**HISTORIC AND DESIGN REVIEW COMMISSION**

**October 21, 2020**

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| **HDRC CASE NO:** | **2020-456** |
| **ADDRESS:** | ROW near 505 LIVE OAK ST |
| **LEGAL DESCRIPTION:** | NCB 556 BLK 41 LOT 18 COMFORT SUITES |
| **ZONING:** | D |
| **CITY COUNCIL DIST.:** | 2 |
| **APPLICANT:** | Lourdes Mendoza/Extenet Systems |
| **OWNER:** | ASNDSATX LLC |
| **TYPE OF WORK:** | Installation of new pole for network node equipment |
| **APPLICATION RECEIVED:** | August 24, 2020 |
| **60-DAY REVIEW:** | Not applicable due to City Council Emergency Orders |
| **CASE MANAGER:** | Huy Pham |

**REQUEST:**

The applicant is requesting a Certificate of Appropriateness for approval to install a new pole for network node equipment at 29.426180, -98.480693, in the right-of-way near 505 Live Oak.

**APPLICABLE CITATIONS:**

Historic Design Guidelines

6. Non-Residential and Mixed Use Streetscapes

A. STREET FURNITURE

i. *Historic street furniture*—Preserve historic site furnishings, including benches, lighting, tree grates, and other features.

ii. *New furniture*—Use street furniture such as benches, trash receptors, tree grates, and tables that are simple in design and are compatible with the style and scale of adjacent buildings and outdoor spaces when historic furnishings do not exist.

UDC Sec. 37 - Appendix A. - Right-of-way Network Node Design Manual

b. Design District Aesthetic Requirements.

In addition to the design requirements in Division III of this Manual, the following aesthetic requirements shall apply in Design Districts:

1. New node support poles in districts designated as Design Districts in this Manual shall be placed within ten feet of interior lot lines.
2. In no event shall new node support poles be placed in front of the front façade of primary structures on any property designated as Historic or within fifteen hundred (1500) feet of the brass monument viewshed marker in front of a structure designated by the United Nations as a UNESCO World Heritage site.
3. Network nodes, node support poles, and related equipment shall require camouflage or concealment measures to mitigate the impact or improve the aesthetics of the installation, as determined by the Historic Preservation Officer based on the unique circumstances of the design district or impacted property.

    A. New network nodes mounted to existing poles shall be low profile and flush mounted to the greatest extent feasible. Network nodes must be painted to match the support pole or structure on which they are mounted.

    B. The installation of new node support poles is discouraged in Historic Districts, Downtown "D", River Improvement Overlay Districts, Viewshed Protection and Mission Protection Overlay Districts. The Historic Preservation Officer may require concealment of the support pole in the form of aesthetically appropriate street lamps, site elements, district signage, or other stealth methods. The color of any new support pole or concealment solution shall be determined by the Historic Preservation Officer based on site specific conditions.

        i. New node support poles must generally be located at commercial corners and intersections.

        ii. New node support poles must be separated from other node support poles or existing poles by a distance of 250 feet.

        iii. Where a separation requirement cannot be met, network nodes are preferred to be mounted to existing poles or installed with a stealth method.

iv. The height of new node support poles should not exceed the established predominant height of other poles and historic site elements located within 500 feet of the proposed installation.

v. New node support poles must be painted and not exceed 8" in diameter at the widest portion of the pole.

C. Ground-mounted equipment must be integrated into the overall design of an installation, camouflaged or concealed based on site specific conditions, and positioned to mitigate visual or physical obstructions to nearby historic features as recommended by the Historic Preservation Officer.

c. Decorative Poles.

In accordance with Chapter 284, installation or attachment of wireless communications equipment, including antennas, network nodes, transport facilities, and related equipment is prohibited on all decorative streetlight poles in Design Districts.

(Ord. No. 2017-08-31-0609 , § 1, 8-31-17)

**FINDINGS:**

a. PURVIEW - The applicant has proposed to install a new wood pole featuring network node equipment and luminaire arm at 29.426180, -98.480693, in the right-of-way near 505 Live Oak. The proposed location is within the Central Business District (Downtown). Per the Unified Development Code Sec. 37, the network node must be in compliance with Appendix A. Right-of-way network node design manual: Division IV. General Aesthetic Requirements and Division V. Additional Aesthetic Requirements in Design Districts.

b. PROJECT DESCRIPTION – The applicant has provided the following project description: "Extenet-Node-SA1001BA_41LAB COSA-10703-20200802 Originally submitted to COSA on 3/5/20. Small Cell Node to be placed on a proposed Extenet Pole at 29.426180, -98.480693 for Extenet Systems. Shroud to be placed on the pole with an Omni at the top of the pole. Pole is located on the south side of Live Oak and Dawson. The COSA issued address is 425 Live Oak St, San Antonio, TX 78205."

c. LOCATION - The applicant has proposed to install a new wood pole featuring network node equipment and luminaire arm at 29.426180, -98.480693, in the right-of-way near 505 Live Oak. The proposed location is within the Central Business District (Downtown). The proposed location is adjacent to the hotel parking garage structure and across the street to two vacant lots. Per the Design Manual 3.B.i., new poles must be generally located at commercial corners and intersections. Staff finds the proposed poll does not bisect any historic or commercial facades nor disrupt the pedestrian experience.

d. SEPARATION – The applicant has proposed to install the new pole within the immediate block as multiple existing utility poles. Per the Design Manual 3.B.ii., new poles must be separated from existing poles by 250 feet. Staff finds that the proposed location is adequately separated.

e. COLLOCATION – Per the Design Manual 3.B.iii, where a separation requirement cannot be met, new nodes are preferred to be mounted to existing poles or installed with a stealth method. Staff finds that a collocation on existing poles should be explored prior to consideration of a new stealth pole. A letter from the owner-operator of the existing nearby poles (CPS Energy) and/or an engineer's letter noting the feasibility of collocation will suffice as a supporting document for this finding.

**f.** HEIGHT – The applicant has proposed to install a wood pole including node equipment featuring a total of thirty feet (30') from grade. Per the Design Manual 3.B.iv., the height of new node support poles should not exceed the established predominant height of other poles and historic site elements located within 500 feet of the proposed installation. Staff finds that the proposed height is subordinate to existing poles within proximity.

g. DIAMETER – The applicant has proposed to install a pole that is typical width of a Class 3 wood utility pole. Per the Design Manual 3.B.v., new poles should not exceed 8 inches (8") in diameter at the widest portion of the pole. Staff finds that the proposed pole width to by typical of existing wood utility poles.

h. DESIGN – The applicant has proposed to install a wood pole that features a cylindrical antenna at the top, a luminaire arm, a rectangular cabinet radio at mid-pole, and conduit and meter/disconnect approaching pedestrian and ground level. The applicant referenced existing wood utility poles in selecting the pole type in this location and included a luminaire arm in an effort to meet stealth and multi-purpose provisions. Per the Design Manual 3.B.: *The Historic Preservation Officer may require concealment of the support pole in the form of aesthetically appropriate street lamps, site elements, district signage, or other stealth methods. The color of any new support pole or concealment solution shall be determined by the Historic*

*Preservation Officer based on site specific conditions.* Staff finds the proposed design adequately relates to surrounding features without detracting from historic features or the pedestrian experience with the stipulation that all network node equipment is painted, manufactured or screened to mimic the pole color.

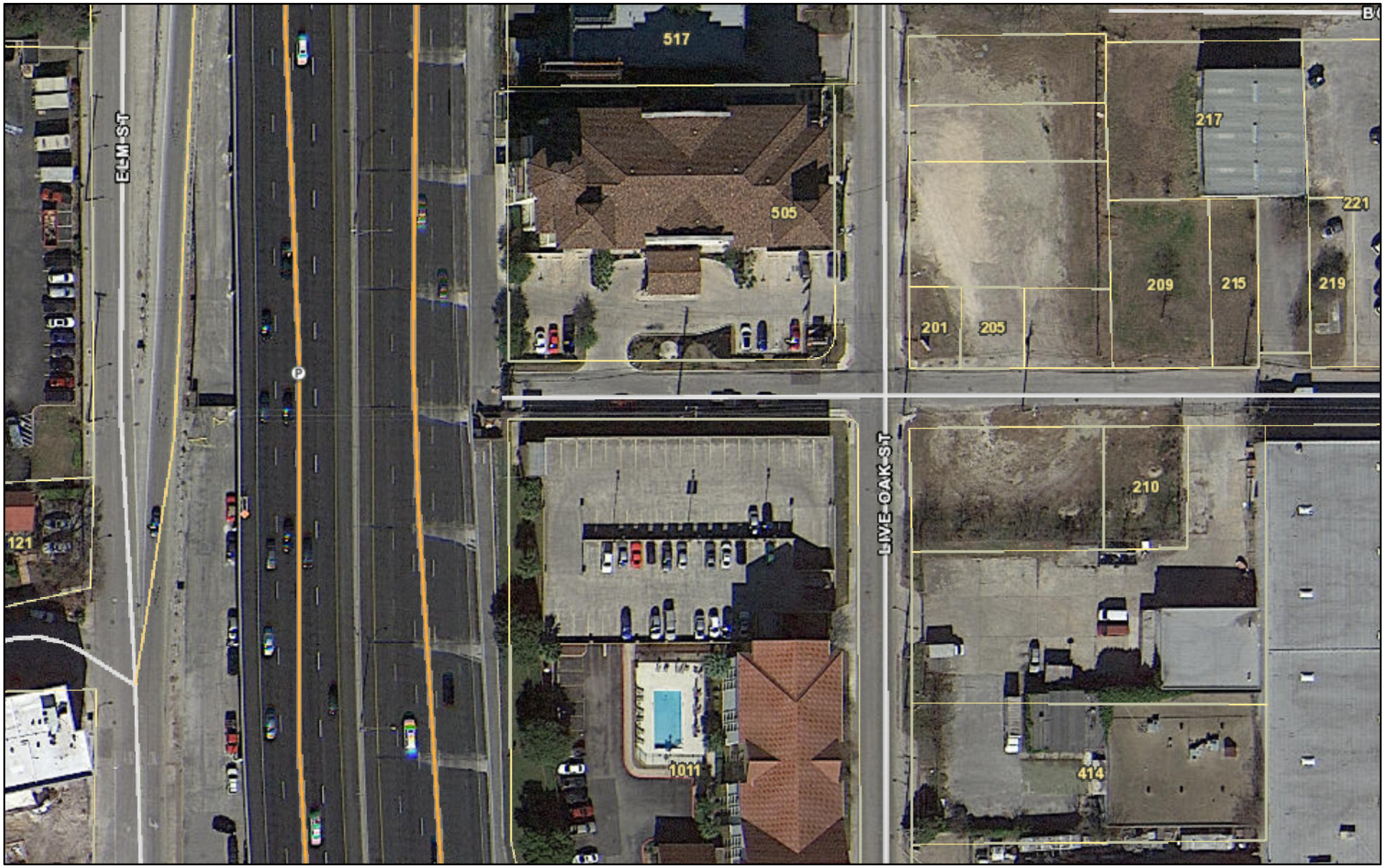
i. TRENCHING –If approved, any disturbance of sidewalk or streetscaping should be restored to the condition prior to installation. The project shall comply with all federal, state, and local laws, rules, and regulations regarding archaeology.

**RECOMMENDATION:**
Staff recommends approval of the new network pole based on findings b through h with the stipulation that all network node equipment is painted, manufactured or screened to mimic the pole color.

If approved, any disturbance of sidewalk or streetscaping should be restored to the condition prior to installation. The project shall comply with all federal, state, and local laws, rules, and regulations regarding archaeology.

Approval from the Historic Design Review Commission does not omit or supersede any additional permissions required by CPS Energy or related permitting City departments.

