



**REVIEW BY FORT BEND COUNTY  
COMMISSIONERS COURT**

**Fort Bend County  
Engineering Department**  
301 Jackson Suite 401  
Richmond, Texas 77469  
281.633.7500  
[Permits@fortbendcountytx.gov](mailto:Permits@fortbendcountytx.gov)

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

Permit No: 2016-10738

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

**Job Location Site:** 22830 1/2 Cinco Ranch Boulevard, Katy, TX 77450

**Bond No.**                      **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  
County Engineer

Date Recorded 12-21-16 Comm. Court No. 1314

By: N/A  
Drainage District Engineer/Manager

Clerk of Commissioners Court  
By: Ronda Wallis  
Deputy



# SHIFT

November 28, 2016

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

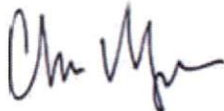
**RE: Cinco Ranch Traffic Control Plan  
- Shift Project #160614**

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 S LAKE VILLAGE DR  
**PROJECT TYPE:** METAL SLIMLINE POLE  
**HUB AREA:** CINCO RANCH - HGCW  
**NODE #(s):** **CCR-48**  
**COORDINATES:** LAT: 29.74412, LONG: -95.7643

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

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



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

RECORD DRAWINGS ISSUE DATE: 10/18/16



Shift Companies, LLC  
 7011 NORTH VISTA ROAD  
 SCOTTSDALE, ARIZONA 85251  
 PH: 480.384.8000  
 FAX: 480.384.9100

DATE	SUBMITTAL
6/3/16	1ST CITY SUBMITTAL
10/18/16	IND. CITY SUBMITTAL

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

**PROJECT NAME**  
 CINCO RANCH EXPANSION

**NODE ADDRESS**  
 CINCO RANCH - HGCW

**NODE #:** CCR-48  
 CINCO RANCH BLVD  
 AND S LAKE VILLAGE DR

**HUB AREA**  
 CINCO RANCH - HGCW

**SHIFT JOB NUMBER** 150602  
**IN HOUSE**  **KA**  
**CHECKED BY:** CM

**SHEET TITLE**  
 TITLE SHEET

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

**PLOT SCALE:** 1" = 24' (30" x 42" @ 11x17")

PROJECT TEAM	
<b>ARCHITECT</b>	<b>OWNER INFO</b>
Company: SHIFT CONSULTING Address: 7333 E MONTE VISTA RD, SCOTTSDALE AZ 85267 Phone Number: 480.264.0829 Fax Number: 480.294.0160 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: 719 EAST PARK BLVD, SUITE 110, PLANO, TX 75074 Phone: 972.423.9080 Email: scott@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 77494 PH: 281.520.6275 CONTACT: KEN CORTEZ

NOTE: NOT ALL SITES ARE INCLUDED IN THIS SET. SEE NODE #9 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 SHROUDS.



**Cinco Ranch Expansion**  
700 RRH Specifications

Mechanical	
Frequency Band	B13 (700MHz)
Technology	LTE FDD
RF Output Power	2400W/4430W (SW configurable)
Operational Range	DL: 746-758 MHz UL: 777-787 MHz
Instantaneous BW	10 MHz (1 Carrier)
RF Configuration	2T2R, 2T4R, 4T4R
Interfaces	AWG 2.0 RS485 port 2 integrated Smart Bias Tees 5 port external alarms (4x)
Power	-48 VDC
Environmental Conditions	520W typical @ full RF load -40°C to +55°C
Connectors	DDN 2116

Physical	
Dimensions	21.8 x 12 x 9 in
Weight	87 lbs
Mounting options	Pole/Wall
Connector Location	Bottom



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

Mechanical	
Frequency Band	B2 & B25 (1900)
Technology	LTE FDD
RF Output Power	2400W/4430W (SW configurable)
Operational Range	DL: 1920-1995 MHz UL: 1850-1915 MHz
Instantaneous BW	65 MHz (4 Carriers)
RF Configuration	2T2R, 2T4R, 4T4R
Interfaces	AWG 2.0 RS485 port 2 integrated Smart Bias Tees 5 port external alarms (4x)
Power	-48 VDC
Environmental Conditions	500W typical @ full RF load -40°C to +55°C
Connectors	DDN 2116

