Letter of Determination

September 22, 2017

Laura Meiners
SureSite Consulting Group for Sirius XM
43251 Osgood Road
Fremont, CA 94539

Site Address: 1101 Green Street and 400 Beale Street
Assessor’s Block/Lot: 0125/026-089 and 3766/012-259
Staff Contact: Stephanie Skangos - (415) 575-8731 or Stephanie.Skangos@sfgov.org
Record Number: 2017-009245ZAD

Dear Ms. Meiners:

This letter is in response to your request for a Letter of Determination (LOD) as to whether two (2) new Sirius XM Wireless Telecommunication Services (WTS) Facilities proposed for 1101 Green Street and 400 Beale Street can be considered Micro WTS Facilities, pursuant to Planning Code Section 102.

The proposed facility at 1101 Green Street would consist of the following: (a) one panel antenna, measuring 39.5” tall by 6.5” wide by 8.0” deep; (b) one VSAT dish, measuring 70.9” in diameter; (c) one RX dish, measuring 26” in diameter; and (d) one equipment cabinet, measuring 80.26” tall by 34.6” wide by 31.5” deep. The proposed facility at 400 Beale Street would consist of the same equipment except that the proposed VSAT dish would be smaller at this location, measuring 39.4” in diameter instead of 70.9” in diameter.

On August 2, 2016, the Board of Supervisors adopted Ordinance No. 16-166 (Planning Code - Wireless Telecommunications Services Facilities) which, among other things, amended the Planning Code to add “Micro WTS Facilities” as a use category which is principally permitted in all zoning districts subject to specific limitations. Micro WTS Facilities are defined as follows:

Wireless Telecommunications Services (WTS) Facility, Micro. The Zoning Administrator shall determine whether a proposed WTS Facility is a Micro WTS Facility. A Micro WTS Facility is generally characterized by
(a) limited spatial effects;
(b) a small number of antennas (typically up to two);
(c) an absence of substantial cumulative effects on neighborhood character or aesthetics, when considered in conjunction with other WTS Facilities at the same project site; and
(d) a location that is not "disfavored" as specified in the Guidelines.
After reviewing previous determinations, relevant Planning Code provisions, existing guidelines and the information submitted with your letter, it is my determination that the proposed Sirius XM WTS facilities at 1101 Green Street and 400 Beale Street would not be consistent with the definition of Micro WTS Facilities based upon the following:

1. The size, number and function of the proposed equipment are similar to that of a Macro WTS Facility, when considered in conjunction with other WTS Facilities in similar adjacent areas.
   
a. The size of the proposed equipment, specifically the proposed dishes, is larger than the accessory dishes typically included as part of a WTS facility and will have more than a limited spatial effect on the project sites.

b. The proposed facility includes one (1) panel antenna; however, the panel antenna is not the only transmitting element of the proposed facility. The VSAT dish functions similar to an antenna and also transmits and receives; and, while, the proposed RX dish receives only, the potential overall impact of the equipment as a whole is more similar to that of a Macro WTS Facility.

2. Additionally, the project site at 1101 Green Street is located within an RH-3 Zoning District, which has been identified as a “Disfavored Site,” per the WTS Facilities Siting Guidelines.

Please note that a Letter of Determination is a determination regarding the classification of uses and interpretation and applicability of the provisions of the Planning Code. This Letter of Determination is not a permit to commence any work or change occupancy. Permits from appropriate Departments must be secured before work is started or occupancy is changed.

APPEAL: If you believe this determination represents an error in interpretation of the Planning Code or abuse in discretion by the Zoning Administrator, an appeal may be filed with the Board of Appeals within 15 days of the date of this letter. For information regarding the appeals process, please contact the Board of Appeals located at 1650 Mission Street, Room 304, San Francisco, or call (415) 575-6880.

Sincerely,

Scott F. Sanchez
Zoning Administrator

cc: Property Owners
    Russian Hill and SoMa Neighborhood Group Mailing Lists
    Stephanie Skangos, Planner
July 13, 2017

Office of the Zoning Administrator
1650 Mission Street, Suite 400
San Francisco, CA 94103

Reference: Request for Letter of Determination for two (2) projects, Applicant Sirius XM:
Project Site Address: 1101 Green Street (Sirius XM SFX501S)
Block/Lot: 0125/026-089
Building Permit Application Number: 2016.11.10.2496
Zone: RH-3

Project Site Address: 400 Beale Street (Sirius XM SFX502T)
Block/Lot: 3766/012-259
Building Permit Application Number: 2017.04.28.5180
Zone: RH-DTR

Zoning Administrator,

Per Notice of Planning Department Requirements letters dated December 8, 2016 and May 22, 2017, please find this Request for a Letter of Determination (LOD) to determine whether each of the above referenced projects is a micro wireless facility or a macro wireless facility. Please also find copies of the submitted plans enclosed to assist you in your review.

The 1101 Green Street scope of work includes:
• Install (1) new Sirius XM panel antenna on existing penthouse (antenna dimensions: 39.5” x 8”)
• Install (1) new Sirius XM VSAT dish on existing penthouse (VSAT diameter: 70.9”)
• Install (1) new Sirius XM RX dish on existing penthouse (RX dish diameter: 26”)
• Install (1) new Sirius XM cabinet and equipment platform on existing rooftop (dimensions 6’ x 4’)

The 400 Beale Street scope of work is very similar:
• Install (1) new Sirius XM panel antenna on existing rooftop (antenna dimensions: 39.5” x 8”)
• Install (1) new Sirius XM VSAT dish on existing rooftop (VSAT diameter: 39.4”)
• Install (1) new Sirius XM RX dish on existing rooftop (RX dish diameter: 26”)
• Install (1) new Sirius XM cabinet and equipment platform on existing rooftop (dimensions 6’ x 4’)

The only difference in the scope is a smaller VSAT dish proposed on the Beale Street site. Please also review the plans that were submitted with the application if you have any additional questions regarding what is being proposed.

