



**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

- Right of Way Permit
- Commercial Driveway Permit

Permit No: 2016-10725

Applicant: Crown Castle NG General LLC/Shift Companies

Job Location Site: 24520 1/2 Cinco Ranch Boulevard, Katy, TX 77494

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 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. 13C

By: N/A
Drainage District Engineer/Manager

Clerk of Commissioners Court
By: Ronda Wallis
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@fortbendcountytexas.gov

- Right of Way Permit
 - Commercial Driveway Permit
- Permit No: 2016-10725

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. Ay

Permit Administrator

12/6/16

Date



PROJECT NAME: CINCO RANCH EXPANSION
PROJECT ADDRESS: CINCO RANCH BL. & GLENWORTH LN

PROJECT TYPE: METAL SLIMLINE POLE
HUB AREA: CINCO RANCH - HGCW
NODE #(s): **CCR-41**
COORDINATES: LAT: 29.735445, LONG: -95.784051

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FORT BEND COUNTY ENGINEER
 ENGINEER: *Richard W. Collins, P.E.*
 for Richard W. Collins, 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 MEMBER'S REVIEW	REVIEWED/DATE
R.F. ENGINEERING	
PRODUCT MANAGEMENT	
NETWORK REAL ESTATE TEAM	
UTILITY TEAM	
IMPLEMENTATION	
OPERATIONS	



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

RECORD DRAWINGS ISSUE DATE: 10/16/16

RECORD DRAWING DRAFTING ONLY



Shift Companies, LLC
 7011 NORTH 40TH AVENUE
 NORTHGATE, ARIZONA 85021
 PH: 480.348.0000
 FAX: 480.348.0100

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PROJECT TEAM	
ARCHITECT	OWNER INFO
Company: SHIFT CONSULTING Address: 7333 E. MONTE VISTA RD. SCOTTSDALE, AZ 85257 Phone Number: 480.261.0626 Fax Number: 480.264.0163 Contact: CHRIS MYERS	Company: CROWN CASTLE Address: 1220 AUGUSTA DR. HOUSTON, TX 77057 Phone #: 817.440.3113 Email: BARRY.CAMPALU@CROWNCASTLE.COM Contact: BARRY CAMPALU
STRUCTURAL	RF ENGINEER
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:
FIBER ENGINEERING	
Company: TDC2 Address: 710 EAST PARK BLVD SUITE 110 PLANO, TX 75074 Phone: 972.423.9000 Email: scott@tdc2.com Contact: SCOTT CRUM	

PROJECT SUMMARY	
PROJECT NAME: CINCO RANCH EXPANSION	APPLICANT: CROWN CASTLE 1220 AUGUSTA DR. HOUSTON, TX 77057 CONTACT: BARRY CAMPALU
PROJECT AREA: CINCO RANCH - HGCW	CODES: 2009 INTERNATIONAL BUILDING CODE (IBC) 2009 INTERNATIONAL ENERGY CONSERVATION CODE (IECC) 2008 NATIONAL ELECTRICAL CODE (NEC) 2008 NATIONAL ELECTRICAL SAFETY CODE (NESC)
JURISDICTION: FORT BEND COUNTY ENGINEERING DEPT. 1124 BLUME RD ROSENBERG, TX 77471 PH: 281.833.7500 CONTACT: JOHNNY ORTEGA	PLUMBING REQUIREMENTS: FACILITY HAS NO PLUMBING.
HANDICAPPED REQUIREMENTS: -FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION	POWER COMPANY: CENTERPOINT ENERGY 5431 HIGHWAY BLVD. KATY, TX 77494 PH: 281.520.6275 CONTACT: KEN CORTEZ
HANDICAPPED ACCESS REQUIREMENTS ARE NOT REQUIRED	

NOTE: NOT ALL SITES ARE INCLUDED IN THIS SET. SEE NODE #5 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.

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

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

PROJECT NAME
 CINCO RANCH EXPANSION

NODE ADDRESS
 CINCO RANCH - HGCW

NODE #: CCR-41
 CINCO RANCH BL. & GLENWORTH LN

HUB AREA
 CINCO RANCH - HGCW

SHIFT JOB NUMBER / **IN HOUSE**
 150802 / DRIVEN BY: AL / CHECKED BY: CM

SHEET TITLE
 TITLE SHEET

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

PLT SCALE: 1/1 @ 24"x36"; 1:2 @ 11"x17"

CASE # PLAN CHECK #

PART 2 - EXECUTION

2.1 EXECUTION

A. Provide (1) main ground from the antenna mounting bracket at the top of the pole. If the main ground for the TM06B location defined below. Main vertical ground shall consist of a # 2 solid bare copper wire. Back grounds shall be protected by a PVC coating to the top of the pole and extend every 24" with corrosion resistant (aluminum) galvanized staples. #2 bare copper cable is highly susceptible to theft and may be a lot excessive to lay out to ground pole. #2 is the best and is recommended by Opa. As it's a live wire and has safety to be taken. Bare wire should be coated by PVC coating to the top of the pole and extend every 24" with corrosion resistant (aluminum) galvanized staples.

B. Provide (1) main ground from the antenna mounting bracket at the top of the pole. If the main ground for the TM06B location defined below. Main vertical ground shall consist of a # 2 solid bare copper wire. Back grounds shall be protected by a PVC coating to the top of the pole and extend every 24" with corrosion resistant (aluminum) galvanized staples.

C. Ground rod shall be 1/2" diameter minimum and copper clad.

D. Ground rod shall be installed per NEC code with regards to depth and distance from wood pole.

E. Ground rod shall be bonded minimum of 6" below grade.

F. If 2 grounds shall be attached directly to the ground rod via Galv thread.

G. Main ground vertical shall be attached directly to a ground rod (TM06B) mounted to the face of the utility pole. Method of contact shall be a hole drilled up (blow in) to the main ground bus (TM06B) on the left or top end depending on the orientation of the TM06B.

H. Main ground vertical to the antenna mounting bracket shall be attached directly to the Antenna Bracket via self-tapping bolt or screw. A weather seal shall be added to the thru-bolt or screw to avoid damage to the lug while maintaining a secure bond.

I. TM06B shall be mounted above the conductors, cabinet base 96" or greater.

J. All pole mounted devices, including but not limited to, antenna mounts and antenna mounting brackets, cabinets shall be connected to the TM06B with #10 copper braided cable. Use metal and green in color.

K. All pole mounted devices, including but not limited to, antenna mounts and antenna mounting brackets, cabinets shall be connected to the TM06B using compression type, 3.5oz conductor lugs.

L. Conductor lugs must attach to the bus bar with hot lead taping up and with the bolt heads on the back side of the bus bar.

M. Removal of conductor lugs is prohibited.

N. Placement of conductor lugs on front and rear face of grounding bar is permitted.

O. Any modifications to the conductor lugs is prohibited, including but not limited to grinding, cutting or bending.

P. Conductor lugs must be installed with even spacing and must not come in contact with another conductor lug.

Q. Stripped side of the conductor lug should be placed on the exposed side of the bus bar.

R. All conductor lugs must have NDC-04 applied to any sides which contact another metal to inhibit corrosion including and separately the conductor in the compression end.

S. All conductor lugs must be properly sealed from weather with heat glue.

T. All conductor lugs must be attached using 3/16" hardware x 2 per each lug and in the following manner:

- a. Flat Washer on the backside of the lug
- b. Bolt thru the lug hole facing outward
- c. Flat Washer on the front side of the lug
- d. Bolt thru the lug hole facing inward
- e. Nut on the bolt, turned to "three threads showing at maximum torque"
- f. All nuts or conductor bolts must be tightened so that the lock washers are completely compressed.

U. No mechanical connections are acceptable except in the event of mechanical damage being a integral part of the product from the factory. In Cases where # 6 ground lugs on rear side of the cabinet.

V. Boxes needs on cabinets must be ground off to a safe level.

W. All steel must be coated with Zn-5 or less ground to prevent oxidation.

X. All exposed metal surfaces must be bonded with a protective coating such as Zinc-5.

Y. All fittings exposed to environment must be sealed with storm glue.

Z. "Galvanized" finishes/finishes are prohibited if it is less than 1/16th of an inch.

PART 3 - TESTING AND DOCUMENTATION

3.1 TESTING

A. 5 Ohms to ground is required for acceptance. If 5 Ohms cannot be met with above requirements, additional ground rods will be added to the field until 5 Ohms is achieved.

