

**SITE LEASE AGREEMENT**

**Between Board of Water Commissioners of the City of Saint Paul and Sprint Spectrum L.P.**

This Lease Agreement (“Lease”) is entered into this \_\_\_\_ day of \_\_\_\_\_, 2017, between the **BOARD OF WATER COMMISSIONERS OF THE CITY OF SAINT PAUL**, a Minnesota municipal corporation (“Lessor”), and **SPRINT SPECTRUM L.P.**, a limited partnership organized and existing under the laws of Delaware, (“Lessee”).

In consideration of the terms and conditions of this Lease, the parties agree as follows:

**1. Leased Premises.**

(a) Lessor hereby leases to Lessee certain space located at and on Lessor’s Cottage Avenue Standpipe, located at 2095 Clear Ave E, Saint Paul, MN, and legally described in Exhibit “A” *Legal Description*. The water storage facility and its appurtenances (“Structure”), and the Lessor’s land upon which the Structure is situated are collectively called (“the Property”). The property interest leased and granted by the Lessor to Lessee (collectively, the “Leased Premises”) consists of the following:

- (1) ground space comprised of approximately \_\_\_\_\_ square feet, subject to any and all existing easements;
- (2) structure exterior space for attachment of antennas at alpha, beta & gamma sectors at \_\_\_\_\_ FAGL;
- (3) space required for cable runs to connect equipment and antennas;
- (4) non-exclusive easements required to run utility lines and cables;
- (5) non-exclusive easement across the Property for access.

(b) No other space or property interests are being leased to Lessee except as described above and as described on Exhibit “A” *Legal Description*.

**2. Terms/Renewals.**

(a) The initial term of this Lease shall commence on April 01, 2017 (the “Commencement Date”), and shall expire on December 31, 2022. Lessee and Lessor agree to enter into a

memorandum confirming the Commencement Date, as contained in Exhibit "F"  
*Memorandum of Lease Recording.*

- (b) Lessee shall have the right to extend this Lease for three (3) additional five (5) year terms (each a "Renewal Term") subject to (c) below.
- (c) This Lease shall automatically be renewed for each successive Renewal Term unless Lessee is in default beyond applicable notice and cure periods of any of the terms or conditions of this Lease, or unless Lessee provides Lessor with written notice of its intention not to renew not less than thirty (30) days prior to commencement of the succeeding Renewal Term.

**3. Rent.**

- (a) Lessee shall make all payments of rent to Lessor at the following address or until otherwise notified of a change in address:

Board of Water Commissioners  
Attn: SPRWS Accounting  
1900 Rice Street, Office Building  
Saint Paul, Minnesota 55113

- (b) Lessor's FIN number is # 41-6005521.
- (c) Lessee shall pay rent annually in advance, as indicated in the payment schedule below:
  - (1) Lessee shall pay Lessor, as rent, the sum of \$46,650.00 per year plus annual escalator described in Section 3(c)(4) based upon Lessee's installation and operation of the antenna facilities and frequencies identified in Exhibit "D" *Antenna Facilities and Frequencies*, ("Antenna Facilities").
  - (2) The first year's rent shall be pro-rated to the end of 2017 based on the Commencement Date for year 2017, and shall include a one-time administrative fee of Two Thousand Five Hundred Dollars (\$2,500.00), and shall be paid within sixty (60) days after the Commencement Date. Thereafter, the rent due hereunder shall be paid on or before the fifth (5<sup>th</sup>) day of each January of each succeeding year.
  - (3) Lessee shall not install and/or operate any additional antennas or related equipment beyond those Antenna Facilities and frequencies identified in Exhibit "D" *Antenna Facilities and Frequencies* without the prior written consent of Lessor, such consent not to be withheld, conditioned or delayed without cause. Such additional equipment may require an amendment to the Lease and increase in rent, as may be determined by Lessor. However, changes made exclusively to frequencies shall not require an amendment and shall not constitute grounds for revision of rent. Notwithstanding, Lessee has the right to perform routine maintenance and repairs without Lessor's approval.

(4) Commencing January 1, 2018, and on January 1<sup>st</sup> of each subsequent year, the rent shall be increased annually by five percent (5%).

**4. Engineering Studies**

(a) Structural Study

Prior to modifying the existing Antenna Facilities to increase the weight load on the Structure, Lessee must obtain an engineering study carried out by a qualified engineer, showing that the Structure is able to support the additional Antenna Facilities. If the study finds that the Structure is inadequate to support the proposed antenna loads, Lessee may not perform such modifications unless Lessee agrees to make structural modifications to the Structure in order to support the additional load.

(b) Interference Study

Prior to modifying the existing antennas or frequencies at the Leased Premises, Lessee must obtain a radio frequency interference study carried out by an independent professional radio frequency engineer ("RF Engineer") showing that Lessee's intended use will not interfere with any existing communications facilities located on the structure. RF Engineer shall provide said evaluation no later than thirty (30) days after frequencies are provided by Lessee. Lessee shall provide Lessor with a copy of a satisfactorily completed RF evaluation prior to transmitting or receiving radio waves at the Property.

**5. Use of Leased Premises.**

(a) Primary Use of Property

The primary use and purpose of the Property, including the Leased Premises, is for a water storage structure and appurtenances to provide water service to customers of the Lessor ("Primary Use"). Lessor's operations in connection with pursuit of the Primary Use ("Lessor's Operations") take priority over Lessee's operations.

(b) User priority

Lessee agrees that the following priorities of use, in descending order, shall apply in the event of communication interference, emergency public safety needs, or other conflict while this Lease is in effect, and Lessee's use shall be subordinate accordingly:

(1) Lessor;

(2) Public safety agencies, including law enforcement, fire, and ambulance services, that are not related to Lessor;

(3) Other governmental agencies where use is not related to public safety;

(4) Pre-existing lessees (defined as lessees that installed equipment prior to Lessee's original installation of equipment on September 19, 1996);

(5) Lessee.

(c) Jeopardy of Primary Use

- (1) In the event that the Lessor's Primary Use of the Structure is put at risk because of Lessee's operations ("Jeopardy"), Lessor shall provide written notice of such event to Lessee. Lessor and Lessee agree to work together to cure the occurrence that causes the Jeopardy. Lessee shall make all good efforts to cure the Jeopardy within thirty (30) days of receipt of written notice of event. If Lessee does not cure the Jeopardy within thirty (30) days of receipt of written notice of event, said occurrence of Jeopardy shall constitute an event of default by Lessee, as otherwise defined in *Section 14. Termination*. If circumstances beyond the control of Lessee prohibit the Jeopardy from reasonably being cured within thirty (30) days, Lessee shall notify Lessor of such circumstances and commence actions required to cure the Jeopardy (e.g. assessing the problem, ordering necessary equipment) within seven (7) days of Lessor's written notice of Jeopardy and shall diligently pursue the cure to completion within a reasonable time thereafter.
- (2) In the event of Jeopardy that poses an immediate threat of substantial harm or damage to the water supply, to persons, and/or property on the Leased Premises, as solely determined by Lessor ("Severe Jeopardy"), Lessor may enter the Leased Premises and take actions it determines are required to protect the water, individuals or personal property from such Severe Jeopardy; provided that promptly after such emergency entry onto the Leased Premises, and in no event later than twenty-four (24) hours after such entry, Lessor gives written notice to Lessee of Lessor's emergency entrance.
- (3) If Lessor determines that the conditions of a Severe Jeopardy would be benefited by cessation of Lessee's operations, Lessee shall immediately cease its operations on the Premises upon notice from Lessor to do so and Lessee shall be permitted to terminate this Lease upon written notice to Lessor.

(d) Lessee's Use of Leased Premises

- (1) Lessee shall have the non-exclusive right, at its sole cost and expense, to use the Leased Premises for the transmission and reception of communications signals ("Approved Use").
- (2) In accordance with this Approved Use, the Lessee has the right to install, operate, maintain, repair, replace, store or remove its antennas, utility building, equipment, personal property, leasehold improvements, and appurtenances as shown in Exhibit "D" *Antenna Facilities and Frequencies* and Exhibit "C" *Construction Plans*.
- (3) Lessee shall be responsible for all expenses incurred by the Lessor resulting directly from the use and/or occupancy of the Leased Premises by Lessee. Lessor shall submit an itemized invoice of such expenses to Lessee together with reasonable supporting documentation evidencing such expenses at the notice address set forth in Section 17 below and Lessee shall make payment to Lessor within sixty (60) days of receipt.

(e) Laws Governing Use

Lessee's Antenna Facilities and any other facilities shall be installed, maintained, and operated in accordance with all state or federal or local or municipal statutes, ordinances, rules, or regulations now in effect, or that hereafter may be issued by the Federal Communications Commission ("FCC") or any other governing bodies which apply to Lessee's Approved Use of the Leased Premises.

**6. Installation of Equipment and Leasehold Improvements.**

(a) Construction Plans

For the initial installation of all Antenna Facilities and for any and all subsequent revisions and/or modifications thereof, or additions thereto, Lessee shall provide Lessor and Lessor's Water Tower Construction Engineer ("Construction Engineer") each with comprehensive construction plans ("Construction Plans") consisting of the following:

- (1) line or CAD drawings showing location of all planned installations plus materials and construction methods;
- (2) specifications for all planned installations;
- (3) diagrams of Antenna Facilities for initial installation, and subsequently, diagrams of proposed antenna facilities for any and all revisions, modifications, or approved additions;
- (4) a complete and detailed inventory of all proposed equipment and personal property of Lessee to be placed on the Leased Premises. Lessor retains the right, at its sole cost and expense, to survey such equipment and personal property.

(b) Construction Plans shall be easily readable and subject to prior written approval by the Construction Engineer, which shall not be withheld, conditioned or delayed without cause. Lessor shall have thirty (30) business days to review and comment on the Construction Plans. Lessor, on behalf of itself and the Construction Engineer, hereby approves of the Construction Plans for the existing Antenna Facilities.

(c) Lessee shall be solely responsible for all costs associated with said review and approval of Construction Plans by Construction Engineer ("Review Fee") for the review of the Construction Plans for each subsequent revision, modification, or approved addition to the Antenna Facilities.

(d) Construction Scheduling

At least five (5) days prior to Lessee's construction mobilization, Lessee shall conduct a pre-construction meeting on the Property or other location as determined by Lessor. Said meeting shall be attended by the Construction Engineer, Lessee's representative and all contractors involved in the installation.

(e) Construction Inspection.

All construction activity for any and all subsequent revisions and/or modifications to the Antenna Facilities, or additions thereto shall be subject to inspection and approval by the

Construction Engineer to ensure compliance with the approved Construction Plans and the terms of this Lease. Inspection will be performed beginning with the pre-construction meeting and continuing through installation/construction/punch-list and verification of as-built drawings at project completion as determined by Lessor. Lessee agrees to pay for the cost of said inspections and project documentation ("Inspection Fees"). Lessor shall submit an itemized invoice of such Inspection Fees to Lessee at the notice address set forth in Section 17 below together with reasonable supporting documentation evidencing such fees and Lessee shall make payment to Lessor within sixty (60) days of receipt. If deemed necessary by the Construction Engineer, construction work performed without approval of the Construction Engineer will not be accepted and shall be removed or uninstalled at Lessee's sole expense, provided Lessor or the Construction Engineer notifies Lessee of such non-compliance within thirty (30) days of submission of as-built drawings to Lessor.

(f) Escrow

Prior to performing subsequent revisions and/or modifications to the existing Antenna Facilities or additions thereto, Lessee agrees to pay an escrow amount equal to the estimated costs of Review Fees and Inspection Fees as determined by Lessor for any and all such subsequent revisions and/or modifications thereof, or additions thereto, prior to commencement of such activities. If the escrow amount is insufficient for these expenses, Lessee agrees to pay the additional costs within forty-five (45) days of receipt of a detailed invoice from Lessor at the notice address set forth in Section 17 below together with reasonable supporting documentation evidencing such costs.

(g) Exposed Antenna Facilities

All Antenna Facilities and coaxial cables affixed to the Structure which have exterior exposure shall be as close to the color of the Structure as is commercially available to the Lessee. For exposed coaxial cables that Lessee desires to install after the Commencement Date of this Agreement, Lessor reserves the right to require Lessee to provide cables in manufactured colors in lieu of painting.

(h) Damage by Lessee

Any damage to the Property, Leased Premises, or Lessor's equipment thereon caused by Lessee's installation or operations shall be repaired or replaced at Lessee's expense and to Lessor's reasonable satisfaction.

(i) As-built drawings

Within thirty (30) days after Lessee activates the Antenna Facilities, Lessee shall provide Lessor with a Site Plan in electronic file format compatible with Lessor's record file system consisting of as-built drawings of the Antenna Facilities and the improvements installed on the Property, which shall show the actual location of all equipment and improvements. Said drawings shall be accompanied by a complete and detailed site survey of the property, inventory of all equipment, personal property, and Antenna Facilities.

7. **Modifications.**

- (a) Before the Lessee may update or replace the Antenna Facilities, Lessee must provide a detailed proposal to Lessor. The proposal shall include any information reasonably requested by Lessor of such requested update or replacement, including but not limited to revised lease exhibits as may be necessary, construction drawings and specifications as may be required under *Section 6. Installation of Equipment and Leasehold Improvements*, and engineering studies as may be required under *Section 4. Engineering Studies* of this Lease, carried out at Lessee's expense. The proposal must be approved by Lessor, which will not unreasonably withhold approval.
- (b) Lessee shall provide at least thirty (30) days written notice to Lessor before modifying frequencies on the Leased Premises. Said notice shall describe all equipment and frequencies proposed to be added or modified and shall be subject to evaluation by a RF Engineer approved by Lessor, which shall not be withheld, conditioned or delayed without cause. Said review shall consist of necessary interference studies to ensure that the modified or additional frequencies will not cause harmful radio interference to Lessor's Operations or the operations of Lessor's existing tenants. Lessee shall pay all costs for any such interference studies. In the alternative, Lessee may perform the interference studies and submit the results to the Lessor for review and approval.
- (c) If Lessee seeks to increase the number of antennas and/or associated transmitting accessories, and such installation shall exceed the requirements or standard discussed in the engineering report as required by Section 4.(a), then Lessee must obtain an engineering study carried out by a qualified professional demonstrating that the Structure can structurally support the additional accessories.
- (d) **As-built drawings**  
Within thirty (30) days after Lessee activates the Antenna Facilities, Lessee shall provide Lessor with a Site Plan in electronic file format compatible with Lessor's record file system consisting of as-built drawings of the Antenna Facilities and the improvements installed on the Property, which shall show the actual location of all equipment and improvements. Said drawings shall be accompanied by a complete and detailed site survey of the property, inventory of all equipment, personal property, and Antenna Facilities. By its signature below, Lessor acknowledges receipt of the foregoing Site Plan, site survey and inventory in the form required by this Section.

8. **Maintenance and Repairs.**

(a) **Property**

- (1) Lessor reserves the right to take any action it deems necessary, in its sole and reasonable discretion, to repair, maintain, alter, or improve the Property in connection with Lessor's Operations.
- (2) Lessor agrees to provide Lessee with thirty (30) days advance notice of such actions that may directly affect Lessee's operations, and to reasonably cooperate with

Lessee to carry out such activities in a manner that minimizes interference with Lessee's Approved Use.

(b) Structure Reconditioning and Repairs

- (1) From time to time, Lessor paints, reconditions, or otherwise improves or repairs the Structure in a substantial way ("Reconditioning Work"). Lessor shall reasonably cooperate with Lessee to carry out Reconditioning Work activities in a timely manner and in a manner that minimizes interference with Lessee's Approved Use.
- (2) Prior to commencing Reconditioning Work, Lessor shall provide Lessee with not less than ninety (90) days prior written notice thereof. Upon receiving such notice, it shall be the sole responsibility of Lessee to provide adequate measures to cover or otherwise protect Lessee's Antenna Facilities from the consequences of such activities, including but not limited to paint and debris fallout. Lessor reserves the right to require Lessee to temporarily remove all Antenna Facilities from the Structure and Leased Premises during Reconditioning Work.
- (3) During Lessor's Reconditioning Work, Lessee may maintain a mobile site on the Property or, after approval by Lessor, on any land owned or controlled by Lessor in the immediate area of the Property. If Property will not accommodate mobile equipment, it shall be Lessee's responsibility to locate auxiliary sites.
- (4) Lessee may request a modification of Lessor's procedures for carrying out Reconditioning Work in order to reduce the interference with Lessee's Approved Use. If Lessor agrees to the modification, Lessee shall be responsible for all incremental cost related to the modification.

(c) Leased Premises

Lessee shall, at its own cost and expense, maintain the Antenna Facilities in good and safe condition, and in compliance with applicable fire, health, building, and other life safety codes applicable to Lessee's Approved Use of the Leased Premises.

9. Property Access.

Access to the Property, including the Leased Premises, by outside persons, including Lessee's employees, agents and assigns, shall at all times be governed by Lessor's Security Plan, as may be revised from time to time and provided to Lessee in writing, in advance, with the most recent Plan being attached hereto and incorporated herein as Exhibit "E" *Security Plan*. Lessee agrees it shall conduct its operations on the Property and the Leased Premises in accordance with all requirements and conditions of said Security Plan. Subject to said requirements and conditions of said Security Plan, Lessee and Lessor agree to the following:

- (a) At no additional charge to Lessee, Lessee shall have access to the Leased Premises and Property, for any purpose relating to this Lease, twenty-four (24) hours a day, seven (7) days a week by means of existing access, as shown on Exhibit "B" *Site Survey*.



- (b) Lessee may, at its own cost and expense, enter upon the Property to study and determine the Property's suitability for any other use of Lessee, which studies may include surveys, radio wave propagation measurements, or field strength tests.
- (c) Lessor retains the right to examine and inspect the Leased Premises for safety reasons and to ensure Lessee's compliance with the terms of this Lease. Lessor shall be liable for, and hold harmless Lessee from, any damage to the Leased Premises or to Lessee's equipment and Antenna Facilities caused by Lessor in exercising its right to examine and inspect the Leased Premises.
- (d) At Lessee's sole cost and expense, Lessee has the right to obtain a title report or commitment for a leasehold time policy from a title company of its choice and to have the Property surveyed by a surveyor of its choice.

**10. Utilities.**

Lessor makes no representations that utilities adequate for Lessee's use of the Leased Premises are available. Lessee shall be responsible for the cost of all utilities installed and used by it at the Leased Premises. Lessor will cooperate with Lessee in Lessee's efforts to obtain utilities from any location provided by the servicing utility.

**11. Personal Property and Real Estate Taxes.**

If any of Lessee's improvements constructed on the Leased Premises should cause the Property, or any portion of it, to be taxed for real estate purposes, it shall be the liability of Lessee to pay that portion of such property taxes directly attributable to Lessee's equipment, provided Lessor shall give Lessee prior written notification of such taxes so that Lessee will have the opportunity to appear before the taxing authority to contest such taxes. Notwithstanding Lessee's right to contest such taxes, Lessee shall pay its share of such taxes within ninety (90) days of receiving notice of the same.

**12. Certificates, Permits, Zoning, and other Approvals.**

Lessee's use of the Leased Premises herein is contingent upon its obtaining all certificates, permits, zoning, and other approvals that may be required by any federal, state or local authority, including but not limited to an engineering study and a radio frequency interference study. Lessee shall, at its sole cost and expense, obtain all such necessary permits, licenses and other approvals and Lessor agrees to cooperate with Lessee in Lessee's pursuit of all such necessary permits, licenses or approvals, and Lessee shall reimburse Lessor its reasonable costs to provide such cooperation.

**13. Interference.**

- (a) In the performance of its Approved Use, Lessee shall not damage or interfere with Lessor's Operations, including its radio frequency transmissions, or approved operations of other parties that were in place on the Property prior to the Commencement Date of this Lease, provided that the equipment used by Lessor or other lessees is operating

within the technical parameters specified by its manufacturer and/or as defined by the FCC. In the event of any such interference, Lessee shall immediately cease such interference, except for brief tests necessary for the elimination of the interference and until Lessee is able to resolve the problem. In the event Lessee cannot correct the interference, Lessee shall have the option to terminate this Lease, pursuant to *Section 14. Termination*. Lessee shall not be responsible for interference that results from a change in the operations of other tenants after the Commencement Date of this Lease.

- (b) Lessee acknowledges that Lessor may lease the Property, or any part of it, to other parties in close proximity to the Leased Premises, and Lessee agrees to work cooperatively with any such other parties, using accepted technical standards in accordance with FCC standards, to ensure that such other parties' use and Lessee's use will be compatible and will not cause interference with each other.
- (c) Lessor in no way guarantees to Lessee noninterference with Lessee's transmission operations provided, however, that in the event that any other party requests permission to place any type of additional antenna or transmission facility on the Property, the procedures of this Section shall govern to determine whether such antenna or transmission facility will interfere with Lessee's transmission operations.
- (d) In the event that Lessee or other tenants on the Property experience interference of their FCC-approved frequencies and they cannot reach agreement as to the cause and remedy of such interference, an RF Engineer approved by the Lessor shall determine such cause and remedy and Lessee shall abide by the RF Engineer's determination, subject to Lessee's right to terminate this Lease.

#### **14. Termination.**

- (a) Except as provided for in Section 14.(a)(3)b. below, or as otherwise provided herein, this Lease may be terminated by either party upon sixty (60) days written notice to the other party for the following reasons:
  - (1) By either party, upon a material default of any other covenant or term hereof by the other party; which default is not cured within sixty (60) days of receipt of written notice of default to the other party (without, however, limiting any other rights of the parties at law, in equity, or pursuant to any other provisions hereof), or if such cure cannot be completed within sixty (60) days, within such reasonable time as may be required, provided the defaulting party commences the cure within ten (10) days of receipt of written notice of default and diligently pursues such cure to completion;
  - (2) By Lessee, in the event that:
    - a. Lessee is unable to obtain or maintain any license, permit, or other governmental approval necessary for the construction and/or operation of the Antenna Facilities;
    - b. the Leased Premises are or become unusable under Lessee's design or engineering specifications for its Antenna Facilities, or the communications system to which the Antenna Facilities belong; or

- c. Lessee's transmission is interfered with by Lessor or its other tenants' equipment. Such right to terminate shall become void if Lessor cures such interference within thirty (30) days of receipt of written notice.
  - d. If the Property or any portion thereof is destroyed or damaged so as to hinder its effective use, Lessee may elect to terminate this Lease upon thirty (30) days written notice to Lessor. In such event, all rights and obligations of the parties shall cease as of the date of the damage or destruction and Lessee shall be entitled to the reimbursement of any rent prepaid by Lessee, prorated to the date of the event.
- (3) By Lessor, in the event that:
- a. Lessor determines, after review by an independent structural engineer, that the Property is structurally unsound, including but not limited to consideration of age of the Structure, damage or destruction of all or part of the Property from any source, or factors relating to condition of the Property;
  - b. Lessee fails to pay rent provided for in *Section 3. Rent* within thirty (30) days of receipt of written notice from Lessor of a rent payment being overdue; or
  - c. Lessee does not complete installation of its Antenna Facilities as shown on Exhibit "D" *Antenna Facilities and Frequencies* within one (1) year of the Commencement Date of this Lease.
  - d. Upon 120 days prior written notice by the Lessor to Lessee if Lessor decides, for any reason, to redevelop and/or discontinue use of the Leased Premises in a manner inconsistent with continued use of the Leased Premises by Lessee.
- (b) If this Lease is terminated, pursuant to the terms and conditions of Section 14.(a), rent shall be pro-rated to the expiration date or the date on which all of Lessee's equipment is removed from the Leased Premises and the Property is restored pursuant to *Section 23. Surrender of Leased Premises*, whichever is later.
- (c) If Lessee terminates this Lease other than provided for in Section 14.(a), Lessee shall pay to Lessor a termination fee in the amount of twenty-five percent (25%) of the rent for the year in which Lessee terminates, unless Lessee terminates during the last year of any Term under *Section 2. Terms/Renewal* and Lessee has paid the rent for that year.
- (d) In the event Lessee becomes aware of any hazardous materials on the Property, or any environmental, health or safety conditions or matter relating to the Property, that, in Lessee's sole determination, renders the condition of the Leased Premises or Property unsuitable for Lessee's use, or if Lessee believes that the leasing or continued leasing of the Leased Premises would expose Lessee to undue risks of liability to a government agency or third party, Lessee will have the right, in addition to any other rights it may have at law or in equity, to terminate this Lease upon written notice to Lessor specifically identifying all such materials, conditions or matters relating to the Property.

## **15. Insurance.**

- (a) Lessee shall obtain and maintain the following insurance to protect the parties against insurable claims, demands, actions, judgments, expenses, and liabilities that may arise out of or result from Lessee's use of the Leased Premises:

(1) General Liability Insurance

- a. Bodily Injury           \$1,500,000 each occurrence  
                                  \$3,000,000 aggregate
- b. Property Insurance   \$1,500,000 each accident  
                                  \$3,000,000 aggregate
- c. These limits may be satisfied by the commercial general liability coverage or in combinations with an umbrella or excess liability policy, provided coverage afforded by the umbrella or excess policy are no less than the underlying commercial general liability coverages.
- d. Policy must include an "all services, products, or completed operations" endorsement. Lessee shall maintain Completed Operations coverage for a minimum of two years after the construction is completed.

(2) Automobile Insurance

- a. Bodily Injury           \$1,000,000 per person  
                                  \$1,500,000 per accident
- b. Property damage not less than \$1,500,000 per accident
- c. The liability limits may be afforded under the Commercial Policy, or in combination with an umbrella or excess liability policy provided coverages of rides afforded by the umbrella or excess policy are not less than the underlying Commercial Auto Liability coverage.
- d. The Commercial Automobile Policy shall include at least statutory personal injury protection, uninsured motorists and under insured coverages.
- e. Coverage shall be provided by Bodily Injury and Property Damage for the ownership, use, maintenance or operation of all owned, non-owned and hired automobiles.