Thank you for your review of these projects. Please provide Letters of Determination for both sites at your earliest convenience. Please let me know if you have any further questions or if you need any additional information to complete your review.

Sincerely,

Laura Meiners
SureSite Consulting Group for Sirius XM
l.meiners@sure-site.com
949-278-2962
SITE NAME: GREEN STREET

SITE ID: SFX5015

SITE ADDRESS: 1101 GREEN ST
SAN FRANCISCO, CA 94109

PROJECT SUMMARY

APPLICANT: SIRIUS XM
1500 E. WOODFIELD ROAD, SUITE 500
CHICAGO, IL 60173
TEL: 1-847-908-8000
FAX: 1-847-908-8031
www.FullertonEngineering.com

LANDLORD:

COMPANY TYPE:
CONSTRUCTION TYPE:

CERTIFICATION STATEMENT

I HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, CONFORM TO THE REQUIREMENTS OF ALL APPLICABLE CODES.

REPORTED WITH THE MEXICO RECREATIONAL PROPERTY ASSOCIATION, INC., A NON-PROFIT ORGANIZATION.
GENERAL CONSTRUCTION NOTES:
1. THIS SET OF PLANS HAS BEEN PREPARED FOR THE PURPOSES OF MUNICIPAL AND AGENCY REVISION AND APPROVAL.
2. THESE PLANS ARE INTENDED TO BE USED TO DIRECT THE PROPOSED LAYOUT. DRAWINGS SHOULD NOT BE SCALING UNLESS OTHERWISE NOTED. PLANS, ELEVATIONS AND DETAILS ARE INTENDED TO SHOW THE END RESULT OF DESIGN. FINISH MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS.
3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AND NOTIFY THE PROJECT MANAGER OF ANY DISCREPANCIES BEFORE STARTING ANY WORK.
4. ALL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS UNLESS OTHERWISE NOTED BY THE ENGINEER OF RECORD.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK RELATED TO THE INSTALLATION OF MATERIALS AND EQUIPMENT AND SHALL NOTIFY THE PROJECT MANAGER OF ANY DISCREPANCIES BEFORE STARTING ANY WORK.
6. ALL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS UNLESS OTHERWISE NOTED BY THE ENGINEER OF RECORD.

WARRANTIES AND BONDS:
1. THE CONTRACTOR SHALL GUARANTEE ALL LABOR AND MATERIALS USED IN THIS PROJECT FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF SUBMISSION OF THE BID.
2. FINAL DATE OF ACCEPTANCE IS DEEMED AS THE DATE THAT ALL REQUIRED PERFORMANCE AND FINISH BONDS HAVE BEEN PROVIDED TO THE OWNER.

DELIVERY, STORAGE, AND HANDLING:
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROCEDURES AND TRANSPORTATION WITH REFERENCE TO THE PROJECT, AND SHALL REQUIRE THAT ALL MATERIALS ARE DELIVERED TO THE SITE IN SUCH A MANNER AS TO PREVENT DAMAGE OR OBSTRUCTION TO THE WORK SITE OR TO THE PUBLIC.

SITE WORK GENERAL NOTES:
1. THIS SET OF PLANS HAS BEEN PREPARED FOR THE PURPOSES OF MUNICIPAL AND AGENCY REVISION AND APPROVAL.
2. THESE PLANS ARE INTENDED TO BE USED TO DIRECT THE PROPOSED LAYOUT. DRAWINGS SHOULD NOT BE SCALING UNLESS OTHERWISE NOTED. PLANS, ELEVATIONS AND DETAILS ARE INTENDED TO SHOW THE END RESULT OF DESIGN. FINISH MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS.
3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AND NOTIFY THE PROJECT MANAGER OF ANY DISCREPANCIES BEFORE STARTING ANY WORK.
4. ALL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS UNLESS OTHERWISE NOTED BY THE ENGINEER OF RECORD.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK RELATED TO THE INSTALLATION OF MATERIALS AND EQUIPMENT AND SHALL NOTIFY THE PROJECT MANAGER OF ANY DISCREPANCIES BEFORE STARTING ANY WORK.
6. ALL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS UNLESS OTHERWISE NOTED BY THE ENGINEER OF RECORD.

CONSTRUCTION SPECIFICATIONS:
1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AND NOTIFY THE PROJECT MANAGER OF ANY DISCREPANCIES BEFORE STARTING ANY WORK.
2. ALL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS UNLESS OTHERWISE NOTED BY THE ENGINEER OF RECORD.
3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AND NOTIFY THE PROJECT MANAGER OF ANY DISCREPANCIES BEFORE STARTING ANY WORK.
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5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK RELATED TO THE INSTALLATION OF MATERIALS AND EQUIPMENT AND SHALL NOTIFY THE PROJECT MANAGER OF ANY DISCREPANCIES BEFORE STARTING ANY WORK.
SITE PLAN

SCALE: 1” = 20’-0”

GREEN STREET

EXISTING BUILDING

EXISTING CONCRETE SIDEWALK

EXISTING BUILDING

EXISTING BUILDING

EXISTING CONCRETE SIDEWALK

EXISTING CONCRETE SIDEWALK

EXISTING CONCRETE SIDEWALK

EXISTING CONCRETE SIDEWALK
ANTENNA NOTES:
1. The size, height, and direction of the antenna shall be adjusted to meet system requirements.
2. Contractor shall verify height of antenna with Sirius XM representative.
3. All antenna azimuth to be from true north.

