



**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: 2016-10741

Applicant: Crown Castle NG Central LLC/Shift Companies

Job Location Site: 2425 1/2 Commercial Center 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. Aj*
for County Engineer

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

By: N/A
Drainage District Engineer/Manager

Clerk of Commissioners Court
By: *Aminda 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@fortbendcountytx.gov

- Right of Way Permit**
 Commercial Driveway Permit

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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: 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

12/6/14

Date

SHIFT

November 28, 2016

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

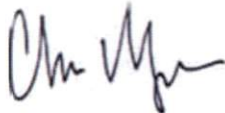
**RE: Cinco Ranch Traffic Control Plan
- Shift Project #160614**

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 & COMMERCIAL CENTER BLVD
PROJECT TYPE: METAL SLIMLINE POLE
HUB AREA: CINCO RANCH - HGCW
NODE #(s): **CCR-50**
COORDINATES: LAT: 29.742921, LONG: -95.777373

PROJECT TEAM	
ARCHITECT	OWNER INFO
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.CAMP@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: 972.423.9060 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: 281.533.7500 CONTACT: JOHNNY ORTEGA	PLUMBING REQUIREMENTS: FACILITY HAS NO PLUMBING.
HANDICAPPED REQUIREMENTS: -FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. -HANDICAPPED ACCESS REQUIREMENTS ARE NOT REQUIRED.	POWER COMPANY: CENTERPOINT ENERGY 5431 HIGHWAY BLVD KATY, TX 77494 PH: 281.550.8275 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.

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



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FORT BEND COUNTY ENGINEER
 ENGINEER: *Paul J. Stangle, PE, P706*
 For Richard W. Stokes, P.E.
 DATE: 11/11/16
 THESE SIGNATURES ARE VOID IF CONSTRUCTION HAS NOT COMMENCED IN (1) YEAR FROM DATE OF APPROVAL.
 APPROVED: *[Signature]*
 Developer's Coordinator
 DATE: 11/11/16

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 Fwy
 SUITE 300
 IRVING, TX 75062

RECORD DRAWING ISSUE DATE: 10/18/16



Shift Companies, LLC
 72211 HWY 281 ROAD
 SCOTTSDALE, ARIZONA 85257
 PH: 480.264.0829
 FAX: 480.264.0832

RELEASE	
DATE	SUBMITTAL
6/03/16	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
 NODE #CCR-50
 CINCO RANCH BLVD & COMMERCIAL CENTER BLVD

HUB AREA
 CINCO RANCH - HGCW

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

SHEET TITLE
 TITLE SHEET

SHEET NUMBER	PAGE
T1.1	1 OF 14

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

HART 2 - EXECUTION

31. EXECUTION

A. Provide (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 wire. Bare ground shall be prepared by a PVC U channel to the top of the pole and stapled every 24" with stainless-steel galvanized staples. Bare ground shall be installed in a trench and may be a 4" x 6" x 1/2" galvanized steel channel or a 4" x 6" x 1/2" galvanized steel bar. Bare ground shall be installed in a trench and may be a 4" x 6" x 1/2" galvanized steel channel or a 4" x 6" x 1/2" galvanized steel bar. Bare ground shall be installed in a trench and may be a 4" x 6" x 1/2" galvanized steel channel or a 4" x 6" x 1/2" galvanized steel bar.

B. Ground rod shall be installed per IEEE code with spacing to depth and distance from wood poles.

C. Ground rod shall be buried 10' minimum of 1" before grade.

D. # 2 ground shall be attached directly to the ground bus bar (TMGB) mounted to the face of the utility pole. Method of contact shall be 2" hole drilled into the main ground bus (TMGB) on the top or top edge depending on the orientation of the TMGB.

E. Main ground vertical shall be attached directly to the ground bus bar (TMGB) mounted to the face of the utility pole. Method of contact shall be 2" hole drilled into the main ground bus (TMGB) on the top or top edge depending on the orientation of the TMGB.

F. Main ground vertical shall be attached directly to the Antenna Mounting Bracket shall be attached directly to the Antenna Bracket via a self-tapping bolt or screw. A washer must be added to the top flange or screw to avoid damage to the lug while maintaining a secure bond.

G. TMGB shall be mounted above the Cradle, cabinet below the RFU assembly, directly to the wood pole structure.

H. All cable mounted devices, including but not limited to: antenna mounts and antennas, mounting brackets, cabinets shall be connected to the TMGB with a #6 copper braided steel (1/8" outer diameter and green in color).

I. All cable mounted devices, including but not limited to: antenna mounts and antennas, mounting brackets, cabinets shall be connected to the TMGB using compression type, 3/16" compression nuts.

J. Connector lugs must attach to the bus bar with two holes facing up and out with the bolt heads are on the back side of the bus bar.

K. Backing of connector lugs is prohibited.

L. Placement of connector lugs on front and rear face of grounding bar is permitted.

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

N. Connector lugs must be placed with even spacing and must not come in contact with other connector lugs.

O. Banded side of the connector lug should be placed on the banded side of the bus bar.

P. All connector lugs shall have MC-OK compression per lug.

Q. All connector lugs must have MC-OK applied to any sides which contact another metal to insure oxidation including and especially the conductor in the compression and.

R. All connector lugs must be properly sealed from weather with lead shrink.

S. All connector lugs must be attached using a 2" x 1/2" hex screw x 1/2" per inch lug and in the following manner:

1. Flat Washer on the backside of the lug

2. Bolt thru the lug from behind

3. Flat Washer on the front side of the lug

4. Lock Washer on the front side of the lug

5. Nut on the front, locked to three threads showing at maximum torque

T. All nuts on connector lugs must be tightened so that the lock washers are completely compressed.

U. No mechanical connections are acceptable except at the level of replacement being a single part and the product from the factory. - Check cabinet if a ground lug on each side of the cabinet.

V. Excess wires on cabinets must be ground off to a safe level.

W. All lead wires must be coated with Zinc or tin product to prevent oxidation.

X. All exposed metallic surfaces must be sprayed with a protective coating such as Zinc.

Y. All things exposed to environment must be sealed with shrink wrap.

Z. Exposed "aircraft" conductors use galvanized steel in excess of 1/16th of an inch.

32. TESTING AND DOCUMENTATION

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 test until 5 Ohms is achieved.

B. Photos of the tests are required as well as test results in formal document format. Submit result of test to CC Construction Manager prior to final walkthrough. Submit all photos and tests with closeout package per Section 017700 - Closeout Procedures and Required Documents.

33. DOCUMENTATION

A. Photos of the tests are required as well as test results in formal document format. Submit result of test to CC Construction Manager prior to final walkthrough. Submit all photos and tests with closeout package per Section 017700 - Closeout Procedures and Required Documents.

GROUNDING SPECIFICATIONS SCALE: NTS 6

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

2. CONTRACTOR SHALL NOTIFY FORT BEND COUNTY ENGINEERS DEPARTMENT 48 HOURS PRIOR TO COMMENCING CONSTRUCTION AND 48 HOURS NOTICE TO ANY CONSTRUCTION ACTIVITY WITHIN THE LIMITS OF THE DRAWING 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 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.

5. ALL ROAD WIDTHS, CURB RADIUS AND CURB ALIGNMENT SHOWN INDICATED BACK OF CURB.

6. A CONTINUOUS LONGITUDINAL REINFORCING BARS SHALL BE USED IN THE CURBS.

7. ALL CONCRETE PAVEMENT SHALL BE 6" 1/2" 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 60 FEET.

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

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.

10. AT ALL INTERSECTION LOCATIONS, TYPE "B" RAMPS SHALL BE PLACED IN ACCORDANCE WITH TxDOT HD-138 B STANDARD DETAIL SHEET "A" (A.1 - HANDBOOK RAMPS SHALL BE INSTALLED WITH STREET PAVING) AND COMPLY WITH CURRENT A.D.A. REGULATIONS.

11. CURB HEADERS ARE REQUIRED AT CURB CONNECTIONS TO HANDBOOK RAMPS, WITH NO CONNECTION JOINT WITHIN 5' OF RAMPS.

12. ALL INTERSECTIONS UTILIZING TRAFFIC CONTROL MEASURES SHALL HAVE A.D.A. WHEEL CHAIR RAMPS 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, SIGNS, STRIPS AND WARNING DEVICES, ETC. DURING CONSTRUCTION - BOTH DAY AND NIGHT.

