



**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: 2016-10749

**Applicant:** Crown Castle NGShift Companies

**Job Location Site:** N.E.C. OF SPRING GREEN BLVD. AND CINCO TERRACE DR, 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 inconsistant 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**

By: Charles O. Ay  
for County Engineer

By: N/A  
Drainage District Engineer/Manager

Presented to Commissioners Court and approved.

Date Recorded 12-21-16 Comm. Court No. 130

Clerk of Commissioners Court  
By: Randy Willes  
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  
281.633.7500  
[Permits@fortbendcountytx.gov](mailto:Permits@fortbendcountytx.gov)

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

Permit No: 2016-10749

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:**

- |                                     |  |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | a. Name of road, street, and/or drainage ditch affected. |
| <input checked="" type="checkbox"/> | b. Vicinity map showing course of directions             |
| <input checked="" type="checkbox"/> | c. Plans and specifications                              |

**(2) BOND:**

- |                                     |  |   |                     |
|-------------------------------------|--|---|---------------------|
| <input type="checkbox"/>            | County Attorney, approval when applicable. |   |                     |
| <input checked="" type="checkbox"/> | Perpetual bond currently posted.           | Bond No: <span style="background-color: black; color: black;">[REDACTED]</span> | Amount: \$50,000.00 |
| <input type="checkbox"/>            | Performance bond submitted.                | Bond No: _____  | Amount: _____       |
| <input type="checkbox"/>            | 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.**

*Charley O. Ay*

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

*12/6/16*

\_\_\_\_\_  
Date

# SHIFT

November 28, 2016

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

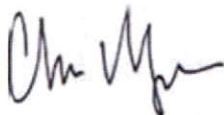
**RE: Cinco Ranch Traffic Control Plan  
- Shift Project #160614**

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:** SPRING GREEN BLVD. AND CINCO TERRRACE DR  
**PROJECT TYPE:** METAL SLIMLINE POLE  
**HUB AREA:** CINCO RANCH - HGCW  
**NODE #(s):** **CCR-27**  
**COORDINATES:** LAT: 29.702651, LONG: -95.814539

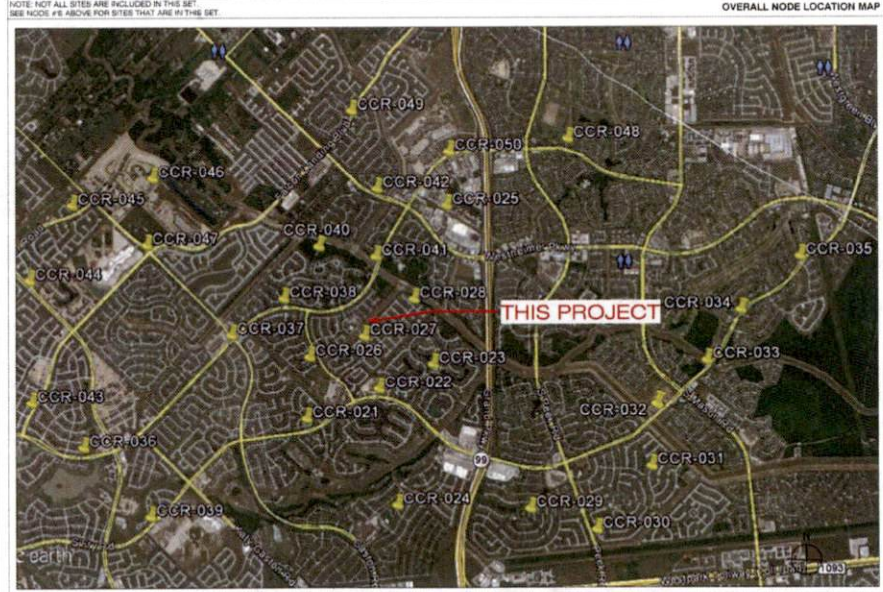
T1.1 - SHEET INDEX		
SHEET #	SHEET DESCRIPTION	PAGE
T1.1	TITLE SHEET	1
T1.2	GENERAL NOTES ABBREVIATIONS AND SYMBOLS	2
T1.3	EQUIPMENT SPECIFICATIONS	3
A1.0	AERIAL	4
A1.1	SITE PLAN, EQUIPMENT AND ANTENNA PLAN	5
A1.2	POLE ELEVATION, PROPOSED	6
D1.1	CONSTRUCTION DETAILS	7
D1.2	CONSTRUCTION DETAILS	8
E1.0	ELECTRICAL PLANS	9
E1.1	ELECTRICAL DETAILS	10
PE1-12A (1)	PEDESTRIAN FACILITIES CURB RAMPS	11
PE1-12A (2)	PEDESTRIAN FACILITIES CURB RAMPS	12
PE1-12A (3)	PEDESTRIAN FACILITIES CURB RAMPS	13
PE1-12A (4)	PEDESTRIAN FACILITIES CURB RAMPS	14

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

TEAM MEMBERS 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: <a href="mailto:barry.campau@crowncastle.com">barry.campau@crowncastle.com</a> Contact: BARRY CAMPAU
<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: 972.423.9080 Email: <a href="mailto:scrum@tdc2.com">scrum@tdc2.com</a> 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 CAMPAU
<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: 281.693.7900 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: 281.520.6276 CONTACT: KEN CORTEZ



**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.



CROWN CASTLE  
 800 E. JOHN CARPENTER FWY  
 SUITE 300  
 IRVING, TX 75002

RECORD DRAWING ISSUE DATE: 10/18/16

RECORD DRAWING DRAFTING ONLY



Shift Companies, LLC  
 2911 W. WIRE VISTA ROAD  
 SCOTTSDALE, ARIZONA 85251  
 PH: 480.354.3333  
 FAX: 480.354.3333

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RELEASE	
DATE	SUBMITTAL
6/28/16	1ST CITY SUBMITTAL
10/18/16	2ND CITY SUBMITTAL