STRUCTURAL NOTES:
Structural calculation prepared by Fullerton Engineering Consultants, contractor to coordinate with Sirius XM representative to obtain a copy.
1. **Plan View**
   - **TA-2364-2-DAB-L-120**
   - Frequency Range: 2320-2340 MHz
   - Size: 8 ft

2. **VBAT SPEC**
   - **TA-2365-2-DAB-L-05**
   - Panel Antenna

3. **GPS SPEC**
   - **TA-2366-2-DAB-L-05**
   - GPS Antenna Tripod (15680-30)
   - Stainless Steel or Galv. Pipe 3/4" Pipe Thread

4. **Notes**
   - The elevation and location of the GPS Antenna shall be in accordance with the Final Project Report.
   - The GPS Antenna Mount is designed to fasten to a 6" Std. Galv. Steel or Stainless Steel Pipe 3/4" Pipe Thread at Antenna Mount.
   - Contractor to verify that GPS Mount is installed and plumbed correctly.
   - Do not scribe test GPS Antenna.

**GPS Mounting Detail**
- **Support Pipe**
- **GPS Antenna Wall Mount**
  - Stainless Steel
  - 3/8" Std. Pipe (Galv.)
  - Basil (Galv.)
- **Spacer Block**
  - New Pressure Treated 2x6x10 (Normal Size 1020x1050-60)
- **New Expansion Anchor 1/4" Concrete Screws**
- Contraction to be filled with a concrete sealant to prevent water penetration.
- New Pressure Treated 36x4x8 (Normal Size 220x220-220x80)

**Parts Details**
- **Existing Concrete Pedestrian Wall**
- **New Pipe** 2 Std (3-5/8" OD, 4-3/8" Galv.)
- **Existing Concrete Pedestrian Wall**
- **Existing Concrete Pedestrian Wall**
- **Existing Concrete Pedestrian Wall**
- **Existing Concrete Pedestrian Wall**

**Contractor to Verify**
- **New Pressure Treated 2x6x10** (Normal Size 1020x1050-60)
- **New Pressure Treated 36x4x8** (Normal Size 220x220-220x80)
**RX Dish Specs**

1. Coax line for TX & RX antennas will be labeled at the top and bottom left side of the connections.
2. Antenna line colors will be as follows:
   - A. LG RED (W)
   - B. HB BLUE (C)
   - C. GPF (J)
   - D. VIV (T)
   - E. RX DISH (W)
   - F. DIVERSITY (ORANGE (G))

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**Weatherproofing Detail**

- Tape (3 layers in 1/16" tape and 3 layers in 1/4"
- Tape, all with a finish of 50% overlap coat with 3M Scotch tape)

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** Typical Color Coding**

- Red (W)
- Blue (C)
- Green (J)
- Yellow (T)
- Orange (G)
- Black (K)
- White (W)
- Gray (G)
- Pink (P)

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**Cable Routing Detail**

- 2" Packer unistrut or approved equal
- Coax
- Hangers

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**Notes**

- Electrical tape ends are to be cut, do not stretch
- Tape should be taped from the bottom up so overlap hides water away from connection

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**Diagram Details**

- Diagram showing RX dish mounting and antenna connections
- Diagram showing coax and cable routing
- Diagram showing mechanical tilt and mechanical cover

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**Additional Information**

- Manufacturer: TIL-TEK
- Model: TA-2324-LHGP
- Weight: 102 lbs

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**Fullerston Engineering**

- Address: 1000 E. Woodfield Rd., Suite 500
- Phone: 847-928-8400
- Website: www.FullertonEngineering.com
## NEW ANTENNA CONFIGURATION

<table>
<thead>
<tr>
<th>ANTENNA NUMBER</th>
<th>NEW OR EXISTING</th>
<th>MANUFACTURER</th>
<th>MODEL NUMBER</th>
<th>AZIMUTH (°W)</th>
<th>TILT (+ OR -)</th>
<th>% OF ANTENNA FROM GROUND LEVEL (FT)</th>
<th>ANTENNA TYPE</th>
<th>MODEL NUMBER</th>
<th>MANUFACTURER</th>
<th>TYPE</th>
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<td>350°-60°</td>
<td>Satellite</td>
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<td>Dish</td>
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<td>VSAT</td>
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## NEW EQUIPMENT SCHEDULE

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<th>MODEL NUMBER</th>
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## NEW POWER SCHEDULE

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<td>120/240V</td>
<td>SINGLE</td>
<td>Existed AC Panel on the 28th Floor</td>
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Product Specifications

LD-ER0406
Light Duty Equipment Platform, 4 ft x 6 ft, with six light duty legs

Dimensions

- Height: 508.0 mm | 20.0 in
- Length: 1219.2 mm | 48.0 in
- Weight: 124.8 kg | 275.1 lb
- Width: 1828.8 mm | 72.0 in

General Specifications

- Product Type: Equipment platform system
- Includes: Frame | Grating | Hardware | Legs
- Legs, quantity: 6
- Material Type: Hot dip galvanized steel
- Note: Contact 828-324-2200 or 1-800-982-1708 (toll free), or your local CommScope representative
- Package Quantity: 1

Regulatory Compliance/Certifications

- Agency: Classification
  - ISO 9001:2008 Designed, manufactured and/or distributed under this quality management system

---

COMMUNICATIONS TECHNOLOGIES, LLC

1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173

TEL: 847-906-8400
FAX: 847-906-8480

Fullerton Engineering.com

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Equipment Specifications

**Dimensions**

- Height: 508.0 mm | 20.0 in
- Length: 1219.2 mm | 48.0 in
- Weight: 124.8 kg | 275.1 lb
- Width: 1828.8 mm | 72.0 in

**General Specifications**

- Product Type: Equipment platform system
- Includes: Frame | Grating | Hardware | Legs
- Legs, quantity: 6
- Material Type: Hot dip galvanized steel
- Note: Contact 828-324-2200 or 1-800-982-1708 (toll free), or your local CommScope representative
- Package Quantity: 1

**Regulatory Compliance/Certifications**

- Agency: Classification
  - ISO 9001:2008 Designed, manufactured and/or distributed under this quality management system
SERVICE EQUIPMENT NOTES:
1. All electrical equipment shall be labeled with permanent engraved plastic labels.
2. Patch repairs and paint any area that has been damaged in the course of the electrical work.