14. ALL STOP SIGNS SHALL BE 30"x30" WITH DIAMOND GRADE SHEETING PER TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

15. STREET NAME SIGNS SHALL BE ON A 9" x 9" SIGN PLAT BLADE VULCANITE GREEN BACKGROUND. STREET NAMES SHALL BE UPPER AND LOWERCASE LETTERING WITH UPPERCASE LETTERS OF 8" MINIMUM AND LOWERCASE LETTERS OF 4.5" MINIMUM. THE LETTERS SHALL BE REFLECTIVE WHITE. STREET NAME SIGNS SHALL BE MOUNTED 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 ON THE SAME SIDE AS THE HYDRANT.

NOTE: FORT BEND COUNTY NOTES APPLY TO 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 HIS OBLIGATIONS HEREUNDER. NEITHER FAILURE TO INSPECT NOR FAILURE TO DISCOVER OR RECTIFY 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 IMPLY AN ACCEPTANCE OF SUCH WORK OR TO RELIEVE THE CONTRACTOR OF ANY OF HIS OBLIGATIONS HEREUNDER.

GENERAL PROJECT NOTES SCALE: NTS 10

CREW MUST HAVE ONE ALC CERTIFIED PERSON - PERSONNEL WORKING/INSTALLING THE NODE CABINET MUST HAVE THE ALL 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" 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 ALCATEL LUCENT AUDIT - CERTIFIED PERSONNEL HAVE ACCESS TO REMOVE TECHNICAL SUPPORT FOR ISSUES RELATED TO METRO CELL INSTALLATION. (866.955.3888) (866.LUCENT) - THE FOLLOWING PRODUCTS ARE COVERED: 3069 METRO CELL INDOOR, 3094 METRO CELL OUTDOOR, 3168 METRO RADIO OUTDOOR V1.0, AND THE 7310 CABINET.

ALL CERTIFIED TECH NOTE SCALE: NTS 11

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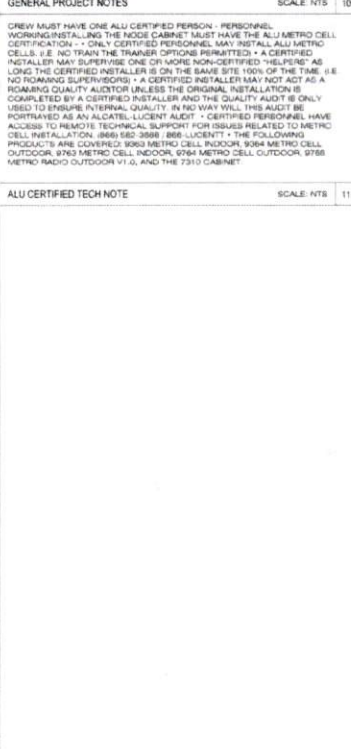
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ABBREVIATIONS AND SYMBOLS SCALE: NTS 20

- RIGHT-OF-WAY USE PERMIT SHALL BE OBTAINED BY CONTRACTOR PRIOR TO COMMENCING WORK.
- A UTILITY LOCATE IS REQUIRED FOR ALL PROJECTS.
- CROSSING OF EXISTING UTILITIES SHALL BE COORDINATED BY CONTRACTOR.
- ALL WORK TO BE CONDUCTED IN CITY RIGHT OF WAY, U.N.O.
- ALL DISTURBED LANDSCAPING SHALL BE REPLACED TO SIMILAR EXISTING CONDITION.
- ALL SURFACE REPAIR SHALL BE TO CITY SPECIFICATIONS.
- ANY SIDEWALK CLOSURE SHALL BE COORDINATED WITH THE CITY AND PROPER SIGNAGE WILL BE PLACED.
- TEMPORARY LIGHTING WILL BE COORDINATED WITH CITY AND PROVIDED WHENEVER EXISTING LIGHTING IS REMOVED OR UNAVAILABLE AS REQUIRED.
- NO MATERIALS OR EQUIPMENT SHALL BE STORED ON PRIVATE PROPERTY OR BLOCK ACCESS TO PRIVATE PROPERTY.
- OPEN EXCAVATIONS SHALL BE PROPERLY GUARDED AND SIGNED. NO OPEN EXCAVATIONS WILL BE LEFT ACCESSIBLE TO THE PUBLIC.
- CLEANUP OF THE WORK AREA WILL BE COMPLETED EACH EVENING AND THE PROJECT AREA WILL BE RETURNED TO EXISTING CONDITION AT THE COMPLETION OF CONSTRUCTION AT EACH NODE LOCATION.
- ALL WORK TO COMPLY WITH OSHA AND CITY GUIDELINES.
- CONTRACTOR WILL BE RESPONSIBLE FOR LOCATING PRIVATE IRRIGATION PRIOR TO EXCAVATION. CONTRACTOR WILL REPAIR OR REROUTE IRRIGATION IN ROW AS NECESSARY.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE AND REPLACE, AT THEIR COST, ANY AND ALL DAMAGED PAVEMENT, SIDEWALK, CURB AND PROJECT OUTSIDE THE PAY LIMIT, DAMAGE DUE TO THEIR ACTIVITIES ON THE PROJECT. THIS INCLUDES, BUT IS NOT LIMITED TO THE REMOVAL AND REPLACEMENT OF NEWLY CRACKED, THE REMOVAL AND REPLACEMENT OF EXISTING CRACKS WHERE THE CRACKS HAVE BEEN ENLARGED DUE TO THE CONTRACTORS OPERATIONS, THE REMOVAL AND REPLACEMENT OF DEFORCEMENT 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.
- THE VAULTS INSTALLED IN CONJUNCTION WITH THE INDIVIDUAL ANTENNA NODES SHALL BE FLUSH WITH THE GROUND.

AC	AIR CONDITIONING	HORIZ	HORIZONTAL	E	SOUTH
ADJ	ADJUSTABLE	HR	HOUR	SCHED	SCHEDULE
AF	ABOVE FINISH FLOOR	HT	HEIGHT	SF	SQUARE FEET
AMSL	ABOVE MEAN SEA LEVEL	HVAC	HEATING, VENTING AND AIR CONDITIONING	SH	SHIELD
APPROX	APPROXIMATELY			SHL	SHALL
AWG	AMERICAN WIRE GAUGE			SPRT	SPECIFICATION
		BD	INTERNATIONAL BUILDING CODE	SQ	SQUARE
BW	BARE COPPER WIRE BUILDING	ID	INSIDE DIA	SS	SANITARY SEWER
BLO	BLOCK	IN	INCH	STL	STEEL
BLK	BLOCK	IN	INFORMATION	STRCT	STRUCTURAL
BS	BOTTOM OF BUILDING SLAB	INT	INTERIOR	SUBP	SUBPENDED
		BY		SYM	SYMBOL
CLG	CEILING	LB/SQ FT	POUNDS PER SQUARE FOOT	TRHU	THROUGH
CLR	CLEAR	LT	LINEAR FEET	TRND	TURNED
CONC	CONCRETE	MAX	MAXIMUM	T.O.	TOP OF
CONSTR	CONSTRUCTION	MECH	MECHANICAL	TOB	TOP OF BLOCK
CONT	CONTRACTOR COMPANY	MTL	METAL	TOC	TOP OF CONCRETE
CO		MFR	MANUFACTURER	TOM	TOP OF MASONRY
		MSR	MANAGER	TS	TUBE STEEL
DBL	DOUBLE	MIN	MINIMUM	TX	TRANSIT SIGNAL
DIA	DIAMETER	MISC	MISCELLANEOUS	TYP	TYPICAL
DN	DOWN	N	NORTH	UD	UNDERGROUND
DM	DIMENSION	NG	NOT APPLICABLE	URH	UNDERWRITERS LAB
DTL	DETAIL	NT	NOT IN CONTRACT	UND	UNIVERSAL RADIO HEAD UNLESS NOTED OTHERWISE
DWG	DRAWING	N/A	NOT TO SCALE		
E	EAST	OC	ON CENTER	VERT	VERTICAL
EACH	EACH	OD	OUTSIDE DIAMETER	VF	VERIFY IN FIELD
EL. ELEV	ELEVATION	OP	OPENING	VT	VERT. TILE
ELECT	ELECTRICAL	OPD	OPENING PROVIDED	W	WEST
ENG	ELECTRICAL PANEL BOX EQUAL	PL	PROPERTY LINE	W/O	WITHOUT
EQ	EQUAL	PLY	PLYWOOD	W/	WITH
EQUIP	EQUIPMENT	PAIR	PAIR	W/O	WITHOUT
EXT	EXTERNAL	PROJ	PROJECT	WP	WORKING POINT
		PROP	PROPERTY	WTR	WATER
FIN	FINISH	PT	PRESSURE TREATED		
FLOR	FLOURESCENT FLOOR	R	REQUIRED		
FLR	FLOOR	RM	ROOM		
FT	FOOT, FEET	ROOF	ROUGH OPENING		
		RS	RIGHT-OF-WAY		
GA	GALVE	RK	RECEIVE SIGNAL		
GALV	GALVANIZED				
GC	GENERAL CONTRACTOR				
GLB	GLUE LAMINATED BEAM				
GRND	GROUND				
GWB	GYPSONUM WALL BOARD				