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

**PROJECT NAME**  
 CINCO RANCH EXPANSION

**NODE ADDRESS**

**NODE #:** CCR-27  
 SPRING GREEN BLVD.  
 AND CINCO TERRRACE DR

**HUB AREA**  
 CINCO RANCH - HGCW

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

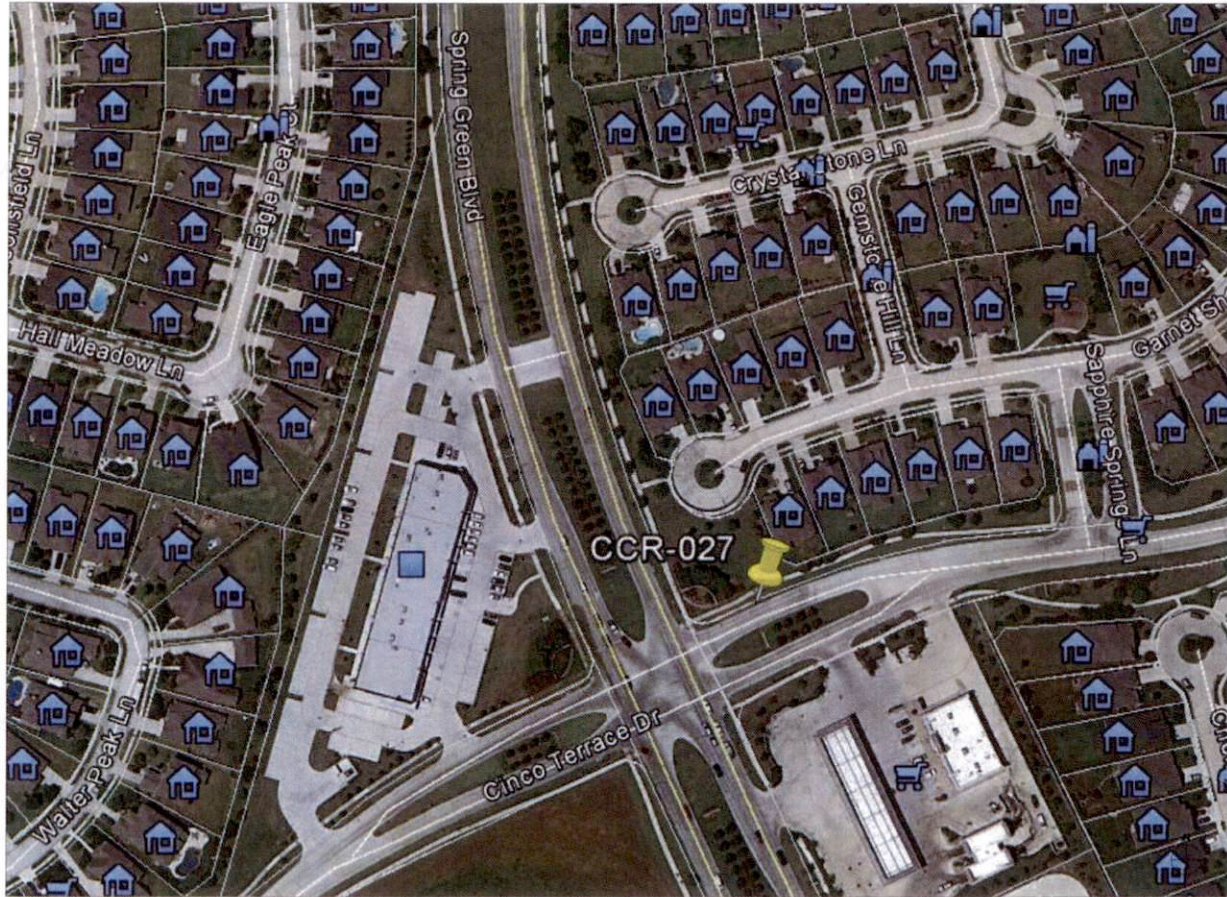
**SHEET TITLE**  
 TITLE SHEET

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

**PLOT SCALE:** 1/1 @ 24"X36"; 1/2 @ 11"X17"







NODE AERIAL PLAN

**SUBJECT POLE:** CCR-27

**GPS COORDINATES:**

**LAT:** 28.70281

**LONG:** 95.81433

**POLE TYPE:** METAL, SUBURB POLE

**POLE ID #**

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

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

**APPROVED:**   
Development Coordinator

**DATE:** 11/1/16



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

RECORD DRAWINGS ISSUE DATE: 11.16.16



**Shift Companies, LLC**  
7311 NORTH WEA ROAD  
SCOTTSDALE, ARIZONA 85257  
PH: 480.344.8029  
FAX: 480.344.0123

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RELEASE	
DATE	SUBMITTAL
6/30/16	1ST CITY SUBMITTAL
10/18/16	IND. CITY SUBMITTAL

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

**PROJECT NAME**  
CINCO RANCH EXPANSION

**NODE ADDRESS**  
**NODE #:** CCR-27  
SPRING GREEN BLVD.  
AND CINCO TERRACE DR

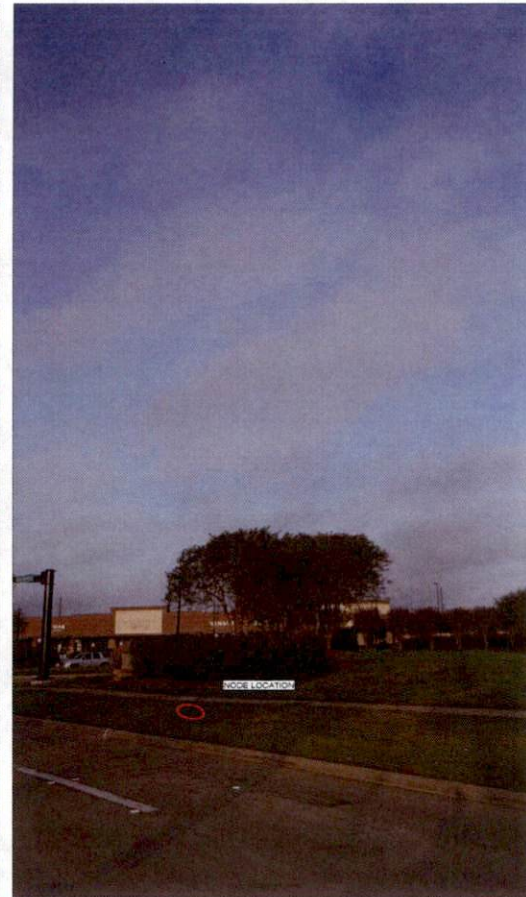
**HUB AREA**  
CINCO RANCH - HGCW

**SHIFT JOB NUMBER** 150802 **IN HOUSE**

**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 OMNI ANTENNA	1601.1
A02	PROPOSED CROWN CASTLE 2" U.G. CONDUIT (APPROXIMATE LOCATION, F.V.)	201.1
A03	PROPOSED CROWN CASTLE INDUCTIVE RADIO UNIT (NODE EQUIPMENT CABINET)	1601.1
A04	PROPOSED NEW METAL SLUABINE POLE	2001.1
A05	PROPOSED CROWN CASTLE UNDERGROUND CONC. FIBER VAULT	8101.2
A06	PROPOSED CROWN CASTLE NODE IDENTIFICATION SIGNS	1001.2
A07	PROPOSED CROWN CASTLE EQUIPMENT CABINET	1601.1
A08	PROPOSED CROWN CASTLE FIBER FOUNDATION	1201.1
A09	PROPOSED ELECTRICAL HAND HOLE	