CONDUCTOR NOTES:
1. All conductors shall be copper.
2. All wiring shall be copper with thin-thin dual rated 600 volts insulation.
3. Grounding conductors shall be solid tinned copper unless otherwise noted.

CONDUIT NOTES:
1. High density PVC conduit shall be used when installed in or inside concrete slabs, in contact with earth, or exposed above grade.
2. EMT shall be used only for interior runs and shall have compression type fittings.
3. Service conductors shall have no more than 1/2-
4. Service conductors shall provide full boxes as needed, where conduit requirements exceed these conditions.
5. All cables, power, and/or telephone and/or fiber system conductors shall have a minimum 24" minimum spacing to equipment, pull boxes, etc., unless otherwise noted, or as required by utility companies.

NEW CABLE GROUNDING NOTES:
1. Avoid damage of existing grounding system. Repair any damage to the satisfaction of the owner.
2. Contractors shall connect ground kits to the existing ground bars at the top and base of tower.
3. Contractors shall connect ground kits to the new ground bar before entry to cabinet.
4. No back to back lugs of grounds.

GENERAL GROUNDING NOTES:
1. Vertical drops shall be 1 1/2" of #4 AWG solid tinned copper wire, caulked to ground bar.
2. All bonding should be bonded.
3. Apply anti-oxidation compound to all connections.
4. Bare copper conductors shall not be in contact with any drain pipe material, place on standoff, if necessary to allow for proper installation.
5. Sharp bends in grounding conductors shall be avoided. Sharp bends shall not be used.
6. All grounding conductors shall be kept as short as possible. The shortest practical route shall be chosen with the least amount of bends and splices. Use this rule at all times.
7. All connections to ground bars shall be with a 2-hole lug unless otherwise specified.
8. When grounding more than one piece of equipment, do not use the equipment as a grounding conductor. Double-stacking of lugs shall be used to get proper equipment to equipment.
9. Remove all paint beneath the surface of ground lug.

ELECTRICAL NOTES

NEW FX ELECTRICAL CONDUIT FROM NEW SIRIUS XM DISTRIBUTION PANEL TO ROOF TOP PANEL LOCATED ON 2ND FLOOR BELOW. ROUTE CONDUIT ALONG ROOFTOP ON BLPERS. SEE E-4A FOR CONSTRUCTION.
NOTE:

EXACT LOCATION OF BIRIUS XM ELECTRIC METER SHALL BE COORDINATED WITH LANDLORD.
### VSAT Antenna Configuration

<table>
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<th>QUANTITY</th>
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<td>VSAT DISH</td>
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<td>PRODELIN</td>
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### GPS Antenna Configuration

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<td>LENGTH</td>
<td>MANUFACTURER</td>
<td>PART NUMBER</td>
<td>REMARKS</td>
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</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td>------</td>
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<td>--------</td>
<td>--------------</td>
<td>-------------</td>
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</tr>
<tr>
<td>1</td>
<td>RX RX CLIPU (22336-2240 MHz)</td>
<td>25x24</td>
<td>1 NEW</td>
<td>NA</td>
<td>TIL-TEK</td>
<td>TA-2324-14CP</td>
<td>CIRCULAR POLARIZED SOLID PARABOLIC DISH ANTE</td>
<td>SIRIUS XM</td>
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<tr>
<td>2</td>
<td>T-8 DIN MALE CONNECTOR</td>
<td>NA</td>
<td>1 NEW</td>
<td>NA</td>
<td>ANDREW</td>
<td>LATCH-PBA</td>
<td>ATTACH TO CABLE PRIOR TO INSTALLATION</td>
<td>VENDOR</td>
</tr>
<tr>
<td>3</td>
<td>GROUNDING KIT</td>
<td>NA</td>
<td>1 NEW</td>
<td>NA</td>
<td>ANDREW</td>
<td>502-0462A</td>
<td>INCLUDES 55% GROUND WIRE INST. KIT EVERY 100 FT. 75%</td>
<td>VENDOR</td>
</tr>
<tr>
<td>4</td>
<td>COAXIAL CABLE 1/2&quot;</td>
<td>10x1</td>
<td>1 NEW</td>
<td>50'</td>
<td>ANDREW</td>
<td>LDF4-50A</td>
<td>PRODUCT BEND RADIUS PER MANUFACTURER SPEC</td>
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<td>5</td>
<td>GROUNDING KIT</td>
<td>NA</td>
<td>1 NEW</td>
<td>NA</td>
<td>ANDREW</td>
<td>502-0462A</td>
<td>INCLUDES 55% GROUND WIRE INST. KIT EVERY 100 FT. 75%</td>
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<tr>
<td>6</td>
<td>N MALE CONNECTOR</td>
<td>NA</td>
<td>1 NEW</td>
<td>NA</td>
<td>ANDREW</td>
<td>LATCH-PBA</td>
<td>-</td>
<td>VENDOR</td>
</tr>
<tr>
<td>7</td>
<td>CABINET</td>
<td>NA</td>
<td>1 NEW</td>
<td>NA</td>
<td>UBB</td>
<td>DRU-2002W</td>
<td>-</td>
<td>SIRIUS XM</td>
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RX ANTENNA CONFIGURATION

SITE NAME
GREEN STREET

SITE ID.
5FX9016

SITE ADDRESS
161 GREEN ST
SAN FRANCISCO, CA 94109

SITE CONFIGURATIONS

E - 4A

PROJECT: 2015.0452 0023

FULLERTON
ENGINEERING DESIGN
11600 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
www.fullertonengineering.com

