

City of Richmond Department of Planning & Development Review

Location, Character, and Extent

LOCATIONS: 910 Byrd St. & 1200 E Clay St.

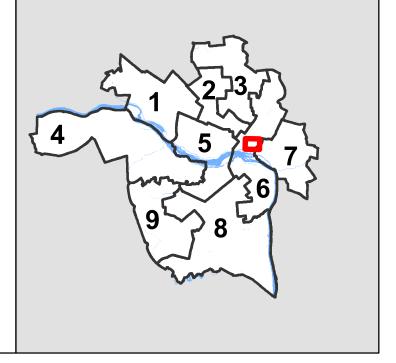
COUNCIL DISTRICT: 3

PROPOSAL: Review of encroachments for new 30'

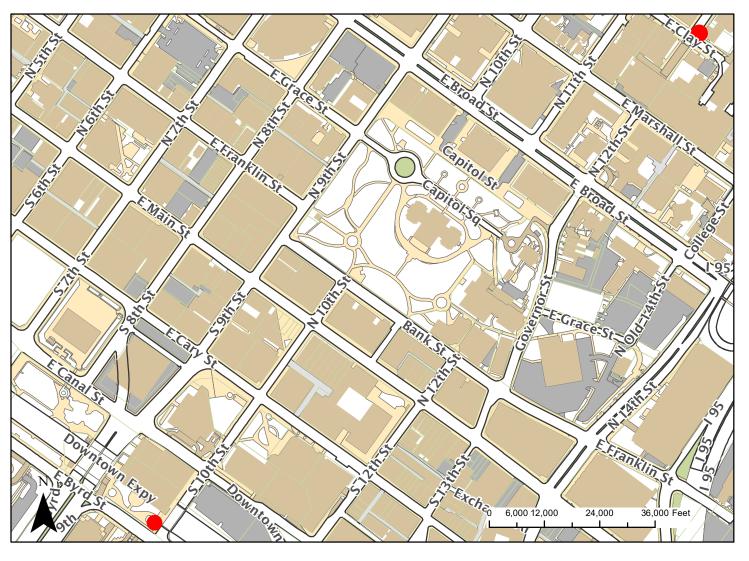
metal poles for the attachment of wireless

communication antennas and associated equipment

within the public right-of-way.



For questions, please contact Josh Son at 646-3741 or joshua.son@richmondgov.com





Application for URBAN DESIGN COMMITTEE Review

Department of Planning and Development Review
Planning & Preservation Division
900 E. Broad Street, Room 510
Richmond, Virginia 23219
(804) 646-6335

http://www.richmondgov.com/CommitteeUrbanDesign

Application Type Addition/Alteration to Existing Structure New Construction Streetscape Site Amenity	Encroachment Master Plan Sign Other	Review Type Conceptual Final
Project Name:		
Project Address:		
Applicant Information (on all applications other than encroachments, a City agence		
Name:	Email:	
City Agency:	Phone:	
Address:		
Main Contact (if different from Applicant):		
Company:	Phone:	
Email:		

Submittal Deadlines

All applications and support materials must be filed no later than 21 days prior to the scheduled meeting of the Urban Design Committee (UDC). Please see the schedule on page 3 as actual deadlines are adjusted due to City holidays. Late or incomplete submissions will be deferred to the next meeting.

Filing

Applications can be mailed or delivered to the attention of "Urban Design Committee" at the address listed at the top of this page. It is important that the applicant discuss the proposal with appropriate City agencies, Zoning Administration staff, and area civic associations and residents prior to filing the application with the UDC.

UDC Background

The UDC is a ten member committee created by City Council in 1968 whose purpose is to advise the City Planning Commission on the design of projects on City property or right-of-way. The UDC provides advice of an aesthetic nature in connection with the performance of the duties of the Commission under Sections 17.05, 17.06 and 17.07 of the City Charter. The UDC also advises the Department of Public Works in regards to private encroachments in the public right-of-way.



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Submission Requirements

- 10 copies of the application cover sheet and all support materials (see below), unless the application is for an encroachment, in which case only 6 copies are required. Plan sheets should be 11" x 17", folded to 8 1/2" x 11". If it is not possible to scale plans to these dimensions, please provide one set of larger, scaled plans.
- An electronic copy (PDF preferred) of all application materials, which can be burned to disc, emailed, or delivered by FTP.

All applications must include the attached cover sheet and the following support materials, as applicable to the project:

For Conceptual Review

- A detailed project narrative which includes the following: purpose of the project, project background, project budget and funding sources, description of construction program and estimated construction start date (description should also provide information on the surrounding area to provide context).
- A site plan for the project indicating site characteristics which include: building footprints, parking areas, pedestrian routes, recreation areas, open areas and areas of future expansion.
- A set of floor plans and elevations, as detailed as possible.
- A landscaping plan which shows the general location and character of plant materials and notes any existing tree to be removed.

For Final Review

- A detailed project narrative which includes the following: purpose of the project, project background, project budget and funding sources, description of construction program and estimated construction start date (description should also provide information on the surrounding area to provide context).
- A site plan for the project indicating site characteristics which include: building footprints, parking areas, pedestrian routes, recreation areas, open areas and areas of future expansion.
- A set of floor plans and elevations, as detailed as possible.
- A landscaping plan that includes a complete plant schedule, the precise location of all plant materials, and a landscape maintenance analysis. The plant schedule must show number, size and type of each planting proposed. If existing trees are to be removed, their size, type and location must be noted on the landscape plan.
- The location of all lighting units should be noted on a site plan, including wall-mounted, site and parking lot lighting. Other site details, such as benches, trash containers and special paving materials, should also be located. Include specification sheets for each item.
- Samples of all proposed exterior building materials, including but not limited to brick, mortar, shingles, siding, glass, paint and stain colors. When as actual sample cannot be provided, a product information sheet that shows the item or a photo of an existing item may be substituted.

Review and Processing

Once an application is received, it is reviewed by staff, who compiles a report that is sent to the UDC. A copy of the report and the meeting agenda will be sent to the applicant prior to the meeting. The applicant or a representative should be present at the UDC meeting or the application may be deferred to the next regularly scheduled meeting. It is also strongly suggested that a representative of the City Agency which will have final responsibility for the item be present at the meeting (if the applicant and the representative are not the same). Once the UDC recommends action on the application, it is automatically placed on the agenda for the next City Planning Commission (CPC) meeting. An exception to this is encroachment applications, recommendations for which are forwarded to the Department of Public Works. The applicant or a representative must be present at the CPC meeting or the application may be deferred to the next regularly scheduled meeting.

CITY OF RICHMOND URBAN DESIGN COMMITTEE (UDC)

MEETING SCHEDULE 2017

UDC Meetings	UDC Submission Deadlines	Anticipated Date of Planning Commission Following the UDC Meeting
December 8, 2016	November 12, 2015*	January 3, 2017
January 5, 2017	December 8, 2016**	January 17, 2017 ¹
February 9, 2017	January 19, 2017	February 21, 2017 ²
March 9, 2017	February 16, 2017	March 20, 2017
April 6, 2017	March 16, 2017	April 17, 2017
May 4, 2017	April 13, 2017	May 15, 2017
June 8, 2017	May 18, 2017	June 19, 2017
July 6, 2017	June 15, 2017	July 17, 2017
August 10, 2017	July 20, 2017	August 21, 2017 ³
September 7, 2017	August 17, 2017	September 18, 2017
October 5, 2017	September 14, 2017	October 16, 2017
November 9, 2017	October 19, 2017	November 20, 2017
December 7, 2017	November 9, 2017*	December 18, 2017 ⁴

¹ Monday, January 16th is a City of Richmond Holiday

The Richmond Urban Design Committee (UDC) is a ten member advisory committee created by City Council in 1968. Its purpose is to advise the City Planning Commission on the design of City projects. The UDC reviews projects for appropriateness in "location, character and extent" and for consistency with the City's Master Plan and forwards recommendations to the Planning Commission. The UDC also advises the Department of Public Works in regards to private encroachments in the public right-of-way.

Regular meetings are scheduled for the Thursday after the first Monday of each month at 10:00 a.m. in the 5th floor conference room of City Hall. Special meetings are scheduled as needed.

For additional information, please contact the Planning and Preservation Division staff at (804) 646-3741 or Joshua.Son@richmondgov.com

² Monday, February 20th is a City of Richmond Holiday

³ This August CPC Meeting may be canceled. If so, Planning Commission hearing would be Tuesday, September 5th.

⁴ This December CPC Meeting may be canceled. If so, Planning Commission hearing would be Tuesday, January 2, 2018.

^{*} Moved forward to account for Veteran's Day/Thanksgiving Holiday Schedule

^{**} Moved forward to account for Winter Holiday Schedule



Glen Allen, VA 23060, USA

www.jacobs.com

Project Narrative

Applicant: New Cingular Wireless PCS LLC (AT&T Mobility)

Site Name: Richmond Downtown Node 17 **Property Address:** 1200 E. Clay St (in ROW)

District: 6

DESCRIPTION OF THE PROPOSED USE

AT&T Mobility proposes to establish a new Small Cell telecommunications facility attached to a new 30' tall metal pole installed by the applicant within the Right-of-Way of 12th St., approximately 45' north of the intersection with E. Clay St. Small Cell antennas are used to "densify" the carrier's network in high use areas providing additional phone and data coverage where needed. A single Omni-Directional Antenna contained within a painted canister will be mounted to the top of the pole. Two small cMRO radios will be housed within the cabinet base of the pole. There will be no overhead wires or cables.

The proposed location is adjacent to the VCU Health building, along a sidewalk with existing light poles. The proposed pole is designed to be similar is design, color and scope as the existing black metal light poles in the area. There are currently other utility poles and street light poles in the area that do not match the black metal.

If approved, AT&T Mobility will enter into an encroachment agreement with the City of Richmond, to install and operate the communications facility and pole.

ANTICIPATED IMPACTS / MITIGATION

The prosed telecommunication facility will be a passive use and not have any on-site employees or personnel and will have no impact on existing traffic volume or parking. It will operate 24 house per day, 365 days per year, be unmanned and will have four or fewer maintenance visits per year by AT&T's operations technicians. The proposed site will not interfere with telephone, radio or television reception and the radio frequency emissions will be in full compliance with all applicable EPA and FCC emission requirements. In addition, the site will not generate any noise, odors, light, dust, vibrations or glare.

This siting proposal will minimize any adverse visual impact on the surrounding property by being located on a decorative pole similar in color, height and design to the existing poles in the area. The antenna enclosure is of the smallest possible design, low profile in design and will be painted to match the pole.

ALTERNATIVE SITES CONSITERED FOR THE PROPOSAL

In our initial evaluation of the area in need of service, we encountered several street light poles along Byrd Street. These structures are owned by the City of Richmond and the Right-of Way office has

indicated they are not open to allowing installation of antennas on city-owned structures (including streetlights and traffic signal posts.

With the use of city structures denied, we analyzed the best location for maximum coverage and available space and determined this location as the best option

Included in the request are photos of the site, elevations of the proposed plan, site plan and equipment specifications.

We request approval from the Urban Design Committee for this request and look forward to working with the City of Richmond on the installation of the Small Cell antenna deployment.



Glen Allen, VA 23060, USA

www.jacobs.com

Project Narrative

Applicant: New Cingular Wireless PCS LLC (AT&T Mobility)

Site Name: Richmond Downtown Node 26 **Property Address**: 910 Byrd Street (in ROW)

District: 6

DESCRIPTION OF THE PROPOSED USE

AT&T Mobility proposes to establish a new Small Cell telecommunications facility attached to a new 30' tall metal pole installed by the applicant within the Right-of-Way of E. Byrd St., approximately 41' west of the intersection with 10th St. Small Cell antennas are used to "densify" the carrier's network in high use areas providing additional phone and data coverage where needed. A single Omni-Directional Antenna contained within a painted canister will be mounted to the top of the pole. Two small cMRO radios will be housed within the cabinet base of the pole. There will be no overhead wires or cables.

The proposed location is adjacent to the RMA parking deck, along a sidewalk with existing light poles. The proposed pole is designed to be similar is design, color and scope as the existing black metal light poles in the area. There are currently other utility poles and street light poles in the area that do not match the black metal.

If approved, AT&T Mobility will enter into an encroachment agreement with the City of Richmond, to install and operate the communications facility and pole.

ANTICIPATED IMPACTS / MITIGATION

The prosed telecommunication facility will be a passive use and not have any on-site employees or personnel and will have no impact on existing traffic volume or parking. It will operate 24 house per day, 365 days per year, be unmanned and will have four or fewer maintenance visits per year by AT&T's operations technicians. The proposed site will not interfere with telephone, radio or television reception and the radio frequency emissions will be in full compliance with all applicable EPA and FCC emission requirements. In addition, the site will not generate any noise, odors, light, dust, vibrations or glare.

This siting proposal will minimize any adverse visual impact on the surrounding property by being located on a decorative pole similar in color, height and design to the existing poles in the area. The antenna enclosure is of the smallest possible design, low profile in design and will be painted to match the pole.

ALTERNATIVE SITES CONSITERED FOR THE PROPOSAL

In our initial evaluation of the area in need of service, we encountered several street light poles along Byrd Street. These structures are owned by the City of Richmond and the Right-of Way office has

indicated they are not open to allowing installation of antennas on city-owned structures (including streetlights and traffic signal posts.

With the use of city structures denied, we analyzed the best location for maximum coverage and available space and determined this location as the best option

Included in the request are photos of the site, elevations of the proposed plan, site plan and equipment specifications.

We request approval from the Urban Design Committee for this request and look forward to working with the City of Richmond on the installation of the Small Cell antenna deployment.



NODE NAME: CRAN RVWN RIFZ2 017 FA: 14263910 USID: 196417 JURISDICTION: CITY OF RICHMOND

GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE; NO SANITARY SEWER SERVICE, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

SITE INFORMATION

APPLICANT: AT&T

APPLICANT ADDRESS:

4801 COX ROAD GLEN ALLEN, VA 23060

AT&T PROJECT MANAGER TARA BREWER

SITE ADDRESS:

1200 E. CLAY ST RICHMOND, VA 23298

PROPERTY OWNER: CITY OF RICHMOND

PROPERTY OWNER ADDRESS: 900 E. BROAD ST

RICHMOND, VA 23219

STRUCTURE TYPE: NEW STEEL CONCEALMENT POLE

JURISDICTION: CITY OF RICHMOND

LATITUDE: N 37.541026

LONGITUDE: W -77.429508

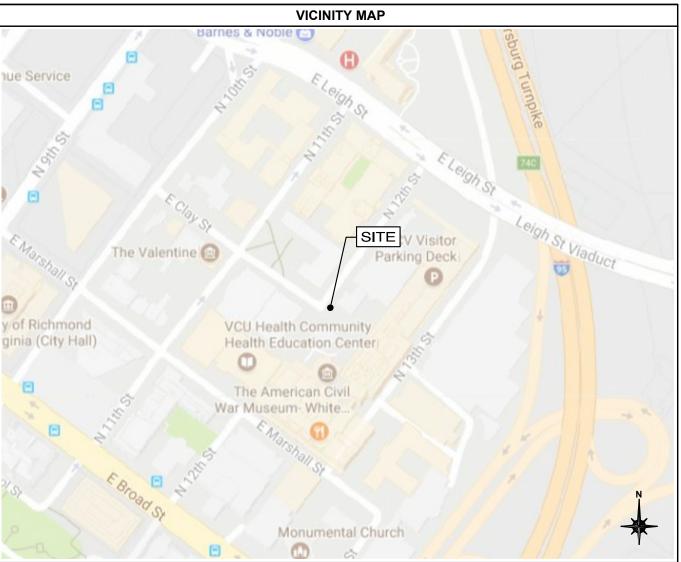
NAD 83 LAT/LONG DATUM: GROUND ELEVATION: ±143' AMSL

POWER DOMINION VIRGINIA POWER

TELCO LUMOS

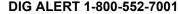
IMPORTANT NOTICE

THE EXISTING CONDITIONS REPRESENTED HEREIN ARE BASED ON VISUAL OBSERVATIONS AND INFORMATION PROVIDED BY OTHERS.
CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION, REPORT AND CONFLICTS OR DISCREPANCIES PRIOR TO CONSTRUCTION.



DRIVING DIRECTIONS

DIRECTION FROM 4801 COX ROAD, GLEN ALLEN, VA 23060.
HEAD SOUTHWEST ON COX RD TOWARD N PARK DR. TURN RIGHT ONTO NUCKOLS RD. USE THE RIGHT LANE TO MERGE ONTO I-295N VIA THE RAMP TO I-64W/CHARLOTTESVILLE. MERGE ONTO I-295N. USE THE LEFT 2 LANES TO EXIT 53B TO MERGE ONTO I-64E TOWARD US-250 RICHMOND. KEEP LEFT TO CONTINUE ON I-64, FOLLOW SIGNS FOR INTERSTATE 64E/INTERSTATE I-95S/NORFOLK/PETERSBURG. USE THE RIGHT LANE TO KEEP RIGHT AT THE FORK, STAY ON I-64 AND FOLLOW SIGNS FOR WILLIAMSBURG/NORFOLK. TAKE THE 3RD EXIT TOWARD COLISEUM/DOWNTOWN, CONTINUE ONTO N 3RD ST. TURN LEFT ONTO E LEIGH ST. TURN RIGHT ONTO N 12TH ST TO THE SITE.





Know what's **below.** Call before you dig.

48 HOURS BEFORE YOU DIG

SCOPE OF WORK

INSTALLATION OF A WIRELESS COMMUNICATIONS ANTENNA AND ASSOCIATED SUPPORT EQUIPMENT ON A PROPOSED STEEL CONCEALMENT POLE.

