COMMUNICATIONS FACILITY SITE LICENSE AGREEMENT

THIS COMMUNICATIONS FACILITY SITE LICENSE AGREEMENT ("License" or "Agreement") is made and entered into this 1st day of October, 2014, by and between the City of Indianapolis, Department of Public Safety, for and on behalf of the Division of Public Safety Communications, whose address is 47 S. State Street, Indianapolis, Indiana 46201 ("Licensor"), and Sprint Spectrum L.P., a Delaware limited, whose address is 6391 Sprint Parkway, Overland Park, KS 66251 ("Licensee").

NOW, THEREFORE, in consideration of the mutual promises and benefits contained herein, the parties agree as follows:

AGREEMENTS

1. LICENSED PREMISES

1.1. On or about November 12, 1997, Licensor and Licensee's predecessor in interest previously entered into a license agreement for a period not to exceed fifteen (15) years to install, maintain, repair, upgrade, and operate cellular telephone equipment and other related equipment on certain real property owned by Licensor located at 6330 North Guilford Avenue, Indianapolis, Indiana which property is more particularly described in the attached Exhibit "A" and made a part hereof ("Licensor's Property").

1.2. Pursuant to that prior license, Licensee installed cellular telephone equipment and made certain additional improvements on Licensor's Property, being more particularly described in the attached Exhibit "C" and made a part hereof ("Licensee's Site Plan").

1.3. Licensor and Licensee desire to enter into this License whereby Licensor agrees to grant Licensee certain rights regarding the limited use and occupancy of Licensor's Property, all as may be defined herein.

1.4. Subject to the conditions set forth herein, Licensor hereby grants to Licensee the right to use a certain portion of said Licensor's Property as described herein and more specifically described in the attached Exhibit "B" (the "Licensed Premises"). Licensee's wireless communications facilities and equipment deployed in/on the Licensed Premises (the "Communications Equipment or Communications Facility") shall be described with specificity and attached hereto as Exhibit "C". The parties acknowledge that as of execution hereof, if the Exhibits to this Agreement remain incomplete, said Agreement shall have no legal or equitable force or effect until such time as all Exhibits and attachments hereto have been fully completed, executed, and approved by Licensor and Licensee, each in its sole discretion. Preparation of the Exhibits shall be at the sole cost and expense of the Licensee and Licensee hereby agrees to indemnify, protect, hold harmless, and defend Licensor from any cost, expense, claim, damages or liability incurred or claimed against Licensee in connection with the preparation of the Exhibits.

1.5. Licensor has entered into a similar license agreement with New Cingular Wireless PCS, LLC ("AT&T") whereby AT&T has constructed a monopole communications tower

("Tower") and made certain additional improvements on Licensor's Property immediately adjacent to the Licensed Premises.

1.6. Licensee, in addition to occupying the Licensed Premises as contemplated herein, will occupy and use certain space on/in the Tower in accordance with the terms of a separate agreement between and among Licensee and AT&T.

1.7. Upon request, Licensee shall provide to Licensor a complete copy of any agreement (and all exhibits and attachments) between Licensee and AT&T or any successor entity for such occupancy and use of the Tower.

2. USE

2.1. The Licensed Premises will be used for the purpose of Licensee's installing, maintaining repairing, upgrading, and operating the equipment and/or structures comprising Licensee's Communications Facility, which is more thoroughly defined below. Such Communications Equipment includes, but is not limited to, the following:

- Licensee's wireless communications equipment including base station(s), antenna(s), GPS receivers, radios, signal amplifiers, switch(es), power supply(ies), battery(ies), heating and cooling equipment, and accessories;

- Licensee's coaxial cable and other communication service lines (either underground or installed internally within the Licensed Premises), telecommunications switches, electric power lines, and mounting and grounding hardware (all should comply with Motorola's R-56 grounding standards or any successor standards).

2.2 The above-described Communications Facility and any equipment contained therein, and lines and equipment may be installed by Licensee or by any of Licensee's agents or contractors and shall conform to the description and details as particularly described in the attached Exhibit C. Licensee has the right, in conformance with Exhibit C, to make alterations at its sole cost and expense to Licensee's Communications Facility from time to time as Licensee determines to be necessary or desirable with the prior approval of Licensor, which approval shall not be unreasonably withheld or delayed; provided, however, Licensee maintains the right to perform routine maintenance, repairs and like-for-like replacements (all subject to the access requirements of Section 6.4 herein) without Licensor's approval. Licensee further has the obligation to add, modify and/or replace equipment in order to be in compliance with any current or future federal, state, or local mandated application, including but not limited to, emergency 911 communication services.

2.3 Licensee shall maintain the Licensed Premises including, but not limited to keeping the area clear of trash, weeds and the like. Additionally, Licensee shall maintain at its sole cost and expense, certain landscaping as is present at the Licensed Premises on the date of execution of this Agreement and pursuant to the City of Indianapolis City Code and as may otherwise be determined by Licensor. Such maintenance and upkeep of the Licensed Premises

and landscaping shall be of a manner and frequency that fully satisfies the reasonable requirements of Licensor.

2.4 Licensee shall also be responsible at its sole cost and expense to provide for any and all drainage modifications which may be required as a result of construction, modification or repair of the Communications Facility.

3. TESTS AND CONSTRUCTION

3.1 Licensee shall have the right at any time following the full execution of this Agreement to enter upon the Licensor's Property for the purpose of making appropriate engineering surveys, structural strength analysis, inspections and other reasonably necessary tests. Upon completion of the testing and inspection process for finalization of the Exhibits hereto and the subsequent mutual approval of same, Licensee shall have the right to enter upon only the Licensed Premises, but not the Licensor's Property except as may be necessary for access to the Licensed Premises. Licensee shall, at Licensee's sole expense, conduct all necessary tests, surveys, and inspections. Upon request and provided such disclosure does not conflict with any other agreement Licensee may be a part of, Licensee agrees to provide Licensor with a copy of any and all such test results and reporting documentation at the time such test results or reports are completed by Licensee or provided by other sources. Licensee acknowledges and agrees that any such tests or construction on Licensor's Property, due to the need for the Licensor to maintain the security of its public safety communications network, shall only be conducted following notice to and with the approval of Licensor's site contact or his/her successor:

David Schwartz
Deputy Chief
Division of Public Safety Communications
Department of Public Safety
47 South State Avenue
Indianapolis IN 46201
Phone: (317) 327-7315
David.Schwartz@indy.gov

4. TERM

4.1. Initial Term. The term of the prior license expired on November 14, 2012; however, Licensee has continued to lease the Licensed Premises under the prior license on a month to month basis through November 14, 2013. The initial term of the Agreement shall be for five (5) years, commencing on November 15, 2013, (the "Commencement Date"). Subject to the automatic renewal provisions set forth in subparagraph (4.2) below, this Agreement shall terminate on the day of the fifth (5th) anniversary of the Commencement Date (the "Initial Term").

4.2. Extended Terms. Provided that Licensee is not then in default beyond the applicable cure period hereunder, Licensee shall have the right to extend the Initial Term of this

Agreement for three (3) additional periods of five (5) years each (the "Extended Term(s)" the Initial Term and any exercised Extended Term may herein be referred to as the "Term") on the same terms and conditions as set forth herein, except for adjustments in insurance. Extensions will be automatic unless Licensee provides written notice to Licensor of its intent not to renew within thirty (30) days of the expiration of the Initial Term or any applicable Extended Term.

4.3. Holding Over. If after the end of the last Extended Term or any previous Term or upon any other event of termination as may be contemplated under this Agreement, should Licensee remain in possession of the Licensed Premises for any period greater than the number of days otherwise permitted by this Agreement for Communications Equipment removal without executing a new Agreement, Licensee shall become a Licensee on a month-to-month basis on the same terms and conditions of this Agreement, but shall begin to pay to Licensor a monthly amount of one-twelfth (1/12) of a sum equal to one hundred and twenty five percent (125%) of the then current annual License Fee payment, in advance, without notice, demand or offset on or before the first day of each calendar month at Licensor's address in Section 19.4 herein below (or such other address that the Licensor may from time to time designate by providing appropriate notice).

5. LICENSE FEE

5.1. Annual fees/rent shall be in the amount of Twenty Four Thousand Dollars and No Cents (US$24,000.00) and shall be increased incrementally as provided below ("License Fee"). The first two installments of Annual License Fees, the first year's Annual License Fee of Twenty Four Thousand Dollars and No Cents (US$24,000.00) and the second year's Annual License Fee of Twenty Four Thousand Eight Hundred and Forty Dollars and No Cents (US$24,840.00), shall be paid in a lump sum of Forty Eight Thousand Eight Hundred and Forty Dollars and No Cents (US$48,840.00) within forty-five (45) days of the Commencement Date. Thereafter, beginning on the second (2nd) anniversary of the Commencement Date, and continuing for the remainder of the Initial Term and any Extended Term(s) (or for so long as this License is in effect), Annual License Fees shall be paid to Licensor on or in advance of each anniversary of the Commencement Date in annual installments, and the amount of each such successive annual payment shall be increased by three and one-half percentage points (3.5%) over the previous year's annual payment.

5.2. All License Fee payments shall be paid to Licensor's Real Estate Manager, Mr. Paul F. Smith at the address listed in 10.4 herein, or another person, firm or a place as Licensor may from time to time specify by providing Licensee with at least forty five (45) days advance written notice thereof.

5.3. In the event that any portion of the License Fee payments as required are not paid to Licensee within thirty (30) days after such payment is due, as required by and in accordance with the schedule described in 5.1 above, Licensor shall provide notice to Licensee, and a monthly late charge of one percent (1%) of the unpaid and then past due balance shall be paid by Licensee for each month or any portion thereof for which payment is past due and has not been made. The terms of the immediately preceding sentence shall not preclude Licensor from exercising any additional rights it may be entitled to under this License.

5.4. Licensee understands and agrees that, as an additional condition of this License and as further partial consideration for Licensor entering into the License, Licensee shall be required to compensate Licensor for the costs associated with the Licensor's use of its preferred architectural, legal and/or other technical service firms in providing assistance to Licensor in reviewing and negotiating the terms of this License. Licensee shall, within thirty (30) days of receipt of a written demand letter from Licensor, compensate Licensor for the cost and expense associated with such services being performed, in an amount of Five Thousand Dollars and No Cents (US$5,000.00).

5.5. The November 12, 1997, license agreement between the parties, required Licensee to pay four (4) separate payees under the control of, or ancillary to, the Licensor. Licensor and Licensee both agree that under the November 12, 1997 agreement, the Licensee has overpaid one (1) of the four (4) payee's in the amount of Seven Thousand One Hundred and Thirteen Dollars and Sixty Three Cents (US$7,113.63). Both parties otherwise agree that all other economic obligations of Licensee to Licensor under that November 12, 1997 agreement have been fully satisfied. Licensor has returned two (2) checks to Licensee in the amount of Seven Thousand Five Hundred Forty One Dollars and Thirty Five Cents (US$7,541.35). The two returned checks were from two (2) of the four (4) payees. Licensee will accept those returned checks as satisfaction for the overpayment and Licensee will draft a check made payable to the Licensor in the amount of Four Hundred Twenty Seven Dollars and Seventy Two Cents (US$427.72), which equals the amount owed subtracted from the amount given. The parties agree that after this final payment, all other economic obligations for license fees between the parties under the prior November 12, 1997 agreement have been satisfied.

6. FACILITIES; UTILITIES; ACCESS

6.1. During the Term, Licensee has the right to the Licensed Premises only for Licensee's operation of Licensee's Communications Facility, and to erect, maintain and operate on the Licensed Premises the Communications Equipment. In connection therewith, Licensee has the right, during the Term and with the written consent and agreement of Licensor, which consent shall not be unreasonably withheld or delayed, to do all work necessary to prepare, maintain, and alter the Licensed Premises for Licensee's operations. In the event Licensor fails to respond in writing within forty-five (45) days following Licensor's receipt of Licensee's request, Licensor shall be deemed to have given its consent. All of Licensees construction and installation work shall be performed at Licensee's sole cost and expense and in a good and workmanlike manner and in compliance with all laws, rules and regulations. Title to the Communications Equipment shall be held by Licensee. Subject to the requirements of Section 10.3, all of the Communication Equipment shall remain Licensee's personal property and are not fixtures. Licensee shall remove all Communications Equipment at its sole expense following the expiration or earlier termination of the Agreement as required by Section 10.3 hereof; provided Licensee repairs any and all damage to the Licensor's Property and the Licensed Premises (specifically including Licensor's equipment) caused by such removal. Upon termination of this Agreement, Licensee shall be required to remove all of Licensee's Communications Equipment and will restore Licensor's Property and the Licensed Premises (specifically including Licensor's

equipment) to its original condition, normal wear and tear and acts beyond Licensee's control excepted.

6.2. Licensee shall pay for any and all utilities it uses or consumes during its construction or operations on the Licensed Premises or Licensor's Property. Licensee shall be required to be separately metered and invoiced for electric, gas, telephone and fiber utilities. Licensee's use of Licensor's Property for utility service shall be approved in writing in advance by Licensor and Licensee may obtain separate utility service from any utility company that will provide service to the Licensed Premises (including, with prior written approval and acceptance of Licensor, a standby power generator for Licensee's exclusive use). Provided that there is no cost, expense, or liability to Licensor, and subject to Licensor's prior written approval as to the location and rights of the utility company on the Licensor's Property, Licensor agrees, where and if reasonable in Licensor's sole opinion, to sign such documents or easements as may be required by said utility companies to provide such service to the Licensed Premises, including the grant to Licensee or to the servicing utility company, of an easement in, over, across, or through the Licensor's Property as required by such servicing utility company to provide utility services as provided herein. Any easement necessary for such power or other utilities will be at a location acceptable to Licensor and the servicing utility company.

6.3. Licensee, Licensee's employees, agents, subcontractors, lenders and invitees, shall have access to the Licensed Premises with notice as described herein immediately below, twenty-four (24) hours a day, seven (7) days a week at no charge.

6.4. Licensee acknowledges and agrees that due to the need for the Licensor to maintain the security of its public safety communications network, Licensee's employees, agents, subcontractors, lenders and invitees shall be required to contact Licensor's Customer Service Desk (upon entry and exit of the Licensed Premises) at (317) 327-7319 or (317) 327-7320 and provide notice to and receive approval for access to the Licensed Premises.

7. INTERFERENCE/NON-INTERFERENCE

7.1. Prior to or concurrent with the execution of this Agreement, Licensor has provided, or will provide, Licensee with a list of radio frequency user(s) and frequencies used on Licensor's Property as of the date of this Agreement. Licensee shall operate its Communications Equipment in a manner that will not cause interference to Licensor and other lessees or licensees of Licensor's Property, as long as the existing radio frequency user(s) operate and continue to operate within their respective frequencies and in accordance with all applicable laws and regulations. All operations by Licensee shall be in compliance with all Federal Communications Commission ("FCC") requirements and all other applicable laws. Licensee specifically acknowledges that AT&T is operating its communications equipment on the Licensor's property and Licensee warrants that such AT&T communications equipment currently does not cause, and in the future shall not be considered to cause, any interference with Licensee's Communications Facility.

7.2. During the Term of the Agreement, Licensor may grant a lease, license, easement, transfer, or convey any other interest in Licensor's Property, or any other property owned by

Licensor contiguous to the Licensor's Property upon which the Licensed Premises is located, provided that such grant would not adversely affect or technologically interfere with Licensee's Communications Equipment, the operation of Licensee's Communications Equipment or the rights of Licensee under this License. If Licensor negotiates to grant a lease, license, easement, transfer, or convey any other interests to another entity for the purpose of installing and/or operating communications equipment, Licensor will only enter into an agreement with that additional entity if there will not be any actual adverse effect or technological interference with Licensee's Communications Equipment, the operations thereof or the rights of Licensee under this License. During the course of negotiations with any new entity, said new entity shall be required to submit a copy of their engineering drawings and frequency plans to Licensor and all licensees engaging in the communications business. The existing licensees (including Licensee if applicable) shall within fifteen (15) business days of receipt of said engineering drawings and frequency plans respond to the Licensor and the new entity identifying any and all adverse effects or technological interference that the new entity's proposed communications equipment may cause. Failure to respond within fifteen (15) business days shall be deemed conclusive evidence that no adverse effects or interference will exist.

7.3. Licensor reserves the right to consult an independent engineering authority for certification and verification that there may or may not be any actual material and unreasonable adverse effects or technological interference with Licensee's Communications Equipment or the operation thereof.

7.4. Licensee agrees that it shall not allow, knowingly use or knowingly permit its Communications Facility to create unreasonable interference with equipment Licensor uses on Licensor's Property for public safety purposes and Licensee will use all reasonable efforts to cause any such interference to cease within twelve (12) hours after receipt of notice of interference from Licensor. In the event any such interference does not cease within the aforementioned cure period then Licensee shall cease operations suspected of causing such interference (except for intermittent testing to determine the cause of such interference) until it is able to resolve the problem. If Licensee is unable to remedy the interference, Licensor will have the right, in addition to any other rights that it may have at law or in equity to attempt to enjoin such interference or to terminate this Agreement in accordance with the terms of Paragraph 10.

7.5. Licensor will not, nor will Licensor knowingly permit its employees, tenants, licensees, invitees, agents, independent contractors, or volunteers to interfere in any way with the Communications Facility, the operations of Licensee or the rights of Licensee under this Agreement. Licensor will use all reasonable efforts to cause other interference to cease within twenty-four (24) hours after receipt of notice of interference from Licensee. In the event any such interference does not cease within the aforementioned cure period, Licensor shall cease all operations which are suspected of causing interference (except for intermittent testing to determine the cause of such interference) until the interference has been corrected. If Licensor is unable to remedy the interference, Licensee will have the right, in addition to any other rights that it may have at law or in equity to attempt to enjoin such interference or to terminate this Agreement in accordance with the terms of Paragraph 10. Notwithstanding the foregoing, Licensee must accept any interference caused by the operation of any public safety equipment such as police, fire department and 9-1-1 dispatch and communications equipment of AT&T, as

long as such equipment is operating within applicable legal guidelines and requirements, and Licensor shall have no obligation to cease interference caused by such equipment.

8. TAXES

8.1 Licensee shall pay, annually to Licensor, an amount equal to any increase in real estate taxes or personal property taxes that may be attributable to any improvement to, or personal property placed on, the Licensed Premises by the Licensee which increases the assessed valuation of the Licensed Premises. Licensee shall reimburse Licensor for the amount of any such tax payment within fifteen (15) days of receipt of sufficient documentation indicating the amount paid and the calculation of Licensee's prorata share thereof based upon the amount of the assessed valuation of the improvements to or personal property placed on the Licensed Premises by Licensee. Licensor shall take all reasonable measures to minimize real estate taxes. Should Licensee disagree with any such requested prorata share amount, the Licensee shall be required, within the payment timeframe described above, to submit payment of the amount Licensee believes to be due with a notice and explanation of the disagreement. Upon notice of disagreement, Licensor will at Licensee's expense, hire an independent local real estate appraiser to make a full, final and binding calculation of Licensee's prorata share. Upon issuance of the appraiser's report any and all prorata amounts determined to be the responsibility of Licensee shall be immediately due and payable to Licensor. Upon written request by Licensee, Licensor shall furnish evidence of payment of all real estate taxes.

9. WAIVER OF LIEN

9.1. Licensor waives any lien rights it may have concerning the Communications Facilities which are deemed Licensee's personal property and not fixtures, and Licensee has the right to remove the same at any time without Licensor's consent.

9.2. In consideration for the above, Licensee agrees to indemnify, protect, defend, and hold harmless Licensor, Licensor's employees, officers, agents, contractors, invitees, licensees, and volunteers who may be performing tasks on behalf of Licensor on account of claims or mechanic's, material man or other liens imposed upon the Licensed Premises or any liability associated therewith (including payment of attorneys' fees, costs, and all expenses) in connection with any alterations, additions, or improvements to the Licensed Premises made by Licensee, Licensee's agents, employees, or contractors. In the event any lien is asserted against the Licensor's Property, Licensee will discharge the same within fifteen (15) days of notice of same. The provisions of this paragraph will survive the termination of this Agreement.

10. TERMINATION

10.1. In addition to the Parties' right to terminate this License pursuant to Paragraph 11 of this License, this License may be terminated at any time upon any of the following events:

10.1.1. By Licensee if the approval of any agency, board, court, or any other governmental authority necessary for the construction and/or operation of the Communications Facility cannot be obtained or is

revoked, or if Licensee determines the cost of obtaining such approval is prohibitive.

10.1.2. By Licensee, in Licensee's sole and absolute discretion and for any or no reason upon ninety (90) days prior written notice to Licensor.

10.1.3. By Licensor if Licensee is subject to an action contemplated under Paragraph 18 herein.

10.1.4. By Licensor in accordance with Paragraph 10.4.

10.2. Licensee will give Licensor thirty (30) days written notice of termination of this License under the terms of Paragraph 10.1.1 and ninety (90) days written notice of termination under Paragraph 10.1.2 above as stated above. Upon such termination, neither party will owe any further obligations to the other under this License except for the indemnities and hold harmless provisions in this License, the provisions of Paragraph 10 of this License and the provisions of Paragraph 10.3 of this License. In the event Licensee terminates this License for the reasons set forth in Paragraphs 10.1.1 or 10.1.2 above or Licensor terminates this License for the reasons set forth in Paragraph 18 or Paragraph 11.1, Licensee shall pay Licensor a termination fee equal to six (6) months of Annual License Fees, at the then current rate.

10.3. Within ninety (90) days after any event of termination, expiration or abandonment of this License, Licensee, unless otherwise requested by Licensor within thirty (30) days after such event, shall remove all of the Communications Facility from the Licensed Premises and restore the Licensed Premises to substantially the same condition it was in as of the Commencement Date of this License, as near as practicable (including if necessary and applicable, the removal of any concrete pads and footers to a depth of three feet (3') below grade level, but excluding underground utilities), normal wear and tear, and acts beyond Licensee's control excepted.

10.4. Should Licensor through the proper action of City Council determine that the Licensed Premises are necessary for public health, safety and welfare purposes, Licensor may terminate this License. Upon any such termination for City purposes, Licensor will give Licensee three hundred and sixty-five (365) days advance written notice of the termination date, and Licensor will in good faith work with Licensee to find a suitable alternate site on Licensor's Property to which Licensee could relocate its Communications Facility. If a suitable alternate site on Licensor's Property is not agreed upon within the first three hundred (300) days of such notice period, Licensor agrees to work in good faith with Licensee and make available to Licensee a temporary location on Licensor's Property mutually agreeable to both parties, to install and operate temporary transmitting/receiving facilities, including a so-called "COW", or cell-on-wheels until a permanent location is agreed upon and the Communications Facility is re-installed at such new location, but not to exceed twelve (12) months. Upon termination without relocation, neither party will owe any further obligations under this License except for the indemnities and hold harmless provisions and the provisions of Paragraph 12 of this License.