(3) Workers' Compensation and Employer's Liability

- a. Workers' Compensation per Minnesota Statute
- b. Employer's Liability shall have minimum limits of:
  - 1. \$500,000 per accident;
  - 2. \$500,000 per employee
  - 3. \$500,000 per disease policy limit
- c. Lessees with 10 or fewer employees who do not have Workers' Compensation coverage are required to provide a completed "Certificate of Compliance" (State

of Minnesota form MN LIC 04) verifying the number of employees and the reason for their exemption.

- (b) Lessee shall provide Lessor, prior to the Commencement Date and, and annually thereafter prior to expiration date of the same, evidence of the required insurance in the form of a certificate of insurance issued by an insurance company licensed to do business in the State of Minnesota, which includes all coverage required in Section 15.(a) above.
- (c) Policies are to be written on an occurrence basis or as acceptable to the Lessor. Certificate of Insurance must indicate if the policy is issued on a claims-made (if expressly approved by Lessor) or occurrence basis. All certificates of insurance shall provide that Lessor shall be given notice of cancellation in accordance with the policy's terms and conditions.
- (d) Additional Insured – Certificate of Insurance.  
The Lessee shall provide, prior to tenancy, evidence of the required insurance in the form of a Certificate of Insurance issued by a company (rated A- or better by Best Insurance Guide) licensed to do business in the state of Minnesota, which includes all coverage required in this *Section 15. Insurance*. General Liability and Automobile policies shall include the Lessor and the City of Saint Paul as additional insured, and shall provide that it will be the primary coverage.

**16. Indemnity.**

Lessee agrees to indemnify, defend, save, and hold harmless Lessor and the City of Saint Paul, and/or any agents, officers or employees thereof from all claims, demands, actions, or causes of action of whatsoever nature or character, arising out of, or by reason of, the leasing of the Leased Premises by the Lessor to Lessee, or arising out of, or by reason of, the use or condition of the Leased Premises, or as a result of Lessee's operations or business activities taking place on the Leased Premises or Lessee's breach of any provision of this Lease, provided the same is not due to the contributory negligence or willful misconduct of the Lessor, the City of Saint Paul and/or any agents, contractors, officers, or employees thereof. It is fully understood and agreed that Lessee is aware of the conditions of the Leased Premises and leases the same "as is".

**17. Notices.**

All notices, requests, demands, and other communications hereunder shall be in writing and shall be deemed to have been duly given (a) when delivered in person, (b) upon receipt after dispatch by registered or certified mail or (c) on the next Business Day if transmitted by national overnight courier (with confirmation of delivery) to the following addresses:

If to Lessor:                    Board of Water Commissioners  
    Attn: General Manager  
    1900 Rice Street, Office Building  
    Saint Paul, Minnesota 55113

If to Lessee, to:                Sprint Property Services  
    Sprint Side ID: MS03XC472

Mailstop KSOPHT0101-Z2650  
6391 Sprint Parkway  
Overland Park, Kansas 66251-2650

With copy to: Sprint Law Department  
Sprint Site ID: MS03XC472  
Mailstop KSOPHT0101-Z2020  
6391 Sprint Parkway  
Overland Park, Kansas 66251-2020  
Attn.: Real Estate Attorney

**18. Representations and Warranties.**

- (a) Lessor represents that (i) it has full right, power, and authority to execute this Lease; (ii) it has good and unencumbered title to the Property free and clear of any liens or mortgages, subject to such liens of record; (iii) Lessee shall have quiet enjoyment of the Leased Premises during the term of this Lease in accordance with its terms.
- (b) Lessee warrants that the individuals signing and executing this Lease on behalf of Lessee have the requisite corporate power and authority to enter into and perform this Lease on behalf of Lessee. Lessor warrants that the individuals signing and executing this Lease on behalf of Lessor have the requisite corporate power and authority to enter into and perform this Lease on behalf of Lessor.
- (c) Lessor represents that it has no knowledge of any substance, chemical or waste on the Property that is identified as hazardous, toxic or dangerous in any applicable federal, state or local law or regulation, as defined in Section 18.(d) of this Lease. Lessor will be solely liable for and will defend, indemnify and hold Lessee, its agents and employees harmless from and against any and all direct claims, costs and liabilities, including reasonable attorneys' fees and costs, arising out of or in connection with the removal, cleanup or restoration of the Property with respect to hazardous, toxic or dangerous materials from any and all sources other than those hazardous, toxic or dangerous materials introduced to the Property by Lessee. Lessee represents and warrants that its use of the Leased Premises herein will not generate and it will not store or dispose on the Property nor transport to or over the Property any hazardous substance, chemical or waste contrary to any applicable law or regulation. Lessee further agrees to hold Lessor harmless from and indemnify Lessor against any release of any such hazardous substance, and any damage, loss, expense, or liability resulting from the breach of this representation or from the violation of any applicable state or federal law by such release associated with Lessee's use of hazardous substances, including payment of all reasonable attorneys' fees, costs, and penalties incurred as a result thereof, except for any release caused by the negligence or willful misconduct of Lessor, its employees, or agents.
- (d) "Hazardous substance" shall be interpreted broadly to mean any substance or material defined or designated as hazardous or toxic waste, hazardous or toxic material, hazardous

or toxic or radioactive substance, or other similar term by any federal, state, or local environmental law, regulation or rule presently in effect or promulgated in the future, as such laws, regulations, or rules may be amended from time to time. Lessor acknowledges Lessee's use of batteries as back-up power and deems them acceptable as long as such batteries are used and disposed of in accordance with all applicable laws.

**19. No Liability on Lessor.**

Except due to Lessor's willful misconduct or negligence, Lessor shall not be liable for any damage to Lessee's equipment or Antenna Facilities, and Lessor shall not be liable for vandalism or malicious mischief caused by third parties, known or unknown, to Lessee's equipment or facilities, nor shall Lessor be liable for any lost revenue, business or profits of Lessee.

**20. Assignment.**

- (a) This Lease may be sold, assigned or transferred by Lessee without approval or consent of Lessor to Lessee's principal, affiliates, subsidiaries of its principal or to any entity which acquires all, or substantially all, of Lessee's assets in the market defined by the FCC in which the Property is located by reason of a merger, acquisition or other business reorganization. Lessee shall provide Lessor written notice of any such sale, assignment or transfer within sixty (60) days after the effective date thereof. As to other parties, this Lease may not be sold, assigned or transferred without the written consent of Lessor, which such consent shall not be unreasonably withheld, delayed or conditioned. No change of stock ownership, partnership interest or control of Lessee or transfer upon partnership or corporate dissolution of Lessee shall constitute an assignment hereunder.
- (b) The parties acknowledge that this is a nonexclusive lease. Nothing in this Lease shall preclude Lessor from leasing other space on the Property to any other person or entity which may be in competition with Lessee, or any other party, subject to the conditions set forth in *Section 13. Interference.*

**21. Condemnation.**

Lessor shall provide to Lessee notice of any condemnation proceedings within thirty (30) business days of receipt. In the event the whole of the Leased Premises is taken by eminent domain, this Lease shall terminate as of the date title to the Leased Premises vests in the condemning authority. In the event a portion of the Leased Premises is taken by eminent domain, either party shall have the right to terminate this Lease as of said date of title transfer, by giving thirty (30) days written notice to the other party. In the event of any taking under the power of eminent domain, Lessee shall not be entitled to any portion of the reward paid for the taking and the Lessor shall receive full amount of such award. Lessee hereby expressly waives any right or claim to any portion thereof. Although all damages, whether awarded as compensation for a decrease in value of the leasehold or to the fee of the Leased Premises, shall belong to Lessor, Lessee shall have the right to claim and recover from the condemning authority, but not from Lessor, such compensation as may be separately awarded or recoverable by Lessee on account of any and all damage to Lessee's business and

any costs or expenses incurred by Lessee in moving/removing its equipment, personal property, Antenna Facilities, and leasehold improvements.

**22. Successors and Assigns.**

This Lease shall run with the Property. This Lease shall be binding upon and inure to the benefit of the parties, their respective successors and assigns.

**23. Surrender of Leased Premises.**

- (a) All portions of the Antenna Facilities brought onto the Property by Lessee will be and remains Lessee's personal property and, at Lessee's option, may be removed by Lessee at any time during or after the term or extension thereof. In the event that this Lease is terminated or not renewed, Lessee shall have sixty (60) days from the termination or expiration date to quit peacefully and surrender possession of the Leased Premises in as good condition as when it was delivered to Lessee, reasonable wear and tear and casualty loss excepted. Lessee shall remove its equipment, personal property, Antenna Facilities, and leasehold improvements from the Property, and shall repair any damage to the Property caused by such equipment, all at Lessee's own cost and expense.
- (b) In the event that Lessee's Antenna Facilities and related equipment are not removed and the Property is not restored to the reasonable satisfaction of the Lessor within sixty (60) days from the termination or expiration date, the Lessor shall have the option to fully decommission the Antenna Facilities, have the Antenna Facilities removed, and repair the site and restore the property, and Lessee shall be responsible for the cost of such actions.

**24. Marking and Lighting Requirements.**

- (a) Lessor acknowledges that it shall be responsible, at its sole cost and expense, for compliance with all building marking and lighting requirements that the Federal Aviation Administration ("FAA") may require with respect solely to the height of the Structure. The responsibility, however, is expressly limited to the requirements that would be required of an elevated water storage facility having no communications equipment installed on it, irrespective of Lessee's Antenna Facilities. Lessor shall indemnify and hold harmless Lessee from any fines or other liabilities caused by Lessor's failure to comply with such requirements for an elevated water storage facility Structure. Further, should the FAA cite Lessor, or in the event any claims are brought against Lessor because the Structure alone is not in compliance, as opposed to the Structure with Antenna Facilities, then Lessor shall indemnify Lessee for full costs, liabilities, damages and expenses, including reasonable attorney's fees. Further, if Lessor does not cure the conditions of noncompliance on the Structure within the time frame allowed by the citing agency, Lessee may terminate this Lease immediately without any further liability hereunder upon written notice to Lessor.
- (b) Lessee acknowledges that it shall be responsible at its sole cost and expense, for compliance with all building marking and lighting requirements that the FAA may require with respect to Lessee's Antenna Facilities. In the event the FAA determines that



the Structure must be additionally marked, lighted, or in any way modified, due to the existence of Lessee's Antenna Facilities, Lessee shall have the option to mark, light or modify the Structure at its sole expense, or to terminate this Lease, pursuant to *Section 14. Termination*. Said marking, lighting and modifying shall be subject to prior written approval by Lessor, such approval not to be withheld without cause. Lessor shall approve or object to such plans within a reasonable period of time to allow timely compliance with FAA regulations.

**25. RF Radiation Compliance.**

- (a) An RF Engineer approved by the Lessor shall perform a radiation survey of the Property following Lessee's initial RF transmissions on the Leased Premises. Lessee shall be responsible for all costs of such survey.
- (b) Lessee shall implement all measures at the transmission site required by FCC regulations, including but not limited to posting signs and markings. Lessor shall cooperate with and permit Lessee to implement all reasonable measures in order for Lessee to fulfill its Radio Frequency exposure obligations. Lessor agrees that in the event any future party causes the entire site to exceed FCC Radio Frequency radiation limits, as measured on the Premises, Lessor shall hold such future party liable for all such later-arising non-compliance.

**26. Third Party Approvals, Inspections and Evaluations.**

The Lessee shall be responsible for all reasonable costs, as determined by Lessor, associated with obtaining required reviews, approvals, inspections, studies, surveys or evaluations, whether required by this Lease or by other governing authorities.

**27. Noise Restrictions.**

- (a) All wireless service facilities shall be constructed and operated in such a manner as to minimize the amount of noise impacts to residents of nearby homes and the users of recreational areas, such as public parks and trails. Proposed anticipated noise levels must be approved by Lessor. Plan review may require noise reduction measures.
- (b) Noise from Lessee's equipment shall not exceed the level allowed by the local jurisdiction ("Allowable Noise Level"), as measured at any location on neighboring property. Lessor will take noise level measurements from time to time to verify compliance. In the event it is found that Lessee's equipment exceeds the Allowable Noise Level, Lessor shall provide Lessee with written notice and Lessee shall take immediate steps to provide permanent reduction in the noise of its equipment to the Allowable Noise Level. If Lessee does not so reduce its Measured Sound Level within sixty (60) days of receipt of written notice of event, said occurrence shall constitute an event of default as otherwise defined in *Section 14. Termination*.
- (c) Board reserves the right to require noise reduction measures necessary to reduce noise to a level determined solely by the Board.

**28. Miscellaneous.**

- (a) Each party agrees to furnish to the other, within thirty (30) days after notice of receipt of the request, such truthful estoppel information as the other party may reasonably request.
- (b) This Lease constitutes the entire agreement and understanding of the parties and supersedes any and all offers, negotiations, or other agreements of any kind with respect to its subject matter. There are no representations or understandings of any kind not set forth herein. Any modification of or amendment to this Lease must be in writing and executed by both parties. No provision of this Lease will be deemed waived by either party unless expressly waived in writing by the waiving party. No waiver shall be implied by delay or any other act or omission of either party. No waiver by either party of any provisions of this Lease shall be deemed a waiver of such provision with respect to any subsequent matter relating to such provision.
- (c) This Lease shall be construed in accordance with the laws of the State of Minnesota. Any legal action may only be commenced and proceed in the relevant district court in Ramsey County, Saint Paul, Minnesota.
- (d) If any term of this Lease is found to be void or invalid, such invalidity shall not affect the remaining terms of this Lease, which shall continue in full force and effect.
- (e) Upon request by Lessee, Lessor agrees to execute a recordable Memorandum of this Lease.
- (f) Any terms and conditions contained in this Lease that by their sense and context are intended to survive the termination or expiration of this Lease shall so survive.
- (g) The submission of this Lease to any party for examination or consideration does not constitute an offer, reservation of or option for the Leased Premises based on the terms set forth herein. This Lease will become effective as a binding Lease only upon the handwritten legal execution and delivery hereof by Lessor and Lessee.
- (h) The parties acknowledge that space at the Leased Premises was previously leased between Lessor and Lessee under the terms and conditions of that certain Water Tower Site Lease Agreement dated September 19, 1996, as supplemented to by that certain Lease Supplement dated September 25, 1996, as modified by that certain Consent Letter dated June 21, 2013, as modified by that certain Consent Letter dated November 1, 2013, and as amended by Amendment No. 1 to Site Lease Agreement dated January 26, 2017 (collectively, the "Prior Lease"). Lessor and Lessee acknowledge and agree that the Prior Lease expires effective as of 11:59 p.m. on March 31, 2017, and that thereafter, the terms and conditions of this Lease shall be the sole instrument governing the leasing of space by Lessee at the Property.

(i) Exhibits "A" through "F" listed below and attached hereto are hereby incorporated into this Lease by reference.

Exhibit "A" *Legal Description*

Exhibit "B" *Site Survey*

Exhibit "C" *Construction Plans*

Exhibit "D" *Antenna Facilities and Frequencies*

Exhibit "E" *Security Plan*

Exhibit "F" *Memorandum of Lease Recording*

[Remainder of this page is left intentionally blank]

IN WITNESS WHEREOF, the parties hereto have executed this Lease, the day and year first written below.

**For Lessor:**

**BOARD OF WATER COMMISSIONERS  
OF THE CITY OF SAINT PAUL**  
FIN # 41-6005521

Approved:

By \_\_\_\_\_  
Stephen P. Schneider, General Manager  
Saint Paul Regional Water Services

By \_\_\_\_\_  
Matt Anfang, President

Approved as to form:

By \_\_\_\_\_  
Assistant City Attorney

By \_\_\_\_\_  
Mollie Gagnelius, Secretary

**CITY OF SAINT PAUL**

By \_\_\_\_\_  
Kristin Beckmann, Deputy Mayor

By \_\_\_\_\_  
Shari Moore, City Clerk

By \_\_\_\_\_  
Todd Hurley, Director  
Office of Financial Service

**For Lessee:**

**SPRINT SPECTRUM L.P.**

By: \_\_\_\_\_

Print name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

## **EXHIBIT "A"**

### **Legal Description**

That part of the Southeast Quarter (SE ¼), Section twenty-three (23), Township twenty-nine (29), Range twenty-two (22), commencing at a point 678.71 feet East of the Northwest corner of Lot 12, Katherine's Addition, according to the recorded plats thereof on file and of record in the Office of the Registrar of Titles, in and for Ramsey County, Minnesota; thence South 268.97 feet to a point 711.69 feet Easterly from the West line of the Northwest Quarter (NW ¼) of the Southeast Quarter (SE ¼) of Section twenty-three (23), Township twenty-nine (29), Range twenty-two (22) Ramsey County, Minnesota; thence Easterly 162 feet; thence Northerly to the South line of Cottage Avenue. All in Ramsey County, Minnesota

**EXHIBIT "B"**

**Initial Site Survey  
Dated 07/30/1996**

**Fiber Survey  
Dated 06/17/2013**



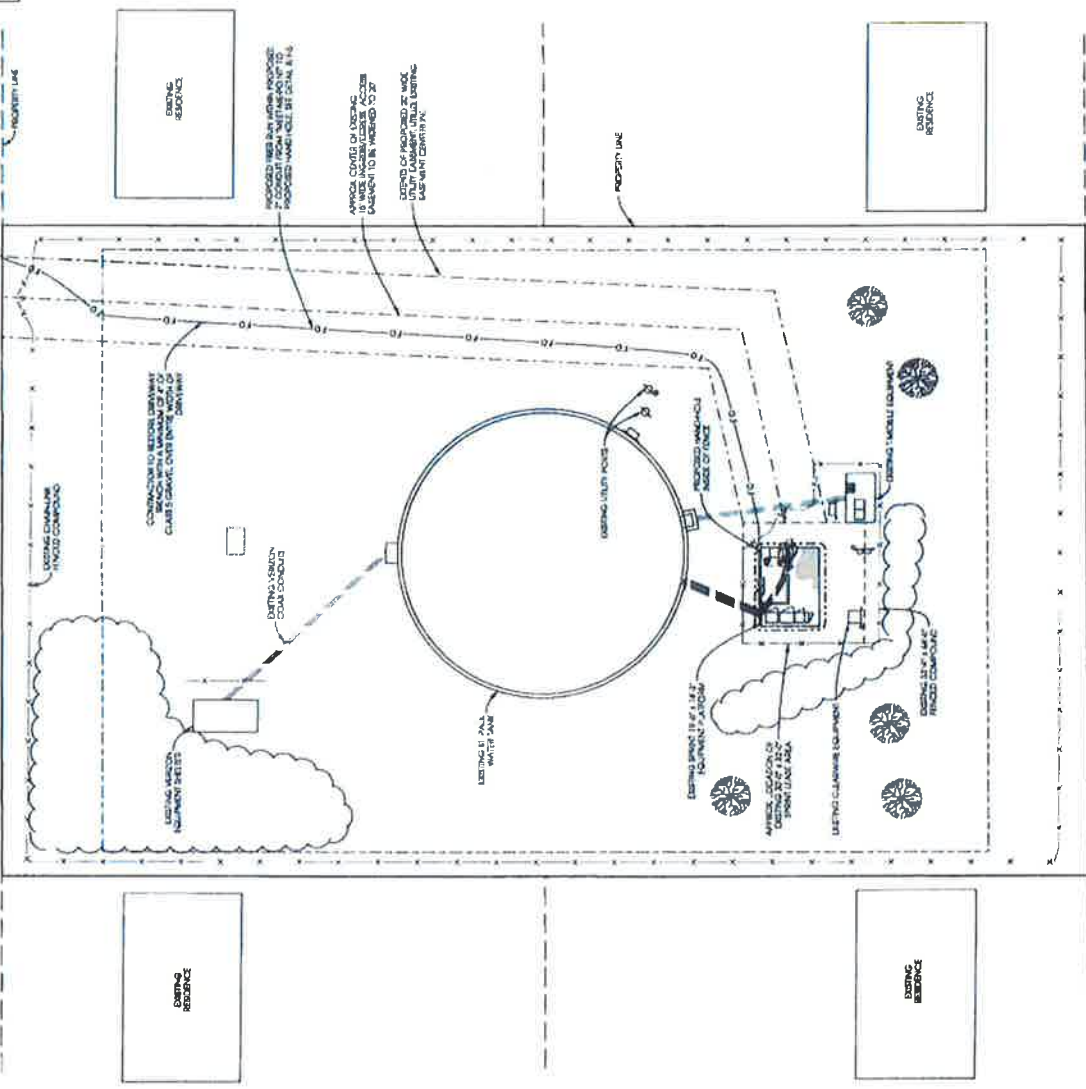


# COTTAGE AVENUE

**NOTE**

1. PROPERTY LINES SHOWN ARE APPROXIMATE AND DONE WITHOUT THE BENEFIT OF A SITE SURVEY.
2. CONDUIT ROUTES ARE PARAMETRICALLY SHOWN ON THIS PLAN AND ARE ONLY APPROXIMATIONS. THE EXACT LOCATION AND ROUTING SHALL BE FIELD VERIFIED.
3. UTILITY AND ACCESS DASHED LINES SHOWN ARE APPROXIMATE LOCATION. CONTRACTOR TO VERIFY EXACT LOCATION.
4. FOR PHYSICAL BENCH ORIGIN SEE SHEET 14, DETAIL E.

LENGTH OF THIS RUN	METRE POINT TO END
DISTANCE	250' +/-



PROJECT NO: NS03XC472  
 EDGE PROJECT NO: 0773  
 DRAWN BY: TCD, GCD  
 CHECKED BY: GGD

REV	DATE	DESCRIPTION
E	20/11/2013	SHALL FOR FIBRE USE
D	16/04/2013	SHALL FOR FIBRE USE
C	20/11/2013	SHALL FOR FIBRE USE
B	20/11/2013	SHALL FOR FIBRE USE
A	15/09/2011	SHALL FOR FIBRE USE

*Handwritten signature and date: 6/1/2013*

IT IS A VIOLATION OF LAW FOR ANY PERSON TO REPRODUCE OR TRANSMIT THIS DOCUMENT OR ANY INFORMATION CONTAINED THEREIN WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER. TO ALTER THE DOCUMENT.

NS03XC472  
 ST PAUL WATER TOWER  
 2100 E COTTAGE AVE  
 ST. PAUL, MN 55119

SHEET TITLE  
**OVERALL FIBER PLAN**

SHEET NUMBER  
**F-1**



**EXHIBIT "C"**

**Fiber Construction Plans  
Dated 06/17/2013 Rev E**

**Construction Plans  
Dated 10/24/2013 Rev 3**

# Sprint



**SITE NAME:** ST. PAUL WATER TOWER  
**SITE NUMBER:** M803XC472  
**SITE ADDRESS:** 2100 E. COTTAGE AVE.  
 ST. PAUL, MN 55119  
**SITE TYPE:** EXISTING 70' WATER TOWER



PROJECT NO:	M803XC472	
EDGE PROJECT NO:	0773	
DRAWN BY:	TOD, GCD	
CHECKED BY:	OGD	
DATE:	12/11/2013	
SCALE:	AS SHOWN	
REVISIONS:		
1	12/11/2013	ISSUED FOR PERMITS
2	12/16/2013	ISSUED FOR PERMITS
3	12/16/2013	ISSUED FOR PERMITS
4	12/16/2013	ISSUED FOR PERMITS
5	12/16/2013	ISSUED FOR PERMITS
6	12/16/2013	ISSUED FOR PERMITS
7	12/16/2013	ISSUED FOR PERMITS
8	12/16/2013	ISSUED FOR PERMITS
9	12/16/2013	ISSUED FOR PERMITS
10	12/16/2013	ISSUED FOR PERMITS

*Signature*  
 I, ALEXANDER J. JAMICH, PE, PLS, A LICENSED PROFESSIONAL ENGINEER, AM ILLINOIS REGISTERED PROFESSIONAL ENGINEER TO ALICE THE LOCATION.

M803XC472  
 ST. PAUL WATER TOWER  
 2100 E. COTTAGE AVE  
 ST. PAUL, MN 55119

SHEET TITLE  
**TITLE SHEET & PROJECT DATA**

SHEET NUMBER  
**FT-1**

**SITE INFORMATION**

**SITE ADDRESS:**  
 2100 E. COTTAGE AVE  
 ST. PAUL, MN 55119

**OWNER/PROPERTY OWNER:**  
 SPRINT COMMUNICATIONS AMERICA, (SAC)  
 131 EAST LOCKHART DRIVE  
 SUITE 1000  
 ST. PAUL, MN 55119  
 (612) 231-7000

**POWER PROVIDER:**  
 XCEL ENERGY  
 1000 W. WASHINGTON  
 ST. PAUL, MN 55102  
 (612) 231-7000

**TELECO COMPANY:**  
 SPRINT COMMUNICATIONS AMERICA, (SAC)  
 131 EAST LOCKHART DRIVE  
 SUITE 1000  
 ST. PAUL, MN 55119  
 (612) 231-7000

**COUNTY:**  
 RAMSEY COUNTY

**ZONING JURISDICTION:**  
 CITY OF ST. PAUL

**ZONING DISTRICT:**  
 UTILITY DISTRICT

**LATITUDE (NAD83):**  
 44° 52' 31.11" N  
 93° 07' 41.11" W

**LONGITUDE (NAD83):**  
 93° 07' 41.11" W  
 44° 52' 31.11" N

**ENGINEERING COMPANY:**  
 EDGE CONSULTING ENGINEERS, INC.  
 1000 W. WASHINGTON  
 ST. PAUL, MN 55102  
 (612) 231-7000



Know what's below.  
 Call before you dig.  
 811

**AREA MAP**



**LOCATION MAP**



**APPLICABLE CODES**

ALL WORK SHALL COMPLY WITH THE FOLLOWING APPLICABLE CODES:  
 IBC 2006 (2003) MINNESOTA STATE BUILDING CODE  
 2009 MINNESOTA PLUMBING CODE  
 IBC 2006 WITH AMENDMENTS  
 NEC 2008 ELECTRICAL CODE  
 IN THE EVENT OF CONFLICT, THE MOST RESTRICTIVE CODE SHALL PREVAIL.