SATELLITE RADIO
22 SHELTON RD, LONG BEACH CT
NASHUA, CT 06059

FULLEZTON
ENGINEERING DESIGN
11600 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
www.fullertonengineering.com
<table>
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<th>ITEM</th>
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<th>QUANTITY</th>
<th>LENGTH</th>
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<th>PART NUMBER</th>
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<tr>
<td>1</td>
<td>TRANSPORT ANTENNA</td>
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<td>N/A</td>
<td>TILTEK</td>
<td>TA-3304-2-CAB-L</td>
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<td>2</td>
<td>3-9 MALE CONNECTOR</td>
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<td>L-701-P8</td>
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<tr>
<td>3</td>
<td>WEATHERPROOFING</td>
<td>N/A</td>
<td>1</td>
<td>N/A</td>
<td>ANDREW</td>
<td>LB-LTL4</td>
<td>WEATHERPROOFING PER 3/8-BA</td>
<td>VENDOR</td>
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<tr>
<td>4</td>
<td>GROUNDING KIT</td>
<td>N/A</td>
<td>1</td>
<td>N/A</td>
<td>ANDREW</td>
<td>80PL-1-B84</td>
<td>INCLUDES 3/8&quot; GROUND WIRE</td>
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<td>5</td>
<td>COAXIAL CABLE</td>
<td>1/4</td>
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<td>60'</td>
<td>ANDREW</td>
<td>LC-4-90A</td>
<td>MINIMUM BEND RADIUS PER MANUFACTURER SPECS</td>
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<tr>
<td>6</td>
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<td>ANDREW</td>
<td>80PL-1-B84</td>
<td>INCLUDES 3/8&quot; GROUND WIRE</td>
<td>VENDOR</td>
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<tr>
<td>7</td>
<td>WEATHERPROOFING</td>
<td>N/A</td>
<td>1</td>
<td>N/A</td>
<td>ANDREW</td>
<td>LB-LTL4</td>
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<td>1</td>
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<td>LEER</td>
<td>DRL-2000</td>
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<td>SIRIUS XM</td>
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**SITE NAME:** GREEN STREET

**SITE ID:** SFX5-015

**SITE ADDRESS:** 101 GREEN ST, SAN FRANCISCO, CA 94109

**SITE CONFIGURATIONS:**

**MATERIAL LIST:**

**PROJECT #:** 2013.0042.0222

**FINAL ANTENNA CONFIGURATION**
**SITE NAME**
400 BEALE STREET

**SITE ID**
SFX502T

**SITE ADDRESS**
400 BEALE STREET
SAN FRANCISCO, CA 94105

**STRUCTURE TYPE**
ROOF TOP

**REQUIREMENTS**
- INSTALL (1) NEW SIRIUS XM PANEL ANTENNA ON EXISTING ROOFTOP
- INSTALL NEW SIRIUS XM RX DISH ON EXISTING ROOFTOP
- INSTALL NEW SIRIUS XM VSAT DISH ON EXISTING ROOFTOP
- INSTALL NEW SIRIUS XM GPS ANTENNA ON EXISTING ROOFTOP
- INSTALL NEW SIRIUS XM CABINET ON NEW STEEL PLATFORM ON EXISTING ROOF TOP
- ALL NEW MATERIAL SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS NOTED OTHERWISE. CABINETS, ANTENNAS AND CABLES FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR

**CERTIFICATION STATEMENT**
I HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.

---

**PROJEC T TEAM**

---

**APPROVALS**

---

**SHEET INDEX**

---

**DRIVING DIRECTIONS**

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**VICINITY MAP**

---

**CODE COMPLIANCE:**

- HANDICAP ACCESS REQUIREMENTS ARE NOT REQUIRED
- FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
- FACILITY HAS NO PLUMBING OR REFRIGERANTS
- THIS FACILITY SHALL MEET OR EXCEED ALL FAA AND FCC REGULATORY REQUIREMENTS

---

**PROJECT TEAM**

---

**ENGINEER**

---

**APPROVED BY**

---

**CHECKED BY**

---

**DRAWING SCALED TO 1/8" = 1'-0"**

---

**T-1**

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**FEC# 2015.0042.0025**
6. The contractor shall keep the contract area clean, hazard free and...

7. The contractor shall comply with all applicable local, county, state, and federal laws, codes, orders, and rules and regulations concerning construction safety and health. The contractor's representatives shall ensure that all employees, contractors, and subcontractors are made aware of the safety hazards and that they are provided with the necessary personal protective equipment.

8. The contractor shall comply with all applicable local, county, state, and federal regulations concerning construction safety and health. The contractor's representatives shall ensure that all employees, contractors, and subcontractors are made aware of the safety hazards and that they are provided with the necessary personal protective equipment.

9. The contractor shall ensure that all work is performed in a safe, secure, and nondestructive manner for protecting personnel and property.

10. The contractor shall comply with all applicable local, county, state, and federal regulations concerning construction safety and health. The contractor's representatives shall ensure that all employees, contractors, and subcontractors are made aware of the safety hazards and that they are provided with the necessary personal protective equipment.

11. The contractor shall ensure that all work is performed in a safe, secure, and nondestructive manner for protecting personnel and property.
(1) New Sirius XM 3"- Conduit on Sleepers for Routing of (3) New Cables

(1) New 0.298" RG-6Q Sirius XM Cable from New Cabinet to New GPS Antenna Routed Inside Conduit on New Sleepers

(1) New 1/2" RG-6Q Sirius XM Cable from New Cabinet to New High-Band RX Dish Routed Inside Conduit on New Sleeper

New Sirius XM 3RU-200W Cabinet Mounted on Steel Frame Anchored Existing Penthouse Wall

Existing Screen Wall

Existing Penthouse

Existing Vent (THR.)

Existing Stairs

Existing Screen Wall, Etc. Structure

Existing Roof

Elev. = 245'-7" AGL
ANTENNA NOTES:
1. The size, height, and direction of the antenna shall be adjusted to meet system requirements.
2. Contractor shall verify height of antenna with Sirius XM representative.
3. All antenna azimuth to be from true north.

