



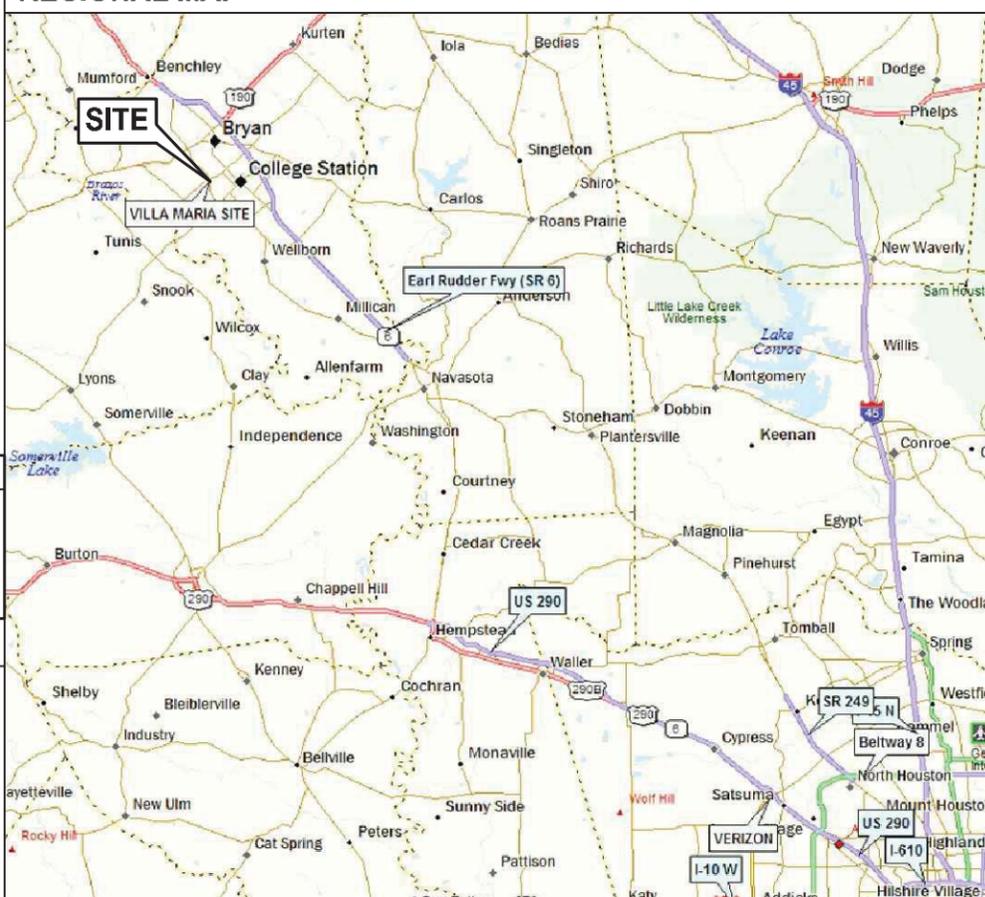
**SITE:**  
**VILLA MARIA**

(911 ADDRESS):  
1429 W VILLA MARIA, #WTF  
BRYAN, TEXAS 77807  
SITE LOCATION CODE: 260668  
LAT: N 30° 37' 45.77", 30.62938  
LONG: W 96° 22' 31.71", -96.37548  
ELEVATION: 309' AMSL

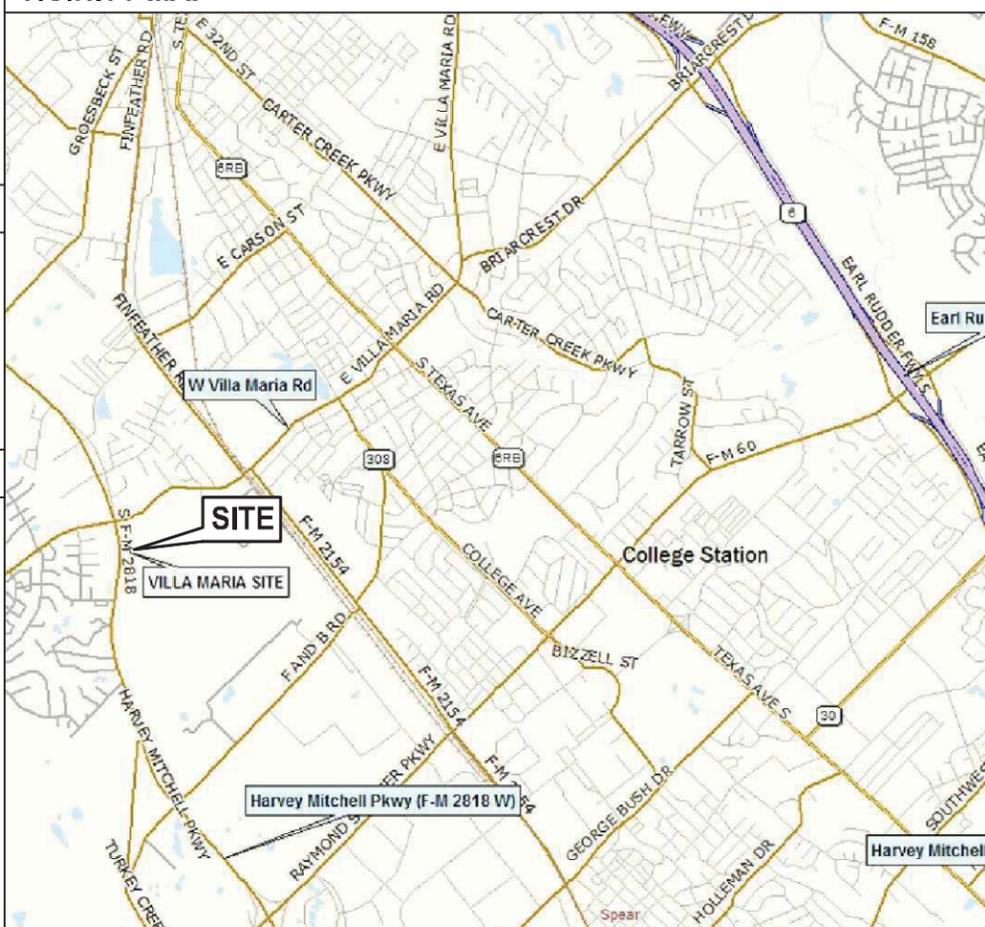
**UTILITY INFORMATION**

POWER: BRYAN TEXAS UTILITIES (BTU)  
CONTACT: (979) 821-5700

**REGIONAL MAP**



**VICINITY MAP**



**verizon WIRELESS**  
14123 CICERO ROAD  
HOUSTON, TX 77095  
PHONE: (713) 507-1650  
FAX: (713) 507-1618

**AXIS Engineering, Inc.**  
Wireless Site Design and Engineering  
www.axisengineering.net  
6200 ROTHWAY STREET, SUITE 140  
HOUSTON, TEXAS 77040  
PHONE: 713-460-9902 FAX: 713-690-5037

AXIS PROJECT NUMBER:  
01-131105-188

THESE DRAWINGS ARE THE PROPERTY OF VERIZON WIRELESS. THEY ARE INTENDED FOR THE EXCLUSIVE USE OF THIS PROJECT ONLY. ANY RE-USE OF THESE DOCUMENTS (DRAWINGS) WITHOUT THE EXPRESS WRITTEN CONSENT OF VERIZON WIRELESS AND AXIS ENGINEERING, INC. IS PROHIBITED.

REVISIONS	BY

**PROJECT DESCRIPTION**

THESE DOCUMENTS ARE PART OF AN APPLICATION TO DEVELOP AN: UNMANNED COMMUNICATIONS FACILITY CONSISTING OF AN EQUIPMENT BUILDING, CONNECTING CABLES, DIRECTIONAL ANTENNAS AND GPS. THE SIZE, HEIGHT AND DIRECTION OF THE ANTENNAS SHALL BE ADJUSTED TO MEET SYSTEM REQUIREMENTS. THE ANTENNAS WILL PROVIDE CLEAR AND RELIABLE COMMUNICATIONS WITHIN THE SURROUNDING COUNTY. THESE INTERCONNECTS WILL ALLOW FOR AN INDEPENDENT COMMUNICATION NETWORK THAT CAN CONTINUE TO FUNCTION IF THE TELEPHONE (WIRE) SERVICE IS DISCONNECTED DURING AN EMERGENCY OR NATURAL DISASTER. THESE FACILITIES WILL ENHANCE THE GENERAL HEALTH, SAFETY AND WELFARE OF THE COMMUNITY AND SURROUNDING AREAS BY PROVIDING RELIABLE COMMUNICATIONS AROUND THIS LOCATION.

**SITE DIRECTIONS**

DEPART 14123 CICERO RD, HOUSTON, TX 77095 ON CICERO RD (WEST). TURN RIGHT (NORTH) ON POINT SIX CIRCLE RD. TURN RIGHT (EAST) ONTO TX-6 (HIGHWAY 6 N). ROAD NAME CHANGES TO FM-1960 (TX-6). TURN LEFT (NORTH) ONTO US-290 W (NORTHWEST FWY). TAKE RAMP (LEFT) ONTO US-290 (TX-6). KEEP RIGHT ONTO RAMP (TX-6 / BRYAN / COLLEGE STATION), THEN TAKE RAMP ONTO TX-6 (BRYAN / NAVASOTA). KEEP LEFT ONTO RAMP (TX-6-BR / COLLEGE STATION). KEEP STRAIGHT ONTO TX-6 BRANCH (TEXAS AVE S). TURN LEFT (SOUTHWEST) ONTO FM-2818 (HARVEY MITCHELL PKWY S). KEEP STRAIGHT ONTO FM-2818 W. ROAD NAME CHANGES TO N HARVEY MITCHELL PKWY (S FM-2818). TURN RIGHT (EAST) ONTO FM-1179 (W VILLA MARIA RD). ARRIVE 1429 W VILLA MARIA STORAGE FACILITY. YOU WILL NEED AN ACCESS CODE TO GET INTO THE FACILITY.

**CONSULTANTS:**

**ENGINEER:**

AXIS ENGINEERING, INC  
6200 ROTHWAY  
SUITE 140  
HOUSTON, TEXAS 77040  
Office: 713-460-9902  
Fax: 713-690-5037  
www.axisengineering.net

**GENERAL CONTRACTOR:**

VERIZON WIRELESS  
14123 CICERO RD.  
HOUSTON, TEXAS 77095  
Phone: (713) 507-1651  
Fax: (713) 507-1618

**VERIZON CONSTRUCTION:**

MR. MARK BROWN  
Office: (713) 507-1650  
Cell: (713) 818-8093

**SURVEYOR:**

COTTON SURVEYING  
6335 GULFON  
SUITE 103  
HOUSTON, TEXAS 77081  
713-981-0275

**PROPERTY OWNER:**

TP VILLA MARIA ROAD SELF STORAGE, LTD  
Contact Name: TOM MAXFIELD  
Address: 9442 North Capital of Texas Highway  
Plaza II, Suite 140  
AUSTIN, TX 78759  
Phone: 214-389-3925

**UTILITY PROVIDERS:**

**ELECTRICAL PROVIDER:**

BRYAN TEXAS UTILITIES (BTU)  
shows service line in this area.  
Contact: (979) 821-5700

**TELCO PROVIDER:**

Verizon  
800-201-1452

**SHEET INDEX**

- SURVEY
- C.1 OVERALL SITE PLAN
- C.2 ENLARGED SITE PLAN & ELEVATION
- C.3 ENLARGED EQUIPMENT PLAN & DETAILS
- C.4 ROOM DETAILS
- AT.1 ANTENNA INFORMATION
- AT.2 RF EQUIPMENT INFORMATION
- S.1 SHELTER FOUNDATION & DETAILS
- S.2 2-HR FIRE RATED DOOR & WALL DETAILS
- S.3 5-TON A/C WALL MOUNTING DETAILS
- D.1 GENERAL DETAILS
- E.1 ELECTRICAL PLAN
- E.2 POWER BOARD DETAILS
- G.1 GROUNDING PLAN & DETAILS
- G.2 GROUNDING DETAILS
- G.3 TELCO GROUNDING DETAILS
- N.1 GENERAL NOTES & SPECIFICATIONS
- RH.1 STANDARD RADIOHEAD DESIGN
- RH.2 STANDARD RADIOHEAD SECTIONS
- P1 PIPING NOTES & PLUMBING DIAGRAM

**PROJECT INFORMATION**

**JURISDICTION:** CITY OF BRYAN, BRAZOS COUNTY  
**CODE:** ALL CONSTRUCTION SHALL COMPLY WITH THE LATEST ACCEPTED ADOPTED EDITION OF THE: LATEST IBC AND ALL LOCAL CODES FOR THE JURISDICTION IN WHICH THE PROJECT IS BEING CONSTRUCTED. INDUSTRIAL CODE (ANSI) OCCUPATIONAL SAFETY AND HEALTH STANDARDS (OSHA) NATIONAL ELECTRICAL CODE (NEC) UNIFORM MECHANICAL CODE

**LIST OF APPLIED CODES:**  
2009 IBC, 2006 IFC, 2006 UMC, 2006 UPC, 2011 NEC, 2009 IECC

**OCCUPANCY:** U  
**ZONING:** NONE  
**CONSTRUCTION TYPE:** I NON-COMBUSTIBLE (IBC)

**PROPRIETARY INFORMATION**

NOT FOR USE OR DISCLOSURE OUTSIDE VERIZON EXCEPT UNDER WRITTEN AGREEMENT

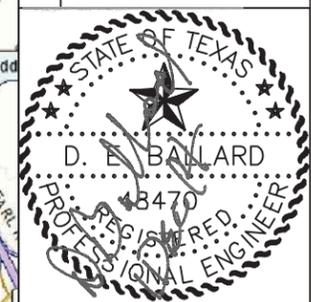
THERE WILL BE NO CHANGES IN THE CONSTRUCTION PRODUCED BY THESE DOCUMENTS WITHOUT THE APPROVAL OF VERIZON WIRELESS AND AXIS ENGINEERING.

**CALL BEFORE YOU DIG**

Call DigTESS dial "811"

Know what's below.  
Call before you dig.

COVER SHEET - GENERAL INFORMATION  
**VERIZON WIRELESS - TEXAS AREA**  
**VILLA MARIA SITE**  
1429 W VILLA MARIA, #WTF  
BRYAN, TX 77807



Axis Engineering, Inc.  
Registration # F-004171

UNDRAWN BY: JCM  
CONTACT: CLF  
DATE: 06-04-2014  
CLIENT SITE No.: 260668

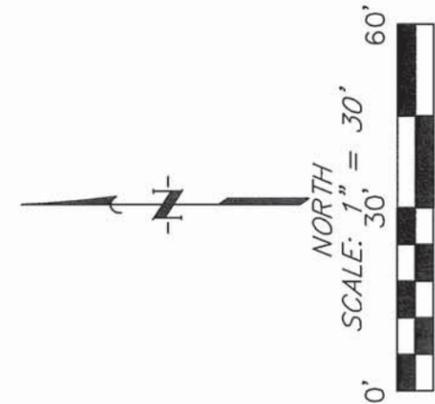
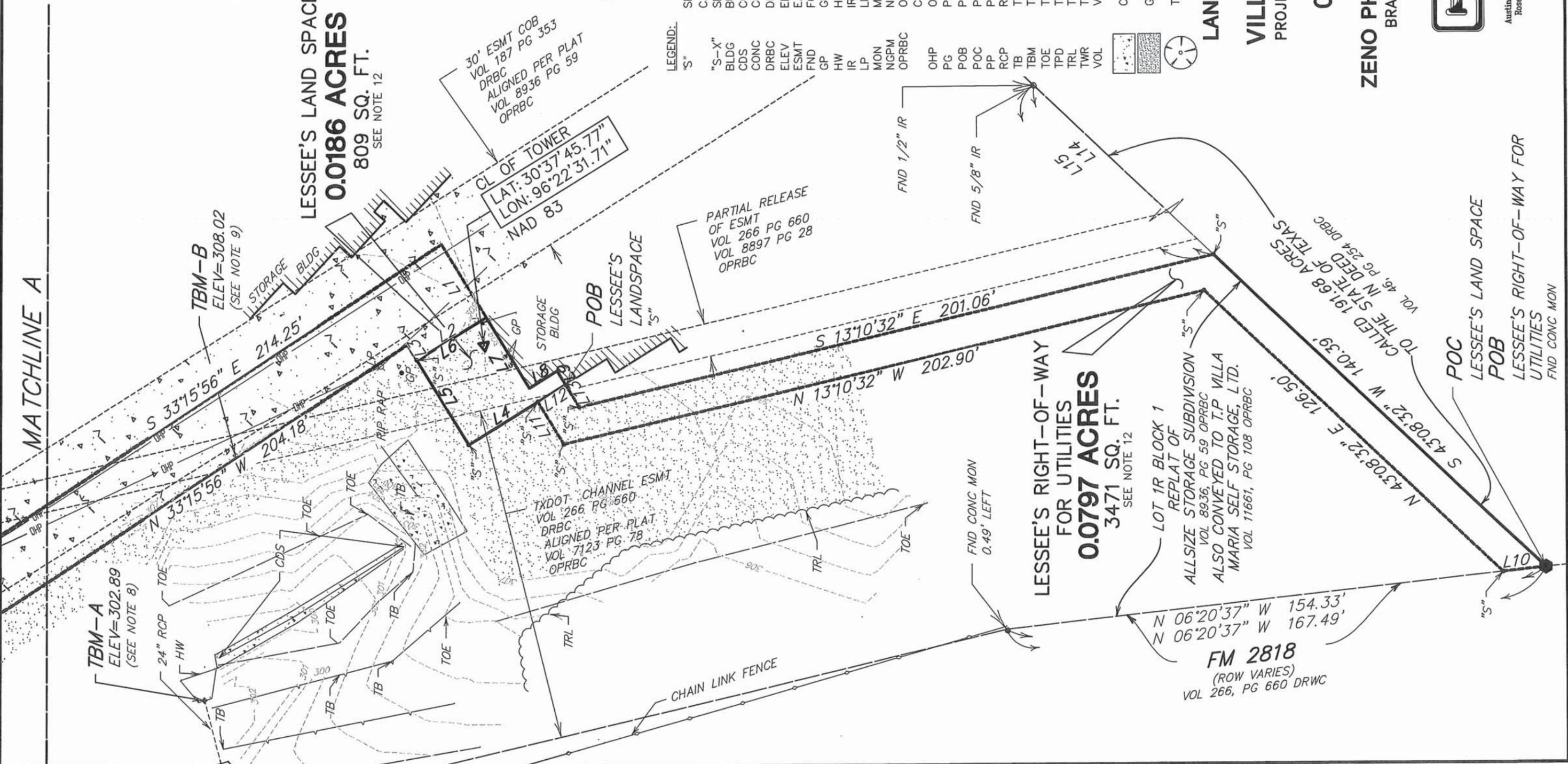
**T1**  
**VERIZON WIRELESS VILLA MARIA**

LINE	BEARING	DISTANCE
L1	S 58°15'33" W	26.22'
L2	N 31°44'27" W	25.00'
L3	N 57°40'53" E	5.54'
L4	N 31°42'33" W	35.03'
L5	N 58°15'33" E	30.37'
L6	S 31°44'27" E	25.00'
L7	S 58°15'33" W	25.44'
L8	S 31°49'25" E	9.99'
L9	S 57°49'45" W	4.97'
L10	N 06°20'37" W	13.15'
L11	N 58°17'27" E	15.29'
L12	S 31°42'33" E	10.00'
L13	S 58°17'27" W	8.10'
L14	N 43°08'32" E	449.03'
L15	N 43°08'32" E	449.39'

**LESSEE'S LAND SPACE**  
**0.0186 ACRES**  
 809 SQ. FT.  
 SEE NOTE 12

**LESSEE'S RIGHT-OF-WAY FOR UTILITIES**  
**0.0797 ACRES**  
 3471 SQ. FT.  
 SEE NOTE 12

**FM 2818**  
 (ROW VARIES)  
 VOL 266, PG 660 DRWC



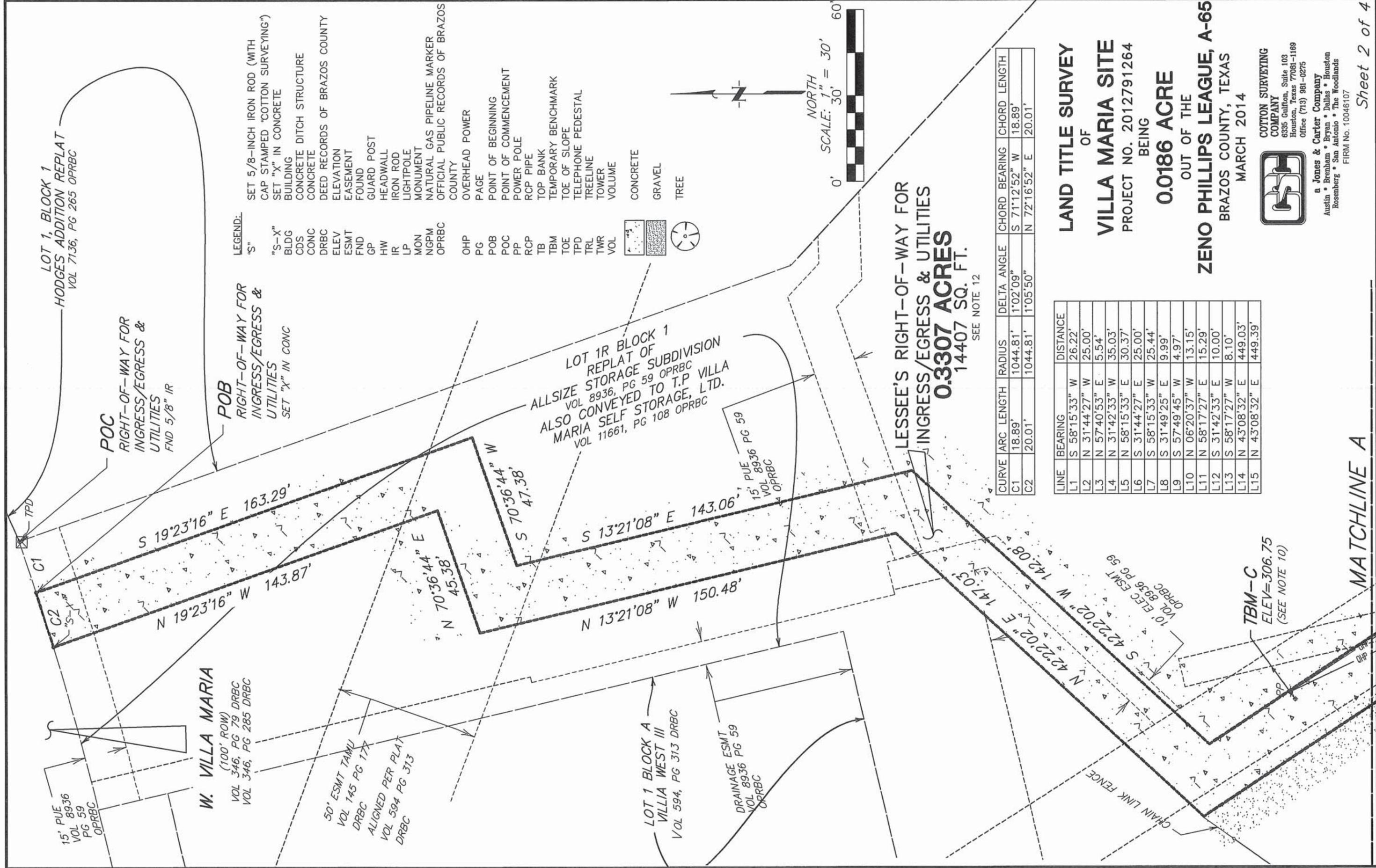
**LEGEND:**

- S" SET 5/8-INCH IRON ROD (WITH CAP STAMPED "COTTON SURVEYING")
- "S-X" SET "X" IN CONCRETE
- BLDG BUILDING
- CDS CONCRETE DITCH STRUCTURE
- CONC CONCRETE
- DRBC DEED RECORDS OF BRAZOS COUNTY
- ELEV ELEVATION
- ESMT EASEMENT
- FND FOUND
- GP GUARD POST
- HW HEADWALL
- IR IRON ROD
- LP LIGHTPOLE
- MON MONUMENT
- NGPM NATURAL GAS PIPELINE MARKER
- OPRBC OFFICIAL PUBLIC RECORDS OF BRAZOS COUNTY
- OHP OVERHEAD POWER
- PG PAGE
- POB POINT OF BEGINNING
- POC POINT OF COMMENCEMENT
- PP POWER POLE
- RCP RCP PIPE
- TB TOP BANK
- TBM TEMPORARY BENCHMARK
- TOE TOE OF SLOPE
- TPD TELEPHONE PEDESTAL
- TRL TOWER
- TWR TOWER
- VOL VOLUME
- CONCRETE CONCRETE
- GRAVEL GRAVEL
- TREE TREE

**LAND TITLE SURVEY**  
 OF  
**VILLA MARIA SITE**  
 PROJECT NO. 2012791264  
 BEING  
**0.0186 ACRE**  
 OUT OF THE  
**ZENO PHILLIPS LEAGUE, A-65**  
 BRAZOS COUNTY, TEXAS  
 MARCH 2014



**COTTON SURVEYING COMPANY**  
 6335 Gulton, Suite 103  
 Houston, Texas 77061-1169  
 Office (713) 981-0275  
 a Jones & Carter Company  
 Austin • Brenham • Bryan • Dallas • Houston  
 Rosenberg • San Antonio • The Woodlands  
 FIRM No. 10046107



LEGEND:

- "S" SET 5/8-INCH IRON ROD (WITH CAP STAMPED "COTTON SURVEYING")
- "S-X" SET "X" IN CONCRETE
- BLDG BUILDING
- CDS CONCRETE DITCH STRUCTURE
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- TOE TOE OF SLOPE
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- TRL TREELINE
- TWR TOWER
- VOL VOLUME
- CONCRETE CONCRETE
- GRAVEL GRAVEL
- TREE TREE



CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	18.89'	1044.81'	1°02'09"	S 71°12'52" W	18.89'
C2	20.01'	1044.81'	1°05'50"	N 72°16'52" E	20.01'

LINE	BEARING	DISTANCE
L1	S 58°15'33" W	26.22'
L2	N 31°44'27" W	25.00'
L3	N 57°40'53" E	5.54'
L4	N 31°42'33" W	35.03'
L5	N 58°15'33" E	30.37'
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L11	N 58°17'27" E	15.29'
L12	S 31°42'33" E	10.00'
L13	S 58°17'27" W	8.10'
L14	N 43°08'32" E	449.03'
L15	N 43°08'32" E	449.39'

**LAND TITLE SURVEY**  
OF  
**VILLA MARIA SITE**  
PROJECT NO. 2012791264  
BEING

**0.0186 ACRE**

OUT OF THE  
**ZENO PHILLIPS LEAGUE, A-65**  
BRAZOS COUNTY, TEXAS  
MARCH 2014



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Rosenberg • San Antonio • The Woodlands  
FIRM No. 10046107

MATCHLINE A

Sheet 2 of 4

DSB/jeJ

JOB No. 01946-125 DWG. No. 1106

LESSEE'S LAND SPACE

STATE OF TEXAS §
COUNTY OF BRAZOS §

A METES & BOUNDS description of a certain 0.0186-acre Lessee's Land Space out of the Zeno Phillips League, Abstract No. 65 in Brazos County, Texas, being a portion of Lot 1R of Block 1 of the Replat of Allsize Storage Subdivision, plat of which is recorded in Volume 8936, Page 59 of the Official Records of Brazos County and also being the same tract conveyed to T.P. Villa Maria Road Self Storage in Warranty Deed recorded in Volume 11661, Page 108 of the Official Records of Brazos County, said 0.0186 acre tract being more particularly described as follows with all bearings being based on the Texas Coordinate System, Central Zone, NAD83.

COMMENCING at a found concrete monument marking the south corner of said Lot 1R, being in the northwest line of a called 191.68-acres to the State of Texas described in a deed recorded in Volume 46, Page 254 of the Deed Records of Brazos County, also being in the east right-of-way of Farm to Market Road 2818, from which a set 5/8-inch iron rod (with cap stamped "Jones & Carter") bears North 6°20'37" West, 13.15 feet and a found concrete monument bears North 6°20'37" West, 167.49 feet and 0.49 feet left;

THENCE, North 43°08'32" East, along the northwest line of said 191.68-acre tract, 140.39 feet to a set 5/8-inch iron rod (with cap stamped "Jones & Carter") from which a found 5/8-inch iron and a found 1/2-inch iron rod bear North 43°08'32" East, 449.03 feet and 449.39 feet respectively;

THENCE, North 13°10'32" West, 201.06 feet to a set 5/8-inch iron rod (with cap stamped "Jones & Carter");

THENCE, North 58°17'27" East, 8.10 feet to a point for corner on the face of an existing storage building marking the POINT OF BEGINNING of the herein described 0.0186-acres Lessee's Land Space;

THENCE, North 31°42'33" West, passing at 10.00 feet a set 5/8-inch iron rod (with cap stamped "Jones & Carter"), continuing a total distance of 35.03 feet to a set 5/8-inch iron rod (with cap stamped "Jones & Carter");

THENCE, North 58°15'33" East, 30.37 feet to a set 5/8-inch iron rod (with cap stamped "Jones & Carter");

THENCE, South 31°44'27" East, 25.00 feet to a point for corner on the face of an existing storage building;

THENCE, South 58°15'33" West, along the face of an existing storage building, 25.44 feet to a corner of an existing storage building;

THENCE, South 31°49'25" East, along the face of an existing storage building, 9.99 feet to a corner of an existing storage building;

THENCE, South 57°49'45" West, along the face of an existing storage building, 4.97 feet to the POINT OF BEGINNING, CONTAINNING 0.0186 acre tract in Brazos County, Texas as shown on Drawing No. 1106 filed in the offices of Jones & Carter in Bryan, Texas.

LESSEE'S RIGHT-OF-WAY FOR UTILITIES

STATE OF TEXAS §
COUNTY OF BRAZOS §

A METES & BOUNDS description of a certain 0.0797-acre Lessee's Right-of-way for ingress/egress and utilities out of the Zeno Phillips League, Abstract No. 65 in Brazos County, Texas, being a portion of Lot 1R of Block 1 of the Replat of Allsize Storage Subdivision, plat of which is recorded in Volume 8936, Page 59 of the Official Records of Brazos County and also being the same tract conveyed to T.P. Villa Maria Road Self Storage in Warranty Deed recorded in Volume 11661, Page 108 of the Official Records of Brazos County, said 0.0797 acre tract being more particularly described as follows with all bearings being based on the Texas Coordinate System, Central Zone, NAD83.

BEGINNING at a found concrete monument marking the south corner of said Lot 1R, being in the northwest line of a called 191.68-acres to the State of Texas described in a deed recorded in Volume 46, Page 254 of the Deed Records of Brazos County, also being in the east right-of-way of Farm to Market Road 2818;

THENCE, North 06°20'37" West, along the west line of said Lot 1R, being common with the said east right-of-way 13.15 feet to a set 5/8-inch iron rod (with cap stamped "Jones & Carter"), from which a found concrete monument bears North 06°20'37" West, 154.33 feet, 0.49 feet left;

THENCE, North 43°08'32" East, 126.50 feet to a set 5/8-inch iron rod (with cap stamped "Jones & Carter");

THENCE, North 13°10'32" West, 202.90 feet to a set 5/8-inch iron rod (with cap stamped "Jones & Carter");

THENCE, North 58°17'27" East, 15.29 feet to a set 5/8-inch iron rod (with cap stamped "Jones & Carter", from which a set 5/8-inch iron rod (with cap stamped "Jones & Carter") bears North 31°42'33" West, 25.03 feet;

THENCE, South 31°42'33" East, 10.00 feet to a point for corner on the face of an existing storage building;

THENCE, South 58°17'27" West, 8.10 feet to a set 5/8-inch iron rod (with cap stamped "Jones & Carter");

THENCE, South 13°10'32" East, 201.06 feet to a set 5/8-inch iron rod (with cap stamped "Jones & Carter" in the northwest line of aforementioned 191.68 acre tract, being common with the southeast line of aforementioned Lot 1R, from which a found 5/8-inch iron and a found 1/2-inch iron rod bear North 43°08'32" East, 449.03 feet and 449.39 feet respectively;

THENCE, South 43°08'32" West, along said common line, 140.39 feet to a set 5/8-inch iron rod (with cap stamped "Jones & Carter") to the POINT OF BEGINNING, CONTAINNING 0.0797 acres of land in Brazos County, Texas, as shown on Drawing No. 1106 filed in the offices of Jones & Carter in Bryan, Texas.