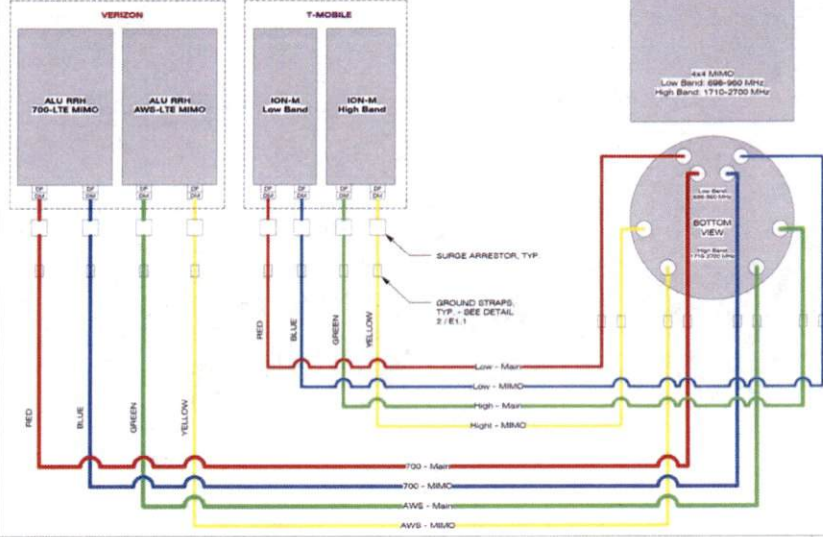
Physical	
Dimensions	21.2 x 12 x 7.1 in
Weight	55 lbs
Mounting options	Pole/Wall
Connector Location	Bottom



**Cinco Ranch Expansion**  
AWS RRH Specifications

Mechanical	
Frequency Band	B4 (2100)
Technology	LTE FDD
RF Output Power	2400W/4430W (SW configurable)
Operational Range	DL: 2110-2180 MHz UL: 1850-1915 MHz
Instantaneous BW	70 MHz
RF Configuration	2T2R, 2T4R, 4T4R
Interfaces	AWG 2.0 RS485 port 2 integrated Smart Bias Tees 5 port external alarms (4x)
Power	-48 VDC
Environmental Conditions	480W typical @ full RF load -40°C to +55°C
Connectors	DDN 2116

Physical	
Dimensions	30 x 12 x 7.7 in
Weight	78 lbs
Mounting options	Pole/Wall
Connector Location	Bottom



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

RECORD DRAWINGS ISSUE DATE: 10/18/16



Shift Companies, LLC  
7031 NORTH VISTA ROAD  
SCOTTSDALE, ARIZONA 85257  
PH: 480.364.8000  
FAX: 480.364.0923

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RADIO SPECIFICATIONS

Amphenol 696-960 / 696-960 / 1695-2700 / 1695-2700 MHz  
SCALE N T 8 10

**2C2UT360X12Fxx0**  
Type: Dual Band | Poles: 1/2 | Carrier: 4x | Size: 30" x 12" x 7.7" | Weight: 78 lbs | Part No: 2C2UT360X12Fxx0

**Features**

- Flexible carrier configuration with 4 carriers
- Ideal for Small Cell / DAS applications
- Available with a 1/4" or 3/8" DIN connector
- Pole mount mounting options
- Can be purchased to blend in with mounting structure

**Connector Description**

The antenna has 8 connectors located at the bottom, each marked with a colored ring:

- Low Band #1 & #2: 476-762 MHz (Red Ring)
- High Band #1: 1875-2130 MHz (Yellow Ring)
- High Band #2: 1875-2130 MHz (Orange Ring)