**PROJECT DESCRIPTION**

INSTALL REFR AND AAV (ND) EQUIPMENT AT CELL SITE

**APPLICABLE CODES**

NO:	SHEET TITLE
01	TITLE SHEET & PROJECT DATA
02	REFR UNIT 1
03	REFR UNIT 2
04	OVERALL REFR PLAN
05	ENHANCED REFR PLAN
06	AAV (ND) INCLUDE ONLINE DIAGRAM
07	STANDARD DETAILS
08	STANDARD DETAILS

**ENGINEER OF RECORD**

EDGE CONSULTING ENGINEERS, INC.  
 CONTACT: OTTO DIMMELDER II (PE # 47730 (MN))  
 1000 W. WASHINGTON  
 ST. PAUL, MN 55102  
 STRUCTURAL ANALYSIS COMPLETED BY OTHERS

**DRIVING DIRECTIONS FROM NEAREST MAJOR AIRPORT**

- FROM MINNEAPOLIS-ST. PAUL INTERNATIONAL AIRPORT (MSP):
- Head southwest on Guinlock Drive (go 0.0 mi)
  - Turn right onto Hennepin Ave (go 0.9 mi)
  - Turn left onto Hennepin Ave (go 0.4 mi)
  - Turn right onto Hennepin Ave (go 0.7 mi)
  - Turn right on Mayhew Ave E (go 0.7 mi)
  - Turn right on Cottage Ave (go 0.4 mi)
  - Turn right on Cottage Ave (go 0.4 mi)
6. Arrive at address on Right.



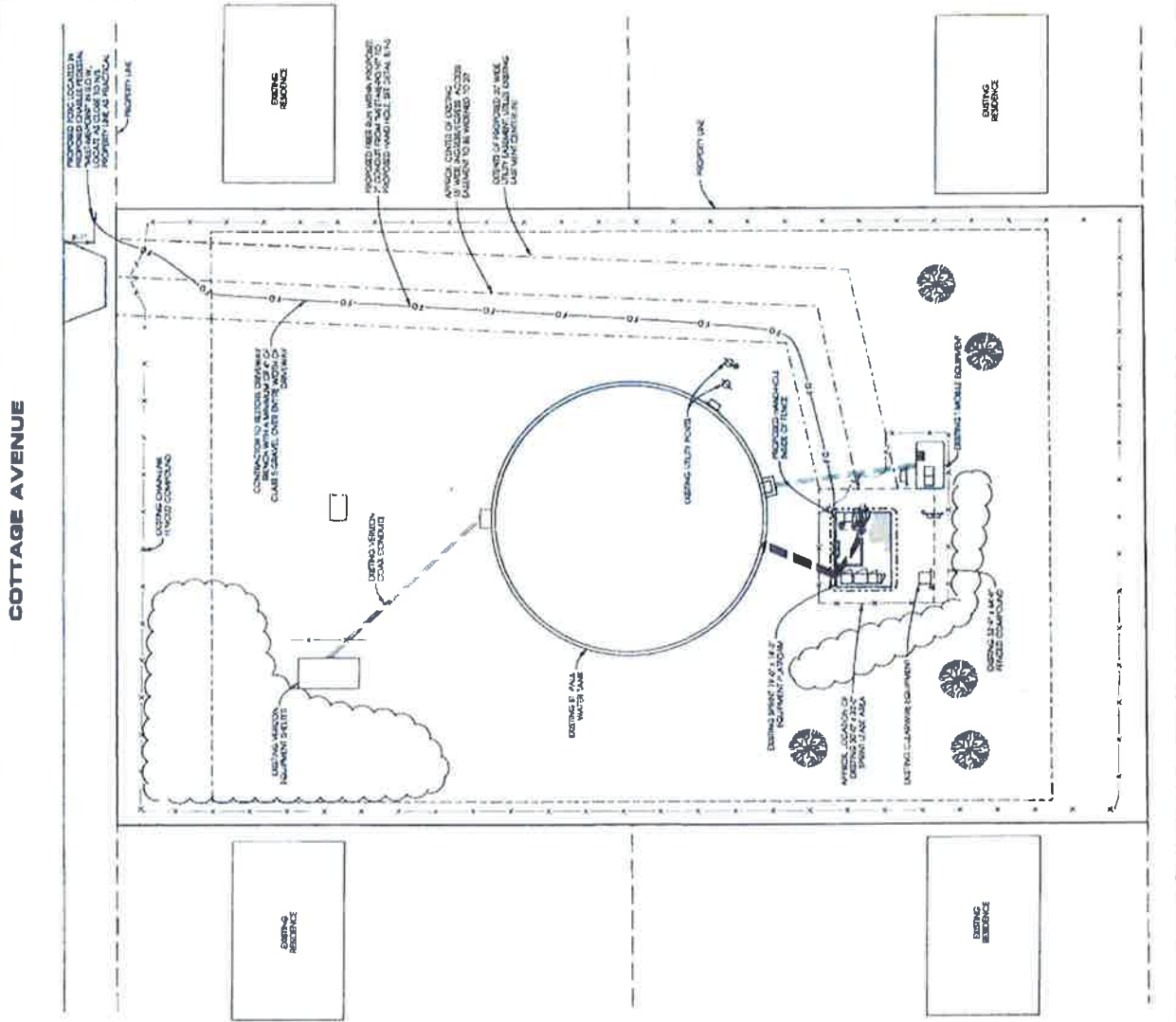




# COTTAGE AVENUE

- NOTES**
1. PROPERTY LINES SHOWN ARE APPROXIMATE AND DONE WITHOUT THE BENEFIT OF A SITE SURVEY.
  2. CONDUIT ROUTING IS DIAGRAMMATICALLY SHOWN ON PLANS AND ARE ONLY APPROXIMATIONS. THE EXACT LOCATION AND ROUTING SHALL BE FIELD VERIFIED.
  3. UTILITY AND ACCESS EXISTENTS SHOWN ARE APPROXIMATE LOCATION. CONTRACTOR TO VERIFY EXACT LOCATION.
  4. FOR TYPICAL TRENCH DETAIL SEE SHEET FA-DTAL-8.

LENGTH OF FIBER RUN	METERS	POINT TO AND FROM
	DISTANCE	ZIP 55119



PROJECT NO: MS033KC472  
 EDGE PROJECT NO: 0773  
 DRAWN BY: TCD, GCD  
 CHECKED BY: GSD

REV	DATE	DESCRIPTION
1	06/17/2013	ISSUED FOR PERMITS
2	06/17/2013	ISSUED FOR PERMITS
3	06/17/2013	ISSUED FOR PERMITS
4	06/17/2013	ISSUED FOR PERMITS
5	06/17/2013	ISSUED FOR PERMITS

*Handwritten signature and date: 6/17/2013*

IT IS A VIOLATION OF LAW FOR ANY PERSON TO REPRODUCE OR TRANSMIT THE INFORMATION CONTAINED HEREIN WITHOUT THE WRITTEN PERMISSION OF THE DESIGNER. ANY REPRODUCTION OR TRANSMISSION WITHOUT THE WRITTEN PERMISSION OF THE DESIGNER SHALL BE PROSECUTED TO THE FULL EXTENT OF THE LAW.

MS033KC472  
 ST. PAUL WATER TOWER  
 2100 E. COTTAGE AVE  
 ST. PAUL, MN 55119

SHEET TITLE  
**OVERALL FIBER PLAN**

SHEET NUMBER  
**F-1**







PROJECT NO: MB030472  
 EDGE PROJECT NO: 0778  
 DRAWN BY: TCD, GCD  
 CHECKED BY: GGD

REV	DATE	DESCRIPTION
1	09/17/2011	ISSUE FOR PERM
2	09/26/2011	ISSUE FOR PERM
3	10/19/2011	ISSUE FOR PERM
4	12/14/2011	ISSUE FOR PERM
5	1/25/2012	ISSUE FOR PERM

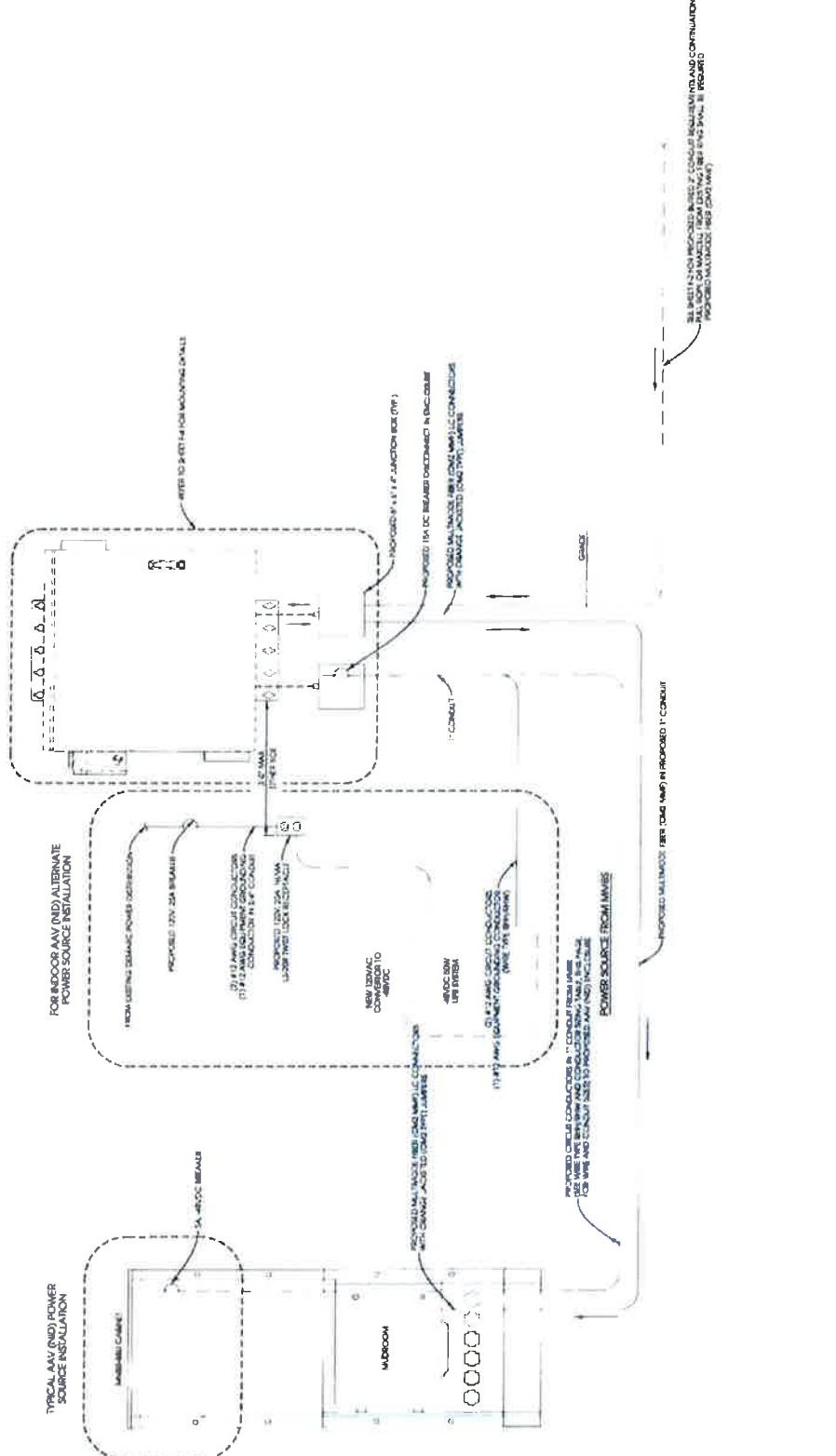
4/17/2013  
 4/17/2013  
 4/17/2013

IF A SECTION OF THIS ONE-LINE DIAGRAM IS TO BE MODIFIED, THE ENTIRE DIAGRAM MUST BE REVISED AND RE-APPROVED. ANY CHANGES TO THIS ONE-LINE DIAGRAM MUST BE APPROVED BY THE DESIGNER AND THE CLIENT. ANY CHANGES TO THIS ONE-LINE DIAGRAM MUST BE APPROVED BY THE DESIGNER AND THE CLIENT.

MB030472  
 ST. PAUL WATER TOWER  
 2100 E. COTTAGE AVE  
 ST. PAUL, MN 55119

SHEET TITLE  
 AAV (MID)  
 ENCLURE  
 ONE-LINE DIAGRAM

SHEET NUMBER  
**F-3**



WIRE TYPE BREAKER AND CONDUCTOR SIZING TABLE (MID @ 90% / 20 AMPS)

DEVICES (P)	WIRE	BK	CONDUCTOR SIZE	CONDUCTOR SIZE	CONDUCTOR SIZE
	10-30T	10-30T	20-40T	40T-20	
	Q3 812 AMPS	Q3 812 AMPS	Q3 812 AMPS	Q3 812 AMPS	Q3 812 AMPS
	Q1 812 AMPS	Q1 812 AMPS	Q1 812 AMPS	Q1 812 AMPS	Q1 812 AMPS
	1.25"	1.25"	1.25"	1.25"	1.25"

- NOTES
1. CONDUCTOR SHALL FOLLOW ALL LOCAL, NATIONAL, CODES FOR CONDUIT INSTALLATION AND INSULATION.
  2. ALL METALLIC ENCLURE SHALL BE GROUNDING AND GAPPED.
  3. ALL INTERNAL CONDUIT SHALL BE EMT.
  4. ALL ABOVE GROUND CONDUIT SHALL BE RIGID.

**A AAV (MID) ENCLURE ONE-LINE DIAGRAM**  
 SCALE: NTS



PROJECT NO: MS030CATZ  
 EDGE PROJECT NO: 073  
 DRAWN BY: TCD, GCD  
 CHECKED BY: OGD

REV	DATE	DESCRIPTION
1	11/17/2011	ISSUED FOR PERMITS
2	11/17/2011	ISSUED FOR PERMITS
3	11/17/2011	ISSUED FOR PERMITS
4	11/17/2011	ISSUED FOR PERMITS
5	11/17/2011	ISSUED FOR PERMITS
6	11/17/2011	ISSUED FOR PERMITS

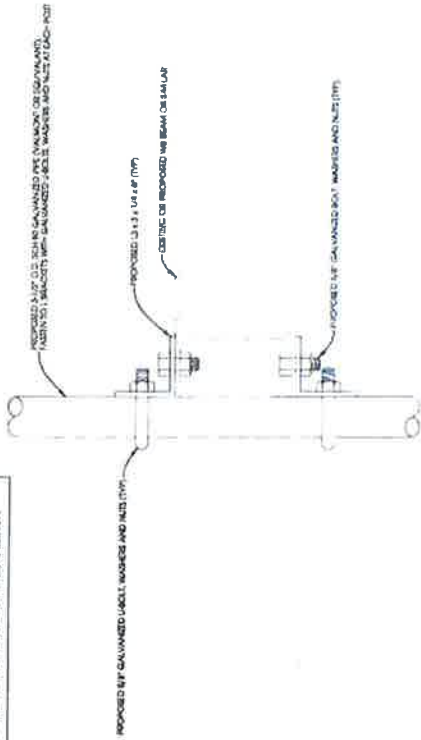
6/1/2013  
 1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE (NEC) AND THE NATIONAL FIRE ALARM AND SIGNAL CODE (NFPA 72).  
 2. CONTRACTOR SHALL VERIFY THE OVERHEAD TRENCH WITH A MINIMUM OF 2" OF CLASS 5 GRAVEL OVER THE ENTIRE WORK OF TRENCH.

MS030CATZ  
 ST. PAUL WATER TOWER  
 2100 E. COTTAGE AVE.  
 ST. PAUL, MN 55119

SHEET TITLE  
**STANDARD  
 DETAILS**

SHEET NUMBER  
**F-5**

NOTE  
 1. CONTRACTOR SHALL FIELD VERIFY EXISTING UTILITIES. UTILITIES SHALL BE IDENTIFIED BY THE ENGINEER AND SHALL BE SHOWN ON THE ENGINEERING DRAWINGS. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES AND SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UTILITIES DURING CONSTRUCTION.



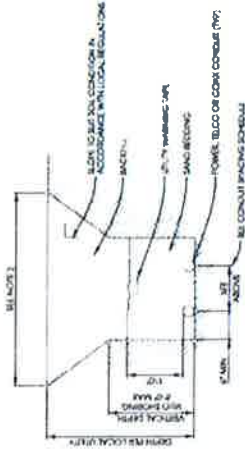
**H-FRAME MOUNT CONNECTION DETAIL AT I-BEAM - SIDE VIEW (AS REQUIRED) -**

SCALE: NTS

CONDUIT SPACING SCHEDULE	
CONDUIT #1	CONDUIT #2
POWER	POWER
POWER	ILLUO
ILLUO	COMMUNICATIONS
COMMUNICATIONS	ILLUO
CONTROL	CONTROL

NOTE:  
 1. MULTIPLE CONDUITS CAN BE PLACED IN THE SAME TRENCH AS LONG AS THEY ARE SEPARATED BY THE LOCAL TYPICAL CONDUIT SPACING SCHEDULE.  
 2. CONTRACTOR SHALL VERIFY THE OVERHEAD TRENCH WITH A MINIMUM OF 2" OF CLASS 5 GRAVEL OVER THE ENTIRE WORK OF TRENCH.

\*ONE CALL\*  
 SERVICE SHALL BE OBTAINED PRIOR TO EXCAVATION



**TYPICAL UTILITY TRENCH DETAIL**

SCALE: NTS





Know what's below. Call before you dig.

Sprint

THIS IS AN EXISTING SPRINT WIRELESS TELECOMMUNICATION FACILITY NETWORK VISION EQUIPMENT UPGRADE

NETWORK VISION MMBS LAUNCH

ST. PAUL WATER TOWER MS03XC472

2100 E. COTTAGE AVE. ST. PAUL, MN 55119 RAMSEY COUNTY

LATITUDE: 44.9824° / 44° 58' 56.96" (NAD 83) LONGITUDE: -93.0120° / -93° 00' 43.40" (NAD 83)

WATER TOWER

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE... CODE BLOCK

SPRINT PROPOSES TO MODIFY AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY... PROJECT DESCRIPTION

Table with columns: APPROVAL, SIGNATURE, DATE

SIGNATURE BLOCK



DRIVING DIRECTIONS: 1. HEAD SOUTHWEST ON GLUMACK DRIVE (0.8 MILES)...

DRIVING DIRECTIONS

Table with columns: SHEET, DESCRIPTION

PROJECT SUMMARY: APPLICANT: OPTIMA NETWORKS... TOWER OWNER: ST. PAUL WATER UTILITY...

PROJECT SUMMARY

ENGINEER: TELCAD WIRELESS SITE DESIGN... SITE ACO, PROJECT MANAGER... CONSTRUCTION MANAGER...

PROJECT INFORMATION: PROJECT NAME: ST. PAUL WATER TOWER... MS03XC472... DATE: 07.24.13... LICENSE: 42889

PROJECT TEAM



Table with columns: REV, DATE, DESCRIPTION, DRAWN BY, CHECKED BY



1961 NORTHPOINT BLVD., SUITE 130 HIXSON, TN 37343 PH: 423-943-9500 FAX: 423-943-9509

DESIGNED BY: JAE

DATE: 07.24.13 LICENSE: 42889

T-1 SHEET 3

**GENERAL CONSTRUCTION NOTES**

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE LOCAL BUILDING CODE, THE LATEST EDITION AND ALL OTHER APPLICABLE CODES AND ORDINANCES.
2. CONTRACTOR SHALL CONSTRUCT SITE IN ACCORDANCE WITH THESE DRAWINGS AND SPRINT INTEGRATED CONSTRUCTION STANDARDS FOR WIRELESS SITES (LATEST EDITION). THE PROTECTION AND THESE DRAWINGS SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.
3. CONTRACTOR SHALL VISIT THE JOB SITE AND SHALL FAMILIARIZE HIMSELF WITH ALL CONDITIONS AND DIMENSIONS AND CONFORMING TO THE DRAWINGS. THE WORK MAY BE COMPLETED AS TO THE EXTENT OF THE DRAWINGS AND CONFORMING TO THE DRAWINGS. THE CONTRACTOR SHALL COMPREHEND WILL BE AWARDED BASED ON CLAIM OF LACK OF KNOWLEDGE OF FIELD CONDITIONS.
4. PLANS WERE PROVIDED TO THE CONTRACTOR. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE OF THE WORK. THE CONTRACTOR SHALL VERIFY THE LOCATION, DEPTH, AND DIMENSIONS OF ALL UTILITIES, EQUIPMENT AND APPURTENANCES, AND LABOR NECESSARY TO EFFECT ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
5. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS OTHERWISE NOTED. SPACING BETWEEN DIMENSIONS SHALL BE TO CENTER UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE WORK AND/OR DESIGN INTENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS PRIOR TO COMMENCING CONSTRUCTION.
6. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED, TO FIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK.
7. CONTRACTOR SHALL RECEIVE CLARIFICATION IN WRITING, AND SHALL RECEIVE IN WRITING ANY CHANGES TO THE CONTRACT DOCUMENTS.
8. CONTRACTOR SHALL SUPPLEMENT AND DIRECT THE WORK USING THE BEST CONSTRUCTION SKILLS AND ATTENTION. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COORDINATING ALL PORTIONS OF THE WORK UNDER CONTRACT, UNLESS OTHERWISE NOTED.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE WORK AREA. ISOLATED AREAS AND BARRIERS SHALL BE MAINTAINED TO PROTECT THE PUBLIC FROM THE WORK UNDER THIS CONTRACT. WORK SHALL CONFORM TO ALL OSHA REQUIREMENTS.
10. CONTRACTOR SHALL COORDINATE HIS WORK WITH THE SUPERINTENDENT OF BUILDINGS & PERMITS. SCHEDULE HIS ACTIVITIES AND WORKING HOURS IN ACCORDANCE WITH THE REQUIREMENTS SPECIFICALLY OTHERWISE INDICATED OR WHERE LOCAL CODES OR ORDINANCES MAY APPLY TO RADIO EQUIPMENT, ANTENNAS AND ANY OTHER PORTIONS OF THE WORK.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK WITH THE WORK OF OTHERS AS IT MAY RELATE TO RADIO EQUIPMENT, ANTENNAS AND ANY OTHER PORTIONS OF THE WORK.
12. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS UNLESS SPECIFICALLY OTHERWISE INDICATED OR WHERE LOCAL CODES OR ORDINANCES MAY APPLY TO RADIO EQUIPMENT, ANTENNAS AND ANY OTHER PORTIONS OF THE WORK.
13. MAKE NECESSARY PREPARATIONS TO PREVENT CURSTS, SURFACES, CORNER, IMPROVEMENTS, PIPING ETC. AND IMMEDIATELY REPAIR ANY DAMAGE THAT OCCURS DURING CONSTRUCTION.
14. IN DRILLING HOLES INTO CONCRETE, WHETHER FOR FASTENING OR ANCHORING PURPOSES, OR PENETRATIONS THROUGH THE FLOOR FOR CONDUIT, PIPES, RUNS, ETC. MUST BE CLEARLY MARKED AND PROTECTED. CONTRACTOR SHALL NOTIFY OWNERS OF ANY DAMAGE TO EXISTING UTILITIES OR ANY OTHER PORTIONS OF THE WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TIES UNLESS OTHERWISE NOTED.
15. WORK AND DESIGN SHALL BE PROTECTED DURING CONSTRUCTION SUCH THAT THEY REMAIN UNCHANGED THROUGH THE RATED AREAS WITH U.L. LISTED AND PIRE CODE APPROVED MATERIALS.
16. KEEP CONTRACT AREA CLEAN, HAZARDOUS FREE, AND DISPOSE OF ALL DIRT, DEBRIS, AND RUBBER. EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY OF THE OWNER SHALL BE REMOVED FROM THE PROPERTY. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TIES UNLESS OTHERWISE NOTED.
18. MINIMUM BOND RADIUS OF ANTENNA CABLES SHALL BE IN ACCORDANCE WITH CABLE MANUFACTURERS RECOMMENDATIONS.
19. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE WORK, SHALL BE PROTECTED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF THE ENGINEER.
20. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL, SEDIMENT CONTROL, AND LOCAL REGULATORY AUTHORITIES SHALL BE COORDINATED WITH LOCAL REGULATORY AUTHORITIES.
21. LIGHT SHADED LINES AND NOTES REPRESENT WORK PREVIOUSLY DONE. DARK SHADED LINES REPRESENT WORK TO BE DONE. CONTRACTOR SHALL NOTIFY OWNERS OF ANY DAMAGE TO EXISTING UTILITIES OR ANY OTHER PORTIONS OF THE WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TIES UNLESS OTHERWISE NOTED.
22. CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS AND/OR WRITING CERTIFICATES REQUIRED FOR THE ELECTRICAL SERVICE UPGRADE. IN ADDITION, CONTRACTOR SHALL PROVIDE ALL NECESSARY PERMITS AND SCHEDULING WITH THE SERVING ELECTRICAL UTILITY AND LOCAL INSPECTION AUTHORITIES.