3.2 DOCUMENTATION

A. Photos of the tests are required as well as test results in formal document format. Submit result of test in CC Construction Manager prior to final submittal. Submit all photos and 100% with detailed package per Section 01770 - Closeout Procedures and Required Documents.

GROUNDING SPECIFICATIONS SCALE: NTB 6

1. FORT BEND COUNTY MUST BE INVITED TO THE PRE-CONSTRUCTION MEETING.

2. CONTRACTOR SHALL NOTIFY FORT BEND COUNTY ENGINEERING DEPARTMENT 48 HOURS PRIOR TO COMMENCING CONSTRUCTION AND 48 HOUR NOTICE TO ANY CONSTRUCTION ACTIVITY WITHIN THE LIMITS OF THE PAVING AT CONSTRUCTION@FORTBENDCOUNTYTX.GOV

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 WAY.

4. ALL PAVING APPROVALS SHALL BE SUBMITTED IN ACCORDANCE WITH FORT BEND COUNTY "RULES, REGULATIONS AND REQUIREMENTS" RELATING TO THE APPROVAL AND SHOWING INDICATES BACK OF CURB

5. A CONTINUOUS LONGITUDINAL REINFORCING BAR SHALL BE USED IN THE CURBS

6. ALL CONCRETE PAVEMENT SHALL BE 5" SLAB 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 90 FEET

7. ALL WEATHER ACCESS TO ALL EXISTING STREETS AND DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES.

8. 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

10. AT ALL INTERSECTION LOCATIONS, TYPE 7 RAIPMS SHALL BE PLACED IN ACCORDANCE WITH TPOD PED-12A STANDARD DETAIL SHEET A.D.A - MANGIAR RAIPMS SHALL BE INSTALLED WITH STREET PAVING AT ALL INTERSECTIONS AND COMPLY WITH CURRENT A.D.A. REGULATIONS

11. CURB HEADINGS ARE REQUIRED AT CURB CONNECTIONS TO HANDICAP RAIPMS. WITH IN CONSTRUCTION JOINT WITHIN 5' OF RAIPMS

12. ALL INTERSECTIONS UTILIZING TRAFFIC CONTROL MEASURES SHALL HAVE A 4" WHEEL CHAIR RAMPING INSTALLED

13. GUIDELINES 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

14. ALL 8" (1" STOP SIGNS) SHALL BE 30"X30" WITH DAMAGED GRASS SHEETING PER TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES

15. STREET NAME SIGNAGE SHALL BE ON A 5" HIGH BEEN PLAT BLADE IN REFLECTIVE GREEN BACKGROUND. STREET NAMES SHALL BE UPPER AND LOWERCASE LETTERING WITH UPPER CASE LETTERS OF 5" MINIMUM AND LOWERCASE LETTERS OF 4" MINIMUM. THE LETTERS SHALL BE REFLECTIVE WHITE. STREET NAME SIGNS SHALL BE LOCATED ON STOP SIGN POST

16. A BLUE DOUBLE REFLECTORIZED BUTTON SHALL BE PLACED AT ALL FIRE HYDRANT LOCATIONS. THE BUTTON SHALL BE PLACED 12 INCHES OFF OF THE CENTERLINE OF THE STREET OR THE SAME SIDE AS THE HYDRANT

NOTE: FORT BEND COUNTY NOTES SUPERSEDE ANY CONFLICTING NOTES.

INSPECTION: THE PROJECT AND ALL PARTS THEREOF SHALL BE SUBJECT TO INSPECTION FROM TIME TO TIME BY INSPECTORS DESIGNATED BY FORT BEND COUNTY. NO SUCH INSPECTIONS SHALL RELIEVE THE CONTRACTOR OF ANY OF ITS OBLIGATIONS HEREUNDER. NEITHER FAILURE TO INSPECT NOR FAILURE TO DISCOVER OR REJECT ANY OF THE WORK AS NOT IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS, REQUIREMENTS AND SPECIFICATIONS OF FORT BEND COUNTY OR ANY PROVISION OF THIS PROJECT SHALL BE CONSTRUED TO SUPPLY AN ACCEPTANCE OF SUCH WORK OR TO RELIEVE THE CONTRACTOR OF ANY OF ITS OBLIGATIONS HEREUNDER.

GENERAL PROJECT NOTES SCALE: NTB 10

CONTRACTOR MUST HAVE ONE ALL CERTIFIED PERSON - PERSONNEL WORKING ON THIS AND THE HOSE CABINET MUST HAVE THE ALL METRO CELL CERTIFICATION - ONLY CERTIFIED PERSONNEL MAY INSTALL ALL METRO CELLS. (I.E. NO TRAIN THE TRAINER OPTION PERMITTED) - A CERTIFIED INSTALLER MAY SUPERVISE ONE OR MORE NON-CERTIFIED "HELPERS" AS LONG AS THE CERTIFIED INSTALLER IS ON THE SAME SITE 100% OF THE TIME. (I.E. NO ROAMING 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 PORTRAYED AS AN ALTERNATIVE AUDIT - CERTIFIED PERSONNEL HAVE ACCESS TO REMOTE TECHNICAL SUPPORT FOR ISSUES RELATED TO METRO CELL INSTALLATION. 9788 METRO CELL INDOOR, 9789 METRO CELL OUTDOOR, 9786 METRO CELL INDOOR, 9787 METRO CELL OUTDOOR, 9788 METRO INDOOR V.I.G. AND THE 7310 CABINET

ALL CERTIFIED TECHNICIAN NOTE SCALE: NTB 11

CONTRACTOR SHALL HAVE ONE ALL CERTIFIED PERSON - PERSONNEL WORKING ON THIS AND THE HOSE CABINET MUST HAVE THE ALL METRO CELL CERTIFICATION - ONLY CERTIFIED PERSONNEL MAY INSTALL ALL METRO CELLS. (I.E. NO TRAIN THE TRAINER OPTION PERMITTED) - A CERTIFIED INSTALLER MAY SUPERVISE ONE OR MORE NON-CERTIFIED "HELPERS" AS LONG AS THE CERTIFIED INSTALLER IS ON THE SAME SITE 100% OF THE TIME. (I.E. NO ROAMING 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 PORTRAYED AS AN ALTERNATIVE AUDIT - CERTIFIED PERSONNEL HAVE ACCESS TO REMOTE TECHNICAL SUPPORT FOR ISSUES RELATED TO METRO CELL INSTALLATION. 9788 METRO CELL INDOOR, 9789 METRO CELL OUTDOOR, 9786 METRO CELL INDOOR, 9787 METRO CELL OUTDOOR, 9788 METRO INDOOR V.I.G. AND THE 7310 CABINET

FORT BEND COUNTY CONSTRUCTION NOTES SCALE: NTB 8

1. RIGHT-OF-WAY USE PERMIT SHALL BE OBTAINED BY CONTRACTOR PRIOR TO COMMENCING WORK.

2. A UTILITY LOCATE IS REQUIRED FOR ALL PROJECTS.

3. CROSSING OF EXISTING UTILITIES SHALL BE COORDINATED BY CONTRACTOR.

4. ALL WORK TO BE CONDUCTED IN CITY RIGHT OF WAY, U.I.G.

5. ALL DISTURBED LANDSCAPING SHALL BE REPLACED TO SIMILAR EXISTING CONDITION.

6. ALL SURFACE REPAIR SHALL BE TO CITY SPECIFICATIONS.

7. ANY SIDEWALK CLOSURE SHALL BE COORDINATED WITH THE CITY AND PROPER SIGNAGE WILL BE PLACED.

8. TEMPORARY LIGHTING SHALL BE COORDINATED WITH CITY AND PROVIDED WHENEVER EXISTING LIGHTING IS REMOVED OR UNAVAILABLE AS REQUIRED.

9. NO MATERIALS OR EQUIPMENT SHALL BE STORED ON PRIVATE PROPERTY OR BLOCK ACCESS TO PRIVATE PROPERTY.

10. OPEN EXCAVATIONS SHALL BE PROPERLY GUARDED AND SIGNED. NO OPEN EXCAVATIONS WILL BE LEFT ACCESSIBLE TO THE PUBLIC.

11. CLEANUP OF THE WORK AREA WILL BE COMPLETED EACH EVENING AND THE REQUESTED AREA WILL BE RETURNED TO EXISTING CONDITION AT THE COMPLETION OF CONSTRUCTION AT EACH NODE LOCATION.