CODES

2012 VIRGINIA STATE UNIFORM BUILDING CODE

2012 INTERNATIONAL BUILDING CODE 2011 NATIONAL ELECTRICAL CODE

STRUCTURAL STANDARD FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES TO TIA-222-G

SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION FOR THE LOCATION. THE EDITION OF THE ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN

AT&T STANDARDS: ATT-TP 76300, ATT-TP 76416 & UPDATES AS

REQUIRED FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

	DRAWING INDEX
SHEET NO:	SHEET TITLE
T-1	TITLE SHEET
C-1	SITE PLAN
C-2	POLE ELEVATIONS
C-3	APPURTENANCE DETAILS
C-4	CONNECTION DETAILS
C-5	ELECTRICAL DETAILS
C-6	LABELING
GN-1	GENERAL NOTES
GN-2	GENERAL NOTES
GN-3	GENERAL NOTES

ARCHITECT/ENGINEER

JACOBS ENGINEERING GROUP, INC. 7150 STANDARD DRIVE, SUITE B HANOVER, MD 21076 CONTACT: LEAH WOODLY PROJECT MANAGER TEL: (443) 230-4400 X113





FP3TURVS

X. XXXXXX

PROJECT NO

DRAWN BY:

CHECKED BY:		Y: L. WOODLY
_		
_		
В	11.09.17	UPDATED AS PER REDLINES
Ā	01.XX.17	FOR REVIEW

IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT

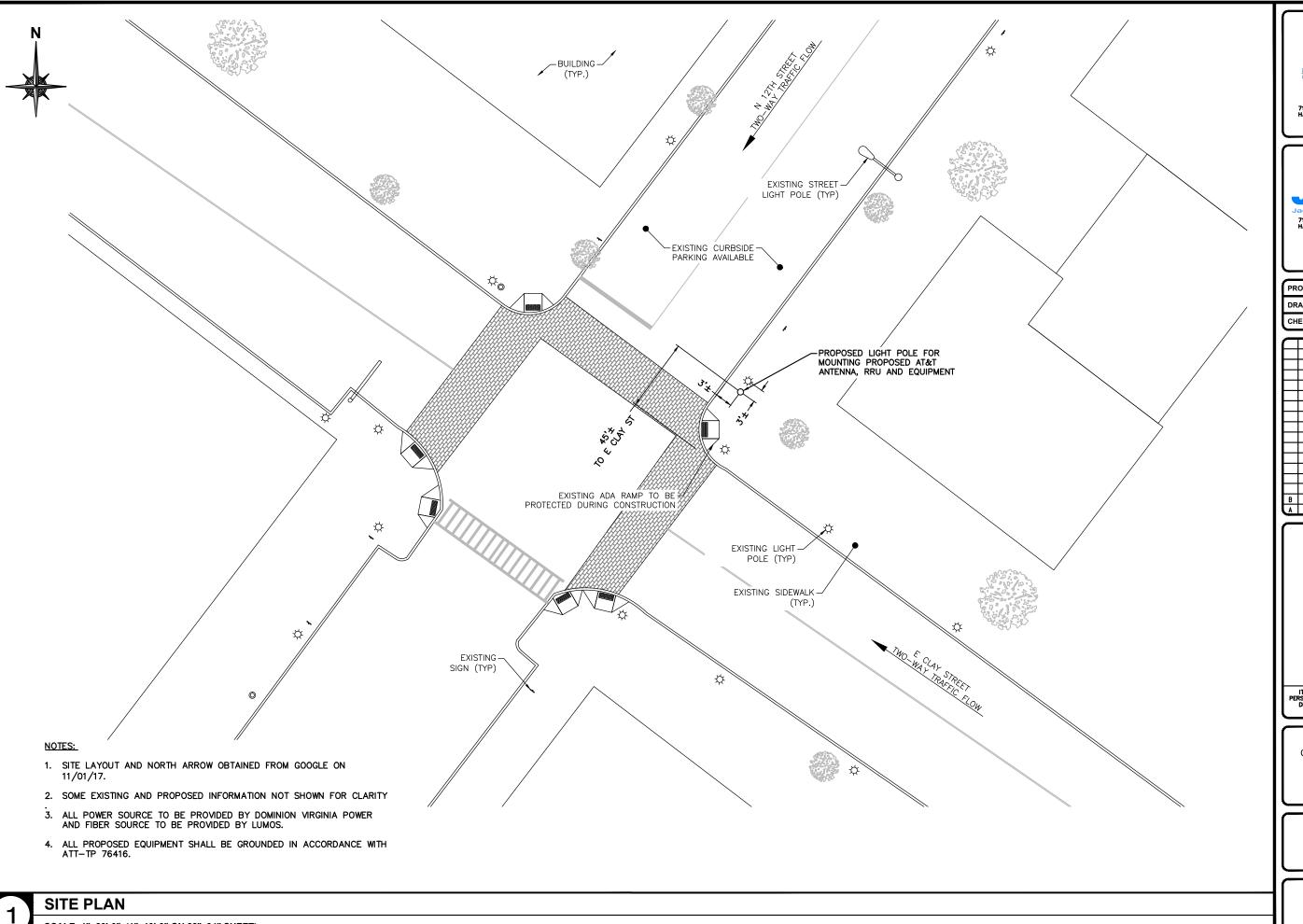
CRAN_RVWN_RIFZ2_017 B RICHMOND, VA 23298 LIGHT POLE NODE ID: NODE 17

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1



JACOBS° 7150 STANDARD DRIVE, SUITE B HANOVER, MD 21076

PROJECT NO: **EP3TURVS** DRAWN BY: x. xxxxxx CHECKED BY: L. WOODLY

B 11.09.17 UPDATED AS PER REDLINES
A 01.XX.17 FOR REVIEW

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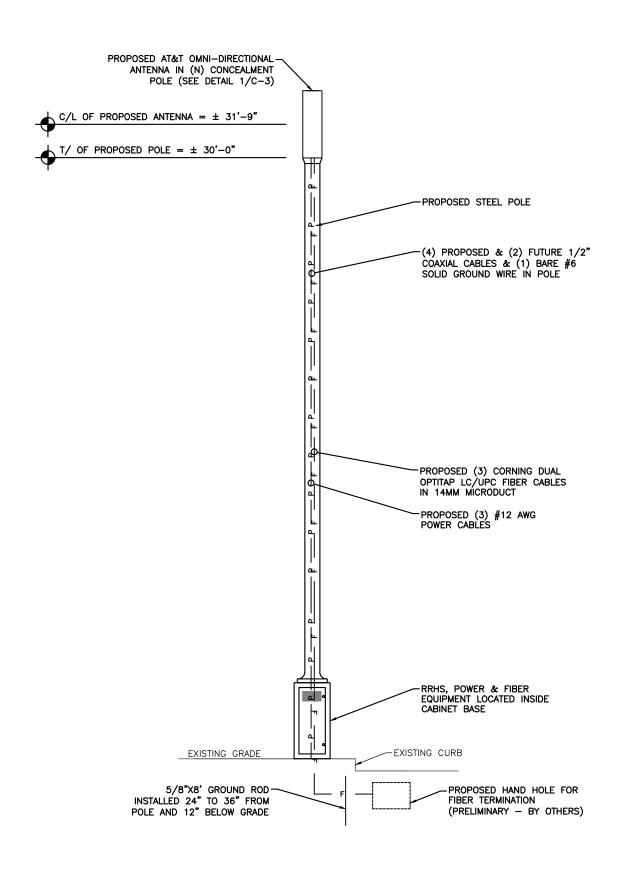
CRAN_RVWN_RIFZ2_017 B RICHMOND, VA 23298 LIGHT POLE NODE ID: NODE 17

SHEET TITLE

SITE PLAN

SHEET NUMBER

C-1



NOTES:

- CONTRACTOR SHALL REFER TO THE STRUCTURAL ANALYSIS REPORT. NO EQUIPMENT SHALL BE INSTALLED UNLESS IN ACCORDANCE WITH THIS REPORT.
- 2. ELEVATION BASED ON IKE GPS SURVEY PERFORMED BY JACOBS ENGINEERING GROUP, INC..
- 3. ALL PROPOSED EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH ATT—TP 76416.
- 4. ALL PROPOSED HARDWARE SHALL BE STAINLESS STEEL.
- 5. INSTALLERS WORKING IN THE AREA OF THE POLE ABOVE THE NORMAL COMMUNICATION SPACE MUST MEET OSHA 1910.269 REQUIREMENTS.
- 6. THE POLE/POST OWNER SHOULD ADVISE ALL EMPLOYEES THAT AT&T ANTENNAS ARE LOCATED ON SOME POLES/POSTS AND THAT THE GUIDANCE PROVIDED BY THE SIGNS SHOULD BE FOLLOWED.



7150 STANDARD DRIVE HANOVER, MD 21076



PROJECT NO:	EP3TURVS
DRAWN BY:	x. xxxxxx
CHECKED BY:	L. WOODLY

1	11.09.17	UPDATED AS PER REDLINES
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CRAN_RVWN_RIFZ2_017 B RICHMOND, VA 23298 LIGHT POLE NODE ID: NODE 17

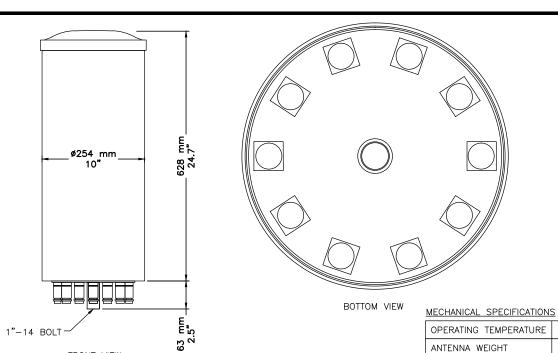
SHEET TITLE

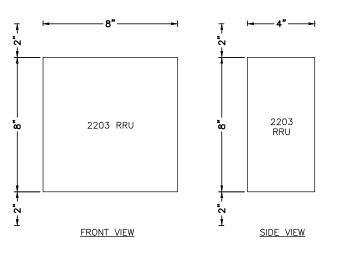
POLE ELEVATIONS

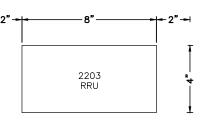
SHEET NUMBER

C-2

PROPOSED POLE ELEVATION







TOP VIEW



PROJECT NO:	EP3TUR
DRAWN BY:	X. XXX
CHECKED BY:	L. WOO

СН	CHECKED BY: L. WOO		
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A 01.XX.17 FOR REVIEW

DIMENSIONS

DIMENSIONS	
H x W x D	7.87" x 7.87" x 3.94"
WEIGHT	11 LBS.
RF	4.3-10 FEMALE
POWER CONSUMPTION	97 WATTS MAX.
MINIMUM AC FUSE RATING	6 AMP
MAXIMUM HEAT DISSIPATION	90 WATTS

ACOM-2F10D-10P ANTENNA DETAIL SCALE: NOT TO SCALE

FRONT VIEW



-40° TO 158°F

10" (256 MM)

24" (610 MM)

FIBERGLASS

COMPLIANT

LIGHT GRAY

OUTDOOR (IP65)

150mph (241km/h)

24.2 LBS (11 KG)

2203 RRH DETAIL

SCALE: NOT TO SCALE



ANTENNA DIAMETER

ANTENNA HEIGHT

RADOME MATERIAL

RADOME COLOR

INGRESS PROTECTION

WIND SURVIVAL RATING

ROHS

POLE OPTIONS STRAIGHT, TAPERED, FLUTED CUSTOM COLORS AND FINISHES TOTAL AGL 35FT MAX POWER/FIBER EQUIPMENT (SIDE ACCESS BEHIND PANEL) AC LOAD CENTER WITHOUP FIBER DEMARC

FAN COOLING SYSTEM-TRANSISTION SHROUD RADIO EQUIPMENT MOUNTING
(2) HP ERC RADIOS
(RRU32,RRU11,RRU12)

ADDITIONAL [1] ERC 2205 RADIO

OPTINID 500 OPTICAL

FEATURES:

- WEATHER-RESISTANT THERMOPLASTIC ALLOY
- SELF-LATCHING, HINGED COVER DESIGN
- CAPACITY FOR ONE 118 LGX COMPATIBLE ADAPTER PLATE PROVIDER OVERRIDE FOR CUSTOMER LOCK
 3/4" NPT CONDUIT FITTING, COMPRESSION CABLE FITTINGS
- OR GROMMETED ENTRY PORTS

SPECIFICATIONS:

DIELECTRIC STRENGTH MINIMUM 2500 VRMS FOR 1 MINUTE HIGH TEMPERATURE STORAGE *F(*C) 14 DAYS AT 159 (70.55) TEMPERATURE CYCLING *F(*C) 150 DAY CYCLING FROM 40-140

IMPACT TEST *F(*C) -40 (-40), 5 FT/LBS

DROP TEST *F(*C) -40 (-40), 5 FT ONTO CONCRETE RAIN 24 HOURS AT 10 PSI UV RESISTANCE 60 PER ASTM-G26-84

60 PER ASTM-BLL7-90 FLAMMABILITY UL94-5V

UL LISTED FLAME RETARDANT DIMENSIONS (H x W x D) IN. (CM) 6.3x7.8x2.0 (17.5 x 19.7 x 5.0) CABLE ENTRANCE IN.(CM) DIA.INPUT 1 x 3/4" NPT (1.130")

STANDARD, MOLDED-IN SNAP FINGER

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CRAN_RVWN_RIFZ2_017 B RICHMOND. VA 23298 LIGHT POLE NODE ID: NODE 17

SHEET TITLE

APPURTENANCE DETAIL

SHEET NUMBER

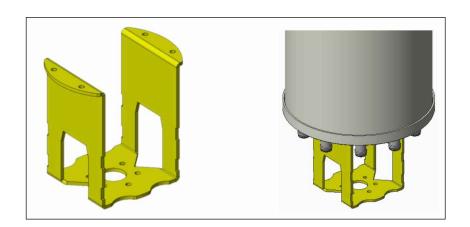
C-3

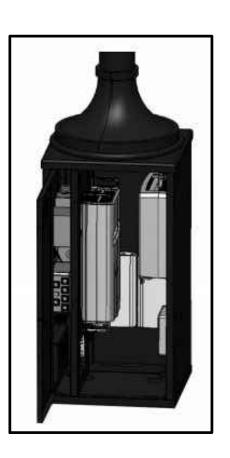
OPTINID 500 OPTICAL DEMARCATION CLOSURE DETAIL

CONCEALMENT POLE - COMMSCOPE SSC-760237427

DECORATIVE

SCALE: NOT TO SCALE





BOTTOM OF POLE CONCEALMENT ENCLOSURE FOR UP TO (2) ERICSSON HP METRO CELL RADIOS

- INTEGRATED CABINET AND POLE FOR HOLDING TWO NOKIA HIGH POWER RADIOS WITH ROOM FOR THIRD AIRSCALE MICRO LAA RADIO
- INTEGRATED AC LOAD CENTER/OVP, AC/DC RECTIFIER AND FIBER DEMARCATION
- PE STAMPED CALCULATIONS AND FOUNDATION DESIGN INCLUDED
- ORDERABLE TO MOUNT MULTI-BAND AND MULT-PORT ANTENNAS FROM MULTIPLE ANTENNA VENDORS



JACOBS°

PROJECT NO: **EP3TURVS** DRAWN BY: X. XXXXXX L. WOODLY CHECKED BY:

В	11.09.17	UPDATED AS PER REDLINES
(A	01.XX.17	FOR REVIEW

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CRAN_RVWN_RIFZ2_017 B RICHMOND, VA 23298 LIGHT POLE NODE ID: NODE 17

SHEET TITLE

CONNECTION DETAILS

SHEET NUMBER

ANTENNA MOUNTING DETAIL WITHIN CONCEALMENT

SCALE: NOT TO SCALE

BASE ENCLOSURE

SCALE: NOT TO SCALE

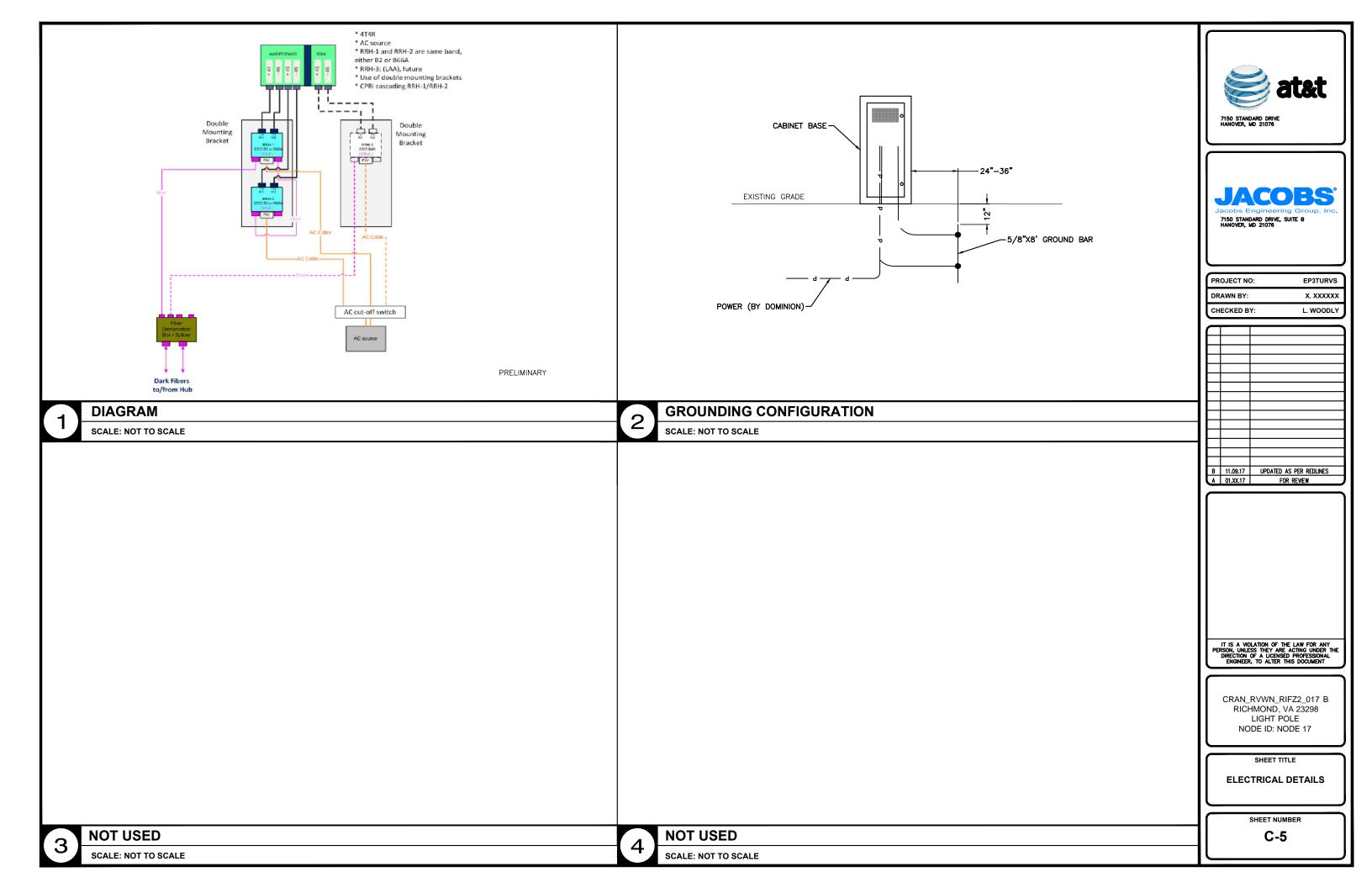
NOT USED

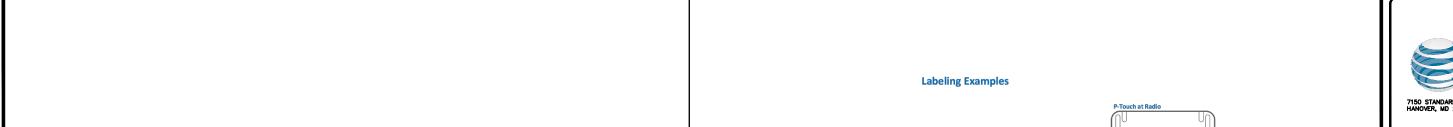
SCALE: NOT TO SCALE

NOT USED

SCALE: NOT TO SCALE

C-4





DMARC LABEL REQUIREMENTS

LINE 1: FIBER CABLE & COUNT LINE 2: JACK #

RADIO LABEL REQUIREMENTS

LINE 1: RADIO COMMON ID

NODE LABELING

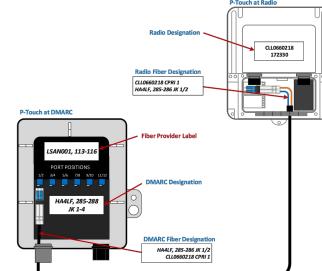
SCALE: NOT TO SCALE

RADIO FIBER LABEL REQUIREMENTS

DMARC FIBER LABEL REQUIREMENTS

LINE 1: FIBER CABLE, COUNT AND JACK # LINE 2: RADIO COMMON ID AND CPRI PORT

LINE 1: RADIO COMMON ID AND CPRI PORT LINE 2: FIBER CABLE, COUNT AND JACK #





JACOBS° 7150 STANDARD DRIVE, SUITE B HANOVER, MD 21076

	PROJECT NO:	EP3TURVS
ı	DRAWN BY:	x. xxxxxx
	CHECKED BY:	L. WOODLY

B 11.09.17 UPDATED AS PER REDLINES A 01.XX.17 FOR REVIEW

LABELING EXAMPLES

SCALE: NOT TO SCALE



RF ANTENNA LABEL NOTE:

TWO ANTENNA DECAL RF NOTICE LABELS MUST BE INSTALLED ON THE POLE OPPOSITE OF EACH OTHER, ONE FOOT (1') BELOW THE ANTENNA OR ABOVE THE UPPER TIPS OF LIGHT FIXTURES.