10.5. Upon any termination of this License, whether for cause, convenience or upon its normal expiration, Licensee shall be required to compensate Licensor for any actual and direct costs or expenses incurred by Licensor in winding up its relationship with Licensee under this License; having Licensee's Communications Facility moved or modified following the removal period in Section 10.3; or facilitating an assignment or transfer of Licensee's interest to another party.

11. DEFAULT

11.1. If Licensee fails to comply with any provision of this License and such failure is not cured within forty-five (45) days after receipt of written notice thereof sent by Licensor to Licensee, Licensor may, at its option, cure the failure of Licensee at Licensee's expense, or Licensor may terminate this License without affecting its right to demand, sue for, and collect all of its damages arising out of Licensee's failure to comply. If any such default cannot reasonably be cured within forty-five (45) days, Licensee will not be deemed to be in default under this License if Licensee commences curing such default within the forty-five (45) day period aforesaid and thereafter diligently effects and concludes such cure within one hundred twenty (120) days of notice of the default.

11.2. The following will be deemed a default by Licensor and a breach of this License: (i) Licensor's failure to provide access to the Licensed Premises as required by Section 6 hereof within twenty-four (24) hours after written notice of such failure; (ii) Licensor's failure to cure an interference problem as required by Section 7 hereof within twenty-four (24) hours after written notice of such failure; or (iii) Licensor's failure to comply with any other provision of this License and such failure is not cured within forty-five (45) days after receipt of written notice thereof sent by Licensee to Licensor. In the event of a Licensor default, Licensee may, at its option, cure the failure of Licensor at Licensor's expense, or Licensee may terminate this License without affecting its right to demand, sue for, and collect all of its damages arising out of Licensor's failure to comply. If any such default cannot reasonably be cured within forty-five (45) days, Licensor will not be deemed to be in default under this License if Licensor commences curing such default within the forty-five (45) day period aforesaid and thereafter diligently effects such cure within one hundred twenty (120) days of notice of the default.

11.3. The rights and remedies of the parties as set forth in this License are not exclusive and the parties, in the event of a breach of this License or a dispute, are entitled to pursue any of the remedies provided in this License, by law, or by equity.

11.4. No course of dealing between the parties or any delay on the part of a party to exercise any right it may have under this License will operate as a waiver of any of the rights provided hereunder or by law or equity, nor will any waiver of any prior default operate as the waiver of any subsequent default, and no express waiver will affect any term or condition other than the one specified in such waiver and the express waiver will apply only for the time and manner specifically stated.

12. LIABILITY, INDEMNITY AND INSURANCE

12.1. Licensee agrees to indemnify, protect, defend, and hold harmless Licensor and Licensor's elected officials, employees, officers, agents, contractors, invitees, licensees, and volunteers from any and all claims (including attorney's fees and costs), loss, damages or liability arising from any breach of this Agreement by Licensee, or any act, omission, or intentional tort of Licensee or Licensee's agents, employees, contractors, invitees, licensees and volunteers in or about the Premises, except to the extent attributable to the negligent or intentional act or omission of Licensor, its elected officials, employees, officers, agents, contractors, invitees, licensees, and volunteers.

12.2. During the Term of this Agreement, Licensee shall at its sole expense carry, at its own cost and expense, the following insurance: (i) workers' compensation insurance as required by law; and (ii) commercial general liability (CGL) insurance with respect to its activities on the Licensor's Property and the Licensed Premises, such insurance to afford protection of up to Three Million Dollars (US$3,000,000.00) per occurrence and Six Million Dollars (US$6,000,000.00) general aggregate, based on Insurance Services Office (ISO) Form CG 00 01 or a substitute form providing substantially equivalent coverage. Licensee's CGL insurance shall contain a provision including Licensor as additional insured. Such additional insured coverage: (i) shall be limited to bodily injury, property damage or personal and advertising injury caused, in whole or in part, by Licensee, its employees, agents or independent contractors; (ii) shall not extend to claims for punitive or exemplary damages arising out of the acts or omissions of Licensor, its elected officials, employees, officers, agents, contractors, invitees, licensees, or volunteers or where such coverage is prohibited by law or to claims arising out of the gross negligence of Licensor, its elected officials, employees, officers, agents, contractors, invitees, licensees, or volunteers; and (iii) shall not exceed Licensee's indemnification obligation under this Agreement, if any. Notwithstanding the foregoing, Licensee shall have the right to self-insure the coverages required herein. Said insurance limits as referenced herein above shall, upon the written request of the Licensor, be increased with the exercise of each Extended Term to an amount that adequately reflects any changes in economic conditions as mutually agreed upon by Licensor and Licensee. The coverage amounts set forth may be met by a combination of underlying and umbrella policies so long as in combination the limits equal or exceed those stated.

12.3 Except for the indemnity obligations set forth in this Agreement, and otherwise notwithstanding anything to the contrary in this Agreement, Licensee and Licensor each waives any claims that each may have against the other with respect to consequential, incidental or special damages, however caused, based on any theory of liability.

13. ASSIGNMENT/SUBLICENSE

13.1 Following written notification to Licensor, Licensee will have the right to assign, sell or transfer the entirety of its interest under this Agreement without Licensor's consent, to: (a) Licensee's affiliate; or (b) any entity with a net worth of at least Fifty Million Dollars and No Cents (US$50,000,000.00); or (c) any entity that acquires all or substantially all of Licensee's assets in the market as such may be defined by the Federal Communications Commission (or any successor agency) in which Licensor's Property is located. Upon notification to Licensor of such assignment, transfer or sale, Licensee will be relieved of all future performance, but shall be

required to perform on all past obligations and duties. Licensee may not otherwise assign this Agreement or sublet or license the Licensed Premises or any portion thereof to another entity without written notification and subsequent written approval by Licensor which shall not be unreasonably withheld or delayed. This Agreement shall run with the property and shall be binding upon and inure to the benefit of the parties, their respective successors, personal representatives, heirs and assigns.

14. WARRANTIES

14.1. Upon the payment by the Licensee of any sums or other charges herein for provided, and upon the observance and performance of all the covenants, terms, and conditions on Licensee's part to be observed and performed, Licensee shall peaceably and quietly hold and enjoy the Licensed Premises for the Term hereby demised without hindrance or interruption by Licensor or any other person or persons lawfully or equitably claiming by, through, or under the Licensor, subject, nevertheless, to the terms and conditions of this Agreement.

14.2. Licensor represents, warrants and agrees that to the best of its knowledge: (i) Licensor owns and controls Licensor's Property; (ii) Licensor's Property is not and will not be encumbered by any liens, restrictions, mortgages, covenants, conditions, easements, leases, or any other agreements of record or not of record, which would adversely affect Licensee's permitted use and enjoyment of the Licensed Premises under this Agreement; (iii) Licensor's execution and performance of this Agreement will not violate any laws, ordinances, covenants or the provisions of any mortgage, lease or other agreement binding on Licensor; and (iv) if Licensor's Property is or becomes encumbered by a deed to secure a debt, mortgage or other security interest, Licensor will provide promptly to Licensee a mutually agreeable subordination, non-disturbance and attornment agreement executed by Licensor and the holder of such security interest.

14.3 Licensee may not, without Licensor's consent, pledge, mortgage, convey by deed of trust or security deed, assign, create a security interest in, or otherwise execute and deliver any and all instruments for the purpose of securing bona fide indebtedness to any or all of Licensee's interest in this License any part thereof, and any and all of Licensee's right, title, and interest in and to any and all of the Communications Facility.

15. REPAIRS

15.1 Licensee shall maintain the Licensee's Communications Facility in good and safe condition and repair. Licensee shall be required to keep Licensee's Communications Equipment and the Licensed Premises in good repair at all times in accordance with normal industry standards. Licensor will maintain and repair Licensor's Property and access thereto and all areas of the Licensed Premises where Licensee does not have exclusive control, in good and tenantable condition, subject to reasonable wear and tear and damage from the elements. Upon expiration or termination hereof, Licensee shall restore the Licensed Premises to the condition in which it existed upon execution hereof, reasonable wear and tear and acts beyond Licensee's control excepted. In no event shall Licensor have any obligations to repair or maintain any portion of the Communications Equipment. However, should Licensor, its agents or employees be a direct

cause of damage to Licensee's Communications Equipment that requires repair or maintenance, Licensor shall reimburse Licensee the costs of any such repairs or maintenance.

16. HAZARDOUS SUBSTANCES/ENVIRONMENTAL LAWS

16.1 As used herein the following terms shall have the following meanings:

"Environmental Laws" shall mean all federal, state, or local laws relating to pollution or protection of human health or the environment, including, without any limitation, the Comprehensive Environmental Response Compensation and Liability Act of 1980 ("CERCLA"), as amended, 42 U.S.C. §9601 et seq., the Resource Conservation and Recovery Act of 1976 ("RCRA"), 42 U.S.C. §6901 et seq., and laws relating to emissions, discharges, releases or threatened releases of any Hazardous Substance into the environment (including without limitation ambient air, surface water, ground water or land), or otherwise relating to the generation, manufacture, processing, distribution, use, treatment, storage, disposal, transport, or handling of Hazardous Substances and any and all regulations, codes, standards, plans, orders, decrees, judgments, injunctions, notices or demand letters issued, entered, promulgated or approved thereunder.

"Hazardous Substances" shall mean any pollutant, contaminant, hazardous, toxic or dangerous waste, substance or material, or any other substance or material regulated or controlled pursuant to any Environmental Law, including, without limiting the generality of the foregoing, asbestos, PCBs, petroleum products (including crude oil, natural gas, natural gas liquids, liquefied natural gas or synthetic gas) or any other substance defined as a Hazardous Substance, "extremely hazardous waste","a restricted hazardous waste", "hazardous material", "hazardous chemical", "hazardous waste", "regulated substance", "a toxic chemical", "a toxic substance", or other similar term in any Environmental Law.

16.2 Licensee agrees that it will not use, generate, store, or dispose of any Hazardous Substances on, under, about, or within the Licensor's Property in violation of any Environmental Laws. Licensor represents, warrants, and agrees (1) that to Licensor's knowledge, neither Licensor nor any third party has used, generated, stored, or disposed of, or permitted the use, generation, storage or disposal of, any Hazardous Substances on, under, about, or within the Licensed Premises in violation of any Environmental Law and to the best of Licensor's knowledge, Licensor's Property has never been subject to any contamination or hazardous conditions resulting in any environmental investigation, inquiry or remediation, and (2) that Licensor will not, and will not knowingly permit any third party, to use, generate, store, or dispose of any Hazardous Substances on, under, about or within, the Licensor's Property in violation of any Environmental Law. Licensor and Licensee agree that each will be responsible for compliance with any and all applicable Environmental Laws to the extent such apply to that party's activity conducted in or on Licensor's Property. Licensee agrees to defend, indemnify, and hold harmless Licensor and Licensor's employees, officers, agents, contractors, invitees, licensees, and volunteers from and against any and all losses, liabilities, claims and/or costs (including reasonable attorney's fees and costs) arising from any breach of any representation, warranty, or agreement contained in this paragraph. If, during the Term of this Agreement, it is determined that the Licensor's Property is contaminated with Hazardous Substances by a party

other than Licensee, Licensee shall have the right to terminate this Agreement upon thirty (30) days written notice to Licensor, but shall have no action for damages against Licensor. This paragraph shall survive the termination of this Agreement.

17. CASUALTY AND EMINENT DOMAIN

17.1 Licensor will provide notice to Licensee of any known casualty or other harm affecting Licensor's Property within seventy-two (72) hours of Licensor's actual knowledge of the casualty or other harm. If any part of the Communications Facility or Licensor's Property is damaged by casualty or other harm as to render the Licensed Premises unsuitable, in Licensee's sole determination, then Licensee may terminate this Agreement by providing written notice to Licensor, which termination will be effective as of the date of such notice. Upon such termination, Licensee will be entitled to collect all insurance proceeds payable to Licensee on account thereof. Licensor agrees, if technologically feasible, to permit Licensee to place temporary transmission and reception facilities on Licensor's Property, but only until such time as Licensee is able to activate a replacement transmission facility at another location. Notwithstanding the termination of this Agreement, such temporary facilities will be governed by all of the terms and conditions of this Agreement, including License Fees. If Licensor or Licensee undertakes to rebuild or restore Licensor's Property and/or the Communications Facility, as applicable, Licensor agrees to permit Licensee to place temporary transmission and reception facilities on Licensor's Property at no additional License Fees until the reconstruction of Licensor's Property and/or the Communications Facility is completed. If Licensor determines not to rebuild or restore Licensor's Property, Licensor will notify Licensee of such determination within sixty (60) days after the casualty or other harm. If Licensor does not so notify Licensee, and Licensee decides not to terminate under this Section, then Licensee may request that Licensor promptly rebuild or restore any portion of Licensor's Property interfering with or required for Licensee's permitted use of the Licensed Premises to substantially the same condition as existed before the casualty or other harm. Licensor agrees that the License Fee shall be abated until Licensor's Property and/or the Communications Facility are rebuilt or restored, unless Licensee places temporary transmission and reception facilities on Licensor's Property. In the event of a condemnation which materially affects Licensee's operations at the Licensed Premises, Licensor shall notify Licensee within fifteen (15) days of Licensor's receipt of notice. Licensee may terminate the Agreement in accordance with Section 10, and may pursue its own separate awards in the condemnation proceeds, but Licensee shall have no right to reduce any award payable to Licensor. Should Licensee be subject to an early termination of this Agreement as described in this Section 17 due to the occurrence of a casualty event or eminent domain action during the term of this Agreement, Licensor agrees to provide Licensee with a future cash equivalent credit or future fee/rental payment offset in an amount equal to any prepaid, but then unearned, portion of License Fee on a pro-rata basis. Such cash equivalent credit or future fee/rental payment offset may only be used by Licensee to satisfy fee/rental payment obligations between the Licensor and Licensee under a future mutually agreed upon communications site lease agreement or other materially similar wireless communications siting agreement between the parties.

18. FORECLOSURE AND RECEIVERSHIP

18.1. Upon the filing of any voluntary or involuntary petition under the Bankruptcy Code by or against Licensee or any action for foreclosure or other judicial sale of Licensee and/or Communication Facilities located on the Licensed Premises, Licensee shall so notify Licensor within a reasonable time.

18.2. Upon notice by Licensee, in accordance with 18.1 above (or thirty (30) days following such filing or action by or against Licensee, whichever comes first), Licensor shall have the right to terminate, pursuant to the provisions of Paragraph 10, Licensee's leasehold interest, subject to any applicable provisions of Law, including the Bankruptcy Code, one hundred and twenty (120) days after the appointment of a receiver or trustee to take over and conduct the business of Licensee, whether in receivership, reorganization, bankruptcy, or other action or proceeding, unless such receivership or trusteeship shall have been vacated prior to the expiration of said one hundred and twenty (120) days or unless:

18.2.1. Within one hundred and twenty (120) days after election or appointment, such receiver or trustee shall have fully agreed to comply with all the requirements and obligations of this License and remedied all defaults hereunder; and

18.2.2. Said receiver or trustee, within said one hundred and twenty (120) days, shall have executed an agreement, duly approved by a court having jurisdiction over the Licensee and/or Communications Facilities, whereby such receiver or his trustee assumes and agrees to be bound by each and every provision of this License.

18.2.3. Said receiver or trustee, within said one hundred and twenty (120) days, shall have executed an agreement, duly approved by a court having jurisdiction over the Licensee and/or Communications Facilities, whereby such receiver or his trustee assumes and agrees to be bound by each and every provision of this License.

19. MISCELLANEOUS

19.1. This Agreement constitutes the entire agreement and understanding between the parties, and supersedes all offers, negotiations, and other agreements concerning the subject matter contained herein. Any amendments to this Agreement must be in writing and executed by both parties.

19.2. If any term, covenant, condition or provision of this Agreement or application thereof, to any extent, is invalid or unenforceable with respect to any party, the remainder of this Agreement, or the application of such provision to persons other than those as to whom it is held invalid or unenforceable, shall not be affected and each provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law.

19.3. This Agreement shall be binding on and inure to the benefit of the successors and permitted assignees of the respective parties.

19.4. Any notice or demand required to be given herein shall be made by U.S. registered or certified mail, return receipt requested, or by hand by nationally recognized overnight express delivery service to the address of the respective parties set forth below:

Licensor:

David Schwartz
Deputy Chief
Division of Public Safety Communications
Department of Public Safety
47 South State Avenue
Indianapolis IN 46201
Phone: (317) 327-7315
David.Schwartz@indy.gov

Licensee:

Sprint Spectrum L.P.
Attn: Sprint Property Services
Re: Cell Site #: IN03XC027-A;
Cell Site Name: Broadripple Fire Station
Mailstop KSOPHT0101-Z2650
6391 Sprint Parkway
Overland Park, KS 66251-2650

With Copy to:

Paul F. Smith
City of Indianapolis
Real Estate Manager
Suite 2260
200 East Washington Street
Indianapolis, Indiana 46203
(317) 327-5832 Phone
(317) 327-7097 Fax
Paul.Smith2@indy.gov

With Copy to:

Sprint Law Department
Attn: Real Estate Attorney
Re: Cell Site #: IN03XC027-A;
Cell Site Name: Broadripple Fire Station
Mailstop KSOPHT0101-Z2020
6391 Sprint Parkway
Overland Park, KS 66251-2020

And

Christopher L. Miller
Ice Miller, LLP.
250 West Street
Columbus, Ohio 43215
(614) 462-5033 Phone
(614) 224-3886 Fax
Christopher.miller@icemiller.com

Licensor or Licensee may from time to time designate any other address for this purpose by written notice to the other Party. All notices hereunder shall be deemed received upon actual receipt.

19.5. This Agreement shall be construed and governed in accordance with the laws of the State of Indiana. Any dispute arising hereunder shall be litigated in the appropriate courts in Marion County, Indiana.

19.6. Licensor warrants that is has the authority to enter into this Agreement.

19.7. After preparation of the legal description of the Licensed Premises, each party, at the request of the other, will sign a Memorandum of License, in such a form as may be reasonably requested. Licensee, at its sole expense, may record the Memorandum of License in the land records of the recording office(s) reasonable for notice purposes.

19.8. Upon Licensees completion of any new construction, modification or repair, Licensee shall provide Licensor with "as built" drawings detailing any and all utility installations and/or construction, modification or repair.

19.9. In any case where the approval or consent of one party hereto is required, requested, or otherwise to be given under this Agreement, except a situation that involves an assignment or sublease of the Licensed Premises, such party shall not unreasonably delay or withhold its approval or consent.

19.10. Headings and subheadings used in this Agreement are for informational purposes only and shall have no legal effect.

19.11. Time is of the essence regarding this Agreement including each and all of its provisions.

19.12. All Attachments and Exhibits annexed hereto form material parts of this Agreement.

19.13. This Agreement may be executed in duplicate counterparts, each of which shall be deemed an original.

19.14 Licensee agrees to comply with all federal, state and local laws, orders, rules and regulations ("Laws") applicable to Licensee's use of the Communications Facility on Licensor's Property. Licensor agrees to comply with all Laws relating to Licensor's use of Licensor's Property and any other improvements on Licensor's Property.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

LICENSOR:

City of Indianapolis
Department of Public Safety
Division of Public Safety Communications
47 S State Avenue
Indianapolis, IN 46201

By: Valerie Washington

Print: Valerie Washington

Title: Deputy Director / CFO

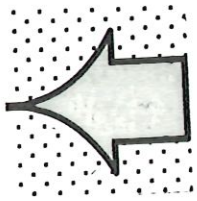
Date: 10/1/14

Tax ID #: _____

WITNESSES:

_____
Sign Name

_____
Print Name



_____
Sign Name

_____
Print Name

LICENSOR:

STATE OF Indiana

COUNTY OF Marion

On October 1, 2014, before me, Paul F. Smith Notary Public, personally appeared Valerie Washington, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument, the person, or the entity upon behalf of which the person acted, executed the instrument.

Witness my hand and official seal.

Notary Public Paul F. Smith
My commission expires:

PAUL F. SMITH
Marion County
My Commission Expires
March 12, 2016

LICENSEE:

Sprint Spectrum L.P.,
a Delaware limited partnership

By: _____

Print: Gary Lindsey

Title: Manager Real Estate

Date: 9/23/14

WITNESSES:

Michelle Crawford
Sign Name

Michelle Crawford
Print Name

Pam Mahoney
Sign Name

Pam Mahoney
Print Name

LICENSOR:

STATE OF Kansas

COUNTY OF Johnson

On September 23, 2014, before me, LaTanya R. Jones Notary Public, personally appeared Gary Lindsey, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument, the person, or the entity upon behalf of which the person acted, executed the instrument.

Witness my hand and official seal.