**Electrical Characteristics**

Frequency Bands (MHz)	Low Band #1 and #2		High Band #1 and #2	
	476-762	806-1910	1875-1980	1875-2130
Power	300	300	300	300
Maximum Beamwidth	360°	360°	360°	360°
Minimum Beamwidth	360°	360°	360°	360°
Gain	1.3 dBi	2.8 dBi	3.9 dBi	2.3 dBi
Elemental Directivity (dBi)	40.5	31.5	31.5	40.5
Impedance	50Ω	50Ω	50Ω	50Ω
VSWR	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1
Upper Substrate Dielectric	< 19.46	< 19.46	< 19.46	< 19.46
Isolation Between Ports	> 20 dB	> 20 dB	> 20 dB	> 20 dB
MSL (in 2000 years)	> 152 dB	> 152 dB	> 152 dB	> 152 dB
RoHS Compliant	Yes	Yes	Yes	Yes
Dimensions	30 x 12 x 7.7 in	30 x 12 x 7.7 in	30 x 12 x 7.7 in	30 x 12 x 7.7 in

**Mechanical Characteristics**

Parameter	Value	Unit
Antenna Dimensions (Height x Diameter)	12.14 x 271	mm
Weight without Mounting Bracket Kit	17.3	kg
Surge Wind Speed	200	MPH
Wind Area	0.47	sq ft
Wind Load (140 km/h or 100 mph)	89	N

WIRING DIAGRAM

SCALE N T 5 18

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

ANTENNA SPECIFICATIONS

EQUIPMENT CABINET SPECIFICATIONS

RELEASE DATE	SUBMITTAL
6/23/16	1ST CITY SUBMITTAL
10/18/16	2ND CITY SUBMITTAL

REVISIBNS NO.	DATE	COMMENT
10/18/16		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**



NODE AERIAL PLAN

**SUBJECT POLE:** CCR-48

**GPS COORDINATES:**

**LAT:** 29.74412

**LONG:** -95.7643

**POLE TYPE:** METAL SLIMLINE POLE

**POLE ID #:**

**UPPER ANTENNA RAD CENTER:** 37' - 0" A.F.G.

**LOWER ANTENNA RAD CENTER:** 35' - 0" A.F.G.

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

**DATE:** 11/16



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

RECORD DRAWINGS ISSUE DATE: 10/16/16



**Shift Companies, LLC**  
7321. HIRSH BERG RD  
SCOTTSDALE, ARIZONA 85257  
PH: 480.264.4827  
FAX: 480.264.6163

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RELEASE	
DATE	SUBMITTAL
4/13/16	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**  
CINCO RANCH BLVD  
AND S LAKE VILLAGE DR

**HUB AREA**  
CINCO RANCH - HGCW

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

**DRAWN BY:** BA **CHECKED BY:** CM

**SHEET TITLE**  
AERIAL

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

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



SITE PHOTO (EXISTING)

N.T.S.

PLAN CHECK #

CASE #

KEYNOTE	DESCRIPTION	DETAIL
A01	PROPOSED CROWN CASTLE OMN ANTENNA	18D1.1
A02	PROPOSED CROWN CASTLE 2" U.S. CONDUIT (APPROXIMATE LOCATION F.V.)	2D1.1
A03	PROPOSED CROWN CASTLE REMOTE RADIO UNIT (INSIDE EQUIPMENT CABINET)	18D1.1
A04	PROPOSED NEW METAL SLURLINE POLE	25D1.1
A05	PROPOSED CROWN CASTLE UNDERGROUND CONDUIT (FIBER CONDUIT)	6D1.2
A06	PROPOSED CROWN CASTLE NODE IDENTIFICATION SIGNAGE	15D1.2
A07	PROPOSED CROWN CASTLE EQUIPMENT CABINET	18D1.1
A08	PROPOSED CROWN CASTLE PIER FOUNDATION	12D1.1
A09	PROPOSED ELECTRICAL HAND HOLE	

KEYNOTE	DESCRIPTION	DETAIL
E01	PROPOSED POWER METER MOUNTED TO EQUIPMENT CABINET (DISTRIBUTION PANEL AND DISCONNECT)	18D1.1
U01	PROPOSED 2" CROWN CASTLE U.S. POWER CONDUIT (APPROXIMATE LOCATION F.V.)	2D1.1 & 6D1.2
U02	PROPOSED CROWN CASTLE 2" U.S. FIBER CONDUIT BY OTHERS (APPROXIMATE LOCATION F.V.)	2D1.1 & 6D1.2



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

**GENERAL NOTES**

1. PAINT 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 HANDCAPS DISTURBED OR DESTROYED AS A RESULT OF CONSTRUCTION SHALL BE REPLACED WITH A LIKE SIZE AND SPECIE.
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 H.O.W. DATA.
7. EXIST UTILITY LOCATIONS SHOWN ON PLANS ARE APPROXIMATE ONLY (AS PROVIDED BY LOCAL UTILITIES).