NOTICE NON RF WORKERS MUST POWER DOWN DEVICE WHEN WORKING ABOVE THIS POINT

RF LABEL NOTE:

A 9"X11" RF NOTICE SIGN MUST BE INSTALLED ON BOTH SIDES OF THE POLE AT A MINIMUM OF ONE FOOT (1') ABOVE THE UPPER MOST ELECTRIC SUPPLY FACILITIES. THIS SIGN MUST INCLUDE THE STANDARD RF SYMBOL AND STATE "NON RF WORKERS MUST POWER DOWN DEVICE WHEN WORKING ABOVE THIS POINT". THE SIGNS SHALL BE 60 MIL LEXAN WITH U.V. INHIBITORS AND SIGNS SHALL ADHERE TO IEEE C95.2 STANDARDS.

IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT

CRAN_RVWN_RIFZ2_017 B RICHMOND, VA 23298 LIGHT POLE NODE ID: NODE 17

SHEET TITLE

LABELING

SHEET NUMBER

C-6

NOT USED

SCALE: NOT TO SCALE

RF LABEL

GENERAL CONSTRUCTION NOTES:

- 1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE LOCAL BUILDING CODE, THE LATEST ADOPTED EDITION AND ALL OTHER APPLICABLE CODES AND ORDINANCES.
- 2. CONTRACTOR SHALL CONSTRUCT SITE IN ACCORDANCE WITH THESE DRAWINGS AND LATEST JACOBS CONSTRUCTION STANDARDS. THE SPECIFICATION IS THE RULING DOCUMENT AND ANY DISCREPANCIES BETWEEN THE SPECIFICATION AND THE CONSTRUCTION DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER OR JACOBS CM PRIOR TO THE COMMENCEMENT OF WORK.
- 3. CONTRACTOR SHALL VISIT THE JOB SITE AND SHALL FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF, CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED, AS SHOWN, PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER OR JACOBS CM PRIOR TO THE COMMENCEMENT OF WORK, NO COMPENSATION WILL BE AWARDED BASED ON CLAIM OF LACK OF KNOWLEDGE OF FIELD CONDITIONS.
- 4. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION, CONTRACTOR IS REQUIRED TO FURNISH AND INSTALL ANY/ALL ITEMS FOR A COMPLETE AND FULLY FUNCTIONAL SYSTEM SUBJECT ONLY TO OWNER-SUPPLIED ITEMS. CONTRACTOR SHALL PROVIDE ANY/ALL REQUIREMENTS FOR THE EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER.
- 5. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY UNLESS OTHERWISE NOTED. THE WORK SHALL INCLUDE FURNISHING MATERIALS. EQUIPMENT AND APPURTENANCES. AND LABOR NECESSARY TO EFFECT ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS. OWNER PROVIDED AND CONTRACTOR INSTALLED MATERIALS WILL INCLUDE THE FOLLOWING. UNLESS NOTED OTHERWISE:
 - A) TRANSMITTER
 - B) UHF ANTENNA AND MOUNTING BRACKETS, GPS ANTENNAS AND KU ANTENNAS
 - C) UHF COAX AND HANGERS
 - D) INTEGRATED LOAD CENTER
- 6. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS. SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, EXISTING CONDITIONS AND/OR DESIGN INTENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPORTING ANY DISCREPANCIES TO THE ATTENTION OF THE JACOBS CM, IN WRITING, PRIOR TO THE COMMENCEMENT OF WORK.
- 7. DETAILS PROVIDED ARE FOR THE PURPOSE OF SHOWING DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR SITE CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK.
- 8. CONTRACTOR SHALL PAY FOR APPLICABLE PERMITS, FEES, INSPECTIONS AND TESTING. CONTRACTOR IS TO OBTAIN PERMITS AND APPROVED SUBMITTALS PRIOR TO ORDERING MATERIALS AND THE COMMENCEMENT OF WORK.
- 9. THE TERM "PROVIDE" USED IN CONSTRUCTION DOCUMENTS AND SPECIFICATIONS. INDICATES THAT THE CONTRACTOR SHALL FURNISH AND INSTALL.
- 10. CONTRACTOR SHALL RECEIVE CLARIFICATION IN WRITING, AND SHALL RECEIVE IN WRITING AUTHORIZATION TO PROCEED BEFORE STARTING WORK ON ANY ITEMS NOT CLEARLY DEFINED OR IDENTIFIED BY THE CONTRACT DOCUMENTS.
- 11. CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING ACCEPTED INDUSTRY-STANDARD SKILLS AND ATTENTION. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER CONTRACT, UNLESS OTHERWISE NOTED.
- 12. CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE WORK AREA, ADJACENT AREAS AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFORM TO ALL OSHA REQUIREMENTS.
- 13. CONTRACTOR SHALL COORDINATE THEIR WORK WITH THE JACOBS CM AND SCHEDULE THEIR ACTIVITIES AND WORKING HOURS IN ACCORDANCE WITH THE
- 14. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THEIR WORK WITH THE WORK OF OTHERS AS IT MAY RELATE TO RADIO EQUIPMENT, ANTENNAS AND ANY OTHER PORTIONS OF THE WORK.
- 15. CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS UNLESS SPECIFICALLY OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
- 16. CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING SURFACES, EQUIPMENT, IMPROVEMENTS, PIPING ETC. AND IMMEDIATE REPAIR, TO NEW CONDITION, ANY DAMAGE THAT OCCURS DURING CONSTRUCTION AT THE SOLE COST OF THE CONTRACTOR.

- 17. IN DRILLING HOLES, OR CORING, INTO CONCRETE WHETHER FOR FASTENING OR ANCHORING PURPOSES, OR PENETRATIONS THROUGH THE FLOOR FOR CONDUIT RUNS. PIPE RUNS ETC. MUST BE CLEARLY UNDERSTOOD THAT REINFORCING STEEL SHALL NOT BE DRILLED INTO, CUT OR DAMAGED UNDER ANY CIRCUMSTANCES (UNLESS NOTED OTHERWISE). LOCATIONS OF REINFORCING STEEL ARE NOT DEFINITELY KNOWN AND THERÉFORE MUST BE LOCATED BY THE CONTRACTOR USING APPROPRIATE METHODS AND EQUIPMENT PRIOR TO ANY DRILLING OR CORING OPERATIONS IN EXITING CONCRETE.
- 18. CONTRACTOR SHALL REPAIR, TO NEW CONDITION, ALL EXISTING WALL SURFACES DAMAGED DURING CONSTRUCTION SUCH THAT THEY MATCH AND BLEND IN WITH
- 19. CONTRACTOR SHALL SEAL PENETRATIONS THROUGH FIRE RATED ASSEMBLIES OR MATERIALS WITH U.L. LISTED AND FIRE CODE APPROVED MATERIALS AND SYSTEMS THAT MEET OR EXCEED THE RATING OF THE ASSEMBLY IN WHICH THE NEW PENETRATION IS PLACED.
- 20. CONTRACTOR SHALL KEEP CONTRACT AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DIRT, DEBRIS AND RUBBISH. EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY OF THE OWNER SHALL BE REMOVED. LEAVE PREMISES IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST OR SMUDGES OF ANY NATURE. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL ITEMS UNTIL COMPLETION OF CONSTRUCTION.
- 21. MINIMUM BEND RADIUS OF ANTENNA CABLES SHALL BE IN ACCORDANCE WITH CABLE MANUFACTURERS RECOMMENDATIONS.
- 22. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION SHALL BE IN CONFORMANCE WITH JURISDICTIONAL OR STATE AND LOCAL GUIDELINES FOR FROSION AND SEDIMENT CONTROL AND COORDINATED WITH LOCAL REGULATORY AUTHORITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF ANY EROSION CONTROL MEASURES, RECORD-KEEPING, MONITORING, AND REPORTING TO THE OWNER AND REGULATORY AUTHORITIES.
- 23. ALL CONSTRUCTION WORK IS TO ADHERE TO APPLICANT'S INTEGRATED CONSTRUCTION STANDARDS UNLESS STATE OR LOCAL CODE IS MORE STRINGENT.
- 24. THE INTENT OF THE PLANS AND SPECIFICATIONS IS TO PERFORM THE CONSTRUCTION IN ACCORDANCE PER STATE BUILDING STANDARDS CODE AND STATE CODE OF REGULATIONS, SHOULD ANY CONDITIONS DEVELOP NOT COVERED BY THE APPROVED PLANS AND SPECIFICATIONS WHEREIN THE FINISHED WORK WILL NOT COMPLY PER STATE CODE OF REGULATIONS, A SCOPE OF WORK DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY THE JURISDICTION BEFORE PROCEEDING WITH THE WORK. A CHANGE ORDER FOR THAT SCOPE SHALL BE SUBMITTED TO THE JACOBS CM PRIOR TO PROCEEDING WITH THE
- 25. ADEQUATE AND REQUIRED LIABILITY INSURANCE SHALL BE PROVIDED BY THE CONTRACTOR FOR PROTECTION AGAINST PUBLIC LOSS AND ANY/ALL PROPERTY 12. ALL WORK SHALL BE COORDINATED WITH OWNER TRADES TO AVOID INTERFERENCE DAMAGE FOR THE DURATION OF WORK.
- 26. CONTRACTOR SHALL GUARANTEE ANY/ALL MATERIALS AND WORK FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN ONE YEAR FROM DATE OF ACCEPTANCE, ANY CORRECTIVE WORK SHALL BE COMPLETED AT THE SOLE COST OF THE CONTRACTOR.

ELECTRICAL NOTES:

- ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL ANY/ALL ELECTRICAL WORK INDICATED. ANY/ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH DRAWINGS AND ANY/ALL APPLICABLE SPECIFICATIONS. IF ANY PROBLEMS ARE ENCOUNTERED BY COMPLYING WITH THESE REQUIREMENTS, CONTRACTOR SHALL NOTIFY JACOBS CM AS SOON AS POSSIBLE, AFTER THE DISCOVERY OF THE PROBLEMS, AND SHALL NOT PROCEED WITH THAT PORTION OF WORK, UNTIL THE JACOBS CM HAS DIRECTED THE CORRECTIVE ACTIONS TO BE TAKEN.
- 2. ELECTRICAL CONTRACTOR SHALL VISIT THE JOB SITE AND FAMILIARIZE THEMSELVES WITH ANY/ALL CONDITIONS AFFECTING ELECTRICAL AND COMMUNICATION INSTALLATIÓN AND MAKE PROVISIONS AS TO THE COST THEREOF. ALL EXISTING CONDITIONS OF ELECTRICAL EQUIPMENT, ETC. THAT ARE PART OF THE FINAL SYSTEM, SHALL BE VERIFIED BY THE CONTRACTOR, PRIOR TO THE SUBMITTING OF THEIR BID. FAILURE TO COMPLY WITH THIS PARAGRAPH WILL IN NO WAY RELIEVE CONTRACTOR OF PERFORMING ALL WORK NECESSARY FOR A COMPLETE AND WORKING SYSTEM.

- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE NEC. ALL CODES AND ORDINANCES OF THE LOCAL JURISDICTION. AND POWER AND TELEPHONE COMPANIES HAVING JURISDICTION AND SHALL INCLUDE BUT ARE
 - A) UL UNDERWRITERS LABORATORIES
 - B) NEC NATIONAL ELECTRICAL CODE
 - C) NEMA NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
 - D) OSHA OCCUPATIONAL SAFETY AND HEALTH ACT
 - E) SBC STANDARD BUILDING CODE
 - F) NFPA NATIONAL FIRE PROTECTION AGENCY
 - G) ANSI AMERICAN NATIONAL STANDARDS INSTITUTE
 - H) IEEE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
 - I) ASTM AMERICAN SOCIETY FOR TESTING MATERIALS
- REFER TO SITE PLANS AND ELEVATIONS FOR EXACT LOCATIONS OF ALL EQUIPMENT, AND CONFIRM WITH JACOBS CM ANY SIZES AND LOCATIONS WHEN NEEDED.
- EXISTING SERVICES: CONTRACTOR SHALL NOT INTERRUPT EXISTING SERVICES WITHOUT WRITTEN PERMISSION OF THE OWNER.
- CONTRACTOR SHALL CONFIRM WITH LOCAL UTILITY COMPANY ANY/ALL REQUIREMENTS SUCH AS THE: LUG SIZE RESTRICTIONS, CONDUIT ENTRY, SIZE OF TRANSFORMERS, SCHEDULED DOWNTIME FOR THE OWNERS' CONFIRMATION, ETC ... ANY/ALL CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE JACOBS CM, PRIOR TO BEGINNING ANY WORK.
- MINIMUM WIRE SIZE SHALL BE #12 AWG, NOT INCLUDING CONTROL WIRING, UNLESS NOTED OTHERWISE, ALL CONDUCTORS SHALL BE COPPER WITH THWN INSULATION. UNLESS OTHERWISE NOTED
- OUTLET BOXES SHALL BE PRESSED STEEL IN DRY LOCATIONS, CAST ALLOY WITH THREADED HUBS IN WET/DAMP LOCATIONS AND SPECIAL ENCLOSURES FOR OTHER CLASSIFIED AREAS.
- 9. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF THE CONSTRUCTION. CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND PROVIDE ALL REQUIREMENTS FOR THE EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER.
- 10. ELECTRICAL SYSTEM SHALL BE AS COMPLETELY AND EFFECTIVELY GROUNDED, AS REQUIRED BY SPECIFICATIONS, SET FORTH BY APPLICANT.
- 11. ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST CLASS, WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY FUNCTIONAL AND SHALL BE APPROVED BY THE JACOBS CM AND LOCAL JURISDICTION. ANY DEFICIENCIES SHALL BE CORRECTED BY AN ELECTRICAL CONTRACTOR AT THE SOLE COST OF THE CONTRACTOR.
- WITH THE PROGRESS OF CONSTRUCTION.
- 13. THE CORRECTION OF ANY DEFECTS SHALL BE COMPLETED BY THE CONTRACTOR WITHOUT ANY ADDITIONAL CHARGE AND SHALL INCLUDE THE REPLACEMENT OR THE REPAIR OF ANY OTHER PHASE OF THE INSTALLATION, WHICH MAY HAVE BEEN DAMAGED THEREIN.
- 14. CONTRACTOR SHALL PROVIDE AND INSTALL CONDUIT, CONDUCTORS, PULL WIRES, BOXES, COVER PLATES AND DEVICES FOR ALL OUTLETS AS INDICATED.
- 15. DITCHING AND BACK FILL: CONTRACTOR SHALL PROVIDE FOR ALL UNDERGROUND INSTALLED CONDUIT AND/OR CABLES INCLUDING EXCAVATION AND BACKFILLING AND COMPACTION. REFER TO NOTES AND REQUIREMENTS "EXCAVATION, AND BACKFILLING"
- 16. MATERIALS, PRODUCTS AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF, SHALL BE NEW AND SHALL APPEAR ON THE LIST OF U.L. APPROVED ITEMS AND SHALL MEET OR EXCEED THE REQUIREMENTS OF THE NEC, NEMA AND IECE.
- 17. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OR MANUFACTURER'S CATALOG INFORMATION OF ANY/ALL EQUIPMENT AND ALL OTHER ELECTRICAL ITEMS FOR APPROVAL BY THE JACOBS CM PRIOR TO INSTALLATION.
- 18. ANY CUTTING OR PATCHING DEEMED NECESSARY FOR ELECTRICAL WORK IS THE ELECTRICAL CONTRACTORS RESPONSIBILITY AND SHALL BE INCLUDED IN THE COST FOR WORK AND PERFORMED TO THE SATISFACTION OF THE JACOBS CM UPON
- 19. THE ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELS WITH ONLY TYPEWRITTEN DIRECTORIES. ALL ELECTRICAL WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
- 20. DISCONNECT SWITCHES SHALL BE UL-RATED, H.P. RATED HEAVY-DUTY, QUICK-MAKE AND QUICK-BREAK ENCLOSURES, AS REQUIRED BY EXPOSURE TYPE.
- 21. ALL CONNECTIONS SHALL BE MADE WITH A PROTECTIVE COATING OF AN ANTI-OXIDE COMPOUND KNOWN AS "NO-OXIDE A" BY DEARBORNE CHEMICAL COMPANY. COAT ALL WIRE SURFACES BEFORE CONNECTING. EXPOSED COPPER SURFACES, INCLUDING GROUND BARS, SHALL BE TREATED - NO SUBSTITUTIONS.





