to CC Construction Manager prior to final walkthrough. Submit all photos and tests with detailed package per Section 017700 - Closeout Procedures and Required Documents.</p>

<b>GROUNDING SPECIFICATIONS</b>	SCALE: NTS 6	<b>GENERAL PROJECT NOTES</b>	SCALE: NTS 10
<p>1. FORT BEND COUNTY MUST BE INVITED TO THE PRE-CONSTRUCTION MEETING.</p> <p>2. CONTRACTOR SHALL NOTIFY FORT BEND COUNTY ENGINEERING DEPARTMENT 48 HOURS PRIOR TO COMMENCING CONSTRUCTION AND 48 HOURS NOTICE TO ANY CONSTRUCTION ACTIVITY WITHIN THE LIMITS OF THE RANGING AT CONSTRUCTION/FORT BEND COUNTY GOV.</p> <p>3. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FROM FORT BEND COUNTY PRIOR TO COMMENCING CONSTRUCTION OF ANY IMPROVEMENTS WITHIN COUNTY ROAD RIGHT-OF-WAYS.</p> <p>4. ALL PAVING IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FORT BEND COUNTY RULES, REGULATIONS AND REQUIREMENTS RELATING TO THE APPROVAL AND ACCEPTANCE OF IMPROVEMENTS IN SUBDIVISIONS AS CURRENTLY AMENDED.</p> <p>5. ALL ROAD WIDTHS, CURB RADI AND CURB ALIGNMENT SHOWN INDICATES BACK OF CURB.</p> <p>6. A CONTINUOUS LONGITUDINAL REINFORCING BAR SHALL BE USED IN THE CURBS.</p> <p>7. ALL CONCRETE PAVEMENT SHALL BE 3" BACK-CEMENT WITH A MINIMUM COMPRESSIVE STRENGTH OF 3500 PSI AT 28 DAYS. TRANSVERSE EXPANSION JOINTS SHALL BE INSTALLED AT EACH CURB RETURN AND AT A MAXIMUM SPACING OF 40 FEET.</p> <p>8. ALL WEATHER ACCESS TO ALL EXISTING STREETS AND DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES.</p> <p>9. 4" X 12" REINFORCED CONCRETE CURB SHALL BE PLACED IN FRONT OF SINGLE FAMILY LOTS ONLY. ALL OTHER AREAS SHALL BE 6" REINFORCED CONCRETE CURB.</p> <p>10. AT ALL INTERSECTION LOCATIONS, TYPE 7 RAMPS SHALL BE PLACED IN ACCORDANCE WITH TYPICAL PRE-12A STANDARD DETAIL SHEET A.D.A. HANGAR RAMPS SHALL BE INSTALLED WITH STREET PAVING AT ALL INTERSECTIONS AND COMPLY WITH CURRENT A.D.A. REGULATIONS.</p> <p>11. CURB HEADERS ARE REQUIRED AT CURB CONNECTIONS TO HANGAR RAMPS, WITH NO CONSTRUCTION JOINT WITHIN 5' OF RAMPS.</p> <p>12. ALL INTERSECTIONS UTILIZING TRAFFIC CONTROL MEASURES SHALL HAVE A.D.A. WHEEL CHAIR RAMPS INSTALLED.</p> <p>13. QUELUBER ARE SET FORTH IN THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AS CURRENTLY AMENDED. SHALL BE OBSERVED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE FLAGMEN, SIGNING, STRIPING AND WARNING DEVICES, ETC. DURING CONSTRUCTION - BOTH DAY AND NIGHT.</p> <p>14. ALL #11 STOP SIGNS SHALL BE 30"X30" WITH DAMAGED GRASS SHEETING PER TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.</p> <p>15. STREET NAME SIGNAGE SHALL BE ON A 9" HIGH SIGN PLAT BLADE WITH REFLECTIVE GREEN BACKGROUND. STREET NAMES SHALL BE UPPER AND LOWERCASE LETTERING WITH UPPERCASE LETTERS OF 6" MINIMUM AND LOWERCASE LETTERS OF 4.5" MINIMUM. THE LETTERS SHALL BE REFLECTIVE WHITE. STREET NAME SIGNS SHALL BE MOUNTED ON STOP SIGN POST.</p> <p>16. A BLUE COULEE REFLECTORIZED BUTTON SHALL BE PLACED AT ALL FIRE HYDRANT LOCATIONS. THE BUTTON SHALL BE PLACED 12 INCHES OFF OF THE CENTERLINE OF THE STREET ON THE SAME SIDE AS THE HYDRANT.</p>		<p>ORBY MUST HAVE ONE ALLY CERTIFIED PERSON - PERSONNEL WORKING/INSTALLING THE MISC CABINET MUST HAVE THE ALLY METRO CELL CERTIFICATION - ONLY CERTIFIED PERSONNEL MAY INSTALL ALL METRO CELLS (I.E. NO TRAIN THE TRAINER OPTIONS PERMITTED) - A CERTIFIED INSTALLER MAY SUPERVISE ONE OR MORE NON-CERTIFIED "HELPER'S" AS LONG AS THE CERTIFIED INSTALLER IS ON THE SAME SITE 100% OF THE TIME. IF NO TRAINING SUPERVISORS - A CERTIFIED INSTALLER MAY NOT ACT AS A ROAMING QUALITY AUDITOR UNLESS THE ORIGINAL INSTALLATION IS COMPLETED BY A CERTIFIED INSTALLER AND THE QUALITY AUDIT IS ONLY USED TO ENSURE INTERNAL QUALITY IN NO WAY WILL THIS AUDIT BE FORWARDED AS AN ALGATE-LUCENT AUDIT - CERTIFIED PERSONNEL HAVE ACCESS TO REMOTE TECHNICAL SUPPORT FOR ISSUES RELATED TO METRO CELL INSTALLATION (800) 582-9066 / 800-LUCENT - THE FOLLOWING PRODUCTS ARE COVERED: 8765 METRO CELL INDOOR, 8764 METRO CELL OUTDOOR, 8765 METRO CELL INDOOR, 8794 METRO CELL OUTDOOR, 8765 METRO RACK OUTDOOR V1.0, AND THE 7010 CABINET.</p>	

<b>GROUNDING SPECIFICATIONS</b>	SCALE: NTS 6	<b>GENERAL PROJECT NOTES</b>	SCALE: NTS 10
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<b>ABBREVIATIONS AND SYMBOLS</b>	SCALE: NTS 20
<p>AC ADJ ADJUSTABLE</p> <p>AF AFF ABOVE FINISH FLOOR</p> <p>AMBL APPROX APPROXIMATELY</p> <p>AWO AMERICAN WIRE GAUGE</p> <p>BCW BARE COPPER WIRE</p> <p>BLD BUILDING</p> <p>BLA BLOCK</p> <p>BOB BOTTOM OF BLOCK</p> <p>BS BULBING STANDARD</p> <p>CLR CLEAR</p> <p>CONC CONCRETE</p> <p>CONCY CONCRETE</p> <p>CONT CONTINUOUS</p> <p>CO COMPANY</p> <p>DBL DOUBLE</p> <p>DIA DIAMETER</p> <p>DM DIMENSION</p> <p>DN DOWN</p> <p>DTL DETAIL</p> <p>DWG DRAWING</p> <p>E EAST</p> <p>EA EACH</p> <p>EL ELEV ELEVATION</p> <p>ELECT ELECTRICAL</p> <p>EPB ELECTRICAL PULL BOX</p> <p>EQ EQUIP EQUIPMENT</p> <p>EW EACH-WAY</p> <p>EX EXISTING</p> <p>EXT EXTERIOR</p> <p>FIN FINISH</p> <p>FLOOR FLOOR</p> <p>FT FOOT, FEET</p> <p>GA GALV GALVANIZED</p> <p>OC GENERAL CONTRACTOR</p> <p>GLB GLUE LAMINATED BEAM</p> <p>GRND GROUND</p> <p>GWB GYPSUM WALL BOARD</p> <p>HORIZ HORIZONTAL</p> <p>HR HOUR</p> <p>HT HEIGHT</p> <p>HYC HEATING, VENTING AND AIR CONDITIONING</p> <p>IBC INTERNATIONAL BUILDING CODE</p> <p>ID INSIDE DIA</p> <p>IN INCH</p> <p>INFO INFORMATION</p> <p>INT INTERIOR</p> <p>INVT POUNDING LINEAR FEET</p> <p>LINE LINEAR FEET</p> <p>MAX MAXIMUM</p> <p>MCH MECHANICAL</p> <p>MTL METAL</p> <p>MFR MANUFACTURER</p> <p>MGR MANAGER</p> <p>MAN MINIMUM</p> <p>MISC MISCELLANEOUS</p> <p>N NORTH</p> <p>NA NOT APPLICABLE</p> <p>N/C NOT IN CONTRACT</p> <p>NTS NOT TO SCALE</p> <p>ON CENTER OUTSIDE DIAMETER</p> <p>OPPOSITE</p> <p>PROPERTY LINE</p> <p>PLY PLYWOOD</p> <p>PAIR PAIR</p> <p>PROJECT PROJECT</p> <p>PROPERTY PROPERTY</p> <p>PRELIM PRELIMINARY</p> <p>REFLECTED CEILING PLAN</p> <p>REQUIRED</p> <p>ROOM ROOM</p> <p>ROUGH OPENING</p> <p>RIGHT-OF-WAY</p> <p>RECEIVE SIGNAL</p> <p>SCHED SCHEDULE</p> <p>SF SQUARE FEET</p> <p>SHR SHOWER</p> <p>SPEC SPECIFICATION</p> <p>SQUARE SQUARE</p> <p>SEW SANITARY SEWER</p> <p>STL STEEL</p> <p>STRUCT STRUCTURAL</p> <p>SUSP SUSPENDED</p> <p>SV SQUARE YARD</p> <p>THRU THROUGH</p> <p>TANNE TANNED</p> <p>TOP OF TOP OF</p> <p>TOB TOP OF BLOCK</p> <p>TOC TOP OF CONCRETE</p> <p>TOH TOP OF HANGAR</p> <p>TUBE TUBE</p> <p>TR TRANSIT SIGNAL</p> <p>TYPCAL</p> <p>UNDERGROUND UNDERGROUNDS</p> <p>UNIVERSAL RADIO HEAD UNIVERSAL RADIO HEAD</p> <p>UNLESS NOTED OTHERWISE</p> <p>VERT VERTICAL</p> <p>VENRY IN FIELD</p> <p>VINYL TILE</p> <p>WEST</p> <p>WITH</p> <p>WINDOW</p> <p>WITHOUT</p> <p>WORKING POINT</p> <p>WTR WATER</p>	