# ROW near 505 Live Oak



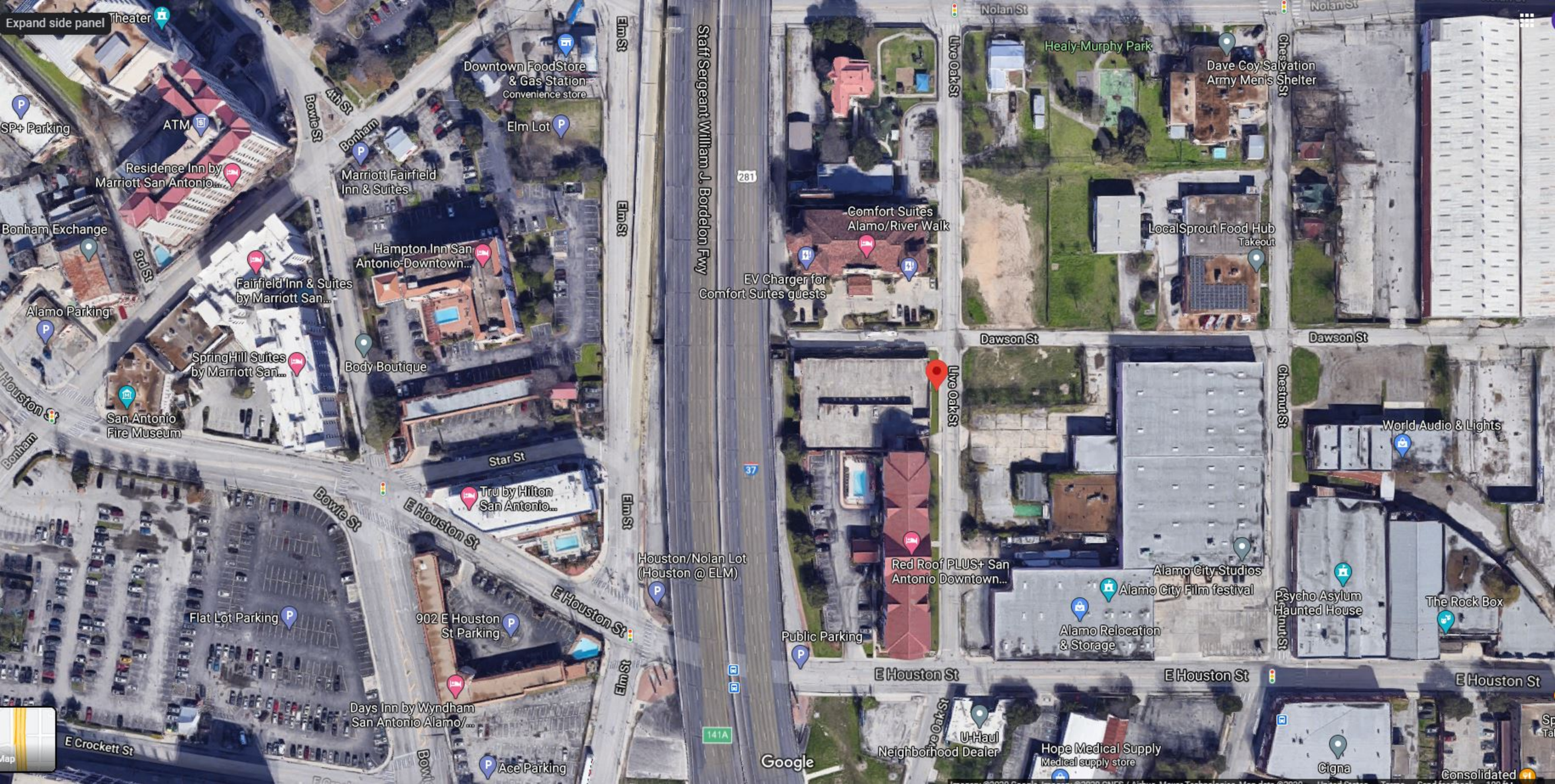

October 13, 2020

1:1,000

0 0.0075 0.015 0.03 mi

0 0.0125 0.025 0.05 km


Downtown FoodStore
& Gas Station
Convenience store
Nolan Lot
@ ELM)
Red Roof PLUS+ San
Antonio Downtown...
Live Oak St
Live Oak St
Dawson St
Dawson St
Dawson St
Google

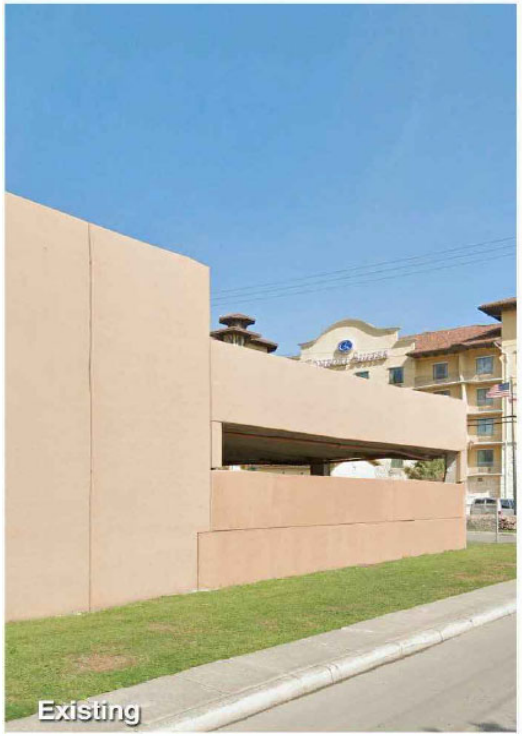

Expand side panel
Theater
Downtown FoodStore & Gas Station
Convenience store
SP+ Parking
ATM
Elm Lot
Residence Inn by Marriott San Antonio...
Marriott Fairfield Inn & Suites
Bonham Exchange
Hampton Inn San Antonio-Downtown...
Fairfield Inn & Suites by Marriott San...
Alamo Parking
SpringHill Suites by Marriott San...
Body Boutique
San Antonio Fire Museum
Star St
Tru by Hilton San Antonio...
Bowie St
E Houston St
Houston/Nolan Lot (Houston @ ELM)
Flat Lot Parking
902 E Houston St Parking
Days Inn by Wyndham San Antonio Alamo/...
E Crockett St
Ace Parking
Elm St
Staff Sergeant William J. Bordelon Fwy
281
37
141A
Nolan St
Healy-Murphy Park
Dave Coy Salvation Army Men's Shelter
Live Oak St
Chestnut St
Comfort Suites Alamo/River Walk
EV Charger for Comfort Suites guests
LocalSprout Food Hub
Takeout
Dawson St
Red Roof PLUS+ San Antonio Downtown...
Alamo City Studios
Alamo City Film festival
Alamo Relocation & Storage
Public Parking
Psycho Asylum Haunted House
The Rock Box
World Audio & Lights
U-Haul Neighborhood Dealer
Hope Medical Supply
Medical supply store
Cigna
Consolidated
Google


432 Live Oak St
San Antonio, Texas
Google
Street View
Comfort Suites
Dawson St

# Location 1:

- **Id:** COSA-10703-20200802
- **Name:** Extenet-Node-SA1001BA_41LAB
- **TMO Node ID:** SA1001BA_41LAB
- **Pole Type:** New Wood Pole
- **Pole Owner:** Extenet
- **Location:** 432 Live Oak Street, San Antonio, TX 78202
- **Coordinates:** 29.42618, -98.480693
- **COA Request #:** 2020-19432

- **Node Details:**
  - Existing wood poles in area are not feasible for Extenet to use due to not being able to meet CPS' standards.
  - Wood pole fits surrounding area poles
  - Extenet to add a luminaire for street lighting.
  - Fiber and power would come underground to pole for a clean install



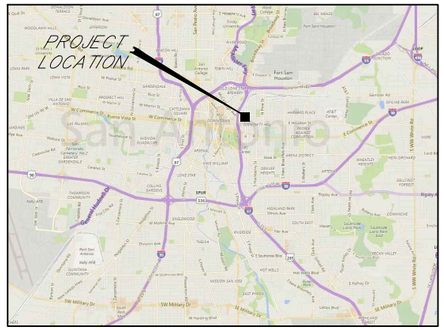


# SAN ANTONIO TX-SA1001BA_41LAB

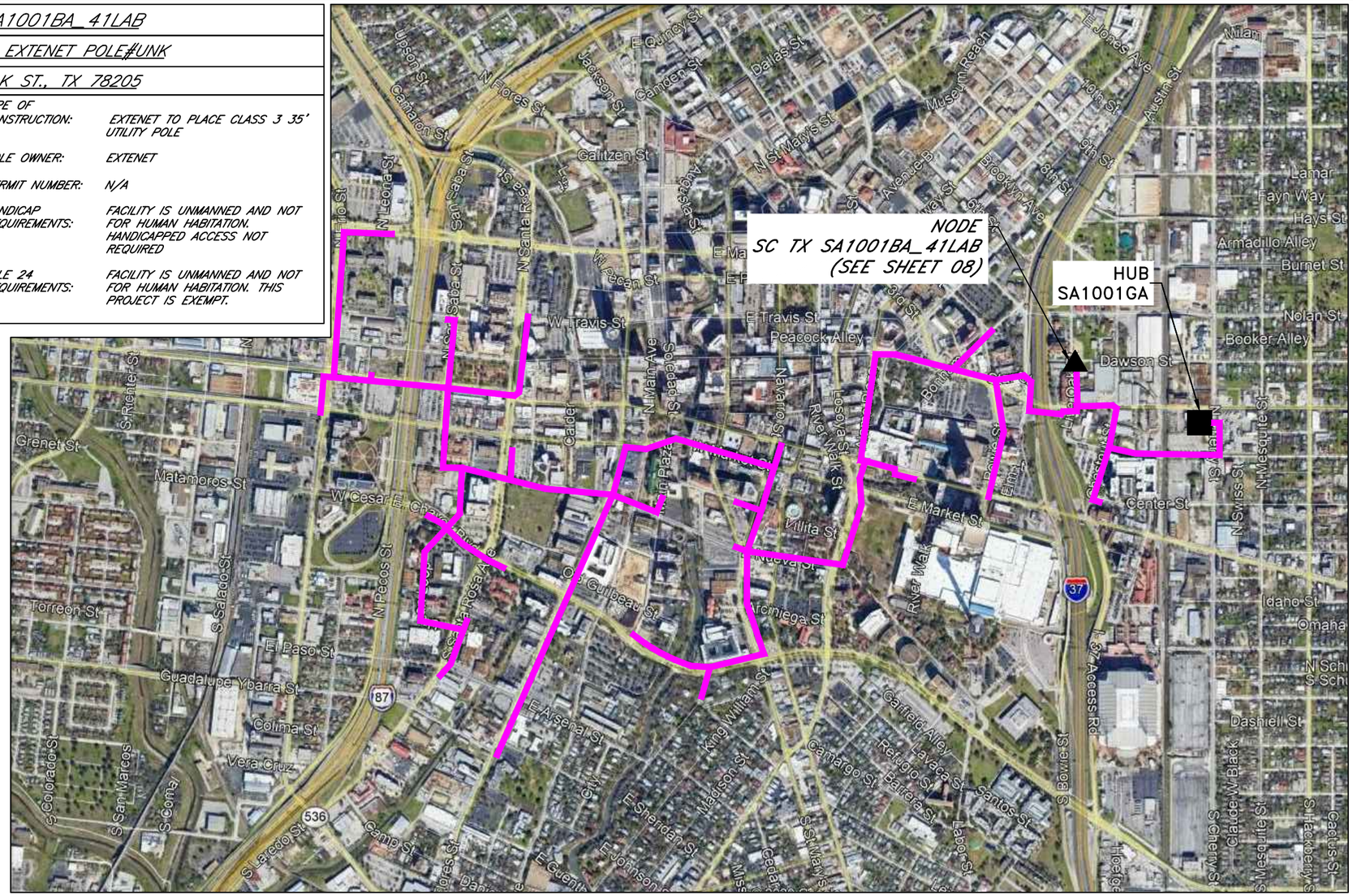
## NODE SITE LIVE OAK ST., EXTENET POLE#UNK

## ADDRESS 425 LIVE OAK ST., TX 78205

| | | | |
|---|---|---|---|
| LATITUDE: | 29.426180° | TYPE OF CONSTRUCTION: | EXTENET TO PLACE CLASS 3 35' UTILITY POLE |
| LONGITUDE: | -98.480693° | POLE OWNER: | EXTENET |
| ELEVATION: | 667' | PERMIT NUMBER: | N/A |
| JURISDICTION: | CITY OF SAN ANTONIO | HANDICAP REQUIREMENTS: | FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS NOT REQUIRED |
| HUB NAME: | SA1001GA | TITLE 24 REQUIREMENTS: | FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. THIS PROJECT IS EXEMPT. |
| ZONING: | PUBLIC RIGHT OF WAY | | |
| OCCUPANCY: | UNMANNED | | |




AREA MAP
NOT TO SCALE




VICINITY MAP
NOT TO SCALE

## PROJECT DESCRIPTION

THESE DRAWINGS DEPICT A PORTION OF A DISTRIBUTED ANTENNA SYSTEM (DAS) TELECOMMUNICATIONS NETWORK, TO BE CONSTRUCTED, OWNED AND OPERATED BY EXTENET SYSTEMS, IN THE PUBLIC RIGHT OF WAY/PUBLIC UTILITY EASEMENT PURSUANT TO AUTHORITY GRANTED BY THE TEXAS PUBLIC UTILITIES COMMISSION.