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PROJECT NO

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CRAN_RVWN_RIFZ2_017 B RICHMOND, VA 23298 LIGHT POLE NODE ID: NODE 17

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

ELECTRICAL NOTES CONT'D:

- 22. RACEWAYS: CONDUIT SHALL BE SCHEDULE 80 PVC MEETING OR EXCEEDING NEMA TC2 - 1990. CONTRACTOR SHALL PLUG AND CAP EACH END OF SPARE AND EMPTY CONDUITS AND PROVIDE TWO SEPARATE PULL STRINGS - 200 LBS TEST POLYETHYLENE CORD. ALL CONDUIT BENDS SHALL BE A MINIMUM OF 2 FT. RADIUS. RGS CONDUITS WHEN SPECIFIED, SHALL MEET UL-6 FOR GALVANIZED STEEL. ALL FITTINGS SHALL BE SUITABLE FOR USE WITH THREADED RIDGED CONDUIT. COAT ALL THREADS WITH "BRITE ZINC" OR "COLD GALV.".
- 23. SUPPORT OF ALL ELECTRICAL WORK SHALL BE AS REQUIRED BY NEC.
- 24. CONDUCTORS: CONTRACTOR SHALL USE 98% CONDUCTIVITY COPPER WITH TYPE THWN INSULATION, UNLESS OTHERWISE NOTED, 600 VOLT, COLOR CODED. USE SOLID CONDUCTORS FOR WIRE UP TO AND INCLUDING NO. 8 AWG. USE STRANDED CONDUCTORS FOR WIRE ABOVE NO. 8 AWG.
- 25. CONNECTORS FOR POWER CONDUCTORS: CONTRACTOR SHALL USE PRESSURE TYPE INSULATED TWIST-ON CONNECTORS FOR NO. 10 AWG AND SMALLER. USE SOLDERLESS MECHANICAL TERMINAL LUGS FOR NO. 8 AWG AND LARGER.
- 26. SERVICE: AS SPECIFIED ON THE DRAWINGS, OWNER OR OWNER'S AGENT WILL 3. APPLY FOR POWER. ALL PROVISIONS FOR TEMPORARY POWER WILL BE OBTAINED BY THE CONTRACTOR.
- 27. TELEPHONE OR FIBER SERVICE: CONTRACTOR SHALL PROVIDE EMPTY CONDUITS WITH PULL STRINGS AS INDICATED ON DRAWINGS.
- 28. ELECTRICAL AND TELCO/FIBER RACEWAYS TO BE BURIED A MINIMUM DEPTH OF 30", UNLESS OTHERWISE NOTED.
- 29. CONTRACTOR SHALL PLACE 6" WIDE DETECTABLE WARNING TAPE AT A DEPTH OF 6" BELOW GROUND AND DIRECTLY ABOVE ELECTRICAL AND TELCO SERVICE CONDUITS. CAUTIONS TAPE TO READ "CAUTION BURIED ELECTRIC" OR BURIED
- 30. ALL BOLTS SHALL BE 3-16 STAINLESS STEEL.

GROUNDING NOTES:

- 1. ALL HARDWARE SHALL BE 3-16 STAINLESS STEEL, INCLUDING LOCK WASHERS. COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND, AS SPECIFIED, BEFORE MATING. ALL HARDWARE SHALL BE STAINLESS STEEL 3/8 INCH DIAMETER OR
- 2. FOR GROUND BOND TO STEEL ONLY: INSERT A CADMIUM FLAT WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE
- 3. ALL STEEL CONDUIT SHALL BE BONDED AT BOTH ENDS WITH GROUNDING BUSHING.
- 4. ALL ELECTRICAL AND GROUNDING AT THE POLE SITE SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE (NEC), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 780 (LATEST EDITION), AND MANUFACTURER.
- 5. ALL DETAILS ARE SHOWN IN GENERAL TERMS. ACTUAL GROUNDING INSTALLATION AND CONSTRUCTION MAY VARY DUE TO SITE SPECIFIC CONDITIONS.
- 6. GROUND ALL ANTENNA BASES, FRAMES, CABLE RUNS, AND OTHER METALLIC COMPONENTS USING #6 GROUND WIRES. FOLLOW ANTENNA AND BTS MANUFACTURER'S PRACTICES FOR GROUNDING REQUIREMENTS.
- 7. ALL GROUND CONNECTIONS SHALL BE #6 AWG, UNLESS OTHERWISE NOTED. ALL WIRES SHALL BE COPPER WITH THHN, UNLESS OTHERWISE NOTED. ALL GROUND WIRE SHALL BE SOLID TIM COATED OR STRANDED GREEN INSULATED WIRE.
- 8. CONTRACTOR TO VERIFY AND TEST GROUND TO SOURCE, 10 OHMS MAXIMUM. PROVIDE SUPPLEMENT GROUNDING RODS AS REQUIRED TO ACHIEVE SPECIFIED OHMS READING. GROUNDING AND OTHER OPTIONAL TESTING WILL BE WITNESSED BY
- 9. NOTIFY ARCHITECT/ENGINEER IF THERE ARE ANY DIFFICULTIES INSTALLING 5. GROUNDING SYSTEM DUE TO SITE SOIL CONDITIONS.
- 10. ALL HORIZONTALLY RUN GROUNDING CONDUCTORS SHALL BE INSTALLED A MINIMUM OF 30" BELOW GRADE / 6" BELOW FROST-LINE IN TRENCH. UNLESS OTHERWISE NOTED. BACK FILL SHALL BE COMPACTED AS REQUIRED BY ARCHITECT/ENGINEER.
- 11. ALL GROUND CONDUCTORS SHALL BE RUN AS STRAIGHT AND SHORT AS POSSIBLE, WITH A MINIMUM OF 12" BENDING RADIUS NOT LESS THAN 90 DEGREES.
- 12. ACCEPTABLE CONNECTIONS FOR GROUNDING SYSTEM SHALL BE:
 - A) BURNDY, HY-GRADE U.L. LISTED CONNECTORS FOR OUTDOOR USE OR AS APPROVED BY APPLICANT PROJECT MANAGER.
 - B) CADWELD, EXOTHERMIC WELDS (WELDED CONNECTIONS).
 - C) ONE (1) HOLE TINNED COPPER COMPRESSION (LONG BARREL) FITTINGS.
- 13. ALL CRIMPED CONNECTIONS SHALL HAVE EMBOSSED MANUFACTURER'S DIEMARK VISIBLE AT THE CRIMP (RESULTING FROM USE OF PROPER CRIMPING DEVICES) AND WEATHER-PROOFED WITH HEAT SHRINK.

- 14. ALL CONNECTION HARDWARE SHALL BE TYPE 3-16 STAINLESS STEEL (NOT ATTRACTED TO MAGNETS).
- ELECTRICAL SERVICE EQUIPMENT GROUNDING SHALL COMPLY WITH NEC, ARTICLE 250-82 AND SHALL BOND ALL EXISTING AND NEW GROUNDING ELECTRODES. NEW GROUNDING ELECTRODE SHALL INCLUDE BUT NOT LIMITED TO GROUND RODS.

TESTING AND EQUIPMENT TURN UP REQUIREMENTS:

- 1. RF CABLE, DATA CABLE, RADIO EQUIPMENT AND BACK HAUL EQUIPMENT TESTING WILL COMPLY WITH CURRENT INDUSTRY STANDARDS AND/OR THOSE STANDARDS OF THE EQUIPMENT MANUFACTURER OR PROVIDED TO THE CONTRACTOR PRIOR TO
- CONTRACTOR WILL USE THE APPROPRIATE CALIBRATED TESTING EQUIPMENT IN THE TESTING OF RF CABLE, DATA CABLE, RADIO EQUIPMENT AND BACK HAUL EQUIPMENT THAT MEET INDUSTRY STANDARDS OF THE MANUFACTURER OR THOSE STANDARDS PROVIDED TO THE CONTRACTOR PRIOR TO TESTING.
- CONTRACTOR TO VERIFY AND RECORD ALL TEST RESULTS AND PROVIDE THESE RESULTS WITHIN THE FINAL CLOSE OUT PACKAGE.
- ALL PERSONNEL INVOLVED IN THE TESTING OF RF CABLE, DATA CABLE, RADIO EQUIPMENT AND BACK HAUL EQUIPMENT WILL BE REQUIRED TO HAVE BEEN TRAINED AND/OR CERTIFIED IN THE PROPER TESTING OF RF CABLE, DATA CABLE, RADIO EQUIPMENT AND BACK HAUL EQUIPMENT.
- ALL TEST RESULTS SHALL BE TIME STAMPED, RECORDED AND PRESENTED PRIOR TO ENERGIZING AND TURN UP OF ANY EQUIPMENT.
- GPS EQUIPMENT IS NOT TO BE TESTED OR ATTACHED TO ANY CABLING DURING TESTING, DOING SO WILL DAMAGE THE GPS UNIT.
- 7. PRIOR TO TESTING IF THE CONTRACTOR HAS ANY QUESTIONS ABOUT THE TESTING PROCEDURES THEY ARE TO CALL AND OBTAIN ASSISTANCE FROM A QUALIFIED DESIGNATED TESTING REPRESENTATIVE.
- 8. EQUIPMENT IS NOT TO BE ENERGIZED UNTIL ALL TESTING HAS BEEN COMPLETED, APPROVED AND THE APPROPRIATE AUTHORITY HAS BEEN NOTIFIED AND GIVES APPROVAL TO ENERGIZE THE EQUIPMENT.

SITE WORK NOTES:

- 1. DO NOT EXCAVATE OR DISTURB BEYOND THE PROPERTY LINES OR LEASE LINES, UNLESS OTHERWISE NOTED.
- 2. SIZE, LOCATION AND TYPE OF ANY UNDERGROUND UTILITIES OR IMPROVEMENTS SHALL BE ACCURATELY NOTED AND PLACED ON AS-BUILD DRAWINGS BY GENERAL CONTRACTOR AND ISSUED TO ARCHITECT/ENGINEER AT COMPLETION OF PROJECT.
- ALL EXISTING UTILITIES, FACILITIES, CONDITIONS AND THEIR DIMENSIONS SHOWN ON PLANS HAVE BEEN PLOTTED FROM AVAILABLE RECORDS. THE ENGINEER AND OWNER ASSUME NO RESPONSIBILITY WHATSOEVER AS TO THE SUFFICIENCY OR ACCURACY OF THE INFORMATION SHOWN ON THE PLANS OR THE MANNER OF THEIR REMOVAL OR ADJUSTMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL EXISTING UTILITIES AND FACILITIES PRIOR TO START OF CONSTRUCTION. CONTRACTOR SHALL ALSO OBTAIN FROM EACH UTILITY COMPANY DETAILED INFORMATION RELATIVE TO WORKING SCHEDULES AND METHODS OF REMOVING OR ADJUSTING EXISTING UTILITIES.
- CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES BOTH HORIZONTALLY AND VERTICALLY PRIOR TO START OF CONSTRUCTION. ANY DISCREPANCIES OR DOUBTS AS TO THE INTERPRETATION OF PLANS SHALL BE IMMEDIATELY REPORTED TO THE ARCHITECT/ENGINEER OR JACOBS CM FOR RESOLUTION AND INSTRUCTION. AND NO FURTHER WORK SHALL BE PERFORMED UNTIL THE DISCREPANCY IS CHECKED AND CORRECTED BY THE ARCHITECT/ENGINEER. FAILURE TO SECURE SUCH INSTRUCTION MEANS CONTRACTOR WILL HAVE WORKED AT THEIR OWN RISK AND EXPENSE. CONTRACTOR SHALL CALL LOCAL UTILITY LOCATE HOT LINE, SUCH AS 811, FOR UTILITY LOCATIONS A MINIMUM OF 48 HOURS PRIOR TO START OF CONSTRUCTION.
- ALL NEW AND EXISTING STRUCTURES ON SITE AND IN AREAS TO BE DISTURBED BY CONSTRUCTION SHALL BE ADJUSTED TO FINISH ELEVATIONS PRIOR TO FINAL INSPECTION OF WORK. ANY COST RELATED TO ADJUSTING EXISTING STRUCTURES SHALL BE BORNE SOLELY BY THE CONTRACTOR.
- 6. GRADING OF THE SITE WORK AREA IS TO BE SMOOTH AND CONTINUOUS IN SLOPE AND IS TO FEATHER INTO EXISTING GRADES AT THE GRADING LIMITS.
- 7. ALL TEMPORARY EXCAVATIONS FOR THE INSTALLATION OF FOUNDATIONS, UTILITIES, ETC., SHALL BE PROPERLY LAID BACK OR BRACED IN ACCORDANCE WITH CORRECT OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REQUIREMENTS.
- 8. STRUCTURAL FILLS SUPPORTING PAVEMENTS SHALL BE COMPACTED TO 95% OF MAXIMUM STANDARD PROCTOR DRY DENSITY, UNLESS OTHERWISE NOTED.
- NEW GRADES NOT IN BUILDING AND DRIVEWAY IMPROVEMENT AREA TO BE ACHIEVED BY FILLING WITH APPROVED CLEAN FILL AND COMPACTED TO 95% OF STANDARD PROCTOR DENSITY.

- 10 ALL FILL SHALL BE PLACED IN UNIFORM LIFTS. THE LIFTS THICKNESS SHOULD NOT EXCEED THAT WHICH CAN BE PROPERLY COMPACTED THROUGHOUT ITS ENTIRE DEPTH WITH THE FOUIPMENT AVAILABLE.
- 11. ANY FILLS PLACED ON EXISTING SLOPES THAT ARE STEEPER THAN 10 HORIZONTAL TO 1 VERTICAL SHALL BE PROPERLY BENCHED INTO THE EXISTING SLOPE AS DIRECTED BY GEOTECHNICAL ENGINEER.
- 12. CONTRACTOR SHALL CLEAN ENTIRE SITE AFTER CONSTRUCTION SUCH THAT NO DEBRIS, PAPER, TRASH, WEEDS, BRUSH, EXCESS FILL, OR ANY OTHER DEPOSITS WILL REMAIN. ALL MATERIALS COLLECTED DURING CLEANING OPERATIONS SHALL BE DISPOSED OF OFF-SITE BY THE GENERAL CONTRACTOR.
- 13. ALL TREES AND SHRUBS WHICH ARE NOT IN DIRECT CONFLICT WITH THE IMPROVEMENTS SHALL BE PROTECTED BY THE GENERAL CONTRACTOR.
- 14. ALL SITE WORK SHALL BE CAREFULLY COORDINATED BY GENERAL CONTRACTOR WITH LOCAL UTILITY COMPANY, TELEPHONE COMPANY, AND ANY OTHER UTILITY COMPANIES HAVING JURISDICTION OVER THIS LOCATION.

ENVIRONMENTAL NOTES:

- 1. ALL WORK PERFORMED SHALL BE DONE IN ACCORDANCE WITH ISSUED PERMITS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAYMENT OF FINES AND PROPER CLEAN UP FOR AREAS IN VIOLATION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROLS DURING CONSTRUCTION FOR PROTECTION OF ADJACENT PROPERTIES, ROADWAYS AND WATERWAYS. ALL EROSION AND SEDIMENTATION CONTROLS SHALL BE MAINTAINED IN PLACE THROUGH FINAL JURISDICTIONAL INSPECTION AND RELEASE OF SITE.
- 3. CONTRACTOR SHALL INSTALL/CONSTRUCT ALL NECESSARY SEDIMENT/SILT CONTROL FENCING AND PROTECTIVE MEASURES AS REQUIRED BY THE LOCAL JURISDICTION WITHIN THE LIMITS OF SITE DISTURBANCE PRIOR TO CONSTRUCTION.
- NO SEDIMENT SHALL BE ALLOWED TO EXIT THE PROPERTY. THE CONTRACTOR IS RESPONSIBLE FOR TAKING ADEQUATE MEASURES FOR CONTROLLING EROSION. ADDITIONAL SEDIMENT CONTROL FENCING MAY BE REQUIRED IN ANY AREAS SUBJECT TO EROSION.
- 5. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING POSITIVE DRAINAGE ON THE SITE AT ALL TIMES WITH SILT AND EROSION CONTROL MEASURES MAINTAINED ON THE DOWNSTREAM SIDE OF SITE DRAINAGE, ANY DAMAGE TO ADJACENT PROPERTY AS A RESULT OF EROSION WILL BE CORRECTED AT THE CONTRACTORS EXPENSE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DAILY INSPECTIONS AND ANY REPAIRS OF ALL SEDIMENT CONTROL MEASURES INCLUDING SEDIMENT REMOVAL AS
- CLEARING OF VEGETATION AND TREE REMOVAL SHALL BE ONLY AS PERMITTED AND BE HELD TO A MINIMUM. ONLY TREES NECESSARY FOR CONSTRUCTION OF THE FACILITIES SHALL BE REMOVED.
- SEEDING AND MULCHING AND/OR SODDING OF THE SITE WILL BE ACCOMPLISHED AS SOON AS POSSIBLE AFTER COMPLETION OF THE PROJECT FACILITIES AFFECTING LAND DISTURBANCE.
- 9. CONTRACTOR SHALL PROVIDE ALL EROSION AND SEDIMENTATION CONTROL MEASURES AS REQUIRED BY LOCAL, COUNTY AND STATE CODES AND ORDINANCES TO PROTECT EMBANKMENTS FROM SOIL LOSS AND TO PREVENT ACCUMULATION OF SOIL AND SILT IN STREAMS AND DRAINAGE PATHS LEAVING THE CONSTRUCTION AREA. THIS MAY INCLUDE, BUT IS NOT LIMITED TO SUCH MEASURES AS SILT FENCES, STRAW BALE SEDIMENT BARRIERS, AND CHECK DAMS.
- 10. RIP RAP OF SIZES INDICATED SHALL CONSIST OF CLEAN, HARD, SOUND, DURABLE, UNIFORM IN QUALITY STONE FREE OF ANY DETRIMENTAL QUANTITY OF SOFT, FRIABLE, THIN, ELONGATED OR LAMINATED PIECES, DISINTEGRATED MATERIAL, ORGANIC MATTER, OIL, ALKALI, OR OTHER DELETERIOUS SUBSTANCES.
- 11. GENERAL CONTRACTOR TO PLACE MATERIAL AT ALL CATCH BASINS ADJACENT TO CONSTRUCTION SITE TO PREVENT SOLID WASTE CONTAMINATION FROM ENTERING SEWER SYSTEM.