<b>GROUNDING SPECIFICATIONS</b>	SCALE: NTS 6	<b>GENERAL PROJECT NOTES</b>	SCALE: NTS 10
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**CROWN CASTLE**

600 E. JOHN CARPENTER Pkwy.  
SUITE 300  
IRVING, TX 75062

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RECORD DRAWINGS ISSUE DATE: 10/16/16



**Shift Companies, LLC**

13111 NEITE GATA ROAD  
HOUSTON, TEXAS 77061  
PH: 281.284.2821  
TX: 480.284.0143

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<b>REVISION</b>	SCALE: NTS 10
<p>1. CENTER LINE</p> <p>2. PROPERTY LINE</p> <p>3. RIGHT-OF-WAY</p> <p>4. FIBER</p> <p>5. GAS</p> <p>6. POWER</p> <p>7. SANITARY SEWER</p> <p>8. STORM DRAIN</p> <p>9. WATER</p> <p>10. LIGHT CIRCUIT POWER</p> <p>11. OVERHEAD POWER LINE</p> <p>12. VIEW NUMBER</p> <p>13. SHEET NUMBER</p> <p>14. SHEET GROUP</p> <p>15. EXISTING TREE</p> <p>16. EXISTING BUSH / SHRUB</p>	

<b>PROJECT NAME</b>	CINCO RANCH EXPANSION
<b>HUB AREA</b>	CINCO RANCH - HGCV
<b>SHIFT JOB NUMBER</b>	150602
<b>IN HOUSE</b>	DRAWN BY: SA CHECKED BY: CP
<b>SHEET TITLE</b>	
<b>GENERAL NOTES ABBREVIATIONS AND SYMBOLS</b>	
<b>SHEET NUMBER</b>	T1.2
<b>PAGE</b>	2 OF 14
<b>PLOT SCALE</b>	1:1 @ 24"X36" 1:2 @ 11"X17"

**Cinco Ranch Expansion**  
700 RRH Specifications

Manufacturer	
Frequency Band	813 (TDD-LTE)
Technology	LTE FDD
RF Output Power	2400W/6480W (5W configurable)
Operational Range	CA: 746-756 MHz UL: 777-787 MHz
Instantaneous BW	10 MHz (1 Carrier)
RF Configuration	2T2R, 2T4R, 4T4R 2 CPRI ports (site 7) A850 2.0 R8548 port
Interfaces	2 integrated Smart Bias Tees 1 port external antenna (4x) Tx & Rx monitor ports
Power	48 VDC 120W typical @ 4.8 RF load
Environmental Conditions	-40 C to +55 C
Connectors	DIN 2118



Dimensions	
Dimensions	31.8 x 12 x 9.6 in.
Weight	87 lbs
Mounting options	Post/Post
Connector Location	Bottom

**Cinco Ranch Expansion**  
PCS RRH Specifications (Future)

Manufacturer	
Frequency Band	828 & 828 (FDD)
Technology	LTE FDD
RF Output Power	2400W/6480W (5W configurable)
Operational Range	CA: 1900-1900 MHz UL: 1850-1815 MHz
Instantaneous BW	60 MHz (4 Carriers)
RF Configuration	2T2R, 2T4R, 4T4R 2 CPRI ports (site 7) A850 2.0 R8548 port
Interfaces	2 integrated Smart Bias Tees 1 port external antenna (4x) Tx & Rx monitor ports 2 800 mA/1.0V DC power connectors 48 VDC
Power	48 VDC 120W typical @ 5.4 RF load
Environmental Conditions	-40 C to +55 C
Connectors	DIN 2118



Dimensions	
Dimensions	31.2 x 12 x 9.1 in.
Weight	83 lbs
Mounting options	Post/Post
Connector Location	Bottom

**Cinco Ranch Expansion**  
AWS RRH Specifications

Manufacturer	
Frequency Band	813 (TDD-LTE)
Technology	LTE FDD
RF Output Power	2400W/6480W (5W configurable)
Operational Range	CA: 710-710 MHz UL: 1885-1730 MHz
Instantaneous BW	70 MHz
RF Configuration	2T2R, 2T4R, 4T4R 2 CPRI ports (site 7) A850 2.0 R8548 port
Interfaces	2 integrated Smart Bias Tees 1 port external antenna (4x)
Power	48 VDC
Environmental Conditions	-40 C to +55 C
Connectors	DIN DIN 4.3-18



Dimensions	
Dimensions	30.9 x 12 x 7.7 in.
Weight	78 lbs
Mounting options	Post/Post
Connector Location	Bottom

RADIO SPECIFICATIONS

Amphenol 696-960 / 696-960 / 1695-2700 / 1695-2700 MHz

2C2UT360X12Faya0

700M Dual Band | Pseudo Omni | Carpenter Antenna | 2x (DIN) | 3M7 | 3M7 | 3M7 | 1.8 / 1.8 / 6A | 6A / 6A | P850 / T57

- Features**
- Pseudo Omni configuration with 8 elements
  - Ideal for Small Cell - 50W applications
  - Available with 1.8 / 1.8 or 4.3 / 1.8 or 7.1 / 1.8 elements
  - Three unique mounting options
  - Can be painted to match in-situ mounting structure

**Connector Description**

Color	Band	Frequency Range
Red	Low Band #1 & #2	474-746 MHz
Blue	High Band #1	1695-2700 MHz
Green	High Band #2	1695-2700 MHz

**Electrical Characteristics**

Parameter	Low Band #1 and #2	High Band #1 and #2
Frequency Bandwidth	270 MHz	1000 MHz
Impedance	50 Ohm	50 Ohm
Return Loss	> 15 dB	> 15 dB
Gain	1.8 dBi	1.8 dBi
Efficiency	> 15 dB	> 15 dB
Power	48 VDC	48 VDC

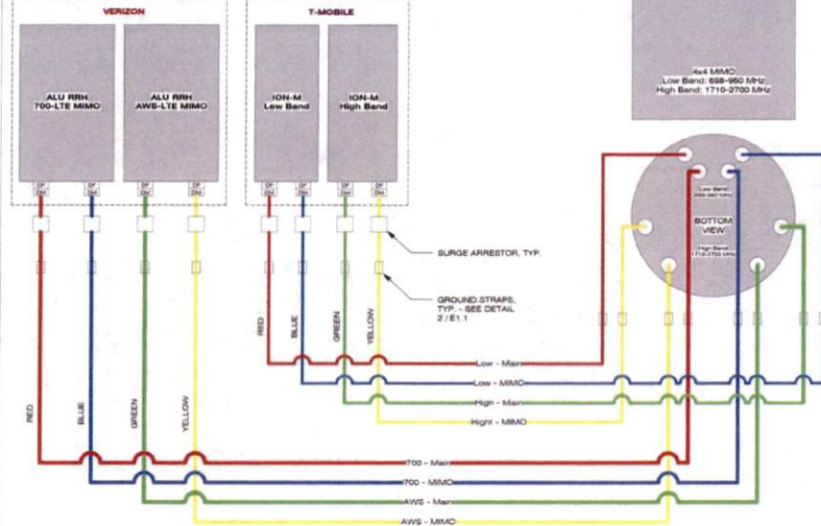
**Mechanical Characteristics**

Height	1219.371 mm	48.011416 in.
Weight	17.3 kg	38.1 lbs
Material	Aluminum	Aluminum
Wind Load	1.47 kPa	33.1 psf
Wind Load (at 100 mph)	2.41 kPa	53.1 psf