-----	CENTER LINE	△	REVISION
-----	PROPERTY LINE	AD	KEY NOTE
-----	RIGHT-OF-WAY	B	DETAIL REFERENCE
-----	RISER	B-1	ELEVATION REFERENCE
-----	DAB	B-2	ELEVATION REFERENCE
-----	POWER	B-3	SECTION REFERENCE
-----	SANITARY SEWER	B-4	ELEVATION MARKER
-----	STORM DRAIN	AE	PHOTOGRAPH REFERENCE
-----	WATER	WF	ANTENNA AZIMUTH
-----	LIGHT CIRCUIT POWER	A-02	VIEW NUMBER
-----	OVERHEAD POWER LINE	A-02	SHEET NUMBER
			SHEET GROUP
			EXISTING TREE
			EXISTING BUSH / SHRUB

AC	AIR CONDITIONING	HORIZ	HORIZONTAL	E	SOUTH
ADJ	ADJUSTABLE	HR	HOUR	SCHED	SCHEDULE
AF	ABOVE FINISH FLOOR	HT	HEIGHT	SF	SQUARE FEET
AMSL	ABOVE MEAN SEA LEVEL	HVAC	HEATING, VENTING AND AIR CONDITIONING	SH	SHIELD
APPROX	APPROXIMATELY			SHL	SHALL
AWG	AMERICAN WIRE GAUGE			SPRT	SPECIFICATION
		BD	INTERNATIONAL BUILDING CODE	SQ	SQUARE
BW	BARE COPPER WIRE BUILDING	ID	INSIDE DIA	SS	SANITARY SEWER
BLO	BLOCK	IN	INCH	STL	STEEL
BLK	BLOCK	IN	INFORMATION	STRCT	STRUCTURAL
BS	BOTTOM OF BUILDING SLAB	INT	INTERIOR	SUBP	SUBPENDED
		BY		SYM	SYMBOL
CLG	CEILING	LB/SQ FT	POUNDS PER SQUARE FOOT	TRHU	THROUGH
CLR	CLEAR	LT	LINEAR FEET	TRND	TURNED
CONC	CONCRETE	MAX	MAXIMUM	T.O.	TOP OF
CONSTR	CONSTRUCTION	MECH	MECHANICAL	TOB	TOP OF BLOCK
CONT	CONTRACTOR COMPANY	MTL	METAL	TOC	TOP OF CONCRETE
CO		MFR	MANUFACTURER	TOM	TOP OF MASONRY
		MSR	MANAGER	TS	TUBE STEEL
DBL	DOUBLE	MIN	MINIMUM	TX	TRANSIT SIGNAL
DIA	DIAMETER	MISC	MISCELLANEOUS	TYP	TYPICAL
DN	DOWN	N	NORTH	UD	UNDERGROUND
DM	DIMENSION	NG	NOT APPLICABLE	URH	UNDERWRITERS LAB
DTL	DETAIL	NT	NOT IN CONTRACT	UND	UNIVERSAL RADIO HEAD UNLESS NOTED OTHERWISE
DWG	DRAWING	N/A	NOT TO SCALE		
E	EAST	OC	ON CENTER	VERT	VERTICAL
EACH	EACH	OD	OUTSIDE DIAMETER	VF	VERIFY IN FIELD
EL. ELEV	ELEVATION	OP	OPENING	VT	VERT. TILE
ELECT	ELECTRICAL	OPD	OPENING PROVIDED	W	WEST
ENG	ELECTRICAL PANEL BOX EQUAL	PL	PROPERTY LINE	W/O	WITHOUT
EQ	EQUAL	PLY	PLYWOOD	W/	WITH
EQUIP	EQUIPMENT	PAIR	PAIR	W/O	WITHOUT
EXT	EXTERNAL	PROJ	PROJECT	WP	WORKING POINT
		PROP	PROPERTY	WTR	WATER
FIN	FINISH	PT	PRESSURE TREATED		
FLOR	FLOURESCENT FLOOR	R	REQUIRED		
FLR	FLOOR	RM	ROOM		
FT	FOOT, FEET	ROOF	ROUGH OPENING		
		RS	RIGHT-OF-WAY		
GA	GALVE	RK	RECEIVE SIGNAL		
GALV	GALVANIZED				
GC	GENERAL CONTRACTOR				
GLB	GLUE LAMINATED BEAM				
GRND	GROUND				
GWB	GYPSONUM WALL BOARD				

REFLECTED CEILING PLAN REQUIRED ROOM ROUGH OPENING RIGHT-OF-WAY RECEIVE SIGNAL

VIEW NUMBER
A-02

SHEET NUMBER
SHEET GROUP

EXISTING TREE

EXISTING BUSH / SHRUB

APPROVED: [Signature]
Development Coordinator

DATE: [Blank]

RELEASE

DATE	SUBMITTAL
6-23-16	1ST CITY SUBMITTAL
10-16-16	2ND CITY SUBMITTAL

REVISION

NO.	DATE	COMMENT
	10-16-16	CITY COMMENTS

PROJECT NAME
CINCO RANCH EXPANSION

HUB AREA
CINCO RANCH - HGCW

SHIFT JOB NUMBER 150602 **IN HOUSE**

SHEET TITLE
GENERAL NOTES ABBREVIATIONS AND SYMBOLS

SHEET NUMBER T1.2 **PAGE** 2 OF 14

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

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

RECORD DRAWINGS ISSUE DATE: 10/16/16

SHIFT
Shift Companies, LLC
15211 W. HWY 100
SCOTTSDALE, ARIZONA 85257
(480) 350-8889
(480) 350-6633

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NODE AERIAL PLAN

SUBJECT POLE: CCR-50

GPS COORDINATES:

LAT: 28.74861


LONG: -95.77797

POLE TYPE: METAL SLIMLINE POLE

POLE C #:

UPPER ANTENNA RAD CENTER: 37 - 0' A.P.G.

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

APPROVED: 
Development Coordinator

DATE: 10/17/16



CROWN CASTLE
800 E JOHN CARPENTER FWY
SUITE 300
IRVING, TX 75060

RECORD DRAWING ISSUE DATE: 10/18/16



Shift Companies, LLC
15151 STATE HIGHWAY
KUTZTOWN, MISSOURI 65237
BY: 48128.RUEBE
ON: 08/25/16

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RELEASE	
DATE	SUBMITTAL
5/13/16	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
NODE #:CCR-50

CINCO RANCH BLVD & COMMERCIAL CENTER BLVD

HUB AREA
CINCO RANCH - HGCW

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

SHEET TITLE
AERIAL

SHEET NUMBER PAGE
A1.0 4 OF 14

PLOT SCALE: 1/8" @ 24'x30'; 1/2" @ 11'x17'



SITE PHOTO (EXISTING)

NTS

KEYNOTE	DESCRIPTION	DETAIL
A01	PROPOSED CROWN CASTLE 3MH ANTENNA	16(D)-1
A02	PROPOSED CROWN CASTLE 2" U.G. CONDUIT (APPROXIMATE LOCATION F.V.)	2(D)-1
A03	PROPOSED CROWN CASTLE REMOTE RADIO UNIT ROOF EQUIPMENT CABINET	18(D)-1
A04	PROPOSED NEW METAL SLABURE POLE	20(D)-1
A05	PROPOSED CROWN CASTLE UNDERGROUND CONC. FIBER VAULT	5(D)-2
A06	PROPOSED CROWN CASTLE NODE IDENTIFICATION SIGNAGE	20(D)-2
A07	PROPOSED CROWN CASTLE EQUIPMENT CABINET	18(D)-1
A08	PROPOSED CROWN CASTLE PIER FOUNDATION	12(D)-1
A09	PROPOSED ELECTRICAL HARD HOLE	