EP3TURVS

PROJECT NO

DR	AWN BY:	X. XXXXXX
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CRAN_RVWN_RIFZ2_017 B RICHMOND, VA 23298 LIGHT POLE NODE ID: NODE 17

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

FOUNDATION, EXCAVATION AND BACKFILL NOTES:

- 1. ALL FINAL GRADED SLOPES SHALL BE A MAXIMUM OF 3 HORIZONTAL TO 1 VERTICAL, UNITESS OTHERWISE NOTED.
- 2. BACKFILL OF POLE SHALL BE PERFORMED IN ONE (1) OF THREE (3) OPTIONS:
 - A) PREFERRED: RAINBOW INDUSTRIES POLE SETTING FOAM SHALL BE INSTALLED PER MANUFACTURER SPECS. FOAM SHALL ALWAYS BE USED FRO POOR SOILS. B) SECONDARY: CONCRETE (REQUIRES JACOBS CM WRITTEN APPROVAL) ALLOWABLE SOIL PRESSURE = 2000 PSF (ASSUMED). NON-NATIVE SOILS SHALL BE REMOVED FROM BORE AREA AND SHALL NOT BE REUSED FOR BACKFILL.
- 3. ALL EXCAVATIONS PREPARED FOR PLACEMENT OF CONCRETE SHALL BE OF UNDISTURBED SOILS, SUBSTANTIALLY HORIZONTAL AND FREE FROM ANY LOOSE, UNSUITABLE MATERIAL OR FROZEN SOILS, AND WITHOUT THE PRESENCE OF POUNDING WATER. DEWATERING FOR EXCESS GROUND WATER SHALL BE PROVIDED WHEN REQUIRED. COMPACTION OF SOILS UNDER CONCRETE PAD FOUNDATIONS SHALL NOT BE LESS THAN 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY FOR THE SOIL IN ACCORDANCE WITH ASTM D1557.
- 4. CONCRETE FOUNDATIONS SHALL NOT BE PLACED ON ORGANIC OR UNSUITABLE MATERIAL. IF ADEQUATE BEARING CAPACITY IS NOT ACHIEVED AT THE DESIGNED EXCAVATION DEPTH, THE UNSATISFACTORY SOIL SHALL BE EXCAVATED TO ITS FULL DEPTH AND EITHER BE REPLACED WITH MECHANICALLY COMPACTED GRANULAR MATERIAL OR THE EXCAVATION SHALL BE FILLED WITH CONCRETE OF THE SAME TYPE SPECIFIED FOR THE FOUNDATION. CRUSHED STONE MAY BE USED TO STABILIZE THE BOTTOM OF THE EXCAVATION. ANY STONE SUB BASE MATERIAL, IF USED, SHALL NOT SUBSTITUTE FOR REQUIRED THICKNESS OF CONCRETE.
- 5. ALL EXCAVATIONS SHALL BE CLEAN OF UNSUITABLE MATERIAL SUCH AS VEGETATION, TRASH, DEBRIS, AND SO FORTH PRIOR TO BACK FILLING. BACK FILL SHALL CONSIST OF APPROVED MATERIALS SUCH AS EARTH, LOAM, SANDY CLAY, SAND AND GRAVEL, OR SOFT SHALE, FREE FROM CLODS OR LARGE STONES OVER 2 1/2" MAX DIMENSIONS. ALL BACK FILL SHALL BE PLACED IN COMPACTED LAYERS.
- 6. ALL FILL MATERIALS AND FOUNDATION BACK FILL SHALL BE PLACED IN MAXIMUM 6" THICK LIFTS BEFORE COMPACTION. EACH LIFT SHALL BE WETTED IF REQUIRED AND COMPACTED TO NOT LESS THAN 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY FOR SOIL IN ACCORDANCE WITH ASTM D1557.
- 7. NEWLY PLACED CONCRETE FOUNDATIONS SHALL CURE A MINIMUM OF 72 HOURS PRIOR TO BACK FILLING.
- 8. FINISHED GRADING SHALL BE SLOPED TO PROVIDE POSITIVE DRAINAGE AND PREVENT STANDING WATER. THE FINAL (FINISH) ELEVATION OF SLAB FOUNDATIONS SHALL SLOPE AWAY IN ALL DIRECTIONS FROM THE CENTER. FINISH GRADE OF CONCRETE PADS SHALL BE A MAXIMUM OF 4 INCHES ABOVE FINAL FINISH GRADE ELEVATIONS WHERE REQUIRED.
- 9. NEWLY GRADED GRAVEL SURFACE AREAS TO RECEIVE GRAVEL SHALL BE COVERED WITH GEOTEXTILE FABRIC TYPE: TYPAR—3401 AS MANUFACTURED BY TYPAR GEOSYNTHETICS OR AN APPROVED EQUIVALENT, SHOWN ON PLANS. THE GEOTEXTILE FABRIC SHALL BE BLACK IN COLOR TO CONTROL THE RECURRENCE OF VEGETATIVE GROWTH AND EXTEND TO WITHIN 1 FOOT OUTSIDE THE SITE FENCING OR ELECTRICAL GROUNDING SYSTEM PERIMETER WHICH EVER IS GREATER. ALL FABRIC SHALL BE COVERED WITH A MINIMUM OF 4" DEEP COMPACTED STONE OR GRAVEL AS SPECIFIED. I.E. DOT TYPE NO. 57 FOR FENCED COMPOUND: DOT TYPE NO. 67 FOR ACCESS DRIVE AREA, UNLESS OTHERWISE NOTED.
- 10. IN ALL AREAS TO RECEIVE FILL: REMOVE ALL VEGETATION, TOPSOIL, DEBRIS, WET AND UNSATISFACTORY SOIL MATERIALS, OBSTRUCTIONS, AND DELETERIOUS MATERIALS FROM GROUND SURFACE. PLOW STRIP OR BREAK UP SLOPED SURFACES STEEPER THAN 1 VERTICAL TO 4 HORIZONTAL SUCH THAT FILL MATERIAL WILL BIND WITH EXISTING/PREPARED SOIL SURFACE.
- 11. WHEN SUB GRADE OR PREPARED GROUND SURFACE HAS A DENSITY LESS THAN THAT REQUIRED FOR THE FILL MATERIAL, SCARIFY THE GROUND SURFACE TO DEPTH REQUIRED. PULVERIZE, MOISTURE—CONDITION AND/OR AERATE THE SOILS AND RECOMPACT TO THE REQUIRED DENSITY PRIOR TO PLACEMENT OF FILLS.
- 12. IN AREAS WHICH EXISTING GRAVEL SURFACING IS REMOVED OR DISTURBED DURING CONSTRUCTION OPERATIONS, REPLACE GRAVEL SURFACING TO MATCH ADJACENT GRAVEL SURFACING AND RESTORED TO THE SAME THICKNESS AND COMPACTION AS SPECIFIED. ALL RESTORED GRAVEL SURFACING SHALL BE FREE FROM CORRUGATIONS AND WAVES.

- 13. EXISTING GRAVEL SURFACING MAY NOT BE REUSED.
- 14. GRAVEL SUB SURFACE SHALL BE PREPARED TO REQUIRED COMPACTION AND SUB GRADE ELEVATIONS BEFORE GRAVEL SURFACING IS PLACED AND/OR RESTORED. ANY LOOSE OR DISTURBED MATERIALS SHALL BE THOROUGHLY COMPACTED AND ANY DEPRESSIONS IN THE SUB GRADE SHALL BE FILLED AND COMPACTED WITH APPROVED SELECTED MATERIAL. GRAVEL SURFACING MATERIAL SHALL NOT BE USED FOR FILLING DEPRESSIONS IN THE SUB GRADE.
- 15. PROTECT EXISTING GRAVEL SURFACING AND SUB GRADE IN AREAS WHERE EQUIPMENT LOADS WILL OPERATE. USE PLANKING "MATTS" OR OTHER SUITABLE PROTECTION DESIGNED TO SPREAD EQUIPMENT LOADS AS MAY BE NECESSARY. REPAIR ANY DAMAGE TO EXISTING GRAVEL SURFACING OR SUB GRADE WHERE SUCH DAMAGE IS DUE TO THE CONTRACTORS OPERATIONS.
- 16. DAMAGE TO EXISTING STRUCTURES AND/OR UTILITIES RESULTING FROM CONTRACTORS NEGLIGENCE SHALL BE REPAIRED AND/OR REPLACED TO THE OWNERS SATISFACTION AT NO ADDITIONAL COST TO THE CONTRACT.
- 17. ALL SUITABLE BORROW MATERIAL FOR BACK FILL OF THE SITE SHALL BE INCLUDED IN THE BID. EXCESS TOPSOIL AND UNSUITABLE MATERIAL SHALL BE DISPOSED OF OFF-SITE AT LOCATIONS APPROVED BY GOVERNING AGENCIES AT NO ADDITIONAL COST TO THE CONTRACT.





PROJECT NO:	EP3TURVS
DRAWN BY:	x. xxxxxx
CHECKED BY:	L. WOODLY

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Α	01.XX.17	FOR REVIEW

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CRAN_RVWN_RIFZ2_017 B RICHMOND, VA 23298 LIGHT POLE NODE ID: NODE 17

SHEET TITLE

GENERAL NOTES

SHEET NUMBER



NODE NAME: CRAN RVWN RIFZ2 026 FA: 14263910 USID: 188925 JURISDICTION: CITY OF RICHMOND



THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE; NO SANITARY SEWER SERVICE, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

SITE INFORMATION

APPLICANT: AT&T

APPLICANT ADDRESS: 4801 COX ROAD

GLEN ALLEN, VA 23060

AT&T PROJECT MANAGER TARA BREWER

SITE ADDRESS: 910 E. BYRD ST

RICHMOND, VA 23219

PROPERTY OWNER: CITY OF RICHMOND

PROPERTY OWNER ADDRESS: 900 E. BROAD ST

RICHMOND, VA 23219

STRUCTURE TYPE: NEW STEEL CONCEALMENT POLE

JURISDICTION: CITY OF RICHMOND

LATITUDE: N 37.5352779

LONGITUDE: W -77.4379103

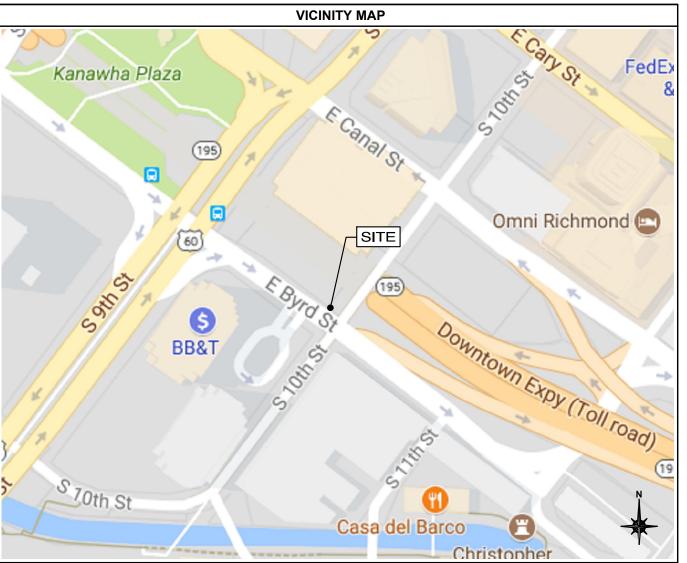
NAD 83 LAT/LONG DATUM: GROUND ELEVATION: ±87' AMSL

POWER DOMINION VIRGINIA POWER

TELCO LUMOS

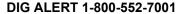
IMPORTANT NOTICE

THE EXISTING CONDITIONS REPRESENTED HEREIN ARE BASED ON VISUAL OBSERVATIONS AND INFORMATION PROVIDED BY OTHERS. CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION, REPORT AND CONFLICTS OR DISCREPANCIES PRIOR TO CONSTRUCTION.



DRIVING DIRECTIONS

DIRECTION FROM 4801 COX ROAD, GLEN ALLEN, VA 23060. HEAD SOUTHWEST ON COX RD TOWARD N PARK DR. TURN RIGHT ONTO NUCKOLS RD. USE THE RIGHT LANE TO MERGE ONTO I-295N VIA THE RAMP TO I-64W/CHARLOTTESVILLE, MERGE ONTO I-295N, USE THE LEFT 2 LANES TO EXIT 53B TO MERGE ONTO I-64E TOWARD US-250 RICHMOND. KEEP LEFT TO CONTINUE ON I-64, FOLLOW SIGNS FOR INTERSTATE 64E/INTERSTATE I-95S/NORFOLK/PETERSBURG. USE THE RIGHT LANE TO KEEP RIGHT AT THE FORK, STAY ON I-64 AND FOLLOW SIGNS FOR WILLIAMSBURG/NORFOLK. TAKE THE 3RD EXIT TOWARD COLISEUM/DOWNTOWN. CONTINUE ONTO N 3RD ST. CONTINUE STRAIGHT TO STAY ON N 3RD ST. TURN LEFT ONTO E BYRD ST. SITE WILL BE ON THE LEFT.





Know what's below. Call before you dig.

48 HOURS BEFORE YOU DIG

SCOPE OF WORK

INSTALLATION OF A WIRELESS COMMUNICATIONS ANTENNA AND ASSOCIATED SUPPORT EQUIPMENT ON A PROPOSED STEEL CONCEALMENT POLE.

CODES

2012 VIRGINIA STATE UNIFORM BUILDING CODE 2012 INTERNATIONAL BUILDING CODE

2011 NATIONAL ELECTRICAL CODE

STRUCTURAL STANDARD FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES TO TIA-222-G

SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION FOR THE LOCATION. THE EDITION OF THE ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN

AT&T STANDARDS: ATT-TP 76300, ATT-TP 76416 & UPDATES AS

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN.
WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A
SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

	DRAWING INDEX		
SHEET NO:	SHEET TITLE		
T-1	TITLE SHEET		
C-1	SITE PLAN		
C-2	POLE ELEVATIONS		
C-3	APPURTENANCE DETAILS		
C-4	ELECTRICAL DETAILS		
C-5	LABELING		
GN-1	N-1 GENERAL NOTES		
GN-2	GENERAL NOTES		
GN-3 GENERAL NOTES			

ARCHITECT/ENGINEER

JACOBS ENGINEERING GROUP, INC. 7150 STANDARD DRIVE, SUITE B HANOVER, MD 21076 CONTACT: LEAH WOODLY PROJECT MANAGER TEL: (443) 230-4400 X113





FP3TURVS

X. XXXXXX

PROJECT NO:

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CHECKED BY:		Y: L. WOODLY
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В	11.09.17	REVISION
Α	01.XX.17	FOR REVIEW

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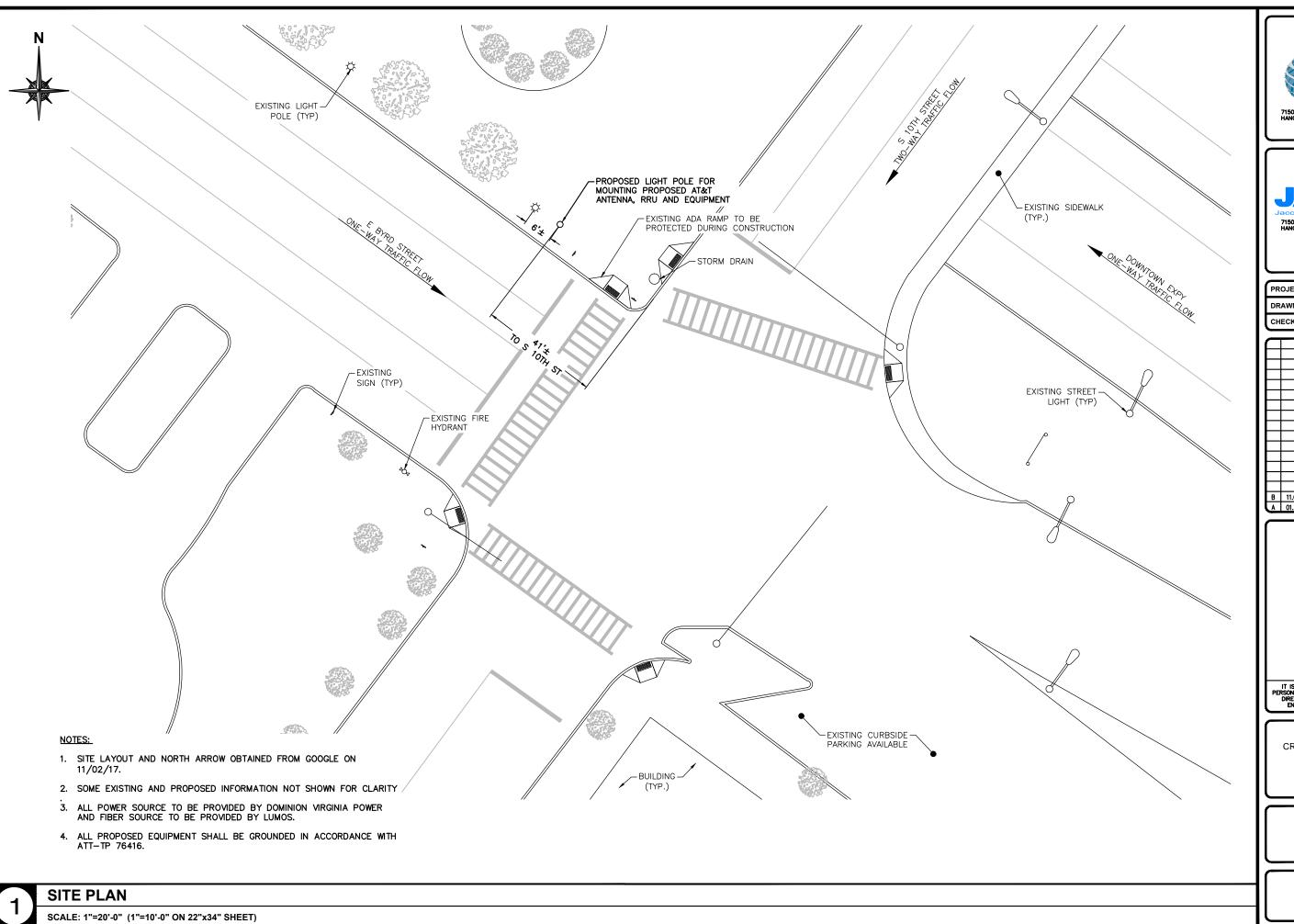
CRAN_RVWN_RIFZ2_026 C RICHMOND, VA 23219 LIGHT POLE NODE ID: NODE 26