ANTENNA SPECIFICATIONS

SCALE N.T.S. 12

**CROWN CASTLE**



WIRING DIAGRAM

SCALE N.T.S. 18

**CROWN CASTLE**

CROWN CASTLE  
600 E. JOHN CARPENTER Fwy  
SUITE 300  
HOUSTON, TX 77060

RECORD DRAWINGS ISSUE DATE: 10/18/16

**SHIFT**

Shift Companies, LLC  
7331 E. NORTH WINDY ROAD  
SCOTTSDALE, ARIZONA 85257  
PH: 480.348.3000  
FAX: 480.348.3043

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RELEASE	
DATE	SUBMITTAL
03/16	1ST CITY SUBMITTAL
10/16	IND. CITY SUBMITTAL

REVISIONS		
NO.	DATE	COMMENT
1	10/16/16	CITY COMMENTS

PROJECT NAME  
**CINCO RANCH EXPANSION**

HUB AREA

CINCO RANCH - HGCW

SHIFT JOB NUMBER: 150602

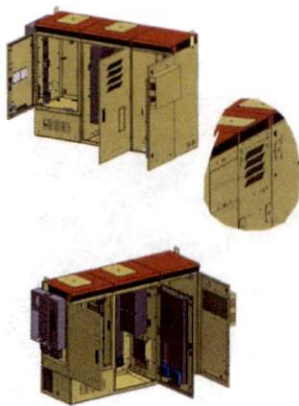
SHEET TITLE

EQUIPMENT SPECIFICATIONS

SHEET NUMBER: T1.3

PAGE: 3 OF 14

PLOT SCALE: 1:1 @ 24"x36"; 1:2 @ 11"x17"



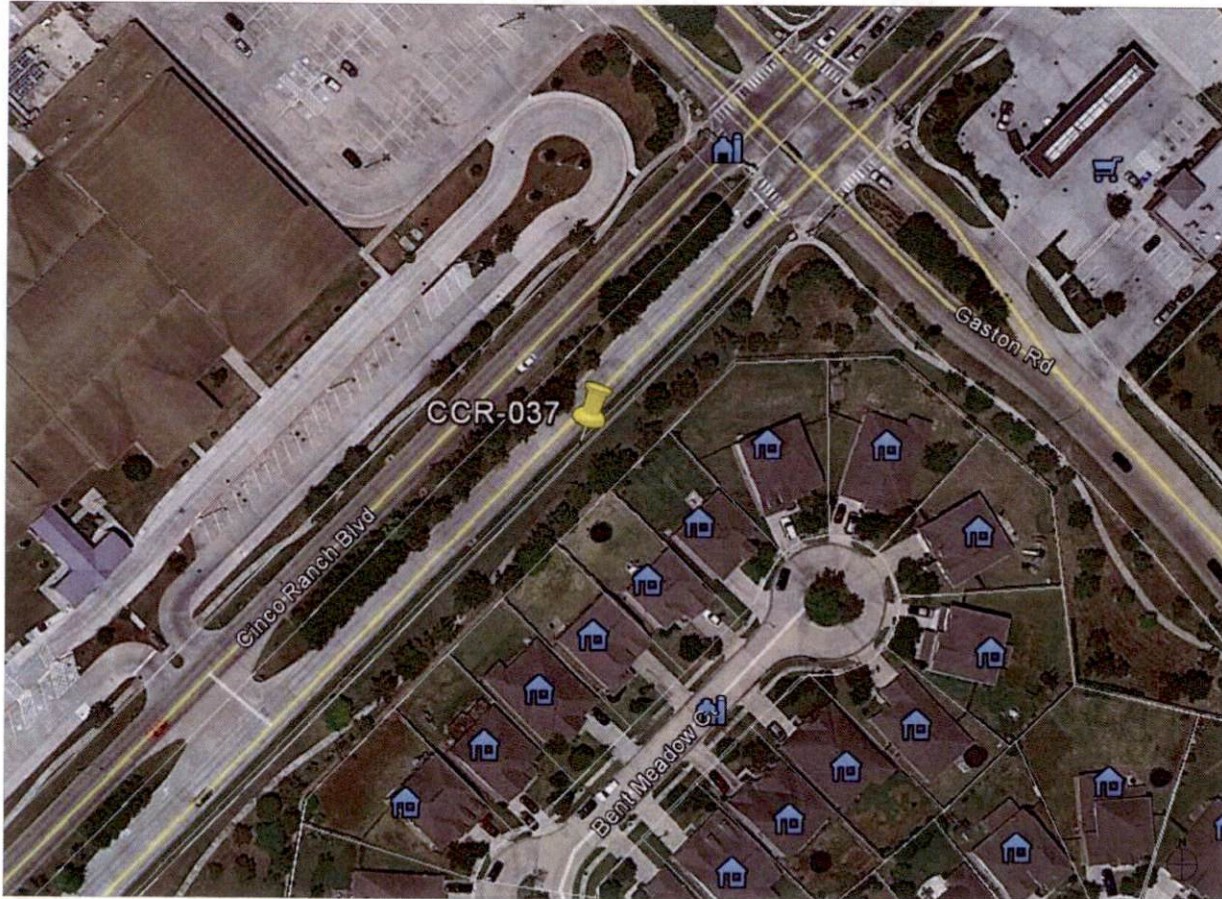
charles A

charles A

APPROVED: [Signature]  
Development Coordinator  
DATE: 11/1/16

EQUIPMENT CABINET SPECIFICATIONS

SCALE N.T.S. 20



NODE AERIAL PLAN

**SUBJECT POLE:** CCR-37

**GPS COORDINATES:**

**LAT:** 29.72078

**LONG:** -95.80142

**POLE TYPE:** METAL SLIMLINE POLE

**POLE ID #:**

**UPPER ANTENNA RAD CENTER:** 32 - O' A.F.D.

**LOWER ANTENNA RAD CENTER:** 30 - O' A.F.D.

**APPROVED:** *[Signature]*  
Development Coordinator

**DATE:** 11/1/16



**CROWN CASTLE**  
600 E. JOHN CARPENTER HWY.  
SUITE 300  
IRVING, TX 75062

RECORD DRAWINGS ISSUE DATE: 10.18.16



**Shift Companies, LLC**  
777 E. WAVE ST. #104  
SCOTTSDALE, ARIZONA  
85258-3648  
SH: 480.349.6545

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RELEASE	
DATE	SUBMITTAL
5/23/16	1 <sup>ST</sup> CITY SUBMITTAL
10/18/16	2 <sup>ND</sup> CITY SUBMITTAL

REVISIONS		
NO.	DATE	COMMENT
	10/18/16	CITY COMMENTS

**PROJECT NAME**  
CINCO RANCH EXPANSION

**NODE ADDRESS**  
CINCO RANCH BLVD AND GASTON RD

**NODE #:** CCR-37

**HUB AREA**  
CINCO RANCH - HGCW

**SHIFT JOB NUMBER** 150602 **IN HOUSE**

**SHEET TITLE**  
AERIAL

**SHEET NUMBER** A1.0 **PAGE** 4 OF 14

**PLOT SCALE:** 1" @ 24'x36"; 1/2" @ 11'x17'



SITE PHOTO (EXISTING) N.T.S.

PLAN CHECK #

CASE #

KEYNOTE	KEYNOTE LEGEND DESCRIPTION	DETAIL
A01	PROPOSED CROWN CASTLE OMNI ANTENNA	16D1.1
A02	PROPOSED CROWN CASTLE 2" U.G. CONDUIT (APPROXIMATE LOCATION, P.V.)	8D1.1
A03	PROPOSED CROWN CASTLE REMOTE RADIO UNIT REISE EQUIPMENT CABINET	18D1.1
A04	PROPOSED NEW METAL SLIMLINE POLE	20D1.1
A05	PROPOSED CROWN CASTLE UNDERGROUND CONG. FIBER VAULT	20D1.2
A06	PROPOSED CROWN CASTLE NODE IDENTIFICATION SIGNAGE	20D1.2
A07	PROPOSED CROWN CASTLE EQUIPMENT CABINET	18D1.1
A08	PROPOSED CROWN CASTLE PIER FOUNDATION	12D1.1
A09	PROPOSED ELECTRICAL HAND HOLE	

KEYNOTE	KEYNOTE LEGEND DESCRIPTION	DETAIL
E01	PROPOSED POWER METER MOUNTED TO EQUIPMENT CABINET (DISTRIBUTED PANEL AND DISCONNECT)	18D1.1
U01	PROPOSED 2" CROWN CASTLE U.G. POWER CONDUIT (APPROXIMATE LOCATION, P.V.)	8D1.1 & 8D1.2
U02	PROPOSED 2" CROWN CASTLE 2" U.G. FIBER CONDUIT BY OTHERS (APPROXIMATE LOCATION, P.V.)	2D1.1 & 8D1.2



NOTES:  
 1. ANY DAMAGE TO EXISTING GUTTER, CURB, SEWALK AND ROADWAY DURING CONSTRUCTION TO BE REPAIRED OR REPLACED.  
 2. EXISTING VEGETATION DAMAGED BY CONSTRUCTION TO BE REPLACED BY SAME SPECIES.