LESSEE'S RIGHT-OF-WAY FOR INGRESS/EGRESS & UTILITIES

STATE OF TEXAS §
COUNTY OF BRAZOS §

A METES & BOUNDS description of a certain 0.3307-acre Lessee's Right-Of-Way for Ingress/Egress & Utilities out of the Zeno Phillips League, Abstract No. 65 in Brazos County, Texas, being a portion of Lot 1R of Block 1 of the Replat of Allsize Storage Subdivision, plat of which is recorded in Volume 8936, Page 59 of the Official Records of Brazos County, and also being the same tract conveyed to T.P. Villa Maria Road Self Storage in Warranty Deed recorded in Volume 11661, Page 108 of the Official Records of Brazos County, said 0.3307 acre tract being more particularly described as follows with all bearings being based on the Texas Coordinate System, Central Zone, NAD83.

COMMENCING at a found 5/8-inch iron rod marking the northeast corner of said Lot 1R, being in the south right-of-way of W. Villa Maria dedicated in Volume 346, Page 79 and Volume 346, Page 285 of the Deed Records of Brazos County, also being the northwest corner of Lot 1, Block 1 of the Hodges Addition Replat recorded in Volume 7136, Page 265 of the Official Records of Brazos County;

THENCE, along the south right-of-way of said W. Villa Maria, following a non-tangent curve to the right having an arc length of 18.89 feet, a radius of 1044.81 feet, and a chord bearing of South 71°12'52" West, 18.89 feet, to a set "X" in concrete marking the POINT OF BEGINNING of the herein described 0.3307-acre Lessee's Right-Of-Way for Ingress/Egress & Utilities;

THENCE, South 19°23'16" East, 163.29 feet to a point for corner;

THENCE, South 70°36'44" West, 47.38 feet to a point for corner;

THENCE, South 13°21'08" East, 143.06 feet to a point for corner;

THENCE, South 42°22'02" West, 142.08 feet to a point for corner;

THENCE, South 33°15'56" East, 214.25 feet to a point for corner;

THENCE, South 58°15'33" West, 26.22 feet to a point for corner on the face of an existing storage building;

THENCE, North 31°44'27" West, 25.00 feet to a set 5/8-inch iron rod (with cap stamped Jones & Carter) from which a set 5/8-inch iron rod (with cap stamped "Jones & Carter") bears South 58°15'33" West, 30.37 feet;

THENCE, North 57°40'53" East, 5.54 feet to a point for corner;

THENCE, North 33°15'56" West, 204.18 feet to a point for corner;

THENCE, North 42°22'02" East, 147.03 feet to a point for corner;

THENCE, North 13°21'08" West, 150.48 feet to a point for corner;

THENCE, North 70°36'44" East, 45.38 feet to a point for corner;

THENCE, North 19°23'16" West, 143.87 feet to a set "X" in concrete in the south right-of-way of aforementioned W. Villa Maria marking the beginning of a non-tangent curve to the left;

THENCE, along the south right-of-way of said W. Villa Maria, following the arc of said non-tangent curve to the left, having an arc length of 20.01 feet, a radius of 1044.81 feet, and a chord bearing of North 72°16'52" East, 20.01 feet to the POINT OF BEGINNING, CONTAINNING 0.3307 acres on land in Brazos County, Texas as shown on Drawing No. 1106 filed in the offices of Jones & Carter in Bryan, Texas.

LAND TITLE SURVEY OF VILLA MARIA SITE PROJECT NO. 2012791264 BEING 0.0186 ACRE OUT OF THE ZENO PHILLIPS LEAGUE, A-65 BRAZOS COUNTY, TEXAS MARCH 2014



COTTON SURVEYING COMPANY 6335 GULFON, SUITE 103 HOUSTON, TEXAS 77081-1169 OFFICE (713) 981-0275

a Jones & Carter Company Austin • Brenham • Bryan • Dallas • Houston Rosenberg • San Antonio • The Woodlands FIRM No. 10046107

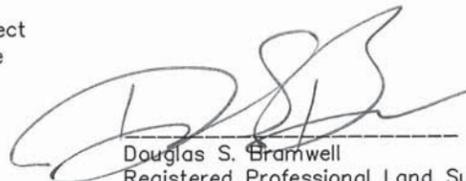
**GENERAL NOTES:**

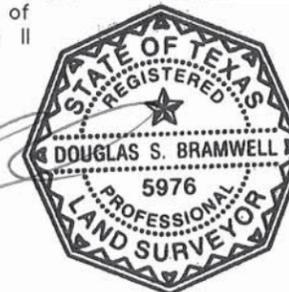
- Reference an Abstractor's Certificate prepared by Texas Abstract Services, having a control number 18611 certified through December 16, 2013. No additional research for easements or encumbrances was performed by Cotton Surveying Company.
- Bearings shown hereon are based on the Texas Coordinate System, Central Zone, NAD 83.
- This survey does not provide any determination concerning wetlands, fault lines, toxic waste or any other environmental issues. Such matters should be directed by the client or prospective purchaser to an expert consultant.
- According to Map No. 48041C0195E of the Federal Emergency Management Agency's Flood Insurance Rate Maps for Brazos County, Texas and Incorporated Areas, dated May 16, 2012, the subject tract is situated within: Unshaded Zone "X"; defined as areas determined to be outside the 0.2% annual chance floodplain.  
  
This flood statement does not imply that the property or structures thereon will be free from flooding or flood damage. On rare occasions floods can and will occur and flood heights may be increased by man-made or natural causes. This flood statement shall not create liability on the part of the surveyor.
- Research for Adjoiner Tracts was performed by Texas Abstract Services and certified through December 16, 2013.
- The surveyor has not been provided with construction plans showing the location of underground utilities. Underground utilities may exist which are not shown hereon.
- Latitude, Longitude and Elevations were obtained with Global Positioning Satellite Equipment.
- Temporary Benchmark A being a square cut in concrete in the center of a headwall. The headwall is located in a detention pond approximately 113 feet northwest of the Lessee's Landspace and approximately 40 feet east of a chainlink fence. Elevation =302.89 feet, NAVD 88.
- Temporary Benchmark B being a square cut on the back of a concrete curb. The curb is located approximately 40 feet west of building D of Allsize Storage and approximately 60 feet northwest of the northeast corner of building G. Elevation =308.02 feet, NAVD 88.
- Temporary Benchmark C being a square cut on the corner of a concrete island for a powerpole. The cut is on the west side of the island. The island is located approximately 20 feet west of building D and approximately 125 feet northeast of building G. Elevation =306.75 feet, NAVD 88.
- Visible improvements/utilities were located with this survey; no subsurface probing, excavation or exploration was performed for this survey.
- The square footage totals as shown hereon are based on the mathematical closure of the courses and distances reflected on this survey. It does not include the tolerances that may be present due to position accuracy of the boundary monuments shown hereon.
- The Abstractors Certificate mentions all easements that are shown on the Replat of Allsize Storage Subdivision, recorded in Volume 8936, Page 59 of the Official Public Records of Brazos County. This consists of a 30 foot wide City of Bryan easement, a drainage easement, 2 separate 15 foot wide public utility easements, and a 10 foot wide electrical easement. All of these easements abut or cross over the Lessee's Right of Way for Ingress/Egress and Utilities but does not affect the Lessee's Land Space and are shown hereon.
- The Abstractors Certificate mentions a right-of-way easement that was recorded on April 26, 1947 in Volume 132, Page 35 of the Deed Records of Brazos County. This is a blanket easement and cannot be located.
- The Abstractors Certificate mentions a right-of-way easement that was recorded on January 17, 1950 in Volume 141, Page 493 of the Deed Records of Brazos County. This is a blanket easement and cannot be located.
- The Abstractors Certificate mentions a waterline easement that was recorded on July 5, 1950 in Volume 145, Page 177, of the Deed Records of Brazos County. This easement crosses the Lessee' Right of Way for Ingress/Egress and Utilities but does not affect the Lessee's Land Space and is shown hereon.
- The Abstractors Certificate mentions a right-of-way easement that was recorded on April 24, 1957 in Volume 187, Page 353, of the Deed Records of Brazos County. This easement crosses the Lessee' Right of Way for Ingress/Egress and Utilities but does not affect the Lessee's Land Space and is shown hereon.
- The Abstractors Certificate mentions an easement that was recorded on May 21, 1963 in Volume 229, Page 71 of the Deed Records of Brazos County. This is a blanket easement and cannot be located.
- The Abstractors Certificate mentions an easement that was recorded on August 17, 1964 in Volume 239, Page 498 of the Deed Records of Brazos County. This is a blanket easement and cannot be located.
- The Abstractors Certificate mentions an easement for Highway Purposes dated July 21, 1967 recorded in Volume 266, Page 660 of the Deed Records of Brazos County. Said easement partially released by instrument recorded in Volume 8897, Page 28 of the Official Records of Brazos County. This easement affects the northwest corner of the Lessee's Land Space and a portion of the Lessee's Right-of-Way for Utilities and a portion of the Lessee's Right-of-Way for Ingress/Egress & Utilities and is shown hereon.
- The Abstractors Certificate mentions an easement that was recorded on January 17, 1968 in Volume 276, Page 824 of the Deed Records of Brazos County this easement is located west of the Lessee's Land Space, and does not affect the Lessee's Land Space, the Lessee's Right-of-Way for Ingress/Egress and Utilities, or the Lessee's Right-of-Way for Utilities.

Subject to the General Notes shown hereon:

The undersigned hereby certifies unto Verizon Wireless and Pennington Law Firm, LLP, and Texas Abstract Services that (a) this survey drawing is based upon an on-the-ground survey made by the undersigned on May 15, 2013, and as to matters of record relies upon the documents listed in the Abstractor's Certificate Control No. 18611, prepared by Texas Abstractors Services and certified through December 16, 2013, which includes, and is limited to, the Lessee's Land Space, Lessee's Right of Way for Ingress/Egress, and Lessee's Right of Way for Ingress/Egress & Utilities, herein collectively termed, the "Property", as shown and as described on this drawing (b) this survey accurately shows (1) the location of any buildings, structures and other improvements situated on or within the Property (2) the facts found by the undersigned at the time of said survey, (3) the courses and measured distances of the perimeter boundaries of the Property as described and shown on this survey, and (4) all setback lines, encroachments, easements and rights-of-way crossing, abutting or affecting the Property, as shown on the Abstractor's Certificate or otherwise known to or observed by the undersigned, along with any recording information for such setback lines, encroachments, easements and rights-of-way; (c) the area of the Property shown hereon is accurate to the nearest square foot, and there are no discrepancies, conflicts or shortages in area or boundary lines; (d) the field notes attached to this survey accurately state the courses and distances found in performing the on-the-ground survey; (e) the notes listed on the survey are true and correct (f) except as shown on the survey drawing, there are no (1) visible easements or rights-of-way across or abutting or affecting the Property (2) easements or rights-of-way across or abutting or affecting the Property of which the undersigned has been advised (3) visible encroachments from the Property onto an adjacent property or onto easements, streets, or alleys, by any of the building structures or other improvements, or (4) visible encroachments on the Property by buildings structures or other improvements situated on adjoining property; (g) Access to the Lessee's Land Space will be from Villa Maria, to the Right-of-Way For Ingress/Egress & Utilities, then through Right-of-Way For Ingress/Egress & Utilities to the Lessee's Land Space; (h) this professional service conforms to (1) the scope of work as requested by Verizon Wireless on a site visit and (2) the current Texas Society of Professional Surveyors Standards and Specifications for a Category 1A, Condition II Survey.

Surveyed: May 15, 2013  
 Revised March 11, 2014 to reflect updated Abstractor's Certificate

  
 Douglas S. Bramwell  
 Registered Professional Land Surveyor  
 No. 5976



**LAND TITLE SURVEY**  
 OF  
**VILLA MARIA SITE**  
 PROJECT NO. 2012791264  
 BEING  
**0.0186 ACRE**  
 OUT OF THE  
**ZENO PHILLIPS LEAGUE, A-65**  
 BRAZOS COUNTY, TEXAS  
 MARCH 2014



**COTTON SURVEYING COMPANY**  
 6335 Gullfion, Suite 103  
 Houston, Texas 77061-1169  
 Office (713) 961-0275

a Jones & Carter Company  
 Austin • Brenham • Bryan • Dallas • Houston  
 Rosenberg • San Antonio • The Woodlands  
 FIRM No. 10046107

**SITE LAYOUT NOTES:**

LESSEE'S EQUIPMENT AREA = 730 SQ.FT., OUTSIDE EQUIPMENT SPACE  
480 SQ.FT, EQUIPMENT ROOM 250 SQ.FT

LESSEE'S PIPE BOLLARDS (8) 6"Ø PIPE X 4' TALL

LESSEE'S PAVED AREA = NO NEW PAVING INSTALLED, AREA PAVED

UNDERGROUND POWER = N/A

OVERHEAD POWER = 45±

UNDERGROUND TELCO = 380± TO R.O.W. ON EAST SIDE OF FM-2818.  
FIBER WAS NOT LOCATED AT SITE WALK.

TOWER = NEW 108.0' STEALTH FLAGPOLE,  
OVERALL HEIGHT = 109.0' WITH 1' TOWER FOUNDATION

PROPOSED ANTENNA HEIGHT (CL) = 97.0'

EQUIPMENT = INDOOR EQUIPMENT IN STORAGE UNIT "G014" WITH  
STEALTH FLAGPOLE TOWER & OUTDOOR DIESEL  
GENERATOR ADJACENT TO ROOM.

FOR TRENCHING SPECIFICATIONS  
SEE SHEET N1, NOTE 4, SECTION 3

**CONTRACTOR NOTE:**

CONSTRUCTION CONTRACTOR SHALL  
CONTACT COTTON SURVEYING TO RE-STAKE  
SITE, FENCE LINE & TOWER CENTER PRIOR  
TO STARTING WORK.

**PLATFORM UTILITY RACK NOTE:**

UTILITY BOXES INCLUDE POWER PANEL / A.T.S., 4'X8' PLYWOOD  
TELCO BOARD, SURGE ARRESTOR, GFI PLUG AT GENERATOR AND  
TWIST TIMER SWITCH FOR SITE LIGHT CONTROLLER MOUNTED ON  
EXTERIOR WALL OF STORAGE UNIT. INSTALL TRANSPORT  
EQUIPMENT IN 21" RACK. VERIFY ALL REQUIREMENTS WITH  
LESSEE'S CONSTRUCTION MANAGER PRIOR TO COMPLETING WORK.  
METER & DISCONNECT MOUNTED ON EXTERIOR WALL OF STORAGE  
UNIT.

**CONTRACTOR INNERDUCT NOTE:**

CONTRACTOR SHALL INSTALL ONLY MAXCELL INNERDUCT  
IN FIBER CONDUIT AS INDICATED IN THESE DRAWINGS &  
PER MANUFACTURER'S SPECIFICATIONS. ANY FAILURE TO  
DO SO SHALL RESULT IN THE CONTRACTOR RETURNING  
TO THIS SITE & CORRECTING THIS ERROR AT THE  
CONTRACTOR'S EXPENSE.

**NOTE:**

THIS PLAN IS SHOWN TO CLARIFY THE RELATIONSHIP OF  
PROPOSED LESSEE WORK TO OVERALL SITE ONLY. AXIS  
ENGINEERING CLAIMS NO RESPONSIBILITY FOR THE LEGAL  
DESCRIPTIONS SHOWN.

REFER TO SURVEY BY:

COTTON SURVEYING  
FOR COMPLETE SITE INFORMATION.

**NOTES:**

- 1.) CONTRACTOR IS TO REPAIR ALL DAMAGE RESULTING FROM CONSTRUCTION,  
BACK TO PRE-CONSTRUCTION CONDITION AT COMPLETION OF WORK.
- 2.) CONTRACTOR SHALL COORDINATE SITE ACCESS TIMES AND EQUIPMENT STAGING  
LOCATIONS WITH LANDLORD.
- 3.) TOWER IS TO SET ON THE IDENTIFIED CENTER POINT.
- 4.) ICE BRIDGE LENGTH SHOWN IS RELATIVE. LENGTH AND EXACT ALIGNMENT WITH  
SHELTER MAY VARY FROM DRAWING DIMENSIONS. ICE BRIDGE WILL APPROACH  
TOWER AS SHOWN.

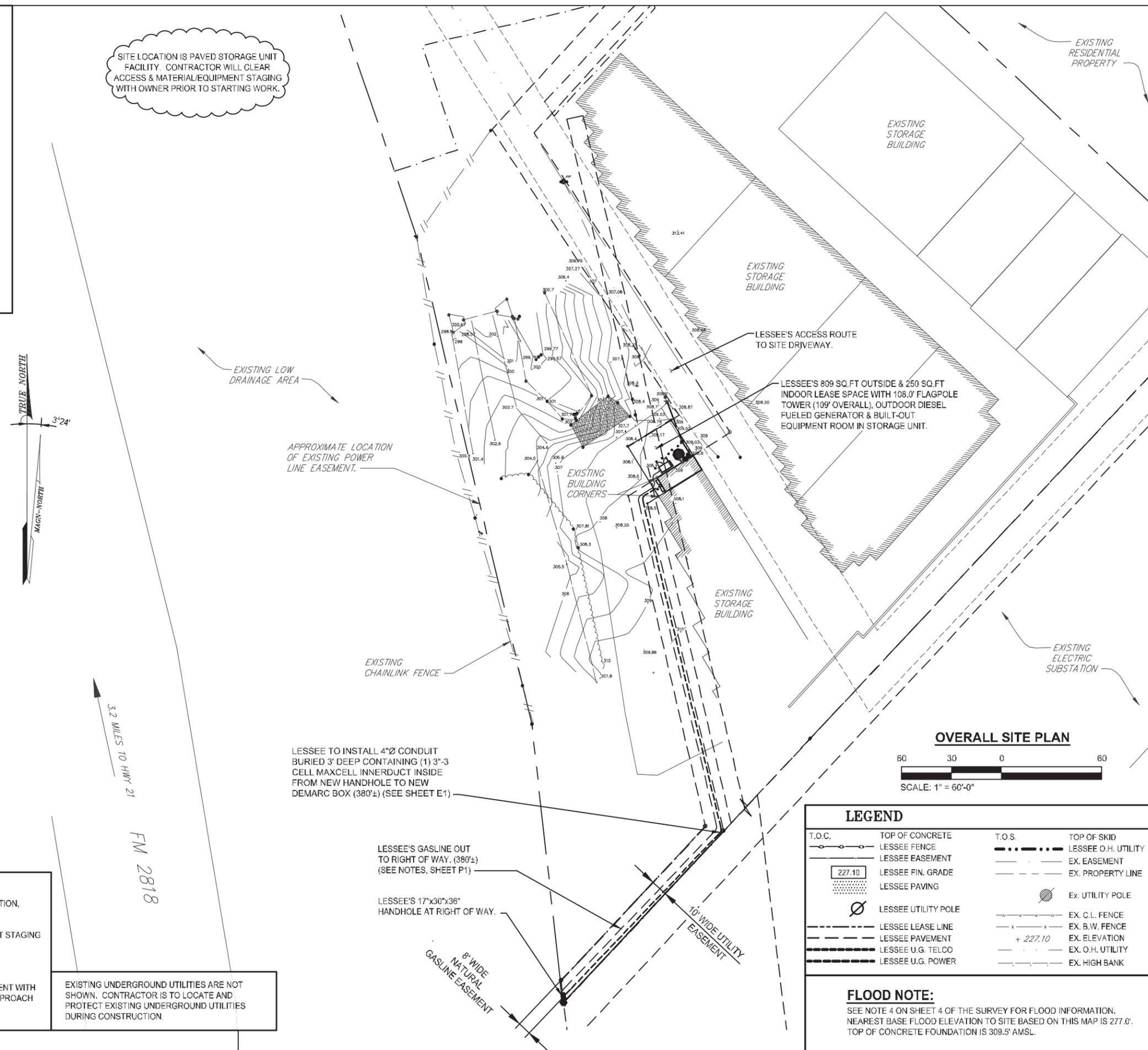
EXISTING UNDERGROUND UTILITIES ARE NOT  
SHOWN. CONTRACTOR IS TO LOCATE AND  
PROTECT EXISTING UNDERGROUND UTILITIES  
DURING CONSTRUCTION.

SITE LOCATION IS PAVED STORAGE UNIT  
FACILITY. CONTRACTOR WILL CLEAR  
ACCESS & MATERIAL/EQUIPMENT STAGING  
WITH OWNER PRIOR TO STARTING WORK.



3.2 MILES TO HWY 21

FM 2818



14123 CICERO ROAD  
HOUSTON, TX 77095  
PHONE: (713) 507-1650  
FAX: (713) 507-1618

**AXIS Engineering, Inc.**  
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www.axisengineering.net  
6200 ROTHWAY STREET, SUITE 140  
HOUSTON, TEXAS 77040  
PHONE: 713-460-9902 FAX: 713-690-5037

AXIS PROJECT NUMBER:  
01-131105-188

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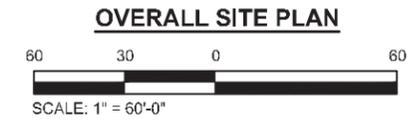
OVERALL SITE PLAN  
VERIZON WIRELESS - TEXAS AREA  
**VILLA MARIA SITE**



Axis Engineering, Inc.  
Registration # F-004171

DRAWN BY: **JCM**  
CONTACT: **CLF**  
DATE: **06-04-2014**  
C/EVT SITE NO.: **260668**

**C1**  
VERIZON WIRELESS  
VILLA MARIA



**LEGEND**

T.O.C.	TOP OF CONCRETE	T.O.S.	TOP OF SKID
---	LESSEE FENCE	---	LESSEE O.H. UTILITY
---	LESSEE EASEMENT	---	EX. EASEMENT
227.10	LESSEE FIN. GRADE	---	EX. PROPERTY LINE
---	LESSEE PAVING	○	EX. UTILITY POLE
○	LESSEE UTILITY POLE	---	EX. C.L. FENCE
---	LESSEE LEASE LINE	---	EX. B.W. FENCE
---	LESSEE PAVEMENT	+ 227.10	EX. ELEVATION
---	LESSEE U.G. TELCO	---	EX. O.H. UTILITY
---	LESSEE U.G. POWER	---	EX. HIGH BANK

**FLOOD NOTE:**  
SEE NOTE 4 ON SHEET 4 OF THE SURVEY FOR FLOOD INFORMATION.  
NEAREST BASE FLOOD ELEVATION TO SITE BASED ON THIS MAP IS 277.0'.  
TOP OF CONCRETE FOUNDATION IS 309.5' AMSL.

**CONTRACTOR NOTE:**  
CONSTRUCTION CONTRACTOR SHALL CONTACT COTTON SURVEYORS TO RE-STAKE SITE, FENCE LINE & TOWER CENTER PRIOR TO STARTING WORK.

**NOTE:**  
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**TOWER LOADING:**  
(6) PANEL ANTENNAS :  
(1) HBXX-6517DS-A2M FOR LTE / AWS PER SECTOR, LNX-6515DS-A1M FOR LTE-700 ON HEAVY DUTY COMMSCOPE MOUNTS, MTC3607.  
(2) RAYCAPS 6x12 OVP RC2DC 3315-PF-48 (1 TOP / 1 BOT) & FIBER MANAGEMENT BOXES IN CABLE BLOCKS ATTACHED TO (1) 6x12 HYBRID CABLE INSIDE OF TOWER LEG WITH COMMSCOPE STANDOFF BRACKET TL-S06.

VERIFY WITH LESSEE IF MICROWAVE DISHES WILL BE REQUIRED.

**CABLE & LENGTHS:**  
COAX: N/A  
6x12 HYBRID CABLE: (1) @ 194"



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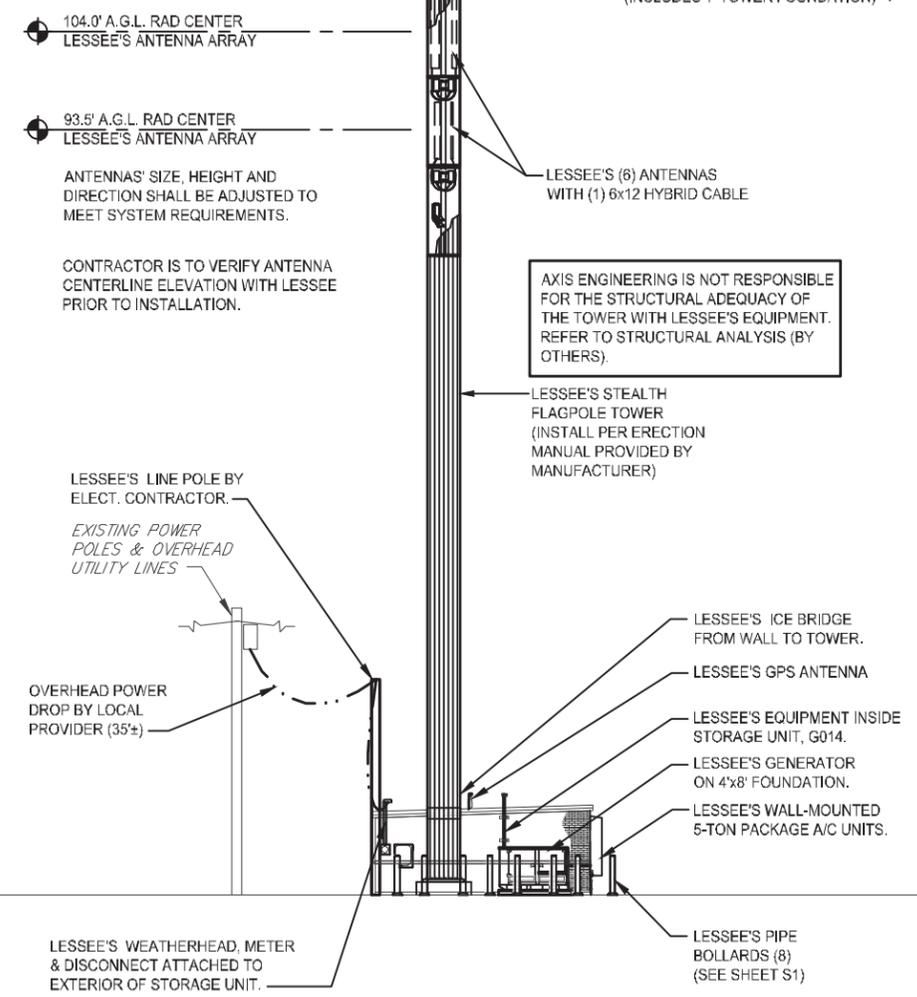
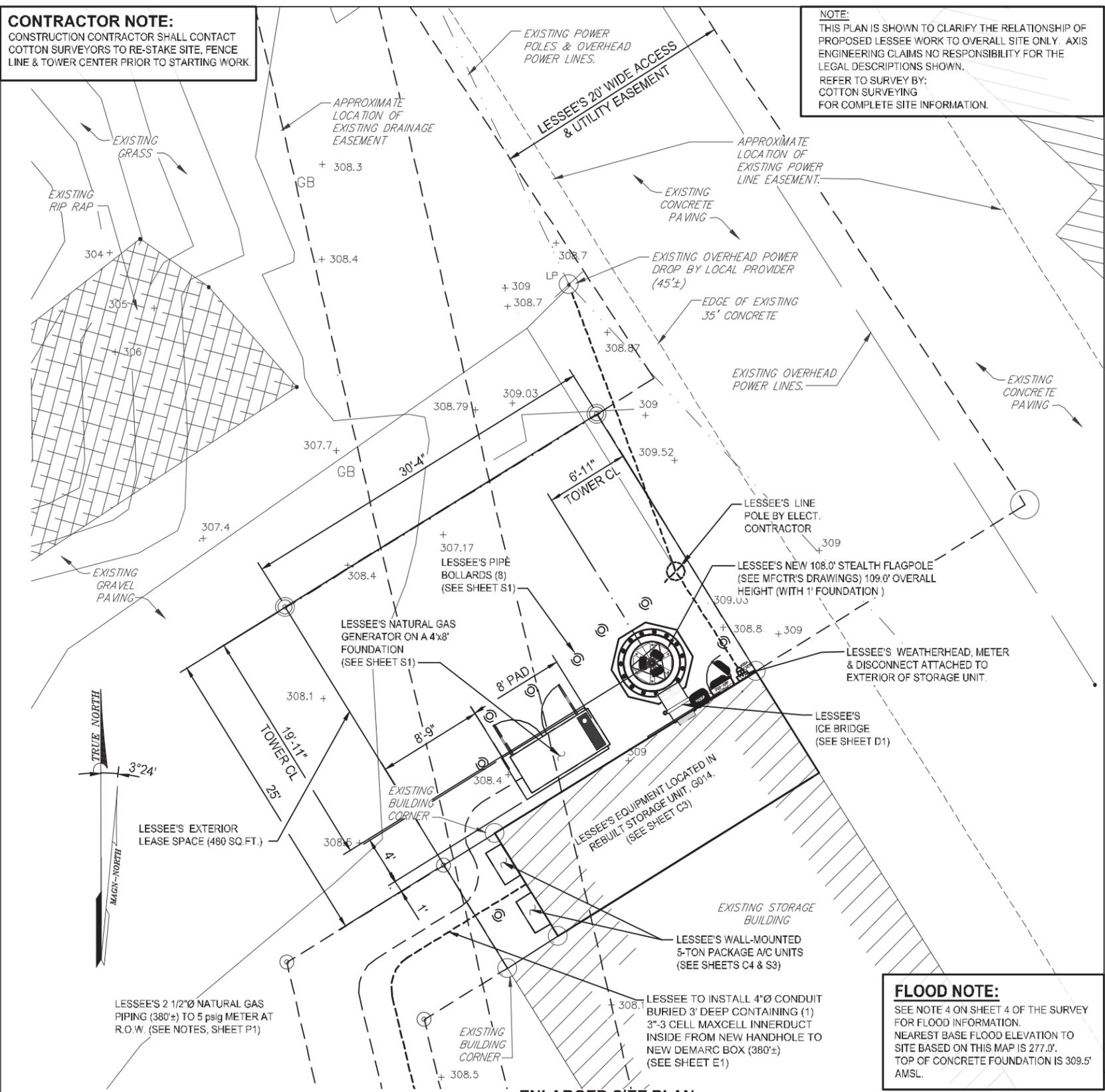
**ENLARGED EQUIPMENT PLAN & ELEVATION**  
**VERIZON WIRELESS - TEXAS AREA**  
**VILLA MARIA SITE**



Axis Engineering, Inc.  
Registration # F-004171

DRAWN BY: **JCM**  
CONTACT: **CLF**  
DATE: **06-04-2014**  
CLIENT SITE No.: **260668**

**C2**  
**VERIZON WIRELESS**  
**VILLA MARIA**



**FLOOD NOTE:**  
SEE NOTE 4 ON SHEET 4 OF THE SURVEY FOR FLOOD INFORMATION. NEAREST BASE FLOOD ELEVATION TO SITE BASED ON THIS MAP IS 277.0'. TOP OF CONCRETE FOUNDATION IS 309.5' AMSL.