**ELECTRICAL NOTES**

1. ELECTRICAL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE ELECTRICAL CODES, UNLESS OTHERWISE INDICATED. ANY/ALL ELECTRICAL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NEC AND ALL CODES AND ORDINANCES OF THE LOCAL, STATE AND FEDERAL GOVERNMENTS. CONTRACTOR SHALL NOTIFY ALL AFFECTED UTILITIES AND LOCAL REGULATORY AUTHORITIES PRIOR TO COMMENCING CONSTRUCTION AND SHALL NOT PROCEED WITH THAT PORTION OF WORK UNTIL THE "CONSTRUCTION MANAGER" HAS ISSUED THE CORRECTIVE ACTIONS TO BE TAKEN.
2. ELECTRICAL CONTRACTOR SHALL VISIT THE JOB SITE AND FAMILIARIZE HIMSELF WITH ANY/ALL CONDITIONS AFFECTING ELECTRICAL AND COMMUNICATION INSTALLATION AND MAKE PROVISIONS AS TO THE PROTECTION OF EXISTING UTILITIES AND LOCAL REGULATORY AUTHORITIES. CONTRACTOR SHALL NOTIFY OWNERS OF ANY DAMAGE TO EXISTING UTILITIES OR ANY OTHER PORTIONS OF THE WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TIES UNLESS OTHERWISE NOTED.
3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE NEC AND ALL CODES AND LOCAL ORDINANCES OF THE LOCAL, STATE AND FEDERAL GOVERNMENTS. CONTRACTOR SHALL NOTIFY ALL AFFECTED UTILITIES AND LOCAL REGULATORY AUTHORITIES PRIOR TO COMMENCING CONSTRUCTION AND SHALL NOT PROCEED WITH THAT PORTION OF WORK UNTIL THE "CONSTRUCTION MANAGER" HAS ISSUED THE CORRECTIVE ACTIONS TO BE TAKEN.

4. DO NOT SCALE ELECTRICAL DRAWINGS. REFER TO SITE PLANS AND ELEVATIONS FOR EXACT LOCATIONS OF ALL EQUIPMENT, AND CONFORM WITH "CONSTRUCTION MANAGER" ANY SIZES AND LOCATIONS WHEN NECESSARY.
5. ALL SERVICES: CONTRACTOR SHALL NOT INTERRUPT EXISTING SERVICES WITHOUT WRITTEN PERMISSION FROM THE OWNER.
6. CONTRACTOR SHALL PAY FOR ANY/ALL PERMITS, FEES, INSURANCE AND TESTING. CONTRACTOR IS TO OBTAIN PERMITS AND APPROVED SUBMITTALS PRIOR TO THE WORK BEGINNING OR ORDERING EQUIPMENT.
7. THE TERM "FEDERAL" USED IN CONSTRUCTION DOCUMENTS AND SPECIFICATIONS, INDICATES THAT THE CONTRACTOR SHALL FURNISH AND INSTALL.
8. CONTRACTOR SHALL CONFORM WITH LOCAL UTILITY COMPANY ANY/ALL REQUIREMENTS SUCH AS THE U.S. SIZE RESTRICTIONS, CONDUIT ENTRY, SIZE OF TRANSFORMERS, SCHEDULED DOWNTIME FOR THE OWNERS, AND ANY OTHER REQUIREMENTS THAT SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR MANAGER PRIOR TO COMMENCING CONSTRUCTION.
9. MINIMUM WIRE SIZE SHALL BE #12 AWG, UNLESS OTHERWISE NOTED OTHERWISE. ALL CONDUCTORS SHALL BE COVERED WITH THIN INSULATION.
10. WET/DAMP LOCATIONS AND SPECIAL ENCLOSURES FOR OTHER CLASSIFIED AREAS IN OUTLET BOXES SHALL BE PRESSED STEEL IN DRY LOCATIONS. CAST ALUMY WITH THREADED HUBS IN CONDUIT SHALL BE USED IN ALL LOCATIONS.
11. IT IS THE INTENT OF THESE PLANS TO SHOW EVERY MAJOR DETAIL OF THE CONSTRUCTION. CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND ALL REQUIREMENTS FOR THE EQUIPMENT TO BE PLACED IN PRIOR TO WORKING UNDER SPECIFICATION. SET POINTS BY DESIGN COMPLETELY AND EFFECTIVELY GROUNDING, AS REQUIRED BY THE CONTRACT DOCUMENTS.
12. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION.
13. CONTRACTOR SHALL GUARANTEE ANY/ALL MATERIALS AND WORK FREE FROM DEFECTS OR A PERIOD OF NOT LESS THAN TWO YEARS FROM DATE OF CUSTOMER'S ACCEPTANCE.
14. THE CONDITION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ANY ADDITIONAL CHARGE AND SHALL BE REPAIRED WITHIN 48 HOURS OF ANY OTHER PHASE OF THE INSTALLATION, WHICH MAY HAVE BEEN DAMAGED THEREIN.
15. ADEQUATE AND THOROUGH INSURANCE SHALL BE PROVIDED FOR PROTECTION AGAINST PUBLIC LOSS AND ANY/ALL PROPERTY DAMAGE FOR THE DURATION OF WORK.
16. PROVIDE AND INSTALL CONDUIT, CONDUCTORS, PULL WIRES, BOXES, COVER PLATES AND DEVICES FOR ALL OUTLETS AS INDICATED.
17. DRIVING AND BACK FILL CONTRACTOR SHALL PROVIDE FOR ALL UNDERGROUND INSTALLED CONDUIT AND CONDUCTORS. CONTRACTOR SHALL USE THE BEST AVAILABLE MATERIALS AND COMPACTION. REFER TO NOTES AND MATERIALS, PRODUCTS, AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF. SHALL BE NEW AND SHALL APPEAR ON THE LIST OF U.L. APPROVED ITEMS AND SHALL MEET OR EXCEED THE REQUIREMENTS OF THE NEC, NEMA AND IEEE.
18. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OR MANUFACTURERS CATALOG INFORMATION OF ANY/ALL MATERIALS TO BE INSTALLED. ALL OTHER ELECTRICAL ITEMS FOR APPROVAL BY THE CONSTRUCTION MANAGER PRIOR TO INSTALLATION.
19. ANY CUTTING OR PATCHING REQUIRED NECESSARY FOR ELECTRICAL WORK IS THE ELECTRICAL CONTRACTORS RESPONSIBILITY AND SHALL BE INCLUDED IN THE COST FOR WORK AND PERFORMED TO THE SATISFACTION OF THE "CONSTRUCTION MANAGER" UPON FINAL ACCEPTANCE.
20. THE ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELS WITH ONLY TYPEWRITTEN DIRECTORIES. ALL ELECTRICAL WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
21. ELECTRICAL WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. ALL ELECTRICAL WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. ALL ELECTRICAL WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. ALL ELECTRICAL WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. ALL ELECTRICAL WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
22. ALL CONNECTIONS SHALL BE MADE WITH A PROTECTIVE COATING OF AN ANT-OXIDE COMPOUND SUCH AS "NO-OXIDE" AT ALL REARBARRE CHROME CO. COAT ALL WIRE SURFACES BEFORE CONNECTING. EXPOSED COPPER SURFACES, INCLUDING GROUND BARS, SHALL BE TREATED - NO SUBSTITUTIONS.
23. REBARRE COATING SHALL BE SCHEDULE 40 PVC MEETING OR EXCEEDING NEMA 122 - 1000. ALL ELECTRICAL WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. ALL ELECTRICAL WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. ALL ELECTRICAL WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. ALL ELECTRICAL WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
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25. SUPPORT OF ALL ELECTRICAL WORK SHALL BE AS REQUIRED BY NEC.
26. CONTRACTORS: CONTRACTOR SHALL USE THE BEST AVAILABLE MATERIALS AND COMPACTION. REFER TO NOTES AND MATERIALS, PRODUCTS, AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF. SHALL BE NEW AND SHALL APPEAR ON THE LIST OF U.L. APPROVED ITEMS AND SHALL MEET OR EXCEED THE REQUIREMENTS OF THE NEC, NEMA AND IEEE.
27. SUPPORT OF ALL ELECTRICAL WORK SHALL BE AS REQUIRED BY NEC.
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29. CONDUCTORS FOR POWER CONDUCTORS: CONTRACTOR SHALL USE PRESSURE TREATED INSULATED TWIST-IN WIRE AND LARGER NO. 10 AWG AND SMALLER. USE SOLDERLESS MECHANICAL TERMINAL LUGS FOR NO. 8 AND LARGER.
30. SERVICES 240/208V SINGLE PHASE 3 WIRE CONNECTIONS AVAILABLE FROM UTILITY COMPANY. OWNER OR OWNERS AGENT WILL APPLY FOR POWER.
31. TELEPHONE SERVICES: CONTRACTOR SHALL PROVIDE EMPTY CONDUITS WITH WIRE TYPE AS INDICATED ON DRAWINGS.
32. ELECTRICAL AND TELLOR RACEWAYS TO BE BURIED A MINIMUM OF 2' DEPTH.
33. CONTRACTOR SHALL PLACE TWO LAYERS OF BURIED TYPE AS A METHOD OF SET BEING EXHAUSTED AND DIRECTLY ABOVE ELECTRICAL AND TELLOR SERVICE CONDUITS. CAUTIONS MADE TO READ "CAUTION BURIED ELECTRIC" OR "BURIED TELEPHONE".
34. ALL BUILTS SHALL BE STAINLESS STEEL.

**ANTENNA & COAX NOTES**

1. VERIFY EACH COAXIAL CABLE LENGTH, DIAMETER, ROUTING, COLOR CODING AND ALL APPURTENANCES WITH CONTRACT DOCUMENTS.
2. THE MAXIMUM COAXIAL CABLE LENGTH AND APPURTENANCES COAXIAL CABLE DIAMETER IS SHOWN ON SHEET A-4. THE CABLE LENGTH IS TO BE USED FOR FABRICATION OR CONSTRUCTION. ACTUAL ANTENNA CABLE LENGTH(S) MUST BE VERIFIED. COAXIAL CABLE SHALL BE PROVIDED BY GDTI.
3. ALL COAX CABLES SHALL UTILIZE GROUND KITS, GROUND AS FOLLOWS:
  - A. NEAR ANTENNA RAD CENTER ELEVATION.
  - B. NEAR ANTENNA RAD CENTER ELEVATION.
  - C. NEAR ANTENNA RAD CENTER ELEVATION.
  - D. AT MASTER GROUND BAR 3'-0" FROM MBRS-88U/CABLEKIT

4. ALL TOP JUMBERS SHALL BE LENGTH AS SHOWN AND INSTALLED BY CONTRACTOR.
5. ALL CABLES SHALL BE COLOR CODED AS SHOWN ON SHEET B-1 AND IN ACCORDANCE WITH SPRINT SPECIFICATIONS.
6. BANDING SHALL BE IN ACCORDANCE WITH SHEET A-4, R-1, AND AS FOLLOWS:
  - A. MAIN LINE COLOR BANDS SHALL BE 2" WIDE MAINTAIN 1" SPACING BETWEEN COLORES.
  - B. JUMPER COLOR BANDS SHALL BE 2" WIDE MAINTAIN 1" SPACING BETWEEN COLORES.
  - C. START COLOR BANDS 2" BEFORE WEATHERPROOFING.
  - D. END COLOR BANDS 2" BEFORE WEATHERPROOFING.
7. FINAL COAXIAL ANTENNA CABLE SIZES SHALL BE DETERMINED BY SAMPLING BY ENGINEER. SEE ANTENNA SCHEDULE SHEET A-4. BASED ON FINAL CABLE RUN LENGTHS DETERMINED BY GDTI.
8. SEE CONSTRUCTION MANAGER FOR ANTENNA SUPPORT ASSEMBLY TYPE.
9. ALL COAXIAL CABLE WILL BE SECURED TO THE DESIGNATED SUPPORT STRUCTURE AT DISTANCES NOT TO EXCEED THE MAXIMUM SPACING SPECIFIED IN THE COAXIAL CABLE ROUTING DETAILS OF THE SUPPLIED STRUCTURE. ALL COAXIAL CABLES AT THE ANTENNA MOUNTING ELEVATION TO PROVIDE FOR FUTURE CONNECTION REPLACEMENT.
10. PROVIDE AT LEAST 4" OF SLACK IN THE MAIN COAXIAL CABLES AT THE ANTENNA MOUNTING ELEVATION TO PROVIDE FOR FUTURE CONNECTION REPLACEMENT.

**ANTENNA & HYBRID CABLE NOTES**

1. VERIFY EACH HYBRID CABLE LENGTH, ROUTING, DIAMETER, COLOR CODING AND ALL APPURTENANCES WITH GDTI.
2. THE HYBRID CABLE AND DIAMETER LENGTH IS SHOWN ON A-4. EXCESS CABLE LENGTHS TO BE DRESSED IN A MANNER APPROVED BY GDTI. CABLES CANNOT BE CUT TO FIT.
3. HYBRID CABLE INTERNAL GROUND WIRE TO BE GROUNDING AT TOP AND BOTTOM PER SAMUSSI'S (SPRINT) SPECIFICATIONS.
4. EXCESS TOP WIRE TO BE SECURED TO TOEED ROADS.
5. MAIN CABLES SHALL BE COLOR CODED AS SHOWN ON SHEET B-1 & IN ACCORDANCE WITH SPRINT SPECIFICATIONS.
6. BANDING SHALL BE IN ACCORDANCE WITH SHEET A-4, R-1.
  - A. MAIN LINE COLOR BANDS SHALL BE 2" WIDE MAINTAIN 1" SPACING BETWEEN.
  - B. JUMPER COLOR BANDS SHALL BE 2" WIDE MAINTAIN 1" SPACING BETWEEN.
  - C. START COLOR BANDS 2" BEFORE MAIN CABLE END.
7. THE HYBRID CABLE SHALL BE DETERMINED BY SAMPLING BY ENGINEER. SEE HYBRID CABLE SCHEDULE SHEET B-1. BASED ON FINAL CABLE RUN LENGTHS DETERMINED BY GDTI.
8. ALL HYBRID CABLE WILL BE SECURED TO THE DESIGNATED SUPPORT STRUCTURE AT DISTANCES NOT TO EXCEED THE MAXIMUM SPACING SPECIFIED IN THE COAXIAL CABLE ROUTING DETAILS OF THE SUPPLIED STRUCTURAL SUPPORT. ALL HYBRID CABLES AT THE ANTENNA MOUNTING ELEVATION TO PROVIDE FOR FUTURE CONNECTION REPLACEMENT.

**SITE WORK NOTES**

1. DO NOT EXCAVATE OR DISTURB BEYOND THE PROPERTY LINES OR LEASE LINES, UNLESS OTHERWISE NOTED.
2. SIZE, LOCATION AND TYPE OF ANY UNDERGROUND UTILITIES OR IMPROVEMENTS SHALL BE ACCURATELY NOTED AND SHOWN ON DRAWINGS BY GENERAL CONTRACTOR AND ISSUED TO ARCHITECT/ENGINEER AT COMPLETION OF PROJECT.
3. ALL EXISTING UTILITIES, FACILITIES, CONDITIONS AND THEIR OWNERS SHOULD BE NOTIFIED PRIOR TO START OF CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS PRIOR TO COMMENCING CONSTRUCTION.
4. CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES BOTH HORIZONTALLY AND VERTICALLY PRIOR TO START OF CONSTRUCTION. ANY DISCREPANCIES OR DOUBTS AS TO THE INTERPRETATION OF PLANS SHALL BE CLARIFIED WITH THE ARCHITECT/ENGINEER PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS PRIOR TO COMMENCING CONSTRUCTION.
5. CONTRACTOR SHALL CALL LOCAL DIGITEL HOT LINE FOR UTILITY LOCATIONS 48 HOURS PRIOR TO START OF CONSTRUCTION.
6. ALL NEW AND EXISTING UTILITY STRUCTURES ON SITE AND IN AREAS TO BE DISTURBED BY CONSTRUCTION SHALL BE ADAPTED TO FINISH ELEVATIONS PRIOR TO FINAL INSPECTION OF WORK.
7. GRADING OF THE SITE WORK AREA IS TO BE SMOOTH AND CONTINUOUS IN SLOPE AND IS TO FEATHER INTO EXISTING GRADES AT THE GRADING LIMITS.
8. ALL TEMPORARY EXCAVATIONS FOR THE INSTALLATION OF FOUNDATIONS, UTILITIES, ETC. SHALL BE PROPERLY SHORING AND BRACING WHICH ARE NOT IN DIRECT CONTACT WITH THE IMPROVEMENTS SHALL BE PROTECTED BY THE GENERAL CONTRACTOR.
9. ALL TRENCHES SHALL BE PROTECTED BY THE GENERAL CONTRACTOR.
10. STRUCTURAL FILLS SUPPORTING PAVEMENTS SHALL BE COMPACTED TO 95% OF MAXIMUM STANDARD PROCTOR DENSITY.
11. NEW GRADES NOT IN BUILDING AND DRIVEWAY IMPROVEMENT AREA TO BE SCHEDULED BY FILLS WITH APPROVED CLEAN FILL AND COMPACTED TO 95% OF STANDARD PROCTOR DENSITY.
12. ALL FILL SHALL BE PLACED IN UNIFORM LIFTS. THE LIFTS THICKNESS SHOULD NOT EXCEED THAT WHICH CAN BE PROPERLY COMPACTED THROUGHOUT ITS ENTIRE DEPTH WITH THE EQUIPMENT AVAILABLE.
13. ANY FILLS PLACED ON EXISTING SLOPES THAT ARE STEEPER THAN 10 HORIZONTAL TO 1 VERTICAL SHALL BE PROPERLY BENCHED IN TO THE EXISTING SLOPE AS DIRECTED BY A GEOTECHNICAL ENGINEER.
14. CONTRACTOR SHALL CLEAN EXISTING SITE DAILY AFTER CONSTRUCTION SUCH THAT NO PAPERS, TRASH, WEEDS, BRUSH, ETC. REMAINS ON SITE. ALL DEBRIS SHALL BE COLLECTED DURING CLEANING OPERATIONS. ALL DEBRIS SHALL BE REMOVED FROM THE SITE BY THE GENERAL CONTRACTOR.
15. ALL TREES AND SHRUBS WHICH ARE NOT IN DIRECT CONTACT WITH THE IMPROVEMENTS SHALL BE PROTECTED BY THE GENERAL CONTRACTOR.
16. ALL SITE WORK SHALL BE CAREFULLY COORDINATED BY GENERAL CONTRACTOR WITH LOCAL UTILITY COMPANY, TELEPHONE COMPANY, AND ANY OTHER UTILITY COMPANIES HAVING JURISDICTION OVER THIS LOCATION.



1961 NORTHPOINT BLVD., SUITE 130  
HIXSON, TN 37343  
PH: 423-843-9500 FAX: 423-843-9509

I HEREBY CERTIFY THAT THIS PLAN SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DAILY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA

Signature: [Handwritten Signature]

PRINT NAME: [Handwritten Name]  
DATE: 2.4.13 LICENSE #42889

PROJECT INFORMATION: NETWORK VISION WIRELESS LAUNCH

ST. PAUL WATER TOWER  
MS03XC472

2100 E COTTAGE AVE.  
ST. PAUL, MN 55119  
RAMSEY COUNTY

DRAWN BY: [Handwritten Name]  
CHECKED BY: [Handwritten Name]  
DATE: 08-19-13

TITLE: GENERAL NOTES

SHEET NUMBER: N-1  
REV: 3





WILLIN

REV	DATE	DESCRIPTION	BY
3	10-24-13	ISSUED FOR CONSTRUCTION	JAE SEH
2	10-14-13	ISSUED FOR CONSTRUCTION	JAE SEH
1	10-04-13	ISSUED FOR CONSTRUCTION	JAE SEH
0	06-20-13	ISSUED FOR CONSTRUCTION	TOD SEH

**TeleGAD Wireless**  
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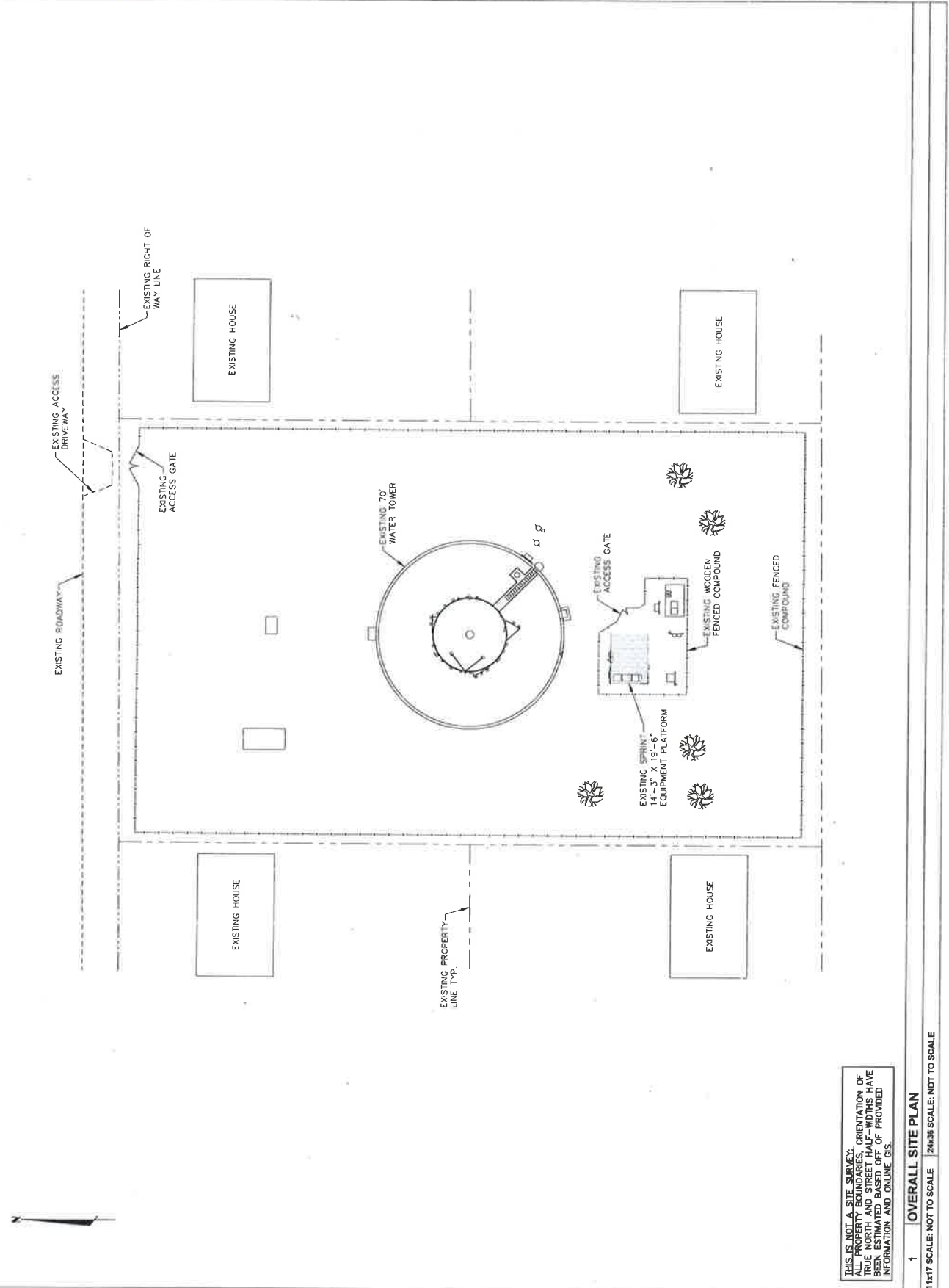
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE: *[Signature]*  
 PRINT NAME: STEPHEN E. HUNT  
 DATE: 10-24-13 LICENSE # 27289

PROJECT INFORMATION  
 NETWORK VISION MMB LAUNCH  
**ST. PAUL WATER TOWER**  
 MS03XC472  
 2100 E COTTAGE AVE  
 ST. PAUL, MN 55119  
 RAMSEY COUNTY

DRAWN BY	CHECKED BY	DATE
TOD	SEH	08-19-13

SHEET TITLE  
 OVERALL SITE PLAN  
 SHEET NUMBER  
**A-1**  
 REV  
**3**



THIS IS NOT A SITE SURVEY. ALL PROPERTY BOUNDARIES, ORIENTATION OF TRUE NORTH AND STREET HALF-WIDTHS HAVE BEEN OBTAINED FROM PUBLIC RECORDS AND FIELD INFORMATION AND OBTAIN G.S.