Notary Public LaTanya R. Jones
My commission expires: 9-11-2017

STATE NOTARY PUBLIC KANSAS
LATANYA R. JONES
NOTARY PUBLIC
STATE OF KANSAS
MY COMM. EXPIRES
9-11-2017

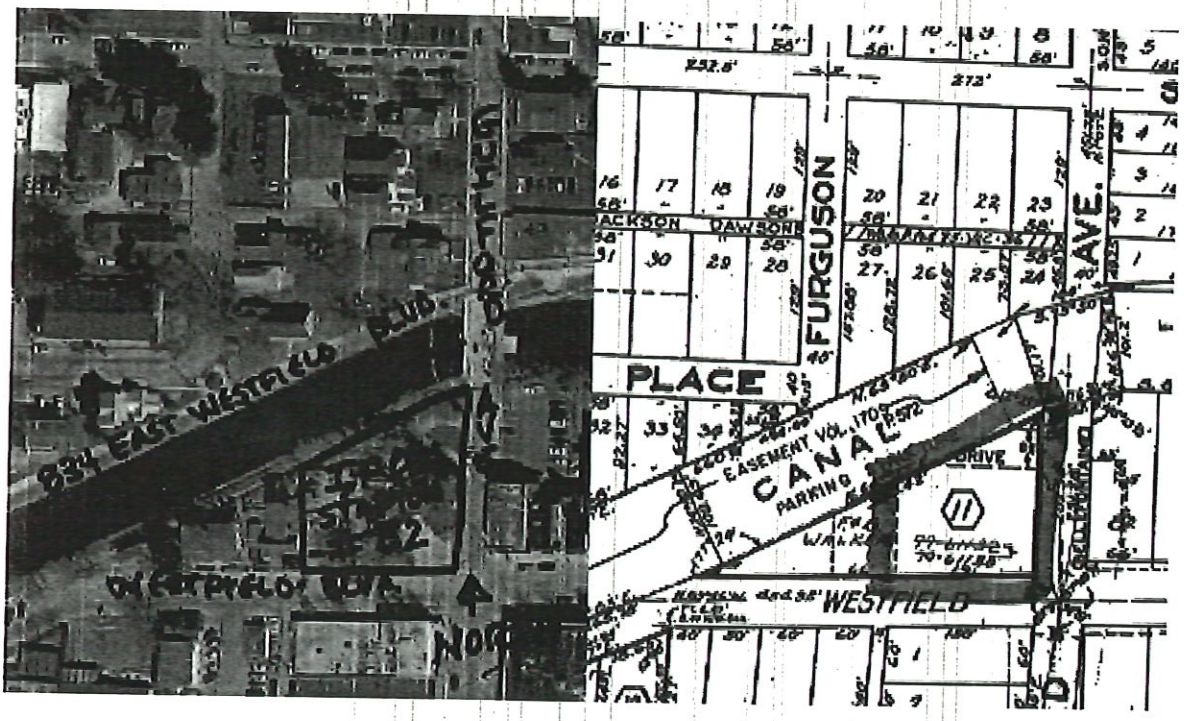
EXHIBIT A

DESCRIPTION OF LICENSOR'S PROPERTY

Indianapolis Fire Station #32

A part of the South Half of the Southwest Quarter of Section 36, Township 17 North, Range 3 East of the Second Principal Meridian in Washington Township, Marion County, Indiana, more particularly described as follows:

All of the real estate bounded by Westfield Boulevard on the South, Guilford Avenue on the East, the Indianapolis Water Company Canal on the North and the property transferred to Walker and Sons, L.L.C. by Warranty Deed recorded October 12, 2000 as Instrument Number 2000-0162994 in the Office of the Recorder of Marion County, Indiana on the West.



NOTE: This description is not the record description of this property which was not provided or found at this time. This description was prepared for use in a cell tower license and should not be used for transfer of property title.

EXHIBIT B

DESCRIPTION OF LICENSED PREMISES

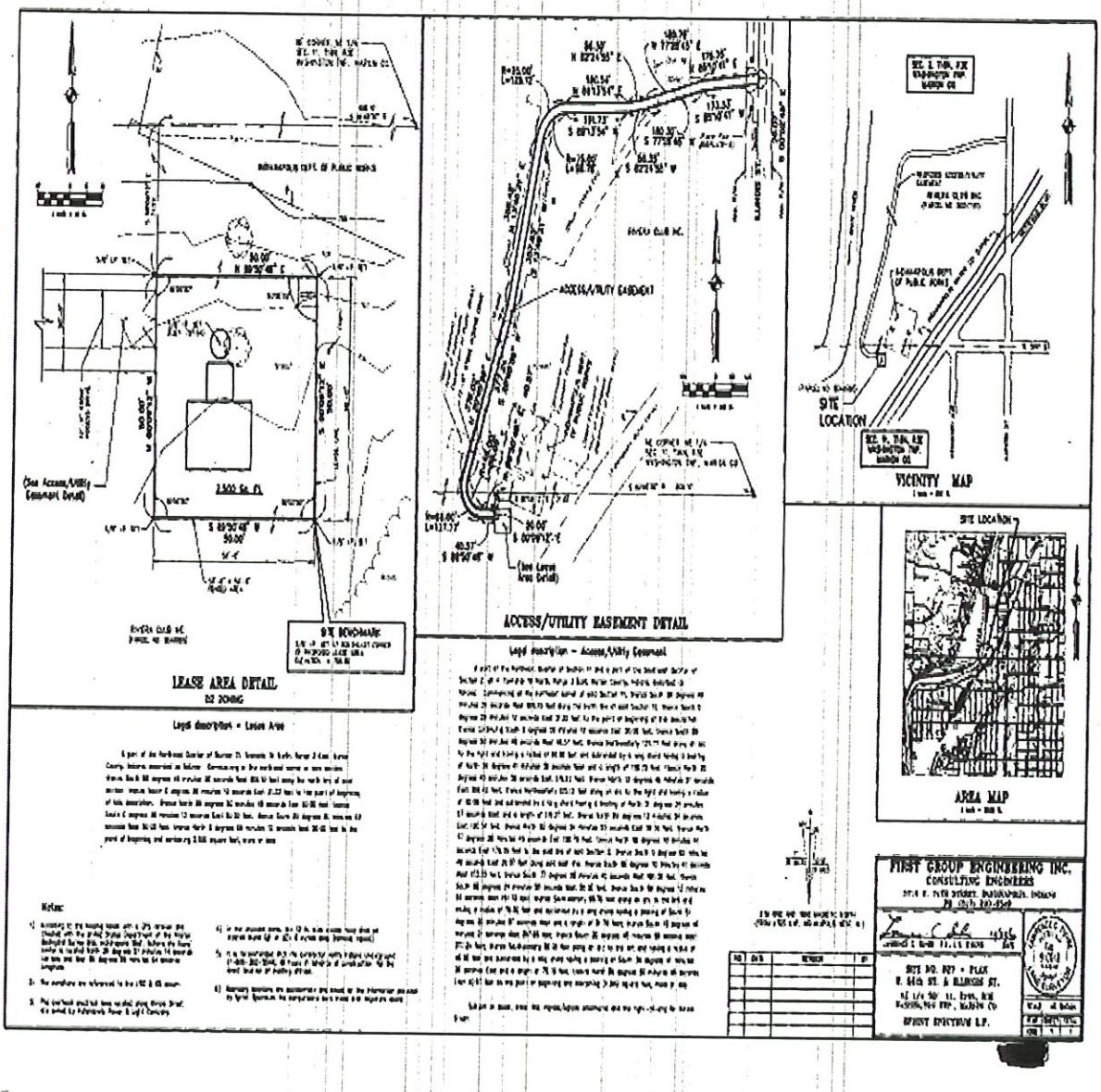


EXHIBIT C

LICENSEE'S SITE PLAN WITH COMMUNICATIONS EQUIPMENT/COMMUNICATIONS FACILITIES

REVIEWED
By Scott Blankenship at 7:47 am, May 24, 2012

APPROVED
By Jeremy Murphy at 12:04 pm, May 24, 2012

Sprint

Reviewed by Aditya Kedia, May 24, 2012

SITE NAME: BROAD RIPPLE FIRE STATION

SITE NUMBER: IN03XC027

SITE ADDRESS: 6330B GUILFORD AVE.
INDIANAPOLIS, IN 46220

SITE TYPE: EXISTING 120' MONOPOLE TOWER

Sprint

SAMSUNG

BLACK & VEATCH

CPD GROUP

PROJECT NO: 30X700.00
DRAWN BY: AMG
CHECKED BY: MRL

A	04/09/12	ISSUED FOR CONSTRUCTION
B	04/20/12	ISSUED FOR CONSTRUCTION
REV.	DATE	DESCRIPTION

IN03XC027
BROAD RIPPLE FIRE STATION
6330B GUILFORD AVE.
INDIANAPOLIS, IN 46220

SHEET TITLE
TITLE SHEET & PROJECT DATA

SHEET NUMBER
T-1

SITE INFORMATION

SITE ADDRESS:
6330 GUILFORD AVE.
INDIANAPOLIS, IN 46220

PROPERTY OWNER:
JANET TORRES
ANGELIS SURVEYING
ACCURATE SURVEYOR NORTH CENTRAL REGION
PHONE: 440-XXX-XXXX
ANGELIS@XXXXXX.COM

EQUIPMENT SUPPLIER:
SAMSUNG TELECOMMUNICATIONS AMERICA (STA)
1301 EAST ARAPAHO DRIVE
RICHARDSON, TX 75082-4412
(972) 761-7000

POWER COMPANY:
INDIANAPOLIS POWER & LIGHT

TELCO COMPANY:
AT&T

COUNTY:
MARION

ZONING JURISDICTION:
INDIANAPOLIS OR MARION SHERIFF

ZONING DISTRICT:
SU1

LATITUDE (NAD83):
39° 52' 15.60" N
39.87100°

LONGITUDE (NAD83):
86° 08' 34.71" W
-86.14250°

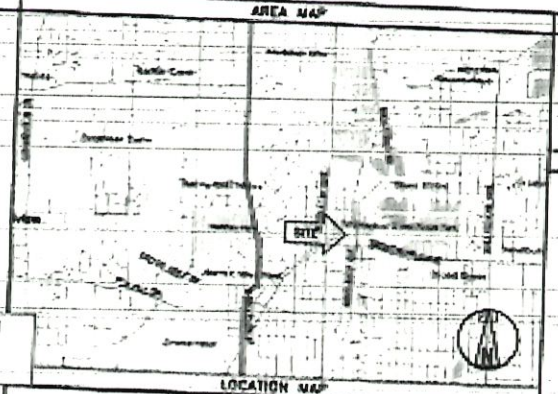
CONTACT ENGINEER:
RUSSELL PEELER
(913) 458-6274
PEELER@BWSC.COM

updated lat/long verified. Please update - JM

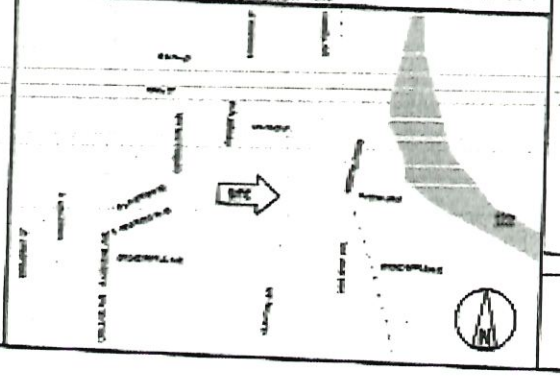
EBTS:
Lat:39.87091
Long:-86.143211

Verify lat/long

AREA MAP



LOCATION MAP



APPLICABLE CODES

ALL WORK SHALL COMPLY WITH THE FOLLOWING APPLICABLE CODES:

2009 INDIANA (BUILDING) CODE (2006 IBC WITH STATE AMENDMENTS)
2008 INDIANA PLUMBING CODE
2008 INDIANA MECHANICAL CODE
2008 INDIANA ELECTRICAL CODE (2008 NEC WITH AMENDMENTS)

IN THE EVENT OF CONFLICT, THE MOST RESTRICTIVE CODE SHALL PREVAIL.

PROJECT DESCRIPTION

- REMOVE EXISTING CABINETS AND ANTENNAS
- INSTALL (1) 6160-RBU CABINET IN EXISTING LEASE SPACE
- INSTALL (1) 3855-BATTERY CABINET IN EXISTING LEASE SPACE
- INSTALL (3) PANEL ANTENNAS
- INSTALL (3) RRU'S TO TOWER
- INSTALL (1) GROUND MOUNTED GPS ANTENNA
- INSTALL (1) HYBRID CABLES
- INSTALL (3) TMA AND (NO) EQUIPMENT AT CELL SITE

DRAWING INDEX

SHEET NO.	SHEET TITLE
T-1	TITLE SHEET & PROJECT DATA
GN-1	GENERAL NOTES 1
GN-2	GENERAL NOTES 2
A-1	OVERALL SITE PLAN
A-2	EQUIPMENT LAYOUTS
A-3	TOWER ELEVATION & ANTENNA DETAILS
A-4	ANTENNA MOUNTING SCHEDULES & LAYOUTS
A-5	EQUIPMENT DETAILS
A-6	EQUIPMENT DETAILS
A-7	EQUIPMENT DETAILS
A-8	NOT USED
A-9	NOT USED
RF-1	ANTENNA & CABLE COLOR CODING DETAILS
RF-2	ANTENNA/RRU JUMPER SCHEMATIC
E-1	SINGLE LINE DIAGRAM & POWER PANEL SCHEDULE
E-2	AC POWER DISTRIBUTION & DETAILS
E-3	POWER & TELCO DETAILS
E-4	GPS/MINIBOOM PANEL SCHEDULE
G-1	GROUNDING PLAN & NOTES
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS
S-1	NOT USED
S-2	NOT USED
S-3	NOT USED
S-4	NOT USED
F-1	OVERALL FIBER PLAN
F-2	ENLARGED FIBER PLAN
F-3	RRH (NEC) RRU/FIBER ONE-LINE DIAGRAM
F-4	STANDARD DETAILS
T-5	NOT USED
T-6	NOT USED

ENGINEER OF RECORD

NAME
PE # XXXXXX
BLACK & VEATCH CORPORATION

DRIVING DIRECTIONS FROM NEAREST MAJOR AIRPORT

DEPART INDIANAPOLIS INTERNATIONAL AIRPORT AND FOLLOW ACCESS ROAD TO RAMP FOR I-70E. FOLLOW I-70E TO MERGE WITH I-65N AND TAKE THE RAMP FOR I-65N. FOLLOW I-65N TO EXIT 116 (38TH ST). TAKE EXIT AND TURN RIGHT ON 38TH ST AND FOLLOW TO 4TH STREET. TURN LEFT ON N. MERIDIAN ST. AND FOLLOW TO E. WESTFIELD BLVD. TURN RIGHT ONTO E. WESTFIELD BLVD AND FOLLOW TO BROAD RIPPLE AVE. FOLLOW BROAD RIPPLE AVE TO GUILFORD AVE. SITE IS LOCATED ON LEFT SIDE OF ROAD (BEHIND FIRE STATION). ARRIVE AT 6330 GUILFORD AVE.

4-2-13

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 SPECIFICATIONS AND WITH CONSTRUCTION STANDARDS FOR WORKERS, STATE SAFETY REGULATIONS, AND OTHER APPLICABLE SAFETY REGULATIONS. ANY DISCREPANCIES BETWEEN THE SPECIFICATIONS 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 AFFECTING THE PROPOSED WORK AND SHALL BASE PROPOSALS AS TO THE EXACT NATURE OF THE CONDITIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND FOR COORDINATING THEM WITH ALL CONTRACT DOCUMENTS. ANY DISCREPANCIES FOUND BETWEEN THE CONTRACT DOCUMENTS AND SITE CONDITIONS MAY BE ACCEPTABLE AT THE DISCRETION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK. NO COMPENSATION WILL BE ALLOWED TO CONTRACTOR FOR CLAIM OF LACK OF FAMILIARITY OF EXISTING FIELD CONDITIONS.
4. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE DIAGRAMATIC IN NATURE AND ARE INTENDED TO BE A COORDINATED OUTLINE AND DESIGN SYSTEMS NOTED. THE WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO INSTALL ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
5. PROPOSING SYSTEMS ARE TO INCLUDE SUPERVISION, MINOR STRUCTURAL NOTED, DRAWING DETAILING, CONSTRUCTION AND ALL OTHER ITEMS NECESSARY FOR COMPLETE AND SATISFACTORY WORKING INSTALLATIONS. IT IS NOT INTENDED TO SHOW EVERY DETAIL REGARDING THE CONSTRUCTION SEQUENCE, EXISTING CONDITIONS, PROPOSED DETAILS, ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM AUTHORIZED REPRESENTATIVE OF THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
6. SCHOOLS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK UNLESS SPECIFICALLY NOTED OTHERWISE ON THE CONTRACT DOCUMENTS.
7. CONTRACTOR SHALL RECEIVE CLARIFICATION IN WRITING, AND SHALL RECEIVE IN WRITING AUTHORIZATION, IF PROCEED BEFORE STARTING WORK ON ANY ITEMS NOT CLEARLY DEFINED OR SHOWN ON THE CONTRACT DOCUMENTS.
8. CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE BEST CONSTRUCTION SKILLS AND ATTENTION. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER CONTRACT, UNLESS OTHERWISE NOTED.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DISCIPLINE AND CONDUCT OF CONTRACTOR'S EMPLOYEES AND SHALL NOT EMPLOY ON THE WORK ANY UNFIT PERSON OR ANYONE NOT SKILLED IN THE WORK ASSIGNED TO HIM. THE WORK UNDER THIS CONTRACT SHALL BE PERFORMED BY WORKERS WHO ARE SATISFACTORY AND SHALL CONFORM TO ALL SAFETY REQUIREMENTS.
10. CONTRACTOR SHALL COORDINATE HIS WORK WITH THE SUPERINTENDENT OF BUILDING & GROUNDS AND SCHEDULE THE UTILITIES AND SERVICES NEEDED, IN ADVANCE OF THE REQUIREMENTS.
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 REGULATIONS TAKE PRECEDENCE.
13. MAKE NECESSARY PROVISIONS TO PROTECT EXISTING SURFACES, EQUIPMENT, IMPROVEMENTS, PIPING ETC. AND IMMEDIATELY REPAIR ANY DAMAGE THAT OCCURS DURING CONSTRUCTION.
14. IN BUILDING AREAS AND CONCRETE MATERIAL FOR PURPOSES OF MACHINING PURPOSES, OR PENETRATIONS THROUGH THE FLOOR FOR CONDUIT RISERS, WIRE WAYS, ETC., MUST BE PLANNED AHEAD AND ARRANGEMENTS MADE WITH THE GENERAL CONTRACTOR FOR THE PROVISIONS OF SUCH OPENINGS. ANCHORS AND ENVIRONMENTAL EXPOSURE NEEDED WHERE NECESSARY. LOCATIONS OF STRUCTURAL MEMBERS SHALL NOT BE DISTURBED WITHOUT PRIOR APPROVAL OF ENGINEER. ALL CUTTING AND PATCHING SHALL BE ACCOMPLISHED BY APPROPRIATE MECHANICS AND SKILLED.
15. REPAIR ALL EXISTING WALL SURFACES DAMAGED DURING CONSTRUCTION EVEN THOUGH THEY MAYBE NOT ELSEWHERE IN WORK REQUIRED GUARANTEE.
16. SEAL PENETRATIONS THROUGH FIRE RATED AREAS WITH ALL LISTED AND FIRE DOOR APPROVED MATERIALS.
17. KEEP CONTRACT AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DIRT, DEBRIS, AND REMOVE EQUIPMENT NOT REQUIRED AS REMAINING ON THE PROPERTY OF THE OWNER. SHALL BE RESPONSIBLE FOR LEAVE PREMISES IN ORIGINAL CONDITION AND FREE FROM PAINT SPOTS, DIRT, DUST, OR RUBBISH RESULTING FROM WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL ROAD UNTIL COMPLETION OF CONSTRUCTION.
18. MINIMUM BEND RADIUS OF ANTENNA CABLES SHALL BE IN ACCORDANCE WITH CABLE MANUFACTURERS RECOMMENDATIONS.
19. ALL EXISTING UNDERGROUND SEWER, WATER GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH CONSTRUCTION OF THE WORK, SHALL BE REMOVED, REROUTED, CAPPED, PLUGGED OR OTHERWISE DISPOSED OF WHERE SHALL NOT INTERFERE, WITH THE CONSTRUCTION OF THE WORK, SUBJECT TO THE APPROVAL OF THE ENGINEER.
20. EXCAVATION WORK, WHERE IT DISTURBANCE TO EXISTING SITE SURFACE CONFIGURATION, DRAINAGE CONDITIONS, ETC., SHALL BE RESTORED TO ORIGINAL CONDITIONS. ALL DISTURBED AREAS SHALL BE GRADED, SURFACE STABILIZATION, SEEDED, AND MULCHED AS REQUIRED TO PREVENT EROSION AND IN ACCORDANCE WITH LOCAL REGULATIONS. ALL EXCAVATION AND BACKFILLING SHALL BE IN ACCORDANCE WITH LOCAL REGULATIONS. SURFACE FOR CONCRETE AND TECHNICIAN BOUNDS, AND CONFORMING WITH ADJACENT.
21. LIGHT SHADED LINES AND NOTES INDICATE WORK PREVIOUSLY DONE. DARK SHADED LINES AND NOTES INDICATE THE SCOPE OF WORK FOR THIS PROJECT. CONTRACTOR SHALL VERIFY & EXISTING CONDITIONS IS COMPLETE. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY EXISTING CONDITIONS THAT DIFFER FROM THE DRAWINGS PRIOR TO BEGINNING CONSTRUCTION.
22. CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS, AND/OR VARIOUS CERTIFICATES REQUIRED FOR THE ELECTRICAL SERVICE UPGRADE. IN ADDITION, CONTRACTOR SHALL PROVIDE ALL NECESSARY COORDINATION AND SCHEDULING WITH THE GENERAL ELECTRICAL UTILITY AND LOCAL INSPECTION AUTHORITIES.