- NOTES:**
- CONTRACTOR IS TO REPAIR ALL DAMAGE RESULTING FROM CONSTRUCTION, BACK TO PRE-CONSTRUCTION CONDITION AT COMPLETION OF WORK.
  - CONTRACTOR SHALL COORDINATE SITE ACCESS TIMES AND EQUIPMENT STAGING LOCATIONS WITH LANDLORD.
  - ICE BRIDGE LENGTH SHOWN IS RELATIVE. LENGTH AND EXACT ALIGNMENT WITH SHELTER MAY VARY FROM DRAWING DIMENSIONS. ICE BRIDGE WILL APPROACH TOWER AS SHOWN.

**LEGEND**

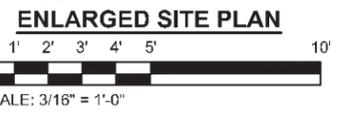
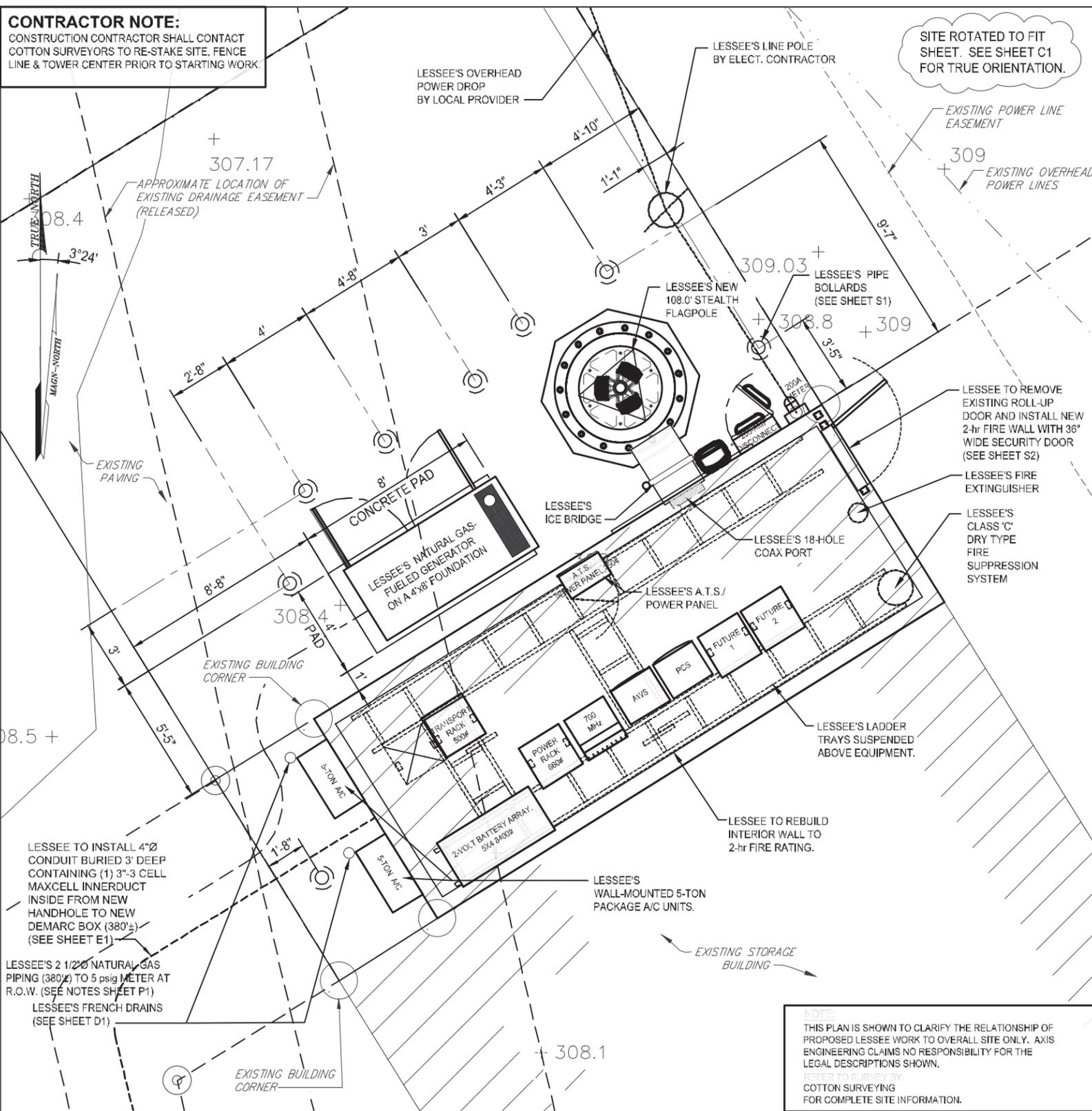
T.O.C. ———	TOP OF CONCRETE	T.O.S. ———	TOP OF SKID
— — — — —	LESSEE FENCE	— · · · — · · ·	LESSEE O.H. UTILITY
- - - - -	LESSEE EASEMENT	- - - - -	EX. EASEMENT
□ 227.10	LESSEE FIN. GRADE	- - - - -	EX. PROPERTY LINE
▨	LESSEE PAVING	⊙	EX. UTILITY POLE
⊙	LESSEE UTILITY POLE	- - - - -	EX. C.L. FENCE
- - - - -	LESSEE LEASE LINE	- x - x -	EX. B.W. FENCE
- - - - -	LESSEE PAVEMENT	+ 227.10	EX. ELEVATION
- - - - -	LESSEE U.G. TELCO	- - - - -	EX. O.H. UTILITY
- - - - -	LESSEE U.G. POWER	- - - - -	EX. HIGH BANK

EXISTING UNDERGROUND UTILITIES ARE NOT SHOWN. CONTRACTOR IS TO LOCATE AND PROTECT EXISTING UNDERGROUND UTILITIES DURING CONSTRUCTION.

FOR TRENCHING SPECIFICATIONS SEE SHEET N1, NOTE 4, SECTION 3

**PLATFORM UTILITY RACK NOTE:**  
UTILITY BOXES INCLUDE POWER PANEL / A.T.S., 4'x8' PLYWOOD TELCO BOARD, SURGE ARRESTOR, GFI PLUG AT GENERATOR AND TWIST TIMER SWITCH FOR SITE LIGHT CONTROLLER MOUNTED ON EXTERIOR WALL OF STORAGE UNIT. INSTALL TRANSPORT EQUIPMENT IN 21" RACK. VERIFY ALL REQUIREMENTS WITH LESSEE'S CONSTRUCTION MANAGER PRIOR TO COMPLETING WORK. METER & DISCONNECT MOUNTED ON EXTERIOR WALL OF STORAGE UNIT.

**CONTRACTOR NOTE:**  
CONSTRUCTION CONTRACTOR SHALL CONTACT COTTON SURVEYORS TO RE-STAKE SITE. FENCE LINE & TOWER CENTER PRIOR TO STARTING WORK.



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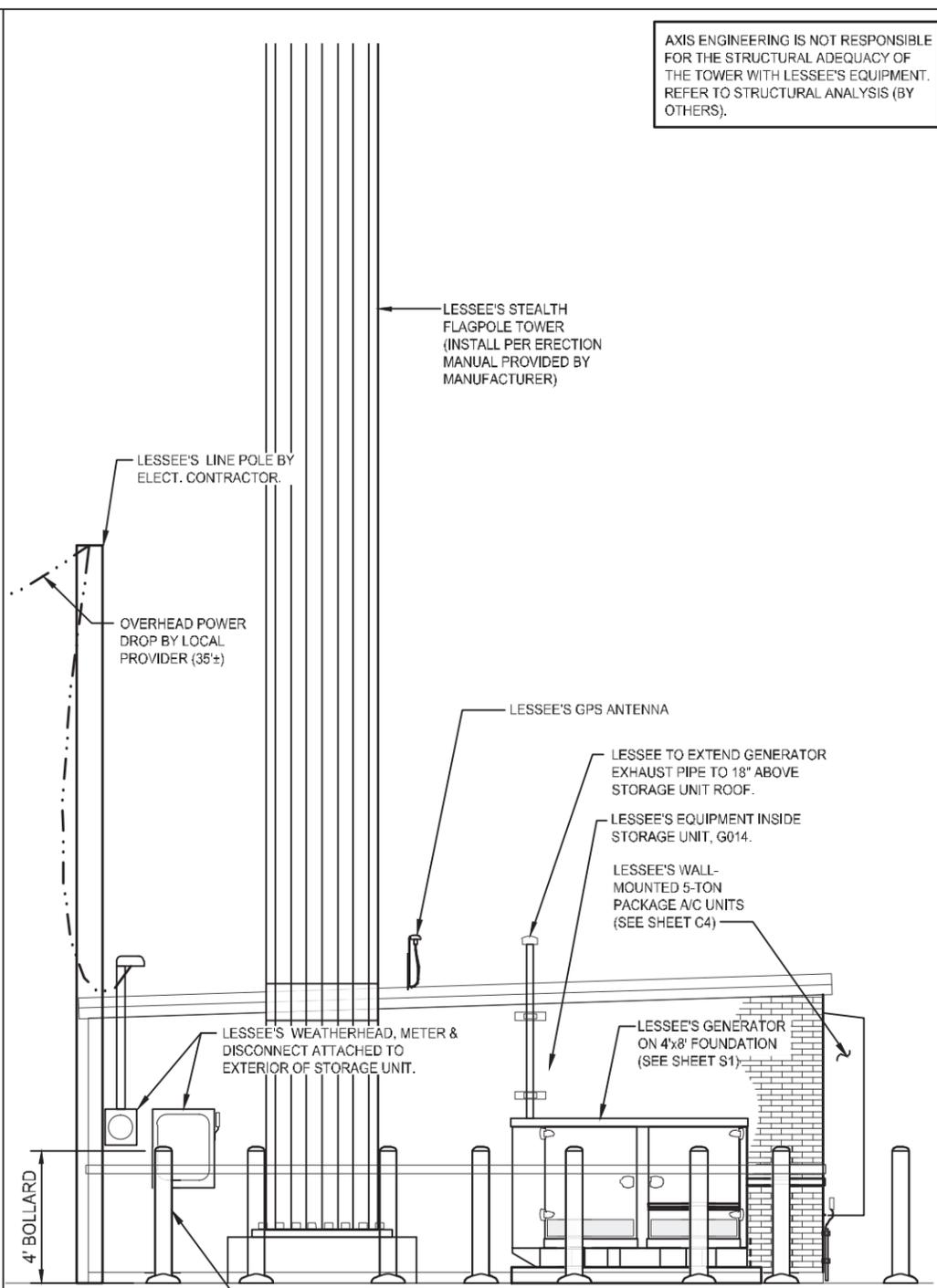
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**PLATFORM UTILITY RACK NOTE:**  
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Printed by Chris M 11/24/2014 04-Villa Maria-C3.dwg

SITE ROTATED TO FIT SHEET. SEE SHEET C1 FOR TRUE ORIENTATION.

AXIS ENGINEERING IS NOT RESPONSIBLE FOR THE STRUCTURAL ADEQUACY OF THE TOWER WITH LESSEE'S EQUIPMENT. REFER TO STRUCTURAL ANALYSIS (BY OTHERS).



**ENLARGED SITE ELEVATION**  
NOT TO SCALE

**NOTE:**  
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REFER TO SURVEY BY: COTTON SURVEYING FOR COMPLETE SITE INFORMATION.

- NOTES:**
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  - ICE BRIDGE LENGTH SHOWN IS RELATIVE. LENGTH AND EXACT ALIGNMENT WITH SHELTER MAY VARY FROM DRAWING DIMENSIONS. ICE BRIDGE WILL APPROACH TOWER AS SHOWN.

LEGEND			
T.O.C.	TOP OF CONCRETE	T.O.S.	TOP OF SKID
---	LESSEE FENCE	---	LESSEE O.H. UTILITY
---	LESSEE EASEMENT	---	EX. EASEMENT
227.10	LESSEE FIN. GRADE	---	EX. PROPERTY LINE
---	LESSEE PAVING	---	EX. UTILITY POLE
Ø	LESSEE UTILITY POLE	---	EX. C.L. FENCE
---	LESSEE LEASE LINE	---	EX. B.W. FENCE
---	LESSEE PAVEMENT	+ 227.10	EX. ELEVATION
---	LESSEE U.G. TELCO	---	EX. O.H. UTILITY
---	LESSEE U.G. POWER	---	EX. HIGH BANK

**verizon WIRELESS**  
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AXIS PROJECT NUMBER:  
01-131105-188

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REVISIONS	BY

**ENLARGED EQUIPMENT PLAN & SITE ELEVATION**  
**VERIZON WIRELESS - TEXAS AREA**  
**VILLA MARIA SITE**

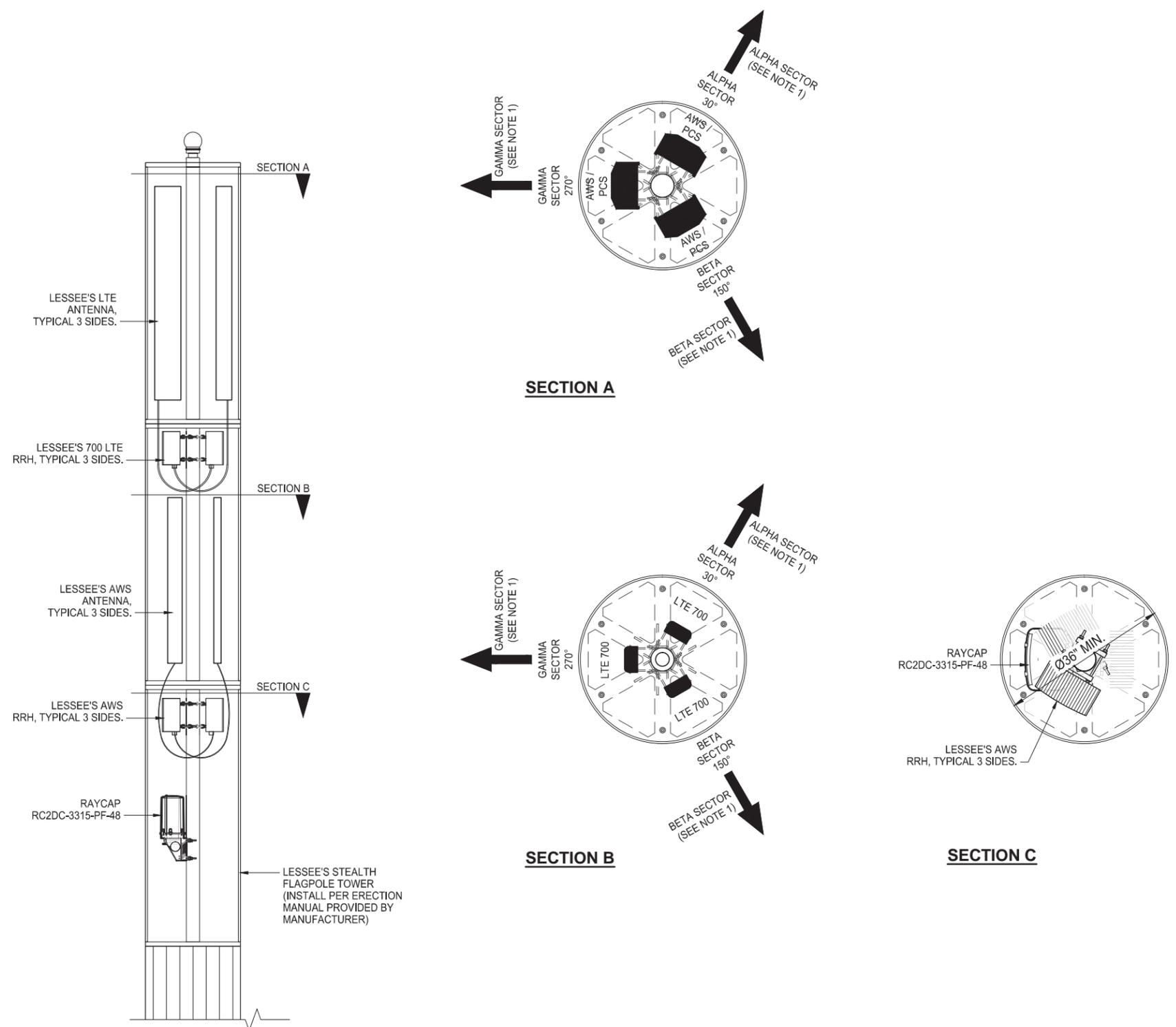


Axis Engineering, Inc.  
Registration # F-004171

DRAWN BY: **JCM**  
CONTACT: **CLF**  
DATE: **06-04-2014**  
CLIENT SITE No. **260668**

**C3**  
**VERIZON WIRELESS VILLA MARIA**





**TYPICAL ANTENNA LAYOUT**  
(SEE SHEET C2 FOR ANTENNA NOTES)

- FOR TYPICAL ANTENNA AZIMUTHS SEE ANTENNA CHART, BUT CONTRACTOR IS TO VERIFY RF INFORMATION WITH VERIZON WIRELESS BEFORE INSTALLATION.
- COAX ARE TO BE MARKED WITH VINYL TAPE CORRESPONDING TO THE COLOR CODING CHART. COAX SHALL BE MARKED AT BOTH ENDS AND MARKS SHALL BE VISIBLE FROM THE GROUND. MARKING BANDS AT THE TOP SHALL BE 2" WIDE AND SHALL BE 1" WIDE AT THE BOTTOM.
- CONTRACTOR SHALL VERIFY THE NUMBER AND SPACING REQUIRED FOR THE ANTENNAS IN EACH SECTOR WITH VERIZON WIRELESS AND SHALL ALLOW FUTURE SPACING AS DIRECTED.
- GPS ANTENNA CABLE SHALL ENTER THE SHELTER THROUGH AN INDEPENDENT PORT.

**ANTENNA INSTALLATION NOTES**

- MAXIMUM RF JUMPER LENGTH SHALL NOT EXCEED 15' FOR EITHER 700 LTE OR 1900 AWS.
- IF EXISTING JUMPER ARE USED, CONTRACTOR SHALL ENSURE COMPLIANCE WITH NOTE 1.
- CONSULT WITH VERIZON PERSONNEL TO VERIFY IF CSRF IS TO BE USED.
- THE MAXIMUM DIFFERENCE IN JUMPER LENGTH FROM ANTENNA TO RRH SHALL BE 9'. I.E., IF THE SHORTEST JUMPER USED IS 6' IN LENGTH THAN THE LONGEST JUMPER MUST BE 15' OR LESS IN LENGTH. CONTRACTOR SHALL ASSESS FIELD CONDITIONS AND ADJUST JUMPER LENGTH ACCORDINGLY.
- ALL RF JUMPERS SHALL BE PRE MADE WITH PRE-INSTALLED CONNECTORS ON BOTH ENDS. NO FIELD ADJUSTMENTS IN LENGTH ARE TO BE MADE.
- ALL RF JUMPER SHALL BE EITHER LDF OR LCF12 JUMPERS FROM APPROVED JUMPER MANUFACTURER.
- ALL JUMPER CONNECTIONS SHALL HAVE THE PROPER TORQUE AND BE FULLY WEATHERPROOFED.
- CONTRACTOR SHALL PERFORM RF SWEEP ON ALL JUMPERS.
- ALL FIBER JUMPER FROM THE RAYCAP BOX TO THE RRH SHALL BE THE SAME LENGTH. ANY EXCESS FIBER TO BE COILED INSIDE THE RAYCAP BOX USING PROPER RADIUS RESTRICTIONS.
- ALL JUMPERS SHALL BE ROUTED SUCH THAT THESE WILL BE SUPPORTED AT INTERVALS NOT TO EXCEED 3'.
- LOCATION DETAILS IN THESE DRAWINGS ARE DIAGRAMMATIC. CONTRACTOR SHALL LOCATE ALL ITEMS SUCH AS TO SATISFY ALL NOTES AND THE DIRECTION OF VERIZON.

**COAX JUMPER NOTES**

ANTENNA INFORMATION			TAPE STRIPES					
SECTOR	TYPE	T/R	RED	ORANGE	YELLOW	GREEN	BLUE	WHITE
ALPHA	1900	TX1		1			1	
	1900	RX1		1			1	1
	700	TX2		1		1		
	700	RX2		1		1		1
BETA	1900	TX1	1				1	
	1900	RX1	1				1	1
	700	TX2	1			1		
	700	RX2	1			1		1
GAMMA	1900	TX1			1		1	
	1900	RX1			1		1	1
	700	TX2			1	1		
	700	RX2			1	1		1

**TYPICAL ANTENNA COLOR CODING**

14123 CICERO ROAD  
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FAX: (713) 507-1618

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REVISIONS	BY
△	
△	
△	

**ANTENNA INFORMATION**  
**VERIZON WIRELESS - TEXAS AREA**  
**VILLA MARIA SITE**



Axis Engineering, Inc.  
Registration # F-004171

DRAWN BY: **JCM**  
CONTACT: **CLF**  
DATE: **06-04-2014**  
CLIENT SITE No.: **260668**

**AT.1**

**VERIZON WIRELESS**  
**VILLA MARIA**



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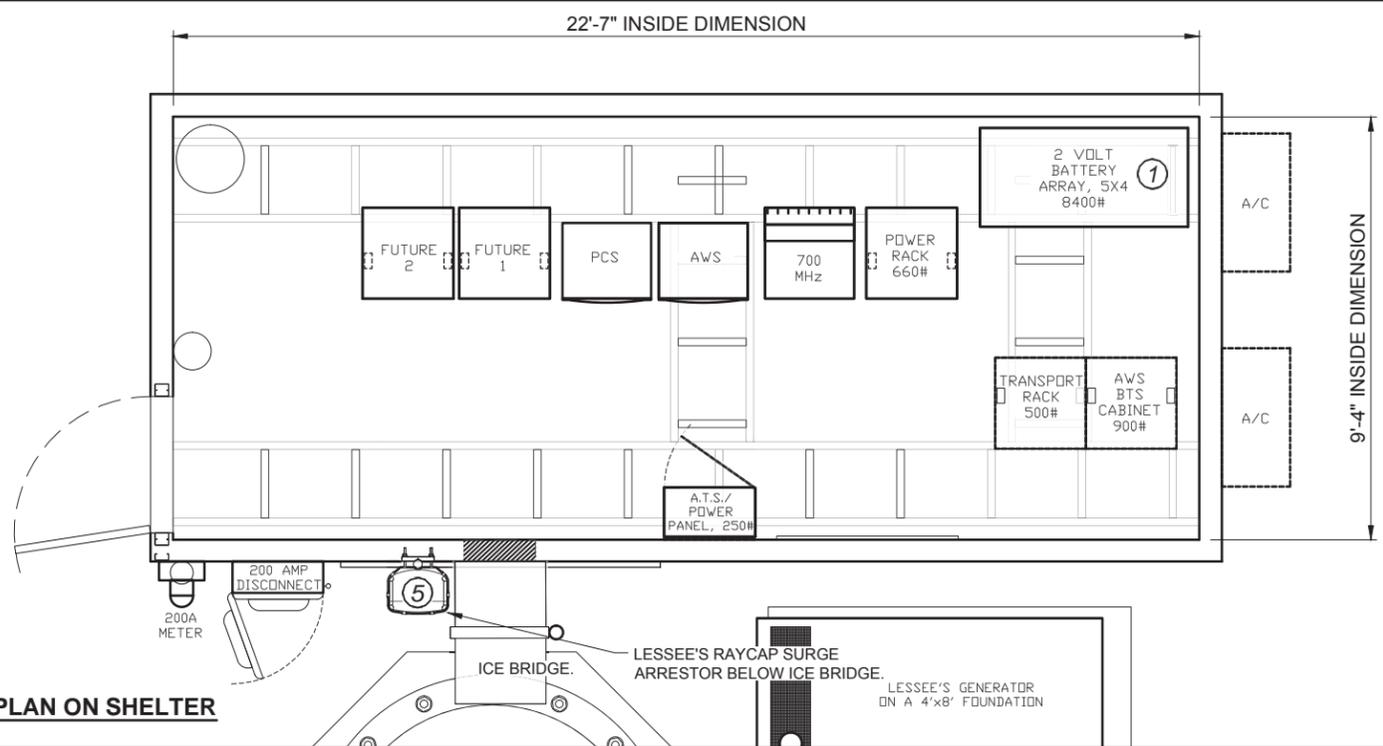
RF EQUIPMENT INFORMATION  
**VERIZON WIRELESS - TEXAS AREA**  
**VILLA MARIA SITE**



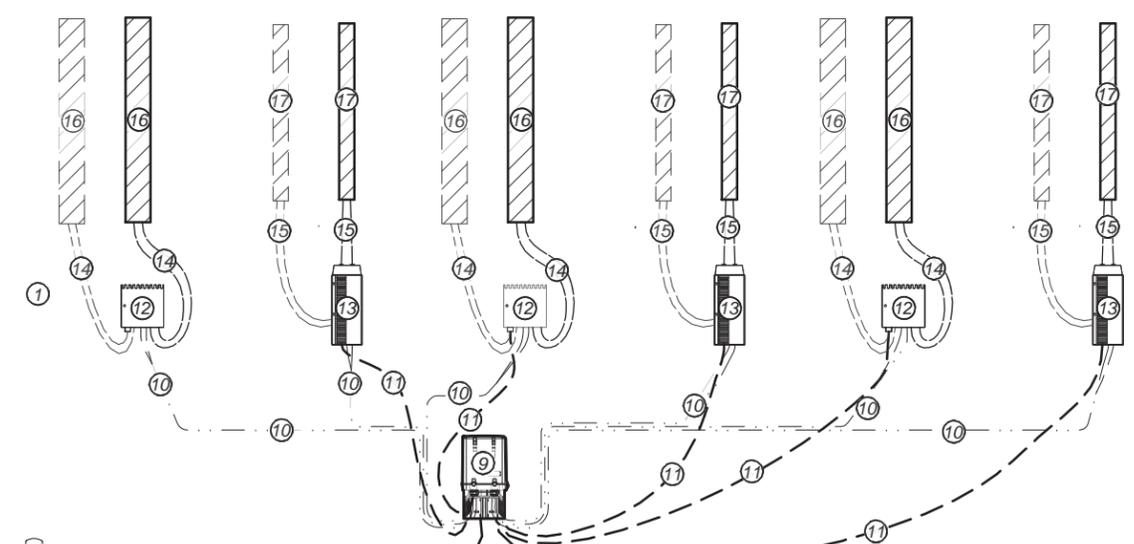
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CONTACT: **CLF**  
DATE: **06-04-2014**  
CLIENT SITE NO.: **260668**

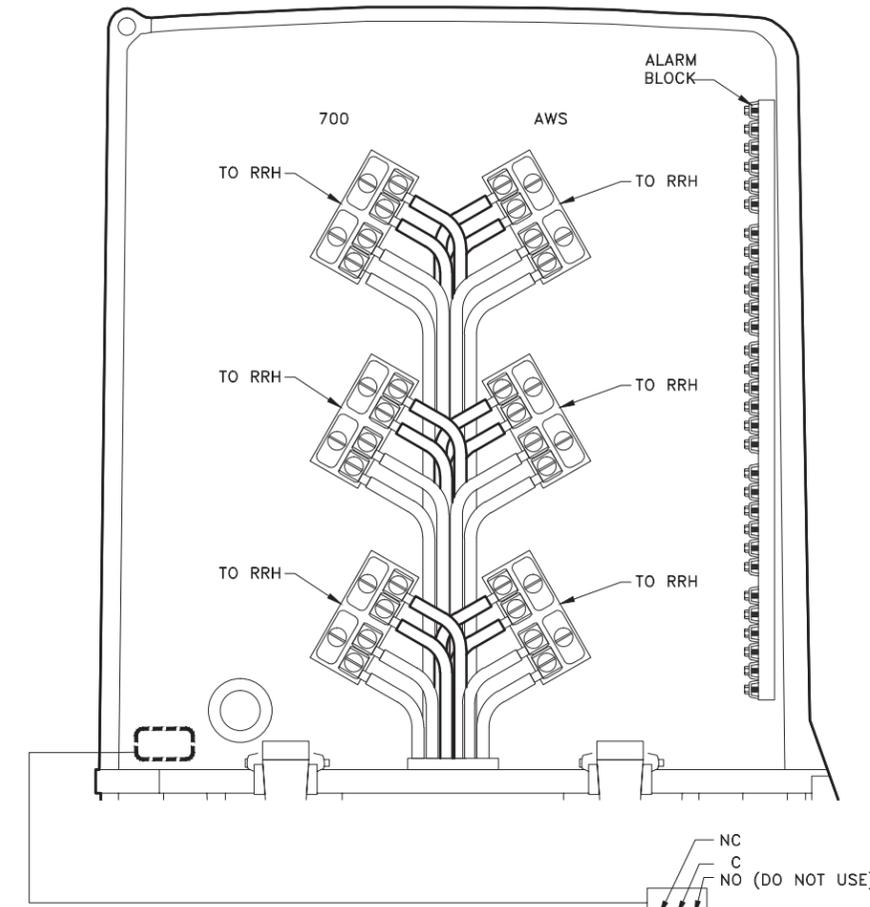
**AT.2**  
VERIZON WIRELESS  
VILLA MARIA



**EQUIPMENT PLAN ON SHELTER**  
SCALE: 1/4"=1'-0"



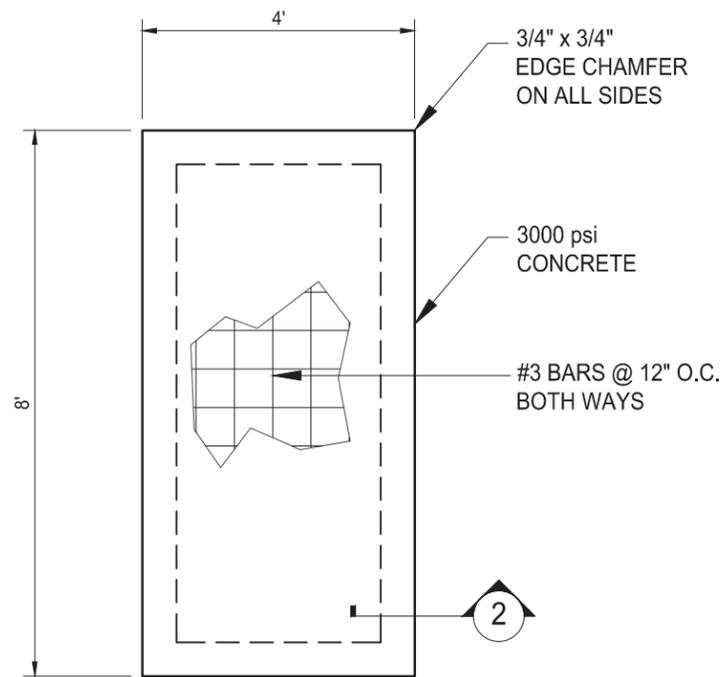
**ANTENNA & EQUIPMENT DIAGRAM**  
SCALE: 3/16"=1'-0"