1 OVERALL SITE PLAN  
 1/16" SCALE: NOT TO SCALE 24x36 SCALE: NOT TO SCALE



REV	DATE	DESCRIPTION	DRAWN	CHKD	BY
1	10-24-13	ISSUED FOR CONSTRUCTION	JAE	SEH	
2	10-14-13	ISSUED FOR CONSTRUCTION	JAE	SEH	
3	10-01-13	ISSUED FOR CONSTRUCTION	JAE	SEH	
4	09-20-13	ISSUED FOR CONSTRUCTION	TDD	SEH	

**TedeCAD Wireless**  
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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE: *STEPHENE LUNJIT*  
 PRINT NAME: STEPHENE LUNJIT  
 DATE: 7.4.13 LICENSE #42789

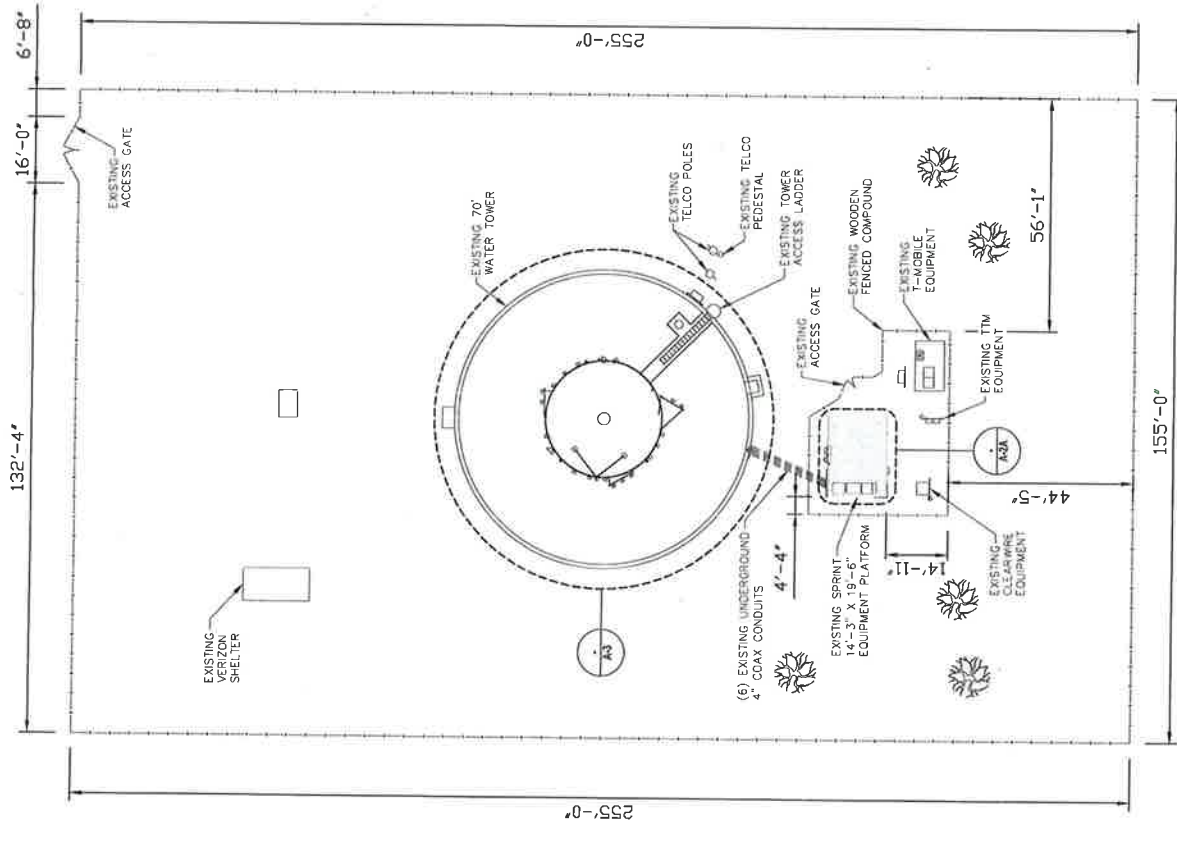
PROJECT INFORMATION  
 NETWORK VISION NMBE LAUNCH  
**ST. PAUL WATER TOWER**  
 MS03XC472  
 2100 E. COTTAGE AVE  
 ST. PAUL, MN 55119  
 RAMSEY COUNTY

DRAWN BY	TDD	CHECKED BY	SEH	DATE	08-19-13
SHEET TITLE COMPOUND PLAN					

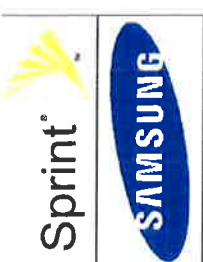
SHEET NUMBER  
**A-2**  
 REV  
**3**

NOTE:  
 1. ABANDONED PVC TO BE CAPPED BELOW GRADE AND COVERED WITH SAND. IF IN GRADE, THE CAP SHALL BE CAPPED FLUSH WITH GRADE AND CAPPED.  
 2. NOISY EQUIPMENT TO BE REMOVED UPON FINAL MIGRATION

NOTE:  
 CONTRACTOR TO OBTAIN A STRUCTURAL ENGINEER AND A LICENSED ELECTRICAL ENGINEER TO REVIEW AND SEAL CONSTRUCTION DRAWINGS PRIOR TO CONSTRUCTION.



1 **COMPOUND PLAN - EXISTING**  
 11x17 SCALE: 1"=15'  
 24x36 SCALE: 1"=7.5'



REV	DATE	DESCRIPTION	BY	CHKD
3	10-24-13	ISSUED FOR CONSTRUCTION	JAE	SEH
2	10-14-13	ISSUED FOR CONSTRUCTION	JAE	SEH
1	10-01-13	ISSUED FOR CONSTRUCTION	JAE	SEH
0	06-20-13	ISSUED FOR CONSTRUCTION	TDD	SEH



1861 NORTHPOINT BLVD., SUITE 130  
 HISSON, TN 37243  
 PH: 423-843-9500 FAX: 423-843-9509

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SIGNATURE: *[Signature]*  
 PRINT NAME: JAEHELEKUNT  
 DATE: 10/24/13 LICENSE #42488

PROJECT INFORMATION  
 NETWORK VISION NUMBER: 148103  
**ST. PAUL WATER TOWER**  
 MS03XC472  
 2100 E. COTTAGE AVE.  
 ST. PAUL, MN 55119  
 RAMSEY COUNTY

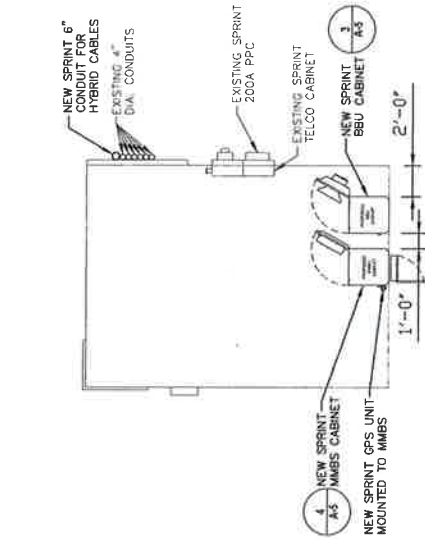
DRAWN BY: TDD  
 CHECKED BY: SEH  
 DATE: 08-19-13

SHEET TITLE: EQUIPMENT PLANS  
 SHEET NUMBER: A-2A  
 REV: 3

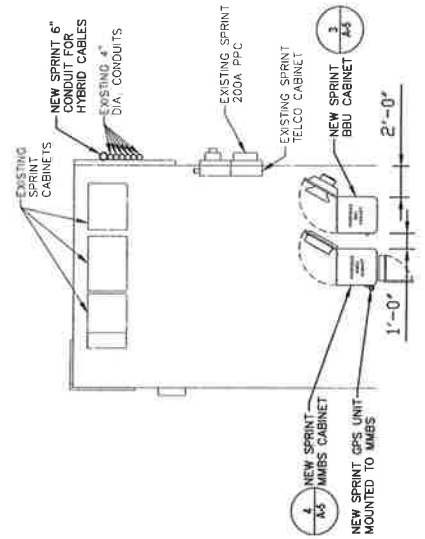
NOTE:  
 1. CONTRACTOR TO REPLACE ALL MISSING GROUND BARS AND GROUNDING CONNECTIONS AS REQUIRED.  
 2. CONTRACTOR TO OBTAIN STRUCTURAL ANALYSIS ON PLATFORM BY OTHERS PRIOR TO PLACEMENT OF NEW EQUIPMENT CABINETS.

ROUTE CABLES/COAX IN 2" FLEX TO MMBS AND RRU IF LESS THAN 6' FROM EXISTING ICE BRIDGE

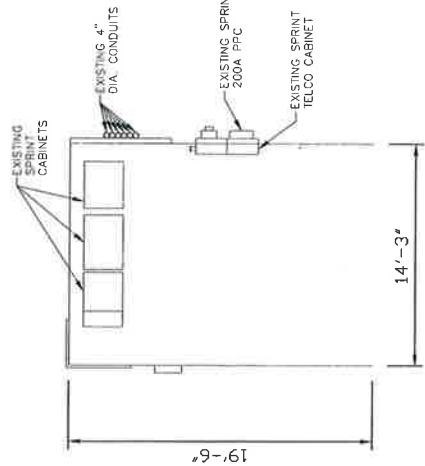
THE PROPOSED MMBS-BBU CABINET AND BATTERY CABINET NEED TO BE PLACED ON THE STEEL PLATFORM DIRECTLY OVER TWO GBX135 CHANNELS. THE TOP FLANGES OF THE CHANNELS MUST BE FULLY SUPPORTED BY THE GRATING AT APPROXIMATELY FOUR FEET ON CENTER TO PREVENT A POSSIBLE BUCKLING MODE OF FAILURE.



3 FINAL EQUIPMENT PLAN  
 11x17 SCALE: 1"=8' 24x36 SCALE: 1"=4'



2 INTERIM EQUIPMENT PLAN  
 11x17 SCALE: 1"=8' 24x36 SCALE: 1"=4'



1 EXISTING EQUIPMENT PLAN  
 11x17 SCALE: 1"=8' 24x36 SCALE: 1"=4'



WILLIN

REV	DATE	DESCRIPTION	BY
3	10-24-13	ISSUED FOR CONSTRUCTION	JAE
2	10-18-13	ISSUED FOR CONSTRUCTION	JAE
1	10-09-13	ISSUED FOR CONSTRUCTION	JAE
0	06-22-13	ISSUED FOR CONSTRUCTION	100

TeleCAD Wireless  
1961 NORTHPOINT BLVD., SUITE 130  
HIXSON, TN 37343  
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SIGNATURE: *[Signature]*  
PRINT NAME: STEPHEN LEHMT  
DATE: 10/7/13 LICENSE #12469

PROJECT INFORMATION  
NETWORK VISION WIRELESS LAUNCH  
ST. PAUL WATER TOWER  
MS03XC472

2100 E. COTTAGE AVE  
ST. PAUL, MN 55119  
RAMSEY COUNTY

CHECKED BY: SEH  
DATE: 08-19-13

ELEVATION

A-3 3

800/1900 EQUIPMENT

SECTOR	RRU MODEL	RRU FREQUENCY	HYBRID CABLE LENGTH	JUMPER LENGTH	RRU CENTER	ANT. SIZE	ELECT. TILT	MECH. TILT
ALPHA	RRH-C2A & RRH-P(4)B00MHz & (1)1800MHz	800/1900 MHz	195'	0"	74'-0"	54"	2/3°	0/0°
BETA	RRH-C2A & RRH-P(4)B00MHz & (1)1800MHz	800/1900 MHz	228'	0"	74'-0"	54"	2/3°	0/0°
GAMMA	RRH-C2A & RRH-P(4)B00MHz & (1)1800MHz	800/1900 MHz	163'	0"	74'-0"	54"	5/5°	0/0°

SECTOR	ANTENNA FREQUENCY	ANTENNA MFR.	ANTENNA MODEL	AZIMUTH	RRAD CENTER	ANT. SIZE	ELECT. TILT	MECH. TILT
ALPHA	800/1900 MHz	POWERWAVE	P80-15-ALP-RR	0°	74'-0"	54"	2/3°	0/0°
BETA	800/1900 MHz	POWERWAVE	P80-15-ALP-RR	120°	74'-0"	54"	2/3°	0/0°
GAMMA	800/1900 MHz	POWERWAVE	P80-15-ALP-RR	240°	74'-0"	54"	5/5°	0/0°

(3) EXISTING SPRINT ANTENNAS TO BE REMOVED UPON COMPLETION OF EQUIPMENT MIGRATION. RAD CENTER APPROX. @ ELEVATION 74'-0" AGL.

(3) PROPOSED SPRINT ANTENNAS (SEE ANTENNA SCHEDULE) @ RAD CENTER @ ELEVATION 74'-0" AGL. TOP OF EXISTING WATER TOWER ELEVATION @ 70'-0" AGL.

ROUTE PROPOSED HYBRID CABLES ALONG EXISTING VERTICAL COAX BRACKETS

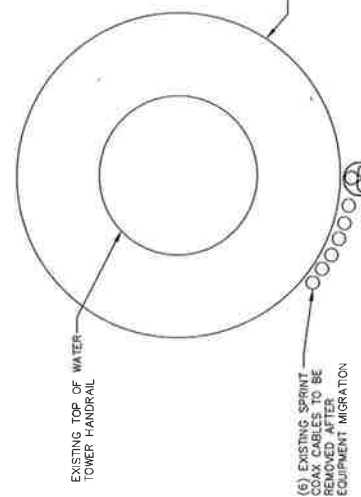
NEW CABLES TO BE ROUTED WITHIN 4" EMT PAINTED TO MATCH EXISTING CABLES. JUMPEES ARE TO BE TAPED WHITE.

EXISTING AND PROPOSED BURIED CONDUITS FOR CABLE ROUTING

LEGEND:

- EXISTING SPRINT 1/8" COAX
- PROPOSED HYBRID CABLE

- NOTE:
- OTHER CARRIER EQUIPMENT TO BE REMOVED UPON FINAL MIGRATION.
  - ALL NON-USABLE OR DETACHABLE EQUIPMENT TO BE REMOVED UPON FINAL MIGRATION.
  - ROUTE HYBRID CABLE & JUMPEES TO THE LOWEST PROFILE METHOD AVAILABLE WITH RESPECT TO EXISTING UTILITIES. SWAP OUT EXISTING 7/8" BRACKETS FOR THOSE OF A SHORTER LENGTH.



EXISTING TOP OF WATER TOWER HANDRAIL

(6) EXISTING SPRINT CABLES TO BE REMOVED UPON EQUIPMENT MIGRATION

(3) PROPOSED HYBRID CABLES TO BE ROUTED TO MATCH TANK CONTRACTOR TO MATCH MOUNTING METHOD OF T-MOBILE & CLEARWIRE.

NOTE: USE STATION EQUIPMENT NOT SHOWN FOR CLARITY.  
FINAL ANTENNA CONFIGURATION SHOWN ON THIS PLAN. SEE ANTENNA PLAN SHEETS FOR EXISTING AND TEMPORARY INTERIM CONFIGURATION.  
EXISTING TOWER INVENTORY PROVIDED BY OTHERS. PROPOSED ANTENNA, RRU, AND CABLE WORK SHALL BE PERFORMED BY THE CONTRACTOR. A STRUCTURAL TOWER POLE, SPRINT PLATFORM AND FOUNDATION REPORT IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL CODES MATCHING THE DESIGN DEPICTED ON THESE DRAWINGS HAS BEEN PROVIDED.

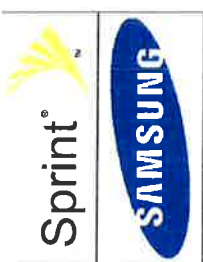
EXISTING ANTENNAS ARE CDMA UNLESS NOTED OTHERWISE.  
NEW SPRINT ANTENNAS INCLUDE RESPECTIVE RRHs WHICH SHALL BE MOUNTED ON THE PIPE BEHIND THE ANTENNA SIMILAR TO THAT SHOWN ON DETAIL 1, SHEET A-6.  
FIELD VERIFY EXISTING AZIMUTH BEFORE RELOCATING THE ANTENNA. IF REQUIRED, SPRINT CONTRACTOR SHALL VERIFY SPRINT TO BE GRANTED BEFORE RELOCATION OF ANTENNAS.  
ANY ABANDONED CONDUIT TO BE CAPPED ABOVE GRADE

NOTES:  
ALL AZIMUTHS ARE TO BE ESTABLISHED CLOCKWISE FROM THE TRUE NORTH HEADING. CONTRACTOR SHALL VERIFY NEW ANTENNA RAD CENTER AND ORIENTATIONS WITH SPRINT FCS PRIOR TO INSTALLATION OF ANTENNAS. CONTRACTOR SHALL VERIFY EXISTING FOUNDATION SECTIONS, EXISTING TOWER AND TOWER FOUNDATION MUST BE ANALYZED BY A LICENSED STRUCTURAL ENGINEER TO VERIFY TOWER IS CAPABLE OF SUPPORTING THE NEW LOADS. REFER TO STRUCTURAL ANALYSIS BY TWSO. CONTRACTOR SHALL REFER TO TOWER FOUNDATION ANALYSIS FOR ADDITIONAL LOADS AND ERECTION OF MODIFICATION OF TOWER SHALL BE MADE WITHOUT APPROVAL OF STRUCTURAL ENGINEER.

1 TOWER ELEVATION 24x36 SCALE: NOT TO SCALE

2 COAX ROUTING 24x36 SCALE: NOT TO SCALE

11x17 SCALE: NOT TO SCALE



REV	DATE	DESCRIPTION	ISSUED FOR	ISSUED FOR	ISSUED FOR	ISSUED FOR	ISSUED FOR
3	10-24-13	ISSUED FOR CONSTRUCTION	JAE	SEH			
2	10-04-13	ISSUED FOR CONSTRUCTION	JAE	IEH			
1	10-01-13	ISSUED FOR CONSTRUCTION	JAE	IEH			
0	05-22-13	ISSUED FOR CONSTRUCTION	TDD	IEH			

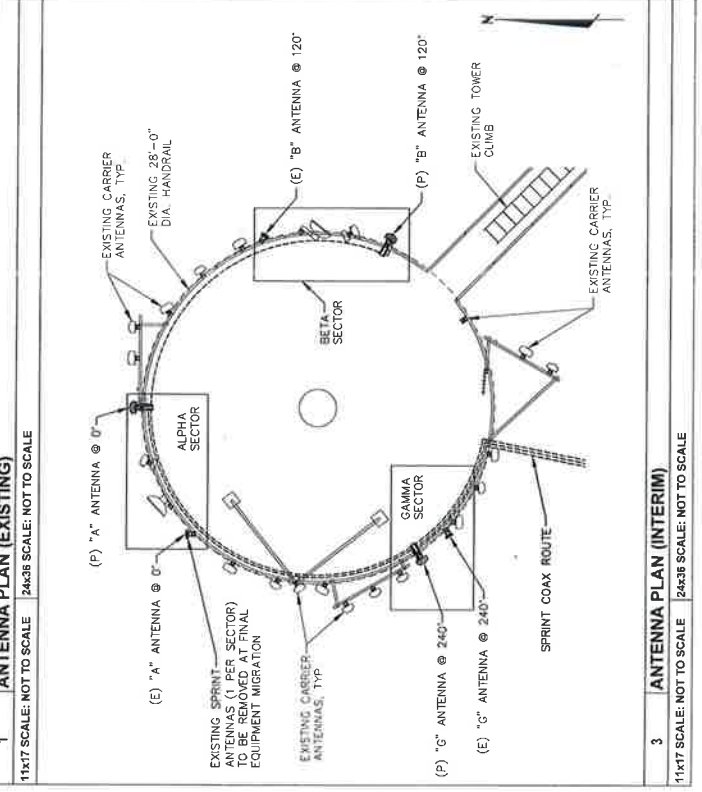
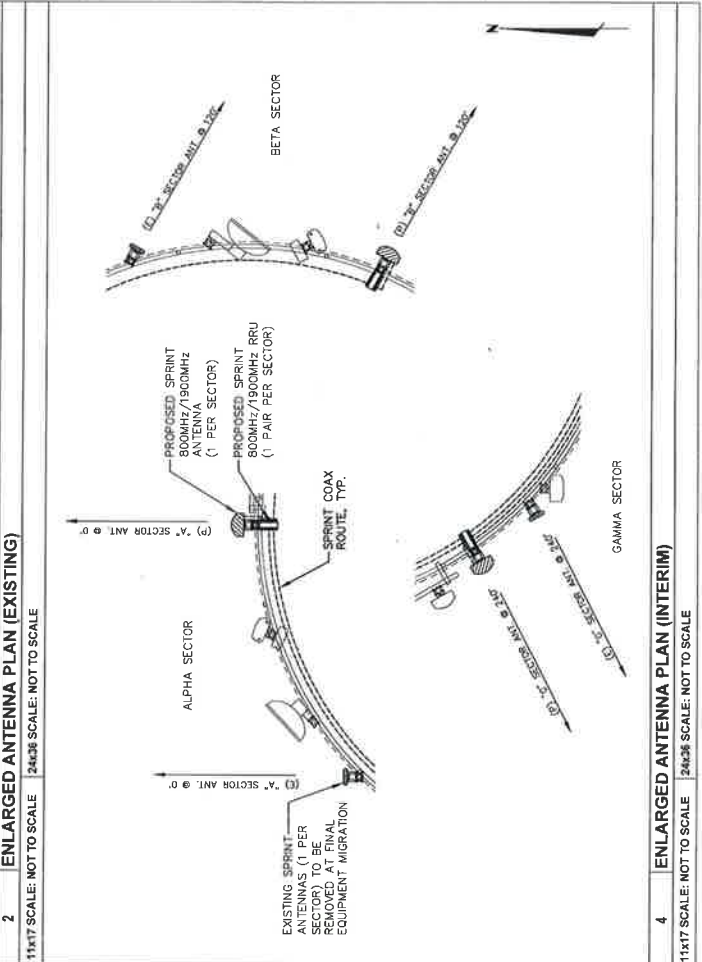
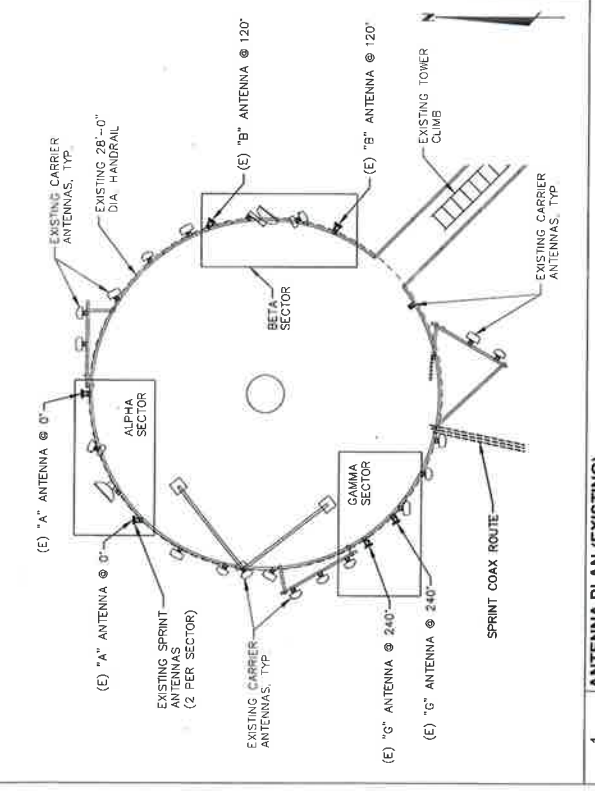
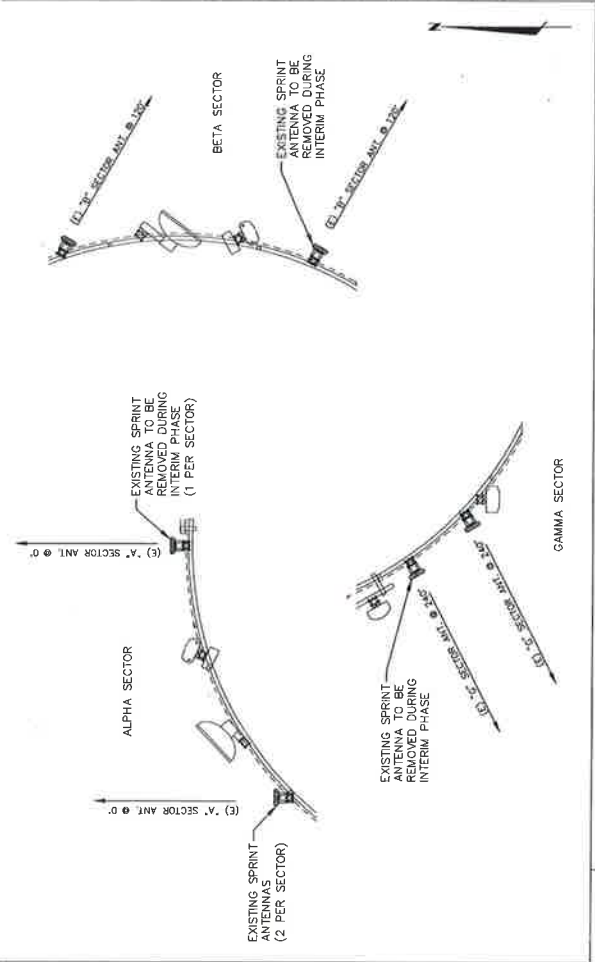
**TeleCAD Wireless**  
 1851 NORTHPOINT BLVD., SUITE 130  
 MILWAUKEE, WI 53245  
 PH: 423-943-9500 FAX: 423-943-9509

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SIGNATURE: *Steve E. Dunt*  
 PRINT NAME: STEPHEN E. DUNT  
 DATE: 10/24/13 LICENSE # 42889

PRODUCT INFORMATION  
 NETWORK VENDOR: HUBER LUNZ  
**ST. PAUL WATER TOWER**  
 MS03XC472  
 2100 E COTTAGE AVE  
 ST. PAUL, MN 55119  
 RAMSEY COUNTY

DESIGNED BY: SEH  
 CHECKED BY: TDD  
 DATE: 08-19-13  
 SHEET TITLE: ANTENNA PLAN (ALL SECTORS)  
 SHEET NUMBER: A-3A 3







REV.	DATE	REVISION DESCRIPTION	DRAWN	CHECKED	BY
3	10-24-13	ISSUED FOR CONSTRUCTION	JAE	SEH	
2	10-14-13	ISSUED FOR CONSTRUCTION	JAE	SEH	
1	10-01-13	ISSUED FOR CONSTRUCTION	JAE	SEH	
0	06-22-13	ISSUED FOR CONSTRUCTION	TDD	SEH	