ELECTRICAL NOTES

1. ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL MINIMUM ELECTRICAL WORK INDICATED SPECIFICATIONS. IF ANY DISCREPANCIES ARE ENCOUNTERED BETWEEN AND/OR ALL APPLICABLE CODES AND ORDINANCES OR ANY PROBLEMS ARE ENCOUNTERED IN COMPLYING WITH THESE REQUIREMENTS, CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY SO SUCH DISCREPANCIES CAN BE RESOLVED. ANY PART OF THE PROBLEM, AND SHALL NOT PROCEED WITH THAT PORTION OF WORK UNTIL THE CONTRACTOR HIMSELF HAS DIRECTED THE CONTRACTOR NOTHING TO BE SAVED.
2. ELECTRICAL CONTRACTOR SHALL VISIT THE JOB SITE AND FAMILIARIZE HIMSELF WITH ANY/ALL CONDITIONS AFFECTING ELECTRICAL AND TELECOMMUNICATION INSTALLATIONS AND MAKE PROVISIONS AS TO THE EXACT NATURE OF THE WORK. EXISTING CONDITIONS OF ELECTRICAL EQUIPMENT, ETC. THAT ARE PART OF THE WORK SYSTEMS, SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO THE SUBMITTAL OF HIS BID. FAILURE TO COMPLY WITH THIS REQUIREMENT WILL IN NO WAY RELIEVE CONTRACTOR OF RESPONSIBILITY FOR PROPER EXECUTION AND COMPLETION OF THE WORK NECESSARY FOR A COMPLETE AND WORKING SYSTEM. NO EXTRA COMPENSATION WILL WORK NECESSARY FOR A COMPLETE AND WORKING SYSTEM.
3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE NEC AND ALL CODES AND LOCAL ORDINANCES OF THE LOCAL COUNTY & TELEPHONE COMPANIES HAVING JURISDICTION AND SHALL INCLUDE BUT NOT BE LIMITED TO:
   - A. UL - UNDERWRITERS LABORATORIES
   - B. NEC - NATIONAL ELECTRICAL CODE
   - C. NEMA - NATIONAL ELECTRICAL MANUFACTURERS ASSOC.
   - D. OSHA - OCCUPATIONAL SAFETY AND HEALTH ACT
   - E. NFPA - NATIONAL FIRE CODES
   - F. BOCA - NATIONAL BUILDING CODES
4. DO NOT SCALE ELECTRICAL DRAWINGS. REFER TO SITE PLANS AND ELEVATIONS FOR EXACT LOCATIONS OF ALL EQUIPMENT, AND CONFER WITH CONSTRUCTION MANAGER AND TRADES AND LOCATIONS WHERE NECESSARY.
5. EXISTING SERVICES: CONTRACTOR SHALL NOT INTERRUPT EXISTING SERVICES WITHOUT WRITTEN PERMISSION OF THE OWNER.
6. CONTRACTOR SHALL PAY FOR AND/ALL PERMITS, FEES, INSPECTIONS AND TESTING. CONTRACTOR IS TO OBTAIN PERMITS AND APPROVALS ALL/PAYABLE PRIOR TO THE WORK BEGINNING OR ORDERING EQUIPMENT.
7. THE TERM "PROVIDE" USED IN CONSTRUCTION DOCUMENTS AND SPECIFICATIONS, INDICATES THAT THE CONTRACTOR SHALL FURNISH AND INSTALL.
8. CONTRACTOR SHALL COMPLY WITH LOCAL UTILITY COMPANY REGULATIONS, REQUIREMENTS SUCH AS THE LAID AND INSPECTIONS, CONDUIT CHANGE, TEST OF TRANSFORMER, SCHEDULE SERVICE FOR THE CONSTRUCTION MANAGER, PRIOR TO BEGINNING ANY WORK.
9. SPARE WIRE SIZE SHALL BE #12 AWG, NOT INCLUDING CONTROL WIRING, UNLESS NOTED OTHERWISE. ALL CONNECTIONS SHALL BE COPPER WITH THWN INSULATION.
10. SAFETY BONDS SHALL BE PROVIDED STEEL IS DRY LOCATIONS. CAST ALLOY WITH ENHANCED RUBS IN WET/DAMP LOCATIONS AND SPECIAL DISCLOSURES FOR OTHER CLASSIFIED AREAS.
11. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF THE CONSTRUCTION CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND PERFECT ALL REQUIREMENTS FOR THE EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER.
12. ELECTRICAL SYSTEMS SHALL BE AS COMPLETELY AND EFFECTIVELY ORGANIZED, AS REQUIRED BY SPECIFICATIONS, THE NORTH OF SHOWN.
13. ALL WORK SHALL BE SUPERVISED BY A LICENSED ELECTRICIAN, CONTRACTOR OR A THREE CLASS ENGINEERING MANUAL THE COMPLETED SYSTEM SHALL BE FULLY OPERATIONAL AND SUBJECT TO SATISFACTORY INSPECTION AND APPROVAL BY CONSTRUCTION MANAGER.
14. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION.
15. CONTRACTOR SHALL GUARANTEE ANY/ALL MATERIALS AND WORK FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN ONE YEAR FROM DATE OF ACCEPTANCE.
16. THE CORRECTION OF ANY DEFECTS SHALL BE CORRECTED REGULAR AND ADDITIONAL CHARGE AND SHALL INCLUDE THE REPLACEMENT FOR THE REPAIR OF ANY OTHER PARTS OF THE INSTALLATION, WHICH MAY HAVE BEEN DAMAGED THEREIN.
17. ADEQUATE AND RESERVED CURRENT ASSURANCE SHALL BE PROVIDED FOR PROTECTION AGAINST PUBLIC LOSS AND ANY/ALL PERSONS DAMAGE FOR THE DURATION OF WORK.
18. PROVIDE AND INSTALL STRAPPING, CONNECTORS, PULL WIRES, BRACES, CONDUIT PLATES AND DEVICES FOR ALL OUTLETS AS INDICATED.
19. EXPOSED AND BACK FILL: CONTRACTOR SHALL PREPARE FOR ALL UNDERGROUND INSTALLED CONDUIT AND/OR CABLES INCLUDING EXCAVATION AND BACKFILLING AND COMPACTION, WORK TO MEETS AND REQUIREMENTS EXCAVATION, AND BACKFILLING.
20. MATERIALS, PRODUCTS AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF, SHALL BE NEW AND SHALL APPEAR ON THE LIST OF ALL APPROVED ITEMS AND SHALL MEET OR EXCEED THE REQUIREMENTS OF THE NEC, NEMA AND IEEE.
21. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OR MANUFACTURER SUPPLIED INFORMATION OF ANY/ALL LIGHTING FIXTURES, SWITCHES AND ALL OTHER ELECTRICAL ITEMS FOR APPROVAL OF THE CONSTRUCTION MANAGER PRIOR TO INSTALLATION.
22. ANY CUTTING OR PATCHING OTHERS 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 WITH FINAL ACCEPTANCE.
23. THE ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELS WITH TYPED DIRECTORIES. ALL ELECTRICAL PANELS SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
24. DISCONNECT SWITCHES SHALL BE H.P. RATED HEAVY-DUTY, QUICK-MAKE AND QUICK-BREAK ENCLOSURE, AS REQUIRED BY EMPLOYER TYPE.
25. ALL CONNECTIONS SHALL BE MADE WITH A PROTECTIVE COATING OF AN ANTI-OXIDE COMPOUND. SUCH AS "NO-OXIDE A" OR EQUIVALENT APPROVED. ALL SPLICES SHALL BE MADE WITH SOLDERLESS CONNECTORS. EXPOSED COPPER SURFACES, INCLUDING GROUND BARS, SHALL BE TINNED - NO EXCEPTIONS.
26. ALL EXTERIOR WORK GROUND CONDUIT SHALL BE RIGID GALVANIZED STEEL, ALL BURIED CONDUITS SHALL BE SCH 40 PVC UNLESS OTHERWISE SPECIFIED. ALL INTERIOR CONDUITS SHALL BE EMT UNLESS OTHERWISE SPECIFIED.
27. FLEXIBLE CONDUIT SHALL BE TECHNICALLY AS PVC MEETING UL SPECIFICATION NEMA TC3 - 1990. CONTRACTOR SHALL ALSO USE ONE EACH END OF SPARE AND EMPTY CONDUITS AND PROVIDE TWO MINIMUM OF 2 #12 SHIELD AWG CONDUCTORS. WHEN SPECIFIED. ALL CONDUIT BENDS SHALL BE A STEEL. ALL FITTINGS SHALL BE SUITABLE FOR USE WITH THREADED RIGID CONDUIT COAT ALL THREADS WITH "RIGID PAC" OR "COLD SHOT".
28. SUPPORT OF ALL ELECTRICAL WORK SHALL BE AS REQUIRED BY NEC.
29. CONDUCTORS: CONTRACTOR SHALL USE NEW CONDUCTIVITY COPPER WITH TYPE THW/THWN INSULATION, 600 VOLT, COLOR CODED UNLESS SPECIFIED DIFFERENT ON DRAWINGS.
30. CONNECTIONS FOR POWER CONDUCTORS: CONTRACTOR SHALL USE PRESSURE TYPE SOLDERED TAPED ON CONNECTIONS FOR NO. 10 AWG AND SMALLER, USE SOLDERLESS MECHANICAL TERMINAL LUGS FOR NO. 8 AND LARGER.
31. SERVICE: 240/120V, SINGLE PHASE, 3 WIRE CONNECTION AVAILABLE FROM UTILITY EQUIPMENT. SHAPE OF DRAWING AGENT WILL APPLY FOR POWER.
32. TELEPHONE SERVICE: CONTRACTOR SHALL PROVIDE EARTH CONDUITS WITH PULL STRINGS AS INDICATED ON DRAWINGS.
33. ELECTRICAL AND TELCO MATERIALS TO BE STORED A MINIMUM OF 3" BOTTOM
34. CONTRACTOR SHALL PLACE TWO LENGTHS OF WARNING TAPE IN A TRENCH AT 12" ABOVE BURIED OR DIRECTLY ABOVE ELECTRICAL AND TELCO SERVICE CONDUITS. CAUTION TAPE TO READ "CAUTION BURIED ELECTRIC" OR "BURIED TELEPHONE".
35. WHEN DIRECTIONAL BORING IS REQUIRED, CONTRACTOR SHALL INSTALL A LOOSE TONING WIRE WITHIN NONMETALLIC CONDUIT TO ALLOW FOR IDENTIFICATION OF UNDERGROUND CONDUITS.
36. ALL BOLTS SHALL BE STAINLESS STEEL.

ANTENNA & COAX NOTES

1. VERIFY EACH ANTENNA CABLE LENGTH, DIRECTION, ROUTING, COLOR CODING AND ALL ANTENNA/RADIO MAIN SPECIFIED.
2. THE MINIMUM BENDING RADIUS, CABLE LENGTH AND CONFIGURATION DURING CABLE INSTALLATION WERE DETERMINED BY THE CABLE MANUFACTURER. THE CABLE MANUFACTURER IS RESPONSIBLE AND LIABLE FOR FABRICATION OF CONFIGURATION, SECTION, ANTENNA CABLE LENGTHS AND RADIO ANTENNA MINIMUM LENGTHS AND WERE BE ADJUSTED. DRAWING SHALL BE PREPARED BY OWNER.
3. ALL MAIN CABLES SHALL HAVE COLOR BANDS APPLIED AT 5' CENTERS AS FOLLOWS:
   - A. MAIN ANTENNA RED COLOR BANDS.
   - B. MIDDLE OF TOWER (MID-POINT OF ANTENNA TO CABLE RUN IS OVER 200').
   - C. BOTTOM OF TOWER.
   - D. AT MASTER GROUND BAR 3'-6" FROM WIRE-BOX CABINET.
4. ALL TWO JUMPERS SHALL BE LENGTHS AS SHOWN, SUPPLIED BY SAMSUNG, AND INSTALLED BY CONTRACTOR.
5. ALL MAIN SHIELD SHALL BE COLOR CODED AS SHOWN ON SHEET RF-1 AND IN ACCORDANCE WITH SPRINT SPECIFICATIONS.
6. GROUND SHALL BE IN ACCORDANCE WITH SHEET RF-1 AND AS FOLLOWS:
   - A. MAIN LINE COLOR BANDS SHALL BE 3" WIDE, SPACED 1" BETWEEN BETWEEN COLORS.
   - B. PRECEDENTLY COLOR BANDS SHALL BE 2" WIDE WITH NO SPACE BETWEEN COLORS.
   - C. JUMPER COLOR BANDS SHALL BE 1" WIDE WITH NO SPACE BETWEEN COLORS.
   - D. [illegible]
7. FINAL GROUND ANTENNA CABLE SIZES SHALL BE DETERMINED BY SAMSUNG BY ENGINEER, SEE ANTENNA GENERAL SHEET RF-1.
8. WIRE CONNECTION BARRIER FOR ANTENNA SUPPORT ASSEMBLY TYP.
9. ALL CONDUIT CABLE WILL BE SECURED TO THE DESIGNED SUPPORT STRUCTURE AT DISTANCES NOT TO EXCEED 3' OR THE CABLE MANUFACTURES SPECIFICATIONS WHICHEVER IS LESS. ALL MATERIAL SPECIFIED IN THE CONDUIT CABLE ANCHOR DETAILS OF THE SUPPLIED STRUCTURAL REPORT.
10. PROVIDE AT LEAST 3" OF SLACK IN THE MAIN CONDUIT CABLES AT THE ANTENNA MOUNTING ELEVATION TO PROVIDE FOR FUTURE CONNECTION REPLACEMENT.

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SAMSUNG

BLACK & VEATCH

GPD GROUP

PROJECT NO:	30420008.08
DRAWN BY:	BRD
CHECKED BY:	BRL

A	03/04/13	ISSUED FOR PERMITTING
B	04/01/13	ISSUED FOR PERMITTING

IN03XC0027
BROAD RIPPLE FIRE STATION
6330 GUILFORD AVE.
INDIANAPOLIS, IN 46220

SHEET TITLE
GENERAL NOTES 1

SHEET NUMBER
GN-1

4-2-13
Asbuilt

SITE WORK NOTES

ENVIRONMENTAL NOTES

FOUNDATION, EXCAVATION AND BACKFILL NOTES

STRUCTURAL STEEL NOTES

CONCRETE MASONRY NOTES

STRUCTURAL CONCRETE NOTES

Sprint

SAMSUNG

BLACK & VEATCH

GPD GROUP

IN33XC037
BROAD RIPPLE FIRE STATION
6330 GUILFORD AVE,
INDIANAPOLIS, IN 46220

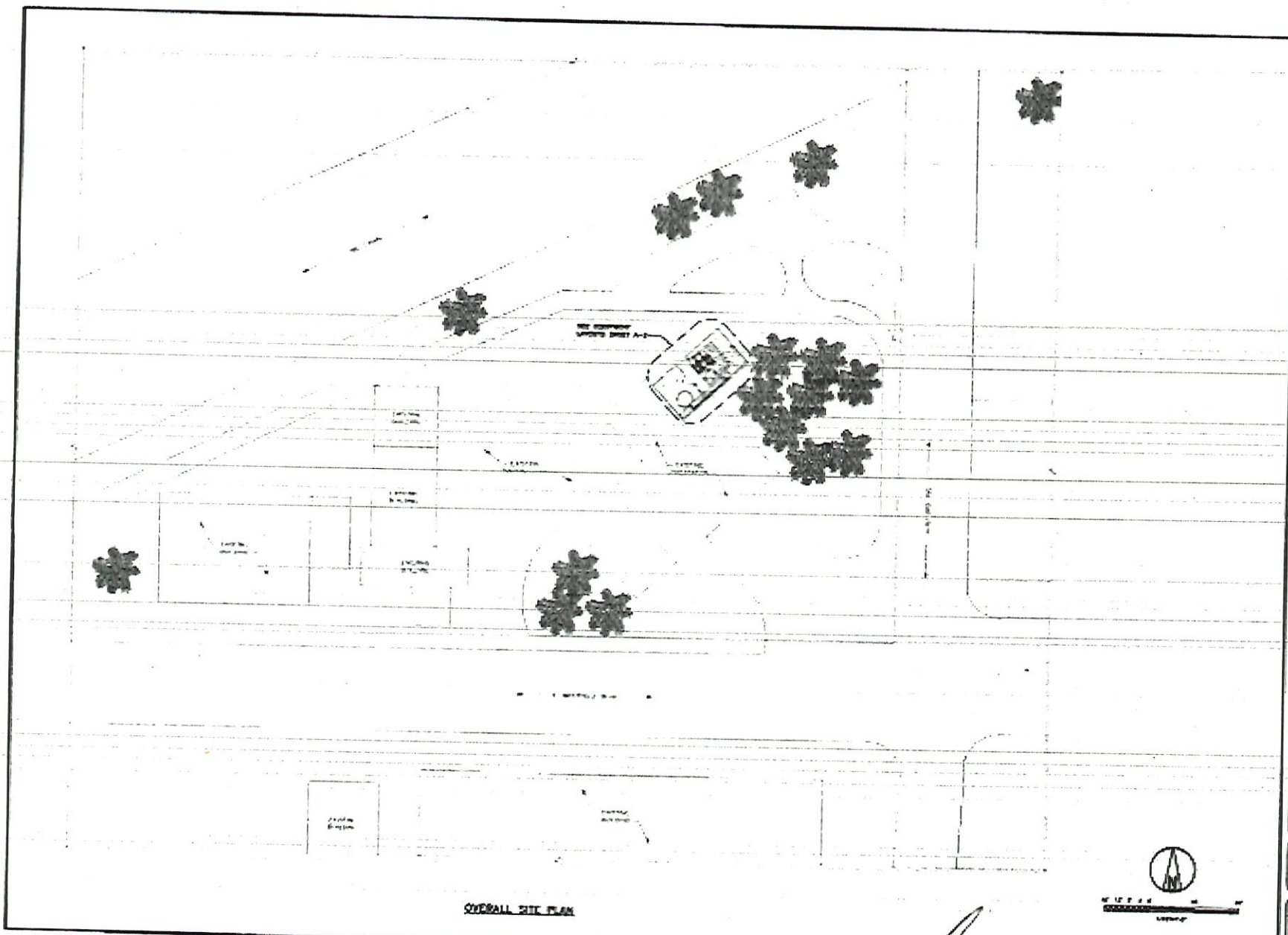
SHEET TITLE

GENERAL NOTES 2

SHEET NUMBER

GN-2

4-2-13



OVERALL SITE PLAN

Sprint

SAMSUNG

BLACK & VEATCH

GPD GROUP

PROJECT NO:	20137001.00
DRAWN BY:	JMS
CHECKED BY:	MRL

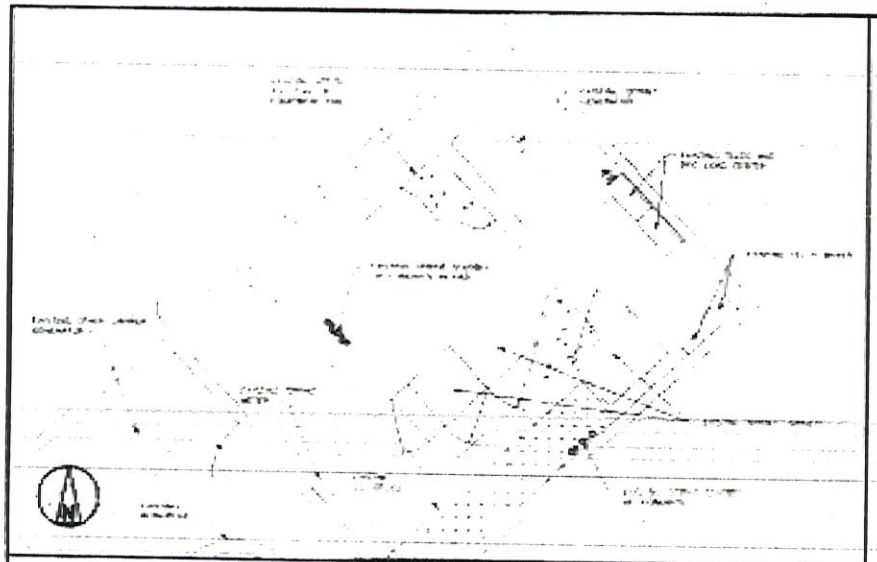
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0	08/31/12	ISSUED FOR REVIEW
NO.	DATE	DESCRIPTION

IN03XC027
BROAD RIPPLE FIRE STATION
53308 CLIFFORD AVE.
INDIANAPOLIS, IN 46220

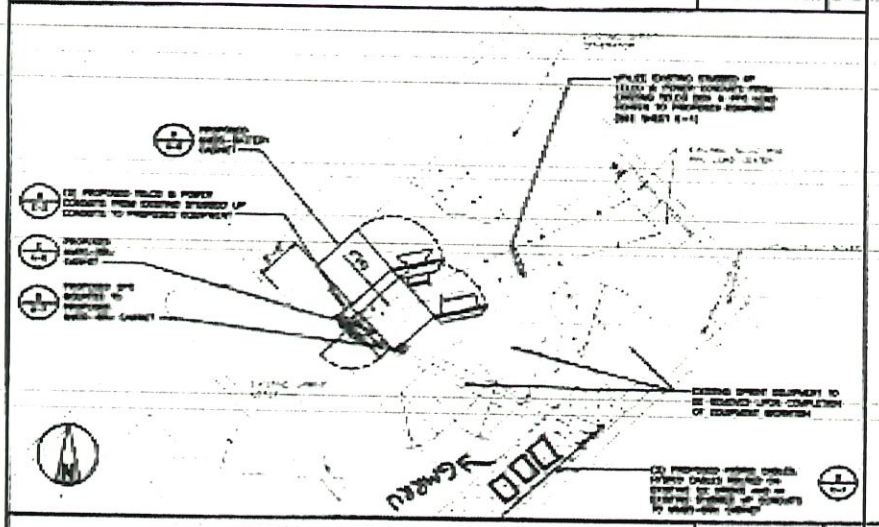
SHEET TITLE
OVERALL SITE PLAN

SHEET NUMBER
A-1

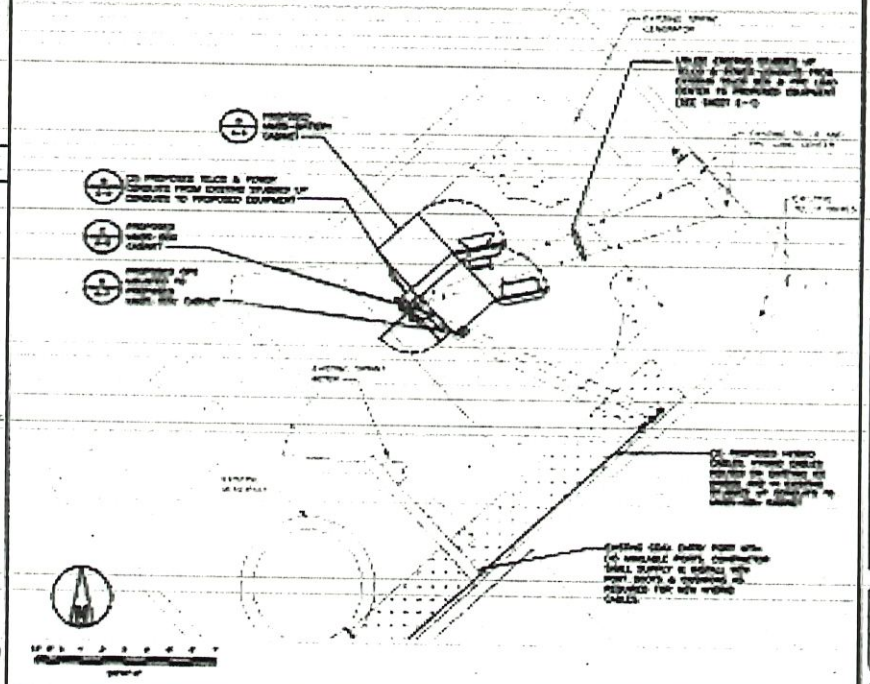
4-2-13



EXISTING EQUIPMENT LAYOUT | A



INTERIM EQUIPMENT LAYOUT | B



FINAL EQUIPMENT LAYOUT | C

GRAPHICS LEGEND

ACRONYM LEGEND

NOTES

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CPD GROUP

INDI0027
BROAD RIPPLE FIRE STATION
6330 GUILFORD AVE.
INDIANAPOLIS, IN. 46220

EQUIPMENT LAYOUTS

A-2

4-2-13

NOTES

1. [illegible]
2. CONTRACTOR RESPONSIBLE FOR PROVIDING TOWER MOUNTED PLANS, SUBJECT TO OWNER APPROVAL.
3. REFER TO STRUCTURAL ANALYSIS FOR APPROVED COAX, HYBRID CABLE PLACEMENT.
4. CONTRACTOR SHALL INSTALL HYBRID CABLE SUPPORTS BASED ON FOLLOWING SPECIFIC TYPE.