THE MAIN COMPONENTS OF THIS INSTALLATION ARE:
THE INSTALLATION OF ONE (1) ANTENNA, THREE (3) RADIO UNITS, ONE (1) POWER EQUIPMENT, ASSOCIATED ELECTRICAL COMPONENTS, AND MOUNTING BRACKETS AS REQUIRED. TO BE PLACE ON NEW EXTENET UTILITY POLE.

## CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUCTED TO PERMIT WORK NOt CONFORMING TO THESE CODES.

1. TEXAS BUILDING CODE
2. TEXAS ADMINISTRATIVE REGULATIONS
3. ANSI / EIA-222-F LIFE SAFETY CODE NFPA
4. BUILDING OFFICIALS AND CODE ADMINISTRATOR (BOCA)
5. TEXAS ELECTRICAL CODE NEC-2006
6. TEXAS MECHANICAL CODE IMC-2006
7. TEXAS PLUMBING CODE UPC-2015
8. LOCAL BUILDING CODE(S)
9. CITY AND/OR COUNTY ORDINANCES
10. MUST COMPLY TO LATEST TEXAS FIRE CODE (AND LATEST MUNICIPAL FIRE CODE)

## CONTACTS

| CONTACT | DEPT. | EMAIL | PHONE |
|---|---|---|---|
| VERNON ROWE | EXTENET | VROWE@EXTENETSYSTEMS.COM | 817-994-6794 |
| SCOTT CRUM | ENGINEERING (FIBER DESIGN) | SCRUM@TDC2.COM | 972-489-9376 |
| RONNIE TEAFF | PROJECT MANAGER | RTEAFF@TDC2.COM | 214-893-4658 |
| ALEX JARAMILLO | DESIGN SPECIALIST | AJARAMILLO@TDC2.COM | 469-688-8566 |

Texas 811
(1-800-344-8377)

"EXTENET SYSTEMS, INC. EXPRESSLY RESERVES ITS RIGHTS UNDER CHAPTER 283 OF THE TEXAS GOVERNMENT CODE AND IS NOT WAIVING ANY OF ITS RIGHTS UNDER CHAPTER 283 OR ANY OTHER STATE LAW BY FILING FOR PERMITS WITH THE CITY."

## INDEX



## CAUTION

CONTRACTOR SHALL NOTIFY THE CITY OF SAN ANTONIO DEPARTMENT OF PUBLIC WORKS AND ENGINEERING, OFFICE OF THE CITY ENGINEER, 48 HOURS BEFORE STARTING WORK ON THIS PROJECT, TELEPHONE NO. (210) 335-6700

FOREIGN UTILITY LOCATIONS ARE APPROXIMATE. CONTACT THE LOCAL ONE CALL AGENCY 48 HOURS PRIOR TO CONSTRUCTION FOR EXACT UTILITY LOCATIONS AT: "TEXAS 811", AT 1-800-344-8317

extenet YOUR NETWORK. EVERYWHERE. SYSTEMS



REVISIONS

| REV | DATE | DESCRIPTION | BY |
|---|---|---|---|
| A | 11/11/19 | ISSUED FOR REVIEW | TDC2 |

SITE NAME:
SC TX SA1001BA_41LAB
SITE ADDRESS:
425 LIVE OAK ST.
SAN ANTONIO, TX 78205
BEXAR COUNTY

TDC2
634 N. BALLARD
WYLIE, TX 75098
OFFICE: 972-442-7005
FAX: 972-578-0517

| | |
|---|---|
| DESIGNED BY: | TDC2 |
| DRAWN BY: | TDC2 |
| SCALE: | N.T.S. |
| DATE DRAWN: | 11/11/19 |
| FILE NAME: | |
| PROJECT NUMBER: | |
| SHEET: | 001 |
| TOTAL SHT: | 008 |

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## STANDARD GROUNDING NOTES:

1. THE COMPLETED GROUNDING SYSTEM SHALL CONFORM TO TIA-607-B, AND SHALL BE TESTED VIA AN APPROVED GROUND RESISTANCE TEST UNIT (I.E., STAKELESS CLAMP-ON GROUND RESISTANCE METER, OR TWO-POINT / THREE-POINT FALL OF POTENTIAL TESTER, IN ACCORDANCE WITH THE MANUFACTURER'S TEST PROCEDURES) TO ACHIEVE / DOCUMENT GROUND RESISTANCE OF 5 OHMS OR LOWER.
2. GROUND RODS SHALL BE CONSTRUCTED OF COPPER-CLAD STEEL AND EITHER OF THE FOLLOWING TWO SIZE OPTIONS IS APPROVED, AS MAY BE REQUIRED TO ACHIEVE GROUND RESISTANCE OF 5 OHMS OR LOWER:
   a. 5/8" X 8 FEET LONG; OR
   b. 3/4" X 10 FEET LONG.
3. GROUND ROD TO BE LOCATED NO NEARER THAN 36" FROM EXISTING POLE GROUND, BE INSTALLED TO A MINIMUM OF 6 INCHES BELOW GRADE, AND THE GROUND CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE GROUND BAR.
4. GROUND CONDUCTOR BETWEEN GROUND ROD AND LOAD CENTER / MAIN GROUNDING BUSBAR SHALL BE #6 AWG STRANDED COPPER INSTALLED 6" BELOW GRADE UNTIL TURNING VERTICALLY FOR MOUNTING TO THE WOODEN UTILITY POLE.
5. THE COPPER GROUND CONDUCTOR SHALL BE COVERED FROM SLIGHTLY BELOW GRADE TO THE LOAD CENTER WITH 1" PLASTIC U-GUARD VERTICAL RACEWAY.

## STANDARD CONDUIT NOTES:

1. ALL UNDERGROUND FIBER OPTIC CABLES SHALL BE INSTALLED IN CONDUITS, EITHER PVC SCHEDULE 40 OR SDR-11 HDPE.
2. FIBER OPTIC RISER CONDUITS SHALL BE CONSTRUCTED FROM 1-1/2" RIGID GALVANIZED STEEL (RGS), EXTENDING FROM 12" BELOW GRADE TO APPROXIMATELY 10' HIGH, OR JUST BELOW FIBER CABINET, WHERE IT WILL TRANSITION TO 1" NON-METALLIC LIQUIDTIGHT FLEXIBLE CONDUIT FOR PENETRATION INTO THE CABINET.

## STANDARD TRENCHING NOTES:

1. MINIMUM CONDUIT DEPTH FOR FIBER OPTIC / ELECTRICAL CONDUITS IS 42" BELOW GRADE, EXCLUDING THE SHORTEST PRACTICAL RADIUS WHERE THE CONDUIT TRANSITIONS TO A VERTICAL POLE RISER.
2. WHERE CONDUITS ARE PLACED VIA OPEN TRENCH, THERE SHALL BE A WARNING TAPE PLACED 24" ABOVE THE FIBER OPTIC CONDUIT (E.G., CAUTION: BURIED FIBER OPTIC CABLE BELOW).
3. IN AREAS OF OPEN TRENCH CONSTRUCTION, CONTRACTOR SHALL INSTALL 6" SAND BED BELOW CONDUITS, AND A 12" SAND BACKFILL ABOVE CONDUITS, PRIOR TO USING NATIVE BACKFILL. MAXIMUM 6" LIFTS WITH 95% COMPACTION WHERE NATIVE BACKFILL IS USED TO RESTORE EXCAVATED TRENCH AREAS.

## POLE/GENERAL CONSTRUCTION NOTES:

1. CONTRACTOR SHALL REMOVE / CLEAN ALL DEBRIS, NAILS, STAPLES, OR NON-USED VERTICALS OFF THE POLE.
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE STANDARDS AND REGULATIONS, INCLUDING THE POLE OWNER / UTILITY, MUNICIPAL, COUNTY, STATE, AND FEDERAL AGENCIES.
3. NOT LESS THAN 48 HOURS PRIOR TO EXCAVATION, CONTRACTOR SHALL CALL (TEXAS ONE-CALL SYSTEM) AT (800) 344-8377.
4. ALL LANDSCAPING / SITE CONDITIONS SHALL BE RESTORED TO ORIGINAL CONDITION, OR BETTER.

## GENERAL NOTES:

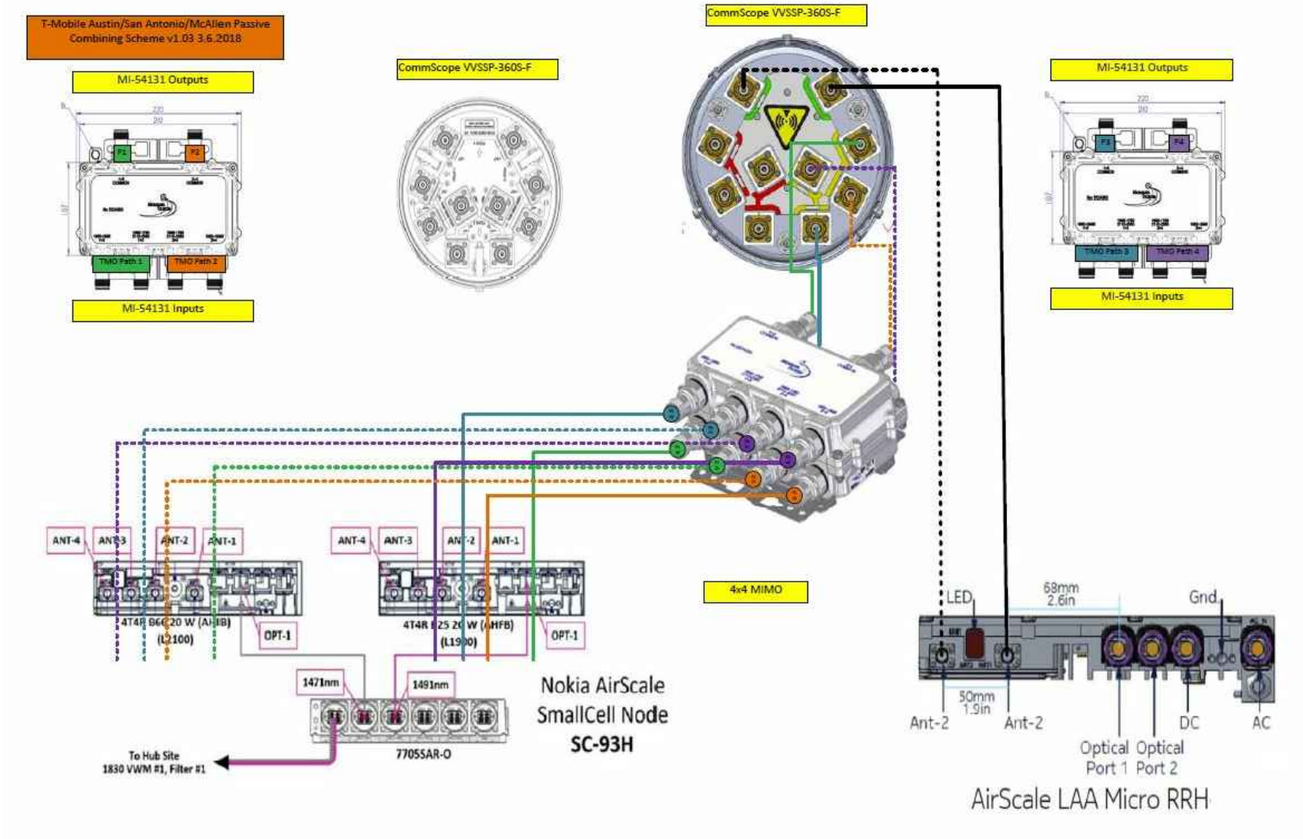
1. EXISTING UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE RECORDS WITH FIELD OBSERVATIONS, BUT ARE NOT NECESSARILY EXACT. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY UTILITY LOCATIONS AT LEAST 100 FEET IN ADVANCE OF TRENCHING, PLOWING, OR BORING OPERATIONS, SO THAT CHANGES IN CABLE PLACEMENT CAN BE MADE IN ADVANCE OF CONFLICTS.
2. ALL KNOWN BURIED OBSTRUCTIONS ARE SHOWN ONE THE CONSTRUCTION DRAWINGS. ANY AND ALL OTHER BURIED OBSTRUCTIONS ENCOUNTERED ARE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE, PROTECT, AND REPAIR (IF DAMAGED).
3. THE CONTRACTOR SHALL CONTACT THE LOCAL ONE CALL AGENCY NOT LATER THAN 48 HOURS PRIOR TO CONSTRUCTION TO LOCATE EXACT UTILITY LOCATIONS AT "JULIE CALL BEFORE YOU DIG" - (800) 344-8377. CONTRACTOR SHALL VERIFY IN THE FIELD THE EXACT LOCATIONS OF BURIED UTILITIES BEFORE COMMENCING CONSTRUCTION.
4. ANY AND ALL SITE IMPROVEMENTS INCLUDING, BUT NOT LIMITED TO, ASPHALT OR CONCRETE PAVEMENT, CURBS, GUTTERS, WALKS, DRAINAGE DITCHES, EMBANKMENTS, SHRUBS, TREES, GRASS SOD, SHALL BE RESTORED BY THE CONTRACTOR TO ORIGINAL OR BETTER CONDITION.
5. THE CONTRACTOR SHALL ADHERE TO THE RULING VERSION OF THE NESC (NATIONAL ELECTRIC SAFETY CODE) RULES, OR LOCAL MUNICIPAL, UTILITY, COUNTY, STATE, OR FEDERAL RULES, WHICH MAY ALTER THE CONSTRUCTION SPECIFICATIONS SHOWN.
6. INSTALLED MATERIALS SHALL NOT EXCEED THE MANUFACTURER'S SPECIFICATIONS / RECOMMENDATIONS. ALL AERIAL CABLE SPANS SHALL BE PROPERLY SAGGED AND MAINTAIN NOT LESS THAN THE MINIMUM ALLOWED DISTANCE FROM UTILITY LINES AS REQUIRED.
7. ALL PROPOSED NEW FACILITIES SHALL MAINTAIN NOT LESS THAN 12" SEPARATION FROM ALL PUBLIC / PRIVATE UTILITIES, UNLESS SPECIFIED OTHERWISE ON THE CONSTRUCTION DRAWINGS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES AND RESTORATION OF ANY WATER, WASTE WATER, STORM WATER, ELECTRICAL, NATURAL GAS, OR TRAFFIC CONTROL FACILITIES. ALL RESTORATION WORK SHALL FULLY CONFORM TO THE APPROPRIATE CITY, MUNICIPAL, COUNTY, STATE, FEDERAL, AND UTILITY SPECIFICATIONS.
9. CONTRACTOR SHALL TAKE REASONABLE, NECESSARY PRECAUTIONS TO PROTECT ROOT SYSTEMS OF SHRUBS, PLANTS, AND TREES ALONG EXCAVATED AREAS.
10. CONTRACTOR SHALL MAINTAIN ONSITE A SET OF REDLINE DRAWINGS, RECORDING "AS BUILT" CONDITIONS DURING CONSTRUCTION. AT COMPLETION OF CONSTRUCTION, THESE REDLINE, MARKED UP DRAWINGS SHALL BE SUBMITTED TO THE DESIGN CONSULTANT SO THAT FINAL RECORD DRAWINGS CAN BE PREPARED AND SUBMITTED TO THE OWNER AND OTHER PERMITTING AGENCIES AS MAY BE REQUIRED.