**SUBJECT POLE:** CCR-48

**GPS COORDINATES:**

**LAT:** 29.7419

**LONG:** 95.7643

**POLE TYPE:** METAL SLURLINE POLE

**POLE ID #:**

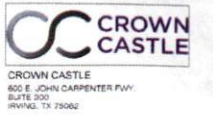
**UPPER ANTENNA RAD CENTER:** 37' - 0" A.F.G.

**LOWER ANTENNA RAD CENTER:** 35' - 0" A.F.G.

**SUBJECT POLE IS LOCATED IN:** FORT BEND COUNTY P.D.W.

**APPROVED:** [Signature]  
Development Coordinator

**DATE:** 11/1/16



RECORD DRAWINGS ISSUE DATE: 10/18/16



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DATE	SUBMITTAL
5/28/16	1ST CITY SUBMITTAL
10/18/16	2ND CITY SUBMITTAL

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

**PROJECT NAME:** CINCO RANCH EXPANSION

**NODE ADDRESS:** CINCO RANCH BLVD AND S LAKE VILLAGE DR

**HUB AREA:** CINCO RANCH - HGCW

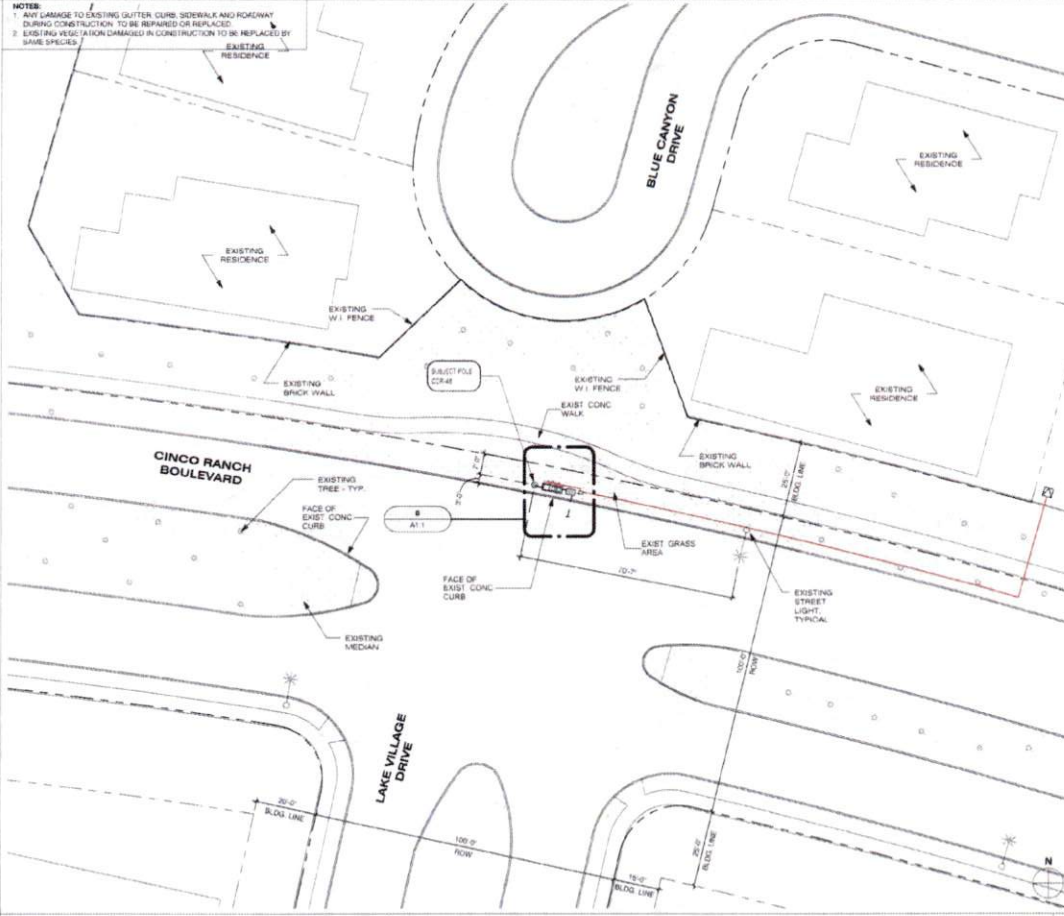