12. ALL WORK TO COMPLY WITH OTHER AND CITY ORDINANCES.

13. CONTRACTOR WILL BE RESPONSIBLE FOR LOCATING PRIVATE IRRIGATION PRIOR TO EXCAVATION. CONTRACTOR WILL REPAIR OR REROUTE IRRIGATION IN ROW AS NECESSARY.

14. THE CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE AND REPLACE AT THEIR COST ANY AND ALL DAMAGED PAVEMENT, SIDEWALK, CURB AND GUTTER OUTSIDE THE RIGHT-OF-WAY DAMAGE DUE TO THEIR ACTIVITIES ON THE PROJECT. THIS INCLUDES, BUT IS NOT LIMITED TO THE REMOVAL AND REPLACEMENT OF DAMAGED PAVEMENT, CURB AND GUTTER, SIDEWALK, ETC. ALL SAW CUTS USED FOR THE REMOVAL OF THESE ITEMS SHALL BE PERPENDICULAR AND PARALLEL TO THE CENTERLINE CONTROLLING THAT ITEM, OR AT THE DISCRETION OF THE CITY INSPECTOR.

15. THE VAULTS INSTALLED IN CONJUNCTION WITH THE ANTENNA NODES SHALL BE FULFILL WITH THE DRAWING.

ABBREVIATIONS AND SYMBOLS

A/C	ADJUSTABLE
A/D	ADJUSTABLE
AFF	ADJUSTABLE
AMB	AMERICAN WIRE GAUGE
APPROX	APPROXIMATELY
AWG	AMERICAN WIRE GAUGE
B/C	INTERNATIONAL BUILDING CODE
IC	INCH
IN	INCH
INFC	INFORMATION
INT	INTERIOR
LB/S	POUNDS
LF	LINEAR FEET
LX	LINEAR
CONC	CONCRETE
CONSTR	CONSTRUCTION
CONT	CONTINUOUS
COMP	COMPANY
DBL	DOUBLE
DIAM	DIAMETER
DM	DIMENSION
DN	DOWN
DTL	DETAIL
DWG	DRAWING
E	EAST
EA	EACH
EL	ELEVATION
ELECT	ELECTRICAL
EPB	ELECTRICAL PULL BOX
EQ	EQUIPMENT
EW	EACH WAY
EX	EXISTING
EXT	EXTENSION
FN	FRESH
FLOOR	FLOOR
FT	FOOT FEET
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GLB	GLUE LAMINATED BEAM
GRDNG	GRADING
GWB	GYPSUM WALL BOARD



ABBREVIATIONS AND SYMBOLS SCALE: NTB 20

ABBREVIATIONS AND SYMBOLS

ADJ	ADJUSTABLE
AFF	ADJUSTABLE
AMB	AMERICAN WIRE GAUGE
APPROX	APPROXIMATELY
AWG	AMERICAN WIRE GAUGE
B/C	INTERNATIONAL BUILDING CODE
IC	INCH
IN	INCH
INFC	INFORMATION
INT	INTERIOR
LB/S	POUNDS
LF	LINEAR FEET
LX	LINEAR
CONC	CONCRETE
CONSTR	CONSTRUCTION
CONT	CONTINUOUS
COMP	COMPANY
DBL	DOUBLE
DIAM	DIAMETER
DM	DIMENSION
DN	DOWN
DTL	DETAIL
DWG	DRAWING
E	EAST
EA	EACH
EL	ELEVATION
ELECT	ELECTRICAL
EPB	ELECTRICAL PULL BOX
EQ	EQUIPMENT
EW	EACH WAY
EX	EXISTING
EXT	EXTENSION
FN	FRESH
FLOOR	FLOOR
FT	FOOT FEET
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GLB	GLUE LAMINATED BEAM
GRDNG	GRADING
GWB	GYPSUM WALL BOARD

ABBREVIATIONS AND SYMBOLS

HORIZ	HORIZONTAL
HOUR	HOUR
HT	HEIGHT
HYVAC	HEATING, VENTING AND AIR CONDITIONING
IBC	INTERNATIONAL BUILDING CODE
IN	INCH
INFC	INFORMATION
INT	INTERIOR
LB/S	POUNDS
LF	LINEAR FEET
LX	LINEAR
CONC	CONCRETE
CONSTR	CONSTRUCTION
CONT	CONTINUOUS
COMP	COMPANY
DBL	DOUBLE
DIAM	DIAMETER
DM	DIMENSION
DN	DOWN
DTL	DETAIL
DWG	DRAWING
N	NORTH
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
ON	ON CENTER
OSD	OUTSIDE DIAMETER
OPEN	OPENING
OPPOSITE	OPPOSITE
PL	PROPERTY LINE
PLY	PLYWOOD
PAIR	PAIR
PROJ	PROJECT
PROP	PROPERTY
PREPARED	PRESSURE TREATED
RCP	REFLECTED CEILING PLAN
REQD	REQUIRED
RM	ROOM
RO	ROUGH OPENING
ROW	RIGHT-OF-WAY
RX	RECEIVE SIGNAL



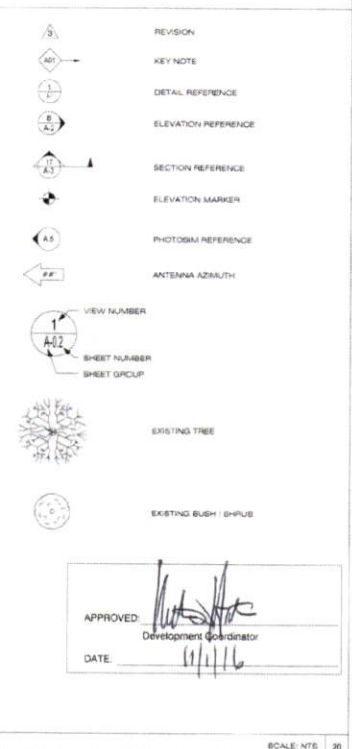
ABBREVIATIONS AND SYMBOLS SCALE: NTB 20

ABBREVIATIONS AND SYMBOLS

HORIZ	HORIZONTAL
HOUR	HOUR
HT	HEIGHT
HYVAC	HEATING, VENTING AND AIR CONDITIONING
IBC	INTERNATIONAL BUILDING CODE
IN	INCH
INFC	INFORMATION
INT	INTERIOR
LB/S	POUNDS
LF	LINEAR FEET
LX	LINEAR
CONC	CONCRETE
CONSTR	CONSTRUCTION
CONT	CONTINUOUS
COMP	COMPANY
DBL	DOUBLE
DIAM	DIAMETER
DM	DIMENSION
DN	DOWN
DTL	DETAIL
DWG	DRAWING
N	NORTH
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
ON	ON CENTER
OSD	OUTSIDE DIAMETER
OPEN	OPENING
OPPOSITE	OPPOSITE
PL	PROPERTY LINE
PLY	PLYWOOD
PAIR	PAIR
PROJ	PROJECT
PROP	PROPERTY
PREPARED	PRESSURE TREATED
RCP	REFLECTED CEILING PLAN
REQD	REQUIRED
RM	ROOM
RO	ROUGH OPENING
ROW	RIGHT-OF-WAY
RX	RECEIVE SIGNAL

ABBREVIATIONS AND SYMBOLS

S	SCHEDULE
SCHED	SCHEDULE
SF	SQUARE FEET
SHR	SHRIMP
SMA	SMALLER
SPEC	SPECIFICATION
SQ	SQUARE
SS	SANITARY SEWER
ST	STRUCTURAL
STRUC	STRUCTURAL
SUSP	SUSPENDED
SY	SQUARE YARD
THRU	THROUGH
THRU	THROUGH
T.D.	TOP OF
TOP	TOP OF
TOB	TOP OF BLOCK
TOC	TOP OF CONCRETE
TOM	TOP OF MASONRY
TE	TUBE STEEL
TX	TRANSMIT SIGNAL
TYR	TYPICAL
UL	UNDERGROUND
UL	UNDERWRITER LAB
URH	UNIVERSAL RADIO HEAD
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VF	VERIFY IN FIELD
VT	VERTICAL
W	WEST
W	WITH
WDW	WINDOW
W/O	WITHOUT
W/P	WORKING POINT
WTR	WATER