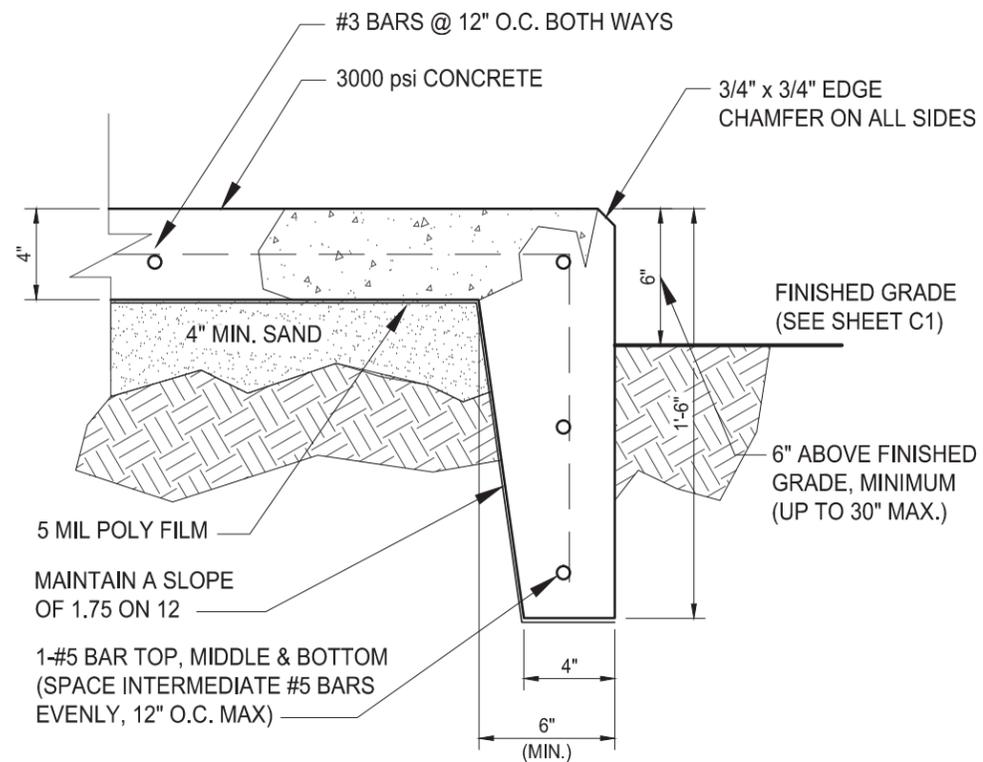
**DC6-48-60-18-84 WIRE DIAGRAM**

**RxxDC-3315-PF-48 ALARM BLOCK WIRE DIAGRAM**  
NOT TO SCALE

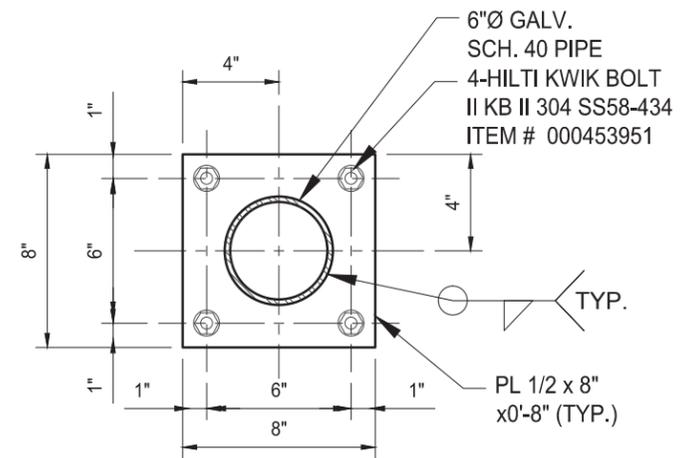
EQUIPMENT LEGEND			
NO.	DESCRIPTION	NO.	DESCRIPTION
1	BATTERY CABINET	20	
2		21	
3	9712 21U CABINET WITH -48V RECTIFIERS & 9926 MODULES	22	
4	20 POWER CONDUIT FROM 9712 TO RAYCAP CABINET WITH (6) 1x1 HYBRID JUMPERS	23	
5	RAYCAP RxxDC-3315-PF-48 OVERCURRENT PROTECTION AND FIBER MANAGEMENT BOX	22	
6	6x12 HYBRID CABLE	23	
7	9712 13U CABINET WITH 9926 MODULES	24	
8		25	GENERATOR
9	RAYCAP RxxDC-3315-PF-48 OVP & FIBER MANAGEMENT BOX		
10	ALARM LEAD FROM RAYCAP TO RRH		
11	RRH 1x1 FIBER/POWER JUMPER FROM RAYCAP BOX TO RRH. SEE NOTES 9 & 10 SHEET AT.1.		
12	700 LTE RRH		
13			
14	700 LTE COAX JUMPER, SEE NOTE 1 COAX JUMPER NOTES SHEET AT.1.		
15	1900 AWS COAX JUMPER, SEE NOTE 1 SHEET AT.1. COAX JUMPER NOTES		
16	700 LTE ANTENNA, LNX-6515DS		
17			
18			
19	FUTURE 6x12 HYBRID CABLE		



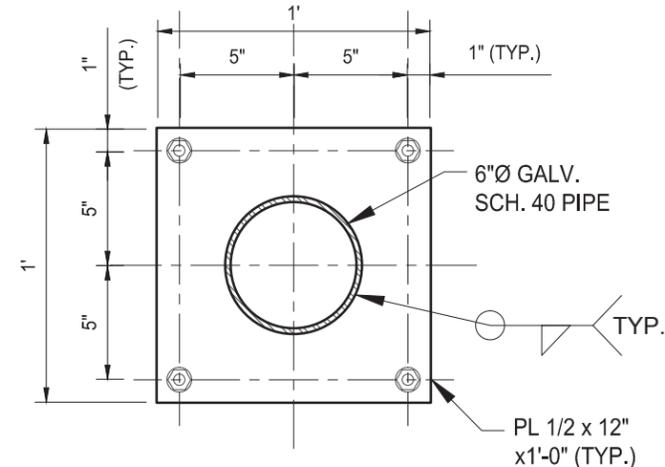
1 GENERATOR CONCRETE PAD PLAN  
SCALE: 3/8"=1'-0"



2 CONCRETE PAD BEAM DETAIL  
NOT TO SCALE

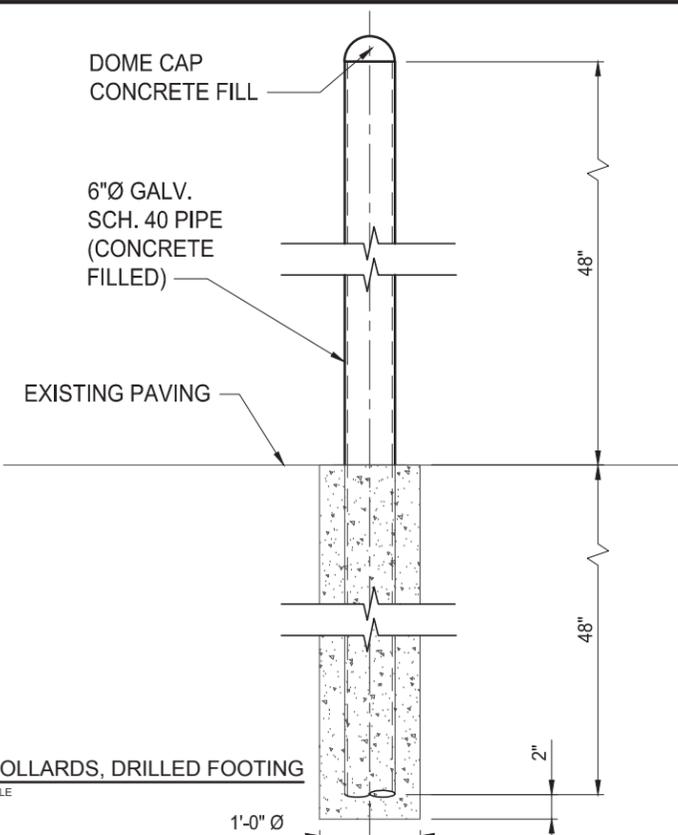


ICE BRIDGE POST BASE PLATE  
NOT TO SCALE

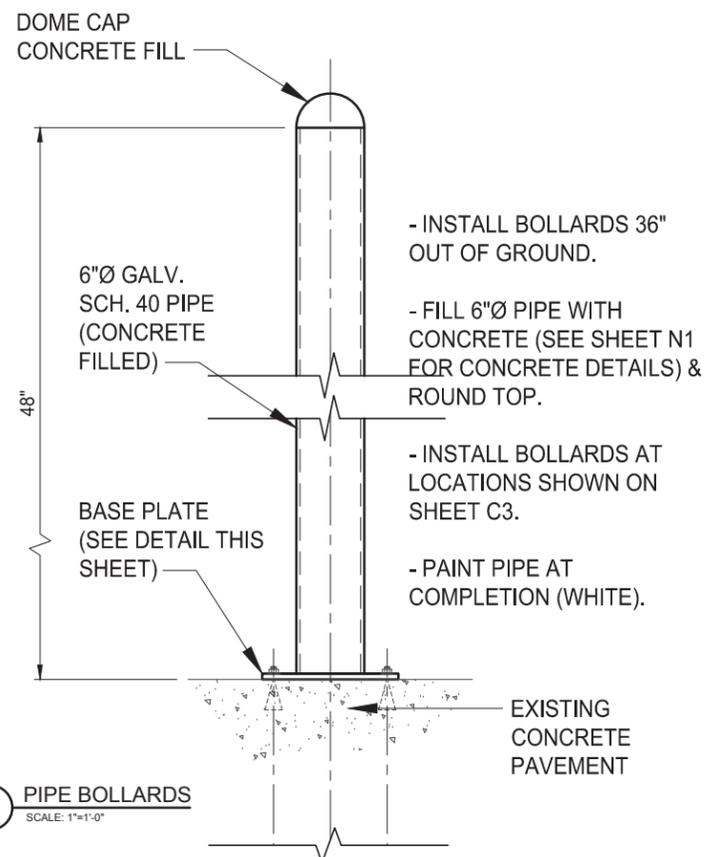


BOLLARD BASE PLATE  
NOT TO SCALE

5 TYPICAL BASE PLATE DETAILS  
NOT TO SCALE



3 PIPE BOLLARDS, DRILLED FOOTING  
NOT TO SCALE



4 PIPE BOLLARDS  
SCALE: 1"=1'-0"

**verizon**  
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AXIS PROJECT NUMBER:  
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SHELTER FOUNDATION & DETAILS  
**VERIZON WIRELESS - TEXAS AREA**  
**VILLA MARIA SITE**

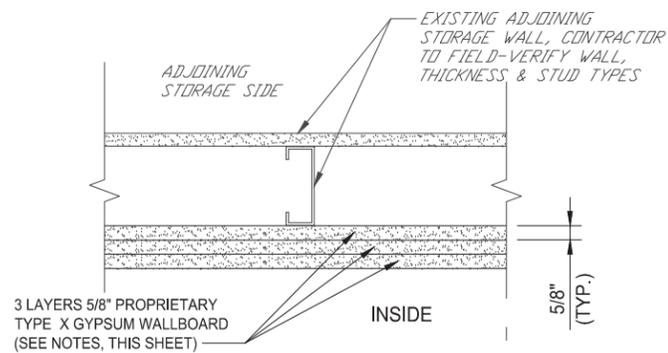


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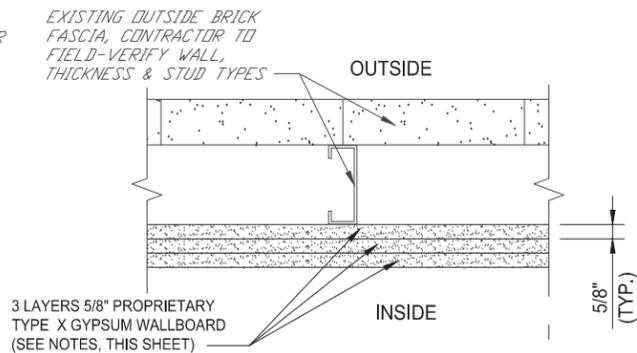
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CONTACT: CLF  
DATE: 06-04-2014  
CLIENT SITE No.: 260668

**S1**

VERIZON WIRELESS  
VILLA MARIA



**2-HR INTERNAL FIRE WALL SIDE: PLAN VIEW**  
SCALE: 1 1/2"=1'-0"



**2-HR EXTERNAL FIRE WALL SIDE: PLAN VIEW**  
SCALE: 1 1/2"=1'-0"

**NOTES:**

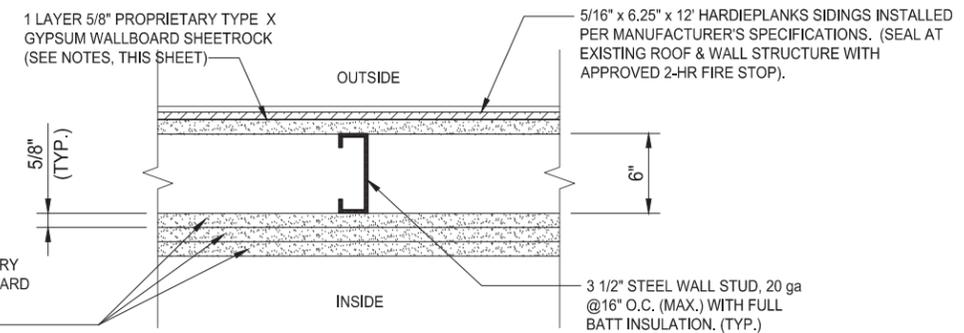
- ONE LAYER HARDIE PLANKS APPLIED PARALLEL OR AT RIGHT ANGLES TO FRONT EXTERNAL SIDE OF 3 1/2", 20 GAUGE STEEL STUDS @ 24" O.C. WITH 1" TYPE S DRYWALL SCREWS 8" O.C. AT VERTICAL JOINTS AND 12" O.C. AT INTERMEDIATE STUDS WHEN APPLIED PARALLEL TO FRAMING, OR @ 8" O.C. AT VERTICAL JOINTS AND IN THE FIELD WHEN APPLIED AT RIGHT ANGLES TO FRAMING.
- INTERNAL SIDE: BASE LAYER: 5/8" PROPRIETARY TYPE X GYPSUM WALLBOARD APPLIED PARALLEL OR AT RIGHT ANGLES TO STUDS WITH 1" TYPE S DRYWALL SCREWS @ 8" O.C. AT VERTICAL JOINTS AND 12" O.C. AT INTERMEDIATE STUDS WHEN APPLIED PARALLEL TO FRAMING, OR @ 8" O.C. AT VERTICAL JOINTS AND IN THE FIELD WHEN APPLIED AT RIGHT ANGLES TO FRAMING.

SECOND LAYER: 5/8" PROPRIETARY TYPE X GYPSUM WALLBOARD APPLIED PARALLEL OR AT RIGHT ANGLES TO STUDS WITH 1 5/8" TYPE S DRYWALL SCREWS @ 12" O.C.

FACE LAYER: 5/8" PROPRIETARY TYPE X GYPSUM WALLBOARD APPLIED PARALLEL OR AT RIGHT ANGLES TO STUDS WITH 2 3/8" TYPE S DRYWALL SCREWS @ 8" O.C. AT VERTICAL JOINTS AND 12" O.C. AT INTERMEDIATE STUDS WHEN APPLIED PARALLEL TO FRAMING, OR @ 8" O.C. AT VERTICAL JOINTS AND IN THE FIELD WHEN APPLIED TO FRAMING. HORIZONTAL JOINTS STAGGERED NOT LESS THAN 6" BETWEEN LAYERS. WHEN GYPSUM PANELS ARE OTHER THAN 48" WIDE, PANELS ARE APPLIED AT RIGHT ANGLES TO THE FRAMING.

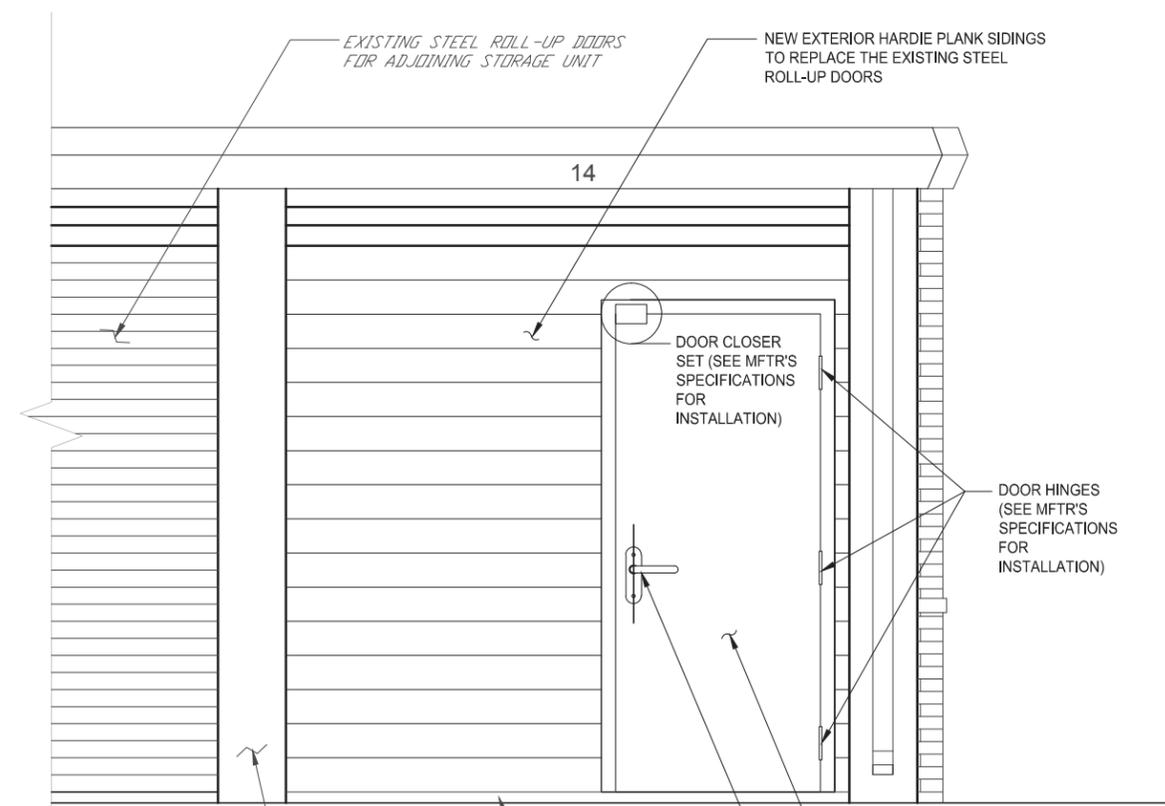
HARDIEPANEL: HARDIEPANEL VERTICAL SIDING MUST BE JOINED ON STUD. POSITION FASTENERS MIN. 3/8" FROM PANEL EDGES & MIN. 2" FROM CORNERS. FASTENERS MUST BE GALVANIZED OR STAINLESS STEEL. PANEL VERTICAL JOINT TREATMENTS PER MANUFACTURERS RECOMMENDATIONS, PROVIDE Z-FLASHING FOR ALL HORIZONTAL JOINTS. REFER TO MANUFACTURERS INSTALLATION SPECIFICATIONS FOR HARDIEPANEL VERTICAL SIDING AT [www.jameshardiecommercial.com](http://www.jameshardiecommercial.com).

**FIRE STOP NOTE:**  
INSTALL APPROVED 2-HR FIRE STOP AROUND ALL STRUCTURAL MEMBERS AND AT CONNECTIONS TO ROOF & EXISTING WALLS (FROM FLOOR TO CEILING).



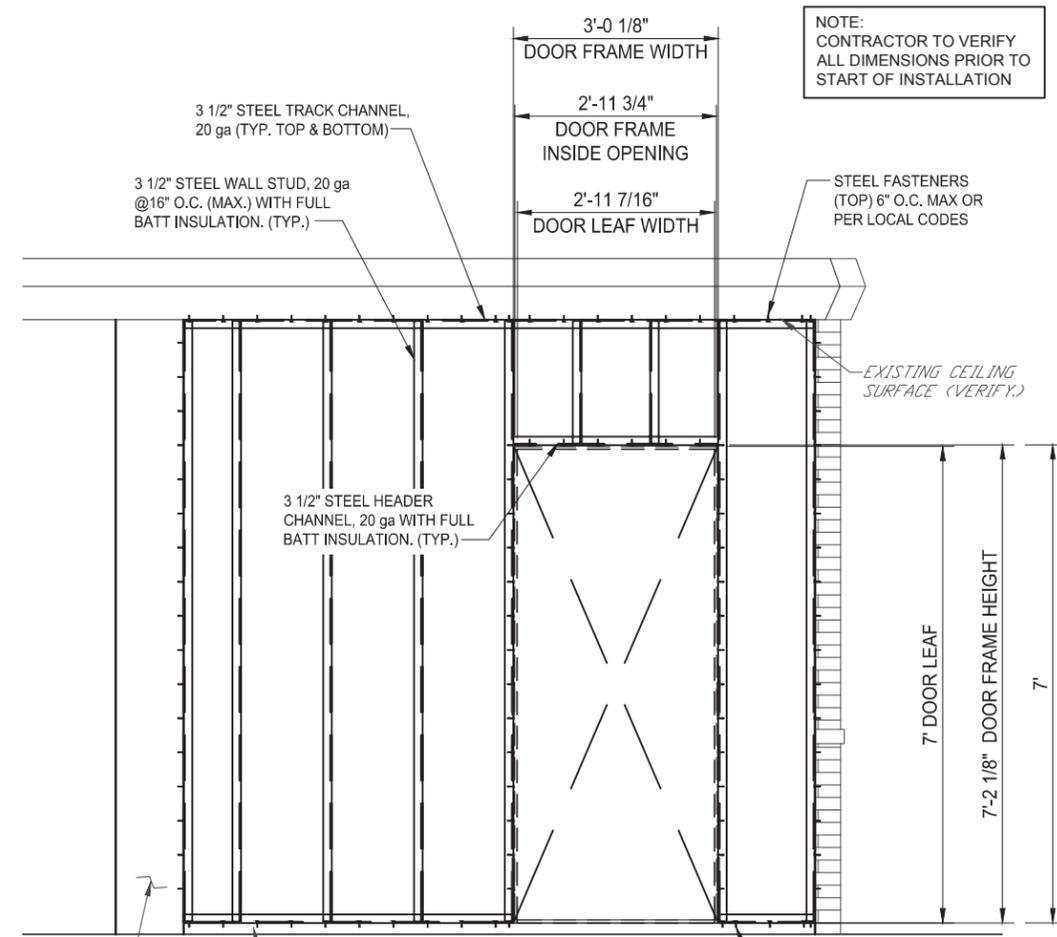
**2-HR FIRE WALL FRONT SIDE: PLAN VIEW**  
SCALE: 1 1/2"=1'-0"

**4 DETAIL SECTIONS**  
SCALE: 1 1/2"=1'-0"



**1 2-HR FIRE RATED DOOR - FRONT ELEVATION**  
NOT TO SCALE

**NOTE:**  
SPEC: SAMSON - 5/8" PRO-ROC TYPE X GYPSUM PANELS, STEEL STUDS (2-HR FIRE RATED) OR EQUAL. SEE MANUFACTURER'S INSTALLATION MANUAL FOR EXACT DIMENSIONS.



**2 2-HR FIRE RATED DOOR FRAMING ELEVATION**  
SCALE: 3/8"=1'-0"



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2-HR FIRE RATED DOOR & WALL DETAILS  
VERIZON WIRELESS - TEXAS AREA  
VILLA MARIA SITE



Axis Engineering, Inc.  
Registration # F-004171

DRAWN BY: JCM  
CONTACT: CLF  
DATE: 06-04-2014  
CLIENT SITE NO.: 260668

**S2**

VERIZON WIRELESS  
VILLA MARIA



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5-TON A/C WALL MOUNTING DETAILS

**VERIZON WIRELESS - TEXAS AREA**

**VILLA MARIA SITE**



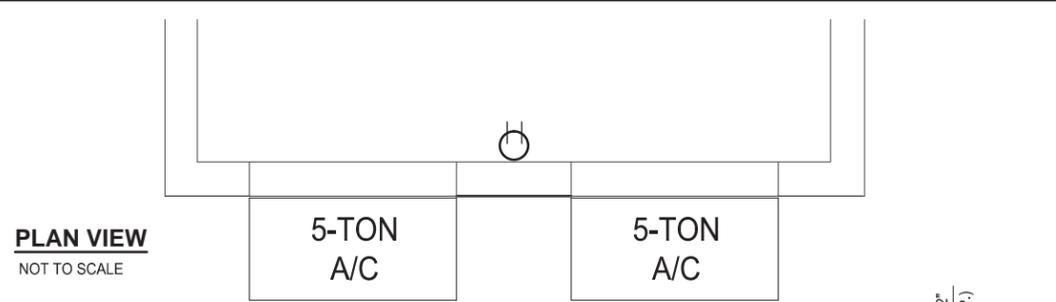
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CONTACT: **CLF**  
DATE: **06-04-2014**  
CLIENT SITE No.: **260668**

**S3**

**VERIZON WIRELESS**  
**VILLA MARIA**

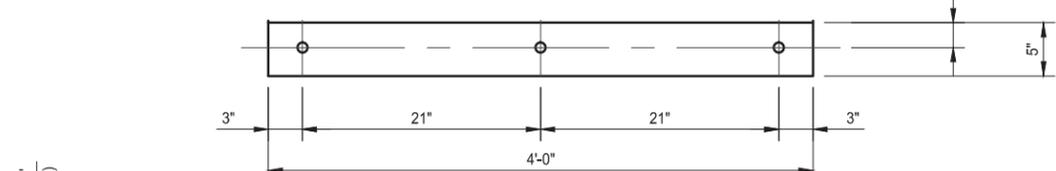
**PLAN VIEW**  
NOT TO SCALE



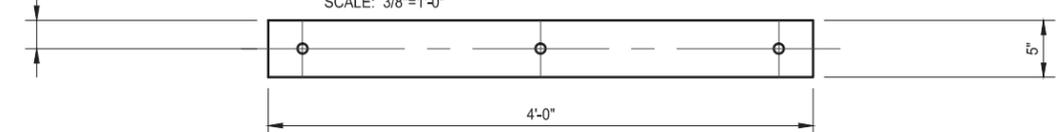
**5-TON A/C**

**5-TON A/C**

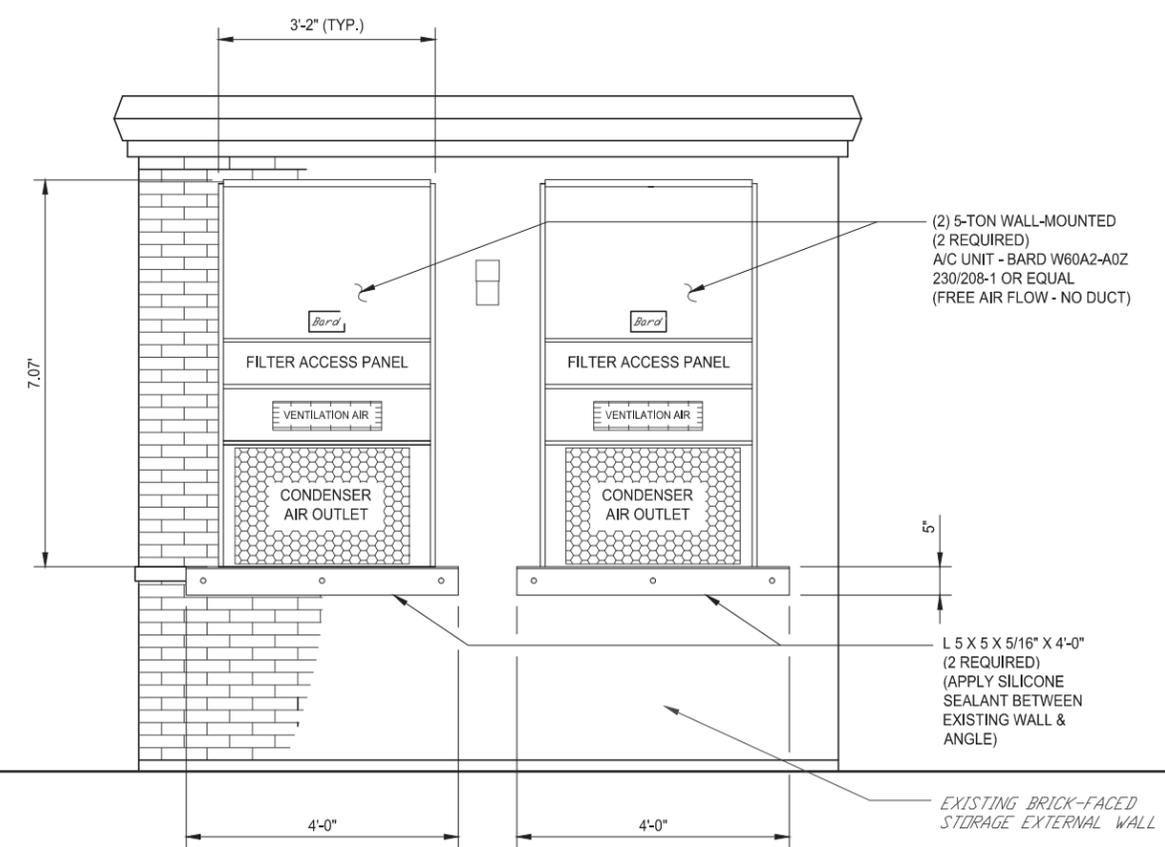
**STEEL ANGLE DETAIL**  
SCALE: 3/8"=1'-0"



**FLAT BAR DETAIL**  
SCALE: 3/8"=1'-0"



**REAR END WALL - FRONT ELEVATION OF A/C UNITS**  
NOT TO SCALE



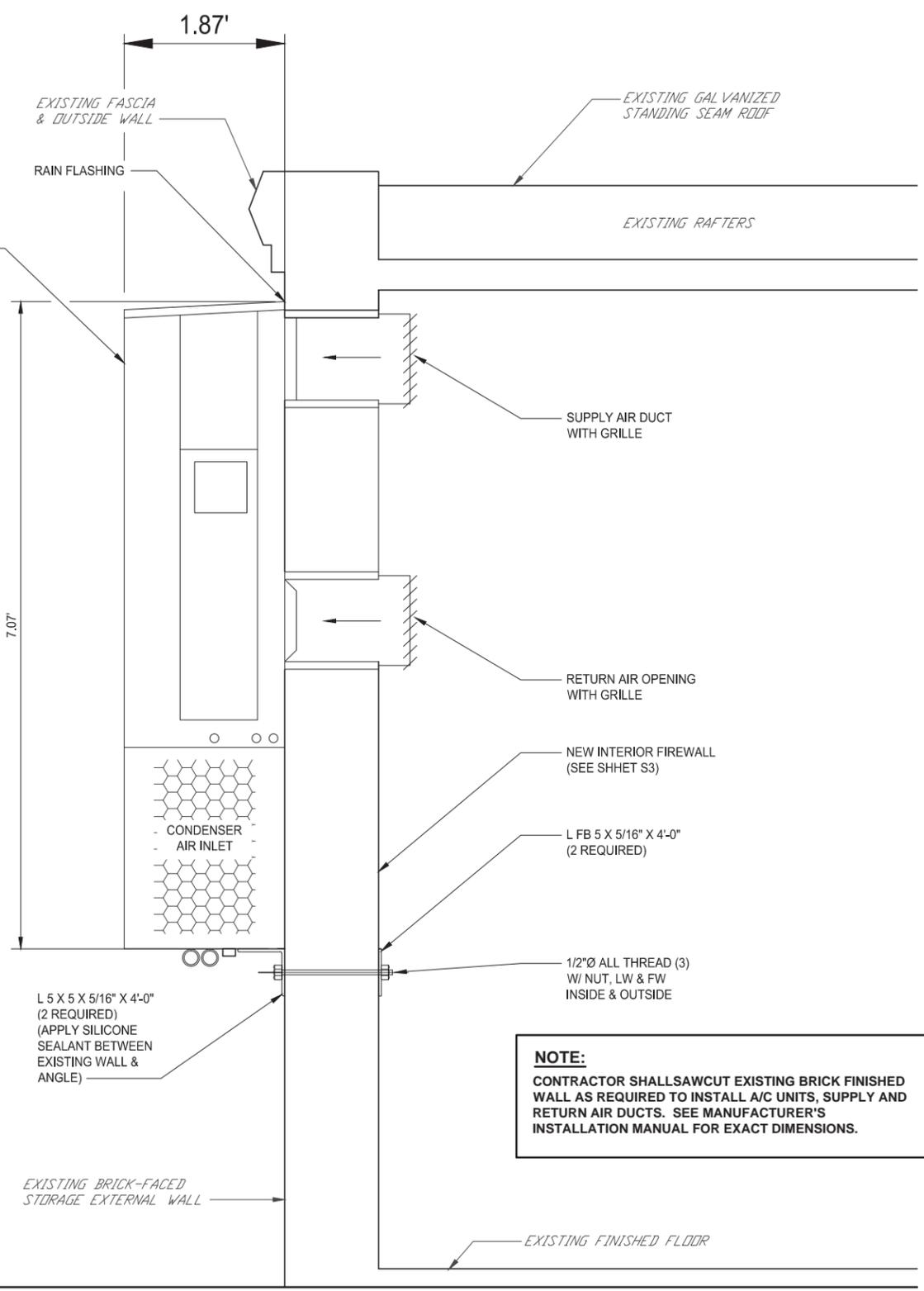
(2) 5-TON WALL-MOUNTED  
(2 REQUIRED)  
A/C UNIT - BARD W60A2-A0Z  
230/208-1 OR EQUAL  
(FREE AIR FLOW - NO DUCT)

L 5 X 5 X 5/16" X 4'-0"  
(2 REQUIRED)  
(APPLY SILICONE SEALANT BETWEEN EXISTING WALL & ANGLE)

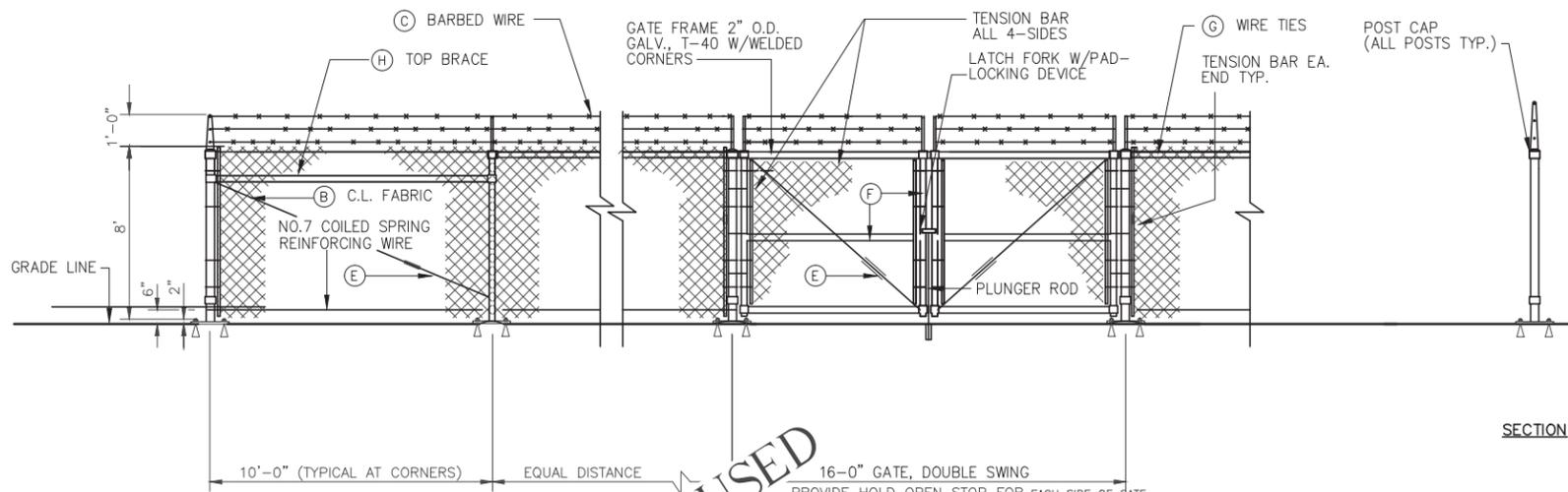
EXISTING BRICK-FACED STORAGE EXTERNAL WALL

**SECTION - A**  
SCALE: 3/4"=1'-0"

(NOTE: DIMENSIONS ARE NOT TO SCALE.)