## CONSTRUCTION NOTES:

1. ALL CONDUIT SHALL BE 2" HDPE SDR-11, UNLESS SPECIFIED OTHERWISE.
2. ALL UNDERGROUND OBSTRUCTIONS (WHEN LOCATED) SHALL REQUIRE PLACEMENT OF A BURIED CABLE MARKER, AND INSTALLATION OF A 2" HDPE SDR-11 CONDUIT, OVER OR UNDER EACH OBSTRUCTION, IN AREAS WHERE CONDUIT IS NOT OTHERWISE SPECIFIED.
3. ALL BURIED CONDUIT / CABLE SHALL BE PLACED AT 48" MINIMUM COVER, UNLESS OTHERWISE SPECIFIED ON THE CONSTRUCTION DRAWINGS.
4. RAILROAD COMMUNICATION AND SIGNALIZATION CABLES SHALL BE LOCATED NO LATER THAN 48 HOURS PRIOR TO CONSTRUCTION, BY CONTACTING THE RAILROAD ROW OWNER.

## ROW UTILITY POLE CONSTRUCTION NOTES:

1. NO BOLT THREADS SHALL PROTRUDE FROM THE POLE MORE THAN 1-1/2".
2. FILL ALL HOLES LEFT IN POLE FROM REARRANGEMENT OF CLIMBING PEGS.
3. ALL CLIMBING PEGS NEXT TO CONDUIT SHALL HAVE EXTENDED LENGTH.
4. CABLE NOT TO IMPEDE 15" CLEAR SPACE OFF POLE FACE (12:00 POSITION).
5. CABLE 90° SHORT SWEEPS, ROUTES, OR TRANSITIONS SHALL ONLY BE PLACED ON THE INSIDE OR BOTTOM OF ANTENNA ARMS. NO CABLING SHALL BE INSTALLED ON THE TOP OF ANY SUPPORT ARMS.
6. USE CABLE CLAMPS TO SECURE CABLE TO SUPPORT ARMS. PLACE 2" IDENTIFICATION TAGS ON BOTH SIDES OF SUPPORT ARMS TO IDENTIFY OWNER.
7. USE 90° CONNECTORS FOR RF CONNECTION TO ANTENNAS.
8. SOME LOCATIONS MAY INCLUDE INTERNAL GPS COMPONENTS. CONTRACTOR SHALL FOLLOW SPECIFIC INSTRUCTIONS FOR GPS ANTENNA INSTALLATION ON A PER SITE BASIS.
9. COAXIAL CABLE SHALL MEET LMR-400 SPECIFICATION (50Ω, TYPICAL OUTER DIAMETER 0.4").
10. AFTER CABLE PLACEMENT, USE FOAM SEALANT TO FILL VOID AROUND CABLES AT CONDUIT OPENINGS TO PREVENT WATER INTRUSION.





extenet YOUR NETWORK. EVERYWHERE. SYSTEMS




| REV | DATE | DESCRIPTION | BY |
|---|---|---|---|
| A | 11/11/19 | ISSUED FOR REVIEW | TDC2 |

REVISIONS

SITE NAME:
SC TX SA1001BA_41LAB
SITE ADDRESS:
425 LIVE OAK ST.
SAN ANTONIO, TX 78205
BEXAR COUNTY


TDC2
634 N. BALLARD
WYLIE, TX 75098
OFFICE: 972-442-7005
FAX: 972-578-0517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|---|---|
| DESIGNED BY: | TDC2 |
| DRAWN BY: | TDC2 |
| SCALE: | N.T.S. |
| DATE DRAWN: | 11/11/19 |
| FILE NAME: | |
| PROJECT NUMBER: | |
| SHEET: 002 | TOTAL SHT: 008 |

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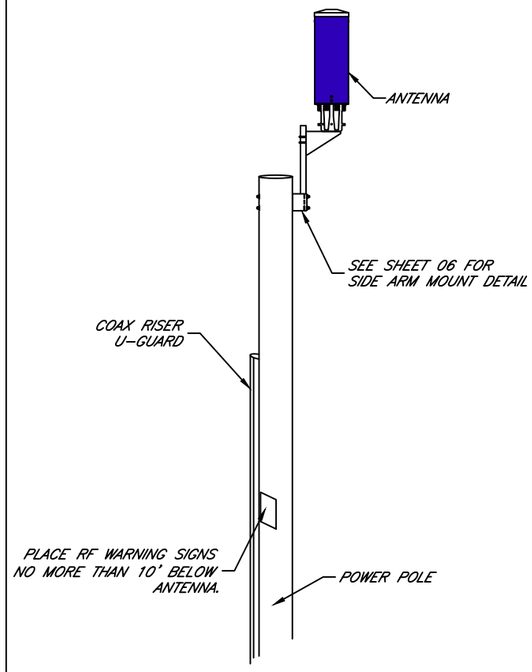
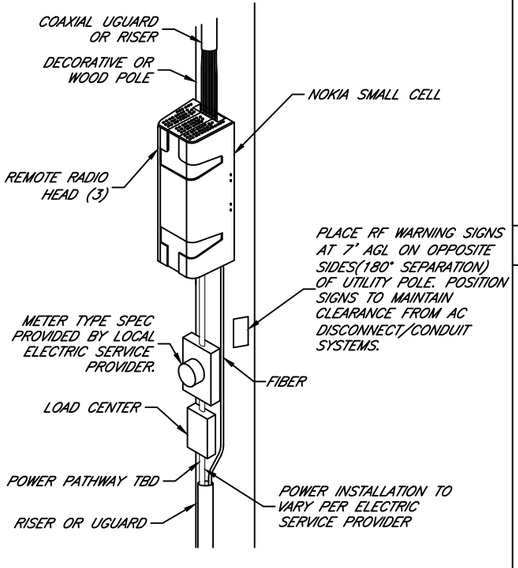



ROSENBERGER CONFIGURATION

AT&T & EXTENET OWNED POLES ONLY




EQUIPMENT CONFIGURATION

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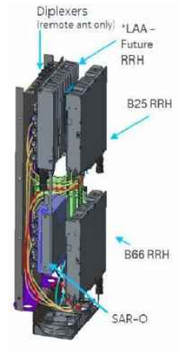
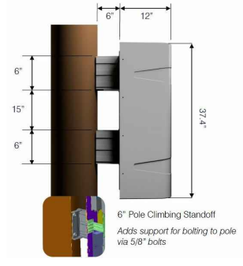
AT&T & EXTENET OWNED POLES ONLY




HEIGHT= 3.08'
WIDTH= 1.025'
DEPTH= 1'
CUBIC FEET= 3.157

NOKIA SMALL CELL SITE

AT&T & EXTENET OWNED POLES ONLY




NOKIA UTILITY POLE MOUNTING


RF WARNING SIGNAGE



| Requirement description | Requirement value | Unit |
|---|---|---|
| Operating frequency for Band 1(B66) | 1710 - 1780 (RX)<br>2110 - 2200 (TX) | MHz |
| Operating frequency for Band 2(B25) | 1850 - 1915 (RX)<br>1930 - 1995 (TX) | MHz |
| Operating frequency for Band 3 | 1710 - 1785 (RX)<br>1805 - 1880 (TX) | MHz |
| Antenna Gain (Band 1) | RX: >10<br>TX: >10 | dBi |
| Antenna Gain (Band 2) | RX:>10<br>TX:>10 | dBi |
| Antenna Gain (Band 3) | RX: >10<br>TX: >10 | dBi |
| Half Power Beamwidth, Azimuth (Horizontal) | 1710 – 1880 MHz : 85° ± 10°<br>1850 – 1990 MHz : 65° ± 10°<br>1920 – 2200 MHz : 65° ±10° | |
| Half Power Beamwidth, Elevation (Vertical) | 1710 – 1880 MHz : 35° ± 10°<br>1850 – 1990 MHz : 35° ± 10°<br>1920 – 2200 MHz : 35° ± 10° | |
| Antenna ports nominal impedance | 50 | ohm |
| Return Loss | ≥ 10.5 | dB |
| Isolation between antenna ports | ≥28 | dB |
| Front-to-back ratio (180° ±30°) | ≥20 | dB |
| Passive Intermodulation (PIM) @ 2 x 37 dBm | < -150 | dBc |
| Dimensions (H/W/D) | 11.6/10.63/0.79 | in |
| Weight | 3.3 | Lbs. |
| Antenna Ports: Quantity & Type | 4 Next10 with pigtails | |

SEMI–INTEGRATED PANEL AAFA


SQUARE D QO8–16L100RB LOAD CENTER


COMMSCOPE – SMALL CELL ANTENNA (VVSSP-65S-R1B)

| REV | DATE | DESCRIPTION | BY |
|---|---|---|---|
| A | 11/11/19 | ISSUED FOR REVIEW | TDC2 |

REVISIONS



SITE NAME:
SC TX SA1001BA_41LAB
SITE ADDRESS:
425 LIVE OAK ST.
SAN ANTONIO, TX 78205
BEXAR COUNTY

TDC2
634 N. BALLARD
WYLIE, TX 75098
OFFICE: 972-442-7005
FAX: 972-578-0517

| | |
|---|---|
| DESIGNED BY: | TDC2 |
| DRAWN BY: | TDC2 |
| SCALE: | N.T.S. |
| DATE DRAWN: | 11/11/19 |
| FILE NAME: | |
| PROJECT NUMBER: | |
| SHEET: 003 | TOTAL SHT: 008 |