TOWER

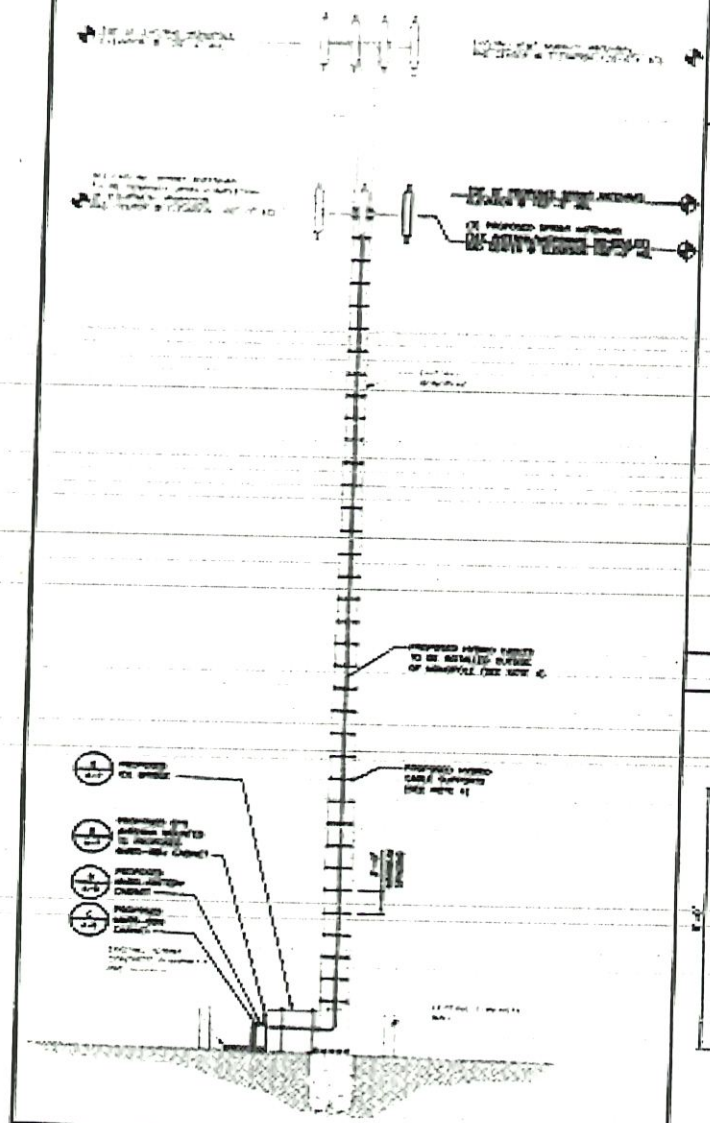
ANTENNAS

MONOPOLE:

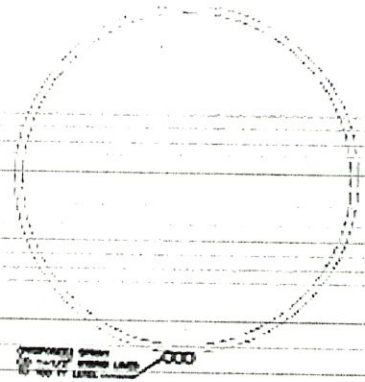
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GRADE/ROOF SUPPORT:

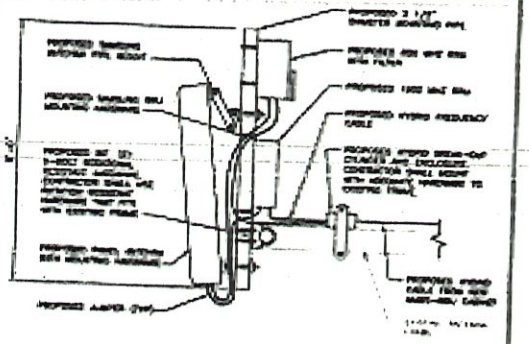
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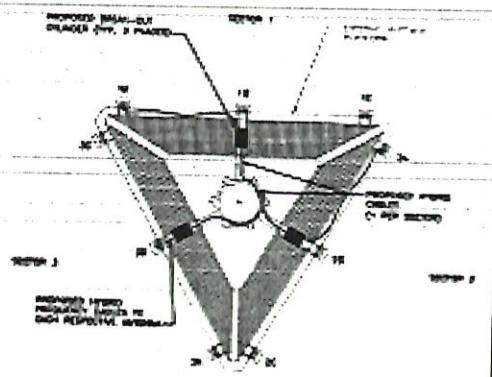
SITE ELEVATION — NO SCALE — A



COAX ROUTING DETAIL — NO SCALE — B



800/1900 MHz ANTENNA MOUNTING/COAX ROUTING DETAIL — NO SCALE — C



TYPICAL HYBRID CABLE/BREAK-OUT DETAIL — NO SCALE — D

Sprint

SAMSUNG

BLACK & VEATCH

GPD GROUP

PROJECT NO:	[illegible]
DRAWN BY:	[illegible]
CHECKED BY:	[illegible]

A	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

[illegible]

IN2336C027
BROAD RIPPLE FIRE STATION
6330B GUILFORD AVE.
INDIANAPOLIS, IN 46220

SHEET TITLE
TOWER ELEVATION & COAX DETAILS

SHEET NUMBER
A-3

11-2-13

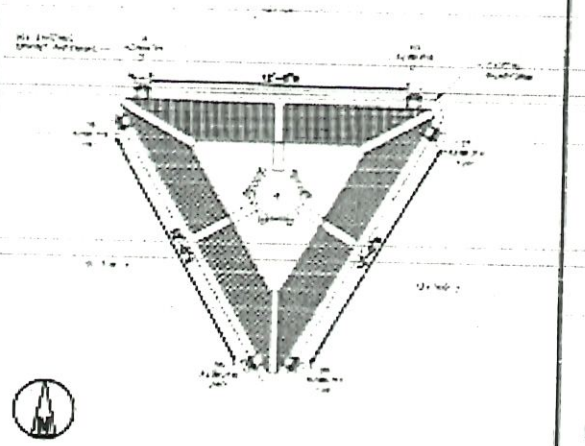
PROPOSED ANTENNA SCHEDULE

SECTOR	ANTENNA NUMBER	ANTENNA MANUFACTURER	ANTENNA MODEL	NUMBER OF HYBRID CABLES	AZIMUTH	RAD CENTER	ANTENNA GAIN	ELEC'L DOWN TILT	MECH'L TILT	TOT DOWN TILT	RRU MODEL	RRU FILTER	HYBRID CABLE LENGTH	JUMPER SIZE	JUMPER LENGTH	RET LENGTH	RET CABLE MANUFACTURER	RET CABLE MODEL NUMBER
1A	850/1900 MHz	POWERWAVE	P65-15-XLPP-RR	SAMSUNG RFC 1 (PER SECTOR)	340°	100'	15.5/15.8	-5°/-3	8	-13°/-11	RRH-C2A & RRH-PS	(1) 850 MHz FILTER	195'	1/2"	6'	5.5'	COMMSCOPE	XXXX-XXX-XXX
2A	850/1900 MHz	POWERWAVE	P65-15-XLPP-RR	SAMSUNG RFC 1 (PER SECTOR)	100°	100'	15.4/14.7	-5°/-3	12	-13°/-11	RRH-C2A & RRH-PS	(1) 850 MHz FILTER	195'	1/2"	6'	5.5'	COMMSCOPE	XXXX-XXX-XXX
3A	850/1900 MHz	POWERWAVE	P65-15-XLPP-RR	SAMSUNG RFC 1 (PER SECTOR)	340°	100'	15.6/15.9	-1°/-1	9	-10°/-10	RRH-C2A & RRH-AWS	(1) 850 MHz FILTER	195'	1/2"	6'	5.5'	COMMSCOPE	XXXX-XXX-XXX
-	GPS	POTD.	GPS-TMG-HR-25-XXX	-	-	-	-	-	-	-	-	-	-	1/2" (TYPE LMR-400)	NF	-	-	-

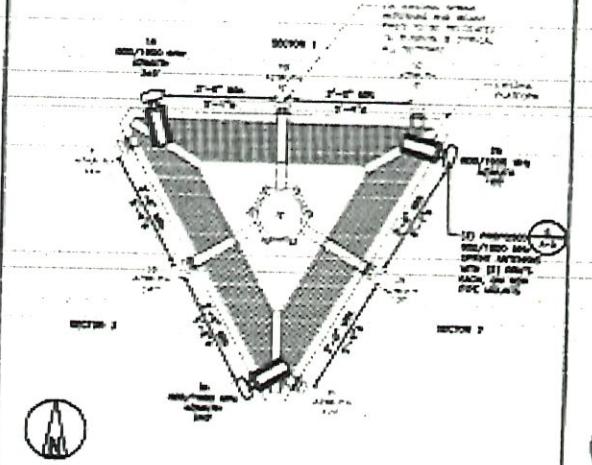
NOTES

1. [illegible] UNLESS NOTED OTHERWISE.
2. [illegible] CONTRACTOR SHALL FIELD VERIFY PRIOR TO START OF CONSTRUCTION [illegible]
3. [illegible] SHALL BE [illegible]
4. [illegible]
5. FOR HYBRID CABLE DIAMETER REFER TO HYBRID CABLE TYPE DETAIL ON SHEET E-2. DETAIL C SIZE WILL VARY BASED ON LENGTH OF RUN.

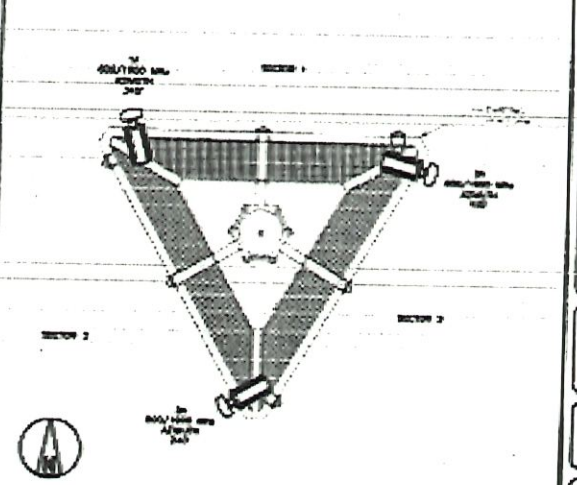
ANTENNA/MICROWAVE SCHEDULES



EXISTING ANTENNA LAYOUT — NO SCALE — A



INTERIM ANTENNA LAYOUT — NO SCALE — B



FINAL ANTENNA LAYOUT — NO SCALE — C

4-2-13

Sprint

SAMSUNG

BLACK & VEATCH

CPD GROUP

PROJECT NO: [illegible]
DRAWN BY: JMC
CHECKED BY: MRK

B	04/02/13	[illegible]
A	01/25/13	[illegible]
REV	DATE	DESCRIPTION

[illegible]

INDIS8C027
BROAD RIPPLE FIRE STATION
6330 GUILFORD AVE.
INDIANAPOLIS, IN 46220

SHEET TITLE
ANTENNA/MICROWAVE SCHEDULES & LAYOUTS

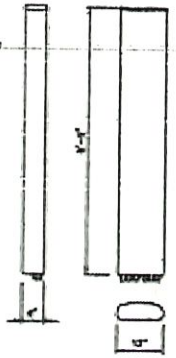
SHEET NUMBER
A-4

POWERWAVE ANTENNA P90-19-XLPP-RR

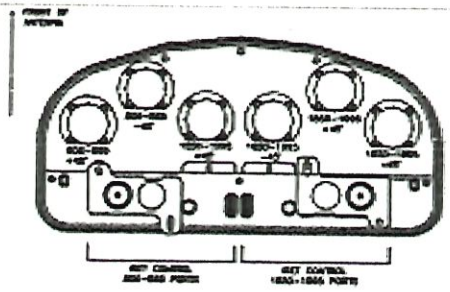


PROPOSED ANTENNA SPECIFICATIONS — NO SCALE — A

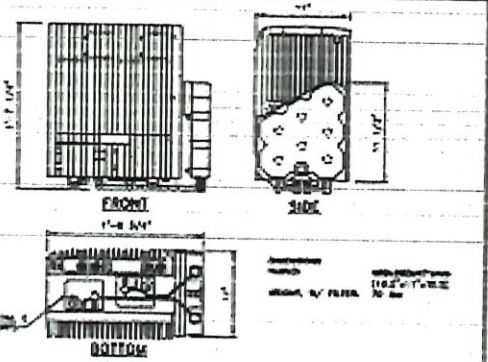
POWERWAVE ANTENNA P90-19-XLPP-RR



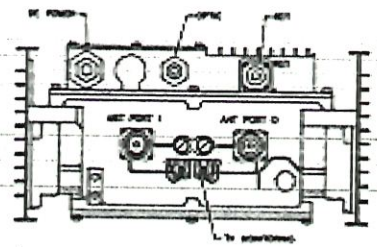
PROPOSED ANTENNA SPECIFICATIONS — NO SCALE — B



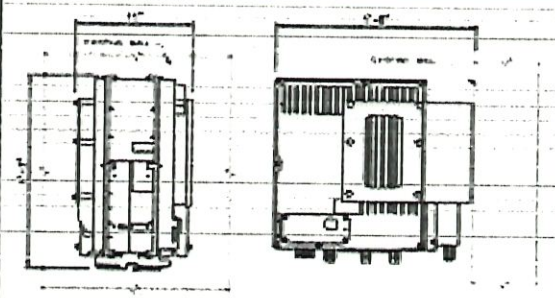
800/1900 MHz ANTENNA PORT CONFIGURATION — NO SCALE — C



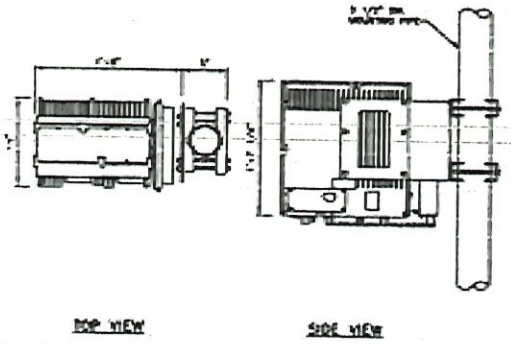
800 MHz RRU MECHANICAL SPECIFICATIONS — NO SCALE — D



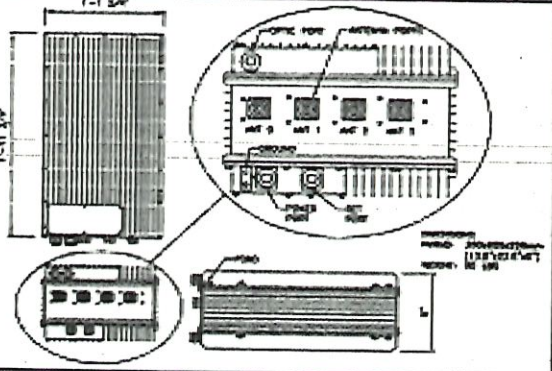
800 MHz RRU FRONT VIEW — NO SCALE — E



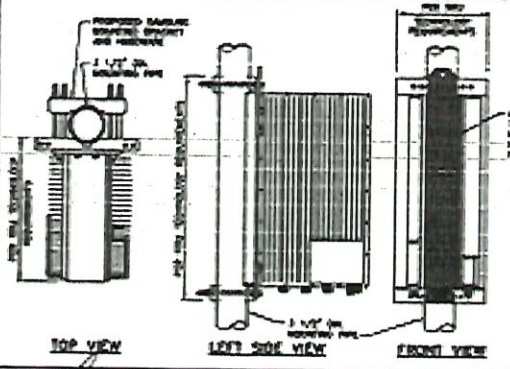
800 MHz RRU WALL MOUNT INSTALLATION DETAIL — NO SCALE — F



800 MHz RRU POLE MOUNT INSTALLATION DETAIL — NO SCALE — G



1900 MHz RRU MECHANICAL SPECIFICATIONS — NO SCALE — H



1900 MHz RRU POLE MOUNT INSTALLATION DETAIL — NO SCALE — I

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SAMSUNG

BLACK & VEATCH

GPD GROUP

PROJECT NO: 2013705.00
DRAWN BY: MRO
CHECKED BY: MR

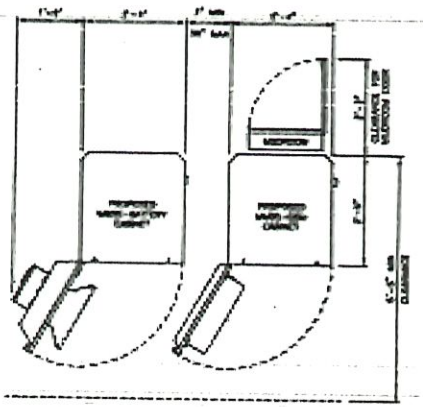
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0	02/28/13	ISSUED FOR REVIEW
NO.	DATE	DESCRIPTION

IN0330C027
BROAD RIPPLE FIRE STATION
6330 GUILFORD AVE.
INDIANAPOLIS, IN 46220

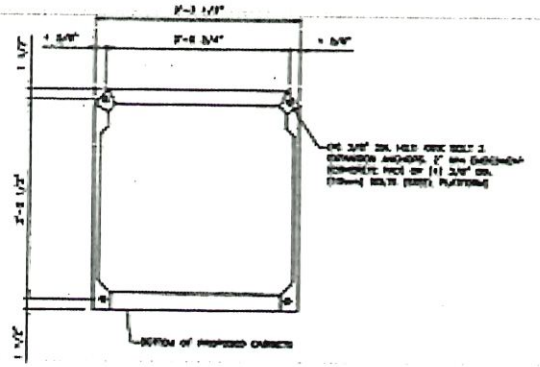
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-5

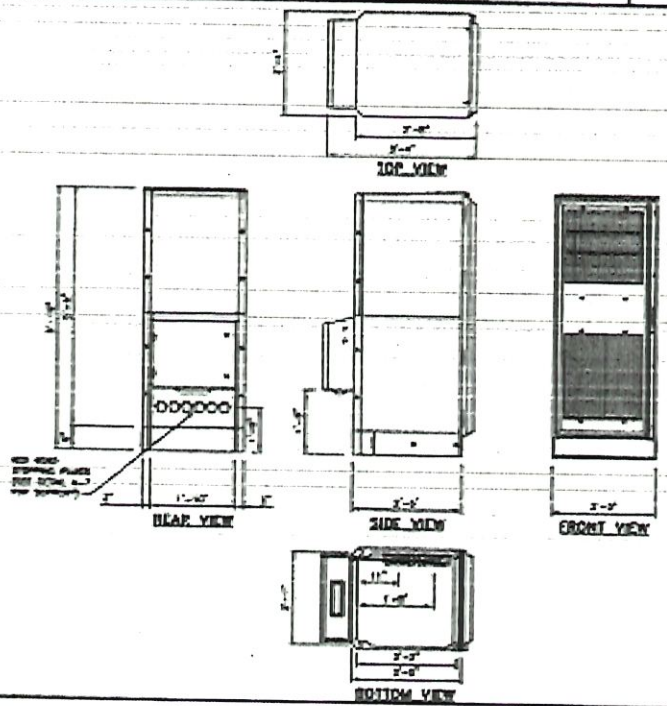
4-2-13



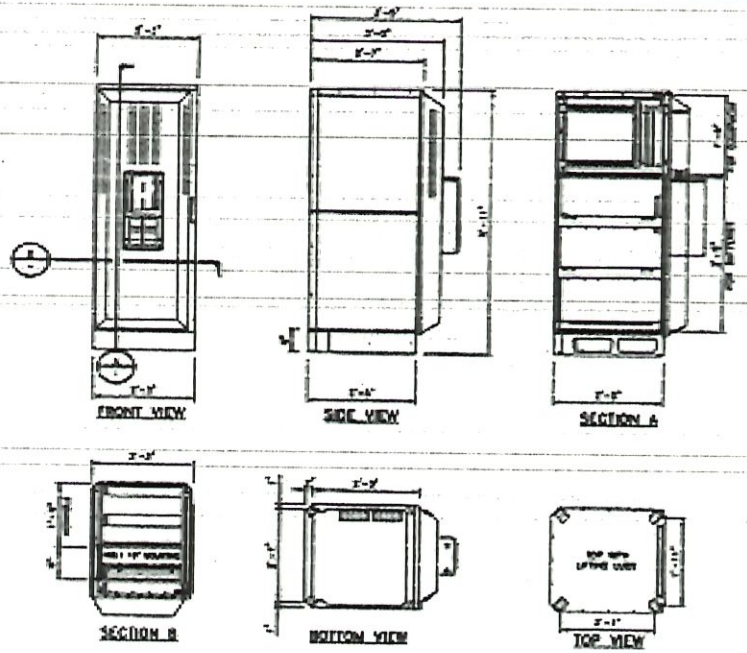
MMBS TYPICAL FLOOR PLAN — A



MMBS CABINET ANCHOR BOLT PATTERN DETAIL — B



MMBS–BBU MECHANICAL SPECIFICATIONS — C



MMBS–BATTERY CABINET — D

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PROJECT NO 20137706.00
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CHECKED BY MBL