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1



JACOBS° 7150 STANDARD DRIVE, SUITE B HANOVER, MD 21076

PROJECT NO: **EP3TURVS** DRAWN BY: X. XXXXXX CHECKED BY: L. WOODLY

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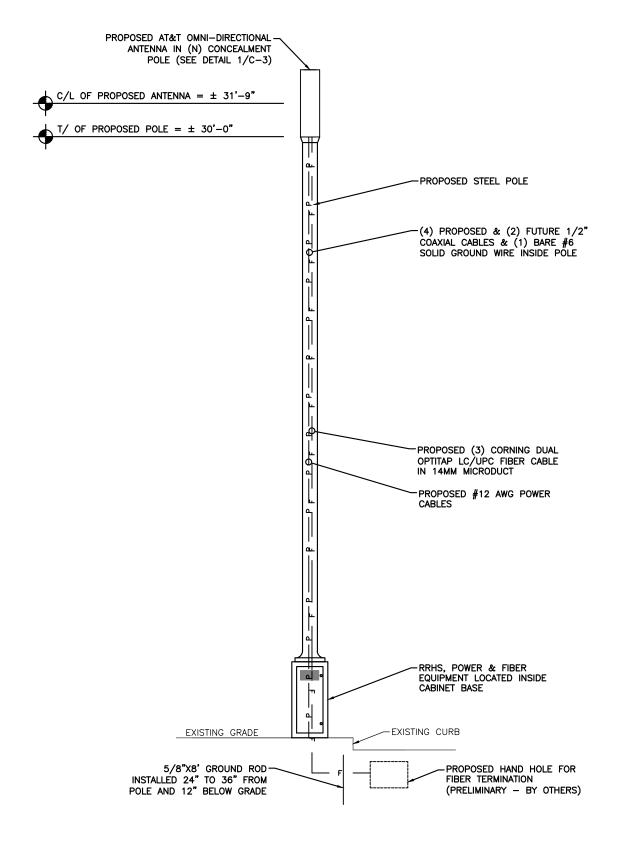
CRAN_RVWN_RIFZ2_026 C RICHMOND, VA 23219 LIGHT POLE NODE ID: NODE 26

SHEET TITLE

SITE PLAN

SHEET NUMBER

C-1



NOTES:

- CONTRACTOR SHALL REFER TO THE STRUCTURAL ANALYSIS REPORT. NO EQUIPMENT SHALL BE INSTALLED UNLESS IN ACCORDANCE WITH THIS REPORT.
- 2. ELEVATION BASED ON IKE GPS SURVEY PERFORMED BY JACOBS ENGINEERING GROUP, INC..
- 3. ALL PROPOSED EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH ATT—TP 76416.
- 4. ALL PROPOSED HARDWARE SHALL BE STAINLESS STEEL.
- INSTALLERS WORKING IN THE AREA OF THE POLE ABOVE THE NORMAL COMMUNICATION SPACE MUST MEET OSHA 1910.269 REQUIREMENTS.
- 6. THE POLE/POST OWNER SHOULD ADVISE ALL EMPLOYEES THAT AT&T ANTENNAS ARE LOCATED ON SOME POLES/POSTS AND THAT THE GUIDANCE PROVIDED BY THE SIGNS SHOULD BE FOLLOWED.



7150 STANDARD DRIVI HANOVER, MD 21076



PROJECT NO:	EP3TURVS
DRAWN BY:	x. xxxxxx
CHECKED BY:	L. WOODLY

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SHEET TITLE

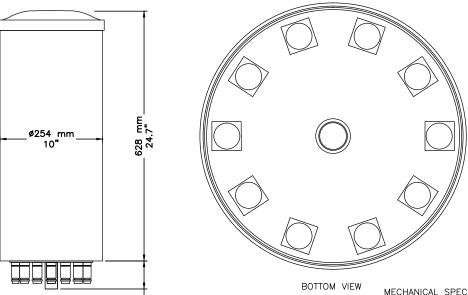
POLE ELEVATIONS

SHEET NUMBER

C-2

PROPOSED POLE ELEVATION

POLE ELEVATIONS



MECHANICAL SPECIFICATIONS

OPERATING TEMPERATURE	-40° TO 158°F
ANTENNA WEIGHT	24.2 LBS (11 KG)
ANTENNA DIAMETER	10" (256 MM)
ANTENNA HEIGHT	24" (610 MM)
RADOME MATERIAL	FIBERGLASS
ROHS	COMPLIANT
RADOME COLOR	LIGHT GRAY
INGRESS PROTECTION	OUTDOOR (IP65)
WIND SURVIVAL RATING	150mph (241km/h)

2203 2203 RRU FRONT VIEW SIDE VIEW

2203 RRU

TOP VIEW



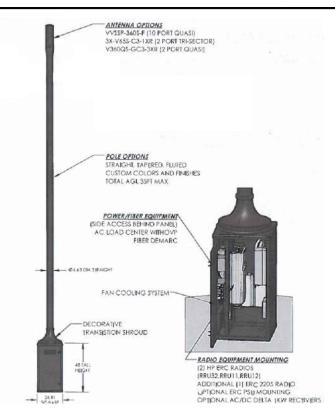
DIMENSIONS

DIMENSIONS	
H x W x D	7.87" × 7.87" × 3.94"
WEIGHT	11 LBS.
RF	4.3-10 FEMALE
POWER CONSUMPTION	97 WATTS MAX.
MINIMUM AC FUSE RATING	6 AMP
MAXIMUM HEAT DISSIPATION	90 WATTS

ACOM-2F10D-10P ANTENNA DETAIL

SCALE: NOT TO SCALE

FRONT VIEW



2203 RRH DETAIL

SCALE: NOT TO SCALE

OPTINID 500 OPTICAL

FEATURES:

- WEATHER-RESISTANT THERMOPLASTIC ALLOY
- SELF-LATCHING, HINGED COVER DESIGN
- CAPACITY FOR ONE 118 LGX COMPATIBLE ADAPTER PLATE PROVIDER OVERRIDE FOR CUSTOMER LOCK
 3/4" NPT CONDUIT FITTING, COMPRESSION CABLE FITTINGS
- OR GROMMETED ENTRY PORTS

SPECIFICATIONS:

DIELECTRIC STRENGTH MINIMUM 2500 VRMS FOR 1 MINUTE HIGH TEMPERATURE STORAGE *F(*C) 14 DAYS AT 159 (70.55) TEMPERATURE CYCLING *F(*C) 150 DAY CYCLING FROM 40-140

IMPACT TEST *F(*C) -40 (-40), 5 FT/LBS DROP TEST *F(*C) -40 (-40), 5 FT ONTO CONCRETE

RAIN 24 HOURS AT 10 PSI UV RESISTANCE 60 PER ASTM-G26-84 60 PER ASTM-BLL7-90

FLAMMABILITY UL94-5V

UL LISTED FLAME RETARDANT DIMENSIONS (H x W x D) IN. (CM) 6.3x7.8x2.0 (17.5 x 19.7 x 5.0) CABLE ENTRANCE IN.(CM) DIA.INPUT 1 x 3/4" NPT (1.130")

STANDARD, MOLDED-IN SNAP FINGER





PROJECT NO: **FP3TUR** DRAWN BY:

X. XXX

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CRAN_RVWN_RIFZ2_026 C RICHMOND, VA 23219 LIGHT POLE NODE ID: NODE 26

SHEET TITLE

APPURTENANCE DETAIL

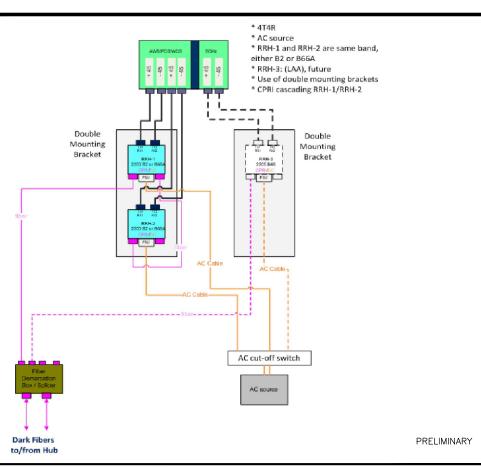
SHEET NUMBER

C-3

CONCEALMENT POLE - COMMSCOPE SSC-760237427

SCALE: NOT TO SCALE

OPTINID 500 OPTICAL DEMARCATION CLOSURE DETAIL



-BARE #6 SOLID GROUND FROM ANTENNA EXISTING GRADE -5/8"X8' GROUND BAR BARE #6 SOLID GROUND FROM CONCEALMENT SHROUD (RRHS) POWER (BY DOMINION)



ı	PROJECT NO:	EP3TURVS
ı	DRAWN BY:	x. xxxxxx
ı	CHECKED BY:	L. WOODLY

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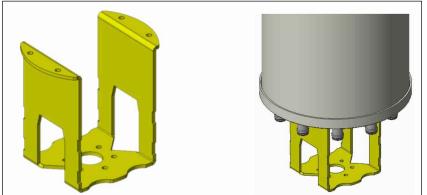
ELECTRICAL DETAILS

SHEET NUMBER

C-4

DIAGRAM

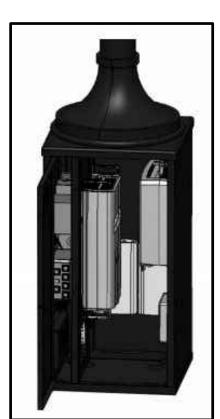
SCALE: NOT TO SCALE





GROUNDING CONFIGURATION

SCALE: NOT TO SCALE



BOTTOM OF POLE CONCEALMENT ENCLOSURE FOR UP TO (2) ERICSSON HP METRO CELL RADIOS

- INTEGRATED CABINET AND POLE FOR HOLDING TWO NOKIA HIGH POWER RADIOS WITH ROOM FOR THIRD AIRSCALE
- INTEGRATED AC LOAD CENTER/OVP, AC/DC RECTIFIER AND FIBER DEMARCATION
- PE STAMPED CALCULATIONS AND FOUNDATION DESIGN INCLUDED
- ORDERABLE TO MOUNT MULTI-BAND AND MULT-PORT ANTENNAS FROM MULTIPLE ANTENNA VENDORS

ANTENNA MOUNTING DETAIL WITHIN CONCEALMENT

BASE ENCLOSURE

SCALE: NOT TO SCALE





DMARC LABEL REQUIREMENTS

RADIO LABEL REQUIREMENTS

LINE 1: FIBER CABLE & COUNT LINE 2: JACK #

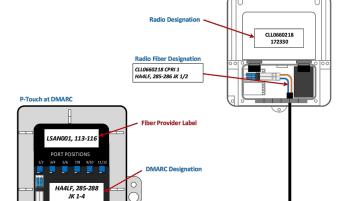
LINE 1: RADIO COMMON ID

DMARC FIBER LABEL REQUIREMENTS

LINE 1: FIBER CABLE, COUNT AND JACK # LINE 2: RADIO COMMON ID AND CPRI PORT

RADIO FIBER LABEL REQUIREMENTS

LINE 1: RADIO COMMON ID AND CPRI PORT LINE 2: FIBER CABLE, COUNT AND JACK #



DMARC Fiber Designation HA4LF, 285-286 JK 1/2 CLL0660218 CPRI 1 P-Touch at Radio

JACOBS° 7150 STANDARD DRIVE, SUITE B HANOVER, MD 21076

PROJECT NO: **EP3TURVS** DRAWN BY: X. XXXXXX CHECKED BY: L. WOODLY

B 11.09.17 A 01.XX.17

NODE LABELING

SCALE: NOT TO SCALE

LABELING EXAMPLES

SCALE: NOT TO SCALE



RF ANTENNA LABEL NOTE:

TWO ANTENNA DECAL RF NOTICE LABELS MUST BE INSTALLED ON THE POLE OPPOSITE OF EACH OTHER, ONE FOOT (1') BELOW THE ANTENNA OR ABOVE THE UPPER TIPS OF LIGHT FIXTURES.

NOTICE NON RF WORKERS MUST POWER DOWN DEVICE WHEN WORKING ABOVE THIS POINT

RF LABEL NOTE:

A 9"X11" RF NOTICE SIGN MUST BE INSTALLED ON BOTH SIDES OF THE POLE AT A MINIMUM OF ONE FOOT (1') ABOVE THE UPPER MOST ELECTRIC SUPPLY FACILITIES. THIS SIGN MUST INCLUDE THE STANDARD RF SYMBOL AND STATE "NON RF WORKERS MUST POWER DOWN DEVICE WHEN WORKING ABOVE THIS POINT". THE SIGNS SHALL BE 60 MIL LEXAN WITH U.V. INHIBITORS AND SIGNS SHALL ADHERE TO IEEE C95.2 STANDARDS.

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REVISION FOR REVIEW

CRAN_RVWN_RIFZ2_026 C RICHMOND, VA 23219 LIGHT POLE NODE ID: NODE 26

SHEET TITLE

LABELING

SHEET NUMBER C-5

NOT USED

SCALE: NOT TO SCALE

RF LABEL

GENERAL CONSTRUCTION NOTES:

- 1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE LOCAL BUILDING CODE, THE LATEST ADOPTED EDITION AND ALL OTHER APPLICABLE CODES AND ORDINANCES.
- 2. CONTRACTOR SHALL CONSTRUCT SITE IN ACCORDANCE WITH THESE DRAWINGS AND LATEST JACOBS CONSTRUCTION STANDARDS. THE SPECIFICATION IS THE RULING DOCUMENT AND ANY DISCREPANCIES BETWEEN THE SPECIFICATION AND THE CONSTRUCTION DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER OR JACOBS CM PRIOR TO THE COMMENCEMENT OF WORK.
- 3. CONTRACTOR SHALL VISIT THE JOB SITE AND SHALL FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF, CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED, AS SHOWN, PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER OR JACOBS CM PRIOR TO THE COMMENCEMENT OF WORK, NO COMPENSATION WILL BE AWARDED BASED ON CLAIM OF LACK OF KNOWLEDGE OF FIELD CONDITIONS.
- 4. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION, CONTRACTOR IS REQUIRED TO FURNISH AND INSTALL ANY/ALL ITEMS FOR A COMPLETE AND FULLY FUNCTIONAL SYSTEM SUBJECT ONLY TO OWNER-SUPPLIED ITEMS. CONTRACTOR SHALL PROVIDE ANY/ALL REQUIREMENTS FOR THE EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER.
- 5. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY UNLESS OTHERWISE NOTED. THE WORK SHALL INCLUDE FURNISHING MATERIALS. EQUIPMENT AND APPURTENANCES. AND LABOR NECESSARY TO EFFECT ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS. OWNER PROVIDED AND CONTRACTOR INSTALLED MATERIALS WILL INCLUDE THE FOLLOWING. UNLESS NOTED OTHERWISE:
 - A) TRANSMITTER
 - B) UHF ANTENNA AND MOUNTING BRACKETS, GPS ANTENNAS AND KU ANTENNAS
 - C) UHF COAX AND HANGERS
 - D) INTEGRATED LOAD CENTER
- 6. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS. SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, EXISTING CONDITIONS AND/OR DESIGN INTENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPORTING ANY DISCREPANCIES TO THE ATTENTION OF THE JACOBS CM, IN WRITING, PRIOR TO THE COMMENCEMENT OF WORK.
- 7. DETAILS PROVIDED ARE FOR THE PURPOSE OF SHOWING DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR SITE CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK.
- 8. CONTRACTOR SHALL PAY FOR APPLICABLE PERMITS, FEES, INSPECTIONS AND TESTING. CONTRACTOR IS TO OBTAIN PERMITS AND APPROVED SUBMITTALS PRIOR TO ORDERING MATERIALS AND THE COMMENCEMENT OF WORK.
- 9. THE TERM "PROVIDE" USED IN CONSTRUCTION DOCUMENTS AND SPECIFICATIONS. INDICATES THAT THE CONTRACTOR SHALL FURNISH AND INSTALL.
- 10. CONTRACTOR SHALL RECEIVE CLARIFICATION IN WRITING, AND SHALL RECEIVE IN WRITING AUTHORIZATION TO PROCEED BEFORE STARTING WORK ON ANY ITEMS NOT CLEARLY DEFINED OR IDENTIFIED BY THE CONTRACT DOCUMENTS.
- 11. CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING ACCEPTED INDUSTRY-STANDARD SKILLS AND ATTENTION. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER CONTRACT, UNLESS OTHERWISE NOTED.
- 12. CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE WORK AREA, ADJACENT AREAS AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFORM TO ALL OSHA REQUIREMENTS.
- 13. CONTRACTOR SHALL COORDINATE THEIR WORK WITH THE JACOBS CM AND SCHEDULE THEIR ACTIVITIES AND WORKING HOURS IN ACCORDANCE WITH THE
- 14. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THEIR WORK WITH THE WORK OF OTHERS AS IT MAY RELATE TO RADIO EQUIPMENT, ANTENNAS AND ANY OTHER PORTIONS OF THE WORK.
- 15. CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS UNLESS SPECIFICALLY OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
- 16. CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING SURFACES, EQUIPMENT, IMPROVEMENTS, PIPING ETC. AND IMMEDIATE REPAIR, TO NEW CONDITION, ANY DAMAGE THAT OCCURS DURING CONSTRUCTION AT THE SOLE COST OF THE CONTRACTOR.