**GENERAL NOTES**

1. PART PROPOSED GROUND EQUIPMENT A NATURAL EARTH COLOR OR AS APPROVED BY CITY.
2. CONTRACTOR TO FIELD LOCATE EXIST. UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
3. EX. LANDSCAPE PLANTINGS AND DECORATIVE HEDGES/CAPES DESTROYED OR DESTROYED AS A RESULT OF CONSTRUCTION SHALL BE REPLACED WITH A LIKE SIZE AND SPECIES.
4. CONTRACTOR TO HAND LOCATE EX. IRRIGATION PRIOR TO EXCAVATION.
5. SITE PLAN IS A DIAGRAMMATIC REPRESENTATION ONLY. VERIFY ALL DIMENSIONS.
6. VERIFY ALL PROPERTY LINE INFORMATION WITH AVAILABLE R.O.W. DATA.
7. EXIST. UTILITY LOCATIONS SHOWN ON PLANS ARE APPROXIMATE ONLY AND PROVIDED BY LOCAL UTILITIES.

**SUBJECT POLE:** CCR-37

**GPS COORDINATES:**

**LAT:** 29.72678

**LONG:** -95.82162

POLE TYPE: METAL SLIMLINE POLE

POLE ID #:

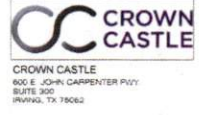
UPPER ANTENNA RAD CENTER: 30' - 0" A.F.G.

LOWER ANTENNA RAD CENTER: 30' - 0" A.F.G.

SUBJECT POLE IS LOCATED IN: FORT BEND COUNTY R.O.W.

APPROVED: *[Signature]*  
Development Coordinator

DATE: 10/17/16



RECORD DRAWINGS ISSUE DATE: 10/18/16



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RELEASE DATE	SUBMITTAL
6/03/16	1ST CITY SUBMITTAL
10/18/16	2ND CITY SUBMITTAL

NO.	DATE	COMMENT
	10/18/16	CITY COMMENTS

**PROJECT NAME:** CINCO RANCH EXPANSION

**NODE ADDRESS:** NODE #CCR-37

CINCO RANCH BLVD AND GASTON RD

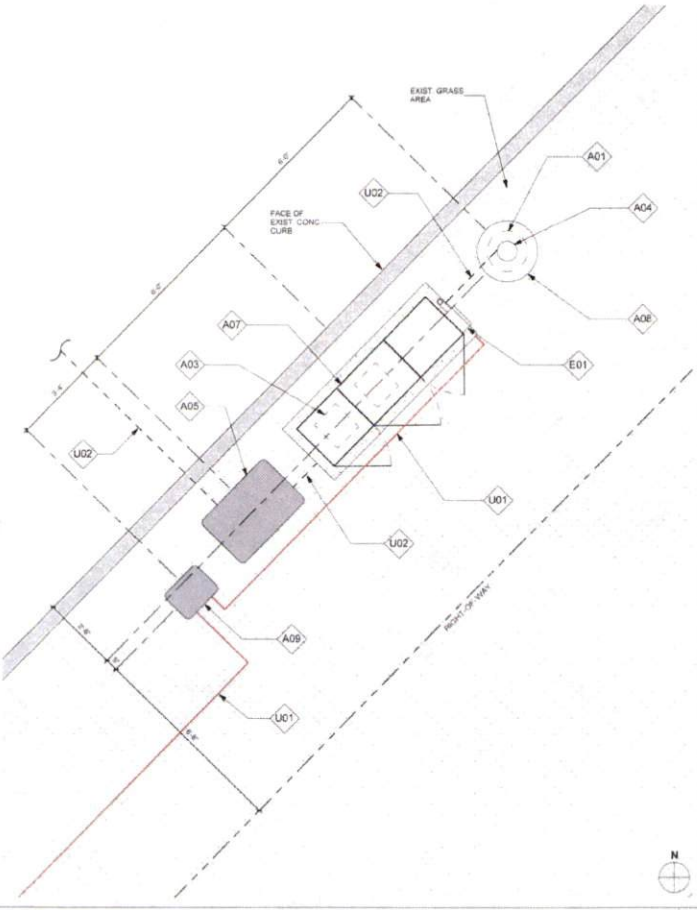
**HUB AREA:** CINCO RANCH - HGCW

**SHIFT JOB NUMBER:** 150602 **IN HOUSE:** DRAWN BY: BA, CHECKED BY: CM

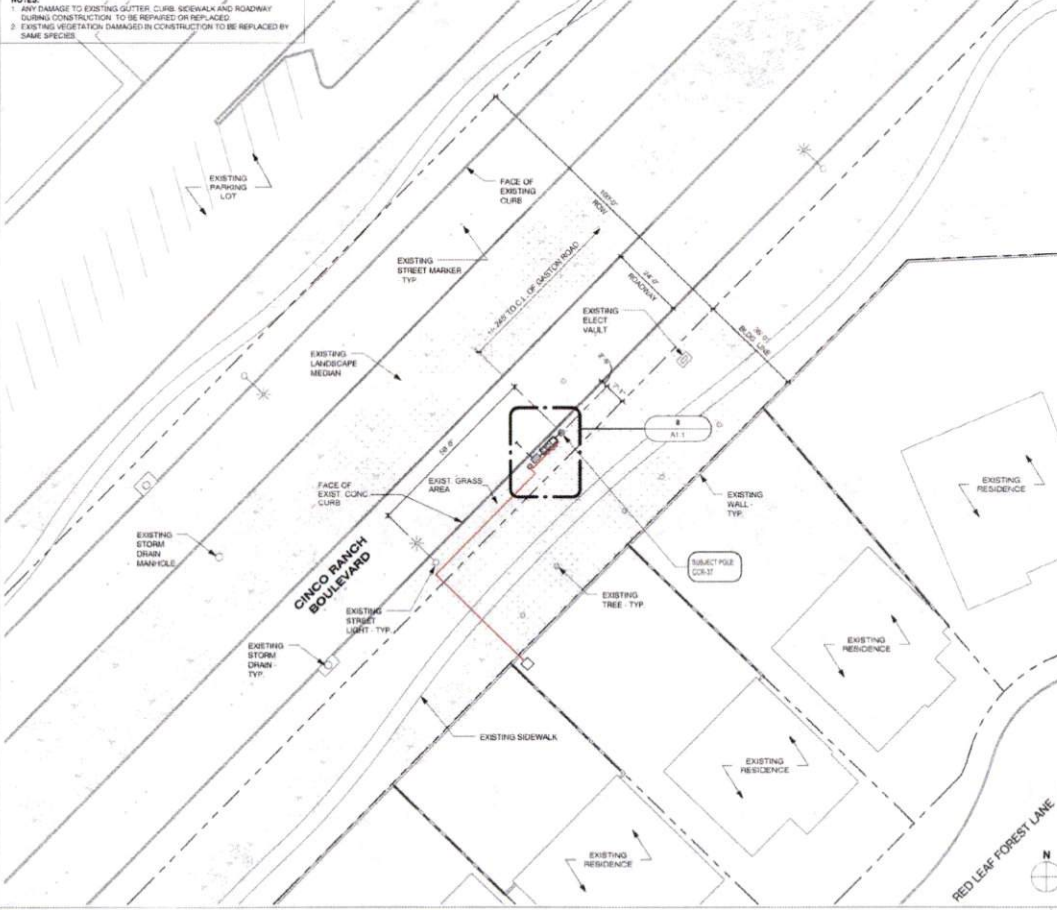
**SHEET TITLE:** SITE PLAN, EQUIPMENT AND ANTENNA PLAN

**SHEET NUMBER:** A1.1 **PAGE:** 5 OF 14

**PLOT SCALE:** 1:1 @ 24"x36"; 1:2 @ 11"x17"



EQUIPMENT AND ANTENNA PLAN 1/2" = 1'-0" 8



OVERALL SITE PLAN 1" = 20'-0" 20

PLAN CHECK # CASE #

C:\Users\ruube\_000\Documents\AAA - Shift Companies\AAA - Crown Castle\Houston\Cinco Ranch Expansion\Sites\CCR-37 - Project - 12.14.15.rvt  
 10/17/2016 2:32:20 PM