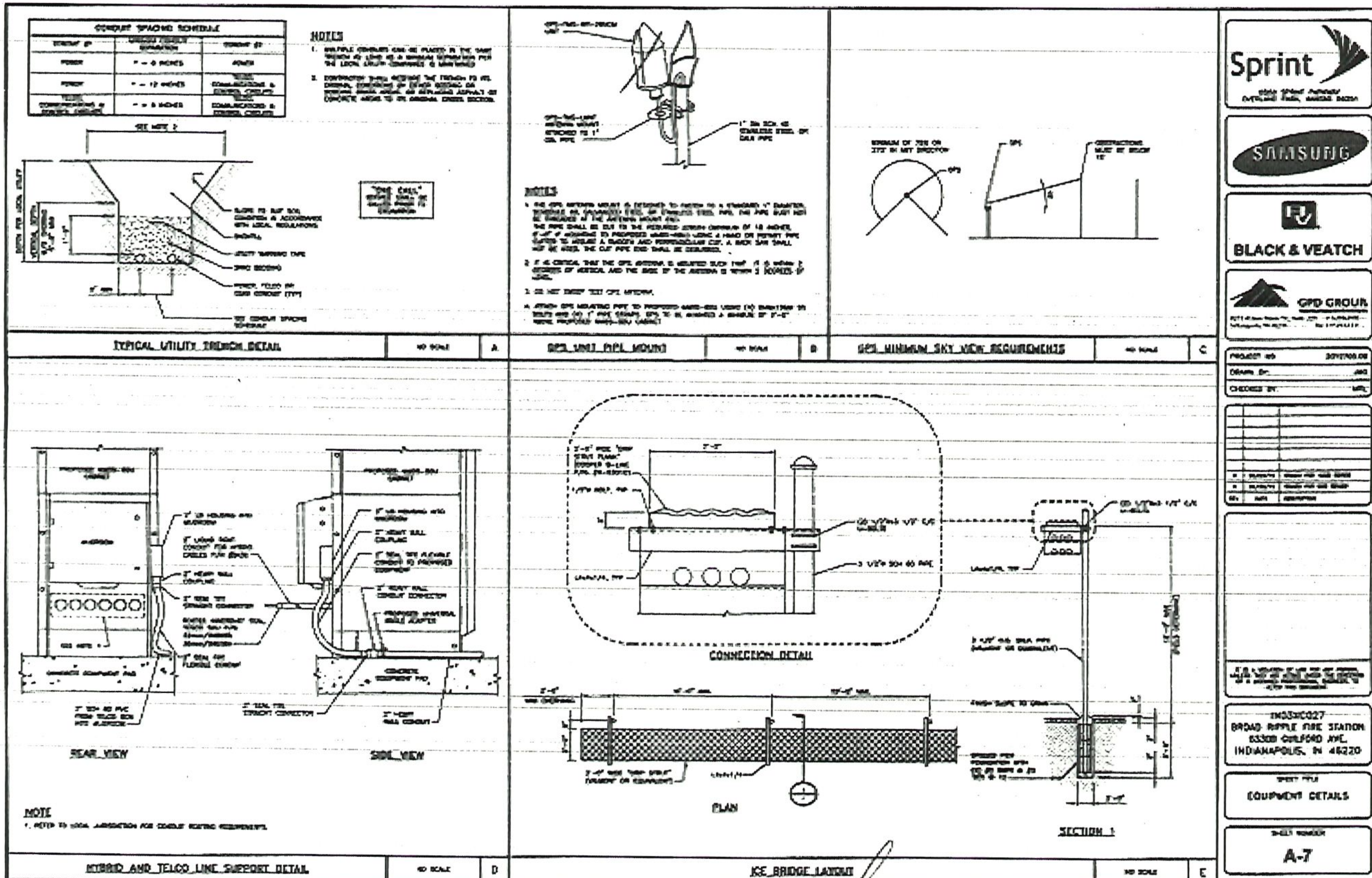
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1	04/05/13	ISSUED FOR REVIEW
MARK	DATE	DESCRIPTION

INDIANA027
BROAD RIPPLE FIRE STATION
6330B GUILFORD AVE.
INDIANAPOLIS, IN 46220

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-6

4-2-13


TYPICAL UTILITY TRENCH DETAIL
NO SCALE
A
GPS UNIT PIPE MOUNT
B
GPS MINIMUM SKY VIEW REQUIREMENTS
C
HYBRID AND TELCO LINE SUPPORT DETAIL
D
ICE BRIDGE LAYOUT
E
REAR VIEW
SIDE VIEW
CONNECTION DETAIL
PLAN
SECTION 1
Sprint
SAMSUNG
BLACK & VEATCH
GPD GROUP
IN33XC027
BROAD RIPPLE FIRE STATION
6330B GUILFORD AVE.
INDIANAPOLIS, IN 46220
EQUIPMENT DETAILS
A-7

4-2-13

FREQUENCY COLOR CODE FOR PAIRS AND FIBER CABLES OF HYBRID CABLE		
FREQUENCY COLOR CODE	FIRST RING	SECOND RING
800 MHz	YELLOW	GREEN
1900 MHz	YELLOW	RED

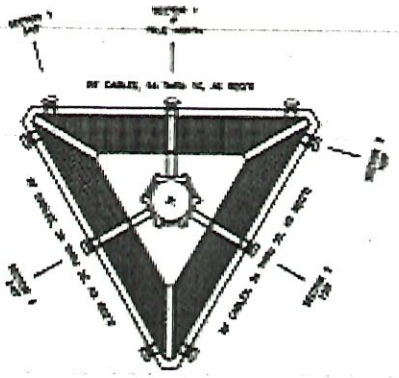
TYPICAL HYBRID CABLE 1 COLOR CODE			
SECTOR	FIRST RING	SECOND RING	THIRD RING
1	GREEN	NO TAPE	NO TAPE
2	GREEN	GREEN	NO TAPE
3	GREEN	GREEN	GREEN

TYPICAL HYBRID CABLE 2 COLOR CODE			
SECTOR	FIRST RING	SECOND RING	THIRD RING
1	BLUE	NO TAPE	NO TAPE
2	BLUE	BLUE	NO TAPE
3	BLUE	BLUE	BLUE

TYPICAL JUMPER CABLE COLOR CODE

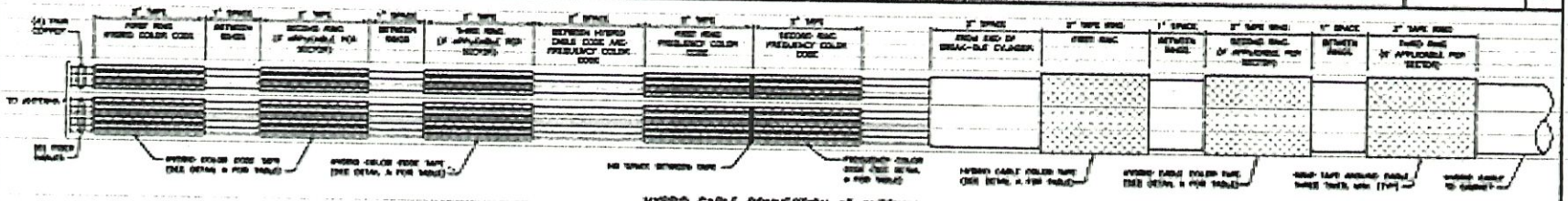
FREQUENCY	ANTENNA PORT	RRU PORT	SECTOR 1	SECTOR 2	SECTOR 3	SECTOR 4
800 MHz	RET	RET	N/A	N/A	N/A	N/A
	800 MHz ANT 1	ANT 1	WHITE	WHITE/WHITE	WHITE/WHITE/WHITE	WHITE/WHITE/WHITE/WHITE
	800 MHz ANT 2	ANT 2	BLUE	BLUE/BLUE	BLUE/BLUE/BLUE	BLUE/BLUE/BLUE/BLUE
1900 MHz	PCS1 ANT 2	ANT 2	BLUE	BLUE/BLUE	BLUE/BLUE/BLUE	BLUE/BLUE/BLUE/BLUE
	PCS1 ANT 1	ANT 1	WHITE	WHITE/WHITE	WHITE/WHITE/WHITE	WHITE/WHITE/WHITE/WHITE
	PCS2 ANT 2	ANT 2	GREEN	GREEN/GREEN	GREEN/GREEN/GREEN	GREEN/GREEN/GREEN/GREEN
	PCS2 ANT 3	ANT 3	ORANGE	ORANGE/ORANGE	ORANGE/ORANGE/ORANGE	ORANGE/ORANGE/ORANGE/ORANGE
	RET	RET	ORANGE	ORANGE/ORANGE	ORANGE/ORANGE/ORANGE	ORANGE/ORANGE/ORANGE/ORANGE

HYBRID AND JUMPER CABLES COLOR CODING — NO SCALE — A

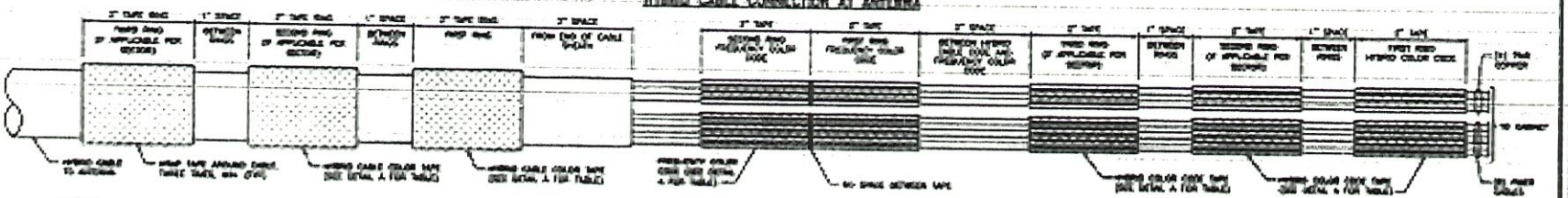


TOP VIEW

ANTENNA SECTOR AND CABLE COLOR DEFINITION DETAIL — NO SCALE — B



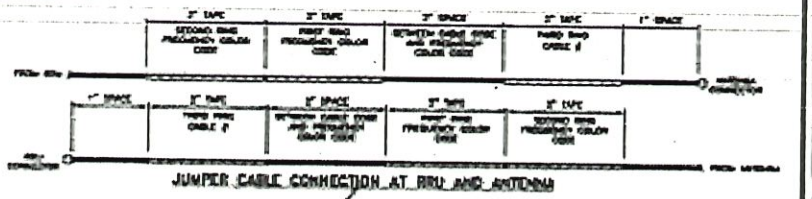
HYBRID CABLE CONNECTION AT ANTENNA



HYBRID CABLE CONNECTION AT CABINET

NOTES

1. ALL CABLES SHALL BE MARKED AT THE TOP AND BOTTOM WITH 3" COLORED TAPE OR BITUMEN TAG. COLOR TAPE SHALL BE OBTAINED FROM CHANNEL ELECTRIC.
2. THE FIRST RING SHALL BE CLOSEST TO THE END OF THE CABLE AND SPACED APPROXIMATELY 3" FROM AN ONE CONNECTOR, WEATHERPROOFING, OR BREAK-OUT CYLINDER, WITH 3" SPACE BETWEEN EACH RING.
3. THE HYBRID CABLE COLOR SHALL BE APPLIED IN ACCORDANCE WITH THE "TYPICAL HYBRID CABLE COLOR CODE" TABLE ABOVE FOR THE RESPECTIVE SECTOR.
4. 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 PAIRS AND FIBER CABLES OF HYBRID CABLE" TABLE ABOVE.
5. A 3" GAP SHALL SEPARATE THE HYBRID CABLE COLOR CODE FROM THE FREQUENCY COLOR CODE.
6. THE 3" COLOR RINGS FOR THE FREQUENCY CODE SHALL BE PLACED NEXT TO EACH OTHER WITH NO SPACES.
7. THE 3" COLORED TAPE(S) SHALL CONSIST OF A MINIMUM OF 3 TAPE WRAPS TO ENSURE THAT HYBRID CABLE IS WEATHERPROOF. CABLES AND THE TAPE SHALL BE KEPT IN THE SAME ORIENTATION AS MUCH AS POSSIBLE.
8. COLOR CODE ON JUMPERS SHALL BE 1" WIDE WITH A 1" SPACE.



JUMPER CABLE CONNECTION AT RRU AND ANTENNA

HYBRID CABLE COLOR SCHEME DETAIL — NO SCALE — C

4-2-13

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OPD GROUP

PROJECT NO. M12706.00
DRAWN BY: JMC
CHECKED BY: MBL

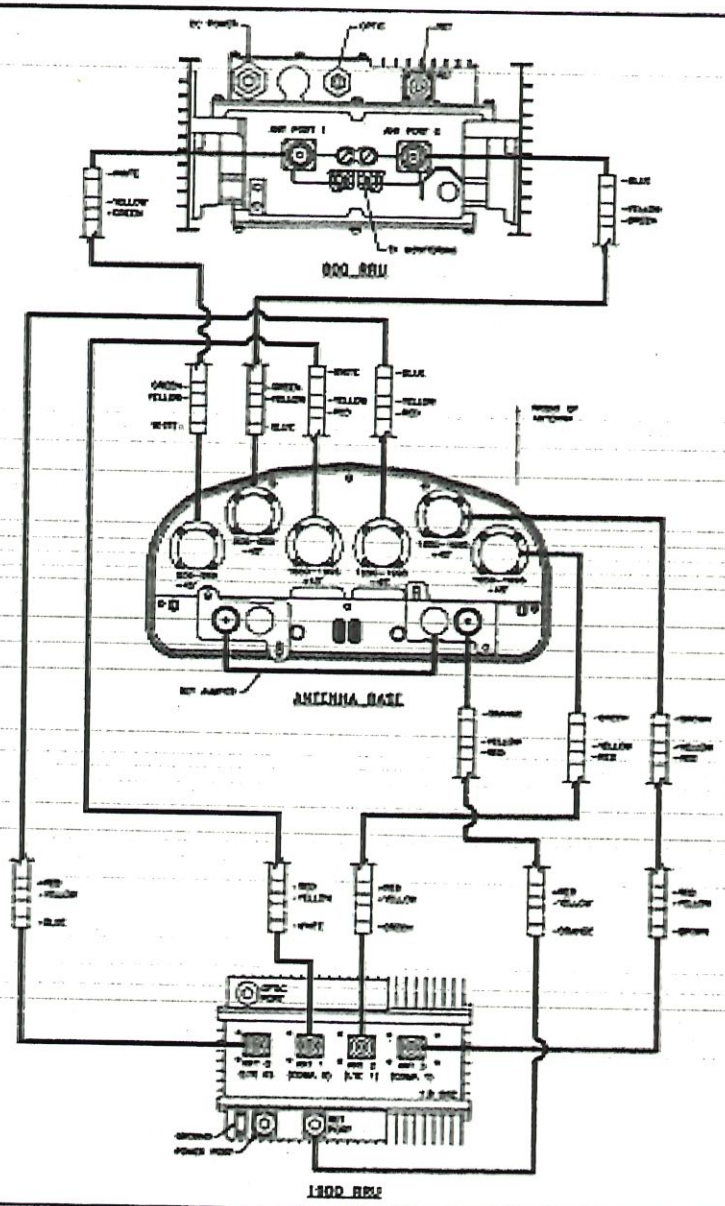
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0	03/15/2013	ISSUED FOR ZONING
REV.	DATE	DESCRIPTION

INDIANA BELL TELEPHONE COMPANY INCORPORATED D/B/A AT&T INDIANA

INDIANA'S
BROAD RIPPLE FIRE STATION
5330B GUILFORD AVE.
INDIANAPOLIS, IN 46220

SHEET TITLE
ANTENNA & CABLE COLOR CODING DETAILS

SHEET NUMBER
RF-1



ANTENNA/RRU JUMPER SCHEMATIC

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CPD GROUP

PROJECT NO. 30937705.00

DRAWN BY: JMO

CHECKED BY: MTL

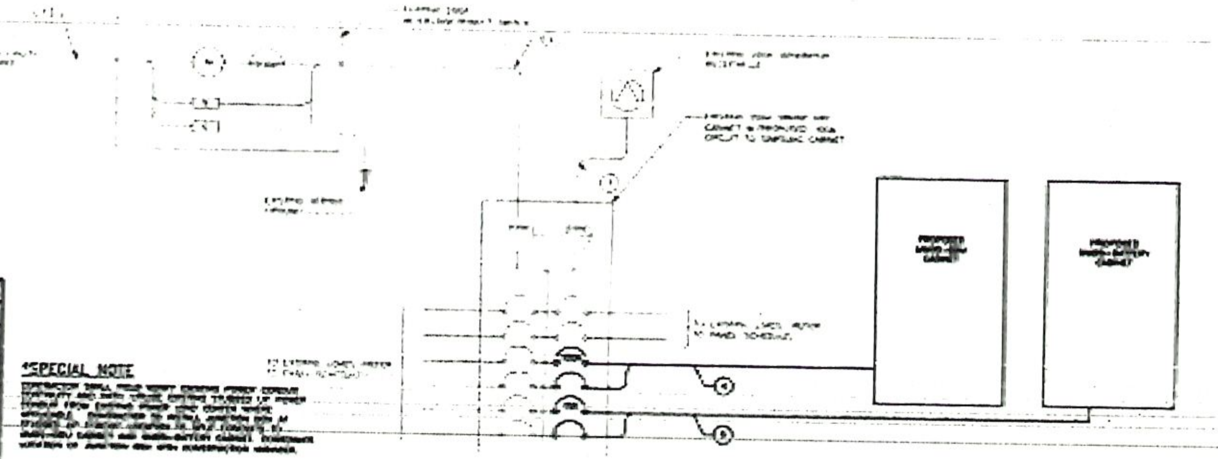
NO.	DATE	DESCRIPTION
0	04/05/13	ISSUED FOR ZONING REVIEW
1	04/26/13	ISSUED FOR ZONING REVIEW

INDIANAPOLIS
SEDAD RIPPLE FIRE STATION
6530E GUILFORD AVE,
INDIANAPOLIS, IN 46220

SHEET TITLE
ANTENNA/RRU
JUMPER SCHEMATIC

SHEET NUMBER
RF-2

4-2-13



NO.	FROM	TO	CONFIGURATION
1	UTILITY SOURCE	METER/DISCONNECT	EXISTING
2	METER/DISCONNECT	TRANSFER & LOAD CENTER	EXISTING
3	TRANSFER & LOAD CENTER	GENERATOR RECEPTACLE	EXISTING
4	TRANSFER & LOAD CENTER	PROPOSED [illegible] CABINET	[illegible]
5	TRANSFER & LOAD CENTER	PROPOSED MAIN-BATTERY CABINET	[illegible] "GRC" CONDUIT

CIRCUIT SCHEDULE

*SPECIAL NOTE

[illegible]

ELECTRICAL ONE-LINE DIAGRAM

NO SCALE | A

ELECTRICAL NOTES

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]
7. [illegible]
8. [illegible]
9. [illegible]
10. [illegible]
11. [illegible]

[illegible panel schedule]

ELECTRICAL NOTES (CON'T)

12. [illegible]
13. [illegible]
14. [illegible]
15. [illegible]
16. [illegible]
17. [illegible]
18. [illegible]
19. [illegible]
20. [illegible]
21. [illegible]
22. [illegible]
23. [illegible]
24. [illegible]
25. [illegible]
26. [illegible]
27. [illegible]
28. [illegible]
29. [illegible]

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CPD GROUP

PROJECT NO: [illegible]

DRAWN BY: [illegible]

CHECKED BY: [illegible]

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INDIANAPOLIS, IN 46220

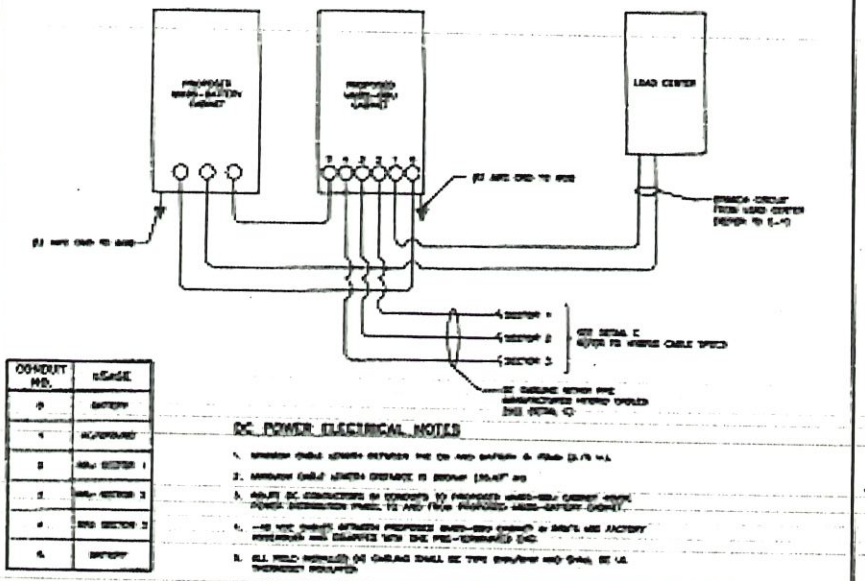
SHEET TITLE

SINGLE LINE DIAGRAM & POWER PANEL SCHEDULE

SHEET NUMBER

E-1

4-2-13
Ashiba

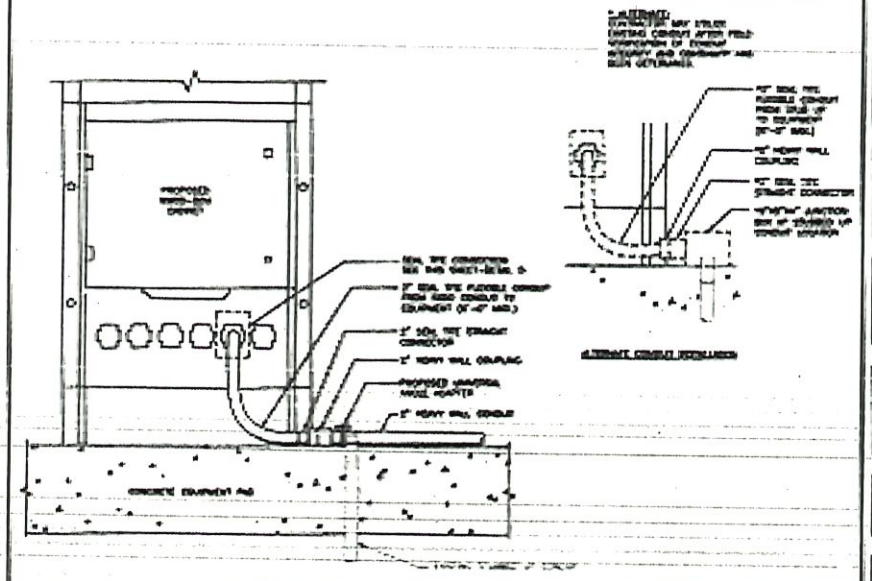


CONDUIT NO.	GAGE
0	BATTERY
1	RECTIFIER(S)
2	RRH SECTOR 1
3	RRH SECTOR 2
4	RRH SECTOR 3
5	BATTERY

DC POWER ELECTRICAL NOTES

1. MINIMUM CABLE LENGTH BETWEEN THE DC AND BATTERY IS FROM [3.75 M].
2. MINIMUM CABLE LENGTH DISTANCE IS BROWN [30.48" IN]
3. ADJUST DC CONNECTIONS AS REQUIRED TO PROVIDED WIRED-WAN CABINET WHERE POWER DISTRIBUTION PANEL TO AND FROM PROPOSED WIRED-SWITCH CABINET.
4. -48 VDC CHARGE BETWEEN PROPOSED WIRED-WAN CABINET AT BASE AND FACTORY INTERCONNECTED WITH ONE PRE-TERMINATED CAC.
5. ALL FIELD INSTALLED DC CABLING SHALL BE TYPE RHW/RHW AND SHALL BE UL THOROUGHLY INSULATED.