**NOTE:**  
CONTRACTOR SHALL SAWCUT EXISTING BRICK FINISHED WALL AS REQUIRED TO INSTALL A/C UNITS, SUPPLY AND RETURN AIR DUCTS. SEE MANUFACTURER'S INSTALLATION MANUAL FOR EXACT DIMENSIONS.



**FENCE NOTES:**

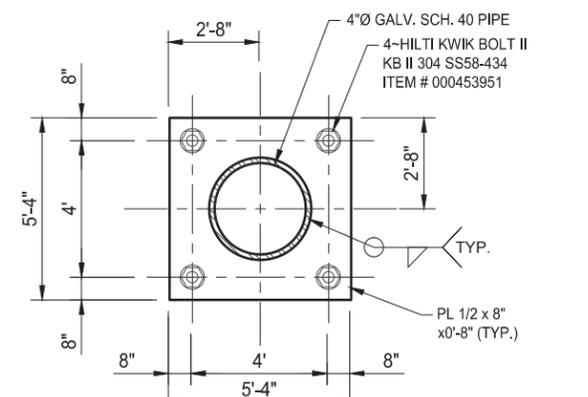
- FABRIC TIES - SECURE FABRIC WITH 9 GU GALVANIZED TIES TO LINE @ 14" O.C. AND TO RAILS @ 24" O.C. SECURE FABRIC TO TENSION WIRE @ 14" O.C. HOG RINGS @ 24" O.C.
- POSTS TO BE SPACED 10'-0" O.C. MAX. SET IN CONCRETE HAVING A MIN. COMPRESSION STRENGTH OF 2500 P.S.I. @ 28 DAYS. CROWN TO SHED WATER. FOOTING SIZE TO BE IN ACCORDANCE WITH THE SCHEDULE SHOWN:
- ALL POSTS AND FRAME WORK SHALL BE HOT DIP GALV. COATED STEEL, 50,000 K.S.I. PER ASTM 463
- BRACE AND TRUSS ASSEMBLY AT EACH CORNER, TERMINAL AND GATE POST
- #7 GAUGE COIL SPRING BOTTOM TENSION WIRE.
- ALL GALVANIZED PIPE TO CONFORM TO ASTM - A120.
- ALL GALVANIZED CHAIN LINK TO CONFORM TO ASTM - A392.
- ALL GALVANIZED FITTINGS TO CONFORM TO ASTM - A153.
- ALL GATES SHALL HAVE "DUCK BILL" HOLD OPENS AT FULL OPEN
- ALL GATES SHALL HAVE AN IN GROUND PLUNGER ROD RECEIVER THAT ACCOMPANIES THE LATCH. (1-1/2" GALVANIZED PIPE TYP.)
- GATE SHALL HAVE LATCH FORK W/PAD (SHALL ACCEPT A PAD LOCK.)
- INSTALL GATE STOP LATCH AT FULL OPEN ON EACH GATE AND INSTALL A 1-1/2" GALV. PIPE 12" LONG INTO THE GROUND FOR THE CLOSED GATE LOCK GROUND STABILIZER.

NOT USED

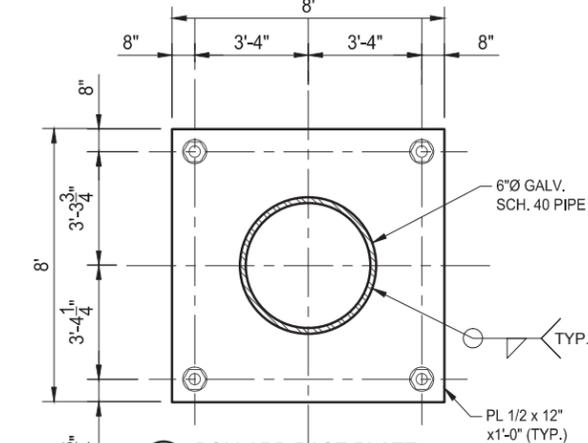
- (A) 4" I.D. x SCHED. 40 CORNER POST 4" O.D. x SCHED. 40 GATE POST (GALV. TO CONFORM TO ASTM-A120)
- (B) 2" DIAMOND MESH #9 GAUGE X 8'-0" (MIN.) (1.02 OZ.) ALL GALV. CHAIN LINK TO CONFORM TO ASTM A392.
- (C) 3 STRANDS OF CLASS III GALVANIZED BARBED WIRE. (TYP.)
- (D) 4" I.D. x SCHED. 40 LINE POST (GALV. TO CONFORM TO ASTM-A120)
- (E) 5/8" ADJUSTABLE TRUSS ROD W/TURNUCKLE (GALV. TYP.)
- (F) 2" WELDED GATE FRAME (SCHED. 40 PIPE) TYP. W/TENSION BAR AT ALL FOUR SIDES. (GALV.)
- (G) WIRE TIES AT 24" O.C. (TYP.)
- (H) 1-5/8" TOP BRACE (GALV. PIPE TO CONFORM TO ASTM-A120)

TYPE OF POST (ROUND, TYP.)	FABRIC HEIGHT	HOLE DIAMETER	HOLE DEPTH	POST EMBEDMENT	POST SIZE	POST GAGE
LINE POST	8' TO 12'	10"	38"	36"	4"	.09"
CORNER POST	8' TO 12'	16"	38"	36"	4"	.09"
GATE POST	8' TO 12'	18"	38"	36"	4"	.09"

**1 TYPICAL FENCE DETAIL/ELEVATION**  
NOT TO SCALE

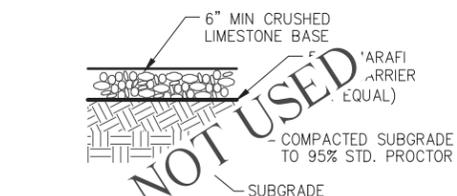


**A ICE BRIDGE POST BASE PLATE**  
NOT TO SCALE

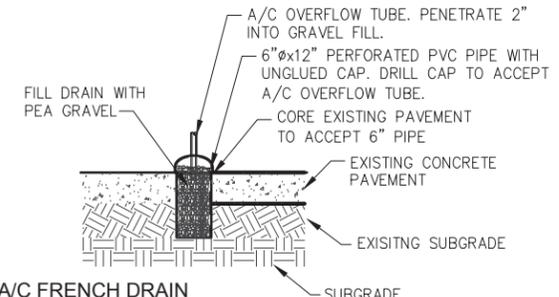


**B BOLLARD BASE PLATE**  
NOT TO SCALE

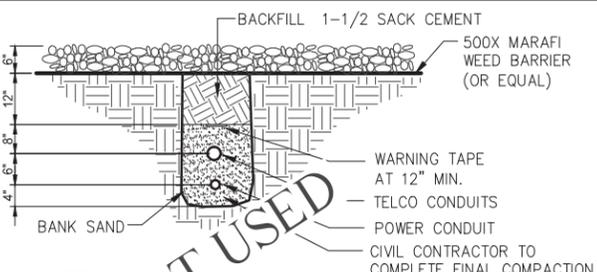
**2 TYPICAL BASE PLATE DETAILS**  
NOT TO SCALE



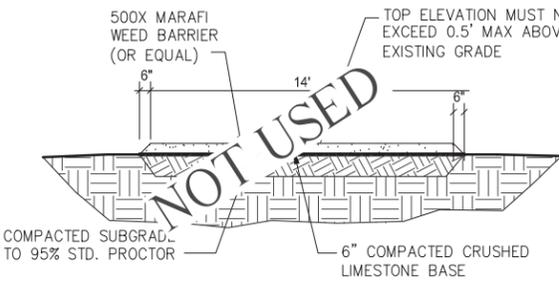
**3 COMPOUND SECTIONS**  
NOT TO SCALE  
FOR LIMESTONE SPECIFICATIONS, REFER TO SHEET N1, LIMESTONE SPECIFICATION SECTION.



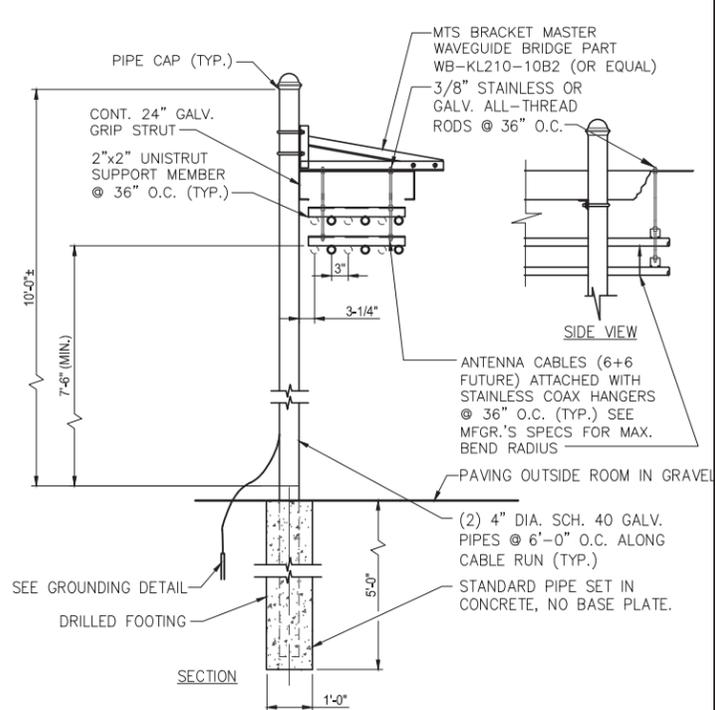
**5 A/C FRENCH DRAIN**  
NOT TO SCALE  
LOCATE DRAIN DIRECTLY BELOW A/C OUT FLOW, BUT NOT CLOSER THAN 10" FROM CENTER OF DRAIN TO SHELTER FOUNDATION.



**4 CONDUIT BEDDING**  
NOT TO SCALE  
FOR TRENCH & BACKFILL SPECIFICATIONS, REFER TO SHEET N1, TRENCH & FILL SPECIFICATION SECTION.



**6 PAVING SECTIONS**  
NOT TO SCALE  
FOR LIMESTONE SPECIFICATIONS, REFER TO SHEET N1, LIMESTONE SPECIFICATION SECTION.



**7 CABLE BRIDGE TRAPEZE ASSEMBLY**  
NOT TO SCALE

NOT USED

**8 PIPE BOLLARDS**  
NOT TO SCALE

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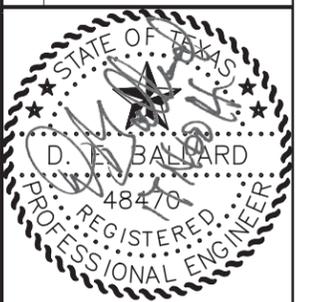
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GENERAL DETAILS

**VERIZON WIRELESS - TEXAS AREA**

**VILLA MARIA SITE**

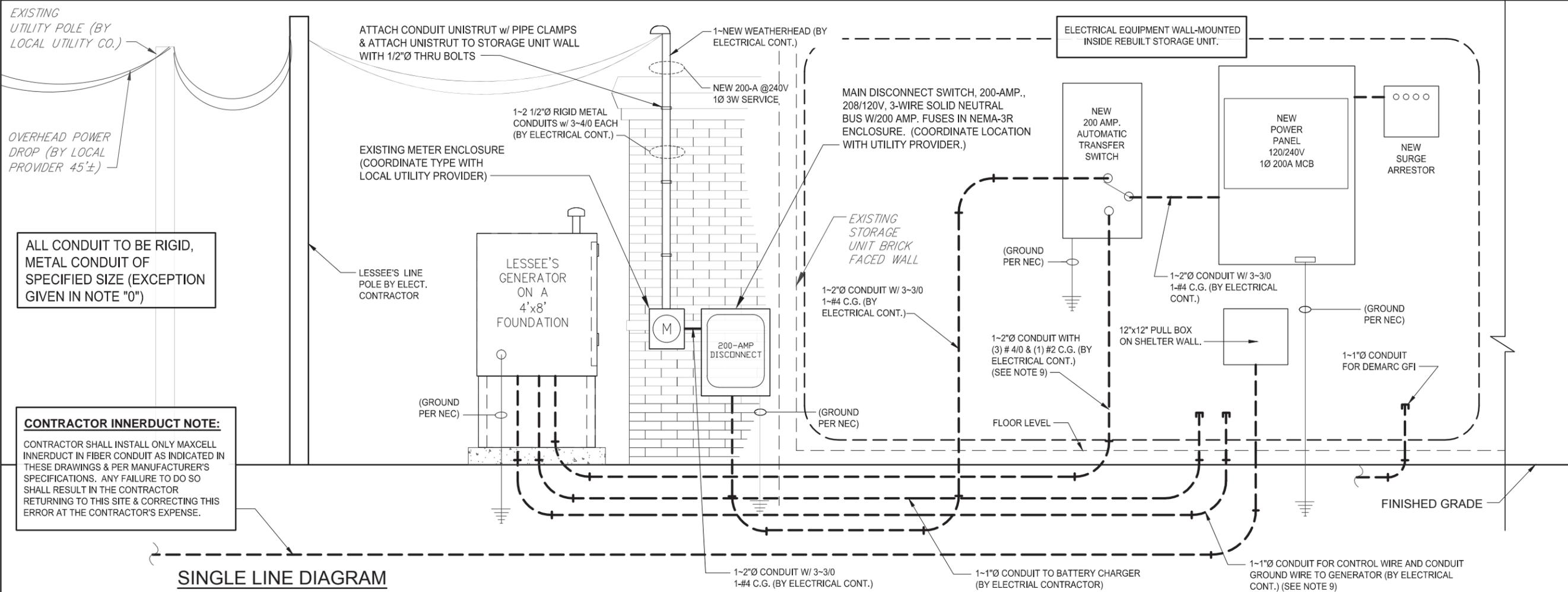


Axis Engineering, Inc.  
Registration # F-004171

DRAWN BY:	<b>JCM</b>
CONTACT:	<b>CLF</b>
DATE:	<b>06-04-2014</b>
CLIENT SITE NO.:	<b>260668</b>

D1

**VERIZON WIRELESS**  
**VILLA MARIA**



**ALL CONDUIT TO BE RIGID, METAL CONDUIT OF SPECIFIED SIZE (EXCEPTION GIVEN IN NOTE "0")**

**CONTRACTOR INNERDUCT NOTE:**  
 CONTRACTOR SHALL INSTALL ONLY MAXCELL INNERDUCT IN FIBER CONDUIT AS INDICATED IN THESE DRAWINGS & PER MANUFACTURER'S SPECIFICATIONS. ANY FAILURE TO DO SO SHALL RESULT IN THE CONTRACTOR RETURNING TO THIS SITE & CORRECTING THIS ERROR AT THE CONTRACTOR'S EXPENSE.

**SINGLE LINE DIAGRAM**

**GENERAL NOTES:**

- ALL WORKS AND MATERIALS SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (EDITION ENFORCED BY LOCAL AUTHORITY), AND ALL APPLICABLE STATE AND LOCAL LAWS AND REGULATIONS. NOTHING IN THESE PLANS OR SPECIFICATIONS SHALL BE CONSTRUCTED AS TO PERMIT WORK NOT CONFORMING TO THE MOST STRINGENT OF THESE CODES. SHOULD CHANGES BE NECESSARY THE DRAWINGS OR SPECIFICATIONS TO MAKE THE WORK COMPLY WITH THESE REQUIREMENTS, THE CONTRACTOR SHALL IMMEDIATELY (SPECIALLY BEFORE BIDDING SUBMITTAL) NOTIFY THE ENGINEER IN WRITING AND CEASE WORK ON PARTS OF THE CONTRACT WHICH ARE AFFECTED.
- THE CONTRACTOR SHALL MAKE A SITE VISITATION PRIOR TO BIDDING AND CONSTRUCTION TO VERIFY ALL EXISTING CONDITIONS AND SHOULD NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY DISCREPANCIES. THE CONTRACTOR ASSUMES ALL LIABILITY FOR FAILURE TO COMPLY WITH THIS PROVISION.
- THE EXTENT OF THE WORK IS INDICATED BY THE DRAWINGS, SCHEDULES, AND THIS SPECIFICATION AND IS SUBJECT TO THE TERMS AND CONDITIONS OF THE CONTRACT. THE WORK SHALL CONSIST OF FURNISHING ALL LABOR, EQUIPMENT, MATERIALS AND SUPPLIES NECESSARY FOR A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM, INCLUDING WORK NOT SPECIFICALLY MENTIONED OR SHOWN ON THE CONTRACT DOCUMENTS BUT ARE NECESSARY FOR A COMPLETE AND OPERATIONAL SYSTEM.
- THE DRAWINGS INDICATE DIAGRAMMATIC ALLY THE DESIRED LOCATIONS OR ARRANGEMENTS OF THE CONDUIT RUNS, OUTLETS, EQUIPMENT, ETC. AND SHALL BE FOLLOWED IN EXECUTING THE WORK SO AS TO SECURE THE BEST POSSIBLE INSTALLATION IN THE AVAILABLE SPACE LIMITATIONS.
- FEEDER AND BRANCH CIRCUITS SHALL BE RUN IN EMT FOR INDOOR PROTECTED LOCATIONS ONLY. FEEDER AND BRANCH CIRCUITS RUN IN NONMETALLIC CONDUIT SHALL INCLUDE A CODE SIZED EQUIPMENT GROUNDING CONDUCTOR HAVING GREEN INSULATION. THE EQUIPMENT GROUND CONDUCTOR SHALL BE PROPERLY CONNECTED TO MAINTAIN ELECTRICAL CONTINUITY.
- WIRING SHALL BE COPPER TYPE THWN-2.
- ALL DIRECT BURIED GROUNDING CONDUCTORS SHALL BE #2 SOLID, BARE TINNED COPPER.
- ALL NON-DIRECT BURIED TELEPHONE EQUIPMENT GROUNDING CONDUCTORS SHALL BE #2 STRANDED, THWN (GREEN).
- ALL TELEPHONE EQUIPMENT GROUNDING CONNECTIONS AND SPLICES SHALL BE MADE WITH BURNDY "HY-GROUND" CONNECTORS EXCEPT WHERE NOTED OTHERWISE
- PAINT AT ALL GROUND CONNECTIONS SHALL BE REMOVED.
- CONTRACTOR SHALL CHECK RESISTANCE BETWEEN GROUNDING (ELECTRODES AND COLD WATER PIPING) AND TELEPHONE EQUIPMENT. MAXIMUM RESISTANCE SHALL NOT EXCEED 5 OHMS.
- UTILITY SERVICE REQUIREMENTS ARE SHOWN ON THE DRAWINGS BASED ON INFORMATION AVAILABLE AT THE TIME AND ARE NOT GUARANTEED.
- DISCONNECTS SHALL BE HEAVY DUTY - MIN. 10,000 AIC RATING. ACCEPTABLE MANUFACTURERS: G.E., SQUARE D, WESCO/CUTLER HAMMER OR SIEMENS.

FOR A COMPLETE SYSTEM IN THE BID.  
 N. THE CONTRACTOR SHALL VERIFY THE EXACT METHOD AND REQUIREMENTS OF SERVICE BY UTILITY COMPANIES DURING BIDDING AND INCLUDE ALL COST

- PVC SCHEDULE 40 MAY BE USED AS PERMITTED BY CODE IN LIEU OF RIGID STEEL CONDUIT FOR UNDERGROUND APPLICATIONS ONLY. INSTALL A CODE SIZED INSULATED BONDED EQUIPMENT GROUND CONDUCTOR (GREEN). USE RIGID STEEL 90° ELBOWS.
- REFER TO GROUNDING NOTES ON SHEET G. ELECTRICAL CONTRACTOR MUST REVIEW EQUIPMENT GROUNDING GUIDELINE FOR CELLULAR RADIO INSTALLATIONS AND CONFORM TO RECOMMENDATIONS THEREIN.
- ELECTRICAL EQUIPMENT, CIRCUIT PROTECTIVE DEVICES, BUSSING AND SWITCHES SHALL BE RATED TO INTERRUPT OR WITHSTAND SHORT CIRCUIT FAULTS GREATER THAN THE AVAILABLE FAULT CURRENT.

**ELECTRICAL NOTES:**

- CONTRACTOR SHALL REMOVE ALL TEMPORARY GROUNDING PROVIDED DURING TOWER INSTALLATION AND REPLACE WITH PERMANENT GROUNDING PER THE GROUNDING PLAN AND DETAILS.
- CONTRACTOR SHALL PROVIDE ALL TEMPORARY POWER ON JOB SITE INCLUDING SERVICE POLE, ENTRY CONDUCTORS, METER, AND DISCONNECTS AS REQUIRED. IF POWER COMPANY TEMPORARY SERVICE IS NOT AVAILABLE, CONTRACTOR SHALL PROVIDE A 10KW MIN. SIZE GENERATOR TO SUPPLY DEMAND.
- ALL ELECTRICAL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL BUILDING CODE AND ALL OTHER CODES HAVING JURISDICTION.
- ALL WIRE IN ALL SERVICE AREAS SHALL BE TYPE THWN-2 COPPER, MINIMUM SIZE #12 AWG. EXCEPT CONTROL WIRING. ALL WIRE UNDERGROUND AND IN WET SERVICE AREAS SHALL BE TYPE THWN-2 COPPER, MINIMUM SIZE #12 AWG. EXCEPT CONTROL WIRING.
- ELECTRICAL CONTRACTOR SHALL CONNECT GROUNDS FROM ELECTRICAL EQUIPMENT ON EXTERIOR OF SHELTER (M.T.S. & DISCONNECT) TO EXTERNAL GROUND LOOP.
- ELECTRICAL CONTRACTOR SHALL COORDINATE DROP POLE SET WITH LOCAL UTILITY COMPANY.
- CONTRACTOR SHALL FILL TRENCH EXCAVATIONS AS NOTED IN "EXCAVATION AND FILL SPECIFICATIONS" IN THESE DOCUMENTS.
- STUB UP LOCATIONS FOR ELECTRICAL AND TELEPHONE SHALL BE COORDINATED WITH VERIZON AND SHELTER MANUFACTURER DRAWINGS.
- EXTERIOR CONDUIT TO BE RGS AND TO BE ATTACHED TO AVOID ANY TRIPPING HAZARDS.
- INSTALL PULL BOXES AS REQUIRED BY N.E.C.

PANEL VERIZON		TYPE	SURFACE	VOLTS	120/208V	MAIN BREAKER	200 AMPS	CYCLE	60 Hz	PHASE	1	WIRES	3			
MOUNTING		SURFACE	TRIP	200A		To Automatic Transfer Switch										
LOCATION & REMARKS	QTY.	UNIT V.A.	LOAD PER PHASE (VA)	A	B	POLES	WIRE SIZE	NO.	NO.	WIRE SIZE	POLES	LOAD PER PHASE (VA)	UNIT V.A.	QTY.	LOCATION & REMARKS	
HVAC-1 (CONTINUOUS)	1	5000	5000	2	#8	2	#8	2	5000	5000	1	5000	5000	1	HVAC-2 (NON-CONTINUOUS)	
DUAL RECEPTACLES	1	240	240	1	#10	5	#10	5	240	240	1	240	240	1	DEMARC GFI	
INTERIOR LIGHTS	3	40/4	480	1	#12	7	#12	7	420	420	1	420	420	1	SMOKE DETECTOR & HEAT DETECTOR	
RECTIFIER-1 (100%)	1	2325	2325	2	#10	9	#10	9	180	180	1	180	180	1	GFIC RECEPTACLE	
RECTIFIER-2 (100%)	1	2325	2325	2	#10	11	#10	11	1163	2325	1	1163	2325	1	RECTIFIER-6 (50%)	
RECTIFIER-3 (50%)	1	2325	1163	2	#10	13	#10	13	582	2325	1	582	2325	1	RECTIFIER-7 (25%)	
RECTIFIER-4 (50%)	1	2325	1163	2	#10	15	#10	15	582	2325	1	582	2325	1	RECTIFIER-8 (25%)	
RECTIFIER-5 (25%)	1	2325	582	2	#10	17	#10	17	240	240	1	240	240	1	BATTERY CHARGER	
DUAL RECEPTACLES	1	240	240	1	#10	21	#10	21	120	120	1	120	120	1	HVAC CONTROLLER	
SPACE															SPACE	
SUBTOTAL CONTINUOUS		9650	9650						660	5780		660	5780		TOTAL KVA CONTINUOUS x 125	25.10
SUBTOTAL NON-CONTINUOUS		3388	3388						2327	7747		2327	7747		TOTAL KVA NON-CONTINUOUS	21.45
															TOTAL KVA	46.55
															TOTAL AMPS	193.96

ALL A.I.C.= 10,000  
 ALL WIRES ARE THWN-2

CALCULATED LOAD = 193.96 AMPS



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AXIS PROJECT NUMBER:  
 01-131105-188

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REVISIONS	BY

**ELECTRICAL PLAN**  
**VERIZON WIRELESS - TEXAS AREA**  
**VILLA MARIA SITE**



Axis Engineering, Inc.  
 Registration # F-004171

DRAWN BY: **JCM**  
 CONTACT: **CLF**  
 DATE: **06-04-2014**  
 CLIENT SITE NO.: **260668**

**E1**

**VERIZON WIRELESS**  
**VILLA MARIA**



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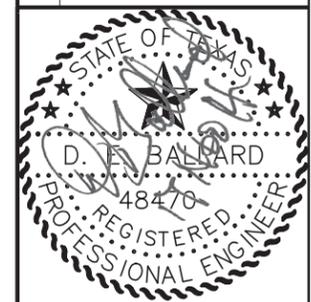
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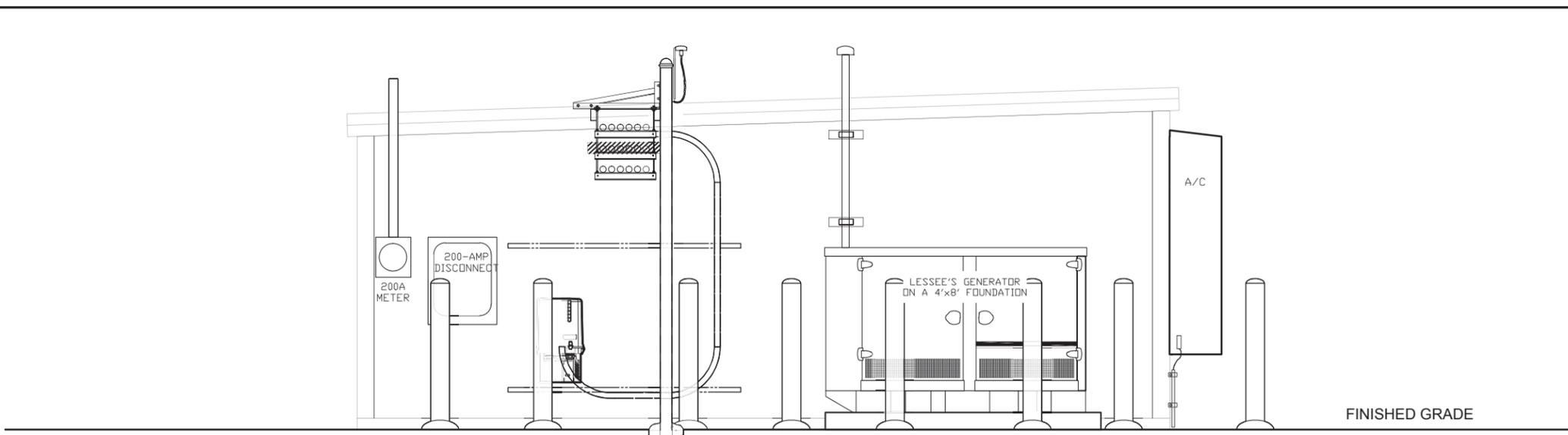
POWER BOARD DETAILS  
**VERIZON WIRELESS - TEXAS AREA**  
**VILLA MARIA SITE**