KEYNOTE	DESCRIPTION	DETAIL
E01	PROPOSED POWER METER MOUNTED TO EQUIPMENT CABINET (EXISTING PANEL AND DISCONNECT)	1601.1
LU1	PROPOSED 2" CROWN CASTLE U.G. POWER CONDUIT (APPROXIMATE LOCATION, F.V.)	201.1 & 601.2
LU2	PROPOSED CROWN CASTLE 2" U.G. FIBER CONDUIT BY OTHERS (APPROXIMATE LOCATION, F.V.)	201.1 & 601.2



**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**

- PAINT PROPOSED GROUND EQUIPMENT A NATURAL EARTH COLOR OR AS APPROVED BY CITY.
- CONTRACTOR TO FIELD LOCATE EXIST. UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
- EX. LANDSCAPE PLANTINGS AND DECORATIVE HARDSCAPES DISTURBED OR DESTROYED AS A RESULT OF CONSTRUCTION SHALL BE REPLACED WITH A LIKE SIZE AND SPEC.
- CONTRACTOR TO HAND LOCATE EX. IRRIGATION PRIOR TO EXCAVATION.
- SITE PLAN IS A DIAGRAMMATIC REPRESENTATION ONLY. VERIFY ALL DIMENSIONS.
- VERIFY ALL PROPERTY LINE INFORMATION WITH AVAILABLE R.O.W. DATA.
- EXIST. UTILITY LOCATIONS SHOWN ON PLANS ARE APPROXIMATE ONLY (AS PROVIDED BY LOCAL UTILITIES).

**SUBJECT POLE:** CCR-27

**GPS COORDINATES:**

**LAT:** 29.70291  
**LONG:** -95.81433

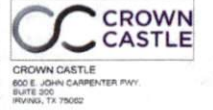
**POLE TYPE:** METAL SLUABINE POLE  
**POLE ID #:**

**UPPER ANTENNA RAD CENTER:** 32' - 0" A.F.D.  
**LOWER ANTENNA RAD CENTER:** 30' - 0" A.F.D.

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

**APPROVED:** [Signature]  
 Development Coordinator

**DATE:** 11/1/16



RECORD DRAWINGS ISSUE DATE: 10.18.16



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DATE	SUBMITTAL
6.03.16	1ST CITY SUBMITTAL
10.18.16	2ND CITY SUBMITTAL

NO.	DATE	COMMENT
10	10.18.16	CITY COMMENTS

**PROJECT NAME:** CINCO RANCH EXPANSION

**NODE ADDRESS:** NODE #CCR-27

SPRING GREEN BLVD. AND CINCO TERRACE DR

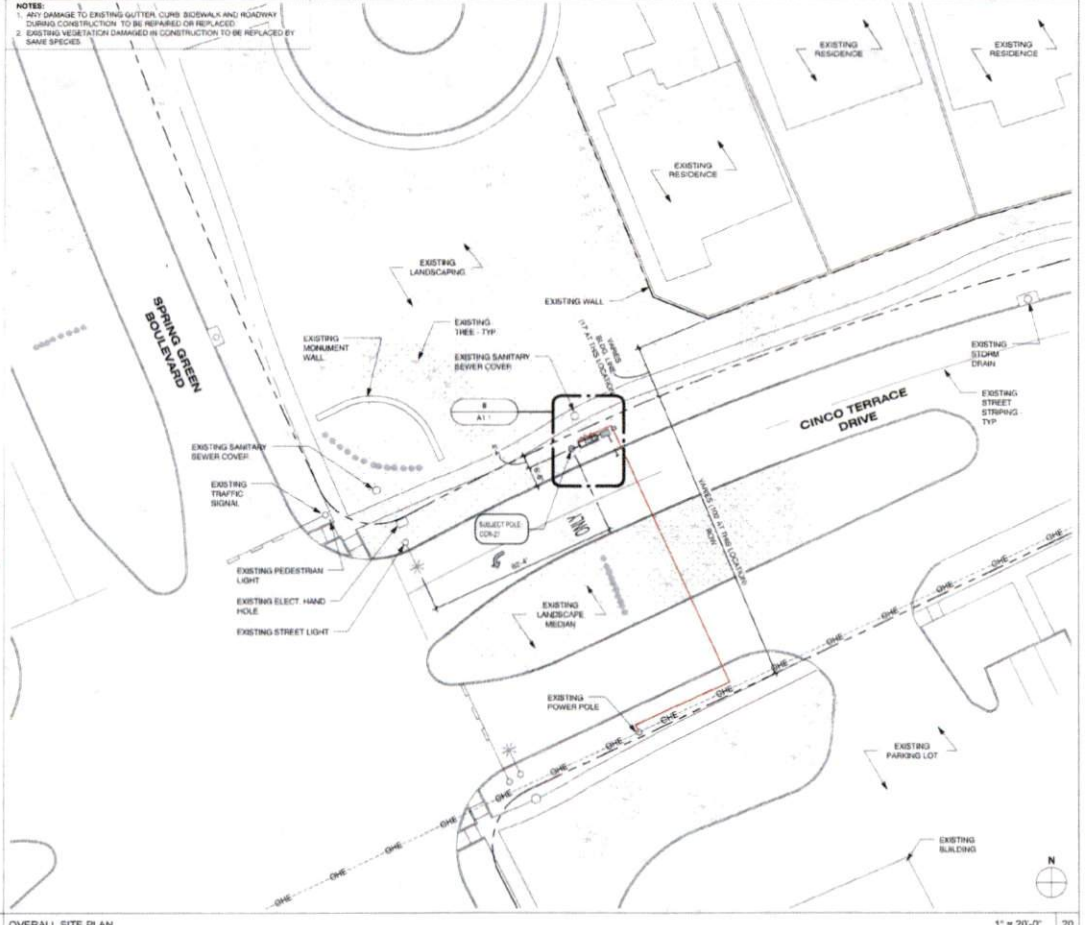
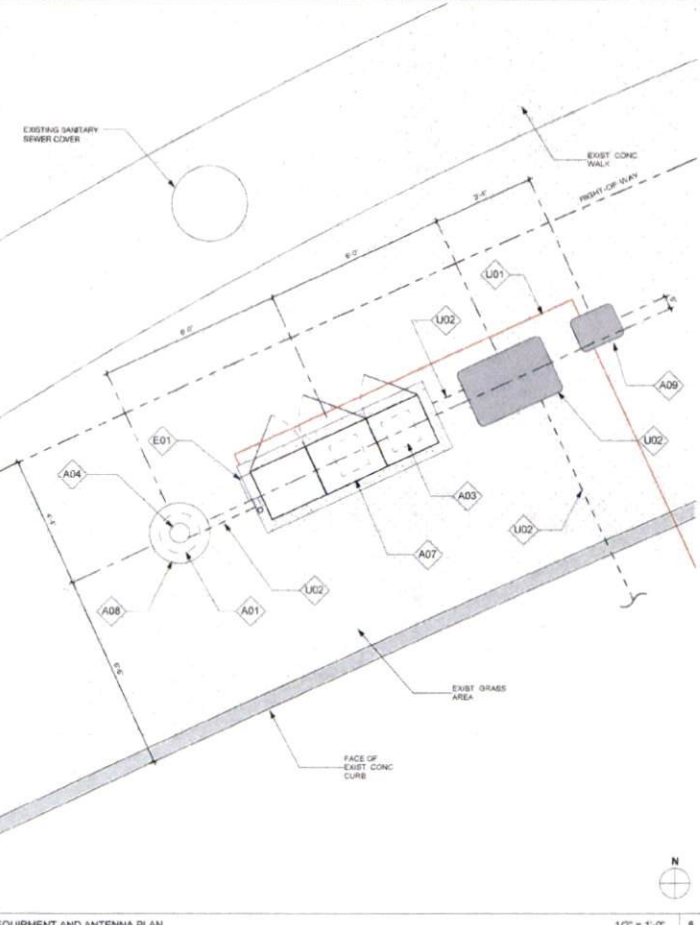
**HUB AREA:** CINCO RANCH - HGCW