**TeleCAD Wireless**  
 1961 NORTHPOINT BLVD., SUITE 130  
 HIXSON, TN 37343  
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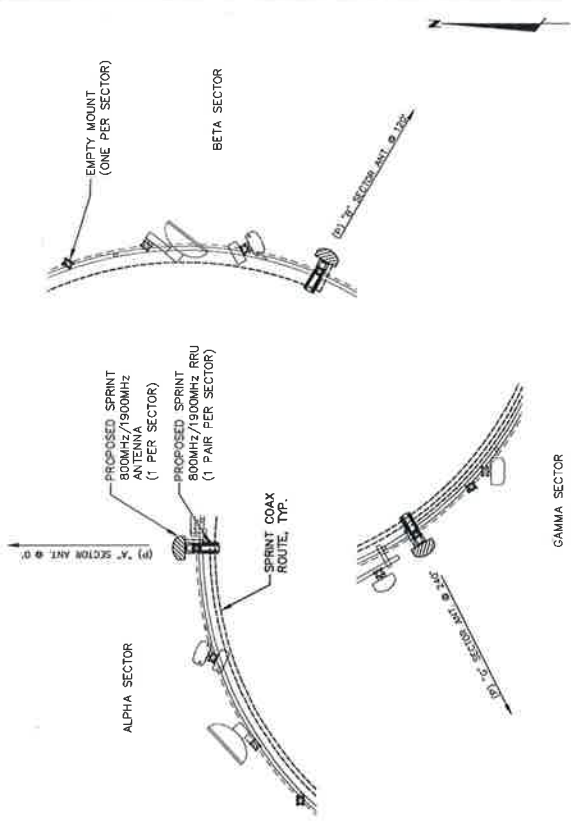
SIGNATURE: *Stephen E. Hint*  
 PRINT NAME: STEPHEN E. HINT  
 DATE: 7.4.13 LICENSE #17388

PROJECT INFORMATION  
 NETWORK: VISION IMBS LAUNCH  
**ST. PAUL WATER TOWER**  
 MS03XC472  
 2100 E. COTTAGE AVE.  
 ST. PAUL, MN 55119  
 RAMSEY COUNTY

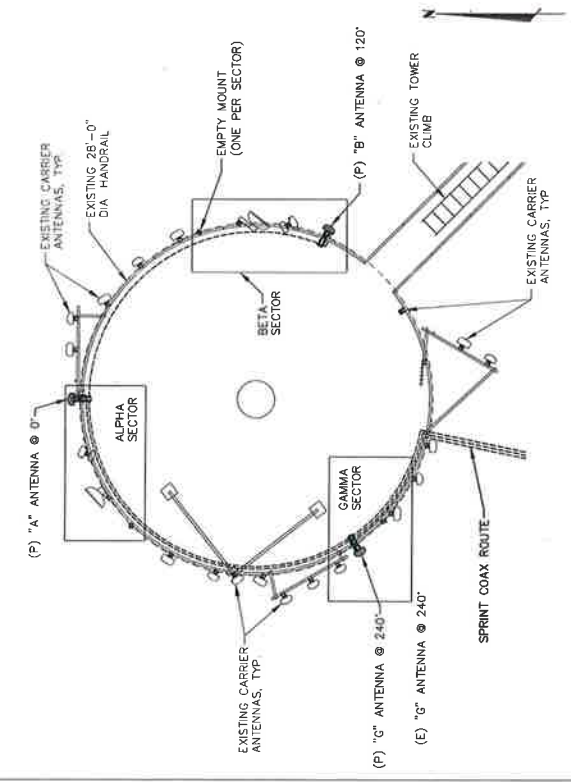
DRAWN BY: TDD  
 CHECKED BY: SEH  
 DATE: 06-19-13

SHEET TITLE: ANTENNA PLAN (ALL SECTORS)

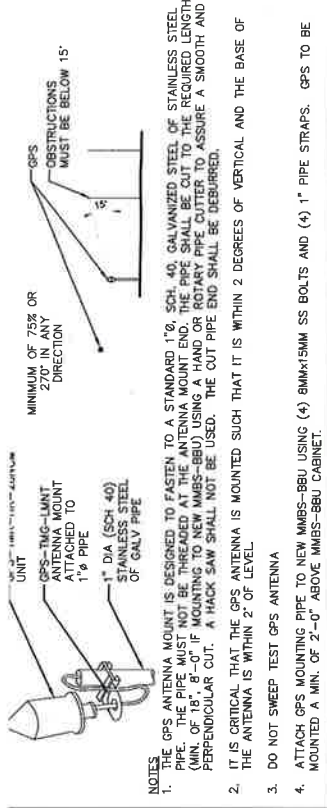
SHEET NUMBER: A-3B  
 REV.: 3



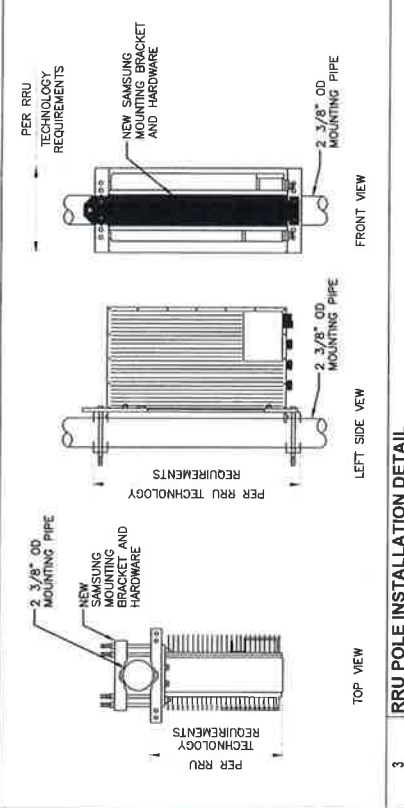
2 ENLARGED ANTENNA PLAN (FINAL)  
 11x17 SCALE: NOT TO SCALE 24x36 SCALE: NOT TO SCALE



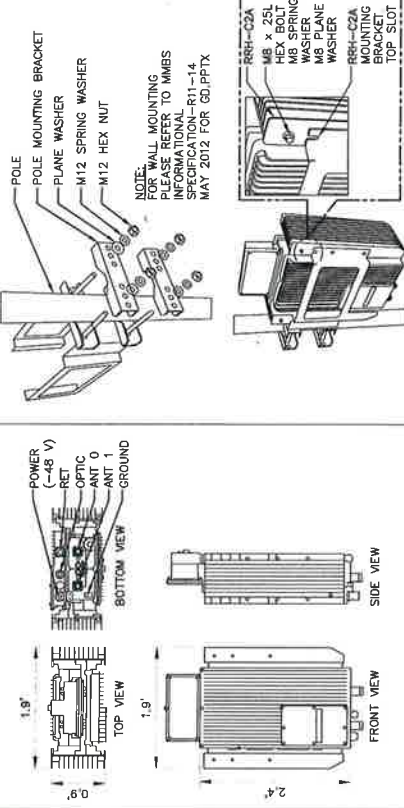
1 ANTENNA PLAN (FINAL)  
 11x17 SCALE: NOT TO SCALE 24x36 SCALE: NOT TO SCALE



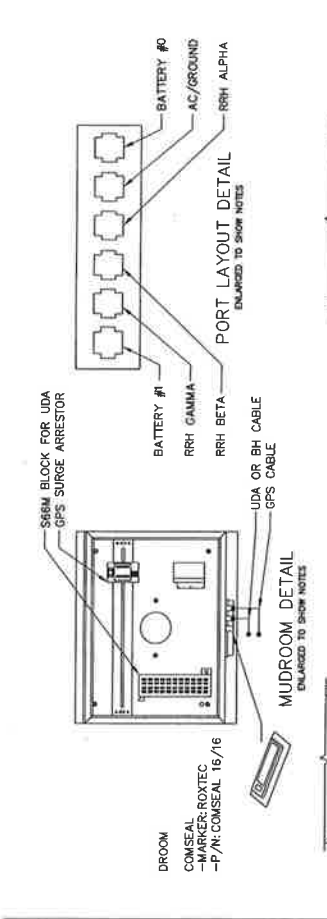
**GPS UNIT PIPE MOUNT & REQUIREMENTS**  
 SCALE: NTS



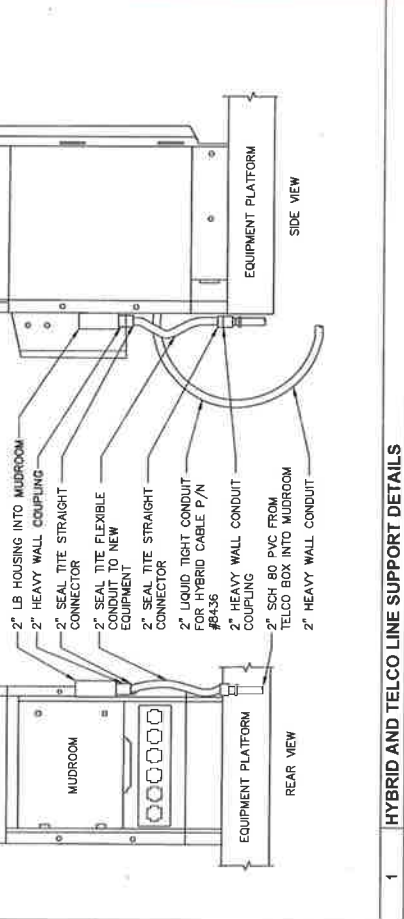
**RRU POLE INSTALLATION DETAIL**  
 SCALE: NTS



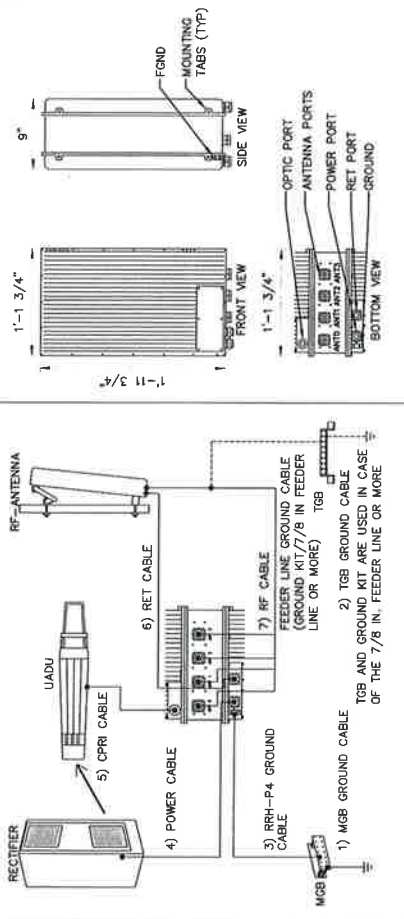
**800 MHz RRR-C2A**  
 SCALE: NTS



**MUDROOM DETAIL**  
 ENLARGED TO SHOW NOTES

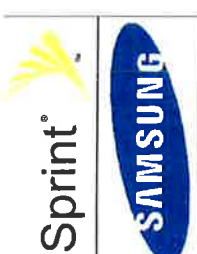


**HYBRID AND TELCO LINE SUPPORT DETAILS**  
 SCALE: NTS



**SAMSUNG MMB5 WIRING DIAGRAM**  
 SCALE: NTS





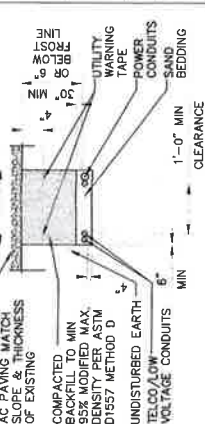
1961 NORTHPOINT BLVD., SUITE 130  
 HIXSON, TN 37343  
 PH: 423-843-9500 FAX: 423-843-9509

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SIGNATURE: *[Signature]*  
 PRINT NAME: JEFFERSON E. HUNT  
 DATE: 07-24-13 LICENSE #4285  
 PROJECT INFORMATION:  
 NETWORK VISION WARE LAUNCH  
**ST. PAUL WATER TOWER**  
 MS03XC472  
 2100 E. COTTAGE AVE.  
 ST. PAUL, MN 55119  
 RAMSEY COUNTY

DATE	07-24-13	LICENSE #	4285
PROJECT INFORMATION	NETWORK VISION WARE LAUNCH		
<b>ST. PAUL WATER TOWER</b>			
MS03XC472			
2100 E. COTTAGE AVE.			
ST. PAUL, MN 55119			
RAMSEY COUNTY			
DRAWN BY	TDD	SEH	DATE
			08-19-13
SHEET TITLE			EQUIPMENT DETAILS
SHEET NUMBER			REV
A-6			3

NOTES:  
 1. MULTIPLE CONDUITS CAN BE PLACED IN THE SAME TRENCH AS LONG AS A MINIMUM SEPARATION PER THE LOCAL CODES IS MAINTAINED.  
 2. ALL CONDUITS SHALL BE PLACED WITH A MINIMUM CLEARANCE TO CENTER SPACING BETWEEN CONDUITS IS 1'-0" (NOT REQUIRED FOR COAX).  
 3. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS. PLACING A 2" SAND OR GRANITE SAND OR CONCRETE AREAS TO ITS ORIGINAL GRADE.  
 4. IF SAW CUT IS NEEDED, OVER CUT BOTH SIDES OF TRENCH BY MINIMUM OF 6" TO AVOID DEPRESSION IN THE FUTURE.



4 UTILITY TRENCH DETAIL  
 SCALE: NTS

DETAIL NOT USED



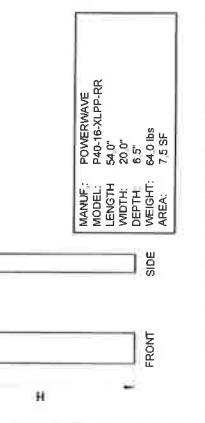
3 ODU DETAIL  
 SCALE: NTS

DETAIL NOT USED



2 DISH ANTENNA SPECIFICATIONS  
 SCALE: NTS

DETAIL NOT USED



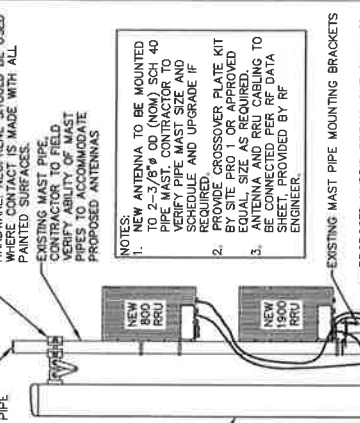
5 ICE BRIDGE DETAIL  
 SCALE: NTS

EXISTING ATTACHMENT TO THE MAST PIPE SHOULD BE MADE WITH NON-CORRODING HARDWARE. NEOPRENE SHOULD BE USED WHERE CONTACT IS MADE WITH ALL PAINTED SURFACES.

EXISTING MAST PIPE TO BE REMOVED. VERIFY ABILITY OF MAST PIPES TO ACCOMMODATE PROPOSED ANTENNAS.

NOTES:  
 1. NEW ANTENNA TO BE MOUNTED ON 2'-0" DIA (NOM) SCH 40 VERIFY PIPE MAST SIZE AND SCHEDULE AND UPGRADE IF REQUIRED.  
 2. PROVIDE CROSSOVER PLATE KIT (WHITE) AS REQUIRED. VERIFY EQUAL SIZE AS REQUIRED.  
 3. ANTENNA AND RRU CABLEING TO BE CONNECTED PER RF DATA SHEET, PROVIDED BY RF ENGINEER.

EXISTING MAST PIPE MOUNTING BRACKETS  
 PROPOSED HYBRID BREAK-OUT CYLINDER AND ENCLOSURE. CONTRACTOR SHALL PROVIDE ADEQUATE HARDWARE TO EXISTING RAILING.  
 EXISTING ROUND MEMBER RAILING.  
 PROPOSED HYBRID COAX CABLE FROM NEW RF CABINET. ROUTE TO PROPER LOCATION W/ UNIVERSAL ANGLE ADAPTORS TO VERTICAL SUPPORTS (ANDREW #8AA OR EQUIV.)  
 EXISTING MAST PIPE MOUNTING BRACKETS  
 EXISTING KICKPLATE

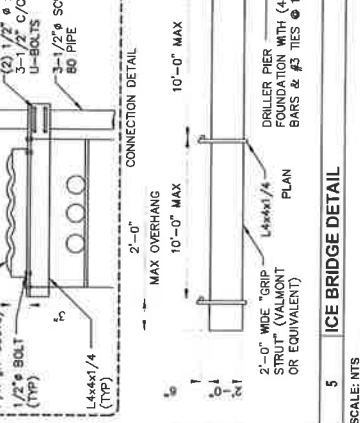


WELDED CAP ON BOTH ENDS OF MAST PIPE

PROPOSED PANEL ANTENNA WITH MOUNTING HARDWARE

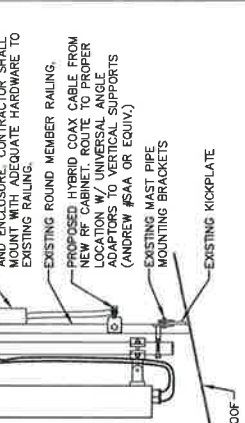
NOTE:  
 CONTRACTOR TO FIELD ROUTE HYBRID CABLE & JUMPERS TO ANTENNA. ALL CABLE TO BE AVAILABLE WITH RESPECT TO ATTACHMENT

NOTE:  
 1. RRUS AND ANY OTHER ADDITIONAL EQUIPMENT ATTACHED TO THE ANTENNA SHALL BE MADE IN A MANNER THAT MAINTAINS THE HANDRAILS COMPLIANCE WITH OSHA ACCESS GUIDELINES FOR ALL STEELWORK. ALL PIPES ARE TO BE GALVANIZED WITH RUBBER CAPS ON BOTH ENDS



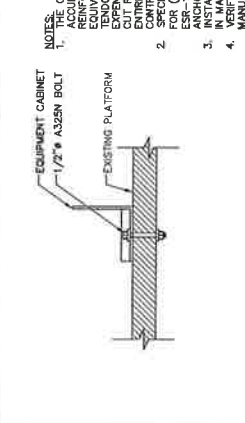
7 TYPICAL BOOM & STANDOFF DETAIL 1900 ANTENNA DETAIL  
 SCALE: NTS

DETAIL NOT USED



NOTE:  
 THE CONTRACTOR SHALL ACCURATELY LOCATE ALL EXISTING REINFORCING BY X-RAY OR OTHER MEANS. ALL REBAR OR TENDONS SHALL BE CUT AT ALL EXPENSES RELATED TO REPAIR OR REPLACEMENT SHALL BE ENTIRELY AT THE EXPENSE OF THE CONTRACTOR.

NOTE:  
 1. PRECAST CONCRETE IS REQUIRED FOR ALL CONCRETE EXPANSION JOINTS. USE ESR-1817 ANCHORS AGAINST SEISMIC. ALL ANCHORS SHALL BE EMBEDDED IN MASONRY IS NOT ALLOWED. VERIFY WITH CABINET MANUFACTURER FOR MOUNTING HOLE LOCATIONS

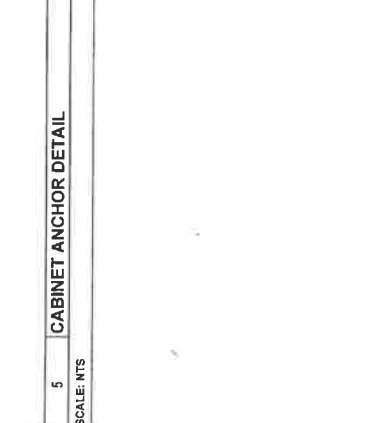


8 TYPICAL BOOM & STANDOFF DETAIL DISH ANTENNA  
 SCALE: NTS

DETAIL NOT USED



DETAIL NOT USED



5 CABINET ANCHOR DETAIL  
 SCALE: NTS



WILLIN

REV.	DATE	DESCRIPTION	DRAWN BY	CHKD BY
3	10-24-13	ISSUED FOR CONSTRUCTION	JAE	SEH
2	10-24-13	ISSUED FOR CONSTRUCTION	JAE	EEH
1	10-01-13	ISSUED FOR CONSTRUCTION	JAE	SEH
0	08-22-13	ISSUED FOR CONSTRUCTION	TDJ	SEH



1364 NORTHPOINT BLVD., SUITE 130  
 HISSON, MN 55119  
 PH: 423-643-9500 FAX: 423-643-9509

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SIGNATURE: *[Signature]*

PRINT NAME: STEPHEN HUNT

DATE: 10/24/13 LICENSE #12489

PROJECT INFORMATION  
 NETWORK VISION IMBELLANCH

ST. PAUL WATER TOWER  
 MS03XC472

2100 E. COTTAGE AVE  
 ST. PAUL, MN 55119  
 RAMSEY COUNTY

DRAWN BY: TDD  
 CHECKED BY: SEH  
 DATE: 08-19-13

SHEET TITLE  
 COAX COLOR CODING

SHEET NUMBER  
 REV

A-7 3

ALL COAXIAL CABLE IN RADIO ACCESS NETWORK SHALL BE MARKED AT THE TOP & BOTTOM WITH 2" COLORED TAPE, STENCIL TAG COLORED TAPE, OR COLORED HEAT SHRINK TUBING (UV STABILIZED TAPE OR HEAT SHRINK ARE PREFERRED). WRAP 2" COLORED TAPE A MINIMUM OF 3 TIMES AROUND THE COAX, AND KEEP THE TAPE IN THE SAME AREA AS MUCH AS POSSIBLE. THIS WILL ALLOW REMOVAL OF TAPE THAT FADES OR DISCOLORS DUE TO WEATHER.

**FIRST SET (CABLE COLOR):**  
 THE FIRST RING SHALL BE CLOSEST TO THE END OF THE CABLE, AND THERE SHALL BE A 1" SPACE BETWEEN EACH RING. THE CABLE COLOR CODE SHALL BE APPLIED IN ACCORDANCE TO TABLE, WHICH ONLY SHOWS 3 SECTORS. BUT, ADDITIONAL SECTORS ARE EASILY SUPPORTED BY ADDING THE APPROPRIATE NUMBER OF COLORED RINGS TO THE CABLE COLOR CODE.

**SECOND SET (FREQUENCY COLOR):**  
 AFTER THE CABLE COLOR CODE IS APPLIED, THE FREQUENCY COLOR CODE MUST BE APPLIED FOR THE SPECIFIC FREQUENCY BAND IN USE ON A GIVEN LINE. A 2" GAP SHALL SEPARATE THE CABLE COLOR CODE FROM THE FREQUENCY COLOR CODE. THE 2" COLOR RINGS FOR THE FREQUENCY CODE SHALL BE PLACED NEXT TO EACH OTHER WITH NO SPACES.