ABBREVIATIONS AND SYMBOLS SCALE: NTB 20



CROWN CASTLE
 500 E. JOHN GARRETT Pkwy
 SUITE 300
 IRVING, TX 75062

RECORD DRAWING ISSUE DATE: 10/16/16



Shift Companies, LLC
 733 E. HAVIS WETA ROAD
 SCOTTSDALE, ARIZONA 85257
 PH: 480.344.0005
 FAX: 480.344.0003

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RELEASE	
DATE	SUBMITTAL
6/23/16	1st CITY SUBMITTAL
10/16/16	2nd CITY SUBMITTAL

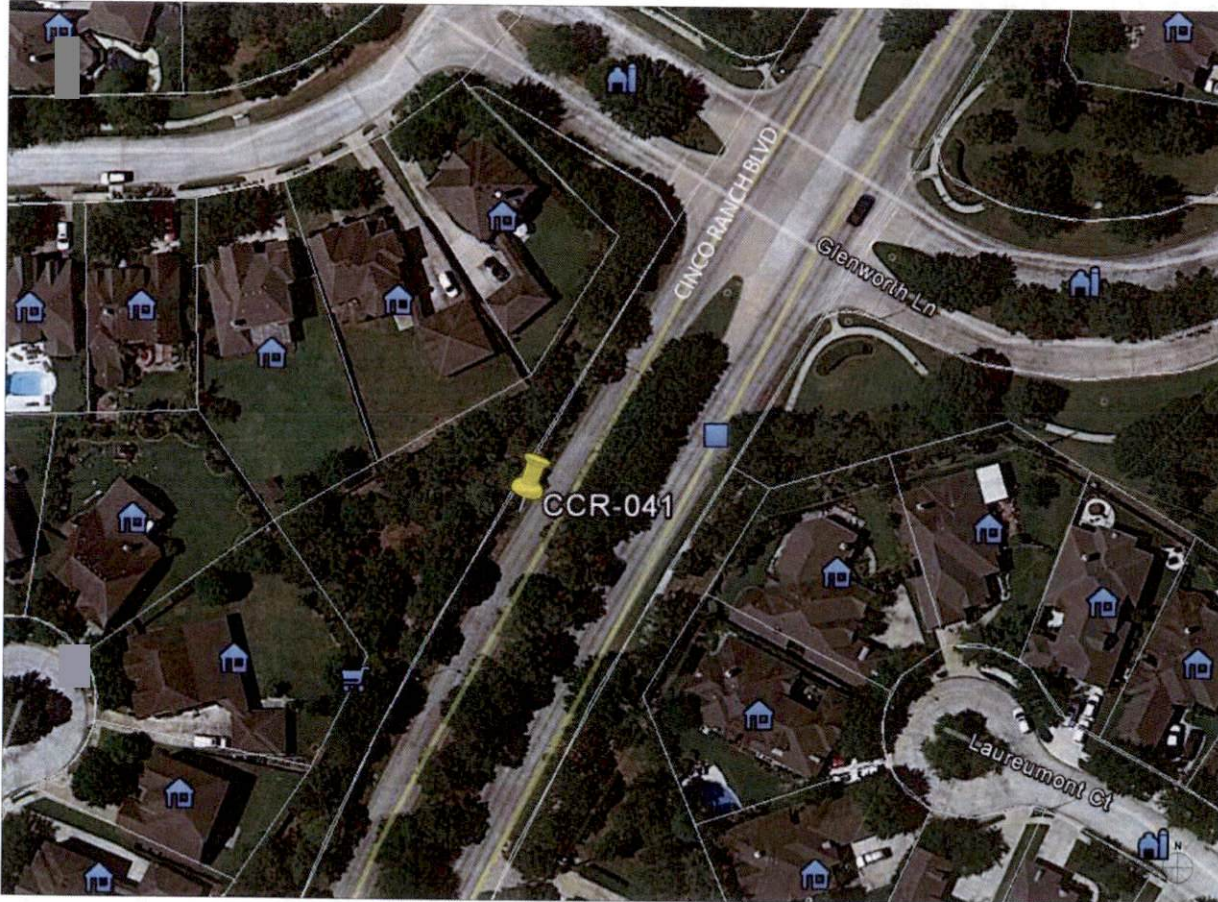
REVISIONS		
NO.	DATE	COMMENT
1	10/16/16	CITY COMMENTS

PROJECT NAME
CINCO RANCH EXPANSION

HUB AREA	
CINCO RANCH - HGCW	
SHIFT JOB NUMBER	IN HOUSE
150802	
SHEET TITLE	
GENERAL NOTES	
ABBREVIATIONS AND SYMBOLS	
SHEET NUMBER	PAGE
11.2	2 OF 14
PLOT SCALE	1:16 24X36; 1:2 @ 11X17

APPROVED: [Signature]
 Development Coordinator

DATE: 11/1/16



NODE AERIAL PLAN

SUBJECT POLE: CCR-41

GPS COORDINATES:

LAT: 29.72645

LONG: -95.76201

POLE TYPE: METAL SMLINE 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
800 E. JOHN CARRETER Fwy.
SUITE 300
IRVING, TX 75060

RECORD DRAWING ISSUE DATE: 10/16/16



Shift Companies, LLC
1731 E. ROSE BLDG 400E
HEATSEAL, MISSOURI 63027
PH: 480.244.4823
MO: 480.244.4343

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RELEASE	
DATE	SUBMITTAL
9/16/16	1ST CITY SUBMITTAL
10/18/16	2ND CITY SUBMITTAL

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

PROJECT NAME
CINCO RANCH EXPANSION

NODE ADDRESS
NODE #: CCR-41

CINCO RANCH BL. & GLENWORTH LN

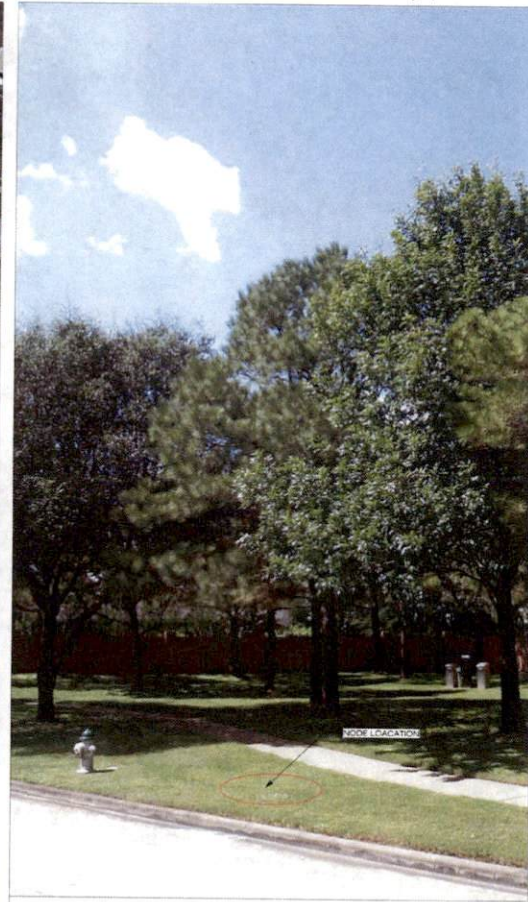
HUB AREA
CINCO RANCH - HGCW

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

SHEET TITLE
AERIAL

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

FLUT SCALE: 1:1 @ 24"X36"; 1:2 @ 11"X17"



SITE PHOTO (EXISTING)

N.T.S.