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

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

SHEET NUMBER	PAGE
A1.1	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

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 CMRR ANTENNA	16D1.1
A02	PROPOSED CROWN CASTLE 2" U.S. CONDUIT (APPROXIMATE LOCATION, F.V.)	2D1.1
A03	PROPOSED CROWN CASTLE REMOTE RADIO UNITS (RADIO EQUIPMENT CABINET)	16D1.1
A04	PROPOSED NEW METAL SLALOME POLE	2D01.1
A05	PROPOSED CROWN CASTLE UNDERGROUND CONC. FIBER VAULT	6D12
A06	PROPOSED CROWN CASTLE NODE IDENTIFICATION SIGNAGE	2D01.2
A07	PROPOSED CROWN CASTLE EQUIPMENT CABINET	16D1.1
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)	16D1.1

MODEL: AMPHENOL - 2CUT269127460  
LENGTH: 48"  
WIDTH: 14.8" DIA.  
DEPTH: NA  
WEIGHT: 38.1 LBS

PROPOSED PANEL ANTENNA SPECS

PROPOSED POLE WIDTH = 8" Ø  
PROPOSED POLE HEIGHT = 27' - 6"  
14'-0" ANTENNA AND  
1'-6" ANTENNA MOUNT

POLE INFO

APPROVED:   
Development Coordinator  
DATE: 11/1/16



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

RECORD DRAWINGS ISSUE DATE: 10/18/16



Shift Companies, LLC  
1111 E. WYATT ST. SUITE 100  
SOUTHDALE, MICHIGAN 48237  
PH: 482.944.8200  
FX: 482.944.8100

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

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

PROJECT NAME  
**CINCO RANCH EXPANSION**

NODE ADDRESS  
**NODE #CCR-27**  
SPRING GREEN BLVD.  
AND CINCO TERRACE DR

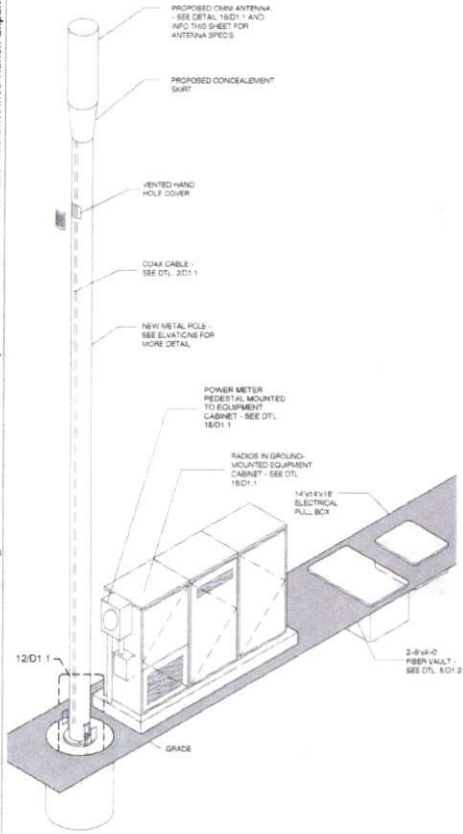
HUB AREA  
**CINCO RANCH - HGCW**

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

SHEET TITLE  
**POLE ELEVATION, PROPOSED**

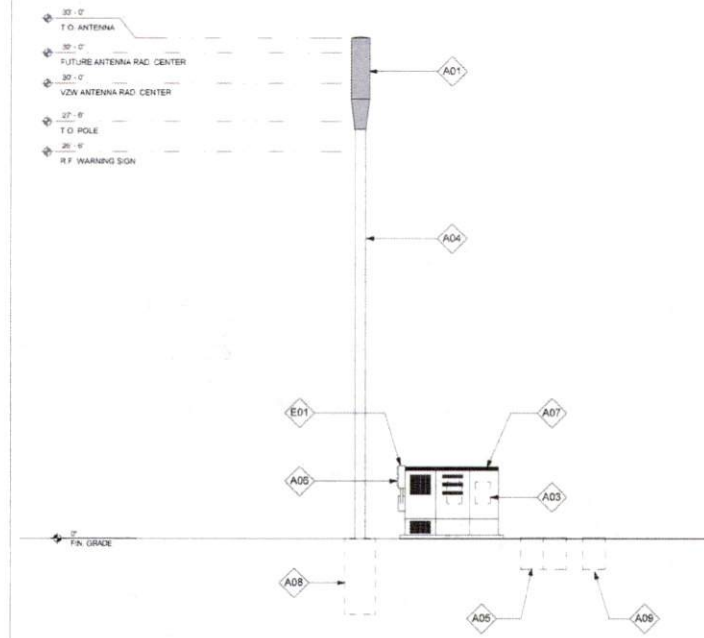
SHEET NUMBER: **A1.2** PAGE: **6 OF 14**