KEYNOTE	DESCRIPTION	DETAIL
ED1	PROPOSED POWER METER MOUNTED TO EQUIPMENT CABINET (DISTRIBUTED PANEL AND DISCONNECT)	18(D)-1
UD1	PROPOSED 2" CROWN CASTLE U.G. POWER CONDUIT (APPROXIMATE LOCATION F.V.)	2(D)-1 & 6(D)-2
UD2	PROPOSED CROWN CASTLE 2" U.G. FIBER CONDUIT BY OTHERS (APPROXIMATE LOCATION F.V.)	2(D)-1 & 6(D)-2



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

GENERAL NOTES

1. PAINT PROPOSED GROUND EQUIPMENT A NATURAL EARTH COLOR OR AS APPROVED BY CITY PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO FIELD LOCATE EXIST UNDERGROUND UTILITIES.
3. EX LANDSCAPE PLANTINGS AND DECORATIVE HANGESCAPES DISTURBED OR DESTROYED AS A RESULT OF CONSTRUCTION SHALL BE REPLACED WITH A LIKE SIZE AND SPECIES.
4. CONTRACTOR TO HARD 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 P.O.W. DATA.
7. EXIST. UTILITY LOCATIONS SHOWN ON PLANS ARE APPROXIMATE ONLY AND PROVIDED BY LOCAL UTILITIES.

SUBJECT POLE: CCR-50

GPS COORDINATES:

LAT: 29.74891

LONG: -98.77727

POLE TYPE: METAL SLABURE POLE

POLE ID #:

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

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

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

APPROVED: [Signature]
Development Coordinator

DATE: 11/1/16

CROWN CASTLE
 800 E. JOHN CARPENTER Fwy
 SUITE 300
 WYNGO, TX 77992

RECORD DRAWINGS (ISSUE DATE: 10/16/16)

Shift Companies, LLC
 7311 L. HEWER VISTA ROAD
 SCOTSDALE, ARIZONA 85117
 P. 480-949-8800
 TX: 409-384-0543

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RELEASE 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