STRUCTURAL NOTES:
Structural calculation prepared by Fullerton Engineering Consultants. Contractor to coordinate with Sirius XM representative to obtain a copy.
NEW SIRIUS XM 3/8" CONDUIT ON SLEEPERS FOR ROUTING OF (3) NEW CABLES

NEW SIRIUS XM TRIMBLE 57860-10 GPS ANTENNA ATTACHED TO EXISTING PENTHOUSE WALL

NEW SIRIUS XM TA-2304—LHCP CABLE FROM NEW CABINET TO NEW LOW-BAND VSAT DISH ROUTED INSIDE CONDUIT ON NEW SLEEPERS

NEW SIRIUS XM TRIMBLE 57860-10 GPS ANTENNA ATTACHED TO EXISTING PENTHOUSE WALL

NEW SIRIUS XM TA-2304—LHCP CABLE FROM NEW CABINET TO NEW LOW-BAND VSAT DISH ROUTED INSIDE CONDUIT ON NEW SLEEPERS

NEW SIRIUS XM 1/2" CABLE FROM NEW CABINET TO NEW HIGH-BAND RX DISH ROUTED INSIDE CONDUIT ON NEW SLEEPERS

NEW SIRIUS XM 1/2" CABLE FROM NEW CABINET TO NEW HIGH-BAND RX DISH ROUTED INSIDE CONDUIT ON NEW SLEEPERS

NEW SIRIUS XM 1/2" CABLE FROM NEW CABINET TO NEW GPS ANTENNA ROUTED INSIDE CONDUIT ON NEW SLEEPERS

NEW 0.298" RG6—QS SIRIUS XM CABLE FROM NEW CABINET TO NEW LOW-BAND VSAT DISH ROUTED INSIDE CONDUIT ON NEW SLEEPERS

NEW 0.298" RG6—QS SIRIUS XM CABLE FROM NEW CABINET TO NEW GPS ANTENNA ROUTED INSIDE CONDUIT ON NEW SLEEPERS

NEW SIRIUS XM TA-2324—LHCP HIGH-BAND RX DISH MOUNTED ON NEW MOUNTING FRAME

NEW SIRIUS XM 1771 W/O DEICING LOW-BAND VSAT DISH MOUNTED ON NEW MOUNTING FRAME

NEW SIRIUS XM TA-2324—LHCP HIGH-BAND RX DISH MOUNTED ON NEW MOUNTING FRAME

NEW SIRIUS XM TA-2324—LHCP HIGH-BAND RX DISH MOUNTED ON NEW MOUNTING FRAME

NEW SIRIUS XM 1771 W/O DEICING LOW-BAND VSAT DISH MOUNTED ON NEW MOUNTING FRAME

NEW SIRIUS XM 1771 W/O DEICING LOW-BAND VSAT DISH MOUNTED ON NEW MOUNTING FRAME
GPS MINIMUM SKY VIEW REQUIREMENTS

MINIMUM OF 75% OR 270' IN ANY DIRECTION

GPS ANTENNA
TRIMBLE (57860-30)

SIDE VIEW

NOTES:
1. THE ELEVATION AND LOCATION OF THE GPS ANTENNA SHALL BE IN ACCORDANCE WITH THE FINAL RF REPORT.
2. THE GPS ANTENNA MOUNT IS DESIGNED TO FASTEN TO A 0.5" STD. GALV. STEEL OR STAINLESS STEEL PIPE WITH 3/4"-11 PIPE THREAD AT ANTENNA MOUNT.
3. CONTRACTOR TO VERIFY THAT GPS MOUNT IS INSTALLED AND PLUMBED CORRECTLY
4. DO NOT SWEET TEST GPS ANTENNA.
REAR VIEW

SIDE VIEW

MANUFACTURER: TL-TEK
MODEL: TA-2324-LHP
WEIGHT: 6.36 lbs

STEP 7 CONNECTOR
O AX CABLE
N SATELLITE RADIO
S II~S I~IS X~

STEP 2 OVERLAP SHIELD WATER AWAY FROM CONNECTION
STEP 3 TAPE (1 LAYER)
STEP 4 TAPE (2 LAYERS IN 1-1/2" TAPE AND 3 LAYERS IN 3/4" TAPE, ALL WITH A MINIMUM OF 50% OVERLAP, COAT WITH 3M SCOTCH COTE)

NOTE:
ELECTRICAL TAPE ENDS CHECKED BY: AG
APPROVED BY: AR
REVIEWED:
REVISION:

PRODUCT INFORMATION:
COOPER B-LINE
509 W. MONROE ST. PRE-INSTALLED
HIGHLAND, IL 62249 1' UNISTRUT
FAX 618-654-1917
WEB: WWW.COOPERTLINE.COM

RX DISH SPECS
SCALE NTS 1 NOT USED

1. COAX MAINLINE FOR TX & RX ANTENNAS WILL BE LABELED AT THE TOP AND BOTTOM WITHIN 12" OF THE CONNECTORS.
2. COAX MAINLINE WILL BE PLACED A POWER SPLITTER LABEL MUST ALSO BE PLACED ON THE JUMPER CABLE 12" FROM THE ANTENNA CONNECTOR.
3. ANY COAX MAKING A WALL PENETRATION WILL BE LABELED ON EACH SIDE OF THE PENTRATION.
4. LOW BAND DIVERSITY IS NOT INSTALLED ON ALL SITES, ONLY THE CORE SITE FOR THE MARKET.
5. ALL COLOR CODED TAPE SHOULD BE 1-1/2" IN WIDTH.
6. ANTENNA LINE COLORS WILL BE AS FOLLOWS:
A. LB—RED (R)
B. HB—BLUE (B)
C. GPS—ORANGE (O)
D. VSAT— {} IM
E. RX DISH—{} IM
F. DIVERSITY—ORANGE (O)

TYPICAL COLOR CODING
SCALE NTS 4 NOT USED

RECEIVE
ANTENNA

GPS ANTENNA

WEATHERPROOFING DETAIL
SCALE NTS 2

NOTE:
ELECTRICAL TAPE ENDS CHECKED BY: AG
APPROVED BY: AR
REVIEWED:
REVISION:

SLEEPER DETAIL

SITE NAME:
400 BEALE STREET
SAN FRANCISCO, CA 94105

SITE DETAILS

SHEET NUMBER:
C-5A
NEW MOUNTING STRUCTURE PLAN VIEW

SCALE: 1" = 1'-0"

EXISTING SCREEN WALL

(1/4")-5/8" # BOLTS

EXISTING HSS 6x6 MEMBER (TYP.)