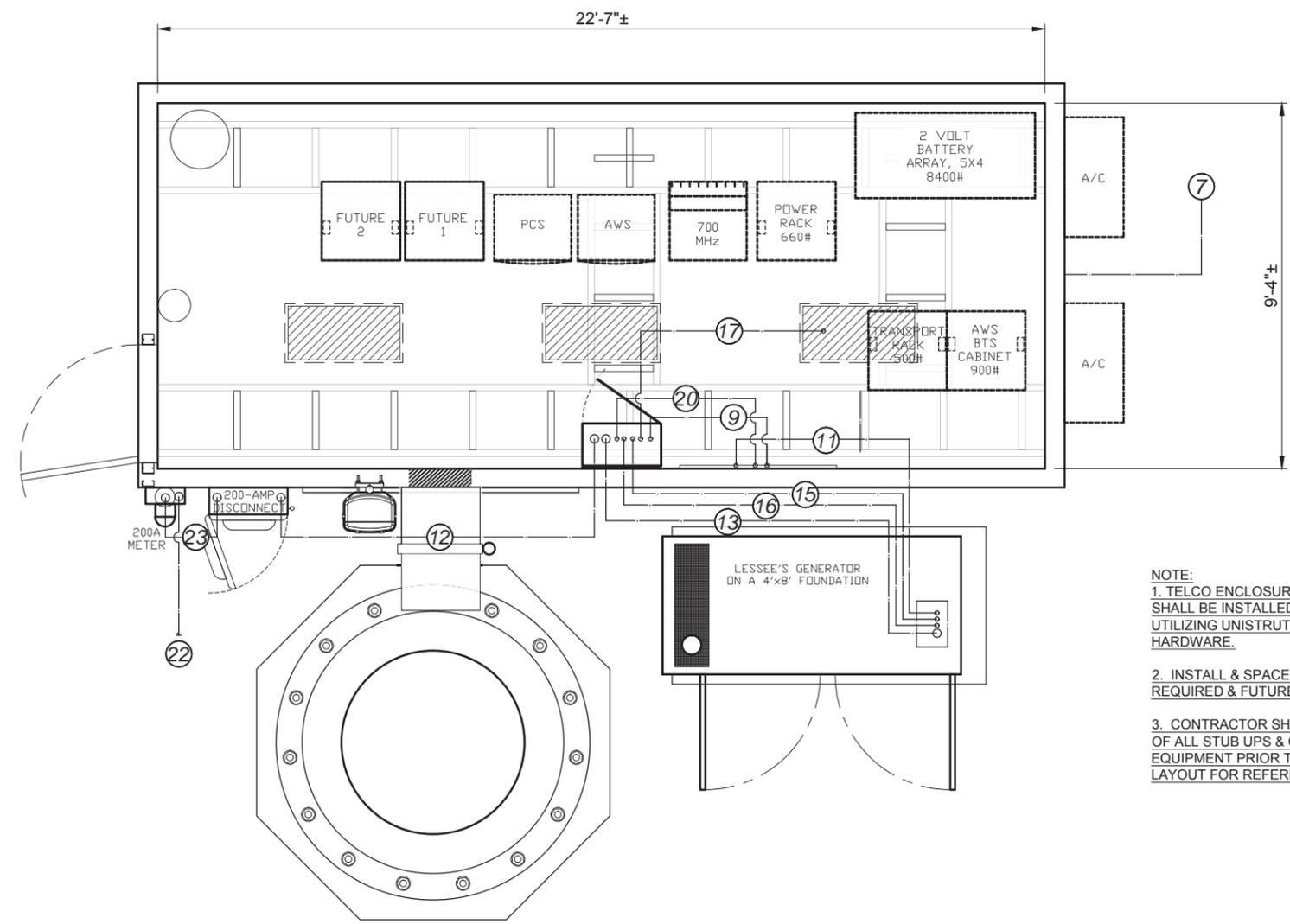
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**E2**  
**VERIZON WIRELESS**  
**VILLA MARIA**



CONDUIT SCHEDULE			
NO.	DIA.(IN.)	FROM	TO
1			
2			
3			
4			
5			
6			
7	4	FIBER SOURCE	TELCO DEMARC
8			
9	1	POWER PANEL	TELCO DEMARC GFI
10	1	TELCO DEMARC	BATTERY CABINET
11	1	TELCO DEMARC	GENERATOR
12	2	SERVICE DISC.	A.T.S.
13	2	A.T.S.	GENERATOR
14			
15	1	A.T.S.	GENERATOR
16	1	POWER PANEL	GENERATOR
17	1	POWER PANEL	SHELTER LIGHT CTRL
18			
19	1	POWER PANEL	BATTERY CABINET
20	1	A.T.S.	TELCO DEMARC
21			
22	2	POWER SOURCE	METER
23	2	METER	SERVICE DISC.
24			
25			
26			
27			
28			
29			
30			
31			
32			



- NOTE:**
1. TELCO ENCLOSURE AND SERVICE EQUIPMENT SHALL BE INSTALLED AND SUPPORTED TO RACK UTILIZING UNISTRUT AND APPLICABLE HARDWARE.
  2. INSTALL & SPACE UNISTRUTS TO SUPPORT REQUIRED & FUTURE ELECTRICAL EQUIPMENT.
  3. CONTRACTOR SHALL VERIFY EXACT LOCATION OF ALL STUB UPS & CONDUIT DROPS WITH EQUIPMENT PRIOR TO STARTING WORK. SHOWN LAYOUT FOR REFERENCE, ONLY.

**GENERAL GROUNDING NOTES:**

1. ALL GROUND RODS SHALL BE A MINIMUM 5/8"x8'-0" COPPER CLAD STEEL.
2. BELOW GROUND CONDUCTORS SHALL BE 4/0 AWG TINNED STRANDED COPPER MINIMUM.
3. GROUND RODS SHALL BE DRIVEN TO A DEPTH SUCH THAT THE TOP OF ROD IS 30" BELOW FINISHED GRADE.
4. HOLD BENDS TO A 12" MINIMUM ABOVE GROUND AND 24" BELOW GROUND.
5. A MECHANICAL JOINT WILL BE PERMITTED FOR HVAC & ELECTRICAL EQUIPMENT TO GROUND RODS.
6. GROUND ALL EXTERIOR EQUIPMENT (MISC.) TO EXTERIOR GROUND LOOP AS WELL AS PER N.E.C.
7. GROUND HVAC UNITS TO EXTERIOR GROUND RING.
8. THE EXTERNAL GROUND RING MAY TAKE THE PHYSICAL FORM OF A "C" OR AN "L" SHAPE IN CASES WHERE ALL SIDES OF THE BUILDING ARE NOT ACCESSIBLE.
9. GROUND RODS ARE TO BE PLACED ALONG GROUND RING AT NOT LESS THAN 8' NOR MORE THAN 16' APART.
10. USE 2-HOLE LUG ON ALL LEADS TO GROUND BARS OR EQUIPMENT.

**FENCE GROUNDING NOTE:**

1. ALL CORNER & GATE FENCE POSTS TO HAVE GROUNDING JUMPERS TO EQUIPMENT GROUND, 4/0 AWG TINNED STRANDED COPPER GROUND LEAD.
2. INSTALL A STANDARD GROUND ROD BETWEEN THE FENCE POST & GROUND RING, IF DISTANCE FROM POST TO RING IS GREATER THAN 16'.

**CONNECTION JOINT PREPARATION:**

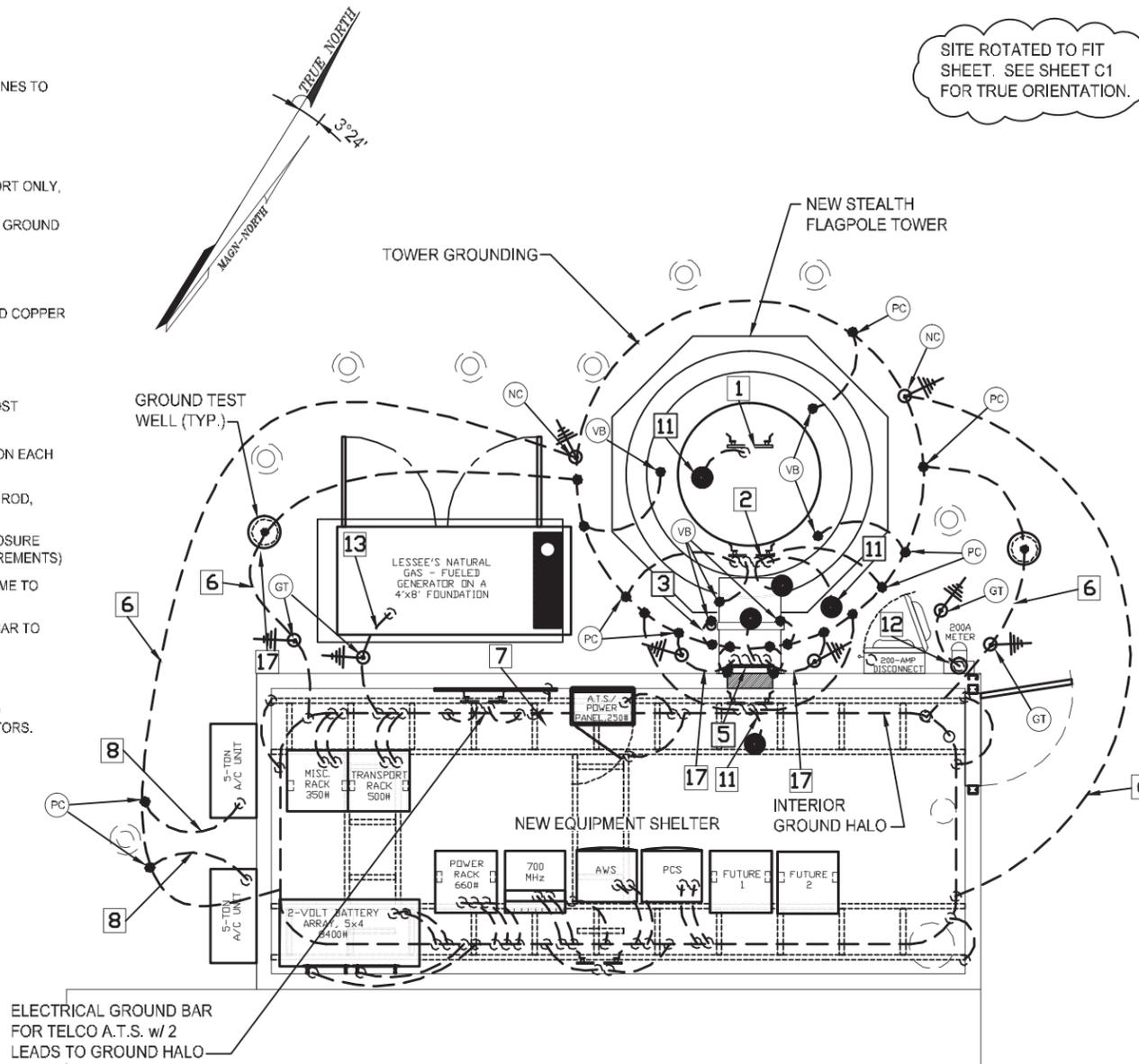
THE SURFACES OF EACH CONDUCTOR TO BE CONNECTED ARE TO BE WELL-CLEANED, REMOVING ALL PAINT, DIRT & CORROSION IN THE AREA OF CONNECTION BEFORE EACH JOINT IS MADE, WHETHER IT BE A MECHANICAL OR WELDED JOINT. AFTER MECHANICAL JOINTS ARE COMPLETED, APPLICATION OF AN ANTIOXIDANT COMPOUND, SUCH AS "NO-OX" OR EQUIVALENT, IS RECOMMENDED. WHEN USING NON-WELDED MECHANICAL CONNECTIONS, SUCH AS BOLT-ON LUGS, THE FOLLOWING PROCEDURES SHALL BE FOLLOWED:

1. TO ENSURE GOOD ELECTRICAL CONTACT, THE MATING SURFACES SHOULD BE CLEAN AND FLAT.
2. 2-HOLE LUGS ARE REQUIRED ON ALL #2 AWG OR LARGER GROUND LEADS MECHANICALLY ATTACHED TO THE MASTER GROUND BAR, ISOLATED GROUND BAR, AND EXTERNAL GROUND BAR, AND ARE PREFERRED FOR OTHER GROUNDING LEADS WHERE THE SIZE OF THE WIRE (#6 OR LARGER) MIGHT EXERT ENOUGH STRESS ON THE LUG TO LOOSEN A SINGLE MOUNTING BOLT.
3. STAINLESS STEEL MOUNTING HARDWARE (NUTS, BOLTS, ETC.) IS REQUIRED ON ALL OUTSIDE CONNECTIONS AS WELL AS ON THE M.G.B. AND I.G.B., AND IS PREFERRED FOR ALL OTHER GROUND LEADS. LUGS MAY BE TINNED RATHER THAN STAINLESS.
4. THE LUG HOLES & STAINLESS BOLT SIZES ARE TO BE CHOSEN TO MATCH THE MOUNTING HOLE SIZES, SO THAT THERE IS MINIMAL PLAY IN THE MECHANICAL ASSEMBLY PRIOR TO TIGHTENING THE NUTS. SPLIT RING TYPES LOCK WASHERS SHOULD BE USED TO PREVENT THE NUTS FROM LOOSENING.

M.G.B. = MASTER GROUND BAR  
E.G.B. = EXTERNAL GROUND BAR  
I.G.B. = ISOLATED GROUND BAR

**DIAGRAM NOTES:**

- 1 COAX COLLECTOR GROUND BAR ATTACHED DIRECTLY TO TOWER. MAXIMUM SPACING BETWEEN GROUND BARS TO BE 75'.
- 2 TOWER GROUND BAR - DROP 2 ~ #2 TIN-PLATED SOLID COPPER GROUND LINES TO TOWER LOOP BELOW.
- 3 GROUND ICE BRIDGE POSTS TO GROUND LOOP.
- 4 COAX TRAY : 1 ~ #2 SOLID COPPER JUMPER AT EACH END.
- 5 GROUND BAR ATTACHED TO SHELTER WITH ISOLATORS AT USED COAX PORT ONLY, WITH 2~#2 TIN-PLATED SOLID COPPER GROUND WIRES TO GROUND LOOP.
- 6 INTERIOR GROUND HALO : RUN 1 ~ #2 LINE AT EACH CORNER OF INTERIOR GROUND HALO TO EXTERIOR GROUND LOOP. (SEE DETAIL 7 SHEET G2)
- 7 1~#2 TIN-PLATED SOLID COPPER GROUND WIRE FROM DEMARC TO GROUND BAR. (VERIFY MFGR.'S REQUIREMENTS)
- 8 GROUND AIR CONDITIONER TO LOOP BELOW WITH 1 ~ #2 TIN-PLATED SOLID COPPER DROP. CONNECT TO A/C FRAME WITH 2-HOLE LUG.
- 9 CORNER FENCE POSTS : GROUND ALL CORNER FENCE POSTS. (SEE DETAIL "N" THIS SHEET)
- 10 GROUND GATE POSTS AS PER DETAIL "M" THIS SHEET. CONNECT GATE POST GROUND RODS WITH #2 TIN-PLATED SOLID COPPER JUMPER.
- 11 COAX GROUND LEADS TO GROUND BAR, SEE G-2. PROVIDE GROUND BAR ON EACH EXISTING TOWER GROUND BAR. (SEE 2)
- 12 GROUND PRIMARY ELEC. SERVICE ENTRANCE TO INDEPENDENT GROUND ROD, PER N.E.C.
- 13 1~#2 TIN-PLATED SOLID COPPER GROUND WIRE FROM GENERATOR ENCLOSURE SERVICE ENTRANCE TO SHELTER GROUND RING. (VERIFY MFGR.'S REQUIREMENTS)
- 14 1~#2 TIN-PLATED SOLID COPPER GROUND WIRES FROM UTILITY RACK FRAME TO GROUND BAR.
- 15 2~#2 TIN-PLATED SOLID COPPER GROUND WIRE FROM MASTER GROUND BAR TO GROUND LOOP. (VERIFY MFGR.'S REQUIREMENTS)
- 16 UNUSED PORTS NOT GROUNDED.
- 17 2~#2 TIN-PLATED SOLID COPPER GROUND WIRE FROM EXTERIOR GROUND BAR TO GROUND LOOP. ATTACH GROUND BAR TO SHELTER USING ISOLATORS.



**TYPICAL EQUIPMENT GROUNDING DIAGRAM**  
NOT TO SCALE

**SERVICE GROUNDING**  
SERVICE ENTRANCE POINT (METER) SHALL HAVE 2 SEPARATE #2 TIN-PLATED SOLID GROUND LEADS, EACH TO AN INDEPENDENT 8' GROUND ROD LOCATED A MINIMUM OF 6' APART.

ALL LINES SHOWN SHALL BE #2 TIN-PLATED UNLESS OTHERWISE IDENTIFIED.

- GROUND LEAD NOTES:**
1. DROP GROUND WIRES VERTICALLY TO GRADE AS CLOSE TO GROUNDED ITEM AS POSSIBLE AND SECURE LEADS TO NEW STRUCTURE TO MAINTAIN ALIGNMENT.
  2. IF GROUND CLEARANCE BELOW SHELTER IS LESS THAN 12", RUN BARE WIRE TO GRADE.
  3. IF GROUND CLEARANCE BELOW SHELTER IS GREATER THAN 12", RUN GROUND LEADS IN 1/2"Ø PVC, SECURED TO NEW STRUCTURE TO MAINTAIN ALIGNMENT.

**GROUNDING SYMBOLS LEGEND**

- MECHANICAL CONNECTION (TWO-HOLE LUGS TYP. OR BURNDY CRIMP)
- ⊕ 5/8"Ø X 8'-0" GALVANIZED STEEL GROUND ROD CAD WELDED TO GROUND LOOP.
- ⊙ INSPECTION WELL, ALT PRODUCTS #3198-36 12"Øx36" DEEP, OR EQUAL.
- ⊙ EXOTHERMIC CONNECTION WELD (LETTER DENOTES CAD WELD CONNECTION TYPE).
- 6 GROUNDING NOTES, THIS SHEET (TYP.)
- NC GROUNDING CONNECTIONS (TYP.) SEE SHEET G3.

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GROUNDING PLAN & DETAILS

**VERIZON WIRELESS - TEXAS AREA**

**VILLA MARIA SITE**

Axis Engineering, Inc.  
Registration # F-004171

DRAWN BY: **JCM**

CONTRACT: **CLF**

DATE: **06-04-2014**

CLIENT SITE No. **260668**

**G1**

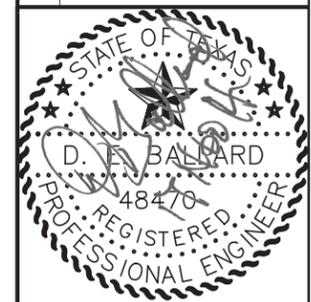
**VERIZON WIRELESS**  
**VILLA MARIA**

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GROUNDING DETAILS

**VERIZON WIRELESS - TEXAS AREA**

**VILLA MARIA SITE**

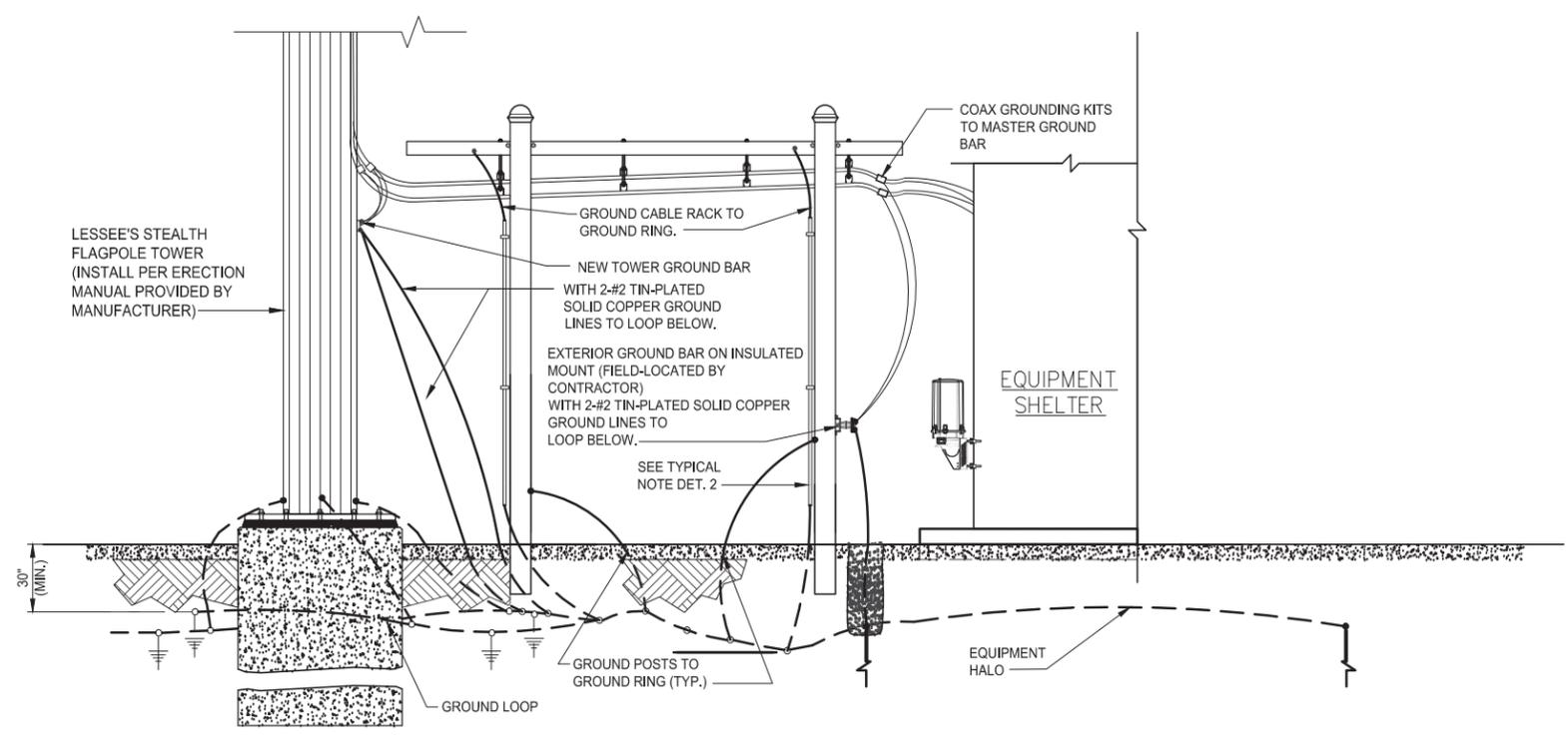


Axis Engineering, Inc.  
Registration # F-004171

DRAWN BY:	JCM
CONTACT:	CLF
DATE:	06-04-2014
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**G2**

**VERIZON WIRELESS**  
**VILLA MARIA**

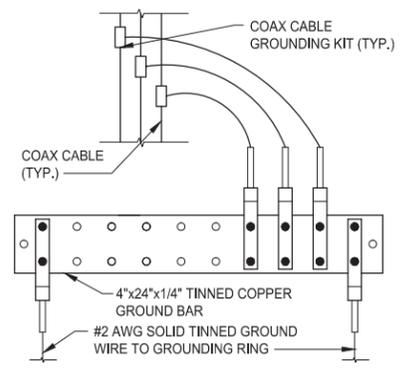


**1** GROUNDING FOR MONOPOLE TOWER  
NOT TO SCALE

NOT USED

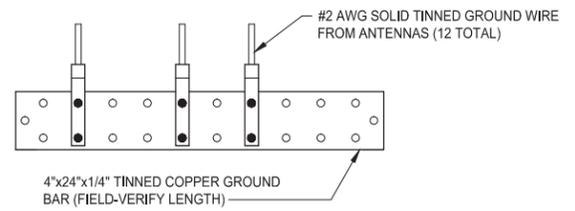
**2** NOT USED  
NOT TO SCALE

- NOTE:**
- 1 FOR GROUND BOND TO STEEL ONLY. INSERT A TOOTH WASHER BETWEEN LUG & STEEL COAT ALL SURFACES W/ KOPR-SHIELD.
  - 2 ALL HOLES ARE COUNTERSUNK 1/16" .
  - 3 USE "KOPR-SHIELD" ANTI-OXIDATION GREASE ON ALL MECHANICAL CONNECTIONS.
  - 4 ATTACH TOWER GROUND BARS DIRECTLY TO TOWER WITH ISOLATORS.

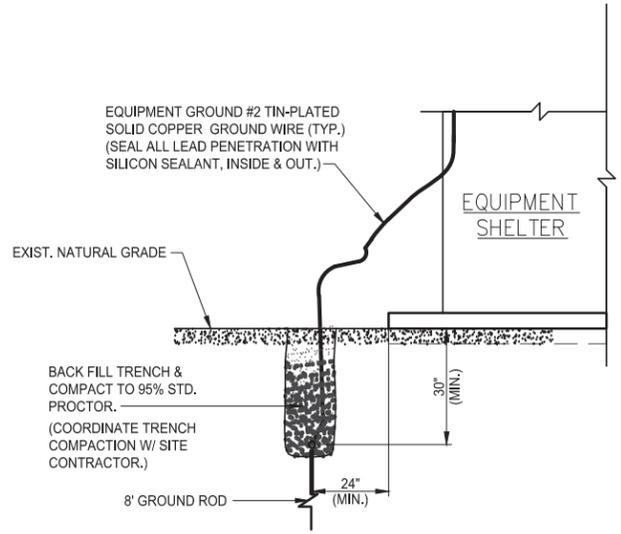


**4** TOWER GROUND BAR  
NOT TO SCALE BOTTOM TOWER

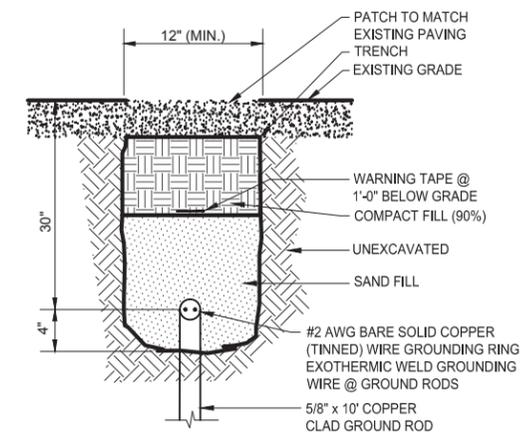
- NOTE:**
- 1 FOR GROUND BOND TO STEEL ONLY. INSERT A TOOTH WASHER BETWEEN LUG & STEEL COAT ALL SURFACES W/ KOPR-SHIELD.
  - 2 ALL HOLES ARE COUNTERSUNK 1/16" .
  - 3 USE "KOPR-SHIELD" ANTI-OXIDATION GREASE ON ALL MECHANICAL CONNECTIONS.
  - 4 ATTACH TOWER GROUND BARS DIRECTLY TO TOWER WITHOUT USING ISOLATORS.
  - 5 SPACE GROUND BARS A MAX. OF 75' APART ON TOWER.



**5** COLLECTOR GROUND BAR  
NOT TO SCALE TOP OF TOWER



**3** GROUNDING PROFILE  
NOT TO SCALE



**6** GROUND RING TRENCH  
NOT TO SCALE

**GENERAL GROUNDING NOTES**

1. ALL GROUND RODS SHALL BE A MIN. 5/8"x8'-0" GALVANIZED STEEL.
2. BELOW GROUND CONDUCTORS SHALL BE #2 AWG TIN-PLATED SOLID COPPER MIN.
3. GROUND RODS SHALL BE DRIVEN TO A DEPTH SUCH THAT THE TOP OF ROD IS 30" BELOW FINISHED GRADE.
4. HOLD BENDS TO AN 12" MIN. ABOVE GROUND AND 24" BELOW GROUND.
5. A MECHANICAL JOINT WILL BE PERMITTED FROM HVAC & ELECTRICAL EQUIPMENT TO GROUND RODS.
6. GROUND ALL EXTERIOR EQUIPMENT (MISC.) TO EXTERIOR GROUND LOOP AS WELL AS PER N.E.C.
7. GROUND HVAC UNITS TO EXTERIOR GROUND RING.
8. THE EXTERNAL GROUND RING MAY TAKE THE PHYSICAL FORM OF A "C" OR AN "L" SHAPE IN CASES WHERE ALL SIDES OF THE BUILDING ARE NOT ACCESSIBLE.
9. GROUND RODS ARE TO BE PLACED ALONG GROUND RING AT NOT LESS THAN 8 FEET APART.
10. USE 2-HOLE LUG ON ALL LEADS TO MASTER GROUND BAR.

**FENCE GROUNDING NOTE**

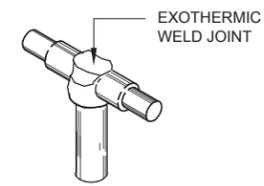
- 1.) ALL FENCE POSTS WITHIN 25' OF THE TOWER GROUND RING OR WITHIN 6' OF THE EQUIPMENT GROUND RING ARE TO BONDED TO THE APPROPRIATE GROUND RING WITH A #2 SOLID COPPER, TINNED GROUND LEAD.
- 2.) INSTALL A STANDARD GROUND ROD BETWEEN THE FENCE POST AND GROUND RING.