KEYNOTE	KEYNOTE LEGEND DESCRIPTION	DETAIL
A01	PROPOSED CROWN CASTLE OMR# ANTENNA	18D1.1
A02	PROPOSED CROWN CASTLE 2" U.G. CONDUIT (APPROXIMATE LOCATION, F.Y.)	3E1.1
A03	PROPOSED CROWN CASTLE MATEO RADIO UNIT INSIDE EQUIPMENT CABINET	18D1.1
A04	PROPOSED NEW METAL SKULINE POLE	3D01.1
A05	PROPOSED CROWN CASTLE UNDERGROUND CONC. FIBER UNITS	3D1.2
A06	PROPOSED CROWN CASTLE NODE IDENTIFICATION SIGNAGE	3D01.3
A07	PROPOSED CROWN CASTLE EQUIPMENT CABINET	18D1.1
A08	PROPOSED CROWN CASTLE PIER FOUNDATION	18D1.1
A09	PROPOSED ELECTRICAL HAND HOLE	

KEYNOTE	KEYNOTE LEGEND DESCRIPTION	DETAIL
U01	PROPOSED 2" CROWN CASTLE U.G. POWER CONDUIT (APPROXIMATE LOCATION, F.Y.)	3D1.1 & 6D1.2
U02	PROPOSED CROWN CASTLE 2" U.G. FIBER CONDUIT BY OTHERS (APPROXIMATE LOCATION, F.Y.)	2D1.1 & 6D1.2



NOTES:
 1. ANY DAMAGE TO EXISTING GUTTER, CURB, SEWALK 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 HARDSCAPES TO BE DISTURBED OR DESTROYED AS A RESULT OF CONSTRUCTION SHALL BE REPLACED WITH A LIKE SIZE AND SPECIE.
4. CONTRACTOR TO HAD 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.

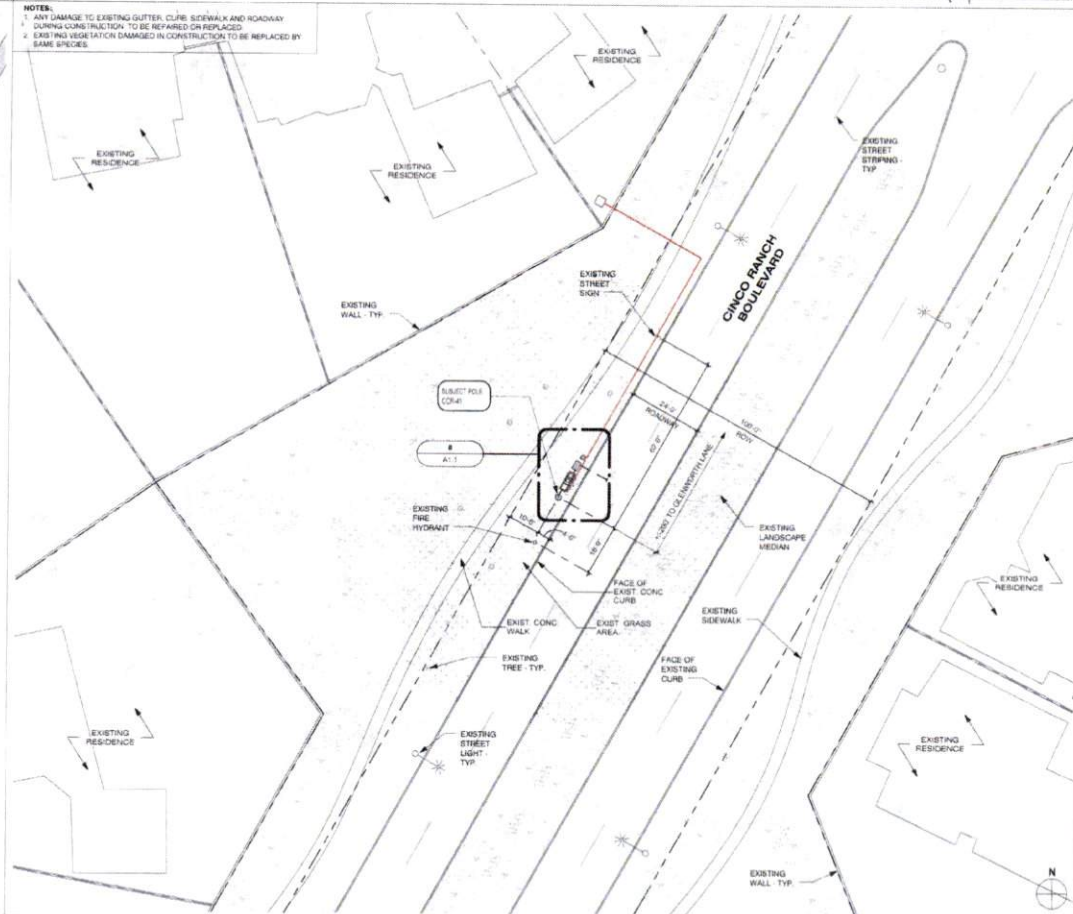
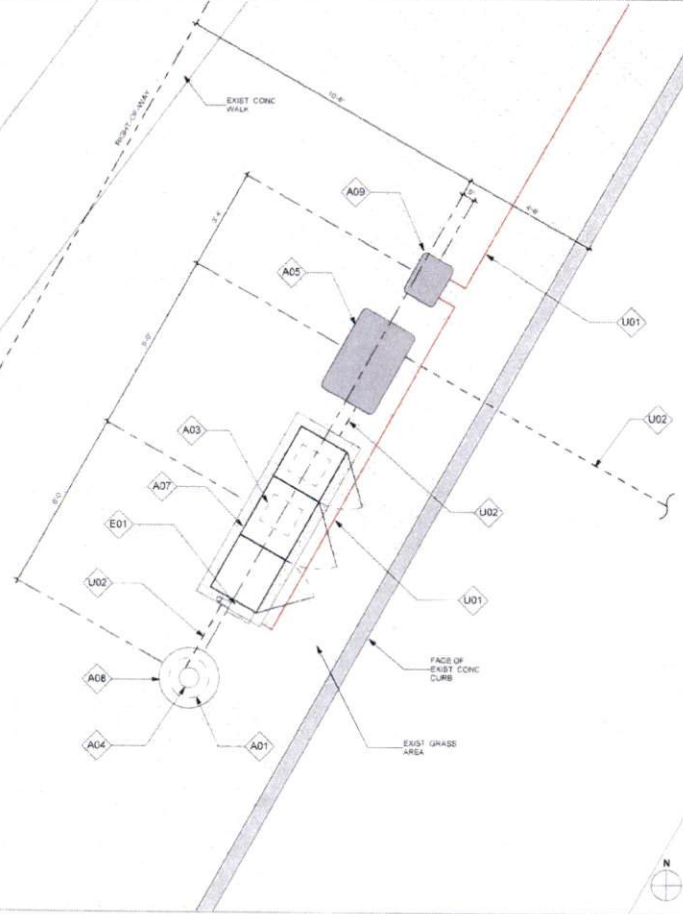
SUBJECT POLE: CCR-41
GPS COORDINATES:
LAT: 29.75641
LONG: -95.78451
POLE TYPE: METAL SKULINE POLE
POLE #:
UPPER ANTENNA RAD CENTER: 37' - 0" A.F.G.
LOWER ANTENNA RAD CENTER: 30' - 0" A.F.G.
SUBJECT POLE IS LOCATED IN: FORT BEND COUNTY R.O.W.
APPROVED: [Signature]
DATE: 11/16

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

RECORD DRAWINGS ISSUE DATE: 10.16.16

Shift Companies, LLC
 7337 HEARST AVE SUITE 600
 SOTTILE, ARIZONA 85117
 PH: 480.396.6807
 FAX: 480.394.1053

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RELEASE	
DATE	SUBMITTAL
5/3/16	1ST CITY SUBMITTAL
10/16/16	1RD CITY SUBMITTAL

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

PROJECT NAME: CINCO RANCH EXPANSION

NODE ADDRESS: CINCO RANCH BL. & GLENWORTH LN

HUB AREA: CINCO RANCH - HGCW

SHIFT JOB NUMBER: 150602

SHEET TITLE: SITE PLAN, EQUIPMENT AND ANTENNA PLAN

SHEET NUMBER: A1.1

PAGE: 5 OF 14

PLOT SCALE: 1/2" = 20'-0"

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	DESCRIPTION	DETAIL NUMBER
A01	PROPOSED CROWN CASTLE OMNI ANTENNA	18D1.1
A02	PROPOSED CROWN CASTLE 2" U.S. CONDUIT (APPROXIMATE LOCATION (F.V.))	2D1.1
A03	PROPOSED CROWN CASTLE REMOTE RADIO UNITS INSIDE EQUIPMENT CABINET	18D1.1
A04	PROPOSED NEW METAL SLIMLINE POLE	20D1.1
A05	PROPOSED CROWN CASTLE UNDERGROUND CONC. FIBER VAULT	5D1.2
A06	PROPOSED CROWN CASTLE NODE IDENTIFICATION SIGNAGE	20D1.2
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 AMPHENOL 2027126X127495
LENGTH 48"
WIDTH 14.6" DIA
DEPTH NA
WEIGHT 38.1 LBS