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



SCALE: SCALE N.T.S. 4

METAL POLE ISOMETRIC

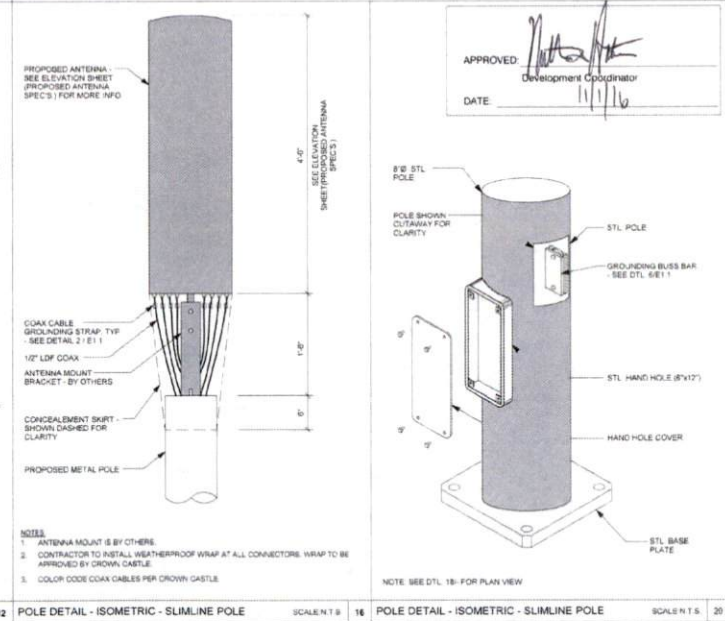
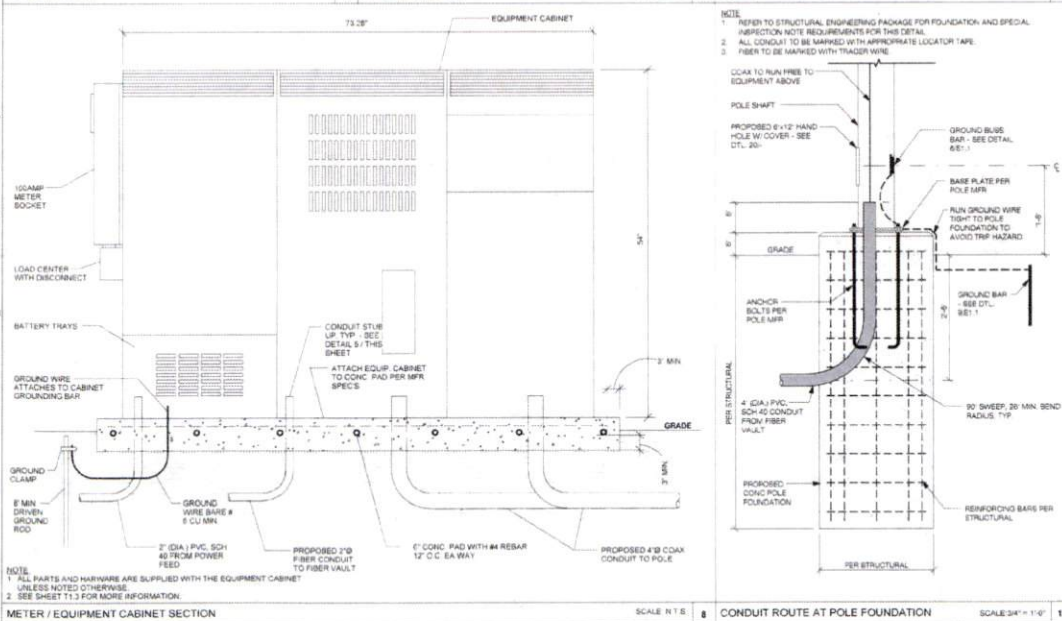
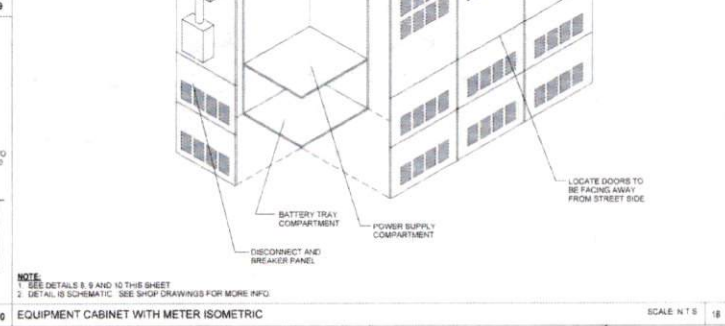
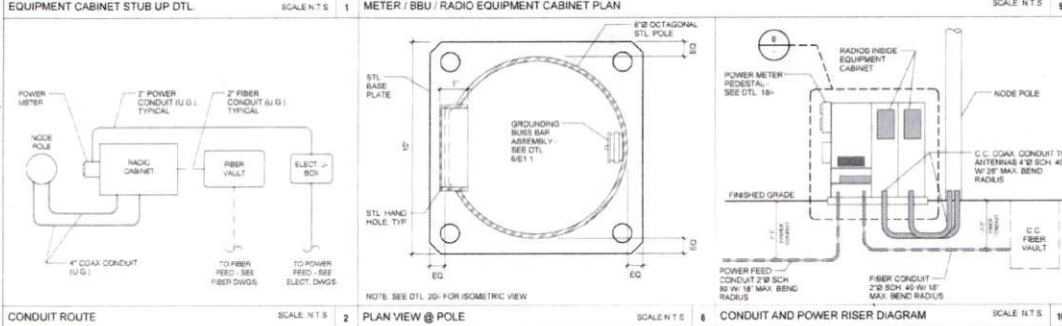
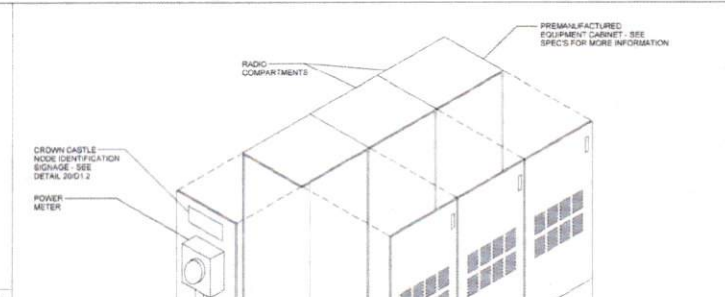
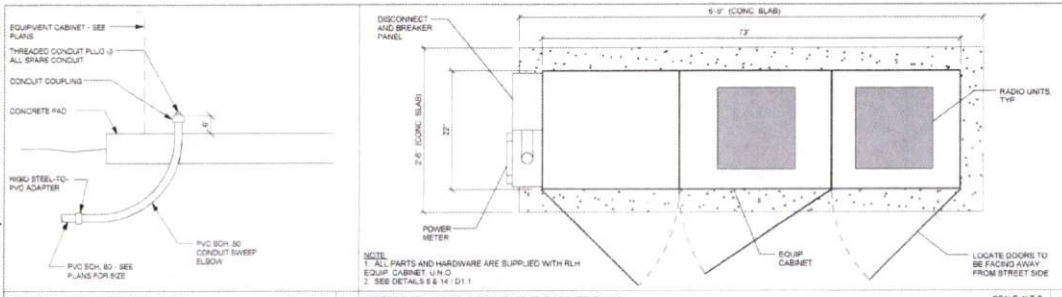