**CONNECTION JOINT PREPARATION**

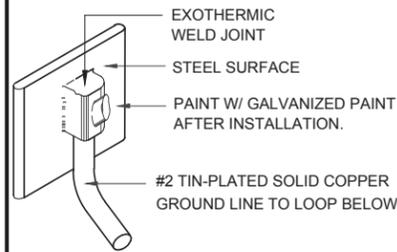
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1. TO ENSURE GOOD ELECTRICAL CONTACT, THE MATING SURFACES SHOULD BE CLEAN AND FLAT.
2. TWO-HOLED LUGS ARE REQUIRED ON ALL #2 AWG OR LARGER GROUND LEADS MECHANICALLY ATTACHED TO THE M.G.B., I.G.B., AND E.G.B., AND ARE PREFERRED FOR OTHER GROUNDING LEADS WHERE THE SIZE OF THE WIRE (#6 AWG OR LARGER) MIGHT EXERT ENOUGH STRESS ON THE LUG TO LOOSEN A SINGLE MOUNTING BOLT.
3. STAINLESS STEEL MOUNTING HARDWARE (NUTS, BOLTS, ETC.) IS REQUIRED ON ALL OUTSIDE CONNECTIONS AS WELL AS ON THE M.G.B. AND I.G.B., AND IS PREFERRED FOR ALL OTHER GROUND LEADS. LUGS MAY BE TINNED RATHER THAN STAINLESS.
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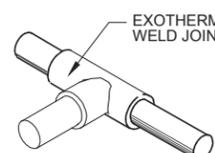
M.G.B. = MASTER GROUND BAR  
E.G.B. = EXTERNAL GROUND BAR  
I.G.B. = ISOLATED GROUND BAR



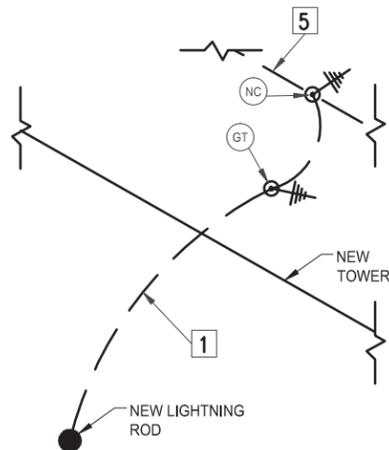
**TYPE - GT**  
TEE / HORIZONTAL CABLE,  
VERTICAL ROD



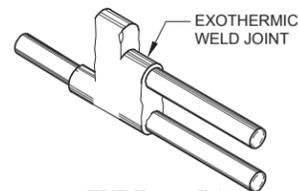
**TYPE - VB**  
TAP / VERTICAL TO STEEL,  
CABLE DOWN AND OFF SURFACE



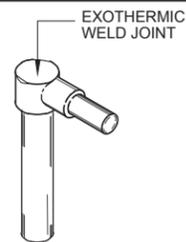
**TYPE - TA**  
TEE / HORIZONTAL



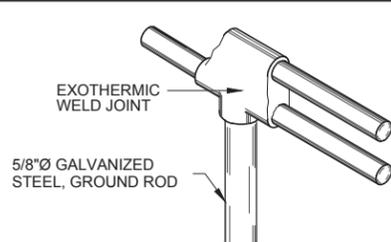
**TYPICAL LIGHTNING  
ROD INSTALLATION**  
NOT TO SCALE



**TYPE - PC**  
PARALLEL TAP / HORIZONTAL  
OVER AND UNDER, TAP ON TOP



**TYPE - GR**  
HORIZONTAL CABLE TO  
VERTICAL DOWN ROD-RIGHT ANGLE

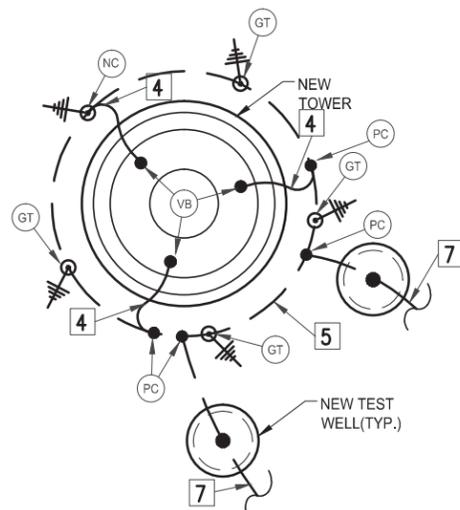


**TYPE - NC**  
TEE / HORIZONTAL THRU AND TAP CABLES,  
VERTICAL DOWN ROD

**DIAGRAM NOTES :**

- 1 1-#2 TIN-PLATED SOLID COPPER GROUND WIRE FROM LIGHTNING ROD TO GROUND ROD AND THEN TIE TO GROUND LOOP (VERIFY MFGR.'S REQUIREMENTS). LEAD IS TO TAKE A PATH TO GROUND INDEPENDENT OF ALL NEW CABLING, CONDUIT, OTHER GROUND LEADS, ETC. CLIP LEAD TO TOWER MEMBERS AS REQUIRED.
- 2 3-#2 TIN-PLATED SOLID COPPER GROUND WIRES FROM EACH LEG OF A SELF-SUPPORTING TOWER TO THE TOWER GROUND LOOP. CADWELDED TO LEG BASE PLATE.
- 3 3-#2 TIN-PLATED SOLID COPPER GROUND WIRES FROM AT 120° SEPARATION AT THE BASE OF A GUY TOWER TO THE TOWER GROUND LOOP.
- 4 3-#2 TIN-PLATED SOLID COPPER GROUND WIRES FROM AT 120° SEPARATION 12" ABOVE THE BASE OF A MONOPOLE TO THE TOWER GROUND LOOP.

- 5 #2 TIN-PLATED SOLID COPPER TOWER GROUND LOOP.
- 6 2-HOLE BURNDY CRIMP LUGS. INSTALL PER TOWER MANUFACTURER'S RECOMMENDATIONS.
- 7 #2 TIN-PLATED SOLID COPPER FROM TOWER GROUND LOOP TO EQUIPMENT GROUND LOOP.
- 8 CORNER FENCE POSTS : GROUND ALL CORNER FENCE POSTS. SEE DETAIL "N" SHEET G1.
- 9 GROUND GATE POSTS AS PER DETAIL "M" SHEET G1.
- 10 CLAMP 1-#2 GREEN STRANDED COPPER GROUND WIRE TO EACH GUY WIRE AND THEN TO GUY ANCHOR GROUND LOOP.

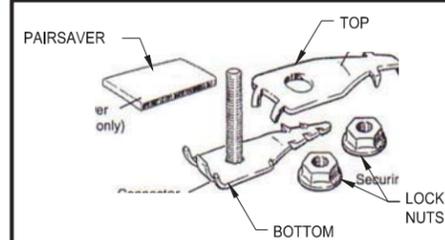


**TYPICAL FLAGPOLE TOWER GROUNDING**  
NOT TO SCALE

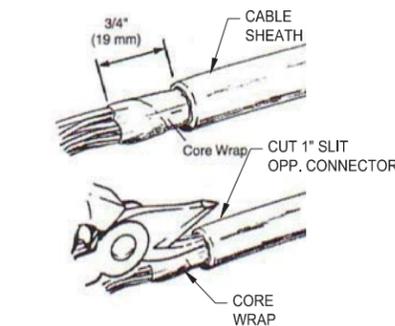
ALL LINES SHOWN SHALL BE #2 TIN-PLATED UNLESS OTHERWISE IDENTIFIED.

**GROUNDING SYMBOLS LEGEND**

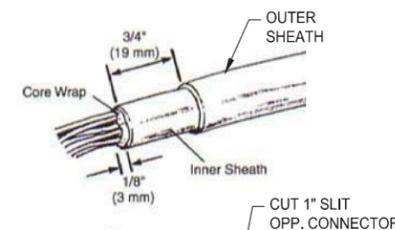
- MECHANICAL CONNECTION (TWO-HOLE LUGS (TYP.))
- 5/8"Ø X 8'-0" GALVANIZED STEEL GROUND ROD CAD WELDED TO GROUND LOOP.
- INSPECTION WELL, ALT PRODUCTS #3198-36 12"Øx36" DEEP, OR EQUAL.
- EXOTHERMIC CONNECTION WELD (LETTER DENOTES CAD WELD CONNECTION TYPE.)



**① COMPONENTS**



**② CABLE STRIPPING**  
SINGLE SHEATH CABLE



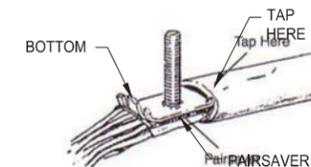
**③ CABLE STRIPPING**  
DOUBLE SHEATH CABLE

**INSTALLATION DETAILS**

**④ INSTALL PAIRSAVER**  
INSERT OPPOSITE 1" SLIT BETWEEN OUTER SHEATH AND INNER CORE

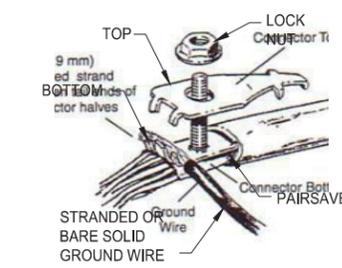
**TELEPHONE CABLE GROUNDING CONNECTOR DETAILS**

USE 3M SCOTCHLOCK CONNECTOR 4460-D, 4460-DS, OR APPROVED EQUIVALENT. EXAMINE MANUFACTURER'S DOCUMENTATION TO VERIFY INSTALLATION PROCEDURE. GROUNDING CONNECTOR TO BE INSTALLED AT BOTH ENDS OF EACH CABLE.

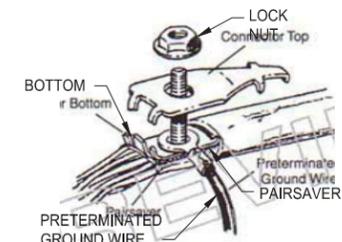


**⑤ INSTALL BOTTOM PART**

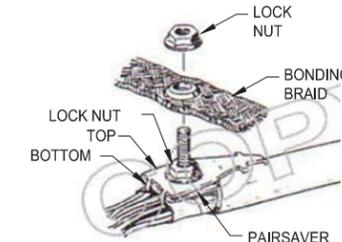
INSERT UP TO STOPS & TAP TO SET TEETH.



**⑥ CLAMP GROUND**



**⑦ CLAMP GROUND**



**⑧ CLAMP GROUND**  
TORQUE LOCK NUTS TO 30-35 in.-lb.s

14123 CICERO ROAD  
HOUSTON, TX 77095  
PHONE: (713) 507-1650  
FAX: (713) 507-1618

**AXIS Engineering, Inc.**  
Wireless Site Design and Engineering  
www.axisengineering.net  
6200 ROTHWAY STREET, SUITE 140  
HOUSTON, TEXAS 77040  
PHONE: 713-460-9902 FAX: 713-690-5037

AXIS PROJECT NUMBER:  
01-131105-188

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REVISIONS	BY
△	
△	
△	

TELCO GROUNDING DETAILS

**VERIZON WIRELESS - TEXAS AREA**

**VILLA MARIA SITE**

Axis Engineering, Inc.  
Registration # F-004171

DRAWN BY: **JCM**  
CONTACT: **CLF**  
DATE: **06-04-2014**  
CLIENT SITE No.: **260668**

**G3**

**VERIZON WIRELESS**  
**VILLA MARIA**

## GENERAL NOTES:

- COORDINATE ACCESS AND WORK SCHEDULES WITH VERIZON.
- ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE DRAWINGS AND SPECIFICATIONS INCLUDED WITHIN.
- CONTRACTOR SHALL PROVIDE ADEQUATE FACILITIES IN ACCORDANCE WITH ALL LOCAL AND NATIONAL SAFETY CODES.
- DISCREPANCIES FOUND IN THE FIELD SHOULD BE CALLED TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH ANY WORK.
- CONTRACTOR SHALL REVIEW AND BE FAMILIAR WITH THE EXISTING SITE CONDITIONS AS WELL AS THOSE PROPOSED PRIOR TO STARTING ANY WORK.
- CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. ANY CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY. THE CONTRACTOR SHALL CONTACT "TEXAS ONE CALL" 48 HOURS PRIOR TO PERFORMING BY CALLING (1-800-245-4545). ANY UTILITIES DAMAGED BY CONSTRUCTION OR RELATED TRAFFIC WILL BE REPAIRED BY THE CONTRACTOR AT HIS SOLE EXPENSE.
- THE COMPOUND PAVING SHALL BE INSTALLED AS SPECIFIED IN THESE DOCUMENTS.

## EXCAVATION AND FILL:

- UNLESS INDICATED OTHERWISE, PROJECT SITE AREAS OUTSIDE OF PLATFORMS SHALL BE GIVEN UNIFORM SLOPES BETWEEN POINTS FOR WHICH FINISHED GRADES ARE SHOWN OR BETWEEN SUCH POINTS AND EXISTING ESTABLISHED GRADE. IF NO GRADES ARE GIVEN THE SITE SHALL NOT HAVE A SLOPE GREATER THAN 0.3" PER FOOT. CARE SHALL BE TAKEN TO SALVAGE THE EXISTING LIMESTONE AND REGRADE THE EXISTING SITE WITH THE SALVAGE LIMESTONE.
- MATERIAL TO BE EXCAVATED SHALL BE NON-CCLASSIFIED AND SHALL INCLUDE ALL MATERIALS ENCOUNTERED IN EXCAVATING AND GRADING. THE CONTRACT PRICE IS UNDERSTOOD TO COVER THE REMOVAL OF ALL SUCH MATERIALS TO THE DEPTH AND EXTENT INDICATED ON THE DRAWING AND AS HEREIN SPECIFIED.
- REMOVE FROM THE SITE ALL DEBRIS AND EXCAVATED MATERIALS.
- ALL FILL MATERIAL SHALL BE SELECT FILL CONSISTING OF A CLAYEY SAND OR A SANDY CLAY WHOSE PLASTICITY INDEX IS LESS THAN 20 AND SHALL BE FREE FROM DEBRIS AND ALL OTHER DELETERIOUS MATERIALS, INCLUDING VEGETATION.
- MATERIAL AT THIS SITE IS NOT CONSIDERED SUITABLE FOR FILL, UNLESS CLASSIFIED BY THE PROJECT ENGINEER.
- PLACE SELECT FILL IN UNIFORM LAYERS OF NOT MORE THAN 8" LOOSE LAYERS. COMPACT EACH LAYER TO A MINIMUM OF 95% OF THE MAXIMUM DRY UNIT WEIGHT PER ASTM D-698 AT +3% OPTIMUM MOISTURE CONTENT PRIOR TO PLACING NEXT LAYER.
- VERIZON HAS THE RIGHT TO REQUEST TESTS OF THE SELECT FILL COMPACTION OF FILL BY A SOIL ENGINEER. SUCH TESTS SHALL BE PAID FOR BY VERIZON.
- WORK PERFORMED THAT DOES NOT CONFORM TO THESE SPECIFICATIONS OR DRAWINGS, IN THE SOIL ENGINEERS OPINION, SHALL BE REMOVED OR REWORKED AS REQUIRED BY THE SOIL ENGINEER WITHOUT INCREASE IN CONTRACT PRICE.

## TRENCHING AND FILL:

- EXCAVATION SHALL BE BY OPEN CUT FROM THE SURFACE. NO TUNNELING WILL BE ALLOWED. ALL EXCAVATION SHALL BE "UNCLASSIFIED" AND THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL FROM THE SITE OF ALL EXCAVATED MATERIAL.
- TRENCH SHALL BE BACK FILLED WITH CEMENT-STABILIZED SAND (MINIMUM OF 1 1/2 SACKS OF PORTLAND CEMENT PER CUBIC YARD), BACK FILL OF PIPING, CATCH BASINS AND MANHOLES SHALL BE PLACED EVENLY AND CAREFULLY AROUND AND OVER THE PIPE IN 1 INCH MAXIMUM LAYERS UNTIL ONE (1) FOOT OF THE COVER EXISTS OVER THE PIPE. THE REMAINDER OF THE BACK FILL SHALL BE PLACED AND COMPACTED IN MAXIMUM ONE (1) FOOT LAYERS. PLACE CEMENT SAND MATERIAL AT OPTIMUM MOISTURE CONTENT AND IN LAYERS NOT TO EXCEED 12 INCHES MEASURED LOOSE. COMPACT WITH MECHANICAL HAND TAMPS TO AT LEAST 95 % OF AASHTO DENSITY TEST METHOD T-99.
- POCKETS EXISTING IN THE NATURAL GROUND THAT ARE WITHIN THREE (3) FEET OF A STRUCTURAL FOUNDATION SHALL BE FILLED WITH CEMENT-STABILIZED SAND AS SPECIFIED IN ITEM "2" UNDER TRENCHING AND FILL. BACK FILL SHALL BE PLACED IN ONE(1) FOOT LAYERS AND COMPACTED AS SPECIFIED IN ITEM "2".

## SITE PREPARATION:

IN ORDER TO MINIMIZE THE CONSTRUCTION PROBLEMS WHICH MAY DEVELOP IF ATTEMPTS ARE MADE TO WORK THE SURFACE SOILS FOLLOWING PROLONGED PERIODS OF RAINFALL, THE CONTRACTOR SHALL PROVIDE PROPER CONSTRUCTION DRAINAGE TO MAINTAIN A RELATIVELY DRY CONSTRUCTION SITE PRIOR TO STARTING ANY WORK AT THE SITE.

## CONCRETE NOTES:

- THE STRUCTURAL ADEQUACY TO THE FORMS, TIES, SHORING, AND BRACING SHALL CONFORM TO THE REQUIREMENTS OF ACI STANDARD 347.
- DETAILING AND FABRICATION OF CONCRETE REINFORCEMENT AND ACCESSORIES SHALL BE IN ACCORDANCE WITH ACI-315, LATEST EDITION.
- LAP ALL CONTINUOUS BARS 36 BAR DIAMETERS AT SPLICES UNLESS OTHERWISE NOTED.
- SUPPORT SLAB REINFORCEMENT ON CHAIRS AND PIER REINFORCEMENT ON SLEDS.
- FINISHED SURFACE OF FLOOR SLABS SHALL BE PLACED TO A CLASS "A" FINISH (1/8" / 10'-0" : DETERMINED BY A 10' STRAIGHT EDGE PLACED ANYWHERE ON SLAB IN ANY DIRECTION).
- COMPONENT MATERIALS
  - CEMENT: PORTLAND; ASTM C-150 TYPE 1 NON-ALKALINE FOR GRADE BEAMS, SLABS, FLAT WORK, AND PIERS. USE ONLY ONE BRAND OF CEMENT.
  - FINE AGGREGATES: WASHED, NATURAL SAND OR MANUFACTURED SAND CONFORMING TO ASTM-C-33.
  - CONCRETE AGGREGATES: GRAVEL, CRUSHED GRAVEL, OR CRUSHED STONE CONFORMING TO ASTM-C-33.
  - MAXIMUM AGGREGATE SIZE: GENERAL-NOT LARGER THAN ONE-FIFTH OF THE NARROWEST DIMENSIONS BETWEEN FORMS OF THE MEMBER FOR WHICH THE CONCRETE IS TO BE USED, OR LARGER THAN THREE-FOURTHS OF THE MINIMUM CLEAR SPACING BETWEEN REINFORCING BARS.
  - MIXING WATER: POTABLE AND CLEAN.
- CONCRETE MIXES AND STRENGTHS
 

AGGR. STRENGTH	MAX. WATER/CEMENT RATIO	SLUMP	
1) 3000PSI 1 1/2" MAX.	0.53	4 1/2"	
2) 4000PSI 1" MAX.	0.48	4 1/2" - 8"+/-1"	W/APPR. SUP. PLAST.
3) 5000PSI 3/4" MAX.	0.40	8"+/-1"	W/APPR. SUPER PLASTICIZER

  - PUMP MIX, 1:2:2.8 BY SSD WEIGHT, +/- 10%
  - ALL CONCRETE PLACED UNDER SLURRY MUST BE 5000 PSI AND CONTAIN:
    - MIN. 650 POUNDS OF CEMENTITIOUS MATERIAL PER CUBIC YARD OF CONCRETE.
    - ADEQUATE RETARDER TO PRODUCE 5" OR GREATER SLUMP AFTER 4 HOURS.
  - REFER TO STRUCTURAL DRAWINGS FOR SCHEDULES. IF NO STRENGTHS ARE GIVEN FOR CERTAIN ITEMS, USE 5,000 PSI MIN.
- ADMIXTURES
  - OPTIONAL USE: ADMIXTURES MAY BE USED TO ACHIEVE THE REQUIRED PROPERTIES OF THE CONCRETE OR TO IMPROVE THE WORKABILITY PROVIDED THEY COMPLY WITH THESE SPECIFICATIONS.
  - APPROVAL: SUBMIT WRITTEN DATA FOR APPROVAL BEFORE USING ADMIXTURES. DATA SHALL GIVE ASTM CLASSIFICATION, BASIC INGREDIENT, AND INSTRUCTIONS FOR USE. (CALCIUM CHLORIDE MAY NOT BE USED).
  - CLASSIFICATION: CONFORM TO APPROPRIATE STANDARDS OF ASTM C-494 AS FOLLOWS:
    - TYPE A: WATER REDUCING
    - TYPE B: RETARDING
    - TYPE C: ACCELERATING
    - TYPE D: WATER REDUCING AND RETARDING COMBINATION
    - TYPE E: WATER REDUCING AND ACCELERATING COMBINATION.
    - TYPE F: WATER REDUCING, HIGH RANGE ADMIXTURES (HRWR)
    - TYPE G: WATER REDUCING, HIGH RANGE, AND RETARDING ADMIXTURES,(HRWR)
  - AIR-ENTRAINED ADMIXTURES: CONFORM TO ASTM C-260 OR AIR-ENTRAINED CEMENT ASTM C-175 TYPE 1A.
    - AMOUNT: 3% FOR 3/4 INCH AGGREGATE
    - TOLERANCES: PLUS/MINUS 1% PER ASTM C-231 OR C-138.
  - THE FOLLOWING ADMIXTURE BRANDS ARE APPROVED FOR USE. OTHERS REQUIRE THE OWNER'S WRITTEN APPROVAL.
    - MASTER BUILDERS
    - SKA CHEMICAL COMPANY
    - UNION CARBIDE
    - W.R. GRACE
    - PROTEX INDUSTRIES
    - SONNEBORN BUILDING PRODUCTS
    - CORMIX
    - MONEX RESOURCES
  - FLY ASH: ASTM C-618
 

NOTE:  
FLY ASH SHALL BE USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. TYPE "C" FLY ASH CONFORMING TO ASTM-C-618 @15% TO 20% AS REQUIRED. USE TYPE "F" FLY ASH CONFORMING TO ASTM-C-618 FOR SULFATE ENVIRONMENTS.
- TEMPERATURE
  - COLD WEATHER
    - WHEN DEPOSITING CONCRETE AT FREEZING OR NEAR FREEZING TEMPERATURES, THE CONCRETE SHALL HAVE A TEMPERATURE OF AT LEAST 50 .
    - THE CONCRETE SHALL BE MAINTAINED AT A TEMPERATURE OF AT LEAST 50 FOR NOT LESS THAN 72 HOURS AFTER PLACING OR UNTIL THE CONCRETE IS THOROUGHLY SET AND HARDENED.
    - WHEN NECESSARY, CONCRETE MATERIAL SHALL BE HEATED BEFORE PLACING.
    - CONCRETE SHALL NOT BE PLACED WHEN THE TEMPERATURE IS AT 40 AND FALLING, BUT MAY BE PLACED WHEN TEMP. IS 32 AND RISING.
  - HOT WEATHER
    - WHEN AMBIENT AIR TEMPERATURE IS 85 OR ABOVE, RETARDER SHALL BE ADDED TO MIX.
    - TEMPERATURE OF CONCRETE MIX WITHOUT RETARDER SHALL NOT EXCEED 90.
    - TEMPERATURE OF CONCRETE MIX WITH RETARDER SHALL NOT EXCEED 100
    - CONCRETE MIXES WHICH EXCEED THE SPECIFIED TEMPERATURES WILL BE REJECTED.
- HANDLING
  - TRANSPORTATION OPERATIONS SHALL CONFORM TO ASTM C-94.
  - DO NOT ADD WATER TO THE MIX AFTER THE TRUCK HAS LEFT PLANT UNLESS AUTHORIZED BY OWNER AUTHORIZED MATERIAL INSPECTOR.
  - USE NO CONCRETE WHICH HAS BEEN HELD IN MIXER MORE THAN ONE HOUR UNLESS APPROVED RETARDING ADMIXTURES HAVE BEEN ADDED.
  - RETEMPERING OF PARTIALLY HARDENED CONCRETE WILL NOT BE PERMITTED.
- DEPOSITING CONCRETE
 

NOTE: APPLICABLE INSPECTOR SHALL BE NOTIFIED AT LEAST 24 HRS. PRIOR TO ANY CONCRETE POUR.

  - SOIL BOTTOMS FOR FOOTING AND SLABS SHALL BE APPROVED BY THE OWNER OR HIS REPRESENTATIVE BEFORE PLACING CONCRETE.
    - NO FOUNDATIONS SHALL BE PLACED ON BACK FILLED SOILS EXCEPT AS SPECIFIED IN EXCAVATION AND FILL.
  - REMOVE WATER AND ALL FOREIGN MATTER FROM FORMS AND EXCAVATIONS. UNLESS OTHERWISE DIRECTED, WOOD FORMS AND SAND SHALL BE THOROUGHLY WETTED JUST PRIOR TO PLACING.

- DEPOSIT CONCRETE AS NEARLY AS PRACTICABLE IN ITS FINAL POSITION TO AVOID SEGREGATION DUE TO RE-HANDLING OR FLOWING.
  - PLACE NO CONCRETE UNTIL ALL REINFORCING STEEL, PIPES, CONDUITS, SLEEVES, HANGERS AND OTHER WORK REQUIRED TO BE BUILT INTO THE CONCRETE HAVE BEEN INSPECTED AND APPROVED.
- NO CONCRETE THAT HAS PARTIALLY HARDENED, BECOME CONTAMINATED BY FOREIGN MATERIALS OR BEEN RETEMPERED SHALL BE USED.
- CONTINUITY OF PLACING
  - CONCERNING SHALL GENERALLY BE CARRIED ON AS A CONTINUOUS OPERATION UNTIL THE PLACING OF AN INDIVIDUAL SECTION IS COMPLETED.
  - WHEN CONSTRUCTION JOINTS ARE NECESSARY THEY SHALL BE MADE AND LOCATED AS INDICATED ON THE DRAWINGS OR AS SPECIFIED.
  - NO ADDITIONAL CONSTRUCTION JOINTS WILL BE PERMITTED WITHOUT APPROVAL OF OWNER.
  - IF FOR ANY REASON THE CONCRETE PLACEMENT PROCEDURE IS UNACCEPTABLE, THE CONTRACTOR SHALL SUBMIT A SUBSTITUTE PROCEDURE FOR APPROVAL.
  - CONCRETE SHALL BE CAREFULLY WORKED AROUND REINFORCEMENT AND EMBEDDED FIXTURES, ALONG SURFACES, AND INTO CORNERS OF FORMS.
  - VIBRATORS MAY BE USED, PROVIDING THEY ARE OPERATED UNDER EXPERIENCED SUPERVISION AND FORMS ARE CONSTRUCTED TO WITHSTAND THEIR ACTION.
- A POUR DROP LIMIT OF 6 FEET SHALL BE USED IN PLACEMENT OF ALL CONCRETE.
- SPECIFICATIONS FOR THE INSTALLATION OF IN-GROUND REINFORCING CAGES:
  - MINIMUM CLEARANCE BETWEEN REBAR CAGE AND SURROUNDING SOIL SHALL BE INSURED BY THE USE OF INDUSTRY ACCEPTED STANDARD MECHANICAL METHODS (SPACING WHEELS, CONCRETE BLOCKS, ETC.). NO WOOD OR SIMILAR PRODUCTS ARE TO BE USED.
  - CONTRACTOR SHALL SPECIFICALLY INSURE THAT THE METHOD EMPLOYED WILL MAINTAIN REBAR CLEARANCE FOR THE FULL LENGTH OF THE CAGE.
- COLD JOINT SPECIFICATIONS:
  - IT IS RECOMMENDED THAT ALL COLD JOINTS BE MADE A MINIMUM OF 12" ABOVE NATURAL GROUND TO INSURE CLEAN JOINTS.
  - ALL JOINTS WILL BE THOROUGHLY WASHED WITH CLEAN WATER PRIOR TO THE INSTALLATION OF THE UPPER PORTION OF ANY COLUMN.
  - ALL JOINTS WILL BE WET AT THE TIME OF CONCRETE POUR.

## GENERAL NOTES:

- THE CONTRACTOR SHALL SUPERVISE AND DIRECT ALL WORK, USING HIS BEST SKILL AND ATTENTION. HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, PROCEDURES AND SEQUENCES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
- THE CONTRACTOR SHALL VISIT THE JOB SITE TO REVIEW THE SCOPE OF WORK AND EXISTING JOB SITE CONDITIONS INCLUDING, BUT NOT LIMITED TO MECHANICAL, ELECTRICAL SERVICE, AND OVERALL COORDINATION.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO SUBMITTING HIS BID. ANY DISCREPANCIES, CONFLICTS OR OMISSIONS, ETC., SHALL BE REPORTED TO AXIS BEFORE PROCEEDING WITH THE WORK.
- THE CONTRACTOR SHALL PROTECT ALL AREAS FROM DAMAGE WHICH MAY OCCUR DURING CONSTRUCTION. ANY DAMAGE TO NEW AND EXISTING CONSTRUCTION, STRUCTURE, OR EQUIPMENT, SHALL BE IMMEDIATELY REPAIRED OR REPLACED TO THE SATISFACTION OF THE PROPERTY OWNER OR OWNER'S REPRESENTATIVE, AT THE EXPENSE OF THE CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR, AND SHALL REPLACE OR REMEDY, ANY FAULTY, IMPROPER, OR INFERIOR MATERIALS OR WORKMANSHIP OR ANY DAMAGE WHICH SHALL APPEAR WITHIN ONE YEAR AFTER THE COMPLETION AND ACCEPTANCE OF THE WORK UNDER THIS CONTRACT.
- THE CONTRACTOR SHALL REMOVE ALL RUBBISH AND WASTE MATERIALS ON A REGULAR BASIS, AND SHALL EXERCISE STRICT CONTROL OVER JOB CLEANING THROUGHOUT CONSTRUCTION, INCLUDING FINAL CLEANUP UPON COMPLETION OF WORK. ALL AREAS ARE TO BE LEFT IN A BROOM CLEAN CONDITION AT THE END OF EACH DAY.
- THE CONTRACTOR SHALL SAFEGUARD THE OWNER'S PROPERTY DURING CONSTRUCTION AND SHALL REPLACE ANY DAMAGED PROPERTY OF THE OWNER TO ORIGINAL CONDITION OR BETTER.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES, WHETHER SHOWN HEREON OR NOT, AND TO PROTECT THEM FROM DAMAGE, THE CONTRACTOR SHALL BEAR ALL EXPENSES FOR REPAIR OR REPLACEMENT OF UTILITIES OR OTHER PROPERTY DAMAGED IN CONJUNCTION WITH THE EXECUTION OF WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE SECURITY OF THE SITE WHILE THE JOB IS IN PROGRESS AND UNTIL THE JOB IS COMPLETED PER CHAPTER 44 OF THE U.B.C.
- THE CONTRACTOR DURING CONSTRUCTION SHALL PROVIDE TEMPORARY WATER, POWER, AND TOILET FACILITIES AS REQUIRED BY THE CITY OR GOVERNING AGENCY.
- ALL CONSTRUCTION WORK SHALL CONFORM TO THE MOST RECENT VERSION U.B.C. AND THE MOST RECENT OF ALL OTHER GOVERNING CODES, ALONG WITH THE GOVERNING RESTRICTIVE CODES.
- THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL COMPLY WITH ALL LOCAL CODE REGULATIONS AND STATE DEPARTMENT OF INDUSTRIAL REGULATIONS AND DIVISION OF INDUSTRIAL SAFETY (OSHA) REQUIREMENTS.
- FIGURED DIMENSIONS HAVE PRECEDENCE OVER DRAWING SCALE, AND DETAIL DRAWINGS HAVE PRECEDENCE OVER SMALL SCALE DRAWINGS. CHECK ACCURACY OF ALL DIMENSIONS IN THE FIELD. UNLESS SPECIFICALLY NOTED, DO NOT FABRICATE ANY MATERIALS OFF-SITE, OR DO ANY CONSTRUCTION UNTIL THE ACCURACY OF DRAWING DIMENSIONS HAS BEEN VERIFIED AGAINST ACTUAL FIELD DIMENSIONS.
- CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY CONFLICTS OR DISCREPANCIES WITHIN THE CONTRACT DOCUMENTS WITH THE CONTRACT DOCUMENTS AND THE FIELD CONDITIONS PRIOR TO EXECUTING THE WORK IN QUESTION.
- EXISTING ELEVATIONS AND LOCATIONS TO BE JOINED BY PROPOSED EQUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION. IF THEY DIFFER FROM THOSE SHOWN ON THE PLANS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT MODIFICATIONS CAN BE MADE BEFORE PROCEEDING WITH THE WORK.
- ALL SYMBOLS AND ABBREVIATIONS USED ON THE DRAWINGS ARE CONSIDERED CONSTRUCTION STANDARDS. IF THE CONTRACTOR HAS QUESTIONS REGARDING THEIR EXACT MEANING, THE ENGINEER SHALL BE NOTIFIED FOR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.