NOTE:  
 ISO IS SCHEMATIC IN NATURE. FIBER VAULT, POWER METER PEDESTAL AND GROUND-MOUNTED RADIO EQUIPMENT PEDESTAL CAN BE RECONFIGURED TO SUIT PROJECT LOCATION

KEYNOTE LEGEND		
KEYNOTE	DESCRIPTION	DETAIL NUMBER
A01	PROPOSED CROWN CASTLE OMNI ANTENNA	16D1.1
A02	PROPOSED CROWN CASTLE 2" U/G CONDUIT (APPROXIMATE LOCATION P.V.)	2D1.1
A03	PROPOSED CROWN CASTLE REMOTE RADIO UNITS INSIDE EQUIPMENT CABINET	18D1.1
A04	PROPOSED NEW METAL SUBLINE POLE	20D1.1
A05	PROPOSED CROWN CASTLE UNDERGROUND LONG FIBER VAULT	6D1.2
A06	PROPOSED CROWN CASTLE NODE IDENTIFICATION SIGANDE	20D1.2
A07	PROPOSED CROWN CASTLE EQUIPMENT CABINET	18D1.1
A08	PROPOSED CROWN CASTLE POLE FOUNDATION	13D1.1
A09	PROPOSED ELECTRICAL HAND HOLE	
E01	PROPOSED POWER METER MOUNTED TO EQUIPMENT CABINET (DISTRIBUTED PANEL AND DISCONNECT)	18D1.1

MODEL: AMPHENOL SCUTSIRA Q1F402  
 LENGTH: 4E  
 WIDTH: 14.5 DIA  
 DEPTH: NA  
 WEIGHT: 28.1 LBS

PROPOSED PANEL ANTENNA SPECS

PROPOSED POLE WIDTH: 8"Ø  
 PROPOSED POLE HEIGHT: 27' - 8"  
 (14'-0" ANTENNA AND 14'-8" ANTENNA MOUNT)

POLE INFO

APPROVED: *[Signature]*  
 Development Coordinator  
 DATE: 11/1/16

**CROWN CASTLE**  
 CROWN CASTLE  
 600 E. JOHN CARPENTER HWY  
 SUITE 200  
 IRVING, TX 75062

RECORD DRAWINGS ISSUE DATE: 10/18/16

**SHIFT**  
 Shift Companies, LLC  
 7231 E. FRONT STREET ROAD  
 SCOTTSDALE, ARIZONA 85267  
 PH: 480.394.8200  
 FAX: 480.394.8300

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RELEASE	
DATE	SUBMITTAL
6/03/16	1ST CITY SUBMITTAL
10/18/16	2ND CITY SUBMITTAL

REVISIONS		
NO.	DATE	COMMENT
	10/18/16	CITY COMMENTS

PROJECT NAME  
**CINCO RANCH EXPANSION**

NOGE ADDRESS  
**NODE #:CCR-37**

**CINCO RANCH BLVD AND GASTON RD**

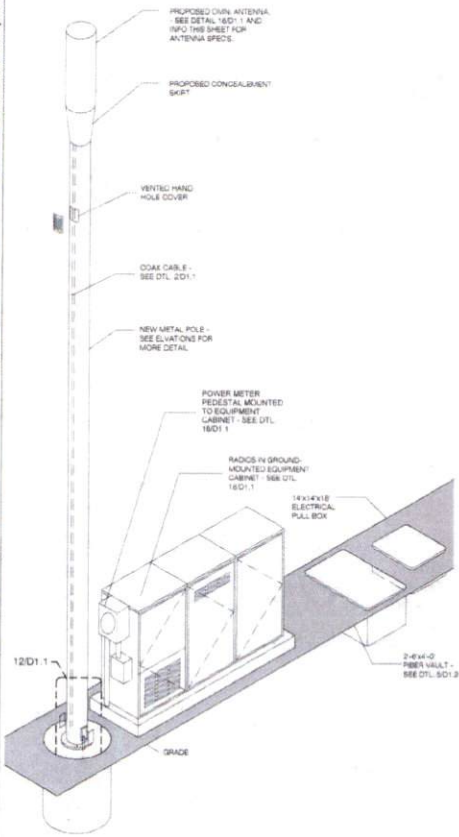
HUB AREA  
**CINCO RANCH - HGCW**

SHIFT JOB NUMBER: **150602**  
 IN HOUSE:   
 DRAWN BY: JA  
 CHECKED BY: DM

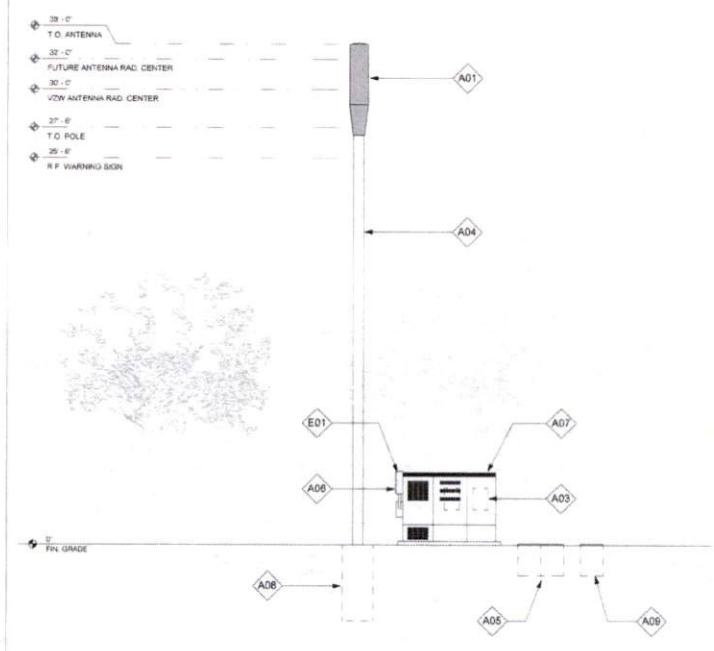
SHEET TITLE  
**POLE ELEVATION, PROPOSED**

SHEET NUMBER: **A1.2** PAGE: **6 OF 14**

PLOT SCALE: 1:1 @ 24"X36" 1:2 @ 11"X17"