(1/4")-5/8" # BOLTS

NEW SIRIUS XM PANEL ANTENNA (T3-TEK-TA-2304-2-048-L-045)

1/2" U-BOLT

1/4" x 6" x 10"

HSS 2.5x2.5x1/4"

PIE 2.0 STD x 5'-0" LONG

NEW MOUNTING STRUCTURE ELEVATION VIEW

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

EXISTING SCREEN WALL

1/2" U-BOLT TYP.

1/4" x 6" x 10"

HSS 2.5x2.5x1/4"

EXISTING HSS 6x6 COLUMN (TYP.)

11/16" HOLES

(1/4")-5/8" # BOLTS

NEW SIRIUS XM PANEL ANTENNA (T3-TEK-TA-2304-2-048-L-045)

1/2" U-BOLT TYP.

1/4" x 6" x 10"

HSS 2.5x2.5x1/4"

EXISTING SCREEN WALL
### NEW ANTENNA CONFIGURATION

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<th>ANTENNA NUMBER</th>
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<th>ANTENNA MANUFACTURER</th>
<th>MODEL NUMBER</th>
<th>ANTENNA TYPE</th>
<th>MODEL NUMBER</th>
<th>AZIMUTH (°)</th>
<th>TILT (°)</th>
<th>% OF ANTENNA FROM GROUND LEVEL (FT)</th>
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<td>1</td>
<td>NEW</td>
<td>TILTEK</td>
<td>TA-2304-2-048-L-045</td>
<td>PANEL</td>
<td>TA-2304-2-048-L-045</td>
<td>40°</td>
<td>0°</td>
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<td>2</td>
<td>NEW</td>
<td>PRODELIN</td>
<td>VSAT</td>
<td>W/D DE-ICING</td>
<td>TA-2324-LHCP</td>
<td>129°</td>
<td>32°</td>
<td>264°</td>
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<td>TILTEK</td>
<td>RX</td>
<td>TA-2324-LHCP</td>
<td>TA-2324-LHCP</td>
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<td>264°</td>
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<td>4</td>
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<td>TRIMBLE</td>
<td>GPS</td>
<td>57860-30</td>
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### CABLE

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<td>LDFR-50A</td>
<td>1/2''</td>
<td>45'</td>
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<td>RG6-QS</td>
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<td>75'</td>
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<td>LDF4-50A</td>
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<td>60'</td>
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<tr>
<td>4 NEW</td>
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<td>50'</td>
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### NEW EQUIPMENT SCHEDULE

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<th>CABINET NUMBER</th>
<th>CABINET MANUFACTURER</th>
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<tr>
<td>1</td>
<td>UBS</td>
<td>REPEATER</td>
<td>DBU-200W</td>
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### NEW POWER SCHEDULE

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<th>AMPERE VOLTAGE PHASE</th>
<th>NOTES</th>
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<tbody>
<tr>
<td>40 AMPS 208/120V</td>
<td>UTILIZE EXISTING PANEL INSIDE ELECTRICAL ROOM ON 26TH FLOOR</td>
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</tbody>
</table>
NEW 4'x6' STEEL EQUIPMENT PLATFORM (ANDREW MEG-P4050 OR EQUIVALENT)

Existing Concrete Roof

NEW 4'x6' CABINET (WEIGHT 725 LBS.)

Flange on cabinet foot (cabinet not shown for clarity)
3/4" bolts into platform (typ. of 4)
3/8" plate

(1) 3/4" bolts with washers & nut to cabinet mounting flange (typ. of 4)

New Dru-200 cabinet

Existing Rooftop

See Detail 2 This Sheet

ELEVATION

Plan

Mounting Detail

Scale: 3/8" = 1'-0"
SERVICE EQUIPMENT NOTES:
1. All electrical equipment shall be labeled with permanent engraved plastic labels.

2. Patch, repair, and paint any area that has been damaged in the course of the electrical work.

CONDUIT NOTES:
1. All conduits shall be copper.
2. All wiring shall be copper with thin/thin dual rated 600 volts insulation.
3. Grounding conductors shall be solid tinned copper unless otherwise noted.

NEW CABLE GROUNDING NOTES:
1. Avoid disruption of existing grounding system.
2. Contractor shall connect ground kits to the existing ground bars at the top and base of tower.
3. No back to back lugging of grounds.

GENERAL GROUNDING NOTES:
1. Vertical drops shall be at least 30' and solid tinned copper wire,
2. All bends minimum 8" radius.
3. Apply anti-oxidation compound to all connections.
4. Bonding shall be done by cadweld to ground bar, earth, or exposed above grade.

ELECTRICAL NOTES:
1. Contractor to verify availability of existing conduit and reuse when possible.