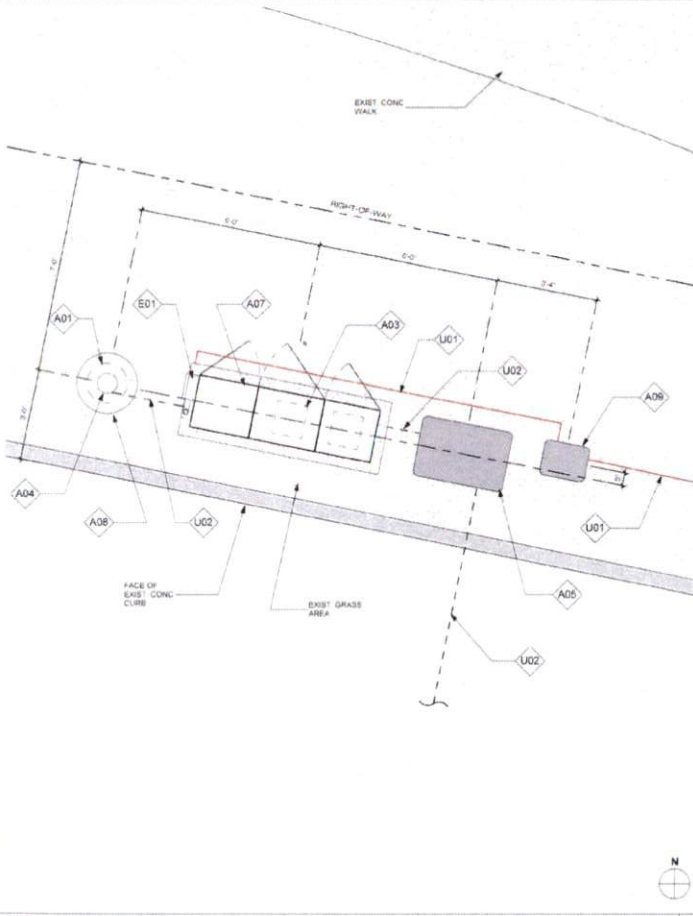
**SHIFT JOB NUMBER:** 150802

**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 #

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 6" U/G CONDUIT (APPROXIMATE LOCATION P.V.)	2D1.1
A03	PROPOSED CROWN CASTLE REMOTE RADIO UNITS (RADIO EQUIPMENT CABINET)	18D1.1
A04	PROPOSED NEW METAL SLIMLINE POLE	30D1.1
A05	PROPOSED CROWN CASTLE UNDERGROUND CONC. FIBER VAULT	3D1.2
A06	PROPOSED CROWN CASTLE NODE IDENTIFICATION BRASS	30D1.2
A07	PROPOSED CROWN CASTLE EQUIPMENT CABINET	18D1.1
A08	PROPOSED CROWN CASTLE POLE FOUNDATION	12D1.1
A09	PROPOSED ELECTRICAL HAND HOLE	
E01	PROPOSED POWER METER MOUNTED TO EQUIPMENT CABINET (DISTRIBUTED PANEL AND DISCONNECT)	18D1.1