POLE ELEVATION (PROPOSED)

SCALE: 1/4" = 1'-0" 20

C:\Users\ruebe\_000\Documents\AAA - Crown Castle Houston\Cinco Ranch Expansion\Sites\Cinco Ranch Expansion - Detail Sheets - 12.14.15.rvt

10/17/2016 3:28:55 PM



**CROWN CASTLE**  
400 E. JOHN CARPENTER Pkwy  
SUITE 300  
IRVING, TX 75060

RECORD DRAWINGS ISSUE DATE: 10/14/15



**Shift Companies, LLC**  
1111 E. HURST BOULEVARD  
SUITE 1000, ARLINGTON, TEXAS 76010  
PH: 817.241.5500  
WWW.SHIFT.COM

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

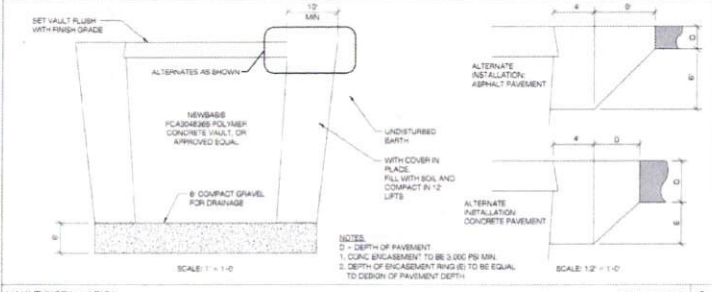
REVISIONS		
NO.	DATE	COMMENT
	10/18/16	CITY COMMENTS

PROJECT NAME  
**CINCO RANCH EXPANSION**

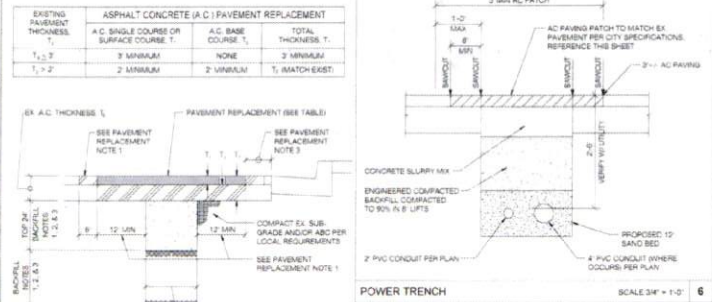
HUB AREA	
<b>CINCO RANCH - HGCW</b>	
SHIFT JOB NUMBER	IN HOUSE
150602	DRAWN BY: RA CHECKED BY: DM
SHEET TITLE	
<b>CONSTRUCTION DETAILS</b>	
SHEET NUMBER	PAGE
D1.1	7 OF 14
PLOT SCALE: 1:1 @ 24"x36"; 1:2 @ 11"x17"	