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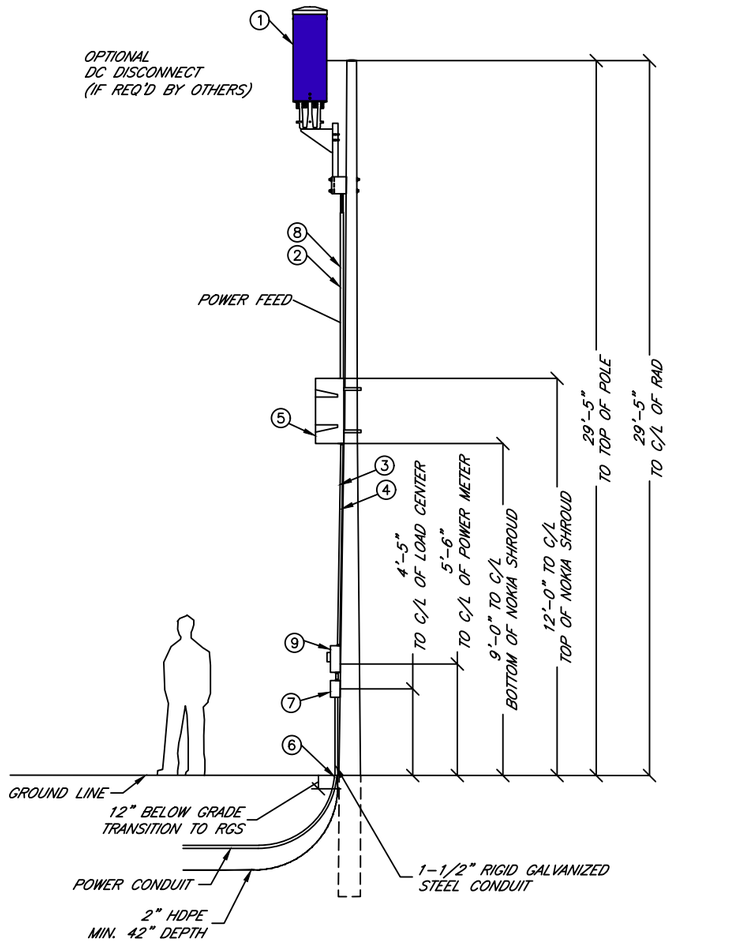
SYSTEM NOTE:
POLE ELEVATION DEPICTED IS TYPICAL – THE DRAWINGS ELEMENTS WILL BE ADJUSTED AS PER THE PROVISIONS AND GUIDELINES DEFINE IN THE JOINT AGREEMENT

POLE NOTE:
EXTENET TO PLACE CLASS 3 35' UTILITY POLE POWER PROVIDED BY OTHERS.

① PROPOSED SMALL CELL ANTENNA COMMSCOPE VVSSP-65S-R1B
② COAX RISER CABLE PROTECTED BY 3" U-GUARD
③ FIBER RISER CABLE PROTECTED BY 3" U-GUARD
④ POWER RISER CONDUIT OR UGUARD
⑤ REMOTE RADIO HEAD AIR SCALE MICRO RRH
⑥ GROUNDING BUSBAR
⑦ LOAD CENTER
⑧ HOISTING GRIP (KELLEMS #02403039 OR EQUIVALANT)
⑨ METER TYPE SPEC PROVIDED BY LOCAL ELECTRIC SERVICE PROVIDER.

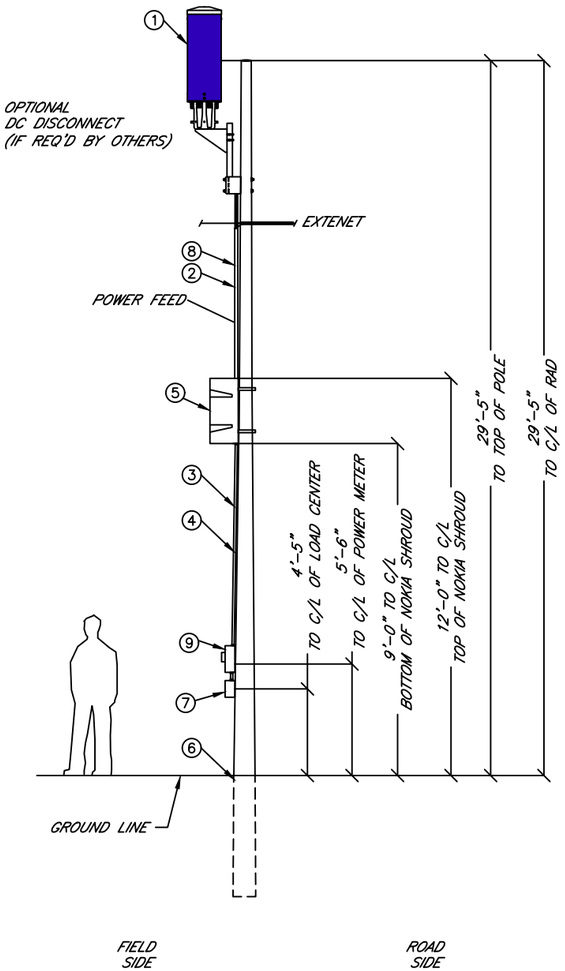
SEE SITE PLAN FOR ACTUAL ANTENNA ELEVATION INFO

OPTIONAL DC DISCONNECT IF REQ'D BY OWNER

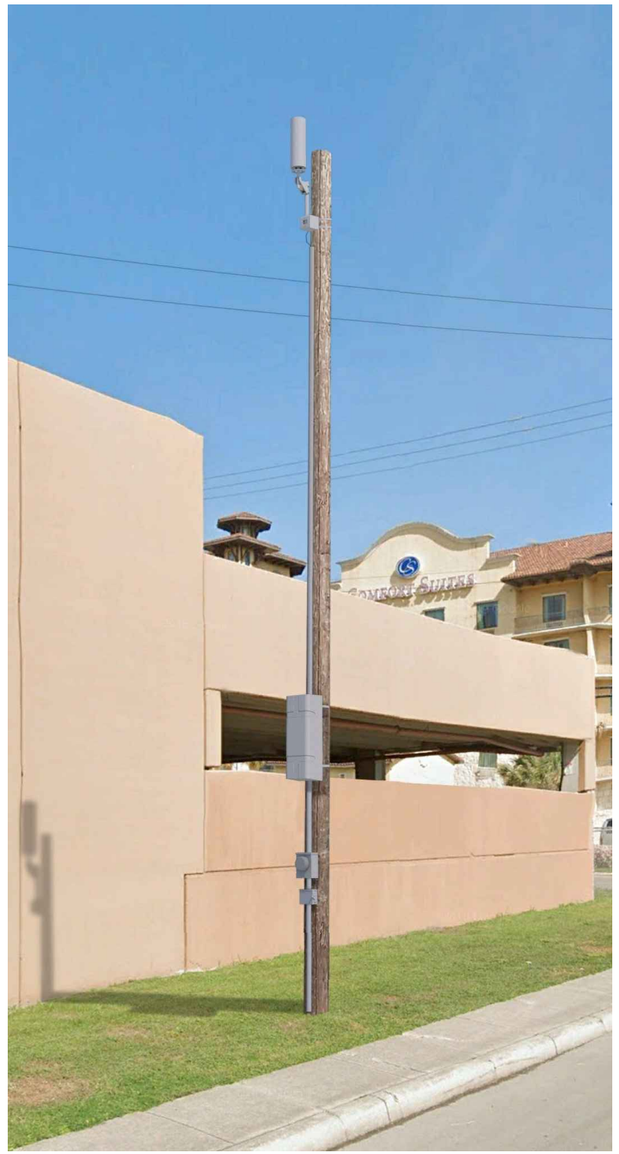



TYPICAL FRONT ELEVATION OF PROPOSED NODE (UNDERGROUND FIBER FEED)

SEE SITE PLAN FOR ACTUAL ANTENNA ELEVATION INFO




TYPICAL SIDE ELEVATION OF PROPOSED NODE



PROPOSED NODE LOCATION

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SC TX SA1001BA_41LAB
SITE ADDRESS:
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BEXAR COUNTY

TDC2
634 N. BALLARD
WYLIE, TX 75098
OFFICE: 972-442-7005
FAX: 972-578-0517

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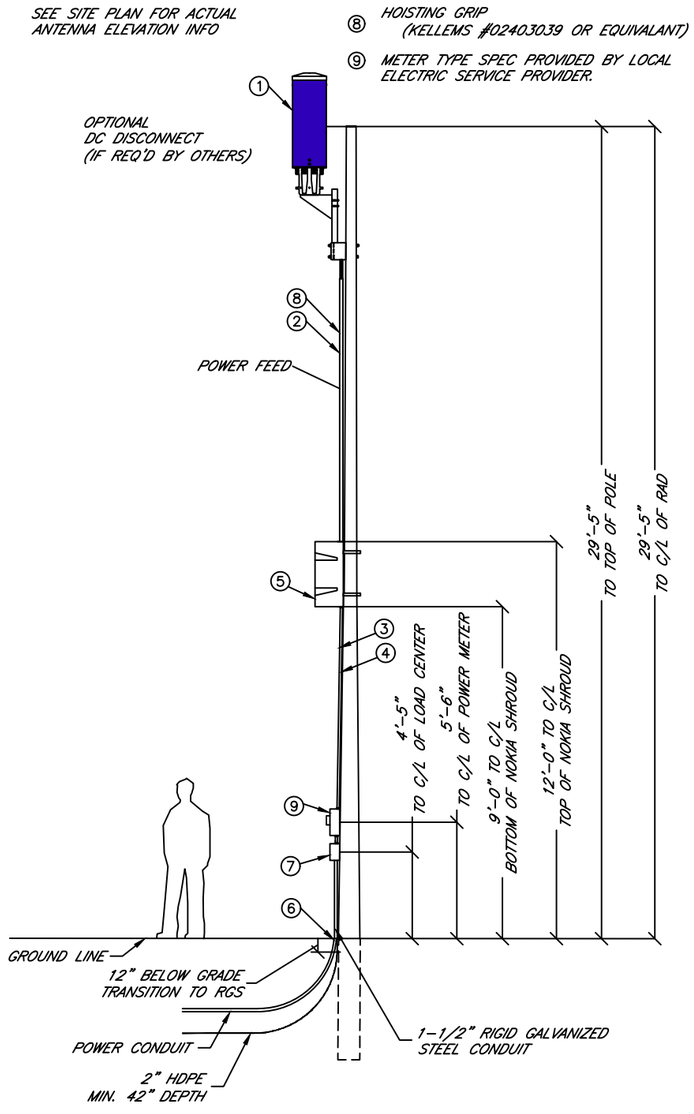
|---|---|
| DESIGNED BY: | TDC2 |
| DRAWN BY: | TDC2 |
| SCALE: | N.T.S. |
| DATE DRAWN: | 11/11/19 |
| FILE NAME: | |
| PROJECT NUMBER: | |
| SHEET: | 004 |
| TOTAL SHT: | 008 |

SYSTEM NOTE:
POLE ELEVATION DEPICTED IS TYPICAL – THE DRAWINGS ELEMENTS WILL BE ADJUSTED AS PER THE PROVISIONS AND GUIDELINES DEFINE IN THE JOINT AGREEMENT

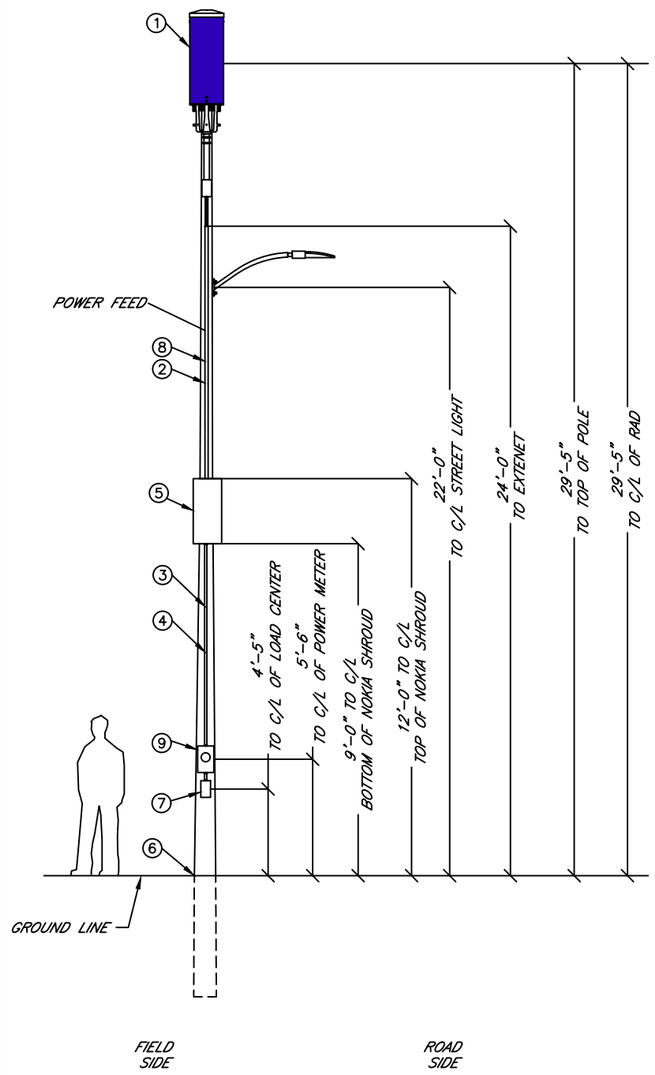
POLE NOTE:
EXTENET TO PLACE
CLASS 3 35' UTILITY POLE
POWER PROVIDED BY OTHERS.