MODEL	AIRPANEL - 2CUT10K13FV01
LENGTH	48"
WIDTH	14" DIA
DEPTH	NA
WEIGHT	28 LBS

PROPOSED PANEL ANTENNA SPECS

PROPOSED POLE WIDTH	6"Ø
PROPOSED POLE HEIGHT	32' - 0"
	14' 8"Ø ANTENNA AND 1'-0" ANTENNA MOUNT

POLE INFO

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



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

RECORD DRAWINGS ISSUE DATE: 10/18/16



Shift Companies, LLC  
7331 NORTH WETA ROAD  
SCOTTSDALE, ARIZONA 85257  
PH: 480.344.2825  
FA: 480.344.2825

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RELEASE	
DATE	SUBMITTAL
6/23/16	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-48**  
CINCO RANCH BLVD  
AND S LAKE VILLAGE DR

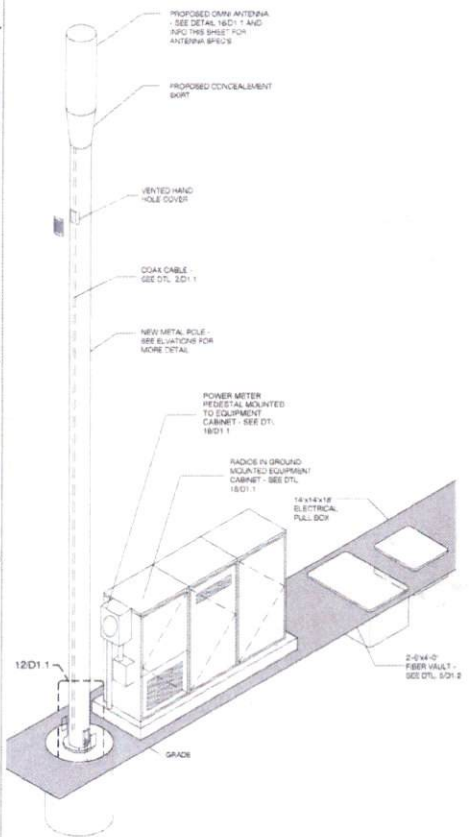
HUB AREA  
CINCO RANCH - HGCW

SHIFT JOB NUMBER: 150602  
IN HOUSE  
DRAWN BY: NA  
CHECKED BY: CM

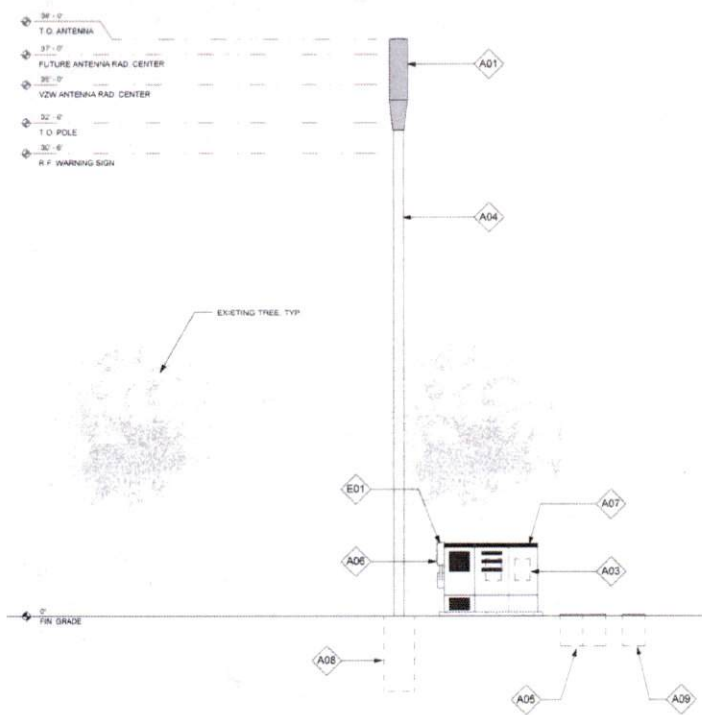
SHEET TITLE  
**POLE ELEVATION, PROPOSED**

SHEET NUMBER: A1.2  
PAGE: 6 OF 14

PLOT SCALE: 1/1" = 24' x 30', 1/2" = 11' x 17'