RET. CABLES DO NOT REQUIRE COLOR CODING

3 COLOR CODING NOTES

SCALE: NTS

FREQUENCY	INDICATOR	ID
800 #1	YELLOW	GREEN
1900 #1	YELLOW	RED
1900 #2	YELLOW	BROWN
1900 #3	YELLOW	SLATE
1900 #4	YELLOW	SLATE
800 #2	YELLOW	ORANGE
RESERVED #	YELLOW	WHITE
RESERVED	YELLOW	PURPLE

2 FREQUENCY COLOR CODING

SCALE: NTS

1 TYPICAL COAX CABLE COLOR CODING SCHEME

SECTOR	CABLE	FIRST RING	SECOND RING	THIRD RING
1 ALPHA	1	GREEN	NO TAPE	NO TAPE
	2	BROWN	NO TAPE	NO TAPE
	3	WHITE	NO TAPE	NO TAPE
	4	RED	NO TAPE	NO TAPE
2 BETA	1	GREY	NO TAPE	NO TAPE
	2	PURPLE	NO TAPE	NO TAPE
	3	ORANGE	NO TAPE	NO TAPE
	4	GREEN	NO TAPE	NO TAPE
3 GAMMA	1	PURPLE	NO TAPE	NO TAPE
	2	ORANGE	NO TAPE	NO TAPE
	3	GREEN	NO TAPE	NO TAPE
	4	WHITE	NO TAPE	NO TAPE

1 COAX COLOR CODING

SCALE: NTS



1961 NORTHPOINT BLVD., SUITE 130  
 HIXSON, TN 37343  
 PH: 423-843-9500 FAX: 423-843-9509

HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MISSISSIPPI

SIGNATURE: *Steve Ull*  
 PRINT NAME: STEPHEN HUNT  
 DATE: 07/24/13 LICENSE #52489

PROJECT INFORMATION  
 NETWORK VISION MMS LAUNCH  
 ST. PAUL WATER TOWER  
 MS03XC472

2100 E. COTTAGE AVE  
 ST. PAUL, MN 55119  
 RAMSEY COUNTY

DRAWN BY: TDD  
 CHECKED BY: SEH  
 DATE: 08-19-13  
 SHEET TITLE: ANTENNA AND CABLE  
 COLOR CODING DETAILS  
 SHEET NUMBER: RF-1  
 REV: 3

TYPE	TYPE 1	TYPE 2	TYPE 3	TYPE 4	TYPE 5	TYPE 6	TYPE 7
TOTAL LENGTH	~114'-9.95"	~180'-5.35"	~213'-3.05"	~282'-5.60"	~328'-1"	~420'-0"	~550'-0"
HYBRID POWER	AWG 10 1 PAIR AWG 12 3 PAIR AWG 10 3 PAIR	AWG 8 1 PAIR AWG 10 3 PAIR AWG 10 3 PAIR	AWG 8 1 PAIR AWG 10 2 PAIR AWG 10 2 PAIR	AWG 6 1 PAIR AWG 8 1 PAIR AWG 8 2 PAIR	AWG 4 1 PAIR AWG 6 3 PAIR AWG 8 2 PAIR	AWG 4 1 PAIR AWG 6 3 PAIR AWG 8 2 PAIR	AWG 4 1 PAIR AWG 6 3 PAIR AWG 8 2 PAIR
CABLE DIAMETER	0.98" (25mm)	1.06" (27mm)	1.18" (30mm)	1.25" (32mm)	1.54" (39.2mm)	1.71" (43.5)	1.71" (43.5)
BENDING RADIUS	11.81"	12.98"	15.35"	17.71"	17.71"	18.00"/20.00"	21.00"/25.00"
DU CABINET	LC/PC-16-LC/PC, SINGLE MODE						
DU CABLE (TERMINAL SIZE AWG 4)	2 PAIR POWER AND OPTIC CABLE WITH PE PIPE						
DU CABLE SPEC	AWG 8, 0.57"-0.60"						
NON USE POWER AND OPTIC CABLE AND OPTIC CABLE AND OPTIC CABLE AND OPTIC CABLE PROTECTION	2 PAIR POWER, 2 PAIR POWER, 2 PAIR POWER AND OPTIC CABLE AND OPTIC CABLE AND OPTIC CABLE AND OPTIC CABLE WITH PE PIPE WITH PE PIPE WITH PE PIPE WITH PE PIPE WITH PE PIPE WITH PE PIPE WITH PE PIPE WITH PE PIPE						
SUPPLIER	TESSCO						
TYPE	LENGTH (FT)	TOTAL WEIGHT (LBS)	TYPE 6	420	402	887	1
TYPE 7	1000	732	1613	1	1	2.2	2.2
TYPE 8	1000	1006	2218	550	553	1220	

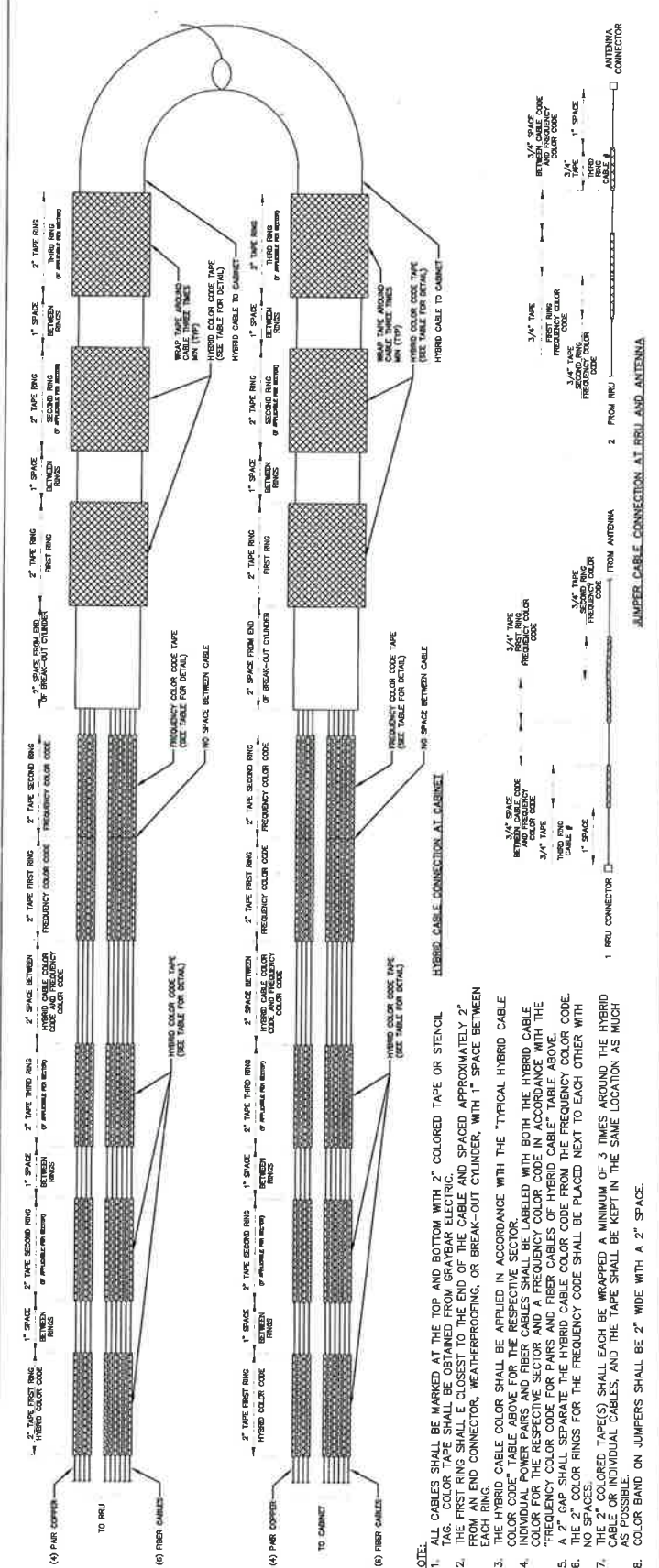
TYPE	LENGTH (FT)	TOTAL WEIGHT (LBS)	ASIA TAI	TOTAL WEIGHT (KG)	WEIGHT / P (LBS)
TYPE 1	80	13	28	0.2	0.5
TYPE 2	15	26	0.2	0.5	0.7
TYPE 3	16	35	0.2	0.5	0.7
TYPE 4	90	19	42	0.2	0.5
TYPE 5	105	30	66	0.3	0.6
TYPE 6	120	34	75	0.3	0.6
TYPE 7	135	36	85	0.3	0.6
TYPE 8	150	43	94	0.3	0.6
TYPE 9	165	47	104	0.3	0.6
TYPE 10	180	59	151	0.4	0.8
TYPE 11	195	75	164	0.4	0.8
TYPE 12	210	80	177	0.4	0.8
TYPE 13	225	89	196	0.4	0.9
TYPE 14	240	95	209	0.4	0.9
TYPE 15	255	101	222	0.4	0.9
TYPE 16	270	133	293	0.5	1.1
TYPE 17	285	141	310	0.5	1.1
TYPE 18	300	148	326	0.5	1.1
TYPE 19	315	155	342	0.5	1.1
TYPE 20	330	163	359	0.5	1.1

SECTOR	FIRST RING	SECOND RING	THIRD RING
A	GREEN	NO TAPE	NO TAPE
B	GREEN	GREEN	NO TAPE
G	GREEN	GREEN	GREEN

FREQUENCY	ANTENNA PORT	RRU PORT	CABLE COLOR
800 MHz	RET	RET	N/A
800 MHz +45°	ANT 1	ANT 1	WHITE
800 MHz -45°	ANT 0	ANT 0	BLUE
PCSI +45°	ANT 0	ANT 0	BLUE
PCSI -45°	ANT 2	ANT 2	WHITE
PCS2 +45°	ANT 2	ANT 2	BROWN
PCS2 -45°	ANT 3	ANT 3	BROWN
1900 MHz	RET	RET	RED

2 HYBRID CABLE TYPE



3 HYBRID CABLE COLOR SCHEME DETAIL

- NOTE:
- ALL CABLES SHALL BE MARKED AT THE TOP AND BOTTOM WITH 2" COLORED TAPE OR STENCIL. COLOR TAPE SHALL BE OBTAINED FROM GRAYBAR ELECTRIC.
  - THE COLOR TAPE SHALL BE OBTAINED FROM GRAYBAR ELECTRIC. THE END OF THE CABLE AND SPACED APPROXIMATELY 2" FROM AN END CONNECTOR, WEATHERPROOFING, OR BREAK-OUT COUNDER, WITH 1" SPACE BETWEEN EACH RING.
  - THE HYBRID CABLE COLOR SHALL BE APPLIED IN ACCORDANCE WITH THE "TYPICAL HYBRID CABLE COLOR CODE" TABLE ABOVE FOR THE RESPECTIVE SECTOR.
  - INDIVIDUAL POWER PAIRS AND FIBER CABLES SHALL BE LABELED WITH BOTH THE HYBRID CABLE COLOR FOR THE RESPECTIVE SECTOR AND A FREQUENCY COLOR CODE IN ACCORDANCE WITH THE "FREQUENCY COLOR CODE FOR PHS AND FIBER CABLES OF HYBRID CABLE" TABLE ABOVE.
  - THE 2" COLORED TAPE SHALL BE WRAPPED AROUND THE HYBRID CABLES FROM THE FREQUENCY COLOR CODE. THE 2" COLORED TAPE SHALL BE PLACED NEXT TO EACH OTHER WITH NO SPACES.
  - THE 2" COLORED TAPE(S) SHALL EACH BE WRAPPED A MINIMUM OF 3 TIMES AROUND THE HYBRID CABLE OR INDIVIDUAL CABLES, AND THE TAPE SHALL BE KEPT IN THE SAME LOCATION AS MUCH AS POSSIBLE.
  - COLOR BAND ON JUMPERS SHALL BE 2" WIDE WITH A 2" SPACE.





REV	DATE	DESCRIPTION	BY	CHKD
1	10-24-10	ISSUED FOR CONSTRUCTION	JAE	SEH
2	10-14-10	ISSUED FOR CONSTRUCTION	JAE	SEH
3	10-27-10	ISSUED FOR CONSTRUCTION	JAE	SEH
4	06-22-10	ISSUED FOR CONSTRUCTION	TED	SEH

**TeleCAD Wireless**  
 1961 NORTHPOINT BLVD., SUITE 130  
 HIXSON, TN 37343  
 PH: 423-843-9500 FAX: 423-843-9509

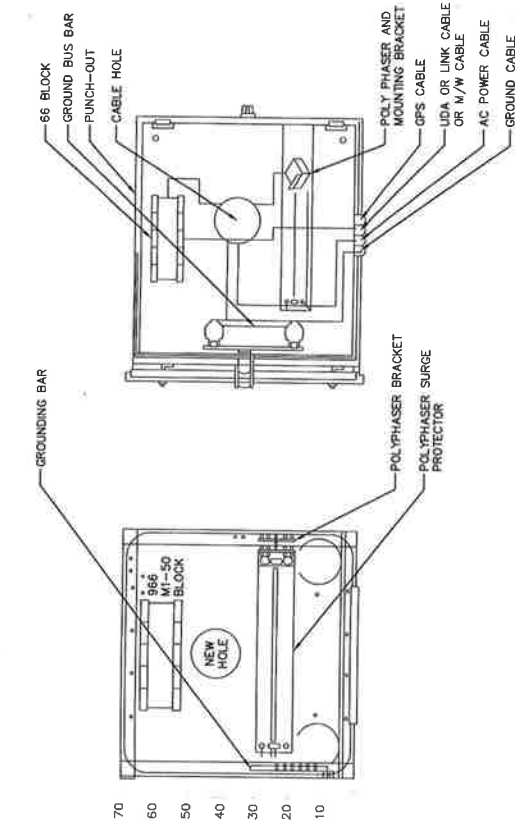
HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR CONTRACT DOCUMENTS HAVE BEEN PREPARED OR DIRECT SUPERVISION AND THAT I AM DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.

*STEPHERLE HUNT*  
 SIGNATURE  
 PRINT NAME: STEPERLE HUNT  
 DATE: 01.24.13 LICENSE #2286

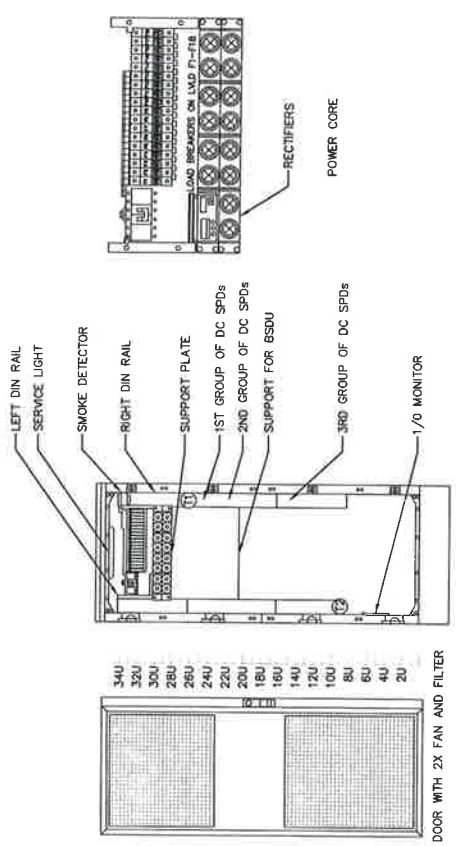
PROJECT INFORMATION  
 NETWORK VISION MMB5 LAUNCH  
**ST. PAUL WATER TOWER**  
 MS03XC472  
 2100 E. COTTAGE AVE.  
 ST. PAUL, MN 55119  
 RAMSEY COUNTY

DRAWN BY	TDD	SEH	DATE
			08-19-13

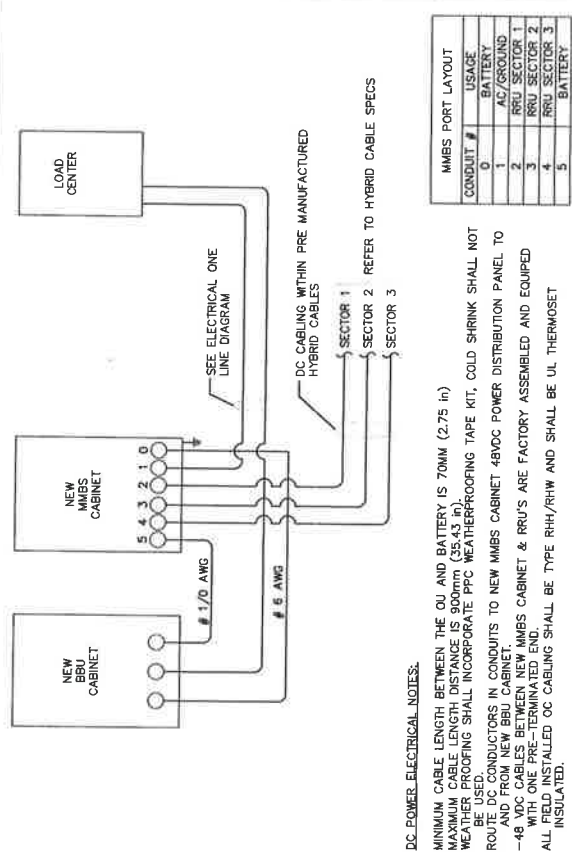
SHEET TITLE: ELECTRICAL DETAILS  
 SHEET NUMBER: E-2  
 REV: 3



2 MUDROOM ELECTRICAL DETAIL  
 SCALE: NTS

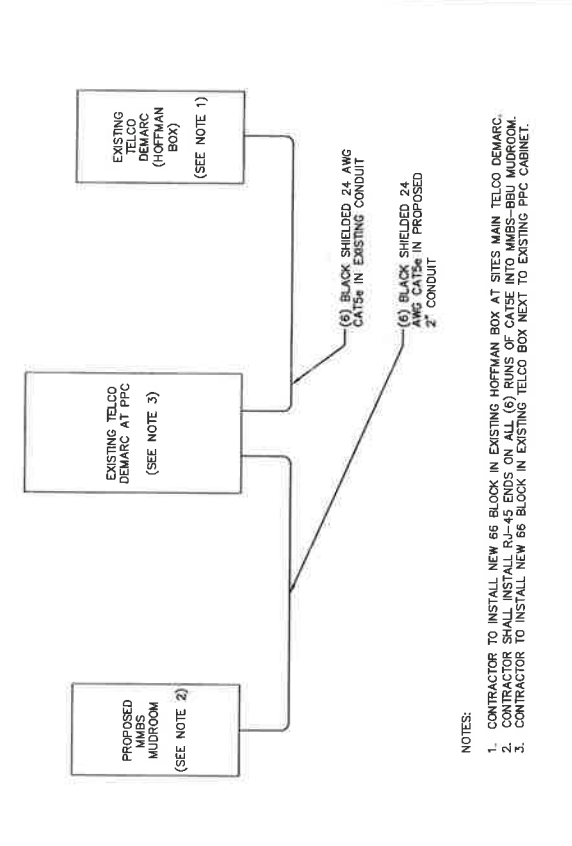


1 MIMBS-BBU ELECTRICAL DETAILS  
 SCALE: NTS



CONDUIT #	USAGE
0	BATTERY
1	AC/GROUND
2	RRU SECTOR 1
3	RRU SECTOR 2
4	RRU SECTOR 3
5	BATTERY

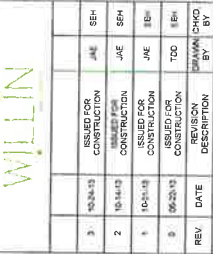
DC POWER ELECTRICAL NOTES:  
 MINIMUM CABLE LENGTH BETWEEN THE OIL AND BATTERY IS 70MM (2.75 in)  
 MAXIMUM CABLE LENGTH DISTANCE IS 900mm (35.43 in)  
 WEATHER PROOFING SHALL INCORPORATE PPC WEATHERPROOFING TAPE KIT. COLD SHRINK SHALL NOT BE USED.  
 ROLL CONDUITORS IN CONDUITS TO NEW MMB5 CABINET 48VDC POWER DISTRIBUTION PANEL TO AND FROM NEW BBU CABINET.  
 -48 VDC CABLES BETWEEN NEW MMB5 CABINET & BBU'S ARE FACTORY ASSEMBLED AND EQUIPPED WITH ONE PRE-TERMINATED END.  
 ALL FIELD INSTALLED DC CABLING SHALL BE TYPE RHH/RHW AND SHALL BE UL THERMOSET INSULATED.



3 TELCO RISER DETAIL  
 SCALE: NTS

NOTES:  
 1. CONTRACTOR TO INSTALL NEW 66 BLOCK IN EXISTING HOFFMAN BOX AT SITES MAIN TELCO DEMARC.  
 2. CONTRACTOR SHALL INSTALL NEW 66 BLOCK IN EXISTING TELCO BOX NEXT TO EXISTING PPC CABINET.  
 3. CONTRACTOR TO INSTALL NEW 66 BLOCK IN EXISTING TELCO BOX NEXT TO EXISTING PPC CABINET.





1961 NORTHPOINT BLVD., SUITE 130  
 HIXSON, TN 37243  
 PH: 423-843-9500 FAX: 423-843-9509

ISSUED FOR CONSTRUCTION JAE SEH  
 10-14-13  
 CONSTRUCTION JAE SEH  
 10-14-13  
 CONSTRUCTION JAE SEH  
 10-15-13  
 CONSTRUCTION JAE SEH  
 10-20-13  
 CONSTRUCTION TOD SEH  
 10-20-13  
 REVISION SHAMAM CHO  
 BY

DATE: 10-7-13 LICENSE: 432488

ST. PAUL WATER TOWER  
 MS03XC472  
 2100 E. COTTAGE AVE  
 ST. PAUL, MN 55119  
 RAMSEY COUNTY

GROUNDING & ROUTING PLANS

E-3 3

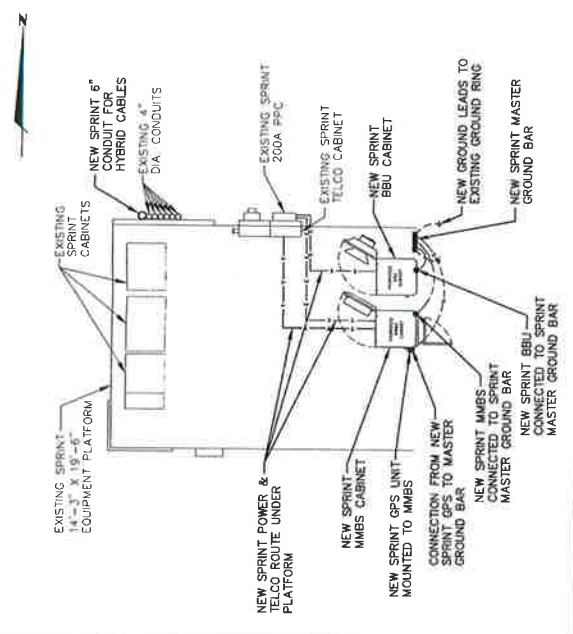
GENERAL GROUNDING NOTES:

- ALL DETAILS ARE SHOWN IN GENERAL TERMS. ACTUAL INSTALLATION AND CONSTRUCTION MAY VARY DUE TO SITE SPECIFIC CONDITIONS.
- OTHER METAL ANTENNA BASES, FRAMES, CABLE RIMS, AND CONNECT TO SURFACE MOUNTED BUS BARS FOLLOWING ANTENNA AND BITE MANUFACTURERS PRACTICES FOR GROUNDING REQUIREMENTS. GROUND COAX SHIELD AT BOTH ENDS AND EXIT FROM TOWER OR POLE USING MFR'S PRACTICES.
- ALL GROUND CONNECTIONS SHALL BE EXOTHERMIC. ALL WIRES SHALL BE COPPER THIN/TWAIN ALL GROUND WIRE SHALL BE GREEN INSULATED WIRE ABOVE GROUND.
- CONTRACTOR TO VERIFY AND TEST GROUND TO SOURCE. GROUNDING SYSTEM SHALL BE VERIFIED BY VISUAL INSPECTION AND TESTED BY SPRINT WIRELESS, LLC REPRESENTATIVE.
- REFER TO DIVISION 16 GENERAL ELECTRIC; GENERAL ELECTRICAL STANDARDS AND COMPLY WITH ALL REQUIREMENTS OF GROUNDING STANDARDS.
- ELECTRICAL CONTRACTOR TO PROVIDE DETAILED DESIGN OF GROUNDING SYSTEM PER SPRINT STANDARD GROUNDING METHOD, AND RECEIVE APPROVAL OF DESIGN BY AUTHORIZED SPRINT REPRESENTATIVE. PRIOR TO INSTALLATION OF SPRINT GROUNDING SYSTEM. PHOTO DOCUMENT ALL EXOTHERMIC AND GROUND RING.
- NOTIFY CONSTRUCTION MANAGER IF THERE ARE ANY DIFFICULTIES INSTALLING GROUNDING SYSTEM DUE TO SITE SOIL CONDITIONS.
- ALL EXISTING GROUND BARS, WIRES & CONNECTIONS SHALL BE FIELD VERIFIED. ANY DEFICIENT ITEMS SHALL BE REPLACED AS REQUIRED TO ACHIEVE ADEQUATE GROUNDING REQUIRED BY SPRINT.

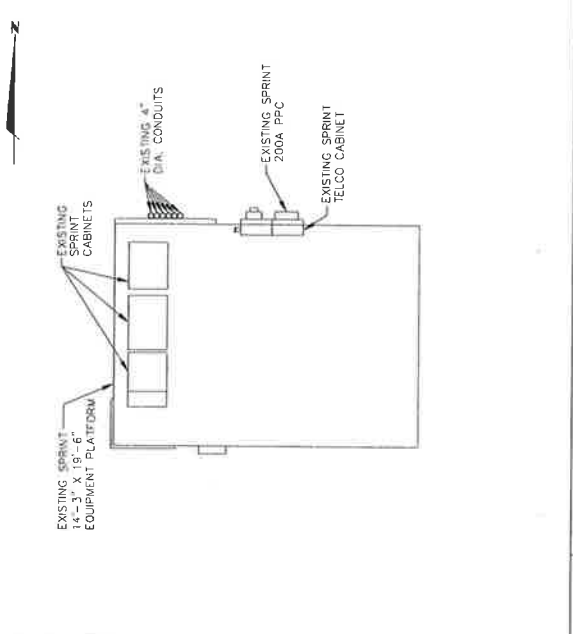
GROUNDING NOTES:

- EXOTHERMIC WELDS (2) 2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUNDING BAR. ROUTE CONDUCTORS TO BURIED GROUNDING RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
- EC SHALL USE PERMANENT MARKER TO DRAW THE LINES BETWEEN EACH SECTION AND LABEL EACH SECTION ("P", "A", "N", "1") WITH 1" HIGH LETTERS.
- ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS. COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING. ALL HARDWARE SHALL BE STAINLESS STEEL 3/8 INCH DIAMETER OR LARGER.
- FOR GROUND BOND TO STEEL ONLY; INSERT A CADMIUM FLAT WASHER BETWEEN LUG AND STEEL. COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
- NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUNDING BAR AND BE SET INTO THE FRONT SIDE OF THE BLACK HEAT-SHRINKING TUBE. 500 VOLT INSULATION ON ALL GROUNDING TERMINATIONS. THE INTENT IS TO WEATHERPROOF THE COMPRESSION CONNECTION.
- NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATION, AND CONNECTION ORIENTATION. PROVIDE AS REQUIRED.
- GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
- WEATHERPROOFING SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
- SUPPLIED AND INSTALLED BY CONTRACTOR.
- WHEN THE SCOPE OF WORK REQUIRES THE ADDITION OF A GROUNDING BAR TO AN EXISTING TOWER, THE SUBCONTRACTOR SHALL OBTAIN APPROVAL FROM THE TOWER OWNER PRIOR TO MOUNTING THE GROUNDING BAR TO THE TOWER.
- EXTEND TWO (2) 2 AWG TINNED CU CONDUCTOR FROM BURIED GROUNDING RING AND CONNECT TO THE PROPOSED TOWER. FOLLOW MANUFACTURERS RECOMMENDATIONS FOR GROUNDING CONNECTIONS TO THE TOWER (APPLICABLE TO NEW TOWERS ONLY.)
- NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATION, AND CONNECTION ORIENTATION. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING APPROVAL FROM THE TOWER OWNER PRIOR TO PROVIDING 50% SPARE CONNECTION POINTS.
- EXPOSED GROUND WIRES TO BE NON METALLIC LIQUID TIGHT.