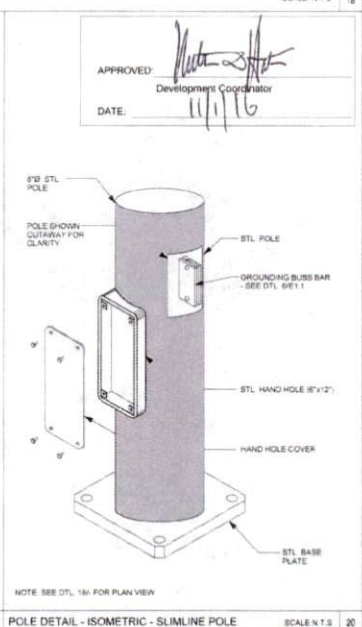
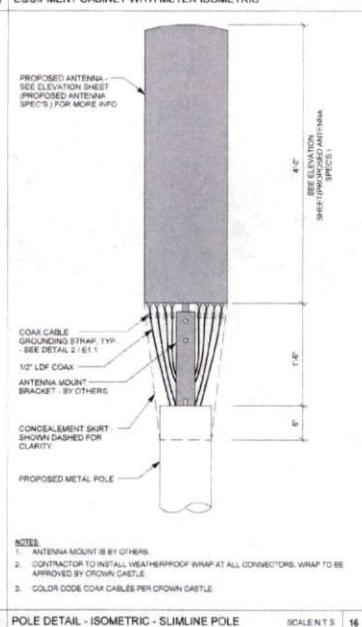
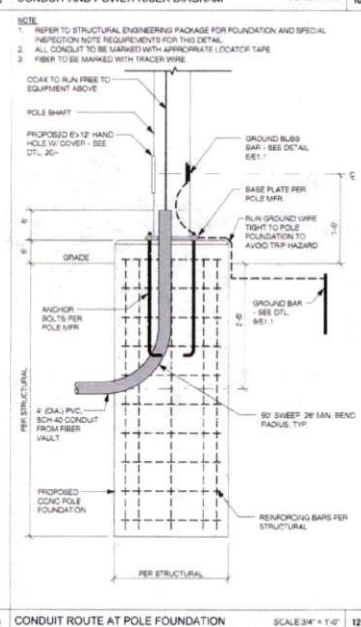
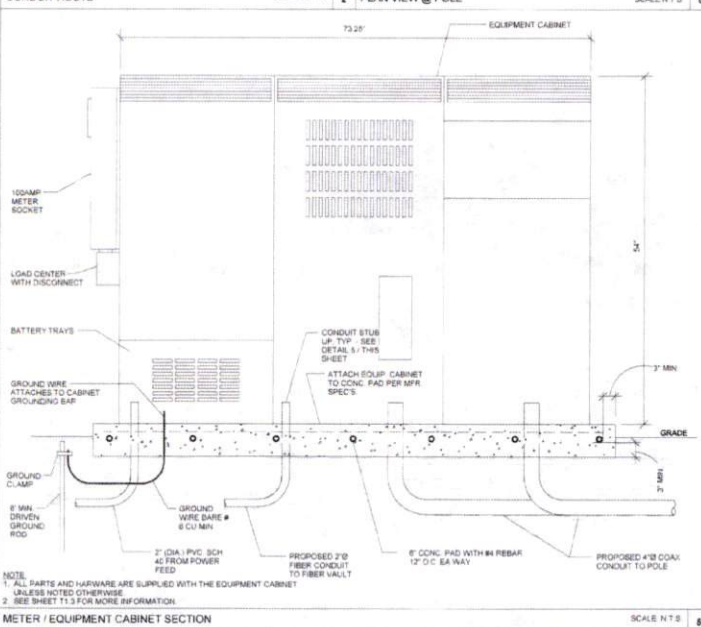
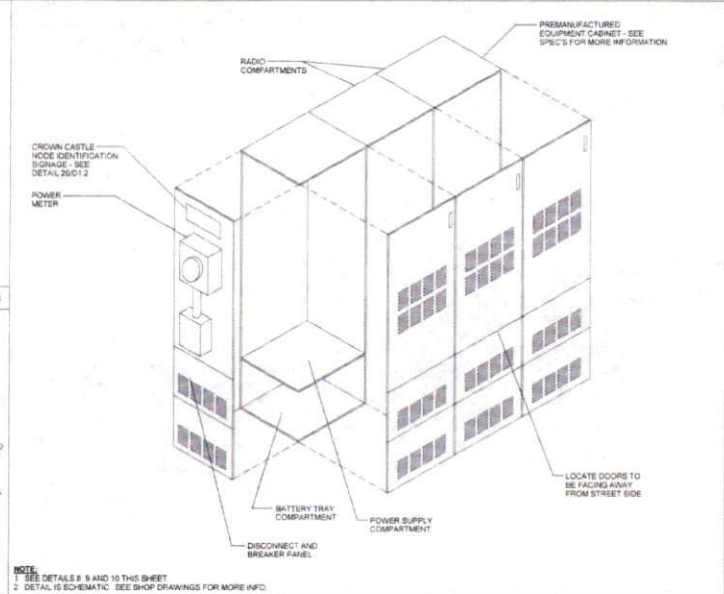
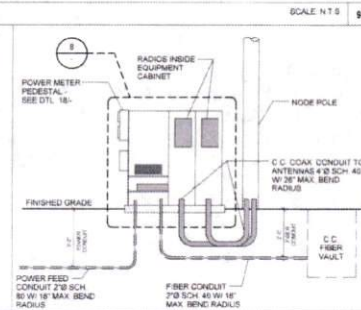
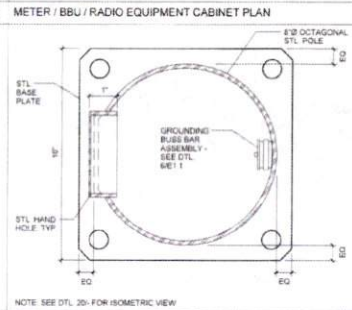
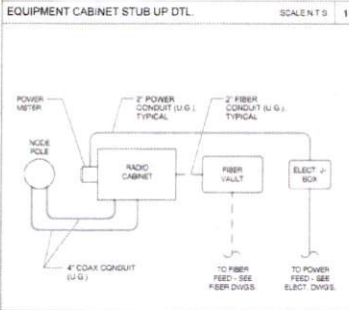
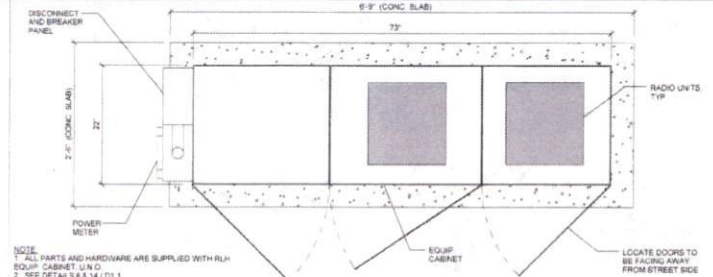
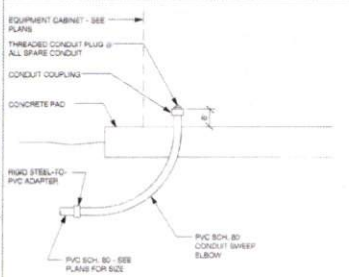


METAL POLE ISOMETRIC SCALE:SCALE N.T.S. 4



POLE ELEVATION (PROPOSED) SCALE: 1/4" = 1'-0" 20

PLAN CHECK #  
 CASE #



CROWN CASTLE  
800 E. JOHN CARPENTER Pkwy.  
SUITE 300  
IRVING, TX 75062

RECORD DRAWING (SHEET DATE: 10.18.16)



Shift Companies, LLC  
10311 FORTY SEVEN BLVD  
SOUTHLAKE, MISSOURI 65077  
PH: 480.264.9024  
FX: 480.264.5332

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DATE	SUBMITTAL
5.03.16	1ST CITY SUBMITTAL
10.18.16	2ND CITY SUBMITTAL

NO.	DATE	COMMENT
10.18.16		CITY COMMENTS

PROJECT NAME  
**CINCO RANCH EXPANSION**

HUB AREA  
**CINCO RANCH - HGCW**

SHEET JOB NUMBER **150602** IN HOUSE  
DRAWN BY: BA  
CHECKED BY: CM

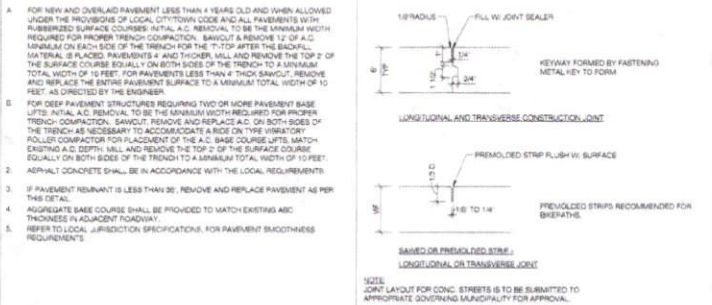
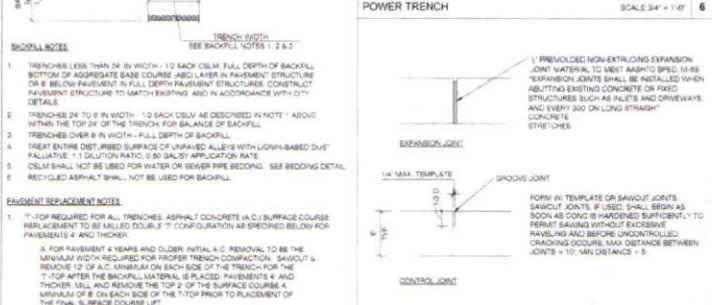
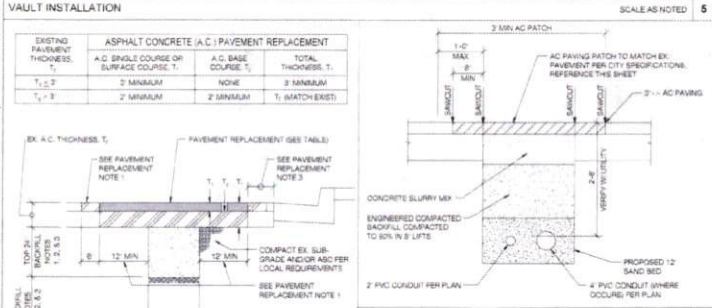
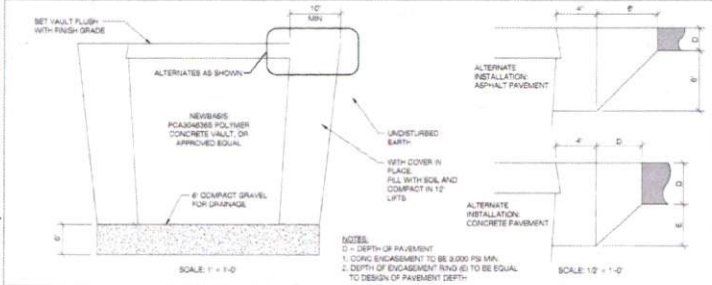
SHEET TITLE  
**CONSTRUCTION DETAILS**