PROPOSED PANEL ANTENNA SPECS

PROPOSED POLE WIDTH = 8" B
PROPOSED POLE HEIGHT = 32' - 6"
(1' 4" ANTENNA AND 1" ANTENNA MOUNT)

POLE INFO

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



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

RECORD DRAWINGS ISSUE DATE: 10/18/16



Shift Companies, LLC
7311 NORTH KELLY ROAD
SCOTTSDALE, ARIZONA 85257
PH: 480.348.6000
FX: 480.348.6100

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RELEASE	DATE	SUBMITTAL
	5/23/16	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-41

CINCO RANCH BL. & GLENWORTH LN

HUB AREA

CINCO RANCH - HGCW

SHIFT JOB NUMBER 150602

IN HOUSE

DRAWN BY: RA

CHECKED BY: DM

SHEET TITLE

POLE ELEVATION, PROPOSED

SHEET NUMBER

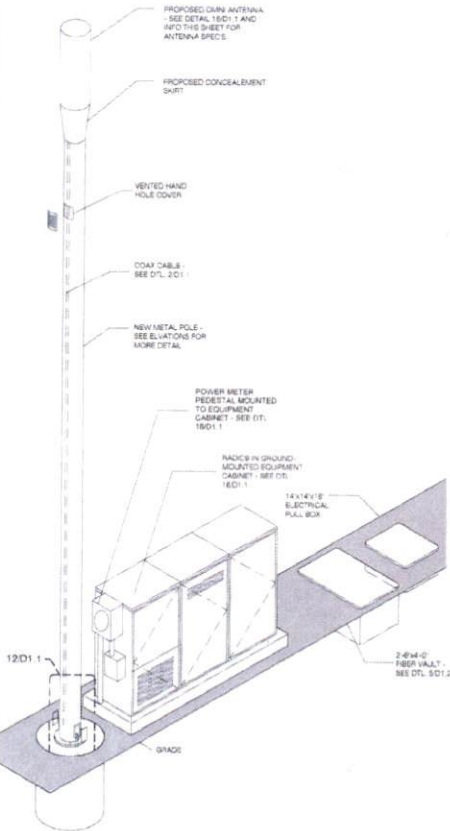
PAGE

A1.2 6 OF 14

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

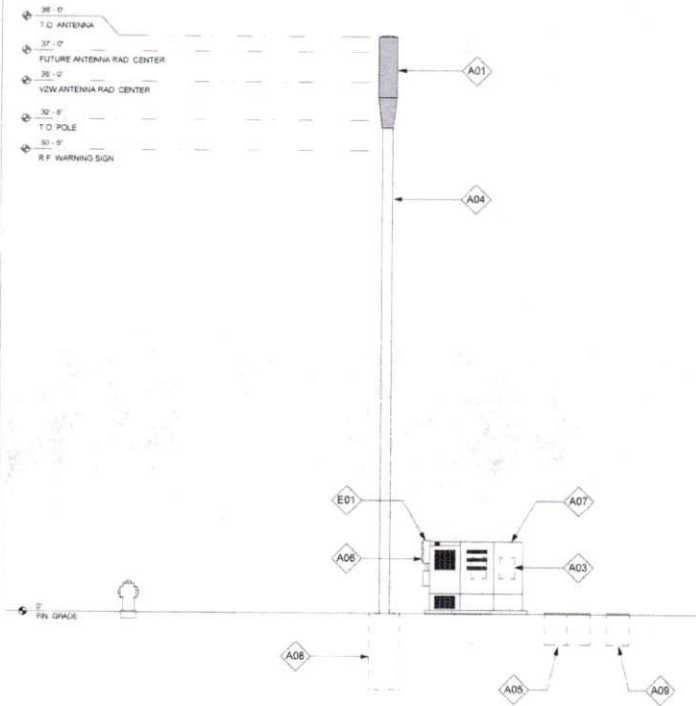
PLAN CHECK #

CASE #



METAL POLE ISOMETRIC

SCALE SCALE: N.T.S. 4

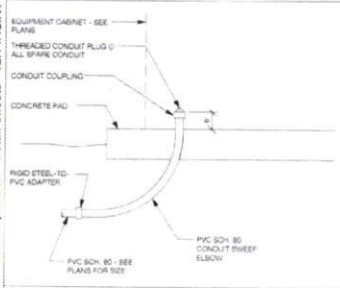


POLE ELEVATION (PROPOSED)

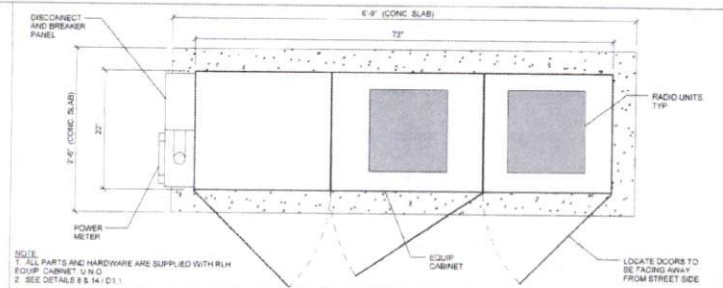
SCALE: 1/4" = 1'-0" 20

C:\Users\nebe_060\Documents\AAA - Crown Castle\Houston\Cinco Ranch Expansion\Sites\Cinco Ranch Expansion - Detail Sheets - 12.14.15.rvt