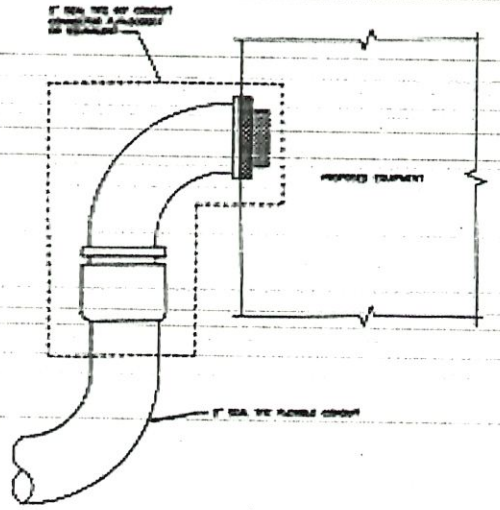
DC POWER DIAGRAM — NO SCALE — A



EQUIPMENT POWER CONDUIT CONNECTIONS — NO SCALE — B

	TYPE 1	TYPE 2	TYPE 3	TYPE 4	TYPE 5
TYPE LENGTH	~40m (~130')	~90m (~300')	~150m (~500')	~180m (~600')	~240m (~800')
HYBRID POWER CABLE CONFIGURATION	AWG 10, 3 PAIR AWG 14, 3 PAIR	AWG 8, 3 PAIR AWG 14, 3 PAIR	AWG 6, 3 PAIR AWG 14, 3 PAIR AWG 14, 2 PAIR	AWG 4, 3 PAIR AWG 14, 2 PAIR	AWG 4, 3 PAIR AWG 14, 2 PAIR
CABLE DIAMETER	15mm (0.60")	17mm (0.68")	20mm (0.79")	26/32mm (1.04")	32mm (1.28")
BENDING RADIUS	300mm (12.00")	330mm (13.20")	360mm (14.40")	450mm (18.00")	480mm (19.20")
OPTIC CABLE	AC/PC-10-62/PC, SINGLE MODE				
RADIO-BOX CABINET POWER CABLE TERMINAL AND TAIL (BY 4)	3 PAIR POWER AND OPTIC CABLE WITH PE PIPE				
WAN POWER CABLE SPEC	AWG 10, 15.24mm (0.60") AWG 14, 12.2mm (0.48")				
WAN LINE POWER AND OPTIC CABLE PROTECTION	3 PAIR POWER AND OPTIC CABLE WITH PE PIPE	3 PAIR POWER AND OPTIC CABLE WITH PE PIPE	3 PAIR POWER AND OPTIC CABLE WITH PE PIPE	3 PAIR POWER AND OPTIC CABLE WITH PE PIPE	

HYBRID CABLE TYPE — NO SCALE — C



SEAL TITE POWER CONDUIT CONNECTION TO PROPOSED EQUIPMENT DETAIL — NO SCALE — D

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GPD GROUP

PROJECT NO: 30127906.00
DRAWN BY: JMS
CHECKED BY: MTL

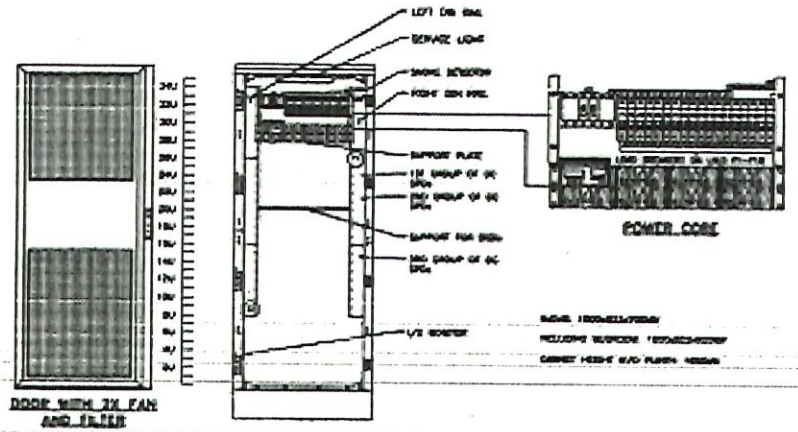
REV	DATE	DESCRIPTION
A	03/29/13	REVISED PER WAN COMMENTS
B	04/02/13	REVISED PER WAN COMMENTS

IN0130027
BROAD RIPPLE FIRE STATION
6330B GUILFORD AVE.
INDIANAPOLIS, IN 46220

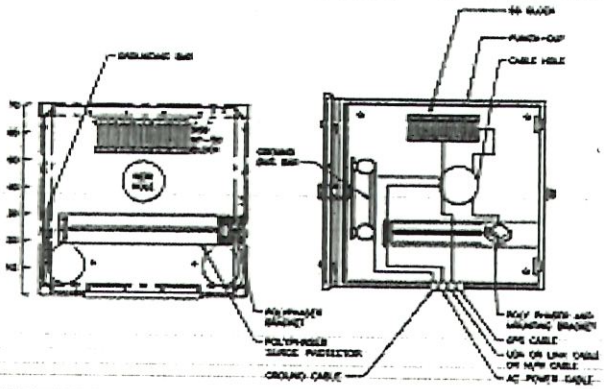
SHEET TITLE
DC POWER ONE-LINE & DETAILS

SHEET NUMBER
E-2

4-2-13

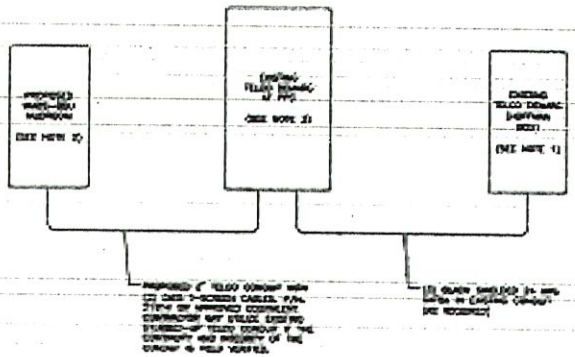


WAMS-BBU ELECTRICAL DETAIL | NO SCALE | A



MUDROOM ELECTRICAL DETAIL | NO SCALE | B

DETAIL NOT USED | NO SCALE | C



NOTES

1. CONTRACTOR TO INSTALL NEW 66 BLOCK IN EXISTING MPOE BOX AT DEMARC PER TELCO STANDARDS.
2. CONTRACTOR SHALL INSTALL RJ-45 ENDS ON ALL 350 PAIRS OF CAT5e INTO WAMS-BBU MUDROOM
3. CONTRACTOR TO INSTALL NEW 66 BLOCK IN EXISTING TELCO BOX NEAR TO EXISTING MPOE DEMARC

TELCO RISER DETAIL | NO SCALE | D

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GPD GROUP

PROJECT NO	20121100.00
DRAWN BY	AAC
CHECKED BY	MBL

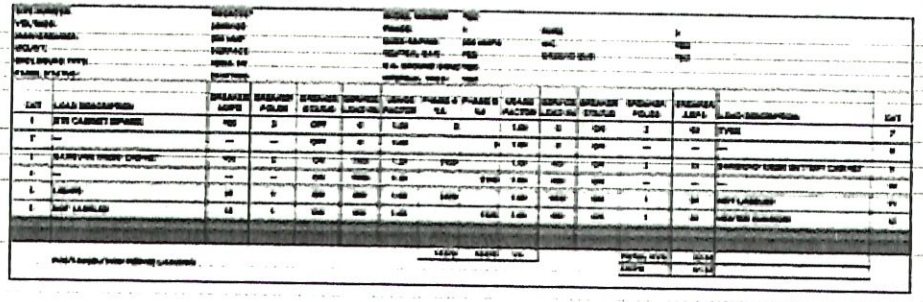
NO.	DATE	DESCRIPTION
A	09/05/13	ISSUED FOR ZONING REVIEW
1	09/26/13	ISSUED FOR ZBA REVIEW

INDIANA027
BROAD RIPPLE FIRE STATION
6330B GUILFORD AVE.
INDIANAPOLIS, IN 46220

SHEET TITLE
POWER & TELCO DETAILS

SHEET NUMBER
E-3

Looks good
11-2-13
Ashlie



POST-MIGRATION PANEL SCHEDULE

Sprint

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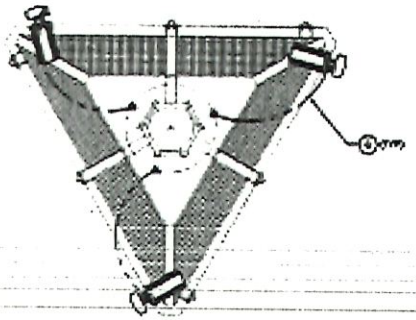
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INDIANAPOLIS, IN 46220

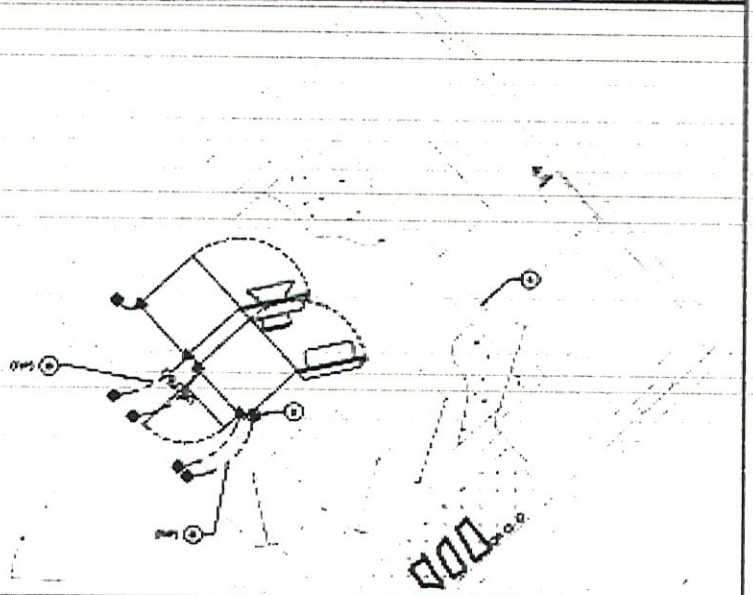
POST-MIGRATION
PANEL SCHEDULE

E-4

4-2-13



ANTENNA GROUNDING PLAN



EQUIPMENT GROUNDING PLAN

GROUNDING NOTES

1. ALL ELECTRICAL AND GROUNDING OF THE CELL SITE SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE (NEC), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 780 (LATEST EDITION), AND MANUFACTURER SPECIFICATIONS.
2. IF THE AC PANEL IN THE POWER CABINET IS SERVED BY UNDERGROUND ELECTRICAL, THE AC NEUTRAL GROUNDING CONDUCTOR SHALL BE CONNECTED TO GROUND ELECTRODE SYSTEM WHERE THE AC POWER IS FIRST BROUGHT TO THE POWER CABINET. IF GROUNDING IS DONE IN THE PANEL, THE GROUND WIRE SHALL BE INSTALLED IN THE AC POWER CONDUIT. THE INSTALLATION SHALL BE PER LOCAL AND NATIONAL ELECTRIC CODE (NEC).
3. EXOTHERMIC WELDING IS RECOMMENDED FOR GROUNDING CONNECTION WHERE PRACTICAL. WHERE NOT, THE CONNECTION SHALL BE MADE USING COMPRESSION TYPE-2 HOLES. LONG BARREL LUGS OR BOLTED CRIMP CLAMP "C" CLAMP. THE COPPER CABLES SHALL BE CLEANED WITH APPROPRIATE COMPOUND BEFORE MAKING THE CONNECTIONS. THE MANUFACTURER'S PERSONS RECOMMENDATIONS ON THE BEST METHOD TO SECURE CONNECTIONS SHALL BE FOLLOWED.
4. THE ANTENNA CABLES SHALL BE GROUNDED AT THE TOP AND BOTTOM OF THE VERTICAL RUN FOR LIGHTNING PROTECTION. THE ANTENNA CABLE GROUND SHALL BE BONDED TO A COMMON GROUND BUSS AT THE LOWER MOST POINT OF A VERTICAL RUN JUST BEFORE IT BENDS TO HORIZONTAL. THE GROUNDING PLANE MUST BE USED TO GROUND SHALL BE KEPT AS STRAIGHT AND SHORT AS POSSIBLE. ANTENNA CABLE SHIELD SHALL BE GROUNDED JUST BEFORE ENTERING THE CELL CABINET. ANY ANTENNA CABLES OVER 200 FEET IN LENGTH SHALL ALSO BE GROUNDED WITH ADDITIONAL GROUNDING AT MID-POINT.
5. ALL GROUNDING CONDUCTORS INSIDE THE BUILDING SHALL BE RUN IN CONCERT WITH POWER AND SHALL BE INSTALLED AS STRAIGHT AS PRACTICAL WITH MINOR BENDS TO AVOID OBSTRUCTIONS. THE GROUND BARS OF NOT BE GROUNDING CONDUCTOR IS 6" PVC RACEWAY MAY BE PLENUM OR PVC FOR THE FIELD CONDITIONS. GROUNDING CONDUCTORS SHALL NOT MAKE CONTACT WITH ANY METALLIC CONDUITS, SURFACES OR EQUIPMENT.
6. PROVIDE PVC SLEEVES WHERE GROUNDING CONDUCTORS PASS THROUGH THE BUILDING WALLS AND /OR CEILINGS.
7. INSTALL GROUND BUSHINGS ON ALL METALLIC CONDUITS AND BOND TO THE EQUIPMENT GROUND BUSS IN THE PANEL BOARDS.
8. GROUND ANTENNA MASTS, TOWERS, CABLE TRAYS AND OTHER METALLIC COMPONENTS WITH #6 GROUNDING CONDUCTORS AND CONNECT TO EXCLUSIVE SURFACE MOUNTED GROUND BARS. CONNECTION DETAILS SHALL FOLLOW MANUFACTURER'S SPECIFICATIONS FOR GROUNDING.
9. ALL PROPOSED GROUNDING CONDUCTORS SHALL BE #2/0 AND CONNECTED TO THE MAIN GROUND BAR OR EXISTING GROUND RING.

GROUNDING LEGEND

1. EXISTING GROUND RING. FIELD DETERMINE EXACT LOCATION.
2. SPRINT EQUIPMENT CABINET GROUNDING PER SP 3, SEE DETAIL 6 / SHEET G-2
3. ANTENNA GROUNDING, SEE DETAIL 5 / SHEET G-2
4. GPS GROUNDING, SEE DETAIL 8 / SHEET G-2
5. ICE BRIDGE GROUNDING. SEE DETAIL 4 / SHEET G-2

EXISTING GROUND RING

- CADWELD CONNECTION
- EXOTHERMIC CONNECTION
- GROUND ROD

CADWELD CONNECTIONS OR APPROVED EQUAL		BURNDY CONNECTIONS OR APPROVED EQUAL
PARALLEL HORIZONTAL CONNECTIONS PARALLEL THROUGH CONNECTION OF HORIZONTAL CABLES TYPE GT	HORIZONTAL STEEL SURFACE TO FLAT STEEL SURFACE OR HORIZONTAL PIPE TYPE HS	BEND LUG/TE FIELD FORMED BENT SPLICED MOLDED TYPE L-TA-1
THROUGH CABLE TO GROUND BUS THROUGH CABLE TO TOP OF GROUND BUS TYPE GT	VERTICAL STEEL SURFACE CABLE DOWN TO TO VERTICAL STEEL SURFACE INCLUDING PIPE TYPE VS	BENDING LUGS TWO HOLE - TWO BARREL LENGTH TYPE TA-2
GROUND PIPE CABLE DOWN TO TOP OF GROUND PIPES TYPE GP		

TYPICAL CADWELD TYPE CONNECTIONS
NO SCALE

Sprint

SAMSUNG

BLACK & VEATCH

GPD GROUP

PROJECT NO:	0912105.00
DRAWN BY:	JMS
CHECKED BY:	MWL

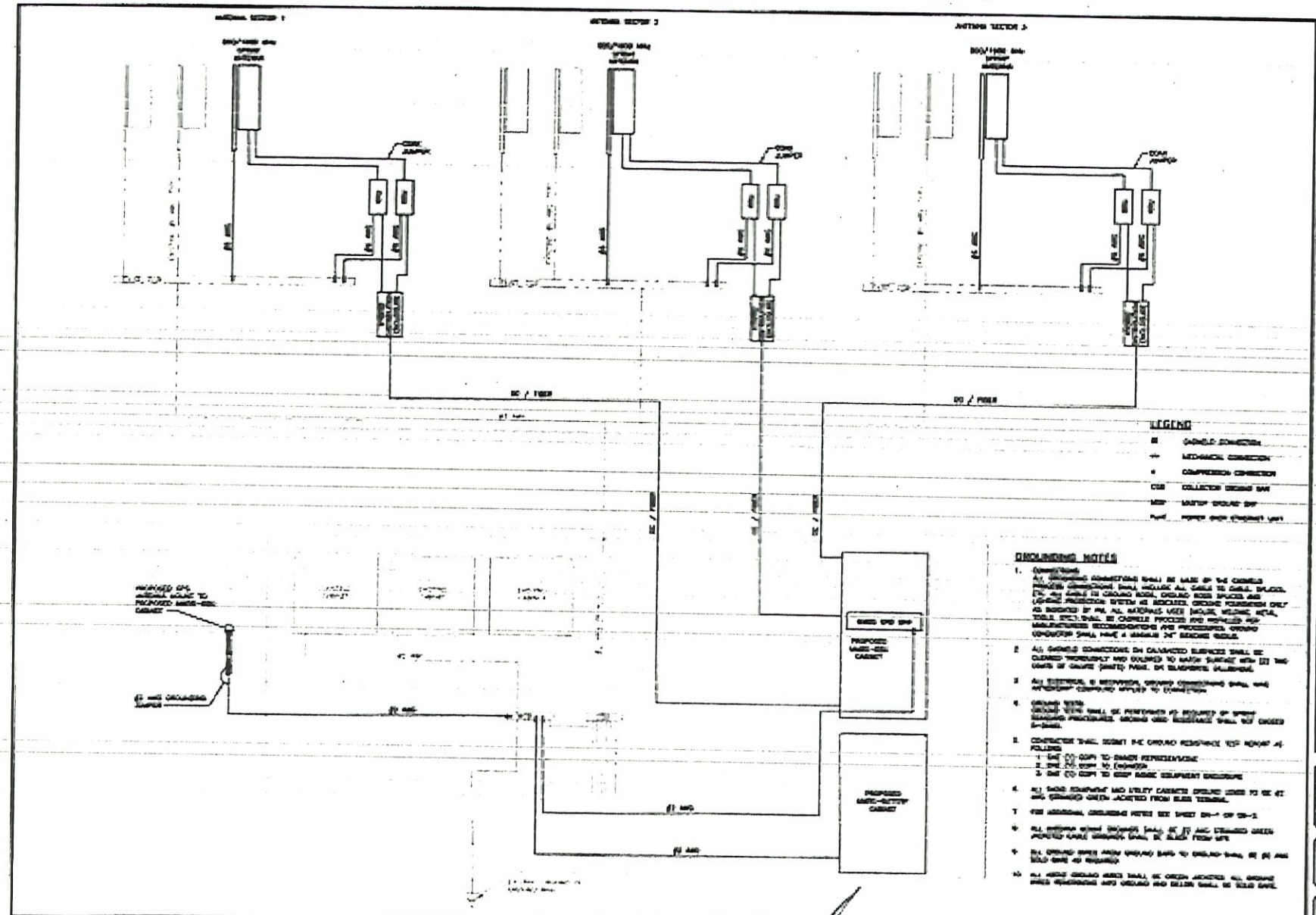
REV	DATE	DESCRIPTION
0	10/05/12	ISSUED FOR 100% REVIEW
A	10/26/12	ISSUED FOR BID REVIEW

IN53XC027
BROAD RIPPLE FIRE STATION
6330B GUILFORD AVE.
INDIANAPOLIS, IN 46220

SHEET TITLE
GROUNDING PLAN & NOTES

SHEET NUMBER
G-1

4-2-13



Sprint

SAMSUNG

BLACK & VEATCH

CPD GROUP

PROJECT NO:	30412700.08
DRAWN BY:	JMG
CHECKED BY:	MWL

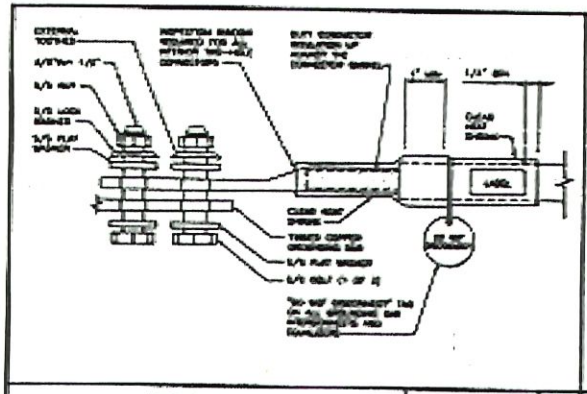
A	05/31/13	ISSUED FOR 100% REVIEW
0	04/19/13	ISSUED FOR 90% REVIEW
NO.	DATE	DESCRIPTION

IN0SX0027
GREAD RIPPLE FIRE STATION
6330B GUILFORD AVE.
INDIANAPOLIS, IN 46220

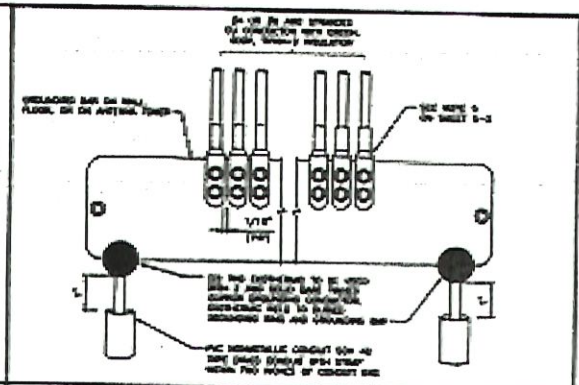
SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-2