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

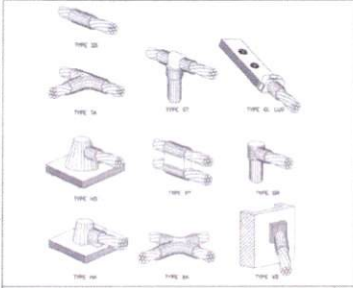


POLE ELEVATION (PROPOSED) SCALE: 1/4" = 1'-0" 20

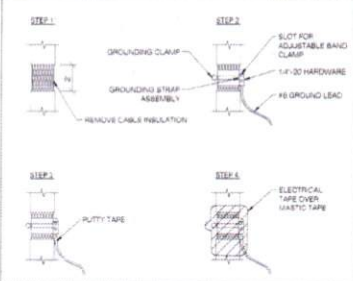




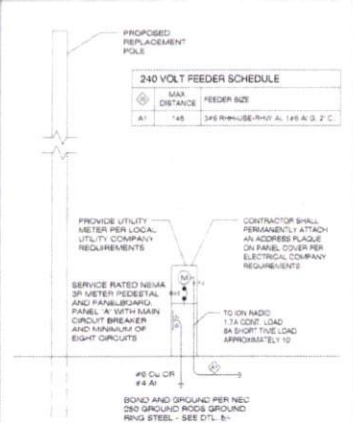




CADWELD DETAILS SCALE: NTS 1



COAXIAL CABLE GROUNDING SCALE: NTS 2

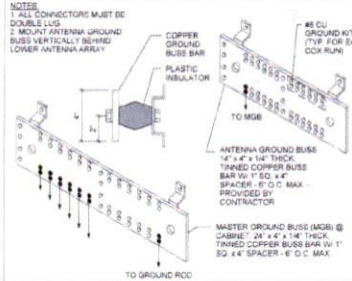


ONE-LINE DIAGRAM SCALE: NTS 4

**NOTES:**  
 1. EC TO FIELD VERIFY SITE CONDITION.  
 2. ALL EQUIPMENT IS NEW UNLESS NOTED OTHERWISE.  
 3. ALL EXTERIOR EQUIPMENT SHALL BE WEATHERPROOF.  
 4. PROVIDE ADEQUATE SERVICE CONDUIT LENGTH AT THE BASE OF THE FEEDER POLE FOR LOCAL UTILITY COMPANIES TO INSTALL THE POLE AND CONNECT TO UTILITY COMPANY SECONDARY LINES WITH A 12" DRIP LOOP & ALL TRENCHES SHALL BE MIN. 24" IN DEPTH.  
 5. ALL WIRE TO BE THIN OR THIN INSULATION OR EQUIVALENT EXCEPT WHERE NOTED OTHERWISE.  
 6. FUTURE BREAKERS IN PANEL B SHALL BE SERIES RATED WITH THEIR RESPECTIVE UPSHIELD REMOVE MAIN PROTECTIVE DEVICE. A TWO-TIER INTERRUPTER SYSTEM IS SPECIFIED.  
 7. WHERE NECESSARY TO TERMINATE OVERSIZED CONDUCTORS, CONTRACTOR TO CONVERT CONDUCTORS TO PANEL LUG APPROVED SIZE USING AN NEC COMPLIANT CONNECTOR.