NODE ADDRESS: CINCO RANCH BLVD & COMMERCIAL CENTER BLVD

HUB AREA: CINCO RANCH - HGCW

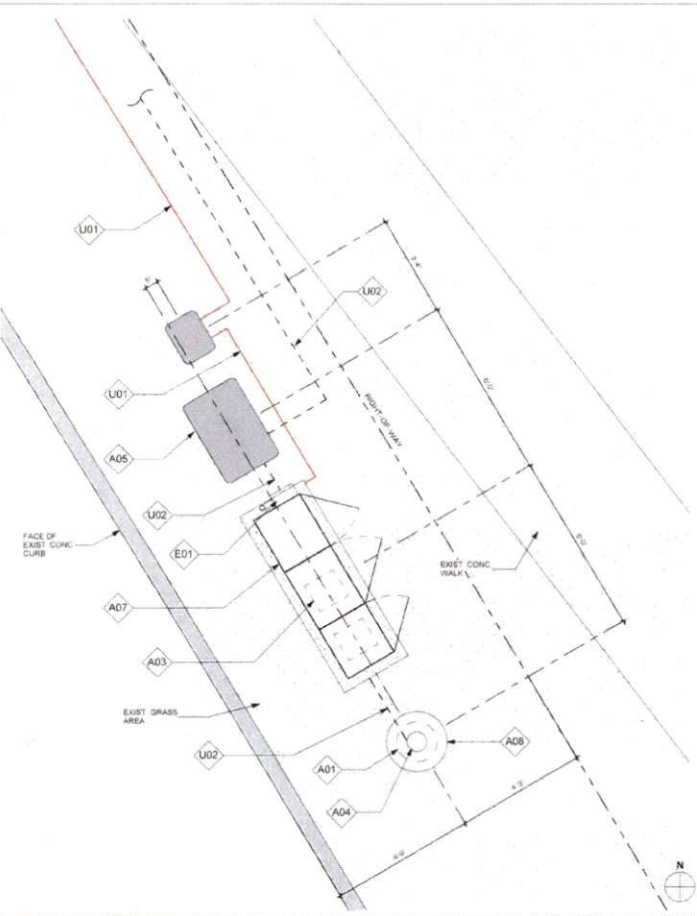
SHIFT JOB NUMBER: 150602

SHEET TITLE: SITE PLAN, EQUIPMENT AND ANTENNA PLAN

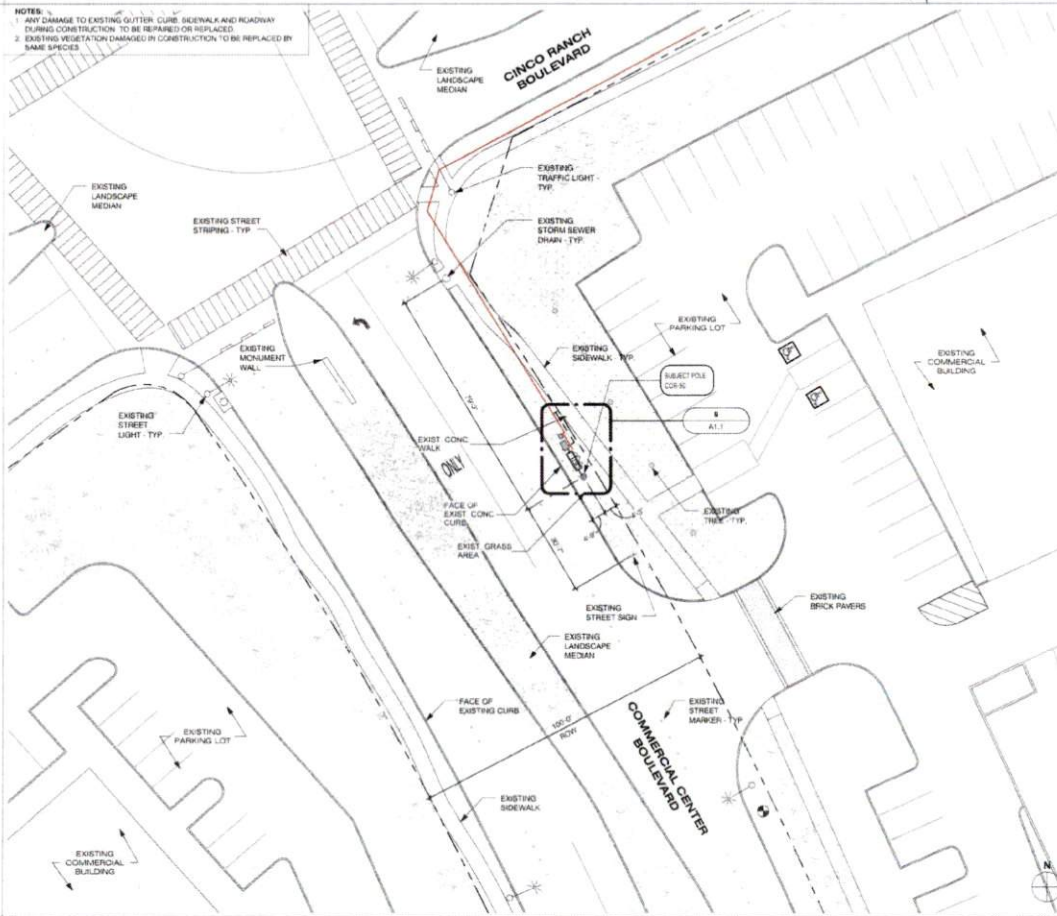
SHEET NUMBER: A1.1

PAGE: 5 OF 14

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

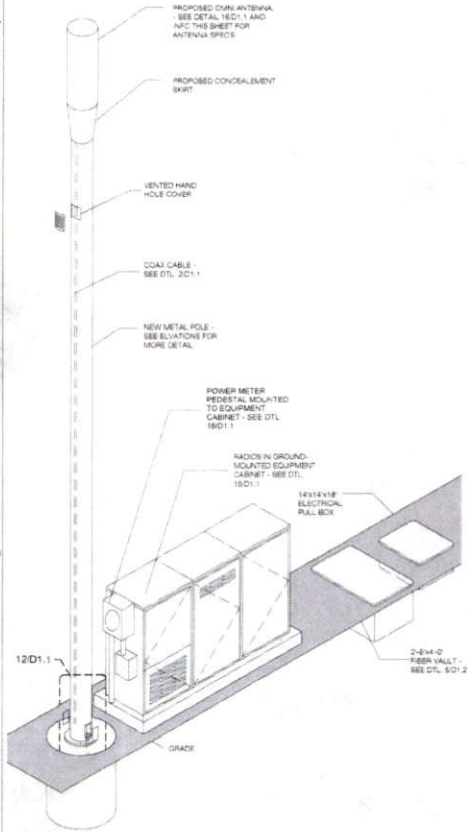


EQUIPMENT AND ANTENNA PLAN 1/2" = 1'-0" 8



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



METAL POLE ISOMETRIC SCALE: SCALE: NTS 4

KEYNOTE	DESCRIPTION	DETAIL NUMBER
A01	PROPOSED CROWN CASTLE OMNI ANTENNA	18D1.1
A02	PROPOSED CROWN CASTLE 2\"/>	

MODEL	AMPHENDL-02UT30013F400
LENGTH	4F
WIDTH	4\"/>

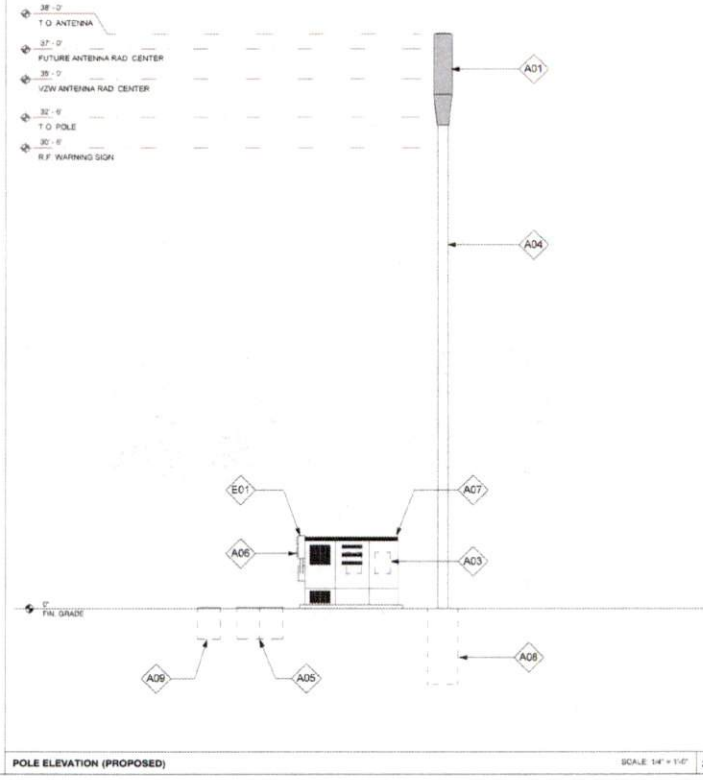
PROPOSED PANEL ANTENNA SPECS

PROPOSED POLE WIDTH = 6\"/>

PROPOSED POLE HEIGHT = 32 - 6\"/>

1\"/>

POLE INFO



POLE ELEVATION (PROPOSED) SCALE: 1/4\"/>

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

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

RECORD DRAWING ISSUE DATE: 10/18/16

SHIFT
Shift Companies, LLC
13111 KYLE BELLWAY
SCOTTSDALE, ARIZONA 85257
PH: 480.244.8820
FAX: 480.244.8823

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RELEASE	DATE	SUBMITTAL
	8/22/16	1ST CITY SUBMITTAL
	12/18/14	2ND CITY SUBMITTAL

REVISIONS	NO.	DATE	COMMENT
	01	10/18/16	CITY COMMENTS

PROJECT NAME
CINCO RANCH EXPANSION

NODE ADDRESS
NODE #:CCR-50

CINCO RANCH BLVD & COMMERCIAL CENTER BLVD

HUB AREA
CINCO RANCH - HGCV

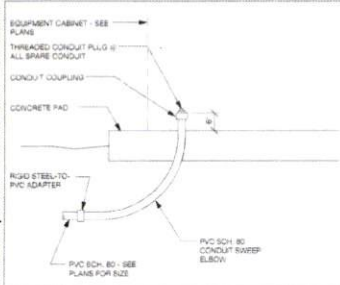
SHIFT JOB NUMBER
150602

SHEET TITLE
POLE ELEVATION, PROPOSED

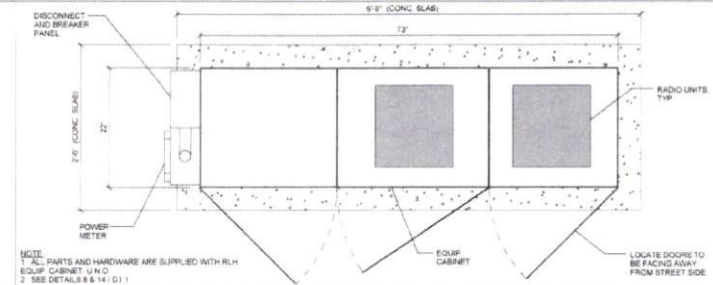
SHEET NUMBER
A1.2

PAGE
6 OF 14

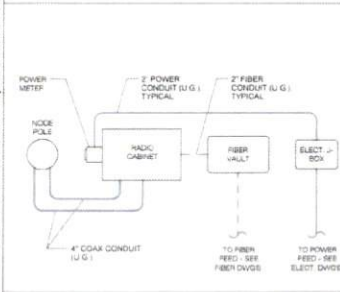
PLOT SCALE: 1:1 @ 24X36; 1:2 @ 11X17



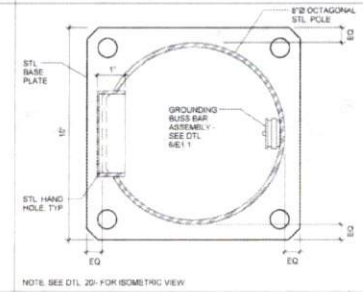
EQUIPMENT CABINET STUB UP DETL SCALE N T S 1