SHEET NUMBER **D1.1** PAGE **7 OF 14**

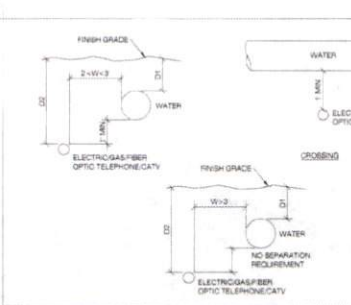
PLOT SCALE: 1.1 @ 24x36", 1.2 @ 11x17"

PLAN CHECK #

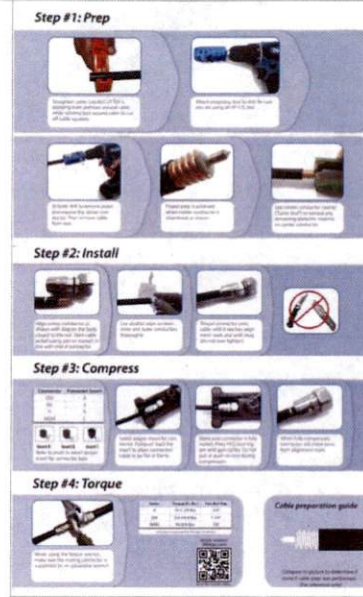
CASE #



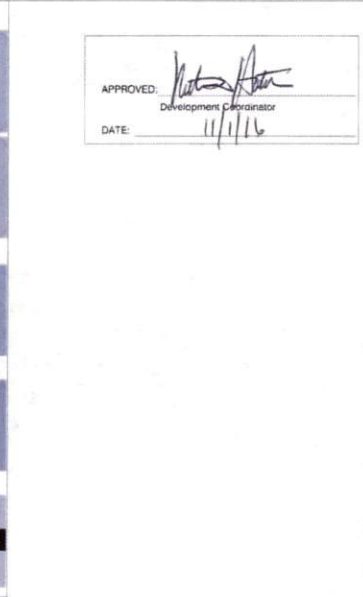
TRENCH AND PATCHING REQUIREMENTS SCALE: N.T.S. 4



SANITARY SEWER SEPARATION / PROTECTION FROM WATER & UTILITIES SCALE: N.T.S. 16



COAX WATERPROOFING - FUSION TAPE TYPE SCALE: N.T.S. 19



NODE IDENTIFICATION SIGNAGE SCALE: N.T.S. 20

APPROVED: [Signature]  
 Development Coordinator  
 DATE: 11/1/16



CROWN CASTLE  
 800 E. JOHN CARPENTER Pkwy.  
 SUITE 300  
 PLYMOUTH, TX 75462

RECORD DRAWINGS ISSUE DATE: 10/18/16



Shift Companies, LLC  
 1333 E. MOHNT VISTA ROAD  
 SCOTTSDALE, ARIZONA 85257  
 PH: 480.284.8200  
 FAX: 480.284.0300

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RELEASE DATE	SUBMITTAL
0.03.16	1ST CITY SUBMITTAL
10.18.16	2ND CITY SUBMITTAL

NO.	DATE	COMMENT
1	10/18/16	CITY COMMENTS

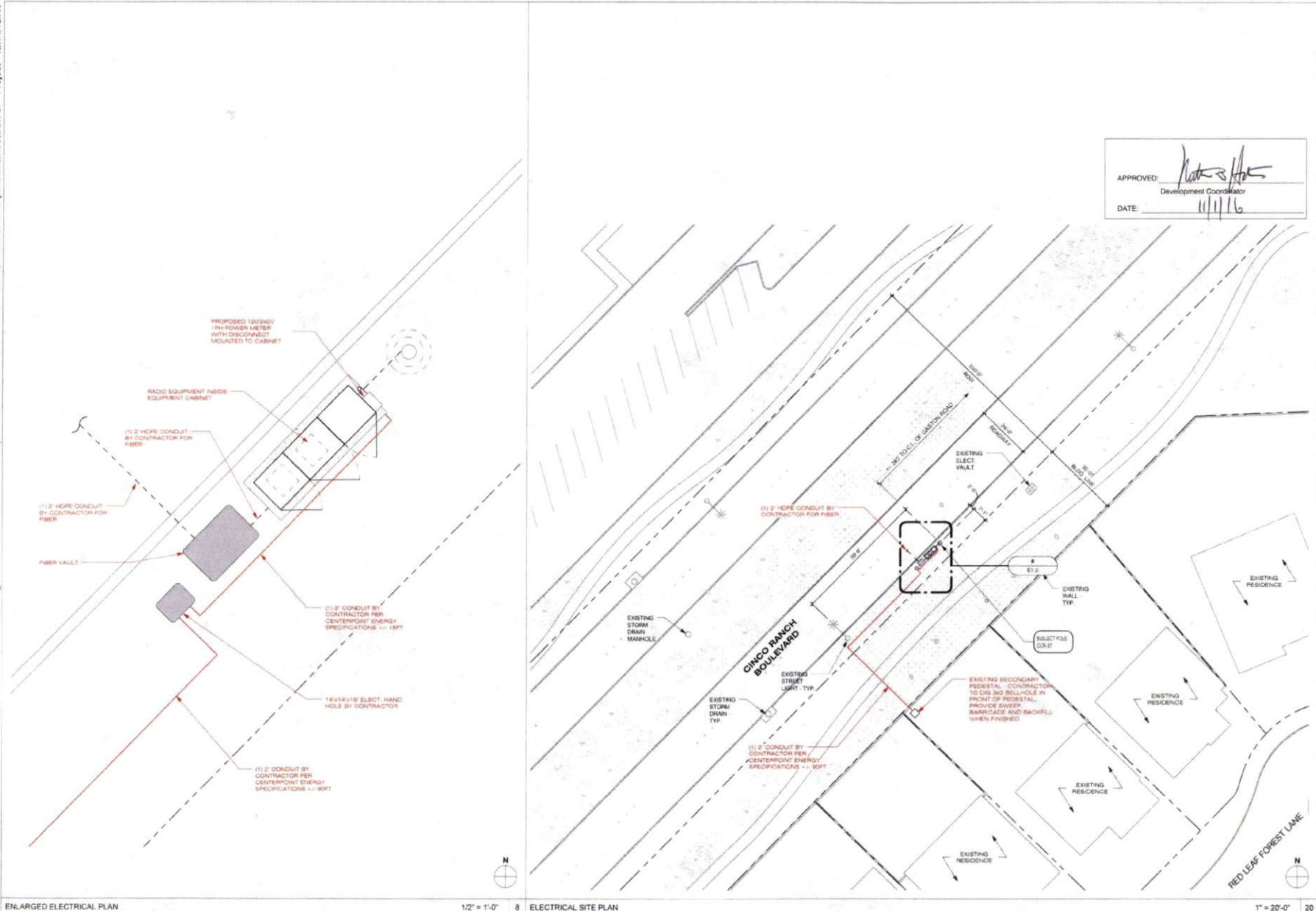
PROJECT NAME: CINCO RANCH EXPANSION

HUB AREA	CINCO RANCH - HGCW
NO.	150602
SHEET TITLE	CONSTRUCTION DETAILS

SHEET NUMBER	PAGE
D1.2	8 OF 14

PLOT SCALE: 1:1 @ 24x36; 1:2 @ 11x17

PLAN CHECK #



APPROVED: *[Signature]*  
 Development Coordinator  
 DATE: 11/11/16



**CROWN CASTLE**  
 000 E. JOHN CARPENTER Fwy.  
 SUITE 500  
 IRVING, TX 75062

RECORD DRAWINGS ISSUE DATE: 10-18-16



**Shift Companies, LLC**  
 7331 HOVE VISTA DR  
 SCOTTSDALE, ARIZONA 85257  
 PH: 480.254.3620  
 FAX: 480.254.6300

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RELEASE	
DATE	SUBMITTAL
8/23/16	1ST CITY SUBMITTAL
10/18/16	2ND CITY SUBMITTAL