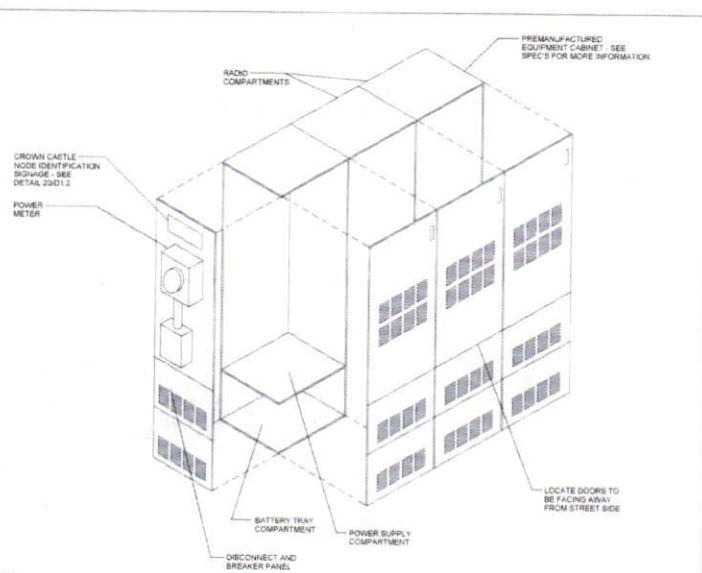
10/17/2016 2:28:55 PM



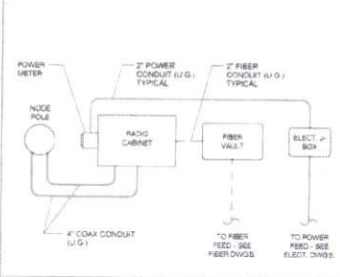
EQUIPMENT CABINET STUB UP DTL SCALE N.T.S. 1



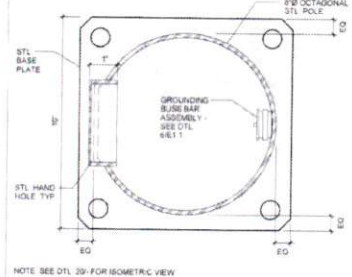
METER / BBU / RADIO EQUIPMENT CABINET PLAN SCALE N.T.S. 9



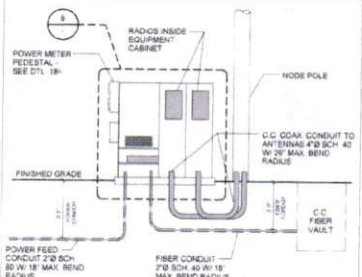
EQUIPMENT CABINET WITH METER ISOMETRIC SCALE N.T.S. 18



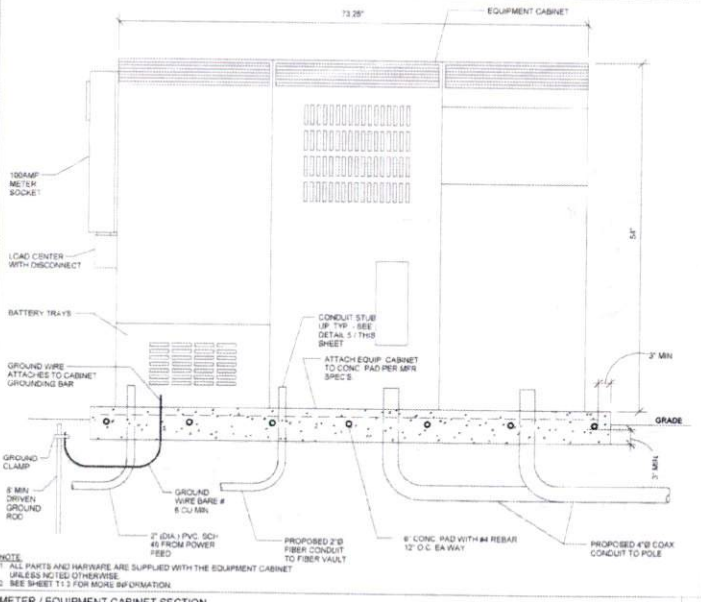
CONDUIT ROUTE SCALE N.T.S. 2



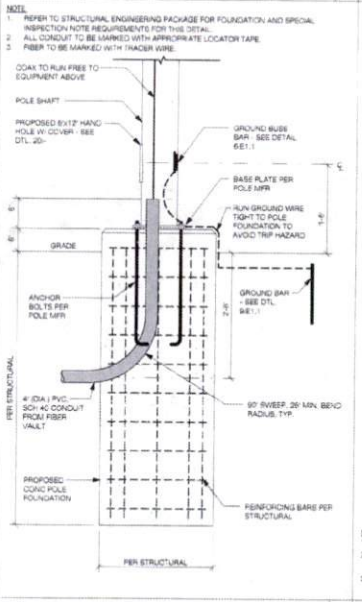
PLAN VIEW @ POLE SCALE N.T.S. 8



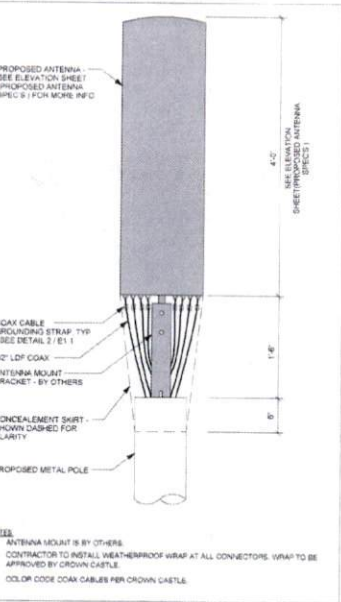
CONDUIT AND POWER RISER DIAGRAM SCALE N.T.S. 10



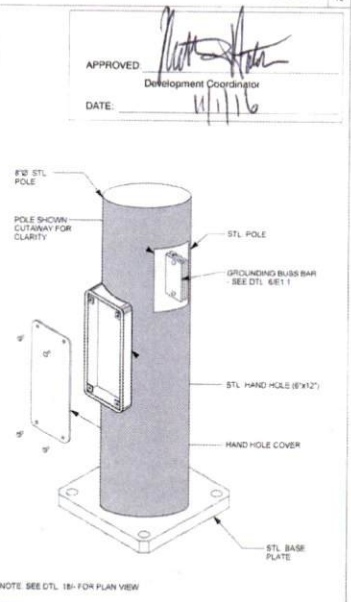
METER / EQUIPMENT CABINET SECTION SCALE N.T.S. 8



CONDUIT ROUTE AT POLE FOUNDATION SCALE 3/4" = 1'-0" 12



POLE DETAIL - ISOMETRIC - SLIMLINE POLE SCALE N.T.S. 16



POLE DETAIL - ISOMETRIC - SLIMLINE POLE SCALE N.T.S. 20



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

RECORD DRAWINGS ISSUE DATE: 10.18.16



Shift Companies, LLC
7331 N. HOUSTON ROAD
SCOTTSDALE, ARIZONA 85213
877-862-2400
WWW.SHIFT-CO.COM

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RELEASE	
DATE	SUBMITTAL
6.02.15	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
CINCO RANCH - HGCW

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

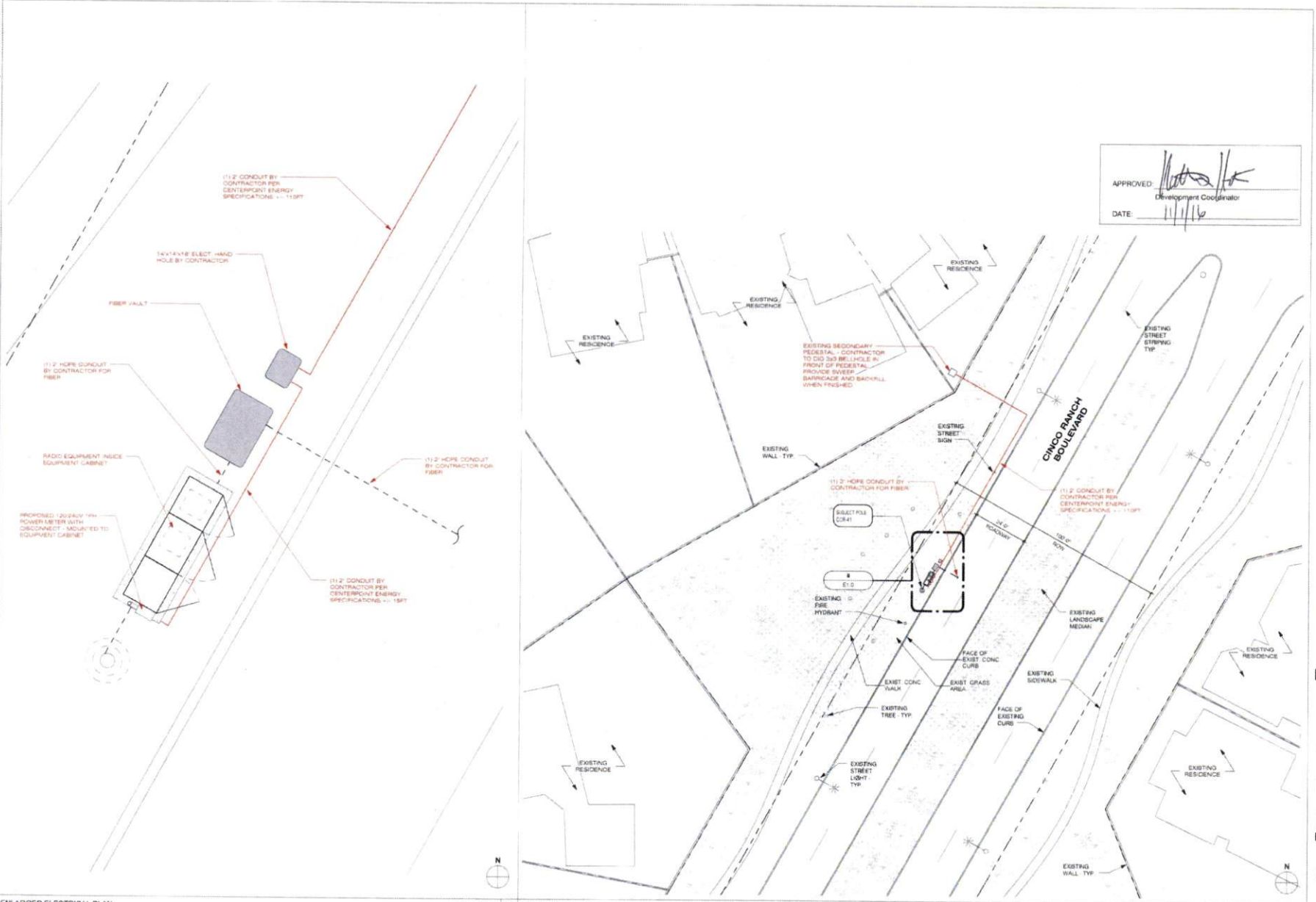
SHEET TITLE
CONSTRUCTION DETAILS

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

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

PLAN CHECK #

CASE #



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



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

RECORD DRAWINGS ISSUE DATE: 10/16/16



Shift Companies, LLC
 17311 E. WASTE WOOD ROAD
 SKOTTSVILLE, MISSOURI 63576
 816-469-2344