PLAN CHECK #

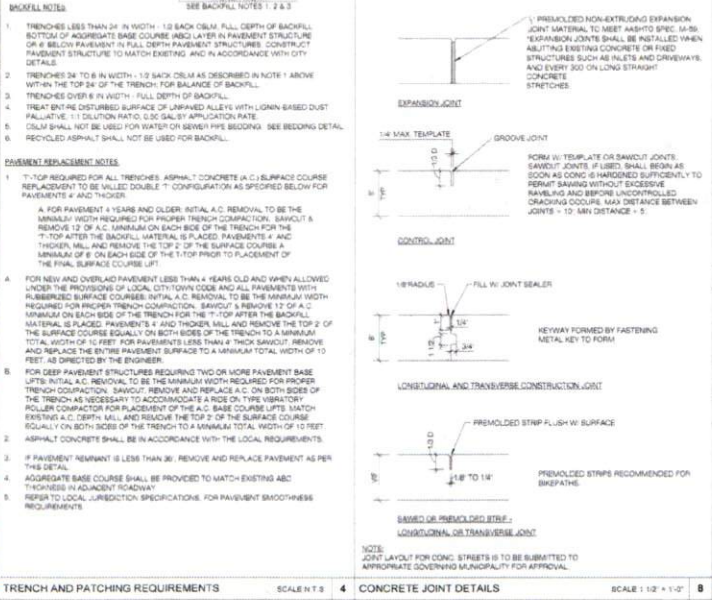
CASE #



VAULT INSTALLATION SCALE AS NOTED 6



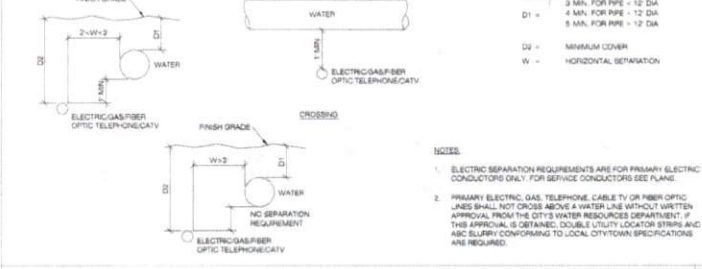
POWER TRENCH SCALE 3/4\"/>



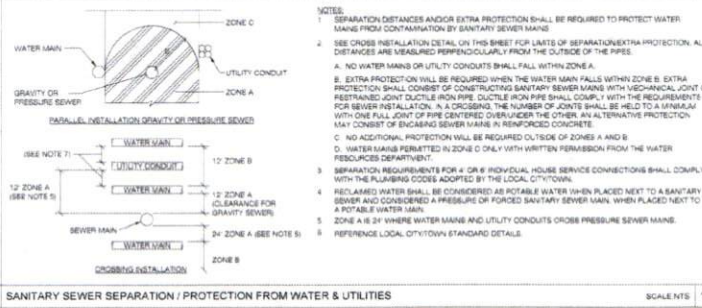
TRENCH AND PATCHING REQUIREMENTS SCALE N.T.S. 4



COAX WATERPROOFING - JMA TYPE SCALE N.T.S. 18



MINIMUM UTILITY SEPARATION REQUIREMENTS SCALE N.T.S. 15



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

**Step #1: Prep**

**Step #2: Install**

**Step #3: Compress**

**Step #4: Torque**

COAX WATERPROOFING - JMA TYPE SCALE N.T.S. 18

APPROVED: *[Signature]*  
Development Coordinator

DATE: 11/1/16

**Step #1: Prep**

**Step #2: Install**

**Step #3: Compress**

**Step #4: Torque**

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

**LEGEND**

D1 = 3 MIN. FOR PIPE < 12" DIA  
D1 = 4 MIN. FOR PIPE < 12" DIA  
D2 = 5 MIN. FOR PIPE < 12" DIA  
D3 = MINIMUM COVER  
W = HORIZONTAL SEPARATION

**NOTES**

- ELECTRIC SEPARATION REQUIREMENTS ARE FOR PRIMARY ELECTRIC CONDUCTORS ONLY. FOR SERVICE CONDUCTORS SEE PLANS.
- PRIMARY ELECTRIC, GAS, TELEPHONE, CABLE TV OR FIBER OPTIC LINES SHALL NOT CROSS ABOVE A WATER LINE WITHOUT WRITTEN APPROVAL FROM THE CITY'S WATER RESOURCES DEPARTMENT. IF THIS APPROVAL IS OBTAINED, DOUBLE UTILITY LOCATOR STRIPS AND ABC SLURRY CONFORMING TO LOCAL CITY/TOWN SPECIFICATIONS ARE REQUIRED.

**MINIMUM UTILITY SEPARATION REQUIREMENTS** SCALE N.T.S. 15

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

**CROWN CASTLE**  
IN CASE OF EMERGENCY CONTACT  
NOC: 288.632.0931

**NOTE** 4 x 6 1/2" STICKER

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

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

RECORD DRAWINGS ISSUE DATE: 10/18/16

**SHIFT**  
Shift Companies, LLC  
7377 E. WYOMING AVE  
SCOTTSDALE, ARIZONA 85257  
PH: 480.284.8870  
WWW.SHIFT.COM

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RELEASE DATE	SUBMITTAL
8/28/16	1ST CITY SUBMITTAL
10/18/16	2ND CITY SUBMITTAL

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

PROJECT NAME  
**CINCO RANCH EXPANSION**

**HUB AREA**

**CINCO RANCH - HGCW**

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

**SHEET TITLE** CONSTRUCTION DETAILS

**SHEET NUMBER** D1.2 **PAGE** 8 OF 14

**PLOT SCALE:** 1:1 @ 24"x30"; 1:2 @ 11"x17"

PLAN CHECK #  
CASE #



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

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

RECORD DRAWINGS ISSUE DATE 10.14.16

**SHIFT**  
 Shift Companies, LLC  
 1111 E. ROY BLVD. SUITE 200  
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 480-442-9999  
 800-442-9999

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

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

PROJECT NAME  
**CINCO RANCH EXPANSION**

HUB AREA  
**CINCO RANCH - HGCV**

SHIFT JOB NUMBER 150602 IN HOUSE  
 DRAWN BY: *[Signature]* 5/6  
 CHECKED BY: *[Signature]* CM

SHEET TITLE  
**ELECTRICAL PLANS**

SHEET NUMBER	PAGE
E1.0	9 OF 14

PLOT SCALE: 1/1" @ 24'X30'; 1/2" @ 11'X17'