REVISIONS		
NO.	DATE	COMMENT
	10/18/16	CITY COMMENTS

PROJECT NAME  
**CINCO RANCH EXPANSION**

NODE ADDRESS  
**NODE #: CCR-37**

**CINCO RANCH BLVD AND GASTON RD**

HUB AREA  
**CINCO RANCH - HGCW**

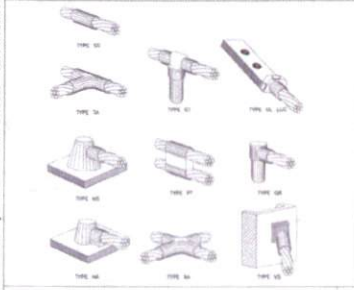
SHIFT JOB NUMBER: **150602** IN HOUSE  
 DRAWN BY: RA  
 CHECKED BY: CM

SHEET TITLE  
**ELECTRICAL PLANS**

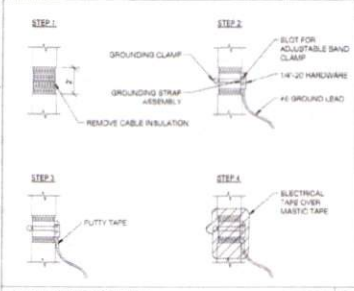
SHEET NUMBER	PAGE
E1.0	9 OF 14

PLOT SCALE: 1" @ 24'-0"; 1/2" @ 11'-0"

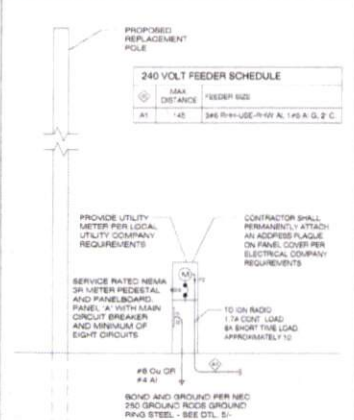
PLAN CHECK #



CADWELD DETAILS SCALE: NTS 1



COAXIAL CABLE GROUNDING SCALE: NTS 2 GROUND BUSS BAR DETAIL SCALE: NTS 6

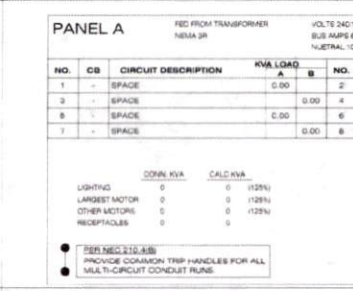


ONE-LINE DIAGRAM SCALE: NTS 4

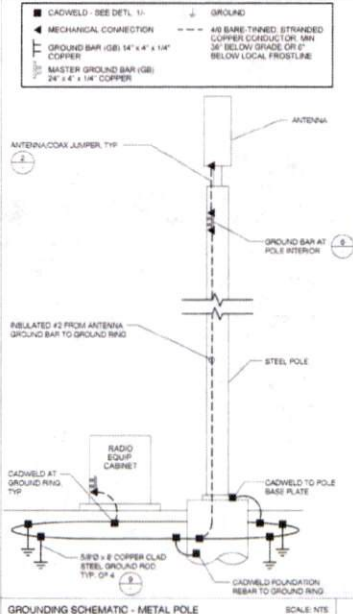
SCALE: NTS 4



GROUND ROD DETAIL SCALE: NTS 9



ELECTRICAL PANEL SCHEDULES SCALE: NTS 14



GROUNDING SCHEMATIC - METAL POLE SCALE: NTS 8



EQUIPMENT GROUNDING SCHEMATIC DTL SCALE: NTS 17

POWER FEEDER SCHEDULE

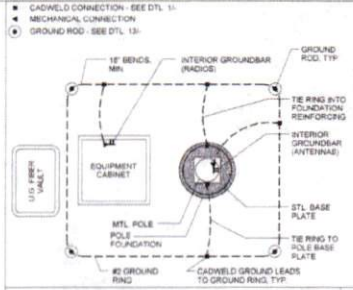
LENGTH	SIZE (AWG/KMIL)	GROUND SIZE	CONDUIT SIZE
320	2	6	2"
380	1	4	2"
470	1/2	2	2"
550	2/3	2	2"
660	3/5	3	2"
800	4/5	1	2"
820	2/5	1/2	2-1/4"
1050	3/5	2/5	2-1/2"

FEEDER SCHEDULE SCALE: NTS 15

FAULT CURRENT CALCULATION

Fault Point	Panel Transformer	Source (Fault Point)	Source I (amps)	Conduit Type	Wire/Bus Size	°C value	E (volts)	L (length)	I	M	Iac	AC Rating
1	UTILITY XMI/RP'S PEDESTAL		25000		1 Set(s) of 2	3730	240				25000	
2	Panel-A @ 20'	1	25000	NM	1 Set(s) of 2	3730	240	20'	0.851	0.54	11884	22,000
3	Panel-A @ 150'	1	25000	NM	1 Set(s) of 2	3730	240	150'	4.236	0.19	4185	12,000
4	Panel-A @ 150'	1	25000	NM	1 Set(s) of 2	3730	240	150'	0.585	0.14	2879	10,000
5	Panel-A @ 200'	1	25000	NM	1 Set(s) of 2	3730	240	200'	8.513	0.11	2513	10,000

FAULT CURRENT CALCULATION SCALE: NTS 20



EQUIPMENT GROUNDING SCHEMATIC DTL SCALE: NTS 17

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND ALL OTHER APPLICABLE LOCAL CODES.
- CONTRACTOR SHALL OBTAIN ALL PERMITS AND SCHEDULE ALL REQUIRED INSPECTIONS. CONTRACTOR SHALL OBTAIN LOCAL POWER COMPANY APPROVAL AND COORDINATE SERVICE ENTRANCE REQUIREMENTS.
- CONTRACTOR SHALL VERIFY SERVICE LOCATION AND CONTACT PROJECT MANAGER WITH DISCREPANCIES FROM PLAN.
- CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIAL DESCRIBED ON THE DRAWING AND ALL OTHER INCIDENTAL TO COMPLETING AND FINISHING THE PROJECT AS FULLY OPERATIONAL. ALL ELECTRICAL TRAYS SHALL BE UL APPROVED OR LISTED.
- CONDUCTORS SHALL BE RETIRED IN SCHEDULE 40 PVC CONDUIT UNDERGROUND AND IN CONDUIT ABOVE GROUND.
- PROVIDE 1" SCHEDULE 40 PVC UNDERGROUND CONDUIT WITH FULL WIRE BETWEEN ELECTRICAL UTILITY DERIVATION POINT AND UPS JUNCTION BOX. CONTRACTOR SHALL DETERMINE REQUIRED NUMBER AND LOCATION OF JUNCTION BOXES PER UTILITY STANDARDS.
- USE 1" SCHEDULE 40 PVC CONDUIT AND APPROPRIATE FITTINGS TO ENTER AND LEAVE CENTER.
- CONTRACTOR TO VERIFY ALL APPROVED SERVICE PATHS TO CONNECTION AND SHALL PROVIDE AND MAINTAIN A TRAFFIC CONTROL PLAN PER VDOT REQUIREMENTS.
- CONTRACTOR TO LOCATE ALL UTILITIES IN PROJECT AREA PRIOR TO CONSTRUCTION THROUGH BLUE STAKE.
- VERIFY DEPTH OF EXISTING UTILITY CROSSING POINTS VIA APPROVED POT-HOLE METHOD AND NOTE ON PLAN SETS FOR AS-BUILT CLOSE OUT.
- NOTE DEPTH AND LOCATIONS OF ALL INSTALLED UTILITIES ON AS-BUILT DRAWINGS.
- IF EXISTING IRRIGATION LINES ARE ENCOUNTERED, CONTRACTOR SHALL NOTIFY OWNER PRIOR TO DESTROYING OR OCCUPANCY.
- CONTRACTOR SHALL NOT RELOCATE EXISTING EQUIPMENT OR POLE LOCATIONS WITHOUT WRITTEN APPROVAL FROM DESIGNER AND PROJECT ENGINEER.
- MATERIAL SUBSTITUTIONS ARE SUBJECT TO DRAWING DATE AND ENGINEERING REVIEW PRIOR TO CONSTRUCTION.

ELECTRICAL NOTES SCALE: NONE 18

APPROVED: *[Signature]*  
DATE: 11/17/16

RELEASE

DATE	SUBMITTAL
4/23/16	1ST CITY SUBMITTAL
10/19/16	2ND CITY SUBMITTAL

REVISIONS

NO.	DATE	COMMENT
10	10/18/16	CITY COMMENTS

PROJECT NAME  
CINCO RANCH EXPANSION

HUB AREA  
CINCO RANCH - HGCV

SHIFT JOB NUMBER  
150602

SHEET TITLE  
ELECTRICAL DETAILS

SHEET NUMBER  
E1.1

PAGE  
10 OF 14

PLOT SCALE: 1" = 24' X 30"; 1/2" = 11' X 17'



CROWN CASTLE  
800 E. JOHN CARPENTER Pkwy.  
SUITE 200  
IRVING, TX 75062

RECORD DRAWINGS ISSUE DATE: 10/18/16



Shift Companies, LLC  
2321 E. HOUSTON AVE. SUITE 400  
HOUSTON, TEXAS 77054  
PH: 481.344.9621  
WWW.SHIFTCS.COM

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