- 17. IN DRILLING HOLES, OR CORING, INTO CONCRETE WHETHER FOR FASTENING OR ANCHORING PURPOSES, OR PENETRATIONS THROUGH THE FLOOR FOR CONDUIT RUNS. PIPE RUNS ETC. MUST BE CLEARLY UNDERSTOOD THAT REINFORCING STEEL SHALL NOT BE DRILLED INTO, CUT OR DAMAGED UNDER ANY CIRCUMSTANCES (UNLESS NOTED OTHERWISE). LOCATIONS OF REINFORCING STEEL ARE NOT DEFINITELY KNOWN AND THERÉFORE MUST BE LOCATED BY THE CONTRACTOR USING APPROPRIATE METHODS AND EQUIPMENT PRIOR TO ANY DRILLING OR CORING OPERATIONS IN EXITING CONCRETE
- 18. CONTRACTOR SHALL REPAIR, TO NEW CONDITION, ALL EXISTING WALL SURFACES DAMAGED DURING CONSTRUCTION SUCH THAT THEY MATCH AND BLEND IN WITH
- 19. CONTRACTOR SHALL SEAL PENETRATIONS THROUGH FIRE RATED ASSEMBLIES OR MATERIALS WITH U.L. LISTED AND FIRE CODE APPROVED MATERIALS AND SYSTEMS THAT MEET OR EXCEED THE RATING OF THE ASSEMBLY IN WHICH THE NEW PENETRATION IS PLACED.
- 20. CONTRACTOR SHALL KEEP CONTRACT AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DIRT, DEBRIS AND RUBBISH. EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY OF THE OWNER SHALL BE REMOVED. LEAVE PREMISES IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST OR SMUDGES OF ANY NATURE. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL ITEMS UNTIL COMPLETION OF CONSTRUCTION.
- 21. MINIMUM BEND RADIUS OF ANTENNA CABLES SHALL BE IN ACCORDANCE WITH CABLE MANUFACTURERS RECOMMENDATIONS.
- 22. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION SHALL BE IN CONFORMANCE WITH JURISDICTIONAL OR STATE AND LOCAL GUIDELINES FOR FROSION AND SEDIMENT CONTROL AND COORDINATED WITH LOCAL REGULATORY AUTHORITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF ANY EROSION CONTROL MEASURES, RECORD-KEEPING, MONITORING, AND REPORTING TO THE OWNER AND REGULATORY AUTHORITIES.
- 23. ALL CONSTRUCTION WORK IS TO ADHERE TO APPLICANT'S INTEGRATED CONSTRUCTION STANDARDS UNLESS STATE OR LOCAL CODE IS MORE STRINGENT.
- 24. THE INTENT OF THE PLANS AND SPECIFICATIONS IS TO PERFORM THE CONSTRUCTION IN ACCORDANCE PER STATE BUILDING STANDARDS CODE AND STATE CODE OF REGULATIONS, SHOULD ANY CONDITIONS DEVELOP NOT COVERED BY THE APPROVED PLANS AND SPECIFICATIONS WHEREIN THE FINISHED WORK WILL NOT COMPLY PER STATE CODE OF REGULATIONS, A SCOPE OF WORK DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY THE JURISDICTION BEFORE PROCEEDING WITH THE WORK. A CHANGE ORDER FOR THAT SCOPE SHALL BE SUBMITTED TO THE JACOBS CM PRIOR TO PROCEEDING WITH THE
- 25. ADEQUATE AND REQUIRED LIABILITY INSURANCE SHALL BE PROVIDED BY THE CONTRACTOR FOR PROTECTION AGAINST PUBLIC LOSS AND ANY/ALL PROPERTY 12. ALL WORK SHALL BE COORDINATED WITH OWNER TRADES TO AVOID INTERFERENCE DAMAGE FOR THE DURATION OF WORK.
- 26. CONTRACTOR SHALL GUARANTEE ANY/ALL MATERIALS AND WORK FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN ONE YEAR FROM DATE OF ACCEPTANCE, ANY CORRECTIVE WORK SHALL BE COMPLETED AT THE SOLE COST OF THE CONTRACTOR.

ELECTRICAL NOTES:

- ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL ANY/ALL ELECTRICAL WORK INDICATED. ANY/ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH DRAWINGS AND ANY/ALL APPLICABLE SPECIFICATIONS. IF ANY PROBLEMS ARE ENCOUNTERED BY COMPLYING WITH THESE REQUIREMENTS, CONTRACTOR SHALL NOTIFY JACOBS CM AS SOON AS POSSIBLE, AFTER THE DISCOVERY OF THE PROBLEMS, AND SHALL NOT PROCEED WITH THAT PORTION OF WORK, UNTIL THE JACOBS CM HAS DIRECTED THE CORRECTIVE ACTIONS TO BE TAKEN.
- 2. ELECTRICAL CONTRACTOR SHALL VISIT THE JOB SITE AND FAMILIARIZE THEMSELVES WITH ANY/ALL CONDITIONS AFFECTING ELECTRICAL AND COMMUNICATION INSTALLATIÓN AND MAKE PROVISIONS AS TO THE COST THEREOF. ALL EXISTING CONDITIONS OF ELECTRICAL EQUIPMENT, ETC. THAT ARE PART OF THE FINAL SYSTEM, SHALL BE VERIFIED BY THE CONTRACTOR, PRIOR TO THE SUBMITTING OF THEIR BID. FAILURE TO COMPLY WITH THIS PARAGRAPH WILL IN NO WAY RELIEVE CONTRACTOR OF PERFORMING ALL WORK NECESSARY FOR A COMPLETE AND WORKING SYSTEM.

- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE NEC. ALL CODES AND ORDINANCES OF THE LOCAL JURISDICTION. AND POWER AND TELEPHONE COMPANIES HAVING JURISDICTION AND SHALL INCLUDE BUT ARE
 - A) UL UNDERWRITERS LABORATORIES
- B) NEC NATIONAL ELECTRICAL CODE
- C) NEMA NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
- D) OSHA OCCUPATIONAL SAFETY AND HEALTH ACT
- E) SBC STANDARD BUILDING CODE
- F) NFPA NATIONAL FIRE PROTECTION AGENCY
- G) ANSI AMERICAN NATIONAL STANDARDS INSTITUTE
- H) IEEE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
- I) ASTM AMERICAN SOCIETY FOR TESTING MATERIALS
- REFER TO SITE PLANS AND ELEVATIONS FOR EXACT LOCATIONS OF ALL EQUIPMENT, AND CONFIRM WITH JACOBS CM ANY SIZES AND LOCATIONS WHEN NEEDED.
- EXISTING SERVICES: CONTRACTOR SHALL NOT INTERRUPT EXISTING SERVICES WITHOUT WRITTEN PERMISSION OF THE OWNER.
- CONTRACTOR SHALL CONFIRM WITH LOCAL UTILITY COMPANY ANY/ALL REQUIREMENTS SUCH AS THE: LUG SIZE RESTRICTIONS, CONDUIT ENTRY, SIZE OF TRANSFORMERS, SCHEDULED DOWNTIME FOR THE OWNERS' CONFIRMATION, ETC ... ANY/ALL CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE JACOBS CM, PRIOR TO BEGINNING ANY WORK.
- MINIMUM WIRE SIZE SHALL BE #12 AWG, NOT INCLUDING CONTROL WIRING, UNLESS NOTED OTHERWISE, ALL CONDUCTORS SHALL BE COPPER WITH THWN INSULATION. UNLESS OTHERWISE NOTED
- OUTLET BOXES SHALL BE PRESSED STEEL IN DRY LOCATIONS, CAST ALLOY WITH THREADED HUBS IN WET/DAMP LOCATIONS AND SPECIAL ENCLOSURES FOR OTHER CLASSIFIED AREAS.
- 9. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF THE CONSTRUCTION. CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND PROVIDE ALL REQUIREMENTS FOR THE EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER.
- 10. ELECTRICAL SYSTEM SHALL BE AS COMPLETELY AND EFFECTIVELY GROUNDED, AS REQUIRED BY SPECIFICATIONS, SET FORTH BY APPLICANT.
- 11. ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST CLASS, WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY FUNCTIONAL AND SHALL BE APPROVED BY THE JACOBS CM AND LOCAL JURISDICTION. ANY DEFICIENCIES SHALL BE CORRECTED BY AN ELECTRICAL CONTRACTOR AT THE SOLE COST OF THE CONTRACTOR.
- WITH THE PROGRESS OF CONSTRUCTION.
- 13. THE CORRECTION OF ANY DEFECTS SHALL BE COMPLETED BY THE CONTRACTOR WITHOUT ANY ADDITIONAL CHARGE AND SHALL INCLUDE THE REPLACEMENT OR THE REPAIR OF ANY OTHER PHASE OF THE INSTALLATION, WHICH MAY HAVE BEEN DAMAGED THEREIN.
- 14. CONTRACTOR SHALL PROVIDE AND INSTALL CONDUIT, CONDUCTORS, PULL WIRES, BOXES, COVER PLATES AND DEVICES FOR ALL OUTLETS AS INDICATED.
- 15. DITCHING AND BACK FILL: CONTRACTOR SHALL PROVIDE FOR ALL UNDERGROUND INSTALLED CONDUIT AND/OR CABLES INCLUDING EXCAVATION AND BACKFILLING AND COMPACTION. REFER TO NOTES AND REQUIREMENTS "EXCAVATION, AND BACKFILLING"
- 16. MATERIALS, PRODUCTS AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF, SHALL BE NEW AND SHALL APPEAR ON THE LIST OF U.L. APPROVED ITEMS AND SHALL MEET OR EXCEED THE REQUIREMENTS OF THE NEC, NEMA AND IECE.
- 17. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OR MANUFACTURER'S CATALOG INFORMATION OF ANY/ALL EQUIPMENT AND ALL OTHER ELECTRICAL ITEMS FOR APPROVAL BY THE JACOBS CM PRIOR TO INSTALLATION.
- 18. ANY CUTTING OR PATCHING DEEMED NECESSARY FOR ELECTRICAL WORK IS THE ELECTRICAL CONTRACTORS RESPONSIBILITY AND SHALL BE INCLUDED IN THE COST FOR WORK AND PERFORMED TO THE SATISFACTION OF THE JACOBS CM UPON
- 19. THE ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELS WITH ONLY TYPEWRITTEN DIRECTORIES. ALL ELECTRICAL WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
- 20. DISCONNECT SWITCHES SHALL BE UL-RATED, H.P. RATED HEAVY-DUTY, QUICK-MAKE AND QUICK-BREAK ENCLOSURES, AS REQUIRED BY EXPOSURE TYPE.
- 21. ALL CONNECTIONS SHALL BE MADE WITH A PROTECTIVE COATING OF AN ANTI-OXIDE COMPOUND KNOWN AS "NO-OXIDE A" BY DEARBORNE CHEMICAL COMPANY. COAT ALL WIRE SURFACES BEFORE CONNECTING. EXPOSED COPPER SURFACES, INCLUDING GROUND BARS, SHALL BE TREATED - NO SUBSTITUTIONS.





EP3TURVS

PROJECT NO

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R	11.09.17	REVISION

FOR REVIEW

IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT

CRAN_RVWN_RIFZ2_026 C RICHMOND, VA 23219 LIGHT POLE NODE ID: NODE 26

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

ELECTRICAL NOTES CONT'D:

- 22. RACEWAYS: CONDUIT SHALL BE SCHEDULE 80 PVC MEETING OR EXCEEDING NEMA TC2 - 1990. CONTRACTOR SHALL PLUG AND CAP EACH END OF SPARE AND EMPTY CONDUITS AND PROVIDE TWO SEPARATE PULL STRINGS - 200 LBS TEST POLYETHYLENE CORD. ALL CONDUIT BENDS SHALL BE A MINIMUM OF 2 FT. RADIUS. RGS CONDUITS WHEN SPECIFIED, SHALL MEET UL-6 FOR GALVANIZED STEEL. ALL FITTINGS SHALL BE SUITABLE FOR USE WITH THREADED RIDGED CONDUIT. COAT ALL THREADS WITH "BRITE ZINC" OR "COLD GALV.".
- 23. SUPPORT OF ALL ELECTRICAL WORK SHALL BE AS REQUIRED BY NEC.
- 24. CONDUCTORS: CONTRACTOR SHALL USE 98% CONDUCTIVITY COPPER WITH TYPE THWN INSULATION, UNLESS OTHERWISE NOTED, 600 VOLT, COLOR CODED. USE SOLID CONDUCTORS FOR WIRE UP TO AND INCLUDING NO. 8 AWG. USE STRANDED CONDUCTORS FOR WIRE ABOVE NO. 8 AWG.
- 25. CONNECTORS FOR POWER CONDUCTORS: CONTRACTOR SHALL USE PRESSURE TYPE INSULATED TWIST-ON CONNECTORS FOR NO. 10 AWG AND SMALLER. USE SOLDERLESS MECHANICAL TERMINAL LUGS FOR NO. 8 AWG AND LARGER.
- 26. SERVICE: AS SPECIFIED ON THE DRAWINGS, OWNER OR OWNER'S AGENT WILL 3. APPLY FOR POWER. ALL PROVISIONS FOR TEMPORARY POWER WILL BE OBTAINED BY THE CONTRACTOR.
- 27. TELEPHONE OR FIBER SERVICE: CONTRACTOR SHALL PROVIDE EMPTY CONDUITS WITH PULL STRINGS AS INDICATED ON DRAWINGS.
- 28. ELECTRICAL AND TELCO/FIBER RACEWAYS TO BE BURIED A MINIMUM DEPTH OF 30", UNLESS OTHERWISE NOTED.
- 29. CONTRACTOR SHALL PLACE 6" WIDE DETECTABLE WARNING TAPE AT A DEPTH OF 6" BELOW GROUND AND DIRECTLY ABOVE ELECTRICAL AND TELCO SERVICE CONDUITS. CAUTIONS TAPE TO READ "CAUTION BURIED ELECTRIC" OR BURIED
- 30. ALL BOLTS SHALL BE 3-16 STAINLESS STEEL.

GROUNDING NOTES:

- 1. ALL HARDWARE SHALL BE 3-16 STAINLESS STEEL, INCLUDING LOCK WASHERS. COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND, AS SPECIFIED, BEFORE MATING. ALL HARDWARE SHALL BE STAINLESS STEEL 3/8 INCH DIAMETER OR
- 2. FOR GROUND BOND TO STEEL ONLY: INSERT A CADMIUM FLAT WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE
- 3. ALL STEEL CONDUIT SHALL BE BONDED AT BOTH ENDS WITH GROUNDING BUSHING.
- 4. ALL ELECTRICAL AND GROUNDING AT THE POLE SITE SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE (NEC), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 780 (LATEST EDITION), AND MANUFACTURER.
- 5. ALL DETAILS ARE SHOWN IN GENERAL TERMS. ACTUAL GROUNDING INSTALLATION AND CONSTRUCTION MAY VARY DUE TO SITE SPECIFIC CONDITIONS.
- 6. GROUND ALL ANTENNA BASES, FRAMES, CABLE RUNS, AND OTHER METALLIC COMPONENTS USING #6 GROUND WIRES. FOLLOW ANTENNA AND BTS MANUFACTURER'S PRACTICES FOR GROUNDING REQUIREMENTS.
- 7. ALL GROUND CONNECTIONS SHALL BE #6 AWG, UNLESS OTHERWISE NOTED. ALL WIRES SHALL BE COPPER WITH THHN, UNLESS OTHERWISE NOTED. ALL GROUND WIRE SHALL BE SOLID TIM COATED OR STRANDED GREEN INSULATED WIRE.
- 8. CONTRACTOR TO VERIFY AND TEST GROUND TO SOURCE, 10 OHMS MAXIMUM. PROVIDE SUPPLEMENT GROUNDING RODS AS REQUIRED TO ACHIEVE SPECIFIED OHMS READING. GROUNDING AND OTHER OPTIONAL TESTING WILL BE WITNESSED BY
- 9. NOTIFY ARCHITECT/ENGINEER IF THERE ARE ANY DIFFICULTIES INSTALLING 5. GROUNDING SYSTEM DUE TO SITE SOIL CONDITIONS.
- 10. ALL HORIZONTALLY RUN GROUNDING CONDUCTORS SHALL BE INSTALLED A MINIMUM OF 30" BELOW GRADE / 6" BELOW FROST-LINE IN TRENCH. UNLESS OTHERWISE NOTED. BACK FILL SHALL BE COMPACTED AS REQUIRED BY ARCHITECT/ENGINEER.
- 11. ALL GROUND CONDUCTORS SHALL BE RUN AS STRAIGHT AND SHORT AS POSSIBLE, WITH A MINIMUM OF 12" BENDING RADIUS NOT LESS THAN 90 DEGREES.
- 12. ACCEPTABLE CONNECTIONS FOR GROUNDING SYSTEM SHALL BE:
 - A) BURNDY, HY-GRADE U.L. LISTED CONNECTORS FOR OUTDOOR USE OR AS APPROVED BY APPLICANT PROJECT MANAGER.
 - B) CADWELD, EXOTHERMIC WELDS (WELDED CONNECTIONS).
 - C) ONE (1) HOLE TINNED COPPER COMPRESSION (LONG BARREL) FITTINGS.
- 13. ALL CRIMPED CONNECTIONS SHALL HAVE EMBOSSED MANUFACTURER'S DIEMARK VISIBLE AT THE CRIMP (RESULTING FROM USE OF PROPER CRIMPING DEVICES) AND WEATHER-PROOFED WITH HEAT SHRINK.

- 14. ALL CONNECTION HARDWARE SHALL BE TYPE 3-16 STAINLESS STEEL (NOT ATTRACTED TO MAGNETS).
- ELECTRICAL SERVICE EQUIPMENT GROUNDING SHALL COMPLY WITH NEC, ARTICLE 250-82 AND SHALL BOND ALL EXISTING AND NEW GROUNDING ELECTRODES. NEW GROUNDING ELECTRODE SHALL INCLUDE BUT NOT LIMITED TO GROUND RODS.

TESTING AND EQUIPMENT TURN UP REQUIREMENTS:

- 1. RF CABLE, DATA CABLE, RADIO EQUIPMENT AND BACK HAUL EQUIPMENT TESTING WILL COMPLY WITH CURRENT INDUSTRY STANDARDS AND/OR THOSE STANDARDS OF THE EQUIPMENT MANUFACTURER OR PROVIDED TO THE CONTRACTOR PRIOR TO TESTING.
- CONTRACTOR WILL USE THE APPROPRIATE CALIBRATED TESTING EQUIPMENT IN THE TESTING OF RF CABLE, DATA CABLE, RADIO EQUIPMENT AND BACK HAUL EQUIPMENT THAT MEET INDUSTRY STANDARDS OF THE MANUFACTURER OR THOSE STANDARDS PROVIDED TO THE CONTRACTOR PRIOR TO TESTING.
- CONTRACTOR TO VERIFY AND RECORD ALL TEST RESULTS AND PROVIDE THESE RESULTS WITHIN THE FINAL CLOSE OUT PACKAGE.
- ALL PERSONNEL INVOLVED IN THE TESTING OF RF CABLE, DATA CABLE, RADIO EQUIPMENT AND BACK HAUL EQUIPMENT WILL BE REQUIRED TO HAVE BEEN TRAINED AND/OR CERTIFIED IN THE PROPER TESTING OF RF CABLE, DATA CABLE, RADIO EQUIPMENT AND BACK HAUL EQUIPMENT.
- ALL TEST RESULTS SHALL BE TIME STAMPED, RECORDED AND PRESENTED PRIOR TO ENERGIZING AND TURN UP OF ANY EQUIPMENT.
- GPS EQUIPMENT IS NOT TO BE TESTED OR ATTACHED TO ANY CABLING DURING TESTING, DOING SO WILL DAMAGE THE GPS UNIT.
- 7. PRIOR TO TESTING IF THE CONTRACTOR HAS ANY QUESTIONS ABOUT THE TESTING PROCEDURES THEY ARE TO CALL AND OBTAIN ASSISTANCE FROM A QUALIFIED DESIGNATED TESTING REPRESENTATIVE.
- 8. EQUIPMENT IS NOT TO BE ENERGIZED UNTIL ALL TESTING HAS BEEN COMPLETED, APPROVED AND THE APPROPRIATE AUTHORITY HAS BEEN NOTIFIED AND GIVES APPROVAL TO ENERGIZE THE EQUIPMENT.