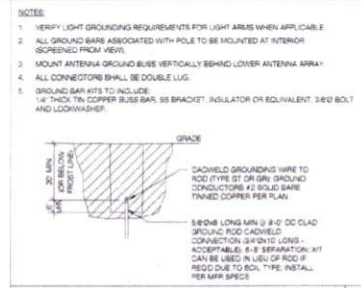
GROUND ROSS BAR DETAIL SCALE: NTS 5



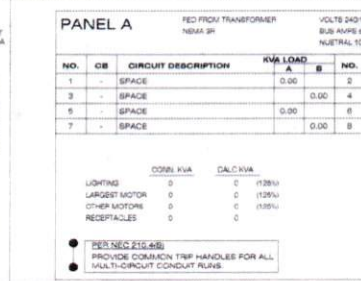
GROUND BUSS BAR DETAIL SCALE: NTS 6



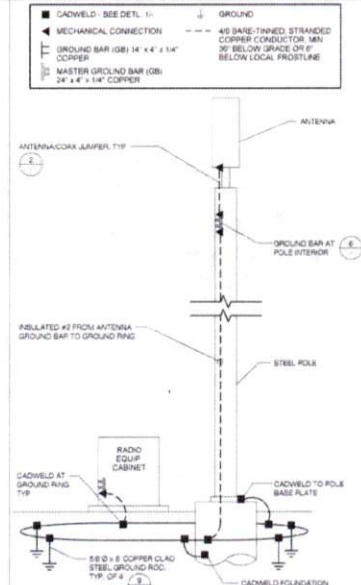
ELECTRICAL PANEL SCHEDULES SCALE: NTS 14



ELECTRICAL PANEL SCHEDULES SCALE: NTS 14



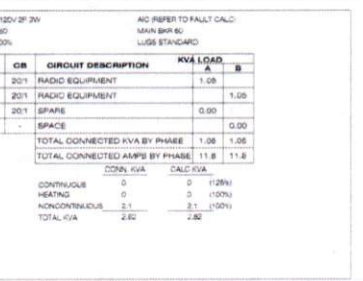
GROUNDING SCHEMATIC - METAL POLE SCALE: NTS 8



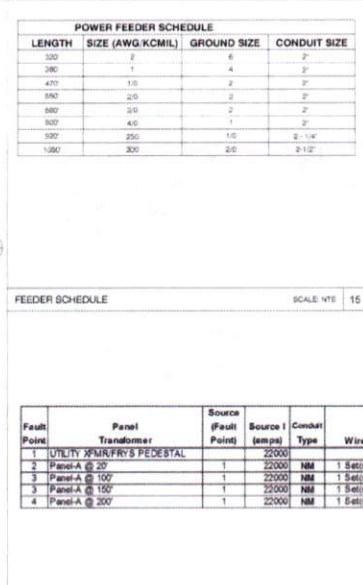
GROUNDING SCHEMATIC - METAL POLE SCALE: NTS 8



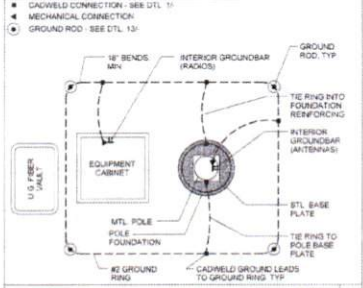
EQUIPMENT GROUNDING SCHEMATIC DTL SCALE: NTS 17



POWER FEEDER SCHEDULE SCALE: NTS 15



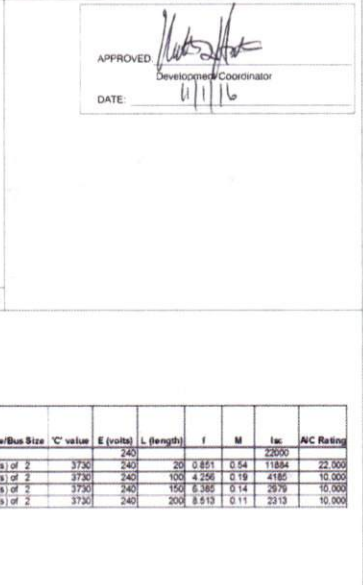
FAULT CURRENT CALCULATION SCALE: NTS 20



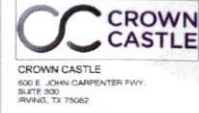
EQUIPMENT GROUNDING SCHEMATIC DTL SCALE: NTS 17



POWER FEEDER SCHEDULE SCALE: NTS 15



FAULT CURRENT CALCULATION SCALE: NTS 20



RECORD DRAWINGS ISSUE DATE: 10/18/16



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DATE	SUBMITTAL
8/23/16	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

SHIFT JOB NUMBER: 150602

SHEET TITLE: ELECTRICAL DETAILS

SHEET NUMBER: E1.1

PAGE: 10 OF 14

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

PLAN CHECK #

CASE #