ENLARGED ELECTRICAL PLAN

1/2" = 1'-0" 8 ELECTRICAL SITE PLAN

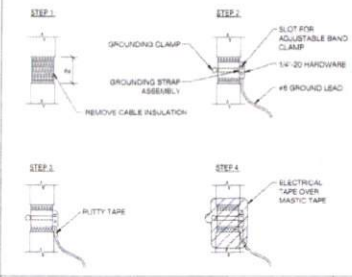
1" = 20'-0" 20

PLAN CHECK #

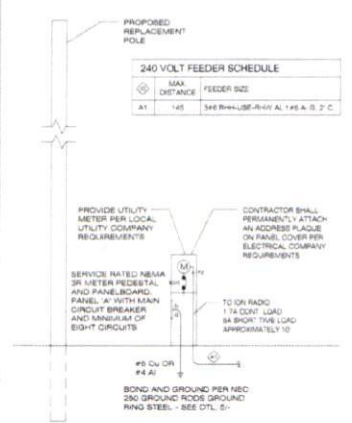
CASE #



CADWELD DETAILS SCALE: NTS 1

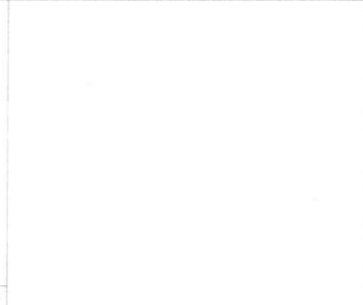


COAXIAL CABLE GROUNDING SCALE: NTS 2

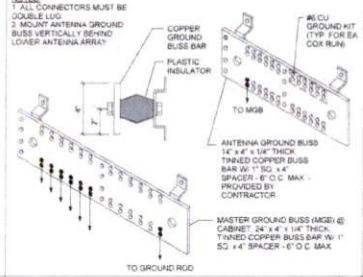


**NOTES:**  
 1. SET TO FIELD VERIFY SITE CONDITION.  
 2. ALL EQUIPMENT IS NEW UNLESS NOTED OTHERWISE.  
 3. ALL EXTERIOR EQUIPMENT SHALL BE WEATHERPROOF.  
 4. PROVIDE ADEQUATE SERVICE CONDUCTOR LENGTH AT THE BASE OF THE RISER POLE FOR LOCAL UTILITY COMPANY TO INSTALL. THE POLE AND CONNECT TO UTILITY COMPANY SECONDARY LINES WITH A 1" DRIP LOOP.  
 5. ALL TRENCHES SHALL BE MIN. 24" IN DEPTH.  
 6. ALL WIRE TO BE THIN OR THIN INSULATION OR EQUIVALENT EXCEPT WHERE NOTED OTHERWISE.  
 7. FUTURE BREAKERS IN PANEL B SHALL BE SERIES RATED WITH THEIR RESPECTIVE UPSTREAM RESIDUAL MAIN PROTECTIVE DEVICE. A TWO THIR (25%-10KVA) SYSTEM IS SPECIFIED.  
 8. WHERE NECESSARY TO TERMINATE OVERSIZED CONDUCTORS, CONTRACTOR TO CONVERT CONDUCTORS TO PANEL BUS APPROVED SIZE USING AN NEC COMPLIANT CONNECTOR.

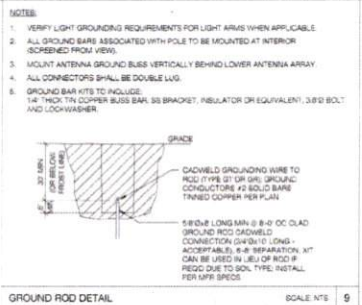
ONE-LINE DIAGRAM SCALE: NTS 4



GROUND BUSS BAR DETAIL SCALE: NTS 6



GROUNDING SCHEMATIC - METAL POLE SCALE: NTS 6



GROUND ROD DETAIL SCALE: NTS 9

**PANEL A** FED FROM TRANSFORMER 198A 3R VOLT 240/208/2P 3W BUS AMPS 60 NEUTRAL 100N AIG REFER TO FAULT CALC. MAIN BAR 40 LUGS STANDARD

NO.	CB	CIRCUIT DESCRIPTION	KVA LOAD		NO.	CB	CIRCUIT DESCRIPTION	KVA LOAD	
			A	B				A	B
1	-	SPACE	0.00		2	201	RADIO EQUIPMENT	1.05	
3	-	SPACE	0.00		4	201	RADIO EQUIPMENT	1.05	
5	-	SPACE	0.00		6	201	SPARE	0.00	
7	-	SPACE	0.00		8	-	SPACE	0.00	
TOTAL CONNECTED KVA BY PHASE			1.05	1.05	TOTAL CONNECTED AMPS BY PHASE			11.8	11.8
CONNL. KVA			CALC. KVA		CONNL. KVA			CALC. KVA	
LIGHTING			0	0 (125%)	CONTINUOUS			0	0 (125%)
LARGEST MOTOR			0	0 (125%)	HEATING			0	0 (100%)
OTHER MOTORS			0	0 (125%)	NONCONTINUOUS			2.1	2.1 (100%)
RECEPTACLES			0	0	TOTAL KVA			2.82	2.82

● **PHASES A-B-C-B**  
 ● PROVIDE COULDM TRIP HANDLES FOR ALL MULTI-CIRCUIT CONDUIT RUNS.

ELECTRICAL PANEL SCHEDULES SCALE: NTS 14



EQUIPMENT GROUNDING SCHEMATIC DTL SCALE: NTS 17

**POWER FEEDER SCHEDULE**

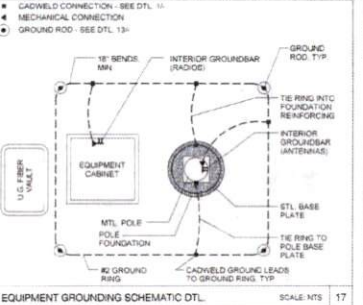
LENGTH	SIZE (AWG, KCMIL)	GROUND SIZE	CONDUIT SIZE
350	2	6	2"
380	1	4	2"
410	1/0	3	2"
450	3/5	3	2"
480	3/0	2	2"
500	4/0	1	2"
820	250	1/2	2 1/4"
1097	300	2/5	2 1/2"

FEEDER SCHEDULE SCALE: NTS 15

**FAULT CURRENT CALCULATION**

Panel	Source (Fault Point)	Source I (amps)	Conduit Type	Wire/Bus Size	C value	E (volts)	L (length)	f	M	Iac	IC Rating
1	UTILITY XFORMER'S PEDESTAL	1	22000	NM	1 Set(s) of 2	3730	240			22000	25 000
2	Panel-A @ 20'	1	22000	NM	1 Set(s) of 2	3730	240	20	0.851	0.84	11884
3	Panel-A @ 150'	1	22000	NM	1 Set(s) of 2	3730	240	100	4.296	0.19	4168
4	Panel-A @ 200'	1	22000	NM	1 Set(s) of 2	3730	240	150	6.385	0.14	2679
4	Panel-A @ 200'	1	22000	NM	1 Set(s) of 2	3730	240	200	8.513	0.11	2513

FAULT CURRENT CALCULATION SCALE: NTS 20



ELECTRICAL NOTES SCALE: NONE 18

**RELEASE**

DATE	SUBMITTAL
6.3.16	1ST CITY SUBMITTAL
10.16.16	2ND CITY SUBMITTAL

**REVISIONS**

NO.	DATE	COMMENT
10	10.16.16	CITY COMMENTS

PROJECT NAME: CINCO RANCH EXPANSION

HUB AREA: CINCO RANCH - HGCW

SHEET JOB NUMBER: 150602

SHEET TITLE: ELECTRICAL DETAILS

SHEET NUMBER: E1.1 PAGE: 10 OF 14

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



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

RECORD DRAWINGS ISSUE DATE: 10.16.16



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