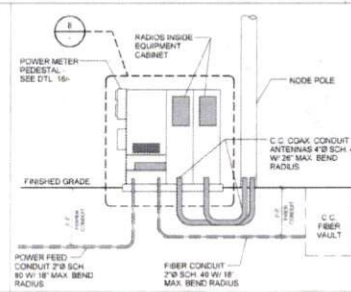
METER / BBU / RADIO EQUIPMENT CABINET PLAN SCALE N T S 5



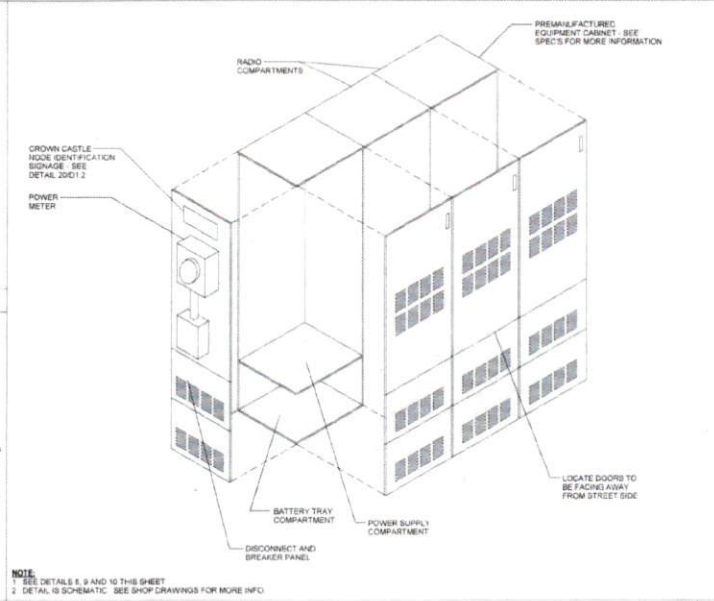
CONDUIT ROUTE SCALE N T S 2



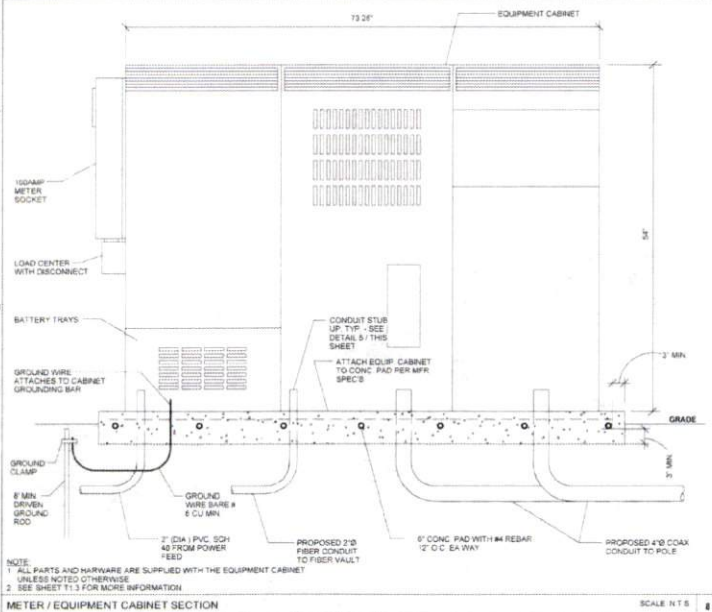
PLAN VIEW @ POLE SCALE N T S 6



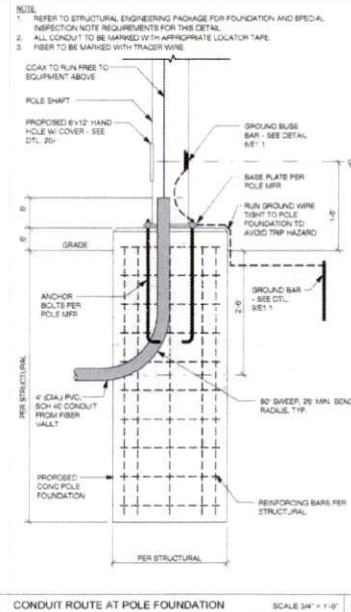
CONDUIT AND POWER RISER DIAGRAM SCALE N T S 10



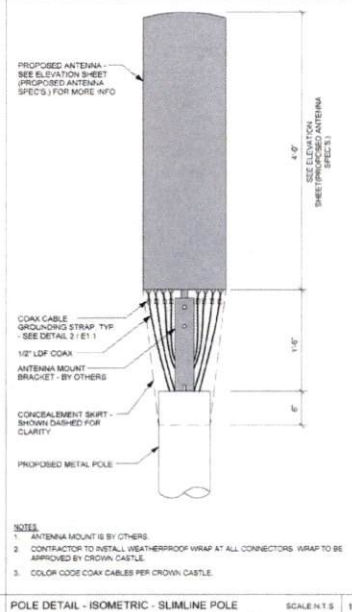
EQUIPMENT CABINET WITH METER ISOMETRIC SCALE N T S 18



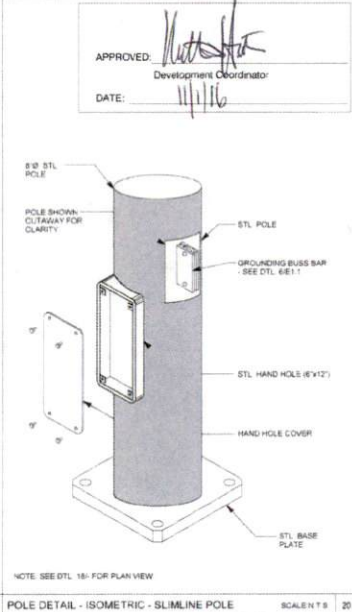
METER / EQUIPMENT CABINET SECTION SCALE N T S 8



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 Pkwy.
SUITE 200
IRVING, TX 75062

RECORD DRAWINGS ISSUE DATE: 10.18.16



Shift Companies, LLC
1331 E. HEAVE RD
HOUSTON, ANDRHO 45517
PH: 408.269.8029
FX: 408.264.5533

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RELEASE DATE	SUBMITTAL
6/29/16	1ST CITY SUBMITTAL
10/18/16	2ND CITY SUBMITTAL

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

PROJECT NAME
CINCO RANCH EXPANSION

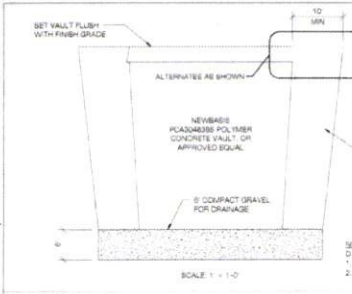
HUB AREA
CINCO RANCH - HGCV

SHIFT JOB NUMBER
150602

SHEET TITLE
CONSTRUCTION DETAILS

SHEET NUMBER	PAGE
D1.1	7 OF 14

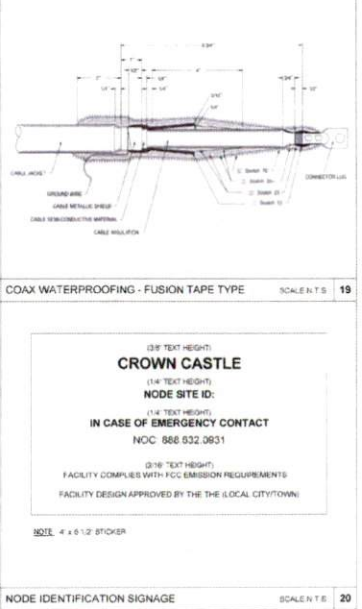
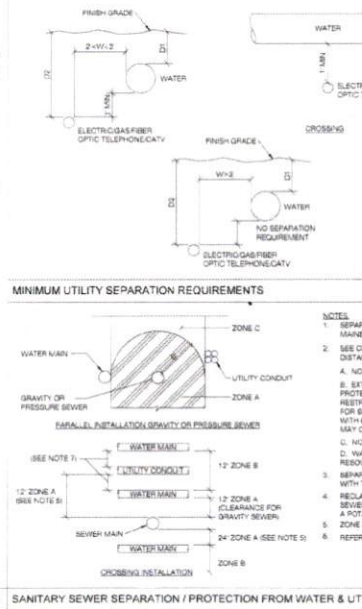
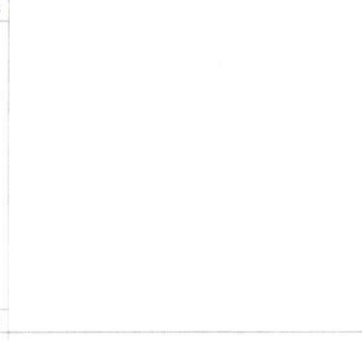
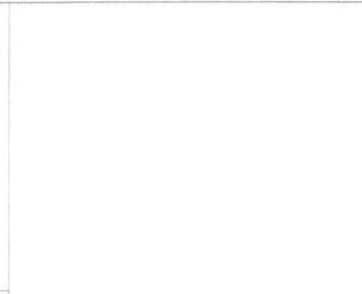
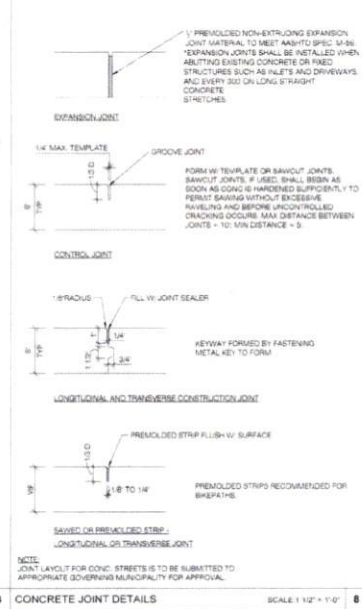
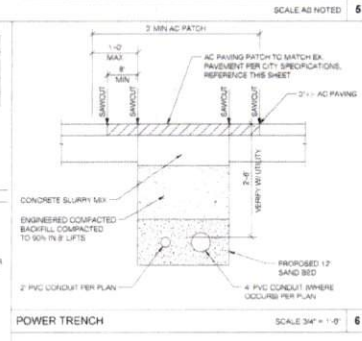
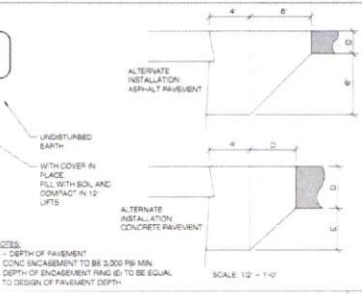
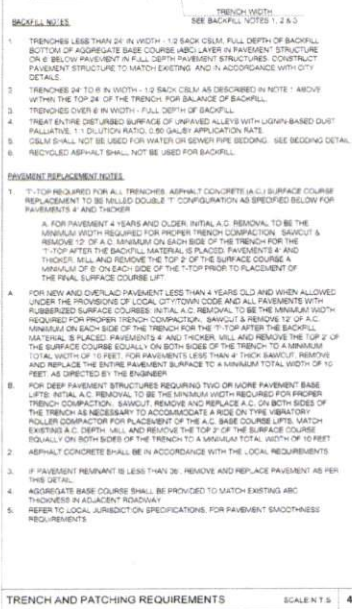
PLOT SCALE: 1" @ 24'-0" 1.2 @ 11'x17'



ASPHALT CONCRETE (A/C) PAVEMENT REPLACEMENT

EXISTING PAVEMENT THICKNESS, T ₁	A/C SURFACE COURSE OR SURFACE COURSE, T ₂	A/C BASE COURSE, T ₃	TOTAL THICKNESS, T _T
T ₁ ≤ 3"	3" MINIMUM	NONE	3" MINIMUM
T ₁ > 3"	2" MINIMUM	2" MINIMUM	T ₁ MATCH EXIST.