## CONTRACTOR RESPONSIBILITIES:

### GENERAL RESPONSIBILITIES:

- THE CONTRACTOR SHALL THOROUGHLY READ AND UNDERSTAND ALL DOCUMENTS CONCERNING THIS PROJECT, INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION CONTRACTOR, CONSTRUCTION DRAWINGS, TOWER DRAWINGS, SHELTER DRAWINGS AND ALL APPLICABLE PERMITS.
- THE CONTRACTOR SHALL NOTIFY AXIS ENGINEERING OF ANY CONFLICTS, OMISSIONS, DISCREPANCIES WITHIN OR BETWEEN ANY DOCUMENT OR WITH REFERENCE TO THE EXISTING CONDITIONS ON SITE PRIOR TO BEGINNING ANY WORK.
- THE CONTRACTOR IS TO COMPLETE ALL WORK IN ACCORDANCE WITH ACCEPTED INDUSTRY STANDARDS AND THE MOST RECENT VERSION OF ALL APPLICABLE CODES.

### EQUIPMENT SHELTER NOTES:

- BUILDING SHALL BE DELIVERED AND SET BY VERIZON WIRELESS. SITE CONTRACTOR SHALL PROVIDE ACCESS FOR THE DELIVERY OF THE EQUIPMENT SHELTER. SITE CONTRACTOR IS ALSO RESPONSIBLE FOR THE FOLLOWING:

A. SITE CONTRACTOR SHALL ERECT PLATFORM TO WITHIN A 1/4" OF LEVEL IN ALL DIRECTIONS

B. SITE CONTRACTOR SHALL INSTALL SHELTER CANOPY OVER DOOR. (CANOPY SUPPLIED BY BUILDING MANUFACTURER.)

- SEE ELECTRICAL DRAWINGS FOR ELECTRICAL WORK IN BUILDING.

### SITE NOTES:

- SITE CONTRACTOR IS TO REMOVE BRUSH & MATERIAL INSIDE PROPERTY BOUNDARIES AS SHOWN ON SITE PLAN. ALL EXCESS MATERIAL IS TO BE REMOVED FROM THE SITE (NO EXCEPTIONS). (DO NOT CLEAR BEYOND TRACT BOUNDARIES)
- FENCING AND GATE IS TO AS SPECIFIED IN THESE DOCUMENTS. ALL PAVING INSTALLED IS TO BE BY SCRAPING 3" OF EXISTING GRADE COMPACTING THE SUB GRADE TO 95% STD. PROCTOR THEN INSTALLING LIMESTONE BASE FOR COMPOUND, AS SHOWN IN THESE DOCUMENTS.
- SITE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION ACCESS AND ACCESS TO THE SITE FOR VERIZON WIRELESS EQUIPMENT INSTALLATIONS.
- SITE CONTRACTOR IS RESPONSIBLE FOR THE COMPACTION OF THE ENTIRE COMPOUND (INCLUDING TRENCH BACK FILL LOCATIONS.) COORDINATE TRENCHING WITH ELECTRICAL CONTRACTOR.

### REQUIRED INSPECTION NOTES:

GENERAL CONTRACTOR IS RESPONSIBLE FOR NOTIFYING ALL APPROPRIATE INSPECTORS OF CONSTRUCTION SCHEDULE 48 HOURS PRIOR TO CONSTRUCTION. (NO EXCEPTIONS.) ALL CONCRETE MIX DESIGNS MUST BE SUBMITTED TO AXIS ENGINEERING 48 HOURS PRIOR TO CONSTRUCTION (MINIMUM.) IF DIRECT CONTACT OF INSPECTOR IS UNSUCCESSFUL, CONTRACTOR SHALL NOTIFY AXIS ENGINEERING (713-460-9902) OF CONSTRUCTION SCHEDULE.

## LIMESTONE BASE SPECIFICATIONS:

BASE MATERIAL SHALL BE CRUSHED LIMESTONE CONFORMING TO TX\_D.O.T. ITEM 242 REQUIREMENTS FOR TYPE "A", GRADE 2 MATERIAL.

## TYPE "A"

TYPE "A" MATERIAL SHALL BE CRUSHED STONE STONE PRODUCED FROM A NATURALLY OCCURRING SINGLE SOURCE. CRUSHED GRAVEL OR UNCRUSHED GRAVEL SHALL NOT BE ACCEPTED FOR TYPE "A" MATERIAL. NO BLENDING OF SOURCES AND/OR ADDITIVE MATERIALS WILL BE ALLOWED IN TYPE "A" MATERIAL.

## GRADE 2

TRIAXIAL CLASS 1 TO 2.3: MIN. COMPRESSIVE STRENGTH, PSI: 35 AT 0 PSI LATERAL PRESSURE AND 175 AT 15 PSI LATERAL PRESSURE.

## MASTER GRADING

2-1/2" . . . . . 0.  
1-3/4" . . . . . 0-10  
NO. 4 . . . . . 4.5-75  
NO. 40 . . . . . 6.0-85

MAX LL . . . . . 40  
MAX PI . . . . . 12  
WET BALL MILL  
MAX. . . . . 45  
MAX INCREASE IN PASSING  
NO. 40 . . . . . 20



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AXIS PROJECT NUMBER:

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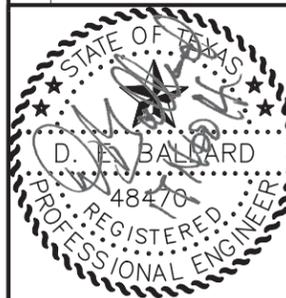
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GENERAL NOTES & SPECIFICATIONS

VERIZON WIRELESS - TEXAS AREA

VILLA MARIA SITE



Axis Engineering, Inc.  
Registration # F-004171

DRAWN BY: **JCM**

CONTACT: **CLF**

DATE: **06-04-2014**

CLIENT SITE No.: **260668**

**N1**

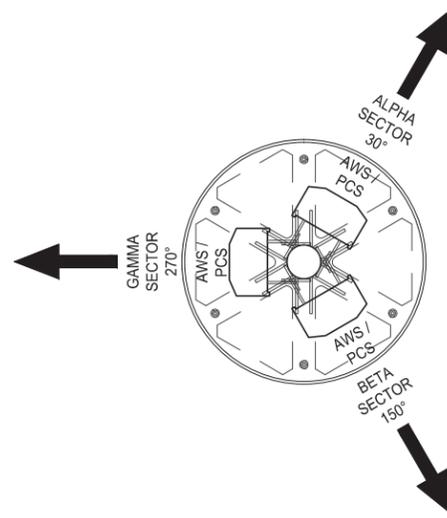
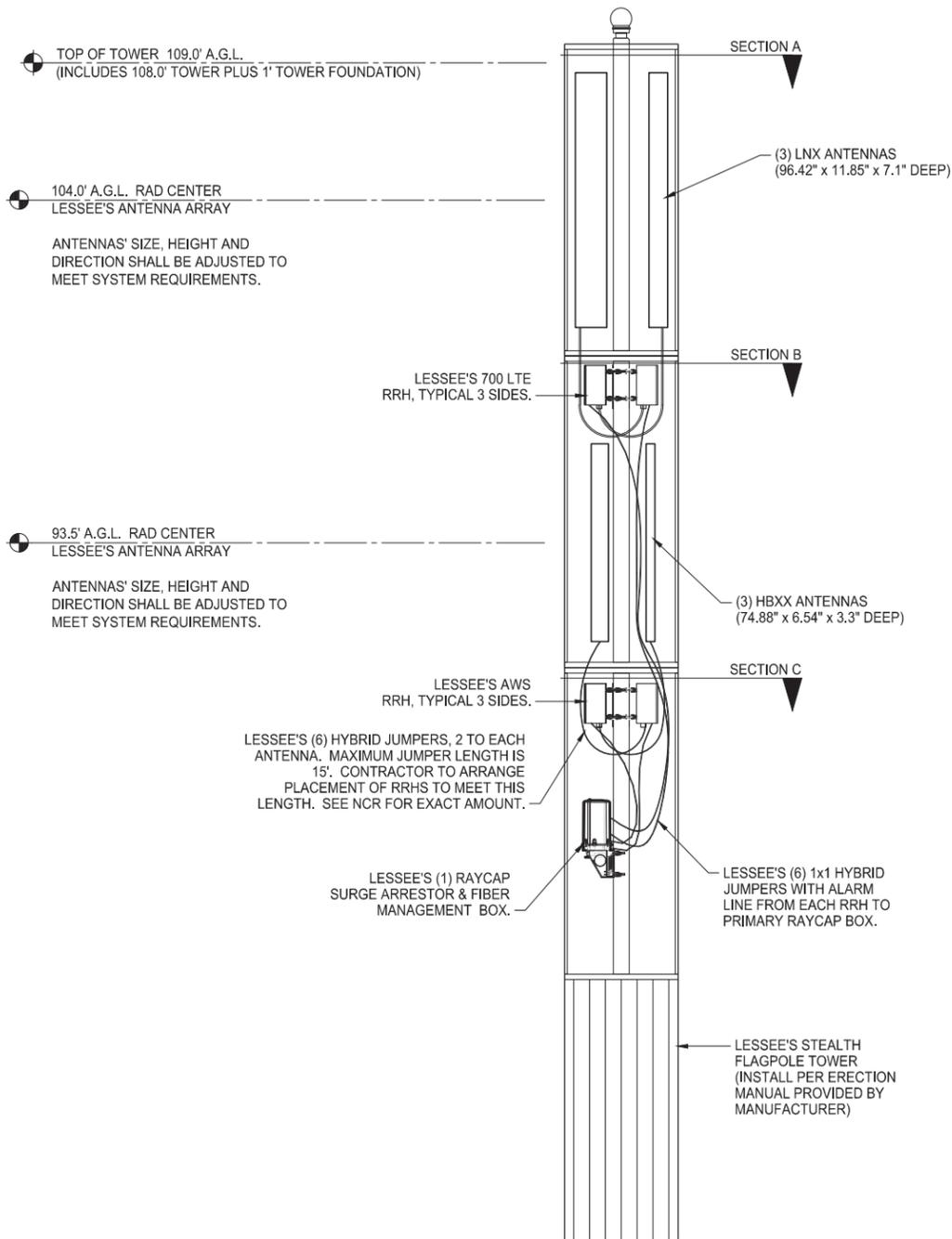
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VILLA MARIA**

COMMSCOPE COMPONENTS PARTS LIST:

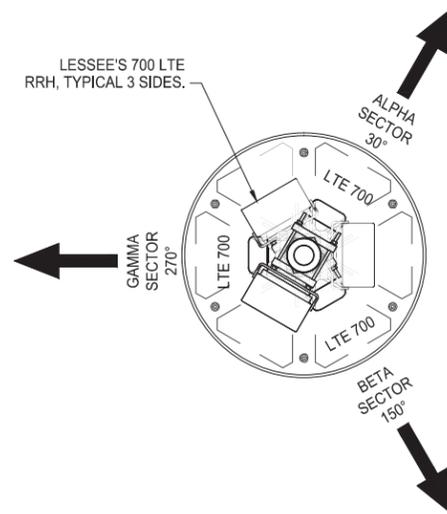
ANTENNA MOUNTS:  
SEE ATTACHED ANTENNA ADDENDUM FOR ALL MOUNTING HARDWARE.

RRH & RAYCAP MOUNTING HARDWARE:  
SEE ATTACHED ANTENNA ADDENDUM FOR ALL MOUNTING HARDWARE.

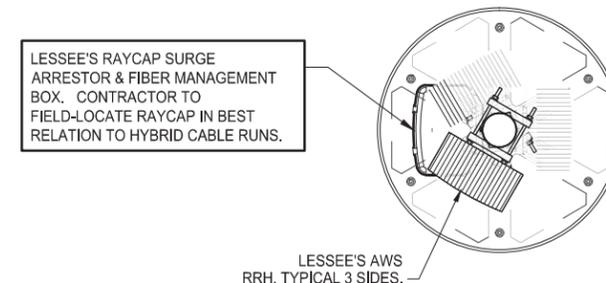
HYBRID CABLE MOUNTS:  
STRAP-MOUNTED STANDOFF BRACKETS FOR 3/8" HARDWARE WITH 2-HOLE CABLE BLOCK. NUMBER REQUIRED TO BE DETERMINED BY CONTRACTOR.



SECTION A



SECTION B



SECTION C



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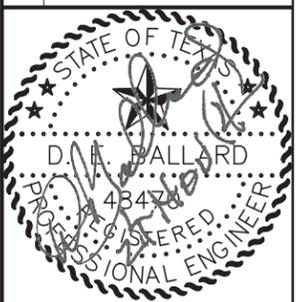
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STANDARD RADIOHEAD DESIGN  
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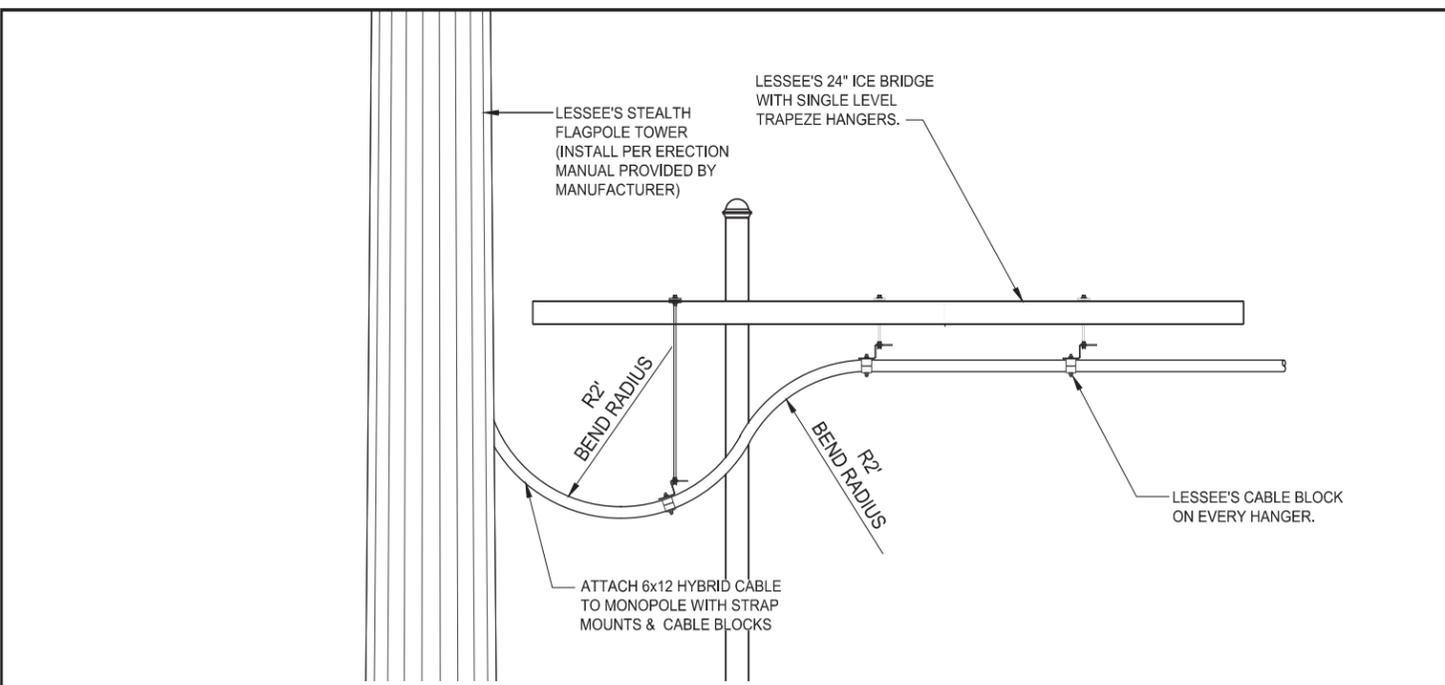


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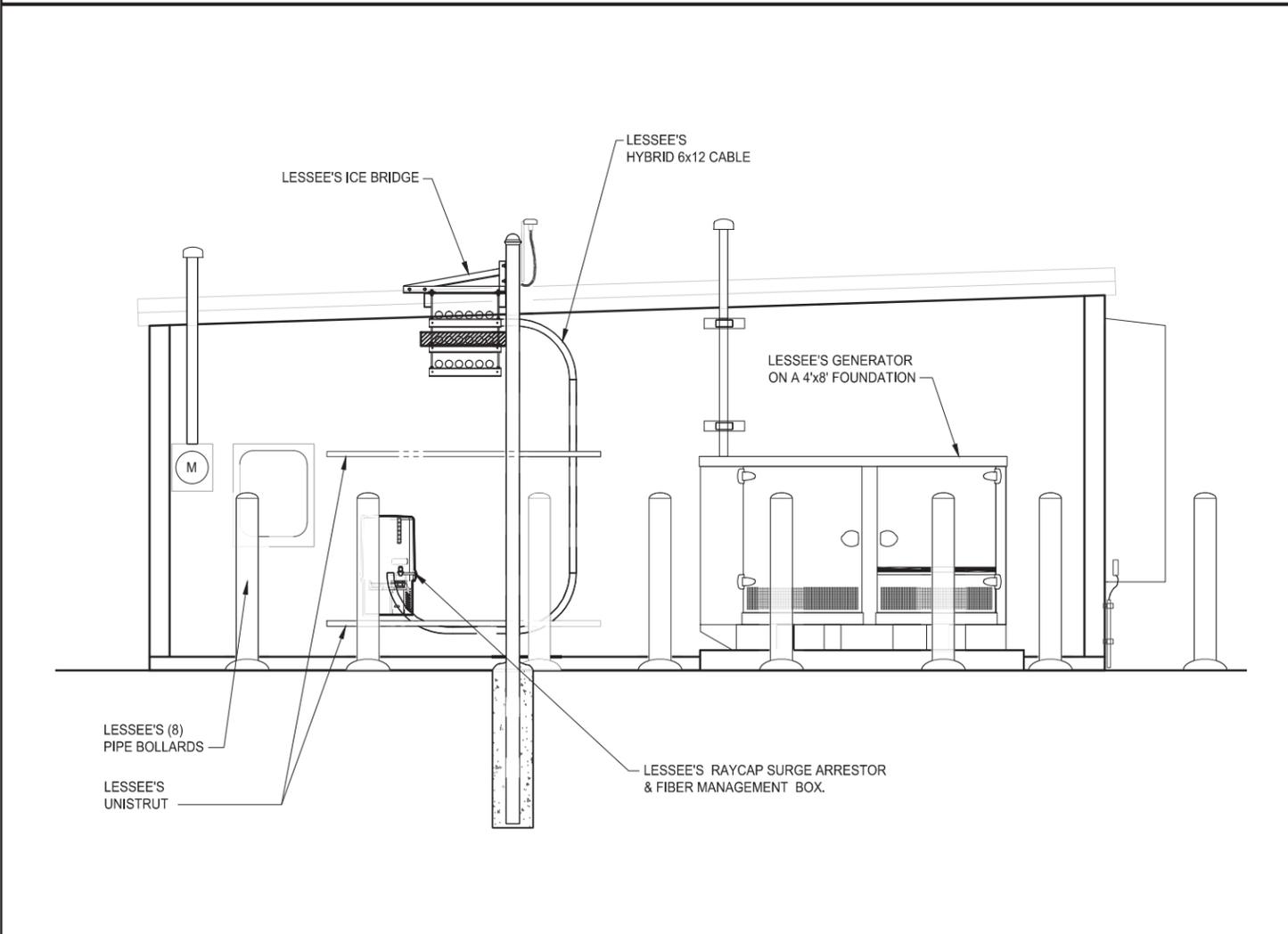
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**RH.1**

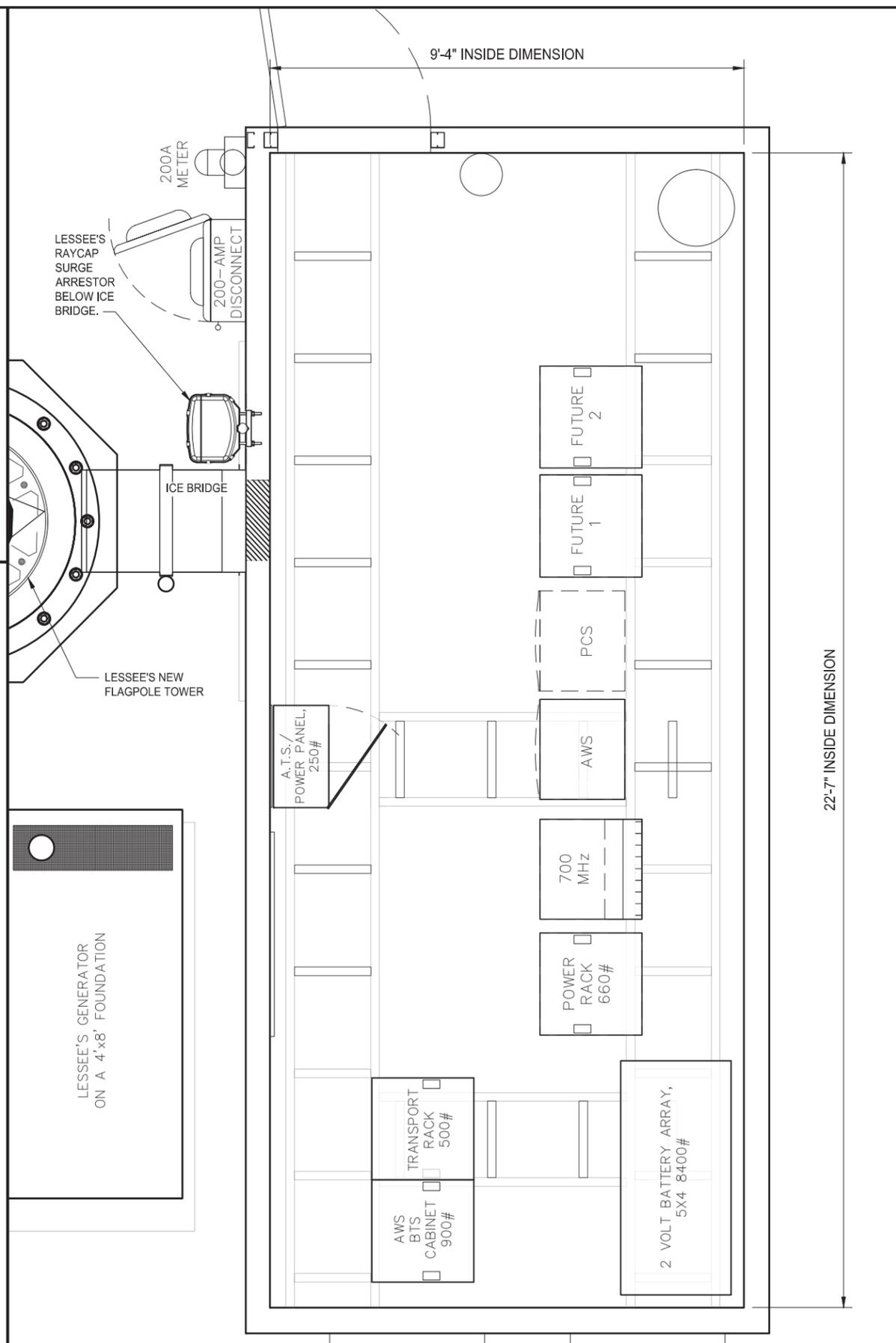
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2 TYPICAL ELEVATION AT TOWER  
SCALE: 3/8"=1'-0"



1 TYPICAL REAR ELEVATION  
SCALE: 1/4"=1'-0"



2 TYPICAL EQUIPMENT LAYOUT  
SCALE: 3/8"=1'-0"



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STANDARD RADIOHEAD SECTIONS  
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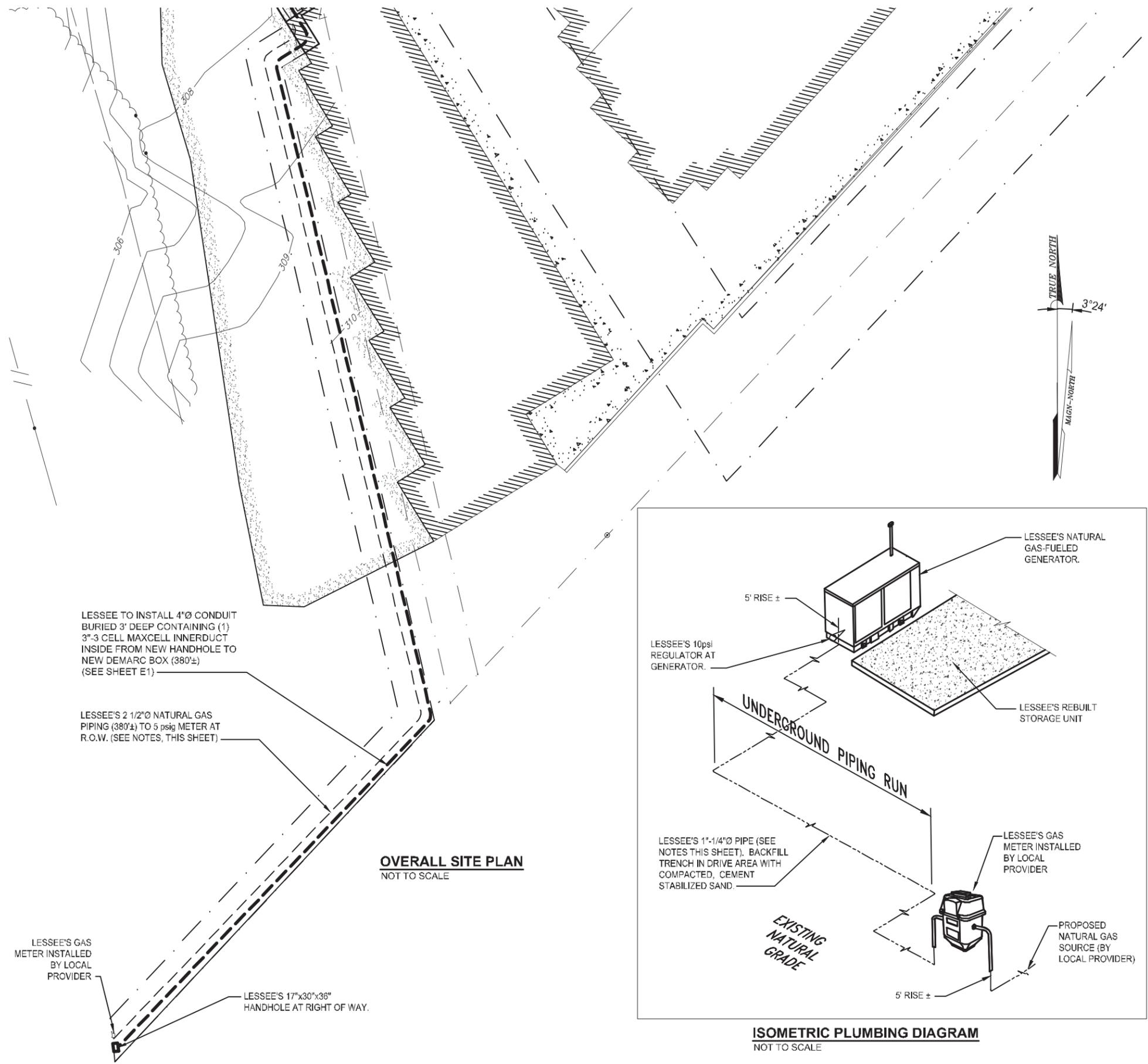
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**RH.2**  
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**GAS PIPING NOTES:**

- ALL STEEL OR MALLEABLE IRON FUEL LINES MUST BE ASSEMBLED USING THREAD SEALANT SUITABLE FOR NATURAL GAS. SWEATED FITTINGS ARE NOT PERMITTED. APPROVED COMPRESSION FITTINGS MAY BE USED OUTDOORS ONLY AND MUST BE DESIGNED FOR PULLOUT RESISTANCE OR STRAPPED.
- FUEL LINES MUST BE SUPPORTED OR STRAPPED AND MUST BE PLUM AND SQUARE.
- GENERATOR SHALL BE PROVIDED WITH A SHUTOFF VALVE SEPARATE FROM THE APPLIANCE. THE SHUTOFF VALVE SHALL BE LOCATED NOT FURTHER THAN 6 FEET (1829 mm) FROM THE GENERATOR, AND SHALL BE INSTALLED UPSTREAM FROM THE UNION, CONNECTOR OR QUICK DISCONNECT DEVICE IT SERVES.
- CONCEALED PIPING MUST BE BLACK STEEL (SCHEDULE 40) OR CORRUGATED STAINLESS STEEL TUBING. CSST MAY ONLY BE INSTALLED BY INDIVIDUALS TRAINED AND CERTIFIED BY THE MANUFACTURER. UNIONS MAY NOT BE CONCEALED IN CEILINGS, WALLS, FLOORS OR OTHER PARTITIONS. CSST INSTALLATIONS MUST CONTAIN THE REQUIRED STRIKE PLATES AND APPROVED TERMINATION FITTINGS, AND BE BONDED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- COPPER TUBING NOT ALLOWED FOR THIS INSTALLATION.
- BE AGA(IAS) APPROVED.
  - ONLY BE USED TO CONNECT A MOVABLE APPLIANCE TO THE MAIN FUEL LINE (UNLESS EXPRESSLY APPROVED IN MANUFACTURER'S INSTALLATION INSTRUCTIONS).
  - BE STAINLESS STEEL OR PLASTIC-COATED BRASS WITH THE PROPER ADAPTER ENDS.
- ALUMINUM TUBING IS NOT PERMITTED.
- ALL FUEL LINES MUST BE PRESSURE-TESTED FOR LEAKAGE. THE FOLLOWING GUIDELINES APPLY TO ABOVE GROUND PIPING ONLY.
  - TEST PRESSURE SHALL BE MEASURED WITH A MANOMETER OR WITH A PRESSURE MEASURING DEVICE DESIGNED AND CALIBRATED TO READ, RECORD, OR INDICATE A PRESSURE LOSS DUE TO LEAKAGE DURING THE TEST PERIOD. THE SOURCE OF PRESSURE SHALL BE ISOLATED BEFORE THE PRESSURE TESTS ARE MADE.
  - THE TEST PRESSURE SHALL BE NO LESS THAN 1 1/2 TIMES THE PROPOSED MAXIMUM WORKING PRESSURE, BUT NOT LESS THAN 3 psig.
  - TEST DURATION SHALL BE NO LESS THAN 1/2 HOUR FOR EACH 500 CUBIC FEET OF PIPE VOLUME OR FRACTION THEREOF. WHEN TESTING A SYSTEM HAVING A VOLUME OF LESS THAN 10 CUBIC FEET OR A SYSTEM IN A SINGLE FAMILY DWELLING, THE TEST DURATION MAY BE REDUCED TO 10 MINUTES.
- ALL WORK TO BE PERFORMED AND SUPERVISED BY A LICENSED PLUMBER. NO WORK IS TO BE DONE ON THIS SYSTEM OTHERWISE.
- THE PLUMBER SHALL BE RESPONSIBLE FOR THE ALL SAFETY MEASURES REQUIRED TO ACCOMPLISH THIS WORK, INCLUDING, BUT NOT LIMITED TO LINE ISOLATION, LINE PURGING, EQUIPMENT ISOLATION AND ALL OTHER ASSOCIATED TASKS.
- ALL CONNECTION TO AND PIPING WITHIN SYSTEMS >5psig ARE TO BE WELDED. IN SYSTEMS OF 5psig & LESS, CONNECTIONS ARE TO BE THREADED MALLEABLE PIPE WITH THREAD SEALANTS APPROVED FOR THE TEMPERATURE, PRESSURE & GAS WITHIN THAT SYSTEM.
- BURIED GAS PIPING SHALL BE AT A MINIMUM DEPTH OF 24", AND TO BE BEDDED IN CEMENT-STABILIZED SAND TO 8" BELOW & 8" ABOVE PIPING. TRENCH BACK FILL TO BE COMPACTED AND GRASS REPLACED ABOVE TRENCH IN AREAS OUTSIDE SITE LEASE.



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**VILLA MARIA SITE**



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