SITE WORK NOTES:

- 1. DO NOT EXCAVATE OR DISTURB BEYOND THE PROPERTY LINES OR LEASE LINES, UNLESS OTHERWISE NOTED.
- 2. SIZE, LOCATION AND TYPE OF ANY UNDERGROUND UTILITIES OR IMPROVEMENTS SHALL BE ACCURATELY NOTED AND PLACED ON AS-BUILD DRAWINGS BY GENERAL CONTRACTOR AND ISSUED TO ARCHITECT/ENGINEER AT COMPLETION OF PROJECT.
- ALL EXISTING UTILITIES, FACILITIES, CONDITIONS AND THEIR DIMENSIONS SHOWN ON PLANS HAVE BEEN PLOTTED FROM AVAILABLE RECORDS. THE ENGINEER AND OWNER ASSUME NO RESPONSIBILITY WHATSOEVER AS TO THE SUFFICIENCY OR ACCURACY OF THE INFORMATION SHOWN ON THE PLANS OR THE MANNER OF THEIR REMOVAL OR ADJUSTMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL EXISTING UTILITIES AND FACILITIES PRIOR TO START OF CONSTRUCTION. CONTRACTOR SHALL ALSO OBTAIN FROM EACH UTILITY COMPANY DETAILED INFORMATION RELATIVE TO WORKING SCHEDULES AND METHODS OF REMOVING OR ADJUSTING EXISTING UTILITIES.
- CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES BOTH HORIZONTALLY AND VERTICALLY PRIOR TO START OF CONSTRUCTION. ANY DISCREPANCIES OR DOUBTS AS TO THE INTERPRETATION OF PLANS SHALL BE IMMEDIATELY REPORTED TO THE ARCHITECT/ENGINEER OR JACOBS CM FOR RESOLUTION AND INSTRUCTION. AND NO FURTHER WORK SHALL BE PERFORMED UNTIL THE DISCREPANCY IS CHECKED AND CORRECTED BY THE ARCHITECT/ENGINEER. FAILURE TO SECURE SUCH INSTRUCTION MEANS CONTRACTOR WILL HAVE WORKED AT THEIR OWN RISK AND EXPENSE. CONTRACTOR SHALL CALL LOCAL UTILITY LOCATE HOT LINE, SUCH AS 811, FOR UTILITY LOCATIONS A MINIMUM OF 48 HOURS PRIOR TO START OF CONSTRUCTION.
- ALL NEW AND EXISTING STRUCTURES ON SITE AND IN AREAS TO BE DISTURBED BY CONSTRUCTION SHALL BE ADJUSTED TO FINISH ELEVATIONS PRIOR TO FINAL INSPECTION OF WORK. ANY COST RELATED TO ADJUSTING EXISTING STRUCTURES SHALL BE BORNE SOLELY BY THE CONTRACTOR.
- 6. GRADING OF THE SITE WORK AREA IS TO BE SMOOTH AND CONTINUOUS IN SLOPE AND IS TO FEATHER INTO EXISTING GRADES AT THE GRADING LIMITS.
- 7. ALL TEMPORARY EXCAVATIONS FOR THE INSTALLATION OF FOUNDATIONS, UTILITIES, ETC., SHALL BE PROPERLY LAID BACK OR BRACED IN ACCORDANCE WITH CORRECT OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REQUIREMENTS.
- 8. STRUCTURAL FILLS SUPPORTING PAVEMENTS SHALL BE COMPACTED TO 95% OF MAXIMUM STANDARD PROCTOR DRY DENSITY, UNLESS OTHERWISE NOTED.
- NEW GRADES NOT IN BUILDING AND DRIVEWAY IMPROVEMENT AREA TO BE ACHIEVED BY FILLING WITH APPROVED CLEAN FILL AND COMPACTED TO 95% OF STANDARD PROCTOR DENSITY.

- 10 ALL FILL SHALL BE PLACED IN UNIFORM LIFTS. THE LIFTS THICKNESS SHOULD NOT EXCEED THAT WHICH CAN BE PROPERLY COMPACTED THROUGHOUT ITS ENTIRE DEPTH WITH THE FOUIPMENT AVAILABLE.
- 11. ANY FILLS PLACED ON EXISTING SLOPES THAT ARE STEEPER THAN 10 HORIZONTAL TO 1 VERTICAL SHALL BE PROPERLY BENCHED INTO THE EXISTING SLOPE AS DIRECTED BY GEOTECHNICAL ENGINEER.
- 12. CONTRACTOR SHALL CLEAN ENTIRE SITE AFTER CONSTRUCTION SUCH THAT NO DEBRIS, PAPER, TRASH, WEEDS, BRUSH, EXCESS FILL, OR ANY OTHER DEPOSITS WILL REMAIN. ALL MATERIALS COLLECTED DURING CLEANING OPERATIONS SHALL BE DISPOSED OF OFF-SITE BY THE GENERAL CONTRACTOR.
- 13. ALL TREES AND SHRUBS WHICH ARE NOT IN DIRECT CONFLICT WITH THE IMPROVEMENTS SHALL BE PROTECTED BY THE GENERAL CONTRACTOR.
- 14. ALL SITE WORK SHALL BE CAREFULLY COORDINATED BY GENERAL CONTRACTOR WITH LOCAL UTILITY COMPANY, TELEPHONE COMPANY, AND ANY OTHER UTILITY COMPANIES HAVING JURISDICTION OVER THIS LOCATION.

ENVIRONMENTAL NOTES:

- 1. ALL WORK PERFORMED SHALL BE DONE IN ACCORDANCE WITH ISSUED PERMITS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAYMENT OF FINES AND PROPER CLEAN UP FOR AREAS IN VIOLATION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROLS DURING CONSTRUCTION FOR PROTECTION OF ADJACENT PROPERTIES, ROADWAYS AND WATERWAYS. ALL EROSION AND SEDIMENTATION CONTROLS SHALL BE MAINTAINED IN PLACE THROUGH FINAL JURISDICTIONAL INSPECTION AND RELEASE OF SITE.
- 3. CONTRACTOR SHALL INSTALL/CONSTRUCT ALL NECESSARY SEDIMENT/SILT CONTROL FENCING AND PROTECTIVE MEASURES AS REQUIRED BY THE LOCAL JURISDICTION WITHIN THE LIMITS OF SITE DISTURBANCE PRIOR TO CONSTRUCTION.
- NO SEDIMENT SHALL BE ALLOWED TO EXIT THE PROPERTY. THE CONTRACTOR IS RESPONSIBLE FOR TAKING ADEQUATE MEASURES FOR CONTROLLING EROSION. ADDITIONAL SEDIMENT CONTROL FENCING MAY BE REQUIRED IN ANY AREAS SUBJECT TO EROSION.
- 5. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING POSITIVE DRAINAGE ON THE SITE AT ALL TIMES WITH SILT AND EROSION CONTROL MEASURES MAINTAINED ON THE DOWNSTREAM SIDE OF SITE DRAINAGE, ANY DAMAGE TO ADJACENT PROPERTY AS A RESULT OF EROSION WILL BE CORRECTED AT THE CONTRACTORS EXPENSE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DAILY INSPECTIONS AND ANY REPAIRS OF ALL SEDIMENT CONTROL MEASURES INCLUDING SEDIMENT REMOVAL AS
- CLEARING OF VEGETATION AND TREE REMOVAL SHALL BE ONLY AS PERMITTED AND BE HELD TO A MINIMUM. ONLY TREES NECESSARY FOR CONSTRUCTION OF THE FACILITIES SHALL BE REMOVED.
- SEEDING AND MULCHING AND/OR SODDING OF THE SITE WILL BE ACCOMPLISHED AS SOON AS POSSIBLE AFTER COMPLETION OF THE PROJECT FACILITIES AFFECTING LAND DISTURBANCE.
- 9. CONTRACTOR SHALL PROVIDE ALL EROSION AND SEDIMENTATION CONTROL MEASURES AS REQUIRED BY LOCAL, COUNTY AND STATE CODES AND ORDINANCES TO PROTECT EMBANKMENTS FROM SOIL LOSS AND TO PREVENT ACCUMULATION OF SOIL AND SILT IN STREAMS AND DRAINAGE PATHS LEAVING THE CONSTRUCTION AREA. THIS MAY INCLUDE, BUT IS NOT LIMITED TO SUCH MEASURES AS SILT FENCES, STRAW BALE SEDIMENT BARRIERS, AND CHECK DAMS.
- 10. RIP RAP OF SIZES INDICATED SHALL CONSIST OF CLEAN, HARD, SOUND, DURABLE, UNIFORM IN QUALITY STONE FREE OF ANY DETRIMENTAL QUANTITY OF SOFT, FRIABLE, THIN, ELONGATED OR LAMINATED PIECES, DISINTEGRATED MATERIAL, ORGANIC MATTER, OIL, ALKALI, OR OTHER DELETERIOUS SUBSTANCES.
- 11. GENERAL CONTRACTOR TO PLACE MATERIAL AT ALL CATCH BASINS ADJACENT TO CONSTRUCTION SITE TO PREVENT SOLID WASTE CONTAMINATION FROM ENTERING SEWER SYSTEM.





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CRAN_RVWN_RIFZ2_026 C RICHMOND, VA 23219 LIGHT POLE NODE ID: NODE 26

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

FOUNDATION, EXCAVATION AND BACKFILL NOTES:

- 1. ALL FINAL GRADED SLOPES SHALL BE A MAXIMUM OF 3 HORIZONTAL TO 1 VERTICAL, UNITESS OTHERWISE NOTED.
- 2. BACKFILL OF POLE SHALL BE PERFORMED IN ONE (1) OF THREE (3) OPTIONS:
 - A) PREFERRED: RAINBOW INDUSTRIES POLE SETTING FOAM SHALL BE INSTALLED PER MANUFACTURER SPECS. FOAM SHALL ALWAYS BE USED FRO POOR SOILS. B) SECONDARY: CONCRETE (REQUIRES JACOBS CM WRITTEN APPROVAL) ALLOWABLE SOIL PRESSURE = 2000 PSF (ASSUMED). NON-NATIVE SOILS SHALL BE REMOVED FROM BORE AREA AND SHALL NOT BE REUSED FOR BACKFILL.
- 3. ALL EXCAVATIONS PREPARED FOR PLACEMENT OF CONCRETE SHALL BE OF UNDISTURBED SOILS, SUBSTANTIALLY HORIZONTAL AND FREE FROM ANY LOOSE, UNSUITABLE MATERIAL OR FROZEN SOILS, AND WITHOUT THE PRESENCE OF POUNDING WATER. DEWATERING FOR EXCESS GROUND WATER SHALL BE PROVIDED WHEN REQUIRED. COMPACTION OF SOILS UNDER CONCRETE PAD FOUNDATIONS SHALL NOT BE LESS THAN 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY FOR THE SOIL IN ACCORDANCE WITH ASTM D1557.
- 4. CONCRETE FOUNDATIONS SHALL NOT BE PLACED ON ORGANIC OR UNSUITABLE MATERIAL. IF ADEQUATE BEARING CAPACITY IS NOT ACHIEVED AT THE DESIGNED EXCAVATION DEPTH, THE UNSATISFACTORY SOIL SHALL BE EXCAVATED TO ITS FULL DEPTH AND EITHER BE REPLACED WITH MECHANICALLY COMPACTED GRANULAR MATERIAL OR THE EXCAVATION SHALL BE FILLED WITH CONCRETE OF THE SAME TYPE SPECIFIED FOR THE FOUNDATION. CRUSHED STONE MAY BE USED TO STABILIZE THE BOTTOM OF THE EXCAVATION. ANY STONE SUB BASE MATERIAL, IF USED, SHALL NOT SUBSTITUTE FOR REQUIRED THICKNESS OF CONCRETE.
- 5. ALL EXCAVATIONS SHALL BE CLEAN OF UNSUITABLE MATERIAL SUCH AS VEGETATION, TRASH, DEBRIS, AND SO FORTH PRIOR TO BACK FILLING. BACK FILL SHALL CONSIST OF APPROVED MATERIALS SUCH AS EARTH, LOAM, SANDY CLAY, SAND AND GRAVEL, OR SOFT SHALE, FREE FROM CLODS OR LARGE STONES OVER 2 1/2" MAX DIMENSIONS. ALL BACK FILL SHALL BE PLACED IN COMPACTED LAYERS.
- 6. ALL FILL MATERIALS AND FOUNDATION BACK FILL SHALL BE PLACED IN MAXIMUM 6" THICK LIFTS BEFORE COMPACTION. EACH LIFT SHALL BE WETTED IF REQUIRED AND COMPACTED TO NOT LESS THAN 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY FOR SOIL IN ACCORDANCE WITH ASTM D1557.
- 7. NEWLY PLACED CONCRETE FOUNDATIONS SHALL CURE A MINIMUM OF 72 HOURS PRIOR TO BACK FILLING.
- 8. FINISHED GRADING SHALL BE SLOPED TO PROVIDE POSITIVE DRAINAGE AND PREVENT STANDING WATER. THE FINAL (FINISH) ELEVATION OF SLAB FOUNDATIONS SHALL SLOPE AWAY IN ALL DIRECTIONS FROM THE CENTER. FINISH GRADE OF CONCRETE PADS SHALL BE A MAXIMUM OF 4 INCHES ABOVE FINAL FINISH GRADE ELEVATIONS WHERE REQUIRED.
- 9. NEWLY GRADED GRAVEL SURFACE AREAS TO RECEIVE GRAVEL SHALL BE COVERED WITH GEOTEXTILE FABRIC TYPE: TYPAR—3401 AS MANUFACTURED BY TYPAR GEOSYNTHETICS OR AN APPROVED EQUIVALENT, SHOWN ON PLANS. THE GEOTEXTILE FABRIC SHALL BE BLACK IN COLOR TO CONTROL THE RECURRENCE OF VEGETATIVE GROWTH AND EXTEND TO WITHIN 1 FOOT OUTSIDE THE SITE FENCING OR ELECTRICAL GROUNDING SYSTEM PERIMETER WHICH EVER IS GREATER. ALL FABRIC SHALL BE COVERED WITH A MINIMUM OF 4" DEEP COMPACTED STONE OR GRAVEL AS SPECIFIED. I.E. DOT TYPE NO. 57 FOR FENCED COMPOUND: DOT TYPE NO. 67 FOR ACCESS DRIVE AREA, UNLESS OTHERWISE NOTED.
- 10. IN ALL AREAS TO RECEIVE FILL: REMOVE ALL VEGETATION, TOPSOIL, DEBRIS, WET AND UNSATISFACTORY SOIL MATERIALS, OBSTRUCTIONS, AND DELETERIOUS MATERIALS FROM GROUND SURFACE. PLOW STRIP OR BREAK UP SLOPED SURFACES STEEPER THAN 1 VERTICAL TO 4 HORIZONTAL SUCH THAT FILL MATERIAL WILL BIND WITH EXISTING/PREPARED SOIL SURFACE.
- 11. WHEN SUB GRADE OR PREPARED GROUND SURFACE HAS A DENSITY LESS THAN THAT REQUIRED FOR THE FILL MATERIAL, SCARIFY THE GROUND SURFACE TO DEPTH REQUIRED. PULVERIZE, MOISTURE—CONDITION AND/OR AERATE THE SOILS AND RECOMPACT TO THE REQUIRED DENSITY PRIOR TO PLACEMENT OF FILLS.
- 12. IN AREAS WHICH EXISTING GRAVEL SURFACING IS REMOVED OR DISTURBED DURING CONSTRUCTION OPERATIONS, REPLACE GRAVEL SURFACING TO MATCH ADJACENT GRAVEL SURFACING AND RESTORED TO THE SAME THICKNESS AND COMPACTION AS SPECIFIED. ALL RESTORED GRAVEL SURFACING SHALL BE FREE FROM CORRUGATIONS AND WAVES.

- 13. EXISTING GRAVEL SURFACING MAY NOT BE REUSED.
- 14. GRAVEL SUB SURFACE SHALL BE PREPARED TO REQUIRED COMPACTION AND SUB GRADE ELEVATIONS BEFORE GRAVEL SURFACING IS PLACED AND/OR RESTORED. ANY LOOSE OR DISTURBED MATERIALS SHALL BE THOROUGHLY COMPACTED AND ANY DEPRESSIONS IN THE SUB GRADE SHALL BE FILLED AND COMPACTED WITH APPROVED SELECTED MATERIAL. GRAVEL SURFACING MATERIAL SHALL NOT BE USED FOR FILLING DEPRESSIONS IN THE SUB GRADE.
- 15. PROTECT EXISTING GRAVEL SURFACING AND SUB GRADE IN AREAS WHERE EQUIPMENT LOADS WILL OPERATE. USE PLANKING "MATTS" OR OTHER SUITABLE PROTECTION DESIGNED TO SPREAD EQUIPMENT LOADS AS MAY BE NECESSARY. REPAIR ANY DAMAGE TO EXISTING GRAVEL SURFACING OR SUB GRADE WHERE SUCH DAMAGE IS DUE TO THE CONTRACTORS OPERATIONS.
- 16. DAMAGE TO EXISTING STRUCTURES AND/OR UTILITIES RESULTING FROM CONTRACTORS NEGLIGENCE SHALL BE REPAIRED AND/OR REPLACED TO THE OWNERS SATISFACTION AT NO ADDITIONAL COST TO THE CONTRACT.
- 17. ALL SUITABLE BORROW MATERIAL FOR BACK FILL OF THE SITE SHALL BE INCLUDED IN THE BID. EXCESS TOPSOIL AND UNSUITABLE MATERIAL SHALL BE DISPOSED OF OFF-SITE AT LOCATIONS APPROVED BY GOVERNING AGENCIES AT NO ADDITIONAL COST TO THE CONTRACT.





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