SCALE AS NOTED 5



Step #1: Prep

Step #2: Install

Step #3: Compress

Step #4: Torque

COAX WATERPROOFING - JMA TYPE

SCALE: N.T.S. 16

APPROVED:

DATE: 11/11/16

Development Coordinator

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

RECORD DRAWING ISSUE DATE: 10/18/16

SHIFT

Shift Companies, LLC
3311 E. WATSON BLVD
KOTTERVILLE, MISSISSIPPI 39201
PH: 601.241.0291
WWW.SHIFT.COM

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RELEASE

DATE	SUBMITTAL
8/23/15	1ST CITY SUBMITTAL
10/18/16	2ND CITY SUBMITTAL

REVISIONS

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

PROJECT NAME
CINCO RANCH EXPANSION

CROWN CASTLE
NODE SITE ID:
IN CASE OF EMERGENCY CONTACT
NOC: 866.932.0631

FACILITY COMPLIES WITH FCC EMISSION REQUIREMENTS
FACILITY DESIGN APPROVED BY THE LOCAL CITY/TOWN:

NOTE: 4 x 6 1/2" STICKER

HUB AREA

CINCO RANCH - HGCW

SHIFT JOB NUMBER
150602

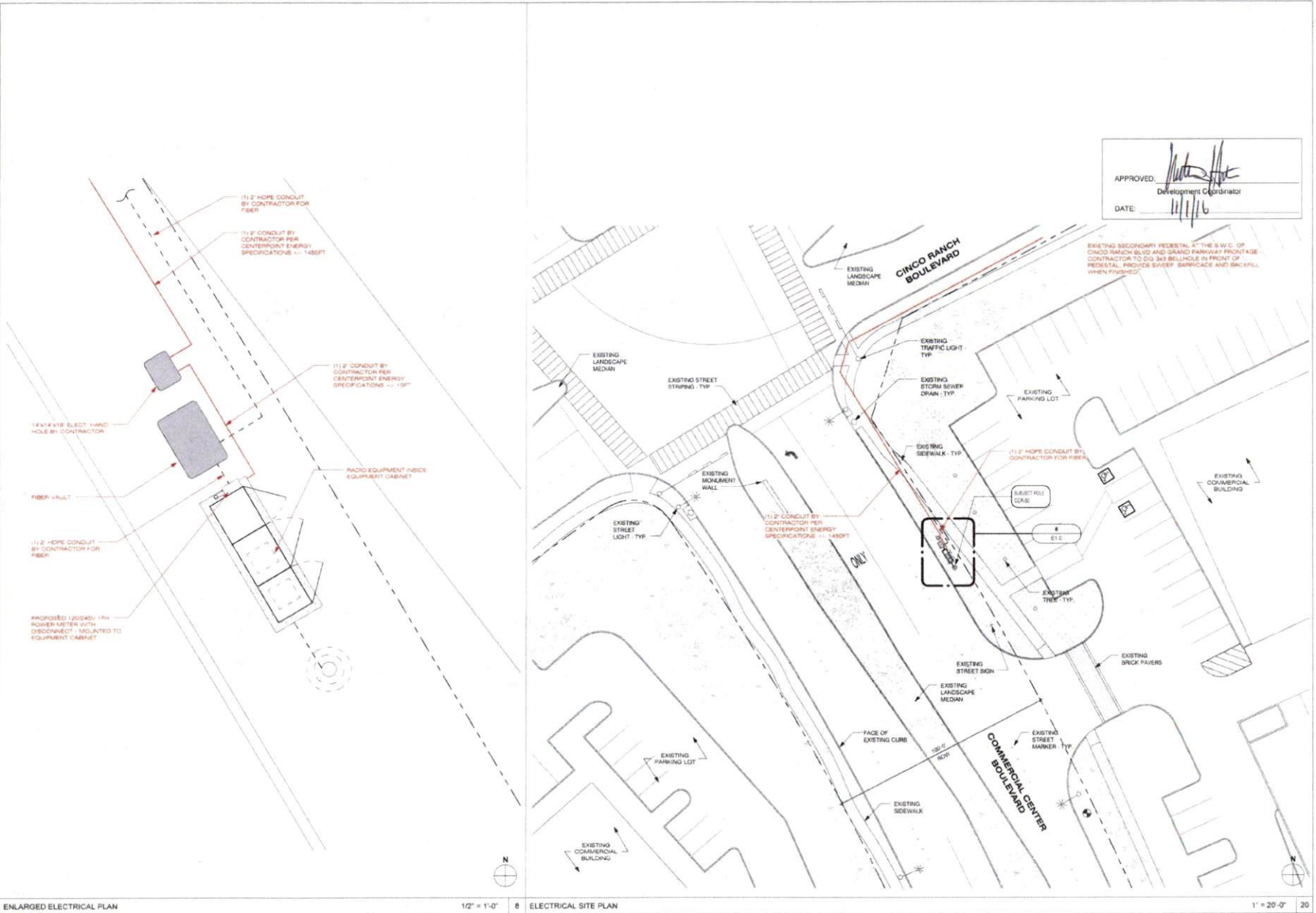
IN HOUSE
DRAWN BY: NA
CHECKED BY: CM

SHEET TITLE
CONSTRUCTION DETAILS

SHEET NUMBER	PAGE
D1.2	8 OF 14

PLOT SCALE: 1/8" @ 24X36", 1/2" @ 11X17"

PLAN CHECK #



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

EXISTING SECONDARY PEDESTAL AT THE S.W.C. OF CINCO RANCH BLVD AND GRAND PARKWAY FRONTAGE CONTRACTOR TO DO 3/4" BELLHOLE IN FRONT OF PEDESTAL. PROVIDE SLEEVES, BARRICADE AND BACKFILL WHEN PROVIDED.



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

RECORD DRAWINGS (ISSUE DATE: 10.18.16)



Shift Companies, LLC
 37111 19TH ST W
 SUITE 1000
 BOZEMAN, MONTANA 59717
 PH: 406.584.5555
 FAX: 406.584.5553

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RELEASE	
DATE	SUBMITTAL
03.25.15	1ST CITY SUBMITTAL
10.18.16	2ND CITY SUBMITTAL

REVISIONS		
NO.	DATE	COMMENT
	10.18.16	CITY COMMENTS

PROJECT NAME
CINCO RANCH EXPANSION

HUB ADDRESS
NODE #:CCR-50

CINCO RANCH BLVD & COMMERCIAL CENTER BLVD

HUB AREA
CINCO RANCH - HGCV

SHIFT JOB NUMBER **150602** IN HOUSE
 DRAWN BY: *[Initials]* CHECKED BY: *[Initials]*