NEW SIRIUS XM DRU-200W CABINET MOUNTED ON STEEL FRAME ANCHORED TO EXISTING ROOF SLAB

EXISTING ELECTRICAL ROOM AT 26TH FLOOR BELOW

NEW ROOF PENETRATION FOR ROUTE OF NEW CONDUIT DOWN TO ELECTRICAL ROOM BELOW SEE E-1-A FOR CONTINUATION

EXISTING ENCLOSURE WITH ELEVATOR POWER EQUIPMENT [AT ROOF LEVEL]

NEW 1/8" ELECTRICAL CONDUIT FROM NEW SIRIUS XM DRU-200W CABINET TO NEW SIRIUS XM DISTRIBUTION PANEL.
LOCATED INSIDE ELECTRICAL ROOM ON 26TH FLOOR BELOW.
ROUTE CONDUIT ON SLEEPERS AND ALONG PENTHOUSE WALL SEE E-1-A FOR CONTINUATION

EXISTING ELEVATOR PEN-THOUSE (TOP)

EXISTING SCREEN WALL

EXISTING VENT (TOP)
NOTE:
CONTRACTOR TO VERIFY AVAILABILITY OF EXISTING CONDUIT AND REUSE WHEN POSSIBLE

EXISTING DOOR (TYP.)
EXISTING ELECTRICAL ROOM
EXISTING StAIRWAY
NEw SIRIUS XM POWER DISTRIBUTION PANEL MOUNTED ON INTERIOR WALL
NEw SIRIUS XM E-MON/D-MON SUB-METER
NEw 1" ELECTRICAL CONDUIT ROUTED ALONG CEILING FROM EXISTING DISTRIBUTION PANEL, TO NEW SIRIUS XM DISTRIBUTION PANEL
NEw 1" ELECTRICAL CONDUIT ROUTED ALONG CEILING FROM EXISTING DISTRIBUTION PANEL, TO NEW SIRIUS XM DISTRIBUTION PANEL
EXISTING DISTRIBUTION PANEL TO BE UTILIZED BY SIRIUS XM
TO EXISTING LOADS

EXISTING 225A RATED HOUSE PANEL

TO EXISTING LOADS

NEW SIRIUS XM POWER DISTRIBUTION PANEL

NEW 40A, 2P BREAKER

BRANCH CIRCUIT W/(3) 10 AWG AND (1) 10 AWG FOR GND (75' RATED) IN 3/4' MIN. CONDUIT

FINAL SINGLE LINE DIAGRAM

FINAL PANEL SCHEDULE

<table>
<thead>
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<th>SITE NUMBER:</th>
<th>SFX502T</th>
<th>MODEL NUMBER:</th>
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<tbody>
<tr>
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<td>240/120</td>
<td>PHASE:</td>
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<tr>
<td>MAIN BREAKER:</td>
<td>225AMP NLO</td>
<td>WIRE:</td>
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<td>NEMA 1</td>
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<th>BREAKER USAGE FACTOR</th>
<th>BREAKER SERVICE LOAD VA</th>
<th>BREAKER USAGE FACTOR</th>
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TOTAL VA: 2,092
AMPS: 23.52
SERVICE EQUIPMENT NOTES:
1. All electrical equipment shall be labeled with permanent engraved plastic labels.
2. Patch, repair and paint any area that has been damaged in the course of the electrical work.

CONDUCTOR NOTES:
1. No EMT conduit shall be used when installed in or under concrete slabs, in contact with earth, or exposed above grade.
2. EMT shall be used only for interior runs and shall have compression type fittings.
3. Service conduits shall have no more than (3) 3/8 inch washers. Avoid bending in any single run. The contractor shall provide full boxes as needed when guard requirements exceed these conditions.
4. All cable, power, and/or telephone and/or fiber system conduits shall have a minimum of 20° bend radius where provided for otherwise noted, or as required by utility companies.

NEW CABLE GROUNDING NOTES:
1. Avoid disruption of existing grounding system. Repair any damage to the satisfaction of the owner.
2. Contractor shall connect ground kits to the new equipment ground bars at the top and base of the equipment.
3. Contractor shall connect ground kits to the new ground bar before entry to cabinet.
4. No back to back lugging of ground bars.

GENERAL GROUNDING NOTES:
1. Vertical drops shall be 20° of #2 and solid tinned copper wire, cadweld to ground bar.
2. All bends minimum 6" radius.
3. Apply anti-oxidation compound to all connections.
4. Base copper conductors shall not be in contact with any combustible material, place, or standoffs, if necessary, to allow for proper installation.
5. Sharp bends in grounding conductors shall be avoided. 90° bends shall not be used.
6. All ground conductors shall be kept as short as possible. The shortest practical route shall be chosen with the least amount of bends and splices. Use this rule at all times.
7. All connections to ground bars shall be with a 2-hole lug.
8. When grounding more than one piece of equipment, do not use the equipment as a grounding conductor. Double-stacking of lugs shall be used to get from equipment to equipment.
9. Remove all paint beneath the surface of ground lugs.
10. Ground system to be tested to 5 ohms or less.

NOTES:
1. All new ground bars shall be fed to (E) ground ring or bonded to (E) ground bars.
2. Use this rule at all times.
3. Apply anti-oxidation compound to all connections.
4. This details is typical for each cable where it is specified to be grounded.
### VSAT Antenna Configuration

<table>
<thead>
<tr>
<th>Item #</th>
<th>Description</th>
<th>Size</th>
<th>Quantity</th>
<th>Length</th>
<th>Manufacturer</th>
<th>Part Number</th>
<th>Remarks</th>
<th>Provided By</th>
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<td>1.0M</td>
<td>1 NEW</td>
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<td>PRODELIN</td>
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### GPS Antenna Configuration

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- SHEET NAME: SITE CONFIGURATIONS
- MATERIAL LIST: E-4
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RX ANTENNA CONFIGURATION

CIRCULAR POLARIZED SOLID PARABOLIC DISH ANTENNA

ATTACH TO CABLE PRIOR TO INSTALLATION

INCLUDES 50' GROUND WIRE, INSTALL 1 KIT EVERY 100 FT. MAX.

MINIMUM BEND RADIUS PER MANUFACTURERS SPECS

INCLUDES 50' GROUND WIRE, INSTALL 1 KIT EVERY 100 FT. MAX.

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