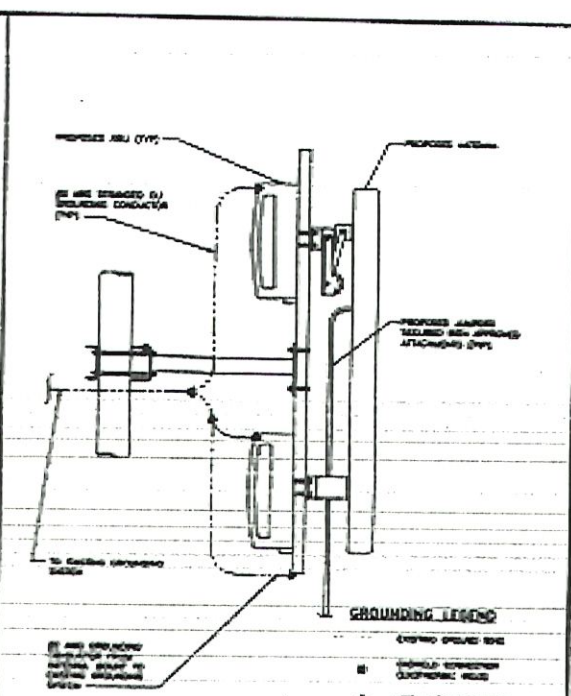
4-2-13

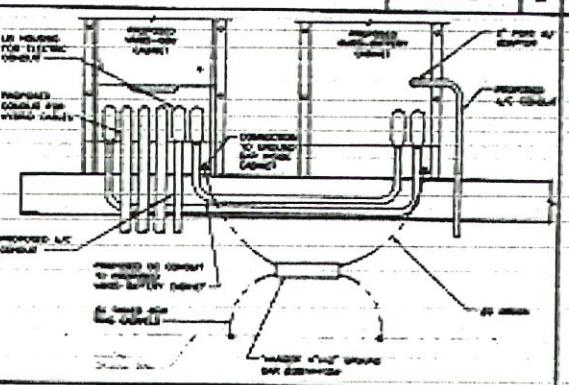


TWO HOLE LUG — NO SCALE — A

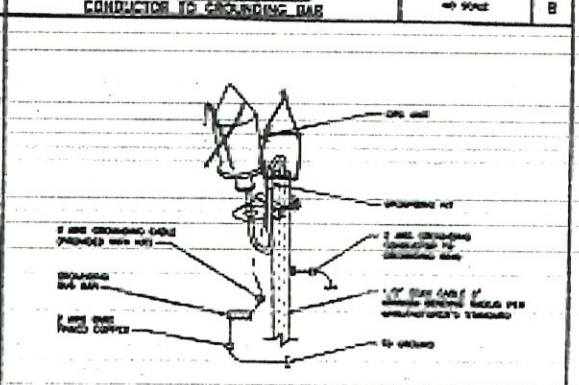


INSTALLATION OF GROUNDING CONDUCTOR TO GROUNDING BAR — NO SCALE — B



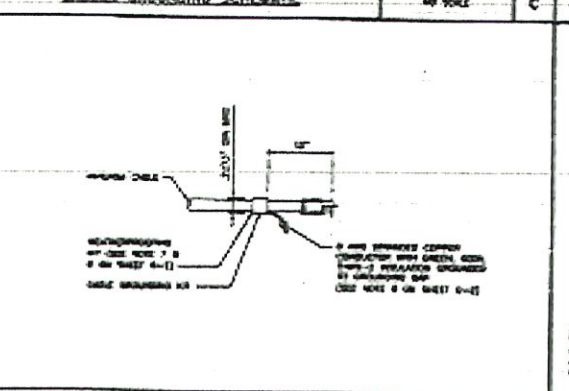


CABINET GROUNDING SCHEMATIC — NO SCALE — C

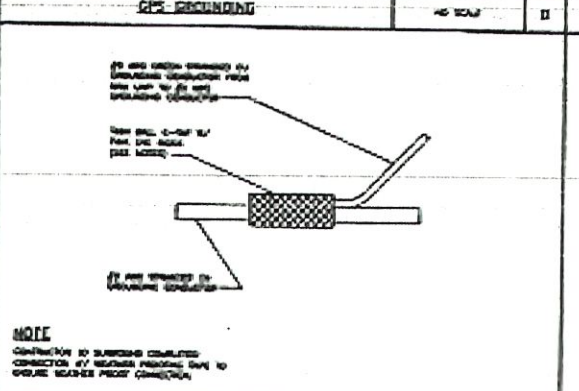


GPS GROUNDING — NO SCALE — D

ANTENNA GROUNDING — NO SCALE — E



CONNECTION OF CABLE GROUNDING KIT TO ANTENNA CABLE — NO SCALE — F



NOTE

C-TAP CONNECTION — NO SCALE — G

GROUNDING NOTES — NO SCALE — H

Sprint

SAMSUNG

BLACK & VEATCH

CPD GROUP

PROJECT NO: INDIANA027
DRAWN BY: AG
CHECKED BY: MPL

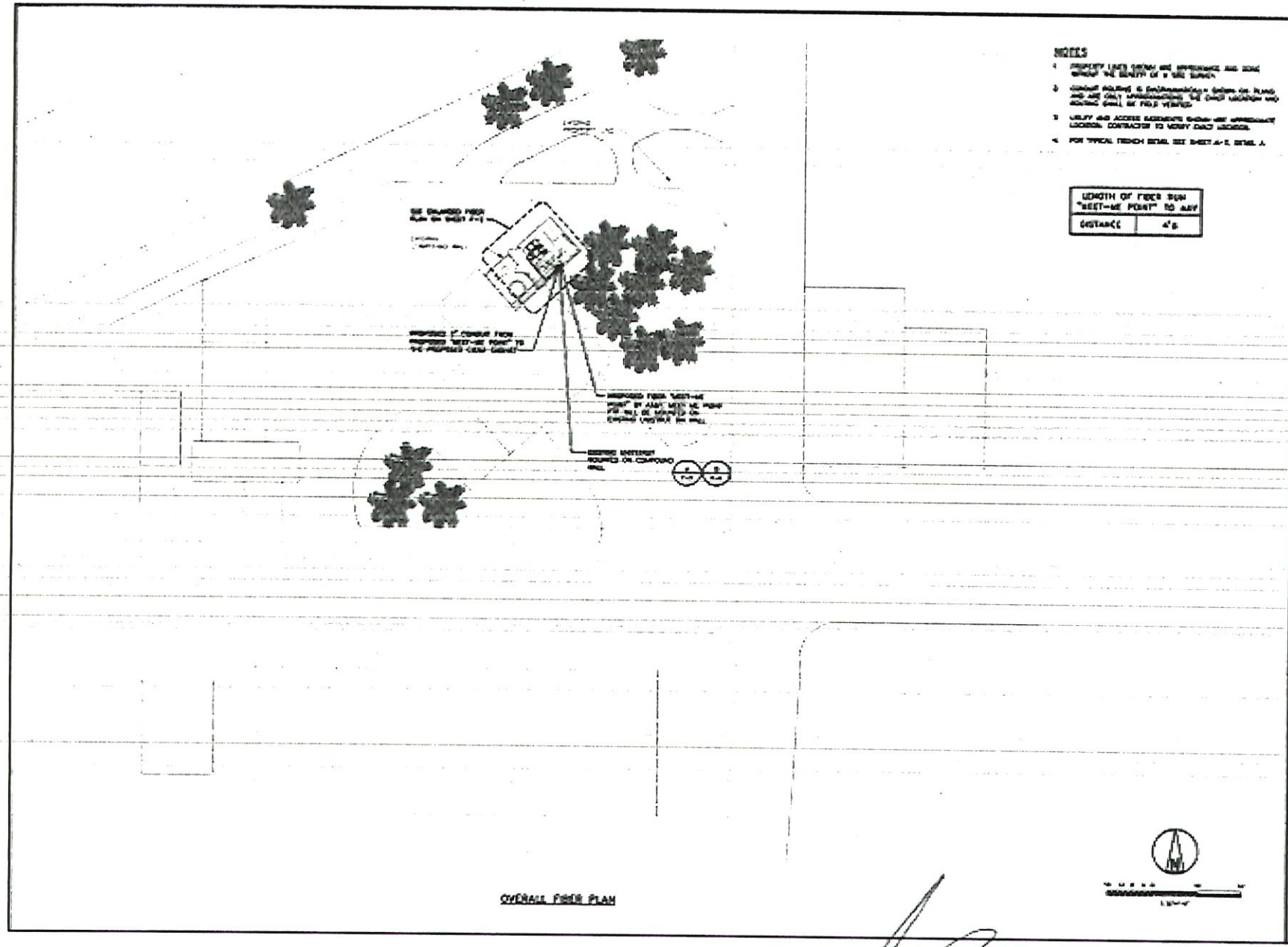
0	04/02/13	ISSUED FOR ZONING
1	03/28/13	ISSUED FOR ZONING
NO.	DATE	DESCRIPTION

IN0266027
BROAD RIPPLE FIRE STATION
8330B GUILFORD AVE.
INDIANAPOLIS, IN 46220

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-3

4-2-13



NOTES

1. PROPERTY LINES SHOWN ARE APPROXIMATE AND SHALL NOT BE IDENTIFY OF A SITE SURVEY.
2. CONTRACT BIDDING & CONSTRUCTION DRAWINGS ARE IN PLANS, AND ARE ONLY DIAGRAMMATIC. THE EXACT LOCATION AND ROUTING SHALL BE FIELD VERIFIED.
3. UTILITY AND ACCESS EASEMENTS SHOWN ARE APPROXIMATE LOCATIONS. CONTRACTOR TO VERIFY EXACT LOCATION.
4. FOR TYPICAL TRENCH DETAIL SEE SHEET A-2, DETAIL 3.

LENGTH OF FIBER RUN "MEET-ME POINT" TO ANT	
DISTANCE	4'-6

OVERALL FIBER PLAN

Sprint

SAMSUNG

BLACK & VEATCH

GPD GROUP

PROJECT NO	
DRAWN BY	
CHECKED BY	

IN03XC027
BROAD RIPPLE FIRE STATION
6330R GUILFORD AVE
INDIANAPOLIS, IN 46220

SHEET TITLE
OVERALL FIBER PLAN

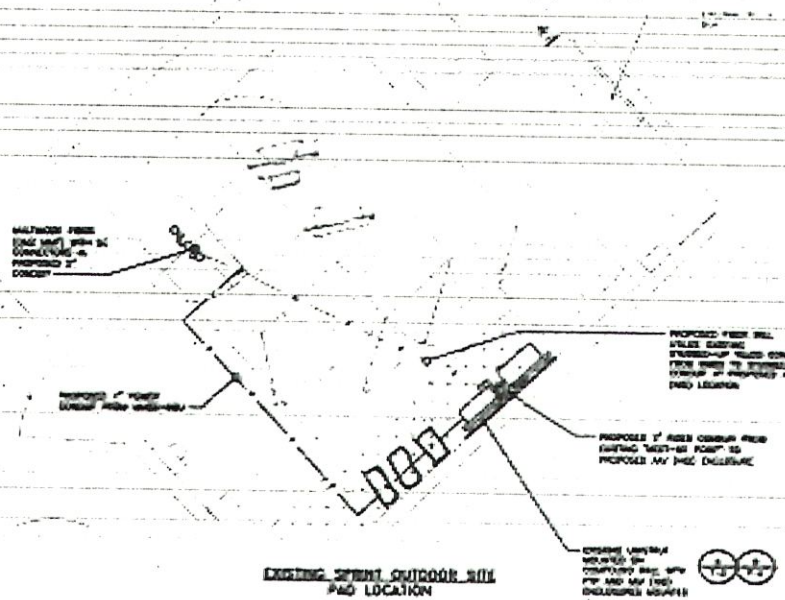
SHEET NUMBER
F-1

4-2-13
Architect

NOTES

1. ALL ELECTRICAL EQUIPMENT AND CONSTRUCTION METHODS SHALL BE PERFORMED WITH LICENSED ELECTRICIANS, MEETING THE CURRENT ORDINANCES AND ALL APPLICABLE CODES AND LAWS.
2. CONTRACTOR SHALL SUPPLY ALL MATERIAL, CONDUITS AND CABLES (INTERNAL AS REQUIRED) FOR A COMPLETE SYSTEM AND SHALL BE IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS.
3. FOR TYPICAL FENCING DETAIL SEE SHEET A-T, DETAIL 4.
4. EXISTING SPRINT LEASE AREA SHOWN IS APPROXIMATE. CONTRACTOR TO VERIFY LEASE AREA WITH LAND SURVEY.

LOCATION OF FIBER RUN WHERE TIE AWAY	
DISTANCE	30'±





Sprint

SAMSUNG

BLACK & VEATCH

CPD GROUP

PROJECT NO.	
DRAWN BY:	
CHECKED BY:	

A		
1		
NO.	DATE	DESCRIPTION

IND2XC027
BROAD RIPPLE FIRE STATION
6330 GUILFORD AVE.
INDIANAPOLIS, IN 46220

SHEET TITLE
ENLARGED FIBER PLAN

SHEET NUMBER
F-2

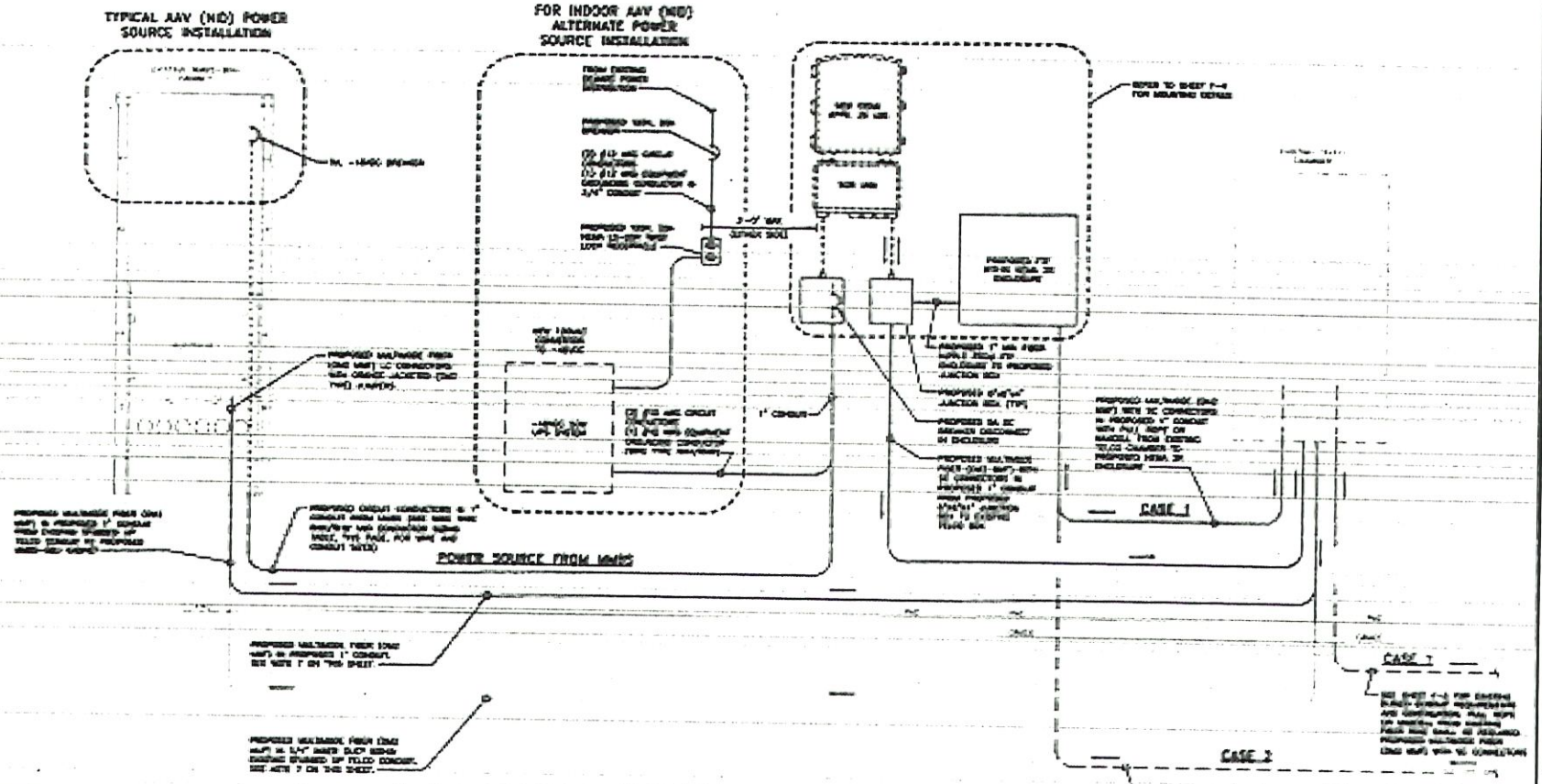
GRAPHICS LEGEND

EXIST.	
PROP./NEW FENCE	
LEASE AREA	
CO. BOUND.	
CABLE TRAY	

ACRONYM LEGEND

AAV:	ALTERNATIVE ACCESS VENDOR
AWG:	AMERICAN WIRE GAUGE
BBU:	BASE BAND UNIT
CDMA:	CODE DIVISION MULTIPLE ACCESS
CMU:	CONCRETE MASONRY UNIT
EMT:	ELECTRICAL METALLIC TUBING
FAP:	FIBER ADAPTER PANEL
FOSC:	FIBER OPTIC SPLICE CLOSURE
FTP:	FIBER TERMINATION PANEL
GPS:	GLOBAL POSITIONING SYSTEM
HVAC:	HEATING VENTILATION AIR CONDITIONING
MGB:	MASTER GROUND BAR
MMBB:	MULTI MEDIA BASE STATION
MPOE:	MINIMUM POINT OF ENTRY
NEMA:	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NID:	NETWORK INTERFACE DEVICE
RPC:	POWER PROTECTION UNIT
RET:	REMOTE ELECTRICAL TILT
RF:	RADIO FREQUENCY
RRU:	REMOTE RADIO UNIT
SMC:	SMART METAMODULE MODEM MODULES (OSM)

Ent 2
4-2-13
Adm



NOTES

1. CONTRACTOR SHALL FOLLOW ALL LOCAL, MUNICIPAL CODES FOR CONDUIT SPECIFICATION AND INSTALLATION.
2. ALL ENTRY/EXIT ENDS SHALL BE CABLE-CAULKED AND SEALED.
3. ALL ENTRY/EXIT CONDUITS SHALL BE EMT.
4. ALL ABOVE GROUND CONDUIT SHALL BE RIGID.
5. CASE 1 - THESE PATHS TO BE USED IF EXISTING CONDUIT FROM "MDET-MC POINT" TO EXISTING TELCO CABINET EXIST.
6. CASE 2 - THESE PATHS TO BE USED IF EXISTING CONDUIT FROM "MDET-MC POINT" TO EXISTING TELCO CABINET IS NOT AVAILABLE OR IF EXISTING CONDUIT SIZES ARE NOT LARGE ENOUGH CAPACITY FOR PROPOSED FIBER RUNS.
7. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDUIT PATH AND DIMENSIONS. IF EXISTING CONDUITS ARE NOT AVAILABLE OR DO NOT FOLLOW ASSUMED PATH, CONTACT CONSTRUCTION MANAGER FOR NEW ROUTING INFORMATION.

WIRE TYPE RHH/RHW AND CONDUCTOR SIZING TABLE (48VDC @ 55A/2.0 AMPS)				
DISTANCE (FT)	0'-100'	100'-200'	200'-400'	400'-700'
CIRCUIT CONDUCTOR SIZE	(2) #12 AWG	(2) #10 AWG	(2) #8 AWG	(2) #6 AWG
GND CONDUCTOR SIZE	(1) #12 AWG	(1) #10 AWG	(1) #8 AWG	(1) #6 AWG
CONDUIT SIZE	1"	1"	1"	1"

AAV (NID) ENCLOSURE ONE-LINE DIAGRAM

NO SCALE

Sprint

SAMSUNG

BLACK & VEATCH

GPD GROUP

PROJECT NO:	30127008-00
DRAWN BY:	JMC
CHECKED BY:	MBL

1	03/28/13	REVISED PER CITY COMMENTS
0	03/15/13	ISSUED FOR CITY REVIEW
REV	DATE	DESCRIPTION

INDI0C027
BROAD RIPPLE FIRE STATION
6535B GUILFORD AVE.
INDIANAPOLIS, IN 46220

SHEET TITLE
AAV (NID) ENCLOSURE ONE-LINE DIAGRAM

SHEET NUMBER
F-3

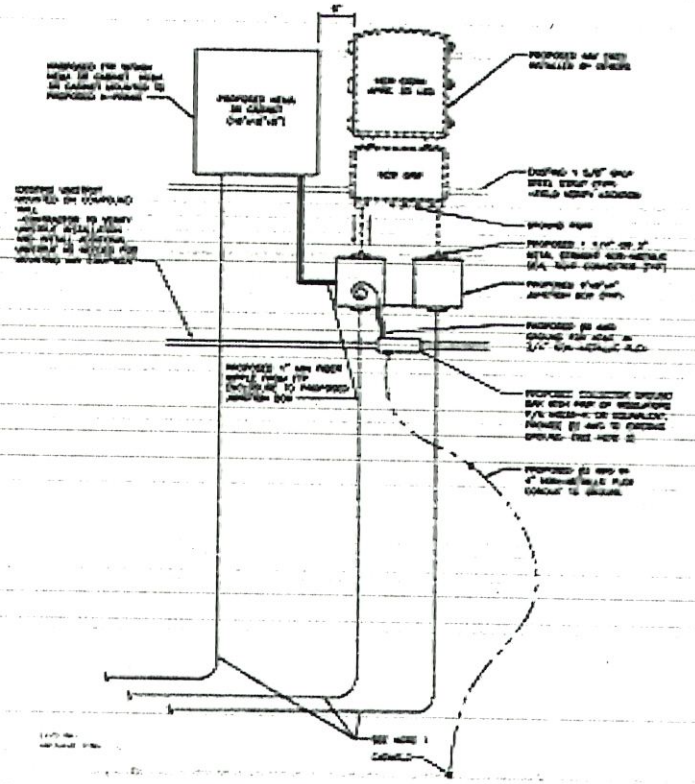
4-2-13

DETAIL NOT USED

A

EXISTING UNISTRUT AAV (NID) AND ITP ENCLOSURE INSTALLATION DETAIL (AS REQUIRED)

B



EXISTING UNISTRUT ON COMPOUND WALL

NOTES

1. REFER TO SHEET F-3 FOR CONDUIT ROUTING DETAIL.
2. CONTRACTOR TO SUPPLY GROUND TO NEAREST ACCESSIBLE MASTER GROUND OR RING GROUNDING SYSTEM.

Sprint

SAMSUNG

BLACK & VEATCH

GPD GROUP

PROJECT NO. [illegible]

DRAWN BY: JMO

CHECKED BY: MR

B	05/23/13	ISSUED FOR FINAL REVIEW
A	04/26/13	ISSUED FOR REVIEW
REV	DATE	DESCRIPTION

[illegible]

BROAD RIPPLE FIRE STATION
6330 GUILFORD AVE.
INDIANAPOLIS, IN 46220

SHEET TITLE
STANDARD DETAILS

SHEET NUMBER
F-4

Apr 25-13