1. PROPOSED SMALL CELL ANTENNA COMMSCOPE VVSSP-65S-R1B
2. COAX RISER CABLE PROTECTED BY 3" U-GUARD
3. FIBER RISER CABLE PROTECTED BY 3" U-GUARD
4. POWER RISER CONDUIT OR UGUARD
5. REMOTE RADIO HEAD AIR SCALE MICRO RRH
6. GROUNDING BUSBAR
7. LOAD CENTER
8. HOISTING GRIP (KELLEMS #02403039 OR EQUIVALANT)
9. METER TYPE SPEC PROVIDED BY LOCAL ELECTRIC SERVICE PROVIDER.




TYPICAL ELEVATION OF PROPOSED NODE
(UNDERGROUND FIBER FEED)

OPTIONAL DC DISCONNECT IF REQ'D BY OWNER




TYPICAL ELEVATION OF PROPOSED NODE
(AERIAL FIBER FEED)

PROPOSED NODE LOCATION

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BEXAR COUNTY

TDC2
634 N. BALLARD
WYLIE, TX 75098
OFFICE: 972-442-7005
FAX: 972-578-0517

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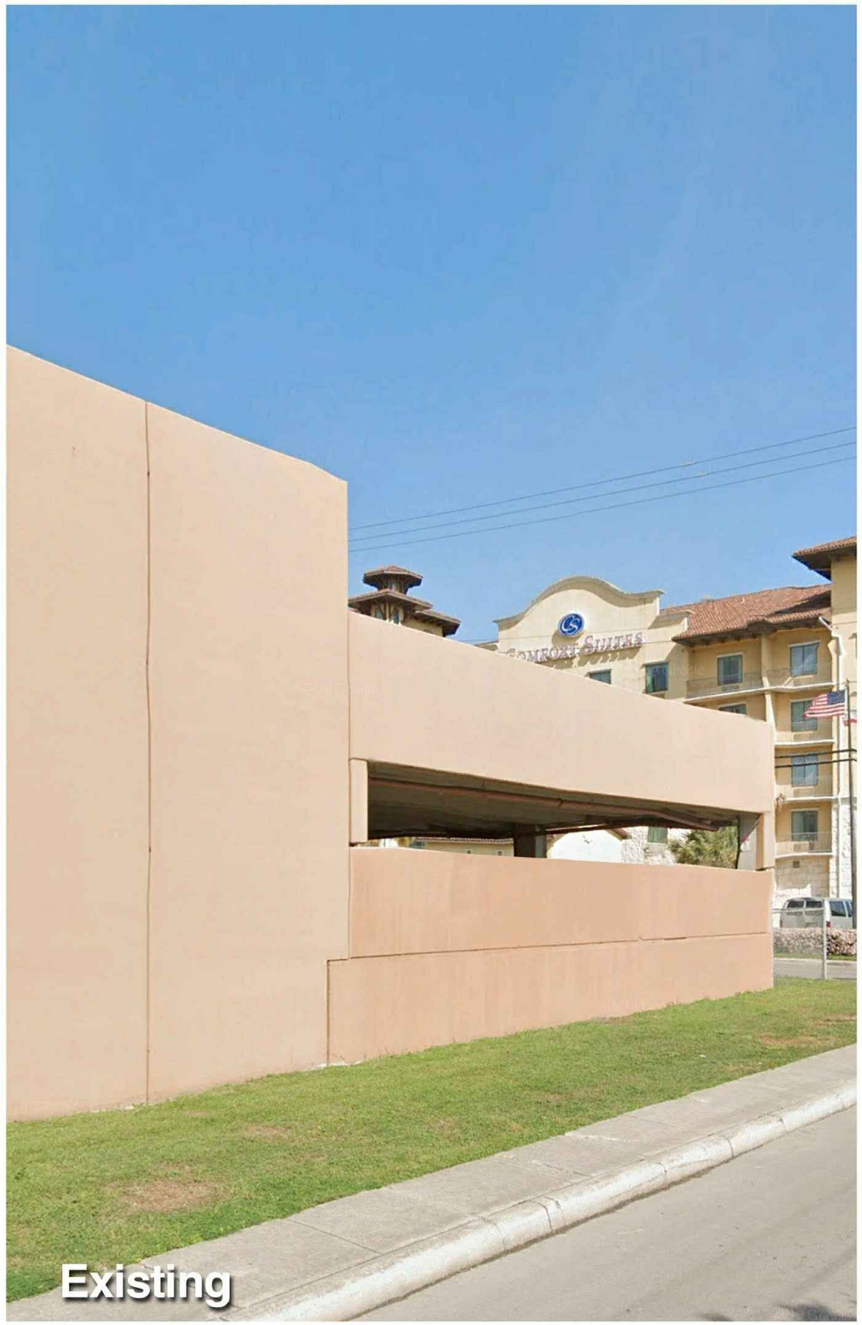
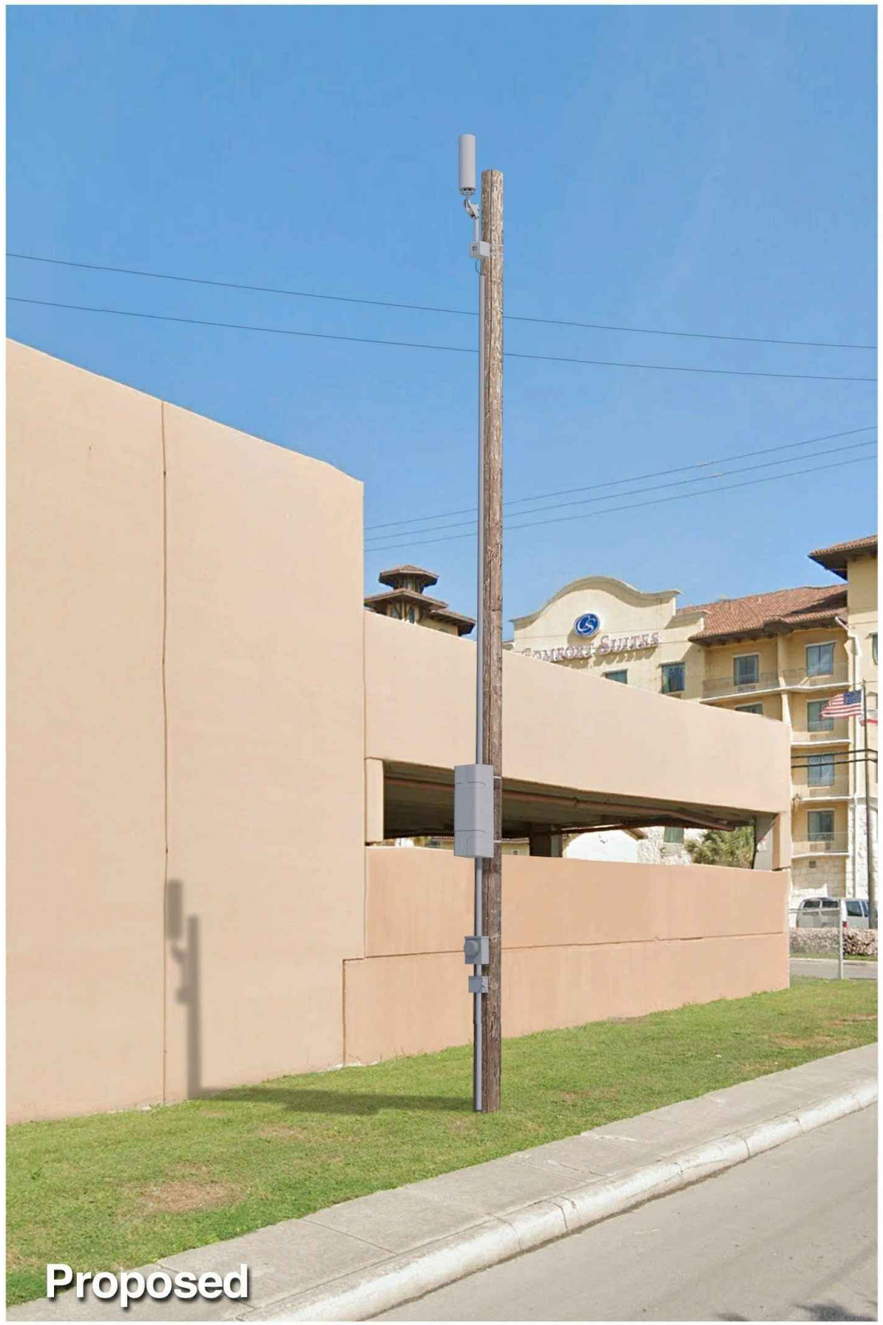
| DRAWN BY: | TDC2 |
| SCALE: | N.T.S. |
| DATE DRAWN: | 11/11/19 |
| FILE NAME: | |
| PROJECT NUMBER: | |
| SHEET: | 004A |
| TOTAL SHT: | 008 |




TDC2

**SA1001BA_41LAB**

425 Live Oak Street
San Antonio, TX

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BEXAR COUNTY

TDC2
634 N. BALLARD
WYLIE, TX 75098
OFFICE: 972-442-7005
FAX: 972-578-0517

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|---|---|
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| DRAWN BY: | TDC2 |
| SCALE: | N.T.S. |
| DATE DRAWN: | 11/11/19 |
| FILE NAME: | |
| PROJECT NUMBER: | |
| SHEET: 005 | TOTAL SHT: 008 |



TDC2

10/2/20

**SA1001BA_41LAB**

425 Live Oak Street
San Antonio, TX

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SAN ANTONIO, TX 78205
BEXAR COUNTY

TDC2
634 N. BALLARD
WYLIE, TX 75098
OFFICE: 972-442-7005
FAX: 972-578-0517

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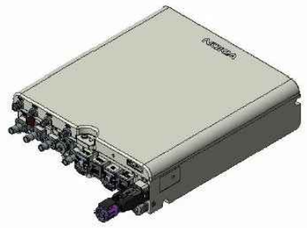
|---|---|
| DESIGNED BY: | TDC2 |
| DRAWN BY: | TDC2 |
| SCALE: | N.T.S. |
| DATE DRAWN: | 11/11/19 |
| FILE NAME: | |
| PROJECT NUMBER: | |
| SHEET: 05A | TOTAL SHT: 008 |

# ANTENNA MOUNTING BRACKET

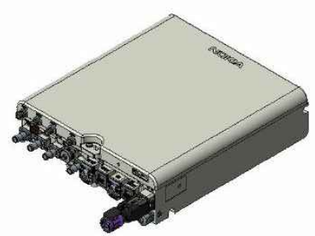
## AirScale B25 Micro RRH- Technical Specs

| Specification | Details |
|---|---|
| Spectrum | Band-25 (UL) 1850 – 1915MHZ; (DL) 1930 – 1995MHz |
| RF Power | 4 x 5W (tunable down to 50mW) |
| Bandwidth | IBW = Filter BW; OBW = IBW |
| Carriers | Up to 5-carriers |
| Physical Size | DC: <4L/4Kg; AC: <5L/5Kg |
| BTS Class | 3GPP Medium Area |
| Modulation | Up to 256QAM w/o power back-off (PAR = 8.5dB) |
| Interfaces | 2 CPRI ports for Fronthaul (2x 9.8Gbps) |
| Antenna | Configuration: 4Tx / 4Rx MIMO<br>Types: Integrated (<20mm thickness) or External<br>Connector: Nex10 |
| Mounting Options | Wall, Pole, Strand, Shroud, Bookshelf, Back-back or Ceiling |
| Operating Temp | -40°C to +55°C |
| Ingress Protection | IP65 |
| Power Consumption | 100W (Typ); 120W (Max) |
| Input Power | DC: - 40.5V to -57V<br>AC: 80V to 276 (via external AC/DC converter) |