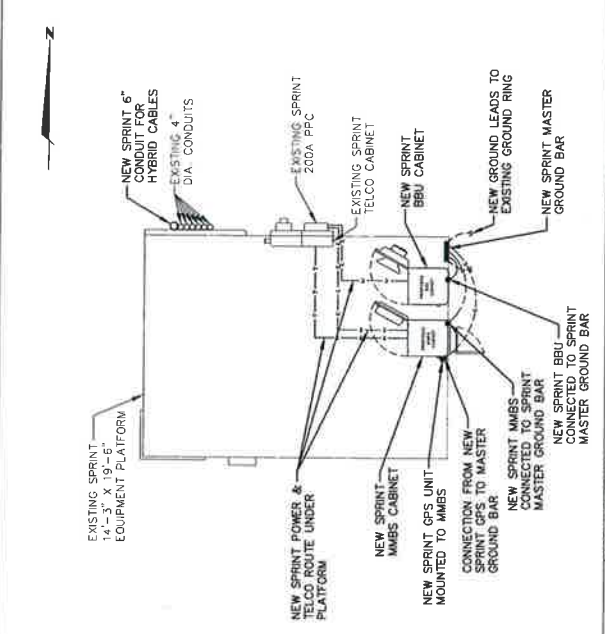
GROUNDING NOTES



1 EQUIPMENT GROUND & ROUTING PLAN (INTERIM) IF REQUIRED  
 11x17 SCALE: 1"=8" 24x36 SCALE: 1"=4"



2 EQUIPMENT GROUND & ROUTING PLAN (EXISTING)  
 11x17 SCALE: 1"=8" 24x36 SCALE: 1"=4"



3 EQUIPMENT GROUND & ROUTING PLAN (FINAL)  
 11x17 SCALE: 1"=8" 24x36 SCALE: 1"=4"



WILLIN

REV	DATE	DESCRIPTION	BY	CHKD BY
1	10-24-13	ISSUED FOR CONSTRUCTION	JAE	SEH
2	10-14-13	REVISED FOR CABLES	JAE	SEH
3	10-01-13	ISSUED FOR CONSTRUCTION	JAE	SEH
4	08-23-13	REVISED FOR CONSTRUCTION	TOO	SEH
		REVISION		
		DESCRIPTION		
		BY		



1961 NORTHPOINT BLVD., SUITE 130  
HIXSON, TN 37343  
PH: 423-843-9500 FAX: 423-843-9509

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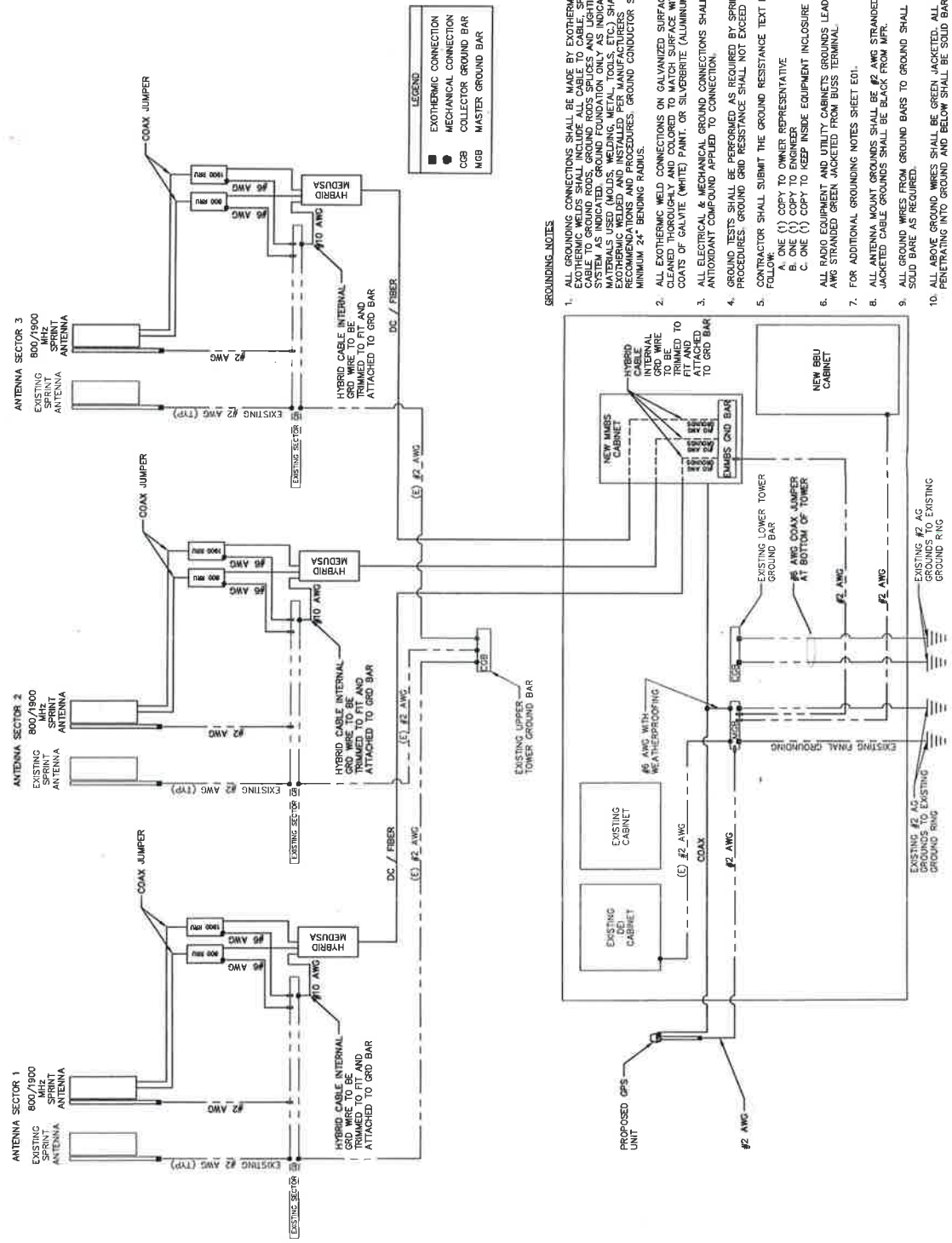
SIGNATURE: *JAE*  
PRINT NAME: JAE  
DATE: 10/24/13  
LICENSE: 42269

PROJECT INFORMATION  
NETWORK VISION WIMBS LAUNCH  
ST. PAUL WATER TOWER  
MS03XC472

2100 E. COTTAGE AVE  
ST. PAUL, MN 55119  
RAMSEY COUNTY

DRAWN BY: TDD  
CHECKED BY: SEH  
DATE: 08-19-13  
SHEET TITLE: GROUNDING DETAILS

SHEET NUMBER: 3  
REV: 1



LEGEND

■	EXOTHERMIC CONNECTION
●	MECHANICAL CONNECTION
○	COLLECTOR GROUND BAR
□	MGB MASTER GROUND BAR

GROUNDING NOTES

- ALL GROUNDING CONNECTIONS SHALL BE MADE BY EXOTHERMIC WELDS. ALL EXOTHERMIC WELDS SHALL BE MADE IN ACCORDANCE WITH THE SYSTEM AS INDICATED. GROUND RODS, SPLICES AND LIGHTING PROTECTIONS MATERIALS USED (MOLDS, WELDING, METAL, TOOLS, ETC.) SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS AND PROCEDURES. GROUND CONDUCTOR SHALL HAVE A MINIMUM 24" BENDING RADIUS.
- ALL EXOTHERMIC WELD CONNECTIONS ON GALVANIZED SURFACES SHALL BE CLEANED THOROUGHLY AND COLORED TO MATCH SURFACE WITH (1) TWO COATS OF GALVANNE (WHITE) PAINT, OR SILVERGRIE (ALUMINUM), ANTIOXIDANT COMPOUND APPLIED TO CONNECTION.
- GROUND TESTS SHALL BE PERFORMED AS REQUIRED BY SPRINT STANDARD PROCEDURES. GROUND RESISTANCE SHALL NOT EXCEED 5-OHMS.
- CONTRACTOR SHALL SUBMIT THE GROUND RESISTANCE TEST REPORT AS FOLLOWS:
  - ONE (1) COPY TO OWNER REPRESENTATIVE
  - ONE (1) COPY TO ENGINEER
  - ONE (1) COPY TO KEEP INSIDE EQUIPMENT ENCLOSURE
- ALL RADIO EQUIPMENT AND UTILITY CABINETS. GROUNDING LEADS TO BE #2 AWG STRANDED GREEN JACKETED FROM BUSS TERMINAL.
- FOR ADDITIONAL GROUNDING NOTES SHEET 001.
- ALL ANTENNA MOUNT GROUNDING SHALL BE #2 AWG STRANDED GREEN JACKETED CABLE GROUNDING SHALL BE BLACK FROM MFR.
- ALL GROUND WIRES FROM GROUND BARS TO GROUND SHALL BE #2 AWG SOLID BARE AS REQUIRED.
- ALL ABOVE GROUND WIRES SHALL BE GREEN JACKETED. ALL GROUND WIRES PENETRATING INTO GROUND AND BELOW SHALL BE SOLID BARE.

1 GROUNDING RISER DIAGRAM

SCALE: NTS



WILLIN

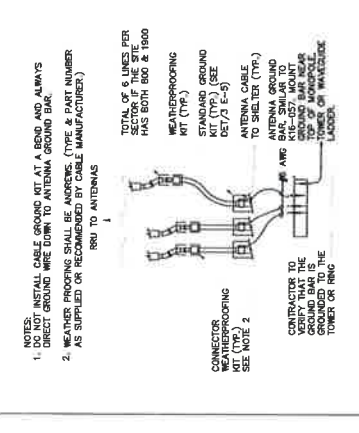
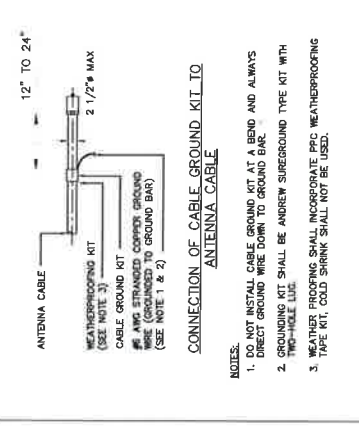
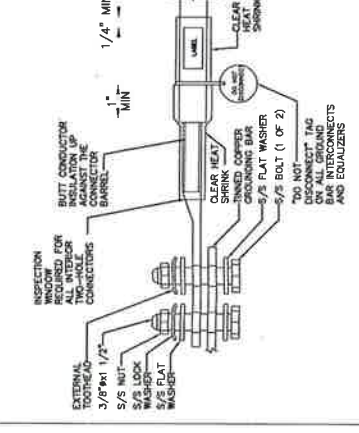
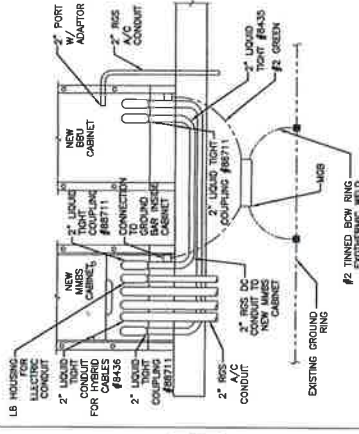
TeleCAD Wireless  
1961 NORTHPOINT BLVD., SUITE 130  
HIXSON, TN 37243  
PH: 423-843-9500 FAX: 423-843-9509

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PROJECT INFORMATION  
NETWORK UPGRADE/LAUNCH  
ST. PAUL WATER TOWER  
MS03XC472  
2100 E. COTTAGE AVE.  
ST. PAUL, MN 55119  
RAMSEY COUNTY

PRINT NAME: STEPHEN HERT  
DATE: 01.24.13 LICENSE # 2268  
DRAWN BY: TDD  
CHECKED BY: SEH  
DATE: 08-19-13

SHEET TITLE: GROUNDING DETAILS  
SHEET NUMBER: GR-2  
REV: 3



1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.

2. WEATHER PROOFING SHALL BE ANDERSONS (TYPE & PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER).

RSU TO ANTENNAS

CONNECTOR WEATHERPROOFING SEE NOTE 2

CONTRACTOR TO VERIFY THAT THE GROUND BAR IS PROPERLY GROUNDING TO THE TOWER OR RING

CONNECTION OF CABLE GROUND KIT TO ANTENNA CABLE

NOTES:  
1. PART INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.  
2. GROUNDING KIT SHALL BE ANDERSON SURROUND TYPE KIT WITH TWO-HOLE LUG.  
3. WEATHER PROOFING SHALL INCORPORATE BUES WEATHERPROOFING TAPE KIT. COLD SHRINK SHALL NOT BE USED.

TYPE LA, TYPE LB, TYPE LC, TYPE LD, TYPE LE, TYPE LF, TYPE LG, TYPE LH, TYPE LI, TYPE LJ, TYPE LK, TYPE LL

STRANDED CU WIRE WITH GREEN, 600V, THIN/THIN INSULATION SEE AS SPECIFIED

GROUND BAR ON WALL, ON AN ANTENNA TOWER

COAX CABLE GROUND LEADS

EXISTING GROUND BAR & CONNECTIONS

TWO-HOLE LUG, BOLTED TO TWO-HOLE LUG USING 3/8" x 1 1/4" STAINLESS STEEL HEX HEAD BOLTS AND HARDWARE

EXOTHERMIC WELD WITH #2 AWG SOLID TINNED BARE CU WIRE OR STRANDED CU WIRE WITH GREEN, SHALL USE EXOTHERMIC CONNECTION

GROUND BAR ON WALL, ON AN ANTENNA TOWER

HYBRID CABLE GROUND LEAD

EXISTING 4" x 1 1/2" x 1/4" THK. TANKED GROUND BAR & CONNECTIONS

TWO-HOLE LUG, BOLTED TO GROUND BAR USING 3/8" x 1 1/4" STAINLESS STEEL HEX HEAD BOLTS AND HARDWARE

## EXHIBIT "D"

SPRINT SPECTRUM L.P.  
MS03XC472  
2095 Clear Ave E, Saint Paul, MN

### Antenna Facilities and Frequencies

#### 1. Shelter and Shelter Components

Sprint has 1 equipment platform 19'6" x 14'3" and lease space of approximately 750 square feet.

Power plant (DC current): Rectifiers installed inside MMBS BBV Cabinet

Battery supply back up: Installed inside MMBS BBV Cabinet

T-1 switch equipment: In existing utility h-frame

Commercial switch gear equipment: In existing utility h-frame

Radio transmitters: Installed inside MMBU Cabinet and behind the antennas in the form of RRU's.

Air conditioner: N/A

#### 2. Generators: N/A

#### 3. Antennas

Quantity: (3) Total; (1) per Sector

Type: Manufacturer: (3) Powerwave

Azimuths: 0; 120; 240

Model: (3) P90-15-XLPP-RR

Dimensions: (3) 72" x 12" x 7.3"

Weight: 64 lbs ea.

Type: Panel

Centerline of the antenna: 74' AGL

#### 4. Coax Cable

Number of lines: N/A

Type:

Size:

#### 5. Tower Mounted Amplifiers (TMAs) N/A

Quantity:

Manufacturer:

Model:

Dimensions:

Weight:

Mounting:

#### 6. Diplexers N/A

Quantity:

Manufacturer:

Model:

Dimensions:

Weight:

**7. Remote Radio Heads (RRHs)**  
 Quantity: (6) Total; (2) per Sector  
 Manufacturer: Samsung  
 Model: (3) RRH-P4, (3) RRH-C2A  
 Dimensions: (3) 19.3''x15.7''x6.7'', (3) 13.8''x23.8''x9''  
 Weight: (3) 52lbs, (3) 60lbs  
 Mounting: Pipe  
 Hybrid Jumper: (3) 1/2'' 6'

**8. Distribution Box (COVP) N/A**  
 Quantity:  
 Manufacturer:  
 Model:  
 Dimensions:  
 Weight:

**9. Sector Box N/A**  
 Quantity:  
 Manufacturer:  
 Model:  
 Dimensions:  
 Weight:

**10. Hybrid Cable**  
 Type: Samsung HFC  
 Number of Lines: (3) Total  
 Junction Cylinders: (3) Power & (3) Fiber

**11. Frequencies**

Svc	Technology	EIRP (WATTS)	Frequencies				
			Std Frequency	Transmit		Receive	
				Start	Stop	Start	Stop
1	1900 CDMA/EVDO	748.17		1930.625	1939.375	1850.625	1859.375
2	1900 LTE FDD	794.32		1990.625	1994.375	1910.625	1914.375
3	800 CDMA	433.51		862.275	863.525	817.275	818.275
4	800 LTE FDD	461.32		863.8	868.8	818.8	823.8

**EXHIBIT "E"**  
**SECURITY PLAN**

**Remote Facilities Access**  
**Saint Paul Regional Water Services (SPRWS)**  
**Standard Operating Procedure (SOP)**  
Effective Date: November 15, 2010

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**INTENT:**

SPRWS is dedicated to providing its employees with the safest work environment possible and to taking every reasonable precaution to ensure the safety of potable water delivered to our communities. This SOP provides conditions for persons with need to access SPRWS facilities outside the McCarrons Center facilities (Remote Facilities). It establishes procedures for access and responsibilities for both those wishing to enter remote facilities and those allowing such access.

**SECURITY OF FACILITIES:**

Persons with routine access to remote facilities include SPRWS staff, agents of entities leasing space, agents of various cities, and various law enforcement personnel. Other entities also have occasional access needs under the supervision of SPRWS staff. With so many persons having legitimate access needs, it is imperative that specific procedures be established to ensure that the highest level of security possible. As a result, the following procedures are established:

**1.0 SITE ACCESS REQUIREMENTS**

- 1.01 Request to access site required prior to entry. Important: note that the police will be called to the site if a call is not made to SPRWS prior to entry.

Note: all requests for entry to remote sites must be made through the Engine Room!  
Any other employee asked to allow entry to a remote site must inform the requester to call the Engine Room so that they can be cleared for entry.

- a) Routine and regularly scheduled

Whenever possible, authorized agencies that require repeated, routine access should schedule such access during normal business hours at least one day in advance by calling SPRWS Engine Room at 651-266-1660. The Engine Room Pumping Engineer will record the name of the agent and arrange for crew to meet agent on site and allow for access after checking for proper ID. Pumping Engineer will verify that agents requesting access are those that arranged for the access previously, and pass the authorized agents names to the field crew for verification in the field. If access is allowed, field crew will notify Engine Room that an entry to a site will occur.

- b) Emergencies

1. Contact Engine Room 651-266-1660.

2. Engine Room Pumping Engineer (PE II) will check against a list of authorized companies for each site to ensure that a particular company has reason to be on site.
3. If company is authorized, PE II will make arrangements with the Distribution after-hours Turn-On truck to allow for access at the site.
4. Distribution personnel will be responsible to verify the identity of the agent(s) and to monitor agent(s') activity at the site.
5. Under certain conditions, Distribution personnel may not be available, in which case PE IIs will use their best judgment to determine if there is another way to grant access to the agent, or to deny or delay access.

1.02 While at site:

- a) Authorized agents are required to perform their necessary work on the site in a manner that does not compromise site security. This includes, but is not limited to, securing all doors and gates before leaving the site.
- b) SPRWS employees will determine whether or not they will need to monitor the activity at the site. If SPRWS employee believes that the agent is not there for a legitimate business reason, the employee should get to a safe area and call 911 to have police confront the agent and remove them if necessary. In this event, SPRWS employee should also call the Engine Room to inform them of the proceedings.

1.03 Leaving site:

- a) Authorized agents must notify Engine Room 651-266-1660 when leaving the site.

## **2.0 IDENTIFICATION PROCEDURES**

- 2.01 All SPRWS staff and personnel are issued a SPRWS photo identification card (ID card) at the McCarrons facility. This ID is to be displayed above the waist. Anyone purporting to be a SPRWS employee should be asked to display this ID card if it is not visible.

Contractors or agents seeking entrance to a remote facility are required to show a valid driver's license. SPRWS employee allowing them access will forward the name and phone number of the entrant to the Engine Room to confirm that access should be granted.

## **3.0 FACILITY LOCKS**

- 3.01 All Remote Facilities will be secured with high-security locks utilizing high-security keys.

- a) Locks will be furnished and installed by SPRWS.
- b) No other locks are permitted, and all such other locks will be removed and disposed of.
- c) SPRWS may make some exceptions in cases where, for the convenience of SPRWS staff, contractor locks will be allowed to be “daisy-chained” onto a SPRWS facility. These exceptions will be on a case by case basis, and the decision to allow this will be made by SPRWS security officer.
- d) For sites that are undergoing construction, SPRWS will install construction locks and give contractors construction keys.

### 3.02 Issuance of Keys

- a) SPRWS staff that require access, as determined by the appropriate SPRWS division manager, will be issued keys. Such keys will be reduced to the lowest possible number.
  - 1. SPRWS staff are responsible for the safe keeping of keys issued to them.
  - 2. Repeated lost keys will be considered negligence and may result in corrective action and/or discipline by SPRWS management.
- b) Key audits will be conducted at least once each calendar year.
  - 1. Each SPRWS staff member, and each Authorized Agent, to whom SPRWS keys were issued will be required to sign a key Audit Statement acknowledging their continued possession of the key.
  - 2. Both Public and Private Agencies are responsible for the return of all keys and/or contractor keys issued to their agents who leave their employ or are no longer required by the Authorized Agency to access SPRWS facilities. Lost keys must be reported immediately to SPRWS by contacting the Engine Room at 651-266-1660.
  - 3. Repeated losses may result in deposit requirements, as may be determined necessary by SPRWS staff.

## 4.0 SPRWS CONTACTS

Normal and emergency access after normal business hours:  
PE II 651-266-1660.



## CONTRACTOR PROCEDURES FOR ENTERING SPRWS WATER TOWER FACILITIES

### Routine Accesses:

- 1) Notify SPRWS Pumping Engineer at 651-266-1660 of desired access at least 24 hours prior to accessing site. Pumping Engineer will verify that company has agreement to be on site, and if so will arrange for crew to meet contractor at designated time and place. Contractor must provide names of all employees that will access the site.
- 2) At time of arranged access, provide IDs (in the form of valid driver's licenses) for SPRWS field crew. If IDs match the names given to the Pumping Engineer, crew will provide access. If not, no access will be provided.
- 3) SPRWS field crew may accompany contractor while they are on site. If the crew does not accompany contractor, contractor must call the Pumping Engineer when they leave the site.

### Emergency Accesses:

- 1) Notify SPRWS Engine Room at 651-266-1660 of need to access site.
- 2) Engine Room Pumping Engineer will verify that contractor has an agreement to be on a particular site.
- 3) If contractor has agreement to be on site, and a reasonable explanation of the emergency is given, Pumping Engineer will arrange for a crew to meet contractor at the site.
- 4) Contractor will need to produce IDs and work orders.
- 5) If OK, crew will allow for access.
- 6) Repeated emergencies will be cause for SPRWS to bill the contractor or deny access.
- 7) Contractor will call Engine Room when leaving site.

- End -

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**Exhibit "F"**  
***Memorandum of Lease Recording***

DRAFTED BY  
AND RETURN TO:

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*(space above this line for Recorder's use only)*

**MEMORANDUM OF LEASE**

THIS MEMORANDUM OF LEASE is entered into as of this \_\_\_\_\_ day of \_\_\_\_\_, 2017, by and between **BOARD OF WATER COMMISSIONERS OF THE CITY OF SAINT PAUL**, a municipal corporation under the laws of the State of Minnesota ("Lessor"), and **SPRINT SPECTRUM L.P.**, a limited partnership organized and existing under the laws of Delaware, ("Lessee").

1. LEASE OF PREMISES. For the purpose of installing, operating, and maintaining a communication facility and other improvements, Lessor hereby leases to Lessee, and Lessee hereby leases from Lessor, certain premises located at 2095 Clear Ave E, City of Saint Paul, County of Ramsey, State of Minnesota, and more particularly described in Section 4 of this Memorandum, and on the terms and conditions more particularly set forth in, that certain Site Lease Agreement dated April 01, 2017 (the "Lease") by and between Lessor and Lessee, which terms and conditions are hereby incorporated by reference.
2. The initial term of the Lease shall commence on April 01, 2017, and terminate on March 31, 2022. Lessee shall have the right to extend the Lease for three (3) additional five (5) year terms.
3. The Lease provides in part the grant of a non-exclusive easement for unrestricted rights of access and to electric and telephone facilities.

**EXHIBIT "F"**

4. The subject property affected by the filing and recording of this Memorandum of Lease is described below:

That part of the Southeast Quarter (SE ¼), Section twenty-three (23), Township twenty-nine (29), Range twenty-two (22), commencing at a point 678.71 feet East of the Northwest corner of Lot 12, Katherine's Addition, according to the recorded plats thereof on file and of record in the Office of the Registrar of Titles, in and for Ramsey County, Minnesota; thence South 268.97 feet to a point 711.69 feet Easterly from the West line of the Northwest Quarter (NW ¼) of the Southeast Quarter (SE ¼) of Section twenty-three (23), Township twenty-nine (29), Range twenty-two (22) Ramsey County, Minnesota; thence Easterly 162 feet; thence Northerly to the South line of Cottage Avenue. All in Ramsey County, Minnesota

(Signature and Acknowledgement Pages Follow)

**Lessor:**

**BOARD OF WATER COMMISSIONERS  
OF THE CITY OF SAINT PAUL**  
EIN 41-6005521

Approved:

By \_\_\_\_\_  
Stephen P. Schneider, General Manager  
Saint Paul Regional Water Services

By \_\_\_\_\_  
Matt Anfang, President

Approved as to form:

By \_\_\_\_\_  
Assistant City Attorney

By \_\_\_\_\_  
Mollie Gagnelius, Secretary

Date \_\_\_\_\_

**CITY OF SAINT PAUL**

By \_\_\_\_\_  
Kristin Beckmann, Deputy Mayor

By \_\_\_\_\_  
Shari Moore, City Clerk

By \_\_\_\_\_  
Todd Hurley, Director  
Office of Financial Services

Date \_\_\_\_\_

**For Lessee:**

**SPRINT SPECTRUM L.P.**

By: \_\_\_\_\_

Print name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_