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

NO.	DATE	COMMENTS
10/16/16		CITY COMMENTS

PROJECT NAME: **CINCO RANCH EXPANSION**

NODE ADDRESS: **CINCO RANCH BL & GLENWORTH LN**

NODE #: CCR-41
CINCO RANCH BL & GLENWORTH LN

HUB AREA: **CINCO RANCH - HGCW**

SHIFT JOB NUMBER: **150802** IN HOUSE
 DRAWN BY: **JA** CHECKED BY: **DM**

SHEET TITLE: **ELECTRICAL PLANS**

SHEET NUMBER: **E1.0** PAGE: **9 OF 14**

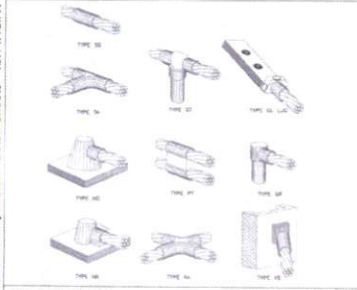
PLOT SCALE: 1:1 @ 24x36; 1:2 @ 11x17

ENLARGED ELECTRICAL PLAN

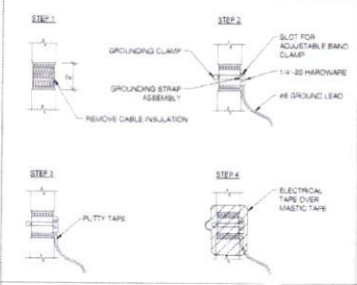
1/2" = 1'-0" 8 ELECTRICAL SITE PLAN

1" = 20'-0" 20

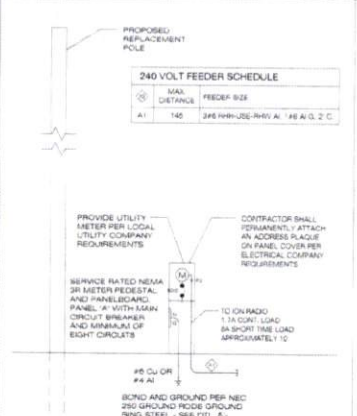
PLAN CHECK # CASE #



CADWELD DETAILS SCALE: NTS 1



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



NOTES:
 1. SEE 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 UP THE POLE AND CONNECT TO UTILITY COMPANY SECONDARY LINES WITH A 1/2" DROP 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 REMOTE MAIN PROTECTIVE DEVICE. A 1/2" ITR (20% OVER) EYESHIELD IS SPECIFIED.
 8. WHERE NECESSARY TO TERMINATE OVERSIZED CONDUCTORS, CONTRACTOR TO CONVERT CONDUCTORS TO PANEL LUG APPROVED SIZE USING AN NEC COMPLIANT CONNECTOR.

ONE-LINE DIAGRAM SCALE: NTS 4



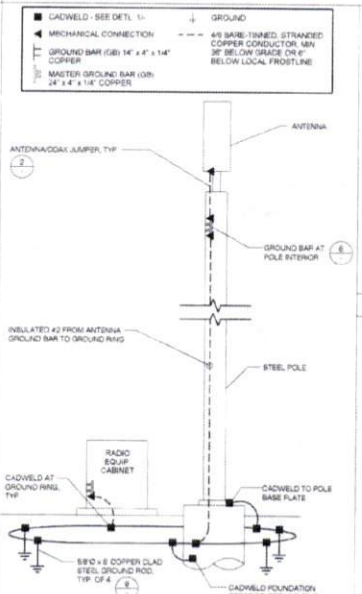
GROUND ROD DETAIL SCALE: NTS 9

PANEL A FED FROM TRANSFORMER NEMA 3P VOLTS 240/120/2P 3W BUS ALPS 60 HURTHAL 100% NO REFER TO FAULT CALC. MAIN BUS 80 LUGS STANDARD

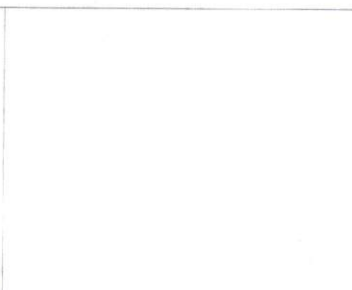
NO.	CB	CIRCUIT DESCRIPTION	KVA LOAD	A	B	NO.	CB	CIRCUIT DESCRIPTION	KVA LOAD	A	B
1	-	SPACE	0.00	2	201	1	-	RADIO EQUIPMENT	1.05	1	05
2	-	SPACE	0.00	4	201	2	-	RADIO EQUIPMENT	1.05	1	05
3	-	SPACE	0.00	6	201	3	-	SPARE	0.00		
4	-	SPACE	0.00	8	-			SPACE	0.00		
TOTAL CONNECTED KVA BY PHASE				1.05	1.05	TOTAL CONNECTED KVA BY PHASE				1.05	1.05
TOTAL CONNECTED AMPS BY PHASE				11.8	11.8	TOTAL CONNECTED AMPS BY PHASE				11.8	11.8
LIGHTING			0	0	125%	CONTINUOUS			0	0	125%
LARGEST MOTOR			0	0	125%	HEATING			0	0	125%
OTHER MOTORS			0	0	125%	NONCONTINUOUS			2.1	2.1	100%
RECEPTACLES			0			TOTAL KVA			2.82	2.82	

PER NEC (2.4.8.6)
 PROVIDE COMMON TRIP HANDLES FOR ALL MULTI-CIRCUIT CONDUIT RUNS

ELECTRICAL PANEL SCHEDULES SCALE: NTS 14



GROUNDING SCHEMATIC - METAL POLE SCALE: NTS 8



EQUIPMENT GROUNDING SCHEMATIC DTL SCALE: NTS 17

POWER FEEDER SCHEDULE

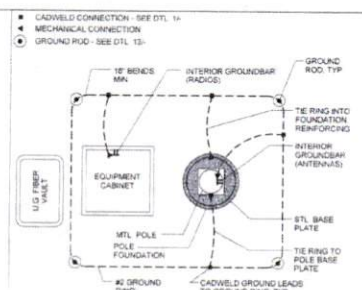
LENGTH	SIZE (AWG/KCMIL)	GROUND SIZE	CONDUIT SIZE
320	2	6	2"
390	1	4	2"
410	10	3	2"
550	20	3	2"
680	30	2	2"
800	45	1	2"
320	250	10	2-1/4"
1050	300	20	2-1/2"

FEEDER SCHEDULE SCALE: NTS 15

FAULT CURRENT CALCULATION

Fault Point	Panel	Source (Fault Point)	Source I (amps)	Conduit Type	Wire/Bus Size	C' value	E (volts)	L (length)	I	M	Isc	AC Rating
1	UTILITY XEMARFRY'S PEDESTAL	1	22000	240			240				22000	
2	Panel-A @ 20'	1	22000	NM	1 Set(s) of 2	3700	240	200	0.851	0.54	11884	22 000
3	Panel-A @ 100'	1	22000	NM	1 Set(s) of 2	3700	240	1000	2.256	0.19	4165	10 000
4	Panel-A @ 150'	1	22000	NM	1 Set(s) of 2	3700	240	1500	6.385	0.14	3979	10 000
5	Panel-A @ 200'	1	22000	NM	1 Set(s) of 2	3700	240	2000	8.513	0.11	2313	10 000

FAULT CURRENT CALCULATION SCALE: NTS 20



ELECTRICAL NOTES SCALE: NTS 18



APPROVED DATE: 11/11/16



RECORD DRAWINGS ISSUE DATE: 10/18/16



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RELEASE

DATE	SUBMITTAL
6/20/16	1ST CITY SUBMITTAL
10/18/16	2ND CITY SUBMITTAL

REVISIONS

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

PROJECT NAME
CINCO RANCH EXPANSION

HUB AREA
CINCO RANCH - HGCW

SHIFT JOB NUMBER
150602

SHIFT TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E1.1

PAGE
10 OF 14

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

SHIFT

November 28, 2016

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

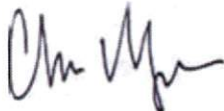
**RE: Cinco Ranch Traffic Control Plan
- Shift Project #160614**

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