## AirScale B66 Micro RRH- Technical Specs

| Specification | Details |
|---|---|
| Spectrum | Band-66 (UL) 1710 – 1780MHZ; (DL) 2110 – 2200MHz |
| RF Power | 4 x 5W (tunable down to 50mW) |
| Bandwidth | IBW = Filter BW; OBW = 80MHz |
| Carriers | Up to 5-carriers |
| Physical Size | DC: <4L/4Kg; AC: <5L/5Kg |
| BTS Class | 3GPP Medium Area |
| Modulation | Up to 256QAM w/o power back-off (PAR = 8.5dB) |
| Interfaces | 2 CPRI ports for Fronthaul (2x 9.8Gbps) |
| Antenna | Configuration: 4Tx / 4Rx MIMO<br>Types: Integrated (<20mm thickness) or External<br>Connector: Nex10 |
| Mounting Options | Wall, Pole, Strand, Shroud, Bookshelf, Back-back or Ceiling |
| Operating Temp | -40°C to +55°C |
| Ingress Protection | IP65 |
| Power Consumption | 100W (Typ); 120W (Max) |
| Input Power | DC: - 40.5V to -57V<br>AC: 80V to 276 (via external AC/DC converter) |

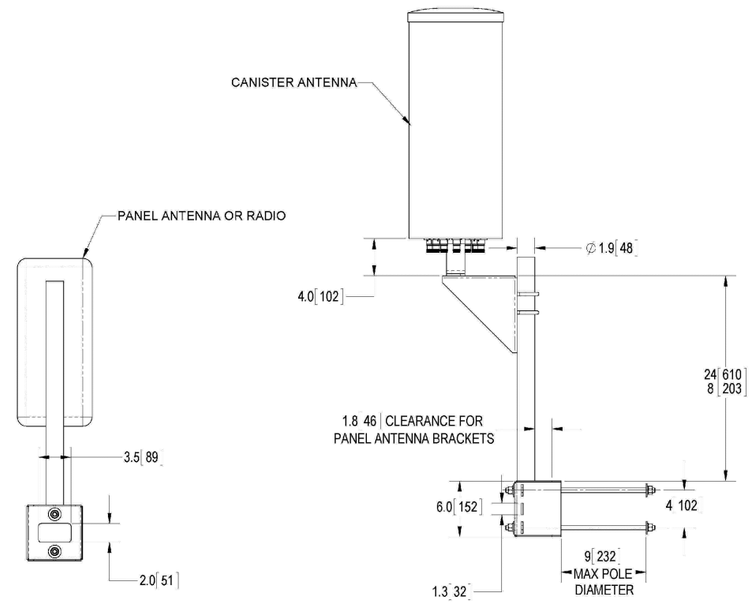


NOTES:
1.0 ALL METRIC DIMENSIONS ARE IN BRACKETS
2.0 FOR COLOR INFORMATION, REFER TO DRAWING MTM1004

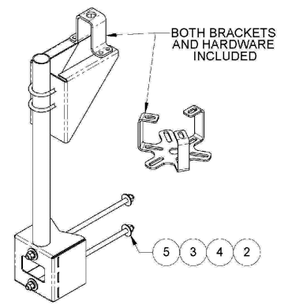
REVISIONS

| REV. | ECN | DESCRIPTION | BY | DATE |
|---|---|---|---|---|
| PRE4 | 8000029000 | INITIAL RELEASE | FA | 03/28/18 |

12" STANDOFF SETUP




POLE TOP SETUP




COMPATIBLE ANTENNAS

| OEM | MODELS | U BRACKET | UNIVERSAL ANTENNA MOUNT |
|---|---|---|---|
| GALTRONICS | P6480 | x | |
| AMPHENOL | CUUT070X06Fxyz0 | | x |
| KATHERIN | 80010783 /80010784 | | x |
| KMW | FX-OM2.10-H2 | x | x |
| COMMSCOPE | (RR) / VVSP-360S-F | | x |

PATENT PENDING

| ITEM | PART NO. | DESCRIPTION | QTY. | WEIGHT | NOTE NO. |
|---|---|---|---|---|---|
| 1 | MTC397351 | | 1 | 9.03 LBS | |
| 2 | MT37916 | 1/2" X 16" GALV THREADED ROD | 2 | 0.88 LBS | |
| 3 | GWL-04 | 1/2" GALV LOCK WASHER | 4 | 0.01 LBS | |
| 4 | GN-04 | 1/2" GALV HEX NUT | 4 | 0.04 LBS | |
| 5 | GWF-04 | 1/2" GALV FLAT WASHER | 4 | 0.03 LBS | |
| 6 | MTC401217 | U BRACKET, GALETRONICS ANT | 1 | 1.53 LBS | |
| 7 | MTC397349 | | 1 | 4.66 LBS | |
| 8 | GUB3230 | 3/8" X 2" X 3" GALV U-BOLT | 2 | 0.24 LBS | |
| 9 | MTC401211 | UNIVERSAL ANTENNA MOUNT | 1 | 2.24 LBS | |

COMMSCOPE, INC. OF NORTH CAROLINA

TOLERANCES: 0 PLACE X ± .25; 1 PLACE X ± .12; 2 PLACE XX ± .06; ANGLES ± 2°

SAP MATERIAL MASTER: SEE NOTE

FINISH: SEE NOTE

MATERIAL: A1011/A1018

| | NAME | DATE |
|---|---|---|
| CG | FA | 3/28/18 |
| PW | | |
| RV | | |
| AD | | |
| RE | TP | 3/28/18 |
| ECN | 8000029174 | |

TITLE:

SCALE: 1:6

DOCUMENT NO.: SCU

| DENSITY | 0.01 | lbs/in³ |
|---|---|---|
| MASS | 28.62 | lbs |
| VOLUME | 1999.41 | in³ |
| SURFACE AREA | | in² |

| HEIGHT |
|---|
| LENGTH |
| WIDTH |

SIZE: C

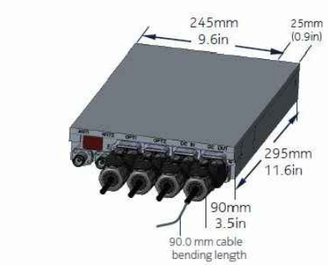
WORK AREA

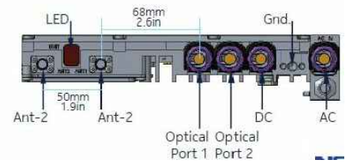
| MODEL VERSION | MODEL STATUS | DRAWING REVISION | DRAWING VERSION | DRAWING STATUS | DRAWING REVISION | SHEET |
|---|---|---|---|---|---|---|
| | | | | | PRE4 | 1 OF 1 |



## AirScale LAA Micro RRH- Technical Specs

| Specification | Details |
|---|---|
| Spectrum | Band-46 (DL) 5170 – 5250MHZ & 5725 – 5835MHz |
| RF Power | 2 x 0.5W (tunable down to 50mW) |
| Bandwidth | IBW = 100MHz; OBW = 60MHz |
| Carriers | Up to 3 contiguous carriers (20MHz BW/Carrier) |
| Physical Size | DC: 4L/4kg; AC: 4.4L/5kg |
| BTS Class | 3GPP Medium Area |
| Modulation | Up to 256QAM w/o power back-off (PAR = 8.5dB) |
| Interfaces | 2 CPRI ports for Fronthaul (2x 9.8Gbps) |
| Antenna | Configuration: 2Tx (DL only)<br>Types: Integrated (<20mm thickness) or External<br>Connector: Nex10 |
| Mounting Options | Wall, Pole, Strand, Shroud, Bookshelf, Back-back or Ceiling |
| Operating Temp | -40°C to +55°C |
| Ingress Protection | IP65 |
| Power Consumption | 70W (Typ); 90W (Max) |
| Input Power | DC: - 40.5V to -57V<br>AC: 80V to 276 (via external AC/DC converter) |

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SC TX SA1001BA_41LAB
SITE ADDRESS:
425 LIVE OAK ST.
SAN ANTONIO, TX 78205
BEXAR COUNTY

TDC2
634 N. BALLARD
WYLIE, TX 75098
OFFICE: 972-442-7005
FAX: 972-578-0517

| | |
|---|---|
| DESIGNED BY: | TDC2 |
| DRAWN BY: | TDC2 |
| SCALE: | N.T.S. |
| DATE DRAWN: | 11/11/19 |
| FILE NAME: | |
| PROJECT NUMBER: | |
| SHEET: 006 | TOTAL SHT: 008 |

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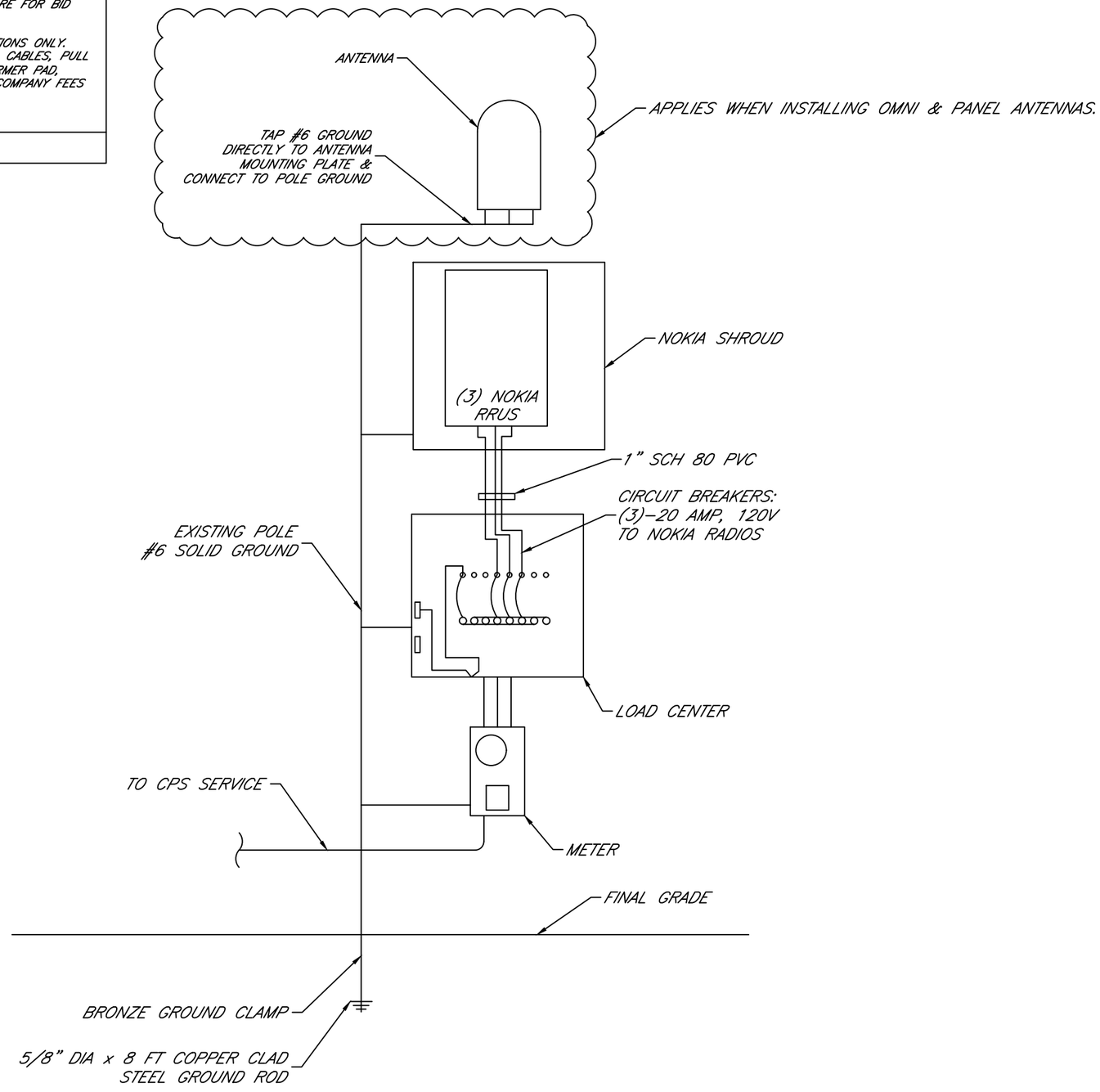
1. UTILITY POINTS OF SERVICE AND WORK / MATERIALS SHOWN ARE BASED UPON PRELIMINARY INFORMATION PROVIDED BY THE UTILITY COMPANIES AND ARE FOR BID PURPOSES ONLY