SHEET TITLE
ELECTRICAL PLANS

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

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

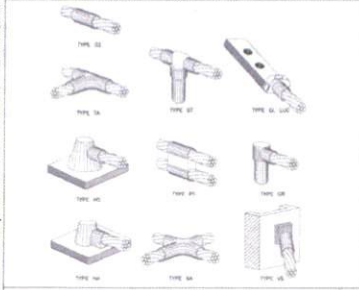
ENLARGED ELECTRICAL PLAN

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

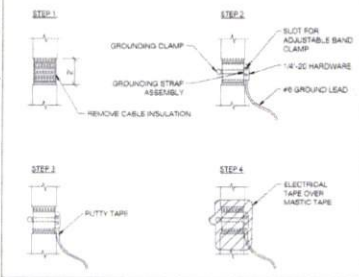
1" = 20'-0" 20

PLAN CHECK #

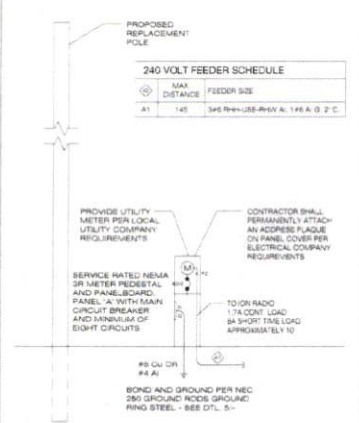
CASE #



CADWELD DETAILS SCALE: NTS 1

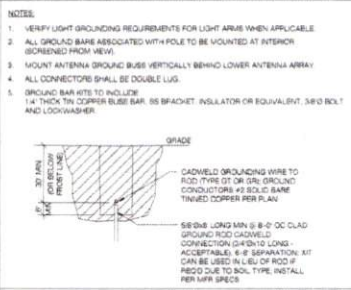


COAXIAL CABLE GROUNDING SCALE: NTS 2



ONE-LINE DIAGRAM SCALE: NTS 4

NOTES:
 1. EIC 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" 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 MAIN PROTECTIVE DEVICE. A TWO-THIRDS (2/3) 10KV SYSTEM IS SPECIFIED.
 8. WHERE NECESSARY TO TERMINATE OVERSIZED CONDUCTORS, CONTRACTOR TO CONVERT CONDUCTORS TO PANEL LUG APPROVED SIZE USING AN NEC COMPLIANT CONNECTOR.



GROUND ROD DETAIL SCALE: NTS 9

PANEL A FED FROM TRANSFORMER NEMA 3R VOLTAGE 240/120/2P 3W BLUE WIRING SCHEME NEUTRAL 100% AIC (REFER TO FAULT CALC) MAIN BUS 80 LUGS STANDARD

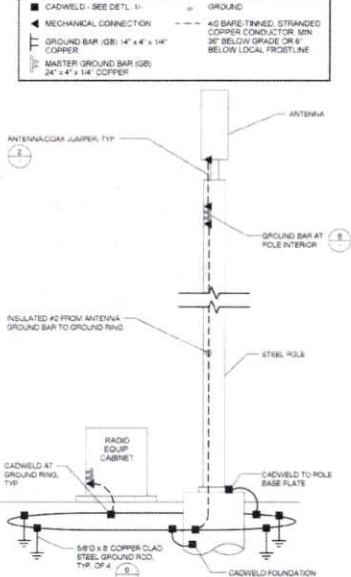
NO.	CB	CIRCUIT DESCRIPTION	KVA LOAD	A	B	NO.	CB	CIRCUIT DESCRIPTION	KVA LOAD	A	B
1	-	SPACE	0.00	2	201	RADIO EQUIPMENT	1.28				
3	-	SPACE	0.00	4	201	RADIO EQUIPMENT			1.05		
6	-	SPACE	0.00	6	201	SPARE	0.00				
7	-	SPACE	0.00	8	-	SPACE			0.00		
			TOTAL CONNECTED KVA BY PHASE						11.8	11.8	
			TOTAL CONNECTED AMPS BY PHASE						11.8	11.8	

CONN. KVA CALC KVA
 LIGHTING 0 0 (125%)
 LARGEST MOTOR 0 0 (125%)
 OTHER MOTORS 0 0 (125%)
 RECEPTACLES 0 0

CONN. KVA CALC KVA
 CONTINUOUS 0 0 (125%)
 HEATING 0 0 (100%)
 NONCONTINUOUS 2.1 2.1 (100%)
 TOTAL KVA 2.62

FIELD SPEC 219-588
 PROVIDE COMMON TRIP HANDLES FOR ALL MULTI-CIRCUIT CONDUIT RUNS.

ELECTRICAL PANEL SCHEDULES SCALE: NTS 14



GROUNDING SCHEMATIC - METAL POLE SCALE: NTS 8

POWER FEEDER SCHEDULE

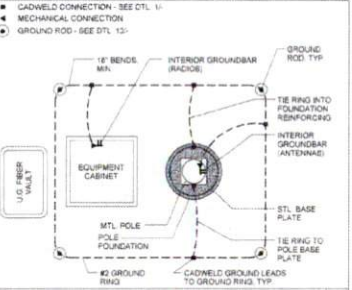
LENGTH	SIZE (AWG/KCMIL)	GROUND SIZE	CONDUIT SIZE
320	2	6	2"
380	1	4	2"
470	1/0	2	2"
560	2/0	2	2"
680	3/0	2	2"
800	4/0	1	2"
820	250	1/0	2 1/4"
1080	300	2/0	2 1/2"

FEEDER SCHEDULE SCALE: NTS 15

FAULT CURRENT CALCULATION

Fault Point	Panel	Source (Fault Point)	Source (amps)	Conduit Type	Wire/Bus Size 'C' value	E (volts)	L (length)	f	M	Isc	A/C Rating	
1	UTILITY XPM/FRY'S PEDESTAL	1	22000	NM	1 Set(s) of 2	3730	240	20	0.851	0.54	11684	22,000
2	Panel-A @ 20'	1	22000	NM	1 Set(s) of 2	3730	240	100	4.256	0.19	4185	10,000
3	Panel-A @ 150'	1	22000	NM	1 Set(s) of 2	3730	240	150	8.365	0.14	2979	10,000
4	Panel-A @ 200'	1	22000	NM	1 Set(s) of 2	3730	240	200	8.513	0.11	2313	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, PAY ALL PERMIT FEES, AND SCHEDULE ALL REQUIRED INSPECTIONS. CONTRACTOR SHALL OBTAIN LOCAL POWER COMPANY APPROVAL AND COORDINATE SERVICE ENTRANCE REQUIREMENTS.
- CONTRACTOR SHALL VERIFY SERVICE LOCATIONS AND CONTACT PROJECT MANAGER WITH DISCREPANCIES FROM PLAN.
- CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIAL DESCRIBED ON THIS DRAWING AND ALL ITEMS INCIDENTAL TO COMPLETING AND PRESENTING THE PROJECT AS FULLY OPERATIONAL. ALL ELECTRICAL ITEMS SHALL BE UL APPROVED OR LISTED.
- CONDUCTORS SHALL BE RE-INSTALLED IN SCHEDULE 40 PVC CONDUIT UNDERGROUND AND A/C CONDUIT ABOVE GROUND.
- PROVIDE 1" OF SCHEDULE 40 PVC UNDERGROUND CONDUIT WITH RLL WIRE BETWEEN ELECTRICAL UTILITY DEMARICATION POINT AND HIS 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 ABOVE GROUND.
- CONTRACTOR TO NOTIFY ALL APPROPRIATE PARTIES PRIOR TO CONSTRUCTION AND SHALL PROVIDE AND MAINTAIN A TRAFFIC CONTROL PLAN PER NEC REQUIREMENTS.
- CONTRACTOR TO LOCATE ALL UTILITIES IN REQUEST AREA PRIOR TO CONSTRUCTION THROUGH BILL STAKE.
- VERIFY DEPTH OF EXISTING UTILITIES CROSSING ROADS VIA APPROVED POT-HOLING METHODS AND NOTE ON PLAN PER ALL BULL GUSSE OUT.
- NOTE DEPTH AND LOCATION OF ALL INSTALLED UTILITIES ON AS-BUILT RECORD DRAWINGS.
- IF EXISTING UTILITY LINES ARE ENCOUNTERED, CONTRACTOR SHALL NOTIFY OWNER PRIOR TO DISTURBING OR MODIFYING.
- CONTRACTOR SHALL NOT FLOCATE PROPOSED EQUIPMENT OR POLE LOCATION WITHOUT WRITTEN APPROVAL FROM CROWN CASTLE AND PROJECT ENGINEER.
- MATERIAL SUBSTITUTIONS ARE SUBJECT TO CROWN CASTLE AND ENGINEERING REVIEW PRIOR TO CONSTRUCTION.

ELECTRICAL NOTES SCALE: NTS 18

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

FEEDER SCHEDULE SCALE: NTS 15



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

RECORD DRAWINGS ISSUE DATE 10/18/16



Shift Companies, LLC
 11111 TEXAS HWY 6300
 NORTHDALE, MISSISSIPPI
 PH: 601-244-6622
 FAX: 601-244-6622

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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

HUB AREA
 CINCO RANCH - HGCV

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

SHEET TITLE
 ELECTRICAL DETAILS

SHEET NUMBER E1.1 **PAGE** 10 OF 14

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