2. CONSTRUCT TO UTILITY COMPANY ENGINEERING PLANS AND SPECIFICATIONS ONLY. CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUIT, PULL ROPES, CABLES, PULL BOXES. CONCRETE ENCASEMENT OF CONDUIT (IF REQUIRED), TRANSFORMER PAD, BARRIERS, POLE RISERS, TRENCHING, BACKFILL, PAY ALL UTILITY COMPANY FEES AND INCLUDE ALL REQUIREMENTS IN SCOPE OF WORK

## UTILITY GENERAL NOTES




## POWER & GROUND SCHEMATIC



| REV | DATE | DESCRIPTION | BY |
|---|---|---|---|
| A | 11/11/19 | ISSUED FOR REVIEW | TDC2 |

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SITE NAME:
SC TX SA1001BA_41LAB

SITE ADDRESS:
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TDC2
634 N. BALLARD
WYLIE, TX 75098
OFFICE: 972-442-7005
FAX: 972-578-0517


| | |
|---|---|
| DESIGNED BY: | TDC2 |
| DRAWN BY: | TDC2 |
| SCALE: | N.T.S. |
| DATE DRAWN: | 11/11/19 |
| FILE NAME: | |
| PROJECT NUMBER: | |
| SHEET: 007 | TOTAL SHT: 008 |

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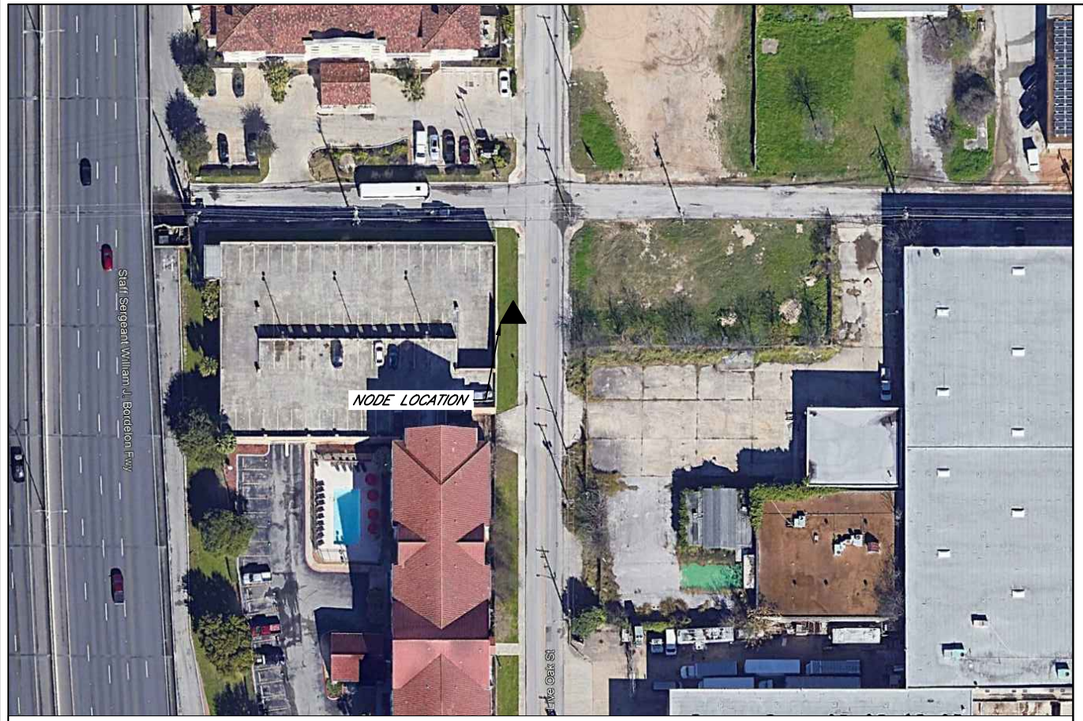
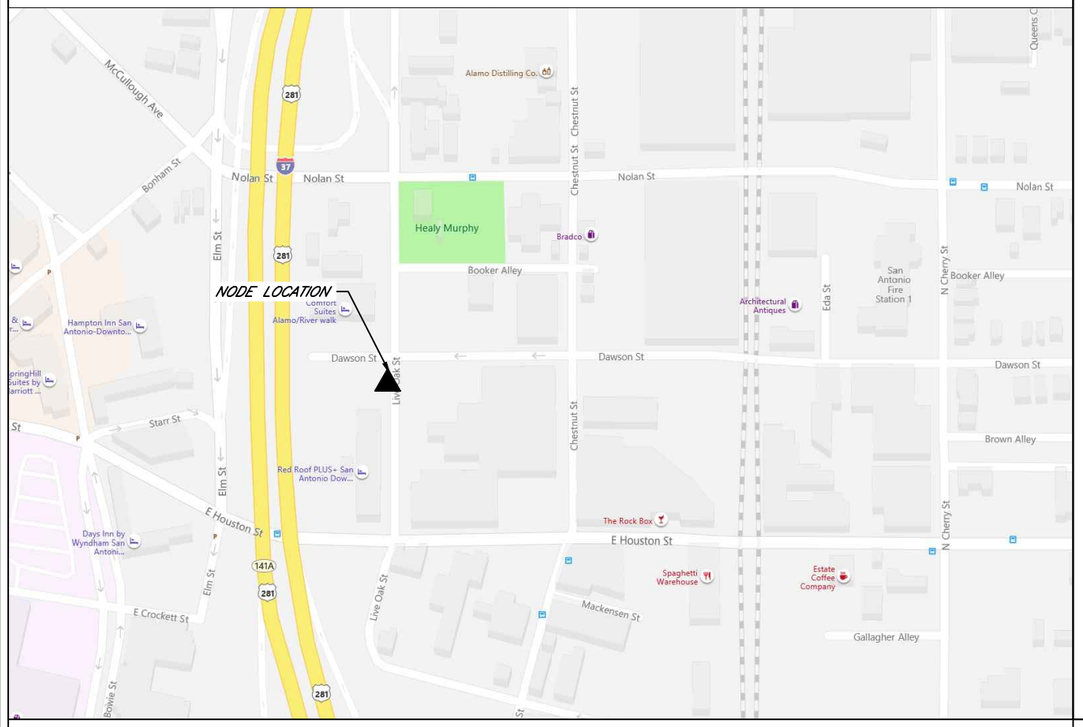


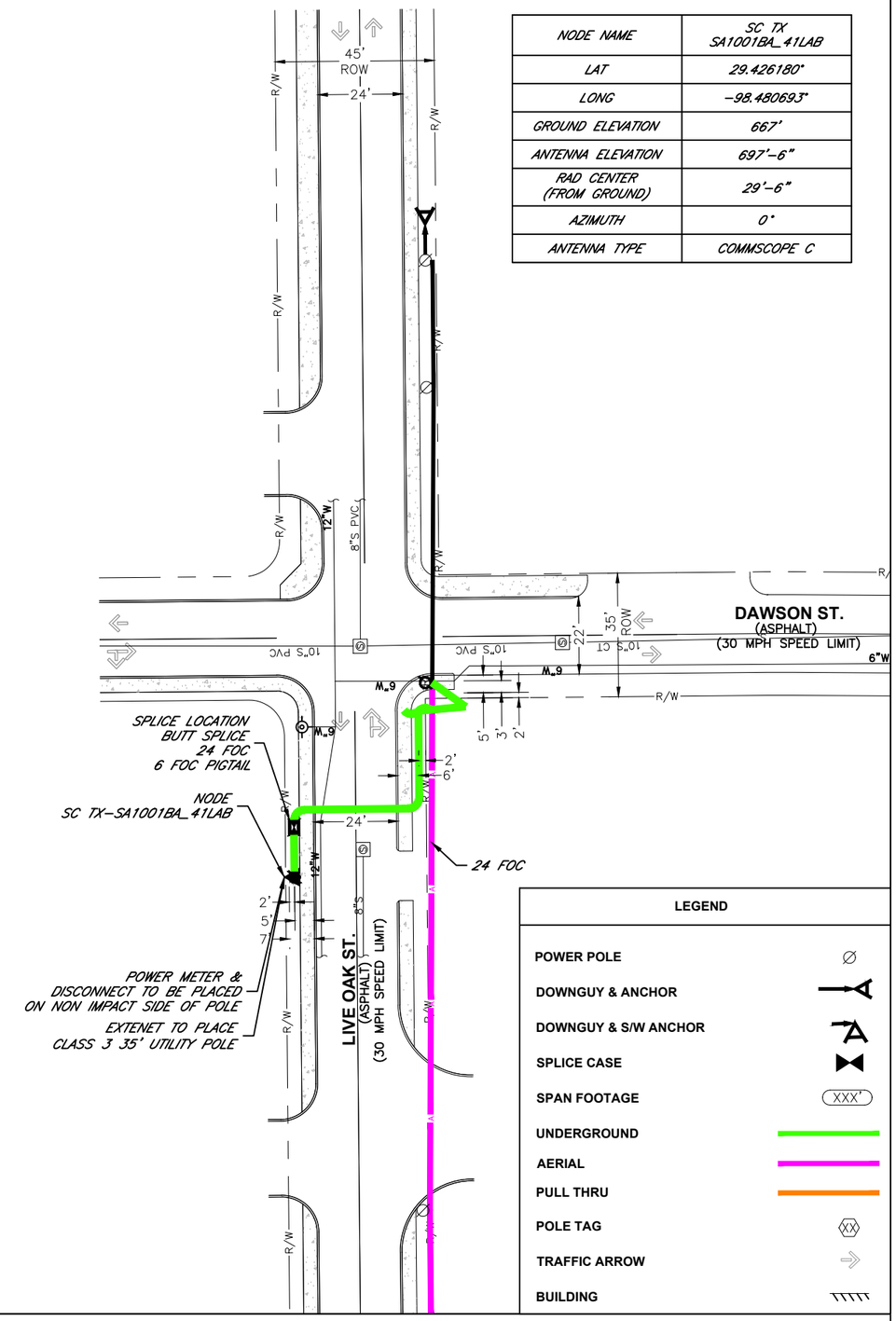

SITE LOCATION MAP




AERIAL PHOTO

## NODE SITE – SC TX SA1001BA_41LAB

| NODE NAME | SC TX SA1001BA_41LAB |
|---|---|
| LAT | 29.426180° |
| LONG | -98.480693° |
| GROUND ELEVATION | 667' |
| ANTENNA ELEVATION | 697'-6" |
| RAD CENTER (FROM GROUND) | 29'-6" |
| AZIMUTH | 0° |
| ANTENNA TYPE | COMMSCOPE C |




### LEGEND

- POWER POLE
- DOWNGUY & ANCHOR
- DOWNGUY & S/W ANCHOR
- SPLICE CASE
- SPAN FOOTAGE (XXX')
- UNDERGROUND
- AERIAL
- PULL THRU
- POLE TAG (XX)
- TRAFFIC ARROW
- BUILDING

OVERALL SITE PLAN SCALE: 1" = 40'

extenet YOUR NETWORK. EVERYWHERE. SYSTEMS



| REV | DATE | DESCRIPTION | BY |
|---|---|---|---|
| A | 11/11/19 | ISSUED FOR REVIEW | TDC2 |

REVISIONS

SITE NAME:
SC TX SA1001BA_41LAB
SITE ADDRESS:
425 LIVE OAK ST.
SAN ANTONIO, TX 78205
BEXAR COUNTY

TDC2
634 N. BALLARD
WYLIE, TX 75098
OFFICE: 972-442-7005
FAX: 972-578-0517

| | |
|---|---|
| DESIGNED BY: | TDC2 |
| DRAWN BY: | TDC2 |
| SCALE: | N.T.S. |
| DATE DRAWN: | 11/11/19 |
| FILE NAME: | |
| PROJECT NUMBER: | |
| SHEET: | 008 |
| TOTAL SHT: | 008 |

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